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TRANSCRIPT OF RECORD

Supreme Court of the United States

OCTOBER TERM, 1933

No. 440

BENJAMIN F. LINDHEIMER AND OTHERS, CONSTITUTING THE ILLINOIS COMMERCE COMMISSION OF THE STATE OF ILLINOIS, OTTO KERNER, ATTORNEY GENERAL OF THE STATE OF ILLINOIS, AND THE CITY OF CHICAGO, APPELLANTS,

vs.

ILLINOIS BELL TELEPHONE COMPANY

No. 548

ILLINOIS BELL TELEPHONE COMPANY, APPELLANT,

vs.

BENJAMIN F. LINDHEIMER AND OTHERS, CONSTITUTING THE ILLINOIS COMMERCE COMMISSION OF THE STATE OF ILLINOIS, OTTO KERNER, ATTORNEY GENERAL OF THE STATE OF ILLINOIS, AND THE CITY OF CHICAGO

APPEALS FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF ILLINOIS

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VOL. I

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10—Article contained on pages 253-265, Bell Telephone Quarterly, October, 1926, entitled "1928 Stock Offer of A. T. & T. Co." written and testified to by witness Blair-Smith	3509	3204
11—Article contained on pages 253-269, Bell Telephone Quarterly, issue of October, 1926, entitled "1926 Stock Issue of A. T. & T. Co." written and testified to by witness Blair-Smith	3521	3214
12—Article contained on pages 262-269, Bell Telephone Journal, issue of October, 1924, entitled "The 1924 Stock Issue of A. T. & T. Co." written and testified to by witness Blair-Smith	3525	3216
17—Article written and testified to by witness Morsack appearing in Bell Telephone Quarterly of April, 1924, page 100, "Accounting in the Long Lines Department".	3526	3217

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18—Pages 565-66 of article appearing in July, 1928, Bell System Technical Journal entitled "Carrier Systems on Long Distance Telephone Lines" by H. A. Affel, C. S. Demarest, and C. W. Green	3528	3218
19—Pages 80-91 of Bell Telephone Quarterly of April, 1931, entitled "Milestones, Guideposts, and Footprints" by R. T. Barrett	3530	3219
20—Pages 92-102, Bell Telephone Quarterly of April, 1931, by W. L. Dusenberry, entitled "Teletypewriter Service and its Present-day Uses"	3532	3220
21—Pages 114-131, Bell Telephone Quarterly, issue of April, 1925, by J. O. Perrine, entitled "The Development of the Transmission Circuit and Communication"	3534	3221
22—Pages 141-149, Bell System Technical Journal, issue of January, 1930, by A. B. Clark, entitled "Wire Line Systems for National Broadcasting"	3537	3223
24—Pages 181-194 of July, 1929, Bell Telephone Quarterly, by R. B. Parker, entitled "Telephone Typewriters and Auxiliary Arrangements"	3539	3224
25—Article appearing in Bell Telephone Quarterly, issue of October, 1924, entitled "World's Telephone Statistics, 1923," by C. W. Foss of A. T. & T., appearing on pages 270-282	3541	3225
26—Article appearing in Bell Telephone Quarterly, issue of January, 1925, entitled "The Work of the Bell Telephone Securities Company," by D. F. Houston, appearing on pages 37-41	3542	3225
27—Article in the Bell Telephone Quarterly, issue of January, 1928, entitled "An Economic Review and Outlook" by F. E. Richter, appearing on pages 27-41	3543	3226
28—Pages 32-42, Bell Telephone Quarterly, issue of January, 1923, entitled "The Budget Plan of the Bell System," by C. A. Heiss	3558	3239
29—Pages 138-149, Bell Telephone Quarterly, issue of July, 1931, entitled "World's Telephone Statistics, January 1, 1930"	3570	3239
30—Pages 150-163, Bell Telephone Quarterly, issue of July, 1931, entitled "Some Auxiliary Services and Facilities of the Bell System," by R. S. Coe	3571	3249

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31—Pages 2-12, Bell Telephone Quarterly, issue of April, 1922, entitled "The Radio Telephone Situation," by A. H. Griswold....	3574	3251
32—Pages 13-22, Bell Telephone Quarterly, issue of April, 1922, entitled "The Work of the Bell Telephone Securities Company," by D. F. Houston..................	3581	3256
34—Pages 238-252, Bell Telephone Quarterly, issue of October, 1926, entitled "Some Problems of Statistics and Economic Research in the Bell System," by C. A. Heiss	3582	3256
35—Pages 23-33, Bell Telephone Quarterly, issue of January, 1926, entitled "An Economic Review and Outlook," by F. E. Richter	3584	3258
36—Pages 9-20, Bell Telephone Quarterly, issue of January, 1927, entitled "1926-1927, an Economic Review and Outlook," by F. E. Richter..........................	3588	3261
37—Pages 520-522, Bell Telephone Technical Journal, issue of October, 1925, entitled "General Engineering Problems of the Bell System," by H. P. Charlesworth	3592	3263
38—Pages 542-560, Bell System Technical Journal, issue of October, 1925, entitled "Engineering Planning for Manufacture," by G. A. Pennock.....................	3596	3266
39—Pages 1-14, Bell System Technical Journal, issue of January, 1925, entitled "Engineering Cost Studies," by F. L. Rhodes..	3598	3268
40—Annual report of directors to stockholders of A. T. & T. for year ending December 31, 1920...........................	3612	3283
41—Annual report of directors to stockholders of A. T. & T. for year ending December 31, 1921..........................	3625	3292
42—Annual report of directors to stockholders of A. T. & T. for year ending December 31, 1922...........................	3629	3295
43—Annual report of directors to stockholders of A. T. & T. for year ending December 31, 1923...........................	3636	3300
44—Annual report of directors to stockholders of A. T. & T. for year ending December 31, 1924...........................	3640	3302
45—Annual report of directors to stockholders of A. T. & T. for year ending December 31, 1925...........................	3648	3308

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46—Annual report of directors to stockholders of A. T. & T. for year ending December 31, 1926	3660	3316
47—Annual report of directors to stockholders of A. T. & T. for year ending December 31, 1927	3669	3321
48—Annual report of directors to stockholders of A. T. & T. for year ending December 31, 1928	36[illegible]	3327
49—Annual report of directors to stockholders of A. T. & T. for year ending December 31, 1929	3689	3334
50—Annual report of directors to stockholders of A. T. & T. for year ending December 31, 1930	3701	3342
50-A—Annual report of directors to stockholders of A. T. & T. for year ending December 31, 1918	3714	3350
50-B—Annual report of directors to stockholders of A. T. & T. for year 1919	3717	3353
54 to 65, both inclusive—CR-51 for years 1919-1930, respectively	3722	3356
66 to 69, both inclusive—CR-51a for years 1919, 1920, 1921, and 1922, respectively	3752	3376
70—CR-51a for 1923	3759	3380
71—CR-51a for 1924	3761	3382
72—CR-51a for 1925	3763	3384
73—CR-51a for 1926	3765	3385
74—CR-51a for 1927	3767	3387
75—CR-51a for 1928	3769	3388
76—CR-51a for 1929	3771	3390
77—CR-51a for 1930	3773	3391
104—Document testified to by witness Saxton, "$125,000,000 Total Issue A. T. & T. Company 35 Year Sinking Fund 5% Gold Debentures, dated January 1, 1925, due January 1, 1960"	3775	3393
105—Document headed as follows: "$100,000,000 A. T. & T. Company 20 Year Sinking Fund 5½% Gold Debenture Bonds, dated November 1, 1923, and due November 1, 1943"	3779	3403
106—Document headed $150,000,000 A. T. & T. Company 35 Year 5% Gold Debentures, dated February 1, 1930, and due February 1, 1965"	3783	3414
108—Tabulation prepared and testified to by witness Uhrig	3784	3416
110—Publication, dated April 15, 1931, "Bell Telephone Securities"	3785	3417

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111—Publication, Bell Telephone Securities, dated April 15, 1930	3799	3429
112—Publication, Bell Telephone Securities, issue of 1929, dated April 15th	3804	3433
113—Publication, Bell Telephone Securities, issue of April 15, 1928	3808	3436
114—Publication, Bell Telephone Securities, issue of April 15, 1927	3809	3437
115—Publication, Bell Telephone Securities, publication of May 1, 1926	3813	3439
116—Publication, Bell Telephone Securities, dated May 21, 1925	3814	3440
117—Publication, Bell Telephone Securities, issue of May 1, 1924	3815	3440A
118—Bell Telephone Securities, 1923 issue, dated May 1, 1923	3817	3441
119—Bell Telephone Securities, issue of May 1, 1922	3821	3444
132—Form of provisional estimate for year 1929	3823	3446
134—Tabulation produced and testified to by witness Behan showing the amount of benefits to American Company resulting from the consolidated income tax return	3836	3447
139—Copies of CR-10 for years 1919 to 1930, both inclusive	3837	3447
142—Statement with reference to the revenues from special contract services and toll services	3842	3450
145—Bond circular of Ill. Bell Tel. Co	3844	3451
146, 149-152, 155-158-161, 164-167-170, 173-176-179—Monthly reports, long lines, 1, 2 and 14, covering month of December for each of years 1919 to 1930, both inclusive	3847	3458
188—Article, Western Electric News, May, 1930, written and testified to by witness Burgess	3859	3470
189—Statement entitled "Patents and patent applications costing $1,000 or more, purchased by Western Electric, 1909 to 1930"	3862	3472
190—Document testified to by witness Folk, entitled "Licenses costing $1,000 or more, paid by Western Electric to others than A. T. & T., 1900-1930"	3863	3473
191—Document testified to by witness Folk, entitled "Federal Trade Commission, Radio Industry"	3864	3474

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192—Document purporting to be copies of certain contracts between Southwestern Telegraph and Telephone Co. and American Bell or A. T. & T. and Southwestern T. & T., resolutions of directors, etc.	3924	3536
193—Statement produced and testified to by witness Carter showing the departmental expenses, 1923-30	3967	3568
194—Paper which is entitled "Distribution of Provisional Estimates, 1932"	3969	3569
195—Statement of number of employes of Bell system, being A. T. & T. and associated companies and Western Electric, Bell Telephone Laboratories and 195 Broadway Corporation	3970	3670
196—Statement furnished by Mr. Folk entitled "A. T. & T. Company Patent Purchases ($1,000 or more) other than from Western Electric Company, 1909 to 1930, inclusive"	3971	3670
197—Statement referred to by Mr. Folk, entitled "A. T. & T. Company, patents purchased from and licenses sold to Western Electric Company, Inc., by A. T. & T. Co. and accounting disposition, years 1909 to 1930"	3974	3573
198—Article in Western Electric News, issue of January, 1929, pages 3 to 6, inclusive, entitled "The Bell System and Ourselves," by Edgar S. Bloom	3976	3574
200—Article in Western Electric News, issue of June, 1914, pages 1 to 4, inclusive, entitled "The Engineering Department of the Western Electric Co." by F. B. Jewett	3980	3575
201—Article in the Bell Telephone Quarterly, issue of January, 1929, pages 9 to 24, inclusive, entitled "Standardization in the Bell System" by H. S. Osborne	3984	3582
202—Article in the Bell Telephone Quarterly, issue of October, 1922, pages 12 to 24, inclusive, entitled "Notes on Radio" by O. B. Blackwell	4002	3595
204—Article in Bell Telephone Quarterly, issue of January, 1923, pages 18 to 31, inclusive, entitled "Engineering the Long Lines" by J. J. Pilliod	4005	3597

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205—Article in Bell Telephone Quarterly, issue of October, 1928, pages 304 to 312, inclusive, entitled "By-products of Telephone Research" by R. W. King	4008	3599
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D- 2—Statement as to Illinois Bell, per cent condition of manual central office telephone equipment	4020	3607
D- 3—Statement as to Illinois Bell, instructions for inspection of central office equipment, January, 1931	4021	3607
D- 7—Circular re $25,000,000 I. T. & T. Corp. 20-year 5½% convertible gold debenture bonds	4022	3608
D- 8—Circular re $40,000,000 New England T. & T. Co. 1st mortgage 4½% gold bonds, series B	4025	3616
D-12—Statement showing changes in Chicago schedule since October 1, 1923	4028	3622
D-15, Excerpts from Special Ordinances of Chicago, 1898, Vol. 2	4030	3623
D-16—Pamphlet, proceedings of city council, Chicago, November 6, 1907	4031	3624
D-18—Pamphlet, an ordinance fixing the maximum rates for telephone service, passed by city council May 26, 1913	4048	3639
D-19—Statement as to Western Electric, analysis of cost of sales by Bell and non-Bell customers	4061	3654
D-25—Statement as to Western Electric, pension fund transactions	4062	3655
D-26—Actuarial computations of required pension accruals, 1916-1930, and minimum fund required	4063	3655
D-27—Details of journal entry for extraordinary plant depreciation, December 31, 1927	4064	3656
D-28—Statement as to Western Electric Co., Inc., extraordinary reserve against plant to bring additions to estimated cost level, 1931-1940 (2 sheets)	4065	3657
D-29—W. E. construction cost indices, as prepared by plant engineering department and general statistical department, 1914, 100 (13 sheets)	4067	3659
D-30—Statement showing net increases in the plant during 13-year period, 1916-1930, inclusive	4080	3674

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D-31—Details of reserve for depreciation of plant during 15-year period 1916-1930, showing gross additions to reserve and write-offs...	4081	3674
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D-33—Explanation of reserve carried on Western Electric books as of December 31, 1926, against investment in stock of Graybar (2 sheets)	4084	3677
D-34—Statement of assets and liabilities of Graybar Electric............................	4086	3678
D-35—Comparison of book value and depreciation reserve of Western Electric and Bell Telephone laboratories.........................	4087	3679
D-36—Explanation of reserve on books of Western Electric as of December 31, 1926, against demand notes of Bell Telephone laboratories	4088	3679
D-38—Classification of customers...................	4089	3680
D-39—Statement—"Conditions under which we extend the benefits of the standard supply contract to Bell connecting companies"..	4090	3681
D-41—Analysis of sales to Bell customers, 1916-1930	4091	3682
D-42—Analysis of sales to non-Bell customers, 1916-1930	4092	3683
D-46—Statement as to Western Electric, basis of valuation of inventory.....................	4093	3684
D-47—Statement showing method of arriving at merchandise inventories as shown on the stockholders' reports as of December 31, 1915, and December 31, 1930.............	4094	3685
D-48—Statement showing sales of apparatus and equipment designed entirely or in part by Western Electric Company, Inc., but manufactured by others, included in sales of manufactures to Bell Companies on Exhibit No. 31004........................	4095	3686
D-49—Statement as to Graybar Electric, sales and estimated net profits on Western Electric manufactures, 1926-1928................	4096	3687
D-50—Statement as to Graybar Electric, earnings for years 1926, 1927, and 1928..........	4097	3687
D-51—Statement as to Graybar Electric, statement of assets and liabilities, 1926-1928........	4098	3688
D-52—Statement showing A. T. & T. loans to Western Electric, 1918-1930..................	4099	3690
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D-55	Condensed summary of results for 1931, compared with 1930, Teletype Corporation.	4103	3694
D-56	Analysis of average investment in operations, Bell business, 1916-1930	4104	3696
D-57	Statement showing average investment non-Bell business, 1916-1930, inclusive	4105	3696
D-61	Analysis of profits on business other than with Bell Telephone Companies from 1881 to 1927, inclusive, Western Electric Co.	4106	3697
D-62	Opening balance sheet, May 31, 1930, W. E. C. O. Corporation	4107	3698
D-63	Statement re assets, W. E. C. O.	4108	3699
D-64	Statement showing average investment compiled from consolidated balance sheets at December 31 of Western Electric Co. and subsidiaries, 1915 to 1930	4109	3700
D-65	Explanatory sheet re D-64	4110	3701
D-66	Statement showing net profits on investments (combined) as reported	4111	3702
D-68	Statement showing consolidated earnings of Western Electric and subsidiaries, 1916-1930	4112	3702A
D-69	Statement showing patents sold to and licenses purchased from A. T. & T. by Western Electric, Inc., and accounting disposition, 1916-1930	4113	3703
D-70	Agreement between Western Electric and Stromberg-Carlson, dated August 13, 1923.	4114	3704
D-71	Agreement between Kellogg Switchboard and Western Electric, dated June 2, 1914	4120	3709
D-72	Description of Western Electric costs	4127	3716
D-73	Statement as to Western Electric, Investment in Products Company	4133	3723
D-74	Condensed summary of results for years 1927-1930, inclusive, E. R. P. I.	4134	3724
D-75	Analysis of principal items appearing on Products Company report No. 1 for years 1927, 1928, 1929 and 1930, under operations, E. R. P. I.	4134	3725
D-77	Analysis of capital stock structures since commencement of business to December 31, 1930, Western Electric	4143	3731
D-78	Analysis of 1925 cost of sales, Western Electric	4146	3735
D-79	Analysis of 1930 cost of sales, Western Electric	4147	3737
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D-81—Statement showing standard and current cost of copper bar and lead purchased by manufacturing department, 1918-1931	4149	3738
D-82—Letter, dated May 26, 1927, signed by Edgar S. Bloom, president, to H. L. Gary, Kansas City, Mo., re memorandum of agreement between International Telephones Sales & Engineering Corporation and E. R. P. I.	4150	3738
D-83 Statement showing approximate purchases from certain suppliers, 1916-1930	4151	3739
D-84 Statement showing rented area leased July 1, 1929, and after at manufacturing locations	4152	3740
D-85 Statement showing additions to pension fund in 1931	4153	3740
D-86 Statement showing depreciation expense included in cost of plant made, 1910-1931, inclusive	4154	3741
D-87 Statement showing total 1929 average investment, Bell and non-Bell business with percentage apportioned on basis of standard cost of sales	4155	3741
D-88 Statement showing total 1929 expenses and operating interest, Bell and non-Bell business with percentage apportioned on basis of standard cost of sales	4156	3742
D-89—Resolutions of board of directors authorizing extraordinary depreciation	4157	3742
D-90—Statement showing extraordinary depreciation on plant, 1924, 1925, and 1926	4158	3743
D-92—Pamphlet, "The Telephone Company as a Citizen of Your Community", an address by F. O. Hale, April 2, 1931	4185	3750
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D-94—Statement as to department of development and research, expense of development work for year 1920	4188	3751
D-95—Statement as to department of development and research, comparison of principal expenditures with budget, December 31, 1921	4189	3752
D-96—Statement as to department of development and research, comparison of expenditures with budget, for year ending December 31, 1922	4190	3752
D-97—Statement showing number of employees of Western Electric Company, Inc., 1916-1930.	4191	3752

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D-98	Bill of sale, A. T. & T. to Illinois Bell Telephone Co., dated December 31, 1927 (form D-261 (1))	4192	3753
D-99	Statement as to A. T. & T., prices charged licensee companies for instruments based on average current cost to A. T. & T. less 20%	4193	3753
D-100	Statement as to A. T. & T., analysis of reserve for depreciation of telephone instruments, years 1923-1927	4194	3754
D-101	Certified copy of letter dated New York March 24, 1921, to Frank S. Fowler, Chief of Depreciation Section, Interstate Commerce Commission, Washington, D. C., by Mr. C. A. Heiss, comptroller of A. T. & T.	4195	3755
D-102	Statement showing prices of transmitters, receivers, and induction coils sold to both Bell and non-Bell customers from January 1, 1916, to December 31, 1925	4203	3762
D-103	Statement showing prices of transmitters, receivers, and induction coils sold to Bell and non-Bell customers from January 1, 1926, to December 31, 1930	4206	3762
D-104	Statement showing sales of telephone receivers, transmitters, and induction coils, 1916-1930, inclusive	4207	3763
D-111	Statement as to A. T. & T., royalties received from Western Electric Company, Inc., Electrical Research Products, Inc., and others, 1923-1931	4208	3764
D-112—	Copy of agreement, dated July 8, 1919, between International Telephone Sales & Engineering Corporation and A. T. & T.	4209	3765
D-115—	Copies of Exhibits 69-AA, 69-BB, 69-CC, 69-DD, 69-EE, 69-FF, certified by master in chancery in Michigan Bell case	4214	3769
D-116—	Heiss Exhibit No. 10 (3 sheets)	4216	3772
D-119—	Statement as to Merrimac Exchange, historical data of mortality study of central office equipment	4219	3774
D-120—	Statement as to Merrimac Exchange, historical data of mortality study of buildings	4220	3774
D-121—	Statement as to Beverly Exchange, historical data of mortality study of central office equipment	4222	3774
D-122—	A. T. & T. instrument credit, Bell System	4223	3775

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D-123—Article entitled "The Straight Line Depreciation Accounting Practice of Telephone Companies in the United States" by Crunden and Belcher, Bell Telephone Quarterly, October, 1929	4224	3776
D-125—Advertisement on back cover of Bell Telephone News, February, 1934	4261	3808
D-126—Statement re Illinois Bell Telephone Company, Chicago Exchange, estimated costs in connection with subscriptions for A. T. & T. Co. stock under the employees' stock plan	4262	3809
D-127—Same, except under the Bell Telephone Securities Co. plan	4263	3810
D-128—Advertisement entitled "Our Slogan: 'Every Subscriber a Stockholder'"	4264	3811
D-129—Statement re Illinois Bell Telephone Company, amounts billed to the Bell Telephone Securities Company for services rendered by Illinois Bell in connection with rights, transactions, and related stock and bond subscriptions	4265	3811
D-130—Statement as to Illinois Bell Telephone Company, same in connection with the sale of A. T. & T. Company stock to the public	4266	3811
D-131—Statement as to Illinois Bell Telephone Company, amount of collections and amount of remittances made to the A. T. & T. Co. in connection with the employees' stock plan during years 1923 to 1931	4267	3812
D-132—Statement as to Illinois Bell Telephone Company, amount of collections and amount of remittances made to the Bell Telephone Securities Company in connection with the sale of A. T. & T. Co. stock under the Bell Telephone Securities Company plan for years 1923 to 1931	4268	3812
D-133—Statement as to Illinois Bell Telephone Company, amount of collections and amount of remittances to A. T. & T. Co. and Bell Telephone Securities Co. in connection with rights, transactions, and related stock and bond subscriptions	4269	3812
D-135—Copy of assignment from Electrical Research Products, Inc., to Western Electric	4270	3813
D-136—Statement showing net profits on sales of new A. T. & T. instruments, 1916 to 1927, inclusive	4274	3816
D-137—Document entitled "Net Profits on Sales of New A. T. & T. Instruments, 1916-1926, Inclusive"	4275	3816A

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D-138—Statement as to Illinois Bell Telephone Company, Chicago area, comparison of depreciation expense actually charged for certain accounts and as modified on basis of present view (1932)	4277	3818
D-139—Statement as to Illinois Bell Telephone Company, Chicago area, data requested by Mr. Goldstein	4306	3825
D-140—Statement as to Illinois Bell Telephone Company, average realized life study of central office equipment	4307	3826
X- 1—Illustration that test applied in City's Exhibit No. 95 is not affected by choice of base year having different proportions of material and labor	4309	3827
X- 2—Illinois Bell Tel. Co., Chicago Exchange, measurement of error in percentages of increase in plant costs used in Plaintiff's Exhibit No. 1, on assumption that increases in material and labor costs are correct, account 241, exchange pole lines	4311	3828
X- 3—Studies re productivity of labor	4312	3828
X- 4—Illinois Bell Tel. Co., Chicago Exchange, table to illustrate that reduction in labor cost from any cause is not fully reflected in Plaintiff's Exhibit No. 1, account 241, exchange pole lines 1922-3	4314	3829
X- 5—Illinois Bell Tel. Co., Chicago Exchange, comparison of gang make-ups as of June 30, 1923, used in Plaintiff's Exhibits Nos. 1 and A-2, exchange outside plant	4315	3830
X- 6—Valuation Illinois Bell Tel. Co., Chicago Exchange, comparison between company experience and Plaintiff's Exhibit No. 1	4316	3831
X- 7—Illinois Bell Tel. Company, Chicago Exchange, comparison between sizes of plant items placed on specific and routine estimates, 1921, 1922, and 1923	4333	3841
X- 8—Valuation Illinois Bell Tel. Co., Chicago Exchange, labor hour performance on specific and routine estimates	4335	3842
X- 8A—Corrected sheets for Exhibit X-8	4366	3863
X- 9—Valuation Illinois Bell Tel. Co., Chicago Exchange, comparison between company experience on its larger construction projects and Plaintiff's Exhibit No. 1	4369	3866
X- 9A—Corrected sheets for Exhibit X-9	4380	3875
X-10—Illinois Bell Tel. Co., Chicago Exchange, material and labor ratios used in Plaintiff's Nos. 1, A-2 and A-10, inclusive	4384	3878

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X-11—Valuation Illinois Bell Tel. Co., Chicago Exchange, labor hour performance on specific estimates 1929	4385	3879
X-12—Valuation Illinois Bell Tel. Co., Chicago Exchange, June 30, 1923, portion of December 31, 1929, appraisal priced on basis of wholesale construction and 1929 material and labor cost levels	4396	3887
X-12 (a)—Statement showing effect of assumed errors in percentages of increase in labor costs in Plaintiff's Exhibits A-2 to A-10, inclusive, account 242, exchange aerial cable	4405	3890
X-13—Comparison between costs used in Sloan appraisals and costs of Western Electric Company apparatus installation equipment specifications	4406	3891
X-13 (a)—Statement showing estimated effect of price changes on apparatus and equipment sold to Bell Company, 1921-1930, statement B	4408	3892
X-13 (b)—Statement showing price trend on installation work performed for Bell Telephone Companies 1923-1925=100	4409	3892
X-14—Price indices all commodities, copper, lead	4410	3892A
X-15—Statement re Western Electric, profit and loss year 1929	4413	3892a
X-16—Western Electric, analysis of basic gross profit year 1929	4414	3892b
X-34—Summary sheets showing gross profits and adjustments by year 1916-1931, both inclusive	4416	3892c
X-35—Statement showing Western Electric gross profit and analysis summaried 1916-1931	4418	3892e
X-36—Western Electric Company, Inc., summary of details of manufacturing department surplus items resulting in the net figures shown in Exhibit D-80	4420	3893
X-37—Western Electric Co., Inc., summary of details of manufacturing department surplus items resulting in the net figures shown in Exhibit D-80 combined in groups by series of years	4422	3896
X-38—Western Electric Company, Inc., comparison of total amounts of manufacturing, inventory and reserves adjustments, with amounts thereof included in Exhibit D-80	4424	3900
X-39—Statement re Western Electric Company, Inc., division of operating surplus, total apparatus and equipment and lead covered cable 1921 to 1930, inclusive (dollars in thousands)	4426	3903

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X-40—Graph showing variations between standard cost and actual cost of purchases of lead by Western Electric for Hawthorne works....	4427	3904
X-41—Same covering copper bars..................	4428	3904
X-42—Same as X-40 expressed in percentages.......	4429	3904
X-43—Graph showing comparison between standard cost and actual cost of purchases of copper bars by Western Electric for Hawthorne works	4430	3904
X-44—Graph showing comparison between standard cost and actual cost of purchases of lead by Western Electric for Hawthorne works....	4431	3904
X-45—Same as X-44 per 100 pounds................	4432	3904
X-46—Same as X-41 expressed in percentages.......	4433	3904
X-47—Same as X-43 per 100 pounds................	4434	3904
X-47 (a)—Statement re Western Electric Company, Inc., standard cost per 100 of selected items with dates, adoption as extracted from Bulletin A-451-1 of indicated years (Hawthorne plant)	4435	3905
X-48—Statement showing average investment, net profits, and percentage of return (per Exhibits A-77 and A-79), Bell and non-Bell business for the years 1916 to 1930 (1)	4438	3908
X-49—Statement showing average investment per Exhibits A-77, A-79, and A-77 and A-79, combined, adjusted to exclude excessive cash, current liabilities, reserve for pension fund and reserve for depreciation, Bell and non-Bell business..............................	4439	3909
X-49½—Sheet from Poor's 1930 Manual entitled "Public Utilities (Western Electric Co., Inc.)"..	4442	3912
X-49 (a)—Statement showing earnings of Western Electric Company on non-Bell business expressed in percentages of sales and in percentage of (a) average investment and (b) average investment less amount of depreciation reserve account 1916-1932, inclusive	4443	3915
X-50—Reconciliation of net profits per Exhibits A-77, A-79, and Exhibits A-77 and A-79 combined, with profits as adjusted, Bell and non-Bell business............................	4444	3916
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X 127—	Statement showing average return to A. T. & T. from dividends on its investments in capital stocks of licensee companies converted into average return to stockholders of A. T. & T. on their investments in capital stock of A. T. & T. during years 1920 to 1922, and during years 1923 to 1930, inclusive	4593	4028
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X-130—Statement showing amounts required in order to receive the same percent of return on investment in capital stock of each licensee company as received from investment in capital stock of Illinois Bell Tel. Co. during years 1920 to 1922, and during years 1923 to 1930, inclusive	4597	4030B
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X 244 Chart, trend of averages of yields of bonds issued in year 1923 to 1931 resold in each year grouped by ratings (Moody's) in year of resale 4831 4216

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X-271—Statement re Ill. Bell Tel. Co., Chicago exchange, balance available for return	5016	4354
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X-272—Statement showing rate of interest on capital stock installments paid by Ill. Bell to A. T. T. converted into average return to stockholders of A. T. & T. on their investments in capital stock of A. T. & T. during years 1920 to 1922, inclusive, and during the years 1923 to 1930, inclusive	5018	4356
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ing years 1920 to 1930, inclusive..........	5024	4361
X-283—Statement re A. T. & T. Co., dividends on capital stock and undivided profits allocable to A. T. & T. Co. ownership related to investment in capital stock and surplus allocable to A. T. & T. Co. ownership of Ill. Bell Tel. Co., of all licensee companies, and of all licensee companies exclusive of the Ill. Bell Tel. Co. during years 1920 to 1930, inclusive	5025	4362
X-284—Statement re A. T. & T. Co., return on investment (including surplus) in Ill. Bell Tel. Co., in all licensee companies, and in all licensee companies exclusive of Ill. Bell Tel. Co. during years 1920 to 1930, inclusive.	5027	4365
X-285—Statement re American Telephone and Telegraph Co., excess of return to A. T. & T. from investment in Illinois Bell Telephone Company over average return from investment in other licensees showing excess of dividends, of interest on loans, of interest on capital stock installments and of undivided profits..........................	5029	4367
X-286—Statement re American Tel. & Tel. Co., per cent of undivided profits and dividend payments to capital stock during years 1920 to 1922, inclusive, and during years 1923 to 1930, inclusive..........................	5033	4371
X-287—Statement re American Tel. & Tel. Co., return on funds used in business during years 1920 to 1930, inclusive....................	5035	4372
X-288—Statement re A. T. & T. Co., summary of capital stock outstanding during years 1920 to 1931, inclusive..........................	5037	4372b
X-289—Statement re A. T. & T. Co., changes in capital stock outstanding since 1922............	5038	4373
X-293—Statement re A. T. & T. Co., investments in capital stock of Western Electric from November 17, 1915, to December 31, 1930....	5041	4374a
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"Building on the Telephone Principle," No. 216, October, 1926	5432	4628
"Where the Bell System's Profit Goes," No. 239, September, 1928	5433	4629
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District Court of [illegible]

FOR THE [illegible]

[illegible]

ILLINOIS BELL TELEPHONE [illegible]

vs.

G. GALE [illegible] J. PA[illegible] H. [illegible] WILLIAM [illegible] PHIL[illegible] W. [illegible] the [illegible] Commerce Commission of the State of Illinois, OSCAR E. [illegible] of the State of Illinois,

and

CITY OF [illegible], a municipal [illegible]

ABSTRACT OF [illegible]

[illegible] PLAINTIFF[illegible]

VOLUME [illegible]

WIL[illegible]
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IN THE

District Court of the United States

FOR THE NORTHERN DISTRICT OF ILLINOIS,

EASTERN DIVISION.

ILLINOIS BELL TELEPHONE COMPANY,
Plaintiff,

vs.

G. GALE GILBERT, J. PAUL KUHN, WALTER H. WILSON, WILLIAM M. BRINKMAN, PHIL W. COLLINS and PAUL SAMUELL, the persons constituting the Illinois Commerce Commission of the State of Illinois, and OSCAR E. CARLSTROM, Attorney General of the State of Illinois,
Defendants,

and

CITY OF CHICAGO, a municipal corporation,
Intervenor.

In Equity
No. 3746.

Heard before
Hon. Evan A. Evans
Hon. George T. Page
Circuit Judges
and
Hon. James H. Wilkerson
District Judge.

ABSTRACT OF RECORD

Plaintiff's Evidence

Volume I—(Pages 1 to 308)

Page of Record

3 The Court convened at 10 o'clock A. M. on Tuesday, the 23d day of February, 1932.

Present:

Hon. George T. Page, Circuit Judge, Presiding
Hon. James H. Wilkerson, District Judge.

Judge Page: Gentlemen, it has been thought that the practical thing to do is that which was done before: have the evidence heard by Judge Wilkerson sitting alone, if that is satisfactory to the parties, and then the matter be taken up by the three Judges after the evidence is in.

Mr. Haight: That is agreeable to the defendants, if the Court please.

Judge Page: Is that agreeable to the other side?

Mr. Bracelen: Yes, your Honor.

It was agreed by counsel, pursuant to the Court's suggestion, that the evidence to be offered pursuant to the Supreme Court's mandate dated December 26, 1930, should be presented and offered by the parties before Judge Wilkerson without requiring the presence at all times or at any time of any or all of the other Judges, members of the Court specially constituted for the trial of this case, under and pursuant to the same stipulations, agreements and arrangements under which the evidence was similarly presented and offered on the original hearings.

Judge Wilkerson: The evidence in this case should be abstracted as we go along with the testimony, as rapidly as possible, and copies of the abstract and exhibits can then go to Judge Evans and Judge Page, who will then have the same benefit of the record up to the point where they are able to participate in the hearing as if they had actually heard the testimony. So, if you will have that in mind and arrange the abstract and the exhibits from time to time so that they will be kept up to date with the proceedings here, I think it will serve very greatly to expedite the disposition of the case.

Mr. Haight: The parties had so arranged, prior to this session, this morning.

OPENING STATEMENT ON BEHALF OF PLAINTIFF

4 Mr. Bracelen: If the Court please, it has seemed to us that it might be helpful to make a short opening statement giving in broad outline the character and scope of the testimony that the plaintiff intends to offer. Under the decision of the Supreme Court, it is incumbent upon the

5 plaintiff to show for each of the nine years now involved in the case, the fair value of the property, the fair rate of return, and what the earnings of the Company would have been under the rates prescribed by the Commission, with respect to the intrastate portion only of the plaintiff's business in the City of Chicago.

Our proof will be addressed, first, to the first of those issues, the fair value of the property. It will be of the same character as that which was introduced by the plaintiff upon the former trial. The actual cost to the plaintiff of its property for each of the years will be shown, of course, and the estimated cost of reproducing the property new, under the conditions prevailing as of each of the nine years. Mr. Sloan, who was the witness upon that branch of the case on the former trial, is the witness at this trial. He will testify that the methods by which he has arrived at the estimated cost of reproduction new, are the same, with one or two very minor modifications, as those which he employed before. I speak of that because it occurs to us that that being so, probably Mr. Sloan's testimony will be very much shorter than would otherwise be necessary, certainly shorter in so far as direct examination is concerned.

6 The depreciation existing in the property as of each of the years will be shown in evidence, and again, the methods employed are the same as those employed before, and that evidence will be summed up as the Commission itself summed it up, and as the Court did at the former trial, in terms of so-called per cent condition. That per cent condition being applied then to the estimated cost of reproduction new, year by year, will give the so-called reproduction cost new, depreciated, as important and more or less controlling evidence of the fair value of the property. In connection with this depreciation testimony, your Honors will recall that the results of an inspection of the property made in 1923 were put in evidence at the former trial. Another much more extensive and complete inspection of the property has been made in preparation for this trial.

That inspection was made in the early months of 1931, made by officials of the Company expert in the several classes of property involved, and by men who have in the regular course of their duties in maintaining and operating the property throughout this entire period, been familiar with its condition at all times, both its physical condition 7 and its functional condition. These men, having acquainted themselves with the inspection made in 1923, and having now made this very thorough inspection in 1931, being familiar with the maintenance of the property in the intervening years, will testify to the condition of the property, and the amount of depreciation existing in it for each of the years separately.

Then, of course, it becomes necessary under the decision of the Supreme Court to make a separation or segregation of the property as between its use in intrastate service and its use in interstate service, since, broadly speaking, the entire property is devoted to both classes of service at all times.

The valuation evidence, the character of which I have described, then deals with the property as a whole; the inspection deals with the property as a whole; and the separation factor, or factors, are applied to make the segregation as between that part of the property which is involved in the case of the intrastate property, and that which is excluded as not within the jurisdiction of the State Commission, and not within the issues. This separation is not different from that which was made before, in so far as the two overlap, but your Honors will have it in mind that the Supreme Court 8 has now held that the portion of the property which was treated as exchange property solely, though involved in interstate and other toll use, must be separated upon the basis of the relative use.

Stating that somewhat more specifically, the telephone instrument upon the subscriber's premises, the lines connecting with the central office, and the central office itself—all of these elements of property that are involved in every local call within the Chicago exchange, are of course utilized in connection with every toll call. The rates for local telephone service, or perhaps it would be more accurate to say, the charges made for local telephone service, have always covered this toll use, both intrastate toll and interstate toll use, and compensated for it so that the telephone subscriber receives as a part of the service for which he pays the regular monthly local rate, access to the toll board. The toll rates, including those for interstate service, whether of the American Telephone & Telegraph Company or of the Illinois Bell Telephone Company, have been based upon the use of the toll property only.

Now, in making the separation of the property, the facts that I have been discussing in reference to the distribu-
9 tion of the charges as between local service and toll ser-
vice have no bearing upon the problem, but we come immediately following our valuation testimony to the matter of revenues, expenses and net earnings, and there the same situation exists. The earnings in total are shown. Of course, the books in this case report the toll earnings and, separately, the intrastate and interstate toll earnings, and the local earnings as such; so that there is no problem involved in identifying those three categories of earnings. But in view of the separation of the property now to be made, it of course becomes necessary to determine that portion of the charges for local service which compensate the Company for the use of the local property in connection with the toll service, and a segregation there is made of the so-called exchange revenues, upon the basis of use. A segregation of the expenses is made, and when our proof shall have been completed to that point, the record will show the value of the property devoted to the intrastate service, the over-all earnings derived from that service, the expenses attributable to it, and the net.

Perhaps I ought to say that, as upon the former trial, so upon this trial, the property separation is made in such

10 manner as to show separately the exchange property, all of which is intrastate in character because the exchange service is purely local business; the toll property, devoted to the intrastate toll service, and the toll property separately, devoted to the interstate service.

We will show the effect of the reductions in the rates that are sought to be enjoined. Those rates have never been in effect, and their effect will be shown by the same kind of evidence that was introduced before. Of course, the effect of the reductions made by the Commission is not a constant amount, both because of more or less shifting in the classes of service, and also because of the growth and extension of the business; but very broadly speaking, your Honors will recall that the reduced rates, had they been in effect, would have reduced the Company's revenue by an amount on the order of $1,500,000. It runs considerably higher than that in some years, and possibly slightly lower than that in one or two years. The facts precisely in that respect I do not have in mind, and it is not important that we have them in mind now.

Ordinarily, the evidence that I have now outlined
11 would cover all of the issues, the ultimate issues, in a case of this character, but there are other collateral issues which must be tried in accordance with the decision of the Supreme Court. These relate to the matter of the profits of the Western Electric Company, first; second, the cost to the American Telephone & Telegraph Company of rendering the services to the operating companies of the Bell System and to the Illinois Bell Telephone Company under what is known as the license contract; and third, the depreciation expense. May I just say a few words about each of these branches of the case?

The evidence upon the former trial adduced upon cross-examination showed that the Western Electric Company had realized a profit of 7 per cent on its investment over a period extending from 1916, when the present Western Electric Company was organized, down to and including the year 1928, that being the latest year available at the former hearing. That evidence further showed that that Company had not earned in excess of 10 per cent in any one year. This Court in its opinion referred to those facts, and the Supreme Court does so in the opinion of Mr. Chief Justice Hughes.

12 The evidence also established the fact that the prices of the Western Electric Company for its products, consisting of telephone apparatus and equipment manufactured by it, were lower, very much lower, to the operating telephone companies of the Bell System, than its prices to outside customers, telephone companies outside the Bell System, and very much lower than the prices of other manufacturers of similar apparatus and equipment. That testimony, of course, was introduced to establish the reasonableness of the Western Electric Company's prices. The Supreme Court in its opinion refers to that testimony and recognizes expressly that it is important, but that Court holds that it is incumbent upon the Telephone Company in this case to show for each of the years the profits made by the Western Electric Company upon that portion of its business done with the companies of the Bell System, and then to relate that over-all showing to the particular area, the Chicago exchange, involved in this case.

The evidence will show that the prices of the Western Electric Company upon its business outside of the Bell System, which were reflected in the 7 per cent average of profits that I referred to a moment ago, have been substantially higher upon that business than the Western Electric
13 Company's profits upon its business done with the Bell System companies, so that in so far as the profit realized by the Western Electric Company tends to establish the reasonableness or unreasonableness of the prices charged by the Western Electric Company, this evidence is more favorable in support of the reasonableness of those prices than was the over-all showing upon the former trial. That, however, is scarcely noticeable in the rate per cent of profit, for the reason that the volume of business done by the Western Electric Company with outside telephone companies is a mere

bagatelle, as compared with the volume of its business in the
sales of telephone apparatus, equipment and supplies to the
companies of the Bell System. That is to say, that while the
Western Electric Company charges substantially higher
prices for its goods to companies outside of the Bell System,
and presumably makes substantially higher profits, and in
fact, makes substantially higher profits upon that business,
as shown by this evidence, than it does upon similar business
done with the companies of the Bell System, the volumes are
such that you can scarcely find the effect in the figures. The
issue to which the evidence of the profits of the Western
14 Electric Company on its Bell System business is directed,
is, of course, the issue of the reasonableness of the Western
Electric Company's prices to the Bell System companies.
That is an important inquiry in the case, and was so recognized
at the former trial, for the reason that the Illinois Bell
Telephone Company, like all of the operating telephone companies
of the Bell System, purchases substantially all of its
plant and much the greater part of its supplies from the
Western Electric Company. Those prices have a bearing
upon the determination of the fair value of the property,
because those prices are reflected in the cost of the property,
which will be shown in evidence; they are the prices employed
in arriving at the reproduction cost new of the property;
and to some extent, although to rather a minor extent,
they have a bearing upon the expenses of the Company from
year to year, since materials and supplies used in the maintenance
and repair of the plant, as distinguished from additions
of a permanent nature, are also purchased from the
Western Electric Company. The evidence upon this branch
of the case will, we think, show that the Western Electric
Company passes on to the operating companies and to this
plaintiff, the advantages which inhere to the Western
15 Electric Company in its situation in relation to the Bell
System as a whole. It would, I think, be proper to refer
to that in this opening statement in any event, but I refer to
it especially because of the fact that the Chief Justice in his

opinion makes express reference to it. He points out in that opinion that the Western Electric Company has this assured market; the Bell System companies buy practically all of their requirements, which in the aggregate are very large, from the companies' own manufacturing company, sometimes referred to, and referred to by the Supreme Court in the opinion, as the Manufacturing Department of the Bell System. It has in addition to this large and assured market, the advantage of the high credit of the companies of the Bell System, with the result that there are no bad accounts, such as a manufacturer ordinarily would have to cover in his prices if he were to have a reasonable profit from his operations.

The third advantage mentioned by the Supreme Court is the fact—which appeared at the former trial and is still true, as the evidence will show—that the telephone companies of the Bell System plan a reasonable way ahead for their
16 construction, and schedule their requirements, and those requirements—provisional estimates, as they are called—are made known to the Western Electric Company. It is therefore in the position of knowing within limits what its volume of business is going to be for the succeeding year. And those advantages, I say, the evidence will show are passed on to the operating companies. They are reflected in the low prices charged by the Western Electric Company, and they are reflected in the very moderate rate of profit which the Western Electric Company makes on its business with the companies of the Bell System.

The next of these three collateral issues is that of the cost to the American Telephone & Telegraph Company of rendering the services relating to financing, development and research, technical aspects of operation and engineering, and so forth. The Court has held that a finding must be made in this case of the amount of that cost to the American Telephone & Telegraph Company for each of the years, and a finding as to the fair apportionment of that cost to the Chicago area of the Illinois Bell Telephone Company. The evidence will cover that subject comprehensively, and put the Court in a position to make that finding, as directed by the Supreme Court.

17 The next of these special issues, if I may refer to them as such, is that of the depreciation expense, the annual charge to expenses for depreciation, whereby the Company accrues a reserve against the time when the units of the property are retired from service. The Supreme Court has held that this Court shall make its own finding as to the fair and reasonable amount of that item of expense for each of the years.

In that connection, the opinion of the Supreme Court suggested that the general experience throughout the Bell System in this respect would presumably throw much light upon that issue in so far as this Company is concerned, and, being admonished by that language of the opinion of the Supreme Court, witnesses will testify concerning the experience of the Bell System operating companies as a whole, and the experience of each of them.

There is a good deal of ground to be covered because of
the many issues, for one thing, and because of the long period
of time now involved, and the necessity of trying nine lawsuits
in one, so to speak, since complete findings are to be made
upon each of the issues for each of the years. We have pre-
pared our exhibits, of which there will be necessarily a
18 large number, in such a way as to dispense, in so far
as is practicable, with oral testimony, with a view to
shortening this hearing. Most of our principal exhibits were
submitted to counsel for the City, as early as the first of last
August, and other exhibits prepared since that date have been
placed in their hands with a view to enabling them to make
their preparation, both for cross-examination and the prepa-
ration of their own defense in advance of the trial. We hope,
and I am sure that counsel for the City share the hope, that
the result of this preparation may be as expeditious a hear
ing and submission of the case as is reasonably practicable,
in view of its importance and complexity.

19 OPENING STATEMENT ON BEHALF OF THE CITY OF CHICAGO

Mr. Haight: If your Honors please, the amount involved here in respect to the refund for past years, including simple interest, is somewhere between $20,000,000 and $21,000,000. In regard to the subject of the separation of the property, the interstate separation which counsel has mentioned, in our opinion, from the exhibits we have examined that have been furnished to us by the plaintiff, that separation is not made in accordance with the requirement of the opinion of the Supreme Court.

In respect to the Western Electric profits and prices, as far as we have been able to examine them—and our examination is still going on, though we hope to have it completed in a few days—we think that our position should be sustained, that those prices and profits are not reasonable, and indeed, that the plaintiff will be unable to show what the reasonable prices and profits are.

In respect to the 4½ per cent contract, as it has sometimes been called in the record, that is, the license contract, it is our judgment that when the evidence is in, the plaintiff will have been unable to show the cost of the contract services
20 to the Illinois Bell Telephone Company, and we think the conclusion will be drawn that no part of the license contract service charges are properly chargeable as operating expenses in the accounting of the Illinois Bell Telephone Company.

In regard to the annual allowance for depreciation, which has been mentioned, we think that our position should be sustained, and that there will be no showing that the Commission's order entered in this case was confiscatory or arbitrary, and that the conclusion ought to be at the end of the hearing that the only depreciation for each year properly allowable is that which will be based upon the Commission's order. And in connection with the subject of depreciation, annual-

allowance for depreciation, in the hearing in this Court before and in the Supreme Court, the depreciation expense set forth and urged by the plaintiff in this case was based upon book costs. On last Saturday we were presented by the Company with further exhibits on a basis of depreciation calculated upon reproduction costs, but we have received no working papers, we have had no chance to check the same or to know what underlies the figures which purport to represent depreciation expense, on the basis of reproduction costs. I take it, however, that by co-operation we can work that out
21 as we proceed through the hearing. We may have to ask
for a bit of time, but I hope not.

In respect to the rate of return, we have asked for plaintiff's exhibits in respect to that, but, as I understand it, we have so far not received any. We have received some exhibits very lately showing the revenues and expenses, and property valuations for the year 1931. Those, however, came to us very recently. We have started to check those.

We still have a request made of Mr. Bracelen that I hope may be complied with shortly so that we may work with it, to furnish us data covering the license contract and the A. T. & T. corresponding data, which has already been furnished us for the years 1919 to 1930, but we have received no reply on that. I think we can work that out among ourselves, however.

There have been certain exhibits that were sent to us on the 15th and 20th of February, respectively, that may take us a little time to check over, but I think the hearing may proceed expeditiously. If we do get caught, we will represent the situation to the Court as we proceed.

It would help us very much to know if the presentation of the case as to subject matter is to be made in the same
22 order as Mr. Bracelen's opening statement. I take it
first he is going on with the valuation and then the per cent condition. But if you can advise us as we go along as to your order, it will help us to keep up and prepare our case in a timely way.

WILLIAM F. SLOAN, called as a witness on behalf of the plaintiff, having been first duly sworn, testified as follows:

Direct Examination by Mr. Thompson.

My name is William F. Sloan. I reside in Chicago. I testified on the former trial of this cause, commencing in
23 April, 1928, and at that time stated my experience in the telephone and appraisal business, and qualifications as a telephone engineer.

At that time, I prepared and there was there introduced in evidence Plaintiff's Exhibit No. 1, showing among other things the cost of reproduction new of the property of the Illinois Bell Telephone Company in its Chicago area, as of June 30, 1923.

Since the former hearing of this cause, I am sorry to say that I have discovered an error in the Station Installation Account of that exhibit, amounting to $583,465. There was also included in the final summary sheet of this exhibit
24 overheads on that error amounting to $98,755. I testified that the overheads which the Company had capitalized on its books had been deducted. In this particular account the conversion factor was based on the comparison of the unit cost of putting in a telephone in each year with that cost on June 30, 1923. Up to 1920 the Company had not capitalized all of its overheads on some of the accounts, in the same amount that it capitalized them subsequent to 1920. The unit cost that we used for June 30, 1923 in this comparison had all of the overheads in it, but we unfortunately deducted only the average amount over the whole period, so that we failed to take out all of the overheads that we should have. This resulted in a cost to reproduce new the property of plaintiff in its Chicago area, as of June 30, 1923, as shown
25 in Exhibit No. 1, of $682,220 more than it should have shown. Exhibit A-1, which I have prepared, makes this correction.

Mr. Thompson: Plaintiff offers Plaintiff's Exhibit A-1 in evidence.

Mr. Haight: I would like to reserve our objections to these offers until the conclusion of the cross-examination so that there will be no waste of time.

Mr. Thompson: No objection to that at all.

26 Since I testified before, I have continued in my work as a telephone appraisal engineer, and have been engaged continuously in such work from April, 1928, to the present time. I was employed by the plaintiff to make reproduction cost estimates of its property in its Chicago area as of December 31 for each of the years 1923 to 1930, both inclusive, and commenced work on these appraisals on January 9, 1931.

27 We had six of our own men employed on the work until late in May, and five from then on until the work was completed in July. Mr. Cook (my partner) and I also were engaged on the work. Our work, including Mr. Cook's and my own, amounted to 855 man-days. We also had the services of 20 of the Illinois Bell employees, totaling 1,485 days, and 43 Western Electric employees, totaling 415 days. That is, a total of about 2,755 days were used in preparing the reports that we were engaged upon.

In securing the data underlying the various exhibits which will be presented by me showing the reproduction cost new of the property of the plaintiff in the various years, I had recourse to the books and records of the Illinois Bell Telephone Company, and we spent many days investigating the purchase records of material, the payrolls of the Company, and the various construction records during the entire period. To the extent that we made use of them in the report, we also examined the plaintiff's accounts showing the measurements of the plaintiff's plant in the Chicago area. When this
28 datum was secured, it was summarized, analyzed, and used in determining the proper conversion factors to relate the cost of construction to the year-end levels, as set out in our report.

After it had been found that the trial of this cause could not be commenced prior to December 31, 1931, I was employed to make and did make a reproduction cost estimate of the plaintiff's property in its Chicago area as of December 31, 1931.

What I have already said about the labor involved and the records consulted, with respect to my reproduction cost estimates for 1923 to 1930, applies to my 1931 work so far as procedure is concerned, except it was shorter. The work
29 was started about December 1, and was completed and submitted on January 21.

As a result of this work I have prepared certain exhibits identified as Exhibits A-2, A-3, A-4, A-5, A-6, A-7, A-8, A-9 and A-10, respectively, which contain my estimates of the cost of reproduction new of the property of the plaintiff in its Chicago area as of December 31, 1923, and as of December 31 of each succeeding year down to and including the year 1931.

The methods which I employed in the preparation of these Exhibits A-2 to A-10, both inclusive, were substantially the same as those used by me in the preparation of Plaintiff's Exhibit No. 1, introduced on the former trial of this cause.
30 There were certain modifications in the detail, particularly in regard to the use of a varying cross-section as contrasted to a constant cross-section, for arriving at the conversion factors.

My 1923 appraisal that was introduced as Exhibit No. 1 was based upon the use of a conversion factor to convert the plant in service as of July 31, 1911 (the date of the Byllesby & Arnold appraisal), to the price level as of June 30, 1923, first as to the total plant, and then the use of conversion factors to convert the gross additions which had been put in, in each year subsequent to the Byllesby & Arnold appraisal. The factor which I used with respect to material in each case was based on a constant cross-section of the materials in the plant as of June 30, 1923.

31 In these appraisals, instead of using a constant cross-section throughout each year, I have taken as nearly as

could be determined the exact cross-section of the plant as it existed each year, and converted that to the next year-end level; and I have also taken the cross-section as nearly as it could be determined of the gross additions. This is one of the variations to which I referred a moment ago.

The second modification of detail to which I referred had to do with the treatment of retirements. In Exhibits A-2 32 to A-10, the present appraisals, the factors for converting the retirements are obtained by converting the appraisal at the beginning of any year to the year-end cost level of prices, and then finding the relation between that and the book cost at the beginning of the period, which converts the retirements to the exact appraisal level, and then, of course, they have been deducted on that basis. In the former case, the retirements up to 1920 had been converted to the 1923 level by the same factor as for gross additions, and subsequent to 1920, that is between 1920 and 1923, which would be a three and a half year period, the conversion was by means of the ratios of the unit costs as of the two dates. Subsequent to 1923 I have used the method just detailed.

33 The use of a varying cross-section in order to obtain conversion factors makes no substantial difference in a report prepared as the June 30, 1923 report was prepared, because that was a case where we converted thirteen separate years to a constant cost level. Now, technically and theoretically the varying cross-section is a more accurate method. Sometimes it will give a slightly higher answer than a constant cross-section, and other times it will give a lower answer; but if you take thirteen years, and use the constant cross-section method, the ultimate answer has been compensated, and it is substantially correct. However, if you are attempting to find the reproduction cost of any one year, or a series of years at different cost levels, it is more accurate to use the varying cross-section method. That is the reason that I have, in my present work, used these varying cross-sections of plant applicable both to total plant in service, and gross additions, in order to obtain my conversion factors; that is

because I have these nine different cost levels to which I must bring my reproduction cost estimates.

34 Those conversion factors were prepared for each of the various plant accounts of the Company, and not for the plant as a whole. To describe the method used in arriving at my conversion factors, I will take the account for poles. From the general plant measurements of the Company, we got a typical cross-section of the entire property at any given date, and the poles representing that cross-section were priced as of the beginning and as of the end of the year; that is, they were priced as of December 31 of one year, and December 31 of the next year. Then the property was simply factored forward on that basis—that is the property as a whole. Now, the gross additions during a given year might be somewhat different in cross-section from the plant as a whole, so

35 we analyzed the gross additions of the poles for the year, and found the relation of the various sizes and kinds that existed in the actual number that were erected in that year, and instead of pricing those with the two year-end level prices, we priced them at the average cost for the year because they went in during the year, and then we priced them again at the year-end price.

The conversion factors used in each of these years in order to convert the total plant in service from one year-end level to another, and in order to convert the gross additions, are based on varying cross-sections, determined in one case by a fair cross-section of the total plant in service at the beginning of the year, and in the other case by a cross-section of the gross additions.

36 The figures shown under Account 211 for land, of $2,017,821, and under Account 212 for buildings, in the sum of $13,922,895, appearing on the summary sheet of Exhibit A-2, were furnished me by Mr. Mapes, Chief Engineer of the Company. These figures, I understand, were prepared by Mr. Renwick for the buildings, and by Mr. Ward T. Huston for the land. With respect to these figures in each of the Exhibits A-2 to A-10, I assume no responsibility. I might add that in the case of buildings there were some dollar

figures supplied to us by the Auditor of the Company which represented improvements to rented quarters, and which
37 were added to the Renwick figures to get the total shown.

In general, in the preparation of Exhibits A-2 to A-10, I used the book costs of the plaintiff in its Chicago area and applied to these costs for the various years the conversion factors. There were a number of exceptions to this where I did not use the book costs of the Company. One exception was in the case of the Main-Franklin switchboard. This entire switchboard, amounting to $858,166, was cut out of service in December, 1928. It was not retired from the books, however, until later, $737,833 being retired in January, 1929, and the balance of $120,333 being retired two months later. In my reproduction cost estimate for 1928, we considered it as a retirement in the year 1928, eliminating the entire switchboard from the appraisal for 1928.

38 Another adjustment was made in the Central Office Equipment Account in the year 1927 because of transfers from Construction Work in Progress to Fixed Capital Accounts. In that year, there went on the books as gross additions: in the Belmont office, $56,338; in the Hyde Park office, $53,433; in the Kedzie office, $51,798; in the Kildare office, $71,956; in the LaFayette office, $11,275; or a total of $244,800, which was transferred out of Construction Work in Progress to the Capital Account, shortly before the property itself was actually cut into service. This total I took out of the
39 Company's accounts for the year 1927, and put over in
the year 1928. This adjustment would not affect the property accounts of the Company in any way in any year other than 1927.

I also made an adjustment in the book figures in the account of Booths and Special Fittings. Prior to the end of December, 1923, the Company's practice had been to retire booths at current cost; that is, if booths cost $100 each in a given year, retirements of booths in that year were made at $100. On January 1, 1924, it began the practice which it
40 follows in other accounts, of retiring at average unit
costs, which might be described, in general, by saying

that the total book figures are divided by the total number of booths to obtain an average price for the booth, at which average unit cost it is retired. This practice was continued up to date, but in 1928 it was obvious that some error had crept into the procedure, because the retirement costs per booth were becoming too small. An inventory of the booths was made, and it was discovered that the previous inventory which had been used up to 1928 had been too great, which gave a unit retirement cost that was too small. The result was to overstate slightly the dollars appearing in the Booths and Special Fittings Account up to the end of 1928. This we corrected by going back over the years and applying the proper retirement units to the booths that had been
41 retired. In this account, by December 31, 1924 an error of $18,532 had crept into the books by reason of that procedure. By the end of 1925, it amounted to $34,893; by the end of 1926, to $57,975; by the end of 1927, to $75,312; and by the end of 1928, to $95,278. Up to this point the error had been increasing. When the error was discovered at this point, retirements began on the proper basis. By the end of 1929 the error had dropped to $81,833; by the end of 1930, to $67,332; and by the end of 1931, to $55,463. Use by the Company of the larger retirement unit costs for this account will ultimately bring the account to a place where the books will harmonize with the plant measurements. The figures I have just read disclose that in a period of four years
42 the error has been corrected to the extent of $40,000. In my appraisal, I have made these corrections without waiting for the account to adjust itself.

In making my appraisal figures used in Exhibits A-2 to A-10, inclusive, I have treated the item of $105,367.86 displaced on the books of the Company in October, 1924, on account of Central Office Equipment which had in fact been retired prior to June 30, 1923 (and concerning which there was some discussion at the former trial), as having been retired prior to June 30, 1923.

43 From my examination of the books and records of the plaintiff, made in the preparation of Exhibits A-2 to

A-10, I have no reason to believe that any corrections or adjustments of any kind or character should be made in these books, other than those to which I have testified. The corrections we made were discovered by ourselves, and, of course, we were scrutinizing the other accounts just as carefully. We fully believe that the accounts as we have adjusted them represent the correct figures of each account.

The summary sheet of Exhibit A-2 for the year ended December 31, 1923, showing a total of $149,047,858,
44 includes no amount for going concern value, nothing for cash working capital or materials and supplies, nor construction work in progress, but, aside from these items, shows all of the property of the plaintiff in its Chicago area as of December 31, 1923, at that cost level. In my opinion, the figure of $149,047,858 would be the minimum cost of reproducing the property of the plaintiff in its Chicago area, exclusive of the items I have already referred to as of Decem-
45 ber 31, 1923. The dollar figures opposite each plant account on the summary sheet of this exhibit, with the exception of Lands and Buildings, opposite Accounts 211 and 212, which I have already explained, represent my judgment and opinion as to the cost to reproduce new as of December 31, 1923, the property in each of the plant accounts of the Company in its Chicago area at the level of prices as of that date. The summary sheets shown in Plaintiff's Exhibits A-3 to A-10, both inclusive, express my opinion of the reproduction cost as of each of the dates set out in the exhibits of the property, both in its entirety and with respect to each plant account.

46 I have made no attempt to separate the reproduction cost new of this property between its interstate and intrastate use; my exhibits show the reproduction cost new of the entire property for all of its uses without separation.

I made a study as of June 30, 1923, of the amount of construction work undertaken each year of the reconstruction period, for the purpose of determining the amount of taxes and interest during construction, which was introduced in

evidence at the former trial. All the undistributed con-
47 struction costs shown on the summary sheets of Exhibits
A-2 to A-10, inclusive, all like items which have been capi-
talized by the Company, have been excluded from the various
property accounts shown on page 1. The 5 per cent for engineering and 2 per cent for administrative and legal, represent my judgment as to what the expenditures would be for doing that sort of work during a reconstruction period. They are arrived at after a careful study of the Company's own experience in regard to those expenditures, and represent my own judgment as to what would be proper and would be required to do in a reconstruction period. These are judgment and experience figures, but I actually checked the records of the plaintiff during the period of time here involved for the pur-
pose of ascertaining what its expenses had been. I in-
48 vestigated carefully the Company's own experience, and
with that and my knowledge of what would be required under a reproduction theory, I arrive at the figures 5 per cent for engineering and 2 per cent for general administrative and legal.

With respect to interest during construction, taxes during construction, and insurance, I prepared, as of December 31, 1930, a study, identified as Exhibit A-11, showing the amount of construction work undertaken during each year of the reconstruction period. This also shows the cumulative cost of construction during each year, the interest charged and credited during the reconstruction period, and insurance and taxes during construction. This exhibit was prepared in substantially the same way and pursuant to the same method used in preparing my study of these same items for the plant
as of June 30, 1923. A refinement was introduced, how-
49 ever, in the calculation of interest, in that we have
assumed that the money would be obtained at the begin-
ning of each month and that the charges and credits would be compounded. The amount obtained for interest during construction is substantially the same as would have been obtained had we used the same method employed in June 30,

1923. Otherwise, the general explanation I gave with respect to this subject matter on the former trial would apply equally to Exhibit A-11.

The figures appearing on the summary sheets of Exhibits
A-2 to A-10 for years other than the ones on which the studies
of June 30, 1923 and December 31, 1930, were made, were
50 arrived at as follows: The 5 per cent for engineering
and the 2 per cent for general were continued throughout.
Interest and taxes were interpolated between the figures
obtained in 1930 and the figures obtained June 30, 1923. I
think this way of arriving at these items of undistributed
construction costs is perfectly proper. As a matter of fact,
the calculated amount of interest as of June 30, 1923, and as
of December 31, 1930, was just a fraction of a per cent different. I think one was 7.98 per cent and the other was 8.01
per cent.

Plaintiff offers in evidence Plaintiff's Exhibit A-11.

51 The instrument which has been identified as Plaintiff's
Exhibit A-12, showing total undistributed construction
costs allocated to various plant accounts of the Company as
of June 30, 1923, and as of the end of each of the years 1923
to 1931, both inclusive, was prepared under my supervision,
but was not used in my work and only prepared for submission to Mr. Mapes, Chief Engineer of the Chicago area of the
Illinois Bell Telephone Company, and Mr. Harris, for use in
certain studies which they were making for the separation
of the plaintiff's property as between intrastate and interstate during each of these years.

52 Plaintiff's Exhibit A-12 offered in evidence.

53 We made a very elaborate study to determine whether these undistributed construction costs should be allocated to plant accounts in varying amounts. We analyzed each plant account and found that the Company's own practice in allocating overhead expenses for each account varied; that each account did not get the same amount of engineering, of interest, of general expense, or what-not. The figures shown in Exhibit A-12 are based on quite an elaborate study of the proper allocation of these items to each plant account.

The reproduction unit costs for certain items of underground conduit, underground cable and load coils for each of the years 1923 to 1931, appearing in an instrument identified as Plaintiff's Exhibit A-13, were prepared under my
54 supervision substantially from the plant measurements of the Company and my appraisals, and reflect, in my judgment, the unit costs which they purport to show. This information was supplied to Mr. Mapes for his use in the separation. In my opinion, these are accurate unit costs.

55 The instrument identified as Exhibit A-14 shows omissions and contingencies allocated to plant accounts, beginning with June 30, 1923, and ending with December 31, 1931. If we had started with the books, we never would have had to consider any items of omissions and contingencies, but our starting point on this appraisal was the Byllesby & Arnold appraisal prepared in 1911. In that appraisal an allowance of 3 per cent, as I recall, was made for omissions and contingencies. As time has gone on, a large part of that plant has been retired, and this Exhibit A-14 reflects the residue remaining at the end of each year of those property accounts. In 1923 it totaled $551,264, and on page 2 of this exhibit it reduces to $295,072. In the exhibits which I have offered in this case, there is no item whatever for omissions and contingencies except this, which is carried over in varying amounts for each of the years from the Byllesby & Ar-
56 nold appraisal, and this has been reduced year by year as the property represented by the Byllesby & Arnold appraisal has been retired from the plant accounts of the plaintiff. On page 2 you will find that practically all of it is underground conduit. Some of the conduit that was in plant when the Byllesby & Arnold appraisal was made still remains.

Plaintiff's Exhibit A-14 offered in evidence.

57 I prepared an exhibit, identified as Number A-15, showing a comparison of the book costs less capitalized overheads with the appraisal totals less capitalized overheads for each of the plant accounts for each of the years referred to, that is, June 30, 1923, and December 31 of each of the years

1923 to 1931. The first column in each year was prepared from the actual books of the Company as we have adjusted them, as previously explained, and after having deducted whatever overhead charges the Company had capitalized. In the second column for each year is shown our appraisal figures for the same items. Our appraisal figures did not, of course, include going value, cash working capital, materials and supplies, or construction work in progress. The adjustments to which I have testified were made in the book accounts before I made these comparisons.

58 Plaintiff's Exhibit A-15 offered in evidence.

59 On the former hearing, I testified that the property of the plaintiff in its Chicago area had a value over and above the value of its physical property as of June 30, 1923, called going value, because it was an operating property with established routines, attached customers, trained employees, etc., and that, in my opinion, that going value was fairly represented by taking 15 per cent of the cost to reproduce new the plaintiff's property as of that time. At that time, I made quite a detailed study of many of the elements which I think should be considered in arriving at a going value figure. Since that time, I have made no detailed study to bring down to date the information that was in the record earlier in this case with respect to going value. In my opinion, the property
60 of plaintiff in its Chicago area as of December 31 in each of the years 1923 to 1931 certainly had a going value and now has a going value. This is because it is a highly organized property, well-manned, with a very capable staff of operating employees, well adapted to the needs of the community in which it is located, and through years of operation has become highly efficient and serviceable to the community.

I have an opinion, based upon my experience and knowledge as an engineer, and upon my familiarity, generally speaking, with this property, as to the amount of that going value in each of the years 1923 to 1931, inclusive, and at the present time. In my opinion, the going value of that property has been and is at least 15 per cent of its cost of reproduction for each of the years. This 15 per cent related to the repro-

duction cost new for each of the years, amounts in dollars,
61 rounded out to the nearest thousand, as follows: December 31, 1923, $22,350,000; December, 1924, $23,500,000; December, 1925, $25,900,000; 1926, $26,850,000; 1927, $28,900,000; 1928, $30,500,000; 1929, $33,000,000; 1930, $34,400,000; 1931, $34,000,000. In my opinion, the present dollar figure would be substantially the same as the year-end figure for 1931.

62 I have a list showing the gross additions to the plaintiff's property in its Chicago area as of each year from 1911 to 1923 (this sheet was identified as Plaintiff's Exhibit A-16 and offered in evidence). The figures appearing
63 on Exhibit A-16 correctly show the gross additions to plant in service made in the Chicago area as of the dates appearing there.

For the purpose of explaining what is meant by a cross-section of plant, I will take the case of the pole line plant. Suppose there are in the property a thousand 30-foot poles, fifteen hundred 35-foot poles, four hundred 40-foot poles, and seven hundred 45-foot poles. We took the actual number from the Company's plant measurement records and divided it by, as I recall, a thousand, so we reduced it down to, say, one of one kind, one and one-half of another kind, four-
64 tenths of another kind, etc. We simply reduced it down to small figures, but gave the relative proportion of each size of pole. By my cross-section I mean taking the items in the various sub-accounts of a particular plant account and getting a representative number in each of the sub-accounts, and thus a total which is representative of the account itself. This is done with respect to each plant account separately.

Cross-Examination by Mr. Haight.

65 There have been plant measurement records for, I imagine, quite a number of years back. The first one that we used was in 1923.

I have never made an inventory of this property at any

time, and I have never used, in arriving at my estimates,
66 any inventory save that one made by Byllesby & Arnold
in 1911. On page 4 of Exhibit No. 1 you will find what part consisted of the result of the Byllesby & Arnold appraisal of 1911. If you will look at page 3 you will find that the Byllesby & Arnold appraisal as of August 1, 1911, was $22,113,328. In
the third column you will notice that that has been con-
67 verted to a June 30, 1923 level of $41,427,357. Of course,
that has been carried forward all along with the gross additions that have been made from 1911 to 1923, and from it has been subtracted all retirements, so that you get a figure in the last column of page 4 of $109,000,000 odd, which is a combination of the Byllesby & Arnold figure and the gross additions, less retirements.

I think the amount of the property represented by the Byllesby & Arnold appraisal of 1911 in existence in the Chicago plant on June 30, 1923, can be verified from these figures here. As a matter of fact, an indication of it is shown in the figure for omissions and contingencies of $551,000, which decreases each year. Now, assume that is 3 per cent, I think that is the figure, and dividing the dollars of omissions and contingencies by 3 per cent, you will get the residue of the
Byllesby & Arnold appraisal every year. That is sub-
68 stantially accurate, I think. Finding out what the residue
69 was on June 30, 1923, is just a matter of mathematics.

I assume that the record is being read, and that it is correct that when I testified at the former hearing I was asked how much of the actual property represented by the Byllesby & Arnold appraisal of 1911 was in existence on the 30th of June, 1923, and that I answered in substance: "It is hard to say how much of that identical property was in existence on June 30, 1923. Of course, the retirements were made from
that property as well as all other property. I could not
70 answer your question as to how much of that property
was in existence on June 30, 1923, specifically. It all might be there or none of it might be there." It is true that the retirements have been made from that property as well as from the gross additions.

It has not been necessary to acquire any new information since that time as to the property represented in the Byllesby & Arnold appraisal still in existence on June 30, 1923, except to determine the residue for omissions and contingencies, which I obtained by making certain deductions for retire-
71 ments and gross additions. As a matter of fact, I think what we did was to assume that most of the retirements were made from the residue of the property in the Byllesby & Arnold appraisal before it was made from the others. That is probably not strictly correct, but it is the nearest approximation we could make for it. That could tell me approximately whether any of that property represented in the Byllesby & Arnold appraisal was or was not in existence on the 30th of June, 1923.

Let us take the case of station apparatus. You will notice on page 4 that they had in the Byllesby & Arnold appraisal $1,977,936, which was converted to the 1923 level of $3,700,141. Now, the total gross displacements in that period were $9,000,000, which was converted to $15,823,000, as of the June 30 level. Of course, you could not say that there would not be a single one of those telephones left, but when there was only $3,700,141 in existence as of a certain date, and there has been $15,000,000 retired, from a common sense standpoint you can see that all of that particular property has been retired,
72 although it is possible that one or two isolated telephones might still be there. I would say that 99.9 per cent of that particular account had been retired, that there was none of that account left on that date. This conclusion is based on the assumption that the old property would be retired first, and from my experience in the telephone business. The average life of telephone instruments in service is only about 5 years, that is, they are turned over about every four or five years. So in that particular account it is almost obvious that there would be hardly any of it left.

Now, if you take the third line, central office telephone equipment, in 1911 there was actually $3,845,969, from which there were total displacements actually of $2,877,401,

or a difference of about $968,000. There would certainly
73 be some of the old equipment left there. If you charged all of the displacements against the property in existence in 1911, there would still be some of that left. This is based on the kind of conclusion that any one could draw, looking at these figures, plus what information I have gained by coming in contact with the operation of telephone companies. It cannot be answered to the last dollar.

I know only in a general way the average life of telephone property in Chicago, speaking of it as a whole. I have
74 made no studies of any depreciation rates. In one of my previous answers, when I mentioned an average life of five years, I intended an approximate estimate of the period of time that telephone instruments remain in service and did not refer to telephone property generally. I have some opinion as to the average life of telephone property generally, but I have not made any study in this case.

75 I assume the record is being read correctly and that in the former trial I testified as follows: "The sum of the gross additions from 1909 to June 1, 1923 is practically the same as the book cost, so you can say it is about 14 years. As a matter of fact, it would be slightly longer than that, because part of those gross additions are stations which are in and out."

76 I have studies on which I could base such an answer.

Save for the principal changes mentioned on my direct examination, and some other possible minor changes, I used the same method in making the appraisals or estimates of reproduction cost new that appear in Plaintiff's Exhibits A-1 to A-9, inclusive, that I employed in connection with the old exhibit, Plaintiff's Exhibit No. 1. In doing that, I took the Byllesby & Arnold appraisal of August 1, 1911, and adjusted
77 that to the cost level of June 30, 1923, by applying to it, by accounts, certain percentage factors that measured the changes in cost level. I then adjusted the gross additions from August 1, 1911 to the end of that year, to the cost level of June 30, 1923, by applying similar factors. Then I ad-

justed the gross additions to the June 30, 1923 level for each
succeeding year down to 1922, and for the first six months of
1923 in a similar manner, by applying factors which I
78 computed for each year. Then I adjusted the retirements
during this same period year by year to the cost level
of June 30, 1923, by applying to them factors purporting to
represent the change in cost level. The Byllesby & Arnold ap-
praisal, plus the gross additions from the date of that ap-
praisal to June 30, 1923, minus the retirements during that
period, after all of them were adjusted to the level of June
30, 1923 by these factors, equalled my appraisal as of June
30, 1923. I computed those factors by developing separately
percentages of increase or decrease for material and for
labor, and then combined those percentages into a composite,
on the basis of the respective proportions of material and
labor found in the Company's experience during each
year.

79 The percentage of material in any given year repre-
sented the percentage that the material bore to the total
in that year. For instance, in the pole line account, in 1913
material was 58 per cent and labor was 42 per cent.

The first line on page 114 of Plaintiff's Exhibit No. 1, per
cent increase—material, means that to find what a pole
80 that was bought in 1911 would have cost on June 30, 1923,
you would have had to increase it by 151.86 per cent. 151.86
per cent represents the increase in the price of a pole between
those two dates. In developing my material percentage, we
took a cross-section of the pole account, divided it into the
various sizes of poles in accordance with the actual number of
each kind that existed, and priced that cross-section out each
year, clear back to 1911, with the price of eastern white cedar
untreated poles. I mean by cross-section that I took certain
items and quantities that I considered representative. In
Plaintiff's Exhibit No. 1, at page 120, exchange pole line, aver-
age material prices, we have taken five classes of poles.
81 The letter B refers to diameter at the top. The principal
other classes are double-A, A, B, C and D. There
are about fifteen or twenty different lengths of poles in a

plant, but I selected only Class B, and five lengths that represents
about 90 per cent of all of them. When I say "cross-section"
I mean that I picked out certain items and certain
quantities that I considered representative and that represented
about 90 per cent of all poles. The Company maintains
operating plant measurement records from which I determined
that they were representative.

82 I then applied to these items and quantities the prices
prevailing during each year, and the prices in effect on
June 30, 1923, for eastern cedar untreated poles. To get the
prices in effect on June 30, 1923, in respect to poles or any
other plant items, I analyzed the purchase records of the Company
by years, for the period 1911 to 1923; I went over the
actual vouchers and drew off the quantity purchased, and the
dollars paid. Those records were bills to the Illinois Bell
from the Western Electric, showing Western Electric prices.

I obtained from the same source the prices prevailing
83 during the year 1922. In getting prices in effect on June
30, 1923, being Western Electric prices, not all of the
bills I looked at, of course, were dated June 30, 1923. In the
case of poles particularly, we had certain lists which are prepared
from time to time indicating a date when a price change
takes place. In our checks of the actual price paid, we found
that during a given period they check very closely with the
prices shown on the list which indicated the price change
level. As I recall, for getting our spot date, June 30, 1923,
we used the list which contained the prices as of that da
For those prices as of June 30, 1923, I used lists, and n
invoices, which we checked by getting June and July purchases
also. Suppose there had been a price change that
went in on July 1, but was not in effect on June 30: by
getting the July prices we could tell whether prices then
84 were in accordance with the new lists, or whether the
June 30 prices were in accordance with the last list.
We checked the June 30 spot prices in that way. The prices
for plant items during the year 1922 were obtained from the
same source, from the vouchers.

To assure myself that the prices used for 1922 were properly weighted to represent average levels throughout the year, to get this cost index factor I took one type of pole, eastern cedar poles, and those prices for each year. I limited those prices to the five lengths of Class B poles that I selected as representative.

85 In each account, we took a typical representative cross-section of that account, by which I mean the kind of cross-section that I referred to in this exhibit showing exchange poles. Of course, many of the poles purchased in any year might be butt treated poles, or they might be western red cedar poles, or they might be most any type; but we have based our trend which is shown in this report on the eastern cedar poles.

To assure myself that the prices used for the year 1922 were properly weighted to represent the average levels through that year, I got the prices that the Company paid for those kinds of poles and weighted them, as shown here. There was 5.7 of one kind, 32.5 of another, and 17.3 of another. I wouldn't say that I took all purchases, all 86 quantities and all dollars for that year, but I think we got probably 95 per cent of them. There may have been a few scattering purchases we did not get. The purchases in 1922 were not all white cedar poles. We assumed that this trend factor, derived from our eastern cedar poles, was typical of what would happen to pole prices in general, both western cedars and butt treated, and what-not. I think it is very close to the actual facts. In a general way, I followed the same practice in respect to the prices for each of the years 1921, 1920 and back to the year 1911. It wasn't necessary to do any estimating for any of these years. They were the prices that were paid, and we just used them. We examined the original prices as we took them off the vouchers.

87 We took all purchases, and did not limit our analysis. The material we drew from the vouchers was all of the material purchases, including this limited amount shown in our cross-section, and all the rest of it, we got it all. To determine the level of prices prevailing from August 1, 1911 (the date of the Byllesby & Arnold appraisal), until December

31, 1911, in respect to any particular plant account was a simple process. Suppose there were 500 poles purchased during that period that cost $5,000, that would be $10 a pole. That is the way we got at it. To determine our factors, I took the prices only of the selected poles. Prices prob-
88 ably were changed during that time; certainly they were during some of the periods during the year. In some periods changes would be frequent, and in some years the changes would not be frequent. You might have 100 poles bought at $5, you might have 50 poles bought at $7.50, and you might have 200 bought at $9.

89 I did not take the particular selected items that, in my opinion, were representative of a cross-section, and all purchases for the entire period, and divide to get the price. Take one of the items that we selected, the 35-foot B pole: we may have found 10 at one price, 15 at another price, 200 at another price, and 500 at another price in that six months. We got the weighted average of those purchases for that particular size and kind of pole. That factor was then applied to all of the A poles, and the double A poles, and the
90 varying lengths, because the factor that was determined here on page 114 was then applied to the pole account. That is an illustration of what I did in respect to all plant accounts; we got the purchase price of different kinds of material each year that way.

After I priced out these items and quantities in each account in the manner described, I then applied to the result, supply expense percentages which represented the Company's experience in each year. When an item is added to one of the accounts, in general it is charged into the Capital Account at the price paid for it, except in certain cases like poles, where there are certain pole yard charges added to them, which represent shaving and painting, and things of that kind,
91 and then the supply expense, of course, is added, too. An item which is purchased is sometimes not immediately used, and is carried in the supplies account. It might be purchased at one price and put in the supplies account, and on the smaller types of things like hardware, it might be

true that it is used a year later. On the smaller items, it
might be true that the price for that item at that time might
be different from the price for that same item as it existed
at the time that it was purchased and first put into the sup-
plies account; but that, in general, applies only to smaller
92 ~~items~~. There might be small parts of material handled
that way, currently, through supplies. But the vast bulk
of material charged to work is charged at the price paid at
the date of the purchase. I think that would be more applic-
able to hardware, and not to all of that, than to any other
item. Possibly some other item. I think it is the practice of
the Company to take the average price at which it entered
the supplies account. Suppose they bought some bolts at 6
cents a pound, and a month later bought some at 5 cents a
pound, and another month later bought some at 4 cents a
pound, I think when they are charged out it is at the average
price of all the bolts. That is my personal understanding of
the procedure. Whether it be bolts or anything else, it is my
understanding that they weight those prices as they take them
out of the supplies account.

95 The man-days of which I spoke in connection with the
work of preparing my estimates of reproduction cost
would, I think, average about 12 hours per day and some-
times longer. The 12-hour average is purely an estimate;
it was always more than 8 and probably nearer 12, I don't
know exactly. The employees of the Illinois Bell
96 Telephone Company were assisting me in a variety of
work. Much of it was getting out the books of record
for us and helping in getting the material available for our
use. In some cases, they drew off some of the material, but
the computations and deductions were made by my force.
I think, in general, it is true that all computations were made
by my force, but there may have been some of the general
compilations made by the Company's people, but it was
always under our supervision. The 43 Western Electric em-
ployees assisting me principally had to do with the compiling
of the data that were used in getting our index factors on
the dial switchboards; that involved an analysis of practically

all the dial switchboards that had been installed in Chicago.

97 The prices used in Exhibits A-1 to A-10 were Western Electric prices as of December 31 of each year. Prices, of course, are current for more than one day. Price changes do occur in the year, and we took the prices that were prevalent as of the end of the year in each case. Take poles or cables, for example: prices may have changed, say, in October, and they may have extended through into January of the next year. We were able to get the price change dates so that we knew the price that was current as of the year-end date.

98 (Here an answer is corrected from the prior day's transcript. This correction shows in the abstract at that point.)

99 When, in answer to a former question, I stated on page 32: "In the former case, the retirements up to 1920 had been converted to the 1923 level by the same factor as for gross additions," I did not mean by "gross additions" the gross additions of the year in which the retirements took place; I meant the gross addition factor for the year 1912. The practice of the Company, up to May 31, 1920, had been to retire practically all plant at a 1912 level. I could not say what process the Company went through to get that 1912 level. As a mattter of fact that is what they used. As I recall it, I got the 1912 level from the Plant Accounting Department; either that or the Engineering Department.

100 When I said yesterday (page 33) that the use of varying cross-sections in order to obtain conversion factors makes no substantial difference in a report prepared as that of June 30, 1923 was prepared, I intended to say that in
101 the 1923 appraisal the use of a varying or a constant cross-section would give substantially the same result for both labor and material. In Plaintiff's Exhibit A-1 and in the various appraisals for the subsequent years (Exhibits A-2 to A-10, inclusive), I used a constant cross-section for labor, except in 1927 and subsequent years. I think we excluded
102 one man from certain types of construction gangs. This was a minor change described in my direct testimony.

104 (It was agreed by counsel that the witness' testimony on conversion factors on pages 34 and 35 relates to the appraisals for December 31, 1925, and subsequent years.)

105 Since yesterday, I have obtained further data on items carried in the supplies account. In 1923 and prior thereto, and as a matter of fact even up to as late as 1927, the Company maintained its own supply house or warehouse. Since, I think, 1927 or 1928, they have had a joint warehouse with the Western Electric Company. Much of the material charged to construction at that time was charged directly, or billed directly to the job; that is, if larger jobs were being 106 undertaken, the cable would be shipped directly from the Western Electric Company to the job. In other instances, the materials would have been shipped to the warehouse. I cannot tell you the proportion of each, but that was the general situation, and of that material shipped directly to the job, the Western Electric billing prices were the prices at which it was capitalized on the books. In the case of material shipped to the warehouse, it was billed in and out to the job on (using the idiom that the storekeeper uses) a first in first out basis. That is, if a reel of cable came in during one month, at a cost of 90 cents a foot, and the next month another reel came in, the price of which was 85 cents a foot, the first reel would be used up before the second reel would be used, and until that first reel was used up, the 90-cent price would be charged to the work, and then the second reel would be drawn from, and the 85-cent price would be used, and so on until the supply was used up.

In the case of smaller materials, those materials designated as minor materials, which I spoke of yesterday, such as hardware and small miscellaneous material, it is my understanding it has been charged out of the warehouse at current prices. Now, I have not any exact data as to the average length of time that materials ordinarily remain at rest in the warehouse, but the information I have indicates that the average turnover would vary from three to six weeks, that is in periods when any construction at all was being undertaken. 107 There might be a lag of two or three weeks between the date of material being charged into the warehouse and the time it was charged out again on construction. I did not mean that the Company maintained its own warehouse only between the years 1923 and 1927. It maintained a warehouse for many years prior to 1927; I do not know how far back it went, but many years, I think.

When material was handled directly to the job and charged
directly to fixed capital, it was charged with the supply
expense, which was based upon the total amount of mate-
108 rial handled. The dollars for this property were charged
through the supplies account in order to load them with
the supply charge. I think it is correct to say that at that
time all materials bought were charged into the material and
supplies account and then were credited there and charged to
a fixed capital account. The dollars did go through the supplies
account, after which they were loaded with the average supply
expense, which was the total cost of handling supplies divided
by the total dollars of material handled.

109 The legend "direct supervision", appearing on pages
131 to 142 of Exhibit No. 1, means the Account 711. The
percentages for local plant administration and for plant
supervision and tool expense appearing on these pages, were
derived from the Company's experience. This experience
was derived from the Company's Plant Accounting Reports.
I think it is from Reports 19 and 20. I am not sure as to the
numbers, but it is a regular plant account or report. I
obtained from this same source the percentage for local plant
administration during the year 1922 and for the year 1912;
this same account or a similar one existed in 1912. I have
110 forgotten just exactly what the accounting practice was,
but it was derived from the Company's records which
were either described that way or covered the same items.

I took the last payroll in each quarter for each of the years
to obtain the average wage of each class of labor in my typical
gang for the June 30, 1923 appraisal. (Exhibit No. 1.)
111 The payroll records for the year 1912 and prior thereto
are in existence. These show the number of men employed
and the average wage that was paid them. The form of the
records, of course, may have changed in the different years,

but it was possible to get the wage rates and number of men employed and, as I recall, to obtain the number of men employed by classes of labor, meaning linemen, foremen, groundmen, etc., but that I would like to verify.

On page 131 of Plaintiff's Exhibit No. 1, the gang used for exchange pole lines consisted of one foreman, three linemen, one groundman and one driver, and I used this same gang
112 for the erection of aerial cables and for the stringing of aerial wires, to get the trend of labor. This is to factor forward labor; it is not necessarily the gang that was used on that particular work. As a matter of fact, I do know
113 that such a gang was used; I will put it this way: I took the number of foremen, the number of linemen and the number of groundmen in the employ of the Company for the period of 1911 to 1923, inclusive, which I had for every quarter as I just described. These were general construction men who did line work, cable work and wire work and whatnot; they also did some maintenance work. I have before me the list of the number of each type of man for each year, and the average for that entire period is 1 foreman, 2.4 linemen and 2.1 groundmen, which I rounded out to 1, 3 and 2. That is the approximate average of the way work was done.

114 In 1911 the number of foremen, exclusive of cable splicing foremen, was 72; the number of linemen was 136; groundmen and drivers, 136. In 1912 there were 51 foremen, 110 linemen and 128 groundmen and drivers. In 1913 there were 67 foremen, 172 linemen and 151 groundmen. In 1914 there were 86 foremen, 164 linemen and 162 groundmen and drivers. In 1915 there were 56 foremen, 126 linemen and 123 groundmen. In 1916, 47 foremen, 114 linemen and 171 groundmen. In 1917, 51 foremen, 102 linemen and 146 groundmen. In 1918, 16 foremen, 66 linemen and 12 groundmen. In 1919, 15 foremen, 61 linemen and 10 groundmen. In 1920, 16 foremen, 51 linemen and 12 groundmen. In 1921, 14 foremen, 45 linemen and 5 groundmen. In 1922, 16 foremen, 56 linemen and 20 groundmen. In 1923, 15 foremen, 60 linemen and 28 groundmen.

The average of that entire period is very close to the cross-section used in my report. In some cases, there are more groundmen than linemen. That my typical gang has been 115 actually used in fact does not appear from this information. That is the average way the gangs were made up in the various years. The erection of aerial cable is mostly linemen's work, with some help from men on the ground. My typical gang is used purely to get a trend of labor, and I made no attempt to find out for each job the actual number of linemen, groundmen, etc., used on that job as a check for my typical gang. I assumed that my typical gang would give the proper relationship of the labor for each year as 116 compared with 1923. Nor did I attempt to find out how the average wage corresponded with the actual charges for such labor in each account. The actual labor that was in the job was carried forward by the factor that was derived by the use of this typical gang. The effect has been to carry the labor forward as it was actually expended to the new wage level, assuming that the same gang that did the work in 1914 had been converted to the same gang with the June 30, 1923, wages.

After determining the percentages of increase or decrease for material and labor separately, I combined them according to the percentages of material and labor representing the Company's experience in its construction work for that 117 year. These percentages were obtained from the records of the Plant Accounting Department—I cannot give the code number—from an analysis of specific and routine estimates. I cannot say offhand from which department I got the records, but there were records available, which I believed to be substantially accurate, and from which I took the dollars for material, for supply expense, for labor, for supervision, and for incidentals.

The items going to make up the total cost for fixed capital included material and supply expense, which we consid-118 ered as material; the direct labor, including direct supervision, plant supervision, and tool expense, which includes the overheads capitalized by the Company; and another item for incidentals, which is made up very largely of trucking costs and things of that sort. All of these charges, except material and supply expense, are included in the labor side in obtaining my percentages. Of course, the item for overheads was later deducted, but it is in the percentages.

In obtaining the prices current during each year and in effect on June 30, 1923, as I testified, we took outside plant account material costs very largely from vouchers. In the case of central office equipment, we took these costs from published Western Electric prices. The installation costs for
119 central office equipment in each year were taken from
much the same sort of records from which we got the relation of labor and materials for the other accounts.

On page 66 is a good example of how I got the average prices during the year in the case of equipment where the prices were taken from the Western Electric price lists. There is a part of the switchboard described as subscriber line circuits; these items were priced out in each year with the
120 average price throughout a given year, which average
price, if there were any price changes on an item in any given year on the price list, took into effect such change on the date it was made. I did not weight quantities purchased during the year, but if, for instance, the price for a #92 jack prevailed for eight months at one figure and four months at another, I weighted the two prices taken on the basis of eight and four.

The percentages for labor for the installation cost of central office equipment were taken from the same sort of information that the Outside Plant Account percentages of
121 labor were taken from; we went into records, I cannot tell
offhand what the code number of those records is, but I could produce samples and will try to do so.

For a time it was the practice of the Western Electric Company to include installation costs with the price of the equipment sold. If you will look on page 60 of Exhibit No. 1, you will find a fairly good indication of that. In the first column, August 1 to December 31, 1911, the installation cost was only

$477 for about $11,000 worth of material. This indicates
122 that the Western Electric installation labor was included
in the material. The installation cost ($477) probably covered incidental labor that the Telephone Company supplied. There are always certain odd items of labor in addition to the Western Electric labor. I do not know when this practice of including installation cost in the price of equipment changed, but as you go along later in the years you will find that the cost of labor is much higher in proportion to the cost of material because substantially it includes Western Electric installation costs plus Company costs of installation, while in the earlier years it included only Company installation costs.

123 The manufacture of the 7-A coin collector was stopped
in 1915, I think. From that date on, it was carried at the last published price which, as I recall, was about $3.50 or $3.70 per coin collector. It was factored forward on the same basis as the 7-J coin collector which superseded it, and is shown immediately below it on page 103 of Plaintiff's Exhibit No. 1. The ratio between the item of $14.20, shown in the last column for June 30, 1923, for the 7-A coin collector, to the item of
$6.30, shown in the next column to the left, is not the
124 same ratio that prevailed during the entire period be-
ginning in 1911 for the 7-J collector. In 1915, the manu-
125 facture of this type of coin collector known as 7-A was
stopped. The item of $6.30 shown on this page is for 1.8 such collectors which, I think, figures up to $3.50 per collector. The Company continued to use large numbers of these collectors right through to 1923, using them, however, at the last published price of $3.50. Those used they either had on hand or had turned back to what is called the Western Electric C stock, which is really a storage for the Company's own supplies, and were taken out at the same price (I believe the Western did add 20 cents to that price for a small change in insulation which they made). In arriving at our factor, we assumed that if the same type of instrument had been made subsequent to 1915, it would have increased in price in the same proportion that the 7-J did. In other words, we got

the relation between the 7-A and the 7-J at the time when they were both manufactured and arrived at the item of $14.20 from that, that sort of calculation. We did not 126 increase the cost of this collector until June 30, 1923, because we were trying to get the costs that actually went on the books for these coin collectors for each year, and raise that actual cost to the June 30, 1923 level, and they went on the books at $6.30. The ratio between $6.30 and $14.20 from that, that sort of calculation. We did not 127 7-J from the date when the two were made jointly, up to June 30, 1923. The effect of that lower price of the 7-A, when reflected in the percentages at the bottom of the page, would be that at the commencement of the year 1917, those percentages are slightly larger than they would have been had other changes been made; just how much larger it is difficult to say, but there would be some difference.

Jobs costing less than $2,500 are carried under routine 128 estimates. I do not know offhand when that limit went into effect. There was at one time a lower limit. I think it was $1,000—it may have been $1,200, I've forgotten, but it was changed at some time during the period we have been discussing.

The unit costs on page 42 of Exhibit A-3, purporting to show the cost as of December 31, 1924, were obtained first from a study of the purchase records or vouchers for material in each of the months of the year 1924, as compared with the last published price of material for the same date. This is the same both as to Total Plant and Gross Addi-129 tions. The answer would be the same for either one. As nearly as can be determined, that is an instant price for the date given, and was obtained from the Western Electric price lists compared with the last purchases in December, of the same kind of material. When I say "compared" I still mean that I got the prices from the Western Electric 130 price lists. Prices at which the quantity shown on this page were priced out, were obtained from the published price list of cable, if there was such a list, and if not, was taken from the December purchases. I do not remember whether there was a price list. The average costs shown in the next to the last column under the heading Gross Additions, were obtained, as I described yesterday, from the volume of each kind of cable purchased in the year, and are the average prices for the volume purchased. The supply expense which is added to the total bare material cost, was obtained from the Company's own records. I think the account is code 19 or 20, although I do not know; at least it is one of the Plant Accounting Records.

131 The percentages of 56 per cent for material and 44 per cent for labor for the gross additions to the aerial cable account during 1924, as shown on page 41 of Exhibit A-3, were obtained from the records of the specific and routine estimates for that year. The corresponding percentages of 53 per cent for material and 47 per cent for labor applicable to total plant, shown on the same page, of necessity are calculated figures. By the addition of gross additions, there would be a tendency to change the proportions of June 30, 1923, if the gross additions themselves changed.

132 On pages 9 to 18 of Exhibit A-4, relating to central office equipment, are listed the three factors of material cost, equipment specifications and installation cost. On pages 59 and 60 of Exhibit No. 1, are listed only material and installation. I think there was a charge for equipment specifications prior to June 30, 1923, and perhaps it would have been slightly more accurate to have included whatever it was; it was not included in the original report and I doubt if it would have changed the factors very materially, if at all.

Q. On going value and expense in construction, during the construction period, I understood, in reference to your exhibit relating to that, Plaintiff's Exhibit No. 1, dated June 30, 1923, you took into consideration such matters as expense relating to preliminary negotiations, applications for charter, applications for ordinance from the City Council, applications for certificates of convenience and necessity from the Illinois Commerce Commission, and the running of advertisements, before the securing of the ordinance, with advertising costs running into a considerable sum; do you recall that?

A. I tried to consider all of the various factors that would have a bearing on the subject, yes.

133 I have made no study of this subject subsequent to 1923, but considered that all of those factors would have a bearing on each of the subsequent years. I did not particularly consider the cost of the last franchise secured by the Telephone Company from the City of Chicago; I do not know what it cost, and made no inquiry to ascertain that cost, 134 neither did I make any investigations to determine whether any advertising had been done in connection with securing the franchise; I do not consider that as a part of the going value, anyway. I knew that negotiations were being carried on for the purpose of securing a franchise, and I understand that the matter was settled, but I have not kept very close track of the affair. In a general way, I knew that it ran from 1928 to 1931, but I knew nothing specific about it because I had nothing to do with it.

135 I assumed a period of construction of ten years for the plant in 1930, whereas in Plaintiff's Exhibit No. 1 I assumed a period of nine years for construction. I cannot tell when the nine years became ten years, and made no postulation as to that. I assumed, after careful consideration, that the most economical time in which the property could be reproduced would be about ten years, and that it would begin with 1930 and continue for ten years at the constant cost level of prices of 1930. The interest during construction charge would depend upon the time of construction, and I selected a time that I thought would give the very minimum interest 136 charge. I did not make a study for each of the years intervening between 1923 and 1930, but I did make a study for 1923 and for 1930. The results of these studies were practically the same as far as percentages were concerned, and the intervening years were merely a process of interpolation. I do give a percentage figure for interest during construction in 1927, shown on page 1 of Exhibit A-6.

137 Exhibit A-1 shows interest during construction amounting to $9,604,676 (which was a calculated amount), which is about 7.8 per cent of the figure above it, which is $123,-

000,000. The figure for interest during construction on Ex-
hibit A-9, for December 31, 1930, is $15,198,500, which
138 is also a calculated figure, the first amounting to 7.8 per
cent of the physical property and the last to 7.94 per
cent; that is, they are practically the same percentage. For
the intervening years, in view of the fact that those percent-
ages worked out practically identically, it is interpolated for
each year. It gradually increases each year from 7.8
139 up to 7.94 for the last year. It is a gradually increasing
percentage, varying from 7.8 to 7.94, determined by
drawing a straight line between the two percentages and get-
ting the intervening percentages from that line.

140 I could not reconstruct an exhibit here similar to the
page headed "Amount of construction undertaken during
each year of reproduction period, December 31, 1930",
contained in Exhibit A-11 herein. It could be done, but for
the preparation of a similar study for each of the years
between 1923 and 1930 it would probably take a week. The
only way to tell when the $15,000 item for right-of-way in the
second year of the reconstruction period, as shown on page
146 of Exhibit No. 1, became $25,000 in the second year in Ex-
hibit A-11, would be to make a study for each year. As to
141 these specific items, you will notice they are about seven
or eight years apart. That might reflect the same man, the
same amount of time, but a very great increase in salary.
To ascertain this, we would have to get his wage rates and
make this sort of study for each year. Our thought was,
in view of the fact that the results were so close in percent-
age, that that work was more or less useless.

In the item of land during the second year, shown on
Exhibit No. 1, $1,500,000, and on Exhibit A-11, $2,577,030,
there were changes going on between these two dates. The
best way to set up those changes would be to take the same
appraisals of land, if they existed for both periods, and get
the appraiser's figures for each period, and likewise for
142 all other items. To my mind, if the two figures at the
beginning and end of the eight-year period give a per-
centage that is almost identical, I don't see any special rea-

son for checking for the intervening years. The figures for the beginning or the end of the period could be checked and, if found to be wrong, it could be said that all the intervening years were wrong. I don't see that you have to have each year. To determine the distribution of the various accounts for each year so that you have for each exactly the same
143 information as for 1923 and 1930, I would suggest that you either make a study for each year or interpolate, because you get practically the same answer by either method. By interpolation I mean that starting in 1923 we find 7.8 per cent for interest, and that in 1930 we find 7.94 per cent. They are almost the same percentage. If they had come out identical, both of them 7.8 per cent or 7.94 per cent, then it could be said that the exact percentage would apply to each of the intervening years. Practically, this does work, and it does not necessarily follow that there is an assumption of some factor of constant increase for each of these accounts during each of the years.

146 Exhibit No. 1 shows in detail exactly what I have done with reference to 1923, and the exhibit with reference to 1930 shows exactly what I have done for that year. The other years have not been worked out in the same way in which the tables for 1923 and 1930 were worked out, but I have assumed certain percentages between those limits,
147 because I found a certain percentage in 1923 and a certain percentage in 1930, and I assumed that the increase has been with regularity, and I estimated the intervening years accordingly. The difference between the two years
149 was 7.8 per cent and 7.94 per cent. It would be very difficult for me to tell with reference to the amount of construction undertaken each year of the reproduction period, as shown on Exhibit A-11, how to calculate the amount of right-of-way during the second year of the construction program in the 1924 appraisal. If you want that done, the best way would be for us to do it. I would have to get the relations between the wages paid the men in the two years and in 1924; the prices of materials for each of the two years; and the appraised value of the buildings for the same type of building,

as there may have been new buildings put in in one calculation
and not in the other. I could not tell you how to make up each
of these accounts, and construct one of these pages for
150 the year 1924 or any other year, for any of the accounts
appearing on this sheet for any year, without making
a study of it for that year. If I had involved here only an
appraisal for the year 1924, and determinations had to be
made for that year, it would be necessary to have given the
information in detail as appearing on this sheet, in Plaintiff's
Exhibit A-11, in order to calculate interest. In the ap-
151 praisals for the years 1924 to 1929, both inclusive, the
item for engineering during construction is taken at a flat
5 per cent of the figure shown on page 1 of each report, called
"Total." The item of $1,000,000 shown for engineering in
the first column of sheet 1 of Exhibit A-11 does not represent
5 per cent of anything. The figure over in the right hand
column of $9,576,380 is 5 per cent of the figure shown on
page 1 of the exhibit for the year December 31, 1930. To
distribute that amount for each of the preceding years shown
in the vertical columns to the left of the column marked
"Total" on sheet 1 of Exhibit A-11, I made certain studies,
and figured and calculated that before construction work
152 of this kind could be undertaken, certain amounts would
have to be expended before construction work began at
all. Exhibit A-11 is my estimate of the way that the money
for engineering would be expended. It totals 5 per cent of
the total gross construction, but it is not necessarily expended
that way.

The same situation applies to the item of 5 per cent for engineering, amounting to $6,630,623, shown on page 1 of Exhibit A-3 (the appraisal for the year 1924). As to the distribution of it during each year of the construction period, and the number of years over which it should be distributed, the question is the same as it is for right-of-way—a special study would have to be made.

To say that some time between 1923 and 1930 it would have been more economical to have used a ten-year reconstruction

period rather than a nine-year period, is one way of look-
153 ing at it. You might also say that each succeeding year
might take one or two months additional, if you wanted
to reduce it to that. I assumed that for the plant in 1930 ten years would be required for reproduction, and for the plant in 1923, nine years. I made no further assumptions. This assumption was only made to determine the undistributed construction charges. Frequently such a study for interest is made for one year only, and the percentage so determined is used as a reasonable amount. Here I have done it twice and got two figures that are almost identical.

On page 146 of Exhibit No. 1 is shown the purchase of $1,500,000 worth of central office equipment during the third year, and for the third year in Plaintiff's Exhibit A-11 is shown the purchase of central office equipment in the amount of $10,000,000, but the whole type of central office equipment has changed. Whereas a single unit of manual switchboard might have been used in 1923, there is dial
154 equipment in the later years. The whole picture has
changed. You have dial equipment in one year and manual in another. I cannot tell you how much central office equipment would be purchased in the third year in the 1927 appraisal. The determination that it would be more economical in the 1930 study to buy $10,000,000 worth of central office equipment in the third year, and more economical in 1923 to buy $1,500,000 of central office equipment was made from a study of the plant as a whole. I tried to arrive at a figure that would keep the cost of interest during construction down to a minimum. The largest figure, roundly 8 per cent, obviously indicates that I have selected almost the minimum possible way of calculating interest, as that figure, calculated on a 6 per cent per annum basis, means that if the property were to be rebulit, it would be idle only for a
155 period of one and one-quarter years before it was put in
service. I figured that money would cost 6 per cent throughout the period.

Re-direct Examination by Mr. Thompson.

I took out of the Byllesby & Arnold appraisal, which was
made as of July 31, 1911, I think, before starting to convert
the total plant in service as of that date to the June 30,
156 1923 level, the overheads that had been included in that
appraisal. When these overheads had been taken out,
that appraisal was $1,542,211 less than book cost.

I converted the gross additions that were made from year
to year to the Company's property, subsequent to July 31,
1911, up to June 30, 1923, by the use of the conversion factors
which I have described. I also converted the total plant in
service in the Byllesby & Arnold appraisal to the June 30,
1923 level by means of the conversion factors, and then converted
the displacements that had been made during that
157 same period of time to the same level. It makes no difference
whatever in the dollar figures in my appraisal
what portion of the property in the Byllesby & Arnold
appraisal is left in service or what portion of it has been
taken out, because we have simply taken that figure, plus the
gross additions, and converted it to a common cost level, and
then taken out all of the retirements; so the answer would be
identical.

The five lengths of poles selected in my typical cross-section
of plant as of June 30, 1923, namely, 30-foot, 35-foot, 40-foot,
45-foot, and so on, constitute 97 per cent of all the poles
158 in the plant as of June 30, 1923. Having selected poles
of those lengths which represented 97 per cent of the total
poles in the plant, I then used a certain class of those poles
for the purpose of determining my conversion factor and trend
of cost. For each length there were a number of top diameter
designations; that is, you may have a double-A, or an A, or
a B, or a C. Now, the vast majority in each given length are
of the B-type, and it was the B-type in each length which we
selected. I feel absolutely convinced that obtaining in that
way my conversion factor to apply to the total pole line account,
irrespective of the class or the size or the length of the
poles, in order to convert them from the price level at one time

to that of another time, is a very accurate way to do it.

159. With respect to the other plant accounts, I followed a similar method in obtaining my conversion factors, and selected types of material which were fairly representative of the plant in service as of June 30, 1923. Take, for instance, the cable. We selected, as I recall, five sizes of aerial cable, and some fifteen or twenty sizes of underground cable. We selected the 24-gauge, the 22-gauge, and the 19-gauge types. Now, during the period under consideration, the code numbers of the cable changed somewhat, that is, the content of antimony and tin, and so forth, changed at different periods, and in view of that fact we wanted to keep that factor out of our conversion factor, and, to convert purely on a price change basis, we converted the cable to a given type, and in the 24-gauge I think it was the M-type for the large size and NM for the smaller sizes, and in the 22-gauge group we selected the code number known as the ANA. Now, in some of the previous years ANA cable was not made, but it was converted back to each of the preceding years by the factor that existed between the NA type and the ANA

160 type, so that the figures shown in our report here are for a constant size and type of cable clear through the intervening years.

I am convinced that the use of conversion factors, based upon the types of cable which I selected for the cable account, results in giving a proper conversion factor or cost trend which may be applied to all the cable in that account, for the purpose of determining the ratio between the prices as of one date and as of another. Just as in the pole account, where the lengths that we selected were upwards of 90 per cent of all the types and kinds used in the property, so here the cross-section we have taken is indicative of what the plant as a whole is.

161. The Western Electric Company always has had equipment engineering expense in connection with switchboards or other central office equipment that were to be installed, and it has always been reflected in one form or another in its prices. In more recent years, it has been

reflected under the designation of equipment engineering. In the prior years, when it was actually incurred, it was included in Western Electric billing, either in the labor, or in the cost of material. It may not always have been designated as such in prior years, and that was one reason why we left it out of our cross-section in the preceding year, and deemed it advisable to put it in in the subsequent appraisal.

With respect to the actual dollars of labor expended by the Company for gross additions in each of the years
162 included in Exhibits A-2 to A-10, both inclusive, I have converted those actual dollars expended for labor by the use of conversion factors; so that these appraisals show the exact amount of money spent by the Illinois Bell Telephone Company in its Chicago area for labor in each of those years for gross additions, converted to the level of prices as of the date of the appraisal. In making that conversion, I have used a gang that did not exactly correspond in any one year with the labor employed by the Company in that particular year. The gang fluctuated every year, as I read the figures this morning, but the gang I used is very close to the
163 average for the entire period. In order to obtain a conversion factor for labor I know of no better way than by the method that I have used.

The scheme which I have used in setting up these appraisals is to find first as of December 31 of each of these years the total cost to reproduce new, undepreciated, all the material in the Chicago area of the Company, and all the labor, to get at a figure which does not include the so-called undistributed construction costs. That figure was as of December 31, 1923, $126,188,207. The corresponding figure for the cost to
164 reproduce the plant new as of December 31, 1931, is $190,224,011. Now, having obtained the cost to reproduce new the physical property in the Chicago area for each of these years, there were then certain other expenses which would have been incurred by the Company in the construction of this property, commonly called undistributed construction costs, which I had to add to these appraisals by some method or other.

First, with respect to the item of engineering in each of
these years, after careful study of the whole situation, I
arrived at the conclusion that the engineering cost for repro-
ducing this property would be 5 per cent. That is based on my
own judgment and from a careful study of the Company's
actual expenditures for engineering. That remains the same as
a percentage figure related to the total cost to reproduce
165 the property new for each of the years, and is based upon
my judgment as an engineer and upon the records of the
Illinois Bell Telephone Company for construction work done
in Chicago.

The item for administrative and legal follows the same
procedure there; 2 per cent has been used throughout. In
arriving at that figure of 2 per cent, I also had recourse to the
Company's actual construction records to ascertain what
moneys had been expended by them during this period of
time for administrative and legal purposes, and considered
what per cent that expenditure bore to construction work, and
also what, in my opinion, was a correct allowance for the
same item in a reproduction period.

168 I assumed a longer period of construction in my study
as of December 31, 1930, than I did in my earlier study
in 1923 because the plant was very considerably larger in the
latter period, and to my mind it would probably take a some-
what longer period to reproduce the entire property under
an economical building program. The plant at the date of
my second study was approximately $90,000,000 larger than
at the date of my first. The ten-year program for recon-
structing this larger plant requires that more work be con-
structed in each given year of the reconstruction program
than the amount of work that was required in my study made
in 1923, because of the larger amount of plant to be con-
structed. I approached the thing somewhat after this fashion:
here was a larger plant and it would probably take somewhat
longer to build it, and I, of course, speeded up the construction
program. The purpose of making the study was to arrive
at a reasonable allowance for interest during construc-
169 tion. I made the study in 1923 on what I considered to
be a reasonable building program. I also made a similar

study in 1930 on what I considered to be a reasonable building program. In the first instance, I arrived at a figure for interest of 7.81 per cent of the reproduction cost new of the physical property, and in the second instance, that figure amounted to 7.94 per cent. I considered that those were the two limits; that the amount of interest could not be less than 7.81, nor greater than 7.94 per cent. That is, there were two dif-
170 ferent plants of different magnitude, and at the end and beginning periods, I had arrived at two percentages for interest during construction, which led me to believe that the figure should not be less than one nor greater than the other, and I accordingly took for all the intervening years a figure of 7.85, which is not quite an average of the two figures; it is somewhat less than an average, and I consider it a very minimum amount for interest during construction.

The plaintiff, in the actual construction of its plant if it were undertaken, would undoubtedly incur the expenses which I have designated under the head of undistributed construction costs. It does incur similar expenses in every ordinary process of building its plant. Take the question of
171 engineering: it would be absolutely impossible and it would be very foolish to attempt to build such a property without adequate engineering preparation and design. As far as interest is concerned, it is obvious that the money will be idle for a period of time, until it can be put into service, and that money will, of course, have to be charged with interest, because the plant is constructed in advance of the time when it is possible to cut it over into service. In figuring my interest during construction, I used a 6 per cent rate of interest because, in my opinion, that is a common rate of return, and in most States it is a legal rate of return, and in my opinion is a minimum figure. I attempted to arrive at a figure that was beyond criticism, as far as its conservatism was concerned. When I say "a legal rate of return," I am referring to a legal rate of interest. It is my understanding that that is the legal rate of interest in most States.

172 From my experience and knowledge as an engineer, I think the Illinois Bell Telephone Company would necessarily expend, in the reconstruction of its property, as the very minimum amounts, the several sums for engineering, legal and administrative expenses, insurance, interest and taxes during construction, as are set out on the summary sheets of my several exhibits, A-2 to A-10, both inclusive.

Exhibit A-11 does not deal with the engineering, legal
173 and administrative portion of my undistributed construction costs; that is simply a study to determine the probable amount of interest.

The following answer in my cross-examination was a misstatement:

"Answer: Well, we took all the purchases, Mr. Haight; we did not limit our analysis. The material we drew off from the vouchers was all of the material purchased, including
174 this limited amount shown in our cross-section, and all the rest of it. We got it all."

We did not get all of the material purchases that the Company made in any year; we took all of the purchases of the types of material that we used in our cross-section. I evidently misspoke, or did not state exactly what was done, in the answer.

175 Concerning my use of plant measurements in Exhibits A-2 to A-10, inclusive, when I didn't use them for the appraisal of June 30, 1923: plant measurements were not available prior to—I think it was 1922 or 1923—in such form that they could have been used in the same way that they were used subsequent to 1923. They could have been obtained with a great amount of labor, but subsequent to 1923 they were in better shape; they were better compiled, and better tabulated, and it was much easier to use them.

176 *Re-cross Examination by Mr. Haight.*

In making the correction in my testimony when I referred to purchases, I still meant purchases made by the Illinois Bell Telephone Company from the Western Electric Company. When, during cross-examination, I said that I had made comparisons of the price lists of the Western Electric with vouchers and bills, I meant vouchers and bills for purchases made by the Company from the Western Electric Company there also.

Mr. Haight: Where is that letter? If your Honor will pardon us for just about a half a minute.

By consent of counsel, the following letter written to the Illinois Bell Telephone Company by counsel for defendants, on November 13, 1931, was placed in the record:

177 "Please furnish us statements for each year, 1923 to 1929, both inclusive, corresponding to the statements shown in Exhibits 10, 11, 12, 13, 14, 15, sent to us with your letter of August 1, 1931, and dealing with Sloan's revaluation."

Mr. Haight: The exhibits referred to in the letter correspond to the present Exhibit A-11. And the reply was made by Mr. Bracelen, General Counsel for the American Telephone & Telegraph Company, under date of November 24, 1931, as follows:

"Dear Mr. Goldstein:

"We acknowledge receipt of your letter of November 13 in which you asked us to furnish statements for each of the years 1923 to 1929, inclusive, corresponding to Exhibits 10 to 15, inclusive, furnished you with our letter of August 1, 1931.

"These exhibits show the amount of construction work
178 undertaken during each year of the reconstruction period, cumulative cost of construction, interest charged and credited, taxes and insurance during construction, all as of December 31, 1930.

"Similar studies were made as of June 30, 1923, and testified to by Mr. Sloan at the former hearing.

"It is not our intention to prepare any such statements for the years 1923 to 1929, but Mr. Sloan will interpolate the results for that period.

"In Mr. Sloan's appraisals for each of the years 1923 to 1930, you will find on the summary sheet on page 1 the dollar figures showing the taxes, interest and insurance during construction.

"Yours very truly,
"C. M. Bracelen."

183 The figure $30,464,028 for central office telephone equipment, shown on page 2 of Exhibit A-4, under the heading "Cost of Reproduction, December 31, 1924, at December 31, 1925 Cost Level", was obtained from the actual costs of converting the dollar figures for central office equipment, from the year-end level at December 31, 1924, to the December 31, 1925 level. The method of doing that is shown on page 3. There the figure is shown in detail as $30,941,311 in the first column, the total for central office equipment, Account 221. In the next column are shown conversion factors to bring that from the December 31, 1924 level to the December 31, 1925 level. For instance, on the first portion of $24,565,000 it has been reduced from 100 per cent to 98.14. The manner of getting this last figure is shown on page 9. The figures shown on page 9 represent a typical cross-section of that type of switchboard. That is the varying cross-section that we have been discussing in the hear-
184 ing. It is so many sections, 1,017 sections of a board, 50,891 subscribers' cord circuits, and 360,000 answering jacks, and so forth. That is a typical cross-section of the entire property, in the figures shown on page 3. Now we have taken that quantity and priced it out on page 9 there, with the two prices, as of the two dates. The third column shows what those same items would cost December 31, 1924, and the last column shows what the same items would have cost December 31, 1925; so that going down to the totals, and dividing one by the other, you find that the price has been reduced to 98.14 per cent, and in turn everything has been carried through that way. That is the method which I followed with all of these figures. I converted not only the total plant at the end of the year by my conversion factors, but also converted the gross additions and displacements during the same period of time, so that when I take up central
185 office equipment in my 1925 appraisal, I not only have my conversion from the former year-end level of the total plant then in service, but have to consider my factor of gross additions and displacements likewise converted.

Re-direct Examination by Mr. Thompson.

It is not a part of my reconstruction theory, and I have not predicated any cost upon the entire plant remaining idle during the whole reconstruction period. On the contrary, I have tried to do just the opposite. In calculating interest during construction, I tried to cut as much plant into service, and let it carry itself, as I possibly could, and keep the interest during construction at as low a figure as possible. The net amount of my interest during construction is only upon plant which is necessarily idle until it can be cut into service. As
soon as that can be done, I assume operating revenues
186 from the plant. Building would be a good example. You
start your building, and you pay your contractors every
month, and until you get some tenants in that building, or start using it yourself, it is producing no revenue, and accordingly you have to carry the interest charge on it.

Re-cross Examination by Mr. Haight.

Interest during construction was obtained, as I have explained previously, by arriving at the totals, which were all determined substantially as I have said, and then applying that 7.85 interest to that total. Taxes during construction
were determined in much the same way. I did not con-
187 vert the 1924 interest during construction to 1925, like
I did the plant items, and that is true of all the items
after the total, $145,837,811, on page 1 of Exhibit A-4.
188 We excluded all the capitalized overheads of the Com-
pany in their entire construction from our book cost
189 before it was converted. I think the reports speak for
themselves. We say that the book costs have had those
items entirely excluded, and then the very items, interest during construction, taxes during construction, insurance during construction, general expenses charged to construction, and engineering charged to construction, at the bottom of page 1 of any one of those reports, show what has been added. We have excluded all capitalized overheads from the books, before they were converted to a different price level.

Then we have added back such allowances for those same items as would be incurred in reproducing the property.

191 I estimated the interest at a different rate of per cent than the rate the Company actually charged, because we were approaching this from a reproduction theory standpoint. In arriving at a conclusion as to what was the amount to be charged for interest during this reconstruction period, I was not guided by what the Company had in fact paid for interest.

192 The figures for gross additions, per books, shown in Exhibits A-2 to A-10, both inclusive, include all of the gross additions, against which interest, taxes, insurance, general expenses and engineering have been charged during each of the years shown; those gross additions are taken from the books of the Company. We excluded land and buildings, because we did not treat those two items. We took gross additions exclusive of those two items. As I recall, there
193 were certain interest charges that were charged against land and buildings. We considered the property exclusive of those two items, the interest charges that were charged against land and buildings shown in Exhibit A-12.

194 Land was gotten from Mr. Ward T. Huston, I believe, and buildings from Mr. Renwick; that is, we got them from Mr. Mapes, the Chief Engineer of the Company, but I understand the two gentlemen mentioned actually made the appraisals. From those two gentlemen I got just the bare value of the land and buildings, and then the interest figure was one estimated by me.

Mr. Thompson: Your Honor, the plaintiff now offers in evidence at the conclusion of Mr. Sloan's testimony, each of the exhibits, A-1 to A-16, both inclusive.

Mr. Haight: We object to all of them generally on the ground that no proper foundation has been laid or shown. In addition to that, we make the objection that the plaintiff Company's and the Bell System's course of business, as already shown by this record, precludes any rate base being fixed upon any other basis than book cost.

195 In regard to prices, at this point of the record at least the Western Electric prices have not been shown to be reasonable prices.

Also, it is apparent that the exhibits do not take into account the accumulated depreciation reserve against the property.

Also, these objections apply to the entire offer, and to each one separately, A-1 to A-16, both inclusive.

In regard to the item, total of structural value, which in Exhibit A-10 appears on page 1 in the amount of $190,224,011, and also in regard to the specific items: engineering, 5 per cent, $9,511,201; administrative and legal, 2 per cent, $3,804,481; insurance, $529,137; taxes during construction, $5,908,742; and interest during construction, $14,937,011: we object to those items appearing in the various exhibits in reference to that year, 1931, and to each of the years 1924 to 1929, both inclusive, which appear respectively in Exhibits A-3 to A-8, both inclusive, and in Exhibit A-10; and for 1930, which appear in Exhibit A-9.

We make specific objection to the total of structural value, for the reason that there is no proper foundation laid, and no facts on which to base it.

196 Also the general objection, that it is incompetent, on the present state of the record.

Judge Wilkerson: Well, now, that is a pretty long objection.

Mr. Haight: So it is.

Judge Wilkerson: There are several objections there. Read the first objection, please, Mr. Reporter.

(The first objection was read as follows:

"We object to all of them generally on the ground that no proper foundation has been laid or shown.")

Judge Wilkerson: You object to all of them on the ground that no proper foundation has been laid. What do you mean by that, that expert testimony of this kind as to reproduction, as to the cost to reproduce, is inadmissible unless there has been a complete inventory of all of the property? It is a very broad objection.

Mr. Haight: Well, as I understand it, the prices upon which these exhibits are founded are spot prices for the end of the year, being prices from Western Electric price lists. In regard to the materials, and in regard to the labor going into the plant, of the postulates on which the testimony and the exhibits of the witness are founded, they are upon a different basis, and they are not comparable.

197 Judge Wilkerson: Well, all that, of course, would go to the weight which would be attached to the documents. But here is an expert witness who, prior to his opinion evidence as to what the cost to reproduce this property in a given year is, or at a given time, has submitted tabulations prepared by him. Now, it may be that, when analyzed, the opinion of the witness in the light of these tabulations is not persuasive. It may be that it is very persuasive. But it seems to me that the tabulations should go in, as a part of his expert testimony, and such weight should be attached to them as the Court may find they are entitled to, after considering all of these objections which have been urged against them. And in that view, the objection will be overruled; so far as that objection is concerned, it is overruled.

Now read the next one.

(The next objection was read as follows:

"In addition to that, we make the objection that the plaintiff Company's and the Bell System's course of business,
198 as already shown by this record, precludes any rate base
being fixed upon any other basis than book cost.")

Mr. Haight: Of course that goes to the argument upon the merits generally.

Judge Wilkerson: Of course I suppose that a plaintiff who urges as a part of its ground for relief the contention that reproduction cost is an element to be taken into consideration, is entitled as a mere matter of evidence to submit a tabulation based upon that theory. The Court, by admitting the evidence, does not accept the theory. That, of course, is a part of the case, and that objection will bo overruled.

Read the next objection.

(The next objection was read as follows:

"In regard to prices, at this point of the record at least the

Western Electric prices have not been shown to be reasonable prices.")

199 Mr. Thompson: Your Honor, before passing the objection going to the Western Electric prices, the plaintiff desires to state for the record that, in addition to the proof already in this record on the Western Electric prices, it proposes, before the conclusion of its testimony in chief, to offer evidence that the profit made by the Western Electric Company on the business done by it with its Bell associated companies, is less than a fair manufacturing profit.

Judge Wilkerson: Well, with that understanding, the objection will be overruled at this time—I mean the objection urged as the reason why the documents should not go in.

Mr. Haight: Yes.

Judge Wilkerson: Of course, it is impossible for a party to introduce all of its evidence at one time.

Mr. Haight: I understand.

Judge Wilkerson: This is just one link in the chain, and he has offered to connect, so with that understanding I will overrule the objection.

Mr. Haight: I understand that. I just want to call attention to the fact that counsel's promise is hardly within the requirements of the Supreme Court's opinion and man-
200 date. It goes to the merits, of course. He says he proposes to show later that the prices within the Bell System are reasonable prices—of the Western Electric, that is. We have to determine here the reasonableness of the prices to this plaintiff.

But that is a point of argument.

Judge Wilkerson: That goes to the question really of what valuation is to be placed on this property in the end.

What is the next objection?

(The next objection was read as follows:

"Also, it is apparent that the exhibits do not take into account the accumulated depreciation reserve against the property.")

Judge Wilkerson: Well, that is a matter of argument on the merits. That objection will be overruled.

The next objection.

(The next objection was read as follows:

"Also, these objections apply to the entire offer, and to each one separately, A-1 to A-16, both inclusive.")

Judge Wilkerson: Let us see what that is. To which exhibit now shall we turn?

Mr. Haight: A-10.

201 Judge Wilkerson: A-10?

Mr. Haight: A-10. In making the objection I started with that one as a form, so as to apply it to all of them, and the items that I refer to, for convenience are those marked with pencil at the bottom of the page.

Mr. Thompson: And they are on the summary sheet, are they, Mr. Haight?

Mr. Haight: On the summary sheet.

Mr. Thompson: Thank you, sir.

Judge Wilkerson: That is to say, engineering?

Mr. Haight: Yes.

Judge Wilkerson: Administrative and legal?

Mr. Haight: Yes—it starts with "Total Structural Costs, $190,000,000, and then goes down to each of those items, including the engineering cost.

Judge Wilkerson: What is the objection to that, in addition to the ones you have stated already?

Mr. Haight: There is no way by which we can determine from that the alleged reproduction new estimate for each of those years, in so far as those items are concerned; and the objection is grounded upon what appeared on cross-examination yesterday, and the examination this morning.

Judge Wilkerson: That may be so, but why should not the papers go in, and then when we come to discuss the merits
202 of the case, we can hear argument as to the effect of these figures as they are here set up? The documents, with the understanding that I have indicated as to the right of counsel to be heard on the substantial questions, will be admitted in evidence.

Mr. Haight: And we may preserve an exception to each of the rulings?

Judge Wilkerson: Oh, yes.

EDWARD A. RENWICK, called as a witness on behalf of the plaintiff, having been first duly sworn, testified as follows:

Direct Examination by Mr. Thompson.

My name is Edward A. Renwick; I reside in Evanston.
203 I am the senior member of the firm of Holabird & Root, architects. The original firm was Holabird & Simons, and was founded in 1879. Then Mr. Roche came in in 1880, and the firm was known as Holabird, Simons & Roche. In 1883, Mr. Simons withdrew from the firm, and the firm name became Holabird & Roche, which continued, I believe it was until in 1929, shortly after the death of Mr. Roche, when the firm name was changed to Holabird & Root. I started in the employ of the firm in October, 1882, as a draftsman, and have been continuously connected with it until the present time,
204 having been a member of the firm since 1896. I was the business manager of the firm until 1925, and had charge of construction, after drawings and specifications were out, and the taking of bids, letting of contracts, and the carrying on of the work in construction.

In 1921, I visited and examined every building of the Illinois Bell Telephone Company then in existence in its Chicago area; those that have followed, I have been familiar with in the office. They are all work that was carried on under the firms of Holabird & Roche, or Holabird & Root. My firm has been the supervising architects for substantially all of the buildings constructed by the Illinois Bell Telephone Company in Chicago since 1921.

205 I am familiar with the size, the type of construction, the cubic content, and the general character of all of the buildings of the Illinois Bell Telephone Company in its Chicago area, included in my valuation exhibit, identified as Plaintiff's Exhibit A-17. This exhibit was prepared by me, and under my supervision and direction. It sets forth in some detail the various buildings of the Illinois Bell Telephone Company in its Chicago area, showing their cubic con-

tent, the location of the buildings, the prices at which I have appraised the buildings, both on a dollar basis and on the
206 basis of so much per cubic foot, for each of the years 1923 to 1931, inclusive. The figures appearing in this exhibit A-17 under the various listed buildings and opposite the several years therein set out, represent my opinion and judgment, based on my knowledge of those buildings and my experience as to the dollar amount of reproduction cost new of those several buildings in each of the years referred to.

Cross-Examination by Mr. Haight.

207 In Plaintiff's Exhibit A-17, the reproduction value therein given represents my opinion as to the spot value as of the date of valuation as given in each instance, and has not taken depreciation into account.

Exhibit A-17 was thereupon offered and received in evidence.

208 WARD T. HUSTON, called as a witness on behalf of the plaintiff, having been first duly sworn, was examined and testified as follows:

Direct Examination by Mr. Thompson.

My name is Ward T. Huston. I reside at 1745 Hinman Avenue, Evanston, Illinois. I am in the real estate business and have been in that business for 36 years.
209 For many years I have handled the real estate matters for the Commonwealth Edison Company, the Peoples Gas Light & Coke Company, the Public Service Company of Northern Illinois, the Chicago, North Shore & Milwaukee, and the Chicago Rapid Transit. I guess that is about all of the utilities.

Since 1908, I have been the principal appraiser for the Northern Trust Company Bank of Chicago, which is in the general banking and trust business. I have made appraisals for them of real estate held by them in trusts, or in estates, and for loans in excess of $50,000.

I have bought and sold real estate all over the City and Cook County for the Commonwealth Edison Company and
210 the other public utilities to which I have referred. I have purchased, sold, and appraised parcels of real estate generally throughout Chicago and Cook County.

In addition to the purchases and sales which I have conducted myself, and the appraisals which I have made of real estate, either for the purpose of sale or mortgage loans, I have generally, throughout the period of 1923 to 1931, inclusive, been familiar with the sales price of real estate in the City of Chicago, meaning that I have followed and am familiar with the prices at which parcels of real estate have been bought
211 and sold during that period of time in the various localities in Chicago.

I was employed by the Illinois Bell Telephone Company, the plaintiff in this case, to make an inspection and appraisal of the various items of its real estate in the City of Chicago for each of the years 1923 to 1930, and was later employed to make a like appraisal of property for the year 1931. The document identified as Plaintiff's Exhibit A-18 sets out the result of that appraisal for each of the years 1923 to 1931, both inclusive. The appraisals were made as of a spot date in each of the years, that is, I fixed the value as of December 31 as of each of the years.

Before I submitted my report to the Company for the
212 years 1923 to 1930, I personally inspected each piece of property, and have included in Exhibit A-18 a description of each piece, together with its location, its frontage, and the figure which I state is the fair market value of each of those tracts in each of the years.

The dollar figures appearing in Exhibit A-18 under each parcel of real estate and leasehold interest represents my judgment and opinion as to the fair market value of each such tract on each of the dates referred to.

The plaintiff thereupon offered document marked Plaintiff's Exhibit A-18 in evidence.

Cross-Examination by Mr. Haight.

213 The values I have given for the respective items of real property on the respective dates of the respective years were in each case spot values as of that date.

Plaintiff's Exhibit A-18 was thereupon admitted and received in evidence.

FRANK REDMUND, called as a witness herein in behalf of the plaintiff, having been first duly sworn, was examined and testified as follows: 214

Direct Examination by Mr. Bracelen.

My name is Frank Redmund. I reside in Chicago. I am in the employ of the Illinois Bell Telephone Company and have been since 1911. Commencing with 1911, for several years I was Plant Superintendent of the Illinois Bell Telephone Company for the City of Chicago. In later years, up to 1928, I was General Plant Superintendent for the entire Company, and since 1928 I have been Assistant Vice President. By reason of my employment in the capacities stated, I was, from 1911 to 1928, very familiar with the plant and property in Chicago. From 1928 to the present time, I have been familiar with it, but not in as close touch with it as I was during the previous years. 215

I was requested by the Company to make an inspection of the property in the City of Chicago in order to arrive at its per cent condition, and did make and cause to be made such an inspection, during January and February, 1931. I was assisted by other employees of the Company in that inspection. In connection with central office and subscribers' station equipment, Mr. A. P. Hyatt, General Plant Supervisor of the Chicago area, had direct charge of the work of inspection under my direction. Mr. M. H. Riley, Superintendent of Construction and Plant Engineering, had immediate charge of the outside plant, also under my direction, and Mr. B. T. Young,

a building engineer of the Company, of the buildings, also
216 under my direction. I chose these three men on account
of their familiarity with the various parts of the work.
They worked entirely under my general supervision and direction, and reported to me.

First I laid out with these three men the general plan of the inspection and the quantity of the plant which we expected to cover in various classes. I worked with them in connection
with setting up the detailed plans for the inspection. In
217 the case of central offices, I made a general inspection of
about one-third of the central offices with Mr. Hyatt, so that I might be directly familiar with just what he and his men were doing, and so that I also might have some first-hand information. With Mr. Young, I went over about one-third of the buildings. With Mr. Riley, I cannot state in any quantitive way what I personally did by way of inspection, but I spent quite a number of days in the field with him and his inspectors. After the reports were all in and had been summarized, I spent a very large amount of time with them in connection with arriving at conclusions as to per cent condition from the data which had been gathered.

I have prepared for use at this trial, three maps in relation
to this inspection (identified as Plaintiff's Exhibit A-19,
218 Plaintiff's Exhibit A-20, and Plaintiff's Exhibit A-21).

Plaintiff's Exhibit A-19 is a map of Chicago, and carries a very large number of black dots, spread pretty well all over it. Each of those black dots represents a manhole at which inspection was made of both the manhole and the cables which pass through it. The hollow rectangles which appear on various parts of the map indicate the blocks within which building cable was inspected. The boundary lines shown are the boundary lines of the City.

In the map marked Plaintiff's Exhibit A-20, the large black dots represent central offices inspected. In this case, it is 100 per cent of the central offices, all of them. The hollow squares show the blocks within which subscribers' stations and small private branch exchange switchboards were inspected. The small dots show the location of multiple private branch exchange boards, large switchboards, which were inspected.

219 Plaintiff's Exhibit A-21 is a similar map. The hollow rectangles show the blocks within which poles were inspected. The straight lines show the locations of aerial cable inspected, and the straight lines with black dots superimposed upon them show the location of toll pole lines inspected.

The tabulation which has been marked Plaintiff's Exhibit A-22 was prepared by me to show the overall results of the inspection that I have described. The results are expressed as a per cent condition of each class of property, as shown there for each of the years 1923 to 1930. The numbers in the column at the extreme left side of the sheet are the accounting numbers, as prescribed by the official system of the Company, corresponding to the classes of plant shown. The classes of plant as listed in the next column comprise all of the property accounts of the Company, except land and right-of-way, which are omitted because they are not in the class

220 of depreciable property.

In the column subdivided into three columns for 1923, the amount shown for each of the classes of plant under the heading "Reproduction Cost" comes from the Sloan appraisal. The next column shows the per cent condition. The third column is the result of mutiplying the figures in the first column by the percentage shown in the second column, and is merely for the purpose of arriving at an overall percentage for the entire plant as shown on the last line. Each of the amounts, corresponding to each of the classes of the property, is what is frequently referred to as reproduction cost new depreciated. The last per cent condition figure on the sheet opposite the designation "total" is a composite per cent for the entire plant.

221 I took the entire responsibility for the inspection of general equipment, which covers furniture and fixtures other than the furniture and fixtures in the central offices (which are in "Other Central Office Equipment"); general store equipment (that is equipment in storerooms); general stable and garage equipment; and general tools and imple-

ments. This is the plant shown on Exhibit A-22 under account 260, designated "General Equipment:"

With regard to furniture and fixtures, I made an actual inspection of the furniture and equipment in quite a number of offices, including the larger offices of the Accounting Department. In addition to that, of course, I am in the offices
all the time and am quite familiar with them. On inspec-
222 tion of that equipment, I came to the conclusion that 80
per cent would be a fair condition to apply to it, or the other way around, I found that that property was depreciated in my judgment to the extent of 20 per cent.

With regard to general store equipment, I had looked that equipment over at various times and was quite familiar with it. I made no special inspection for this particular purpose. I knew that it was in very good condition, and I assigned a condition of 90 per cent. General store equipment consists of equipment in storerooms, such as bins, shelving, trucks, and things of that kind.

General stable and garage equipment consists almost entirely of automobile equipment. In that case, it seemed to me that the best indication of the condition of that equipment would be the number of miles which it had been run, compared to an estimate of the number of miles which might be expected from the various items of motor equipment, assuming that
they were run until they were no longer any good as
223 automobiles, that is to say, junk. So I made an estimate
of the number of miles the various classes of equipment might be expected to run. In doing that, I discussed the matter with people who were familiar with the equipment. Then we had drawn off the actual number of miles which each item of equipment had run, and applied the percentage which one was of the other to the depreciable value of the items (that is, the cost, less what salvage we might get out of them finally), and that gave a per cent condition.

There are certain parts of automobile equipment, such as tires, which are replaced several times during the life of the equipment. An estimate was made of the proportion of the total cost of these items, and, as they are replaced more or

less frequently, it seemed that on a large fleet such as ours, the condition of that part of the equipment might be about 50 per cent. So I made a further deduction from the per cent condition previously arrived at by taking that into consideration, which brought it down a few per cent. On that basis, I arrived at a 70 per cent condition for the stable
224 and garage equipment. The parts of the automobile, other than tires, for which I made this deduction were batteries, spark plugs, bulbs, hose connections and fan belts. I think that was all. The inspection covered a total of 413 trucks or cars.

Each of the classifications shown on Exhibit A-22, for the purpose of inspection, was broken down into a large number of parts. Of course, I have not all of them in mind, but we will take buildings, for example: my recollection is that buildings were broken down into about 17 parts. It amounted all together to hundreds of parts in the entire plant.

225 The results of the inspection by the men who actually made it were made known to me first, by the detailed reports made by each man. These reports were gathered together, and summaries were prepared by Mr. Riley and Mr. Hyatt, or men in their offices. When the summaries were ready, we examined them together, and worked out the final conclusion from those summaries. In the case of poles, which were examined by district engineers familiar with the poles in their territory, the inspectors reported the per cent condition. In all other cases, the men who actually made the inspection reported in general terms the condition of each item, or in other cases they reported specific defects found. It was done differently, as deemed most suitable in different classes of plant; but they did not report percentages. Having, by means of these reports and summaries of them, arrived
226 at the per cent condition for a sub-class of plant, the proportion which each component part of any class was of the total class, was developed. In that way, a weighted percentage was arrived at for the entire class.

Various detailed methods for the selection of plant of a particular class to be inspected were followed, but I will take poles, for example. The City was divided on maps into squares or rectangles (I don't remember exactly what the dimensions of them were), and then the block or several blocks nearest to the middle of each rectangle was taken as the point at which poles would be inspected. The idea was to secure in that way such a spread of the inspection as to get a fair view of the entire City. It was done in a similar way in regard to aerial cable. In the case of the inspection of manholes, which covered both the manhole and the cable that went through it, every tenth manhole in each run, starting from each central office, was taken. In that way, we secured approximately a 10 per cent inspection.

227 In my judgment, the method of selection employed, and the amount of plant inspected were certainly sufficient to enable me to arrive at a fair judgment as to the overall condition of the plant and as to the condition by classes of the plant. For every class of plant, we adopted some method of spreading the inspection so that it would be representative.

I have testified that all buildings and all the central offices were inspected. Those are the only instances in which the entire property was inspected.

228 In planning the work, the consideration which determined the things the field men should look for and report about specifically can best be explained by example. Take the case of underground cable: there are certain things which may exist in connection with underground cable. For instance, there may be kinks in the sheath, which mean sharp bends. It may not be properly racked. Now, we tried to think of all the things in which there could be injuries or defects, and put it up to the men to report any of those things they found. We will take the aerial cable account, take the strand and the rings on which the cable is supported. The strand may be slightly rusted, or it may be not rusted at all, or it may be badly rusted. The same thing with the rings: the rings may have slipped, allowing the cable to bow somewhat between rings. Forms were set up which provided for reports of all those things.

In the case of some other items, there were no specific things that could be reported as worn, so a report
229 was provided on which the item could be listed in one of three conditions, we will say. In the case of some items where it was possible to actually measure the wear, such as jacks and plugs, they were actually measured with gauges prepared for that purpose, and the actual degree of wear was reported.

A field inspector, with the single exception of poles, was to report the actual findings of defects, or his judgment as to which of the three conditions I have referred to the particular unit was found by him. The process by which those reports of inspection were translated into per cent condition was again different, in different cases. For instance, in the case of specific defects reported, we tried to arrive at a fair per cent which we should take off for various kinds of defects, basing that partly on the question of how much harm it might do, and partly on what it might cost to restore it to satis-
230 factory or perfect condition again. In that way, we arrived at percentages to be deducted for various defects found, and arrived at a per cent condition, taking into consideration as well, perhaps, some other things that we knew about.

In the case of items which were reported, say, good, fair, or poor, we worked out for each particular class of items a percentage to apply to each one of those three conditions, as stated by the men. That was based on the extent to which that particular item might deteriorate and still remain in plant, and what it would cost to restore it to its normal condition, and also the fact that we had been closely in touch with these men while they were making these inspections, and knew just about what they meant. From that, a per cent was arrived at to apply to each one of the three statements of conditions, and by averaging all those up, a good average condition was arrived at for that item.

While the principal factor going into the per cent condition

was the physical condition, I also had in mind through-
231 out, the matters of obsolescence and inadequacy, and I
found several items which I considered obsolete at the time of the inspection. They were items the use of which had been discontinued. It was not expected to re-use them, the discontinuance having been on account of a change in practice or a change in design. Those items were considered obsolete, and given zero per cent condition. The largest of these items consisted of certain keys in the switchboard, known as call circuit keys. Owing to a change in operating practice, the use of those keys had been discontinued, and there was no particular prospect that they would ever be used again. They were not taken out of the switchboard because I don't think it would pay to take them out. I don't think enough would be realized on them to make them worth the taking out, so they remained there as part of the switchboard. Those I considered obsolete, and I assigned to them a zero per cent condition regardless of whether they were perfectly good keys as physical things or not.

232 Another item of obsolescence was certain carrier equipment and apparatus at the Morrell Park Station. We found that the use of that had been discontinued, having been superseded by a later design. The equipment had not at that time been removed, but so far as we could find, it was not likely that it would be used again; and I considered that, again, as obsolete. I gave it a zero per cent condition. Another item was a certain type of teletypewriter. They are machines similar to those which print with a telegraph instrument. Those were used on subscribers' premises, and there was one type which it had been definitely decided not to use again, and we had some of those on hand. I classed those as obsolete, giving them zero condition.

Another large item which came into that class was certain conduit. A good many years ago, what we have called paper conduit was put in in Chicago to a considerable extent, and it served a useful purpose for a long time. A considerable part of it is still in use, but about 50 per cent of it is now not

in use. That which is not in use we do not expect to
233 re-use, although we might possibly do so. It is in rather
bad condition, and I gave that entire conduit a condition of 5 per cent. Now, perhaps you might say that half of it was considered obsolete because it was not in use and not expected to be re-used, and half of it perhaps you might give 10 per cent to, because, while it was still in use, it was in quite bad condition. I weighed all those factors, and said it is depreciated 95 per cent. There are close to 1,000,000 feet of that conduit in the plant.

Those are the only items of obsolete plant in the telephone plant of the Company in Chicago, in my judgment. I did not find anything which seemed to me to be inadequate. I
234 should say that the plant of the Illinois Bell Telephone
Company, as a whole, is a modern Bell System plant. I think the maintenance has been very good, and it is in excellent functional condition.

Plaintiff's Exhibits A-19, A-20 and A-21, were offered in evidence.

236 As Plant Superintendent for the Chicago area for the
period 1912 to 1928, inclusive, I was in direct charge of
237 the maintenance of the plant in Chicago. From 1911 to
1928, during several years, I was Plant Superintendent for Chicago, and then during later years was General Plant Superintendent for the entire Company. From 1928 to the present time, I have been Assistant Vice President and not directly in charge of the plant. In general, I know that the plant has been well maintained during the entire period involved in this case, and that about the same general standards have prevailed.

The tabular sheet, Plaintiff's Exhibit A-22, showing the final results of this inspection, extends down to 1930 and does
not cover 1931. No inspection has been made since the
238 early part of 1931, which was to determine the condition
as of December 31, 1930, but from my general knowledge of the conditions and the plant I feel satisfied that the condition on December 31, 1931, was substantially the same as shown for 1930. In considering the matter, I have considered

whether there have been any substantial changes that would have any bearing upon the condition, either as to changes in the standards of maintenance, actual general maintenance conditions, or changes in type of plant.

No inspections were made for the purpose of arriving at the per cent condition during the years intervening between 1923 and 1930, but during that entire time I was quite familiar with the general condition of the plant. Having made the inspection to determine the condition for December 31, 1930, I was sufficiently familiar with the plant to be able to set up a relative condition for the other years. In all but three
239 cases, my opinion was that the same condition would apply back through the years. In these three cases, I made some allowance.

The first one was central office equipment, which I showed as 93 per cent for 1929 and 1930, and 92 per cent for the years prior to that. That was on account of some quite large installations of equipment which were made, and which I believed were of sufficient importance to make a change in the overall per cent condition of the central office equipment. In the case of private branch exchanges, I showed 94 for 1930 and 88 for 1923, gradually reducing the percentage during the years. During that period, I know we made a rather unusual number of new installations of private branch exchanges, replacements to a large extent, and the consideration of that, I think, was enough to warrant reducing the per cent condition in the previous years. In the case of booths and special fittings, I show 85 per cent for 1930, which is gradually reduced to 78 per cent. That is a similar situation. During those years, we had made quite a large number of changes in booths in pay stations, more than would occur in the ordinary turn-over, and for that reason I made a
240 reduction in that account.

In the other accounts, I did not, as I have stated before, make any reduction. The overall result is that the per cent condition for the whole plant is shown as 92 in 1930, and 91 in 1923, that is, the changes in those individual accounts make but very little difference in the overall result for the entire plant.

ALBERT P. HYATT, called as a witness on behalf of the plaintiff, having been first duly sworn, testified as follows:

Direct Examination by Mr. Bracelen.

I am the Mr. Hyatt to whom Mr. Redmund has referred in
his testimony as having had charge, under his direction, of
one of the three main branches of the inspection. I have had
over thirty years' experience with the Illinois Bell Tele-
241 phone Company. In 1899 and 1900, I was special inspector
on private branch exchange switchboard maintenance,
and also involved in testing out new central offices at that
time being cut over from the magneto type. The next two
years, 1901 and 1902, I was wire chief at Central office in Chi-
cago, in charge of the maintenance of the Central office plant
and subscribers' stations. During the next nineteen years,
1902 to 1921, I had various titles from foreman to equipment
superintendent in charge of central office and private branch
exchange equipment work. In these positions, I had to do
with the installation and modification of central office equip-
ment, the testing and cutting over of all new central offices,
and I also had certain equipment engineering duties. For the
next two years, 1922 to 1923, I had charge of all of the mainte-
nance of all central offices in Chicago, including the cut-over
and the maintenance of the first dial office. From 1924 to
date, I have had the title General Plant Supervisor, in
242 charge of the plant staff; responsible for all of the plant
instructions; supervision of the practices followed in the
Plant Department, including construction, installation and
maintenance; the analysis and presentation of all of the op-
erating results in the Plant Department; and the general
supervision of the maintenance budget and plant operations.
Practically my entire telephone career of thirty years has
pertained to the general field of plant, which was covered by
my part of the inspection. My experience covers the entire
field covered by my inspection.

I had under me in my part of the inspection altogether between 20 and 25 men in diffeernt parts of the plant. The

inspection started in January and ran up to some time in
March. After that, there was a great deal of summariza-
243 tion, checking and analyzing, that ran up to a few months
ago. We had a good many different types of plant in the
part for which I was responsible.

We divided central office equipment into three general classes: Manual, dial, and the equipment used for long lines purposes. Each of those classes was subdivided into what we called "component parts." Manual office, for example, we subdivided into 14 component parts so that we could break it down where we could really see it and analyze it. I picked for that particular part of the work about 10 experienced equipment men, who had served under me during my direct supervision of that work and whom I knew. I issued written instructions describing just how we wanted to inspect
that particular equipment. We also had a few classes, during
which we talked to these men so that we would all have a
244 uniform idea of just what we wanted to accomplish.

The necessary forms were prepared to show each of these component parts with any elements that belonged to them, and they were divided into different grades, as we called them. Some of the component parts we could grade into three parts, or sometimes four, and for convenience we called them good, fair and poor. We had a very clear understanding of what we meant by good, fair and poor. "Good" was equipment that we considered just as good as new physically. "Fair" meant there was some little thing off, some deterioration or depreciation that we considered was not in the third class and certainly was not in the first class, so we put it in the middle class. The last class we classified as poor, which is a relative term, to determine things that really had defects or something we thought should be taken care of. The inspectors filled out these forms under those particular classes, having no knowledge of the final rating, or what they would come to in percentages.

We had to decide about another class of equipment which
would actually wear out, like cords, plugs and a certain
245 portion of the switchboard jacks. In those cases, we
designed special tools or gauges to measure that wear.

We had in those kinds of things six classes instead of three or four; that is, the first class we coded usually "A" and that would represent the brand new article before it is worn. The last one would be zero. There was about 20 per cent difference between each one, which would give us from 100 per cent condition to zero per cent, or no wear to 100 per cent wear.

In the final ratings for these codes, "A" to "E," or good, fair and poor, Mr. Redmund and I discussed various parts of it and finally arrived at certain percentages. Of course, on the parts that wore, it was fairly accurate because of the definite relation to the wear; that is, from no wear to 100 per cent wear. For the others, we had to arrive at certain percentages, based upon 100 per cent to the point of the greatest amount of wear or depreciation. We arrived at what it aproximately would cost to replace them as good as new. In some cases, the lower base would be about 80 per cent condition; that is, the greatest amount of depreciation would be 20 per cent.
246 When most of the parts wore down to zero, that is 100 per
cent wear, there was no salvage, or it was negligible, so they were given a zero rating.

The other type of inspection which involved a report by the field men of defects, rather than by grading, I have covered in a general way. The form of which I spoke which was to be filled out by the field men by code, shows the six codes. The field men would actually measure the equipment with the gauges. As to some parts of the plant within my portion of the inspection, the inspector's report was confined to the observation and recording of definite defects. In all of
247 these reports, they covered that phase of it. In no case
did the field men report any percentage condition or percentage of wear; they just reported the fact as they found it, according to the form. The information on these forms was summarized in my office. The field men knew nothing about percentages and were not interested in that phase of it.

There were three sub-classes included in the general classification of central office equipment. These were manual central offices, dial central offices, and offices used for long

lines purposes. These were all included in the account
248 classification "Central Office Equipment", shown on
Exhibit A-22. I arrived finally at a separate per cent
condition for each of these sub-classes which was, for manual
central offices, 91.41 per cent for dial central offices, 97 per
cent; and for long lines central office equipment, 96.5 per cent.
What is called "Other Central Office Equipment" is not a
sub-class here, but is a separate account which takes care of
itself. and is the next account shown on Exhibit A-22, as
Account 222.

249 The records piled on the table are the original records
of the inspection, those in the manila covered bindings
being the ones pertaining to my part of the inspection. The
ones indicated, being 31 folders, one for each office
including the manual tandem board, cover the manual central
office equipment. The folder indicated is a summarization of
all remaining volumes, and each of the others are alike,
250 in that they contain inspectors' reports summarized
afterwards; that is, each component part is tabulated.

The volume marked "Inspection of Central Office Equipment at the Austin Office" contains the original reports turned in by the men who made the inspection at that office. There are 14 component parts at the office of the manual equipment treated separately in those inspection reports.

The first of the component parts is the A and B Section
Frames, which is the switchboard framework with certain
equipment on it. I personally made the inspection of this
particular part in every case. I covered the switchboard
frames, plug rails, end sections, the back of the board, lamps
and certain miscellaneous features. It did not include
251 the jacks, cords or plugs.

In order to analyze that particular component part, I broke it down into a number of sub-items, so that I could examine them and see just what condition they were in. I finally arrived at a composite condition of that, rating it, of course, just the same as all these frames (with the exceptions I have spoken about) as good, fair and poor. There are two columns for entering, for the purpose of analysis, any defects that would not naturally come into these ratings, so I could finally arrive at the condition of that particular part of the equipment. The sub-parts into which I broke down this particular equipment were foot rails, back curtains, end sections, keyboards, retaining strips, plug rails, lamp rails, lamp caps, pile facings and jack blanks.

The Method C indicated on the first sheet of this folder
shows which of the three general methods was used by me
252 in the inspection, which have been followed in this case.
These methods have been previously described. Method A was the method by which we measured or gauged the wear of equipment. Method B was used where we could examine certain parts ~~very closely~~ and judge by certain calculations, not by actual measurements, but by knowledge of certain conditions; for example, the storage battery plates would come under this method. Method C was strictly an observation method. That is where I would make certain observations, that is, I would look at the equipment. Of course, Method C is very similar to Method B.

This same sheet shows the date, designates the office and its address, and the name of the inspector. It then designates "component part of central office equipment No. 1" which is one of the 14 component parts of the manual office to
which I referred. No. 1 is shown on the form below as
253 consisting of A and B section frames. In each of the
offices, we have a line of what we call A switchboards and B switchboards. The words on this sheet "Total A-36" indicate that there are 36 sections of A switchboard in that office which I inspected. Following that, the "Total B" with subdivisions 1, 2, 3, 4 and 5, represent the lines of B board. In most all our offices, we have more than one line of B board. Every B board represents the office prefix. In this office, we had four B units. Each B unit had a certain number of sections, just the same as the A board, and the total shows the total number of B sections for all of those four units. This sheet then shows that 36 sections of the A board and 35
sections of the B board were inspected. As I inspected
254 all central offices, this covers all the A and B boards at
this office.

Next on the form are columns, in the first of which, headed "Group Designation," is set down section frames, foot rails, and so on, for the 11 sub-classes of plant that make up A and B section frames. Opposite each of these separate sub-classes in the succeeding columns are entries, as, for example, for section frames in the column "Good as New" appears the figure 56. That figure means that of the total of 71 sections in that office, 56 were placed in the grade "Good as New" by me from the summarization of the notes I had made on them. In the next column, headed "Fair Condition," the figure 15 means that 15 of the 71 sections were found to be in fair condition. The next column, headed
"Poor Condition", is blank because there don't happen
255 to be any sections in that particular office in poor condition. There were some in that class in some of the offices.

Having inspected, in a manner similar to the way I have been discussing, the A and B section frames in each of the manual offices, I summarized the results from the inspection sheets for each of the component parts in the same manner I have indicated for the Austin office. I then translated these reports "Good as New," "Fair Condition" and "Poor Condition," as summarized for each office, into condition per cent.
This was done separately for the A and B section frames,
256 and I then brought the results together for each component part for all the manual offices.

The second sub-class into which manual central office equipment was broken down for the purpose of that inspection was keys. The general method of inspecting this item was to examine them for certain kinds of wear, that is, plunger and trunnion wear. The inspectors closely examined a certain percentage of the keys. This they did by operating the key to determine the amount of play. They also examined the springs and contacts. An expert maintenance man, familiar with keys, can tell fairly well just how much play is in a key. We had no way to actually measure that but depended upon our own experience to determine it. We graded the

keys in the same way, "Good as New," "Slightly Worn"
257 and "Considerably Worn." If, in testing a key, we
found it had practically no play, the contact was good,
the springs were good, and it was just as good as new, it would
be rated in the first column of the form as good. If it was
slightly worn, it would be placed in the second column, and if
considerably worn, in the third column. There were two
other columns for missing or broken parts, or defects, in
which entries were made if any such thing were found, so
that it could be put in our final calculations.

The weightings, given in my final computation to each of
these columns were, for "Good as New," 93 per cent condi-
tion; for "Slightly Worn," 80 per cent condition; and for
258 "Considerably Worn," 67 per cent condition. For the
fourth column, "Missing or Broken Parts," 50 per cent
condition was given. These percentages were arrived at by de-
termining that it would cost approximately 60 per cent to
repair the defects listed in the column, "Missing or Broken
Parts." Therefore, the range on the keys would be from 100
per cent to 40 per cent, since the depreciation could not be
more than 60 per cent. We just took an average of those
keys; we could not measure them accurately or precisely, but
we had to get an average in each class, because some would
probably have just been put in today, and maybe some would
be in a condition when they would be about to enter the next
class. That gave us an average on each class. The first
class naturally would start with 100, so we took from 100 to
85, which gave us an average of 93 per cent for "Good as
New". In the second class, the range was 85 to 75, giving an
average of 80 per cent. In the third class, the range was
259 75 to 60, giving an average of 67 per cent. In the fourth
class, the range was 60 to 40, giving an average of 50 per
cent.

What I have just said about the weighting of these various conditions in terms of per cent, illustrates, in general, the principle followed in all similar cases, whether relating to these or some other type of plant. There may have been one or two minor exceptions, but in general this is true.

The next sub-class of central office equipment is
260 switchboard cords. This is one of the pieces of equip-
ment that lent itself to gauging or measuring, because
it wears out. We measured these cords to determine what
proportion of the cords was worn out. A brand new cord, of
course, would be 100 per cent. A cord worn out, we would
grade down to zero condition, or 100 per cent wear. It can be
determined by the length of the reinforcement of the cord
how much has been cut back. The cord is repaired so many
times before it becomes useless, and therefore, by determin-
ing how many of those repairs or cut-backs have been made,
we could determine approximately the per cent of the wear
of the cord. In the form, we put down under each code of
261 the gauge just how many cords we found under that code.
In the case of cords, there were six codes which I have
already explained in a general way.

The next sub-class is the plugs which are attached to
262 the switchboard cords. The photograph, identified as
Plaintiff's Exhibit A-23, illustrates the method of de-
termining the percentage of wear of these plugs. The in-
spector of the plugs turned in a form similar to that used
for cords with six codes on it, showing a range from good to
zero.

The next sub-class is switchboard jacks. The wear on the
jacks is confined to the sleeve portion, which we finally rated
as one-half the total jack. The method of measuring wear
on the jack is similar to the method used on the plugs,
except that on the jack the inside diameter of the sleeve
263 is measured, whereas on the plug, it was the outside di-
ameter. The photograph identified as Plaintiff's Ex-
hibit A-24 illustrates the method of measuring wear on jacks.

The next sub-class is relays. They were checked,
264 tested and inspected in the same manner that I have de-
scribed for keys. A similar form was used and they were
rated the same way, so far as the field men were concerned;
that is, good, fair and poor. There is a little change in the
form for them because we brought out a little differently
just what shape the springs were in. The relays, in general,

were inspected in the same way as keys, but there were certain things we wanted to bring out a little differently from the keys, but the same principle was carried out in filling out the form.

The next sub-class includes message registers, condensers, repeating coils and resistances. This equipment was inspected under Method C, which I have described, that is, the observation method and not the measuring method. This method was followed because on this equipment there is practically no wear. The inspection was just a matter of de-
termining certain defects, proper markings and any miss-
265 ing parts. They were entered in the forms under the
proper headings.

The next sub-class includes the switchboard cabling in the office, divided into position cables, multiple cables and long run cables. They also were inspected under Method C, that is, by looking for defects. We examined the condition of the forms at the end of the cable, the condition of the cable fastenings, and the general condition of the braiding. These were all braided cables and not lead cables.

The next sub-class includes distributing frames and various coil and relay racks, and the fuse boards. They also were inspected under Method C, as there is practically no wear on the equipment. There are just certain defects as to finish and missing parts which we looked for.

The next sub-class includes cross connecting jumpers on distributing frames, the terminals to which they connected, and the protectors. This came under my B Method of inspection, that is, it required very close checking of the condition
of the jumpers and the terminals and the protectors to
266 see whether there were any missing parts, and whether
the jumpers were in good shape. All these defects are classified in the proper columns, and all were reported by the inspectors as far as they could find them.

Sub-class No. 11 took in the testing and repair service desks, which are certain desks in the operating rooms having some switchboard equipment in them. They were all inspected by myself under the C-Method, and graded as I found them.

No. 12 component part was storage batteries. This came under the B-Method. In inspecting storage batteries, I was assisted by one of our expert storage battery men who is thoroughly familiar with the condition of the plates, and can tell their condition in a great measure by the color of the plates, backed, of course, by our knowledge of the methods of charging, discharging, etc. We arrived at the condition of the plates and the general condition of the battery by actually inspecting the plates, so far as we could without taking them out of the cells.

267 Next is power machines. With the exception of the commutators and brushes, there is practically no wear on these machines. The bearings have a rather long life. The big part of the machine does not wear out. These were inspected very closely to determine just how much wear on the commutators, brushes and bearings there was, and the findings were entered on the forms.

The last one took in power boards and the wiring to the power boards. That was examined as closely as we could and the condition determined. There is very little wear in that particular type of equipment.

In manual offices, the force of ten men to which I have referred was divided into crews of two each for the different types of equipment. One would make the inspection, or
268 take the measurement, or make the check, while the other was marking down in the form what was found. They would alternate because some of the tests got very tedious. All of these ten men were working in an office at one time, inspecting the different parts, and they never left the office until I arrived. I always was in the office at some time during the period in which they were inspecting, so I could make checks over the entire work that they had covered.

I did not inspect all of the units of each of these component parts, but have a summary sheet that will tell what percentage of the total units were inspected. The summary 269 covers the 14 component parts of all of the manual offices. It is arranged in tabular form, and shows for each of these 14 component elements of manual central office equipment, in the first column, the per cent inspected; in the second column, per cent ratio of total; in the third column, composite per cent; and in the fourth column, total units. The composite per cent in the third column was worked out to get an average per cent of the total of the central offices, which would be 43 per cent. The actual percentages are in the first column. They vary all the way from about 2 per cent to 100 per cent, and so the composite of the office would be about 43 per cent inspected. That is just a calculation. It is really 100 per cent on most of it.

270 The overall per cent condition of manual central offices was 91.41 per cent.

The next sub-class of central office equipment was dial equipment. The records of inspection made of dial equipment corresponding to those pertaining to the inspection of manual equipment which I have been explaining, are found in these seven folders (indicating). The first folder is a summary for all dial offices, and each of the remaining six folders contains the original inspection reports, turned in by the field men as the result of the inspection at the office covered by the particular folder, together with a summary for that office covering the entire inspection by component elements and as a composite.

The dial offices contain a great deal of equipment that is substantially identical with the central office equipment 271 of the manual offices. The inspection of the dial offices, in so far as the equipment there is like that of the manual offices, was done in the way that I have described with respect to the manual offices. There are certain parts of the dial offices that do not lend themselves to the same method of inspecting and gauging that was used in the case of manual offices. Certain parts of the dial equipment do wear gradually; so far as we can determine, it is a very gradual wear, and some parts, of course, have to be replaced, just like in

the manual, so we tried to determine the condition of
272 those parts as far as possible. We used a magnifying glass to look at those particular parts, and tried to arrive at an approximate percentage of the wear, or condition.

273 The three photographs identified as Plaintiff's Exhibits A-25, A-26 and A-27, show inspectors using a magnifying glass in determining the condition of moving parts of the equipment; particularly the wear upon those parts of the dial equipment lending themselves to that type of inspection.

274 I might add that the men who assisted me in this particular inspection were not the same men who were used on the central office equipment. The men who inspected the dial equipment were specialized both in the manual and dial portions of central office equipment.

The results for all dial offices are brought together in this summary folder in a manner identical with the summary sheet that I have described in connection with manual offices. This summary shows separately by component parts in three columns: first, the average per cent condition for each component part; second, the per cent ratio of the total; and,
275 third, the composite per cent. The dial equipment was found to be overall in 97 per cent condition.

The next division of my inspection which I treated separately, and for which I have a separate group of records, is the so-called long lines plant. That is the plant used for long lines and toll purposes. I divided this equipment into three parts: (1) the long lines and toll switchboards where they make the connections to toll points within the State, and with points across the country and abroad—this equipment is very similar to our manual equipment, and was inspected in the same way; (2) the equipment at Morrell Park; and (3) that in the Franklin Building.

These last two are repeater stations in connection with the long lines and toll lines. The Franklin Building is principally telephone repeater, some carrier current and some
276 broadcasting apparatus. Morrell Park is principally a telegraph repeator station, has telegraph apparatus,

although there is some telephone and some carrier apparatus there.

The four folders indicated cover this property. The summarization is in one folder, and the original inspection reports are in the other three. All of this equipment is located in the three offices I have referred to. This long lines equipment was found to be in an overall condition of 96.45 per cent.

The remaining sub-class of plant included within the general classification of central office equipment is designated in
the accounting system as "Other Central Office Equip-
277 ment." That was covered by my personal inspection in
every office. I inspected 100 per cent of this equipment. I finally found, after consultation with Mr. Redmund, of course, 94 per cent condition for this property.

I have now covered the four main sub-classifications, which comprise the total of central office telephone equipment, Account 221, shown in Exhibit A-22, and have given for each of these four sub-classes the separate per cent condition which finally, weighted, resulted in the figure of 93 per cent, shown in Exhibit A-22 for all central office telephone equipment in 1930.

The next general section of my inspection covered station apparatus, inside wire, drop wire, interior block wire, etc.

Subscriber station apparatus includes the telephone
278 equipment at the subscriber station and is a separate
account. The inside wire or station installation, is the wiring that connects these stations. It also is a separate account, and is treated separately in our inspection.

This stack of folders contains the original inspection reports and summary sheets covering this part of the inspection. Aside from the one folder of summaries, each of the other folders covers an inspection area which was a central office area.

Station apparatus was broken down into about 10 component parts in a way generally similar to what was done in the part of the inspection my testimony has already covered. The wiring, of course, was not so broken down; that is just one component part, or class.

In connection with station apparatus, the first thing
279 was to select a representative number of stations to in-
spect. I think that a map has already been presented illustrating this. We arbitrarily divided each office area into ten sections on the map, and then spotted about the center of each of those sections. We then picked from our records a certain number of stations to inspect, those chosen having such a relation to the total in that division, and to the classes of service, that we would get a repesentative picture of the classes of equipment. They were also of such a number in each district as to bear a proper relation to the total, for the City. Then we went out and inspected these instruments, using men who were thoroughly familiar with the station maintenance. They filled out suitable forms, which we had made up and discussed with them so they would know just what to look for. These forms were filled out in a very similar way to these other forms; they recorded the condition they found as to the station equipment, that is, good, fair and poor.

These same men at the same time inspected the inside wiring, which is another account, and arrived at the condition
of it. Then they placed that on the same form which we
280 used for the station apparatus. They also inspected
the exchange aerial wire, or drop wire that connects from the outside terminal to the station.

The condition of all of that particular equipment was determined and entered on the forms, and then we rated it later in a manner similar to what I have described before.

We inspected a certain number of stations, picked by the method I have described, on the subscribers' premises. In order to check that, we inspected about three days' receipts of equipment returned to the Western Electric. This is equipment that was being taken out of the subscribers' premises; it is what we call our turn-over, or station movement. There are a large number of people moving all the time, going in and out of premises, so the telephone is coming in and out; or the classes of service are being changed, so that there is a constant movement in these station telephone equipments

going back to the Western, where they are rehabilitated, and
go back again into service. By checking three days' re-
281 ceipts from that movement at the Western Electric, for
the same type of equipment and in the same manner, we
arrive at about the same per cent condition. Therefore, we
were satisfied that we had a representative number of sta-
tions, although it is not very large in number.

For station apparatus, we found a final per cent condition of 91 per cent. That is a main account and appears on Exhibit A-22 as Account 231.

In that same account (231) is included our telephone typewriters, and as we also arrived at a per cent condition for those, the 91 per cent is a composite of not only this station apparatus which I have described, but also telephone typewriters.

282 These records that are here have been available since
last August for examination by the representatives of
the City, and to my knowledge they have made considerable
examination of them.

283 The next general section of my inspection was of pri-
vate branch exchange switchboard equipment, which is
covered by the records contained in those six folders (indi-
cating). These records do not all relate to the manual mul-
tiple type, but cover different types. There is one folder,
284 the first, relating to manual multiple type private branch
exchange switchboards. The next folder has the inspec-
tion reports on the dial P. B. X. boards. The next one covers
non-multiple cord P. B. X. boards. The next covers cordless
type P. B. X. switchboards. Another one shows the results of
the inspection of cordless P. B. X. boards at the Western Elec-
tric, and the last one shows the non-multiple type inspection
at the Western Electric.

The first of these, that is, the manual multiple type, is very similar to the manual central offices that I have described, and for it we used similar forms, with not quite as many component parts or breakdowns. The inspection was made in about the same manner as described for manual central offices. We used gauges to measure parts that would wear,

and also the other two methods as I have described them,
285 B and C, for inspecting the other equipment. The dial P. B. X. is similar to the central office, in so far as the method of inspection is concerned. We inspected the manual portion of the dial board in the same manner as the manual central offices. We inspected the moving parts of the dial equipment with magnifying glasses, and used about the same forms that we used in the central offices, and the proper number of component parts.

The non multiple cord type P. B. X. board is simpler than the multiple type described. It has practically all the same elements in it, only in a more concise form or shape, so that the inspection was simpler, but the same general method was followed. The cordless type has no cords or plugs, therefore we do not have those wearing parts to gauge or measure. The keys and wiring are the principal parts of cordless boards, so that was comparatively simple equipment to inspect, compared with the other. However, it was inspected in about the same way, by testing the keys and looking at the wiring, and putting down any defects in the general conditions under good, fair and poor.

I might add that a couple of those folders showed
286 forms used at the Western Electric. We checked a certain number of boards that came back in the station movement, as I described for station apparatus, in order to see whether we were really getting a right check on this equipment at the subscribers' premises. This gave us a fairly good check in the same way that I described for the station apparatus. The station apparatus and the P. B. X. apparatus that was checked in the Western Electric shop was all apparatus moving out of the Illinois Bell Company's plant here in Chicago. It was principally the cordless type, a little cabinet, that comes in, so it is easily inspected and checked. It does not change its condition from the time it leaves the subscriber to the time it arrives at the Western Electric. We did not check any multiple P. B. X.'s at the Western, because they are all knocked down when returned. We could only inspect them on the subscribers' premises.

I determined a per cent condition for each of the classes
of plant I have last been describing separately. This per
287 cent condition was: for the cordless type, 94.87 per cent;
~~for~~ the non multiple cord type, 94.12 per cent; for the
multiple manual, 93.18; for dial, 97.81. The composite was 94.

Then my inspection covered public pay station booth equipment. This large volume (indicating) contains the original inspectors' reports, and summary records of that inspection. The type of report turned in by the inspector in this case was similar to the report we used for station apparatus, which showed good, fair, poor. In this case the report showed good condition, slightly worn, considerably worn. These conditions were arrived at in the same manner as station apparatus. We picked out what we thought was a representative number of booths scattered all over the City. Of course, a great portion of them were in the loop, because that is where
the largest number are. We inspected the condition of
288 those; breaking them down into a number of sub parts so
we could analyze them, like the frames, the exterior and
the interior of the booth, the glass, the doors, locks, shelves, switches and directory hangings, all part of the booth account; 85 per cent condition was found for that class of property.

This last folder (indicating) covers picture transmission in the Telephone Square Building and wire telephony, broadcasting equipment for subscribers' pickup. The picture transmission portion of that account is much the largest part of it, in fact, it constitutes most of it. For that we used forms in the same manner as with the other equipment. I selected a man who is thoroughly familiar with this equipment to assist me in checking it. We broke it down into a number of component parts, in the same manner as the other equip-
ment, and arrived at the percentage condition by deduct-
289 ing for the various things that we thought were worn
or depreciated. I arrived at a percentage condition by
sub-classes within this general class. These findings for the sub-classes are: for the picture transmission, 85.15 per cent condition; for the wire telephony, broadcasting, 87 per cent.

The right to use a certain portion of the conduit at the

Union Depot was purchased. We assigned a percentage to that conduit to correspond with the per cent condition assigned by Mr. Riley for his conduit for the City; that was 91 per cent.

The composite for the entire miscellaneous account is 85 per cent.

290 The photograph identified as Plaintiff's Exhibit A 28, is entitled "Method of selecting answering jacks and out trunk multiple jacks"; these are on the A boards. We have three classes of jacks in the manual switchboard: answering jacks, which have the most wear, because they are used more; the out going trunk multiple jacks on the A board; and, as shown on the other photograph identified as Plaintiff's Exhibit A 29, the subscribers' multiple jacks on the B board. In these photographs, there are certain groups outlined in red, showing our method of selecting the items to be inspected.

The answering jacks are the group on the lower part of the A board. The photograph shows one section of the A board. We picked one panel in each section; that is, every tenth panel of the A board, and tested all of those jacks, which gave us about 10 per cent of the answering jacks on the A board. We selected the outgoing trunk multiple jacks on the A board and the subscribers' multiple jacks on the B board in a little different manner. We stag-
291 gered them, spotting them on different parts of the board in order to get a representative picture, not only of the wear, because we thought that gave us a good picture of it, but also a good relation between the newer parts of the board, because additions to the multiples are made on the top, and extensions are made at the end. We therefore scattered this in such a way that we would get a good representation of new and old; that is, the old relatively speaking, the newer part and the older part. It also gave us a pretty good representation of the traffic conditions on those jacks.

294 The photograph marked for identification Plaintiff's Exhibit A-30 illustrates the method of inspecting cords

by exact measurements so they are divided into
295 conditions, A, B, C, D, E, and F, as I have described before. This shows correctly the method of gauging.

The folder marked for identification as Plaintiff's
296 Exhibit A 31 is practically a complete set of the forms which were placed in the hands of the inspectors and filled out by them at the time and place of the inspection. In some cases, where the equipment was the same, we made a slight change in one of the forms and used it for this other equipment, but in most every case that folder is complete. I have described generally the methods of inspection, and with some particularity the method in a particular case. These forms, together with my testimony, will show the things the inspector was to report, where there were specific things. It will also indicate the method of inspection; that is, whether it was by the use of gauge codes, as in the case of cords and plugs, for example; or whether it was by the judgment of the man himself, that being the only applicable gauge; or whether specific defects were to be reported.

297 The folder identified as Plaintiff's Exhibit A 32 contains 18 pages of tabulations. This was prepared by me from the records that are here in Court, and about which I have already testified generally.

298 The first sheet, headed "Per Cent Condition of Central Office Telephone Equipment, Account 221", and the next succeeding four sheets, that is, pages 1 to 5 of Exhibit A-32, relate to the entire class of plant shown on Exhibit A-22, as Account 221.

The first sheet of Exhibit A 32 deals with the first subclass of that property, namely, all manual central office equipment. I have already said that this equipment was broken down into 14 component elements for the purpose of inspection. Those component elements are shown in the first column of this page.

Taking the first component element, that is, the A and B section frames, the second column shows the number of units

of this component element inspected. This is a
299 summarization, and the figure 1828 in this second column means that that number of A and B section frames of manual offices were inspected throughout the City. The next three columns show that the inspectors reported the items inspected as being in good condition, fair condition, or poor condition, in the numbers indicated. Of the 1,828 A and B section frames inspected, 1,187 of them (the number shown in the third column) were reported by the inspectors as being in good condition.

The report form used by the inspectors for this equipment, which is the first sheet in Exhibit A-31, is headed, in the first column, "Good as New", in the second column, "Fair
300 Condition"; and in the third column, "Poor Condition". Therefore, what is designated on this summary sheet in the column marked "Good Condition" are those units reported by the inspectors in the first column of the form as "Good as New".

Of the 1,828 frames inspected, 547 were reported in fair condition and 94 of them were reported in poor condition. The figure 94.18, which is the next entry for the A and B section frames in the column headed "Average Per Cent", signifies the average per cent condition of that component part for the City. It is the result of the sum of the products of each of those grades, divided by the total number inspected. In other words, it is the number found in the third column, under the heading "Good Condition", multiplied by the
301 percentage assigned to that particular grade. Likewise, the number shown under the next column, that is, "Fair Condition", was multiplied by 90, the percentage assigned to that grade, and the 94 items in the next column, headed "Poor", were multiplied by 83. The sum of all of these multiplications, divided by 1,828, the number of units inspected, gives the average percentage, or 94.18. This is a straight arithmetical computation.

The 16 per cent in the next column, headed "Ratio of Total", represents the percentage of that component part to the total central office, based upon a study of a typical office, to get the relative value of each of these 14 component parts. This shows that the A and B section frames of a manual office comprise 16 per cent of the value of the entire central office.

In the last column, headed "Composite", the entry of 15.07 is the multiplication of the average per cent of that component
part; that is, the ratio 94.18 per cent is multiplied by
302 16, the ratio of total giving a composite of 15.07. That
is done to get the final composite per cent for all component parts, and gives the weighting for that particular part. When that same process is carried out for all the 14 component parts, as the exhibit shows has been done, the overall per cent condition of the manual central offices will be shown as an addition of the figures of that last column.

On the form of inspector's report for the A and B section frames, there are columns headed "Dented or Chipped" and "Missing or Broken Parts". In addition to classifying the part inspected as being "Good as New", or in "Fair Con-
dition", or in "Poor Condition", the inspectors also re-
303 ported specifically in these two columns. I personally
inspected this particular component part, and made notes on the lines provided for such remarks. I not only filled out the two columns just described, but also checked all of the elements that went into the frames, so that I could arrive finally at the number of sections that ought to be classified as "Good as New", "Poor", and "Fair". This having been done by myself, does not come out in the summary as extra items. If the men themselves had done that, it would have been carried out as extra items. I assigned a percentage condition for that after arriving at the depreciation value.

As I said before, the inspector's form for this particular sub-class, which is shown as of the first sheet of A-31, was used by me personally. Wherever the field men made remarks, they made notes of them on the back of the forms they filled out. The remarks would be to the effect that certain things ought to be considered which we had not discussed individually in these various grades. I would then discuss that with them. As I have already mentioned, I 304 interviewed the men before they left the central office and we discussed these particular items, so that I had a clear understanding of what all of those things were before I finally gave them rating values. The men did not apply any percentages. They just described the things.

To determine the percentages I have applied for the A and B section frames on the first or summary sheet of Exhibit A-32; that is, 97 per cent for those frames reported in good condition; 90 per cent for those reported in fair condition; and 83 per cent for those reported in poor condition; I first determined upon my base. I considered that the worst condition I found would not cost more than 20 per cent of the value to be put in as good as new condition. That 305 gave me a base of 80. I know from my own experience and from what I saw in this inspection that there is a great deal of this particular component part that is just as good as new, and a great deal of it that was recently installed, so the top would be 100 per cent. This kind of inspection, it seemed to me, would give a little better result if we got the average, because, of course, there was a variation. I therefore broke this item down into three grades between the 100 per cent and the base, which I divided, not necessarily equally, but according to my judgment, with the variation in the wear. In this particular equipment, there is a small percentage that wears, so that took me down to 80. That would give the first grade 100 to 94, with an average of 97; the next grade would go from 94 to 86, with an average of 90; and the third grade from 86 to 80, with an average of 83 per cent.

306 A very large percentage of these switchboard frames are of iron, and as they are protected from the elements inside of the office, cannot rust. We could not see that there would be any normal depreciation in them at all, so that the range from 80 per cent to 100 per cent would represent a rather large percentage of the total. The next part would be the woodwork on the front, back and top of the boards and

on the key and plug shelves. On the woodwork on the front, the top, the back and the cornices, there is practically
307 no depreciation. I took into consideration that the finish might not be quite as good as new after a period of time. But the iron and wood is a very, very small part of the depreciation. Then there are the foot rails that the operators' feet rest on. They are metal and they do not wear out. They represent a certain percentage of the total component part. This base of 80 per cent represents in my judgment the per cent of the equipment that does not wear out.

The section frames are very rugged. They all have cross braces, and I would consider them extremely rugged, especially when you consider that we can re-use them over and over, and take them out and re-use them at other places, and they do not fall to pieces. There is never any occasion to take them out because of their wearing out. They would
308 only be removed because of a change in the office, or for additions, or shifting a board from one floor to another, which has been done.

My explanation of the meaning of the entries in each of the columns in the case of A and B section frames also covers the next item, keys. The inspector reported keys as in good condition, or slightly worn, or considerably worn; and also inspected, as the next column shows, for "Missing or Broken". This means a missing part of the key, which may be just the identification of the key, and is a small item. Of the 43,000 odd keys that were inspected, the inspectors reported 36,000 on the form, which again gives the first or highest condition, as "Good as New"; reported 4,300 odd keys slightly worn, and 2,300 keys considerably worn, with 403 out of 43,000
309 having some missing or broken parts.

In determining my ratings of 93 per cent for those keys in good condition, 80 per cent for those slightly worn, 67 per cent for those considerably worn, and 50 per cent for those having missing or broken parts, I found the base to be about 40 per cent. That is, it cost about 60 per cent of the value of the key to make it as good as new. Forty per cent is the per cent condition of the lower part of the lower grade.

Now, going to the top again, 100 per cent, the range would be
from 100 to 40. There happen to be four grades here, so the
range of each grade worked out according to the following:
100 to 85 gave 93 per cent for the "Good as New" condition;
85 to 75 gave an average of 80 per cent for the "Fair or
Slightly Worn" condition; 75 to 60 gave an average of 67
per cent for the "Considerably Worn"; and 60 to 40 gave
310 an average of 50 per cent for the fourth grade, which not
only included "Missing and Broken Parts", but also
"Contacts Badly Pitted", as shown by the form. We just
bunched these items, and did not put down on the summary
all of the wording. But it takes in everything that would
come in that class, which we considered as the worst condition
of the grade, and would be 40 per cent condition or 60 per
cent depreciated.

We rarely change any key because it is worn out. There
are parts that wear; just like other parts of our equipment,
but our maintenance standard is such that we are continually
checking and watching to replace those parts when they wear
to such a point that they would affect service. That is a continuous
maintenance process, and when they become necessary,
the replacement parts are new parts. When there is occasion
to replace parts of these keys, they are replaced with
311 new parts, and to that extent the part is being restored
to new condition. The cost of replacing parts in such
case is a maintenance charge, and is a current charge to expense.
The keys, as shown in the next entry, were found
over all to be in 89.91 per cent condition. They comprise
1.3 per cent of the total value of the equipment, and constitute
a composite of 1.17 per cent.

The next component part, cords, of which 19,000 were inspected,
are classified here under code designations A, B,
C, D, E and F. That is one of the cases where precise
measurements could be and were made and reported by the
inspectors. In this instance, Column F, the lowest grade of
cords, indicates that those found in that column are
312 given zero condition; that is to say, of the 19,000 cords
inspected, 766 cords were found totally depreciated. They

were ready to be removed and replaced by new ones on the regular maintenance basis. The process by which I evaluated the number reported under each code designation by assigning these various per cents to each class, as shown on the exhibit, was practically the same process that I have described for the keys and the frames.

The next class, plugs, is similar. There I had the measurements which the inspector made and reported, and the six code designations, with a final zero per cent as to that class.

The same thing is true of jacks, with the exception
313 of the base. It did not go to zero because here the range is not all of the ~~way from~~ zero to 100, but is from 50
314 to 100. The part of the jack that we gauged or measured for wear represents a little less than one-half of the value of the jack. We assumed that the part that wears out is only 50 per cent, and that 50 per cent does not wear out and was just as good as new. Therefore, the base could not be lower than 50 per cent, although the wearing portion we measured did go to zero. This wearing portion represents less than one-half, but we finally computed it at one-half, giving it a base of 50 per cent. I used the 50 per cent in calculating it because that was correct, or approximately so. Actually, the value was a little less than one-half.

315 For relays, this summary sheet shows that more than 205,000 relays were inspected, of which more than 200,000 were reported by the inspectors "Good as New", and given 98 per cent condition. In the final column, nearly 1,700 relays were reported as having "Other Defects", which were given a rating of 99.4 per cent. Those were certain minor defects we picked out that did not seem to fit in one of the other grades. I knew from the inspectors' reports what those defects were. They were all entered on these reports, and
316 from that we determined what relation they had to the total of the depreciated value, and assigned a value to them. The reason we have an odd fraction there is because they range from 99 and a fraction down to another fraction, and we just totaled them and averaged them all up here.

That is, we had three or four of those separate on the sheets, so we took a composite of those, and that gave us that odd average of 99.4.

The next component part, the seventh, message registers, is further broken down into the sub-parts: condensers, repeating coils, and resistances. These are not parts of the message registers, but in our study we picked out those four things because they are so similar, as far as wear or depreciation is concerned—depreciation—and put them together. 317 Then you see in the fourth column from the right the ratio of each one of those to the total of that group. The ratio of that whole group to the total is 9 per cent. We broke that whole group down; you might say they were subcomponent parts. For those component parts, I have four classifications: first, "good condition"; next, "marking illegible"; third, "missing or broken"; and then fourth, "other defects".

The lowest percentage assigned to any of those message registers, or things that are indicated here as associated with message registers, is 97 per cent. The explanation is that this entire equipment has practically no wear to it, as far as I can determine, and so according to my judgment I just set those three gradings arbitrarily, 99, 98 and 97, the first one representing 1 per cent depreciation, which I think from what I know about all that equipment, would take care of any possible general thing that was wrong with it; the second would not take more than 2 per cent, and the third, 318 not more than 3 per cent. Those other defects were specific things; they were very minor—but again we entered them on these forms, and took off one or two points as shown there, to represent that depreciation or difference between them and "Good as New". It is my opinion that, as those percentages of course suggest, this type of equipment is scarcely subject to depreciation at all. The percentages that I have used represent my best judgment as to the amount of depreciation existing in those items inspected. These units shown here in the column "Good Condition" were reported by the inspectors on the forms in a column "Good as New". Of the 216,000 message registers inspected, 206,000 were reported in that column "Good as New".

The next component element is cables, No. 8, on this sheet.

319 In the cables, we have three general classes. First there is the local position cables. Those are what we call hand-made forms; that is, they are made up by hand; loose wires are laced together to carry all of the circuits to the various equipment in the position; that is, the operator's position, the keys, the cords, the plugs, the lamps, and the operator's circuit. We examined a certain percentage of all of those position cables, and the first class was rated "Good as New", and I only took off 1 per cent depreciation for that, making it 99 per cent, because one can see the condition of those cables, and that seemed sufficient.

As bearing upon the high per cent condition in which I found the cable, the wire of each conductor of the switchboard cable, of course, is copper, and each wire is insulated, usually with silk and cotton. There is usually a little tinfoil, to 320 protect the wires from leakage from moisture, although of course we do not have moisture, or anything that is wet around those cables. Then there is a braiding over that, to take care of any abrasive conditions, of which we have very little, of course, except when the cable is first drawn over the racks. There is no braiding around the position cables, it is all silk and cotton-covered twisted wire, laced and shellaced—the shellac is the protection. We determined the condition of those particular cables by the shape they were in, especially the wiring. Taking the first grade, that is the grade where everything is all right, we could not consider really any depreciation there. The copper does not wear out, and the insulation, as long as it is not damaged, does not wear out. The only thing left was in the next column, where, when the wiring spreads out over the apparatus —that is when it is susceptible to damage, and then we took off the graded depreciation. For the cable proper, I could see but very little that we should take off.

321 I think in probably every case, in most cases, at least, I consulted with Mr. Redmund before these ratings, or values that I assigned to these different grades, were made—that is they were not made until we had gathered the facts on these forms. Of course, I also knew about the facts, because I was close to them; so, before we placed or set up these ratings of the values, or the grades, Mr. Redmund and I discussed I think practically every one of them.

As regards the 493 local position cables inspected, this summary sheet shows 228 in the column "Good Condition", and 136 marked "Poor Condition", and a valuation of 80 per cent was given to those, the explanation being as follows:

You will notice that the worst condition was 70 per cent. If that cable was not fastened properly, and came loose, and was out of place, we considered that it would cost probably 30 per cent to put it in shape; that was not a depreciation of the wire, or the position of the cable, but

322 the arrangement of the cable in the position. The worst condition was 70 per cent. We had a condition between that and this other condition, of 90 per cent, that is, "Wiring Frayed"; we put in a half-way condition there, which is 80 per cent, or 20 per cent depreciation. This again is somewhat similar to the other method of carrying the depreciation down to a base. That is not an exact average but is based more upon my judgment of the conditions as we found them, and as we know they are liable to arise. It costs quite a little relatively to straighten up some of those cables.

The same principles and methods were applied to the reports on the remaining component elements. In view of the nature of the reports on the remaining component elements, I think that what I have already said may be taken as explanatory of these remaining component parts, with the possible exception of that first column, "Number Inspected"; in most cases, that refers to certain actual physical items. When we got down to No. 12 component part, storage batteries, we

reduced that to a different common denominator; that is,
323 we put all of those battery plates and tanks on a common
denominator; the commercial rating which is ampere-hour capacity. This was done for the reason that storage battery plates vary in size in different batteries; therefore, I could not show merely the number of battery plates, and get a real composite on them, so I reduced that to the commercial rating, and that allowed us to weight them. Otherwise, I think I have covered all of the variations, the principles being just the same as I have described.

The footing of the final column headed "Composite" shows a total of 93.18 per cent. Then there is an adjustment, and a final footing "Per cent Condition for Manual Central Offices" of 91.41 per cent.

324 That adjustment by which I deduct 1.77 per cent represents the call circuit key equipment we found in the various offices which was not in service, due to change in practices, but was still on the books; so we had to arrive at some method to get that out of our per cent condition. Those are the call circuit keys that Mr. Redmund referred to in his testimony as one of the items of obsolete property found in the plant. He stated, as I recall it, that those were given a zero per cent condition. In arriving at zero per cent condition for those, we took the ratio of that equipment to the total, which is 1.9, in the second column from the right, multiplying that by the original per cent condition for central offices, as shown there, 93.18, which gives us a resultant of 1.77, which, subtracted from 93.18, gives the final per cent condition for manual central offices, 91.41.

325 On sheet 2 of this same exhibit, per cent condition of dial offices, I show the 15 component parts which make up dial offices, with the result of the inspection separately for each part. This sheet for the dial offices corresponds to the three columns having the same headings that are shown on the first sheet I have been explaining; they are the average percentage, the ratio of the total and the composite. I have shown here for dial offices what is shown for manual offices,

but have omitted all of the detailed summary of the inspectors' reports, and the various weightings. A sheet similar to that for the manual offices could be prepared for the dial offices from the data in my records that are here in Court. That simply has been dispensed with thus far because the methods and principles in the case of dial offices are precisely the same as in the case of manual offices. In
326 fact, most of the 15 component parts are manual parts. There are only 5 of these 15 that are peculiar to the dial and all the other 10 parts are just exactly the same as manual. Sheet 2 shows in the last column that the per cent condition for total panel offices is 97 per cent. For dial offices of the step by step type, I show 96.64 per cent, and for the composite total for the dial offices, 97 per cent.

The next sheet, 3, is like sheet 2, and covers all so-called Long Lines central offices; the equipment at Morrell Park and the equipment at the Franklin Building is on page 3 and that at the Bell Building is on sheet 4, with a summary of those three Long Lines offices at the bottom of sheet 4.
327 For the boards and equipment of those three offices, an overall composite per cent condition of 96.45 per cent is shown.

The next sheet, 5, brings together the three sub-classes, manual, dial, and Long Lines offices, and weights those three to get an overall per cent condition for central office telephone equipment. The total account, as shown on sheet 5, is found to be in 93.86 per cent condition. On the original summary sheet which was identified by Mr. Redmund, Plaintiff's Exhibit A-22, the per cent condition for this Account 221, is entered for the year 1930 as 93. That figure actually found of 93.86 per cent was rounded out by dropping the decimal. We dropped the fraction in every case when we finally carried it through to the final account.

The next sheet, 6, of Plaintiff's Exhibit A-32, shows the results of the inspection of central offices for the class of property included in Account 222, and known as other
328 central office equipment. The three columns, "Per Cent Condition", "Ratio of Total", and "Composite", are

explained in exactly the same way that I have explained for manual central office equipment. They are mere computations as to putting them together; just the same method as the other.

The inspection of all the "Other Central Office Equipment" was made by myself in the offices. I arrived at the per cent condition for each office in this particular case, because this type of equipment is so variable that it does not lend itself to the counting of elements or items, like we did in central office telephone equipment. Therefore, in filling out the form "Good as New", "Fair", and "Poor", and other details, I would put in the percentage of each "Good as New", or "Fair", or "Poor", and then finally carry out the same method of multiplying, dividing by the total, and getting 329 the composite per cent for each item; then following the same method I have described for getting the overall per cent for the offices. I could readily do that because I handled that entire thing myself, and saw every article. Some of the items that enter into this account are: the operators' chairs, all of the furniture and fixtures in the rest rooms, the clocks, the fire extinguishers, certain test boxes, the operators' training school equipment (which we measured just the same as we did the manual, and then put it in the composite), electric fans, platforms (which was one of the big items), and platforms where the operators' chairs rest in front of the switchboard. As I have said, I personally made the inspection of this class of plant. I inspected every item, 100 per cent of this equipment.

The next sheet, which is page 7 of the exhibit, gives 330 the same data for dial offices and Long Lines offices, and then gives the composite summary at the bottom. Those at the top are the four dial offices. Then there are five different locations, where the Long Lines forces are. A composite per cent for all of the property in this Account 222, of 94.27, is shown in the final column, and that is carried into the overall summary, Plaintiff's Exhibit A-22, as 94 per cent.

331 Turning to the next sheet, page 8, Account 231, subscribers' telephone equipment: the heading shows that

1174 subscribers' stations were inspected. I think I have previously described how the ones to be inspected were selected by taking each office area and arbitrarily dividing it on a map into ten sections. Then, in the center of each of these sections, we picked out from our records a number of different classes of service in relation to the total of classes in that division. The inspector reported separately upon the condition of each of the component parts of the subscribers' telephone equipment, as shown on this summary sheet, and the figures show the number of each component part inspected, the summarization of the inspectors' reports with the depreciation values assigned to each, and generally the data cor-
332 responding to those shown on the previous exhibits. The method of arriving at it is just about the same; that is based on averages for each grade, taking a base and 100 per cent for the top.

The data for teletypewriter equipment are set forth at the bottom of page 8 of Exhibit A-32. Those averages for the different kinds of typewriters are arbitrary percentages based on my judgment of the condition of those different types. To the first type, Number 10, we gave a zero condition because that particular type was obsolete. It had been taken out of service and it had not been retired at that time. There
333 were thirty-two of those. They are the typewriters Mr. Redmund referred to in his testimony as a class of obsolete equipment. The composite per cent condition of the teletypewriter equipment was found to be 56.81 per cent. The figure 91.62 covers the subscribers' telephone equipment, composited with the teletypewriters.

Page 9 covers the inspection of subscribers' station apparatus as it was passing through the Western Electric warehouse on the in-and-out movement, to which I have already referred. Those are stations in connection with the movement of subscribers, not taken out because they are in trouble or worn or anything, but just in the regular course of business. No piece of equipment taken out in connection with our ordinary subscribers' movement is replaced until
334 it goes back through our warehouse and is worked over to make sure when it goes back again it is just as good as

new. This inspection is the result of looking at that equipment before it has been worked over; it is just as received at the warehouse the day it came in. For the most part, these stations are taken out and go into the Western Electric warehouse because the subscriber has discontinued his service or has moved from one location to another, or changed to a class of service that might require a different type of instrument. The per cent condition covering this part of the inspection separately is 92.77 per cent, and that compares with the 92.61 per cent which was found as the condition for all of the subscribers' instruments inspected at the subscribers' premises. The note on page 9, at the bottom of the page, shows that this inspection at the warehouse was made for the purpose of checking the results of the inspection at the subscribers'
335 stations or subscribers' premises. It shows that it was very representative.

The next sheet, page 10, shows that station installations were inspected at 1919 locations. It shows the summarization of the inspectors' reports under several categories, and the per cent condition of 90.28 per cent. The inspectors' reports and the detailed summarizations are not shown here but are contained in the original papers which are present here in Court.

The next sheet, page 11, is an exactly similar sheet for Account 233, interior block wires. We have very little of that type of distribution in Chicago and, therefore, we did not need to inspect very much, but we think that it is a representative volume. What I have said with reference to the preceding sheet holds true for this inspection as well. All of the data are present here in the records in Court.

Sheet 12 shows the summarization of the inspection reports, and the final computations, as in preceding cases for
336 P. B. X. switchboards which were inspected on the subscribers' premises. These P. B. X. switchboards are broken down into component parts generally similar to the component parts of the larger central office switchboards. The multiple is very similar; the non-muntiple has the same elements in it and the cordless has fewer, but the same type of

elements as in our central office manual. We arrived at the ratings in the same manner. The large type of boards on subscribers' premises are the ones shown here, 17 manual multiple P. B. Xs. Those are practically the same as miniature central offices. Those are the boards at which the subscriber may have several telephone operators. "Multiple" means more than one operator. The non-multiple has one or two, but multiple has always more than two.

What I have said previously with reference to central office switchboards, and the type of inspection, and how I trans-
337 lated the inspectors' reports of general condition in the three categories into per cents condition, applies equally to this class of property, and if I were to cover this now I would be saying over substantially what I have previously said. The per cent condition for the cordless group is 94.87. The per cent condition for the non-multiple P. B. X. is 94.12. The figure at the bottom of the page is for the multiple manual P. B. X. only; the composite is on sheet 14. The
338 next sheet of this group of three, being page 13 of the exhibit, is another sub-class: the dial P. B. X. boards. The words "5 Dial P. B. X. Switchboards" on the left hand margin, at the center of the page, embrace all that appears on this sheet. That "5" represents five installations of that type that were inspected. The total in the last column, both vertically and horizontally, 97.81 per cent, is for that particular class. The next sheet, page 14 of the exhibit, brings all four of these classes together, consolidates them and shows the final overall per cent condition of 94.76 per cent for this class of property. In all instances the fraction has been dropped on Exhibit A-22.

339 Sheet 16 is similar to those that have gone before, showing the similar data for Account 235, booths and special fittings. That is ranged in four grades, the fourth grade being zero condition, that is, zero per cent; that is a computation, really; the base there is on the poor condition, just the same as we treated the others, but in our study, arriving at the cost, we found that a certain percentage of these booths when returned in connection with the regular movement were

not economically reparable, that is, the repairs were excessive. Therefore, they were junked and we have allowed for that by considering that number would have been in zero condition. That does not mean they were not subscribers' stations working, it does not mean they were obsolete. It merely means if they had come back in the regular course, that number would have been rated at zero. So, we have carried that out in this calculation. That is a little different from the others. There were 43 of these.

340 The next sheet, which is page 17, covers exchange aerial wire, Account 243, and shows a per cent condition of 84.39 per cent, arrived at by a method similar to the others.

The last page of this exhibit shows similar data for the class of property designated Account 274, entitled, "Miscellaneous Account", and, so far as I can see (except for the property rights to which I have assigned Mr. Riley's percentage for conduit, as it constitutes the right to use con-
341 duit in the Union Depot), is self-explanatory. I personally made the inspection for this class of property.

The results that I have testified to and that are shown by the exhibits are those obtained as of the year 1930, because in getting our ratio comparison we used Mr. Sloan's reproduction costs as of December 30, 1930.

I have testified concerning my long period of service in the telephone business, and have shown that it has been related to the class of property covered by my inspection, in the various capacities in which I have had to deal with it. I have also testified that I have been, in the regular course of my duties, familiar with the property that I inspected as of 1930 and its maintenance and operation. Taking all that knowledge of the property from my day to day familiarity with it throughout these years, together with my knowledge of its construction, methods of maintenance, and the condition in which it is maintained, together with this inspection and the results
342 of it, as shown, into consideration, I have been able to form a reliable judgment as to the condition in which these same classes of property were during the years intervening between the inspection made in 1923 by others, which

was testified to in this record upon the other trial, and the inspection made by me as of 1930. I think my close connection with those particular classes of property during all that period put me in a position to determine in a reasonable way what the percentage condition was at those different periods. I think the per cent condition for each of the classes of property inspected by me, as shown for each of the years on Exhibit A-22, is very representative as to the condition of the property throughout the period and for each of those years.

I have specifically referred to two cases of obsolete property which I found in the plant covered by my inspection. There were only three such cases, the third being in the subclass "Long Lines", and was taken care of in the summary
pertaining to that class. I have not specifically referred
343 to it in the discussion but it shows in my exhibits. It
was the carrier telephone equipment at Morrell Park,
which was referred to by Mr. Redmund in his testimony.

I did not find any inadequate property in all that inspected by me.

I think the per cent condition for the year 1931 is just about the same as that found for 1930. I do not think there have been any changes of any size that would cause me to think there should be a different per cent condition for that year.

I heard Mr. Redmund's testimony referring to central
344 office equipment, which is shown on Exhibit A-22 to be
in 93 per cent condition in 1930 and in 1929, and uniformly 92 per cent condition for each of the preceding years back to and including 1923; I also heard Mr. Redmund's testimony referring to private branch exchanges, which were covered by my inspection and as to which there is a variation of condition, somewhat gradual, as shown by Exhibit A-22, from 94 per cent condition in 1930 back to 88 per cent condition in 1923; I also heard Mr. Redmund's testimony referring to booths and special fittings, Account 235, as to which a generally similar situation is shown by Exhibit A-22, the condition in 1930 being 85 per cent and gradually lower for the preceding years, reaching a low point of 78 per cent in 1923.

I subscribe to all of Mr. Redmund's testimony with reference to these three classes of property, and to his explanation of that situation. In fact, Mr. Redmund and I discussed this matter together and arrived at certain conclusions.

There was thereupon offered in evidence Plaintiff's Exhibit A-22 and each of the later exhibits down to and including
A-32, and each of them separately. Defendants reserved
345 their right to object to these exhibits until the cross-
examination.

346 B. T. YOUNG, called as a witness on behalf of the plain-
tiff, having been first duly sworn, was examined and
testified as follows:

Direct Examination by Mr. Bracelen.

My name is B. T. Young and I live in Evanston, Illinois. I am an employee of the Illinois Bell Telephone Company and have been since November, 1912. This period covers my entire experience in the telephone business.

I was first employed as a draftsman, and several months later was transferred to the Building Department as a draftsman and junior engineer. That work was continued, with some added responsibilities, to the present time. During that
period, I have actually worked on the drawings and
347 specifications, and assisted in the erection of 18 of the 41
buildings. During the same period, I have done the same
work also on alterations and additions to the balance of the buildings. Throughout, my employment has had to do with buildings, and my work over this period of years has made me familiar with the buildings covered by the inspection about which I am to testify.

I had charge of the inspection of the buildings under the general supervision and direction of Mr. Redmund. I made the inspection myself, and have prepared a report of it, which has been marked for identification as Plaintiff's Exhibit A-33.

The exhibit has the legend on the cover "Report on condition as of 31st December, 1930, of all buildings owned by the Illinois Bell Telephone Company in Chicago, Illinois." The

first sheet of this exhibit is the summary sheet, showing in the first column each of the buildings by the designation by which
it is known. The second column shows the per cent which
348 each of the buildings is of the entire group of buildings;
the third column, "Estimated per cent decrease in condition" for each of the buildings. The fourth column shows "Per cent to be deducted from condition of entire group." The figures shown in the last three columns are correct. The figures in the column showing the per cent which a given building is of the entire group of buildings were based on Mr. Renwick's appraisal, which has been testified to, and it is in evidence here. The percentage figures in the next column state the amount of depreciation found for each building. The figure in the first column, multiplied by that in the second
column, gives the result shown in the third. The final
349 figure in the last column, which is 6.350, if deducted from
100 per cent, gives the per cent condition of the entire group of buildings, which is 93.650, as shown at the bottom of this sheet.

The second sheet shows the results of my inspection of the
Austin Building, which is shown first on the summary
350 sheet. There is a similar sheet for each of the buildings.

Taking now the sheet for the Austin Building, the legend at the top gives its location in the City, indicates its type of construction, which, in this case, is reinforced concrete on spread footings, and gives the reconstruction cost as a percentage of the reconstruction cost of the entire group. The entries in the column headed "Item" indicate the component parts into which the building was broken down for inspection.

The second column shows the per cent which each component element is of the entire building. These we arrived at by using component parts, following very closely the work done by the various contractors. It was, therefore, possible to determine very accurately, for instance, the average cost of the electric wiring in our buildings, and so on down through the various items, such as glazing, heating and ventilating, lathing and plastering. Those varied somewhat in the various buildings. For instance, for a building containing elevators, the various other percentages would have to be reduced proportionately in order to build up to the 100 per cent, so those values are not constant throughout, but are very nearly so.

351 The next column, headed "Estimated per cent decrease," shows the amount of depreciation found, stated as a percentage, for each of the component elements of the building. The last column at the right margin of the sheet is the computation which I have already explained. That is, the per cent decrease in the total building, which, footed up at the bottom and subtracted from 100, gives the per cent condition of the building.

In explaining about my inspection of the buildings, I will use the Austin Building as an example.

I inspected every part of it; that is, the roof, penthouse, all of the exterior, and every room of the interior. In the case of electric wiring, for instance, all of the switches were operated to see if they performed their function. Fuse cabinets and any part of the wiring which it was possible to get at were inspected and any defects or wear was noted. In the case of exterior ornamentation, I noted any cracks or severe weathering of the stone, terra cotta, marble, or whatever
352 the ornamentation consisted of. All of the windows were inspected for broken glass, and for the condition of the putty or strips holding the glass in place. All of the finished hardware was inspected; that is, the door locks, butts, and so on, and movable parts. The heating and ventilating system was gone over; the boiler first was inspected for cracked covering or broken grates, or broken gauge glasses, and so on. Then the entire system was gone over as to the radiators, valves, etc. All of the pipe covering was inspected and the pipe, where exposed, was gone over. The lighting fixtures were easily inspected for breakage, deterioration of finish, or dented or damaged pieces. The lathing and plastering was, of course, visible in all places for cracks and loose plaster. The interior marble, slate, and so on, in the vestibules and toilet rooms was inspected for cracks and chips. The metal

doors and frames were all operated to see whether they were bound in place or operated easily, or if there were any dents or broken parts that detracted from their condition. The windows were inspected in the same way, and the sash, where practicable, were opened and closed to see whether they operated properly, and that all the sash chains were in position.

The millwork and carpentry was all inspected to see
353 whether there was any of it damaged, broken, or badly
scarred. The ornamental metal and miscellaneous iron was inspected for broken, bent or entirely missing pieces. The painting and decorating was looked over to note the need for redecorating, or for any particular damage to the outside painting.

The plumbing, drainage, and gas fitting was gone over in somewhat the same manner as the heating system. All of the movable parts, that is, flush valves, faucets, and so on, were inspected for worn or broken parts, each outlet being operated to see whether reasonable pressure was delivered to the various fixtures.

The roof in each case was inspected to see if repairs or recoating was necessary. The structures, depending on the type of construction, particularly the outside walls, were noted for signs of settlement, also the underside of the floor construction; the columns and the structural members were inspected where they were exposed. That included the masonry. The outside walls were looked over to note the necessity for possible repointing of mortar joints.

The tile partitions inside were inspected for possible shrinkage, and the fire-proofing on the columns and structural members was inspected for cracks and broken pieces.

The items noted were simply the specific things that
354 could be put down to serve as a guide for my estimate of
the condition of that component part. They were considered separately, and a per cent decrease in condition assigned to each of them. They were then totaled, giving a total deduction for the building. In each case, after several buildings had been inspected, and I had arrived at my conclu-

sions, I reviewed them with Mr. Redmund. In each case, he concurred in the final finding that I had made.

When I referred a moment ago to those things that are set down, I referred to the specific notations made on the sheet in the column headed "Reason for Deduction". These were used as a guide, along with the overall results of the building as a whole, in arriving at the per cent condition.

The valuation of these factors of depreciation for each 355 component part was purely a matter of personal judgment. There is no scale by which we could be guided. As I have stated under "Reason for Deduction", I noted the particular faults I found. At the same time, I had gained an impression of the condition of, for instance, the exterior ornamentation as a whole. The impression that was made on me it would make on any other engineer or architect that might examine it. That is my best judgment as to the amount that might reasonably be taken from the 100 per cent condition to describe the condition I found. The abbreviations which I have entered under the heading "Reason for Deduction" are explained in the sheet pasted on the cover of this exhibit.

Exhibit A-33 was here offered in evidence by plaintiff. Defendants reserved objections until after cross-examination.

356 The condition of the buildings as shown by the exhibit is that found as a result of my inspection, and has reference to the end of the year 1930. As a result of my day to day familiarity with these buildings, gained in connection with the discharge of my duties and my employment throughout the years 1923 to date, and my knowledge of the Company's standards of maintenance of its buildings and the extent to which the standards were adhered to or departed from throughout the years, and my knowledge gained from this inspection, I believe that approximately this same condition might reasonably be assumed to have obtained over the preceding period from 1923 to date, and the period immediately after the inspection. I have been in all of these buildings numerous times during the various years, and have always found them to be, without an inspection, in approximately

the same condition that I found them at this time. They are maintained, as every other class of the Company's
357 property is maintained, by repairs and replacement of parts as they wear out. For instance, if the boiler becomes used to a point where it needs renewal of parts, that is attended to as a matter of maintenance. The condition of the buildings to date and during the time since the inspection was made is, in my judgment, substantially the same as shown here for the end of 1930.

MAYNARD H. RILEY, called as a witness on behalf of the plaintiff, having been first duly sworn, was examined and testified as follows:

358 *Direct Examination by Mr. Bracelen.*

My name is Maynard H. Riley and I live in Winnetka, Illinois. I am in the employ of the Illinois Bell Telephone Company and have been since 1912. I started to work for the Central Union Telephone Company at Indianapolis in 1905, in the Engineering Department, and was with that Company from 1905 to 1912. I have been continuously engaged in the telephone business since 1905. The Central Union Telephone Company was a Bell Telephone Company. I am now Superintendent of Construction and Plant Engineering.

359 After employment with the Central Union Company in 1905, I was appointed division engineer for the Illinois Division of the Central Union Company in 1911, with headquarters at Springfield, Illinois. In 1912 I came to Chicago as facilities engineer for the Illinois Division of the Central Union Company, and the Suburban Division of the Chicago Company. In 1914 I had the same position for the Suburban Division of the Chicago Company and the Chicago area. In 1920 I was made Plant Engineer for the Chicago area, and held that position until 1925, when I was appointed to my present position. From 1920 to 1925, during which time I was Plant Engineer for the Chicago area, I had

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charge of the engineering of the outside plant for Chi-
360 cago. From 1925 down to date, I have had the same
duties, with the added responsibility for outside plant
construction and maintenance. My jurisdiction has been con-
fined to the Chicago area, that is to say, the City of Chicago,
from 1914 down to date.

Under Mr. Redmund's general supervision and direction, I
had charge of the inspection of all of the outside plant ac-
counts in Chicago with the exception of exchange wire, which
Mr. Hyatt handled. That included the pole lines, aerial cable,
underground conduit, underground cable, submarine cable,
and the toll accounts for the same classes of property. I had
altogether about 30 inspectors to make this inspection under
my direction. Ten of these were district plant engineers that
I had inspect pole lines. Another ten were construction fore-
men, of experience and ability in the classes of plant which
they were to inspect, which was underground conduit,
361 that is, the manholes, the underground cable, and the
building cable. Then I had ten other inspectors, consist-
ing of linemen, who were perfectly familiar with that class of
work, to inspect the aerial cable and terminals.

After deciding upon the amount of inspection of each
different class of plant, jointly with Mr. Redmund, I deter-
mined upon the methods of selection of different classes
of plant, in order to insure a uniform spread of inspection,
and a typical cross-section of each class of plant throughout
the City. Generally, that was done by blocking out the City in
areas varying in size from about a mile by three-quarter mile
square for pole lines to quarters of office areas for aerial
cable. The purpose of that was to divide the total quantity
of plant in each class proportionately. By blocking it off this
way, and taking a uniform amount in the center of each block
area, we were able to obtain a very uniform spread, and what
I believe to be a very typical cross-section of the different
items of plant. The units of the plant to be inspected for
362 the building cable inspection were selected somewhat on
that basis, by taking every tenth city block. Each city
block in an office area is numbered, and by taking every tenth

block and getting the records of the building cable in that block, we obtained a sufficient amount of building cable to meet our requirements for the inspection uniformly through each office area.

Page 1 of Exhibit A-34, which is marked on the cover, "Account 241, Exchange Pole Lines", is a copy of the form which was put in the hands of the inspector, and upon which he made the report of his inspection.

I have here in Court, laid out on the counsel table,
363 some 84 volumes or folders. These are the original records, including original reports, turned in by the inspectors, and the various summarizations and computations involved in each inspection.

The inspectors of pole lines stated their conclusions in terms of per cent condition for each pole, cross-arm, anchor and guy which they inspected, on the ground. That is the only instance in which that was done, in this inspection. The account with which we are dealing groups the pole itself, cross-arm, anchors, and the guys together as one class.

Page 2 of this exhibit is a summary of total poles,
364 cross-arms, anchors and guys inspected, summarized by district areas. That is, the original inspection sheets were summarized by districts, and transferred to this sheet, totaled up to a final summary on the bottom of page 2, for Chicago as a whole. The first column, headed "Joint", indicates the inspection of poles held in joint ownership between the Illinois Bell and some other company. The second column, headed "I. B. T.", shows poles owned 100 per cent by the Illinois Bell Telephone Company. The initial letters in the left-hand margin are district area designations, "ER", for instance, meaning the Edgewater-Rogers Park area. The word "Penetration" at the head of the third column is the designation of a method of inspection whereby we determined the amount of rot at the base of the pole, and used that, together with what could be observed visually about the condition of the pole, in the calculations for the condition of the pole.

365 There were so many of our poles set in pavement, and

such a very large percentage of them were butt treated (all the poles set in the past ten years have been butt treated, in which case we find no rot), that we were only able to get at the base of the pole to determine the amount of decay in a little less than 12 per cent, I think it was, of the total poles inspected. The rest of them were inspected visually, and by sounding the pole, and looking at the damage, and other things that might have occurred to it. The paving preserves the base of the pole, and prevents rot. Ordinarily we could not make the inspection by the penetration method where the pole was set in pavement without great expense, which seemed unreasonable in a case like this. During the past ten
366 years, during which period all poles have been butt treated, poles equaling 56 per cent of the total number have been set.

367 Page 2 of Exhibit A-34 is a sheet summarizing the reports of the inspectors for the poles, arms, anchors and guys, and is continued on the next page with the footings for the entire City of Chicago at the bottom. This sum-
368 mary consists simply of an arithmetical addition of the inspection sheets. Page 4 shows how the results of the inspection were translated into the final condition per cent for this class of property. The first main heading at the top of this sheet shows the total number of poles in the plant as divided between those wholly owned by the Illinois Bell Telephone Company and those partly owned, which are designated as joint poles, and similarly shows the total number of arms, anchors and guys in the plant.

The next main heading shows the total number of these items inspected, so that the relation of those inspected to the total number in the plant can be derived arithmetically from these facts. In the fourth column, under the heading "Sum of condition per cents after conversion of joint
369 poles to whole units", is shown simply a conversion of the sum of the conditions of joint poles inspected to the equivalent of whole poles by dividing by two. All but about 100 of these joint poles are owned on a 50 per cent basis, so we divided them by two and added it to the sum of the condition

of the wholly owned poles. Similarly, the number of joint poles inspected was converted to a whole pole unit basis by dividing by two and adding the result to the total wholly owned poles inspected. This was done to give a 50 per cent weighting to the joint poles because the Illinois Bell Telephone Company had only a 50 per cent ownership in those poles. The average per cent condition from inspection is a straight arithmetical average.

The figures in the third from the last column, "Book Value as of September 30, 1930," were taken from the books,
370 but required a computation to divide the poles, anchors
and guys; those two items are contained in the same amount, as I recall it, and we had to make a computation to divide those two. This computation was made by one of my plant engineers for me but under my direction.

The final overall per cent condition of 78.46, shown in the last column, was derived by multiplying the average per cent condition for each item by the per cent of total account, shown in the next to the last column, thus obtaining the average of the three. The fraction was dropped and 78 per cent used and carried forward for this class of plant into Exhibit A-22.

Exhibit A-35 covers Account 242, Exchange Aerial
371 Cable. The first sheet is the form that was placed in the
hands of the inspector, to be filled out by him upon making the inspection of each unit. Terminals, the unit designated in the first column of this sheet, are the boxes located at the points where pairs in the cable are brought out for distribution; they are provided so the wire can be gotten at. These boxes are attached to poles. There is not quite one terminal to every pole, but almost every pole has a terminal. The large majority of poles have them. A span is the length of cable between two poles, and averages about 100 feet of cable.

The next section of this sheet, that is, columns numbered 3 to 7, indicates the specific defects which the inspector
372 was to make a record of. The defects designated there
are all of the defects we are accustomed to encountering in maintenance work. We designated all of the things that

we thought would affect the condition of the cable, and these are all of the things that we normally encounter in connection with our maintenance work.

The sheet would indicate that column 8, rings slipped, broken or rusted, is related to the cable. As a matter of fact, it is related to the strand, and was so treated by me. Of course, that mistake in the report sheet made no difference whatever to the inspectors. It was a mistake in the printing and rather than have it printed over again, we explained it to the inspectors, and they reported it correctly. The strand is the wire which supports the cable. The rings are
373 attached to the strand and the cable is placed through them. I have listed on this sheet all of the defects that I would expect to find in the inspection of terminals.

Pages 2 and 3 of the exhibit (A-35) are the arithmetical totals of the corresponding column footings of the inspectors' reports, with the exception of column 19. In that column the inspectors' reports show "Size of Terminal," but on the summary sheets that was converted to "Number of Binding Posts". We were able to determine the total number of binding posts shown in column 19 on page 2 from the inspectors' reports showing the size of terminals, because the size of the terminal determines the number of binding posts. There are two binding posts to each cable pair, so that it is very easy to obtain the total number of binding posts from the size of the terminal.

Page 4, the final sheet of this exhibit (A-35), shows for
374 cable a 2 per cent depreciation on account of the defects to the sheath reported by the inspectors. After considering the quantity and quality of the defects reported in relation to the total amount of cable reported, and also considering the cost of repairing those defects, we arrived at the final conclusion that 2 per cent would be an ample allowance to take care of the depreciation of the entire sheath. We estimated that the total defects, with the exception of the extra sleeves, shown on the summary sheet, that is, the sheath injuries, temporary taped openings, cable bows, and broken ties, could be repaired at an average cost of $5 each.

There are 377 of those defects in 6 per cent of the cable, averaging approximately 6,300 for the entire cable, which at $5 each would cost about $30,000 to repair. That would amount to about 1 per cent of the entire cable cost. Then, for
whatever effect the extra sleeves might have on condition,
375 and for any other wear which might not have been readily
observable on inspection, we allowed another 1 per cent. You see, these inspectors climbed only the terminal poles to inspect the cable closely at the poles. The rest of it they inspected from the ground, by walking along under the cable. Extra sleeves are called "Extra Splices" in the summary sheet in Column 6. The effect of those extra sleeves or extra splices was taken into the 2 per cent depreciation.

Now, in the next column of this summary sheet (page 4, Exhibit A-35), under the headings of Per Cent Depreciation and Other Allowances, there is a figure of 2.77 per cent for defective pairs. That is the percentage of cable pairs defective and not in use related to the total cable pairs in the aerial cable, as determined from a study of our office records. The
cable was treated as being 100 per cent impaired to the
376 extent of the defective pairs, in relation to the total num-
ber in the cable. Defective pairs mean wire conductors not functioning at the time. The sizes of aerial cable average all the way from 25 pairs to 100 or 150 pairs for normal distribution. We have a few larger sizes. The sheath is the lead sheath, as in the case of other cables.

The total per cent depreciation for cables, shown in the next column, of 4.77, is the sum of the 2 per cent for sheath defects, and the 2.77 for defective pairs. In the next column, headed "Per cent depreciable value allowing for net salvage" and lettered (b), is the figure 82 per cent for cable. We
figured that there was a point beyond which the cable
377 would not depreciate, because of its junk salvage value.
We made an estimate of the net salvage as junk, after allowing for the cost of removal, and found that to be 18 per cent, which we subtracted from 100, leaving 82 per cent as the depreciable value of the cable. Therefore, the per cent condition found from sheath defects and defective pairs

should be applied to the 82 per cent depreciable value. That is worked out in the next column, entitled, "Per cent depreciation allowance", showing for aerial cable a depreciation allowance of 3.91.

The second item on this page (page 4, Exhibit A-35) is strand and rings, and shows in the fifth column a 46 per cent allowance for defects. The summary sheets show under "strand" two items: "slightly worn or rusted" and "badly worn or rusted." If the strand was good, no entry was made, so that the good strand could be determined from the difference between the total amount inspected and the sum of the two columns shown here. As the result of that inspection, we found that out of 6,240 spans inspected, there were 2,809 good spans, 1,418 slightly rusted spans, and 2,013 badly
378 rusted spans. We also found that about half of the rings were reported to be rusted or slipped, and we figured that that was approximately the same percentage as the rusted strand to the total span, so we considered both of those items together, rather than condition them separately. We considered strand in three general classifications: good, medium and poor condition. We assumed that the good strand would fall in the range of the class of 66 per cent to 100 per cent, or one-third, and gave it a condition of the mean between those two points, or 83 per cent. Similarly, the medium strand fell in the range of from 66 per cent down to 33 per cent, or an average of 50 per cent. The badly rusted strand, or that in poorest condition, which fell in the range of from 33 per cent to zero, was given an average of 17 per cent. Those percentages applied to the number of spans of strand found defective for each classification, and divided by the total number of spans inspected, gave an average of 54 per cent condition for the entire strand.

379 The next item is terminals, for which the per cent condition figure is shown in column 8. This also was found by considering carefully the results of the inspection for each different class of defect found, and estimating about what effect such defect would have on the total terminal, and estimating a depreciation allowance for each of

those defects from that. Take, for instance, the 135 cable tails, as they are listed on page 3, that is the number of cables from the terminal boxes to the main cable, which were found kinked, cracked or injured. Most of those injuries were slight, but we allowed a depreciation of 20 per cent for each. That is our best estimate of what the effect of those defects would amount to as an average. Then we worked that out as a depreciation allowance on all the terminals for that particular defect, by taking 20 per cent for each of the 135 defects, divided by the total number of terminals inspected, 4,762.

That gave a depreciation allowance of .57 per cent for
380 that particular defect. The other items in that column were worked out in the same manner. We considered the 99 housings listed as broken as having a more serious effect than those rusted, and allowed a higher depreciation rate, which was 30 per cent. For housings rusted, and for the next item in the summary sheet of 48 cracked, broken or missing covers, we allowed 5 per cent depreciation. This was based largely on the fact that it would cost about 5 per cent of the cost of the terminal to paint or replace the cover, and take care of those defects. For the 122 face plates cracked, we allowed 20 per cent average depreciation. These cracks ran all the way from small slight ones to some rather bad ones. Out of a total of 149,450 binding posts inspected, there was a total of 1,828 binding posts found defective in some way. As most of these binding posts shown on the inspector's report as defective had just a small amount of corrosion, and could be easily cleaned, we allowed 25 per cent depreciation for each binding post, and obtained the depreciation
381 allowance of .31 per cent. These all totaled to 3.19, and then we made a total allowance of 4 per cent depreciation on terminals.

I think we only have 10 load coils and cases (the last item on page 4 of Exhibit A-35) in the exchange aerial cable plant. I do not think we found any of them on inspection, but we gave a depreciation allowance of 2 per cent to cover any rust that there might be in the pots, or any other defect in the cable tails from the pot to the cable. It is rather an arbitrary allowance, but I think it is ample to cover any depreciation that might possibly be found in them. That is the item of $5,000 for the entire plant in the City of Chicago.

The per cents for depreciation for the various defects and impairments found, as shown by this inspection, in this case and in all other cases covered by my testimony, are deemed by me to be reasonable, fair and adequate allowances. I
382 found, as the result of totaling these figures on the summary sheet, page 4, a composite per cent condition for this class of plant of 88.92 per cent, and carried that forward into the final summary at 88 per cent.

383 The first sheet in Exhibit A-36 covering Account 244, Exchange Underground Conduit, is the inspector's report form. The last three horizontal columns of this sheet, under the head of Conduit Sections, were not used in this inspection. We provided these columns for the inspection with the hope that we might be able to obtain some information about the conduit sections on the inspection; but it was found to be almost impossible to get enough to be of any use. This sheet required the inspectors to report all of the defects or impairments in the manholes that would be encountered in our maintenance work.

The next sheet, 2, is a summary of the inspection reports for manholes. The sheet itself indicates a summary of
384 conduit, but that relates to the part of the report form that was not used. As I have just explained, this section, columns 23 to 30, was put in for such information as we might be able to secure on the ground. A part of this information was expected to be obtained from the inspection report of underground cable, covering dead cable stuck in the ducts (this is an item which we will come to later, where also we found we could not do anything with it and it was omitted from this summary). Whatever we could find in the manholes concerning the last three items on the inspection report (sheet 1) is actually summarized on this summary report in columns 21 and 22, I think: Ducts, Breaks. Page 3 is a continuation of the summary, with the final footings

385 on that sheet. These are merely arithmetical additions of the facts reported by the inspectors.

Sheet 4 (of Exhibit A-36) is the inspector's report form for lateral conduit, underground terminals and standpipe, and so forth. The next sheet, 5, is a similar summary of the reports of the inspectors made on that form. Sheet 7, is a final summarization and conversion into per cent condition of the inspection covered by both of these forms for both of these sub-classes of plant that I have referred to. Here again the problem is to evaluate the defect, and then state it in terms of per cent of depreciation, in relation to the man-
386 hole or terminal or conduit wholly unimpaired and as good as new. After breaking the manhole down into the elements or parts which we were to inspect, such as walls, roofs, floors, frames and covers, and cable racks, we figured out from our retirement unit costs the average cost of an average manhole for Chicago. That cost was then broken down into the component parts which were to be inspected, and we found that the percentages are as shown in the column entitled "Ratio of component parts to total subclass". That is, the walls would constitute 34.5 per cent of the entire cost for the manhole, roofs 11.5 per cent, and so on down.

Then, having found the number of defects in each part of the manhole, which, from the inspection forms and notes thereon, were classified as minor and major defects, we assumed that a major defect in any one of these parts would be of sufficient importance that we would allow 100 per cent
387 depreciation for that part. Therefore, as in the case of a wall, for instance, there are four walls for a manhole, and the percentage of walls to the total manhole was 34.5, and we allowed about one-quarter of that or 9 per cent depreciation for a major defect in the wall. That is, if any wall had a severe or major defect, as shown by the inspector's report, that was treated as a 100 per cent depreciation. We allowed 50 per cent of that, or approximately a little less than 50 per cent, for each minor defect in each of these classes. The allowance for minor defects all through here is just a little less than one-half the allowance for each major defect.

That is all related to the percentage of the component parts,
and the basis of 100 per cent allowance for major defects. By
multiplying out the defects found by the depreciation allow-
ance, we arrived at a per cent depreciation for each part,
which, summed up, makes a total depreciation allowance of 2
per cent. The computation method I have just described
388 is, I think, a very reasonable one, and makes ample allow-
ance for any depreciation to be found in manholes.

What I have said for walls of manholes is descriptive also of what was done in the case of roofs of manholes, and the floors, frames and covers and cable racks.

The tunnels listed on this page (page 7, Exhibit A-36) are
under the river in Chicago, and contain conduits and cables.
We have five of them. One is under the Chicago River at
La Salle Street, and is owned jointly with the Edison Com-
pany. We were unable to inspect these tunnels in this inspec-
tion without spending quite a good deal of money to pump
them out, because they are usually full of water; so we
389 relied upon information about them that some of our
men have had from the last time they were inspected. I
have seen most of them myself. They are all in good condi-
tion; so we allowed the same amount that we allowed on the
conduits, 10 per cent, and made them 90 per cent condition.
In so far as actual visual inspection of those tunnels is con-
cerned, I have only such information as has been obtained
when they have been pumped out from time to time in the
course of maintenance work.

The next component part of exchange underground con-
duit is the conduit itself. The Camp tile is a single clay tile,
of which we have a very small amount. It was laid quite a
good many years ago, but is in excellent condition, very well
constructed, and protected with a complete concrete encase-
ment. We never had any trouble with it. The McRoy conduit
is the multiple and single vitrified clay conduit which we now
use and have been using for a number of years, and which
390 constitutes by far the largest amount of our conduit, as
will be seen from the figures showing the number of duct
feet. That type of conduit has been excellently constructed,

and is of a very substantial structure. We have had very little trouble with it. Almost all of the trouble we have had, has been as a result of damage to it rather than from any defects in the conduit itself, or in the construction of it. The second entry, reading across the page, shows 86.23 per cent, which indicates that this type of conduit (the best type that I have been describing) constitutes 86 plus per cent of all the conduit. The other types of conduit shown below the McRoy and Camp tile are older types, and, while we have relatively small amounts of them, we have given them a rather
high depreciation, particularly the 10 by 10 type, which
391 is a clay conduit; it is not a very substantial structure
and not very well constructed. As a result, that conduit has broken down in a great many places, and settled, and is out of line; it is not in good shape, so we allowed 85 per cent depreciation for that.

Probably the worst type of conduit we have is the paper pipe, which also is in very bad condition, crushed. While a good deal of it is in use, there is not much of what is not in use that can be used; so we allowed a rather high depreciation rate on that. There is somewhat less than 1,000,000 feet of this conduit, and we have depreciated that 95 per cent. That is the paper conduit which Mr. Redmund referred to in his testimony as being considered obsolete.

The first sheet of Exhibit A-37, which covers Account 245, exchange underground cable, is the inspector's report form for the subscribers' and trunk main underground cable.
What I have said with respect to the listing of the points
392 to be made note of by the inspector for the previous exhibits, holds good for this sheet also.

The next sheet, page 2 (Exhibit A-37), is the summary of the inspectors' reports. So far as the cable sheath itself is concerned, this summary sheet is similar to the one described a while ago in Exhibit A-35. It covers about the same class and character of defects. A bond is the point at which each of the cables is tied together in the manhole, for electrolysis purposes. The loading consists of the load pots and load coils in the trunk cables contained in the manholes. We have

here in this summary sheet the facts respecting the dead cable
to which I referred a moment ago.

393 Sheet 4 is the inspector's report form for the items
shown there. Sheets 5 and 6 contain the summary with
the column footings on page 6. Sheet 7 is the inspector's
report form for building cable and terminals. Building cable
and terminals include only the cable inside of the building.
Sheets 8, 9, 10, 11 and 12 are the summaries of the inspectors'
reports for building cable and terminals, with the final footings on page 12.

Sheet 13 shows the method by which the summarizations of
defects reported were converted into the per cent condition,
and sheet 14 is the same thing, having been added because it
was large and could be read more easily.

394 Every tenth manhole was inspected, and this sheet 14
(of Exhibit A-37) shows, in the second column, that the
main subscribers' cable was inspected at the time of the
inspection of the manholes. For sheath defects of main subscribers' cable, sheet 13 and sheet 14 show depreciation
amounting to 1.5 per cent, which was arrived at in about the
same way that I described for aerial cable. Then there
395 is a depreciation of 1 per cent for electrolysis. We could
not secure enough information about electrolysis on the
inspection to satisfy us, but we found that we had a record of
some 1,400 odd sections of cable which had been removed in the
past 4 or 5 years, on which we had some very thorough reports
of the condition of electrolysis found by close inspection of
those removed cable sections. We also had records showing
the cable section replacements and repairs due to electrolysis,
and in both cases it showed a rather small amount, compared
with the total, of sheath deterioration due to electrolysis.
From these figures, we arrived finally at 1 per cent as being a
very reasonable allowance for electrolysis; that is a fair
allowance for the sheath depreciation since that is all it
affects. We found a depreciation of this class of cable for
defective pairs equal to 2.5 per cent. What I said about defective pairs in another connection a while ago applies
396 equally here. The 5 per cent total depreciation for main
subscribers' cable is the sum of the depreciation per cents

that I have referred to, namely, 1.5 per cent sheath defects, 1 per cent for electrolysis, and 2.5 per cent for defective pairs. The next column, "Per cent depreciable value allowing for net salvage," is shown to be 75 per cent. The explanation for that is the same as I have given in other similar cases in my testimony.

The next sub-class is trunk cable. The explanation that I have given heretofore applies equally here. Instead of 5 per cent, as in the case of main subscribers' cable, we get for the trunk cable 4.8 per cent. This is due to the fact that the
defective pairs here are 2.3 per cent, instead of 2.5 per
397 cent, as shown by our records for defective pairs of main
subscribers' cable.

The next sub-class is subsidiary cable. My testimony for similar property in another sub-class is fully explanatory of this.

The next sub-class is building cable, which shows sheath defects of 1 per cent. In this case we found relatively few defects. When we got through with the inspection, we had a good picture of the condition of the cable from the number and character of the defects shown; and this represents my best judgment as to what the depreciation allowance should be for sheath defects in building cable. We did not relate the defects to any figures of cost or repair, because there were not enough of them. I think that this is a fairly liberal allow-
ance, considering what we found upon inspection. Here
398 the defective pairs were 1.4 per cent of the total pairs in
the cable, and were treated in the same way as I have
already described in other cases.

We arrived at 2 per cent depreciation for the final sub-class of terminals in practically the same way that I described for sheath defects. That is, we made no attempt in this case to break that down and assign depreciation values for each character of defect found in terminals, because there were relatively so few defects shown. Rather than that, we assigned what seemed to be a reasonable amount for the overall amount of defects found.

We got a condition per cent, as a composite, for the entire class of exchange underground cable of 96.32 per cent, from which a deduction of 1.32 per cent was made. Thus we 399 obtained 95 per cent, which was carried forward, for this class of property, into Exhibit A-22. This deduction was more than the mere dropping of a fraction. There were some things in here that we had not cared for in the other computations. For instance, there were extra sleeves on the cables in manholes that we had not made any allowance for. It is rather difficult to say just how much allowance should be made for these things and for duct splices, also, there was some dead cable stuck in the ducts (representing about .14 of 1 per cent, as I recall it, of the total cable account, and which, of course, should be given zero condition). We felt that some allowance should be made for these things, and for the fact that some of this cable was in conduit and we could not see it. I don't think there were any defects there other than from the 400 electrolysis, which I have already taken care of, but in case there was anything of that sort, we made this deduction of 1.32 and rounded out the figure to 95 per cent, which, in our judgment, seemed to be fair and reasonable. In that deduction we weighted the dead cable at zero per cent condition.

The last of my exhibits is A-38, which covers Accounts 251, Toll Poles Lines; 252, Toll Aerial Cable; 253, Toll Aerial Wire; 254, Toll Underground Conduit; 255, Toll Underground Cable; and Accounts 246 and 256, Exchange and Toll Submarine Cable. With the exception of the wire account and submarine cable, this exhibit deals with classes of property precisely similar to the pole lines, cable, and so forth, that I have already testified about, except that these are devoted to toll use instead of to exchange use.

401 Submarine cable is covered by pages 14 to 18 of this Exhibit (A-38). There is a very small amount of it, some 2,264 feet. Of course, that which we could inspect is the portion which ends in the manholes. We gave that the same allowance for depreciation as we gave underground cable, except that no allowance was made for salvage.

402 Toll aerial wire is shown on page 6 of this same exhibit. There is relatively a very small amount of that

wire. It was inspected at the same time the toll poles were inspected. Nothing wrong was found with it, but with the thought that there might be some wear, perhaps at the ties, which we could not see, we gave it a 1 per cent depreciation, to be conservative about it, and made it 99 per cent condition. There is $70,000 worth of that in the plant.

Conduits are protected largely by concrete. In heavy traffic streets they are completely encased in concrete. At other locations, where the traffic situation is not quite so severe, we sometimes use top and bottom construction. Of course, in the case of the lateral cables, small single duct, from a manhole to a pole, or in a parkway, sometimes we use plank protection,
and occasionally no protection at all. But corresponding
403 to the degree of protection required, it is ample to take
care of it. It is, as I said before, a very well constructed structure throughout. It is upon these facts that I stated a little earlier in my testimony that there is no depreciation in these classes of plant, at least in any ordinary circumstances, except that caused by accidental violence of some sort. I cannot see anything to depreciate about that kind of structure.

The amount of depreciation existing in these classes of plant covered by my inspection was determined for the year 1930. I have already testified concerning my familiarity with the plant throughout the period of years involved in this case, and to my knowledge of the Company's maintenance practices, by which defective parts are renewed and made as good as new in the regular course of maintenance; and also as to the Company's actual standards of maintenance throughout this period. On the basis of all these facts, I am able to testify as to the condition of these classes of plant for the years from 1923 on to the date of the inspection. It is my judgment that
the percentages shown in Exhibit A-22 are correct, and as
404 to the period subsequent to the inspection, the same thing
is true.

Plaintiff offered in evidence Plaintiff's Exhibits A-19 to A-35, both inclusive, and offered each of them separately.

Right to object to said exhibits was reserved by defendants until the close of the cross-examination.

406 ALBERT P. HYATT, a witness appearing on behalf of the plaintiff, having been previously duly sworn, resumed the stand and further testified as follows:

Cross-Examination by Mr. Haight.

The field men's work in connection with the inspection started, I think, in late January, and most of it was finished early in March. There may have been one or two further checks that we made later, but practically all of it was finished in March, 1931.

407 I have made a great many inspections from a maintenance viewpoint, to find how we were maintaining our property; that is what my job has been for many years. I had nothing to do with the inspection of 1923 to determine the per cent condition.

I have described three methods used in connection with the inspection. Method "A" was the gauging method; that is the method where we used certain gauges that we designed to measure the wear or depreciation, and so arranged that we could get approximate points between 100 per cent condition and zero; the particular type of equipment that we gauged was susceptible to wear and would wear out. The "B" method was a method by which we examined certain types of equipment very closely; examples are relays and keys, where we examined the condition of the springs and contacts,

408 and the bearings. That method was also followed in inspecting the power machines. We would examine the commutator and the brushes and the bearings. It was also followed in the case of batteries, where we examined the condition of the plates.

The "C" method was a method by which we inspected equipment, and based our results to a great extent on our judgment, gained from experience in maintaining that equipment and knowing what the general depreciation and wear and tear on it was. It was somewhat similar to the "B" method, but did not involve quite as extensive examination of the things, that is, they were more open to inspection in a broad way of looking at it. That is based on judgment. You can tell in a very reasonable and, I think, in a very clear way, just about what the general deterioration or depreciation is on that equipment.

These three methods, I think, would cover the ones used in determining the per cent condition of the property con-
409 cerning which I have testified. There might have been a combination of those, but I graded them by those three general methods.

I gave the men under me instructions before this work was undertaken. The first instructions were in writing, but I supplemented those by personal instructions, that is, the written instructions were a broad guide, but in the personal instructions we discussed the various things we would run up against and looked for those. For broad guidance I had written instructions given out respecting Account 221, Central Office Telephone Equipment, but not for Account 222, Other
410 Central Office Equipment, because I inspected that personally. In each of the groups of field men, I had a supervisor to watch closely everything. He, of course, was in personal charge of the work all the time and kept checking it, so he may have given instructions, carried out from mine, but I gave the oral instructions in every case.

There were special written instructions given in regard to the manner of inspecting manual central office telephone equipment. These instructions were broken down into an outline of what we wanted to accomplish for each of those 14 component parts. There was a definite instruction for each one. I haven't these instructions with me, but will procure them.

411 I had specific written instructions for the inspection of dial central office telephone equipment and for the inspection of station apparatus. I had written instructions for the inspection of aerial wire, which is included in the one instruction for all of that equipment. I think those are all the written instructions for the inspection of any items of telephone plant, the inspection of which was under my charge.

The forms that appear in Plaintiff's Exhibit A-31 are the

forms that were used by the inspectors, following the methods of inspection A, B, C, or some of them, or combinations of them, as I have explained them. These forms were re-
412 ferred to in the instructions. The instructions always carried the same form number. Using the forms shown in Plaintiff's Exhibit A-31, and following the methods I have described, the inspectors obtained the information called for by the forms, when appropriate, of course.

Exhibit A-32 contains the summaries of all of the inspections, and that information so summarized in A-32 appears in Plaintiff's Exhibit A-22, in the last column, under the year 1930, as percentages of the complete account, but not of any sub-accounts.

413 When in the course of my examination on direct, I said:

> "We had a very clear, understanding of what we meant by good, fair and poor.. 'Good' was equipment that we considered just as good as new physically.. 'Fair' meant there was some little thing off, some deterioration or depreciation that we considered was not in the third class and certainly was not in the first class, so we put it in the middle class. The last class we classified as 'poor'."

I had in mind at that particular time that the words "deterioration" and "depreciation" were synonymous.

414 When, in speaking of the gauges used to measure the wear in regard to some classes of equipment, I gave the illustrations of plugs and of cords, and there, in connection with that, used "depreciation," I did so in the sense of wear. Again, when speaking of that same item of property, I referred to the amount of wear or depreciation, and said that the greatest amount of depreciation would be 20 per cent, I meant that I was trying to determine the difference between the thing in the actual physical condition in which I found it, and compare that with the same thing if it were in 100 per cent or perfect condition. Wherever I speak of that difference and use the term "depreciation," I think it is that
415 physical difference based upon this inspection that I am talking about; I think I have tried to be consistent in that.

Q. And so, I find in some of counsel's questions to you, and in some of your answers, that same term "depreciation" used in speaking of this condition that you find, and I am safe in assuming, am I not, that in all of those instances you simply mean the difference between that thing, whatever it may be, in its condition of perfection, or, 100 per cent, and the physical condition, that you then found it in?

A. I think that is right, if I understand you correctly.

I prepared a summary work sheet showing the per cent condition assigned to the central office equipment in each of the manual central offices. I prepared work sheets showing the per cent condition for each of the 14 component parts constituting each central office, for each of the following offices: Calumet, Canal, Dearborn, Delaware, Merrimac, Monroe, Newcastle and Tandem.

417 I now have my work sheets and the reports on the Dearborn manual office. It is divided into 14 component parts, as explained in my direct. The date of the inspection of the first component part, "A" and "B" section frames, is January 23, 1931. The second one, keys, is dated February 21, 1931. The third one, cords, is dated January 23, 1931. The fourth one, plugs, is dated January 23, 1931. The next one, jacks, is dated January 23. The next one, relays, is dated February 21, 1931. The next one, which is the four

418 groups: message registers, condensers, repeating coils, and resistances, is dated January 23, 1931. The next one, number 8, is dated January 23, 1931, and it has three groups of cables, local position cables, short multiple cables and all other cables. Number 9 is dated January 23, 1931, and has three component parts: frames, racks, and fuse boards. Number 10 is dated January 23, and covers the jumpers, terminals and protectors. Number 11 is dated January 23, and covers the test and repair desk. Number 12 is dated January 26, and covers the storage batteries. Number 13 is dated January 26, and covers the power machines. Number 14 is dated January 26, and covers the power boards and the wiring.

That first component part, number 1, I inspected personally. The men did not have anything to do with that.
419 Number 11 component part I also inspected personally. The men did not handle that in the manual central offices. I think all of the other component parts were assigned to different field men that I had on the job. Mr. Redmund was present from time to time at some of these inspections; I think he went with me to eleven of the thirty or thirty-one manual offices. I don't think he visited Dearborn. Dearborn happens to be the first office we inspected and I made some tests on that two or three times. I think that is one of the reasons that the dates vary in there. On most of the exhibits you will find the dates, with the exceptions of the batteries and the power machines, which are very close together.
420 A portion of the Dearborn office is still in service. Speaking of it generally, I think it went out of service in March or April, 1931, as I remember.

Item 5, jacks, is right here (indicating). On one of the sheets, being sheet 3, in reference to the Dearborn office, name of inspectors, C. F. Esmiol and F. Wolfertz, there is a notation "pegs in sacks not removed for test." This page refers to outgoing multiple jacks. We peg jacks that are not in service in a group of trunks to another office. This refers to the fact that they did not remove those pegs. That was one of the instructions I had given: to be very careful not to remove any pegs, because it is a very important thing to get those back right. It affects service. In our inspection, we did everything to avoid affecting our service. That had nothing to do with the number inspected. The number in-
421 spected is shown in the column there. These pegged jacks weren't in service in relation to the whole group, but the whole group of trunks was in service. We have to have a margin of operation, so there are certain jacks that are not in use at a given time. They keep shifting the groups of them. I can't give the exact date of the original installation of central office equipment of the Dearborn office. I think that was about eight years before it was converted to dial.

Mr. Bracelen: If you wish, the record may show that the cut-over took place on January 31, 1931.

Mr. Haight: All right, thanks.

422 "The office was cut over" means that the lines that were formerly working in the Dearborn manual office were changed over to the new office. As I said, there was an exception of certain lines that are still retained on the old Dearborn board. In the main, the old manual equipment is discontinued when the other equipment is cut in. Ordinarily that would be true, but in the Dearborn office there was a little exception because a certain portion was retained.

In arriving at the conclusion that the accounts I inspected as appearing in Exhibit A-22 were correct for the various years preceding 1930, we had in mind, of course, that this, if we can call it such, is a projection backward. That is, we had our inspection results as of December, 1930. Of course, we started from that as a base. So we projected that backward, taking into consideration any changes that had been 423 made in that period between 1923 and 1930 that we thought should make a change in that inspection as we found it early in 1931. I would have no opinion as to definite percentages of condition during each of the years 1923 to 1929, both inclusive, without having made any inspection at all. I did rely upon the inspection made in 1931 because of the definite inspection for that year in projecting it backward into the other years. During each of those years, there was some difference in the size of the plant in some of these accounts, and during each of those years, going backward, there were differences in the relative proportions of old and new plant in some of the accounts. The relative proportions of panel and manual switchboards had not changed a great deal in the various years. There was some little difference, 424 but we did not find it would make much difference in the percentage. I know that because I know what went into the plant each of those years. There was displaced equipment and new equipment taking its place.

I don't think I can say offhand how much of the plant that I inspected during 1930 was in existence in 1923; I don't

believe I would want to say without thinking it over a little. That would have some bearing. I had a very clear idea of that when I worked it out, but I would have to go back and think it over. This does not appear in any of my working papers in which I worked it out, but it is one of the things Mr. Redmund and I discussed a great deal in connection
425 with projecting these percentages back. We were asked to try to arrive at the per cent condition in these different years, and we definitely stated we had no inspections for those years. So we made an attempt to project that backward, and I think from my judgment of the plant during those years, that that is pretty close. It may vary a fraction of one per cent in different years. Take the booths, for example: there was a radical change in the types of booths and the quantity that came in in that period, and we allowed for that. Just toward the end, we got quite an influx of dial equipment and the new toll board for handling long lines that went in early in 1929 or late in 1928. So we made a change there, in central office. That is the only change that we could see ought to be made. Save for that and booths and P. B. X.'s (there was quite a change in type of P. B. X.'s during this period), I assumed the same rate of increase, the same rate of retirement, and the same rate of everything from year to year throughout.

426 I have no working papers that I used in determining the per cent condition, or figuring out the per cent condition for any years other than 1930; that is, for 1923 to 1929, inclusive, and for 1931. There isn't a scrap.

These matters to which I refer by way of defects, generally speaking, are matters of maintenance. That is, most of these items we would usually clear up in our regular maintenance work, but a great many of the particular items that I called defects or depreciations are things that, while in my
427 judgment they detracted from the perfect condition or 100 per cent condition, we ordinarily would not spend good money to make as good as 100 per cent; for example, switchboard cables. I took off something for the appearance of the cables, the fading; we would not spend money to put the

cable back just to make it look prettier. So in all of those things I have taken depreciation off of what I considered brand new.

There is practically no wear in the principal part of the power machines in central office equipment. When there is wear in the course of time on the brushes, we put in new brushes. That is an ordinary matter of maintenance. All of those items are charged to maintenance, and that is true as
to most of the items to which I have testified. Save for
428 that general exception I have just mentioned, I think that
is true.

I did not testify to any inspection made in 1927.

I found no inadequacy in the inspection of the property I had charge of. From what I know of the plant, if I were inspecting the property in 1924, I don't think I would have
found any inadequacy. There might have been some. I
429 could not say, but I doubt if there was. I mean by inade-
quacy, in the way I look at this, that the equipment was not adequate to operate. Take, for example, a battery. Now, when that battery is put in for the ultimate of that particular office, we don't put in a full supply of plates, but as the lines increase, and we get to the point where we need more plates, we can readily add them. Now, if I found that they could not add additional plates, and found that they had to tear out the whole battery to take care of a normal addition, I would probably call that inadequate. I did not find anything of that kind in any part of our equipment. It was adequate to take care of everything.

Of course, there is a margin on all these things, just as I
described in this battery tank, there is a margin that is
430 available. I would not go so far as to say that there was
no part that was not actually working. We have a margin of everything, just like I described those jacks that were pegged out. That is a margin. You have to have a margin on all equipment to operate. I should not think generally that a central office switchboard ever becomes inadequate. I should not think so, generally speaking. I think we always have means to enlarge or extend that board by putting on additions

to the building, or going up in the air, or rearranging the boards. In my experience I have rearranged a lot of boards so we could add sections. Originally, we used to install boards that would finally grow up to the end of the building. It might not be economical to add to that building, so we would shift the board around so we could grow; we would just keep extending and building on. When we come to a situation where the switchboard is not sufficient to care for the service that we wish to give through that particular office, and we add on in the manner I described, I would not call that neces-
431 sity inadequacy of that equipment. All I mean when I say I can translate my mind back to 1924 and give a per cent condition, and that I remember whether there was any inadequacy or not at that time, I simply mean that in my judgment, what did work then, worked, and there was a margin for growth. When I translated or projected the result of my inspection in per cent condition from 1930 back to the preceding years, as, for instance, 1925, it was based upon my general knowledge of the plant and growth during those years and the changes; I have been very closely connected with them. It was not based upon any calculations, but just upon general judgment.

432 I have no substantiating data in respect to those years. It might have happened for a very short time between 1923 and 1931 that equipment was being used so completely and fully as to have no margin for growth, so as to be inadequate in that sense. I know in my own experience that we have had cases happen for a short period, if our growth was faster than our engineering plans permitted the equipment to get in, but usually the margin in planning ahead was such that we were always ahead of the growth.

433 *Re-direct Examination by Mr. Bracelen.*

The Dearborn office, which the record shows was cut over January 31, 1931, was a manual central office cut over to dial at that time. There were about 30 or 31 central offices in the Chicago plant of the Company at the time of my inspection, including the Tandem. Eliminating the Tandem, that has since been changed to dial, the Delaware that has gone to dial, and most of this Dearborn that has gone to dial, there would be three less, so that there are in the plant today 28 manual central offices, substantially like the Dearborn office. I don't have any exact idea of the number of telephone subscribers or telephones being served today in Chicago by manual offices, as compared with the number of dial offices or 434 subscribers, it is somewhere around 20 per cent dial, as I remember, and 80 per cent manual. That may vary three or four or five per cent.

The plant that is covered by the per cent condition shown on Exhibit A-22 for each of the years involved in this case is the plant, and all of the plant, and only the plant which was being used by the Illinois Bell Telephone Company for giving service that it has given in the City of Chicago throughout that period of time.

435 *Re-cross Examination by Mr. Haight.*

I only had three or four reports concerning the Dearborn office in February. I can explain those, if you wish me to. Two of the items were inspected in February. I finished my inspection some time in February. The board was still there at that time, though. I will be glad to explain that more fully.

B. T. YOUNG, a witness appearing on behalf of the plaintiff, having been previously duly sworn, resumed the stand and testified further, as follows:

Cross-Examination by Mr. Haight.

I had nothing to do with determining the per cent condition of any of the property of the Illinois Bell Telephone 436 Company in Chicago in 1923 or 1922.

Not more than four of the buildings are new since 1923. Roughly, seventeen of the buildings have had additions made to them since that date; I am not just sure of the exact dates of some of them, away back in the period.

I used the figures from Mr. Renwick's appraisal in determining the percentage of the value of each building to the entire building property. I understood Mr. Renwick's estimate to be the cost to reproduce these buildings new.

437 I made no specific use of sub-contractors' contracts, which I said followed very closely the component parts of the buildings, enabling me to determine accurately, for instance, the average cost of electric wiring. We have had at various times, as a matter of interest, breakdowns. We do not normally get the amounts of these sub-contracts. Back a number of years we have had, for our own information, a so-called breakdown of some total general contracts, which gave us what we considered a very close idea of the costs of the various parts. That is not an idea peculiar to myself, that is, similar information is always available in engineers' and architects' handbooks. I did not use any definite sub-
438 contractor's figures in any manner in arriving at my judgments. We had made up, as I said, just as a matter of information, some several years ago—I made it myself—a study of that kind, to determine rather accurately the value, for instance, of electric wiring, and heating systems, and so on. I based this work on that previous study, making such variations as were necessary, depending upon the type of construction.

I gathered all of the information that is contained in Plaintiff's Exhibit A-33 myself.

NOTE: In the following, the page relating to the Austin Building was used for the purpose of illustration.

The notations under "Reason for Deduction" were what I noted to serve as a guide. That is, it gave me a very good picture of the condition of, for instance, the exterior ornamentation. They are not the sole reasons for the deductions made.

Referring to the item of glazing, showing 17 lights
439 cracked: it is not necessary at all to replace the cracked lights, unless they constitute a dangerous condition, which none of these could, because they are practically all of wire glass. They might remain cracked for years without any

necessity for replacing them. If they had been badly cracked, they would have been replaced as soon as damaged. If they had reached a point where it was advisable to replace them, they would have been replaced, because that would only have been so if a dangerous condition obtained. That replacement would be charged to maintenance. The wood sash are reputtied periodically if required, and charged to maintenance.

440 What would be done with the damaged pipe covering, noted for "Heating and Ventilating," depends on the degree of the damage. Ordinarily, if the canvas of the covering cracks slightly, nothing is done about it. If it reaches a point where it is hanging in shreds, it is replaced. The minor cracks probably are not visible to the layman at all; they would never be noticed.

My notation as to lighting fixtures is "that all fixtures require refinishing." If that were done, it would be charged to maintenance. Most of these items that appear here listed under "Reason for Deduction," in connection with the Austin Building, and for that matter, all of these other buildings, are items that relate to conditions that are rectified and charged to maintenance, as a rule.

441 As an illustration of the things taken into consideration for deduction from condition in addition to the things that are listed on these various sheets in Plaintiff's Exhibit A-33, as "Reason for Deduction," I will take, for example, interior marble. There is, in that building, a considerable amount of marble in the floors, toilet stalls, wainscoting, and so forth. Well, I actually only found four stair treads worn, and one threshold cracked. That gave me what I thought was a fair picture of the condition of all of the marble. That is, there might have been, at the joints, some very minor chipped places, or the joint might have needed a little repointing, but they were things really too small to note. But in going over all the marble in the building, I noted these points as a sort of memorandum to give me an idea what the
442 whole picture was. When I refer to other things, I simply mean that in looking at the others at the particular time

I did look at them, I made these notations as to the important items, but there were other things that influenced my judgment as to the then physical condition, of which my explanation of the marble is a fair illustration. These are the important things noted here, however. The others were infinitesimal. That is true throughout this exhibit in reference to the other buildings.

I had nothing to do with that 1923 figure in Exhibit A-22. For the years 1924 to 1929, both inclusive, and for 1931, in supplying this figure, I gave it as my opinion that a
443 straight line curve projected backwards would reflect the condition of the buildings during that period. I took into consideration the fact that there had been some new buildings built during that period, at least four. That would not alter the trend of my curve during that time. While one might consider that they would increase the per cent condition at the time they were added, yet on the other hand there is a certain falling off (probably on some of the older buildings) that we decided would offset that. A great many more old buildings would not necessarily send the curve the other way, because during that period some of those new buildings were of considerably greater size and value than the older ones.

The largest building is a 20-story building, built, I think, in the summer and fall of 1912, just before I came with
444 the Company. The next largest building is an 18-story one. The first 11 stories of that building were erected, I think, in 1919. There was an addition of 7 stories some time during the last two or three years.

The per cent condition of the entire group of buildings for the year 1923 should be about the same per cent condition as of that same group of buildings, with their additions and new buildings, in 1927, let us say. Based on the maintenance standard, and considering the group at all times as a whole, it
445 would be about the same. My opinion is that it is about the same. I have an opinion as to 1923. Throughout my experience with buildings during that period, while I had nothing to do with any inspection for a rate case, I have been

in all of these buildings practically every year. I have not
such an accurate opinion as to 1915, because that was a num-
ber of years ago. Of course it is a little hard to recall things
that far back, and at that time I was not as active in the
field. I did not have the responsibility that I have at this
time. I became more active in the field after the war, in 1919;
of course, it has been increasing constantly since then. My
446 inability to go back to 1912 or 1913 is because that during
the period that has since elapsed I have made no attempt,
of course, to keep that in mind.

I cannot give an opinion as to the per cent condition of the buildings that will be in existence in 1937. I could guess at it, but there is nothing to base it on. There is no foundation to base it on at all. It would be purely a guess. I would guess it probably would be in the nineties. Before venturing an opinion on a subject like that, I would not necessarily want the facts in each year, because the condition does not change except over a period of years.

It took, I think, from seven to ten months to put the
447 addition to the 18-story building to which I referred (the
Franklin Office Building). That would be an important
factor during that year.

If I were to tell the per cent condition of buildings from now forward to 1937, it would be only a guess.

I would not be much better contented if I had analyzed
448 each of these years 1929, 1928. When talking of the fu-
ture, I have not seen, and I do not know what kind of
buildings those might be, but when talking of the past and
present I do know what these buildings are, and I have been
in them during each one of these years; inspected certain
parts of them and the condition is bound to change on a well-
constructed building very little from year to year, especially
considering the standard of maintenance we have. I am able
to say that they are in approximately the same condition for
each of those years. I don't know what the figure given in
1923 was, but, based on this, the natural method of procedure
would be to project a straight line curve, and I think it is
reasonable.

I didn't know what the figure for 1923 was. The figure for 1930 is the only one I had anything to do with. I didn't
449 project it back to 1923. I was asked my opinion if that figure would hold good, that is, if that was a fair method of arriving at a figure for each year. I could project the 1930 figure back to 1919, for instance, just 93 per cent for each year. There is no reason to suppose there would be any difference for 1918; or 1917 would be right, also, in my opinion. That would be all right for a period of course not too far in the past. On this same group of buildings the same figure would be all right. The same would be true of 1914 and
450 1913. I would not be qualified to say whether the same holds good prior to 1912. I would have to stop at 1912, as I know nothing about them before that time. When I said a moment ago, "Of these same buildings now in existence," I did not understand that we were postulating, that we were carrying the buildings themselves back.

In one of the answers that I gave yesterday, I spoke about depreciation found. I meant the difference between those
451 buildings in the condition I found them in, and those same buildings if they were in perfect or 100 per cent condition.

I did not have any written instructions, nor use any written instructions in respect to finding the per cent condition of these buildings. Mr. Redmund outlined what he wanted, and left it more or less to me to formulate a plan of procedure, which I outlined to him orally before I started. I have made no working papers, and have had no working papers, nor have I anything written in respect to the projection of my opinion of 1930 back into 1924 and intervening years. There is no such thing in existence and never has been.

452 On each page after the first or the summary sheet in Plaintiff's Exhibit A-33 is a legend, of which the one on the first page relating to the Austin Building is a fair illustration (the figures are different in the others), as follows: "As the reconstruction cost of this building represents 1.583 per cent of the total reconstruction cost of the entire group,

and its present condition is 5.739 per cent less than originally,
the effect will be a .091 per cent deduction from the condition
of the building group as a whole." The words "than
453 originally" in that legend mean new at the time of in-
spection.

MAYNARD H. RILEY, a witness on behalf of the plaintiff, having been previously duly sworn, resumed the stand and testified further as follows:

Cross-Examination by Mr. Haight.

At one point in my testimony, in speaking of the pole lines
account (241) appearing in Plaintiff's Exhibit A-34, I said for
the last ten years the poles have been butt treated. That
454 was true in 1923. This butt treating started about 1920
or 1921, as I recall it. There were many poles in about
1920 that were not butt treated. The percentage or propor-
tion of those that were butt treated would increase rapidly,
beginning at that time, because all new poles at that time were
butt treated.

I had a number of men who assisted in this work under my
direction or charge. In part of this work, I took part per-
sonally, and in respect to all of it, I supervised it. Those men
were given instructions in writing prior to the time that the
work was undertaken. I had specific instructions for the in-
spection of main underground cable. I had specific instruc-
tions for all of the accounts, in so far as they related to
455 the use of the forms, and the character of the inspection.
There were specific instructions for Account 241, for Ac-
count 242, and for Account 244, but not for 251; the same in-
structions applied to that as for 241. Similarly, for toll (Ac-
count 252) there were no written instructions, as I recall, nor
for Account 253, aerial wire, toll aerial wire. For Account
254, the same instructions would apply as for 244; similarly
for 255. There were no instructions written for Accounts
246 and 245, covering a small amount of submarine cable.
456 I have copies of those instructions with me. I will pro-
duce copies that can be put in evidence.

In Account 241, we were undertaking to find out the per cent condition of the poles. That also applies to Account 251. By per cent condition in respect to poles, I mean the relation of condition between those poles in 100 per cent, or perfect condition. On the rest of the accounts, we were undertaking to find out all of the facts that we could find out from this inspection upon which we could base our conclusions as to their per cent condition.

457 Plaintiff's Exhibit A-35 is the one relating to aerial cable. For sheath defects there was a 2 per cent deduction. The extra sleeves were taken into account. There is some question as to what effect an extra sleeve may have on the condition of the cable. It is a case where there may have been a case of trouble, and the extra sleeve is evidence of the fact that it has been repaired and taken care of, or it may be due, for instance, to a pole having been moved, and the terminal location moved, causing that particular point to have to be closed up, and a sleeve put over it. If there is a satisfactory job done, that cable sheath is just as good as new where that extra sleeve is, but there is a possibility that a little faulty workmanship may have been done, so I think we should make some allowance for those cases. The cost of repairing a defective or injured cable sheath is charged to maintenance.

460 On sheet 1 of Exhibit A-35 there are listed at the tops of the vertical columns, certain items, beginning with terminal, span, and continuing with sheath which was injured, kinked or cracked, and so forth. These are the defects we are accustomed to encountering in our maintenance work, and are the kind of defects that, when they occur, are usually charged to maintenance. This is not altogether true of all of the exhibits which have been produced by me, from this
461 one on up to and including Exhibit A-38. For instance, in the terminals, some of those major defects would possibly result in the replacement of the terminal. It would be replacement rather than maintenance. As to defective pairs

in cables, if made good, the cost would be charged to
462 maintenance. The poles would be charged to replacements. Other than those exceptions, I think that it is generally true, so far as the items listed are concerned, that the defects are charged to maintenance.

In the third vertical column on page 4 of Exhibit A-35, headed "Per cent depreciation," there are three sub-columns one headed "Allowance for defects found by inspection"; the next, "Other allowances"; and the next one, "Total." In that first one of these columns, headed "Allowance for defects found by inspection," is found "2 per cent"; those are the allowances for defects of that character that we find listed, or at least some of those, upon the form on page 1 of this exhibit. In the next column "Other allowances," the
463 "2.77 per cent" relates only to defective pairs in cables. The information respecting that, I obtained from records in the office relating to cables, where the fact that they were defective was determined in operation. There are then added together the 2 per cent and the 2.77 per cent, getting the 4.77 per cent appearing in the next column. I then say in the next column that cable will have a salvage value of at least 18 per cent, so I say, "We will put in that column the difference between 18 per cent and 100 per cent, or 82 per cent. Then we will apply the figure 4.77 to that." Thereupon, we get in the next column 3.91. Then we subtract the 3.91 from
464 100, and in the next column we get the per cent condition, or 96.09. That is the process. If, instead of subtracting 3.91, I subtracted the 4.77 from 100 per cent, obviously the per cent condition in that particular instance would be 95.23. So by that system of mathematics I increase the per cent condition in relation to the 100 per cent condition. The final per cent condition that I give in that column, of 96.09, represents, in my judgment, the per cent condition of the cable in relation to cable new at the time of inspection. That is, if it were 3.91 per cent better, it would be a perfect cable as it then stands. That same thing applies throughout these exhibits, where we have calculated using net salvage as
465 it appears on this page. When I use the word "depreciation", it simply means that I am using that term to

measure the difference between a thing that is perfect or in 100 per cent condition, and the actual physical condition that I find it in, which may be 4 per cent less or 10 per cent less, as the case may be, in these various exhibits.

467 ALLEN G. HOYT, called as a witness on behalf of the plaintiff, having been first duly sworn, testified as follows:

Direct Examination by Mr. Blackman.

My name is Allen G. Hoyt. I reside in New York City. I am Vice President of the National City Bank of New York; and also of the City Bank-Farmers Trust Company. I have been Vice President of the City Bank-Farmers Trust Company since 1929, and of the City Bank since 1928. Prior to that I was Vice President of the National City Company, which is a corporation affiliated with the National City Bank.

468 The National City Company, while I was connected with it, was engaged in the underwriting and distributing of investment securities, stocks and bonds. It dealt in public utility securities. The financing of public utilities which the National City Company undertook for its sole account, or in which it participated with others, aggregated, during the period that I was Vice President, many hundreds of millions of dollars. I was Vice President from about the year 1918 to 1928. During that period, the National City Company participated in a great many underwriting syndicates of securities of public utilities. It engaged in the financing of companies other than public utilities, and in the underwriting of their securities.

469 I was connected with the National City Company prior to the time I became Vice President for two years, 1916 to 1918, and was in the banking or security business prior to my connection with the National City Company. In 1907 I became a member of the firm of N. W. Halsey & Company. N. W. Halsey & Company of New York were investment bankers. They were engaged particularly in the financing of

public utilities. They also handled securities of railroads and industrial corporations. I was connected with this Company from 1907 until 1916. Their principal office was in New York; and they had offices in other cities in the country, including Chicago and San Francisco.

I am and have been a director of a number of public utilities. At the present time, I am a director of the International Telephone & Telegraph Corporation, and the New York
Steam Corporation, both public utilities. In the course
470 of my experience, I have had occasion to come into con-
tact with the question of borrowing funds for corporations, both on the side of lender and on the side of borrower.

During the time I was Vice President of the National City Company, it participated in financing a considerable number of telephone issues. It participated in all of the bond syndicates formed to handle the bonds of the American Telephone & Telegraph Company. It participated in the bond issues of a number of affiliated companies of the A. T. & T. System, including the New York Telephone Company, the New England Telephone Company, the Northwestern Telephone Com-
pany, the Illinois Bell Telephone Company, the South-
471 western Bell Telephone Company, and some others. At
the syndicate meetings, I usually represented the National City Company in connection with the negotiation of the issues.

During the years when I was actively engaged in financing public service and other companies, if a public utility or other company operating in any part of the country wished to raise funds through a bond issue of a substantial amount, say, in tens of millions, it customarily went to New York City in order to get that money. I think there were very few issues of the size of ten millions of dollars where the principal underwriting was not undertaken in New York City.

I have continued to follow the matter of corporate security issues since the change in my duties. I am at present one of
the officers having charge of the investment of trust funds
472 and review of investments, and my present duties neces-
sitate my continuing to be familiar in a general way with the financing and development of public utilities. New York

has continued to be the most important market for the financing of the kind referred to. That applies to stocks as well as bonds. Generally speaking, I think the prices for money in New York are lower than elsewhere.

In the course of my business and in making loans to the American Telephone & Telegraph Company and its various subsidiaries, I have become familiar in a general way with that Company. The American Telephone & Telegraph Company is primarily engaged, either directly or through
473 its subsidiaries, in the telephone business. In the Bell System, as it is commonly called, there are about 16,000,000 telephones. The A. T. & T. Company, at the end of 1930, in the last balance sheet I have seen, showed on a consolidated basis, assets of about five billions of dollars; and its net earnings for the year 1930 were about $270,000,000. Its capitalization, at the end of 1930, on a consolidated basis, was as follows: it had outstanding stock to the amount of $2,155,000,000. The outstanding bonds of the Company, and of the system, amounted to approximately $1,115,000,000.

In addition to its telephone business, the Company is engaged in various other activities. Through the Western Electric, it has a very important manufacturing business, where telephone equipment is manufactured. The sales of the Western Electric I think last year were over four hundred millions of dollars. The Company is also engaged and has taken a very prominent part in the development of the talking moving picture. Many moving picture houses in the
474 country are equipped with the A. T. & T. system of reproducing sound. The Company also takes a very important part in the development of phonograph records and reproduction. The Company does a large business of a telegraphic nature. By that I mean many of its circuits or lines are leased to the Western Union and to the Postal Telegraph Companies.

In addition to that, it furnishes leased lines for telegraphic business between principal offices. It has the process of transmitting typewritten undertakings by wire. It also is importantly engaged in the radio business. From certain studios, over the wires of the A. T. & T., programs are broadcast through many chains of broadcasting stations The Company has also been in the forefront among the developers and experimenters in television.

These outside activities I think have appealed to the
imagination of the stock buyer, perhaps more than the
475 utility departments of the business, and have accounted
to a considerable degree for the fact that its stock at
times has sold at very high prices. That condition obtained
to a marked degree particularly in 1928 and 1929, and partially in 1930. I think it sold proportionately higher than
the prices of other stocks. U. S. Steel is no exception to this
because it was making very large earnings during this period.
It is impossible to generalize about whether the slump of
A. T. & T. stock was just about the same as other first class
stocks, because the depreciation has not been uniform.
476 What I was referring to particularly was a comparison
with utility stocks.

This outside business, which was non-utility and non-regulated, affected the price of the Company's stock and its ability to get money.

I know the Illinois Bell Telephone Company in a general
way. Some years ago, we participated in the syndicate
which handled its bonds. During the period from 1923
477 to 1931, the assets of the Illinois Bell Telephone Company
have grown from about $171,000,000 to $322,000,000.
Its capitalization has grown from about $117,000,000 or
$118,000,000 to $200,000,000, approximately. I understand
that about two-thirds of the investment of the Company is in
the City of Chicago and that has had a similar growth over
that period.

In the course of my business, I have become familiar with
the way in which the investing public regarded and regards
the various classes of securities in which my Company has
dealt during my connection with it. I have become
478 familiar with the risks and uncertainties. which such
investing public considered and considers attend the
various enterprises which have issued such securities. I have

become familiar with the returns that were and are being
made by the various enterprises on the securities in
479 which my Company has dealt. I am familiar with the
returns which are being made generally in this part of
the country on investments in public utility and other businesses and, in a general way, with the prices at which the securities of such companies sell and were sold.

I refer to both the wholesale price and the retail price. In connection with the distribution of bonds, the securities are usually sold by the corporation at wholesale to a banker or a group of bankers. That price is below the price at which the bankers reoffer the securities to the investing public, the difference being the margin to the bankers to cover the cost of distribution, profit, and so forth. The cost of money to the corporation is the wholesale price, except that in connection with the issues, the corporation has further expenses to
meet, which somewhat increases the net cost of money
480 above the yield at the wholesale price. I refer to the cost
of printing the bonds, trustees' fees, attorneys' fees,
expense of listing, and so forth.

After bonds come into circulation, they have a certain market price. That market price does not indicate the price at which a large block of bonds, or a new issue of similar bonds, could be sold by the Company. The stocks sell on the Exchanges at a certain price. That does not indicate to a banker, however, that the Company could make a large new issue of stock and obtain the price at which the few shares traded in per day bring in the market.

The American Telephone & Telegraph Company, in selling its securities, comes in competition with all other borrowers so far as bonds are concerned. It comes in competition with
all other seekers of capital by stock issues as far as its
481 stocks are concerned. In the future, if it undertakes to
get additional funds, it will have to compete with others.
The Illinois Bell, were it to finance, would have to enter into competition with other borrowers or other seekers after capital. The American Telephone & Telegraph Company competes for funds most directly, I think, with other public utility

corporations; particularly the gas and electric companies. The particular corporations with which the Illinois Bell would come into competition in marketing its bonds or stocks to the public are gas and electric companies.

In the course of my business, I have become familiar with the risks and uncertainties which attend an investment in a telephone business in the eyes of those investing therein. 482 Some of those are: the Telephone Company is strictly limited, as far as its profits are concerned, by reason of regulation; as far as losses are concerned, however, the Company is unlimited. If it cannot find the business for itself, of course, it must take a loss. On the other hand, if the business develops very successfully and it earns more than a reasonable return, it will be compelled to reduce its rates. There is a hazard for the Company by reason of the fact that if, at any time, on account of increased operating expenses, or for other causes, the return becomes inadequate, the procedure of obtaining relief is usually long drawn out. The question of taking the proofs to the Commission usually in the first instance, and the frequent necessity of appeal from the Commission to the courts, may require a number of years before the Company can obtain relief and receive permission to charge adequate rates. Furthermore, during this period of inadequate rates, the Company suffers a certain loss or deficiency in return. That loss is gone forever. It is permanent, because the regulatory bodies or the courts in afterwards readjusting the rates do not make allowances 483 which will permit the Company to make up a loss incurred during the period of inadequate rates. On the other hand, should the earnings of the Company show more than an adequate return, the Commission or public authorities are very likely to move very promptly for a downward revision of rates.

I have not seen a survey, taking into account all the cases, which shows in what percentage of rate cases the companies have been able to get any relief from the State Commis- 484 sions in the first instance, without going to the courts.

But I have come in contact personally with quite a number of important cases. In all of those cases, I think the companies had to appeal to the courts to get an increase.

A telephone company makes an unfavorable comparison with respect to other public utilities, particularly an electric or a gas company utility, in certain respects. I refer to the fact that the principles of mass production are not, in my opinion, applicable to a telephone company. As a matter of fact, as the telephone company's business develops, the investment per station tends to increase, and in view of the fact
that the investment tends to increase, the return upon
485 that additional investment is constant. On the other
hand, the electric and to some extent gas companies, as their business develops, are enabled to install larger and more efficient generators, and the tendency is for the cost per unit of output for those companies to decline.

Furthermore, I think that the telephone company is at somewhat of a disadvantage by reason of the fact that in the event of declining business, the electric and gas companies may reduce their purchases of fuel, and fuel is an important item in production cost. A telephone company, however, providing only service, is not in a position to show the same flexibility of operation and reduce production cost to the same extent that the other public utilities are.

There have been the following developments that affect the outlook of the telephone company during recent years: the business has expanded very rapidly; and in that expansion the company has reached a clientele of more moderate means than the average subscriber, I believe, of a few years ago. That means, of course, that the company is in a more vulnerable position than heretofore because, if these subscribers
486 of moderate means have reduced incomes by reason of
part time employment or unemployment, or reduced salaries, they are very likely to terminate their telephone contract and have the instrument disconnected. I think the telephone company compares unfavorably with the gas and electric companies in that respect, because the electric companies supply many houses with illumination. A householder or apartment renter must use a certain amount of electricity,

if he has any illumination at all. The same thing is true, to a degree, of the gas company, because there are, in many instances, no other means available to the customer of the gas company for cooking except by using a certain amount of gas. On the other hand, the telephone subscriber can have his telephone taken out; and telephones are being taken out. It is the exeperience of telephone companies that they are losing at the present time a great many subscribers.

I think that in the minds of some investors also there is the fear, as far as a telephone investment is concerned, that the telephone company may be adversely affected by the
487 further development of wireless communication.

I think there is one further hazard in connection with the telephone business, and also to some degree other public utilities: the telephone companies and other public utilities have made very large investments during the past four or five years, and during a considerable part of that time, construction costs were high. It may be that construction costs will decline. As a matter of fact, they are showing a declining tendency. It may be that a reappraisal of the reproduction value of public utility property will show, as far as that part of the plant is concerned which was constructed during the past four or five years, that the duplication value is materially below the actual cost; and as duplication value is to be given great weight in determining a rate base, it may be that the rate base, as far as the property is concerned which was installed during the past four or five years, will be adversely affected. The investor in public utilities speculates on the price of labor, material and other things, just as an investor in any other business.

488 I think it would be fair to say that my last statements concerning the comparative difficulties of procuring capital by gas and electric companies on the one hand, as distinguished from telephone companies on the other hand, would apply specifically to the Illinois Bell.

489 The telephone business has shown great stability up to a certain point, the reason being in my opinion that until recently the telephone industry never approached the point

of saturation. There was always an unfilled demand for telephones up until recently. The gas and electric companies have enjoyed a similar experience. In fact, by reason of discoveries of new uses for electric companies particularly, and to some extent gas companies, they have perhaps enjoyed benefits which the telephone company does not enjoy, as, after all, a telephone plant can only be used for transmitting the spoken word.

In my opinion, a telephone company such as the Illinois Bell Telephone Company must earn, at the present time, a return of more than 8 per cent on the value of the property which it employs for the convenience of the public in
490 Chicago, in order that such return shall equal that generally being made at this time, in this part of the country, on investments in other business undertakings, which are attended by corresponding risks and uncertainties.

The money markets at the present time are very much disturbed. I am inclined to think that no operation running into hundreds of millions of dollars, whether by means of bonds or stocks, could be successfully underwritten at the present time. The demand for long-term investments, even of the highest character, is very much limited. The uncertainties regarding the Government's program, and the knowledge that the Federal Government must enter the market for enormous amounts within the relatively near future, make it further impossible for private corporations and even municipal and state corporations (states which have heretofore enjoyed the highest credit), to obtain funds in large amounts at the present time.

In my opinion a telephone company such as the American Telephone & Telegraph Company, doing a nation-wide business, must earn a return in excess of 8 per cent on the
491 value of the property which it employs for the convenience of the public, in order that such return shall equal that generally being made at this time, in this country, on investments in other business undertakings, which are attended by corresponding risks and uncertainties.

In answering questions as to what risks and uncertainties were in the mind of the investing public, I was considering the risks inherent in the business, irrespective of the present market conditions. The risks that I referred to are recognized, I think, by bankers and others, who invest in securities of this kind.

The return which a telephone company such as the Illinois Bell would have had to earn on the value of the property which it employs for the convenience of the public during the period beginning with 1923 and continuing down through 1931, in order that such return would equal that generally being made at the time in this part of the country, on investments in other business enterprises which are attended by corresponding risks and uncertainties, would have been
492 as follows: I think the return in 1923 would have had to have been 8 per cent; in 1924, 8 per cent; in 1925, 8 per cent; in 1926, 8 per cent; in 1927, 8 per cent; in 1928, 7 per cent; in 1929, 7 per cent; in 1930, 7 per cent. In 1931 I think the situation changed, toward the latter part of the year, and the return during the latter part of the year would have had to have been increased to 8 per cent. In 1932, over 8 per cent; it is impossible to say at the moment how much over 8 per cent. I do not think you could assemble the capital to buy or build a public utility on any terms at the present time.

497 FRANK REDMUND, recalled as a witness on behalf of plaintiff, having been previously duly sworn, further testified as follows:

Cross-Examination by Mr. Haight.

I did not make an inspection of the Chicago property of the Illinois Bell Telephone Company in 1922 and 1923, and had nothing whatever to do with an inspection made at that time. I did not testify in relation to such an inspection upon the first hearing of this cause. The only inspection that I have had to do with is the one resulting in Plaintiff's Exhibit A-22.

498 In preparing this Exhibit A-22, I did not take into consideration the inspection that was made in 1922 and 1923. I knew that such an inspection had been made, but did

not take it into consideration in arriving at the condition of the property in 1923; I simply tried to arrive at what appeared to me to be the correct figure for December 31, 1923, by a consideration of the findings for 1930, and my general information and knowledge as to the relative condition of the plant in the preceding years. The information for the years 1923 to 1929 in Exhibit A-22 was based on the information
gained through the inspection resulting in the figures for
499 the year 1930, taken together with my general knowledge
of the relative condition of the plant in the preceding years.

I don't think I ever considered the question of whether I preferred to use, for the year 1923, the inspection made by me in 1930, or the inspection actually made in 1923. I was making this estimate myself with the assistance of the other men who have testified. I do not think it ever occurred to me to use something else. That idea was never suggested to me, or to anybody involved in the making of this determination of per cent condition.

It is hard to say in what connection I learned that an inspection was made in 1923. Of course, we know of a good many things that are going on, without having them brought up
specifically for any purpose. Now, I know that an inspec-
500 tion was made. I know the man who made that inspection,
but I cannot tell how I actually knew that inspection was made. Now, it is also a fact that I saw something of that inspection in the previous testimony in this case. I think I had some talk with the man who made the inspection, because I meet him quite frequently, but I cannot tell you specifically when and how the matter came to my attention.

I think the subject was referred to at various times by
someone in my presence with relation to the making of
501 Plaintiff's Exhibit A-22. The only reason I worked 1923
back from 1930 was that I felt that this was a new job that I was responsible for myself, that I was doing myself, and I did not take into consideration what had been done before.

I knew that retirements were by no means uniform from

year to year in this plant. I took into consideration the general
knowledge which I had of the relative condition of the
plant in those preceding years. I did not, in making Exhibit
A-22, postulate that retirements were substantially uni-
502 form. I knew that retirements were not uniform from
year to year. I do not think I made any allowance for
that, except in the three cases mentioned. In the case of
booths and special fittings, I knew that there had been a
rather unusual number of booths replaced during that period,
and therefore I showed a lower percentage in the earlier
years. Now, to that extent, we took that into consideration.
I also explained the same situation in regard to private
branch exchanges. I also explained why, in connection with
central office equipment, I lifted the per cent from 92 in
1928, at which it had run from 1923, to 93 in 1929 and 1930.
I knew that retirements were not uniform, but I do not think,
except for those particular cases, that there has been a
503 sufficient change in the average and general character of
the various parts of the plant, to have any material effect
on the per cent condition. I do not mean by that that the
retirements fluctuate over a rather narrow range. I do not
think that there was enough difference in any of the other
accounts to have affected the per cent condition materially.
I know that retirements vary considerably, not merely
for any one class of plant, but for all of the classes taken
together. I took that into consideration, but I did not think,
except in the accounts mentioned, that the resulting
504 change in per cent condition would be considerable. I
considered simply my general opinion as to the relative
condition of the plant in those previous years, compared to
1930.

By "condition of the plant", I mean per cent condition compared with the new plant. I took into consideration the wear and tear that existed at the time of the inspection. The obsolescence that I took into consideration was only the realized complete obsolescence that had removed the possibility of the particular item giving further service. Of that, I gave four instances. I did not find anything which I considered inadequate. I bore in mind the question of adequacy or inadequacy in coming to the conclusions as expressed in Plaintiff's Exhibit A-22. I considered, from my general knowledge of the plant, that for each of those years there could have been no inadequacy. 505

The situation is that you are always making certain additions to plant in some places, and you have certain spare plant in other places. That is the general condition which has existed throughout the period. Taking the plant as a whole, it would be true that the size of the plant was always a bit ahead of the immediate demand, so that there was in that sense extra plant. In particular places, we might have arrived, at various times, at the condition where additions were necessary; that would be the regular course of business.

506 I considered physical condition, inadequacy and absolescence, as I have explained those terms. I did not take into consideration any retirements that may occur in the future, due to new inventions or discoveries. That was not part of my work. Nor did I take into consideration wear and tear in the future, or something that might occur subsequent to the date of the inspection, but which had not yet happened. I took the condition as I found it at that time. I did not speculate on what might happen in the future, nor did I consider at all the retirements of property that might occur subsequent to the date of the inspection because of physical changes, or because of future public requirements, or future changes in the public demand, or because of future losses that might occur through storms, and so forth. 507

I would not say positively that there have been no retirements of plant since 1923 due to obsolescence or inadequacy, but I do not think of any plant that has been retired on account of its being obsolete. There have been changes made in the central offices of various kinds. We have introduced certain dial equipment in place of manual switchboards at some places, because, as I understand the situation, as a general overall matter, and considering the 508 cost of labor, it appears that dial operation under certain conditions may be more economical than manual operation. That does not mean that the manual equipment is obsolete. Some of the manual equipment that was taken out may have been re-used; some of it may not. I do not know in detail.

The manual equipment taken out of the Dearborn exchange is still standing on the floor, and will probably be used some time. Part of it is actually in use today for another purpose. I believe that it stands in the Supply Account, or most of
509 it. The Delaware office is not now in use. I do not know whether the equipment from that office is still in the building, or where it is. I do not know whether it has been charged off or not, but I expect that it has; however, I cannot say that I know. My understanding is that most of the Dearborn office has been removed from the books, but part of it is still in use and remains on the books. The part displaced, I believe is in the Supply Account.

By the per cent condition that I have discussed and defined, I mean the same thing for each of the years appearing upon Plaintiff's Exhibit A-22. I have no working papers or any memos relating to this projection of the per cent condition from 1930 back through each year to and including 1923,
510 and there never were any. In coming to the conclusions in regard to the per cent condition for the years 1923 to 1929, both inclusive, and the year 1931, I talked the matter over with Mr. Hyatt, in respect to the equipment; with Mr. Riley, in respect to the outside plant; and with Mr. Young, in respect to the buildings. We came to the conclusion that, except for the accounts which I have mentioned, there had been no changes in the general condition which would be of sufficient importance to make a change in the per cent condition shown for the accounts. Mr. Hyatt and myself came to a conclusion with regard to central office telephone equipment, and so forth; and Mr. Riley and myself reached a conclusion in regard to exchange pole lines, and so forth.

I, myself, obtained the data in regard to general equip-
511 ment (Account 260), which includes Furniture and Fixtures, General Store Equipment, General Stable and Garage Equipment, and General Tools and Implements. In the

case of Furniture and Fixtures, I inspected the equipment and furniture in a number of offices, not attempting to make any calculations, but arrived at a conclusion as to the per cent condition.

512 Among the automobiles, there was a Lincoln car of the (I assume) 1927 model. That car had run 23,836 miles at the time I made my inspection. I gave that and two other cars of the same general type, an 88 per cent condition. That is, there was a Cadillac and another Lincoln involved in the same group, and I gave the group an 88 per cent condition. I do not think it is reasonably fair to pick out the one Lincoln and say it was in 88 per cent condition. I think that it
513 had run further than the others. The Cadillac ran 17,967 miles and the other Lincoln had run only a little over 2,000 miles. Then, obviously, by my method the 1927 Lincoln would have been figured, if it were figured separately, in a lower condition than the other two. I did not try to arrive at the then per cent condition of the 1927 model Lincoln limousine, taken by itself. I took the group as a whole. As applied to individual cars, the principle might not be good; but if I did attempt to arrive at the condition by individual cars for the purpose of illustration, I would do it the same
514 way. My postulate was that those three cars would probably run 150,000 miles, and the ratio of the number of miles that they had run to 150,000 miles would be the same as their per cent condition to 100; with a small adjustment that I can explain later, that would be true. I do not know the original cost of the Lincoln, but will accept the assertion that it was $5,862.60; I do not know that its estimated value on the market as of the 31st of December, 1930, was $775, but it would be somewhere around there, probably.

We were working on the actual inspection during Jan-
515 uary and February, and I think some parts of it ran into March. I don't remember exactly, but I think we finally came to the conclusions as to per cents condition that are expressed upon Plaintiff's Exhibit A-22 as late as August, possibly later.

Mr. Hyatt, Mr. Young, Mr. Riley and myself spent a great deal of time together in conferences. After the inspection was completed, we discussed the exact methods and the details of translating the inspection into per cent condition. I think there are no written instructions other than those asked for.

516 *Re-direct Examination by Mr. Bracelen.*

The modification or adjustment to which I referred in my cross-examination, in connection with the condition of the Lincoln car, was explained by me in my direct testimony, in reference to the treatment of such things as tires and fan belts and some other items that are replaced from time to time.

517 ALBERT P. HYATT, a witness on behalf of the Plaintiff, having been previously duly sworn, resumed the stand and further testified as follows:

Cross-Examination by Mr. Haight.

Mr. Haight: Mr. Hyatt has produced, in response to our request, a sheet which gives the per cent condition of manual central offices by central offices, which I will ask be marked Defendants' Exhibit D-1.

And a group of sheets, eight in number, relating to the per cent condition of manual central office telephone equipment, the first one being Account 221, summary for Calumet office; the next one being Account 221, summary for Canal office; the next one, Account 221, summary for Dearborn office; the next, Account 221, summary for Delaware office; the next, Account 221, summary for Merrimac office; the next,
518 Account 221, summary for Monroe office; the next, Account 221, summary for Newcastle office, and the last, Account 221, summary for Tandem office, all marked as Defendants' Exhibit D-2.

And also instructions for the inspection of Central office telephone equipment January, 1931, entitled "General"; a second sheet with the same general title, and the sub-title "A and B Section frames." The next one, similarly headed,

entitled "Keys." The next one, with a similar legend, entitled "Cords." The next one, with a similar legend, entitled "Plugs." The next one, with a similar legend, entitled "Jacks." The next one, with a similar legend, entitled "Relays." The next one, with a similar legend, but entitled, "Message registers, condensers, repeating coils, resistances." The next, with a similar legend, entitled "Local position cable, short multiple cables, all other cables." Next, with a similar legend, entitled "Frames, racks, fuse boards." The next, with a similar legend, entitled "Jumpers, terminals, protectors." The next, with a similar legend, entitled "Test and repair desk, operating room desk." The next, with a similar legend, entitled "Storage batteries." The next, with a similar legend, entitled "Power machines." The next,
519 with a similar legend, entitled "Power boards, conduit wiring." All marked for identification Defendants' Exhibit D-3.

And also 14 pages of instructions upon the subject matter, "Instructions for the inspection of dial central office telephone equipment January 1931." We do not further identify each of the separate 14 pages, but they may all be marked Defendants' Exhibit D-4 for identification.

Also 4 pages of instructions, entitled "Instructions for the inspection of station equipment," all marked Defendants' Exhibit D-5, for identification.

Re-direct Examination by Mr. Bracelen.

In addition to the written instructions which I have identified, I have already testified on my direct examination concerning the classes that I conducted and the oral instructions which the men working under me received.

520 Mr. Haight: We asked Mr. Riley during his cross-examination for the sets of instructions used by him in his inspection work. They have just been produced by counsel. They are all bound together in a volume which, for identification, we will now have marked Defendants' Exhibit D-6, they being the instructions in regard to the various subject matters that were identified by the witness yesterday

during his cross-examination, and we will not further identify them now upon the record.

MAYNARD H. RILEY, a witness on behalf of the plaintiff, having been previously duly sworn, resumed the stand and further testified as follows:

Re-direct Examination by Mr. Bracelen.

In addition to the written instructions which have just been marked in evidence, I also held classes with men working under me at which we studied this subject, and I also
521 gave oral instructions to them. We had conferences, and there were numerous other oral instructions given in connection with the printed instructions. This was done both before and during the inspection.

Mr. Bracelen: May the record show Plaintiff's Exhibits A-19 to A-38 inclusive, received in evidence?

Mr. Haight: But before making objection, I would like to offer in evidence as part of our case even at this time, the exhibits that have been produced and identified by the witnesses just upon the stand. Then I wish to make an objection to Plaintiff's Exhibit A-22, this summary sheet. The objection relates to the per cent condition given for those years, 1923 to 1929, both inclusive, and also to the year 1931, upon the ground that there has been no proper foundation laid, and no proper showing made that makes these admissible in evidence. As for the rest, we have no objection
522 to the other exhibits. They are entitled to their theory of the case, and I think they should be received.

The Court: As to the exhibit to which you object, it certainly is no more than it purports to be, and the evidence in the record shows the basis for the tabulation. I think it is a question of its weight, rather than its admissibility. You can save your point, and I will overrule the objection, and admit the documents in evidence.

Mr. Haight: All right. Exception.

523 Defendants' Exhibits marked D-1 to D-6, inclusive, received in evidence.

525 L. R. MAPES, a witness on behalf of the plaintiff, having been first duly sworn, was examined and testified as follows:

Direct Examination by Mr. Thompson.

My name is L. R. Mapes. I live in Evanston. I have been employed by the plaintiff in this case, the Illinois Bell Telephone Company, as Chief Engineer of the Chicago area since March 1, 1928. Prior to that time, I was Equipment and Building Engineer for the whole Company from July 1, 1925, until I became Chief Engineer. Prior to my employment by the Illinois Bell Telephone Company, I had been employed by
526 the American Telephone and Telegraph Company from August 1, 1913, until I came to the Illinois Bell Telephone Company in July of 1925. I was employed by the American Telephone and Telegraph Company as an engineer in its Engineering Department in New York City, which later became the Department of Operation and Engineering.

Since my employment by the plaintiff, I have been and am now familiar with the physical property and plant of that Company in its Chicago area, including its real estate and buildings, and with the actual use to which that property has been and is being put in the handling of both the intrastate and the interstate business of the plaintiff in its Chicago area. Except, perhaps, for a small portion of the total plant, the books and records of the Illinois Bell Telephone Company do not show upon their face a division, apportionment or
527 separation of the property of the Company as between that used in the performance of its intrastate functions, and that used in the performance of its interstate functions. I have made a separation and apportionment of the property of the plaintiff Company in its Chicago area as of December 31, in each of the years 1923 to 1931 inclusive, between the use of that property in its interstate business, and in its intrastate business. To obtain the information used in making this separation, I examined the records of the Company, particularly the plant records. I also had collected and prepared under my direction, a large amount of data from the traffic records.

The work of making the separation for the years 1923 to 1930, inclusive, was started early in January, 1931. The
528 work on this separation was finished shortly before August of 1931, but I have done a very substantial amount of work since that time in reviewing the data. Later I undertook the further work of separating the property of the Company as to its respective uses in intrastate and interstate service for the year 1931. The work of making this separation was started in December of 1931. There were certain data that were not available until January of 1932, but we carried it on continuously from the time we started in December until it was completed, I think late in January of 1932, at which time we turned over our results to Mr. Kruse, General Accountant of the Company, for his further use.

My chief assistant in doing this work was Mr. H. A.
529 Harris, who is Plant Extension Engineer for the State area of the Illinois Bell Company. He has been employed by that Company for the past twenty years. Mr. Harris and I had at least 150 different people working on the separation at various times. I think that it can be expressed this way: there was the equivalent of about 40 people working continuously for six months. We examined records taken in the regular course of business, for all of the years involved
530 in the separation. The records were very bulky and would, I think, fill at least a very good sized truck.

On the former trial of this cause, a separation was made of the Company's property as between its interstate and intrastate uses by the so-called board-to-board method. Under that method of separation, the property is first separated between its toll and local uses by allocating to toll, the toll switchboard, the toll lines, the toll trunks connecting the toll switchboard with the local switchboards, and that part of the local switchboards used for A-B toll service. Under this board-to-board method, the subscribers' stations, subscribers' lines, and that part of the local central offices used for completing calls, both local calls and calls connecting the subscribers' lines with the toll trunks, was treated purely as exchange property. The exchange property was all considered as intrastate property. The toll property, which I have previously mentioned, was then separated between interstate and intrastate, on the basis of use of the toll property.

531 In Chicago, there is a very large volume of short haul toll calls, which it is very desirable to handle as nearly like exchange calls as possible, that is, without routing them through the toll board. These calls are handled by the exchange operators, for example: the A operator in the originating exchange, the central office where the call originates, passes this call to the B operator in the exchange where the called line is terminated. This may be done either directly by means of direct trunks between the two offices, or it may be done via the Tandem board. This is called A-B toll service. In the main, it is short haul toll business.

532 In this case, I have not used the so-called board-to-board method of separating plaintiff's property between its interstate and intrastate uses, as I have just described it, and which was used at the former hearing. I have made the separation here by the so-called station-to-station method. The general result of this method of separation is that all the property is separated or apportioned to interstate and intrastate uses, in accordance with its respective uses for those services. Included in that property is not only that which was separated in the other case, but also the subscribers' station apparatus, the subscribers' lines, and the local central office equipment.

These separations were made as of December 31, in each of the years involved in this cause, that is, 1923 to 1931.

533 Wherever property was used exclusively for interstate service, it was put in the interstate class. Wherever it was used exclusively for intrastate service, it was put in that class. The property which was used jointly for both services was apportioned to intrastate and interstate, on the basis of the respective use made for those purposes.

The Illinois Bell Telephone Company divided its property, for operating purposes, into two areas on March 1, 1928. Those two areas are called "Chicago area" and "State area." There is included in the Chicago area the property within the city limits of the City of Chicago. All other property of the Company is included in the State area. There may be a very few minor exceptions to this general rule, but, if any, they are of no practical importance in this separation.

534 In separating and apportioning plaintiff's property in its Chicago area as between its intrastate and interstate uses, I have included all of the property of the Company located in the Chicago area, irrespective of the use to which the property was put. There is property in the Chicago area which is used, in part, for State area purposes, and also property in the State area which is used, in part, for Chicago purposes. In making my separation and apportionment, it was impossible to exclude from the property separated and apportioned that small part of the property in the Chicago area used in part for State area purposes, and to include that relatively small part of the State area property used for Chicago purposes. I made no compensation for the use of Chicago property for State area purposes, or for State area property used for Chicago purposes. I did, however, furnish Mr.
535 Kruse, the General Accountant of the Company, the necessary data that he needed, in addition to that which he already had, to make proper compensation for these respective uses. I believe he did make a proper compensation for these uses.

The exhibit identified as Plaintiff's Exhibit A-39, which shows schematically the property and plant in the Chicago area of the Illinois Bell Telephone Company used separately for intrastate and interstate purposes, and used jointly for both purposes, was prepared under my direction and supervision.

536 The color scheme, as shown in the upper right hand corner of this schematic plan (Plaintiff's Exhibit A-39) indicates the uses to which the offices and connecting property was put. For example, the toll lines which connect the toll office to offices in other States (such as Wisconsin) and are, therefore, being used for interstate purposes, are shown by the solid

blue lines. The interoffice trunks connecting the local offices within the City of Chicago, and used for exchange calls, which are intrastate, are indicated by the green lines. The property which was used jointly for interstate and intrastate service, such as the subscribers' stations and the local central offices, are indicated in red. The property which was used wholly for intrastate toll uses, such as the Tandem trunks between the Tandem office and the offices outside of the City,
are indicated in dashed blue lines. The property used
537 for both intrastate and interstate toll services, such as
certain toll lines connecting the toll office to other offices
outside the City, are indicated by blue dot-dash lines.

Telephone service is provided in Chicago by 32 local central offices, each serving the subscribers in a relatively small area. We have only shown three central offices on this schematic plan, so as to make it clearer. The subscribers' stations are connected with the local central office by one or more pairs of wires. Each local central office is connected with the other local central offices in the City by interoffice trunks used for exchange calls, which are intrastate. It is connected with the
toll office by recording trunks and toll switching trunks,
538 indicated here by the blue dot-dash lines, and is also con-
nected with the Tandem office by Tandem trunks, indicated by the red lines. The central offices are also connected with offices outside of the City of Chicago by direct A-B trunks, as indicated by the blue dash lines here (indicating). These particular trunks go to another office in the State of Illinois, and are intrastate. There are also trunks from some of these local central offices going to points in Indiana, which are interstate points.

The Tandem office is used principally for handling short
haul toll calls between points where the volume of calls
539 is relatively small. It is also used to some slight extent
for exchange calls under similar circumstances. Most of the central offices in the City of Chicago have such a substantial volume of traffic with the other central offices in the Chicago area that there are direct trunks connecting the two offices. There are, however, certain portions where there is not

enough business between two offices to justify direct trunking connections between the two, and in these cases the Tandem office is a device by which we collect the calls from these various local offices and distribute them to the other local central offices, where there is not the need, owing to the volume of traffic, for a direct connection. In this way, the Tandem office handles not only local exchange calls, but also a substantial portion of the A-B toll calls.

540 The toll office is used primarily for the longer haul toll calls; both calls to other points in the State of Illinois, and to other States. The connections of the toll office are not only with cities in Illinois, but with cities in other States.

Exhibit A-39 does not attempt to show any more than schematically the Company's property in the City of Chicago. We have not attempted to show by the number of symbols or lines on the chart the actual quantities of the various types of equipment.

541 An exchange call which is classed as intrastate, originates at the subscriber's station, indicated by the red circle, is carried over the subscriber's line, indicated by the red line, to the A board at the local central office, indicated by the red rectangle. Now, in some cases that call may then be carried from the A board in this local central office to the B board in the same local central office, and from there out over the terminating subscriber's line to the terminating subscriber's station. In other cases, it may go from the A board of the local central office over the interoffice trunks (indicated by green lines used for exchange, that is, intrastate service), to the B board in some other local office, from whence it is completed over the subscriber's line to the subscriber's station. A local call may also be handled in the exact manner which I have described, the only difference being that it would go through the Tandem office, but that applies to only a very small proportion of the total exchange calls.

542 Toll calls are handled by any one of three different methods: first, by means of A-B direct trunks. Starting as before with the subscriber's station, the subscriber's line, the A board in the originating local central office; from

thence over an A-B trunk to the terminating office, which may be in Illinois, in which case the service is an intrastate service, or which may be in Indiana, in which case the service is an interstate service; and from this office then to the terminating subscriber's line and subscriber's station.

A second method of handling toll calls is through the Tandem board. Starting as before with the subscriber's line and subscriber's station, the A board in the local central office, from thence over an originating Tandem trunk to the Tandem office, and from the Tandem office over a com-
543 pleting Tandem trunk to an office outside of the City, which may be either interstate or intrastate. In the case of interstate, the Tandem trunks here are shown in solid blue lines, and in the case of the trunks between the Tandem office and the local central offices they are shown in red lines, because they may be used for either interstate or intrastate service.

The third method of handling calls is through the toll office. Starting as before with the subscriber's station, the subscriber's line, the local central office, thence by recording or toll switching trunks to the toll office, and from there to offices at distant points, over either interstate toll lines, as shown in solid blue, or over joint interstate and intrastate toll lines, as shown by the dash-dot lines.

544 The A-B toll calls were approximately 81 per cent of the total toll calls in the year 1930.

Any calls which cross the State line are classed as interstate calls. Other calls are classed as intrastate. Exchange calls are classed as intrastate with one minor exception, which occurs in the case of so-called foreign exchange lines. Foreign exchange service is service given to a subscriber from an exchange other than the one to which he would normally be connected, for example, a subscriber in Gary, Indiana, would normally be connected with the Gary exchange. Now, for some reason he wishes to be connected with the Chicago exchange, so that we actually do connect his telephone to a central office in the Chicago exchange, and that particular service and that particular line is known as foreign

545 exchange service and foreign exchange line. Where calls moving over foreign exchange lines come from stations located outside of Illinois, we have treated them, in the various computations which we have made in the preparation of our exhibits, as interstate calls.

I have prepared an exhibit which shows in some detail the methods used in the separation and apportionment of the property of the Illinois Bell Telephone Company in its Chicago area, as between intrastate and interstate use, and also the method of apportionment of operators' wages and transmission power, furnished by me to Mr. Kruse, the General Accountant of the Company, for his use in the separation and apportionment of those expenses of the Company. That exhibit has been identified as Plaintiff's Exhibit A-40. It was prepared in connection with the separation of the Company's property in its Chicago area for the years 1923 to 1930.

This Exhibit A-40, or copies of it, were submitted to the defendants in this cause for their examination and inspec-
546 tion on August 1, 1931. The underlying data upon which this exhibit is based have been available for the inspection of the defendants and their counsel, and is now available for their use. The data I used in making the separation for the year 1931 have also been available for inspection by the defendants.

The methods which I used in separating and apportioning the property of the Company for the year 1931 were identical with the methods which were used for making the separation of the property for the earlier years, as such methods are set out in Exhibit A-40. In connection with the separation of transmission power expense for the year 1931, we did not make a new study to obtain the relative drain as between intrastate and interstate uses for that year. We assumed
547 that the drains were proportionately the same as they were in 1930. In my opinion as an engineer, that is a very fair assumption to make.

By the methods which I have used, as set out in Exhibit A-40, I have separated and apportioned the entire property of the Illinois Bell Telephone Company in its Chicago area for the various years shown in these exhibits, on the basis of the actual uses to which that property is put, viz., its intrastate and its interstate uses. In my opinion, the methods which are set out in Exhibit A-40, and which I have used, are proper and accurate methods for the purpose of accomplishing the kind of separation to which I have just testified.

When the percentages of such respective uses (interstate and intrastate), which I have obtained for each of the years 1923 to 1931, are applied to the fair value of the property as it shall finally be found by this Court, the resultant dollars will give the value of the interstate and intrastate property of the plaintiff in its Chicago area on the basis of such use.
548 In the exhibits which are to be introduced, I have made the separation, not only on the dollar basis, but on the percentage basis, for the property in its entirety for each of the years, and for each plant account.

The exhibit which has been marked Plaintiff's Exhibit A-41, consisting of eleven sheets, was prepared under my supervision and direction. Page 1 of this exhibit shows an apportionment of the reproduction cost new of the plaintiff's property in Chicago, to intrastate and interstate uses, as of December 31 of each of the years 1923 to 1930, and the same information with respect to the year 1931 is on the
549 second sheet. These first two sheets are summaries showing the apportionment of reproduction cost new for each of the years by dollars, as between intrastate and interstate use, and also an apportionment on the percentage basis. Sheets 3 to 11 of Exhibit A-41 show the separation by dollars and by percentages, broken down by plant accounts and sub-accounts. The dollar figures representing the cost to reproduce new, which have been apportioned in this Exhibit A-41, were obtained from the exhibits prepared and already intro-
550 duced in evidence in this case. That would include, of course, Mr. Sloan's exhibits, Mr. Renwick's exhibits and Mr. Huston's exhibits. The dollar figures appearing in this Exhibit A-41 include the cost to reproduce the physical property, including undistributed construction costs and general equipment, but excluding going value, cash working capital,

construction work in progress, and materials and supplies.

551 Sheets 1 and 2 of Exhibit A-42 show an apportionment of the property of the plaintiff in its Chicago area, based on the reproduction cost new, less depreciation. This apportionment is for each of the years 1923 to 1931, inclusive, and shows the apportionment by dollars, and also the apportionment by percentages. These sheets 1 and 2 are summaries. Sheets 3 to 11 are apportionments, both on a dollar and a percentage basis, but broken down by plant accounts and subaccounts, there being one sheet for each year. We

552 obtained these dollar figures on Exhibit A-42 by making the separation of the cost to reproduce new as between intrastate and interstate uses first, and then applying to such separated dollar figures the conditions per cent obtained from Mr. Redmund's exhibits.

The dollar figures included in Exhibit A-42 were also obtained, so far as the cost to reproduce new is concerned, from the exhibits which have already been introduced in this case, and we separated, so far as dollars are concerned, on Exhibit A-42 the same things which were separated on A-41, that is, cost to reproduce new, plus structural overheads, plus general equipment, but not including going value, cash working capital, materials and supplies or construction work in progress.

553 The methods which are outlined in Exhibit A-40 apply equally to the work which was done in connection with Exhibits A-41 and A-42, and were followed by me in compiling the figures obtained on both of these exhibits.

These two exhibits, A-41 and A-42, other than the figures contained in them with respect to the year 1931, were furnished the defendants' counsel on or about the first of August, 1931. My 1931 work was furnished to the defendants' counsel some time around or after February 1 of this year.

I have prepared very recently at counsel's request two exhibits, identified as Plaintiff's Exhibits A-43 and A-44. These exhibits have not been submitted to the defendants in this case. Exhibit A-43 shows an apportionment of the property of the plaintiff, based on the reproduction cost of the property, in accordance with the testimony that I have 554 previously given. Exhibit A-44 is a summary similar to sheets 1 and 2 of Exhibit A-42, and shows the reproduction cost new less depreciation, separated between intrastate and interstate uses. These two exhibits differ from Exhibits A-41 and A-42 in one respect only. In these last two exhibits, being Exhibits A-43 and A-44, we have excluded all overheads on land. In these two new exhibits, I have made a separation on the same basis that I used in the preparation of my other separation exhibits, and the only difference is that in the preparation of A-43 and A-44, at the direction of 555 counsel, I have excluded all overheads on land. The overheads on land were furnished to me by Mr. Sloan.

The Court: Are they in some exhibit here?

Mr. Thompson: They are, your Honor. The undistributed construction costs are, as I recall it, included in Exhibit A-12, and they show there the spread to the several accounts and sub-accounts, including land; and I understand Mr. Mapes to say that he has taken the overhead which Mr. Sloan applied to the land account and excluded it in preparing Exhibits A-43 and A-44.

The Witness: That is right.

The Court: All right. Why did you do that?

Mr. Thompson: In a reproduction cost new, we would actually have incurred the expense of interest during construction, taxes during construction, and so forth, with respect to land. There is, however, in the Minnesota Rate Case a statement by Mr. Chief Justice, then Mr. Justice Hughes, dealing with the question of overheads on land. In that particular case, the railroads were contending that they would take the fair market value of adjacent lands, and because of the expense of segregation, and the value for railroad pur- 556 poses, they would apply a multiplier of 2½ in order to get the market value of lands up to the place where the special value for railroad purposes would be fairly met by the application of this multiplier.

Then, on top of that, they put on certain undistributed construction costs. Frankly, in view of that language, we felt it was essential to bring to your Honor here exhibits which would show this separation, based not only upon lands including overhead, but on land excluding overhead.

The Court: So that if we decided to take the statement of that case, we would have the figures before us?

Mr. Thompson: The basis upon which it could be done. I want your Honor to understand clearly that we believe the language of the Court can be distinguished in that case from the facts in this case, but if your Honor should conclude otherwise, we don't want you to be without the basis upon which you can proceed.

The Court: So that there will be no delay?

Mr. Thompson: Yes.

All the exhibits which have been introduced purporting to show a separation and apportionment of the plaintiff's property as between its intrastate and interstate uses, accurately and correctly reflect, in my opinion, the separation in dollars, and also on a percentage basis, of the property of the 557 plaintiff in its Chicago area (exclusive of going concern value, materials and supplies, cash working capital and construction work in progress), as between its intrastate and interstate uses, on the several bases to which I have testified.

558 The exhibit identified as Plaintiff's Exhibit A-45 consists of six sheets, and is a list of the traffic data which we used in the separation of the property between its intrastate and interstate uses. This is substantially a compilation in exhibit form of information listed in Exhibit A-40. I think substantially all of those items indicated in Exhibit A-45 are referred to in Exhibit A-40. Exhibit A-45 really shows a rather complete list of the traffic data to which we resorted in making the separation of the plaintiff's property on the basis of use.

The data contained in the exhibit identified as Plaintiff's Exhibit A-46, which is in ten sheets and which relates to call volumes and time intervals in the local central offices in the Chicago area of the plaintiff for the years 1923 to 1931, both inclusive, were compiled under my direction for use, and were

used by me in the separation of the plaintiff's property in its
Chicago area in each of the years. The first sheet of this
559 Exhibit A-46 contains the data for the years 1923 to
1930, and sheet 2 shows the similar data for 1931. The
information in this exhibit was compiled principally for use
in separating that part of the property jointly used for intrastate and interstate service, such as the subscribers' lines
and subscribers' stations.

The data which are covered on sheets 1 and 2 of this exhibit
(A-46) show, in the first column, total calls originating in
local central offices in the City of Chicago for each of the
years. In the subsequent columns, these calls are broken
down into certain major classes, and each class is subdivided
where necessary between intrastate and interstate. The exhibit also shows the total calls originating in all local central
offices split between those originating in manual offices
560 and those originating in dial offices.

The total originating calls in central offices in the City
of Chicago combining both the manual and the dial offices, and
all sorts of calls which were used for the purpose of making
this separation, exceed a billion in each of these years. All
of the data with respect to all of these calls, aggregating more
than a billion a year, were collected and compiled and classified as between intrastate and interstate in the separation of
the Company's property.

Sheets 1 and 2 of this exhibit (A-46) not only show the total
calls broken down by various classes, but also show the percentages of total calls in the various classes used for intrastate and interstate where such separation is necessary.
Sheets 3 and 4 show for each of the years 1928 to 1931, a
further subdivision of the originating calls, and also show
the number of incoming calls in total to all local offices
561 in the City, and these figures also are all broken down
between those incoming to manual offices, and those incoming to dial offices. Sheets 5 and 6 show the time use per
call for the various classes shown on the previous sheets.

In apportioning and separating the plaintiff's property, I
not only obtained the total number of calls of the various

kinds, that is, exchange, interstate toll and intrastate toll, but also obtained the time intervals and use with respect to each of those classes of calls, so that I could weight out that factor of use, not only by the number of calls, but on the basis of the actual time the subscriber's line was held, or the talking time, or whatever the proper method is. The detail of how I did that appears on Exhibit A-40 with respect to each class of the Company's property which, in my opinion, is fully explanatory of the situation.

562 Sheets 7 and 8 (Exhibit A-46) show the total time use for the various classes of calls, obtained by multiplying the number of calls by the time in use per call. That has been subdivided as shown on the exhibit. Sheets 9 and 10 show the total minutes use for interstate and intrastate service, and the resulting percentages, which indicate the per cent use of the property for interstate and intrastate service.

Exhibit A-46 does not contain a summarization of all the traffic data which were used in making this entire separation. This particular set of figures in Exhibit A-46 was obtained in order to separate the subscribers' lines and subscribers' stations and related property. These data are typical of those which were used in the separation and apportionment of the other types of property. All of those data are contained 563 in my work papers, and have been used by me in making the separation, depending upon the exact character of the property that I was separating and apportioning, all as shown in Exhibit A-40, which is the method exhibit.

When we got the call volumes and the time intervals set out in Exhibit A-46, we applied the percentages arising therefrom to the subscribers' lines and subscribers' stations, and certain other related property which had the same use as the lines and stations. I obtained other call volumes and time intervals in order to apply percentages arising therefrom to other property used generally for interstate and intrastate purposes.

The dollar figures which appear on the several exhibits, showing the separation of the plaintiff's property as between its intrastate and interstate uses, were not altogether derived

by applying these call volumes and time intervals to the property, because we first allocated or apportioned to toll use any property used exclusively for toll. Similarly, any property used exclusively for exchange use we first apportioned or allocated to such exchange use. The balance of the property which was jointly used was separated in accordance with
564 the actual time use of such property for the two respective services.

I furnished data for the use of Mr. Kruse, the General Accountant of the Company, in separating two of its expense accounts. These expense accounts were Transmission Power, which is Account 628, and Operators' Wages, which is Account 624-11. Account 628, Transmission Power, covers the cost of power purchased for transmitting traffic, operating signals, the cost of renewing local and central office batteries, and the cost of labor employed and supplies consumed in operating the generating and storage battery plants. Transmission power is regularly accounted for as a separate item of traffic expense.

The basis upon which this separation of transmission power expense was made is covered in Exhibit A-40, in
565 a general way. We have certain basic current drain figures for the various classes of calls. By multiplying out the total number of calls in each class by the current drain required per call for that particular class, we can arrive at the total current drain for that class, and the current drain total for all classes, and thereby obtain a percentage which can be used in dividing the transmission power expense. This was done so that we could get the percentage which was applicable to interstate calls and intrastate calls separately. "Current drain" is an engineering term, and is generally expressed, I think, in our work, in ampere seconds. It represents the number of amperes of current flowing from the battery, multiplied by the number of seconds that those amperes flow. If one ampere was flowing for one second, it would be one ampere second. The basis of the separation
566 which I have made of this transmission power expense as between interstate and intrastate is to obtain, in the

method I have indicated, the amount of power used respectively for the two uses.

Account 624-11 is Operators' Wages. We use in the regular course of our business certain factors technically known as traffic coefficients, which are proportional to the amount of operating labor required for various classes of calls. Now, by multiplying out the number of calls in the various classes by the coefficients applicable to those classes, we could get the total labor units expended in handling traffic. We could get the separation of that into the various classes of calls, and from thence a separation into interstate and intrastate, on a percentage basis.

To explain a traffic coefficient by example: a relatively simple call is represented by a coefficient of 1. An operator, in a busy hour, can handle about 230 of those calls. Now, a somewhat more difficult call, which takes twice as much operat-
567 ing labor as a simple call, will be represented by a coefficient of 2, so that, in effect, she could handle about 115 calls in the busy hour of that particular type. All the various classes of calls have various coefficients, depending on the amount of labor required by the operator in completing the call and disconnecting the subscriber. The actual work done by the operator with respect to these classes of calls is accurately measured by these coefficients. The method which I have used in apportioning this item of traffic expense of operators' wages is one which results in making a just and proper apportionment of it between intrastate and interstate expense on the basis of the respective time devoted by the operators to those two given services.

568 I am familiar with each of the parcels of real estate and leasehold interests which are described in Exhibit A-18 and which have been appraised by Mr. Huston. I am also familiar with the use to which these parcels of land have been and are now being put by the Illinois Bell Telephone Company. These respective parcels of land, and the leaseholds shown for the year 1931, are actually now used either as locations for the business offices or exchanges of the Illinois Bell Telephone Company in its Chicago area. There

are three exceptions where there are no buildings on vacant parcels of land at the present time. These are tracts 29, 34 and 35.

569 Tract 29 is located at 813 East 44th Street. It was acquired in 1918 as a site for the new Oakland central office to take care of the very rapid growth which was being experienced in that area. After this real estate was acquired, there was a change in the situation which resulted in a temporary postponement of the use of the real estate. The growth was not what we expected it to be in that particular area, which, I think, is very largely given over to a negro population at the present time, so that we have not yet built a building upon this particular parcel, but the Company retained this property for the purpose of erecting a building upon it in the future. It is contemplated that such a building will be erected in the next four or five years.

570 Tract 34 was acquired in 1929, and is located at the northwest corner of 75th Place and Stony Island Avenue. It was acquired for a new central office to relieve the very rapidly growing South Chicago, Hyde Park and Stewart offices. When this tract of land was acquired in 1929, the Company had a definite plan for erecting a building there; we expected to start the erection of the building in 1930. That building was not commenced because of the very much smaller demand for telephone service on account of business conditions. The Company now intends to use this tract to which I have just referred in the near future for the construction of a telephone building; probably in 1935.

Tract 35 is located at the northwest corner of 64th Street and Cicero Avenue, and was acquired by the Com-
571 pany in 1929. It was acquired for a new building to relieve the rapidly growing area served by the Prospect and LaFayette offices. At the time of its acquisition, it was expected to start the construction of a new building in 1930. That plan was not carried out, also due to the lessened demand for telephone service in that area. The Company at this time has a definite plan for the use of this tract of land for a telephone building; we expect to start the erection of a building in 1935.

Land was purchased for a new Monroe dial office in the 572 fall of 1931. It had a few old buildings on it, of no value.

We started construction on this property during the last few days in December of 1931. Of course, the construction has not been completed yet, and the equipment has not been installed, or the office cut over. The foundations are just being completed. Work is to be prosecuted in the immediate future on the completion of that building.

There are parcels of real estate included in the Huston appraisal identified as Exhibit A-18 on which there are buildings used for telephone purposes, but which are also occupied in part by buildings not used for telephone purposes. They are tracts 1, 9, 14, 21, 22 and 33. I have prepared a list 573 of the parcels of land, to which I have just referred, giving the dimensions of real estate, the dimensions of the buildings used for telephone purposes, the dimensions of buildings used for other than telephone purposes, and the purposes for which such latter buildings are used. (This document was identified as Plaintiff's Exhibit A-47.)

This exhibit shows enough information so that it is substantially self-explanatory. All the buildings not used for telephone purposes, which are located on the tracts to which I have referred, were already constructed on the real estate at the time it was purchased.

With respect to all of the tracts of lands included in the Huston appraisal, the Illinois Bell Telephone Company has not purchased more property than is reasonably necessary for the several exchanges located on these parcels of land for these reasons: we plan our buildings so that it is pos-574 sible to extend them, and we must protect ourselves by having adjacent land on which those extensions can be made. In certain cases, the zoning ordinances require us to have more land than that which is actually occupied by the building. In my opinion, the Company has not purchased land for extension in excess of its normal requirements for telephone service.

Tracts 6 and 42, included in the Huston appraisal for certain years, were not used for telephone buildings, and were

subsequently sold by the Company, or taken out of its operating property. Tract 6 was purchased in 1917. It was acquired for an office to take care of the fairly rapidly growing Canal area, but the growth was not what was anticipated. In 1929, we took that property out of our operating prop-
erties, and also out of the appraisal. Tract 42 was ac-
575 quired in 1919 to relieve the fast growing Wentworth
area. We later determined that that particular property
would not be needed, so part of it was sold and the balance was taken out of our operating property.

In my opinion, and as a result of my knowledge of all of this property, the real estate, the leasehold interests, the buildings and the operating telephone property, are used and useful, and were used and useful by the Illinois Bell Telephone Company in rendering service to the public in its Chicago area during the period of time in which it has owned this property.

576 ALLEN G. HOYT, recalled as a witness on behalf of the plaintiff, having been previously duly sworn, further testified as follows:

Cross-Examination by Mr. Goldstein.

577 I am, at the present, one of the officers of the National
City Bank, having charge of the investment of trust
funds, and of the review of investments. In connection with my duties as such, I have had occasion to compare the various classes of securities, and to compare the relative merits of bonds versus stocks, and to compare the merits of various classes of bonds. I find some bonds that I consider as high grade, some bonds that I consider as medium, and some bonds that I consider as speculative.

I also give consideration to the restrictions that may exist
by statute with reference to bonds available for invest-
578 ment in trust funds. I also consider the various classi-
fications, the various requirements, and the various
attributes of bonds, apart from the statutory restrictions,

which have become impressed upon the investors and upon me as a banker in connection with my selection of securities for investment. In connection with my determination of these various classes and types of bonds, I have occasion to consult various sources in order to procure the data upon which I form my judgment. Some of those sources are established manuals, annual reports of companies, and the services of statistical companies. The established manuals to 579 which I referred are Poor's Manuals, Moody's Manuals, Standard Statistics, and so forth. The services include Standard Statistics, particularly, and Moody's.

In connection with the various classes of securities, investors have come to think of bonds in certain classifications: bonds legal for savings banks and bonds not legal. They have also come to think of the classifications in the terms in which some of the established services have rated them, that is, as A-1 bonds or as Triple-A bonds. Many investors have in mind those ratings in connection with the type of securities purchased.

580 We have as fields for bonds, the savings bank, the trust funds, the so-called conservative investor, the so-called speculative investor, and the so-called business man risk investor. And all of these various classes of investors do not buy the same kind of bonds. The savings banks, the trustees, and the conservative investors are very likely to confine their purchases to bonds of the general character rated by Moody as Triple-A bonds. Generally speaking, the trust funds would confine their purchases to Triple-A bonds. The conserv- 581 ative investor would buy a higher-rated, or more conservative bond than the speculative investor.

There are circulars issued by the National City Company in connection with the issues in which it participates, or originates. The circulars which have been handed to me are, I think, very similar to circulars issued by the National City with regard to bond offerings. These circulars include one concerning $125,000,000 of American Telephone & Telegraph Company, 35-year Sinking Fund, 5 Per Cent Gold Debentures, identified in the margin as Defendants' Deposition Exhibit 104. It is typical of its class. There is also a circular entitled: "$150,000,000 American Telephone & Telegraph Company, 35-year, 5 Per Cent Gold Debentures," identified as Defendants' Deposition Exhibit 106. Another one is entitled: "$50,000,000 Illinois Bell Telephone Company First and Refunding Mortgage 5 Per Cent Gold Bonds, Series A," identified as Defendants' Deposition Exhibit 145. 583 Another is entitled: "$100,000,000 American Telephone & Telegraph Company, 35-year Sinking Fund, 5.5 Per Cent Gold Debenture Bonds," identified as Defendants' Deposition Exhibit 105. Another is entitled: "$25,000,000 International Telephone & Telegraph Corporation, 20-year 5.5 Per Cent Convertible Gold Debenture Bonds" (which was marked Defendants' Exhibit D-7 for identification). There is also a circular entitled: "$40,000,000 New England Telephone & Telegraph Company First Mortgage 4.5 Per Cent Gold Bonds, Series B" (which was marked Defendants' Exhibit D-8 for identification).

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These circulars, and the circulars which the National City Company issues, contain the information which the ordinary investor usually looks at in making his investment. 584 They contain the pertinent facts which the bankers believe would be of interest to the prospective buyer, and the letters contained in these circulars directed to the bankers, contain certain information that the banker desires to have in connection with his resale of the securities purchased.

The ordinary investor, in addition to the market condition and the kind of industry, looks at the ratio of the credit obligations to the total book value of the assets. He also 585 looks at the ratio of earnings available for interest requirements over a period of years, and at the amount of book value of the assets behind his obligations. The ordinary investor who invests in capital stock of a company, would look at the amount of outstanding credit obligations ahead of his security. He would also look at the amount of book value of the assets behind his security, and at the amount of earnings available for dividends after deducting interest, and all prior charges. He would also look at the per cent of the total earnings available for dividends, which are paid out in dividends. He would also look at the amount of book value and assets which are used to earn the amount of money which is required to pay his dividends and the extra amount added to surplus.

586 The liabilities on the balance sheet consist of capital liabilities, bonds and stocks, surplus items, premium on stock, and reserve; those are the principal items. When I say these show on the liability side, I do not necessarily have in mind that, in determining the ratio of the assets available for his stock, or his investment in the company, I would deduct the reserve for depreciation from the plant assets, on the assets side. Some companies carry the reserve for depreciation against plant as a deduction on the assets side. Very few public utilities, as far as I am aware, make a deduction from their plant account on the assets side. Some indus-
587 trials do. If they are carried on the liability side, and the assets side carries the gross plant, the amount of assets represented by the reserve is helping to earn the money necessary to pay the dividends, provided the total assets on the assets side are invested. In considering the total assets that are used to produce the required earnings, we consider the total assets before the depreciation deduction.

An investor may give consideration to the fact that perhaps the actual value of the assets may be greater than the book value. He certainly gives consideration to the fact
588 that reproduction may be more or less than the book value. In determining the amount of assets which are used to produce the income, for instance, in determining whether it is 8 times the interest requirement or 4 times the dividend requirement, and so forth, the only figure that is available to the investor is the book value of those assets. Of course, the investor and particularly the stock buyer might give a great deal of consideration to the fact that since the plant was built up, construction cost has increased, and there were good grounds to believe that the duplication value

greatly exceeded the book value. In determining whether 589 the assets will earn 4 times the dividend requirement or the interest requirement, or the total earnings available for interest or for dividends, the investor may compute his ratios upon the basis of the earnings to the asset values as shown on the books of the company.

"Q. Now, you were asked five questions on direct examination, and I will repeat them to you. The first question was:

'Question: Have you become familiar with the returns that were and are being made by various enterprises in securities in which your company dealt?'

590 "And the answer was:

'Answer: I have.'

"The Witness: In a general way that is true, yes.

"Mr. Goldstein: Q. Yes. I am just—I just want to repeat these questions, and then I will predicate some questions on the basis of your answers, later on. The second question was:

'Question: Have you become familiar with the returns which are being made generally in this part of the country, on investments in public utilities and other businesses?'

"And your answer was:

'Answer: I think I am.'

"And the question then was:

'Question: In your opinion, Mr. Hoyt, what return must a telephone company such as the Illinois Bell Telephone Company earn on the value of the property which it employs for the convenience of the public in Chicago, in order that such return shall equal that generally being made at this time, in this part of the country, on investments in other business undertakings which are attended by corresponding risks and uncertainties?'

'Answer: At the present time?'

'Question: Yes.'

591 "And you answered:

'Answer: More than 8 per cent.'

"Then the question was asked:

'Question: In your opinion, what return must a telephone company such as the American Telephone &

Telegraph Company, doing a nation-wide business, earn on the value of the property which it employs for the convenience of the public, in order that such return shall equal that generally being made at this time, in this country, on investments in other business undertakings, which are attended by corresponding risks and uncertainties?''

"And the answer was:

'Answer: In excess of 8 per cent.'

"Then the question was:

'Question: Now, Mr. Hoyt, would you state the return which a telephone company such as the Illinois Bell would have to earn during the period beginning with 1923, and continuing down to 1931, stating the return by years, assuming the same conditions that I asked you about with regard to the present time.'

"And your answer was:

'Answer: I think that the return in 1923 would have had to have been 8 per cent; in 1924, 8 per cent; in 1925, 8
592 per cent; in 1926, 8 per cent; in 1927, 8 per cent; in 1928, 7 per cent; in 1929, 7 per cent; in 1930, 7 per cent. In 1931 I think the situation changed towards the latter part of the year, and the return during the latter part of the year would have had to have been increased to 8 per cent.'

"Now, those were the questions and the answers. What I would like to ask you is this: What did you understand by the word 'property' as used in each of the questions?

"A. The fair value of the property. As I take it, a utility is entitled to rates which will produce net earnings equal to a reasonable return on the fair value of the property."

I understood the word "property" in those questions to be whatever the value should be. If you are going to enlist capital for enterprises, the return must be based upon the capital equal to the value of the plant. Referring to the
593 first of these questions, when I said that I have become familiar with the returns that were and are being made by various enterprises in the case of the securities in which my company dealt, by the word "returns" I meant largely,

as far as the bonds were concerned, the yield on the bonds. As to stocks, I meant the question of dividend paid and the relation of earnings to dividend, and the question, generally speaking, of asset value to par value, or number of shares outstanding.

594 In answer to the second question, I stated that I am familiar with the returns which are being made generally in this part of the country on investments in public utility and other businesses. I understood the word "investments" to mean the capital embraced or embarked in the public utility undertakings. I understood that word to mean all of the money which the investor would put in at the time if he were buying or building an undertaking of this kind. It is true, I am looking at the investor's equity in the business, but I am looking particularly at the total value of the property; the total that might be embraced in the value of the property in bonds, stocks, surplus, and whatever else there might be.

595 In speaking of the 8 per cent return and the 7 per cent return that the investor would require on the investment in public utility enterprises with similar risks and uncertainties as the Illinois Bell, I did not have in mind that the bondholder would require 8 per cent return and the stockholder would require 8 per cent return. I assumed that if a group of capitalists advanced or raised an amount of capital to buy the undertaking outright, then this group might subsequently issue a certain amount of bonds, and a certain amount of stock in order to finance that investment. The bonds would bear a much lesser rate than 8 per cent, and the stock earnings would be over 8 per cent, probably, under a sound and, as close as may be, a fair recapitalization.

596 I would consider the 8 per cent as 8 per cent on both the stocks and the bonds.

I had in mind what the average investor, who would put his money into that kind of enterprise, would expect. I have had in mind the return which a group of capitalists or bankers would expect in the first instance to raise the capital. They would depend more or less upon the investment market to distribute, in whole or in part, the securities after the capital had been enlisted in the enterprise. The return that would be expected on the capital put in by the bankers would depend to some extent upon the market conditions, upon the selling resistance, and upon the type of investment that they could resell.

597 I think that there are a certain amount of bonds and a certain amount of stocks that might be issued to raise the funds, and my experience leads me to believe also that certain dividends would have to be paid on that stock, and that the earnings would have to exceed the dividend paid. In measuring the 8 per cent return, the necessity of which I have testified to, I had in mind the amounts necessary 598 to take care of the interest expected to be paid upon the bonds to be issued, and the earnings applicable to the stock. The return in relation to the requirements for interest and dividends and the margin above the dividend requirements are taken into consideration.

I have spoken of my familiarity with the Bell System, and with the fact that my Company has participated in syndicates that purchased and sold the bond issues of certain of the subsidiary companies, like the Northwestern Bell, the New York Telephone Company, the New England Telephone Company, and the Southwestern Bell, and also A. T. & T. bonds.

I have also spoken of the total amount of assets of the 599 Bell System as shown on a consolidated basis, and the total amount of the earnings of the Bell System on a consolidated basis. When I spoke of the Bell System, I thought of it as a unit of which the A. T. & T. was the head. I was speaking of the A. T. & T. owned properties and subsidiaries, consolidated. When I spoke of it in that light, I also spoke of the A. T. & T. and the subsidiary companies as a unit engaged in the telephone business proper, in the manufacturing business of the Western Electric, in the phonograph business, in the moving picture business, the telegraph business, the radio business, and, to a certain extent, in the television business.

I do not remember how much capital was attracted to the

Bell System during the period from 1923 to 1931, but I remember it was a very large amount. I do not have the exact figures before me. The figure of $1,820,000,000, of which $520,000,000 was bonds, given by counsel for defendants,
600 sounds right.

I think the Bell System securities by and large during that period were well regarded; and to a degree they got what is known as cheap money.

The Bell System has in the United States, I think, some 16,000,000 telephones, out of a total of 20,000,000 or somewhat less. I do not know how many companies operate the 4,000,000 that are outside the Bell System. There must
601 be quite a large number of such companies. There are very few companies outside of the Bell System operating in cities of 250,000 or over. I do not think of any which operate in a city over that size. Neither do I think of any in this country operating in cities of over 100,000. The only company of any size that I recall is, I think, a company called the Lincoln Telephone Company, the size of which I do not know. It is located in Lincoln, Nebraska. There are few large telephone companies outside of the Bell System. I do not think of any telephone company in this country outside of the Bell System that would require, say, $5,000,000 or $10,000,000 of capital.

602 The actual earnings of the Bell System, on a consolidated basis, on the book value of its assets, as shown on the balance sheet, varied from around 6 per cent to a rate, in 1931, of slightly over 5 per cent. The return of some of the subsidiaries on the book value was probably a little higher than this 5 or 6 per cent, but some of them were not greatly at variance. In 1931, according to the annual report of the A. T. & T. which has just been released, I think the earnings, on a consolidated basis, were only slightly
603 over 5 per cent. In 1930 they were 5.8 per cent, and in earlier years a little more, but I have not the per cent in mind.

The cost of borrowed money to a utility consists of two things: the discount in the price paid by the bankers, and the

expense incurred by the company in trustees' fees, certification fees, registration, and things of that nature. The price that a banker or underwriter pays to a company for its bonds represents the wholesale price, and the price that the
604 banker gets on resale to investors is the retail price. The banker must have a certain margin in order to cover expenses and profit, and that margin below the list or offered price to the investor is the wholesale price. He bears in mind the retail price in determining what his wholesale price is going to be.

The original offering of the bonds of the Illinois Bell Telephone Company in 1923 was about 95, to yield about 5¼ per cent. I do not know the yield-on-offering price of any other Bell Telephone security during the period 1923 to 1931.
605 Recently, I think, the Telephone Company and the telephone industry have enjoyed better credit than the railroad industry. That means that they have been able to sell their bonds at a lower yield, and they have borrowed money at lower cost than the railroad industry. I think that in the earlier years of the period 1923 to 1931, by and large, the Telephone Company securities compared very favorably with the railroad. As I recall, the railroads were returned by the Government in 1920, after Government operation, with some difficulties. In any event, I would say that the telephone industry compared favorably with the railroad. Perhaps some railroads could borrow a little more cheaply than the
606 Telephone Company, and others could not.

The Bell Telephone funded debt obligations, by and large, compared favorably with other public utilities during the period 1923 to 1931. I would say that the bonds of the Telephone Company, bearing the same coupon rate and having the same maturity, probably sold a little higher than the average of other public utilities. The yield to the investor was a little lower in the case of the Telephone Company, although the mortgage bonds of the better utilities, like the Consolidated Gas Company and its subsidiary, the New York Edison Company, would sell on just about the same level as the mortgage bonds of some of the more important subsidiaries of the Telephone Company.

607 The A. T. & T. obligations are all debenture obligations. Most of them are not secured. If, however, you were to compare them with the debenture obligations of the electric light and power industry, or the gas industry, I should think that the rate of return produced by those obligations at the market price would be very similar to the electric light and power. I would say that the mortgage obligations of a subsidiary of the Bell System, like the Illinois Bell Telephone Company, would compare favorably with the mortgage obligations of the gas and electric light utilities; the yield would be very similar to the better obligations.

There are probably 20 or 25 of the better grade gas and electric companies that issue credit obligations in excess of $5,000,000.

608 There are, relatively speaking, a small percentage of companies in the gas and electric light industry that issued securities during the period 1923 to 1931 which had funded debt obligations of $5,000,000 or over, and those I would consider to be the high-grade companies which I compare with the Illinois Bell for relative yields. I do not
609 have the figures showing the total amount of money acquired by gas and electric utilities through credit obligations during the period 1923 to 1931. I do not know what percentage of the total amount of money acquired through the sale of credit obligations was acquired on the same basis of offering yield approximating that of the Illinois Bell. I would say not a very large percentage. It would be less than 50 per cent, but I am not sure that it would be less than 25 per cent.

Assuming that market conditions are the same and that bonds are issued by various companies, the ratio of earnings to bond interest is very important in the determination of the difference in the yield to investors of the various classes of bond issues. The record of the company over a period of

time is important; the ratio of indebtedness to assets is
610 important; the character of the business and the management of the company are important. Those, I think, are the primary things.

I only know the ratio of funded debt to capitalization in the Bell System on a consolidated basis. The Illinois Bell Telephone Company has outstanding slightly under $50,000,000 of bonds and about $150,000,000 of stock. The entire Bell System has a bonded indebtedness of about $1,000,000,000. The capitalization of the entire System on a consolidated basis is somewhat over $2,000,000,000. The total of bonds and
611 stocks outstanding on a consolidated basis is approximately $3,250,000,000. The $1,000,000,000 outstanding funded debt includes the funded debt of the subsidiary companies and the A. T. & T. These figures which I have just mentioned were as of 1931 and based upon the 1931 annual report. The proportion of bonds to total capitalization has come down over the period 1923 to 1931; there were more bonds and less stock earlier in the period. That would
612 be very helpful in improving the credit of the Company.

The total assets of the Bell System on a consolidated basis in 1931 are about $5,000,000,000 and the funded debt is about $1,000,000,000. The relationship between funded debt and total assets has also improved during the period between 1923 and 1931, which was helpful in keeping up and improving the credit of the System.

The capital stock of the Illinois Bell Telephone Company has increased materially since 1923. There has been no increase in bonded debt, so the ratio has been improving from a securities and credit standpoint. That has the same
613 salutory effect upon the credit of the Company; it is healthy. The total assets of the Illinois Bell at the present time are about $320,000,000, and outstanding stocks and bonds of $200,000,000, as shown by the books, and that has grown during this period from 1923 to 1931, inclusive.

The Chicago property of the Illinois Bell, I think, is approximately two-thirds of the property of the Company. I did not have in mind that the ratio of outstanding obligations

for the Chicago property would be in about the same proportion as the total outstanding obligations of the entire Company. I do not know how they would allocate a part of the outstanding capitalization to a part of the property, but I understand that the book value of the assets of the Com-
614 pany in Chicago is about two-thirds of the total and I assumed it to be that throughout.

In my opinion, those companies whose bonds sell to the investor at an offering price to yield, say, 5.5 per cent, compete to some extent for the capital of the investor against a bond selling on a yield-on-offering price of 6.5 to 7 per cent. But the bonds on the basis of 5.5 per cent look to a rather different class of investors than those of the corporation that has to pay 6.5 per cent for its money. To a considerable extent, the type of investor to be attracted by bonds sold to yield 5 or 5.5 per cent will be different from that attracted by bonds sold to yield 6.5 to 7 per cent. With the variation in the
615 retail price of the bonds, the banker takes into account the selling resistance in determining the wholesale price. It is usually more expensive to sell a speculative type of bond, I think, than to sell a high-grade issue. There is some
616 relation between the type of issue and the discount or annual charge. I can tell about what the maximum spread was between the retail and wholesale price of Bell Telephone bonds during the period 1923 to 1930. It varied from 4 to 3¼ per cent. This, translated into annual charge, was probably a quarter to .3 of 1 per cent. The spread in the case of gas and electric companies was very similar, some running somewhat higher and some somewhat lower; that is, there was a greater spread, although not as high as a per cent greater, unless it was a case of a very short obligation. I have been talking of high-grade securities, but it is very unlikely that there would be a spread as high as 1 per cent in the case of speculative obligations. In connection with high-grade
617 securities, I should say that .4 of 1 per cent would be the maximum spread on the basis of annual charge. It might possibly be one-half of 1 per cent.

I would consider from 5½ to 5¾ per cent to be a fair yield to the investor on offering price of these high-grade bonds during this period. The corresponding yield on medium-grade bonds during this period, I should say, would be from 5.5 to 6.5 per cent; on speculative bonds, from 6.5 per cent to 8 per cent, perhaps.

618 I did not assume that any of these public utilities were financed on a speculative basis from a bond standpoint. I assumed that all of the borrowed money would be on high-grade securities. In speaking of the gas and electric companies, I had in mind fairly sizeable and relatively strong companies.

619 When I spoke of the investor and what the investor would expect, I had in mind the ordinary investor. What the ordinary investor expects when he buys a bond depends on the type of bond. The ordinary investor would buy an ordinary type of bond. He expects, when he purchases a bond, to get his interest as stipulated; he expects to get his money back on a definite maturity date as stipulated in his bond; and he would expect to get whatever additional money the company agreed to pay if his bond were retired in advance of maturity. He would also expect to get priority

620 in the distribution of assets upon dissolution or distribution of assets, or in the case of bankruptcy.

The investor who puts his money in stock expects to get the dividends declared by the directors; he has an equity in the undivided profits. Upon dissolution or liquidation, he expects to get his proportionate share of the total assets remaining after taking care of all prior claims. He also expects to participate in the management of the corporation to the extent to which he has the right to vote or participate.

621 It would not make much difference to the stockholder, provided he received a return which was acceptable to him, that the company in which he made his investment would use its own employees, without charge to the investor, to help the investor sell his own securities in order to raise the money to subscribe to the stock or bonds of the company in which he makes his investment.

"Q. He would not expect the company to help him raise the money to subscribe for the stock, would he?

"A. He would not expect the company?

"Q. Yes, to help him raise the money to subscribe for the stock in that company.

622 "A. He, the stockholder—

"Q. Yes.

"A. —would not expect the company to help him, the stockholder?

"Q. Yes, raise the money in order to subscribe for that stock; that is his own affair, is it not, to raise the money?

"A. Yes.

"Q. I beg your pardon?

"A. Yes. The company might make it helpful by issuing information, or what-not."

The question of a corporation investing in a subsidiary corporation, expecting the subsidiary to use its employees, at its own expense, to assist the stockholding company to sell its own securities is one of management; I cannot answer 623 that very well. There might perhaps be advantages to the stockholder of the subsidiary company to have the securities of the parent company distributed in its territory.

Q. Let us take Company A and Company B. Company B is about to purchase stock in Company A, and desires to get the necessary money in order to purchase that stock. Company B has Company A use the A Company's employees to sell bonds of the B Company, to raise money to permit the B Company to purchase stock of the A Company. Now, if B were the ordinary investor, would it expect A to help it raise the money to purchase that stock?

624 "A. Well now, if you carry that through to your logical conclusion, then B is the only stockholder in A.

"Q. Well, whether it is the only stockholder or a large stockholder, it makes no difference, it is immaterial.

"A. So that if A spent some money for the benefit of B, it would be spending it for the benefit of the principal stockholder?

"Q. That is right.

"A. Well, why not?"

The ordinary investor does not, I should say, expect the corporation of whose shares he expects to make a purchase, to raise the money so that he, the investor, can buy shares in the corporation.

"Q. Yes, sir. Now, similarly, would that same investor expect the company in which he makes the investment to defray any of the expenses incurred by the investor himself, in raising the money to make the investment?

"Mr. Blackman: I object to that as not proper cross examination.

"Mr. Goldstein: I am testing what he considers the ordinary investment.

625 "Judge Wilkerson: Well, I will allow a liberal cross-examination on both sides. He may answer.

"A. The ordinary investor, I would think, would not expect that.

"Mr. Goldstein: Now, in thinking of the ordinary investor, and in making the ordinary investment, did you consider that the company in which the investment was made, was a component part of a large system to which the benefits of the company's operations accrued, and the stock in the system companies was all owned by the same investor?

"A. I was considering the matter with reference to the Illinois Bell Telephone Company, as though it were an in-
626 dependent entity.

"Q. Did you consider in your determination of what the ordinary investor would expect, or what you would consider that the ordinary investor would expect, that the company in which he owns the investment in stock would perform without charge whatever services were necessary to permit the employees of the company to purchase stock of the investor on the installment plan?

"A. He probably would not give—the investor would not give a detail of management of that kind very much consideration.

"Q. He would not expect to have that done for nothing, would he?

"A. Well, on the statement as you have made it, I would think not."

In determining what return the average investor would expect of the Illinois Bell, I did not give consideration to the fact that the Company's employees and the employees of other companies in the Bell System are all joined under a plan where the investor, the A. T. & T. Co., can shift employees around from one organization to another as the investor sees fit.

627 By the Court:

It is not my contention, nor did I advance the idea here that in arriving at a conclusion as to what is a fair return upon money devoted to the public use, the Court is to arrive at any different conclusion because it happens to be the money of one company rather than another. The test is what is a fair return upon money devoted to public use; and it makes no difference whose money it is, nor what the capitalization is, nor whether it is the money of the Standard Oil Company or of any one else.

"Judge Wilkerson: I just wanted to make sure in my own mind whether, in arriving at his conclusion as to what, in his opinion as an expert, the fair return upon this money
628 that is devoted to the public use is, he has given any consideration to the fact that the money which was devoted to the public use was my money, we will say, or the money of the American Telephone & Telegraph Company, rather than the money of some other company.

"Mr. Goldstein: And did not take into account the relation between the investor and the company in which the investment is made.

"Judge Wilkerson: As to what is the test, what are the elements properly to be considered, I suppose the Court would have to decide that, when the Court arrives at a conclusion as to what is the fair return upon money devoted to the public use. And I was wondering whether there was any contention here that it made any difference whose money it was.

629 "Mr. Blackman: So far as we are concerned, we make no such contention. And, following up your Honor's

contention, I would like to point out that in my questions I did not ask what the fair return was. I followed the language of the Supreme Court in the Bluefield case, and asked this witness what rate of return this Company would have to earn in order to earn the same return that was being made by other companies at this time in this part of the world, subject to the same risks and uncertainties.

"Mr. Goldstein: But you did not ask him any questions required by the Smith case, in the decision of the Court.

"Did you take into account in determining what your ordinary investor would require, the return that he expected, and in thinking of the Illinois Bell and its relation to that ordinary investor, the fact that this Company was required to make a detailed statement each year, and for a period of years, in advance of its requirements for the purchase of supplies and materials, and furnish those statements to the investor, to be used by the manufacturing company of
630 those supplies and materials in which the investor also owns the stock?

"A. I assumed the Company would have efficient management, and that whatever policy efficient management dictated, would be followed. I did not think of the detail of filing in advance—

"Q. Statements?

"A. —schedules of this kind."

I assumed that the management would file detailed statements with its own Board of Directors. As far as the investor represented control of the Company, he would, through his officers or the Board of Directors, determine the amount of extensions, or additions, and the purchases of the
631 Company. It would be the owners acting through their representatives that would determine that. It would be the owner, whether it was the average investor, or what-not. The stockholders elect the directors, and the directors represent the stockholders. It is through the election of the directors that the ordinary stockholder would control the corporation.

I did not take into account the fact that the investor, as such, apart from the Board of Directors, would specify who should be the seller of apparatus purchased by the Company in which he made his investment. I did not take into account that the investor, as such, apart from the Board of Directors, would specify who the manufacturer of the apparatus should be.

632 "Q. Did you take into account the fact that the company in which the investor made his investment is required to share the expense of research which is undertaken by the investor himself, so that any new discoveries that are made in the business would be woven into the plant in which he has his investment?

"A. Not unless the Board of Directors should determine that such a policy was in the interests of the local company.

"Q. Yes. It would be—pardon me?

"A. In other words, to get value received for that expenditure.

"Q. It would be treated as a separate item?

"A. Yes, sir.

"Q. And would you take into account the fact that, if the investor were to undertake the research himself apart from the Board of Directors, and should in the course of that research come upon inventions that were applicable to fields other than the field of operation of the company, the investor could keep all of the profits of those outside activities without accounting to the company?

"A. I did not take that fact into consideration."

In answering the above questions about the Illinois Bell, I assumed that the Illinois Bell was operating as a separate 633 unit and would raise its money as a separate unit in relation to the public. I did not assume that the Illinois Bell was a component part of a system, headed by one company, which raised the capital for all the component parts of the system, at their expense, by the issue of one well and nationally known security as the source of funds for all.

I stated in the course of my direct examination that investments in the telephone business are attended with certain risks and uncertainties. The Telephone Company is

limited, as far as its profits are concerned, by reason of
regulation. There is a hazard in connection with the tele-
phone business by reason of the fact that if at any time, on
account of increased operating expenses, or for other causes,
the return becomes inadequate, the procedure of obtain-
634 ing relief is usually drawn out for a number of years and
during this period of inadequate rates the company
suffers a certain loss, which is gone forever because the regu-
latory body or the courts, in afterwards adjusting the rates,
do not make allowances which will permit the company to
make up the loss incurred during a period of litigation.

635 The Telephone Company suffers (or makes an unfavor-
able comparison with respect to other public utilities, par-
ticularly electric and gas companies), because the investment
per station in the telephone business tends to increase, and,
as the overhead represented by that investment is one of the
principal items of true cost of service, to that extent the cost
per station goes up, and the return becomes less. The Tele-
phone Company is also at a disadvantage by reason of the
fact that, in the event of declining business, it has less flexi-
bility in adjusting its operations.

636 I think that, in the development of its business during
the past few years, the Telephone Company has reached a
clientele of more moderate circumstances than the average
subscribers of a few years ago. Therefore, in a business de-
pression, the Company is more vulnerable on account of the
danger of losing subscribers than it was in the earlier period.
An investor would take that into account.

Some investors think that the development of wireless
communication offers something of a threat to investments in
telephone communication by wire. The investor in a
637 telephone utility might also fear that the use of the re-
production cost basis for rate-making purposes would re-
duce the rate base in part, and, therefore, reduce his divi-
dend payments.

In giving my opinion as to the necessity of earning 8 per cent or 7 per cent on the value of the property of the Illinois Bell Telephone Company, I was taking into consideration the risks.

The resale price of bonds is not a complete criterion of the price at which the company would have to sell its bonds to attract capital; it has some significance, depending upon conditions. But if a similar bond sells occasionally at a cer-
638 tain price, it means that a large issue of $50,000,000 or $100,000,000 can probably be floated a few points below that price. It is impossible to generalize completely upon that. The resale price of securities of the company has some relation to the opinion of the investors, and the degree of stability of the business. The price at which the securities sell provides some indication of how the investor regards that company.

I would expect the risks which I mentioned, and particularly those which would affect the telephone companies in times of depression, to be reflected in the prices of telephone securities during a period of depression. I think the Illinois Bell bonds have had a favorable market during practically all of the period 1923 to 1931, as compared with the resale yield of gas and electric companies' securities.

639 In defining the period of depression, I think the present and prospective situation must be taken into consideration. When I say "present," I mean today and I would go back as far as the beginning or the middle of 1930.

The resale prices of Bell System credit obligations have compared very favorably with the resale prices of rail-
640 road credit obligations.

By the Court:

There are $5,000,000,000 behind Bell System bonds. The amount of the bonds is $1,000,000,000. There are five to one, approximately, back of the bonds. It would be impossible to raise the $5,000,000,000 on bonds alone.

641 "Mr. Goldstein: The witness says the original sale price would be affected by certain risks, and he says the same risks would likewise affect them on resale."

I did not say that the resale prices of credit obligations of the Company would be affected by certain risks; that would only happen to a small extent; the total investment would be affected.

"Judge Wilkerson: I do not believe anybody in the world would contend that you ever had a company that could raise all of the money it had to have to acquire the property devoted to public service, by issuing bonds against all of the property at 5 per cent.

642 "Mr. Goldstein: No, but the amount that the investor would expect to get out of the balance of the capital would depend upon the character of the credit obligations as well, and the interest rate.

"Judge Wilkerson: Of course, you have the stock, but that is speculative.

"Mr. Goldstein: Yes, but the degree of speculation would depend upon the character of the industry, the character of the company, which is determined likewise in the sale of the bonds.

"Judge Wilkerson: Well, experience is a pretty good teacher with respect to that, is it not?

"Mr. Goldstein: I am just testing the witness as to what he knows about the experience on this point—which we will show."

I spoke of an 8 or 7 per cent return on the value of the property devoted to public use during the years 1923 to 1931. Assuming a sound capitalization, the amount of dollars resulting from such a return, and the amount of dollars
643 necessary to pay the interest and dividends, and have a margin for surplus, would be similar. If I were to assume that the Company in this case stated a fair value of the property which it employed for the convenience of the public in Chicago as X dollars in the years 1923 to 1931, inclusive, I would consider very inadequate a return on that value equal to 3 per cent, but which took care of all expenses, the interest, and amortization of the bonds, and yielded $9 per share for every $100 of investors' money in the capital stock. I would think further that, for some reason, the capitalization had been very much less than the X dollars of the assumption. If it were otherwise, the 3 per cent on the X dollars would not pay the interest and dividends
644 stated. If you have $100,000,000 of capitalization and $300,000,000 of property, of course, a very small return

on the $300,000,000 would provide a very substantial return upon the $100,000,000.

If I found as a result of the small ratio of outstanding bonds and stocks that a small return on the property was 645 sufficient to pay $9 per share for every $100 invested, I would think that the $9 to $10 a share would mean that those shares were very good. On that kind of showing, the Company probably would be able, under efficient and economical management, to maintain and support its credit, and it would probably be possible to raise the money necessary for the proper discharge of its public duties. If the return on the value of the property was $11 per share, or more than $10, it would probably be more than sufficient.

In speaking of electric and gas companies, I particularly referred to the electric power industry; I would include in my electric companies the light and power companies.

646 Speaking of the hazards of the telephone business, I stated that if the courts were to give reproduction value weight in determining the rate basis, the investment might suffer as to that part of the plant constructed during the period of higher costs than those which may be experienced in the future, if the decline in construction costs, some of which we are experiencing now, continues. The period of high 647 construction costs would include 1923. If the entire plant were valued on the basis of unit costs prevailing during any of the years from 1923 to 1930, when prices were high, I should say that the hazards were increased.

The ordinary investor might have expected at the time that the prices prevailing in the years 1923 to 1930 would be likely to prevail for a reasonable period in the immediate future. Recent experiences have now called the question into doubt; since the beginning of 1930, developments, I think, have begun to bring the question before the minds of investors, but not before that.

By the Court:

Of course, there has always been some debate on that subject, and a very sharp debate on that point, even during

1928 and 1929. Of course, during a part of those years, 648 the companies believed, as many investors believed, that that part of the plant constructed prior to the outbreak of the World War, and still in service, had a value in excess of the book value, because the duplication value was greater than the cost.

By Mr. Goldstein:

That was judged by the spot prices of the year which they were thinking about.

By the Court:

I have testified on the rate of return, in a number of utility cases during the period in question here, and have given the matter a great deal of thought. I came to the conclusion, in the light of the information available to me in those years, that the return to which I have testified would have been necessary in those years. I have put out of my mind, 649 in giving these rates, the economic experience since the Supreme Court wrote the opinion in this case, and have endeavored to state these rates upon the facts as they existed at the respective dates.

Re-direct Examination by Mr. Blackman.

650 I do not know that I can give the approximate dates of the cases in which I have testified, but during the period from 1921 until, I think, 1927, I testified in connection with the rate of return in two cases involving the Consolidated Gas Company. I testified before the New York Commission in two cases involving the New York Edison Company. I testified before the Commission, and later before the Master, in connection with a case involving the New York Telephone Company. I testified in Baltimore before the Commission in one case involving the United Railway & Electric Company, and in another case involving the Consolidated Gas, Electric & Power Company of Baltimore. I have also testified in some smaller cases during that period. That covered pretty well the period from 1921 to 1927.

At those times I prophesied generally the same things

which I have prophesied today, and used the same rates
651 of return generally. The last case prior to this one in which I testified was, I think, the New York Telephone case, in 1927, when I believed that an 8 per cent return was necessary.

Now, in 1928, 1929 and 1930, it seems to me that confidence was pretty general in this country. The supply of capital was relatively large, and therefore it probably would have been possible to finance public utilities during these years on a 7 per cent basis instead of 8. It is a very close question, however.

I have testified to an 8 per cent return in all these other cases that I have referred to. Several of these cases went to the Supreme Court of the United States. I testified to an 8 per cent return, and the 8 per cent was, I think, the rate sustained very largely.

When I made a comparison of the hazards of the telephone business with those of gas and electric companies, it was after having studied those companies, and being familiar with them, and having testified for them as to the proper rate of return in those industries.

652 One of the advertisements to which my Company's name was signed, shown to me on cross-examination, was Defendants' Deposition Exhibit 106. This sets forth a relatively recent offering of the American Telephone and Telegraph Company, 35-year, 5 Per Cent Gold Debentures, amounting to $150,000,000, and offered to the public February 1, 1930, at a price of 99½. The last column to the right (those figures appearing in the center of the page of this exhibit), reports or summarizes the net earnings of the American Telephone and Telegraph Company available for interest. It shows that the interest charges were earned, during the years hereafter stated, the following number of times: 1924,
653 6.4; 1925, 5.9; 1926, 6.3; 1927, 6.9; and 1928, 7.4. That, plus the other information available to the average investor, showed that he could purchase bonds of the American Telephone and Telegraph Company with very little risk.
654 That risk was small because the indebtedness bears such a very moderate proportion to the property value and to the

capitalization as a whole; that is, the $1,000,000,000 of bonds I have referred to, compared with the $5,000,000,000 of book assets, which is about 20 per cent.

The American Telephone and Telegraph Company itself, during this period, showed a ratio of bonds to total assets of as low as 15 per cent.

655 I have seen a booklet or circular of the Bell Securities Company, a subsidiary of the American Telephone and Telegraph Company, issued some years ago, in which the statement appeared that the actual value of the properties of the Company was far in excess of the book value. By and large, I think that statements of that kind by the American Telephone and Telegraph Company and the Bell Securities Company are regarded by bankers and investors as being reliable.

When I said that the bonds of the Bell System compared favorably with bonds of gas companies, I had in mind the fact that the bond interest was earned from 5.9 to 7.4 times in the case of the securities of the Bell System, and that the bonded debt of the Bell System, as compared with the earnings and property value, was very moderate. I do not know of any gas company or electric company of first rank that has a bonded indebtedness quite as low as that of the
656 Bell System. Some of them are approximately as low.

The bonded indebtedness of a large, conservative gas or electric Company runs from 30 to 40 per cent of the property value. It is rather questionable whether a public utility could maintain its credit if it permitted its borrowings to exceed materially 30 to 40 per cent of the property value.

In considering the rate of return for the Illinois Bell Telephone Company, I considered that Company as an independent entity, because I have had to assume that this business is to attract the capital necessary to reproduce it, and what the expectations would be. If we obtained the capital from a group of investors, the Company would have to be disconnected from the Bell System in order to give an indica-
657 tion as to what capital would be expected; that is, if the Illinois Bell were to appeal to the public for funds, and

were to raise any great part of its money on stock, it would have to be pretty completely divorced from the Bell System, because as long as the American Telephone and Telegraph Company was a substantial stockholder in the Illinois Bell Telephone Company, the Illinois Bell would have no financial worries, and its securities would sell on a very high basis, perhaps, which would not give an indication of what
658 the investor in a public utility enterprise would expect if it were on an independent basis.

I have stated that, in my opinion, a telephone company, such as the American Telephone and Telegraph Company, doing a nation-wide business, should earn on the value of the property which it employs for the convenience of the public, in order that such return shall equal that being generally paid at this time in this country on investments in other business undertakings which are attended by corresponding risks and uncertainties, in excess of 8 per cent. The percentages necessary, in my opinion, in the years prior to 1932 would be: in the latter part of 1931, 8 per cent; in the earlier part, 7 per cent; 1930, 7 per cent; 1929, 7 per cent; 1928, 7 per cent; 1927, 8 per cent; 1926, 8 per cent; 1925, 8 per cent; 1924, 8 per cent; 1923, 8 per cent.

It is my opinion that, no matter how the money was obtained, whether by the Illinois Bell Telephone Company itself or through the American Telephone and Telegraph Company, the return would have to be the rates which I have stated on the fair value of the property in each of the various years.

659 It would make no difference, in my opinion, in that respect, if we took into account that the Illinois Bell Telephone Company was a part of a large system organized for the purposes of maintaining the credit of the constituent companies; and securing their efficient and economical management.

Re-cross Examination by Mr. Goldstein.

The A. T. & T. bond issue of which I spoke is a debenture bond issue. A debenture bond issue ordinarily has no specific security behind it. There are other types of bond issues, such as a bond issue of the Illinois Bell Telephone Com-
660 pany secured by a lien on fixed assets. There is occasionally a bond issue secured by a lien on stocks, and also bond issues which are debenture issues having convertible features. The mortgage bonds of a company usually sell at a more favorable price, and on a lower interest basis than the unsecured obligations. The investor probably would not expect to have the same margin of earnings to interest in the case of a fixed lien bond as he would in the case of a debenture bond, although whether the bonded debt is secured by lien or not, if it exceeds a certain proportion of the capitalization or property value, the bonds will lose their
661 credit standing. I would expect a high-grade debenture bond issue to have a greater number of times interest earning capacity than I would a mortgage bond.

The case of the United Railway & Electric Company of Baltimore, in which I testified, was the case that went to the United States Supreme Court, known as the Baltimore Railway case. I cannot recall the year of that case, and am not confident it was the same case in which I testified before the Commission which afterwards went up to the Supreme Court, but I did testify in connection with a case of the Company before the Maryland Commission. I think the case decided by the Supreme Court grew out of the same proceedings
662 that I testified in originally, but I am not confident. The Consolidated Gas case in which I testified went to the United States Supreme Court. I believe I testified in regard to the 85 Cent Gas Case and also in regard to the so-called "Dollar Gas Case." I do not think I testified in any other case that went to the United States Supreme Court. The only case in which I testified that I positively know went to the Supreme Court is the Consolidated Gas case, and perhaps the Baltimore Railway case.

I cannot recall exactly what I testified to in the Baltimore case, but I think I testified at that time that an investor in a company similar to that would expect to have, in order to attract capital, a return in excess of 8 per cent.

663 "Mr. Haight: I would like to place on the record, if your Honor please, a motion to strike all of the testimony of this witness on the ground it appears, both upon his direct and upon his cross-examination, that he was giving opinions in respect to the Illinois Bell Telephone Company as an ordinary public utility, and that showing upon both direct and cross-examination is not in any wise helped by the last question asked by counsel for the plaintiff on re-direct examination, in which he quoted a part of a sentence from the opinion of the Supreme Court, that part being this: 'one that is part of a large system organized for the purpose of maintaining the credit of the constituent companies and securing their efficient and economical management.'

"The inclusion of that part of the sentence of the Supreme Court's opinion, and getting the answer from this witness that in the witness' opinion that would make no difference to him whatever, he would give the same answers in respect to such situation as he would in regard to the ordinary public utility, separate, and in the usual situation—

"The Court: I did not so understand the testimony. I

664 thought what he testified was, in his opinion the Illinois Bell Company was just as good as the American Telephone and Telegraph Company when it came to raising money. Sometimes the big company is worse than the little one.

"Mr. Blackman: Not the same amounts, of course, but the same relative amounts.

"The Court: Sometimes the little company's credit is better than the big one's.

"Mr. Haight: The entire sentence in the opinion is this: 'It is evident that in the present case we are not dealing with an ordinary public utility company, but with one that is part of a large system organized for the purpose of maintaining the credit of the constituent companies and securing their efficient and economical management.'

"Whatever he meant by the answer to the last question on re-direct examination, the motion to strike is just the same.

"The Court: Have you anything to add to that? Did you consider the fact that practically all of the stock of the Illinois Bell Telephone Company is owned by the American Telephone and Telegraph Company, and that as a result, 665 the Illinois Bell Telephone Company is one of the units in this vast system?

"A. I assumed that you could enlist capital necessary for this purpose for a telephone company in this district, independent of the A. T. & T.; and one which was efficiently managed.

"The Court: The motion of counsel will be noted on the record. I would not care to pass on that without consultation with the entire Court. The ruling will be reserved until the case is argued before the entire Court."

Re-direct Examination by Mr. Blackman.

"Q. Mr. Hoyt, if we assume that the Illinois Bell Telephone Company is a part of a large system, organized for the purpose of maintaining the credit of the constituent companies and securing their efficient and economical management, and that there is a parent company which fur- 666 nishes funds, or the greater part of the funds for these companies for their expansion, it would be necessary to take into account, viewing the rate of return on that basis, what it would cost the parent company, would it not?

"Mr. Haight: I object to the question because the assumption made in the question omits very many of the inherencies of the relationship between the A. T. & T. and the plaintiff in this case.

"The Court: He may answer.

"A. If the requirements of the Illinois Bell were to be financed by the A. T. & T., of course, that fact would have to be taken into consideration."

If the Illinois Bell and all the other 24 subsidiary companies of the Bell System were to be financed by the A. T. & T., and I wanted to know what it cost to do that financing, then I would have to know at what price the American Telephone and Telegraph Company financed its entire requirements, based on the entire value of its property.

It was with that in view that I made the statements 667 that I did as to the rate of return, or the percentages for the years 1923 to 1932, inclusive. I also had in mind, as far as the Illinois Bell is concerned, the rate of return which would be necessary to enlist the capital in that corporation, whether an individual or a corporate stockholder. That return would have to be expected; that would have to be the expectation.

"Mr. Haight: We renew the motion to strike. The only purpose of renewing the motion is that it may include the testimony of the witness on re-redirect.

"The Court: Ruling reserved."

668 L. R. MAPES, a witness on behalf of the plaintiff, having been previously duly sworn, resumed the stand for cross-examination and testified further as follows:

Cross-Examination by Mr. Haight.

Those exhibits introduced by me (Exhibits A-39 to A-47, both inclusive), which make separations by years from 1923 to 1931, inclusive, were based upon studies for each year 669 separately. The reproduction cost new figures in Exhibits A-41 and A-43 were taken from Mr. Sloan's figures. Exhibits A-42 and A-44 are based upon Mr. Redmund's exhibits, the final summary of which was Plaintiff's Exhibit A-22. Save for that, these exhibits which relate to various years, 1923 to 1931, inclusive, are based upon a separate inquiry respecting each year.

I mean by "normal requirements", the inclusion of provisions for reasonable extensions. The reasons for such

provisions are so that we can give proper telephone ser-
670 vice. We have some margin of telephone plant so that
we can give a subscriber either new or additional service promptly.

"Q. That is, if you have more conduit than you immediately need, you have more switchboard provision than you immediately need, you have provision more than you immediately need, within reasonable limitations, those are to prevent inadequacy in respect to any of those things?

"A. I would not express it in those terms.

"Q. How would you express it?

"A. I would say it was so we could give telephone service."

I don't think I consider the word "inadequacy" in my ordinary engineering work. I cannot give a definition of that word. I have heard the term used in connection with depreciation. I might try to express what I mean as inadequacy, or
as I understand it as used in depreciation matters. For
671 example, we might have a switchboard located in a build-
ing which could not be extended. Because of the impossibility of extension it might be necessary to build a new building and replace that switchboard, in which case I would say that the old building and switchboard had become inadequate. If we had some spare building capacity in that particular building, as I see it, it would not become inadequate until that spare capacity had been used up. We generally make provision for reasonable growth of the plant. But there
672 comes a time when we can no longer make that provision
in a specific location.

Re-direct Examination by Mr. Thompson.

Exhibits A-41, A-42, A-43 and A-44 (in which I have made certain apportionments of reproduction cost new, and reproduction cost new depreciated, of the property of the plaintiff Company in its Chicago area), contain not only the dollar figures of the apportionment, but also percentages which, when applied either to reproduction cost new or reproduction cost new depreciated, will give a separation or apportionment of plaintiff's property on the basis of use.

H. A. HARRIS, called as a witness on behalf of the plaintiff, having been first duly sworn, was examined and testified as follows:

Direct Examination by Mr. Thompson.

673 My name is H. A. Harris. I am in the employ of the plaintiff in this case, the Illinois Bell Telephone Company, as Plant Extension Engineer of the State area. I was a witness on the former trial of this case, when I testified as to a separation of the Company's property as of June 30, 1923, in its Chicago area, between its intrastate and its interstate uses. Since my former testimony in this cause, I have retained my position as Plant Extension Engineer up to the present time. I am familiar with the property of the plaintiff Company employed in its Chicago area in the service of the public for telephone purposes.

I undertook with Mr. Mapes, who has just testified, the preparation of exhibits showing the separation and 674 apportionment of the Company's property on the station-to-station method, as between its intrastate and interstate uses. This work was commenced January 11, 1931, and I have been engaged continuously in that work since that time.

"Mr. Thompson: I don't believe the record yet shows the introduction of Mr. Mapes' exhibits, and I would like now to offer Exhibits A-39 to A-47, both inclusive.

"Mr. Haight: I object to those that were identified by Mr. Mapes on his cross-examination as having employed exhibits of Mr. Sloan on valuation, and to those that employed Exhibit A-22 on the per cent condition, for the reasons urged in respect to the original exhibits. I merely want to preserve that.

"The Court: I think it goes to their weight rather than their admissibility, and I will overrule the objection."

(Whereupon said documents were received in evidence and marked Plaintiff's Exhibits A-39 to A-47, both inclusive.)

675 I am familiar with the exhibits which were introduced in evidence at the conclusion of Mr. Mapes' testimony,

showing the separation of the Company's property, the methods employed in the separation, the application of those methods to obtain the percentage of intrastate and interstate uses, the dollar separations made, and the apportionment of operators' wages and transmission power expense. I worked in conjunction with Mr. Mapes during the entire progress of this matter, and am familiar with all the details of the work which was done, and which are reflected in these exhibits. By the methods which were used, as they are set out in Exhibit A-40, we have separated and apportioned the entire property of the Illinois Bell Telephone Company in its Chicago area on the basis of the actual uses to which that property was put, viz., intrastate and interstate uses, in each of the years 676 included in the exhibit. In my opinion, the methods which have been used are proper and accurate ones to accomplish that purpose. When the percentages of the respective uses for intrastate and interstate, which were obtained for each of the years 1923 to 1931, are applied to the fair value of the property, as it shall be finally fixed by this Court, the resultant dollars, in my opinion, will give the value of the intrastate and interstate property of the plaintiff in its Chicago area on the basis of use.

Cross-Examination by Mr. Haight.

In these exhibits, by the term "plant", I mean the 677 entire plant in the Chicago area. By the use of the plant, I mean its use for the various services: exchange, interstate toll or intrastate toll. By "exclusive use", I mean if there was any part used exclusively for toll, that would be exclusive toll use, and exclusive local use would be 100 per cent local. By "joint use", I mean such plant as the local central office equipment, subscribers' lines and stations, which may be used jointly for local service, intrastate toll service or interstate toll service. It is not possible, of course, in respect to a jointly used facility, while it is being put to use for one class of service, to be also used at the same time in another class of service. The jointly used facilities are not used separately and indiscriminately for each of the 678 various classes of service. They are used one time for toll service and another time for local service, but, taken as a whole, it is considered as jointly used service. Many of these jointly used facilities are used indiscriminately for toll service, long distance service, and local exchange service.

If one goes to a telephone at a private station, in his office or home or in a booth, he may call and receive intrastate 679 service, interstate service, local exchange service, indiscriminately. Those facilities, beginning with the station apparatus itself, are available at all times for any one of those services when they are not already in use for some one of those services.

680 W. K. KRUSE, called as a witness on behalf of the plaintiff, having been first duly sworn, was examined and testified as follows:

Direct Examination by Mr. Thompson.

My name is W. K. Kruse and I reside in Chicago, Illinois. I am employed by the Illinois Bell Telephone Company as General Accountant, which position I have held since July 1, 1930. I first entered the employ of the Company in 1912. I was engaged in various clerical positions until 1920, when 681 I became Special Accountant. In 1923 I was appointed Supervisor of Methods in the Accounting Department, and on March 1, 1927, I was appointed Assistant to the General Auditor. On July 1, 1930, I was appointed to my present position as General Accountant.

I am familiar with the books and accounting records of the Illinois Bell Telephone Company, particularly those which show the revenues and expenses of the plaintiff in its Chicago area. I have had supervision of the general books of the Company since July 1, 1930. Prior to that time, I had access to, and am generally familiar with, the records.

The books and accounting records of the Illinois Bell Telephone Company are now kept and have been kept during the

entire period in controversy in this cause, that is from 1923 to this day, in accordance with the Uniform System of Accounts for Telephone Companies prescribed by the Interstate Commerce Commission, and in accordance with the rules prescribed by the Illinois Commerce Commission. During this entire period, separate books and accounting records
682 have been maintained by the plaintiff Company, showing its revenues and expenses in the City of Chicago, sometimes called the Chicago area, or the Chicago exchange. That has been the fact continuously since regulation started in 1913.

The Illinois Commerce Commission has adopted the Uniform System of Accounts for Telephone Companies prescribed by the Interstate Commerce Commission. Neither the Uniform System of Accounts of the Interstate Commerce Commission applicable to telephone companies, nor any rule of the Illinois Commerce Commission, requires that either the revenues or expenses of the Illinois Bell Telephone Company be separated or apportioned as between its intrastate or interstate uses.

I have made a separation and apportionment of the revenues and expenses of the Illinois Bell Telephone Company in its Chicago area for each of the years 1923 to 1931, to
683 show separately the revenues and expenses attributable to its exchange, its intrastate and its interstate toll business. I commenced this work in January, 1931. I was continuously engaged in the separation of the years 1923 to 1930 up to the latter part of July of 1931. Afterwards I undertook, at the request of the Company, to make a separation of its revenues and expenses in its Chicago area for the year 1931. I began the preliminary work for that separation in the middle of December, 1931, although the actual results for the year were not available until after the close of the year. The work was completed and placed in exhibit form in the early part of February, and, I think, was delivered to the City
684 on the 8th of February, 1932. My earlier separation exhibits were delivered to representatives of the City

about August 1, 1931, with the exception of a few exhibits which were delivered about a week or ten days later.

I had at times as many as 25 people engaged in working on the separation for the years 1923 to 1930. I believe a fair average for the entire period would be from 10 to 12 persons. The work in connection with the separation of the Company's revenues and expenses was done in conjunction with the work which has been done and testified to by Mr. Mapes and Mr. Harris, in separating the property of the Company as between its intrastate and its interstate uses.

There are certain revenues and expenses of the plaintiff in its Chicago area for each of the years 1923 to 1931, inclusive, which are attributable or chargeable directly to its intrastate business and to its interstate business, and there are certain other revenues and expenses which must be apportioned
685 between these two classes of service on the basis of use.

In making the apportionment (to which I shall refer in just a moment), the revenues and expenses were either apportioned on the basis of the use of the property, or directly allocated where no apportionment was necessary.

I prepared the instrument identified as Plaintiff's Exhibit A-48. It shows the various methods that I have used in separating and apportioning the revenues and expenses of the Chicago exchange, for the years 1923 to 1930, between exchange, intrastate toll and interstate toll. This exhibit sets forth in detail the methods which I have used in arriving at the separation and apportionment of the revenues,
686 expenses, and net income of the plaintiff Company in its Chicago area, as shown by the separation exhibits which I have prepared, and which will shortly be introduced in evidence; and proceeds upon the basis of station-to-station separation. Exhibit A-48 was prepared for use in connection with the separation for the years 1923 to 1930. The same methods were used for the 1931 separation. During 1931, there were some minor changes in accounting practices, but they did not affect the methods of separation.

In my opinion as an accountant, the methods used in making this separation of the revenues, expenses and net income of the plaintiff with respect to its exchange, intrastate and interstate toll business, are correct and proper methods.

When the methods which I have used are applied to the 687 Chicago area revenues, expenses and net income, they will, in my opinion, produce a proper separation and apportionment of such revenues, expenses and net income for the years 1923 to 1931, inclusive, as between its exchange, intrastate and interstate toll business.

The instrument identified as Exhibit A-49 (in 9 sheets), showing the separation in dollars of the revenues, expenses and net income of the plaintiff in its Chicago area for each of the years 1923 to 1931 (the result for each year being on a separate sheet), was prepared by me and under my supervision. The total revenues and expenses for the Chicago area are shown in the last column, headed "Total Chicago." The various items which make up these amounts were apportioned to exchange, intrastate toll and interstate toll, based on the various methods outlined in my previous Exhibit A-48. The amounts shown in the "Total Chicago" column are the book figures after eliminating certain revenues and expenses applicable to non-operating property, and after adjusting 688 the tax accruals on the books for the years 1923 to 1929 to agree with the actual taxes paid for each of those years.

For the years 1930 and 1931, the tax figure that I have shown represents our best estimate of the amounts that will have to be paid for each of those years, based on the latest information available at the time the exhibits were prepared.

The revenues do not include any of the interest or dividend revenues that we have received on funds invested in securities of connecting telephone companies, or on any U. S. Treasury Certificates, or on funds loaned to the A. T. & T. Company which are not needed for telephone operations.

When I mentioned that I have excluded all revenues and expenses applicable to non-operating property, I meant it 689 to include taxes on non-operating property. I do not as yet have the definite amounts of either the assessments or rates for the 1930 and 1931 taxes, so that the exact payment is not known. We are just getting the 1930 tax bills in at the present time, but we have not as yet received them all.

The item near the bottom of the sheet (Exhibit A-49), designated "Net compensation to Chicago for use of Chicago properties for 'Other than Chicago' purposes and use of State area properties for Chicago purposes" was taken from another exhibit which I prepared, and which will be introduced shortly. (This exhibit was later introduced as Exhibit A-51.) The next line, designated "Balance available for return under present rates", represents the net income under our present rates shown by the distribution of the book figures, plus the net compensation to Chicago for use of Chicago properties for State area purposes. The next line shows the reduc-
690 tion under rates in suit, the total amount of which was taken from another exhibit which I have prepared. The last line is merely the difference between the balance available for return under our present rates and the reduction under rates in suit.

This explanation of the first sheet of Exhibit A-49 applies to the figures appearing on each of the 9 sheets of the exhibit for each of the years.

I have prepared within the last few days, at counsel's request, an exhibit identified as Plaintiff's Exhibit A-50, consisting of 9 sheets, and showing the separation of the revenues and expenses of the plaintiff in its Chicago area for each of the years 1923 to 1931 on the identical basis as shown in Exhibit A-49, except I have excluded all overheads on lands. There is no other difference than that which I have indicated, that is, the exclusion of overheads on land, between Exhibits A-49 and A-50.

I have also prepared an exhibit in 2 sheets, which has
691 been identified as Exhibit A-51, and which shows in detail the various items making up the net compensation to Chicago for use of Chicago properties for other than Chicago purposes. The first page shows this information for the years 1923 to 1930, inclusive, and the last page, for the year 1931. This statement shows in detail the various items which were considered in arriving at the net compensation to Chicago

for the use of Chicago properties for State area purposes. It consists principally of annual charges, including an 8 per cent return on that part or portion of the Company's owned land and buildings, office furniture and fixtures, general store equipment, general stable and garage equipment, general tools and implements, official private branch exchanges, certain central office equipment, and related plant located in Chicago but used for State area purposes. This is offset by similar annual charges, including an 8 per cent return on Company owned land and buildings, office furniture and fixtures, general stable and garage equipment, certain cen-
692 tral office equipment and related plant located in the
State area but used for Chicago purposes. It also includes other items, such as improvements to leased buildings in Chicago used for State area purposes. It considers telephone service furnished on a concession basis to State area employees residing in Chicago. It includes a part of the cost of the official telephone directory, which lists our State area employees in Chicago, and the portion of the Federal Income Tax which is related to the various items shown on the exhibit.

Mr. Mapes, in apportioning the total property in Chicago between exchange, intrastate toll and interstate toll, included the portion of the Chicago property used for State area purposes in his valuation of intrastate exchange property. In order to compensate for the inclusion of that property in the exchange valuation, it was necessary that I add to the
net income from our intrastate exchange operations, a
693 compensation figure to cover the inclusion of that prop-
erty in his exchange valuation. On the other hand, there is a certain small portion of property located in the State area which is used in part for Chicago area purposes. In making compensation to Chicago for the use of its property located in Chicago for State area purposes, I offset it by a corresponding credit to the State area for Chicago's use of State area property. By this method, I think I have fairly and justly compensated Chicago for the situation which I have described. The net amount of the compensation in each of

the years appears as the last figure in each of the columns on sheets 1 and 2 of Exhibit A-51. This varies from an amount of approximately $144,000 to an amount of $313,000; the largest amount being for 1925.

694 I also prepared an exhibit in 2 sheets which shows the basis for the figures appearing opposite the phrase "Less reduction under rates in suit", shown on each sheet of Exhibits A-49 and A-50 (which said exhibit was identified as Plaintiff's Exhibit A-52). In line 1 of this exhibit is shown the decrease in the annual revenues which would have resulted from rates in suit had they actually been in effect during each of the various periods. These figures were furnished me by Mr. C. R. Findeisen, the General Commercial Supervisor of our Chicago area. The next line shows the decrease in traffic expenses had the rates in suit been in effect during each of the years from 1923 to 1931. This amount was furnished me by Mr. S. S. Smith, Traffic Engineer of the Chicago area. In line 3, I have shown the decrease in licensee revenue payments that we would have made had the rates actually been in effect during each of the years. Similarly, in line 4 is shown the decrease in the 3 per cent payment to the City of Chicago. Line 5 is a total of the preceding lines 2, 3
695 and 4. In line 6, I have shown my estimate of the increased revenue accounting expense that we would have incurred during each of the years had the rates been actually in effect. Line 7 is a net figure, after deducting line 6 from line 5, and in line 8 is the net after deducting line 7 from line 1. In line 9, I have shown the decrease in the amount of Federal Income Tax that we would have paid had the rates actually been in effect during each of the years.

These amounts were used by me in preparing Exhibit A-49, and for the year 1923 I have extended the amount shown on Exhibit A-52 for the three months October to December to an annual basis by multiplying the figure of $389,310 by 4. This figure, $389,310, covers only the months of October, November and December, 1923, because the proposed rates were to have become effective October 1, 1923. I arrived at the annual
696 effect in 1923 merely by multiplying that figure by 4.

I have explained sheet 1 of Exhibit A-52. Sheet 2 contains information compiled on the identical basis, but of course in varying amounts for the year 1931. These net amounts were apportioned by me on Exhibit A-49 to exchange, intrastate toll and interstate toll, on the same basis that the related amounts included in the exchange revenues were apportioned. That is, they were apportioned on the basis of the use of the subscribers' lines for intrastate and interstate business.

I prepared the exhibit identified as Plaintiff's Exhibit A-53, which is in 9 sheets, and shows for each of the years 1923 to 1931, both inclusive, the rates of return under the present rates and under the rates in suit, based both on average reproduction cost new less depreciation of plaintiff's
697 property in its Chicago area, and upon the average book cost of the plaintiff's property. The figures appearing in lines 2 and 3 represent the balance available for return under present rates and under rates in suit, as taken from my previous Exhibit A-49. The fourth line shows the reproduction cost new less depreciation of plant in service and general equipment, as taken from Exhibit A-42 introduced by Mr. Mapes.

The next item is construction work in progress. This is a book figure which I have apportioned to exchange, intrastate toll and interstate toll by classes of plant, on the basis that Mr. Mapes apportioned the corresponding classes of plant in service. In this connection, the amount for 1927 was adjusted to correct for an over-clearance made on the books at that time.

The next item is going value. This represents Mr. Sloan's figure, which I apportioned on the basis of the separation made by Mr. Mapes of the reproduction cost of the total plant in service, including general equipment.

Line 7 is merely a total of the preceding lines 4, 5 and 6. In line 8 is a mean average for the year. It has been determined by taking the balance at the beginning of the year
698 and at the end of the year, and dividing by two. Now, in the case of 1923, I did not have a balance at the beginning of the year for the reproduction cost of the property, so I

determined what the ratio was, based on the book costs; that is, I determined, first, the average book cost, and related that to the book cost at the end of the year, and then applied that percentage to the figures appearing in line 7, as the reproduction cost at the end of the year.

In order to ascertain the rate of return under the present rates and under the rates in suit, based upon the average reproduction cost new less depreciation and the average book cost, I applied the net income, not to the property in service at the end of the year, but to the average property in service during the year. I obtained this average property for the year by the methods I have just described.

The item appearing in line 9 (Exhibit A-53) represents the average material and supplies. This is a book figure, and represents the average of monthly averages that I have
699 apportioned on the basis of the reproduction cost of the
plant in service, including general equipment. The next item of average working cash capital, including its distribution to intrastate and interstate, was furnished to me by Mr. Cleveland, Vice President of the Illinois Bell Telephone Company. Line 11 is the total.

Line 12 is the book cost of the plant in service and general equipment at the end of each year, which I have apportioned in total on the basis of the reproduction cost of the plant in service and general equipment, as spread by Mr. Mapes. In this connection, I made certain adjustments because of delayed displacement entries treated on the books in 1924 and 1929. I also made an adjustment of the figures at the end of 1927, because of the over-clearance of construction work in progress that I mentioned a little while ago. The item appearing in the next line, construction work in progress, is the same as line 5. Line 14 is a total, and line 15 is an average for the year. Lines 16 and 17 are the same figures as
700 appear in lines 9 and 10, and line 18 is the total. In the
lower portion of the exhibit, I have shown the per cent of return under present rates and under rates in suit, based on the average reproduction cost new less depreciation, as shown in line 11, and the average book cost as shown in line 18.

The first sheet of Exhibit A-53 shows on line 20, "Per cent of return under present rates based on average reproduction cost new less depreciation." In the first column, the per cent return on exchange is shown as 3.52; in the second column, the per cent return on intrastate toll is shown as 9.20; and in the third column is shown the per cent return for the total intrastate property of 3.77. It is upon that same general plan that all of these sheets are set up.

I prepared recently, at counsel's request, an exhibit in 9 sheets identified as Plaintiff's Exhibit A-54, which shows
701 the rate of return based upon the present rates and the rates in suit, both with respect to reproduction cost new less depreciation and average book cost, but excluding all overheads on land. The general explanation which I have just made with respect to Exhibit A-53 applies with equal force to Exhibit A-54. The amounts available for return, of course, were taken from another exhibit (Exhibit A-50), and the reproduction cost new less depreciation was taken from an exhibit introduced by Mr. Mapes as A-44. Other than that, the same explanation applies. In the preparation of this exhibit, I have applied the same methods used in the preparation of the other exhibits, except with respect to this Exhibit A-54 I have excluded all overheads on land, and made any related changes that were rendered necessary by such exclusion.

I have prepared a statement identified as Plaintiff's Exhibit A-55, in 9 sheets, which shows a station-to-station
702 separation and apportionment of the revenues, expenses and net income of the plaintiff for each of the years 1923 to 1931, and also the rate of return, but with depreciation and amortization of landed capital based on reproduction cost new, with the related changes in Federal Income Tax. This last exhibit (A-55) was prepared in identically the same way, using identically the same figures as Exhibit A-53, except that in Exhibit A-53 the depreciation and amortization of landed capital were figured upon book cost, and in Exhibit A-55 I have based these expenses upon reproduction cost new, and have made the related changes in Federal Income Tax.

I have also prepared from the books of the Company an exhibit, in 2 sheets, identified as Plaintiff's Exhibit A-56. This exhibit shows the Company operated stations in service in its Chicago area at the end of each of the years 1923 to 1930, and as of June 30, 1931, and at the end of 1931, together with the net increase or decrease in stations during each of the periods.

703 I have also prepared an exhibit, in 3 sheets, identified as Plaintiff's Exhibit A-57, showing for each of the years 1923 to 1931, both inclusive, the annual gross additions, displacements and net additions to plant in service and general equipment of the plaintiff in its Chicago area. The figures in this exhibit were taken from the Company's records for each of these years.

I have likewise prepared an exhibit identified as Plaintiff's Exhibit A-58, in 3 sheets, which shows in parallel columns as of December 31 for each of the years 1923 to 1931 the plant in service and general equipment accounts for the Chicago and State areas of the Illinois Bell Telephone Company separately. This exhibit is self explanatory.

I have prepared the statement identified as Plaintiff's 704 Exhibit A-59, which is in 2 sheets. This exhibit shows a comparison of the Commission's allowance for maintenance and depreciation with the actual charges for maintenance and depreciation accruals as shown by the Company's books, and with the actual charges for maintenance and retirements as shown by the Company's books, for each of the years from 1923 to 1931. On pages 1 and 2 of this exhibit appear certain stars or designations after figures for the years 1928, 1929, 1930 and 1931, and the notation that those are red figures. That means that the Commission's allowance for maintenance and depreciation was less than the actual charges shown on the Company's records for maintenance and retirement.

I have also prepared an exhibit from the books of the Illinois Bell Telephone Company in its Chicago area identified as Plaintiff's Exhibit A-60, showing an analysis of the fixed capital reserves of the Company in its Chicago area for the years 1923 to 1931, both inclusive.

705 All of the exhibits which have been identified during my testimony correctly and accurately reflect the entries appearing on the books of the Illinois Bell Telephone Company for its Chicago area, except where I have already testified that I have made certain adjustments, or where I have testified that the figures have been furnished me by other witnesses.

The instrument identified as Plaintiff's Exhibit A-61 shows what percentage of our gross purchases from the Western Electric Company for the Chicago area are chargeable to maintenance and other expense accounts, for each of the years 1923 to 1931.

I have also prepared Exhibit A-62, which shows the
706 book cost of local manual central office equipment of the Illinois Bell Telephone Company in its Chicago area, for the end of each of the years 1923 to 1931.

707 The net telephone revenues of the Illinois Bell Telephone Company in its Chicago area for the year 1931, after making the adjustments which I have already de-
708 scribed in my testimony, were $9,882,253. 41,844 stations were lost by the Company in its Chicago area during 1931. There has been a further loss of stations by the Company in its Chicago area in the months of January and February of 1932. For January, this loss was 6,579, and for the month of February it was 7,268 stations. The net loss of stations for the first day of March, 1932, was 312.

There has been a decrease in the calling rate from the end of 1930 to the present time. The average daily calling rate per station for January, 1931, was 4.21; in January, 1932,
709 it was 4.02. That is a decrease of .19 of a call per day per station in the calling rate in the Chicago area. A reduction in the calling rate affects the revenues of the Company; it has a very close relationship to the revenues. We have no flat rate service in the City of Chicago, all of the service is measured; so the revenues of the Company depend upon the number of calls as well as the number of stations in

service. There is no indication at the present time that the Company might cease to lose stations during the year 1932; we have had a rather large loss during 1931, and we have continued to lose stations so far during 1932.

For the year 1931, the revenues do not reflect the total 710 loss from the stations taken out during 1931, as the revenues for 1931 include all of the revenues collected from all stations in service during the actual period that they were in service, although some of them were subsequently removed. In addition, the calling rate has been decreasing, and that has an effect on the revenues which was not fully realized during 1931. If a certain number of stations were removed in February of 1931, the revenues for those stations were included in our January revenues, and so on throughout the year; as stations were removed, the revenues from those stations were reflected for the portion of the time that they were actually in service during 1931.

I have prepared an exhibit, identified as Plaintiff's Exhibit A-63, which shows the message tolls, Account 510, received by the plaintiff in its Chicago area during each of the months of 1930, each of the months of 1931, the totals for the two years, and the message tolls for January, 1932. This 711 exhibit is a correct statement of the Message Toll Account of the plaintiff Company in its Chicago area, as reflected by its books.

(Plaintiff offered Exhibit A-63 in evidence and it was admitted and received.)

713 C. R. FINDEISEN, called as a witness on behalf of the plaintiff, having been first duly sworn, testified as follows:

Direct Examination by Mr. Thompson.

My name is C. R. Findeisen. I reside at 2342 North Kedzie Boulevard, Chicago. I am General Commercial Super-
714 visor for the Chicago area of the Illinois Bell Telephone Company, which position I have held for about 2 years. I have been connected with the Illinois Bell Telephone Company for about 16 years. Prior to my appointment as General Commercial Supervisor, I was for 2 years General Sales Manager; 5 years, Traffic Supervisor and Traffic Results Engineer; 3 years, Traffic Supervisor; 2 years, in the Engineering Department; and the balance of the time in the Traffic Department. In the last 10 years of my employment by the plaintiff, I have been engaged in those portions of the Traffic and Commercial Departments having to do, among other things, with the effect of rates, both on the question of revenue, and on the question of subscribers' usage.

I have made a study of the effect on subscribers' usage and gross revenue of the Chicago area of the plaintiff, if the rates fixed by the order of the Illinois Commerce Commission dated August 16, 1923, had been put into effect. The
715 figures appearing in the first line of Exhibit A-52 for each of the years 1923 to 1931 shown opposite the words "Decrease in annual revenues from rates in suit," were furnished by the Commercial Department, as a result of the study to which I have already testified, to Mr. Kruse, for use in the preparation of this Exhibit A-52.

I also made certain calculations with respect to the usage which would have resulted had the proposed rates been put into effect, and furnished such calculations to the Traffic Department for the purpose of figuring the dollar result on traffic expenses had these rates been established. Those
716 figures to which I have last referred were given to Mr. S. S. Smith, Traffic Engineer of the Chicago area of the Illinois Bell Telephone Company.

I prepared the instrument, identified as Plaintiff's Exhibit A-64, which shows the rates now being collected by the Illinois Bell Telephone Company in Chicago from the four classes of coin box service affected by the order of the Commission, and the rates fixed by the Commission's order for the same classes of service. This exhibit further shows the daily, monthly and annual rates, the number of messages under the respective guarantees, the rates for excess messages, and the rates of the present two-party measured residence service of the Company, with the same details. It correctly sets forth what it purports to show.

From my experience in the telephone business, I am familiar with the effect of changes in rate schedules on dollar revenue and on subscribers' usage, and by that I mean the number 717 of messages used by a given group of subscribers under varying guarantees. In arriving at the figures appearing in line 1 of Exhibit A-52 (referring to decrease in annual revenues from rates in suit), there is involved, first, the decrease in revenues in all four classes, because of the decreased rates; secondly, the decreased usage of the four-party coin box subscribers, because of the decreased guarantee; and, thirdly, a regrading of certain of the two-party measured subscribers to the four-party coin box class.

With respect to the individual business coin box, the two-party business coin box, and the two-party residence coin box, I arrived at the decreased revenues which would have been received under the rates of the Illinois Commerce Commission had they been put into effect, by applying such decreased rates to the actual usage of these three classes as obtained from our records. In doing that, I did not assume that there would be an increased usage in these three classes of service 718 resulting from the reduced rate, because it is my experience that a decrease in the rates of these three classes does not tend to show any increase in their usage. They are already using, at a higher rate, whatever their telephone requirements may be.

It is, possibly, the general rule in the utility business that if the price goes down, the quantity consumed is increased, except where they are already using all that their requirements may be.

719 With respect to the fourth class of service, the four-party residence coin box class, experience has shown that a change in usage results from a change in the guarantee. There are included in this class those persons who desire telephone service at the lowest cost in the Company's

720 entire structure. Under the rates now being collected, the guarantee is $2.745 per month of 30.5 days, with 54.9 messages for the same period. Under the rates fixed by the Commission, the corresponding guarantee is $2.2875, with 45-3/4 messages. There is a difference there of not quite, but almost, 50 cents in the amount of the monthly minimum rate and a difference of about 9 messages per month.

It is my opinion that, during the years involved in this study, between 60 and 70 per cent of these subscribers would not have exceeded the guarantee under the rates fixed by the Commission. After determining the number of subscribers who would not exceed the guarantee, and those who would, we applied the rates as fixed by the Commisison in order to determine the decrease in revenue which would have resulted if those rates had been put into effect.

721 There was a substantial difference between the amount of the minimum monthly payment under the two rate schedules, and also a substantial decrease in the amount of messages which a man could get without making an extra payment. I made a study of this class of coin box service in order to determine what the usage was, and found that from 60 to 70 per cent of the total number of subscribers using the service would be under the message guarantee fixed in the proposed rates. Therefore, I assumed that, their message use, being within the message allowance which they

722 would get for their minimum monthly payment, there would be a decreased usage. The four-party residence coin box service is the lowest rate.

The individual business coin box service, the two-party business coin box service, and the two-party residence coin box

723 service are classes of service where the minimum monthly payment and the number of messages for that monthly

payment are in each instance higher than the minimum monthly payment and the number of monthly messages for the four-party residence coin box service, both under the rates now collected by the Illinois Bell Company, and under the rates fixed by the Illinois Commerce Commission. For the individual business coin box service under the present rate, there is a guarantee of $6.10 per month, with 122 messages, and messages thereafter are paid for at the rate of 5 cents each. The proposed rates of the Commission reduced this monthly guarantee to $5.49, and the number of messages from 122 to 109.8; the excess messages were to be charged for under the Commission's proposed rates at 4 cents each.

For the two-party business coin box, the guarantee under our present rates is $4.575 per month, with 91.5 messages.
724 Under the schedule proposed by the Commission, that guarantee was $3.965, with message use reduced to 79.3 messages, and with the excess messages at 5 cents each up to a certain point, and thereafter at 4 cents each.

Under the present schedule, the minimum monthly payment for the two-party residence coin box service is $3.8125 per month, with 76¼ messages, and under the proposed rates of the Commission, $3.355 per month, with 67.1 messages guaranteed and excess messages at 4 cents.

The reduction made by the Commission in the dollar monthly guarantee in these classes of service, is a less proportionate reduction, based upon the monthly rate now in effect, than that made in the four-party residence coin box service. The message usage for the minimum guarantee
725 is substantially higher, both under the Company's rates and under the rates proposed by the Commission, than the monthly guaranteed messages for the four-party coin box service.

The percentage of subscribers that exceed the guarantee in these three classes (two-party residence, two-party business and individual business), is somewhat higher than the percentage that exceed the guarantee under the four-party coin box rates. A higher percentage exceeds the guarantee in the one and two-party coin box classes than they do in the four-party. Starting from that fact, it is my opinion that the rate schedule is so fixed now, and was so fixed by the Commission, that the change proposed by the Commission would not 726 have induced a greater telephone usage in those three classes of coin box service, because the guarantees in the one and two-party classes do not control the usage to the same extent as in the two-party coin box business or residence classes. The subscribers are paying a higher rate for the telephone service because their usage is well in excess, or will be in excess of the four-party guarantee, and the total usage that they are going to make in the course of a month's time does not bother them. They are using all of the telephone service that they need, all of the time, regardless of the rate. I don't think the fact that in the present rate schedule in these three classes of service the excess message is 5 cents, and under the Commission's rates it is in most instances 4 cents, will have much effect on increasing the number of excess calls.

It is my opinion that, if the proposed rates had been put in effect, some of the two-party measured residence subscribers would have taken the four-party coin box service, because of the rate differential; this is known as regrading. Under 727 the rates now being collected for two-party measured service, the guarantee is $2.75 a month with 55 messages. Our records show that from 51.5 to 63 per cent of these subscribers use 45 calls per month or less, and that usage is below the message guarantee for the four-party coin box subscribers as fixed by the Commission. These persons then by regrading to the four-party coin box service, could save approximately 45 cents per month, and still get the same message usage as they had in the two-party class. I did not assume, however, that all of them would regrade, but, on the contrary, only 40 per cent of that group that fall below 45 messages per month. In addition, 12 to 16 per cent of this group use from 46 to 55 messages. I assumed that 20 per cent of those would regrade, and that their message use would be 49 to 50 calls per month. The latter class will save something by regrading from the two-party service to the four-party coin box under the Commission's proposed rates,

when they are that close to the guarantee in those months
728 where they do not exceed it; but I have assumed that
only 20 per cent of this latter group (consisting of 12 to
16 per cent that use that number of messages), will, in fact,
regrade from the two-party measured to the four-party coin
box, in the event that the Commission's rates should be put in.

I furnished to the Traffic Department figures based on this study to which I have just testified, showing the decreased message usage which would have resulted had the Commission's rates been put into effect, in order that the Traffic Department might figure the decreased traffic expenses attributable to such decreased usage. The results of that study are shown on Exhibit A-65 which I have prepared.

(Plaintiff offered Exhibits A-64 and A-65 in evidence Objections reserved until after cross-examination.)

729 *Cross-Examination by Mr. Haight.*

The decrease in rates shown in Exhibit A-64, based upon
the order of the Illinois Commerce Commission here in question, would not increase the use of telephones. If the rates
were just half those of the order of 1923, it might in some
instances increase the use of telephones, and it might not
730 in others. It would increase the use, possibly, of those
subscribers who are already using considerably in excess
of the guarantee; except in the case of such subscribers, it
possibly would not increase the use of telephones in the City
of Chicago.

I have already stated that the rates proposed, in my opinion, would not tend to increase the usage.

731 If the subscribers are already using all of the telephone
service they require, they cannot use any more than they
need because the rate is decreased. It is my opinion that the
rate has nothing to do with the extent of the use.

Q. Now, there are some instances in this postulated case of
just half the rates of those set up in the Commission's order
of 1923, in which it would not increase the use of tele-
732 phones in the City of Chicago. What ones did you have
in mind, in making that answer?

A. Well, I do not see quite where that applies, because they could get—those subscribers could get a much lesser rate by taking a lower grade of service.

We have not assumed that the rates might be reduced 50 per cent. I based my opinion that the rates of 1923 would not increase the usage on 16 years of experience. We had an increase of local exchange message rates in the City of Chicago. To my personal knowledge we have not had a decrease. I would not say in that respect that the experience I mentioned does not exist; it does exist. We have had the experience of the change in rates from the two-party to the four-party rates. I have never at any time had any experience with a decrease. When I say that I have based my opinion upon experience, I do not mean any experience whatever with a decrease in local exchange rates.

733 My testimony upon direct was based only upon the use of the average number of existing subscribers in each of the years. This takes into consideration the growth in each of the years, and the gain or loss in stations. I have here the information concerning the growth and gain or loss in stations for each of the years.

734 This document, headed "Estimated revenue effect of proposed rates," shows four groups (A, B, C and D), which are, respectively, the average number of subscribers to the one-party coin box business, the two-party coin box business, the two-party coin box residence, and the four-party coin box residence. The next page has to do with the regrading of the two-party measured rate subscribers to the four-party coin box class.

735 In group A (which is the one-party coin box business), we arrive at the average number of subscribers for each of the years 1923 to 1931 from our records. I do not remember if those are the average by months, or whether they are the average of the first and the end of the year. The same is also true in regard to each of these groups, B, C and D; it is either the average taken from the 12 months of the year, or the yearly average.

There was a gradual increase of the one-party coin box service from 1923 to 1930, with a drop in 1931. There have been no exhibits prepared giving these figures.

In group B (that is, the "2 C.B." or two-party coin
736 box business class) there were 29,000 odd subscribers in
each of the three years 1923 to 1925, and a reduction in
that number each year down to 1931. Of course, in the years
1930 and 1931 there has been a general loss in stations. The
gradual decrease of the number of subscribers in this class
from 1926 down to 1931 is because it is not a comparable service.
Convenience and privacy of service for business purposes
force the regrading to the one-party coin box single
line; that is, the customers change from one class to the other,
but I would not say that the change is very great.

In group C (the two-party coin box residence service) there
were, in 1923, 11,000 subscribers; in 1930, there were
737 32,000; and in 1931, 31,000. We have more subscribers
in all classes than we had in 1923; that is the growth of
the business. This class of service is not comparable to group
B (two-party coin box business); because they are two different
types of service. This is a residence service and group
B is a business service. My explanation of the increase
738 in this class is the growth in the Company's business.

The subscribers in this class, that is the two-party coin box residence class, increased about three times during the period 1923 to 1930.

With reference to Plaintiff's Exhibit A-64, prepared by me, I was aware of changes by the customers from the four-party coin box service to the two-party measured rate service. We obtained, first, the two-party service as compared with the four-party service. In general, the two-party measured rate service is somewhat more convenient for the subscribers. They set up an account and pay their bills in advance; it is not a pay-as-you-go service. It is a little higher type of service, and the rate differential is very slightly different under the existing rates.

I cannot state specifically whether or not, during the years 1923 to 1931, there has been a tendency to change from the four-party residence coin box service to the two-party residence coin box service. I do not have the figures available here.

739 The groupings in Plaintiff's Exhibit A-64 are the same as the four groupings which I have heretofore discussed with respect to the individual business coin box, two-party business coin box, two-party residence coin box, and the four-party residence coin box, as shown on the sheet I described a minute ago. The groupings are identical.

The groupings on the sheet which I have just described were: group A, "1 C.B.", individual business coin box; group B, "2 C.B.", two-party business coin box; group C, "2 C.R.", two-party residence coin box; and group D, "4 C. R.", four-party residence coin box.

I haven't here the definite percentages of the various classes; I haven't those on any separate table.

740 I am not familiar with any figures on long distance service. I assume there has been an increase in local tolls.

742 As I stated before, I have spent all of my time with the Illinois Bell Telephone Company. It is not at all the fact that I have had no experience upon which to base my testimony.

I reside at 2342 North Kedzie boulevard, Chicago. I
743 have never used a suburban telephone. I have used a long distance telephone. I have learned something about long distance rates in connection with my use of the long distance service. During that time I have known of decreases in long distance rates. I have used the local toll lines, but that use has been very slight. It has been exceeded by my long distance calls. I could not even guess how often I have been in the habit of using local tolls, but I have used the long
744 distance service probably two or three times a month on personal business.

To a certain extent, I have had experience that showed that decreased rates result in more people acquiring telephones. That experience, broadly speaking, is the development in Chicago, as compared with other cities where the rates are somewhat different. I know nothing about the financial status of the telephone subscribers. There is no tendency being indicated at the present time by the so-called moderate customer to use the telephone more and more. The classes as a whole increased their usage at some times.

745 I have no knowledge as to whether or not telephone users are attracted to the use of a telephone through a

746 decrease in rates; my opinion, in view of my long experience in the business, would be that they would not use it any more than they do now. I am speaking of non-users.

If the present rates were reduced to 10 per cent of what they are now, it probably would induce some non-users

747 of telephones to use them. If you give something away everybody will want it. I cannot say definitely that the same principle applies to a decrease of the price of a thing. For example, I eat three meals a day. If those meals are reduced from one dollar to fifty cents, I cannot eat six because they have come down to fifty cents, but I suppose that if I ate nothing and meals were offered within the range of my pocketbook, I would then eat. Using the same analogy, the increase of the appetite for telephone use by reason of the reduction in the rates would, in my opinion, depend upon the reduction; that is, a small reduction would have nothing to do with it and a large reduction would.

748 I cannot conceive of anybody not having a telephone because it is not necessary; the telephone is a necessity. It does not follow that all who could pay the price would use the telephone, but a very large percentage of them would.

If the guarantee on service were reduced, some few of those people who now go to public pay stations, drug stores, etc., might put in a telephone, but I would not venture to guess the number.

749 By way of general supervision, I have to do with the subscribers' contracts in the City of Chicago. I have not any forms of these contracts with me. The two documents handed me by counsel for the City are, in general, all of the forms of subscribers' contracts used in the City of Chicago for the years 1923 to 1931, both inclusive. I think there have

been some minor changes in the get-up of the forms; that
750 is, in the columns provided for entering information, or
the rearrangement of the spaces on the contracts. Save
for that, they are identical with those used throughout that
period and are the only ones used.

(Said documents were marked for identification as Defendants' Exhibits D-9 and D-10, respectively.)

I do not have anything to do with the handling of rate schedules in Chicago.

The abbreviation "Mess." in the last column of
751 Exhibit A-64 means messages. By "message" I mean
a completed chargeable call from one station to another
in Chicago, and, as applied to these rate schedules, in Chicago only.

I think numbers of the subscribers to the four-party service would go to the two-party service if the two-party line rates were decreased.

The sheet heretofore discussed, headed "Estimated reve-
nue effect of proposed rates", is one of my work sheets
752 (which said document was marked for identification as
Defendants' Exhibit D-11) This sheet was based upon
the average number of existing subscribers in each year
involved.

753 *Re-direct Examination by Mr. Thompson.*

The work sheet which has just been marked for identification as Defendants' Exhibit D-11, contains certain data
and information compiled in connection with making an estimate of the revenue effect of the proposed rates established
by the Illinois Commerce Commission. In each of the four
classes included on this exhibit, we have treated the average
number of subscribers for each year as they actually
754 existed under the Company's existing rate schedule. If
there were any increase from year to year in the number
of subscribers in a particular class of service, that increase
is reflected in this Defendants' Exhibit D-11, as is also any
decrease in the number of the Company's subscribers using
a given class of service.

I have never in my experience with rate matters heard of
any rate fluctuation in Chicago, or anywhere in the United
States, which amounted to as much as 50 per cent of the total
monthly payment of a given subscriber. What I have con-
sidered in my work and in the exhibits which are presented
here, has been the effect upon the use of subscribers' of the
Illinois Bell Telephone Company of the rates fixed by the
755 Illinois Commerce Commission, where the reduction was,
roughly speaking, on the order of from 50 to 70 cents per
month. Of course, if a very violent rate fluctuation were
made, either upward or downward, that would have quite a
different effect than if a moderate change were made one way
or the other.

I have devoted practically all of my time since I have been with the Company, and certainly in the last ten years, to the study of its rate schedules, and various traffic and engineering matters connected with that sort of work.

Re-cross Examination by Mr. Haight.

Whether or not withdrawals of telephones would be
decreased if rates were decreased during depression
756 periods depends on the individual subscriber. I would
not give a ge[illegible]l opinion; it depends upon what the
reduction is and u[illegible] the subscriber. I have an opinion as to
whether withdrawals would decrease or not if rates were
decreased during periods of depression, and assuming that
people are trying to save some money. To a certain extent,
they might retain their telephone service, but for the man
who cannot pay anything it makes no difference what the
rate is; he cannot buy it anyway. I cannot say as to what
extent that rate reduction would decrease the number of with-
drawals. In a general way, the assumption might be
757 made that there would be a lesser withdrawal.

Re-direct Examination by Mr. Thompson.

The extent of the lessening of telephone withdrawals during a period of depression resulting from a rate reduction depends entirely upon the amount of the decrease.

758 S. S. SMITH, called as a witness on behalf of the plaintiff, having been first duly sworn, was examined and testified as follows:

Direct Examination by Mr. Thompson.

My name is S. S. Smith, and I reside at 547 Ashland Avenue, River Forest, Illinois. I am an employee of the Illinois Bell Telephone Company, and am, and have been since 1928, Traffic Engineer of the Chicago area of that Company. I have been an employee of that Company since 1901, and have been practically continuously in the Traffic Department. I was, for a period of 10 years prior to the reorganization of the Company into areas, Traffic Engineer of the entire Company.

759 As Traffic Engineer, I am responsible for studies and plans made to determine the amount of facilities required to handle traffic properly. These facilities include central office switching equipment, certain private branch exchange switching equipment, and interoffice trunks. I am also responsible for the development of traffic data required in the preparation of equipment cost studies, usually headed up by the Chief Engineer, including estimates of traffic expenses entering into the studies.

It has been a part of my duties for the past 10 years to determine the actual cost of handling messages, as the cost relates itself to the volume of messages. The volume of traffic affects the expense of that traffic.

I am responsible for the figures appearing in line 2 of Exhibit A-52, opposite the title, "Decrease in traffic 760 expenses." In arriving at the figures on this exhibit for the years 1923 to 1931, I took into consideration the decreased usage in coin box service. I also took into consideration, in the two-party measured rate service, the decreased usage by reason of the regrading to coin box service which would have resulted from the putting into effect of the

Commission's rates of August 16, 1923. In both instances, I received the amount of decreased usage from the Commercial Department of the Company. All the dollar figures appearing on Exhibit A-52 in line 2 are based upon the figures furnished me by the Commercial Department, which I have used for the purpose of determining decreased traffic expenses.

I received from Mr. Findeisen the decreased usage which 761 he has testified would have resulted if the Commission's rates had been put into effect, and then evaluated that decreased usage in terms of dollars for each of the years.

Our traffic accounts are set up to show monthly the cost per thousand traffic work units. I translated the decreased messages into traffic work units, and from the cost figures which we have for each year, determined the savings which would result from the decrease in work units.

In my opinion, the figures shown on Exhibit A-52, in line 2, "Decrease in traffic expenses", correctly represent the savings which would have been made in traffic expenses by the Illinois Bell Telephone Company in its Chicago area if the decreased message use furnished me by Mr. Findeisen had actually taken place.

762 *Cross-Examination by Mr. Haight.*

There is no relation between the traffic expense and the gross income of the Company for each year. There is no relation between the revenue per message and the traffic expense for any class of service.

I presume that the rate per message is based upon the traffic expense as an element, but I have had nothing to do with that matter in my experience, and do not know who in the Company does have to do with it.

763 I figured the decrease in traffic expense on the cost per thousand traffic units, messages, ratios of messages to calls and traffic units. Those data are all assembled now under my control, and I would permit accountants of the defendants to look at them.

Re-direct Examination by Mr. Thompson.

The work sheets to which I referred and which are here in Court have never been examined by the representatives of the City of Chicago, but have been available for their examination constantly.

764 U. F. CLEVELAND, called as a witness on behalf of the plaintiff, having been first duly sworn, was examined and testified as follows:

Direct Examination by Mr. Thompson.

My name is U. F. Cleveland. I reside in Oak Park. I am the same U. F. Cleveland who testified on the former hearing of this cause. At that time I was General Auditor of the Illinois Bell Telephone Company and continued in that position up to the end of June, 1930, when I became Vice President in charge of the Financial and Accounting Departments of the Company. Since July 1, 1930, I have been continuously Vice President of the Company in charge of the two departments referred to.

765 There was a displacement made in the accounts of the Company in October, 1924, of $105,367.86. This displacement is the one referred to in the testimony of Mr. Andrew Sangster, on the former hearing of this cause, appearing on pages 1141 and 1142 of the record, and also referred to by me in my own testimony on the former hearing, appearing on pages 1144 and 1145 of the record.

Of the $858,166 affected by the Main-Franklin manual central office equipment that was cut out of service in December, 1928, as referred to in the testimony of Mr. W. F. Sloan on this hearing, $737,833 was displaced from the books in January of 1929, and the balance of $120,333 was displaced from the books in March, 1929. The work under this estimate

766 provided for the displacement of Randolph, Franklin and Main manual units. The displacement entry for the Randolph unit was made in December of 1928, amounting to

$578,898. Plans were under consideration which involved the possible re-use of a portion of the Main-Franklin equipment, and the displacement entry was not made immediately, pending the consideration of those plans. The situation was called to my attention by the Chief Engineer, and I advised him to make the displacement entries. They were made in the month following the cutting out of service of the Main-Franklin unit, except for the $120,000, which was made in March, 1929, at the time the entire job was cleared up. At the time this matter was first called to my attention, the books for 1928 had already been closed.

Mr. W. F. Sloan has testified on this hearing that in December, 1927, there were transferred from Construction Work in Progress to Central Office Equipment in Service certain amounts before the equipment had actually been placed
767 in service. It is a practice, when work included in Construction Work in Progress is partly completed and put in service, for the Chief Engineer to notify the Accounting Department of the percentage so completed. From that advice, a proportion of the amount expended is cleared from Construction Work in Progress into Plant in Service.

In these cases, there were five estimates involved, and there were transfers made in both November and December of 1927. The November transfer was proper. In making the December transfer, the accountants neglected to take into consideration the amount of the November transfer, consequently there was an over-clearance to the Plant in Service account. Our routine check of the plant accounting transactions disclosed this fact in January of 1928, and the correction was made at that time. The incident having occurred at the end of the year, it was not corrected until the following year. When this amount referred to was transferred from Construction Work in Progress to Plant in Service, in 1927, the account for Construction Work in Progress for the year 1927 was
768 understated by the amount of the excess transfer. Mr. Kruse, in his exhibits in this case, has made an adjustment in this matter by decreasing his book figures for Plant

in Service and making a corresponding increase in Construction Work in Progress, both for the year 1927. The net effect of this adjustment is to leave the total of the plaintiff's Plant in Service account, plus Construction Work in Progress for the year 1927, unchanged.

Mr. W. F. Sloan has also testified on this hearing with respect to booths and special fittings, and particularly to the retirement unit costs in that account for the years 1924 to 1928. Up to the end of 1923, the estimated original cost of booths displaced was considered to be the current cost of a booth of similar character. Beginning with January of 1924, displacements were based on the average cost of booths. This average cost was obtained by dividing the dollars of the investment shown on the books by the number of booths
769 in use, as shown in the record maintained in the Plant
Department. Along in 1928 it appeared that the unit costs used for displacement purposes were small. In attempting to clear up the situation and find what caused it, we made a complete field inventory of all the booths. This inventory showed a considerably smaller number of booths than was shown by the running record which had been used in previous displacements. As the inventory had been very carefully made, it was felt that we were justified in using it as the basis of our future displacements. Beginning, therefore, with 1929, displacements were made on the basis of average costs arrived at by using the inventory figures as the number in the plant.

I have never known what the exact reason was for the discrepancy in the number of booths and special fittings between the running account of the Company and the inventory. My judgment is that the plant record which was first used included not only the booths owned by the Company, but some owned by our agents and customers, which had been furnished by us but paid for by them. I say that because the inven-
770 tory made in 1928 disclosed that there were some 3,800
such booths in the plant not belonging to us. From the date we began to use the revised figures, the adjustment of any under-displacement which may have occurred in earlier years by reason of the use of the former retirement units

costs would be constant. If there had been any under-displacement by the use of the previous figures, that would have in time straightened itself out.

I know of no other accounting adjustments, either in respect to a lag in completing the accounting entries on the books after disposing of the physical property, or for any other reason, that ought to be taken into consideration in the figures used by Mr. Sloan in converting book costs of the Company.

Mr. Kruse has prepared, and there has been introduced in evidence by him, Plaintiff's Exhibit A-53, in 9 sheets, which shows the rate of return under the present rates and the rates in suit for each of the years 1923 to 1931, and shows also the reproduction cost new less depreciation of plant in service
771 and general equipment. In my opinion, the property as shown by the books of the Company for each of the dates referred to, as it is reflected upon this exhibit by means of the conversion factors used by Mr. Sloan applicable to book costs, was actually installed for use in furnishing service to the public in the Chicago area.

There are some very minor parts of the plant outside of the city limits that are used for furnishing Chicago exchange service, at Chicago rates, to a number of subscribers who are not located in the area assigned to the territory of suburban division exchanges. This minor part of the plant is included in the plant accounts of the books kept separately for the Chicago area. Outside of these very minor items, all of the plant and property covered by Exhibit A-53 is located in the City of Chicago.

772 The terms, "Chicago area," "Chicago division" and "Chicago exchange," mean absolutely the same thing. They mean the territory of the City of Chicago with such minor modifications as I have explained with respect to those small items just outside the city limits.

On several of the exhibits introduced by Mr. Kruse, particularly on Exhibit A-53, in line 10, appears a figure "Average Working Cash Capital." I am responsible for those figures. The operating expenses of the Company for the Chicago area for a period of six weeks was the basis of the figures used. In my judgment as an accountant, that is a fair and reasonable basis upon which to ascertain the cash working capital actually required for the Company's operation.

773 I believe that the dollar figures appearing on these several exhibits for average working cash capital state the amount necessary for working cash capital.

By "working cash capital," I mean the amount, exclusive of materials and supplies in this case, necessary to have invested in the business in order to provide for all expenses prior to the time that the money is collected and available for use.

Cross-Examination by Mr. Haight.

774 Part of the service that the Company furnishes to its existing subscribers is to make available additional subscribers. In order to do that, necessarily, we have to have more plant than is actually connected up for the existing subscribers. I know of no way to get at what that amount is, except to measure the plant that is not at the moment connected up for existing subscribers. I have no way of estimating the figure. The provision of this plant is handled through the engineering of the plant. The program for

775 making provision for the growth in the plant is a constant operation. These programs are discussed throughout the entire organization, and it is agreed as to what items of plant will be decreased and what items will be built. This program, in a general way, is found in the provisional estimates, but I do not think that the provisional estimates would indicate, even in a general way, what the spare plant will be in the future. The specific estimates providing for the particular installations would be more likely to indicate that.

"Q. Well, in the provisional estimates, would the program be shown in which spare plant is involved?"

"A. There is nothing specifically set up in the provisional estimate which identifies what you refer to as spare plant, or what I understand you to refer to as such.''

776 The provisional estimate is a summarization of the plant that is required. I rather think that the fundamental plans would have something to do with that, although I have to confess an entire lack of familiarity with the fundamental plan work. I could not tell how the spare plant could be checked up during each year of the period involved here. If there is any way of making the determination of that, I do not know it. Provisional estimates running back over the years 1923 to 1931, inclusive, are in the Company's records.

778 I would be expressing an opinion if I stated what period of time in advance provisional estimates for spare plant are made, but it is my judgment that there isn't any specific number of days, hours, weeks, months or years under consideration. It is probably the anticipated new business which will come to the Company within a reasonable time. You can identify certain items of plant; for example, there would not be a building built this year that was going to fill the requirements only up to the end of this year. Just the length of time that building would provide facilities would depend very largely upon the facts with reference to that specific piece of property. As far as buildings are concerned, it would be my judgment that we would look forward a great many years. The same would be true of the central office
779 equipment. We would look ahead there some time, although I am not familiar with the period.

(Plaintiff offered Exhibits A-64 and A-65 in evidence, which were admitted and received in evidence.)

780 ANDREW SANGSTER, a witness called on behalf of the plaintiff, having been first duly sworn, was examined and testified as follows:

Direct Examination by Mr. Thompson.

My name is Andrew Sangster. I reside in Chatham, New Jersey. I am a Certified Public Accountant with offices in New York City. I have been a Certified Public Accountant for the past 11 years, but for 6 years prior to that time I was practicing as a public accountant.

I am the same Andrew Sangster who testified on the former trial of this cause, with respect to the accounting methods and practices of the Illinois Bell Telephone Company relating to its plant accounting, and with respect to the methods of separation of its property, revenues and expenses which had been made by Mr. Harris and Mr. Cleveland.

781 The examination of the Company's books and records about which I testified in the former hearing was for the period from July 31, 1919, to June 30, 1923. Since the former hearing, I have been employed by the Company to make a further examination of its books and records in certain particulars, and also to examine the work done in connection with the separation of its property, revenues and expenses.

I have examined the exhibits prepared by Mr. Mapes and introduced in evidence in this cause, relating to the separation of the Company's property in its Chicago area. I have likewise examined the exhibits prepared by Mr. Kruse and introduced in evidence during his testimony, showing a separation of the revenues and expenses of the Company in its Chicago area.

782 I began the work on the detail of the examination of the plant accounts of the Company early in January, 1931, and completed it during the first few days of July, 1931. In addition to that, I spent about a month's time reviewing the methods used by the engineers and accountants of the Telephone Company in the separation of its property, revenues and expenses in the Chicago area.

Most of the work which I did in connection with the separation exhibits was devoted to an examination of the 783 exhibits for 1923 to 1930. I have examined the exhibits for the year 1931 since my return to Chicago to testify in this cause.

Since my testimony on the former hearing, I have examined the plant accounts of the Company in its Chicago area, particularly with respect to the gross additions and retirements to and from the property during that period of time. The examination was to verify the gross additions to the property in the Chicago area, including betterments and replacements, and to verify the retirements of property during that time. From the examination which I have made of the books and records of the Company in its Chicago area, it is my opinion as an accountant that they are kept by the Company in accordance with the Uniform System of Accounts applicable to Telephone Companies, as prescribed by the Interstate Commerce Commission and by the Illinois Commerce Commission.

784 As the result of my examination of the books, it is my opinion that the fixed capital accounts of the Company for the Chicago area are correct in all fundamental respects, and show the actual cost of the plant, including gross additions, betterments and replacements; and all retirements have been accounted for. In connection with those retirements, I found two instances in which the record of the retirements had not been made until after the close of the year in which the plant actually had been displaced. One of those instances was the amount of approximately $105,000 to which I testified on the former hearing, and to which Mr. Cleveland has just testified: The other instance was the case of the Main-Franklin central office equipment which was cut out of service in 1928 and was not displaced on the books until January and March of the following year, to which Mr. Cleveland testified this morning.

785 I also ascertained in my examination that transfers had been made from Construction Work in Progress to the

Fixed Capital Account in December, 1927, with respect to certain additions in the Belmont, Hyde Park, Kedzie, Kildare and LaFayette offices. I found that correct entries had been made for these items in January, 1928.

I want to qualify the statement that I made that the books of the Company have been kept in accordance with the rules of the Interstate Commerce Commission and the Illinois Commerce Commission. There are certain elements of over-
786 head charges which have been included in the plant accounts only since the year 1920. I referred to this situation in the testimony which I gave at the previous hearing. These elements of overhead which have been included in the plant accounts and the fixed capital accounts for the Chicago area only since 1920 represent interest during construction, traffic engineering, commercial engineering, and general expenses charged to construction. At no time down to the close of the year 1930 has anything been included for taxes during construction or insurance during construction. I mean, in connection with insurance, charges that are made to Account 668, insurance, and general and miscellaneous expenses which might be charged to fixed capital accounts, in so far as insurance is applicable to construction. I do not know how these two items, that is, taxes during construction, or interest during construction, have been handled in 1931; I have not examined the plant accounts for the year 1931. Certainly, no charges for taxes during construction or insurance during construction were carried into the overhead accounts down through 1930.

787 I have investigated the situation concerning the account of Booths and Special Fittings, which both Mr. Sloan and Mr. Cleveland referred to. Prior to the year 1924, booths and special fittings removed from service were retired on the basis of the current cost of similar classes of equipment. Beginning in 1924, retirements were based upon an average cost, determined by dividing the total booth cost in the account by the number of units in service, as shown by Plant Department records. This method has been continued down through 1930. As Mr. Cleveland explained, a field inventory was made

in 1928 of the actual number of booths in service in the Chicago area, and the number found was less than the number shown on the record maintained by the Plant Department.

788 This inventory quantity was put into effect in determining the average unit cost for booths and special fittings, and resulted in increasing that retirement unit cost from 1929 and then on. The effect of this increased retirement unit cost would be to more rapidly correct the account for any excess that might be present due to the use of a lower retirement unit cost.

I have before me Plaintiff's Exhibit A-40, which is the method used by Mr. Mapes in making the separation of the property of the Illinois Bell Telephone Company in its Chicago area. I also have before me Plaintiff's Exhibit A-48, prepared by Mr. Kruse, showing the method used by him in separating and apportioning the revenues and expenses of the plaintiff in its Chicago area. I have examined the methods that were set out in these two exhibits.

789 I have made a check of the separation figures in dollars and percentages appearing upon the exhibits introduced by Mr. Mapes, showing the separation of the property, and also the exhibits introduced by Mr. Kruse, showing the separation of the revenues and expenses. In the case of the figures introduced through Mr. Mapes, the Chief Engineer, I have not gone to the original sources from which he obtained his data, covering call volumes, time intervals and circuit mileages; as these are contained in records that are not familiar to me, I have not attempted to verify them in any way, but have followed through his treatment of the various fundamental factors in his separation studies, so my tes-
790 timony with respect to Mr. Mapes' exhibits should be limited by the statement I have just made, because of my lack of familiarity with the traffic data which Mr. Mapes used.

Both of these separations, that is, the property separation and the revenues and expenses separation, were made, generally, on the basis of the use of the property and the service for exchange, for intrastate toll, and for interstate toll purposes. By "use," I mean actual physical use. In other words, the separations were made on the station-to-station basis.

In my opinion as an accountant, from the examination I have made of the methods used by Mr. Mapes in making the property separation, and those used by Mr. Kruse in making the separation of the revenues and expenses of the Company in its Chicago area, they are correct and accurate, and, when properly applied, will show separations and apportionments on the basis of the respective uses of the plaintiff's property in its Chicago area as between intrastate and interstate.

791 It is my opinion from the examination which I have actually made of the separation exhibits themselves, that the methods have been properly applied in making the separations.

Cross-Examination by Mr. Haight.

793 It is my opinion that the separations, both as to property and as to revenues and expenses, were correct. In giving that opinion, I have taken into consideration the fact that a portion of the exchange revenues have been placed in the interstate toll revenues for each of the years 1923 to 1931, inclusive. The separation studies show the amounts in each of the exchange revenue accounts that have been apportioned, by following that method, to interstate toll for the use of the subscribers' lines and equipment for each of the years 1923 to 1931.

I have also taken into account in reaching my opinion on this subject, in so far as they are involved, the rate schedules filed by the Illinois Bell Telephone Company, and the contracts made by the Illinois Bell Telephone Company with its subscribers under which these revenues were collected.

794 I did not examine the rate schedules themselves. I based my conclusion on the understanding that the rates for exchange service contained in the rate schedules covered the use of all of the exchange facilities and services fur-

795 nished to subscribers. I did not examine any rate schedule or contract. I had information as to what the

exchange rates for exchange service covered in the City of Chicago.

I thought it a matter of general knowledge among the officials of the Illinois Bell Telephone Company that the exchange rates covered the use of the exchange facilities for interstate service. My knowledge of this subject was gained from the
officials of the Company. I discussed this question with
796 Mr. Cleveland, Vice President, Mr. Mapes, Chief Engineer, and Mr. Burgess, General Counsel for the Company.
I do not think they were together when they gave me this
information. I discussed it at various times with these
797 gentlemen. Perhaps I should also have mentioned the
late Mr. Bangs. I think ~~he~~ was the gentleman with whom
I first discussed the question; I think I discussed it with him
before I testified in the former hearing. The next person
with whom I discussed this matter was probably Mr. Cleveland. I could not be certain whether that was before the first
hearing, but it possibly was. After that the discussion was,
I think, general, with either of these gentlemen, together with
Mr. Burgess and Mr. Mapes, or separately, or together. I
am not sure that I was possessed of this information at a time
prior to the time I first testified in this case.

798 I had access to the Company's Account 500, covering
subscribers' station revenues; Account 501, covering
public pay station revenues; Account 504, covering private
exchange lines; and Account 505, minor rents of exchange
plant. Mr. Kruse's work papers show how much has been
apportioned to interstate toll from each of these accounts.
I could not state in dollars how much has been apportioned to
interstate toll from each of these accounts. The individual
accounts are not shown in Mr. Kruse's exhibits.

799 My opinion that the exchange rate schedules cover the
use of local plant in interstate toll service is based finally
on the opinions given me by the gentlemen whom I have
named, beginning with Mr. Bangs. The information which
they gave me was that the rates for exchange service cover
the use of the local exchange plant for all classes of service,
including interstate service. I was never told by any of them

that the use of the local exchange plant for interstate service
was free. I understand that there is no specific charge
800 in the exchange rate for the use of local exchange plant
for interstate purposes. I was informed that the schedules for toll rates stated that the toll rate covered the use of
toll facilities and services only, but I cannot remember when
I was told that or who told me. That was information I
obtained from one or the other of the officials of the Company.
There was no year specified as to when this became true.
I understood that that was a continuing situation during the
period of the study.

I cannot assert definitely, but I think probably Mr. Bangs
told me this in 1923. I was not told of any exchange
801 schedules or any schedules in relation to local exchange
rates as containing any such provisions; no one ever told
me that any such provision was made in the exchange schedules filed anywhere in regard to local exchange rates. It was
my understanding that the exchange rate schedules made no
reference to the matter. I acquired that understanding
802 some time in connection with the preparation of the previous separation studies filed in this case. I do not recall
the source of that understanding.

I did not examine any contracts made with local exchange
subscribers to determine whether they covered this matter in
any way. I did not endeavor to obtain any information
respecting that. I relied upon the statements of the officials
of the Company that I have mentioned: I do not mean to say
that they made statements in connection with these contracts.

803 I was informed that the contracts made no reference
to this point. At that time, I was seeking to find out
about it; I think I made the inquiry to get as much information on the subject as I could obtain. I had in mind that the
contract with subscribers might have some bearing upon this
question of separation, and that the rate schedules filed with
the official body might also have some bearing.

804 I relied upon the information which I obtained from
the officials of the Company, as to all of those matters

concerning which they could correctly inform me, as to what was contained in contracts with subscribers, or any other matters.

"Mr. Haight: In view of the fact that the testimony of this witness is based upon what has been told him by officials of the Company in regard to contracts covering this period 1923 to 1931, I move to strike out all the witness' testimony until such time as the plaintiff produces those contracts, and produces the schedules filed by it with the Illinois Commerce Commission, and its predecessor, during the years 1923 to 1931, both inclusive, because they are the best evidence.

"The Court: Do you expect to put them in?

"Mr. Thompson: Your Honor, may I answer that indirectly at first, and then come to it directly? This witness has said that he approved the apportionment made of the revenues and expenses on the basis of an understanding that it has always been the Company's practice to include in its exchange rate, pay for all services rendered by means of exchange facilities. Now, that is all that this witness has said.

"Now, on cross-examination Mr. Haight asked him first
where he had received that understanding, whether he
805 had ever seen any rate schedules, whether he had seen
the Company's contracts. Now, it is our position in this
case that the question of whether exchange revenue should be taken out in part in this interstate separation depends upon the fact as to what those exchange rates were set up to include, and what they did include, and there will be substantial testimony in this case on that line.

"The Court: Well, on that statement I will permit the testimony to stand without prejudice to your right to renew the motion to strike later."

807 It is noted that on Wednesday, March 9, 1932, Judge
Evans was sitting.

W. K. KRUSE, recalled as a witness on behalf of the plaintiff, having been previously duly sworn, further testified as follows:

Direct Examination by Mr. Thompson.

When I was on the witness stand last week, I gave the number of stations which had been lost by the plaintiff in
its Chicago area in the months of January and Febru-
808 ary, 1932, and on the first day of March. I now have in-
formation on this subject up to and including the 6th of March. There were 1,858 stations lost in the Chicago area of the Illinois Bell Telephone Company during the first six days of March.

809 *Cross-Examination by Mr. Haight.*

In making the interstate separation about which I have testified on direct, I took out a part of the exchange revenues and placed that part in interstate toll revenues for each of the years 1923 to 1931, inclusive. The amounts so apportioned were:

In Account 500, for the year 1923, $324,606.33; 1924, $348,427.22; 1925, $412,544.54; 1926, $418,696.31; 1927, $463,533.40;
1928, $535,653.61; 1929, $592,103.64; 1930, $590,475.46;
810 and in 1931, 545,798.11.

In Account 501, the amounts apportioned were: 1923, $31,434.98; 1924, $35,205.92; 1925, $40,461.86; 1926, $41,408.41; 1927, $45,836.01; 1928, $52,837.82; 1929, $58,143.55; 1930, $58,138.19; and 1931, $55,391.30.

In Account 504, Private Exchange Lines, all of the revenues assigned to interstate toll are in connection with teletype-
writer service, radio circuits and short-period talking
811 service. There was nothing assigned for the years 1923,
1924 and 1925. In 1926, there was assigned $632.53 in connection with teletypewriter service. In 1927, $1,972.67 in connection with teletypewriter service; $54.16 in connection

with some short-period talking service; and $3,661.97 in connection with radio service, or a total of $5,688.80. In 1928, teletypewriter revenues assigned to interstate were $2,073.80; short-period talking service, $63.25; for radio, $5,221.24; 812 or a total of $7,358.29. In 1929, for teletypewriter service, $2,042.33; for radio, $11,732.12; or a total of $13,774.45. In 1930, there was assigned for teletypewriter service, $2,630.11; for radio, $19,555.81; or a total of $22,185.92. In 1931, there was assigned only an item for radio, amounting to $20,631.35.

In Account 505, Minor Rents of Exchange Plant, there was only one year where any revenue was assigned to interstate. That was in 1923, when there was assigned to interstate toll the sum of $93,771.56, representing a portion of the originating commissions received on A. T. & T. messages during that year.

In Account 500, there were some other items in connection with long distance terminals assigned to interstate toll, 813 as follows: In 1923, $4,727.82; in 1924, $4,016.53; in 1925, $3,724.16; in 1926, $3,634.33; in 1927, $3,923.80; in 1928, $4,095.70; in 1929, $4,723.09; in 1930, $5,528.82; and in 1931, $5,984.57.

There is one more item in Account 500, which represents the revenue in connection with interstate foreign exchange service. For this item, there were assigned to interstate toll the following amounts: for 1923, $26,621.72; 1924, $29,863.70; 1925, $31,099.65; 1926, $31,424.97; 1927, $34,718.49; 1928, $38,398.71; 1929, $42,051.03; 1930, $39,169.63; and for 1931, $37,385.40.

814 I made these apportionments based on my understanding that the exchange rates compensate for all uses made of the exchange facilities, both interstate and intrastate, which fact is a matter of common knowledge in the general offices of the Company. I perhaps originally got this 815 information from my immediate superior, who, at that time, would have been Mr. U. F. Cleveland, General Auditor. It would be rather difficult to say when I first got this information, but I think I can safely say it was back at

least as far as 1923, when this case was first started. At that time I was assisting Mr. Cleveland in making the separations in connection with the former hearings in this cause. The information which he gave me was oral and not in writing.

To a certain ~~extent~~, it was in dependence upon that that I have made the separation that I have described, and, to a certain extent, it was based on my contacts with other
816 men in the Company. The matter was discussed at some time, I believe, with the General Manager, Mr. Kurtz. I could not say just when, but I feel that it would have been under discussion with him at some time or other. I have a very definite picture in mind of having discussed the matter with him since the Supreme Court entered its decision in this case; which would have been some time in the early part of 1931. We had a discussion at that time, not only on that particular subject, but the entire separation; I think this was after I made the separation.

817 I received instructions from Mr. U. F. Cleveland, Vice-President, to make a separation on a station-to-station basis. I do not remember the exact date of these instructions, but I would say it was either in the latter part of December, 1930, or in the early part of January, 1931. These instructions were not in writing. I did make such a separation, which was introduced in evidence in this case. It was on the basis of those instructions which Mr. Cleveland gave me that I proceeded.

I actually prepared Plaintiff's Exhibit A-48. When I
818 prepared it, I think I had consulted with Mr. Cleveland and others. I believe I also consulted concerning this exhibit with Mr. A. B. Crunden, Assistant Comptroller of the American Company, and had some discussions with Mr. Mapes, Chief Engineer. I would say that the majority of these discussions were had during the time involved in separating the revenues and expenses. I do not think that I had had any consultation with any of these gentlemen when I began making the separation that was finally embodied in

the exhibits that were identified by me on direct examina-
819 tion. I was instructed by Mr. Cleveland to go ahead and I did so. No one else gave me any instructions. Before I went ahead with the separation, I was not directed by anyone to make the separation of the revenues in the way I have done in these exhibits. The only instructions given me by Mr. Cleveland were to proceed with a separation on a station-to-station basis. I think those were all the instructions I had from him.

I did not consult any rate schedules or contracts with the subscribers. The separation was based principally on my understanding that the exchange rates covered interstate and intrastate uses of the exchange facilities. The only way
820 that I took the rate schedules into consideration was based on my understanding of what those rates covered. I said that I did not consult the contracts or schedules.

"Q. But you must have—you said it was based upon your understanding of those schedules and contracts. Did you get that from the air, or from the documents?

"Mr. Thompson: To which question the plaintiff objects, because the witness did not say that it was based upon his understanding of those contracts and schedules, but was based upon his understanding of what the exchange rates were intended to, and did, cover—that is, all services rendered by means of exchange facilities.

"Judge Evans: You may answer that question, as to your understanding. What was your understanding?

821 "A. No, sir. As I mentioned before, it was based on my discussions with Mr. Cleveland and others, as to what those rates covered."

It was based upon my understanding of what the rates covered. I have never seen the schedules. If I said that it was based upon my understanding of the schedules, I really meant the rates; what the exchange rates covered. I think the words "rates" and "rate charges" are synonymous.

If I should undertake now to find out what the rates were, I would look at the rate schedules on file with the Illinois
822 Commerce Commission. I have not done this in respect

to this separation, nor have I examined any contracts or schedules for any of the years 1923 to 1931, inclusive, neither did I consult the bills to the subscribers for services rendered. The understanding upon which I proceeded was not an understanding based upon any examination of schedules or any contracts or bills rendered to the subscribers for service. I had an understanding in respect to those matters based upon my discussions with Mr. Cleveland and others. In the discussions I had with Mr. Cleve-
823 land or others, no copies of the schedules of the Company, nor of its contracts, nor of its bills rendered to subscribers, were brought into them. I do not know whether any of these things were taken into consideration by the others when they discussed the matter with me. The contents of any of these contracts, schedules, or bills were not mentioned in any of these discussions.

828 I do not know as a matter of fact whether the document appearing as Plaintiff's Exhibit 8, as printed in the Supreme Court record, transcript of record, Volume IV., page 1222, which bears the letters "I. P. U. C. No. 1, Sheet No. 3," and the sheet on page 1224 of that record, headed "I. P. U. C. No. 1, Sheet No. 7." were issued by the Illinois Bell Telephone Company on December 27, 1920, and on October 31, 1922, respectively, effective January 1, 1921, and December 1, 1922, respectively, and were filed with the Commission before their effective dates. According to the exhibit, these rate schedules were filed by our General Commercial Superintendent, who, at that time, was Mr. A. R. Bone. He is the official who has charge of the filings in our Company; that is one of his responsibilities. That is a responsibility of that official and has been back to and including 1923. Mr. B. R. Cooper holds that position now, and has, I think,
829 since 1928 or 1929, and he was preceded by Mr. Bone, who runs back to a time prior to 1923.

830 I did not prepare the document marked Defendants' Exhibit D-12 for identification.

(Mr. Thompson stated that Exhibit D-12 was furnished defendants by plaintiff.)

834 If the rates shown in I. P. U. C. No. 1, Sheets Nos. 3
and 7, appearing in Plaintiff's Exhibit 8, and regulations
shown in I. P. U. C. No. 1, Revised Sheet No. 2, and Original
Sheet No. 2, are all of the effective rate schedules during
835 the period 1923 to 1931, we have assigned to interstate
toll, based upon the use of the exchange facilities, a part
of the revenue collected under those schedules.

(Pages 5 to 14 of the Chicago Alphabetical Telephone Directory of 1931-1932 were marked for identification as Defendants' Exhibit D-13.)

836 (A document purporting to be a photostat taken from
the Chicago Alphabetical Telephone Directory for 1923
was marked for identification as Defendants' Exhibit
D-14.)

838 I took out a portion of the exchange revenues and
placed that part in intrastate toll revenues in making my
separation. The amounts so apportioned were as follows:

Account 500, in 1923, long distance terminals,
839 $2,839.11; exchange revenues for use of exchange facili-
ties, $600,521.71; total, $603,360.82. In 1924 long dis-
tance terminals, $2,500.64; subscribers' lines, $686,505.13;
total, $689,005.77. In 1925, long distance terminals, $2,071.30;
subscribers' lines, $791,938.18; total, $794,009.48. In 1926,
long distance terminals, $2,161.13; subscribers' lines, $924,-
291.86; total, $926,452.99. In 1927, long distance terminals,
$1,806.05; subscribers' lines, $1,036,629.23; total, $1,038,-
435.28. In 1928, long distance terminals, $1,634.15; subscrib-
ers' lines, $1,160,582.81; total, $1,162,216.96. In 1929, long
distance terminals, $1,626.86; subscribers' lines, $1,279,-
707.87; total, $1,281,334.73. In 1930, long distance terminals,
840 $1,936.50; subscribers' lines, $1,348,972.39; total, $1,350,-
908.89. In 1931, long distance terminals, $2,175,46; sub-
scribers' lines, $1,197,980.61; total, $1,200,156.07.

Account 501, for use of subscribers' lines for 1923, $58,154.72; 1924, $69,366.11; 1925, $77,672.32; 1926, $91,411.01; 1927, $102,505.99; 1928, $114,481.96; 1929, $125,665.09; 1930, $132,819.76; 1931, $121,579.22.

Account 504, private line stations for 1923, $99.00; for

1924, $99.00; and for 1925, $108.00. For 1926, private line stations, $216.00; teletypewriter service, $1,247.37; short-841 period talking service, $21.00; total, $1,484.37. For 1927, private line stations, $171.00; teletypewriter service, $3,509.52; short-period talking service, $83.58; total, $3,764.10. For 1928, private line stations, $180.00; teletypewriter service, $5,491.76; short-period talking service, $169.38; total, $5,841.14. For 1929, private line stations, $297.00; teletypewriter service, $6,660.09; total, $6,957.09. For 1930, private line stations, $450.00; teletypewriter service, $10,224.44; total, $10,674.44. Nothing was apportioned in this account in 1931.

In Account 505, 1923 was the only year in which anything was assigned, and the amount of $11,898.44 represents a part of the originating commissions received on A. T. & T. messages and report charges originating in Chicago.

I received the same instructions with relation to the separation of intrastate toll as I did with relation to inter-842 state toll. The same discussion with regard to interstate toll would apply fully to the intrastate toll separation.

Exhibit 13, appearing on page 1271 of Volume IV. of the transcript of record in this case before the Supreme Court, which is entitled "Ill. C. C. No. 2, Revised Sheet No. 2, Cancelling Original," issued September 1, 1926, and effective October 1, 1926, is a schedule which apparently refers to the intrastate toll service of the Illinois Bell Telephone Company. There is no reference made specifically to intrastate toll, but it was filed with the local Commission, and I 845 assume applies to intrastate toll. The understanding upon which I made the separation, as to what the exchange rate charge covered with reference to local toll, was based upon the discussions which I have heretofore 846 described. The amounts billed to subscribers were in accordance with the approved effective rate schedules on file with the Commission, but my understanding is that those revenues which I have apportioned from exchange revenue to interstate toll and intrastate toll compensate for the use of exchange facilities for intrastate and interstate toll use. The billings in those cases were based upon the rates set up in the local exchange schedules. As far as revenues and expenses are concerned, the separation which I made of them to interstate toll service included long distance service of the A. T. & T., the Illinois Bell interstate service to Indiana, and the connecting company interstate toll service of the Illinois Bell.

847 I think an apportionment of the revenues, expenses and
property allocable to the long distance service of the
A. T. & T. in Chicago could be made along the same lines
which we have followed in this particular separation which
I have made. It would be merely breaking down the inter-
state items between long lines and others. It would be, how-
ever, a rather enormous task, and I am afraid it would
848 take me, with quite a large force of people, a rather
long time. After the property had been separated, it
would take at least a month for a crew of five or six people
to so separate the revenues and expenses. I think that is a
very conservative estimate. Before the revenues and expenses
could be separated, I would have to wait until the property
had been separated. I do not know how long it would take to
separate the property.

849 *Re-direct Examination by Mr. Thompson.*

Accounts 500, 501, 504 and 505 are all revenue accounts.
Account 500 includes revenues billed for use of exchange fa-
cilities, involving stations at subscribers' premises. Account
501 includes the revenues collected from public pay sta-
tions for the use of exchange facilities. Account 504 in-
cludes the revenue from private exchange lines, and Account
505 covers minor rents of exchange property. I stated on my
cross-examination that I had considered as interstate toll
revenue for the year 1923, the sum of $93,771.56, which
850 represented a portion of the originating commissions re-
ceived on A. T. & T. messages and report charges
originating in Chicago. I also stated that no sum was in-
cluded under this Account 505 during any of the other years
by reason of the fact there was a change in the accounting

for this particular item, effective January 1, 1924, whereby they have been treated in the Toll Revenue Account 510. This is the reason why this item does not appear in the particular revenue accounts which I have been discussing. I was just furnishing details of the amounts in Account 505 which are apportioned to interstate toll, and those amounts since 1924 appear in Account 510.

851 Long distance terminal is a service furnished to certain subscribers who wish to have it. It permits them to have conections direct with the toll board on toll calls without going through the local switchboard. A portion of the revenues from these long distance terminals was apportioned by me to interstate and intrastate revenues in my separation exhibits. The revenue for the use of the instruments and the lines connecting the instruments to the board in the case of long distance terminals is in the 500 account. The amounts which we bill for messages is in the 510 Toll Revenue Account.

852 CARROLL O. BICKELHAUPT, called as a witness on behalf of the plaintiff, having been first duly sworn, was examined and testified as follows:

Direct Examination by Mr. Thompson.

My name is Carroll O. Bickelhaupt. I live in New York City. At this time I am Assistant Vice President of the
853 American Telephone and Telegraph Company, with which Company I have been connected from the time of my graduation from the University of Wisconsin, in 1911, continuously down to the present time, except for a period of five and a half years, when I was associated with the Southern Bell Telephone Company.

The first telephone experience that I had was with the Dakota Central Telephone Company, in Aberdeen, South Dakota. I went to work there as a messenger boy in 1904. That Company is not owned, and never has been owned, by the Bell Telephone System.

I first went to work for the American Company in 1911, as
a junior engineer. Shortly thereafter I became toll rate en-
gineer, and later on, toll traffic engineer, and finally, in 1922,
I became commercial engineer. I left the Company in
854 1925 to go to the Southern Bell Telephone and Telegraph
Company. I ~~was elected Vice President~~ in charge of
operations of the Southern Bell Telephone and Telegraph
Company and the Cumberland Telephone and Telegraph
Company, January 1, 1925. The Cumberland Company went
out of existence in 1926, but I was with the Southern Bell
Company until May, 1930, at which time I became Assistant
Vice President of the American Telephone and Telegraph
Company.

During my connection with the American Telephone and Telegraph Company, I had experience in connection with the making of rates for telephone service, including those commonly called exchange rates, and those commonly called toll rates. In fact, most of my work with that Company from 1911 to 1925, had to do with rate and associated matters.

During that time I was familiar, and am now familiar, with
the rates and rate practices of the American Telephone
855 and Telegraph Company, and of the various Bell asso-
ciated companies, including the Illinois Bell. During
the time that I was in the commercial engineering division
of the American Company, and during the time I was at the
head of that division, I made studies with respect to the
effect of various rate treatments upon telephone revenues,
expenses, traffic, etc.

As I said, I was the commercial engineer of the American
Telephone and Telegraph Company. The commercial division
of the Department of Operation and Engineering of the
American Company, studies, among other things, rates, rate
practices, tariffs; it furnishes consulting advice to the asso-
ciated companies along those lines, and also with respect
856 to commercial practices. While commercial engineer of
the American Telephone and Telegraph Company, I fre-
quently consulted with the various Bell associated companies,
including the Illinois Bell, on rate and tariff questions.

As Operating Vice President of the Southern Bell Telephone and Telegraph Company, the rate making of that Company was under my direction. The Southern Bell Telephone Company does now, and it did during my connection with it, operate in 9 southern States. These States are: North and South Carolina, Alabama, Georgia, Florida, Tennessee, Kentucky, Mississippi and Louisiana.

I have studied and am familiar with the principles covering the making of rate schedules and the actual manner in which they have been made in the Bell System, including not only the American Telephone and Telegraph Company,
857 but the associated Bell telephone companies. I am also familiar with the facts as to the historical development of telephone service by telephone companies generally in the United States, and as to how rates and rate practices applicable to exchange and toll service have been developed.

Originally, telephone service was furnished over lines permanently connecting a pair of telephones. These lines were essentially what we now think of as private lines. The telephones connected to these lines were ordinarily located in the home or business place of a customer, or the lines connected places of business of associated business enterprises.

858 At first there were no telephone exchanges as we now know them, but within a very short time exchanges were established to permit the inter-connection of the lines used by customers for telephone service.

Exchange service only was furnished by these early telephone exchanges. The rates for this early exchange service were usually flat monthly or annual rates, which entitled the subscribers to the exchange service to connection with any other telephone in the exchange.

At the beginning of the telephone industry, there were no inter-city or inter-exchange lines. The first inter-city lines were established, however, fairly shortly after the telephone business commenced. These inter-city lines and the exchange systems then existing were not connected in any way. In the beginning, the inter-city lines teminated in telephones, or long distance offices, and anyone desiring to use them had to go,

to one of these offices and pay the rate for the use of the inter-city line, in accordance with whatever tariffs or
859 rates were then established.

Shortly after inter-city lines began to be established, arrangements were developed for connecting them into the telephone exchange switchboards. This made it possible for the subscribers to the telephone exchange service to use these inter-city or long distance facilities without the necessity of going down to the long distance office to talk. In other words, they could talk from their own telephones.

It also happened that these inter-city lines were extended into small towns where no exchanges existed. In that case they were terminated in telephone instruments which were referred to, and have always been referred to since, as toll stations.

"Q. Now, how were the toll rates applied when someone desired to talk over these inter-city lines to one of these toll stations?"

Defendants object; overruled.

860 "A. A subscriber to a telephone exchange, to telephone exchange service, who desired to talk to a toll station in a distant town, paid a certain rate for that long distance message. Now, anyone who desired to talk in the reverse direction from the toll station in this given town back to the same exchange and to a subscriber in that exchange, paid exactly the same toll rate."

Telephone companies still have toll stations today.

In many cases, the demand arose for a more complete telephone service in many of the smaller towns which had previously been served by the toll stations only. In such cases, the telephone company canvassed the towns, secured lists of subscribers, and constructed exchanges.

861 "Q. What do you have to say as to the rate procedure which was followed in such cases?

"Mr. Haight: May it be understood, if your Honor please, that our objection made to this line of testimony may stand to the entire line?

"Judge Evans: It is only a background for the question of construction. It has no direct bearing, but it shows how the thing got started.

"Mr. Haight: Well, for that purpose, of course it is quite all right, but I did not want my objection to be waived to any evidence, on the ground that the objection had not been made.

"Mr. Thompson: I think it has, if the Court please, a very direct bearing, not only from the historical standpoint, but as to how these rate structures have been built up and developed, and what they cover today.

"Judge Evans: The testimony will be received. The objection will be noted as though it was taken to all of the testimony."

A schedule, or set of exchange rates, was established for this new exchange, and applied to all the subscribers secured. The toll rate between this exchange and other exchanges remained just as it was prior to the time when the exchange
862 was constructed, and when the town was served only by a toll station. There was no difference in the amount paid for a toll message as between a person who was a subscriber to the exchange and one who was not.

My principal duty in the first job I had, was as a messenger for the purpose of notifying people that they were desired to answer telephone calls. It was my job to go and call people to the telephone when someone wanted to talk with them. A collateral job was when I would call the same man to the telephone several times. I would take a contract out to him and try to get him to subscribe to our service. When I succeeded in getting a man to subscribe to our service, he paid the exchange rates of this particular town (Aberdeen, South Dakota) and he paid the regular toll rate if he used the
863 toll facilities. Those toll rates were exactly the same, as far as he was concerned, as what he had paid when he had had to walk down to the office and make his call.

The local exchange rate entitled the subscriber to connection with any telephone connected to the exchange, including connection with the long distance switchboard, the information operator, repair clerk and telephone company's business office.

This method of establishing rates has prevailed throughout the telephone industry down to the present time.

864 It has been the general practice of telephone companies throughout the United States to separate or classify the telephone service into exchange service and toll service, and to charge separate rates for each class of service. When a subscriber pays his exchange rates, he is entitled to exchange service, which has always included the right or privilege of connection with the other telephones connected with the same exchange, including the right to call or be connected with the toll or long distance board, in order to send or receive toll and long distance messages which come over the toll facilities. When toll lines are connected with exchange lines, the subscriber who pays the toll rate for a given toll call is entitled to the use of toll facilities.

Usually in connection with a toll call, both exchange service and toll service are required. The patron pays for the use of the toll facilities by payment of the toll rate, and he pays for the exchange service that is required in connection with
865 the toll call through payment of his exchange rates. This method of establishing rates has prevailed since the beginning of the telephone industry and prevails today.

The exchange rate covers every use made of the exchange telephone, just as it did at the beginning of the telephone industry. That has always been so in all of the telephone industries with the possible exception of New York where special conditions prevail with respect to the local toll service.

The purpose of a telephone exchange is to furnish all connections within the exchange area. When a connection is made with the toll systems, it is made within the exchange area by means of exchange facilities which are there for the purpose of affording all connections within that exchange area. The Bell System, and the associated companies, have built up their telephone service on this basis.

866 I have before me Supplement No. 2 to the May 1, 1917, issue of the Tariff and Route Book of the American Tele-
867 phone and Telegraph Company, issued effective June 1, 1917. This contains the following:

"This Tariff and Route Book, together with the Rate Sheets described below and all Supplements as issued, constitutes the American Telephone and Telegraph Company's tariff for telephone toll service.

"The service covered by this tariff consists in furnishing for the use of patrons facilities, other than exchange facilities, intended for use in telephonic communication between the points listed. The exchange facilities used in connection with this service are the facilities required to establish connection between an exchange station and the toll board, or between an exchange station and the toll trunks, when such trunks are employed to effect connection with the toll board, and the
868 use of such facilities is covered by the charges for exchange service."

869 (Plaintiff offered a document identified as Plaintiff's Exhibit A-66 in evidence. This consisted of a certified copy of the first three sheets of the Tariff and Route Book of the American Telephone and Telegraph Company, filed with the Illinois Commerce Commission, effective August 1, 1917; the right to reserve objections was granted to the defendants by the Court.)

870 The same provisions hereinabove quoted are contained in the present tariff of the American Telephone and Telegraph Company.

871 There is a similar provision in the license contract of the American Telephone and Telegraph Company and the Illinois Bell Telephone Company, dated September 25, 1930.

872 (Defendants objected to an instrument identified as Plaintiff's Exhibit A-67, containing certified copies of certain tariffs filed by certain of the Bell associated companies with the Public Service Commissions of various
874 States, as being immaterial. That exhibit was received in evidence for the limited purpose of corroborating or explaining the meaning of the term "exchange service.")

875 The instrument identified as Plaintiff's Exhibit A-68 contains certain filings made by companies not associated with the American Telephone and Telegraph Company with

the Public Service Commissions shown in the particular filings.

(Plaintiff offered in evidence Exhibit A-68. Defendants objected thereto as being immaterial. Exhibit was admitted in evidence for the limited purpose of corroborating or explaining the meaning of the term "exchange service.")

876 The instrument identified as Plaintiff's Exhibit A-69, which bears on the outside of it the legend "Traffic Agreements with Connecting Companies", contains copies of agreements between certain Bell associated telephone companies and their connecting companies. The first contract included in this exhibit is that of the New York Telephone Company, currently in use, but I don't know how long it has been in use. The second one, entitled "Exchange and Toll Line Agreement", has been in use in the State of Arkansas since 1921, as has likewise the third, entitled "Exchange Agreement". The fourth contract, which bears the inscription "Form S-8615 a-T", has been used in the State of Texas since 1923, as has likewise the next contract. The last con-

877 tract in the exhibit is one between the Michigan Company and one of its associated companies. I am not sure how long it has been used, but this is a copy of a contract which has actually been executed and it bears the date of November, 1924.

(Plaintiff offered in evidence Exhibit A-69. Defendants objected on the ground that it was immaterial. It was received in evidence for the limited purpose of corroborating or explaining the meaning of the term "exchange service.")

879 I have made studies to determine what percentage of the exchange subscribers use the toll service of a given company. During the time I was associated with the Southern Bell Company, the General Auditor of that Company used to furnish me with current statistics on that subject.

"Q. Will you state just generally what that usage is?"

(Defendants objected on the ground of immateriality. Objection overruled.)

881 These studies indicated that during any one month, from 50 to 60 per cent of all subscribers to a given exchange make use of the toll service in originating toll and

long distance business. While I have never made any such studies myself, I have seen data showing the use that subscribers make of this toll service during a year, and that runs considerably higher. The studies that I have seen indicate this use would run from perhaps 85 to 90 per cent of all subscribers. This is based on originating calls, and has no reference to the amount of toll traffic received.

882 (Defendants moved to strike out entire answer and the reference to "studies I have seen." Motion was denied.)

"Q. Do the exchange rates of the Illinois Bell Telephone Company give to subscribers for exchange service, the privilege of connection with the toll system as a part of the exchange service paid for in the exchange rates?

"Mr. Haight: I object to that. The schedules speak for themselves. There is no other vocalization to be had on that question. This witness' opinion or judgment or statement is not only immaterial, it is utterly uncalled for.

883 "Judge Evans: I haven't any objection to the answer. To me it is self-evident. But I assume his answer is yes.

"Q. What is your answer?

"A. Yes."

Cross-Examination by Mr. Goldstein.

887 As toll rate engineer of the American Company, my principal duty was to study the experience of the Bell System, on the various systems of toll rates as they applied throughout the country; to investigate the advantages and disadvantages of various kinds of schedules; to put myself in a position to be able to estimate revenues under various toll schedules; to furnish consulting advice with respect to toll rate matters to the associated Bell telephone companies; and to give the associated companies such services as they requested in connection with such matters. As commercial engineer I had those same duties, which were performed under my direction. I also had the responsibility for exchange rate matters and for commercial practices—and by that I mean, the collection practices, billing practices, management of telephone business offices, telephone directory matters, connecting

company arrangements as far as they went into the commercial phases of the business; and there again my duty was to study these matters, and put myself in a position to render consulting service to the associated companies, and I did render consulting service on these matters.

888 To acquire the information as to the manner in which rates were established, and the manner in which they should be established, I started from what was actually the practice of the various associated companies. I ascertained the practices of the companies in various ways, by going out and talking with them, by correspondence, or by their coming in to see me. I found out what the practice of all the companies was at the time I was working on that job. I secured substantial quantities of data from the associated companies which would permit me to determine the effect of various types of rate schedules on traffic, for example. I have had the data that were in the possession of the American Telephone and Telegraph Company as to how the
889 rates were established. That is historical.

My first information, with respect to toll rates, was secured along about 1913, if I remember correctly. At that time my superior, who was then the Commercial Engineer, called a conference of the officers of the various Bell telephone companies at which we discussed for several days the toll rate schedules. Included in this discussion were questions of how these schedules were established and whether they were effectively meeting the requirements of the existing situation. I attended this conference and learned a great deal from these discussions.

I think I have seen contracts between the American Telephone and Telegraph Company, or its predecessor, the American Bell Telephone Company, and the exchange licensees, or with the licensees covering extra-territorial service. I
890 assume that those contracts are in the possession of the American Telephone and Telegraph Company. I do not think I ever asked the Secretary of the American Company to provide me with any specific contract of that nature. In

visiting the associated companies, I have seen their end of the same contracts from time to time.

I am not sure that any of these contracts make provisions for the basis upon which exchange rates or toll rates should be established; I would have to examine the contract to determine that. Undoubtedly, these contracts contained provisions which had a bearing upon the effect in the establishment of exchange rates and toll rates. These contracts provided, among other things (at least the ones I have seen did), for an inter-connection between the toll lines owned by the American Bell or the American Telephone and Telegraph Company and the exchange system of the other companies. I assume that in these contracts are provisions relating to the compensation from the toll line company to the exchange company for certain services which the exchange company performs for the toll line company, which services are in the nature of toll service which the toll line company is hiring some one else to do for it. I am sure that is the case from the several I have seen.

892 If there is a connection contemplated under the exchange contracts, there certainly would be some terms under which such a connection would be made, but I do not know.

I believe I have a copy of the license contract of the Illinois Bell Telephone Company, and I am familiar with it to a certain extent; the contract to which I am referring is the one dated September 25, 1930. I am also familiar with the memorandum of agreement between the American Company and the Chicago Company, dated February, 1919.

893 I have seen contracts between the Chicago Telephone Company and the American Telephone and Telegraph Company dated prior to 1919, but I do not know that I am familiar with all the terms. I probably have seen copies of the forms of contracts used by all of those companies of the Bell System whose tariff provisions as to toll service are described in the Exhibit A-67. I, of course, cannot carry in mind just exactly what those contracts state. I probably have seen most of the contract forms used in providing for

inter-connection between the systems of independent telephone companies and the companies referred to in Plaintiff's Exhibit A-69.

894 I am sure I have seen the license contract between the American Company and the Southwestern Company. I don't know whether I have ever seen the contract between the American Company and the Michigan Bell Telephone Company, but I am quite sure I have seen the contract between the American Company and the New York Telephone Company.

895 I am not familiar with the forms of exchange and toll license contracts between each of the companies whose tariffs are described in Exhibit A-67, and the American Bell Telephone Company, or the American Telephone and Telegraph Company. I am, however, familiar with the license contract between the American Telephone and Telegraph Company and the Southern Bell Telephone and Telegraph Company.

It is hard for me to say whether or not the contracts with which I am familiar are the current contracts now existing, or contracts which are superseded by the present con-
896 tracts. From time to time in the last twenty years, I have had occasion to consult these contracts. During the last seven years I have only been with the American Telephone and Telegraph Company a little over a year and a half, and whether new contracts have been written since I have seen the old ones, or not, I am not sure. I do know about the Southern Bell, however.

In a general way I am familiar with the form of contract that has existed between the Southwestern Bell Telephone Company and the American Bell.

Forms of contract between the Southwestern Bell and the American Bell Telephone Company which have been reproduced as Defendants' Deposition Exhibit 192, and are shown in the record of the so-called Houston Case, appearing in 259 U. S. 318, being forms 109-D, 113-D and 116-C, are
897 not the forms of contract with which I am familiar. The contract that I referred to as being more or less familiar

with, is a contract executed some time around 1925 or 1926. I do not know the exact date, but I was negotiating a similar contract on behalf of the Southern Bell with the American Company, and I looked at the terms of a recently executed contract of the Southwestern Bell in connection with my own negotiations. I am not familiar with the provisions of the contract which existed between the Southwestern Bell and the American Company prior to 1925.

898 In my experience, the American Company did not have a form of contract for exchanges, but made a contract with the associated Bell companies that covered both exchanges and toll lines, and which provides for the inter-connection of the whole system. There was no specific contract with reference to exchanges.

I am not familiar with the form of contract known as Form 109-D, entitled "Contract for Exchanges."

899 I do not believe I have ever seen the contract Form 109-D between the American Bell and the Southwestern Telegraph and Telephone Company, dated July 27, 1889, and appearing as part of Defendants' Deposition Exhibit 192. I cannot say that I have ever seen the form of contract known as Form 113-D, entitled "Contract for Extra-territorial Connecting Lines." I have seen similar contracts, but whether they were contract Form 113-D or not, I do not know. I do not know whether or not this Form 113-D was used with any company other than the Southwestern Bell. I have never 900 seen a contract containing the same terms as Form 109-D. I do not know that I could even say that I had seen a contract with substantially the same terms. I do not believe that I have seen exactly or substantially the same phraseology contained in Sections 7, 8 and 9 of that form of contract (Form 109-D).

901 Over a period of years ending in 1925, I have been consulted on numerous occasions by representatives of the Illinois Bell Telephone Company with reference to the making of rates for telephone service, including those commonly called exchange rates. These consultations go back probably to 1912 or 1913, and had reference to a good many

things; it is hard to state the nature of the subject matter. With reference to exchange rates, the subject would have to do with service connection charges, the effect of various types of message rate schedules, coin box schedules, and so forth.

902 I think I have seen the contract dated November 10, 1879, between the Western Union Telegraph Company and the National Bell Telephone Company, which appears in Vol. VI., page 1887, of the Supreme Court printed record of this case as City's Exhibit 22. I am not familiar with it. It is a long contract and I think I have seen it, but I do not know all of those terms. I do not know that I have read it all through but I have read parts of it. That contract, as I remember it, was largely the granting of licenses under patents.

903 The contracts had to do with the granting of licenses for the use of telephone instruments, because the patents were still running at that time. I understand from my rather cursory examination of the contract that the Bell Telephone Company was to construct an exchange in Chicago.

904 I am not familiar with the contract shown as City's Exhibit 22, dated November 10, 1879, between the Western Union Telegraph Company for itself and for the Gold & Stock Telegraph Company, the American Speaking Telephone Company, and the Harmonic Telegraph Company, as parties of the first part, and the National Bell Telephone Company, as party of the second part. I have never read that contract. I have seen the contract dated December 23, 1881, between the American Bell Telephone Company and the Chicago Telephone Company, which appears as City's Exhibit 23, in Vol. VI., page 1925, of the Supreme Court printed record, but I would not say that I am familiar with it. It is a matter that I would have to study at considerable length before I could claim familiarity with it. I have read that provision of that contract appearing in Section 2, on page 1925 of the Supreme Court printed record, which reads as follows:

"The Licensor [being the American Bell Telephone Company] hereby grants and licenses to the party of the

second part [being the Chicago Telephone Company] the
905 full and exclusive right within and for all of the territory hereinafter defined, to use, and to license others to use, for all purposes for which the Licensor has or shall have the right to use them (except so far as the party of the first part to the contract of November 10, 1879, between the National Bell Telephone Company/the predecessor of the American Bell Telephone Company/of the one part and the Western Union Telegraph Company for itself and associates of the other part, may have a right under Article 14 of said contract to acquire from the Licensor telephones for transmitting telegraph messages and for use in private lines with the right to sub-let the use thereof along with such private lines, and except as hereinafter provided) telephones furnished by the party of the first part, embodying any invention in or relating to telephones or their use which the party of the first part now has or shall have the right to use, either under any Letters-Patent which it now owns or may hereafter acquire, or under any license or other grant or right
906 which it has acquired or may hereafter acquire under or by virtue of the contract of November 10, 1879, or otherwise, including such full and exclusive right as aforesaid to use such telephones on exchanges as defined in said contract last named."

I take it that that is a patent license. It has all of the terms that are usually included in a patent license. I am not familiar with the scope of the license granted by Section 2, because it refers back to a prior contract with which I am not familiar. I have seen Section 10 of the same contract as it appears in the Supreme Court printed record at page 1929, which reads as follows:

"In case the Licensor, its successors, or grantees shall desire to connect points within said territory, with points outside of said territory they shall have the right to connect with or avail themselves of the lines and facilities
907 of the party of the second part or its Licensee, owners of exchanges of public lines making a reasonable and

suitable division of the tolls and profits of such extra-territorial and through business; and if or so far as said Licensee or its sub-licensees shall not have or shall not furnish suitable lines and facilities then said American Bell Telephone Company may within said territory construct such lines and use such telephones as may be necessary for such purposes."

The contract of July 1, 1891, between the American Telephone and Telegraph Company and the Chicago Telephone Company, appearing in Vol. VI., page 1934, of the Supreme Court printed record, being City's Exhibit 24, appears to be a contract for services. It is rather special in its nature, and I am not familiar with it. It is not the type of general contract.

908 I have never seen the letter dated January 7, 1896, appearing on page 1938 of the Supreme Court printed record, being City's Exhibit 25, nor the letter dated January 15, 1896, appearing on page 1939 of the Supreme Court printed record as City's Exhibit 26.

I have never seen the letter of the American Telephone and Telegraph Company of June 14, 1899, appearing on page 1940 of the Supreme Court printed record, being City's Exhibit 27, nor the calculation reproduced on page 1940 of the Supreme Court printed record as City's Exhibit 27-A. I have never seen the document reproduced as City's Exhibit 28, on page 1941 of the Supreme Court printed record, entitled "Simplifying Accounts"; nor the letter dated May 11, 1909, from
909 the American Telephone and Telegraph Company to the Chicago Telephone Company, appearing on the same page as City's Exhibit 29. I take it that all these letters had to do with the administration of prior contracts, and are quite usual. I would not have had any opportunity of seeing them unless I particularly looked them up; I have never seen them.

I have never seen the document reproduced as City's Exhibit 30, on page 1942 of the Supreme Court printed
910 record; nor City's Exhibit 31, on page 1943 of the record. With the possible exception of Mr. Thayer's letter to

Mr. Sunny of May 28, 1920, being City's Exhibit 40, appearing on page 1977 of the record, which I may have seen as I was closely associated with Mr. Thayer's office, I have not seen the documents appearing on pages 1971, 1972, 1976, 1978 and 1979 of the record.

I have seen the ordinances of the City of Chicago under which the Chicago Telephone Company or the Illinois Bell Telephone Company has been operating during its exist-
912 ence. Specifically, I have seen an ordinance dated about 1881, the ordinance of 1907 and the ordinance of July, 1931. I think that when I referred to the ordinance of 1881, I had in mind the ordinance authorizing the Chicago Telephone Company to construct, maintain and operate lines of telephone wires, passed January 4, 1889, and accepted January 10, 1889. I think 1889 is the date (which said ordinance was marked for identification as Defendants' Exhibit
913 D-15). I have seen the 1907 ordinance (which was thereupon marked for identification as Defendants' Exhibit D-16). I have seen the ordinance of 1931 (which was marked for identification as Defendants' Exhibit D-17).

I do not know that the Chicago Telephone Company made any attempt to have the exchange rates in Chicago cover the use of local exchange property in long distance service,
914 beginning with 1893. My conclusion is that they always did it that way. I am not familiar with any litigation concerning this question, but I think the Chicago Telephone Company included, as one of the things which the subscriber who paid exchange rates was entitled to, the use of the exchange plant for reaching toll facilities in making toll and long distance calls. The exchange rates of the Illinois Bell Telephone Company and its predecessor companies, as far back as I have knowledge of them, entitled anyone who paid those rates to communication with all telephones in the
915 City of Chicago, and also entitled the subscriber to the use of those lines in getting access to the toll facilities, both of the Illinois Bell Telephone Company and of those other companies with which it had made contracts for the benefit of its customers.

I have been in the telephone business since 1904. When I was in college, between 1907 and 1911, I frequently came to Chicago. At those times I made use of the telephones in Chicago and thereby gained my knowledge that at that time that is the way the service was charged for. My knowledge of the Chicago Telephone Company starts, therefore, from the period between 1907 and 1911.

916 I have drawn conclusions of the practice prior to 1907 from my examination of the contracts of the Illinois Bell that I have had access to. I have seen a good many old contracts that the Illinois Bell Telephone Company made at different times with different customers, and I saw nothing in those contracts inconsistent with my conclusions. It is impossible for me to identify those contracts. I have seen
917 contracts describing the Company's practice. I have seen probably 100 or more forms of contracts between the Illinois Bell Telephone Company and its exchange subscribers in Chicago. I saw these contracts recently, but they were ones executed prior to 1907. It is from these contracts and other things that I have derived my information on this subject.

I could hardly be in the telephone business and know the Illinois Bell people as I have known them for almost twenty years, without gaining a very definite impression upon which to base a conclusion as to what they did. I have talked with them and consulted with them from time to time. I have
918 looked into their rate practices and examined their contracts. I have looked at their tariffs. I did not look at their tariffs prior to 1907, nor did I have any discussions with them with reference to their practices prior to 1907. In my experience in the telephone business, I have acquired a general knowledge of how the business grew up, and I have been able to reach conclusions which I think are reasonable; any man could have reached the same conclusions who has had the same experience I have had.

I have assumed that the practice in Chicago was similar to the practice which I knew prevailed throughout the telephone industry, although I formed a conclusion based on various items of information which I have seen and which I have acquired from time to time in the course of my life.

919 I never heard of a court order requiring the Chicago Telephone Company to refund to local exchange subscribers a portion of the charges which it had made them for local plant in long distance service. I am not sure that I ever heard of the Chicago Telephone Company making any refunds at any time. A number of Bell companies, in connection with rate litigation, have had to impound money and subsequently refund it, but I am not sure about the Chicago Company. I never heard of the Chicago Telephone Company refunding money prior to 1907.

922 I think I have seen the ordinance of 1913, under which the Chicago Telephone Company operated, which has been identified as Defendants' Exhibit D-18.

I knew the Central Union Telephone Company and some of its officers. I visited this Company and consulted with its officers, and they visited me in New York and consulted with me, and I corresponded with them. I would not be able to give its corporate history, or the dates on which various incidents happened in connection with its corporate history. I do not believe that I am familiar with its license contract with the American Bell Telephone Company or the American Telephone and Telegraph Company. Most of my experience with the Central Union Telephone Company was while it was
923 in receivership. I knew the receivers. I do not know whether the Central Union Telephone Company had a license contract between it and the American Company on Form 109-D, nor do I know whether it had for extra-territorial business a contract Form 113-D. I am not sure whether it had Form 116-C for private lines. It undoubtedly had a contract with the American Telephone and Telegraph Company, but I do not know what contract, nor what form it had.

924 The Tariff and Route Book, which has been identified as Plaintiff's Exhibit A-66, from its nature would enable any person who had the rate schedules and rate charts before

him to determine the rates from any point served by the Illinois Bell Telephone Company and its connections in Illinois to any other points in Illinois, or outside of Illinois. It relates to the rates of the American Telephone and Telegraph Company, and covers points "reached via the lines of the American Telephone and Telegraph Company and its connections." If the 100-mile contract of the Central Union Telephone Company was in effect during the time of this tariff, it would relate to those rates. There is no reference in this tariff to any contract. I recognize what is meant by the 100-mile contract, but I have never seen it; I do not know whether it is in the possession of the American Telephone and Telegraph Company, but if it is a contract signed by the American Telephone and Telegraph Company, I assume they have kept
930 a copy of it. If the contract is in the files of the American Company, I will let counsel for the City see it.

931 In a general way, I am familiar with the rate schedules for exchange service filed by the Illinois Bell Telephone Company, covering exchange service in the City of Chicago, from 1893 to date. I have examined those rate schedules.

932 I should think that the sheets from the rate schedules of Illinois independent telephone companies, which are listed in the first portion of Plaintiff's Exhibit A-68, are part of exchange schedules and not of toll schedules. Some of these companies, with which I am familiar in a general way, have no toll lines.

933 There is no paragraph in the tariff of the Illinois Bell for its Chicago exchange defining local exchange rates in the same language as that contained in each of the schedule sheets which are reproduced in Exhibit A-68, as follows:

"The local exchange rates herein shown are for local exchange service which includes service and connection with the toll boards having connected thereto the toll lines which connect with the * * * local exchange."

934 There is a statement in the schedule covering the exchange service in the City of Chicago, as follows:

"Subscribers to Chicago Exchange System service may, on the terms of their contracts, transmit local messages to all exchange telephones located within the limits of the City of Chicago.

"A local message is a communication not exceeding five minutes' duration between subscribers' stations

935 within the same exchange limits. By ordinance of the City of Chicago and these regulations the subscriber, lessee or patron is forbidden to charge any person more than five cents for a single message transmitted to any point within the City of Chicago from any telephone furnished under the contract of which these regulations are a part."

That statement in the regulations appearing in the Chicago exchange tariff is not in any sense a complete definition of exchange service.

There is nothing in the regulations in these schedules that says that the subscriber will get a telephone. It is im-

936 plied by saying that he must take care of the telephone. I think you would have to read the entire tariff to determine what kind of service an exchange subscriber is entitled to. I think that all of the tariffs of the Illinois Bell Company should be taken as a whole for the City of Chicago and for the service which people can get from Chicago; by that I mean the toll tariff and exchange tariff together, and all other tariffs. I think that the generally accepted custom and usage of the business go to show what the Telephone Company meant when it was talking about exchange service.

There is no definition of exchange service, in so many words, in any one place in the exchange tariff, which completely defines exchange service, in my judgment. There

937 is nothing in the tariff that says that the subscriber is entitled to a directory listing, and yet that is one of the things he is entitled to. A provision similar to that shown in Exhibit A-68, providing that the exchange rates cover access to the toll board, is contained in the tariff of the Illinois Bell Telephone Company for toll service, and is implied in the

938 exchange schedules. It is not stated explicitly in the exchange schedules, but I draw the conclusion from them that the service includes facts in line with that definition.

939 There is included in the exchange tariff a statement of the rates for long distance terminals, that says:

"For long distance and toll use only; terminates in long distance switchboard; including mileage charge, measured by the most direct street distance, from the Exchange through which subscriber's line is operated to 940 Toll center, 111 N. Franklin Street, for first one-half mile or less, $4.50; for each additional quarter mile or fraction, $1.25."

There is an exchange rate which provides for the use of facilities that cannot be used except for communication with the toll board. The revenues from the application of that rate are exchange revenues. That toll terminal does nothing more or less than furnish access to the toll board; that is the only thing it can be used for.

That is one of the things that leads me to the conclusion that the local exchange rates include access to the toll board. The words "exchange service" and "exchange rates" have a definite meaning; they have grown up in the business to have a definite meaning, and there is no doubt on the part of such telephone men as I know (and I know a great many of them, both in the Bell and independent field) about what is meant. In my experience with our customers, there has never been any doubt on their part as to what was meant.

941 After reading the tariff of the Illinois Bell Telephone Company, I am satisfied that I know what is meant by exchange service, and that it includes the right of access to the toll and long distance boards upon payment of the exchange rates. There is no very specific language; there is no language as specific as that contained in the toll tariff of the Illinois Bell Telephone Company. Continuously throughout the tariff appears the word "exchange" and the words "exchange service" and "coin box service," and reference to measured rate service, and all of these services have that meaning to me. I do not know whether the sheets superseded by Sheet 1, Ill. C. C. No. 2, Section 1, shown on 942 page 1 of Exhibit A-68, referring to Versailles, Illinois, contain language identical to that contained in the first of the two quoted paragraphs.

When I was reading before from the Chicago exchange schedule, I was reading from the one now in effect. I was reading from a sheet of the Illinois Bell Telephone Company tariff for its Chicago exchange, headed "I. P. U. C. No. 1, First Revised Sheet No. 5, Canceling Original," issued December 27, 1920, effective January 1, 1921, filed by A. R. Bone. Mr. Bone at that time was General Commercial Superintendent of the Company.

950 I assume that if the companies in the State of Illinois have toll properties, they would file tariffs covering their use, and if they had none, they would only file exchange tariffs. I do not know whether all of them or some of them, or how many of them have toll lines, but I think it would be found that a great many of them have no toll property.

From the language in the sheets from the State of Indiana, appearing in the same exhibit (A-68), I am unable to go behind the certificate as to whether or not the tariff covered by the certificate is a toll tariff or an exchange tariff. I do
951 not know. The words "The local exchange rates herein shown" indicate that they are used in connection with an exchange tariff.

I have in mind, however, that I have seen independent companies make one filing for both exchange and toll service, but I do not know whether there is a separation between the two or not. I would assume from the language that it would
952 be a part of an exchange tariff. There is one toll tariff in here, and that is the tariff of The Tri-State Telephone and Telegraph Company, in the State of Minnesota, that specifically states it is a toll tariff, but it is the only one, I believe, that does state that. I do not know the definition of "local exchange service," contained in the local exchange tariff existing at the same time and in the same community covered by the tariff that is reproduced in Exhibit A-68 in the case of The Tri-State Telephone and Telegraph Company of Minnesota.

960 I am familiar with the definition of "station-to-station toll service" which was contained in the Illinois Bell Telephone Company's toll rate schedules for toll rate service prior to 1925. That definition, as filed in 1920, was: "a connection

between any two telephones (including private branch exchange switchboard operator), and does not contemplate the establishment of conversations between particular individuals."

The companies whose sheets are reproduced in Exhibit 961 A-67 would have to define station-to-station toll service in some way or other if they filed a toll tariff since 1919, when that particular classification of toll service was established by order of the Postmaster General. I do not know whether their schedules contain a definition of station-to-station toll service similar to the one in the Chicago Telephone Company's schedule. They would undoubtedly have to define what they meant by station-to-station toll service, however, but I do not know how they defined it.

964 The license contract of September 25, 1930, does not cover all of the arrangements between the Illinois Bell Telephone Company and the A. T. & T. for the use of the Chicago facilities for long distance service in the City of Chicago.

965. I do not believe that any of the studies to determine the percentage of exchange subscribers who use the toll service of a given company (about which I testified on direct) related to the business of the Illinois Bell Telephone Company in the City of Chicago. I have made such studies in Denver and in cities in the northwest, of which I think Minneapolis is one, and perhaps Omaha another; I have secured information concerning cities in the south on that point a number of times. The dates of these studies would be in the period from, say, 1914 to 1925, or some place in there.

966 Subsequent to the tariff of the American Telephone and Telegraph Company filed in 1917, to which I have referred, there was a filing of that Company on November 1, 1919, and another issued on March 1, 1924. Shortly after that time, the American Company withdrew from intrastate business in Illinois, and ceased to make filings with the 967 Illinois Commission, I believe. These filings refer to all business of the American Telephone and Telegraph Company, both intrastate and interstate. Prior to 1925, the American Company carried on an intrastate business in Illinois as

well as an interstate service. They withdrew from that intrastate service some time around 1925, and at that time I assume that they withdrew their filings, or their filings ceased to have any significance as to intrastate business in Illinois.

968 *Re-direct Examination by Mr. Thompson.*

Some reference was made in my cross-examination to a toll schedule showing the station-to-station toll rate. That
969 sort of service was first established about 1919. Prior to that time, a number of companies gave what they called a two-number service, the distinction between that and the usual toll service being that, in the two-number service, the company did not undertake to secure the presence at a distant telephone of a specific individual. This service was also called "A-Y service", "A-Y" being our abbreviation of "Anyone". In 1919, when the Postmaster General established the so-called P-M-G schedules of toll rates, he referred to these particular classes of calls as station-to-station. The denotation of those words was that the telephone companies did not attempt to get to the distant telephone the presence of a specific individual. It was to distinguish between another class of rates, called person-to-person rates, where we undertook to secure the presence at a telephone of a particular person. There was a difference in the rates; one was cheaper than the other.

When the designation "station-to-station" was first
970 used, it was necessary for the companies having toll schedules not only to put into effect their rates for the station-to-station service, which were different from their person-to-person rates, but also to define the term "station-to-station" in their toll tariffs.

Re-cross Examination by Mr. Goldstein.

There was no service called "station-to-station service" prior to the time of the Postmaster General's order, which, I believe, was issued in January, 1919. I was in France at the time, and I do not remember the exact date, but it was about that time.

971 LAMBERT N. WHITNEY, called as a witness on behalf of the plaintiff, having been first duly sworn, testified as follows:

Direct Examination by Mr. Thompson.

My name is Lambert N. Whitney, and I live in Boston, Massachusetts. I am employed as Assistant Vice President by the New England Telephone and Telegraph Company, which operates in 5 New England States. I have been in the telephone business about 36 years.

After graduating from the Massachusetts Institute of Technology in 1896, I went immediately with the American Telephone and Telegraph Company in New York. During the next 7 years I held various positions in various depart-
972 ments there, the responsibilities of which were in connection with the construction, maintenance, operation and accounting of the long lines. In 1903, I went to Indianapolis as Division Superintendent of the Central Union Telephone Company, for the State of Indiana. My responsibilities there were in connection with the construction, maintenance and operation of the plant in Indiana, but at that time there was a very important department known as the Connecting Company Department and the head of that department reported to me. At that time, there were a large number of independent or competing telephone companies, and the function of this Connecting Company Department was to negotiate agreements between these independent companies and the Central Union Company covering the interchange of traffic, and then to develop the proper schedules under which we should operate.

In 1911, the Central group of telephone companies was formed. That group consisted of the Wisconsin Telephone Company, operating in the State of Wisconsin; the Michigan Telephone Company, operating in the State of Michigan; the Cleveland Telephone Company, operating in Cleveland, and

in Cuyahoga County; the Chicago Telephone Company, operating in Chicago and adjacent counties; and the Central
973 Union Company, operating in Indiana, Illinois and Ohio.

This Central Group was formed in 1911, and included the Chicago Telephone Company, operating in this City. This Central Group had a common executive management, located here in Chicago, and at that time I assumed the position of General Agent for Connecting Companies, reporting to the Vice President. The duties of that department were similar to the duties that I have described for that department in the State of Indiana, although the Connecting Company Department in the Central Group covered 5 States, and involved much more complicated and more important problems.

974 In 1912, the Central Group organization was changed, and at that time I returned to Indianapolis as General Manager for the State of Indiana, with responsibilities similar to those I had held as Division Superintendent. I stayed in Indiana until 1914, which was the time of my first connection with the New England Telephone and Telegraph Company.

When I first went with the New England Telephone and Telegraph Company in 1914, I assumed the position of General Commercial Manager. The duties in connection with that position involved responsibilities for the determination of what classes of service should be offered to the New England public; the responsibility for pricing that service, or developing a rate schedule; and a general responsibility for selling that service.

My telephone experience has involved the study of the making of toll and exchange rates. All the telephone rate
975 schedules with which I have been associated have involved both exchange and toll rates.

I have not personally had to do with the study and preparation of rate schedules during my entire experience in the telephone business. During the first 7 years of my employment with the American Telephone and Telegraph Company, there were no duties in connection with the rate schedules, but during the following 29 years, both in the middle west and with the New England Company, my responsibilities have been in connection with telephone rate schedules.

During my experience in this particular phase of the business, covering 29 years, there has been a distinction between toll rates and exchange rates. The distinction has been very definite that the exchange rates provide for service within defined local areas, and toll rates provide for the service
976 between these defined local areas. In all of the rate schedules with which I have been associated, the exchange rates, through associated exchange service, have always afforded the subscriber the privilege of communication with all stations and all switchboards within the defined local area. The toll rates have always paid for toll service, which starts at the toll board; and the exchange rates have paid for the exchange service associated with any given toll message. The rate schedules which I have formulated have been fixed upon the basis which I have just stated.

When we terminated our toll lines in toll stations which were connected directly to the toll lines, the users of the toll service, in order to use the toll lines, came to the toll station, and no exchange service was involved. When we con-
977 nected our toll lines with the exchanges of these independent companies, the users of the toll service talked from their premises, and the service between their premises and the toll lines was involved in connection with the toll message. When we closed our toll stations, and connected our toll lines into the local exchange, we made no change in our toll rates in order to provide for this service between the subscriber's station and the toll line. As a matter of fact, our toll rate between two toll stations a given distance apart has always been the same as our toll rate between the subscribers of two exchanges the same distance apart.

I am familiar with the class of service furnished by the Illinois Bell Telephone Company called "long distance terminal loop"; that is quite a common practice. If a subscriber's use of the service between his premises and the toll board is great enough to involve the entire use of a pair of wires, such pair of wires is furnished, and the service over those wires between the subscriber's station and the toll
978 board is paid for by a special rate, which is in addition

to the toll rate. This additional rate is an exchange rate, and is included in the exchange revenues.

I know the basis upon which contracts with the so-called connecting companies were made while I was in charge of the work of making such contracts and preparing rate schedules in connection with the independent and so-called connecting companies. When I arranged for connections with the local or independent companies in a manner that involved only the local property of the local company, no through rates were established. If, however, the connection that we arranged for with such local company involved their toll property, then a through rate was established covering our toll service and the associated toll service of the local company in connection with any given toll message.

979 When we connected our toll lines directly into the exchange of an independent company, our toll rates did not cover any part of the exchange service rendered by the connecting company in completing these calls, and no through rates were established under such conditions. The toll rates covered the toll service between the toll boards, and the exchange rates covered the exchange service in connection with any given toll message. In that case, there was no division of the established toll rates as between our Company and the connecting companies. We retained it all. Of course, we paid these connecting companies for services rendered in connection with selling, billing and collecting for our toll revenues, but these services were of the same type and for the same purpose as had been involved when we had been previously dealing with our toll agents when no through rates were involved.

When through rates were involved, the division of revenue involved in that through rate was generally provided for on the basis of the relative length of the two companies' toll
980 circuits involved. There was nothing included in these through toll rates for service between the subscriber's station and the toll board rendered in connection with the furnishing of the toll message. The situation there was the same as where we connected our lines directly to the exchange of the local company, without including any toll property.

The exchange service between the subscriber's station and the toll board under these conditions was exactly the same as where there were no through rates, and that service was not involved either in the development or the division of the through toll rate.

Cross-Examination by Mr. Haight.

There is quite a lot of the special wire service of which I spoke; it is largely with the large business firms. Generally,
it is entered into by customers when toll service is very
981 extensive, and it is desirable to have a special wire from
their premises to the toll board. The largest users of toll
service in any large community tend to become more and more
users of the special wire service; that is the natural economic
development.

In the testimony I have just given upon my direct examination, I have not undertaken to give any interpretation of any special contracts existing here in Illinois with reference to the business of the Chicago Telephone Company, or of the Illinois Bell Telephone Company in its Chicago area. I have tried to state the practices which I have followed, and have left out of consideration entirely any statutes, ordinances or contracts.

During the days of the Central Group, I had nothing to
do with the development of the exchange rates, or of the toll
rates, of the City of Chicago, except to this extent: at
982 that time there was a competing telephone company in
Chicago, and negotiations were under way for the merger
of that exchange. In connection with that, there was no consideration given by me to any changes in the toll rates due to the addition of the local service of that company between its stations and the toll board.

Re-direct Examination by Mr. Thompson.

When I referred to a time when the Bell Company with which I was affiliated connected up with independent telephone companies, I meant local telephone companies with which it had connecting contracts.

ALLAN B. CRUNDEN, called as a witness on behalf of the plaintiff, having been first duly sworn, testified as follows:

Direct Examination by Mr. Thompson.

My name is Allan B. Crunden and I live in Montclair, 983 New Jersey. I testified on the former hearing of this cause, at which time I was the Assistant Comptroller of the American Telephone and Telegraph Company, which position I still hold. I have had about 30 years' experience as an accountant and statistician, including the years spent in telephone accounting and statistical work in the Bell System, which amount to about 20 years.

I am familiar with the accounting methods for obtaining a correct separation of telephone property, revenues and expenses between exchange and toll, and as between interstate and intrastate operations. I was called upon in 1922 to make such a separation and to testify regarding it before the 984 Public Service Commission of Tennessee. I also made a separation of the business of the Southern Bell Telephone and Telegraph Company in the State of Mississippi for incorporation in an affidavit to be filed in a then pending confiscation case in the Federal Court. As a result of my connection with those two early cases of separation, I have been consulted regarding, and have rendered, assistance to the associated companies of the Bell System in all cases of separation since that time, including the New England Telephone and Telegraph Company, the Ohio Bell, the Illinois Bell, and a number of others.

I advised with and assisted Mr. Kruse and Mr. Mapes in the development of the methods of separation which they used and applied to the property, revenues and expenses of the Chicago area of the Illinois Bell Telephone Company in this case. I have examined the exhibits which have been introduced in evidence here, showing, respectively, the methods used in making the separation and apportionment of the plaintiff's property, and of its revenues and expenses.

985 In my opinion, the methods shown by these exhibits are sound methods for obtaining a complete separation all

the way through the plant, beginning with the subscriber's station, on a use basis, and, properly applied, they will produce a result that is correct for all purposes of sound accounting.

From 1910 to 1919, I was in charge of the general accounts and statistics of the Chicago Telephone Company. The nature of my duties in that position required me to become familiar, and I did become familiar, with the Company's rates for exchange service and for toll service, and the kinds of facilities that were made available under each of these types of service.

987 Exchange service is the aggregate of the facilitiies provided within a designated local service area for the purpose of enabling any subscriber to the service in that area to obtain communication with any other local subscriber in the area, with the Company's offices, and with the terminal plant of the toll system, if any, in that area.

Toll service is the service rendered between exchange areas by means of toll lines, toll switchboards or portions of toll switchboards, and frequently also those short connecting lines known as toll trunks, which run from the toll switchboard to the exchange switchboard in which those trunks terminate and the exchange facilities begin.

Cross-Examination by Mr. Haight.

In saying that I was familiar with the methods of sep-
988 aration, and that I approved the methods that are shown
by the exhibits and the testimony in this case, I was
speaking only as an accountant.

When I undertook to give the definitions of "exchange service" and "toll service", I was speaking as a practical telephone man, and, primarily, of course, as an accountant, because that is my profession.

There was an exchange service in Chicago in 1891. I am
not sure whether there was an exchange service in Chicago
before there was any long distance service. If I were to as-
sume that there was a plurality of telephones in Chicago,
989 with a central board, I would say there was an exchange
service in Chicago before there were any long distance

connections whatever, and until long distance came, I would say there was then no toll service within the area. Under the assumption that there was exchange service in Chicago prior to the time that there was long distance service, my definition of "exchange service" would be the same in principle, but, in practice, of course, it would be different, because there were no toll facilities available.

As a practical matter, when the toll service came and was employed by a telephone user to talk in a telephone, and, through mechanism, be heard and receive replies from another at some distant telephone, that was not toll service; that was the toll conversation of the party.

"Q. What was the service in that case? What is the service? When I pick up the telephone in this room, for instance, and talk to New York City, what is the service? Isn't it talking from here to the telephone in New York City?

"A. That is telephone service.

"Q. That is the service?

"A. That is the service, telephone service.

990 "Q. And when I talk to another in Chicago, the service is talking to somebody in Chicago?

"A. That is telephone service.

"Q. Even though I talk into the same instrument, and partly use the same instrumentality?

"A. That is telephone service."

In giving my definitions, I had in mind the statutes of the State of Illinois and the contracts between the Illinois Bell Telephone Company, or its predecessor, the Chicago Telephone Company, and the American Telephone and Telegraph or other companies. I had all of them in mind. I considered that a rate schedule filed with the Illinois Commerce Commission was to be given force in determining the service that it was to cover. I had in mind that all of the schedules justified the definition which I gave of "exchange service."

991 One of the schedules which I had in mind was, for example, the Chicago exchange schedule effective between 1914 and 1919. I had these schedules in mind in this way: if I had the slightest reason to believe that there was anything

in those schedules or filings which negatived or tended to cast doubt on my understanding, as a practical telephone man, as to what this service was, I would not have given the definition.

992 "Q. All right. I will call your attention to the local exchange schedule that you specified, and I will read to you the following:

"'A local message is a communication not exceeding five minutes' duration between subscribers' stations within the same exchange limits.'

"Now, will you, in addition to that, find anything in the schedule that you say justifies your definition? If so, pick it out and read it on the record specifically.

"A. Right above where you were reading, Mr. Haight, it says 'Exchange Service' ".

Now, to my mind, that means that the subscriber is entitled to certain services, which are well understood and comprehended in the term, just as much as if I were to go to a store and I would see a sign: "Apples, 5 cents". I know what an apple is. There is nothing in that paragraph hereinabove quoted and read to me by counsel for the defendants upon which I base my definition of "exchange service". I did

993 not say that. The entire paragraph reads as follows:

"A local message is a communication not exceeding five minutes' duration between subscribers' stations within the same exchange limits. By ordinance of the City of Chicago and these regulations the subscriber, lessee or patron is forbidden to charge any person more than five cents for a single message transmitted to any point within the City of Chicago from any telephone furnished under the contract of which these regulations are a part."

Immediately before the paragraph which I just read, appears the following:

"Subscribers to Chicago Exchange System service may, on the terms of their contracts, transmit local messages to all exchange telephones located within the limits of the City of Chicago."

994 Another thing appearing in the schedule upon which I base the definition which I gave on direct, are the words "exchange service", and the collateral evidence furnished by the fact that the long distance terminals are included in this exchange tariff.

I was asked whether I took into account these schedules, and I said that I did. To say that I arrived at my opinion on the schedules is not quite the same thing. I am trying to point out that these words "exchange service" in these schedules have a definite meaning, and I say there is nothing in this tariff inconsistent with the understanding that I arrived at.

995 In arriving at the definition that I gave on direct examination, I used the schedule as an entity. As I say, my knowledge is that of a practical telephone man. I went into the business and had to find out, like other people do, what is meant by exchange service. Now, this schedule is a thing that enters into the consideration of it. I was asked to define exchange service, and I did so. I was asked whether this had any bearing on the matter, and I said it had. If there were anything in that schedule that in any way negatived or cast doubt upon what I said, I would never have made the statement.

In arriving at the opinion that I gave, I took into consideration that material from the schedule which has been read into the record, and I took into consideration that the schedule used the words "exchange service". I did not
996 take anything more into consideration than the fact that this is an exchange service schedule.

I understand that the Company is required to file its schedules with the State authorities, and I had in mind, in arriving at my opinion, that these schedules were filed with the
997 State authorities. I never read the section of the statute that counsel for defendants has just read, which provides that all rules and regulations, privileges and contracts, that in any manner affect the rates charged or to be charged for any service, must be part of the schedule. Before I arrived at the opinion which I gave on direct examination in respect

to the definitions, I considered that the statute was in existence.

I also took into consideration Section 35 of the statute, providing that a public utility is required not to perform any service or to furnish any product or commodity unless or until the rates and other charges and classifications, rules and regulations relating thereto, applicable to such service, product or commodity, had been filed and published in accordance with the provisions of the act.

998 I did not discuss with anyone all of these statutes, ordinances and rate schedules, and all of the other matters of that character that I took into consideration, before I came on the stand, but I did discuss some of them. I discussed with Mr. Cleveland and Mr. Bickelhaupt our mutual understanding as to what exchange service was.

So far as I can remember, I did not discuss with anybody the effect of the ordinances of the City of Chicago, nor the various provisions of the statute of the State of Illinois. I discussed with Mr. Cleveland and Mr. Bickelhaupt the filed rate schedules within the last month, and I also discussed
999 these schedules with Mr. Noble of the Commercial Department of the Illinois Bell. I repeatedly discussed that part of the license contract which has to do with the compensation of the local company for the service which it provides in connection with the toll service. I mean by the license contract, the so-called 4½ per cent contract, which is now the 1½ per cent contract. I do not mean the 1881 contract, but I mean the 1919 contract. I have repeatedly dis-
1000 cussed that with many people. I have discussed that contract with dozens of people at various places, among them being Mr. Wlodeck, Mr. Behan, Mr. Saxton, Mr. Shaver, Mr. Heiss, Mr. Brooks and Mr. McTiernan.

I did not, in any of these discussions, mention the contract of 1881. I did not consider the section of that contract reading as follows:

> "In case the Licensor, its successors, or grantees shall desire to connect points within said territory, with points outside said territory they shall have the right

to connect with or avail themselves of the lines and facilities of the party of the second part or its licensees, owners of exchanges or public lines making a reasonable and suitable division of the tolls and profits of such
1001 extra territorial and through business, and if/or so far as said Licensee or its sublicensees shall not have or shall not furnish suitable lines and facilities then said American Bell Telephone Company may within said territory construct such lines and use such telephones as may be necessary for such purposes."

I never read that contract.

I have heard of Form 109-D, but I never investigated for the purpose of finding out. I have heard Form 113-D spoken of, but I have no familiarity with those early contracts.

1002 When I first came into the business, in 1910, I was General Bookkeeper of the Chicago Telephone Company. I was required to make statistics and accounts for administrative purposes covering exchange and toll operations. In order to do that, it was necessary for me to find out what exchange service was and what toll service was. I investigated that by inquiry and conferences with older and more experienced practical men, and arrived at a conclusion on that point. I prepared the statistics for the officers based on my understanding. That was in 1912, 1913, and so
1003 on. I was Auditor of the Wisconsin Telephone Company, which was required by law to make a separate annual report for each exchange system, and a report for its toll system. It was not possible for me to make those reports without a definite understanding as to what exchange service was and as to what toll service was, therefore, I proceeded to inform myself.

This term "station-to-station basis", used in connection with the separation, is a loose term. It can be used to describe two different kinds of station-to-station bases.

The first station-to-station separation that I had anything to do with was in the New York case. The station-to-station separation in that case had to do with local tolls.

1004 This is the first case in which I have had to do with a separation involving interstate business made upon a station-to-station basis. Generally speaking, the previous separations I have made have been upon what is called the board-to-board basis, except in the New York case.

The present separation results in the separation of exchange and toll business on a board-to-board basis, and also in the separation of interstate traffic on a station-to-station basis. The board-to-board basis is not any theory. I
1005 do not want it to be understood that I have gone off the board-to-board method. We are still on the board-to-board method. The new thing in this case is the separation of the exchange service facilities between interstate traffic and other traffic. That is the new thing injected into this case.

The reason for the exception in the New York case was as follows: the City of New York had grown to be such an immense area that it no longer represented merely the island of Manhattan, but a whole group of fairly sizable cities. It was just as if you might take Chicago as the nucleus and add to it Evanston, Glencoe, Elgin, Joliet, Aurora, and other points between which and Chicago, and between which and each other, there are at present short-haul toll rates. If you were to take all of those areas into the City of Chicago, you would cease to have clear-cut toll rates, and they would probably become exchange rates. The reason that the
1006 exception was made in New York was in view of the then present status of such short-haul toll rates. They existed on a station-to-station basis. I did not go back far enough into past history to find out whether they were built up years before on such a basis or not. The charge for local toll service in New York was on a station-to-station basis at the time of the separation, and, as regards this particular business, the local rate did not include the right to connect with the toll board.

The two kinds of station-to-station separation that I had in mind are these: throughout the United States, so far as my knowledge goes, outside of the restricted condition
1007 in and around New York City, the exchange service includes the privilege of connection with the toll. A

separation that proceeds in accordance with that is a station-to-station separation, in which it is necessary to take out certain of the exchange service facilities and assign them to interstate. That is one kind of separation. The other separation is one that affects this exception; that is, such a condition as exists in New York, where there are certain short-haul tolls that are in the nature of exchange service. By short-haul tolls, I mean local tolls of the New York Telephone Company. There the toll rates must be treated as though they went back to the station, so that you get a slightly different proposition from a classification standpoint.

After having taken into consideration the statute and the ordinances and the rates filed, and all of the other things about which I have testified, I have not been able to find that Chicago is any exception to the general practice of the Bell System.

IN THE

District Court of the United States
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION.

ILLINOIS BELL TELEPHONE COMPANY,
Plaintiff,

vs.

O. [illegible] [illegible], [illegible], WALTER E. [illegible], WILLIAM E. [illegible], FRED W. [illegible] and [illegible], the persons constituting the Illinois Commerce Commission of the State of Illinois, and OSCAR E. CARLSTROM, Attorney General of the State of Illinois,
Defendants,

and

CITY OF CHICAGO, a municipal corporation,
Intervenor.

In Equity
No. [illegible]

Heard before
Hon. [illegible], [illegible]
Hon. [illegible], [illegible]
Circuit Judges
and
Hon. [illegible]
District Judge.

ABSTRACT OF RECORD
PLAINTIFF'S EVIDENCE
VOLUME II—(Pages [illegible] to [illegible])

WILLIAM H. SEXTON,
Corporation Counsel, City of Chicago.

GEORGE I. [illegible], and
BENJAMIN F. [illegible], and
EDMUND D. ADCOCK,
On behalf of City of Chicago,
Intervenor.

OSCAR E. CARLSTROM,
Attorney General of Illinois,
and
WILLIAM H. [illegible],
Assistant Attorney General,
On behalf of Illinois Commerce
Commission.

CHARLES H. [illegible],
WILLIAM H. [illegible],
[illegible] F. [illegible],
HOWARD J. [illegible],
On behalf of Plaintiff.

HORACE KENT TENNEY,
[illegible] N. [illegible],
Of Counsel.

IN THE

District Court of the United States

FOR THE NORTHERN DISTRICT OF ILLINOIS,
EASTERN DIVISION.

ILLINOIS BELL TELEPHONE COMPANY, Plaintiff, vs. **G. GALE GILBERT, J. PAUL KUHN, WALTER H. WILSON, WILLIAM M. BRINKMAN, PHIL W. COLLINS and PAUL SAMUELL,** the persons constituting the Illinois Commerce Commission of the State of Illinois, and **OSCAR E. CARLSTROM,** Attorney General of the State of Illinois, Defendants, and **CITY OF CHICAGO,** a municipal corporation, Intervenor.	**In Equity No. 3746.** — Heard before **Hon. Evan A. Evans** **Hon. George T. Page** Circuit Judges and **Hon. James H. Wilkerson** District Judge.

ABSTRACT OF RECORD

Plaintiff's Evidence

Volume II—(Pages 309 to 605)

1009 RICHARD H. GREGORY, called as a witness on behalf of the plaintiff, having been first duly sworn, testified as follows:

Direct Examination by Mr. Thompson.

1010 My name is Richard H. Gregory. I live in Montclair, New Jersey. I am Comptroller of the Western Electric Company, and have been for 23 years.

Shortly after graduation from college, I entered the employ of the Western Electric Company (on August 1, 1898) in a clerical capacity. In December of that year, I became Assistant Chief Clerk of the New York house. In 1900, I was transferred to Chicago, to the Secretary's Department, and in 1902 I was transferred back to New York as the representative of the Secretary. In 1905, I was made Assistant Secretary of the Company, and transferred to Chicago, where the headquarters of the Company were at that time. I remained in Chicago until October, 1908, when I was transferred to New York and appointed Comptroller of the Company, which position I have held since.

1011 As Comptroller, I am the Chief Accounting Officer of the Company, and have charge of the preparation of the balance sheets and profit and loss statements. All of the accounting records are under my supervision and control.

The manufacturing plants now owned and operated by the Western Electric Company are: the Hawthorne plant located at Chicago, Illinois; the Kearny plant located near Kearny, New Jersey; the Point Breeze plant at Baltimore, Maryland; and the Queensboro plant located on Long Island. Only the Hawthorne plant has been operating continuously since 1916. The Kearny plant was constructed prior to 1925, and commenced operations in 1925. The Point Breeze plant was constructed and began operations in 1929. The Queensboro plant was acquired in 1929.

1012 The dollar sales of goods manufactured by the Western Electric for the period 1916 to 1931 amounted to nearly $2,400,000,000. The lowest year was in 1916, when the sales amounted to $46,500,000, and the highest, in 1929, was $278,000,000. During that same period of time, 1916 to 1931, raw materials and supplies amounting to $700,000,000 were purchased from others and used by the Western Electric Company in its manufacturing business; the lowest year was in 1919, and amounted to $17,000,000; the highest was in 1929, and amounted to $103,000,000. During the same period of time, the lowest annual payroll of the Western Electric Company for its productive labor was in 1916, and amounted to $10,000,000; the highest was in 1929, and amounted to $78,000,000.

The Western Electric Company operates distributing
1013 houses from which its manufactured goods and supplies
are distributed to its customers; there are, at the present time, 32 such distributing houses located in the principal cities throughout the United States. There has been a gradual growth in the business done by these distributing houses from 1916 up to the present time. These distributing houses carry stocks of Western Electric manufactures, and of supplies purchased from others for resale to the Bell associated companies. They also receive goods returned by the Bell associated companies for reconditioning or re-use. All goods sold to the Bell associated companies, whether they are delivered
directly from the factories, or through the distributing
1014 houses, are invoiced through the distributing houses.

The Western Electric Company also has an organization for the installation of central office telephone equipment. The headquarters of the Installation Department are in New York, and it has 13 branches throughout the principal cities of the United States.

During the period 1916 to 1931, the lowest number of employees of the Western Electric Company was 17,000 in 1916; and the highest number was 85,300 in January 1930. At the end of 1931, there were 44,600.

The executive offices of the Western Electric Company, including its Accounting Department, are located at 195 Broadway, New York City.

In 1916 there were approximately 1,000 employees in the
Accounting Department, of which I am the head. This
1015 number gradually increased until the middle of 1930, to

5,000. At the present time there are approximately 3,300. These accounting employees are located at the Company's headquarters, at 195 Broadway, and at each of the manufacturing plants of the Company, and at the installation divisions and distributing houses to which I have referred. As of July 1, 1930, such accounting employees were divided among its several activities as follows: at manufacturing locations there were approximately 3,500; at distributing houses, 550; at installation divisions, 350; and at the general staff at New York, 430. The annual payroll of the Accounting Department as of July 1, 1930, was $8,500,000.

The chart which has been identified as Plaintiff's Exhibit A-70 shows the accounting organization of the Western Electric Company as of December 31, 1931.

During the years 1916 to 1931, the Western Electric Company has kept more than one set of ledgers, journals and cash books.

1016 The Company cash books, ledgers and journals have been kept at the executive headquarters at 195 Broadway, New York. The subsidiary ledgers, journals and cash books have been kept at the various manufacturing departments, installation divisions, and distributing houses to which I have referred.

These general company ledgers, which are kept at the executive offices of the Company, and the subsidiary records, which are kept at the various other points, are kept in accordance with accounting routines and instructions issued from time to time by the Comptroller's office. These routines prescribe the principles of accounting for action by all departments of the Company, and for insuring accuracy and uniformity in the results which we receive from those various departments.

1017 I have in the court room the general accounting instructions of the Western Electric Company which are now in force. They consist of three books, aggregating over 1,300 pages. They include over 125 accounting subjects and cover all phases of the accounting of the Company.

During all of the period from 1916 to 1931, there has been maintained in the general accounting organization at New

York an auditing division, whose duties have been to audit the subsidiary records of all of the distributing houses, manufacturing department locations, and installation divisions. That has been done continuously since 1916, and even prior to that time. Also, since 1922, certified public accountants have audited our books, certifying to the accuracy of the balance sheets and income statements. During the years 1922 to 1925, inclusive, our books were audited by Price, Waterhouse & Company; for the year 1926, by Lybrandt, Ross Brothers & Montgomery; and from 1927 to the present time, by Arthur Young & Company. These audits are made for the purpose of insuring certification to our stockholders of the accuracy of our balance sheets and profit statements, and also for the purpose of ascertaining whether the accounting practices and routines prescribed by the Company have been followed in the accounting of the Company. We also have prescribed routines and instructions for making audits by our own employees.

The accounting books maintained by the Company at 1019 its executive offices at 195 Broadway, that I have described as the general accounting books of the Company, consist of journals, ledgers and cash books. There are 5 ledgers, 16 journals and 29 cash books, covering the period 1916 to 1931. All of them are now in the court room.

Entries in the Company ledgers are made at the present time by the Company bookkeeper, and in the journals and cash books, by several different people. The people who make these entries change from time to time. None of the employees of the Western Electric Company who have worked on the general books are now residents of or within the State of Illinois. No one person has knowledge of all of the facts with respect to the entries in the cash books, journals and ledgers.

1020 The entries which appear in the general Company books are made in accordance with our general accounting routines and subject to audit, as I have previously testified. These entries are made regularly and currently in the ordinary course of business by employees of the Company entrusted with that work. In my opinion, such entries are accurately and correctly made.

It would not be possible to produce in Court all of the persons who have personal knowledge of all of the facts with respect to all of the entries made in the general ledgers, journals and cash books of the Western Electric Company during the years 1916 to 1931. Some of these persons are dead; some have left the employ of the Company; and thousands of them are scattered throughout the various localities of the country where we have distributing houses, installation divisions, and manufacturing department locations.

The subsidiary records which I have said are kept by the Western Electric Company at its various manufacturing
plants, installation divisions and distributing houses,
1021 consist of ledgers, journals and cash books. The instru-
ment identified as Plaintiff's Exhibit A-71 shows the volume of these records, to which I have referred as the subsidiary records of the Company. This Exhibit A-71 correctly sets forth the ledgers, journals and cash books of the Western Electric Company, which I have termed subsidiary records, the places at which they are maintained, the number of such records, and the number of pages of such records. In total, there are 1,258 of these records, consisting of more than 525,000 pages.

In the business of the Western Electric Company at its various manufacturing plants, distributing houses, and installation divisions, during the period of time inquired about, the Accounting Department handled vouchers, cost records,
invoices, and the like. In recent years, the raw material
1022 tickets handled at our Hawthorne and Kearny plants
alone have totaled over 3,000,000 annually. The number of items billed by our distributing houses in recent years has amounted to more than 10,000,000 annually. The labor tickets at our Hawthorne and Kearny plants, distributing houses, and installation divisions have amounted to more than 10,000,000 annually in recent years. The payroll checks issued have averaged over 3,000,000 in each of the last 3 years; that is, 1929, 1930 and 1931. Invoices from suppliers have amounted to more than 1,000,000 annually. All of these matters to which I have referred enter into and form a part of the accounting involved in the Western Electric Company.

The instrument identified as Plaintiff's Exhibit A-72 shows the general instructions issued by the Western Electric Company providing for the preservation of certain records, 1023 memoranda, checks, invoices and other papers. This Exhibit A-72 is dated January 23, 1931, and replaced an issue of September 6, 1928. Generally speaking, the subject matter of the instructions which were replaced by this issue was practically the same as the subject matter of these instructions. The records which are referred to in Exhibit A-72 are preserved only for a definite period of years, and some of them are destroyed after the expiration of that period of years. None of them, however, are destroyed prior to the dates that are stated in these general instructions.

Under the accounting system of the Western Electric Company, reports are made to me from time to time as Comptroller by the accounting officers in charge of the records and accounting at the various manufacturing plants, distributing houses, and installation divisions of the Company. I, as Comptroller of the Company, also make reports from time to time to the executive officers of the Company and to the stockholders, based on the general accounting records of the Company and the reports made to me from the manu- 1024 facturing plants, distributing houses and installation divisions. Some of these reports which are made to me, and by me, are issued monthly, some quarterly, some semi-annually, and some annually. In addition to the balance sheets and profit and loss statements, these reports cover such items as sales, gross profits, expenses, net profits; merchandise, plant, receivables, cash, payables, personnel and other items. These reports are a part of the records of the Western Electric Company, and are made currently in the regular course of its business by employees of the Accounting Department of that Company for the use of its officers and executives. These reports are audited by the Auditing Department of the Company. They contain, among other things, in summary form, the information which appears upon the 1025 subsidiary cash books, journals and ledgers kept and maintained at the various manufacturing plants, installation divisions, and distributing houses of the Company.

The general Company ledgers are made up from the general Company cash books and journals. A part of the information and data appearing on the general Company journals is made up from the reports to which I have referred. I have in Court at this time, not only the general Company ledgers, journals and cash books for the entire period 1916 to 1931, but also all of the annual reports for the same period of time. Some of these reports were used by me in the preparation of the four exhibits identified as Plaintiff's Exhibits A-77, A-78, A-79 and A-80. These reports are bound together in volumes.

1026 I also have in Court, my work sheets and other information used by me in the preparation of these Exhibits A-77, A-78, A-79 and A-80 which show the total sales, cost of sales, profit on sales, return on investment, and Total investment in Bell and non-Bell business of the Western Electric Company. These work sheets and other information are bound up in 107 volumes.

The general Company cash books, journals and ledgers, and the reports which I have described and which are all in Court, are the first permanent records of the transactions of the Western Electric Company which they purport to reflect. While the Company's subsidiary cash books, journals and ledgers are kept for at least 15 years, no closing entry is made in such subsidiary ledgers until first that entry is made on the Company books reflecting these transactions. The Company books have at all times during this period been considered as the controlling books of the Company.

1027 The Western Electric Company has relied during the entire period referred to (1916 to 1931), and does now rely, in making its calculations, its investments, and for the practical administration of its business (including the determination of its profit and return on its investment; on sales, and the like), on its Company books, located in New York, consisting of ledgers, journals, and cash books, and on reports received from subsidiary locations—subsidiary cash books, ledgers and journals.

There are no entries made upon the subsidiary books maintained at these various manufacturing plants, distributing houses, and installation divisions, other than the entries made with respect to the business transacted at or through those specific locations. There are no records maintained or kept by the Western Electric, other than the general Company journals, ledgers and cash books, and the reports made to me and by me, as Comptroller, from which it is possible to obtain information or data concerning the transactions of the Company in its entirety.

1028 Other than the records of the Hawthorne manufacturing plant, the Chicago distributing house, and the Chicago installation division, none of the subsidiary records of the Western Electric Company maintained at its various manufacturing plants, distributing houses, and installation divisions throughout the United States are within the State of Illinois. They are located at such far distant points as Boston, Atlanta, Dallas, Los Angeles, San Francisco and Seattle. The expense of transporting these records to Chicago under proper supervision would be substantial. The inconvenience resulting from these records being taken away from the various locations where they are needed, particularly for the later years, for the recording of current transactions, would seriously interfere with the current recording of our business day by day. The hazard of transporting over 1,200 volumes, consisting of 525,000 pages, of which we have no copies, would be extremely great. It would be
1029 difficult, if not impossible, to replace these records if they should be lost.

It is possible, in my opinion, for a competent accountant, by the sole use of the records which I have now in this court room, to determine the accuracy of all of the figures appearing on the 4 exhibits to which I have already referred, and which will be offered in evidence in connection with my testimony, showing sales, cost of sales, net profit on investment, investment, etc., in the Bell and non-Bell business of the Western Electric Company for the period 1916 to 1931.

I have prepared and submitted for inspection to the attorneys or representatives of the defendants in this case, certain data and information obtained from the general books and records of the Western Electric Company and its subsidiaries. This information was furnished them beginning with July 9, 1931, and continuing from that time up to and including March 9, 1932. I have prepared in exhibit form a list showing in detail the data and information so furnished or submitted for the inspection of the representatives of
1030 the defendants. This is the instrument identified as Plaintiff's Exhibit A-73. This exhibit refers not only to the data which have been actually submitted to them in statement form, but also to records which were submitted for their inspection.

All of the statements referred to in these exhibits could be prepared from the books and records of the Company which I now have in the court room, without reference to the subsidiary records which I have described, with the exception of the exhibit to be introduced showing the division of sales of the Western Electric Company between the Chicago and the State areas; that information would have to be obtained from records which are located at Chicago, Illinois, and which can be produced in Court. The auditors, accountants and 1031 attorneys employed by the defendants have inspected the books and records of the Western Electric Company in its New York offices.

In the preparation of the exhibit which will be hereafter offered in evidence and identified as Plaintiff's Exhibit A-84 (which is a consolidated earnings statement of the Western Electric Company and its subsidiaries for the period 1916 to 1931), I used, in addition to the records of the Western Electric Company, the reports which I received from its subsidiary companies. They consisted of reports from the International Western Electric Company, the Northern Electric Company (which we do not control), and from other subsidiary companies. There are in Court now, the ledgers, journals and cash books of subsidiaries of the Western Electric covering the period 1916 to 1931, from which the information appearing on this consolidated earnings statement can be obtained, so far as such subsidiaries are concerned.

1032 The statement identified as Plaintiff's Exhibit A-74 gives a list of the particular records of the Western Electric Company and certain of its subsidiaries, which are now in Court.

The books and records of the Northern Electric Company, including its ledgers, journals and cash books, are kept at the headquarters of that Company in Montreal, Canada. The Northern Electric Company is not controlled by the Western Electric Company, and our statistics concerning that Company are covered by reports which we have received currently from them from time to time.

The Graybar Electric Company was sold to the employees of that Company at the close of 1928, and its books passed out of the possession of the Western Electric. The results of the Graybar Electric Company after it passed out of 1033 the control of the Western Electric at the end of 1928, are not, of course, consolidated subsequent to that date. During the period from 1926 to 1928, inclusive, while it was a 100 per cent owned subsidiary of the Western Electric Company, it was consolidated, and we have complete reports for that period.

We have received reports from the Northern Electric Company currently, and its results have been included in this consolidated statement in the ratio of our ownership of that Company, which is 43.6 per cent.

In addition to the ledgers, journals and cash books of the subsidiaries of the Western Electric Company which are now in Court, I have assembled and there are now in Court in binders, all other records, reports and work sheets used in compiling the consolidated earnings statement of the Western Electric Company and its subsidiaries for the years 1916 to 1931. It would be possible for a competent accountant to determine from the records now in Court the accuracy of the figures appearing on such consolidated earnings statement of the Western Electric Company.

1034 The Western Electric Company of Illinois was organized in 1881. The present Western Electric Company (the Western Electric Company of New York) was organized in November, 1915, and commenced business November 17, 1915. The Western Electric Company of New York purchased the assets of the Western Electric Company of Illinois, and continued to carry on the business formerly conducted by the Illinois Company. Continuously since the organization of the Western Electric Company of New York, the American Telephone and Telegraph Company has owned a controlling interest in it. From 1916 to 1920, the American Telephone and Telegraph Company owned in excess of 97 per cent of the total outstanding common capital stock of the Western Electric Company of New York. Since 1920, it has owned over 98 per cent of the outstanding common capital stock.

I know of the execution of two contracts between the 1035 American Bell Telephone Company and the Western Electric Company of Illinois, the first of which was executed February 6, 1882, and the second, which is a modification of the former agreement in certain particulars, was executed on April 8, 1908. These two contracts are the ones identified in this record as City's Exhibits 60 and 61. The original contracts (City's Exhibit 60), as modified by the supplemental contract (City's Exhibit 61), is now in force between the American Telephone and Telegraph Company and the Western Electric Company of New York.

Hereafter, when the Western Electric Company is mentioned, I shall be referring to the Western Electric Company of New York, unless the contrary be specifically stated.

1036 From 1916 to the present time, the Western Electric Company has been engaged chiefly in the manufacture of telephone apparatus and cable, the purchase and sale of supplies, and the sale of such manufactures to the Bell associated companies. The Bell associated companies consist of those companies with whom we have supply contracts. They are principally the Bell licensee companies, but there are some connecting companies with whom we have supply contracts that are included in this classification. During this period, the Western Electric Company has done business with other than Bell Telephone Companies, which has consisted of the manufacture of Western Electric telephone apparatus and cable for sale to the independent telephone companies in the United States, and to others. When 1037 the Graybar Electric Company began business in 1926, it took over this business, and since that time has sold to the independent telephone companies and others, and has purchased supplies of other manufacturers for resale to other customers, including independent telephone companies in the United States. The Western Electric Company during this period has also sold its manufactures to the International Western Electric Company, to the Northern Electric Company, and to the International Standard Electric Company for use in foreign countries.

The Western Electric has sold its manufactures of talking motion picture equipment to its wholly owned subsidiary, the Electrical Research Products, Incorporated, since the time that Company began business on January 1, 1927, down to the present time.

1038 I have prepared a chart, identified as Plaintiff's Exhibit A-75, which shows in skeleton form the corporate structure of the Western Electric Company and its principal subsidiary groups. This chart shows the duration and extent of the Western ownership, and includes the Bell Telephone Laboratories, Incorporated, of which the Western owns only 50 per cent of the common stock, and the Northern Electric Company, Limited, in which the Western owns only 43.6 per cent of the stock. I have not included in this chart any of the subsidiaries of subsidiaries. It does not include a large number of subsidiaries of the International Western Electric Company during the time that we owned it, nor does it include a large number of subsidiaries of the 1039 Electrical Research Products, Incorporated, which are now in existence.

The International Western Electric Company was formed to take over the foreign business of the Western Electric Company, and was first organized in 1882. During all of the time up to the date of its sale, it manufactured telephone apparatus and cable at various localities in Europe and other foreign countries, and also purchased Western Electric manufactures in this country for resale to its customers abroad. The Western Electric Company at all times owned 100 per cent of the International Western Electric Company. The International Western Electric Company in turn owned 100 per cent of most of its subsidiaries. In some other of its subsidiaries, it owned more than 50 per cent, and in some, less than 50 per cent.

1040 These companies, other than the Northern Electric Company, were sold by the Western Electric Company to the International Telephone and Telegraph Company on September 30, 1925. Since that date, the Western Electric Company has had no interest or ownership in this foreign business, with the exception of its 43.6 per cent interest in the stock of the Northern Electric Company.

There was an interchange of patent rights between the Western Electric Company and the International Company and its foreign companies.

1041 During the entire period from 1916 to 1931, and down to the present time, the Western Electric Company has owned 43.6 per cent of the capital stock of the Northern Electric Company. The business of that latter Company has consisted, in the main, of the manufacture of telephone apparatus and cable, and the purchase of supplies for the Bell Telephone Company of Canada. It has also done quite an extensive supply business to the general trade in Canada and Newfoundland.

The Graybar Electric Company was organized in December, 1925, and began business January 1, 1926. The Western Electric Company owned 100 per cent of the stock of the Graybar Company from the date of its organization until that stock was sold to the Graybar Management Corporation, on December 31, 1928. The stock of the Graybar Management Corporation was owned by the employees of the Graybar

1042 Electric Company. Since December 31, 1928, the Western Electric Company's only interest in the Graybar Electric Company has been in some of its preferred stock, which is gradually being liquidated. The Western Electric ceased to have any ownership of any common stock of the Graybar Company on December 31, 1928.

The Graybar Electric Company is engaged in the distribution of Western Electric manufactures (cable and telephone apparatus), and in the purchase and sale of supplies of other manufacturers throughout the United States. That is substantially the same business, so far as that branch of it is concerned, as the Western Electric formerly carried on

1043 with its non-Bell customers through its Supply Department. The Graybar also sells public address equipment, and other non-telephone articles.

The Electrical Research Products, Incorporated, was organized in December, 1926, and began business January 1, 1927.

It is a wholly owned subsidiary of the Western Electric Company. It has never engaged in the manufacture or sale of telephone apparatus. The list identified as Plaintiff's Exhibit A-76 shows the classes of devices which are marketed by the Electrical Research Products. With respect to the several classes of devices shown on Exhibit A-76, the Electrical Research Products, Incorporated, has the right to use patents owned by the American Company or by the Western Electric Company.

1044 The Western Electric Company acquired the Teletype Corporation on October 1, 1930. That corporation is engaged in the manufacture of telegraph printing in-
1045 struments. Prior to October 1, 1930, the Western had no ownership, directly or indirectly, in the Teletype Corporation, but had been one of its customers.

The Bell Telephone Laboratories, Incorporated, was organized in December, 1924, and began business January 1, 1925. It is owned 50 per cent by the American Telephone and Telegraph Company, and 50 per cent by the Western Electric Company. It was organized to take over the development and research work formerly done by the Western Electric Company. It does development and research work for
1046 the Western Electric Company, for the American Telephone and Telegraph Company, and for the Electrical Research Products, Incorporated. The work done for these three companies is billed to the respective companies at cost, plus interest on the investment. That rate of interest is 7 per cent per annum.

The Western Electric Company has some other subsidiaries which I have not specifically described. It has a railroad (the Manufacturers' Junction Railway Company), which is a plant facility of our Hawthorne plant. It has a real estate company, which is owned in conjunction with the New York Telephone Company, at 395 Hudson Street, New York, and some other minor companies.

The instrument identified as Plaintiff's Exhibit A-77
1047 shows, for each of the years 1916 to 1930, the sales, total cost of sales, net profits, per cent net profits to sales,

average investment, and the per cent return on investment, on Bell business. The figures at the bottom of this exhibit, opposite the word "Total", are the aggregate amounts of the various figures appearing against each year. Thus, it shows that the per cent of net profits to sales on business done by the Western Electric with its Bell customers during this period has been 4.9 per cent; and that the per cent return on investment for the same period, and also in connection with its Bell business, has been 7 per cent. There are not included in the figures used in this exhibit, any profits on, or expenses relating to, any business done by the Western Electric Company during the years included in the exhibit with companies other than the Bell associated companies.

1048 On Exhibit A-77, under the column "Sales," is shown the aggregate of the billing to Bell Companies by years. Under the column "Total Cost of Sales," are shown the costs which have to be in part allocated or apportioned. In determining the cost of sales, the manufacturing costs of apparatus and cable sold to Bell customers are the same as the manufacturing costs of cable and telephone apparatus sold to non-Bell customers, and they require no allocation. They are direct costs. The installation costs are also direct costs. The remaining costs and expenses have to be allocated or apportioned. Where the time factor is involved, they have been divided on the basis of the time devoted to Bell business relative to the time devoted to non-Bell business. All other costs have been apportioned or allocated on the basis of the shop costs of sales. There has been deducted from the total cost, an item for interest received, which practically classifies itself without allocation. The interest received is principally on so-called Class C stock, representing returned goods from the Tele-
1049 phone Companies. There are also included Federal taxes, which, of course, are apportioned at the prevailing rate on the net profits previously ascertained from the application of the allocations I have mentioned.

The third column represents the difference between the first and second columns. The fourth column, "Per Cent

Net Profits to Sales," represents the relation of the third column to the first column. The fifth column represents "Average Investment," and the sixth column represents "Per Cent Return on Investment."

The average investment includes the cost of plant plus merchandise, plus receivables, plus cash, less accounts payable, and has been apportioned between Bell and non-Bell business on the following basis: the allocation of plant has been based on usage, as determined by the shop cost of sales. Merchandise in a great many cases is segregated for Bell and non-Bell customers, and requires no allocation, but where allocation is required, the merchandise is apportioned on the basis of shop cost of sales. Receivables classify themselves. Cash and accounts payable are apportioned on the basis of the purchases of plant and the shop cost of sales.

1050 In my opinion, the figures appearing in the column "Total Cost of Sales," reflect the direct and apportioned costs of the Bell business, as I have defined it, as taken from the books and records of the Western Electric Company. In my opinion, the apportionments and allocations which I have made are made upon a proper and correct basis. In my opinion, the apportionment of average investment is a proper one, and when the method which I have followed has been applied as I have applied it, it will correctly show the investment devoted to the Bell business in each of the years.

I prepared an exhibit, identified as Plaintiff's Exhibit A-78, which gives information similar to that contained in Exhibit A-77, but includes the year 1931, estimated on 1051 the basis of 8 months. This exhibit was prepared prior to the end of 1931. The 1931 figures were prepared by using the 8 months' figures, and adding 50 per cent to those figures to obtain the 12 months' figures. At the time Exhibit A-78 was prepared, the 1931 figures were not available, but have become so within the last week or 10 days. The actual figures for 1931 are as follows: under the column "Sales," the actual figure is $219,535,000; "Total Cost of Sales," $209,035,000; "Net Profits," $10,500,000; "Per Cent

Net Profits to Sales," 4.8 per cent; "Average Investment," $270,423,000; "Per Cent Return on Investment," 3.9
1052 per cent. The fact that the per cent of net profits to sales and the per cent of return on investment, as shown by the actual figures for 1931, are a trifle higher than those included in Exhibit A-78 (based upon the estimated year's results on the basis of 8 months), does not change the overall result shown at the end of this exhibit for the entire period. The effect of the difference between the estimated figures and the actual figures is so small in proportion to the total that it makes no change aggregating as much as .1 per cent. We have only carried our figures in this exhibit to the first decimal point, and that is not affected by this change.

In the preparation of Plaintiff's Exhibit A-78, the same methods of apportionment and allocation were used as in the preparation of Plaintiff's Exhibit A-77, concerning
1053 which I have just testified. The explanation which I have just given of the methods used in the preparation of Plaintiff's Exhibit A-77 applies equally to Plaintiff's Exhibit A-78. In Plaintiff's Exhibits A-77 and A-78, I have included all sales of telephone instruments made by the Western Electric Company to the American Telephone and Telegraph Company since January 1, 1916.

Plaintiff's Exhibit A-79 shows the sales, total cost of sales, net profits, per cent net profits to sales, average investment, and per cent return on investment of the Western Electric Company in its non-Bell business, for each of the years 1916 to 1930, and for the 15-year period. Exhibit A-80 shows similar information for the period 1916 to 1931. These two exhibits also were prepared under my supervision from the books and records of the Western Electric Company. In the
1054 preparation of these two exhibits, showing the results of non-Bell business, I have used the same methods of apportionment and allocation as I did in the preparation of Plaintiff's Exhibits A-77 and A-78, and the explanation about those exhibits applies equally to Exhibits A-79 and A-80, except, of course, that these two latter exhibits are in connection with non-Bell business, while A-77 and A-78 are in connection with Bell business.

In the preparation of Exhibits A-77, A-78, A-79 and A-80, which show sales, total cost of sales, net profits, per cent net profits to sales, average investment and per cent return on investment of the Western Electric Company in its Bell and non-Bell business, I have considered only the operating business of the Western Electric during the period involved.

There is one exception to this, and that is for the period
1055 1916 to 1925. There we have included the dividends and interest received from the Manufacturers' Junction Railway, from the 395 Hudson Street Company (our real estate company in New York), the interest on notes of the Bell Telephone Laboratories, Incorporated, during the first year of its operation, and some other minor items, aggregating in total $1,800,000. But aside from these items, I have not considered any non-operating income. In Exhibits A-79 and A-80 I included in non-Bell sales, all sales of the Western Electric Company to the Western Electric subsidiaries, as well as to outsiders.

In the instrument identified as Plaintiff's Exhibit A-81 appear several columns. The first column shows the years from 1916 to 1931 (1931 being estimated on the basis of 8 months plus 50 per cent). The second column shows the total sales of Western Electric manufactures to non-Bell customers during this period. The third column shows
1056 sales to domestic customers by our Supply Department prior to the organization of the Graybar Electric Company. The fourth column shows the export and foreign sales to the International Western Electric Company, Incorporated, and the Northern Electric Company, Limited. The fifth column shows sales to the United States Government, reflecting principally sales during the war years, since which time sales to the Government have been included in other classifications, as they are a relatively small amount.

In the next 4 columns are shown sales to distributors: Graybar Electric Company, Inc., from 1926 to 1931, inclusive; International Standard Electric Corporation; Northern Electric Company, Limited; and Electrical Research Products, Inc. The last column shows some minor sales to other customers.

In Plaintiff's Exhibits A-77, A-78, A-79 and A-80, the sales of the Western Electric Company in its non-Bell business, as shown in Exhibit A-81, have been included in the
1057 non-Bell business and excluded from the Bell business.

No part of the development expense incurred and paid by the Electrical Research Products is included in the development expense charged against Bell or non-Bell business in Exhibits A-77, A-78, A-79 and A-80.

During the period 1927 to 1931, the Electrical Research Products, Inc., incurred development expense in the conduct of its business, and likewise received royalties in connection with its business. A portion of these royalties were retained by the Electrical Research Products, and a portion of them were paid to other corporations and persons. The Western Electric Company during this period also received certain royalties, and paid portions of them to other corpora-
1058 tions. The International Western Electric Company, Inc., and the Western Electric Company, Limited, of Canada also received royalties from certain of their respective subsidiaries and others.

The statement identified as Plaintiff's Exhibit A-82 shows the income from royalties and patents sold, and expenses applicable thereto, of the several companies to which I have referred, and shows how these royalties have been distributed. This exhibit shows that information with respect to the period 1916 to 1931 in the first column, and like information for the period 1923 to 1931.

In the first grouping on this exhibit are shown the gross royalties received by the Western Electric Company, the Electrical Research Products, Inc., the International Western Electric Company from its subsidiaries, and those received by the International Western Electric Company and its subsidiaries from others. All of the gross royalties
1059 shown in this grouping are divided between the periods 1916 to 1931 and 1923 to 1931, and include the amount received for patents sold.

The second grouping shows the distribution of those gross royalties listed under the first grouping. There is shown the amount distributed to the American Telephone and Telegraph Company under contract with it, and to the Vitaphone Corporation under contract with it. There is also shown the distribution to the Northern Electric Company, Limited, and to the International Standard Electric Corporation, and three other cases in smaller amounts. The balance retained by the Western Electric Company, the Electrical Research Products, Inc., and the International Western Electric Company and its subsidiaries after this distribution, is shown in the third grouping.

The fourth grouping shows the expenses applicable to the royalties received and patents sold, as incurred by the Western Electric Company on royalties and patents sold, as incurred by the Electrical Research Products in development expense, and as incurred by the Electrical Research Products
in other expenses. The last line shows the net royalties
1060 and patents sold, and represents the difference between
the third group and the fourth group.

This exhibit is not a set up that relates itself to the Western Electric Company alone, or to any other of these companies alone. What I have done is to take the royalties received, not only by the Western Electric Company, but by the Electrical Research Products, and by the International Western Electric from some certain of its subsidiaries and by its subsidiaries from others. The groupings represent royalties arising from these various sources; the other groupings relate themselves also to the same corporate entities.

This exhibit shows, in the first column of figures, that for the years 1916 to 1931 there was an excess of $2,243,000 of royalties received and retained, above the development
expense and other expenses applicable thereto. If this
1061 sum of $2,243,000 should be credited to the Bell busi-
ness, the effect on the per cent of profit made by the Western Electric Company on its Bell business during the period 1916 to 1931, as shown on Exhibit A-78, would be .1 per cent. It would increase the profit on the Bell business from 6.6 per cent to 6.7 per cent on the investment for the period 1916 to 1931, as shown on Exhibit A-78.

The data compiled for the exhibits, showing the profits on
the Bell and non Bell business of the Western Electric Com
pany for the periods 1916 to 1930 and 1916 to 1931, were not
compiled recently. They were compiled year by year. For
instance, early in 1917 information was obtained as to the
results of the business for 1916, and divided between Bell and
non Bell business, for the use of the administrative officers of
the Western Electric Company. That same method was
followed in subsequent years right up to the present
1062 time. During this entire period of time, the rate of
earnings made by the Western Electric Company on its
non bell business was higher than the return made by it on its
Bel business.

There are 4 or 5 factors that caused the variations in per
cent of net profits to sales, and in return on investment
throughout the several years. The first factor is the per cent
capacity at which our manufacturing plants were operated.
If they are operating at full capacity, it tends to decrease the
cost. Raw materials purchased have varied up and down
during the period, and labor rates have shown a constant
increase from 1921 up to recent years; this is particularly
true of our productive labor rates. There is the further
factor that, during all of this period, we have made
1063 reductions in prices to our customers. All of these
factors taken into consideration, and with various
weightings for the various years, result in the percentages
shown as return on investment during this period. In my
opinion, the results of a single year's operation are not rep
resentative of the Company's business, and to get a fair
cross-section of that business we must take a number of
years.

A number of decreases and increases in prices have been made by the Western Electric Company to the Bell associated companies during the period 1916 to 1931. The prices on lead covered cable, being dependent largely on prices of copper and lead, have fluctuated with the prices of copper and lead. The prices of supplies have fluctuated as the costs of supplies have fluctuated. We made reductions in price of telephone apparatus from 1921 until November 1, 1930, when an increase was made.

The statement identified as Plaintiff's Exhibit A-83 shows the effect in dollars of the price changes made by the Western Electric Company in the years 1921 to 1930. This exhibit relates itself to sales of telephone apparatus, and does not include lead covered cable or supplies. The amount shown opposite each year on this exhibit represents the price change related to the volume of business in that particular
year. They are not cumulative. Where a plus figure
1065 appears, it means that the price was more than it had
been previously, and where a minus figure appears, it
means that the price was less than previously. In one year (1923), there was a slight increase in prices, and in all of the years since, except in 1930, there was a decrease. In 1930 there was an increase.

If the 1921 prices of the Western Electric Company had been in effect in 1930, the Bell Telephone Companies would have paid $97,000,000 more for their purchases than they actually did pay in 1930. In other words, the 1930 prices were $97,000,000 less than the prices for 1921. This includes the effect of the 1930 price increase during the two months
in which the price change was in effect. The percentage
1066 of reduction in prices during this period was slightly
less than 40 per cent.

The instrument identified as Plaintiff's Exhibit A-84 shows the consolidated earnings of the Western Electric Company, including its subsidiaries and the subsidiaries of its subsidiaries, for the years 1916 to 1934. On the first line are shown the net profits for this period of $244,594,000. On the second line is shown the average investment of $3,229,000,000. The third line shows the per cent return on investment of 7.6
per cent.

1067 The average investment shown in Exhibits A-77, A-
78, A-79 and A-80 includes the book cost of plant
undepreciated, that is, the purchase price of the plant; it also includes the merchandise stock that we have on hand for use either for Bell or non-Bell customers, receivables due from

our customers and the amount of cash that we necessar-
1068 ily must have on hand for use in the business. There is
deducted from the total of these items, the current accounts payable.

This investment was apportioned between the Bell and non-Bell business on the following basis: the book cost of plant is apportioned on the basis of usage of that plant, as determined by the shop cost of sales to the Bell customers and the non-Bell customers; for example: if we had a particular machine, the question was as to how we were to apportion the book cost of that machine. Say that 10 articles were made on that machine which were sold to Bell customers and 5 articles were made on it which were sold to non-Bell customers. Now, that would
have a relation to the apportionment of the book cost of
1069 that machine. If 10 items of the same cost were sold to
Bell customers, and 5 items of the same cost to non-Bell customers, two-thirds of that investment would be applicable to Bell business and one-third to non-Bell business
during the period of time during which those sales were
1070 made. In the illustration just given, the investment in
Bell and non-Bell business, respectively, changes slightly from year to year, depending upon the use of the machine relatively for Bell and for non-Bell purposes.

In determining what our investment was, we have not made any deduction from the purchase cost of the property. We made a study at one time to ascertain whether the plant, if reproduced new, less depreciation, would equal or be less or more than the book cost of plant. The facts concerning that study have been submitted to counsel on the other side.

1072 The investment of $3,229,000,000 shown on Exhibit A-84 includes not only the average investment of the Western Electric Company, but also the average investment of all of its subsidiaries and subsidiaries of subsidiaries. Where the Western Electric Company has owned less than 100 per cent of a company, the per cent of that investment representing Western Electric ownership is included.

This exhibit (A-84) includes, for the period of time shown on its face, that is, 1916 to 1931, all of the average investment on the basis I have described for the Western Electric 1073 Company, as well as that Company's earnings, whether operating or non-operating, and its interest in the earnings and investment of every corporation in which it owned 50 per cent or more interest, except that the Northern Electric Company, of which we own 43.6 per cent, is also included. Where the interest of the Western Electric Company in another company is less than 50 per cent and we do not control it, we have considered that as a sundry investment.

This statement (Exhibit A-84) shows all the earnings of the Western Electric Company and all of its subsidiaries 1074 during the entire period of time, related to the average investment, including either the whole of that investment or the proportionate part of it represented by Western's ownership. It shows that in the Western's business during this period of time, it has earned 7.6 per cent, whether those earnings are distributed or undistributed. It shows all of the earnings of the Western Electric Company and all the earnings of its subsidiaries, and the earnings of the subsidiaries of subsidiaries, to the extent of their ownership, where that ownership is in excess of 50 per cent. In the case of the Northern Electric Company, we have included its earnings to the extent of our ownership, even though that owner-1075 ship is less than 50 per cent. It includes Western's profits, and to the extent of its ownership, the profits of these other companies, whether those profits are held by the companies, or distributed by them to the Western, or distributed by it.

Since the sale of Graybar stock to the Graybar Management Corporation, as of December 31, 1928, the Western Electric Company's interest in the Graybar Electric Company has been confined to the dividends that it has received from the preferred stock in that Company. It has shared in the profits of the Graybar Company in the relation of the preferred stock to the total; that is, if it had 60 per cent of the preferred stock at the beginning, it had 60 per cent of the net profits after certain deductions, but that percentage has gradually decreased as the preferred stock interest decreased. The preferred stock interest now held by the Western Electric is $4,000,000; it was originally $6,000,000.

1076 The earnings of the Teletype Corporation, which was purchased by the Western Electric Company on October 1, 1930, and the investment in that Company, appear on Exhibit A-84 for the period October 1, 1930, to December 31, 1931.

Exhibit A-85 shows the average investment and the average annual earnings of 88 manufacturing companies for the 6-year period 1925 to 1930, inclusive. To prepare this exhibit, we first examined the Standard Statistics Manual, which is an index of large industrial companies in the United States. We then went to Poor's and Moody's Manuals for the data. We eliminated from the original list of 579 companies those companies which were obviously not comparable with the Western Electric Company, such as extracting companies, mining and oil companies, railroads and public utilities.
1077 We also eliminated all steel companies, for, although they have extensive manufacturing interests, their other interests are also extensive. They are in the shipping business, the railroad business, and the mining business; it was impossible for us in any way to segregate that information and data from their total business. We further applied the test of size, eliminating all companies whose profits in the years 1925 to 1929, inclusive, amounted to less than $5,000,000, and whose income in more than one year fell below $1,000,000. We also made sure that there was enough information in Poor's and Moody's Manuals as to their depreciation and cost of plant to enable us to put them, as far as possible, on a comparable basis with the Western Electric Company.

After applying all these tests, we eliminated all of the original 579 companies except the 88 which are listed in Exhibit A-85.

On the second page of this exhibit (A-85), it appears that
these 88 companies earned, during the 6-year period, 12.2
1078 per cent on investment. One of the tests which we had
applied to arrive at these 88 companies was to make sure

that we had sufficient information on depreciation, so that we could make up the average investment on the same basis as we ascertained the average investment for the Western Electric Company. The average investment for all of these companies includes the book cost of plant, without deduction for depreciation.

The instrument identified as Plaintiff's Exhibit A 86 shows sales for all of the 88 companies where sales information was available. We could only find sales information for 38 of the 88 companies. This exhibit shows that, during this
1079 period of 5 years, the per cent profits to sales has been 11.6 per cent.

The tests for selecting the particular companies listed in this exhibit, to which I have referred, were applied for the period 1925 to 1929, inclusive, and the 1930 figures were added without attempting to apply the tests for that particular year.

This exhibit shows that, out of 88 companies included in Exhibit A 85, we could arrive at the per cent of net profits to sales for 38 of them, for the period 1925 to 1930, and during that time those 38 companies had earned 14.6 per cent on sales. The total figures in this exhibit are the actual figures for all of the companies, both as to sales and as to net profits; that is, the 38 companies during this 6 year period had $21,289,883,000 in sales and earned $2,469,549,000 in profits.

1080 Plaintiff's Exhibit A 87 shows the ranking of those companies appearing on Exhibit A 86, and the Western Electric Company on its Bell business, during the same 6 year period with respect to the per cent of net profits on sales.

Plaintiff's Exhibit A 88 shows, in the first column, the years 1926 to 1930. It shows in the second column the per cent of sales of telephone apparatus to all Bell Companies to the total sales to all Bell Companies. In the third column it shows similar information for the Illinois Bell Telephone Company. The fourth and fifth columns show this information for lead covered cable, and the sixth and seventh columns for supplies.

1081 The second column shows, with respect to each of the
years, the per cent which the sales of telephone appa
ratus to all Bell Companies bear to the total sales made by the
Western Electric Company to all Bell Companies. The third
column shows the per cent which the sales of telephone appa
ratus to the Illinois Bell Telephone Company bear to the total
sales of the Western Electric Company to the Illinois Bell
Telephone Company for each of these years, and the other
columns contain similar information with respect to lead cov
ered cable and supplies.

The sales of telephone apparatus to all Bell Companies for
the years 1923 to 1931, inclusive, were 55.5 per cent of all sales
to all Bell Companies. For the Illinois Bell Telephone Com
pany for the same period, the sales of telephone appa-
1082 ratus were 59 per cent of the total sales to that Com-
pany. The sales of lead covered cable to all Bell Com-
panies for the period 1923 to 1931 were 15.6 per cent of the
total sales of the Western Electric Company to all Bell Com
panies for the same period; and for the Illinois Bell, were 15
per cent of the total sales to that Company. The sales of
supplies to all Bell Companies for this same 8 year period
were 28.9 per cent of all sales to all Bell Companies, and the
corresponding percentage for the Illinois Bell was 26 per cent.

The second page of Exhibit A-88 contains the same informa-
tion with respect to the year 1931, as appears on the first sheet
with respect to the years 1916 to 1930, inclusive.

The Western Electric Company has done a large business
in supplies with its Bell System customers during the period
covered by Exhibit A-88. From 1916 to 1930, inclusive, the
total volume of supplies sold to all Bell associated com-
1083 panies was about $915,000,000. The Western Electric
Company made .8 of 1 per cent on all these sales of
supplies, which amounted to about $7,000,000.

Exhibit A-89 shows the division of Western Electric sales
to the Illinois Bell Telephone Company for the years 1928,
1929 and 1930, divided between telephone apparatus, lead cov-
ered cable and supplies, and further divided between the Chi-
cago and State areas of the Company. The second page of

this exhibit shows similar information for the year 1931. The
first grouping on this exhibit shows the total sales of tele-
phone apparatus, lead covered cable and supplies for each
of the years 1928, 1929 and 1930, and the per cent that such
telephone apparatus, lead covered cable and supplies bear to
the total sales for each of the years. The second group-
1084 ing shows that portion of the first grouping which was
in the Chicago area, and shows for each of the years the
percentage that telephone apparatus, lead covered cable and
supplies bore to the total sales. The third group shows sim-
ilar information for sales in the State area of the Company
for the same years.

For instance, Exhibit A-89 shows, under the title "Chicago," a grouping for the year 1928, which, of course, totals 100 per cent, and means that the figures represent the total purchases on behalf of the Chicago area from the Western Electric of manufactured articles and supplies for the year 1928. Now, 59.5 per cent of those total purchases were telephone apparatus, 13.9 per cent were lead covered cable, and 26.6 per cent were supplies. That is the way the exhibit is set up, both for the Chicago and State areas, and for the Illinois Bell as a whole for each of these years.

Exhibit A-90 was prepared from the records of the
1085 Western Electric Company, and shows the sales of West-
ern Electric manufactures for the years 1916 to 1930,
and that part of the total sales represented by Bell business,
both in dollars and as a percentage of the total. This exhibit
shows the same information for supplies and for the total of
both manufactures and supplies for the same period.

This exhibit (A-90) shows, in the last lines, a comparison of Western Electric sales for the 8 months of 1930 and for the 8 months of 1931, both of Western Electric manufactures and supplies, and of the total of the two. There has been a decrease in the sales for the first 8 months of 1931, as compared with the first 8 months of 1930. On Western Electric manufactures, there was a decrease of 38 per cent in the total, and 35.9 per cent on sales to Bell customers. On supplies, there

was a decrease of 44.5 per cent in total sales, and a de-
1086 crease in Bell sales of 44 per cent. The combined total
of Western Electric Company manufactures and sup-
plies shows a decrease for the 8 months of 1931, as compared
to the 8 months of 1930, of 39.8 per cent for the total, and
38.2 per cent for Bell customers.

Plaintiff's Exhibit A-91 was prepared by me from the records of the Western Electric Company. It shows the book cost of plant facilities (which include land, buildings, service equipment, machinery, tools, furniture and fixtures), with the annual increases from 1916 to 1930, inclusive.

Plaintiff's Exhibit A-92 shows the owned factories of the Western Electric Company on June 30, 1931. It shows the locations of these factories and the dates of erection, acquisition, or major additions to them. It shows the kind of product manufactured at each of these 4 factories, which are: Hawthorne, Kearny, Queensboro and Point Breeze.

1087 The supply business which the Western Electric Company does with its Bell customers represents sales of goods purchased by the Western Electric Company from others. It consists of a large number of different items which the Telephone Companies use and which we do not manufacture, such as poles and pole lines, hardware, line wire, insulators, cross arms, conduit, furniture and supplies, directories, and miscellaneous items of a similar character.

The Northern Electric Company, of which I have spoken, is a Canadian corporation.

1088 In the consolidated balance sheet, which I have heretofore described, where the Western Electric Company has owned less than 50 per cent of some of the foreign companies, those companies have been considered as investments and not as consolidated with the Western. This was not true of the Northern Electric Company, where we included a proportionate part of its earnings, although we own less than 50 per cent. I am referring now to a few of the foreign subsidiaries of the International Western Electric Company that operated in foreign fields. When the Western Electric Company owned

less than a 50 per cent interest in them, we included
1089 merely the investment in our consolidated balance sheet. In all other cases, including the Northern Electric Company (where the Western Electric Company owns less than a control) and the Bell Telephone Laboratories (where it owns 50 per cent), they have been treated by including whatever proportion the Western Electric Company owned in them. In these small subsidiaries of the International Western, of which I have been speaking, we included the dividends received, but not the earnings of such companies.

There was included in the consolidated earnings statement about $5,000,000 of the profit on the sale of the International Western Electric Company. The total profit made on
1090 such sale was $7,100,000. These foreign companies had been engaged in business abroad commencing in 1882, and had made earnings from that time down to the date of the sale as of October 1, 1925, of the International Western Electric Company to the International Telephone and Telegraph Company. I included in the consolidated earnings statement, that portion of the profit on the sale attributable to the period 1916 to 1925, determined by the proportion which the earnings in that period bore to the total earnings of all foreign companies, from the commencement of their business in 1882.

1093 F. O. HALE, called as a witness on behalf of the plaintiff, having been first duly sworn, testified as follows:

Direct Examination by Mr. Thompson.

My name is F. O. Hale. I testified on the former hearing of this cause, at which time I stated my qualifications and experience in the telephone business. I became President of the Illinois Bell Telephone Company on July 1, 1930, in which position I have continued to serve up to the present time.
1094 I am familiar with the exhibit marked Plaintiff's Exhibit A-64, and with the rate schedules which are shown

on it. If the Commission's rate schedule for the four-party
coin box service had been put into effect, it would have re-
sulted in a monthly rate about 46 cents lower than then existed
in the City of Chicago. If that rate schedule had been
1095 put into effect, it would have brought in some additional
users in Chicago, perhaps to the extent of 10,000 or
12,000 additional subscribers. I think it would have taken a
period in the neighborhood of two years for it to have had its
maximum effect in producing the additional stations.

If from 10,000 to 12,000 subscribers had been attached by
reason of this reduced four-party coin box rate, they would
have been marginal users to whom the rate was very im-
portant, and I would expect that we would have lost consid-
erably more than one-half of them (from two-thirds to three-
quarters) during the period 1930, 1931 and up to the present
time. In my opinion, the gross yearly revenues from these
additional subscribers would not have been, on the aver-
1096 age, over $28.00, on which the net telephone revenue
would not have exceeded 10 per cent per station; that is,
not more than 10 per cent of the $28.00.

I do not think that there is any doubt that the introduction
of these additional subscribers would have reduced the net
return which we have received without their being acquired,
because at 10 per cent they are earning less of the gross than
the average subscriber did during the period from 1923 on.
The net of gross for stations that were attached during this
period was from 15 to 16 per cent, on the average. The four-
party coin box service, everything considered, is not
1097 actually more expensive per station, but is relatively
more expensive.

I do not think that there would have been any increased message use by the existing subscribers to the individual business, two-party business, and two-party residence coin box services if the reduced rates fixed by the Commission had been put into effect for these 3 classes. Generally speaking, the use of the business subscriber is governed by the necessities of his business. Under the existing rates, he probably has used all that he would use. The telephone is an adjunct of his business, and I do not think that his message usage is governed to any great extent by the excess message rate. This is true both of the individual business coin box and the two-party business coin box.

The case of the two-party residence coin box service is one
where again the usage is less free from cost considera-
1098 tion. It is a higher class of residence user, and if any-
thing happened there, I think that the reduction in the
allowance of messages under the guaranteed rate would have
tended to decrease the usage in that class of service rather
than increase it.

We have assumed that there would be no change in the usage in these 3 classes (one-party business coin box, two-party business coin box, and two-party residence coin box), which, I think, is a maximum allowance.

In the two-party residence coin box, the Commission's order
reduced the number of messages guaranteed per month from
approximately 76 to approximately 67. We have assumed
that the usage in this service would remain the same
1099 under the new rates, even though the guarantee has
dropped, and even though our belief is that the guaran-
tee is a controlling feature, at least in residence use, and that,
especially in the lower classes of residence use, the number of
messages allowed by the guarantee has a great deal to do with
the average usage per station. The tendency here would have
been to reduce the usage in the two-party residence coin box
service, although we have not assumed that that would be
reduced at all.

Exhibit A-65 is a study showing the effect on the message usage of the existing subscribers in the four-party residence coin box service if the Commission's rates had been made effective. It also shows the regrading from the two-party measured residence to the four-party residence coin box service if the rates had been made effective. This exhibit shows the expected usage resulting from these changes in the rates. I am familiar with this exhibit and with the underlying data upon which it was based, and in my opinion, it

correctly shows what the result would have been had the Commission's rates become effective; I think it is as
1100 good an estimate as could be made of what the usage would be.

When the decreased message usage had been ascertained, the amount of such deceased messages was furnished to Mr. S. S. Smith, Traffic Engineer of the Illinois Bell Telephone Company, who, in order to ascertain the savings in traffic expenses resulting from that decreased usage, applied certain coefficients to the decreased message use. I am familiar with the method used by Mr. Smith; it is a very simple calculation, and, in my judgment, is entirely accurate.

1101 I think there is an additional factor that should be taken into consideration, in the line at the bottom of Exhibit A-52, representing "Net Reduction in Net Income Under the Rates in Suit." This factor is the additional stations that might be attracted by the reduced four-party rate. As I have already stated, I do not think that the net income from these additional subscribers would have been more than 10 per cent of the gross from the stations. At $28.00 per station (the assumed gross revenue of these additional stations), and at 10 per cent of the gross which would result from
1102 this $28.00 per station, the net income would be around $30,000 per annum. Now, I want to make it clear that, in my judgment, that is the absolute maximum that we could expect from this. I am not at all sure that there would be any net revenue, but giving effect to the maximum that we could expect, I would put it for 10,000 stations at around $28,000 and for 12,000 stations at around $33,000.

These figures, if we are to assume the maximum result, should operate to reduce the figures appearing on the last line of Exhibit A-52, which is the net reduction from the rates in suit if they had been put into effect; that is, the reduction would not be as large by about $30,000. It should be borne in mind, however, that that $30,000 probably would not apply for more than 4 years, because it would take a couple of years to build up to the maximum number of stations that we would get with this reduced rate, and that type of station would have been more affected during the depression. We have 1103 lost stations as it is, and we would have lost a greater percentage of those additional stations than we have of the stations which we now have. It would have been less than $30,000 in 1924, 1925, 1930 and 1931, in my judgment.

(Cross-examination deferred by agreement between the parties.)

RICHARD H. GREGORY, recalled as a witness on behalf of the plaintiff, having been previously duly sworn, further testified as follows:

1104 *Direct Examination by Mr. Thompson.*

MARCH 14, 1932.

The Western Electric Company has price lists for telephone apparatus and lead covered cable covering the 1105 period 1916 to 1931. The prices included in those lists are the same at any given time for all of the Bell associated companies.

The instrument identified as Plaintiff's Exhibit A-91 shows the book cost of plant facilities of the Western Electric Company, including land, buildings, service equipment, machinery, tools, etc., as of December 31, 1915, and as of December 31 of each year thereafter down to the end of 1930, and also shows the amounts added during each of the years. These plant facilities have been entered upon the books of the Western Electric Company and included in my average investment figures at their actual cost to the Western Electric Company.

1106 There is no item added in the column headed "Average Investment" in the Exhibits A-77, A-78, A-79 and A-80, for going concern value, good will, patents or development expense. On December 31, 1931, the Western Electric Company owned 4,276 patents, and was licensed under 4,775 patents. The Western Electric Company has received, during

the period 1925 to 1931, $695,000 in royalties from the North-
ern Electric Company, and this sum for the years 1925 to
and through 1931 has been reflected in Exhibits A-77,
1107 A-78, A-79 and A-80. The effect of this treatment of
royalties has been to reduce the expense entering into
the cost of sales.

Prior to 1925, the Northern Electric Company paid a royalty to the International Western Electric Company amounting to about $279,000. That has been given consideration in Exhibit A-82, showing income from royalties and patents sold.

During the period 1916 to October 1, 1925, the Western Electric Company received $860,000 from the International Western Electric Company for supervisory and patent services rendered.

Exhibit A-81 shows sales by the Western Electric Com-
pany to the Electrical Research Products of something in ex-
cess of $46,000,000 for the period 1927 to 1931, inclusive. I
have testified that the expenses of the Western Electric Com-
pany for its research and development work were spread
1108 on these manufactures, as well as other manufactures
of the Western Electric Company. Development ex-
pense, amounting to approximately $3,500,000, was included
in the cost of these sales of $46,000,000 to the Electrical Re-
search Products. The Electrical Research Products pays the
Western Electric Company royalties on account of the re-
leases by the American Telephone and Telegraph Company to
the Western Electric Company of the right to sell restricted
apparatus covered by patents of the American Company.
During the years 1927 to 1931, inclusive, the royalties on ac-
count of these patents amounted to $1,493,000. The Western
Electric Company paid this money to the American Telephone
and Telegraph Company.

The International Standard Electric Corporation paid
1109 the Western Electric Company $918,000 on account of
royalties from October 1, 1925, through the year 1931.
This sum, to the extent of the payment, has reduced the ex-
pense that has entered into the cost of sales in my exhibits.

Exhibit A-88 shows the per cent of sales of telephone apparatus, lead covered cable and supplies to total Western Electric sales to all Bell Companies, and shows similar information for the Illinois Bell Telephone Company for each of the years 1916 to 1930. I have given in my testimony the percentage relationship for the period 1923 to 1931. The
same percentage relationship for the period 1916 to 1931
1110 is as follows: per cent of total sales of telephone appa-
ratus to total sales to all Bell Companies, 53.7 per cent; per cent of total sales of telephone apparatus to total sales to Illinois Bell Company, 59.1 per cent; per cent of total sales of lead covered cable to total sales to all Bell Companies, 15 per cent; the corresponding figure for the Illinois Bell is 15.1 per cent; the per cent of total supplies to total sales to all Bell Companies is 31.3 per cent, and for the Illinois Bell, 25.8 per cent.

The classifications (telephone apparatus, lead covered cable and supplies) appearing on these exhibits are the three main classifications of the sales of the Western Electric Company. From 1916 to 1931, the Western Electric Company has made a different profit on sales and on investment in each of these three classifications.

I have prepared certain exhibits, identified as Plaintiff's Exhibits A-93, A-94, A-95, A-96; A-97 and A-98, which make
certain comparisons between profits on sales and invest-
1111 ment of the Western Electric Company in its total busi-
ness, and in its business with the Illinois Bell Telephone Company, and for a portion of the time with the Chicago area of the Illinois Bell Telephone Company.

Exhibit A-93 shows the sales, the per cent net profit to sales, and per cent return on average investment for the total Bell business and for the Illinois Bell business for the period 1916 to 1931, inclusive. It shows total sales on Bell business during this period in excess of $3,100,000,000, and shows Illinois Bell business in excess of $209,000,000. It shows that the per cent net profit to sales on all Bell business is 4.9 per cent, and the per cent net profit to sales on Illinois Bell business is 5.3 per cent. It shows that the per cent return on investment

for the whole Bell business is 6.6 per cent, and on the Illinois Bell business, 7 per cent. This is for the period
1112 1916 to 1931, and includes not only sales of manufactured articles, that is, telephone apparatus and lead covered cable, but also supplies, both for the Illinois Bell and all Bell associated companies.

Exhibit A-94 shows in total the same figures shown on Exhibit A-93, and a breakdown both on the Bell business and the Illinois Bell business between telephone apparatus, lead covered cable and supplies.

Exhibit A-95 corresponds to Exhibit A-93, except that
1113 it covers the period 1923 to 1931, whereas Exhibit A-93 covers the period 1916 to 1931.

Exhibit A-97 shows the sales, per cent profits to sales, and per cent return on average investment for the total Bell business and for the Illinois Bell business in the Chicago area for the period 1928 to 1931, inclusive. It shows that the total sales on Bell business during this four-year period amounted to slightly less than $1,200,000,000, and sales to the Chicago area of the Illinois Bell Telephone Company amounted to slightly in excess of $49,500,000. The per cent net profit to sales on the Bell business was 4.8 per cent, and on the business of the Illinois Bell in its Chicago area was 4.5 per cent. The per cent return on investment for the total Bell business during this four-year period was 6.3 per cent, and the return on the Illinois Bell business in its Chicago area was likewise 6.3 per cent.

Exhibit A-98 is the same sort of breakdown or explanation of Exhibit A-97 that Exhibit A-94 was for Exhibit A-93.

This exhibit (A-98) shows such a comparison for the
1114 years 1928 to 1931. The available data for the purpose of making such a comparison on the basis of profit on sales and return on investment on all sales of the Western Electric in its Bell business and sales for the Chicago area is limited to this four-year period.

In all of these exhibits (A-93 to A-98), the figures have been prepared on the basis of profits on sales and return on investment both in the total Bell business and in the business done with the Plaintiff Company in the Chicago area on the basis of these three general classifications: telephone apparatus, lead covered cable and supples.

As plant facilities are retired from use by the Western Electric Company, the book cost of such retirements are taken out of our fixed investment. In the years 1924, 1925, 1926
and 1927, the Western Electric Company accrued an
1115 extraordinary reserve against plant in an amount
slightly in excess of $8,200,000. In reviewing the situation at that time, it was felt that the costs of construction of the buildings, service equipment and machinery, were high, due to the great activity then existing throughout the United States. It was felt that it was wise and sound that this period should stand some of that excess cost of construction. An estimate was made of the cost of reconstructing the plant during the period 1931 to 1940, and the difference between that estimate and the cost as shown on the books at the end of 1927, which amounted to $8,200,000, was charged to the cost of sales. If this amount had been treated on Exhibit A-78 as plant retired and written out of the plant accounts, it would have increased the return on Bell business by approximately
.3 per cent. The result of the same computation applied
1116 to the earnings on investment in Bell business during
the period 1923 to 1931 also would have increased the return on Bell business by approximately .3 per cent.

When the Electrical Research Products Company was organized, the Western Electric Company transferred to that company an option which the Western Electric Company had acquired to purchase the stock of the International Telephone Sales and Engineering Corporation. The International Telephone Sales and Engineering Corporation was a holding company owning a controlling interest in the Automatic Electric Company, which was engaged in the manufacture and sale of telephone apparatus and equipment. There was a contractual relationship between the Automatic Electric Company and

the Western Electric Company, commencing in 1919 and con-
tinuing down to the present time (the expiration date of
1117 the present contract is December 31, 1936). The present
contract with the Automatic Electric Company provides
for a minimum annual purchase of $2,600,000 of automatic
equipment from the Automatic Electric Company.

This option was surrendered by the Products Company
to the original owners May 26, 1927, for a consideration of
$4,000,000 paid in installments. If this figure were to be given
effect in Plaintiff's Exhibit A-78, we would first have to
1118 take into account the period of 17 years during which
there were contracts between the Western Electric Com-
pany and the Automatic Electric Company. We should also
have to take into account the Federal Income Tax on such
amount. If this amount were to be treated as a credit to
Bell business, it would result in a net credit of $2,900,000 and
would increase the return on investment in the Bell business
shown on Exhibit A-78 by .1 per cent. It would also increase
profits on Bell business for the period 1923 to 1931 by .1 per
cent.

If all of the amounts involved in the extraordinary reserve
accrued from 1924 to 1927, and in connection with the Auto-
matic Electric Company, and in connection with the ex-
1119 cess of royalties and patents sold shown in Exhibit A-82,
were treated as credits to Bell business, they would have
increased the rate of return shown in Exhibit A-78 from 6.6
per cent to 7.1 per cent for the period 1916 to 1931 inclusive.
The same sort of calculation for the period 1923 to 1931, in-
clusive, would have increased the return on the Bell business
from 7.1 per cent to 7.7 per cent.

(Exhibits A-93 to A-98, both inclusive, were offered in evidence by plaintiff. Right to object was reserved until after conclusion of Mr. Gregory's testimony.)

I have some documents, prepared at the request of counsel for the defendants, and which I have submitted to them, entitled "Analysis of Cost of Sales to Bell and non-Bell Customers."

(The following documents were identified by defendants:
Defendants' Exhibit D-19, "Analysis of Cost of Sales to Bell
and Non-Bell Customers"; Defendants' Exhibit D-20,
1120 "Analysis of Cost of Sales of Telephone Apparatus to
Bell Customers"; Defendants' Exhibit D-21, "Analysis
of Cost of Sales of Lead Covered Cable to Bell Customers";
Defendants' Exhibit D-22, "Analysis of Cost of Supplies to
Bell Customers"; Defendants' Exhibit D-23, "Analysis of
Cost of Sales of Western Electric Manufactures to Non-Bell
Customers"; Defendants' Exhibit D-24, "Analysis of Cost of
Sales of Supplies to Non-Bell Customers".)

These are correct copies.

On Defendants' Exhibit D-19 is a column headed "Addi-
tions to Employees' Benefit Fund", both under Bell
1121 Customers and Non-Bell Customers. The sum of
$2,000,000 shown under this column for Bell business
for the year 1924 is the total amount included in the cost
of sales, but these columns do not in all of the later
1122 years represent the total amount that is included in the
cost of sales, as additions to the pension fund have been included in other costs. The pension fund plan was started in 1906, from which time up to and through 1923, the amounts were set aside by action of the Board of Directors without any actuarial studies. Beginning with 1924 and up to the present time, actuarial studies have been made, based on censuses taken at two-year intervals; that is, 1931, 1929, 1927, 1925 and 1923. As a result of these actuarial studies, the Board of Directors and the officers of the Company have ascertained the amounts which should be included in the cost of sales. Of course, as we have gone on from year to year our experience has grown. We have found that for the first two years there is not enough information to know what the

trend is going to be, but as we go on we get more ac-
1123 curate information. If we should go back now and do the thing over again on the basis of our present information of service life, service of employees, the age of employees, and the salary or wage level (which has been increasing during this time), and other data that we have, the amounts that we would set aside would be increased over the amounts that we have actually set aside over this period.

I furnished the defendants two sheets, one entitled "Pension Fund Transactions" and identified as Defendants' Exhibit D-25, and the other entitled "Actuarial Computations of Required Pension Accruals, 1916 to 1930, and Minimum Fund Required", identified as Defendants' Exhibit D-26.

1124 "Q. As I understand it, when in 1924 you determined to deduct from operating income certain amounts for your pension fund accruals, you found that if you had gone back to 1916 and had made accruals on the actuarial basis, you would have had to take out of current income for those preceding years amounts aggregating around $8,200,000, is that correct; that is, you were short by 1924 amounts aggregating $8,200,000?

"A. That is approximately correct."

In the years 1925, 1926 and 1927 we did not make up the entire deficit resulting from the years 1916 to 1923. We
1125 made up a part of it. For the period 1916 to 1931 we have not accrued as much as we should have under our actuarial computations.

In the year 1925, we set aside $1,773,000 in excess of the amount that would be required under our actuarial studies; in 1926, $3,100,000; in 1927, $2,871,000; in 1928, $249,000; but we set nothing aside in excess of the requirements shown by the actuarial studies for the years 1929 and 1930. In 1924 we were short of the amount required under our actuarial studies by $209,000; in 1923 we were short $2,000,000; in 1922 we were short $1,500,000; in 1921 we were short
1126 $1,300,000; in 1920 we were short $1,044,000; in 1919 we we short $660,000; in 1918, $657,000; in 1917, $590,000; and in 1916, $391,000.

In the years 1925, 1926 and 1927, we made up about
$7,744,000 of that shortage, which has been given effect in
those years in Exhibits A-77, A-78, A-79 and A-80, but for
the period 1923 to 1930 the amount charged in excess of
actuarial requirements is only $5,784,000.

I have not computed the years 1925, 1926 or 1927 on the
basis of only including in the operating expenses the amount
which should have been set aside under the actuarial
studies.

1127 The amount of $2,000,000 shown for 1924 was charged
against apparatus sold to Bell customers and nothing
was charged against the sales of supplies to Bell customers,
or against the sales of manufactures or supplies to non-Bell
customers. As I explained in my direct testimony, these
statements, the reports and the figures year by year are the
ones that we use currently and were made up currently for
the use of the administrative officers of the Company. In
the year 1924 we did not attempt to segregate this amount
between Bell and non-Bell customers. In all of these
1128 exhibits we are showing the actual figures which were
made up for administrative purposes in those particular
years. If we went back now and made a redivision in the light
of our present information, we would find some that we would
add to the Bell business and some that we would subtract from
the Bell business.

In the years subsequent to 1924, we made an allocation of
the pension fund between Bell and non-Bell business. I
1129 am not sure, but I think that in making up the deficit
in the years 1916 to 1923 in pension fund accruals it
was done on the basis of the employees in 1916 for 1916,
those in 1917 for that year and so forth. It was done on the
best estimate we could get. We had no experience up to
1924, so this was just an estimate without any check.

The pension fund accruals, beginning with 1924, are
1130 based upon actuarial studies. I know that the methods
used by the operating companies of the Bell System

are the same as our methods. I am not an actuary, but, in general, I am familiar with the fundamental principles underlying these studies. The factor of future separation of the employees enters into the consideration of these studies. I cannot testify as to whether or not in the study of 1924 we assumed that the future separation of the employees of 1131 the Western Electric Company would presumably be substantially as it had been in the previous experience of the Company. I am not familiar with what we assumed as to the future separation of Western Electric employees. All of the data in this actuarial study were made up by the Chief Statistician of the Company, who is a former professor of mathematics of Brown University, and I am not familiar with the details of it. Mr. R. W. Burgess is the Chief Statistician of the Western Electric Company, and is the man who is familiar with the details of that study. Neither am I familiar with the studies subsequent to 1924.

1132 I know about the income tax returns of the Western Electric. Up to 1927 there was no law which allowed us to make any deductions for pension accruals. In 1927 an act of Congress was passed allowing accruals in the current year to be deducted as a current operating expense. We have followed the provisions of that law in our income tax returns since that time. Since 1927, we have deducted each year from current operating income the entire amount that we have paid the Trustee for that year's accrual under the pension fund, including the interest, because it is the amount that we have paid the Trustee.

I am familiar in general with the arrangement made by the Western Electric Company with the Bankers' Trust 1133 Company. Under that arrangement, the Western Electric Company has the right to advise the Bankers' Trust Company as to the investment of the pension fund accruals deposited with it as Trustee. Since the inception of that plan, the Western Electric Company has always advised the Bankers' Trust Company to loan those accruals to it on its unsecured notes.

The accruals contemplate that the fund shall have future
earnings at 4 per cent compound interest. When we borrow
the money from the Bankers' Trust Company, we pay
1134 5½ per cent interest. In the average investment appearing
in these exhibits we have included the assets represented
by the amount of the pension fund notes and have not
deducted from the operating *income the interest* paid to the
Bankers' Trust Company.

1135 The amount of extraordinary depreciation, to which
1136 I have heretofore referred, is included in the column
"Additional Depreciation of Plant" in Defendants' Exhibit
D-19, but there are other items besides. The deduction
for extraordinary depreciation in the year 1924 was esti-
1137 mated on the extraordinary cost of additions prior to
and in that year. I am not sure whether the index numbers
were used in 1924. My recollection is that there was a
study made in 1924, but I do not know whether it was reduced
to writing. The study to which I referred in my direct examination
was the one made in 1927.

The journal entry as of December 31, 1924, shows that the
deduction of $1,562,000 was approved by the Board of
1138 Directors on March 17, 1925. The sheet which I furnished
counsel for the defendants, showing the journal
entry, bears the statement "Details on file in the General
Accounting Department". That was seven years ago, but I
am sure there were such details in writing in my department
at that time; I do not know whether they are in existence
now or not.

1139 The $1,562,000 written off in 1924, as I recollect it,
was based on an estimate made by our Plant Engineer
and Engineer of Manufacture as to the amount that should be
written off as representing the excess cost of construction of
the additions made during the previous period of years.

1141 The entry for December 31, 1927, is the one supported
by a study. The entries for extraordinary depreciation
of plant in that year were as follows: for Hawthorne: buildings,
$469,000; permanent fixtures, $307,000; machinery,

$610,000; total, $1,386,000; for Kearny: $246,000 for buildings, $71,000 credit for permanent fixtures, and $241,000 for machinery, or a total of $416,000. This made a total deduction of $1,803,000, which was supported by a detailed study and was in accordance with the action of the Board of Directors in 1928.

1142 *The sheet which recites* "Details of journal entry for extraordinary reserve against plant, December 31, 1927" is a copy of a sheet which I made available to defendants.

(Which document was identified as Defendants' Exhibit D-27.)

1144 Journal entry 284 for the year 1924 does not recite "Extraordinary depreciation written off to profit and loss of December 31, 1924, to revalue buildings, permanent fixtures and machinery to estimated cost for the next ten years". It states "Extraordinary depreciation as follows—with details on file in the General Accounting Department".

1145 The statement "Extraordinary depreciation written off to profit and loss December 31, 1924, to revalue buildings, permanent fixtures and machinery to estimated cost for the next ten years" appears on the summarization that we have made of the whole study, and is my statement. That is, it is my conclusion from an examination of the books as to what should be charged off to depreciation. We have regular depreciation, but this represents additional or extra-
1146 ordinary depreciation of an entirely different nature from ordinary depreciation, in that it is for the purpose of setting aside a reserve for the excess cost rather than for obsolescence and wear and tear. The entry in the books of the Company for this expense does not give a full explanation of it. It is extraordinary depreciation.

1147 The journal entries do not give a full explanation of the details of this extraordinary depreciation reserve which I have explained, but the working papers from which I obtained the amount at the end of 1927, and which are really the controlling figures, are all here. These working papers

were not controlling in 1924, 1925 and 1926. In 1927 we determined this amount on a more careful study than
1148 we had made before. In that careful study we used index numbers of the actual cost and of the future cost, and compared the two index numbers and found there was this excess. We had previously written off various amounts, so it left for 1927 an amount to be written off representing the difference between the amounts that we had written off in 1924, 1925 and 1926 and the amount found by this study, so the balance was written off in 1927.

1149 By the Court:

This extraordinary depreciation does not represent depreciation in the ordinary sense of the word; that is, it is not depreciation for wear and tear and obsolescence. It is a reserve that was set aside for a decline in the cost of the plant, which we estimated would come in the future. We expected that we would be able to replace our plant in the period 1931 to 1940 at a lower figure than what it actually cost us, because it was perfectly evident that costs were extraordinarily high, perhaps due to war conditions. We were getting a large volume of business during that time, and getting the profits on that large volume of business, and we said, "It is fairer to charge this reserve against the profits at the time we are getting them rather than to make the lean years in the future stand the loss". That is anticipatory depreciation, all
1150 charged in four years for depreciation which would
occur in the future.

By Mr. Goldstein:

In Defendants' Exhibit D-27, there is the entry "Extraordinary depreciation written off at December 31, 1924,
1151 to revalue buildings to estimated cost for next ten
1152 years". We made a study in 1927 and obtained this
amount of $8,000,000, which it was necessary to write off. We then could deduct from that sum the amount which we had written off for previous years and get the amount to be written off in 1927. In using the words "for the next ten years" in connection with 1924 entry, I had in mind the period of ten years following 1924.

1153 The journal entry for extraordinary reserve against
plant, as of December 31, 1927, was determined by an
estimate made that year of the requirements for this amount,
against which was credited the earlier deductions. We also
credited the excess over normal depreciation on Hawthorne's
books, resulting from writing back at December 31, 1924, the
excess war costs of gross additions which were written off
in the years 1917 to 1920, inclusive. In those early years (and
I think that it was prior to 1920), we wrote off of the face
of the accounts $884,000 for excess cost of construction which
we thought was due to war conditions. In 1924, in order
1154 that we might have our plant account in its entirety on a
cost basis, we wrote that amount back into the face of
the account, but took into account the effect of the depreciation
on that particular amount during the period up to 1924.
Therefore, the amount of the credit to depreciation reserve is
not $884,000; but is $598,000, or a difference of $286,000. We
did not add back this difference to the income account; it did
not affect it. We charged $884,000 against operating income
from 1917 to 1920, which wiped out that much plant. We
figured that the $286,000 difference between the charge of
$884,000 and the $598,000 restored to the books was normal
depreciation on that item if it had been in the plant account.

The extraordinary amount was the difference between
1155 the two amounts, *i. e.*, $598,000, which is included in
this amount of $8,233,000. There were no credits to any
operating income.

The 1927 entry was based upon certain studies.

(Defendants identified copy of sheet which had been made available to them by plaintiff, entitled "Extraordinary reserve against plant to bring additions to estimated cost level for 1931 to 1940", as Defendants' Exhibit D-28.)

Defendants' Exhibit D-28 shows the cost of additions
1156 to the Hawthorne buildings from 1917 to 1927 and cost
indices on the basis of the index of 1914 at 100. Thus
the 1917 cost index for additions to the Hawthorne buildings
was 153 per cent of 1914 as 100 per cent. In other words,

the cost level of the additions to Hawthorne buildings in 1917 was 53 per cent higher than if constructed in 1914. We determined for each year's additions the cost index, based on 1914 as 100 per cent, not only for buildings but for permanent fixtures and machinery.

It was then estimated that if the additions made to the Hawthorne plant in 1917, for instance, were in existence in the period 1931 to 1940, or if they were replaced in the period 1931 to 1940, they might be replaced for 2.6 per cent less than they actually cost in 1917. The index figure for the period 1931 to 1940 for these 1917 additions was estimated to be 149.

1157 That is the principle upon which the study is based.
It is based on this assumption: if the same additions to buildings made in 1917 were replaced during the period 1931 to 1940, the replacement cost would be 2.6 per cent less than the actual cost.

Our regular depreciation plan is on the straight line method of spreading the cost, less salvage, over the period of the useful life of the property. We do not have a replacement
reserve, but this extraordinary reserve is a reserve
1158 against decline in price of the construction of buildings,
service equipment and machinery. We conceived in 1927 that if, during the period 1931 to 1940, we built $739,000 of additions, they would cost 2.6 per cent less than they did in 1917. This reserve was provided, not with the idea of replacing this plant in the period 1931 to 1940, but with the idea of finding out what it would cost to replace that plant if we
had to replace it. We did not know in 1917 that we were
1159 ever going to replace these additions, and in 1927 we
did not know whether we would replace those 1917 additions as of 1931. The basis of making that charge in 1927 was to charge during the period 1921 to 1929 or 1930 the excess cost of construction of our plant, because during that period we were having an extremely large amount of business placed upon us; our growth was very rapid, we were making large additions to our plant year by year, and we felt that

it was only sound and conservative business, exercising conservative business policy, to put into those years this excess cost of construction of that plant.

When I say "of that plant", I mean the excess cost
1160 of that plant upon the basis that the plant would be
rendering service from 1931 to 1940. We were determining how much less that particular plant would cost during the period 1931 to 1940 than it did cost us during the period of its actual construction. I do not know whether the plant that was built in 1917 would be in existence in the period 1931 to 1940. We considered, in making this study, that all of the additions that we made during this period would be in existence during the period 1931 to 1940, in order to get at this difference in price level or cost level of construction. In
making up this study, we assumed that the machinery
1161 we built in 1919 would be in existence during the period
1931 to 1940.

We depreciate the machinery on the basis of 10 per cent per annum; that is, based on a life of ten years. We had $219,000 worth of machinery added at Hawthorne in 1919, and ten years from that time would be 1929. What we were trying to do was to get the difference in the cost level between the
period of these additions and the period 1931 to 1940.
1162 It is the purpose all the way through to get at the cost
level in 1931 to 1940, and, in getting at that cost level, I assumed that it would be correct to take these additions and, on the average, compare them with what the cost level would be in 1931 to 1940, and in that way we would get at a correct amount.

We took the dollars to take care of this reserve out of
operating income for the years 1924 to 1927. There is
1163 no cash involved in this transaction. We received the
dollars from our customers.

What we did was to exercise what, in our judgment, was sound business judgment, in order to get this into this particular period. Now, whether you put that into the cost of
sales, or whether it is a segregation of profit, is a debat-
1164 able point. The purpose of the deduction was to set aside
a reserve to prepare for what we estimated would be a

decline in the replacement cost of buildings, service equipment and machinery in the period 1931 to 1940. This money was transferred to reserve and held by the Company to take care of this contingency. The Company has the money.

1165 What we did was to try to estimate what would be the 1166 replacement cost of these plant additions during the period 1931 to 1940. It is an approximation in any way you view it. No one knows what the prices in 1931 to 1940 are going to be. It is an estimate, but present conditions seem to indicate that maybe we were right in making that reserve and that there was some need for it. I would not say that we had such foresight in our organization that in 1924 we could foresee the conditions from 1931 to 1940, but we did feel that we were in a period of high prices, which were not going to continue. As a matter of fact, they kept on going higher after that than they were in 1924, and even after 1927 they were still higher.

1167 We felt as early as 1924 that the prices then current, and those current for a few years subsequent thereto, were not stable prices, taking into consideration a long period of time. The reason was, we knew that after periods of great wars (take the War of 1812), there was a period of great activity for ten years, and another period of ten years of lower activity. After the Civil War you get exactly the same situation, and we are getting the same situation after the last great war. Those past experiences indicate that point of view.

There is a footnote on the bottom of Defendants' Exhibit D-28, as follows: "Indices furnished by Mr. Lincoln as follows: Buildings and permanent fixtures, 4-2-27; Machinery, 10-14-26, 10-19-26, 12-15-26". I have these indices with me.

(Which said indices were marked for identification as Defendants' Exhibit D-29.)

In the year 1928, our records show a deduction from operating income for extraordinary depreciation of plant in 1168 the amount of $2,000,000, which is shown in the set-up which we furnished the defendants, marked Defendants' Exhibit D-19, in a separate column. In 1928, we made a study of the service life of our machinery. Prior to that time, we had been depreciating machinery at 7½ per cent, but we were then in a period of great activity and making many improvements in our machine equipment, which made the machinery obsolete more quickly than had been our experience in the past. As a result of a study made by our Engineer of Manufacture, we found that the service life of machinery was really only ten years instead of fourteen years, so we changed our rate in that year, and also made a change for the previous three or four years, which aggregated a couple of million dollars. That amount we charged into the cost in that particular year, but it is really applicable to the previous years. In the light of our experience at that time, we saw that we had underdepreciated on machinery. For the purpose of 1169 our Exhibits A-77, A-78, A-79 and A-80, we made that deduction in the year 1928, because, of course, we could not go back and undo what had already been done.

I have here a copy of the statement, which I furnished defendants, showing the net increases in plant during the fifteen-year period 1916 to 1930, inclusive.

(Which said statement was marked for identification as Defendants' Exhibit D-30.)

I also have a statement, which I furnished defendants, showing the details of reserve for depreciation of plant during the fifteen-year period 1916 to 1930, inclusive, and showing gross additions to reserve and write-offs.

(Which said statement was marked for identification as Defendants' Exhibit D-31.)

I did not make any study in 1928 to determine the relation of the cost index of additions in that year as compared 1170 to the ten-year period of 1931 to 1940, nor did I make such a study in 1929, nor in 1930. I do not know what the relation of each of these years is to the index for the period 1931 to 1940. We stopped these deductions at the end of 1927, because we felt that this amount of $8,200,000 was an estimated amount and an approximation, and that if we made further studies, it would not make very much difference in the amount that we would feel should be written off. Of course, I do not know how much of the additions made in 1928.

1929 and 1930, will be in existence during the period 1931 to 1940 as compared with the additions beginning with 1917.

In 1928, we made additions amounting to $7,687,000. In 1929, we made additions of $40,000,000, and in 1930, approximately $29,000,000, or a total of approximately $77,000,000 during this period of three years.

1171 The total amount of the additions which we took into
consideration in connection with the study leading up
to the retirements from 1924 to 1927 appear on the details
which we have submitted to the defendants, but are not summarized. That would be the additions from 1917 to 1927, as
shown. They are gross additions.

1172 On Defendants' Exhibit D-31, we show a reserve in
1923 of $34,000,000, or 60 per cent of the total cost of
the plant.

In 1930, a reserve of $66,000,000 is shown, or [illegible]0 per cent of the book cost of the plant.

The reserve against tools, furniture and fixtures in January,
1923, amounted to approximately $15,000,000, and increased
to approximately $29,000,000 by the end of 1930. The
1173 depreciation reserve for tools, furniture and fixtures
stood at 100 per cent of the book cost for these items
for each year from 1916 to 1922, inclusive; at 95 per cent
to 98 per cent from 1923 to 1927, inclusive; and at 100 per
cent in 1928 to 1930, inclusive. That depreciation reserve
was built up out of the charges against operating income, in
addition to the charges for the extraordinary reserve.

The extraordinary deduction in 1928 was of an entirely different character than the deduction for the period 1924 to 1927. The 1928 deduction had to do with the understating in previous years of the amount which should have been charged against operating income for the normal depreciation of machinery under the straight line method.

We have no studies for the years 1928, 1929 and 1930 cov-
ering the subject matter which was involved in the
1174 adjustments made in 1924 to 1927, and we made no such
adjustments for those three years.

We made a study of the value of the property in 1927. We then attempted to ascertain how our cost value of plant, as it stood on the books, would compare with our reproduction value less then existing depreciation. That is the practice that is followed, as I understand it, in telephone valuations. This was not made by outside appraisers, but by our own people; it was made by the Engineer of Manufacture on machinery, tools and fixtures, and by the Engineer of Plant on land, buildings and service equipment. It was carefully made by those individuals, not with the idea of proving it in Court, but for the purpose of satisfying ourselves as to what the result would be. It was gone into very carefully, and, 1175 as a result of that study, we ascertained that the amount of the reproduction value less existing depreciation was slightly in excess of the book cost of our plant at the end of 1927. I have sheets showing the details of that study.

(Which said sheets were marked for identification as Defendants' Exhibit D-32.)

The persons who made the study in 1927 on the reproduction value less existing depreciation of the plant were the two individuals that I have named; that is, the Engineer of Plant and the Engineer of Manufacture. In addition to these two individuals, estimates were made by the Chief Stat- 1176 istician in connection with the study for extraordinary depreciation.

The persons who held these same offices in those years were the ones who had to do with the studies which formed the basis of the deductions in 1924, 1925 and 1926. There may have been a change in the individuals. I am not sure, for instance, when the Engineer of Manufacture took his office. It may have been the predecessor of the present Engineer of Manufacture who had to do with some of the studies.

1177 I think undoubtedly the person who made the valuation study in 1927 had knowledge of the study of extraordinary depreciation of plant. I think he also undoubtedly knew about the study, or the causes that led to the deductions in 1924, 1925 and 1926. Whatever individual occupied the office at that time knew about it. I cannot tell whether the particular individual who made the study showing that the valuation was above book cost in 1927 had knowledge of the previous studies indicating that the property would be worth less than book cost in 1931 without knowing the date on which the present Engineer of Manufacture took his office. I do not carry that in mind, but it was the Engineer of Manufacture and the Engineer of Plant who had to do with that.

1179 The three sheets showing the valuation of 1927 are all that I know of. There may be further details in the possession of the individuals. The note on one of these sheets, "Observed depreciation", is intended to cover the existing depreciation of the plant at the time this study was made, in the amounts shown under each classification of plant,
1180 from an examination by experts. The term "depreciation", as used in this connection, is supposed to be synonymous with the per cent condition of the property at that time. What was intended by this observed depreciation is the per cent condition of the property, being the difference between what the condition would have been if it were new and what it actually was found to be by a physical inspection. It was not intended to take into account the balance of service life, obsolescence or inadequacy, but just observed deterioration.

Our depreciation reserve is built up through depreciation charges computed on the straight line method such as
1181 the telephone companies use. These depreciation rates take into account, not only the factors determined by this observed deterioration or inspection, but also the questions of inadequacy, obsolescence, service life and salvage. Depreciation rates take into account factors other than those taken into account in determining what I call "observed depreciation".

We did not deduct in our original return for income taxes, as a deductible expense, any amount covering this extraordinary depreciation, but did deduct those amounts from operating income in the years in which they are charged in Exhibits A-77, A-78, A-79 and A-80.

1182 In computing the return on the 1931 investment, I used the average book cost of plant, the average cost

of equipment, tools, furniture and fixtures; it was all based upon book cost figures without any deductions of any kind. Of course, all retirements actually made were deducted, but we took the book cost of plant as it stood, without deducting the depreciation reserve. Our policy on tools, furniture and fixtures has been to maintain a reserve of 100 per cent against the cost value of these items. That is, in effect, writing
1183 off approximately between 20 and 25 per cent of the face value each year. That is a rate commonly used by the electrical industry for depreciation on such items, which are of short life, and of questionable value other than for the purposes for which they are made.

Our policy with reference to machinery at the present time is to depreciate at the rate of 10 per cent per year on a straight line basis, except the rod and wire mill, where the rate is 5½ per cent. Prior to 1928, we used depreciation on this item of 7.5 per cent per annum; as I recall it, the depreciation rate has been 7.5 per cent for machinery during all of the time until we made the change to 10 per cent.
1184 On tools and fixtures, we, in effect, maintained a 100 per cent reserve, although in some years it is a little less than 100 per cent.

We have consolidated our income tax returns with the American Telephone and Telegraph Company since 1918, and in each of those returns has been included the tentative return that we made at the first of the year. Later on we have had examinations by field accountants of the Treasury Department, and, as a result of these examiners' inspection, we have made an estimate of what adjustment would be necessary in our return. We have settled with the Government for the period from 1916 to 1923.

"Q. And in that settlement there was a determination that the amounts of depreciation charged as a deductible expense for those years was excessive?

"Mr. Thompson: To which question the plaintiff objects.

"Mr. Goldstein: We are testing the policy that they are using, and that they say is currently used.

1185 "Judge Wilkerson: Determined by whom?

"Mr. Goldstein: We are talking about the Internal

Revenue Department and the Western Electric. The Internal Revenue Department examined their books and their income tax returns from 1916 to 1923, and they settled with the Government.

1186 "Judge Wilkerson: Do you know anything about that?

"A. As I understand, the situation is this: we have made our return on the basis, tentatively, at first, on exactly what we had written off the face of the account. I went down to Washington, I think about 1923 to 1924, and we consulted with the Treasury Department as to what they would allow for small tools and furniture and fixtures, they have allowed on machinery and on buildings and on service equipment, and they said, 'You have got to spread those over a longer period of time than you are doing it.' They said a four-year period on tools and a six-year period on furniture and fixtures.

1187 So what that does, what the effect of that is, your Honor, when we make large expenditures for tools, as we did in 1929, when we had the large profit in that year, it means the Government says, 'You cannot charge it all up, but you have got to defer it to 1931 and 1932, as a deduction of income', and we could credit 1931 and 1932 for those particular items we filed in 1929. Now, our practice in this respect I know is exactly the same as the General Electric Company has followed. That is, they write off—I don't know how they make their returns for the United States Treasury Department, but it seems to me what the Treasury Department regulations are, are not determining as to what is sound policy in the company.

"Mr. Goldstein: And then subsequent to 1923, you filed amended returns that conformed to this understanding of the Revenue Department?

"Mr. Thompson: To which question the plaintiff objects, that they conformed.

1188 "Mr. Goldstein: When they show a comparison with other companies, and it appears that they are following one policy, and the other companies—

"Judge Wilkerson: Do you know what policy the other companies are following? Let's get down to that."

1189 I cannot testify as to what policy each of the 88 companies follows in respect to taking into account the rulings of the Internal Revenue Department. I do know about the General Electric Company, but I do not know, of my own knowledge, about any of the other companies. I had the exhibit which shows the 88 companies prepared; it was prepared from Moody's and Poor's. I do not know whether there appears in Moody's and Poor's any statement as to any company that it has its depreciation policy in conformity with the Internal Revenue Department's rulings. I do not know, because I have not examined those individual reports.

1194 The figures which I gave referred to taxable income and not to taxes.

(It was agreed by counsel that the following figures would be put into the record by the counsel for the defendants, as representing the difference between the depreciation charges allowed by the Government and those returned by the Western Electric, subject to check by the plaintiff: $364,000 in 1916, $1,031,000 in 1917, $591,000 in 1918, $239,000 in 1919, $1,400,000 in 1920, and $1,136,000 in 1921, the Western Electric Company being entitled to credits in the following years of $168,000, $44,000, and a debit of $77,000 in 1924.)

1195 Our returns for 1924 have not been finally checked by the Government, and there is still some contention between us.

At the end of 1925, we sold certain assets to the Gray-
1196 bar Company, and a portion of our plant, which was carried on our books at approximately $897,000, as I remember. There was a depreciation reserve at that time of about $857,000 against that property. When the opening entries were made on the Graybar Company's books, the book cost of that property appeared in the amount of $897,000, with a depreciation reserve of only $443,000. The $411,000 difference between the reserve on our books and the reserve on the books of the Graybar Company was considered as a reserve against the stock of the Graybar Company. It had no effect whatsoever on the profits of the Company; we never took any profits on account of that reserve. We get dividends from the Graybar Company.

1197 The sale of the Graybar Company was made for $9,000,000. When we sold the Graybar Company, we carried that on the books of the Products Company, which is a wholly owned subsidiary of the Western Electric Company, at $8,500,000, which was after deducting certain values which we knew existed, but which we did not adjust to the reserve; that is, there was $119,000 for Habishaw receivables, which we had written off at 100 per cent previously, but which we recognized as good, and which were sold to the Graybar Company. There was about $275,000 of profit made on the sale of merchandise manufactured by the Western Electric Company that was still in the inventory of the Graybar Company. I do not think that has anything to do with the profit on the sale. In making up the account on the books of the Graybar Company, we had a reserve for bad accounts, which later proved to be excessive, as the Graybar collected more than the value we put in, so when you take all of these factors into con-
1198 sideration, what we did was to sell the Graybar Company for $9,000,000, which was approximately the cost to the Western Electric Company, regardless of all of these write-ups of plant or write-downs of plant, or anything of that kind.

When we sold the Graybar Company to the Graybar Management Company, the net amount for that investment was carried on the books of the Products Company, and amounted to about $8,500,000. This investment increased from $6,700,000, at January 1, 1927, to $8,500,000, at December 31, 1928, on the books of the Electrical Research Products Company by this means: the Graybar Company was owned 100 per cent by the Electrical Research Products, Inc., during the period 1926 to 1928, inclusive; therefore, the Graybar
1199 Company's undistributed earnings during that time were, in reality, the profits of the Electrical Research Products, Inc. This $6,700,000 did not take into consideration these undistributed earnings, so we wrote it up to $8,500,000 at the end of 1927, I think it was. This figure of $8,500,000 is the one I have mentioned before as the value of the Graybar Company as shown on the books at the time of

the sale. I have explained what should be added to the $8,500,000 to bring it up to $9,000,000. In other words, we sold the Graybar Company at approximately what it stood on our books.

When the Graybar Company was organized in 1925, the Western Electric Company had $15,000,000 worth of stock, against which it had a reserve of $8,300,000; I think that 1200 is correct. In that $15,000,000 of stock, there was an item put on the asset side of the ledger of $7,500,000 for good will, so that, in reality, we do not want to talk about $15,000,000 of stock; we want to talk about $7,500,000 of stock. The investment of the Western Electric Company in the capital surplus and open account of the Graybar Company at December 31, 1925, was $8,269,000. There was an open account there that the Western Electric Company had, in addition to the $6,700,000 which appeared on the Western Electric Company's books as the investment.

1201 What I said was that at the time the transfer was made to the Graybar Company, on December 31, 1925, the investment of the Western Electric Company in the capital, surplus and open account of the Graybar Company was $8,269,000. For that investment the Western Electric Company received $15,000,000 worth of stock, which included $7,500,000 of good will. It received $15,000,000 of stock, but I am not saying anything about what it was worth. The 1202 Western Electric Company carried on its books at January 1, 1926, the $15,000,000 worth of stock and $1,446,000 on open account at $8,105,000.

This $8,105,000 was arrived at in this way: the investment of the Western Electric in the assets transferred to the Graybar Company at the close of 1925 (that is the time they were transferred to the Graybar Company and the Graybar Company was organized) was $8,269,000. There was deducted from that amount $283,000 on account of reserves for incorporation and advertising expense and for Western's profit on the merchandise inventory of the supply department. Then there was also included $119,000, representing the Habishaw receivables at that time. These items resulted in an aggregate of $8,105,000 as the net investment.

I gave no effect at all on our books to the $411,000 of
1203 revaluation through the depreciation reserve. We considered our investment just the same as if the Graybar Company had never been formed.

It was sold to the Electrical Research Products for $6,700,000 on January 1, 1927. The difference between this $8,105,000 and the $6,700,000 is this: in 1926, the Graybar paid its open account to the Western Electric Company of $1,446,000, and then there was a minor item of $41,000, which brings down the value to $6,700,000. In 1927, we revalued that investment to take into account the undistributed earnings of the Graybar Company of $1,800,000, making our total investment in the Graybar Company at the time of the sale, as carried on the Products Company's books, $8,500,000. I have already given the explanation of the difference between that and the $9,000,000.

We transferred the same assets in March or April of 1930 to another corporation, called The Weco Corporation.
1204 That was transferred, as I recall it, without profit or loss to the Western Electric Company; I have not the figures in mind. It was transferred with the same reserve against it.

I want to correct my testimony in connection with the stock received from the Graybar Company. After the Graybar Company was sold to the Graybar Management Corporation, the only investment of the Western Electric Company, or of the Electrical Research Products Company, or of the Weco Corporation, in the Graybar Electric Company was preferred stock, which had been taken in part payment of the sale; the Graybar Company paid $3,000,000 in cash out of the $9,000,000 sale price. There has since been retired $2,000,000 of this preferred stock, so that at the present time the Western Electric Company, or the Weco Corporation (a wholly owned subsidiary of the Western Electric Company), owns $4,000,000 par value of the preferred stock of the Graybar Electric Company, against which there is no reserve on the books of either the Western Electric Company or the Weco Corporation.

1205 I have been talking all the time about the investment that we have had, which is after the deduction of all reserves. What we did with reference to the depreciation and plant in forming the Graybar Company, and in selling it to the Graybar Management Corporation, had absolutely no effect on the profits of the Western Electric Company. If we should collect all of the proceeds of that $4,000,000 of preferred stock, so that our entire Graybar transaction would be reduced to cash, the $411,000 of the reserve would not be transferred to surplus. There was no profit for the Western Elec-
1206 tric Company in this Graybar transaction. It sold for $9,000,000, regardless of write-ups which are put on the books and regardless of this good will item. It is complicated in this set-up, but the facts are that we sold the Graybar Company to the Graybar Management Corporation at approximately the book cost to the Western Electric Company, as shown on either its books or the books of its wholly owned subsidiaries.

$8,500,000 was the value at which the Graybar stock was carried on the Products Company's books prior to the
1207 sale, and $9,000,000 was the sale price. This difference of $500,000 is made up of these items, roughly: $119,000 of Habishaw receivables, which we considered of no value in appraising the value of the Graybar stock at $8,500,000, but which had value at that time, but, as we were selling the company, we did not bother to write it up at that particular time. It also included around $250,000, representing profit on sale of merchandise which was in the stock of the Graybar Company. Those two items together make $369,000. The Graybar Electric Company, while it was a 100 per cent owned subsidiary of the Western Electric Company, had depreciated doubtful receivables, and they had at that time a 1 per cent reserve for contingencies of that sort. Now, the Graybar Company, in the next year, collected more than the value
1208 of the receivables at the beginning of the year. Adding all of these things together, you come approximately to $9,000,000.

The transaction with Graybar had no effect whatsoever on the profits of the Western Electric Company, or of the subsidiaries of the Western Electric Company, at any time, and it will have no such effect if we finally receive cash for the preferred stock.

We also made a sale of certain assets to the Bell Telephone Laboratories. The Bell Telephone Laboratories was organized in December, 1924, and began business January 1, 1209 1925. The Bell Telephone Laboratories was organized for the purpose of taking over the research and development work of the Engineering Department of the Western Electric Company. Prior to the commencement of business on January 1, 1925, we had an appraisal of the property made by Horace S. Ely and Company, a real estate appraiser in New York of recognized standing. After they had appraised the property, they reported a value, which was less certain deductions necessary to be made on account of foundations that needed to be strengthened, of approximately $2,650,000. Now, this $2,650,000 was practically the same as the cost value of the property at 463 West Street, where the Bell Telephone Laboratories is located. In other words, the increase in the value of the land had offset the depreciation in the buildings, which were put up in 1897 and 1899, and had offset also the depreciation of the service equipment included in those buildings.

There were also other items, such as machinery and small tools, and furniture and fixtures, on which we did not get an outside appraisal, but came to an understanding with the 1210 officials of the Bell Telephone Laboratories as to a proper valuation. We carried the investment in plant sold to the Laboratories on the books of the Western Electric Company (that is, cost less reserve for depreciation) at a lower figure than the appraised and agreed-upon values, so that we had made a profit on the sale of about $2,100,000. This sale was made to the Bell Telephone Laboratories, whose stock was owned 50 per cent by the Western Electric Company and 50 per cent by the American Telephone and Telegraph Company. The profit on that sale has not been included in these exhibits.

The reserve on the books of the Western Electric Company for these items stood at $3,188,000 at the time of the sale. When these assets were transferred to the Bell Telephone Laboratories, that Company set up on its books a depre-
1211 ciation reserve of $1,096,839. After we sold the Bell Telephone Laboratories, we had a balance in the reserve, which was credited eventually to surplus. It was not put in the books as a current earning, and does not appear anywhere in these exhibits, but it increased the surplus.

The Bell Telephone Laboratories charges depreciation on its plant as part of the costs which are included in the billings to the Western Electric Company and the American Telephone and Telegraph Company. The book cost of the plant on the books of the Bell Telephone Laboratories, upon which these computations are made, is the value of the plant
1212 based upon this appraisal with the reserve standing against it of $1,000,000. In the computations that are made to determine the depreciation expense of the Bell Telephone Laboratories plant, there is taken into account the book cost only, and not the book cost less any depreciation reserve.

MARCH 15, 1932.

1214 (The following documents were identified by the defendants: Defendants' Exhibit for identification D-33, Explanation of Reserve carried on Western Electric Company's books as of December 31, 1926, against Investment in Stock of Graybar Electric Company, Inc. Defendants' Exhibit for identification D-34, Statement of Assets and Liabilities of the Graybar Electric Company, Inc. Defendants' Exhibit for identification D-35, Book Value and Depreciation Reserve on Plant, on Books of the Engineering Department of the Western Electric Company as of December 31, 1924, compared with the Book Value and Depreciation Reserve as shown by the books of the Bell Telephone Laboratories, as of January 1, 1925. Defendants' Exhibit for identification D-36, Explanation of Reserve on Books of the Western

Electric Company as of December 31, 1926, against
Demand Notes of Bell Telephone Laboratories.)

1215 The documents identified as Defendants' Exhibits
D-33 to D-36, both inclusive, are correct.

A portion of the $40,000,000 net additions to plant in 1929
was constructed by the Western Electric Company, and, in
varying amounts, portions of the additions in each year from
1916 to 1930 were constructed by it. The portions of additions
constructed by the Western Electric Company itself
1216 would be in the class of some machinery, and tools and
fixtures, also some service equipment and buildings.

The construction of machinery, tools and fixtures done by
the Western Electric Company itself are placed on the
1217 books at the cost of the labor, material and loading
applicable thereto, on a standard cost basis. In the term
"loading" is included all the factors of manufacturing cost,
except the hourly productive labor cost and the material cost.
There is included therein a factor of depreciation. There is
included in each of the items manufactured by the Western
Electric Company and placed in its plant accounts, a factor for
the depreciation of the plant which has produced that
1218 item. If you are going to get a true cost of anything that
is produced in our plant, you must, of course, include part
of the cost of the plant that is used in order to produce
1219 that particular item. Those items of cost are added to
the cost of the plant.

The present depreciation rates applicable to buildings are
from 3 to 4 per cent. We use an average rate for build-
1220 ings which takes into account the different construction
of the buildings, and, as I recall, 3.5 per cent is the composite rate. On service equipment, the present depreciation rate is 5 per cent. On machinery, 10 per cent (except the rod and wire mill, where the rate is 5½ per cent, and on tools, furniture and fixtures we maintain a 100 per cent reserve. In addition to depreciation expense, we also make charges against the operating revenues for changes and repairs, which is a maintenance proposition.

The document identified as Defendants' Exhibit D-37
1221 is a correct statement of the amount of repairs and
changes from 1916 to 1930.

On Defendants' Exhibit D-37 the changes and repairs are defined as follows: Changes consist of that work which changes the design of plant but does not increase its reproduction cost. Repairs consist of that work which restores plant to good operating condition but does not change its design nor increase its value above the cost of the equipment. This is intended to bring the property into good working condition.

In the 1927 study, which has been heretofore described,
1222 the reduction below 100 per cent condition was to bring
the property down to an existing condition value. I should not think defects found by observed deterioration would be the kind of things cleared up through these items of expense, changes and repairs. As I have explained, the study of 1927 was a rough approximation of the conditions at the time, and I am not informed as to just how detailed an examination was made by the different individuals responsible.

I should not think that the kind of defects found by observation would be the kind of things that would clear
1223 through maintenance. I should think that the changes
and repairs would bring it up to the condition it was in, and that this observed depreciation would be needed in excess of that.

I know that all of the 88 companies state the amount of their depreciation reserve in Poor's. I am not informed as to whether or not they state rates in every case or not, as I did not personally examine each of those companies individually. I do not know how many of them have their rates expressed in Poor's.

1230 In determining whether a machine should be replaced
by another, we take into account certain factors, such as whether there will be a saving produced by the one machine over another. In that connection, we also use a cost study to determine the relative return which will be obtained from one machine as against the other. In these cost studies,
1231 we frequently use the sinking fund basis of depreciation.
In determining the savings, we figure the present worth.

The column "Current Cost of Sales Before Interest and
Expenses", on Defendants' Exhibit D-19, represents
1232 somewhere around 80 per cent of the entire cost of sales.
The difference between the sales price and the current
cost of sales, before interest and expenses, is represented by
the column "Gross Profit".

Plaintiff's Exhibit A-78 shows that the Bell business in
1929 was $372,000,000, and Exhibit A-79 shows that for the
same year the non-Bell business was $38,000,000. The
1233 classification of customers in effect prior to the formation
of the Graybar Company is shown on Defendants'
Exhibit D-38. This classification was also in effect when we
owned the International Western Electric Company.

The changes in this classification made since the organization
of the Graybar Company to date are as follows: the
companies under the Supply Contract, which are shown on
D-38 as Associated Bell Companies and Non-Associated Contract
Companies, are now called Bell Companies and they are
combined. The Non-Associated, Non-Contract Telephone
Companies in D-38 include connecting independent non-competing
and independent competing companies, and are now, in
so far as they have no supply contract with the Western Electric
Company through the licensee companies, customers of
the Graybar Electric Company. The other domestic customers,
which include in this exhibit central stations, electric
railways, industrial plants and other large users, electrical
contractors and dealers, other dealers, steam carriers,
1234 miscellaneous, and the Government (except the Government
Department, New York), are now customers of the
Graybar Electric Company, with the exception that some of
our sales to the United States Government are made direct.

There is now another classification, which is not included in this exhibit. This new classification represents our sales to aviation companies in this country, which were not in existence at the time that this classification was made up. As to the classification on D-38 "Exports" (sales to International Western Electric Company, Incorporated, Delaware): we sold the International Western Electric Company in 1925, and our export sales now consist of sales to the International Standard Electric Corporation and to the Northern Electric Company, Limited, Canada.

The Electrical Research Products, Inc., was not formed until
January 1, 1927. In 1929, it would be included as a cus-
1235 tomer of the Western Electric Company in a separate
class by itself, under the distributors' class. It will now
be included in the exhibit as a non-Bell customer.

The companies listed on Exhibit D-38, under the classifica-
tion "Non-Associated Contract Companies", are what we now
classify as connecting companies. They are either controlled
by the licensee companies or have license arrangements with
the various licensee companies, and guarantee a sufficient
volume of business to warrant the Western Electric Company
giving them licensee prices. The credit of these com-
1236 panies is guaranteed by the licensee companies. There
are two other companies not owned or controlled with
which this license arrangement is made. These companies are
the Lincoln Telephone Company, located in Lincoln, Nebraska,
and the Tri-State Telephone Company.

(Document furnished the defendants by plaintiff and entitled "Conditions under which we extend the benefit of the supply contract to Bell Connecting Companies" marked for identification as Defendants' Exhibit D-39.)

1237 The Western Electric Company now manufactures
approximately 20,000 different items, involving over
100,000 different parts. That is a very rough approximation.
There are 20,000 combinations, which we call completed appa-
ratus. These 20,000 combinations are, in turn, composed of
combinations of 100,000 various items. When we manufacture
a piece part, or even when we manufacture a piece of
telephone apparatus, we do not know at the time whether
it may be sold to a non-Bell customer or to a Bell cus-
tomer. On the other hand, 90 per cent of all of our manu-
factures go to the Bell customers, so that our error, if
1238 any, is slight. It is impossible at the time of manufac-
ture to know whether the piece being manufactured is
going into a piece of telephone apparatus to be sold to a
Bell Company or to a non-Bell Company.

1239 "Q. I want to know whether after the sales are made at the end of a year, at the end of a month, or at the end of a week, or at the end of a day, and shipments are completed,—can you or can you not tell how many of the piece parts manufactured by the Western Electric Company went into the items that were delivered, sent, during that particular day, that particular week, that particular month, or that 1240 particular year, to the Bell customers, and to the non-Bell customers? Will you answer that yes or no.

"The Witness: Why, it can be done, yes."

1241 To do that we would have to set up a most elaborate organization to trace every item of telephone apparatus sold and break it down into its piece parts and find out just how many piece parts went into that particular telephone apparatus. It would mean an immense amount of clerical work that would have no practical use in the business whatsoever. It would be a waste of money to do it. It probably would cost millions and millions of dollars, and I mean millions and millions of dollars, to do it. I am not exaggerating. Under present methods of operation of the Western Electric Company, we have no records that would enable us to determine that question.

1242 The three sheets which I furnished the defendants, showing an analysis of total sales from 1916 to 1930, the analysis of sales to Bell customers from 1916 to 1930, and the analysis of sales to non-Bell customers from 1916 to 1930, are correct.

(The documents referred to were marked for identification as Defendant's Exhibits D-40, D-41 and D-42.)

In 1929, we classified our sales between three main classes of products. One of these classes we designated as supplies, which are all those articles not of our manufacture 1243 but which we purchase from others as purchasing agent for the Bell System, and any other supplies that we have purchased for sale to other than Bell System customers. The supplies cover both Bell and non-Bell customers.

Another main classification is called apparatus, which includes all of the sales of telephone apparatus manufactured by us to all customers, and which would include also the installation billing. The apparatus would also cover the special commercial products which we sell to the non-Bell customers.

In this discussion, when I refer to telephone apparatus, 1244 I will speak of it as telephone appliances, and when I speak of special commercial products, I will designate them by that term.

The third main class is lead covered cable, which is also sold to both Bell and non-Bell customers, and is self-explanatory.

I furnished defendants a sheet showing the sales of special commercial products by the Western Electric Company.

(Which said document was marked for identification as Defendants' Exhibit D-43.)

On Defendants' Exhibit D-43, the various kinds of special products indicated therein are further subdivided into 1245 details as to the particular items. They contain maybe 40 or 50 different kinds of items. These products are sold mainly through Graybar and Electrical Research Products, Inc., but to some extent directly to aviation companies.

I have the reports for 1929 for the Hawthorne plant, known as Q202-1, 202-2 and 202-4.

(The documents were thereupon collectively marked for identification as Defendants' Exhibit D-44.)

1247 "Mr. Goldstein: Now, Defendants' Exhibit D-44 for identification to Hawthorne—or of Hawthorne, shows, does it not, over 20 classes and over 100 sub-classes of items of appliances and of special commercial products which are sold, also the dollar sales and the varying amounts, and the varying kinds to Bell customers, to distributors, and then shows the standard cost of sales, is that correct?

"A. I do not know about the number, but that sounds—

"Q. I mean approximately.

"A. That sounds approximately correct."

1248 A similar report was made in 1929 at Kearny, also.

The plants other than Hawthorne also manufacture various classes of items, which are sold in varying amounts to various customers of the Bell System. There must be

variations between the ratios each Bell customer buys in each
year as to each kind of item manufactured by the Western
Electric as compared to the ratio of that item for every
1249 other Bell customer. I do not know how much these
1250 variations are. I have no knowledge as to whether or
not each Bell customer buys the same ratio each month
of each item as every other Bell customer purchases during
the same month, but common sense would indicate that there
must be variations. It is similarly obvious that the Illinois
Bell, Chicago division, does not buy the same ratio each
month, or each year, of each item purchased by every other
Bell customer. The same is true of the State area of the
Illinois Bell.

1251 There are certain items that are sold exclusively to
Bell customers, and some items that are sold exclusively
to non-Bell customers, and there are certain items that are
sold both to Bell and non-Bell customers. It is probably true
that of the items that are sold jointly to the Bell and non-
Bell customers, the ratio of Bell to non-Bell purchases of
every item is not the same for any month, or for any year.

We have not kept any record to enable me to say whether
each Bell customer has purchased in any one year, or over a
period of years, the same amount of each of the items manu-
factured by the Western Electric Company as every
1252 other Bell customer. Some special commercial products
are sold directly to non-Bell customers, which classify
themselves. Some, such as sound pictures and aviation equip-
ment, are not sold to Bell customers at all. There are other
special commercial products that are sold both to Bell and
non-Bell customers. The ratio in which they are sold depends
upon the needs of the customers.

The ratio of labor, material and overhead, which make up
the cost of each item of telephone appliances and of special
commercial products, is not the same as the ratio of labor,
material and overhead that make up the cost of every other
item of telephone appliances, or of special commercial
1253 products. The ratios change constantly from day to day,
from hour to hour, from minute to minute, and it is an

impractical thing to attempt to get at the exact labor cost of any particular item. No manufacturing company ever attempts to do that sort of thing. It would be foolish for them to spend the money to do it, and so we have to adopt a system which will, on the whole, give us a true picture of the facts, which is all we need to carry on our business and conduct it efficiently.

If you take a long enough period, the ratio of the aggregate of labor, material and overhead making up the cost of the appliances as a class, will average themselves out with 1254 the ratio of the aggregate of the labor, material and overhead making up the cost of the special products as a class. The ratio as between those two classes of course varies.

Merchandise is sold by the Western Electric Company to telephone companies and other customers through the distributing houses, of which there are a great many, located in all sections of the country. The sheet which I have furnished defendants shows the locations of the factories and branches of the Western Electric Company as of December 31, 1930.

(Which said sheet was marked for identification as Defendants' Exhibit D-45.)

1255 There have been some increases in these distributing houses, but substantially the same conditions existed in the years prior to 1930. There has been a gradual growth in the business from 1916 to 1930, which involved adding new distributing houses.

The prices which the distributing houses charge the customers are established by the General Commercial Manager. They are made on the basis of studies of standard costs, the difference between standard costs and selling prices that are in existence, and are made after a study has been made 1256 of the probable results for the coming year. For instance, whenever there is a big increase in the volume of business, I make a study as to what the probable results will be with that increase in volume of business, or, if there is a decrease in the volume of business, or any change, as a result of that study, with the prevailing price level, I will get an indication as to what the profits will be.

We have attempted at all times to make our prices reasonable to the Bell System customers and to make our profits reasonable. If we see by the increased volume of business that we are going to get a larger return on the investment than we should, then that information is passed on to the General Commercial Manager. He and I together make a joint recommendation to the President of the Company for a change in price downward in that particular instance. When the President makes his decision as to the action to be taken, the General Commercial Manager's job is to apportion that amount of reduction by classes of apparatus, which involves issuing a new price list, to be given to all of the licensee companies. The prices are related to what the costs are, or probably will be, of producing the classes of merchan-
1257 dise and the furnishing of a reasonable rate of return.
That is what we attempt to do. It has a relation to the cost of the product.

The distributing houses get merchandise and services from the merchandising departments of Hawthorne and Kearny. They also get merchandise services from the equipment departments at Hawthorne and Kearny and from the installation divisions located at thirteen different places in all parts of the country. They are furnished with supplies from
1258 outside suppliers.

The merchandise departments of Hawthorne and Kearny furnish these distributing houses with Western Electric manufactured goods. I would say that probably all of the other items are shipped direct from the various factories throughout the country to the distributing houses or to the customer. The billing from the merchandising department to the distributing houses is at a price set by the Commercial Department in New York. That price, at the present time, is exactly the same as the price to the customer;
1259 that is, there is no difference in the price at the distributing houses and the price at the merchandising department.

The items of the equipment departments and installation divisions, which consist largely of labor, are billed to the distributing houses at cost, plus 6 per cent interest on investment. What we attempt to do in the case of installation is to get back our cost with interest on the investment. By "investment", I mean the amount of money that would be tied up in that particular operation of installing and equipment engineering. The equipment department has the same practice.

1260 My recollection is that there is very little in the way of supplies stocked by the merchandise department, as it is much more economical to ship those supplies directly to the distributing house from the factories where they are manufactured, or to the destination where the merchandise is to be used. In general, the billing by the factories to the merchandising department of Western Electric manufactures and also the billing by the equipment department to the merchandising department is, in each case, made on the basis of the standard shop cost. The billing from the equipment department to the merchandise department is based on cost, plus an interest item of 6 per cent on the investment.

1261 On the Exhibit D-19, the gross profit for Bell business is shown for the year 1929 as being approximately $49,000,000, and the gross profit for non-Bell business in the same year is shown as being approximately $11,900,000. That, in each instance, is the difference between the sales and the cost of sales shown in the column immediately following.

As the billing is made to the customers during the year, we figure item by item the price of the article and the standard cost of that particular article. At the end of the year, when we take inventory, we make adjustments which are neces-
1262 sary because of inventory revaluations, and we make adjustments, also, to cover the difference between the aggregate of all the standard costs during the year and the actual amount of labor, material and loading that has been expended during the year.

I have explained why we cannot get actual costs, so that the necessity of some standard is clearly evident. These standard costs are based upon engineering or planning studies as to what a thing should cost at a particular time. That is checked by the actual conditions prevailing at the time, except that no adjustment is made for material. Material is taken at the standard material cost, and the total standard shop cost thus obtained is modified by any known changes in methods of manufacture which we may have in mind at the time.

1263 For instance, if we know that we have a new process which will reduce the labor item necessary to produce a certain quantity from 42 employees to 6 employees, that known item is taken into account in computing estimated standard costs for use in the prevailing period. That is the way, in general and very roughly, that we make up our standard costs.

Our standard costs consist of three factors. We take the labor cost which the Planning Engineer thinks will be proper for that particular item at the prevailing rate at the time. Then, as I explained, when it has gone into manufacture,

1264 that is checked up in comparison with the actual cost. The Planning Engineer takes into account all the knowledge he can get as to what the real labor cost will be in the production of that article in the immediate future. The standard labor costs have as their bases the piece rate currently effective on the operation for which standard cost is being computed. The labor rate thus ascertained is embodied in our standard cost and continues as the basic labor rate until some future study is made and the experience is checked; then the labor rate is revised again and becomes the standard rate until some further check.

1265 Those studies are not made for each particular week on the same day, or the same month. In a period of great activity we have at least 350 people who are doing nothing else but studying these conditions and finding out what the real standard costs are. It is a constant process with us, and from time to time, as we feel that the standard costs may be far away from the actual conditions, we make a complete study of all the standard costs, and use another level of standard costs in computing our basic gross profit.

How often a complete revision of the standard basic labor costs is made depends upon the circumstances. The present
standard costs have not been changed for some time.
1266 The cost conditions were so unstable that we would not
know what to change to if we did change them. I think that the present figures have been in force for three years.

Before the last change, I think the preceding basic labor included in standard costs had been in force either one or two years, I am not sure just which. These changes would run in intervals of from one to three years, but I do not think it would be longer than a three-year period.

The next element ~~that~~ enters into the shop cost of each product is the price of the raw material. In connection with raw material prices we try to avoid in our cost keeping the effect of changes from time to time in raw material prices.
What we are after is to measure the efficiency of our
1267 manufacturing organization. If it is affected by changes
in raw material prices, such as copper going up to 25 cents or down to 8 cents, we do not get the gauge that we want. For this reason copper is included in our present standard cost at 15 cents. I think the current quotations in the newspapers indicate what we are actually paying for copper; I think it is around 6¼ cents. I think we are buying some copper, but very little; we have a stock. The 15 cents standard copper price has been in use during this three-year period. I think that it is probably true that it has been in use since 1925, but I am not sure. I am not sure just how long the present standard lead price has been used, but it has
been for some time.

1273 These figures for cost of sales before interest and
expenses on Exhibit D-19 include the total actual labor cost during the year as shown by our payrolls. They also include the actual cost of material for the year and the total actual overhead during the year, and proper adjustments for inventory revaluations.

The standard cost of manufactured goods sold, telephone apparatus and special commercial products, is the same whether sold to a Bell customer or a non-Bell customer, and

therefore, requires no allocation whatsoever. The installation costs are direct, because they are done on a particular job. In addition to those two items of cost, there are development costs, distribution costs and Federal taxes. The
1274 current cost of sales before interest and expenses shown on Exhibit D-19 is the sum of labor, materials and overhead, the materials being subject to the customary adjustments that are made in taking inventory of a manufacturing concern. My reference to labor and material is to the labor and material of the plant as a whole.

Our books do not show the actual labor, the actual material and the actual overhead that go into each of the items that are sold to the Bell and non-Bell customers.

1275 We have standard costs and at the end of the year we make an adjustment between the actual labor ex-
1276 penses during the year and the item of standard labor which was used in the standard costs. The standard cost system is simply a tool and a mechanism that we use during the year to get approximate figures, which are adjusted at the end of the year to the actual labor that we have expended and the actual material at cost prices and the actual overhead, all adjusted for inventory revaluation.

In arriving at the cost of sales to the Bell customers we proceeded as follows: we took all the standard costs of all the items mentioned which make up the Bell business, and a portion of the adjustment to arrive at the actual cost which I have used in my exhibits. The method of allocation of gross profits and adjustment between Bell and non-Bell business requires the use of standard costs. My allocation is de-
1277 pendent upon the accuracy of the adjustment from the standard labor and material and overhead to the actual material and labor and overhead experienced during that period, and the extent of the adjustment is a vital factor in my exhibits.

To arrive at the Bell profits we have to make an adjustment between the actual price to the Western Electric Company of copper for the year 1929, and the basic copper price which we used in making up the material. Similarly, we have to make the same kind of adjustment for each of the years

from 1916 to 1931. In order to determine the amount of the
adjustment, we have to know how much our basic copper
price was during each year, and how much the actual price
to the Western Electric Company was for that year.

1278 I know what the actual price of copper was during
each of the years 1916 to 1931.

1280 At the end of the year we aggregate the standard
costs for overhead for all of the items of the year and
arrive at a single adjustment, which is spread over the Bell
and non-Bell business according to the standard cost of each
class of apparatus, *i. e.*, telephone apparatus, cable and supplies.
There is included in the standard cost for overhead
all of the items of manufacturing expense, except labor and
material. That would include salaries paid to supervisors,
changes and repairs, clerical help, depreciation, insurance
items which enter into the rent, and so on. The overhead
that goes into each item as manufactured enters by virtue
of what we call "loading," and that loading is a per-
1281 centage of labor hours. The basic loading for overhead
is changed as conditions change and warrant different
rates; that depends upon the judgment of the Manufacturing
Department. I would say that they are changed every year
or so, but I am not sure of the exact length of time that
elapses. It is frequent. I do not think that it would be two
years at any time.

When we make a change in our standard cost for a
1282 particular item, it is for the purpose of bringing the
assumed figures for labor, material and overhead in
closer proximity to the actual conditions as we find them at
the time when we make our study. It is based upon factors
which we expect to exist in the immediate future.

We arrive at our actual shop cost by making certain adjustments
to our basic gross profit figures.

The following are the items of expense incurred during
the year 1929 and allocated between Bell and non-Bell
1283 business upon the basis of standard shop cost: development
expense (which amounted in that year to approximately
$11,000,000, of which amount $8,910,000 is allocated to

Bell business and $2,114,000 to non-Bell business), merchandising, and general expense. The allocation of Federal taxes
does not depend upon shop costs, nor does interest re-
1284 ceived, except in part perhaps. The adjustments made
to arrive at our actual gross profits from our basic gross profits are spread between Bell and non-Bell customers on the basis of standard shop costs.

We have allocated a portion of our plant on the basis
1285 of usage as determined by standard shop costs. We ap-
portioned the plant on the basis of shop costs, because shop costs is our method of arriving at the use of the plant. I think almost all of the plant account was allocated on the basis of usage as determined by shop costs. A part of the inventory was apportioned between the investment in Bell
and non-Bell business on the basis of standard shop
1286 costs. Cash and payables are allocated on the basis of
standard shop costs of sales and the purchase of plant items.

Some part of the distribution cost would be direct costs. Those are expenses in connection with our distributing houses.
Direct costs of distribution would come under the mer-
1287 chandising expenses. The plant account, to a certain
extent, was apportioned on the basis of standard shop costs and likewise the inventory and a portion of the cash and payables.

The cost of sales shown in the exhibits is the total cost, and includes shop cost and all other items. Federal taxes are allocated on the basis of the earnings in each class of business, after we have ascertained them through the method which I have described.

The larger part of the plant account is apportioned on the basis of the standard shop cost of sales.

1288 The unadjusted basic gross profits of the Merchandis-
ing Department for the year 1929 were $56,899,000. This represents $47,426,000 for telephone apparatus, $8,191,000 for lead covered cable, and $1,282,000 for supplies.

There is a gross profit on local shop manufactures of
1289 $321,000, which I have allocated all to telephone appa-
ratus. There is a basic gross profit in the Installation Department of $105,000, which represents the gross profit and

remuneration on the direct expense materials. The entire $105,000 has been allocated to telephone apparatus.

1290 Profit on sale of connecting blocks of $64,000 is allocated to telephone apparatus. Miscellaneous profits and losses, totaling $6,000, allocated $2,000 to telephone apparatus and $4,000 to lead covered cable. (The witness agrees to prepare a statement showing all basic gross profits for year 1929 and submit same to counsel for the defendants.)

1291 In connection with "the Manufacturing Department surplus," there is an item called "Reduction to actual cost of productive labor and manufacturing expense, December 31, 1928, Hawthorne Manufacturing Department, $1,142,000". This was allocated $1,095,000 to telephone apparatus and $47,000 to lead covered cable. It represents the difference between the standard cost of labor and manufacturing expense that was used in these standard cost studies to get at the basic gross profits, and the actual cost of productive labor and manufacturing expense applicable to the opening inventory. The cable was manufactured in an entirely separate shop and practically allocates itself.

1292 In the same column and under the same sub-head appears the same thing for Kearny, Philadelphia Instrument Shop, Engineer of Manufacture, Hawthorne Merchandise Department, Kearny Merchandise Department, and Broadway, making a total reduction to actual cost of productive labor and manufacturing expense as of December 31, 1928, of $4,498,000, which was divided $4,335,000 to telephone apparatus, $160,000 to lead covered cable, and $3,000 to supplies. This adjustment is in different amounts for each of the manufacturing departments and for the merchandise departments. The Hawthorne Merchandise Department had an adjustment of $1,408,000; the Kearny Merchandise Department, $793,000; the Philadelphia instrument house, $51,000; the Kearny Manufacturing Department, $374,000; and the Hawthorne Manufacturing Department, $1,142,000.

1293 "Shop surplus on production" represents the difference between the standard costs and the actual costs of items that are delivered to our merchandise departments. It is what we call our output surplus account. It is the difference between the standard costs used in the course of manufacture and the actual costs at the end of the year. In order to make the adjustment, we have designated it as "shop surplus on production".

The net aggregate of these adjustments for the year 1929, for all of the plants, including headquarters, was $2,238,000, which is shown in the red. This red figure indicates that instead of a surplus there was a deficit, or, in other
1294 words, that the actual costs were higher than the standard costs for the entire organization.

The Hawthorne Manufacturing Department shows an adjustment of $5,353,000 in the black, indicating that our standard costs were too high so far as Hawthorne was concerned. At Kearny, the adjustment of $6,178,000 is the other way, showing that the standard costs were too low at Kearny. The net amount of all the adjustments for the year 1929 was $2,238,000.

The standard shop costs were too low on telephone
1295 apparatus, but too high on lead covered cable by $351,000.

At Hawthorne, the standard cost was too high by $4,575,000 for telephone apparatus, and too high for lead covered cable by $804,000, but too low for supplies by $26,000. At Kearny, the standard costs were too low for telephone apparatus by $6,636,000, and too high for lead covered cable by $458,000.

The statement at the end, on total surplus incurred, is the difference between the figure of $2,238,000, representing the deficit, and the figure of $2,859,000, covering the item "Eliminating reserve for moving expenses to be incurred in 1930", and amounts to $621,000. The moving expense is supposed to cover the expected cost of major moves that were
1296 anticipated at the end of that year. The major moves
anticipated were in all plants. I have not the detail or anything to indicate how much of that was for Hawthorne, Kearny, Point Breeze, Philadelphia Instrument Shop, Queensboro Works or Headquarters.

There is an entry in connection with the same adjustment.

entitled "Manufacturing Department reserve for moving ex-
penditures in 1930", which is in red by the same number of
dollars that it is in black in the Manufacturing Depart-
1297 ment surplus. That is to eliminate from this item of
surplus in the shop the reserve for moving expenses. We
did not incur this expense in the year 1929; it says "to be
incurred in 1930". It would enter into our figures in 1930,
depending on whether we made a reserve at the end of that
year.

The next items are some slight adjustments as follows: "Reduction to actual cost of productive labor and expense, December 31, 1929; Philadelphia Instrument Shop, $25,000, which was allocated to telephone apparatus; Kearny Merchandise Department, $50,000, allocated to telephone apparatus". This is our estimate of how much lower actual costs were than standard as they apply to the ending inventory.

There is an item "Change to 1930 bulletin for productive
labor and expense loadings of December 31, 1929 inventories",
which aggregates $3,882,000, allocated $3,860,000 to tele-
1298 phone apparatus, $21,000 to lead covered cable, and
$1,000 to supplies. When we change our bulletins that,
of course, affects the inventory at the end of the year and in
order to get the profits for the year, we have to take into ac-
count the effect of using the new bulletin in inventorying at
the end of the year. By a bulletin cost we mean a stand-
1299 ard cost. A bulletin is simply a list of various items,
showing the standard cost of each item. When we make
a change of standard costs used in our accounting system,
that means that if the bulletin at the end of the year at which
we price our inventory is higher than the old bulletin, in order
to get at the profits for the year we have to take into account
the difference between the two bulletins as it applies to
1300 the inventory. The adjustment is for the bulletin cost,
which is made up of three items, material, overhead and
labor, and represents the changed conditions from what the
former bulletin cost represented. That is, it is a change in
the bulletin cost of the particular items manufactured. The
adjustment figures show the effect of the difference between

the figure resulting from applying to the inventory the old
bulletin costs and the figure resulting from applying to that
same inventory the new bulletin costs.

1301 This adjustment shows the effect of the changes in
each of the plants, and in varying amounts, as follows:
Hawthorne Manufacturing Department, $1,111,000, divided
$1,053,000 to telephone apparatus, $57,000 to lead covered
cable and to surplus $1,000; Kearny manufacturing
1302 plant, $606,000, allocated $638,000 to telephone appa-
ratus, $32,000 used on lead covered cable; $560,000 in
black for Hawthorne Merchandise Department, of which
$559,000 was allocated to telephone apparatus; $979,000 for
Kearny Merchandise Department (which was the net adjust-
ment representing a black figure, $986,000 on telephone appa-
ratus, and a red figure of $7,000 on lead covered cable); there
was an adjustment of $532,000 for Broadway (distributing
houses), of which $531,000 was allocated to telephone appa-
ratus. The total adjustment for the effect of the bulletin
charge was $3,882,000, and was divided $3,860,000 to telephone
apparatus, $21,000 to lead covered cable, and $1,000 to sup-
plies. This all represents the effect on the 1929 inventories
of the change in the bulletin, and does not involve the process
of going back to the first of the year.

1303 That disposes of the Manufacturing Department sur-
plus, which had a net adjustment of $1,162,000. There
was a surplus for the total plant. This is made up of a sur-
plus of $481,000 for telephone apparatus, $862,000 for lead
covered cable, and a deficit of $181,000 for supplies.

The general rule is that we apportion these adjustments
of the Manufacturing Department surplus on the basis of the
total aggregate standard costs of each class of appa-
1304 ratus: telephone apparatus, cable and supplies.

"Current under-run" represents the difference be-
tween the standard cost of material and the actual purchase
cost of material to the Company. The current under-run
1305 is when the actual cost is under the standard, and is
shown in black figures. For example, if we have a stand-
ard cost of 15 cents for copper and we buy copper for 8 cents,

the 7 cents difference is a current under run and is shown in black. When we have an under run, the standard assumed cost of material was too high. Whenever there is a black figure in connection with this adjustment, it means the standard cost was too high, and it is called an under run. A red figure is called an over run, and means the standard cost of raw material was too low.

The first item of adjustment for current under run is "Adjusting raw material from 1929 standards to actual 1306 costs" for material on the December 31, 1928 inventory.

The adjustments under this item are as follows: in the Manufacturing Department, $797,000 total, of which $706,000 was for telephone apparatus, $98,000 for lead covered cable, and $7,000 in the red for the supplies. In the Merchandising Department, the total under run was $486,000, made up of $436,000 for telephone apparatus, $56,000 for lead covered cable, and $6,000 in the red on supplies. For Broadway (distributing houses), the total of $215,000 is made up of $139,000 for telephone apparatus and $76,000 for lead covered cable. The total adjustment was $1,498,000, made up of $1,281,000 for telephone apparatus, $230,000 for lead covered cable, and a red figure of $13,000 for supplies. We arrived at these adjustments in the following manner: we currently kept a record of the cost of our purchases and compared those costs with the standard costs of the materials. We know from month to month exactly what the current under-run is on all our purchases, and this is the adjustment which arises out of the information which we have currently kept.

1307 What I have spoken of before is the adjustment of the raw material prices as they apply to the beginning inventory. The next item, "current under-run incurred", is in connection with scrap sold and used and Class B and raw material and miscellaneous items purchased during the year. The adjustment of "current under-run incurred" aggregates $772,000 for all of the plants and shows that the standard costs were too high. This aggregate figure is composed of $2,459,000 for telephone apparatus where the standard costs were too high, and $1,115,000 for standard costs that were too low on lead covered cable.

1308 If I mention "estimates" while speaking of this subject, I have in mind the estimates that enter into shop costs; I mean standard shop costs.

The term "Class B" means material that is returned from the telephone companies to be disposed of by the Western Electric Company as scrap.

1309 The total adjustment for the item "difference between standard value and shop cost of raw material produced" is $117,000 in the red, and shows that the standard shop cost was too low. Of that total figure, $111,000 is for telephone apparatus and $6,000 is for lead covered cable.

The allocations of these over runs and under-runs between telephone apparatus and lead covered cable were determined in exactly the same way as I have described before. That is, on the aggregate of the standard shop costs. The allocations were based on total costs, one as against the other. Of course, the under runs for lead covered cable go directly against cable. The allocation between Bell and non Bell customers is on the basis of shop cost of sales of telephone apparatus and cable.

1310 Under "Change in standard raw materials and scrap prices, 1929 to 1930 bulletin, on December 31, 1929 inventory" is shown, in the Manufacturing Department, that the standard costs were too high by $752,000. This is made up of an under-run of $768,000 in telephone apparatus, an over-run of $17,000 in lead covered cable, and an under-run of $1,000 in supplies. In the Merchandise Department, the standard costs were too high by a total of $58,000, composed of an under-run of $61,000 for telephone apparatus and an over-run of $3,000 for lead covered cable. The determination of this was a matter of computation. It is for the purpose of making adjustment for the two bulletins, which are different. These bulletins were bulletins of standard raw material prices. When you get the standard, it is different, so

1311 you have to get a different item to compare the actual with.

The next item is "Adjusting raw material from 1930 standards to actual cost." Under that heading, the Manufacturing
Department shows a total figure of $346,000 in red. This
1312 is made up of a black figure of $58,000 for telephone
apparatus and a red figure of $325,000 for lead covered cable, and a red figure of $79,000 for supplies. This means that in the particular year the standard prices for materials used in lead covered cable in the ending inventory were $325,000 lower than the actual prices and telephone apparatus standard prices were $58,000 higher than the actual prices
paid. The Merchandise Department shows a total figure
1313 of $55,000 in red. This is made up of a black figure of
$38,000 for telephone apparatus, a red figure of $42,000 for lead covered cable, and a red figure of $51,000 for supplies.

If the figure is in black, it means that the standard cost is higher than the actual cost. That is, there is an under-run.
The effect of an under-run would be to increase the basic
1314 gross profits. Wherever there is a red figure, the effect
would be to decrease the basic gross profits. These effects, however, would be opposite when applicable to ending inventories.

The next item is "Effect of current under-run on beginning and ending inventories at engineer of manufacture not considered in M 2.01-5 report, but included with inventory revaluations." Here are balancing figures of $22,000 each way for apparatus and lead covered cable, resulting in a total of zero.

The total adjustments for the entire plant in the year 1929 resulted in a $1,849,000 under-run. That is, the adjustments increased our basic gross profits by $1,849,000. For telephone apparatus the current under-run was $2,793,000, increasing our basic gross profits for apparatus by a like amount. On the other hand, the effect of current over-run decreased the basic profits for lead covered cable by $488,000 and for supplies by $456,000.

1315 "Q. And in order that we can get the picture clear
at this point, the Manufacturing Department surplus, which we discussed before—the adjustment resulted in an increase for all of the plants of basic gross profits by $1,162,000,

divided between telephone apparatus, $481,000, lead covered cable, $862,000, and a decrease in profits, basic gross profits for supplies, of $181,000, is that correct?

"I am now looking at Manufacturing Department surplus, that we have discussed before, and I want to get the significance of those adjustments.

"A. Well, the adjustment to which you refer is the adjustment of the total bulletin effect surplus applicable to sales.

"Q. That is right.

"A. Total sales, yes."

The next series of adjustments is known as "Inventory revaluations and reserves" and totals $6,625,000 in the
1316 red. The effect of these adjustments is that the basic gross profits have been decreased by $6,625,000, in the aggregate, except, of course, that the figure includes that moving reserve, which is in and out. The adjustment of $6,625,000 for the entire business is composed of an adjustment to decrease the basic gross profits on telephone apparatus by $5,945,000, on lead covered cable by $627,000, and on supplies by $53,000.

"Effect of eliminating overtime (except normal) and minimum earnings allowances" represents that part included in our standard cost of merchandise which was on the inventory covering overtime, except the normal overtime, and also represents that part included in our standard costs covering the difference between the minimum earnings that we guarantee our employees and their piece rate earnings included in
1317 our standard costs, and those are all in the red for each of the classifications, and are in varying amounts for the plants, and for the merchandising departments. The total of this sub-division is $403,000, in the red (that is, a decrease in basic gross profits), and is made up of $401,000 for telephone apparatus and $2,000 for lead covered cable.

The adjustment for "Effect of eliminating productive labor increment loading except overtime and minimum earnings allowances" totals $724,000 in the red, divided between telephone apparatus $717,000, lead covered cable, $6,000, and $1,000 for supplies. In our standard cost is included an item

called increment labor. Increment labor includes the amounts paid to our employees while not working because of enforced absences for military and jury duty, vacations, pension accruals, sickness, and so forth. Now, this adjustment is to take out of our inventory that portion of those items which was spent during the year applicable to the inventory. The amounts vary between the plants and vary between the merchandising departments, and the instrument shops, and
1318 are divided between telephone apparatus and lead covered cable as stated.

The adjustment "Effect of eliminating factors in standard shop cost to recover: manufacturing development, including cost reduction; vacations; enforced absences, benefit payments; accrued service pension liability; general moves; rearrangements and reconstructions; expense of process storerooms not incurred; indeterminate losses" explains itself. The adjustments vary as between plants and between merchandising departments and are all decreases of basic gross profits.

1319 The adjustments for "Inventory revaluation and reserves" are divided between Bell and non-Bell business, in general, on the basis of standard shop costs to sales. There is a direct allocation between telephone apparatus, lead covered cable, and supplies.

"Q. But the allocation between Bell and non-Bell, and between specialty products—the appliances and the specialty products is on the basis of the aggregate shop costs of each class of item?

"A. That is right."

The next adjustment is for "Effect of eliminating factors in shrinkage for loss on reduction to fair market value and errors in figuring" and the total adjustment for this item results in a decrease in the basic gross profits of
1320 $326,000, made up of a decrease of $318,000 for telephone apparatus and of $8,000 for lead covered cable. This adjustment is self-explanatory. There is a factor in the standard cost to cover it, and when we come to inventory, we feel that we should not include in it any item put in the standard

cost to cover errors. We include it in the standard cost and then take it out as to the inventory valuation.

The next adjustment is for "Effect of eliminating preliminary packing, reel and spool expense, and cable stub details". The total effect of this adjustment is a decrease in the basic gross profits of $104,000 ($73,000 for telephone apparatus and $31,000 for lead covered cable).

The next is "Effect of eliminating loadings on commercial piece parts". The total adjustment here is a decrease in the basic gross profits of $26,000, all attributable to telephone apparatus.

1321 There are other adjustments for the following: "Effect of reduction of raw material from actual cost to market prices where lower"; "Reduction of non-bulletin items to bulletin cost levels"; "Reduction of local shop costs to Hawthorne cost level"; and "Effect of reduction to fair market value". In each of these cases, except one, there are decreases in the basic gross profits for telephone apparatus, supplies, and lead covered cable. The amounts of the adjustments vary between the manufacturing departments of Hawthorne, Kearny, and Point Breeze, and also vary between the merchandising departments. The allocation of these adjustments between telephone apparatus, lead covered cable, and supplies is made by direct allocation, but the apportionment between Bell and non-Bell, or between telephone appliances and specialty products, and between non-Bell appliances and Bell appliances is made generally on the basis of the aggregate shop costs of each class.

1322 The next adjustment is "Eliminating factors in 1930 bulletin for preparation expense at Point Breeze and Kearny not incurred in 1929". This results in a total decrease of $375,000 in the basic gross profits, divided $352,000 to telephone apparatus and $23,000 to lead covered cable. Obviously, as these expenses were not incurred, they should not be in the inventory.

The next adjustment is "Effect of reduction of excess shipments on open switchboard jobs to cost level". The result is a $22,000 decrease in basic gross profits.

The next is "Adjustment for redivision by merchandise classes of manufacturing operating surplus, inventory revaluations, and current under-run", the total effect of which was a $1,000 increase in the basic gross profits. This was made up of an adjustment of a $40,000 increase for telephone apparatus and a $39,000 decrease for lead covered cable.

The next is "Manufacturing department reserve for moving expenditures in 1930", which we have taken out for the purpose of inventory valuation. However, the moving reserve does not in any way affect the valuation of our inventory.

1323 These adjustments were also divided between telephone apparatus, lead covered cable, and supplies by direct allocation. In general, they were apportioned as between specialty products and telephone appliances as a class on the basis of aggregate shop cost of sales of each class, and as between telephone appliances sold to Bell and non-Bell customers on the basis of aggregate shop cost of sales of each class.

1324 Line 51, on page 2 of the report which we have just been discussing, shows the total basic gross profits for the year 1929, to which all of these other adjustments are made. The total basic gross profit in the Merchandise Department is $54,807,000; this is obtained by making certain adjustments to the figure of $56,899,000, with which we start. These adjustments are shown on page 1, the first one being "Reversal of 1928 claim entries". There are about ten miscellaneous small items of adjustment shown there.

1325 There is one adjustment here, entitled "Unexplained differences", amounting to $1,805,000, all allocated to telephone apparatus. In a big manufacturing organization, such as the Western Electric Company, we use certain

1326 tools during the year in order to ascertain the approximate results; and, at the end of the year, we get the actual figures from taking the actual inventory, and then explain the difference between the actual and the expected, so far as we can. We find finally that there are some items we cannot explain, and it so happens that, in this particular year, the difference we cannot explain amounts to $1,805,000. Of

course, in a big manufacturing plant there are losses from clerical errors, and so forth, that come in. This $1,805,000 is all allocated to telephone apparatus, because that is where the intricate process of accounting occurs and is neces-
1327 sary. Lead covered cable is simpler and the accounting more readily obtained without any possibility of error. The adjustment was then allocated between sound pictures and telephone appliances on the basis of the aggregate shop costs to sales of each class and between Bell and non-Bell customers likewise on the basis of aggregate shop costs of sales of each class.

There is another item for the distributing houses, entitled "Other adjustments to profit (including unexplained
1328 difference)", totaling $634,000, $343,000 of which was allocated to telephone apparatus, $34,000 to lead covered cable, and $257,000 to supplies. This is another one of those items that we cannot explain, but that certainly crept in; it is inherent in any accounting system that errors of this sort would occur. This adjustment was allocated between telephone apparatus, lead covered cable, and supplies on the basis of the distributing houses' sales of stocked materials. Of course, on supplies there are no shop costs and there the cost would be the purchase cost of the supplies. Lead covered cable was allocated on the basis of shop cost of sales. The adjustment was apportioned between Bell and non-Bell on the basis I have already discussed. As between sound
1329 pictures and telephone appliances, and as between Bell and non-Bell, the adjustments were on the basis of aggregate cost of all sales of each class to each class of customer. Whenever I use "cost of sales", it is synonymous with standard shop cost of sales.

1330 Under "Broadway" is an adjustment "Effect of change in reserve to distribute equipment gross profits in proportion to billing of installation". The effect of this adjustment was to decrease the basic gross profits by $618,000. We attempt to equalize profits on the total billing of switchboard equipment to our telephone companies. Of course, we ship the material first and it carries the larger profit. After the material is shipped, there is the installation to be done, which is at a relatively lower profit (practically cost plus 6 per cent). In order to apportion properly in each year the profits on the total billing (although the shipment has been made and the title passed on the apparatus), we make a reserve, so as to only put into that particular year ~~the~~ profits applicable by using the average percentage rate.

The documents marked for identification as Defendants' Exhibits D-46 and D-47 show the basis of valuation of inventory and method of arriving at merchandise inventories
1331 as shown in the stockholders' reports as of December
31, 1915 and as of December 31, 1930.

Exhibit D-47 shows that we had, on December 31, 1930, an inventory, figured at standard costs, of $114,000,000, and that when we got through with our adjustments, we ended with an inventory valuation, which we used for the purpose of determining profits, of $86,000,000, or net adjustments decreasing the value of the inventory by $28,000,000. The
1332 $114,862,000 with which we started represents our inventory at the standard cost level in the manufacturing and merchandise departments and at the price level to
1333 the customers in the distributing houses. We first made
a reduction to get to the standard cost level at the distributing houses from the price level. That $114,000,000 is after that reduction. I have it in mind that we started from $116,000,000. That adjustment does not appear on the exhibit. The approximate $116,000,000 was reduced by a million or two million dollars to bring the distributing houses' new material inventories down to the standard cost level at the factory, so we have a standard cost inventory valuation at the factory of $114,000,000.

Then the $114,000,000 is reduced by $4,551,000, to reduce raw materials and raw material content standard cost to actual cost. That means that the inventory at standard
1334 cost was $4,551,000 more than our actual cost. We then
reduced our cost to market, if lower than cost, which decreased the value by another $1,720,000. This reduced the inventory of materials to cost or market, whichever was lower.

We then reduced that cost or market, whichever is lower, to fair market value. This involved another $5,000,000 reduction in the value. This represents the amount which, from our experience, we considered necessary to write off because of the factor of having stocks in excess of normal requirements. In our business we have rapid changes in design of manufacture. The designs are made by the Bell Telephone Laboratories and are placed in the shop; the decision as to whether they shall be put into manufacture is dependent upon whether the Bell System, as a whole, is to be the gainer by putting them into manufacture, rather than whether it means a loss to the Western Electric Company or not; so we have
a distinct hazard in being required to junk or scrap
1335 stocks of material, which, from a System standpoint,
will be of advantage, but which, from the Western Electric Company's standpoint, will be of distinct disadvantage. Bearing that in mind, we have set up certain standards or relations: for six months stock, we show no depreciation; beyond six months, we have varying rates, depending upon the length of time it would take us to dispose of that stock on the basis of its expected use or sale. In addition, this includes, also, stock that is obsolete, or of poor physical condition. This $5,000,000 is supposed to take care of this contingency. For stock on hand in excess of six months' requirements, we apply varying percentages of depreciation, depending how long over six months we expect to have had it.

We start to depreciate the inventory because a por-
1336 tion of that inventory will have to stay on hand beyond
January 1, or may be scrapped and never used. Of
1337 course, there is a factor for the fact that it is not going
to move very rapidly. The normal rapidity that we use in order to determine how much we should take is usually a rapidity of inventory for six months from January 1. Of course, under present conditions, we have to normalize to some extent: we have to say, for instance, that in 1931 we do not think the division we had for the first six months was perhaps what ought to be expected over a normal period of six months. That may be up or down. The reduction for

market value at the end of 1930 amounted to $5,000,000.
1338 We figured that any merchandise that was going to be on hand longer than six months was worth less to us from a balance sheet standpoint. The same thing was true with specialties. We considered what the expected demand would be on those by our customers, both Bell and non-Bell.

The principle of this is to get at the fair value of the merchandise. We do not want to overestimate; we do not want to show in our balance sheet a value for merchandise in excess of what it really is worth. We do not want to tell our stockholders that we have our merchandise at a higher value than it is worth.

1339 The turnover of our entire investment on telephone apparatus is about once a year. Of course, that includes plant and other items, and I would say that on the average six months is probably the amount of stock that we normally ought to have for telephone apparatus business.

This study was made item by item on the inventories. On that basis we made our adjustments reaching $5,000,000.

The next adjustment is a decrease of $10,651,000 in the value of the inventory as "Reduction to fair market value on returned materials and special stocks (charged to deferred receivables)". This is of a slightly different character.
1340 We receive returned goods from the telephone companies and credit them with these returned goods at the current selling price. When we inventory these items, however, we inventory them at what we think they are worth. This $10,000,000 represents the difference between the price allowed the telephone companies and what we think that inventory should be valued at (it is over one-half of the current price with which we credit the telephone companies and is charged to the receivable account). In other words, this $10,651,000 item has no effect whatsoever on the profits of the Western Electric Company, but it does have an effect upon the value of the inventory, because the title to the returned goods has been passed to the Western Electric Company. The adjustment is made at the end of the year to bring it down to what

the Western Electric Company considers as a cost basis, 1341 and during all of the year there is a similar adjustment made on an approximate basis. It has no effect whatsoever on the cost of sales, other than the minor fluctuations from month to month on this returned material stock.

The cost of sales takes into account the inventories on hand at the beginning of the year and at the end of the year. To the extent that our inventory is cut down, the cost of 1342 sales goes up, but our inventory basis, as a part of the investment, represents the average investment, month by month, during the year.

We require the use of the closing inventory, not only for the purpose of determining what our average investment was, but in determining what our gross profits were. Our gross profits will decrease to the extent of the additional inventory revaluations deducted at the end of one year over those deducted at the end of the previous year. However, when we take at the end of 1930, $10,651,000 from our inventory for revaluation of Class C returned material from selling price to fair market value we have not decreased our basic 1343 gross profits by that amount, since this valuation is charged to another asset account (Receivable) and not against profit.

The same deduction has been made from our average investment during the period of twelve months as the average amount during the period. This adjustment does not have any effect, so far as the computation of average investment is concerned, and has no effect on the gross profits. This returned material from the telephone companies is credited them at selling prices. The telephone companies agree that when the material is reissued to them, they will pay exactly the same price which we paid. Of course, the title has passed and we do not think that this returned material should be valued from a merchandising standpoint at selling price, so we charge the difference between what we think it is worth and what we have allowed the telephone companies to a receivable item, and credit merchandise inventory for the identical amount the credit to the telephone company in our receivable account and we have a debit to the telephone company in merchandise of a certain amount, and a debit in receivables of another 1344 amount, which exactly offset each other, so there is no profit or loss to the transaction.

We resell this material to the telephone company plus a 3½ per cent service charge for the handling of the merchandise, plus a 6 per cent return on the investment involved in the merchandise. There is no profit involved in depreciating the inventory at the end of the year by the $10,000,000 item. The only profit that we make on the returned material from the telephone companies is a 3½ per cent service charge (which is to cover the expense of handling and practically covers the cost) and the 6 per cent return on the investment while we have it in our possession.

It enters our inventory at one price, which is adjusted, at the end of the year, to a lower value, because it is our property and we do not think it ought to be valued as high as we have credited the telephone companies, but as long as the telephone companies guarantee to take it back at the 1345 price which we allow them, there is no profit or loss to the Western Electric Company. The amounts of this material coming to the Western Electric Company and the amounts repurchased by the telephone companies are approximately the same. It runs something like $30,000,000 of returns to the Western Electric Company and about $31,000,000 or $32,000,000 reissues to the telephone companies. The excess of returns should be a credit on sales, being the total returns less the replacements which would be the net reduction from the sales.

1346 In valuing these returns, we attempt to get them down to the figure which corresponds to the level or fair market value in the case of the inventory, that is, to cost or market, whichever is lower, less an item which takes into account the rapidity of the movement of the product, and value it on the same basis as the Western Electric Company.

The next item, "Excluding direct labor increment loadings", reduces the inventory for 1930 by $1,198,000.

In the other column on Defendants' Exhibit D-47 for December 31, 1915, we start with an inventory of $20,000,000. The adjustments aggregated $2,651,000, as compared to the adjustments on December 31, 1930 of $28,000,000. These adjustments in 1915 vary some as compared to 1930, and there are some adjustments appearing in one which do not appear in the other.

1347 In recent years, you would find most all of the items that appear in the December 31, 1930 column, but they would not necessarily all be decreases from figured cost of inventories. In some cases, we have added to our inventory, because our cost of merchandise would be in excess of the standard. In a great many years it was that way. That is, the variations run plus and minus over a period of years.

EDGAR S. BLOOM, called as a witness on behalf of
1349 the plaintiff, having been first duly sworn, testified as follows:

Direct Examination by Mr. Thompson.

March 16, 1932

My name is Edgar S. Bloom and I live in New York City.

I am at this time President of the Western Electric
1350 Company and have been since August, 1926. I was graduated from the Engineering Department of the University of Pennsylvania in June, 1895, with the degree of Bachelor of Science. I received the degree of Mechanical Engineer after one year of post-graduate work.

Immediately following, in July, 1896, I became connected with the Metropolitan Telephone and Telegraph Company, which was the predecessor of the present New York Telephone Company. I was about one year in the Traffic Department of that company as Traffic Inspector and Traffic Engineer. I was then transferred to the Construction Department and became a Foreman and Supervisor of line and cable gangs. About six months later, I was made Construction Engineer of the New York Telephone Company, and remained in that

position until June, 1906. I then became Superintendent of Plant of the New York-New Jersey Company, in what was then the City of Brooklyn, which position I held for one year, when I became Superintendent of Plant of the division of the New York-New Jersey Company in the State of New Jersey, operating throughout northern New Jersey contiguous to New York. Following that, I went to the Pacific Coast
1351 as General Superintendent of the Pacific Telephone and Telegraph Company, operating throughout the Pacific Coast states, where I had charge of construction and engineering. I was there close to a year, and then came back to New York and became Superintendent of Plant of all of upstate New York, except New York City.

I then went with the American Telephone and Telegraph Company as an engineer in charge of general supervision of plant operations of the Bell System all over the United States. Following that, I went to St. Louis as Executive Vice President of the four companies operating throughout the Southwest, which, about that time, were put into what is now known as the Southwestern Bell System, operating throughout the states of Missouri, Kansas, Texas, Arkansas, and Oklahoma.

Following that, in the spring of 1914, I came to Chicago as Receiver of the Central Union Telephone Company, in which position I remained until the receivership came to an end. I then became President of the Central Union Telephone Company, and, successively, President of the Ohio Bell, Cleveland Telephone Company, Indiana Bell Telephone Company, and Executive Vice President of what is now the
1352 Illinois Bell Telephone Company. Following that, in the spring of 1922, I went back to New York as Vice President of the American Telephone and Telegraph Company, and, in August, 1926, I became President of the Western Electric Company, which position I still retain.

The sale of our manufactured products to the Bell associated companies in 1920 amounted to $80,000,000, from which figure it increased gradually; in 1921, it went up to $111,000,000; in 1922, $125,000,000; in 1923, $144,000,000; in 1924, $192,000,000. That was a period of general increase

in wage levels in this country and one of general prosperity.
That prosperity and increase in wage rates brought in a new
economic level of people who became possible telephone
1353 subscribers. In addition, there had been a dammed-up
demand as a result of the war, so that the growth during that period is accounted for by those two factors.

From 1924 until 1927, the business, from our standpoint, was relatively steady. In 1924, the sales amounted to $192,000,000; in 1925, $181,000,000; in 1926, $192,000,000; and in 1927, $183,000,000. Beginning with the spring of 1928, we noticed a very perceptible tendency, getting stronger each month, which indicated that the demands upon us were getting to be greater than our capacity. By the summer of 1928, we had made studies looking ahead five years. We had gathered information from the associated Bell companies and the American Telephone and Telegraph Company and had carefully studied their views.

All of the indications were that we were in for a very important period of heavy demands upon us. In 1928, our business increased to $200,000,000, which was the largest business we had ever done up to that time. In 1929, it increased
to $278,000,000, and in 1930 (while the slump was on us,
1354 it did not affect us until the middle of 1930), the sales
were $273,000,000. In 1931, they had dropped to
$171,000,000.

Now, of course, in the spring of 1928 our plants did not have the capacity to take care of this absolutely unforeseen and extraordinary growth. We were put to it in every possible way to establish temporary facilities. We introduced overtime work during the day; we put on night shifts; we rented outside quarters temporarily to meet the situation; and by the middle of 1929 we had rented outside space equal to 25 per cent of the floor area of our permanent plants. Our studies looking ahead five years clearly indicated that this demand was going to hold up. We had tested the forecasts of all of the financial and statistical experts, and we drew on all of the fund of information that was available upon which to base our predictions.

It is uneconomical to carry on manufacturing in rented quarters scattered all over, but we had to take quarters for manufacturing space where we could find them, but we immediately began to plan for permanent manufacturing
1355 plant additions within our own Works locations. Our Works at Hawthorne seemed to us to be about a completed proposition. We were drawing heavily on the labor supply in Chicago, or in the area contiguous to Hawthorne, out of Cicero.

We had, in 1925, started our plant at Kearny. That had been started because we felt that we could not depend on this Chicago labor supply for any greater number of people on an advantageous basis. Kearny was operating when this heavy demand came on us, and we planned for certain additions to that plant.

At the same time, we had had under consideration the question of going into the manufacture of rubber covered wire, which had always been made by other manufacturers. We could see some great economies in going into that manufacture, and also we thought we could materially improve the product by being in close touch with its manufacture.

When this rush came upon us, we decided to establish a third plant somewhere on the Atlantic Seaboard, which would provide for this rubber covered wire plant, and also for an additional plant to take care of this increase of business on a permanent basis. We finally decided on the location at Point Breeze, Baltimore, Maryland, which is on the
1356 Atlantic Seaboard. The seaboard was selected because of the fact that one of the principal items of product that we expected to manufacture there, was lead covered long distance cable, and we wanted to be at a seaboard location to get the advantage of lower freight rates in shipping such cable to Pacific Coast points.

Of course, we had a very large program under way. We were in this situation: we had undertaken to furnish the Bell System (and had been doing it for years) to the best of our ability with everything that they needed in the way of apparatus and cable. The Bell System was serving the

public, and they could not go back to a possible subscriber and say, "We cannot give you a telephone because the Western Electric Company has not the capacity to manufacture the equipment." We had to be ready at all times, as far as was humanly possible, to meet the big public demand for telephone service. We were planning to meet this (as far
1357 as we could see at that time) extraordinary growth; and
after the most intelligent consideration it looked as if
that higher level of demands on us was going to continue.

After the stock market break on October 29, 1929, I called our people together and said, "We had better go slow for a few weeks on our Point Breeze additions." We had planned a very important unit down there, an apparatus shop, which involved many millions, and a very large increase in our capacity for the manufacture of telephones and allied apparatus, and we entirely stopped that building. We had a building planned at Kearny and we stopped that, although the foundations were under way; we completed the foundations.

1358 After the break in June, 1930, our business began to
slip very rapidly from then right on to the end of the
year. While the business for the year ($273,000,000) was almost as large as 1929, that was due to the business that we had on the books, which was completed in the early part of 1930. Towards the end of the year, however, we fully realized that business was slipping, and slipping rapidly; and then we absolutely shut off all of these additions and cancelled entirely those we had already stopped. The business slipped progressively throughout the last half of 1930 and all through 1931.

Beginning with the spring of 1931, our employment problem became most serious. We had been compelled to lay off a great many people, and we adopted the policy of spreading the work to the utmost limit; that is, we would provide 75 per cent work for 100 per cent of the people, instead of 100 per cent work for 75 per cent of the people. On the first of August, we put everybody (all the executives and everyone else in the company) on a five-day week, and in some of the

departments in the factories it was necessary to go to
1359 a lower basis than that, some of them working only four days a week. And that is our present situation. Our demands are very much smaller; for 1931 the total was $171,000,000, or only about 60 per cent of the output in 1929. As to these buildings that we rented (this 25 per cent floor space), we have been gradually moving that as rapidly as we could into permanent buildings, that we had planned to permanently take care of this heavier growth.

At the inception of the telephone industry, about all that the National Bell Telephone Company acquired was Mr. Bell's inventions. There were no telephone switchboards, there were no telephone cables, there were no twisted pair wires, no hard drawn copper wire.

1361 Back in 1879, Mr. Vail conceived this plan for the development of the telephone business in America:

First, there should be a parent organization, and underneath it should be financially controlled local companies attending to the local communities. To avoid duplication of study and effort by all of the many local companies, the parent organization would do for all, those things which one organization could best do economically and efficiently.

Second, that there should be a system of long distance lines connecting all of these local companies and looking to the development of a universal service.

Third, a manufacturing organization closely associated with the telephone industry, which would be responsive to the needs and demands of the telephone industry, and the development of which could be controlled in the interests of the telephone industry as compared with the selfish interests of the manufacturer itself.

1362 Between 1879 and 1882, the Bell Companies, through their licensee manufacturers (there were six small licensee manufacturers throughout the country), had developed principally signalling devices and call bells. When the telephone was put on the market, a man would take a telephone in his residence, and put another in his office, or his stable, and have a private line connection. But the demand

soon arose for interconnection. There was a company known as the Western Electric Manufacturing Company, which had been principally engaged in making telegraph apparatus. The telegraph business, at that time, had been developed into a commercially successful business, and this Western Electric Manufacturing Company had developed switching devices in connection with the telegraph business and it had the best switchboard business in America. It seemed natural, at that time, to attempt to get control of this Western Electric Manufacturing Company, in order to combine the best switchboard
manufacturing knowledge in the country with the knowl-
1363 edge that the telephone companies' manufacturing
licensees had as to signal apparatus, call bells, and so
forth. In 1882, this control was acquired; the name was changed to the Western Electric Company; and the relationship has been maintained ever since.

That relationship has been an important factor in the economic development of the telephone service in America. Mr. Vail and his associates thoroughly realized that any manufacturing company making apparatus and devices for the telephone industry, would, during the process of manufacturing, invent many devices and patent them. If the manufacturer were not controlled by the telephone industry, the industry would for years pay tribute to this outside manufacturer who had developed devices because of its contact with the telephone industry. Here was an infant industry, nothing was known and everything had to be developed; so it was essential that the manufacturing organization should be in close relationship with the technical organization of the Bell Companies, in order that it would be responsive in every sense of the word to their needs.

Twenty devices might be perfectly proper and efficient
1364 for use, but if you could concentrate on one of them and
put that into manufacture, you would get increased volume and the resulting economies that come with that volume. You could only obtain that through this close relationship between the manufacturing organization, the operating telephone companies, the technical staff of what is today the Bell

Laboratories, and the general staff of the American Telephone and Telegraph Company. So, through all of these years, there has been this constant relationship between the manufacturing company, the Western Electric Company, and the telephone organization.

"Judge Wilkerson: What was the reason for having a manufacturing business conducted by a separate corporation?

"A. Well, it was a separate corporation at the time, your Honor, and while utility regulation had not come into being,—as you will recall Mr. Vail was one of the pioneers in the utility regulation, and he always thought that some day all public utilities would be regulated—a manufacturing company is of a different type, for the same reason the American Telephone & Telegraph Company, while it was the overhead organization—

1365 "Judge Wilkerson: Well, it was to keep the non-utility part of the business as a separate entity, was it not?

"A. That is my guess.

"Judge Wilkerson: Yes.

"A. I would think that would be the natural thing.

"Judge Wilkerson: I think that would be obvious.

"The Witness: That would be one of the natural reasons, although I do not believe it had crystallized into that at the time."

Every new device that is put out comes out in this way: first, the general staff of the American Telephone and Telegraph Company, through its contact with the associated companies all over the United States, finds out whether there is a need for a device to accomplish some specific thing. They consider it, and if it looks like it is a desirable thing to do, they put it up to the Bell Telephone Laboratories. The Bell Laboratories, from a technical standpoint, develops that 1366 into a device, which, perhaps, is not yet a device that can be manufactured. That device is then submitted to the Western Electric Company and it views it from the standpoint of the possibility of economical manufacture of the apparatus involved. Finally, after it has gone through these organizations, and their minds have met, we get the finished device, which is then a standard for the Bell System for accomplishing the particular purpose involved.

A device is recommended as a standard device because it is felt that it is economically sound for use, not from the standpoint of the Western Electric Company as a manufacturer, but from the standpoint of the entire Bell System. Many devices are put into the System which mean a real loss to the Western Electric Company, but, because of longer life, lower maintenance charge, or for some other advantage, and after considering the Western Electric Company's loss and the benefits to the Bell System, in the end it proves to 1367 be economical and a sound thing to recommend to the System. Everything that is devised and finally comes into operation must pass this test: is it economically sound for the Bell System as a whole, including the Western Electric as the manufacturing end of the business?

The Western Electric has certain important advantages over other manufacturing companies. Two of the principal advantages are these: first, there is no credit risk in sales, as far as our Bell Telephone business is concerned, which is about 90 per cent of our business; second, there is no sales expense. The mere recommendation of the American Telephone and Telegraph Company, and the Laboratories, and ourselves, as a whole, after a device has been established, is all that is necessary. We do not have to go out and promote it. Now, those two things involve important savings, particularly in sales expense, and they have been passed on to the associated companies in the way of savings to them.

While they are advantages from the manufacturing end, they have meant nothing to us from a profit standpoint, 1368 because we have not retained that amount in the business. Aside from that, the risks of the Western Electric Company as a manufacturing company are about the same as any other manufacturing company. We have this advantage: we have a close contact with our customers; we have their estimates looking to the future, which enable us to plan a more steady load, but, unfortunately, their estimates are not firm orders, and while they gave us estimates in 1928 and 1929, for example, as to what they would probably require, we, having assumed the obligation of taking care of them, found it necessary to provide the plant capacity so that we could take care of them. That demand, however, did not develop into orders, and we had no redress. That, in one sense of the word, is a disadvantage to the Western Electric Company as compared with other manufacturers.

In 1929, our sales of manufactured products were $278,000,000. From the best estimate we can make, we probably would have made more money in 1929 if we had refused to take the last thirty or forty million dollars of business.
1369 Our plants were working beyond capacity; we had all of these rented quarters; we had night work, which is always inefficient; overtime work, which is inefficient; our employees had been on overtime for some time, and were getting tired, and our efficiency was slipping down.

Furthermore, our manufacturing forces had increased terrifically. For instance, in 1925 we had 39,500 people on our payroll; in 1926, 45,000; in 1927, 40,000; in 1928, 56,000; and by the end of 1929 we had 84,000 people. That growth of employees began with the late spring of 1928. As I recall it, we had from 45,000 to 50,000 employees in the middle of 1928. We went up in one and a half years to 84,000 people; that is, we increased our forces practically 70 per cent in a little over one year. Now, those people, of course, were unskilled; they all had to be trained. That meant that it was necessary to take skilled men off their work to train these other people, and by the time we got up to the 84,000, the business began to slump. At the end of 1930 we were down to 64,000, and in 1931 we were down again to 44,000.

Now there was a terrific loss to us during the period
1370 of up-building and training the new forces, but there was nothing else we could do. We could not say "Well, it is not profitable to us to build this equipment for you, and we will not build it", because immediately the telephone companies would have been in trouble with their customers. The

customers would have appealed to the Public Service Commissions and the telephone companies would have been ordered to install the service.

While we have a great many advantages, those two I mentioned and this advantage of close contact with our customers; we have this important disadvantage: that we must be ready at all times to meet the peak demands of the telephone industry, and we cannot refuse to accept the business. That does not apply to other manufacturing companies. Outside of those differences, I see no difference in the risk of the Western Electric Company as compared with any other manufacturing company.

Not less than 10 per cent on the book cost would have been fair earnings for the Western Electric Company in its business with the Bell associated companies during the
1371 period 1916 to 1931. By "book cost", I mean the cost of the assets devoted to the Bell business less the current liabilities.

Cross-Examination by Mr. Goldstein.

The Western Electric Manufacturing Company, an Illinois corporation, was the predecessor of the present corporation, and, in turn, was the successor of several other companies; I have forgotten whether it was three or not. The American Bell Telephone Company, the predecessor of the American Telephone and Telegraph Company, obtained control of this merged corporation; I do not know the
1372 mechanism, but it did acquire control.

During the period 1881 to 1907, there was a very strong minority interest; General Steger and his successors ran the business. I would not say that the real transformation of the Western Electric Company into the Manufacturing Department of the Bell System commenced in 1907. The relationship became closer as time went on; it developed.
1373 Beginning with 1907, this relationship was accentuated. You could never have the same program when you have

a 49 per cent minority interest, as when you have practically 100 per cent control.

In 1907, when the American Telephone and Telegraph Company undertook to buy out the strong minority interest, it did not change the Engineering Department so as to work in with the American Company plant. It did work in more as the years went on, but that was a natural growth. I do not recall the date when the American Telephone and Telegraph Company acquired this strong minority interest; I do 1374 not recall whether it was 1907.

Prior to 1907, there were two engineering departments, one in the American Telephone and Telegraph Company and one in the Western Electric Company, and there still are two. I do not know whether they performed the same functions prior to 1907; I never had occasion to check that up. I know that they do not perform the same functions today.

1375 Undoubtedly, there was some duplication in the functions of the engineering departments of the American Telephone and Telegraph Company and the Western Electric Company prior to 1907. As the years have gone on, we have, with experience, been eliminating this duplication. There were duplications when I came into the Western Electric Company, and we have cut them out. I suppose there are some duplications today that we do not realize are duplications, but with experience we keep improving.

I do not know whether the American Telephone and Telegraph Company maintained laboratories apart from the Western Electric Company laboratories prior to 1907. They 1376 undoubtedly did, but I was in an associated company and I do not know. I do not know the exact date, but I know that we finally combined all of the laboratory work into what was then the Western Electric Engineering Department: I do not recall whether that was in 1907 or 1906, but it was around that time.

From 1907 to 1919, the Engineering Department of the Western Electric Company functioned to take care of all of the laboratory work and development and research that is largely done now in the Bell Laboratories. The Department

of Development and Research of the American Telephone and Telegraph Company was organized under that name
1377 in 1919; of course, it had been there before. I think there were some functions of the Western Electric Company that this department took over; it was a general rearrangement. In 1925, the Engineering Department of the Western Electric Company became the Bell Telephone Laboratories, owned jointly by the American Telephone and Telegraph Company and the Western Electric Company.

As I explained in my direct testimony, the Department of Development and Research, through its contacts with the associated companies, finds that there is a need for a
1378 certain device to accomplish a certain particular thing. They consider it from the standpoint of the telephone companies and recommend to the Laboratories that the device should be developed. For example, it may be that years ago there had been a great many complaints from people that they got a blow in the ear from capacity discharge. The Department of Development and Research would consider that and would take it up with the Laboratories, saying, "Here is a problem. We want to do away with this". The Laboratories would then go into it, work out a device or circuit, or whatever was necessary to cure that particular problem. The matter would then be taken up with the Western Electric Company, as to how to manufacture economically the device to accomplish the result desired.

The ideas as to what the telephone companies need, come from all of us. Any of us can suggest anything and the Department of Development and Research correlates it
1379 all by contact with the business.

Immediate contact with the telephone companies is through the Department of Operation and Engineering. The Department of Operation and Engineering, having found out what the telephone companies require, passes on the idea to the Department of Development and Research. But the
1380 Department of Development and Research itself, because of its general contact with the business, might see the need for something. So the ideas of the Department of

Development and Research might come from the Department of Operation and Engineering, from within that department itself, or from the Western Electric Company, or from any where in the business or from outside sources.

The Department of Development and Research does a certain amount of work before it passes on the idea to the Bell Telephone Laboratories, depending on the nature of the work
and depending on the problem. It does the original
1381 research and fundamental study along certain lines that
do not require laboratory research; they do not have
complete laboratories.

The idea comes to the Department of Development and Research, which department considers it to the point where it can be developed as a practical device to accomplish the result desired. When it gets to that point, the Department
of Development and Research releases it to the Bell
1382 Laboratories, which works on the design of an appa-
ratus which will be practical to accomplish the particular thing. Then that is submitted to the Western Electric Company, to see if they can manufacture it efficiently or whether there has to be some change in the design to meet economical manufacturing.

In general, the Department of Development and Research performs the first step toward the development of new or improved products. But there are many lines of things that the Department of Development and Research does not enter into at all. The question of pole preservation, for instance, is handled by the engineers in the Laboratories. I do not know who first suggested the idea of pole preservation, but the Department of Development and Research did not make any study of that, as far as I know.

The Western Electric Company meets the require-
1383 ments after the Laboratories have met our ideas for
economical manufacture and after we have met the
Laboratories' ideas. It is a meeting of the minds. Then there is a final recommendation by the Department of Devel-

opment and Research that the device should be standard
1384 and it becomes a standard product and is brought to the attention of the associated companies through a bulletin saying that the device has been developed and we recommend it to accomplish certain results. That leads to sales by the Western Electric Company and is how we eliminate our sales resistance.

It is almost obvious that the associated companies pay their bills to us 100 per cent. We have the credit of the whole Bell System back of us. We have a customer where there is practically no credit risk. If, however, we were selling to thirty or forty thousand customers we would have some credit risk; 29,000 might be good credit risks, but the other 1,000 would be bad. We do not look at it as if it were
1385 the credit of the entire System. We do not look at it that way at all, but our experience has been that there is no credit risk. We are dealing with a very high grade of customers and we recognize that we have no credit risk. We do have a credit risk with our outside customers, the same as any other manufacturer.

This lack of credit risk is passed on to the Bell Telephone Companies because it does not appear in our expense. Any general manufacturing company would figure its distribution expense at anywhere from 15 to 25 per cent. Included in this distribution expense, is sales expense of approximately 5 per cent. The Western Electric Company incurs distribution expense other than sales expense. It does not incur sales expense. Manufacturing companies generally also incur credit risk of from 1 to 3 per cent. That would go in as an element of cost, but in the case of the Western Electric Company the sales expense and credit risk are not present and are not in our costs.

I was Receiver for the Central Union Telephone Company. That company was under receivership in Judge Dever's
1386 court from 1914 to 1919. The question as to whether we would purchase from the Western Electric Company came up the minute we became receivers. There was strenuous objection to our purchasing from the Western Electric

Company, and the court finally left it to the judgment of the Board of Receivers as to whom we should purchase from. We purchased every dollar from the Western Electric Company the same as we had in the past.

We went into the whole question and there was a very extensive investigation made. We found that it would cost the Central Union Telephone Company a great deal more money to buy on the open market and to establish its own purchasing department and to carry on the functions that were being carried on for us by the Western Electric Company. Therefore, the Board of Receivers decided to continue the relationship with the Western Electric Company, and it
was continued throughout the entire receivership. The
1387 Western Electric had no credit risk at all, even though
we were in receivership, because we paid our bills. The continuance of purchasing from the Western Electric Company was approved by the court.

The Western Electric Company did not appear in this matter, in any way, in court, but the American Telephone and Telegraph Company, as one of the parties in the suit, said, "You can do what you please," and the court left it to the Receivers. The Receivers of the Central Union got the money
to pay the Western Electric Company bills from the
1388 receipts. The Central Union operated some three or
four hundred thousand telephones. That was the only source of revenue we had. The Receivers did not borrow any money.

In the lawsuit there were several things challenged, and the money from the items challenged was impounded and held by the Central Union Telephone Company. The American Telephone and Telegraph Company consented that that money could be used by the Central Union Telephone Company for corporate uses approved by the Receivers, so we had plenty of money. Maybe "impounded" is not the proper legal term,
but they consented to certain payments being deferred.

1389 Prior to the receivership, the Central Union Telephone
Company was a good credit risk. It always paid its bills, but it did not pay any dividends. In order to pay its

bills, it borrowed large sums of money from the American Telephone and Telegraph Company. The source of money for its real operations was partly from earnings; as I recall it (I do not remember exactly now), the Central Union Telephone Company was earning enough money to pay all of its fixed charges in most years, but it had nothing left. Its indebtedness to the American Telephone and Telegraph Company was large, and constantly increased, because the business was growing and it needed money for capital expenditures. By capital expenditures, I mean the construction of new plant and that would be part of the money that would go to 1390 the Western Electric Company.

There is no legal assurance that the bills of the Western Electric Company to the licensee company will be paid because of their relationship with the American Telephone and Telegraph Company; but there is moral assurance, the same as with the Central Union Telephone Company. The American Telephone and Telegraph Company stood back of the Central Union in its dark days and performed a very valuable financial service to that company. It is really the background of the Bell System, of which the American Telephone and Telegraph Company is the controlling factor, to see that the licensees will not go astray or go into bankruptcy, and that they will meet their bills and obligations; that is also a thing that I took into account.

1391 I stated, for the reasons described, that in the early days the relationship with the Western Electric Company had been a good thing for the telephone companies. In the development of the Western Electric Company, there was undoubtedly a reciprocal advantage to it out of that relationship.

1392 The ideas as to the kind of items that should be developed came from all over. Let us assume that in America 1393 instead of the American Telephone and Telegraph Company, there had been just these 25 or 30 associated companies, each one separately owned and controlled. Let us further assume that the Western Electric Company was not controlled in any way by the Bell System, but was a separate manufacturing organization. Under these assumptions, this is what would have happened:

Engineer A, out on the Pacific Coast, would have an idea which he would start to develop and spend a lot of money in experimentation. Engineer B, in another company, would have another idea, and likewise engineer C, and so on. There would be a great deal of duplication like in the railroad business when each master mechanic favors his own ideas. The Western Electric Company would have had the engineer
1394 from the Pacific Coast favoring a certain device and saying, "We want you to make that device for us." Engineer B in New York would have favored another device to accomplish exactly the same result. That would have meant that the Western Electric Company would have had to build two sets of machines, one to make the item for the Pacific company, and another to make the item for the New York company.

By virtue of this control and general supervision and close relationship, all that is eliminated. Each engineer in each company is not going off on his own hook developing his own ideas, but they are all under a general control. As I said before, the thing is done once and for all, and for all companies, in a most thorough way, because you have such a volume that you can afford to go into the greatest detail to develop the best possible idea. You could not do it in any other way.

The Western Electric Company has no competitors in sales to the Bell Companies because no one could compete with us in price. I know of no other reason why there is no competition. The associate companies are perfectly free, if they want, to buy from other sources, if they could find a
1395 better arrangement. Although there is this close relationship, there has never been compulsion. There has been only a compulsion of selfish interest, if I may express it that way.

I do not say that if the Western Electric Company were getting different ideas from all over the country we
1396 would not have quantity production and would not have

standardization. We still get ideas from all over the country.

I think unquestionably our competitors are hampered because they do not have the close relationship that we do; they cannot spend the money on the development of a
1397 particular idea because they have not the broad field that that we have.

The potential field for the products of our competitors outside of the Bell System I can best illustrate in this way:
1398 There are about 18,000,000 telephones in the Bell System and about 4,000,000 in the independent telephone development. There is a relative idea of the two fields. Even that does not give a clear picture, because the 18,000,000 Bell telephones, as a whole, are in the large cities and have a little more potential purchasing power than the 4,000,000 telephones in the smaller towns.

I should say that these 4,000,000 telephones are operated by about six or seven thousand companies. There are a lot of good sized companies. I do not now remember how many independent telephone companies operate in cities of 100,000.

1399 We purchase from Kellogg and Stromberg and from the Automatic Electric Company, certain items which are sold to the Bell System. These companies are, in a sense, competitors of ours, but not in the ordinary sense. I do not consider their prices are competitive with ours in the Bell business, because we make a different type of product.
1400 To expand on that answer, in the Bell System the primary consideration in everything that is put out is quality and operating cost as compared with low initial cost, and perhaps in service, high operating cost. That is because of this relationship in the Bell System. Quality is always the supreme condition in every device.

The Western Electric Company undertook some years ago to construct machine switching equipment for the telephone companies. I do not carry in mind the volume of that equipment manufactured by the Western Electric Company, 1401 but it has been rather large. It has been a substantial percentage of our product during the years.

I cannot state definitely when this machine switching program started in the Bell System, but it was somewhere
1402 in 1918, 1919 or 1920. I do not carry in mind what percentage of the Bell System is now on machine switching operation. It is less than 50 per cent. I imagine it is in the annual report of the American Company which has just been issued. The plans which we have made contemplate the completion of that program; that program was one of the reasons we have built our permanent investments. We have been looking 10 or 15 years ahead on that. I would say
1403 that if America is going to come back that there will be business from these concerns for 10 or 15 years.

In connection with that program, we undoubtedly had some development of patents to accomplish, although I am not familiar with the details; our development expense includes whatever that expense was. In addition, we have also acquired
1404 patents from others. I know that we acquired some patents from the Kellogg Switchboard Company somewhere around 1914, but I do not remember whether they were automatic patents or not. They may have been, but I do not know.

I do not happen to know whether we acquired any patents or licenses from the Stromberg Manufacturing Company. I would assume that we did. Our policy on patents has been to endeavor to acquire them whenever we felt that our failure to do so was going to hamper us in our field of development, even though we could not use the patent. We always wanted a free field of development along our own lines. In the case of a particular patent, we would say that it is of no special advantage to us, but we do acquire an interest in it, as it may be that our field will be narrowed; we cannot tell and we
1405 do not take chances.

We have given reciprocal licenses; that depends upon the deal. I do not recall any licenses to the Stromberg-Carlson Manufacturing Company in exchange for licenses to us in connection with machine switching.

I do not know whether any of our licenses have provided that the licensee shall not sell any of the devices resulting from the use of the invention to the Bell System. We
1406 have made no general contract in restraint of trade.

"Q. All right. Concretely, what would you say, if you found that the Western Electric Company made an agreement with the Stromberg-Carlson Manufacturing Company somewhere around 1923, by the terms of which Stromberg gave the Western a license on the Stromberg patents relating to the panel-type and other types of machine-switching, and then you found that the Western Electric likewise gave Stromberg a license for its inventions—and then you found that it recited—a recital that there was a question as to whether Stromberg's inventions infringed on the Western's, and to eliminate that possibility, this contract was being entered into, and you found a restriction whereby Stromberg agreed that it would not make use of the license granted to it for the purpose of constructing any items of apparatus to sell to the Bell business—

"A. Oh, that is an entirely different problem.

"Mr. Thompson: Just a moment. Plaintiff objects to the question as argumentative, and beyond the proper field.

1407 "Judge Wilkerson: Do you know anything about it?

"A. I don't know anything about the particular contract, but I know, your Honor, that if we own a patent, we can in dealing with anyone, say whether we will give them a full patent on it, or a patent on it in one field, or in another field. That is perfectly legal. But that is entirely dif-
1408 ferent from what you were inferring.

"Q. There is no question of legality now, Mr. Bloom; I am trying to get the facts.

"A. Well, you cannot get it from me, because I do not know what you are talking about.

"Q. All right. If you do not know anything about it.

"A. No.

"Q. All right. Then you certainly did not take that into account in your statement as to what would be a fair return?

"A. That particular thing?

"Q. That fact—the fact that the Western Electric has eliminated competition on the machine-switching program or any part of it, in regard to—in its relation to the Bell System?

"A. No, no, we have not eliminated competition.

"Q. Well, will you please answer me. Did you or did you not take into account in your determination of a fair rate of return the fact that the Western Electric did, or might—did in fact eliminate such competition?

"Mr. Thompson: To which question the plaintiff objects.

1411 "The Witness: Well, the facts are these: I do not know the particular thing Mr. Goldstein is talking
1412 about—we own a patent; I do not know what it is—it may be a patent, as you say, on machine switching. Now we have a perfect right, as long as that is an adjudicated patent, to do what we please with it, and manufacture under it. We can give you a license in a limited field, or in no field. We can tell you that you can sell it to A and not to B, or not to C.

"You asked me whether I had taken account of this patent situation. No, I did not."

1413 I did not take the patent situation into account, because if I had, our profits would of necessity have been much larger, as under a patent you can exact anything you please, but that has not been the policy of the Bell System or the Western Electric Company.

I told in my direct examination about the increase in the volume of business beginning with 1928. That was also a period of activity in the outside business of the Western Electric, that is, in the business of the Electrical Research Products. In 1929 there was not so much as in 1928; the jump
1414 was in 1928. We did not have to do any reorganizing of the manufacturing business in connection with the Electrical Research Products as that was too small a percentage of the total. We had to establish a department to manufacture that apparatus. I do not know how many men we put

into that department or the size of the department.
1415 The great activity about that time that led to the increase
in facilities was in Bell business.

No special plant or equipment whatever was built for the Electrical Research Products business. We put it into a small department out at Hawthorne. The room the department is in was a little longer and narrower than the court room. There may have been some machine investment to manufacture this equipment, but in relation to our volume and
investment it was almost nothing. I might guess that
1416 the expenditure for this equipment was a couple of hun-
dred thousand dollars or half a million, or a million.

This construction program for plant started in the fall of 1928. It was contemplated that it would continue for a period of three or four years, as I recall it. That is, it would run from 1928 to 1932, or 1933. At Point Breeze, we had it planned out for a period of about 15 years. In connection with the program, we contemplated spending somewhere around $100,000,000 altogether.

We had forecasts and information upon which we
1417 based our future program. Each year the associated
telephone companies make up their budgets and their forecasts for the next year, and forecasts for the next five years. These budgets go to the Department of Operation and Engineering of the American Telephone and Telegraph Company, where they are assembled and considered, and bulked up. There are extensive conferences on them between the economists and the operating people of the American Telephone and Telegraph Company, as to whether in total that looks like a reasonable program in view of business conditions. They check up the general business conditions to get the best view that can be had for a general picture, and we are then advised as to that.

We find, for example (I am just taking that as a
1418 theoretical case and assuming that our manufactures
have been running at the rate of $100,000,000 a year), in connection with this forecast, that at the beginning of the third year the requirements on us are going to jump

up to $200,000,000. That gives us a tip immediately, and we begin to figure just what we should do to meet this anticipated demand of two years later so that we are not caught at the last minute. We work up our ideas, and if we can, we wait until next year to see what jump is then contemplated for two or three years ahead. We wait until the last moment before we commit ourselves.'

Nobody in 1927 had anticipated what was going to happen in 1929, and no one in 1929 anteipated what was going to happen at the end of the year. As a result, we came to this increase of business in 1928 and were forced to do a great deal of temporary work.

"Q. You say that nobody had anticipated the break. How long—this provisional estimate that you are talking about, the last one you used, at the end of that year, 1928, was that the one you based your program on?

1419 "A. Yes.

"Q. 1929?

"A. 1929.

"Q. 1927?

"A. 1927 and 1928, we reviewed them; they are in our proposed program, as forecast.

"Q. And which runs for about five years?

"A. Yes. Of course, the last few years are not on as solid a foundation, in fact, as the earlier years."

We check the likelihood of such a program in every way we can. The use of the economists of the organization is just one phase of the check. We had in mind at that time that there might be a break in prices or wages or wage levels between 1931 and 1940. We felt, back in 1927, that the building cost undoubtedly would come down, but we did not know when. I had in mind that wages might come down, but

1420 I hoped that we would never have to cut our wage level in the Western Electric Company, because I am a believer in high wages; I think they promote efficiency.

I felt that the wage levels other than those of the Western Electric Company might come down, and particularly those in the building trades, which I always thought were out of all reason. The increase in wage levels of working people in general during the years of 1921, 1922, 1923 and 1924, was one of the elements causing the increase in business. There was also a greater demand, and, in turn, that reacts on business. In 1928 we took into account everything, including the possibilities of a decline in demand for telephone service because of a decline in wages outside the Western Electric Company.

1421 Provisional estimates made at the end of 1928 showed an increase in business during the period 1928 to 1932. I do not know whether it showed an increase for every year, but there was quite an increase, and it indicated that the level of business was higher and would be higher for the years 1931 to 1934. I did not see the provisional estimates, 1422 All I saw was the summary which estimated the telephone companies' stations and their plant requirements. This summary showed there would be an increase in stations each year from 1931 to 1934. I do not know who compiled the summary, but it was someone in the American Company. We had nothing to do with this compilation. We just got it after the American Company had it.

We did not accept the summary as facts, they are not facts, they are estimates. We accepted it as a fact that they did not give us wrong information, and we assumed that they had given us the information as they had it. There was no reason for their giving us wrong information. So far as rea- 1423 sonable, we relied on that information.

These summaries were made up of combinations from the various provisional estimates from the local companies. Provisional estimates are not a controlling part of our operations, but they are important information to us in order to enable us to start our studies. They are important in 1424 determining what they will require from us. It gives us a general idea.

These provisional estimates have not the same im- 1425 portant relationship to the Laboratories and the American Telephone and Telegraph Company as they have to us, at all. These figures can be converted into actual estimates of probable volume of different types of equipment required of us. As far as the Laboratories and the general staff of the American Telephone and Telegraph Company are concerned, they have this problem before them planned out for years ahead; the mere fact that the growth is going to be 700,000 instead of 300,000 stations is not an important vital factor to the Laboratories.

It is important in this respect: some years ago, in fore-
casting the growth in New York City, for example, it
1426 was estimated that in about 15 years there would not
be enough young women in New York City to operate
the telephone switchboards. This was a tip to the general
staff of the American Telephone and Telegraph Company
and to the Bell Telephone Laboratories (then our Engineer-
ing Department). They started to work on the machine
switching program. Those things are of importance to the
Laboratories and to the Department of Development and Re-
search for far views, but not for the immediate day to day or
year to year use in the same respect as it is with us.

"Q. Now, Mr. Bloom, the Western Electric stands about 70 per cent of the entire expense of the Bell Telephone Laboratories, is that correct?

"A. Well, I do not know whether that is the exact percentage—

"Q. Well, about that.

"A. (Continuing): But it sounds about familiar.

"Q. 65 to 70 per cent.

"A. Depending—it is based on the use that we and the American Company make of the Laboratories."

1427 The program of the Bell Telephone Laboratories is according to a budget from year to year. I am a Director of the Bell Telephone Laboratories and am familiar with its operations.

1428 The 15 to 25 per cent sales expense and 1 to 3 per cent credit risk of which I spoke were intended to relate to the percentages of sales.

When I spoke about the forecast indicating increase in stations, I meant an increasing increase each year. It gained a little momentum as it went along.

In general, a 10 per cent return on the book cost of prop-
erty is a fair return for the Western Electric Company
1429 year in and year out. Of course, you cannot run a
manufacturing business and make an even amount each
year. In a period of unusual activity we make a little more. Other years we make a little less. But over a long period of years, a manufacturing company similar to the Western Electric, should make about 10 per cent on its assets devoted to that business, less current liabilities.

There is a relationship between our prices and a fair return on our property that we expect to get. Because of our close relationship, we have always attempted to keep our prices down to a figure which we consider beyond the criticism of any fair investigator.

I would consider the 10 per cent return on property
1430 a minimum to which we would be entitled. I said not
less than 10 per cent. In 1923 we earned about 6 or 7
per cent (I forget the actual figure) on the basis I have defined.

I do not think there ever was a return on the Bell business, during the period 1923 to 1930, of 10 per cent on the book cost of the property less current liabilities. I think that such a return was earned on the non-Bell business during some of the years. We make all we can on the non-Bell business. There may have been one year when it was close to 10 per
cent on the Bell business.

1431 The capital that goes into our business is determined
by the total amount of our business. Inasmuch as some of the business is to outsiders, that proportion is determined by the outside business. I do not recall how much money went to the Western Electric Company from outside sources,
other than earnings, during the period 1923 to 1930.

1433 I said that I consider that 10 per cent on the book cost
of the property devoted to the Bell business less the current liabilities, would be a fair rate of earning for that class of business, considering the risks and everything that

was attached to it. That was not for any one year. It was an average for years.

1434 The amount of dollars necessary to pay interest, the amount of dollars to pay dividends, and the amount necessary to have left over to go to surplus, added together, must be the 10 per cent. You pay out your interest and dividends and what is left is surplus.

"Q. Then, your opinion that a 10 per cent return was the fair return over the period of years was on the 10 per cent on the amount of property represented by the bonds, and the stock and the surplus, is that it?

"A. I didn't say that at all.

1439 "Q. Assume that the book cost of that property is a hundred million dollars. Would you consider as adequate a return on the hundred million of dollars which was equal to 3 per cent, which took care of all of the expenses, took care of all of the interest, the amortization of the bonds, and yielded $9 per share for every $100 of investor's money in the capital stock?"

(Plaintiff objects to the question.)

1441 "Judge Wilkerson: He may answer subject to the objection, and you may make a motion to strike out the answer.

"A. The answer is that I would only consider it a fair earning if it was not less than 10 per cent on the book cost of the property. Now, here is the reason for it: the return on the stock, the dividends you pay on the stock means nothing until you investigate the whole corporate structure of the company. The company may have a tremendous

1442 amount of watered stock out, it may represent no value at all. I can well conceive that a 10 per cent earning might produce a half of 1 per cent on the stock, and still it would be a fair earning, in my judgment. Again, I can well conceive that the 10 per cent might result in a 200 per cent dividend on the stock, and not be an unfair earning. It would depend a great deal on the corporate structure, but—

"Q. I said $100 of investor's money, so it eliminates the possibility of watered stock.

"A. Oh, no, it doesn't at all. It cannot possibly eliminate it.

1443. "Mr. Goldstein: All right. The investor's money is his subscription to the stock, and that was $100 per share. Would you say, if it yielded $9 per $100 of investor's money represented by the amount of the investment in capital stock plus the surplus existing in the business, and belonging to the investor—

"A. Those figures mean nothing.

"Q. Those figures mean nothing?

"A. Those figures mean nothing unless you investigate the whole corporate structure. My answer is just the same as it was before, not less than 10 per cent on the book cost of the property devoted to the particular business."

That answer does not take into account the corporate structure of the company; it takes into account the book cost of the property and not the relation of the bonds, stock and surplus and all that sort of thing. It does not take into account the number of dollars represented by the bonds, stock and surplus, but it does take into account the book cost of the

1444 property which is on the asset and not the liability side. The depreciation reserve is on the liability side. I am talking about the assets of the company. Take the book cost of the property and deduct the current liability and you have the book assets devoted to this particular business. I have said all along that I took into account the liability, "current liabilities". But I did not take into account the particu-

1445 lar liability known as depreciation reserve.

I did not say that 10 per cent of all the assets was a "fair return". I said that it was "fair earnings". I said "fair earnings" because I wanted to distinguish between a return on a public utility and a manufacturing company. The fair earnings which I defined was 10 per cent on the book cost of the property less current liabilities. The 10 per cent I do not define as a return but as earnings.

1446 RICHARD H. GREGORY, a witness on behalf of the plaintiff, having been previously duly sworn, resumed the stand and testified further as follows:

Cross-Examination (continued) by Mr. Goldstein.

March 16, 1932.

We have apparatus and equipment designed wholly or in part by the Western Electric Company but manufactured by others. The sales of these items are included in Exhibits A-78 and A-79. Some parts of the apparatus included in Defendants' Exhibit D-48 are manufactured by the Western Electric Company and shipped to the companies, and it is my impression that the article is shipped from these manufacturing companies in completed shape. I think the shipments are made direct from the outside manufacturer 1447 to the Bell licensee company. We consider them under manufactures and not under supplies, but it is my impression that they are sent direct from the outside manufacturers. There may be some cases where there is some work done.

The prices on these items are set by the General Commercial Manager at 195 Broadway. The independent manufacturer bills us and we bill at the price at which we sell. Whatever shipping instructions are necessary are made by us.

1450 I know that these items are included in the total sales to Bell Companies, where such apparatus was sold to the Bell Companies, and I assume it was practically all sold to Bell Companies. They are included in our cost of sales and in connection with our adjustments to the extent that the latter is applicable. The total costs of all our manufactures are included in our aggregate cost and as a basis of distribution of the adjustment between Bell and non-Bell business.

In determining the adjustment on the items manufactured by the Western Electric Company itself and what part of it should be allocated between Bell and non-Bell business, 1451 we take into account the total cost of our manufactures. I do not know whether that total cost includes or excludes the cost of these items on Exhibit D-48; I would have to check up on that.

1453 I stated yesterday that I did not have the figures for 1929, but for the ten-year period the aggregate of the adjustments depending upon shop costs as a basis of allocation was 2/10 of 1 per cent. We have a statement showing the amount of that adjustment year by year, which, in

1454 the aggregate, equals 2/10 of 1 per cent. I will produce that statement for counsel for the defendants.

In the year 1916, we made adjustments from basic gross profits to arrive at the total gross profits. We then allocated these adjustments between non-Bell and Bell business, in order to arrive at the gross profit of the Bell business and the gross profit of the non-Bell business. All of the information concerning these adjustments allocated between Bell and non-Bell business, is in the underlying records, which the defendants have had access to since September, 1931. I am not able to say how much that adjustment was in 1916 which we apportioned between non-Bell and Bell business; I

1455 cannot carry all of those figures for 16 years in my mind. The data is in the underlying records and probably in some of these trunks in the courtroom.

There are six men from my organization in the courtroom now. All but one of them came from New York and they all came to help me in this case. I have the underlying data we used in determining the amount of the adjustments between Bell and non-Bell business in 1916 in this courtroom. I also have it for the years 1917, 1918, and every year thereafter.

1456 (It was agreed by counsel that representatives of each side would meet and attempt to agree what the basic gross profits and basic adjustments were for each year.)

1457 The prices for special commercial products sold to non-Bell customers were established by the General Commercial Manager on the same sort of basis as applied to the Bell business; all of the information went in, including competitive prices.

"Q. You have stated there were many kinds of adjustments, and the basic gross profits which have to be made in order to arrive at the annual gross profits, is that correct?

"A. We went over that yesterday, Mr. Goldstein.

"Q. Yes. Then, you said you arrive at the actual 1458 gross profit for the Bell and the non-Bell business separately, as shown in D-19, by computing just the aggregate basic gross profits of each class, and then applying a portion of the many kinds of adjustments to each class on the basis of the apportionment of their aggregate gross profits, or the aggregate standard costs?

"A. Shop costs.

"Q. Yes, that is correct. And in computing your ratios of the aggregate standard shop costs of Bell and non-Bell business, you included in each case the total of the appliances and the special commercial products sold to the Bell customers, and the appliances and special products sold to the non-Bell customers, as a unit?

"A. Took into consideration all of our shop costs.

"Q. Yes. Now, the result of that computation, you claim, gives you the correct statement of the actual gross profit resulting on the Bell and non-Bell business, and as shown in exhibit D-19.

"A. Yes, sir.

"Q. In order that your calculation should give that correct statement, do you not assume that the same ratio of adjustment is applicable each year to appliances as a class, 1459 and as to specialty products as a class?

"A. We spread that adjustment over the entire output of the factories that produce what we call telephone apparatus, which includes both specialty commercial products, as well as telephone apparatus.

"Q. But isn't that on the assumption that the same ratio of adjustment is applicable to one class as to the other?

"A. Yes, this 2/10 of 1 per cent over ten years would be applied equally over each class:"

The same ratio of adjustment is applicable each year to appliances as a class and to specialty products as a class.

"Q. Have you any figures to prove that, to prove that the same ratio exists of adjustments of appliances as a class as it is to specialty products as a class for each year?"

In a large manufacturing business such as the West-
1460 ern Electric Company (manufacturing, as I said yesterday, over one hundred thousand different parts), when we get to the end of the year and find that there is this difference between the actual amount of labor, material and expenses and the amount included in the standard shop costs, the only practical way that we can apportion it is to prorate it over the entire output. I have data on which I based my statement that the same ratio of adjustment is applicable each year to appliances as a class and to specialty products as a class.

We divided our adjustment between telephone appliances sold to Bell and those sold to non-Bell customers on the basis that the total aggregate shop cost of sales to Bell and non-Bell business bore to the total aggregate shop cost of
1461 sales. We assume that the same ratio of adjustment is applicable each year to the appliances sold to the Bell and those sold to the non-Bell customers; we have no other way of doing it. We have no facts to prove that assumption, except experience in the business and sound business judgment and that it would be unwise and expensive to attempt to get any further details and to get a finer allocation of that deficit or surplus.

"Q. In other words, your conclusion that the same ratio of adjustment exists in the case of Bell and non-Bell sales is predicated upon the proposition that it would be too expensive to work up a method to find out?

"Mr. Thompson: The witness answers a question that an apportionment has been made on the basis of judgment and experience, and because it would be greatly expensive to do it another way. Then after he has answered it, then counsel said, 'Now, your answer is based upon the expense of doing this,' omitting two of the propositions that the witness has definitely placed in his former answer. I say that is
1462 not a proper way to cross-examine a witness.

"Mr. Goldstein: If counsel will permit his own statement to stand as the witness' answer, I am satisfied.

1463 "Mr. Thompson: All right. That is all right."

I spread the labor adjustment over Bell and non-Bell apparatus, including specialty products, on the basis of the shop costs of all of them. By so doing I assumed that the differences between the actual labor and what was used in the standard costs should be prorated in that way.

1464 Each item manufactured has a factor of labor, a factor of material, and a factor of overhead. Each item of non-Bell business has the same three factors. The allocation of this small variation (amounting to 2/10 of 1 per cent over the ten-year period) is on the basis of the total labor, material, and overhead in the standard costs compared with the actual expenditures for labor, material, and overhead with inventory adjustment computed at the end of the year. The adjustment is a combination of the adjustments of labor, material, and overhead.

1465 Of course, there are variations in the percentages of total cost of labor on different items of the one hundred thousand manufactured. They are infinite in number. In some items there may be a small percentage of labor, and in other items a large percentage of it. Of course, labor varies all over the lot.

"Q. Now, if an item which is sold to the Bell business—which is part of the Bell business, contains a ratio of 25 per cent labor, 25 per cent material and 50 per cent overhead—I am just using those figures for figures—and another item which is sold to non-Bell has a ratio of 50 per cent labor instead of 25, and 10 per cent material instead of 25, and 40 per cent of overhead, would an adjustment which takes care of the errors as to labor, material and overhead of both of those items, if spread on the basis of the actual shop cost, give you a correct adjustment?

"A. We, of course, never ascertained what the proportion is for specialty commercial products as compared with telephone apparatus. Undoubtedly there are variations. I don't know what they are, never attempted to find out what they

are. But your illustration is, of course, extreme. My
1466 impression is that the relation for both telephone appa-
ratus and special commercial products, as far as the
labor factor is concerned, is approximately the same."

I should say that the relation for material in both telephone apparatus and special commercial products is approximately the same; of course, there are variations, and there may be wide variations, but, on the average, I should say they are the same. I would say the same as to overheads; I am not familiar with the details and I have not examined them, but that would be my impression.

I have never looked into the matter as to whether, on the average, the relation of the factor of labor to the total shop cost of appliances is the same as the ratio of labor to the factors making up the shop costs of specialty products.

The adjustments include also an adjustment of mate-
rial.
1467 We average the entire matter on the total of the labor,
the total of the material, and the total of the expense
compared with the aggregate standard shop costs with in-
ventory adjustments. The variation resulting amounts to
2/10 of 1 per cent, and is spread over all. There may be more
or less material, more or less labor, or more or less expense
that go to specialty commercial products; I do not know, and
I have never looked into it. The variation of 2/10 of 1 per
cent is the average I found for the period of ten years
1468 from 1921 to 1930. My answer would be the same in
connection with the spreading of the overhead adjust-
ment between non-Bell and Bell business.

"Q. Now, consider for the moment various customers within the Bell System; you assume, having spread the assessment over the Bell business as a unit, as compared to the non-Bell business, you have produced Exhibit A-78 as a result, which shows the profits of the Bell business as a whole, is that true?

"A. That is correct."

There have been produced in my direct evidence certain statements or exhibits which clearly indicate the relationship between the profits on the particular items sold to the Illinois Bell and the profits on the sales to the Bell System as a whole.

That relation is shown on Exhibit A-93. Exhibit A-93
1469 shows the total sales to Bell customers at $3,100,000,000,
and sales to the Illinois Bell of $209,000,000, each covering the period 1916 to 1931, inclusive. This exhibit shows that the per cent net profit to sales on Bell business amounted to 4.9 per cent, and that the per cent net profit to sales on Illinois Bell business amounted to 5.3 per cent. It further shows that the per cent return on investment on Bell business as a whole amounted to 6.6 per cent, and the per cent return on investment on Illinois Bell business amounted to 7 per cent.

Plaintiff's Exhibit A-97 also indicates the return on investment in the Chicago area for the Illinois Bell business is 6.3 per cent, and the return on investment for the total Bell business for the same period (1928 to 1931) is exactly the same (6.3 per cent).

We arrived at the profits on the Illinois Bell business by taking the percentages shown on Exhibit A-88. In that exhibit is shown the percentages which total sales of telephone apparatus to all Bell companies bear to total sales to all
Bell companies. This percentage for the years 1916 to
1470 1930 is 52.9 per cent. I later put in evidence the figures
from 1916 to 1931, which show 53.7 per cent for telephone apparatus. The figures that I will now give are for the period 1916 to 1931: the per cent of total sales of telephone apparatus to the Illinois Bell was 59.1 per cent of total sales. Lead covered cable was 15 per cent of the total sales to all Bell companies and 15.1 per cent of the sales to the Illinois Bell. Supplies were 31.3 per cent of the sales to all Bell companies and 25.8 per cent of the sales to the Illinois Bell.

It is by the application of the average rate of net profit that we have made on each of these classes of business, telephone apparatus, lead covered cable and supplies with all Bell customers to the sales to the Illinois Bell Telephone Company, that gives the profit made on the Illinois Bell business as compared to the profit made on the Bell business as a whole, and is shown in the exhibits which I read a moment ago?

As far as telephone apparatus is concerned, we first determined the per cent which the sale of telephone apparatus bore to total sales to all Bell companies. Then we ascertained the per cent which telephone apparatus bore to all sales 1471 to the Illinois Bell. As shown in the underlying exhibits, which the defendants have had access to, we know that we made a certain net profit on telephone apparatus during this period. This figure of profit, as I carry it in my mind, is 7.2 per cent, and, assuming for the purpose of this explanation that that is the correct percentage, we applied it (or whatever the correct percentage was) as a profit to the telephone apparatus sold the Illinois Bell Telephone Company. We did the same thing for cable and for supplies, and thereby got our total.

We divide the basic gross profits among the three 1472 main classifications; that is, telephone apparatus, supplies and cable. The adjustments which have been discussed heretofore are made on telephone apparatus, on cable, and on supplies separately. We assumed that because we made 7.2 per cent on all items of telephone apparatus sold to the Bell System as a whole that by applying 7.2 per cent to the sales of telephone apparatus to the Illinois Bell we get the net profit on our sales of telephone apparatus to the Illinois Bell, because we think that the sales to the Illinois Bell are a fair cross section of the total sales of the Western Electric Company on telephone apparatus. We made an actual division of the sales to the Illinois Bell Telephone Company for the four years 1928 to 1931 between the sales 1473 in the Chicago area and those outside of the Chicago area, and applied whatever the rate of profit was for those particular years to the Chicago sales (this 7.2 per cent is the rate over the whole period of fifteen years). The rate which we applied to the particular sales of telephone apparatus, either to the Illinois Bell or to the Chicago division, was the rate representing the net profit on sales of telephone apparatus to all Bell customers for that year.

"Q. And that is on the assumption that the sales to the Illinois Bell or to the Chicago division, in either case, was a fair cross section of the operations of the Western Electric on telephone apparatus?

"A. Of course, when it comes to the Chicago area, we made an exact division there, and we know what the telephone apparatus portion is, but with that exception, Mr. Goldstein, your statement is correct."

It is on the basis of being a cross section. There are
1474 many items of apparatus. We know that the total cost
of any article of telephone apparatus manufactured by
us and sold to the Illinois Bell is the same for the Illinois Bell
as if sold to any other customer.

The Illinois Bell buys telephone apparatus (a generic term
which includes many items). Each of the items making up the
one class of telephone apparatus has a varying ratio of
1475 labor, material and overhead. No one company pur-
chases the same number of items as every other com-
pany, or the same proportion of the number of items as every
other company in the Bell System. They change from time
to time. We think that the Illinois Bell, on the average, gets
just about the same number of items of the various kinds as
the total relation of their purchases from the Western Elec-
tric Company bears to the purchases of all Bell companies.

There are about twenty thousand items, involving about one
hundred thousand different parts, constituting the class known
as telephone apparatus. There may be a very little variance
in the ratio of labor, material and overhead in a great
1476 many of these items, and there may be more than a little
variance. I do not know. I do not know the degree
of variation. I do not know the degree of variation in a combination of these items purchased by the Illinois Bell and purchaised by any other customer of the Bell System; this is averaged. I do not know that for any one month, or for any one year. We know the average adjustment that it is necessary to make at the end of the year. I do not know the average variation in the ratio of labor to total shop cost of the items sold to the Illinois Bell, and the ratio of labor to

the total shop cost of the items sold to the Bell System. I do not know the average of the ratio of material to total
1477 shop cost of the items sold to the Illinois Bell and the balance of the System. I do not know the average ratio of the overhead to the total shop costs of the aggregate of the items sold to the Illinois Bell and to the balance of the customers.

"Q. Without any knowledge of the ratio of labor, material and overhead to the total shop cost, and without specific knowledge—without knowledge of the amount of error in the labor, material and overhead constituting the standard shop cost of each item, how can you correctly adjust—spread the ~~adjust~~ments on the basis of the total shop costs and know that the adjustments later give you a correct result?

"A. By the use of common sense."

That common sense is based upon experience over the life of our business of manufacturing. It is based on the cost studies that we are making from time to time and our knowledge of the quantities of various materials and kinds of materials that are shipped to the various telephone companies.

The average adjustments will equalize over a period
1478 of years. I have already stated that over the ten-year period 1921 to 1930 the variation between standard and actual shop costs only amounted to 2/10 of 1 per cent. I could not tell whether it would require a ten-year period, or a nine-year period, or a seven-year period to equalize. I can tell what the facts are in the last ten years, but I cannot predict as to what they will be in the next ten years. I have no facts as to whether or not the adjustments on the merchandise purchased by the Illinois Bell in the years 1911 to 1920 will equalize the adjustments of purchases for any other period. The ten-year period of which I have spoken practically did
1479 equalize. I do not know whether if I had used a nine-year period it would have equalized, nor do I know whether a twelve-year period would have equalized.

In determining that the ten-year period would equalize, I took the actual facts. That is, I found, for example, that in the year 1921 the adjustments increased the profits, while in the year 1922 they went the other way; I do not know about going up and down in any particular year, but over the ten-year period I know they did equalize, with a minor variation of 2/10 of 1 per cent.

1480 I do not know whether the net aggregate of the adjustments for labor alone would equalize over a period of ten years, nor do I know whether the net aggregate of adjustments for material would equalize over a period of ten years. The figures for overhead are available, but I do not carry them in mind.

This average of 2/10 of 1 per cent includes the combination of labor, material and overhead. The result of the 1481 adjustment of each of these could be ascertained. I took into account that the aggregate of all three would equalize. I do not know what the result would be separately. That is a matter of fact that I do not carry in mind. At the time that I arrived at the 2/10 of 1 per cent variation, I think I had the figures separately, but I did not attempt to keep those particular details in mind among the mass of figures I have to keep in mind. I knew, at the time that I came to the conclusion as to the 2/10 of 1 per cent for the aggregate of the adjustments, about the labor adjustment sepa-1482 rately, but I do not recall what it was. I also had at the time the data showing whether the aggregate of the material adjustments taken separately would equalize over a period of years, and the same information concerning the adjustments of overhead separately. I will produce all that information for counsel for the defendants.

The adjustments in the Bell business were spread over 1483 the several main classes of products. The adjustments are spread over telephone apparatus as a whole and not by the items that make up the total of telephone apparatus. The result would be that the adjustments would be spread over the subclasses according to the percentage they bear of total standard shop costs of all with the aggregate of shop costs of each class. I think it would be very, very surprising if the ratio of labor, material and overhead to the total cost

were the same for each of the subclasses of telephone apparatus. It might be the same for lead covered cable, because
lead covered cable is a simpler form of manufacture
1484 than is involved in the manufacture of one hundred
thousand different parts; but I do not know. I should
think that the ratio of labor to total shop costs for the various subclasses of telephone apparatus would vary. The same would be true with the ratio of material and overhead, because if the labor varies, the other two must vary. The combination of the various factors, then, would necessarily vary."

"Q. Then with a variation in the ratios of labor, material and overhead, separately, and with a variation in the aggregate, how can you spread an adjustment over the various subclasses on the basis of the percentage of total shop cost and get a correct result?

"A. My answer to that is the same as I answered before. The result of our experience and study and knowledge of our business has convinced us that on the average, by applying it on the average, we get a correct result."

I selected the years 1921 to 1930 as a basis of my study
1485 because that was a period when we began to have a de-
cline in prices for material purchased and was a period
when we began particularly to make a reduction in prices to our customers. Beginning with 1921, the prices of our materials started to drop; 1921 was a year of depression. I do not recall whether prices were dropping in 1922. Previous to 1921, the years 1916, 1917 and 1918 were war years. Conditions were very unusual, and in 1919 and 1920 the price level went up. In 1921, prices went to a lower level, and I took that as more representative of an average than the whole fifteen-year period. I do not think that the period taken would affect the study. I would be perfectly willing to take the whole period of fifteen years. There is not much difference in the
variation, whether you take fifteen years or you take
1486 only ten years. If I had taken five years, it would be
different from the ten years and different from the fifteen years.

"Q. That is, the degree of error would depend upon the number of years that you took into your calculation?

"A. Well, the degree of adjustment.

"Q. Of adjustment?

"A. Not error. I would not call that error."

The degree of equalization, that is, whether it is 2/10 of 1 per cent, or 5 per cent, or 10 per cent, or 15 per cent, would depend upon the aggregate of the conditions in each of the years which make up the total. If you take fifteen years, you get one result; ten years, another; and five years, an-
1487 other. The ten-year period covers that period and nothing else. The ten-year period would not be intended to give a conclusion as to what was the situation before the ten-year period. The study is based upon the situation during the period 1921 to 1930 and covers only the question of the equalization of the adjustments during that period and nothing more.

1488 If we actually figured it out, we might find from a very careful study that the adjustments applicable to the Illinois Bell business would add a great deal larger amount to the cost and would reduce the per cent we are showing, but we do not think it is fair to do it that way. We might also find the converse. We have taken the average. We have averaged it by years; that is, each year in these results that are here are the adjustments for the particular year. The summation of all these adjustments over the period 1921 to 1930 I have given at 2/10 of 1 per cent.

I presume that we have varying adjustments within a single year between the items sold to the Illinois Bell and
1489 the items sold to other Bell customers. We have no knowledge as to whether the Illinois Bell would be affected adversely or advantageously during the year by our method of distributing these adjustments according to the percentage of the total apparatus purchased by it as compared to the whole.

In this exhibit, year by year, the item of the adjustment enters into the cost of sales as the adjustment for that particular year. Now for 1916, the adjustment would be for

1916, and so on. The result of the study which I have stated is for the aggregate of all the period 1921 to 1930. In one particular year, say 1923, the adjustment might affect the profits on the Illinois Bell business in one way and the
1490 balance of the Bell business in another way; but if the Illinois Bell purchases from the Western Electric a fair cross section of items which are manufactured for all companies for that particular year, it would not affect the result.

If the Illinois Bell purchases a fair cross section of the Western Electric manufactures for a particular year, the adjustments on the Illinois Bell business would not affect the results of that business in a dissimilar way than they would affect the results of the balance of the System. By a fair cross section, I mean that the Illinois Bell would purchase approximately the same percentage of each of the various items which the Bell System as a whole purchases from us. In other words, that they would purchase about the same percentage of total machine switching as the percentage of total Illinois Bell purchases are to the total Bell System purchases. To illustrate, if the Illinois Bell percentage of
1491 sales was 8 per cent of the total sales to the Bell System (that is an assumption), they would purchase about 8 per cent of the total sales of subsets made to the Bell System during that particular year.

"Q. Then it is your idea of a fair cross section in 1923 that if the Illinois Bell bought 8 per cent of the total number of dollars represented by the dollar sales of telephone apparatus, that that means that it bought 8 per cent of each of the 20,000 items that make up telephone apparatus, is that correct?

"A. I think that is correct, in the main. That is, we expect that if they have bought, say, fifteen millions of dollars in any one year, and our total sales are one hundred and fifty million of telephone apparatus, they bought ten per cent of the total.

"Now, we know that, by an actual study, we can find out the quantities that have been sold or produced in that particular year, we can find out the quantities that are sold to the Illinois Bell. They will vary, of course; some will be above and below the 10 per cent, but the variation, I think, would not be far from the 10 per cent, on the average."

1492 If the Illinois Bell in 1923 purchased a fair cross section of all of the items of telephone apparatus made by the Western Electric Company in that year, then the adjustments to the items purchased by the Illinois Bell would have the same effect as the adjustments on the items sold to the balance of the System. During the year 1923, the Western Electric Company manufactured several thousand items that come within the one classification of telephone apparatus. I assume that the fair cross section which the Illinois Bell purchased in 1923 was a certain percentage of each of
1493 the twenty thousand items. We have, for each of the years, information, of course, as to the total sales of telephone apparatus to the Illinois Bell and also as to the total sales to the Bell companies. We also have information in some of the years for the quantities of items; I do not recall whether we had this information for 10 years.

At the time I made this study, I did not have the facts as to whether or not the Illinois Bell purchased in each of these 10 years the percentages of the particular items making up telephone apparatus, but it is perfectly common sense; knowledge of the business would enable anyone to say with assurance that the purchases of the Illinois Bell are a fair cross section of the purchases of the whole Bell System. They might vary in different years; they might go up in one
1494 year and down in another year; I do not know. I think it is the cross section for a period of years that is determining.

"Q. Well, then, you are changing your answer, that it is not the cross section for the particular year that is involved, but over a period of years?

"A. Yes, and I think over a period of years it is determining."

I do not have any information for any particular year. My

testimony on this subject is directed to a period of years. I cannot draw any conclusion as to whether the adjustment in a particular year will have the same result on one customer's sales as it will on another's. The adjustment is so small it
will make no difference. Common sense would indicate
1495 that it would be absolutely an unnecessary and very ex-
pensive process to attempt to get any further refinement of the facts of that allocation. The fact is we have not done it; we do not think it is necessary to do it.

The exhibits are predicated upon the proposition that over a period of years the Illinois Bell has purchased a fair cross
section of the Western Electric manufactures. This
1496 study is for a 15 year period. We had some informa-
tion which indicated that the Illinois Bell purchases were a fair cross section over a period of years. I did not have any facts showing what percentage of each of the one hundred thousand different parts manufactured by the Western Electric over the 15 year period was purchased by all of the Bell customers and what percentage was purchased by the Illinois Bell during the years. We did have facts showing what percentage of the total of certain subclasses that make up telephone apparatus was purchased by the Illinois Bell
over the period of years. That information was obtained
1497 subsequent to the making up of these exhibits, and shows
a fair cross section, in our judgment. We received figures showing that the Illinois Bell purchased over the period of years a certain percentage of each of the separate subclasses. I think, as I remember it, there may have been twenty-five or thirty main subclasses of telephone apparatus. The information was in quantities of items only and not in dollars. I do not recall the period that it covered.

We had prices during the year 1923 and made profits on the
sales of items covered by those prices. To arrive at
1498 those profits, we made adjustments in that year to the
basic gross profits, and then arrived at our gross profits. The prices are the same to all Bell customers. We average the adjustments to the basic gross profits over all the costs, but it is similarly affecting all of them. The adjustments

in a particular year may increase the profits and in an
1499 other year they may decrease the profits. In the 10
year period 1921 to 1930, the increases in the profits and
the decreases in the profits practically offset each other. In
manufacturing companies such as the Western Electric, I
think you have to take quite a period of years in order to get
a fair idea of what the results really are. No one year is
representative.

1500 We determine prices in the following manner: first,
we take the prices that are in effect at the time and
take into account the estimates of the volume of business we
expect to get from the telephone companies in the following
year. If, by that volume of business, we find that we are
going to get a return on the investment that is more than we
expect, then we have to reduce our prices.

If the net profits of the Western Electric Company for the
year 1923 were 25 per cent, I should think the prices were altogether too high.

1501 In Exhibit A 78 is shown a net return on investment
of 10 per cent for 1925. That is the computation that
we made at the time as to the amount of money we
earned in relation to the investment as we have
1502 computed it in that particular year. If, for any particular
year, we made 10 per cent on investment, as we did in
1925, it would indicate that we were making a fair return on
the investment for that particular year. It might very well
be that we ought to have made considerably more than 10
per cent in that particular year, in order to take care of those
years in which we made less than 10 per cent. What we are
attempting to do is to get at least 10 per cent over an
1503 average period of time. We have used the same figure
of profit in the computation for the Illinois Bell. We
have assumed the same rate of profit applies to the Illinois
Bell as to the Bell System as a whole.

1504 "Q. How can the profits on the Illinois Bell business
as a whole in the year 1925 be representative of the
profits of the Illinois Bell purchases, if you don't know what

ratio of the items manufactured in 1925 for the entire Bell System was purchased by the Illinois Bell itself?

"A. Well, we know, Mr. Goldstein, that every telephone company in the United States, associated company, buys proportionately about the same ratio of the various items that the other companies do."

This ratio might vary by years, but over a period of years
it is the same. I do not know about any particular year,
1505 but I think they all need the same kind of plant, central
office equipment, subsets, lead covered cable, line wire, and poles. In proportion to the number of subscribers they have, they probably need just about the same percentage of each item.

I do not know whether each company in the Bell System had the same program for machine switching for each year. I have taken account of a period of years. I assumed in any particular year that the Bell System ratio was the ratio for the Illinois Bell, but whether it was or not, in the next year, if it wasn't, it would average out, so over a period of time we would get correct results.

MARCH 17, 1932.

1506 There was no change in the general price levels of
1507 the Western Electric Company in 1931. The rise in
1930 is due to the fact that the reductions we made July 1, 1929, when we anticipated a large increase in the volume of business, were too much. We found that, instead of getting an increase in business, business was falling off. We had followed the policy from 1921 (and in general) of making reductions in prices to Bell Companies and to all of our customers consistent with a fair earning on our investment. Even during those years when other manufacturing companies were increasing their prices or keeping them up, we were reducing our prices. Around July 1, 1929, we found that our prices would have been too high on the volume expected for 1930, but at the end of 1930 we saw that our

business was slipping away and in order to get fair earnings on the investment it was necessary to increase the prices.

The reduced prices in 1929 were in effect from July 1st
1508 of that year; in the early part of the year they were higher than the July 1 prices. We expected that our earnings would be more for the year 1929 than we actually got for the year. Conditions in 1929 were chaotic. We knew that we were going to get a big volume of business and so had to increase our forces to such an extent that our costs went up; that is, the level of efficiency went down. In the month of September alone we took on 7,500 employees in order to get 2,500 employees net. That was a very expensive process, and as a result of that inefficiency due to the rapid increase in our forces and even in spite of the volume of business we got, the net earnings on our business for the year were less than we expected.

The earnings on investment for the 1929 Bell business
1509 were 8.5 per cent, as shown on Exhibit A-78, and that was less than we had expected. I have quite clearly in mind that I made a study that indicated that if the orders continued at the rate they were at that time our fair earnings on the investment would have been 13 per cent or 14 per cent. Our volume did not decline in 1929, but the conditions of turning out that output in rented quarters scattered through various localities and with unskilled labor brought the earnings down.

1510 We first began to know that there was going to be an increase in volume in 1928, and I think we did some of the renting of these extra quarters in 1928. I have not in mind the figures showing the amount of the quarters rented
1512 after July, 1929, and those rented before that date, but I will furnish the figures to the counsel for the defendants.

I do not know the number of foremen we took off of their regular jobs to train new men before July 1st nor after July 1st. I have not those facts and I do not know whether they are available, although I presume they are.

1513 It was generally known throughout the Company at

the time that the decline in our earnings was due to the
1514 fact that we took men off from their jobs and had to
train new men. I know from general information that
it was hundreds of men that were so taken off their jobs, but
that information was altogether general hearsay.

The non-Bell prices also went up in 1930; there was a
general increase in the level of prices on our telephone apparatus
sold to Bell and non-Bell customers, but no general
increase in special commercial products. I do not know
1515 just how much special commercial products went up.
The prices in general, outside of those for goods sold to
the Bell System, are governed in part by competitive conditions.
In 1930, the prices went up to the non-Bell as well as
to the Bell customers. I do not have in mind the figures in
dollars of sales of special commercial products to non-Bell
customers. We furnished to defendants a statement showing
in dollars and by years what portion of special commercial
products were sold jointly to Bell and non-Bell. I do not
1516 have that information by items. If there was any increase
in price at all on an item which was sold jointly
to Bell and non-Bell customers, it would apply to that item,
whether sold to the Bell or non-Bell customers. Of course, I
am testifying to the average price level and not to any particular
item.

There is more than one item of special commercial
1517 products. I have no knowledge as to what the price
change was, applicable to special commercial products
sold to other than Bell customers. I do not know whether
there was any such price change.

The actual 1931 figures for Exhibit A-80 are as follows:
under the column Sales, $9,421,000; under the column
1518 Total Cost of Sales, $9,572,000; Net Profits, a red figure
of $151,000; Percent Net Profits to Sales, a red figure
of 1.6 per cent; Average Investment, $11,947,000; Percent
Return on Investment, a red figure of 1.3.

Taking the figures that I gave for Exhibits A-78 and A-80,
we made $10,500,000 on Bell business in 1931 and lost $151,000
on non-Bell business. The return on investment for the year

1931 on Bell business was 3.9 per cent, and on non-Bell was a red figure 1.3 per cent.

I have the total figures for the entire period 1916 to 1931,
inclusive, for the non-Bell business, which are as follows:
1519 Sales, $695,714,000; Total Cost of Sales, $665,271,000;
Net Profits, $30,443,000; Percent Net Profits to Sales,
4.4 per cent; Average Investment, $303,775,000; Percent
Return on Investment, 10 per cent.

The net profits to sales for Bell business in 1930 was 3.4
per cent; in 1931 it was 4.8 per cent. On the non-Bell business
it was 5.5 per cent in 1930 and 1.6 per cent in the red in 1931.
We increased our ratio of net profits to sales on Bell business
in 1931 over 1930 from 3.4 per cent to 4.8 per cent, but on
our non-Bell business the ratio of net profits to sales declined
from 5.5 per cent to minus 1.6 per cent. That is, the
1520 ratio of net profits to sales increased in Bell business
and there was no net profit in 1931 for the non-Bell
business.

When the International Western Electric Company was
formed, it purchased part of its manufactures from the Western
Electric Company in this country. Of course, whatever
manufactures were made in this country carried a loading
for development expenses in the price that was made
1521 to the foreign companies. That is the development expense
made after the organization of the International
Western Electric Company; we charge off development expense
currently year by year.

There was an interchange of patent rights between the International Western Electric Company and the Western Electric Company. The International Western Electric Company had the right to file in foreign countries whatever of the Western Electric Company patents they thought were necessary. Of course, they only used that right to a limited extent. They paid nothing for that right and neither did we pay anything for the right to the patents resulting from inventions made by them in foreign countries. The International Western Electric Company had a Department of Development and

Research; they did development and research. I cannot
1522 tell you how large that department was as to numbers,
but they expended quite a number of millions of dollars during this period in the development of apparatus which is adapted to foreign use. In foreign countries they have their own ideas as to what kind of apparatus they want. The International had the right to use all of the patents already owned by the Western Electric Company at the date of the organization of the International as we had the right to use their patents in this country. The International Western Electric Company was organized in 1918 and it paid nothing for the right to develop and use the patents theretofore developed and owned by the Western Electric Company.

1523 The Electrical Research Products Company had the right to use the patents of the Western Electric Company, owned by it at the date of the organization of the Electrical Research Products Company in its particular field, which was the sound picture field. The development expense after the organization of the Products Company was borne entirely by that company. As to all of the patents of the Western Electric Company in existence at the time of the organization of the Products Company, it had the right to make use of them in its field in so far as they were of any value to it. It has paid royalties to the American Telephone
1524 and Telegraph Company for that right. It has paid no
royalties to the Western Electric Company, but as a result of the business with the Products Company there has been a large volume of manufactures placed in our factories and development expense has been spread on products delivered to that company in sound pictures as well as on Bell products. As the result of that (and without any specific development on sound pictures in the Western Electric Company) there has been something like $3,500,000 charged in the prices to the Products Company which otherwise would have been included in the cost of sales on Bell business.

1525 We suffered a loss in 1931 on the total non-Bell business. Except in so far as expenses of selling to distributors may vary from expenses of selling to the Bell customers,

there would be no variance in the net profit on items which are sold both to the Bell and the non-Bell customers. The loss on special commercial products is primarily due to the loss on sales of aviation equipment. We have had considerable commercial development expense in connection with that equipment and the volume of business has not been large enough for us to recover that expense and make a profit. We have lost money on the aviation business as there is a small market for that equipment. Only a few of the
1526 aviation lines have adopted this radio equipment, but, of course, as the aviation field develops that loss may be recouped in the future.

If there were in that year any commercial development expenses for items that have not yet been commercially materialized as commercial products, that would, of course, reflect as a cost in that year.

I think in general it is considered sound accounting practice to charge off development expense currently. I know that some companies have capitalized it to some extent but are very careful to mention that fact in the annual report and I know from a financial standpoint the bankers in loaning to them are questioning that practice very seriously.

I do not know what the practice of the 88 companies
1527 shown on Exhibit A-85 is with respect to development expense. I obtained all my information concerning these companies from Poor's and Moody's Manuals. I do not know whether there is any mention there as to how they have charged their development expense. I do not know whether Stewart-Warner does defer the charge but I would be very much surprised if there was a large percentage of the companies that did it. Some companies might charge the development expense for new and improved products to surplus.
1528 I should think that if we knew definitely that the development expense of a company on Exhibit A-85 is not included in cost and we knew what that development expense was, an adjustment should be made in the exhibit to make it comparable to the Western Electric Company where we charge all of the development expense currently into the cost

of sales. To the extent of whatever the adjustment amounts to, the company would not be on a comparable basis; the adjustment might be little or much.

1529 The Graybar Company does not exploit Western inventions. All it does is to distribute the products of the Western Electric Company; this constitutes about 14 or 15 per cent of Graybar's business. The rest of its business consists of buying from various manufacturers electrical supplies and selling them to consumers.

1530 (Statement showing Graybar Electric Company sales and estimated net profits on Western Electric manufactures 1926 to 1928 was marked for identification as Defendants' Exhibit D-49; statement showing Graybar Electric Company earnings for the years 1926, 1927 and 1928 marked for identification as Defendants' Exhibit D-50; statement of assets and liabilities of Graybar Company 1926 to 1928 marked for identification as Defendants' Exhibit D-51.)

These statements marked D-49, D-50 and D-51 are correct.

The total sales of the Graybar Company for the 1531 year 1926 amounted to $76,588,000. Of this amount $12,172,000 was Western Electric manufactures. The net profit to Graybar on Western Electric manufactures was $1,204,000 and the total profit for the year was $1,348,000. In other words, the Graybar Company, paying the same or higher prices for our manufactures as the Bell Companies, was able to sell in competition with other manufacturers throughout the country and make $1,204,000 in that particular year. For the balance of $64,000,000 representing merchandise purchased from other manufacturers, the Graybar 1532 Company was able to sell to its customers in competition and make $144,000.

In 1927 the total sales of Graybar were $68,712,000, of which $9,020,000 was merchandise of Western Electric manufacture. The net profit on Western Electric manufac- 1533 tures was $993,000, while on non-Western Electric manufactures there was a profit of $771,000. This shows that on the non-Bell business of $59,000,000 in 1927 Graybar made some $700,000, or five times as much as was made from the non-Western Electric manufactures in the previous year; that is, conditions were different in 1927 and they were able to make a good deal more money than they did the previous year on the purchase of supplies from others.

In 1928 Graybar sold $9,789,000 of Western Electric manufactures, on which the profit was $1,097,000; they sold about $63,000,000 worth of non-Western Electric manufactures, on which the profit was $1,450,000. The sales in dollars of
1534 non-Western Electric manufactures was about seven times as much as the sale of Western Electric manufactures.

I have my working papers showing the details of the assets and liabilities of the Western Electric Company which I used to arrive at the average investment shown on Exhibits A-77, A-78, A-79, and A-80. In arriving at average investment, we deducted the current liabilities, but did not deduct interest-bearing indebtedness of any kind, whether it was demand
1535 paper, three months paper, six months paper, twelve months paper, or two year paper. In some of the years we deducted and in some of the years we did not deduct the notes representing loans from the American Telephone and Telegraph Company to the Western Electric.

(Sheets given defendants by the Comptroller's department of the American Telephone and Telegraph
1536 Company representing loans to the Western Electric Company were marked for identification as Defendants' Exhibit D-52.)

The loans made by the American Telephone and Telegraph Company to the Western Electric Company in general were made on demand; sometimes they were outstanding for a considerable length of time, but it was the understanding that we could pay them off as necessary. These loans were notes payable in each case. I think they were by the terms
1537 of the instrument demand liabilities, although some of them may have been on the time basis. They were repaid as we had surplus cash beyond the particular needs of our business. In the earlier years, the interest rates were

the prevailing rates at which we could borrow money on the
open market. In the earlier years, we were accustomed to
borrow money from banks and when the American Telephone
and Telegraph Company had surplus funds an arrangement
was made with them whereby we would pay, on the average,
about one-half of 1 per cent above the Federal Reserve Bank
rate. In those earlier years, the American Telephone
1538 and Telegraph Company substituted as banker for our
current loans. By "earlier years", I refer to the years
prior to 1928 and 1929.

"Q. There are loans here I notice in 1922, 1923, 1924, 1925, 1926 and 1927. Those are the years you refer to?

"A. I think that is right.

"Q. Yes.

"A. (Continuing.) Although of course I have not examined that statement carefully.

"Q. Now, the rates indicated here show 3.5 and 4.5, with a high of 6 per cent in 1924 for several months, but excluding that, it is usually 4¾ or 5 per cent; is that about the rate?

"A. That would be the rate that I would expect to see there, as a result of our practice at that time.

"Q. Yes.

"A. (Continuing.) Determining the rate of money."

Subsequent to 1927, there was a change in the arrange-
1539 ments between the Western Electric and the American
Telephone and Telegraph Company. I do not remember
the exact date, but about 1927 the American Telephone and
Telegraph Company had, through a stock issue, a large
amount of money on hand which they were temporarily invest-
ing in Government securities. At the same time we were
engaged in a large plant extension program and there was
an agreement at that time that the American Telephone and
Telegraph Company would advance us sums as we would need
them up to a maximum, I think, of $50,000,000 at a rate of
interest which I think was 6 per cent. I don't remember
1540 just what year this was, but I think it was around 1928
or 1929. This statement shows that it was in 1929 the
loans were made on that basis. These loans are included in

the payables which I have not deducted as current liabilities in determining average investment.

In October, 1930, the Teletype Corporation was purchased by the Western Electric Company. The mechanics of this purchase were as follows: the Teletype Corporation exchanged 150,000 shares of its stock for 150,000 shares of American Telephone and Telegraph Company stock. The Western Electric Company on the same day purchased the Teletype stock from the American Company for $30,000,000 and borrowed the money necessary to make that pur-
1541 chase from the American Telephone and Telegraph Company.

The Teletype Corporation sold 150,000 shares of its stock to the American Telephone and Telegraph Company in exchange for 150,000 shares of the stock of the American Telephone and Telegraph Company. The stock of the American Telephone and Telegraph Company was a hundred dollar par value stock but had a market value at that time of something like $215 per share. The Western Electric Company purchased the Teletype Corporation stock from the American Telephone and Telegraph Company and borrowed that $30,000,000 from the American Company. That $30,000,000 is the loan which is included in the payables.

1542 (The statement furnished to the defendants by the Western Electric Company showing the balance sheet of the Teletype Corporation as of September 30, 1930, was identified as Defendants' Exhibit D-53. A statement likewise furnished defendants by the Western Electric Company purporting to explain the purchase of the Teletype Corporation was identified as Defendants' Exhibit D-54.)

1543 The consolidated earnings statement of the Western Electric and subsidiaries includes the investment in the Teletype Corporation for 1930 and 1931. The investment included for that corporation is the $30,000,000 with whatever variations there may be from that figure; that is, subject to errors and additions or differences in plant valuation. The balance sheet of the Teletype Corporation as of September

30, 1930 (Exhibit D-53) is the balance sheet as of the date of the sale and is before giving effect to the purchase by the American Telephone and Telegraph Company.

1544 The balance sheet of the Teletype Corporation on October 1, 1930, is exactly the same as the balance sheet of September 30. There was a change in the balance sheet at December 31, 1930, to give effect to the investment of the Western Electric Company. I have a statement showing that.

1545 (Which said statement was marked for identification as Defendants' Exhibit D-55.)

This change in investment is reflected in the second line in the second column of Exhibit D-55, where there is shown in the balance sheet (as of December 31, 1930) an item of goodwill of $23,813,000. That accounts for the major portion of that change.

The Teletype Corporation prior to its sale to the American Telephone and Telegraph Company had a Department of Development and Research which employed, as I recollect it, 81 people out of a total of about 1,500 employees in the Corporation.

1546 "Q. And on January—the payroll for the Development and Research Department was $16,000 for the month of September, 1930, and your payroll for the entire organization of the Teletype was $246,000 a month.

"A. I think—that sounds right, Mr. Goldstein. I do not carry those figures in my mind.

"Q. And the same—the Development and Research Department of the Teletype Corporation has continued about the same since that time, has it not, as far as the employees and the functions are concerned?

"A. Well, I know that they have continued their development.

"Q. Yes.

"A. (Continuing.) To what extent there have been changes one way or the other, I am not informed.

"Q. They have maintained their Development and Research Department since?

"A. So far as I know.

"Q. And in 1931, November, which is the figure—the date
of which we have the figures taken from some statements
which you have made available to us, we find that there
1547 were 71 employees in the Development and Research
Department, with a payroll of $15,000 per month,
January, 1932, and there were about 822 employees for the
Teletype Corporation, with a payroll of $116,000 per month.

"A. I think that is correct."

Other than the loans by the American Telephone and Tele-
graph Company which I have already described, there is
included in payables, outstanding debentures of $35,000,000.
There are also loans that have been made to us by the Trustee
under the pension fund plan of approximately the same
amount. These loans are made from the Trustee under the
conditions I have previously described and all bear in-
1548 terest at the rate of 5½ per cent. The annual report to
the stockholders shows the exact figures at the end of
each year. We have not included these loans from the Trus-
tee as a current liability. The loans are demand loans.

1549 The reason why it was decided in 1927 to deposit
pension fund money with the bank, rather than to carry
it on our accounts as before, was because about that time
there was an Act of Congress which made pension accruals
a proper deduction in determining income tax if the accruals
were deposited with a trustee. We made this arrangement
with the Trustee and paid the money to the Trustee and since
that time have been able to deduct the current accruals and
also the interest that we paid the Trustee in determining our
net income for Federal tax purposes. Prior to 1928 we had
an employees' benefit fund. In arriving at our average invest-
ment for the years 1916 to 1927, we did not make any deduc-
tions for reserve for pension funds.

1550 We also had working reserve which included such
items as this moving reserve that I have described, and
other reserves of an estimated nature representing the dif-
ference between what our books indicated would be shown for
a particular period and what we felt from past experience

the results would actually be at the end of that year.
1551 In connection with these reserves, we set up the proper
proportion of what we expected we would need for the
year, and apportioned it to that particular month, and set it
up in that particular month. The next month would be a
varying amount, the next a similar amount, and so forth; it
was the average of all of those. It would not be on a sinking
fund basis.

The aggregate amounts of these working reserves included
in our liabilities were as follows: 1931, $4,921,000; 1930,
1552 about $7,800,000; 1929, $9,800,000; 1928, $6,900,000;
1927, $11,100,000. I have only these figures back to
1927. $9,900,000 is approximately correct for the aggregate
amount for 1926. There was no working reserve included for
previous years.

In arriving at our average investment, we made no
deduction whatever from the book cost of plant for
depreciation.

1553 I think the option the Western Electric Company had
on the stock of the International Telephone and Sales
Corporation, of which I spoke, was in writing. I have never
seen a copy of that option and I think it would, natu-
1554 rally, be surrendered on the sale. I have not a copy in
my possession and to my knowledge the Western Elec-
tric Company has no copy. The option provided that the
Western Electric Company, on the payment of approximately
$800,000 (with certain adjustments for dividends), could ac-
quire the capital stock of the International Telephone Sales
and Engineering Corporation, which owned control of the
Automatic Electric Company.

The Automatic Company made a series of contracts with
Western, beginning in 1919, by which it was to manufacture
for us certain step-by-step equipment which is sold by
1555 the Western to the Bell customers. There was a pro-
vision in the contract whereby advances could be made
to the Automatic against shipments to be made in the future.
What this meant was that the Automatic Company got its
money for sales to us in advance of shipment, and paid us

interest for the period of time intervening between advance and the normal date of collection.

The Western Electric Company did not, to my knowledge, pay off a mortgage or bond issue of the Automatic as a part of the same transaction, nor did it advance any large
1556 sum of money to the Automatic. There have been payments made to the Automatic Company for licenses and patents; a complete list of these payments have been given to the defendants and are indicated on Defendants' Deposition Exhibits 189 and 190.

This option was given to the Western Electric Company in 1924. At that time the contract for the purchase of the Automatic manufactures by the Western Electric Company had expired and a new contract was in process of negotiation. The Western Electric Company felt that it should obtain the option (and the people who owned the stock were willing to give it) for the purpose of assurance that the quality
1557 and price of the apparatus delivered would be satisfactory to us.

There was a prior option given in 1919, running to the American Telephone and Telegraph Company. The American Company got an option when the first contract was made with the Automatic. At that time the Western Electric Company made this arrangement for the purchase of manu-
1558 factures from the Automatic for a period of five years.
The same reasons that influenced the acts of the Western Electric Company to secure its option influenced the American Telephone and Telegraph Company to secure an option; that is, to insure quality and price of products.

The American Telephone and Telegraph Company was not a party to the contract between the Western Electric Company and the Automatic Electric Company. I do not know how the option came to run to the American Telephone and Telegraph Company, nor the reason for it. The option to the American Company ran for five years, 1919 to 1924, and expired by its own terms.

1559 The contract made by the Western Electric Company with the Automatic Company in 1924 covered about the same subject matter as the prior contract; that is, the purchase of products which were to be sold to Bell customers.

This time, however, the option ran to the Western Elec-
1560 tric Company. The period of this option was for five years and no money was passed for it. When the Electrical Research Products was formed in the latter part of 1926, this option was included among the non-Bell assets transferred to it. No value was placed on the books at the time of the option; its value was not known at that time.

I was not a party to the negotiation, but I know the facts concerning the circumstances under which the option was surrendered. In May, 1927, it was decided the Western Electric Company would not want to exercise the option. We were manufacturing step-by-step equipment in our own
1561 factories and in looking to the future, we saw we could very well take on the entire manufacture of automatic equipment at a later time, if we cared to do so. We entered negotiations with the former owners of the property and they were interested for a number of reasons. They were afraid, I think, that the option might pass to someone other than the Western Electric Company and they were anxious to acquire control of the company because at that time they were buying up independent telephone companies throughout the United States and expanding rapidly in Europe. This factory was the manufacturing department for such purchases.

At the same time they were interested in negotiating a contract with the Western Electric Company for a longer period and such contract was negotiated from the period 1927 through December 31, 1936. We had a five-year contract
1562 in 1924 which would run to 1929. We surrendered the option to them for $4,000,000 in 1927. We then made a new contract to continue the manufacture for the Western Electric Company for ten years from 1927; that is, expiring the last of 1936. As I remember it, the minimum volume to be purchased under the new contract (which is the one now in force) is something like $2,600,000 per annum, the previous contract was for $3,000,000 or $3,300,000 per annum.
1563 I did not say that our purpose in surrendering the

option was because we felt we would do all of the manufacturing ourselves. What I said was that we might be in a position later on to do so, if we wanted to. By later on, I mean subsequent to 1937.

The $4,000,000 received by Electrical Research Products for this option is not reflected in our Exhibits A-77 and A-78, which show the earnings on the Bell business. It is considered as a non-Bell asset. That is, as part of the earnings of the Products Company. Products Company earnings are not in the non-Bell earnings in our exhibits, but are considered 1564 in the Electrical Research Products. They form part of the earnings from which the Western Electric Company receives dividends, and part of the earnings from which the Western Electric Company received the $48,000,000 dividend in 1927.

The other sources from which this $48,000,000 dividend was derived were as follows: when the Products Company was formed in 1927, it was not only for the purpose of exploitation of the sound picture business and other specialty products, but it also took over some of the non-Bell assets of the Western Electric Company (consisting mostly of securities and a million dollars of cash) aggregating $41,000,000. That was the situation at the beginning of 1927.

During that year there was this receipt of $4,000,000 1565 from the Automatic Company on the sale of the option; there was also a receipt from the final adjustment of the war claim at Antwerp (which was an asset of the Products Company) amounting to some $1,800,000. In that year we wrote up the book value of the Graybar and Northern Electric stock to more nearly represent our interest in the undistributed earnings and capital of those companies. There were also some royalties received during that year and a loss on the sound picture business of approximately $1,000,000. The net results of all these transactions meant that at the end of the year we had a capital of $1,000,000 in Electrical Research Products and a surplus of some $51,000,000. At that time it was decided that there should be a distribution of these assets which had been accumulating

over a long period of years on non-Bell business, and special
dividends were declared, aggregating about $48,750,000.
1566 This dividend was paid to the Western Electric Company and it in turn paid it to its stockholders, without clearing through our surplus account.

On December 31, 1926, the Western Electric Company had in its possession about $21,000,000 of Liberty Bonds and about $9,000,000 of Treasury Notes, aggregating about $30,000,000. These thirty million dollars of Liberty Bonds and Treasury Notes formed a part of the payment of the
dividend; in other words, the dividend was paid in part
1567 by these Notes and Liberty Bonds. We took whatever assets we had, whether cash or securities, to enable us to pay that dividend.

The thirty million dollars of Liberty Bonds and Notes were turned over to the Electrical Research Products on January 1, 1927. They were not needed as working capital of that company but were part of the non-Bell assets which the Electrical Research Products had been formed to take over.
1568 We turned over to the Products Company a large part of the non-Bell assets. We did not turn over to the Products Company those non-Bell assets included in the exhibits as non-Bell assets for 1926 nor for 1927, because they represented the portion of our manufacturing plant devoted to non-Bell business; we would not turn that over to the Products Company. We also had some cash receivables. The Liberty Bonds and Treasury Notes which we turned over to the Products Company were assets of the Western Electric Company not needed for operating purposes. These Notes and Liberty Bonds were in the treasury of the Western Electric Company for some period of time, maybe a year or
so; I do not recall how long. The cash with which
1569 we purchased these Bonds and Notes came from whatever cash sources we had. In a large part, you have to go back for this cash to the sale of the International Western Electric Company, from which we received a large amount of money.

In 1925, when we apportioned the cash between Bell and non-Bell, we apportioned some $24,000,000 of that cash as working capital for Bell business. As I recall it, in that year the large amount of cash we had on hand represented notes of telephone companies; I think the Pacific Telephone and Telegraph Company and some other certificates. There 1570 were also certificates of deposit that we had in bank at the time.

The International Telephone and Telegraph Company turned over to us $25,000,000 in bonds in 1925 under an agreement whereby we were to get, by October of that year, $23,500,000 in cash, as part of the purchase price of the International Western Electric Company. We did receive that cash in that year.

It is pretty hard to pin down the cash with which we purchased the Liberty Bonds and Treasury Notes to any particular time. So far as the apportionment of the investment 1571 is concerned, any securities which we have been discussing, that is, Liberty Bonds and Treasury Notes, would be included in Sundry Investments and not included in investment in operations.

"Q. Did you or did you not include the cash received from the International Western Electric Company as the cash which was apportioned between the Bell and non-Bell business in 1925?"

Whatever cash we had on hand in 1925 necessary to carry on the Bell and non-Bell business would be apportioned properly between the Bell and non-Bell business regardless of the sources of that cash. I think that we considered that all the cash we had on hand in that year was devoted either to Bell or non-Bell business.

We did not purchase those Liberty Bonds or securities with the cash received from the International Western Electric Company sale the moment we received the cash. I think 1572 the proceeds of that sale were used to retire the preferred stock that was outstanding at that time.

The large amount of cash which we had in the year 1925, we got out of the general resources of the business.

When it comes to the apportionment of cash, the Western

Electric Company is in a peculiar position. It has been able
to carry on its operation with a relatively small amount of
cash for the reason that it has been able to get its money from
the American Telephone and Telegraph Company on short
notice. It has not been necessary to have large amounts of
cash, such as the General Electric Company has (where they
have $140,000,000 to $150,000,000 tied up). I think the
1573 amount of cash applicable to Bell business and non-Bell
business over this fifteen-year period is an extremely low
amount to carry on the immense business that we have had
during that period although it may be particularly large in
one year. In a particular year it might be a little high and
in some years it might be a little low, but over the average,
in my opinion, it is much lower than we would ordinarily
expect a manufacturing corporation to have.

We received $29,000,000 in cash from the sale of the International Western Electric Company, which was used to retire outstanding preferred stock.

1574 (Statement entitled "Analysis of average investment in operations, Bell business, years 1916 to 1930, inclusive," identified as Defendants' Exhibit D-56; statement showing "Average investment non-Bell business, years 1916 to 1930, inclusive," identified as Defendants' Exhibit D-57; statement showing "Analysis of Bell plant by classes of property for the years 1926 to 1930, inclusive," identified as Defendants' Exhibit D-58; statement showing "Analysis of non-Bell plant by classes of property for the years 1926 to 1930, inclusive," identified as Defendants' Exhibit D-59; statement showing "Average investment in Bell business divided between manufacturers and supplies, 1916 to 1930," identified as Defendants' Exhibit D-60.)

1575 The statements just identified are correct.

Exhibit D-56 shows $24,000,000 in cash as part of the Bell investment for the year 1925. It shows $8,000,000 for the previous year. That represents the difference in the cash we had on hand between the two years; the cash increased. The $8,000,000 might have been altogether too low to carry on the manufacturing business of the Bell Companies in 1924, and I am not sure but that $24,000,000 might have been too low under the general conditions of 1925. Exhibit D-57 shows that $3,000,000 in cash was allocated to non-Bell business for 1925.

1577 "Q. In the year 1925, you show that the Bell business, in Exhibit A-77, was $226,000,000. In each year thereafter you show sales from $241,000,000 to $338,000,000 in Bell business. Your cash for the years subsequent to 1925 ranged from $4,000,000 to $9,000,000. Was there a shortage of cash in the subsequent years necessary for your business, for your Bell business?

"A. Mr. Goldstein, of course, this apportionment that we have made has been made year by year currently. That is, in 1917 we made the apportionment for 1916, and so on all the way through and these are the figures resulting from that apportionment made currently for the administrative purposes of the Company. Now, when we came to 1925, we had this large amount of cash on hand, and we apportioned it, certificates of deposit—"

The exhibit represents allocations which were made for administrative purposes.

1578 I think that the exhibit indicates the allocation of assets necessary, on the average, in the particular year for the sales to Bell customers. So far as cash is concerned, I would think that a percentage of less than 6 per cent of the total investment in cash would be a very modest amount to include during this period.

"Q. That is, your allocation in each year of assets is as you found them, without going into the question whether in the year 1925, for instance, $24,000,000 was really necessary for the Bell-business?

"A. We made up this exhibit, as I stated before, from the records, that we made currently, year by year, long before we thought of any rate case at all, Mr. Goldstein.

"Q. Will you please answer?

"A. And they were used for administrative purposes, and, if you should go back now, in the light of present information, you would make changes all the way through. Now, my estimate of what that change would be as a whole, would be that there would be practically no difference in the rate of 1579 return, even if we made all of the adjustments we might consider necessary."

If I went back now and revised the administrative reports, those revised reports would contain the same items as now appear in Exhibit A-77 for each of the years; there might be varying amounts up or down.

"Q. So that the figures in D-56 which show $24,000,000 in cash for the year 1925, as average investment in cash for the year 1925, is not intended to contain the number of dollars of cash which was necessary in the Bell business in that particular year, is that correct?"

As far as any particular year is concerned, there might be changes that could be made, but, as I said before, you have to consider these exhibits over a period of years for a manufacturing business. In any particular year you might want to change one figure and that might readily be less than is shown there. On the other hand, in the other years there might be considerably more cash that should be allo-1580 cated to the Bell business than we have.

The exhibits showing the average investment in operations represent the amount that we considered as the proper amount in the particular year. That is, in 1926 we considered that a proper allocation against Bell business. If we were to go back now and allocate all of our assets, cash and receivables, merchandise and plant, and reallocate on our profits on the same basis, we would make considerable changes.

1581 In my opinion, I would say that $24,000,000 of cash was not necessary to manufacture the articles and to transact all of the necessary operations to make $226,000,000 of sales to the Bell customers in the year 1925. As is generally 1582 known, we do not finance a business in any one year for the needs of that particular year. We might, for instance, put out a bond issue of $35,000,000, as we did in 1924. Now, that was not for the needs of 1924, but was for the needs of succeeding years and in varying amounts. Now, in that particular year it might be in excess, but for the average over the whole period of time, I consider the average cash devoted to Bell business is no more than a normal amount necessary to carry on that volume of business, and is less than most industrial concerns would consider as necessary. This apportionment has been made on the basis of the facts as we found them in a particular year, but the explanation I gave as to why cash was high in that particular year is because we do not finance every year. We have to finance for a period of years; we have a bond issue that runs for twenty years.

We issued $35,000,000 of debenture bonds on April 1, 1583 1924, and, as I recall it, got the money from that issue on the same day; I am not sure whether it was all paid on April 1st or was paid in part at later periods in the same year. I think it was all paid in the same year. The proceeds of this bond issue might be in cash or it might have been used to pay off interest-bearing indebtedness during that period.

1584 I cannot say from my own knowledge as to how the $24,000,000 happened to be piled up in 1925. I do know that there was a $35,000,000 bond issue in April 1, 1924, but I do not carry in mind just how the money was disbursed. I have in the court room the facts regarding the amount of cash and the amount of securities on hand on January 1, 1925. At that time we had marketable securities of $138,000 and cash of $9,920,000, or a total of something over $10,000,000. At the end of 1925, we had on hand $10,142,000 in marketable securities and $21,418,000 in cash.

1585 In 1925 we received $29,000,000 of cash from the sale of the International Western Electric. Not all of the cash received from this sale was used to retire our preferred stock. $24,679,000 of preferred stock was paid off; it was called at 110, which would take approximately $26,000,000 or $27,000,000. That would leave approximately $3,000,000 in cash from the sale of the International Western Electric.

We had, at the beginning of 1925, $138,000 in marketable

securities, and we had $10,000,000 in marketable securi-
1586 ties at the end of 1925. In the statement I have here the marketable securities at the end of 1926 are combined with investments. We had $31,000,000 in Liberty Bonds and Treasury Notes alone that we turned over to the Products Company, so we had investments in securities of $10,000,000 on December 31, 1925, and $30,000,000 in securities in December of 1926, which we turned over to the Products Company and which they returned to us as a dividend.

The source of the cash used to purchase the $30,000,000 of marketable securities between January 1, 1925, and December 31, 1925, is easily explained by a comparison of the balance sheet items ~~of~~ December 31, 1925, and December 31, 1926.
1587 At the end of 1925, we had $10,000,000 of marketable securities. At the end of 1926, we had $30,000,000 of Liberty Bonds and Treasury Notes, but when you look at the cash item, we had $24,418,000 at the end of 1925 and
1588 only $7,450,000 at the end of 1926.

It is absolutely impossible to apportion every dollar of cash received and say just where that cash went. Cash builds up just as it does in any business; it fluctuates from year to year from the normal transactions that we get. If the inventories go down, naturally the cash goes up; if the receivables go up, the cash goes down; if the payables go down, the cash probably is decreased; if the payables go up, you have got, perhaps, more cash on hand. You have to go through the whole process of the receiving and expenditure of cash, item by item.

"Q. Well, now, with those possibilities in view, will you please look at D-56 and D-57, which shows every item of assets, and state which you think, in your opinion, account for the moneys which were used to purchase these bonds?

"A. Well, now; on D-56, for instance, you look at the
1589 merchandise item, and you will find for 1924 an average of $70,914,000 of merchandise on hand. For 1925 there was an average of $57,127,000. Now, there is a decrease of $13,800,000. Now, whether it went in the plant, or where it went, I don't know, but certainly there are $13,000,000 which

came in because of the lower inventory values, inventories that we had at the end of that year."

The Graybar Corporation has, at all times, been considered as a non Bell asset, and it would not appear in this exhibit at all. I have been talking about Bell business and not non-Bell business. When we organized the Graybar Company,
1590 we sold our supply department to it; that was in 1925. The Graybar Company took over the supply business in the United States, and took over the merchandise inventories in that business along with other assets.

The inventory turned over to the Graybar Company is reflected in Exhibit D 57. It shows that for 1925 there was $8,120,000 average inventory, whereas in 1926 it shows an inventory of $3,868,000. That reflects the sale of that merchandise to the Graybar Company and also any other fluctuations in the merchandise on non Bell business that might have occurred during the year. The total inventory that we turned over to the Graybar Company at the end of 1925 amounted to $4,490,000. The sale to Graybar constitutes a large part of the explanation of that shrinkage in the non-Bell inventory.

1591 As I said before, the merchandise for Bell business was reduced from $70,900,000 in 1924 to $57,127,000 in 1925. That would account for some part of that $24,000,000. It is a reduction of the general assets for the whole business, as a whole, which we have allocated in the method that we have stated which explains the cash on hand at the end of 1925. The non-Bell inventory, except for Graybar, shows no net shrinkage for this year. The shrinkage due to the sale to Graybar did not reflect itself in cash to the Western
1592 Electric in 1925.

The securities purchased at the end of 1925 were, of course, purchased from the surplus cash we had on hand coming from all sources. Whatever securities were purchased in 1925 were purchased from cash that came from the general
1593 cash resources of the Company during that year.

The difference between the $10,000,000 of marketable securities that we had on hand on December 31, 1925, and the

$30,000,000 of marketable securities on hand December 31, 1926, would come from cash that we had on hand on December 31, 1925, and from liquidation of any cash assets during the year, and from any other sources of cash that we might have had during that year.

The cash on hand at the end of 1925 certainly was a factor in the total cash which was apportioned between Bell and non Bell business. The total amount of cash we had on hand on December 31, 1925, was $21,418,000.

"Q. And that $21,000,000 entered into your average balances over the months which you totaled and apportioned in the manner in which you apportioned your cash between Bell and non Bell business?

"A. Whatever the amounts were, of course.

1594 "Q. Yes.

"A. Varying amounts per month."

The dividend of $48,000,000, of which I have spoken before, represented the liquidation dividend of the non Bell profits that had been made over the life of the Western Electric Company and its predecessor, the Western Electric Company of Illinois. I know that the earnings on the non Bell business from 1881 on, on the foreign business and on the domestic business, aggregated an amount in excess of this $48,000,000.

1595 As to whether if we used $21,000,000 to purchase Liberty Bonds that would be necessary cash for the Bell business in 1925, my answer is the same as it has been before that the cash in any one year may be high or low over the period of years. When you find that over the entire period the cash only represents 5.9 per cent of the total investment, or 4.1 per cent of the sales, I think it is a very reasonable amount.

The allocation of the other assets, shown on D-56 and D-57, represents, of course, assets we have on hand. If we have merchandise on hand, it may be high in relation to our sales, but if we have it there, it is part of our investment. If we have our plant there, it is part of our investment. It may be
high for the particular period. It is high now for our
1596 requirements, but we have paid out our money for it and
it is part of our investment.

I have made a study, upon which I based my conclusion that the $48,000,000 dividend represents non Bell earnings. I have this study here, and it is entitled "Analysis of profits of business, other than with the Bell Telephone Companies, from 1881 to 1927, inclusive."

(Which said document was marked for identification as Defendants' Exhibit D 61.)

1597 The Western Electric Company declared a dividend of $48,750,000 to its stockholders.

The Electrical Research Products during the year 1927 increased its surplus around $10,000,000, as I recall it, of which $5,000,000 were earnings. Included in these earnings was the $4,000,000 on the sale of the option and the war claims which were valued in that particular year. They also included a loss on the talking motion picture equipment of $1,000,000.

1598 This dividend of $48,000,000 was really two dividends, one approximately of $3,500,000, which was considered the current dividend, and the other a special dividend of approximately $45,000,000. Some part of this $48,000,000 came from the current earnings of the Electrical Research Products, although, as will be seen from the statement that I presented to the defendants, the earnings on non-Bell business far exceed the total of $48,750,000.

As I have previously explained, the Liberty Bonds were used as a mechanism of paying the dividends. When the Western Electric Company received the bonds back from the Products Company, it used them as a medium for paying the dividend to the American Telephone and Telegraph Com-

1599 pany. At the time when it declared that dividend (December 31, 1927), it also transferred to surplus the reserve for contingencies which was set up on its books, amounting to approximately $6,000,000. That reserve for contingencies stood in 1916 at approximately $4,000,000. The $2,500,000 difference in the reserve for contingencies during the period 1917 to 1927 represented the net increase in the reserve after the operating earnings had been determined: it had no

1600 part in these exhibits. This credit to reserve for contingencies is in effect a segregated surplus item: that is,

it is after the earnings have been determined. No deduction of that amount from gross revenue is made. First we obtain our earnings on the Bell and non-Bell business, which, we will say, is $15,000,000. Now, that $15,000,000 goes into these exhibits. When we get the $15,000,000, we set aside
1601 $2,000,000 of that in the reserve for contingencies, which is a segregated surplus. This reserve for contingencies was not deducted from the total of the gross assets less current payables upon which our return was calculated.

In 1930, certain assets were transferred to the Weco Corporation by the Electrical Research Products Company.
1602 When the Products Company was first formed, it was intended to take over the non-Bell assets and also exploit the talking motion picture business. As that business grew, however, we decided to confine the activities of the Products Company to the talking motion picture equipment business and to put into another corporation the securities which it held having no relation to the talking motion picture business.

(Document entitled "Weco Corporation opening balance sheet, May 31, 1930" identified as Defendants' Exhibit D-62; document headed "Weco Corporation" identified as Defendants' Exhibit D-63.)

"Q. If the Illinois Bell purchased in 1923 all of the plant items which it had in its plant account in that year, would such purchases also be considered by you as a fair cross section of the Western Electric manufactures for that year?

"A. I can't answer that.

1603 "Q. You don't know?

"A. No. But over a period of years, I feel quite confident that the Illinois Bell buys a fair cross section of all the manufactures of the Western Electric Company.

"Q. But not if it purchased all in one year, you don't know anything about that?

"A. No, I have never made that study."

If the entire plant of the Illinois Bell were divided between the various items that make up that plant, and were compared to a fair cross section of the aggregate of all of the plants of all the telephone companies in the United States, I am not so sure but that you would find that it was a fair cross 1604 section. I have not made the study, but it seems to me it is a very reasonable conclusion to come to.

1605 "Q. Have you any opinion as to whether, if the purchases of the entire plant account of the Illinois Bell in 1923 were made on the basis of the prices for the year 1923, that the adjustments on the gross profits of those purchases would equalize in the same ratio as the adjustments on the purchases of the Bell System during that same year, as were in fact made?

"Mr. Thompson: I object to this question, because it 1606 contains a wholly impossible assumption.

"Mr. Goldstein: You have reproduced your property on those prices.

"Mr. Haight: I am willing to let it go on counsel's assertion, that it is a perfectly impossible assumption.

"Mr. Thompson: All right. We are all agreed."

The apportionment of fixed plant was on the basis of use, as determined by the shop cost of sales; we used the shop cost of sales as a measure of use.

"Q. Now, the shop cost of sales is determined, as I understand it, by taking the opening inventory, by taking the production during the year, and then subtracting the closing inventory, and then from that you arrive at your cost of sales, is that correct?

1607 "A. That, in effect, is true."

The cost of sales takes into account three items: first, the opening inventory; second, the production; and third, the closing inventory. The opening inventory was not produced during the year in which the apportionment was made, but was produced in the previous year, or perhaps more than a year. We used the shop cost of sales for the purpose of this apportionment, excluding administration and things of that sort; that is, we are not using general and merchandising expenses for the purpose of apportioning plant.

Some of the items manufactured during a particular 1608 year are sold during that year, and some are not. The carry-over of items manufactured in a particular year is not the same proportion of the production of that particular year; it varies. I have never made a study to find out whether the beginning and closing inventories are composed of the same ratio of the different kinds of piece parts manufactured during that year, but I think that just ordinary common knowledge would indicate that they would not be. The difference between the number of piece parts of each kind of item found in the opening inventory and found in the closing inventory is not in the same proportion each year; I made no study to test out any such thing. The beginning and closing in-

1609 ventories of Bell and non-Bell items, respectively, in any one year may or may not be composed of the same ratio of the different kinds of piece parts manufactured in that year. I do not know whether the difference between the number of piece parts of each kind of item manufactured by the Western in the opening and closing inventories of the Bell and non-Bell business is in the same proportion in any one year. From our experience, we think it irons out over a long period of time and if you apply the rule of reason, you get a correct result.

"Q. Yes. Now, have you any facts other than the rule of reason which led you to this conclusion which you just stated?

"A. Experience."

I made no study on this subject and had no facts before me at any time to form that conclusion; I would consider it a very expensive process, without any practical result being obtained.

1610 The ratio of dollar value of Bell to non-Bell in the opening inventory may or may not be the same as that ratio in the closing inventory in each year; I have never made any attempt to find out, and I do not know.

The jointly used plant, in general, is divided between Bell and non-Bell on the basis of the Company's standard shop cost of sales for that period.

"Q. Now, using seventy-five million as a shop cost of one, and twenty-five million as a shop cost of the other, you get a ratio of three to one?

"A. If that was the shop cost of sales in those years, it would be a three to one ratio.

"Q. How do you know that the production in that year for Bell and non-Bell business bore the same ratio as the shop cost of sales during that particular year in which these hundred millions of cost of sales were compared?

1611 "A. I never made a study to find out.

"Q. You don't know. Is it not a fact that in your apportionment of plant, you did not take into account the actual units manufactured during that year?

"A. The point we take into account is, as you have expressed it, Mr. Goldstein, we have taken the opening inventory and the production during the year, and the ending inventory, and apportioned it on that basis.

"Q. Now, in your conclusion there would be this apportionment of Bell and non-Bell on the basis of book cost,—on the basis of shop cost. You assume, do you not, that in each year the ratio of Bell to non-Bell shop cost of sales is the same as the ratio of Bell to non-Bell cost of production during that year?

"A. Now, I am making this division on the basis of shop cost of sales.

"Q. Yes.

"A. Now, I think it is perfectly clear to everybody in this court room just what I mean by that, and I cannot amplify that answer in any way whatsoever, Mr. Goldstein.

1612 "Q. All right. Now, in order to reach that conclusion, would it be necessary that the inventory at the beginning and the end of the year of Bell and non-Bell items were in the same ratio as the Bell and non-Bell cost of production during the year?

"A. You are going right back over the same ground again.

"Q. I am asking you, would it be necessary, or would it not, or you don't know? What is your answer?

"A. I have given you my answer. It is based on the shop cost of sales, and the method I have described in considerable detail, over two or three days, and that is the whole answer. I cannot amplify it any more than I have.

"Q. All right. Is the ratio of the cost of production of

Bell and non-Bell items each year the same as the ratio of cost of plant and equipment used to produce the Bell and non-Bell items during the year?

"Mr. Thompson: In the interest of time, your Honor, I object to this.

"Mr. Goldstein: This is an entirely different question.

"Judge Wilkerson: I think in the interest of time we will let the witness answer.

"Mr. Thompson: All right.

"Mr. Goldstein: Q. You have now the cost of plant, you have now the cost of plant, have you?

1613 "A. I will say that I don't know, I never made the study; I have never made that study.

"Q. You don't know whether the ratio of the cost—

"A. You are talking about items?

"Q. No, I am not talking about items at all. I am now talking about the ratio of the cost of production of Bell and non-Bell items each year.

"A. Yes.

"Q. And the ratio of the cost of the plant used to manufacture items during that year. Is there any relation between one and the other?

"A. Let me state the question as I think you have said it. I don't know as I get it. You are asking me now whether the cost of production of plant in one particular year—

"Q. Cost of production of merchandise.

"A. All right. Start that way, first. Start with the relation of the cost of production of merchandise in one particular year, in relation between Bell and non-Bell, to the cost of the production of plant in that particular year.

"Q. No, to the amount of plant used to produce those items during a particular year.

"A. The amount of plant used?"

We are apportioning the amount of plant used to pro-1614 duce items in a given year according to the cost of sales of the items sold. As to whether there is any relation between the two, I think it is perfectly fair and correct to apportion the plant between Bell and non-Bell on the basis of the usage of that plant which we have at that time. At the end of one year we may find that 90 per cent, based on the cost of sales, is applicable to Bell business; the next year may be 85, and in the next year it may be 95. It varies according to the cost of the sales in each and every year.

"Q. Will cost of sales of items which were manufactured in several years give you any measure of use of the plant to produce any items in a given year?

"A. I think that the cost of sales is a very good indicator of the use that the plant is put to."

Questioned by Court: I know of no other way that we could get at the use of a plant. If we cannot get at it 1615 in that way, the problem is unsolvable.

Questioned by Mr. Goldstein: I do not know whether the cost of equipment used in producing a dollar of Bell business is the same as the cost of plant used to produce a dollar of non-Bell business.

1616 In arriving at the average investment in inventory, 1617 we used the monthly balances, except in the consolidated returns, where we had to use the ending inventories for the subsidiary companies. When we used the monthly balances, we used the actual figures and made adjustments 1618 each month in so far as we knew them, and then made the final adjustments at the end of the year. I don't know whether the adjustments in December are larger or smaller than those in the other months.

My estimate of the portion of plant which was apportioned on the basis of the shop cost of sales each year would be that it was around 90 per cent; that would be the average, I would say. The portion of the total inventory allocated between Bell and non-Bell based on the basis of shop cost of sales appears in the Exhibits D-56 and D-57; it is purely a matter of computation. We do not apportion our entire inventory on the basis of shop cost of sales, for some part of it was directly al- 1619 locable either to Bell or non-Bell. I do not know whether our working papers show on their face the amount of inventory directly allocable and which it was not neces- 1620 sary to apportion. I do not know what portion of the cash and current payables were divided on the basis of purchases of plant and what portion on cost of sales. I have not examined the working papers in such detail as would enable me to say whether this is shown in them. We make an apportionment of part of the cash and payables on the basis of purchases of plant. I believe the working papers upon 1621 which we made the apportioinment are in the court room, but I do not know a detail of that sort, which is contained in 107 volumes, aggregating thousands and thousands of pages. I think I have in court all of the working papers that are reasonably necessary to substantiate this exhibit. I 1622 have here the consolidated balance sheet and earnings statement.

(Which said document was identified as Defendants' Exhibit D-64; and the explanatory sheet of which was identified as Defendants' Exhibit D-65; the sheet entitled "Net Profits on investment combined, as reported" 1623 was identified as Defendants' Exhibit D-66; the sheet entitled "Surplus adjustments made to combined earnings" was identified as Defendants' Exhibit D-67; the sheet entitled "Consolidated earnings of the Western Electric Company and subsidiaries, 1916 to 1930" was identified as Exhibit D-68.)

The consolidated income statement included that portion of the profit on the sale of the International Western Electric Company in excess of the undistributed earnings applicable to the period 1916 to 1931. There was an adjustment 1624 made for the Pension Fund to bring it down from the amount we set aside. There was no profit on account of the Graybar sale.

"Q. You did not include in your consolidated statement the $2,000,000 profit on the sale of the assets to the Bell Telephone Laboratories, did you?

"A. No, there was nothing in there. That was a surplus adjustment."

The consolidated statement shows that there are $3,000,000 earnings attributable to the sale of the option; I stated before that the sale was $4,000,000 and the explanation of that

$1,000,000 difference is this: in the agreement made in 1927, when the sale was made, the agreed upon price was 1625 $4,000,000, but $1,000,000 was held in abeyance. If conditions which we thought would prevail in the following years did not prevail, that $1,000,000 would be paid back. The cash was paid in at the end of 1930, but the purchasers of the option are making a claim for that $1,000,000; they are claiming that back and the matter has not yet been settled. The basis of the claim is that the terms and conditions under which they were to pay the $4,000,000 in their mind were not met by the actual conditions that prevailed. There is a letter in existence describing the terms under which the option was sold; that letter is available.

1626 The Bell and non-Bell profits shown in my exhibits are from operating earnings only. The earnings statements of the various companies making up the 88 companies shown on Exhibit A-85 include operating and non-operating earnings, and the assets used as a basis in connection with the returns of these companies include operating assets and non-operating assets.

1627 "Mr. Goldstein: Q. In connection with your two exhibits, one return on investment and the other ratio of profits to sales of the eighty-eight companies, is there any relation between the ratio of net profits to sales of those companies, and the return on their investment?

"Mr. Thompson: As I understand the question, is there a ratio between them?

"Mr. Goldstein: Is there any relation?

1628 "Mr. Goldstein: If a company earns 10 per cent net profits on sales, will it earn 10 per cent on its investment?

"Judge Wilkerson: That depends on how much it has invested, of course.

"Mr. Goldstein: Correct. The exhibits are on the basis that there is some relation.

"Mr. Thompson: Why no; they have set out the facts.

"Judge Wilkerson: I don't understand there is any such relation claimed. They are independent showings.

"Mr. Thompson: Why, of course.

"Mr. Goldstein: With the statement of counsel that that is correct, why, we are satisfied."

1629 I stated that I excluded mining companies from the 88 companies. I have not checked over the 88 companies to see if there are mining companies among them. Maybe there are some of them that have mining operations, but they are so concealed that I never ran across them. I do not know whether the Allied Chemical, the Glidden property, the American Cyanide, the Goodyear, the International Harvester, or the Deering have mining operations; I haven't examined it in that detail. Of course, what we are trying to do here is to get representative companies. If they do mining, I presume that their mining operations are almost negligible. They would be put in if the mining operations were negligible.

I would consider a company comparable to the Western Electric Company for the purpose of this comparison 1630 that valued its inventory at cost; we value our inventory at cost, in general, I think, it is market or cost, whichever is lower. If you want to be absolutely meticulous you 1633 cannot make your comparison with any company. I do not know whether the Lorillard Company carries its inventory at cost.

1635 The development expense incurred by the Department of Development and Research of the American Telephone and Telegraph Company is all an expense of the American Telephone and Telegraph Company.

1636 (Statement of patents sold and licenses purchased from the American Telephone and Telegraph Company by the Western Electric Company marked for identification as Defendants' Exhibit D-69; statement showing a patent acquired by the Western Electric Company from the Stromberg-Carlson Telephone Manufacturing Company marked for identification as Defendants' Exhibit D-70; statement showing a patent acquired from the Kellogg Switchboard and Supply Company marked for identification as Defendants' Exhibit D-71. These documents were furnished the defendants by the plaintiff, and it was agreed that they were authentic.)

We charged our entire development expense as a current expense. I do not know what the practice is of all other manufacturers.

1637 (Statement showing the description of Western Electric costs marked for identification as Defendants' Exhibit D-72; statement showing investment in Products Company of the Western Electric marked for identification as Defendants' Exhibit D-73; statement showing summary of results for years 1927 to 1930, inclusive, marked for identification as Defendants' Exhibit D-74; statement headed "Electrical Research Products, Inc., Analysis of principal items appearing on Products Company Report No. 1 for years 1927 to 1930, inclusive," was marked for identification as Defendants' Exhibit D-75; sheet headed "Controlling interest of American Telephone and Telegraph Company in Western Electric Company" was marked for identification as Defendants' Exhibit D-76; statement headed "Western Electric Company, Inc., Analysis of capital stock structure since commencement of business to December 31, 1930," was marked for identification as Defendants' Exhibit D-77; statement "1925 Cost of Sales" was marked for identification as Defendants' Exhibit D-78, and "1930 Cost of Sales" as Defendant's Exhibit D-79.)

CLARENCE G. STOLL, called as witness on behalf of
1642 the plaintiff, having been first duly sworn, testified as follows:

Direct Examination by Mr. Thompson.

March 21, 1932.

My name is Clarence G. Stoll. I live in New York City.

At this time I am Vice President in charge of opera-
1643 tions of the Western Electric Company, which position
I have held since January 1, 1928.

After graduation from college, where I received a degree in electrical engineering, I entered the employ of the Western Electric Company at its Clinton Street factory in Chicago, in its College Students' Training Course. After about 4 months, I was transferred to the New York factory location, to complete my course there. About October, 1904, upon completion of my course, I was transferred to the Engineering Department of the Company, doing apparatus design work. Some time during 1906, I was placed in charge of apparatus design work. In March, 1907, I was transferred back to the Chicago Clinton Street location, in the Engineering Department, where I had charge of apparatus design and circuit work. In October, 1907, upon the consolidation of the Clinton Street Engineering Department with the New York Engineering Department, I was transferred back to New York, where I had charge of the consolidated apparatus and design work.

1644 About January 1, 1908, I was transferred to the manufacturing organization in the New York plant, at the time of the creation of the Engineer of Manufacturing Methods' organization. About 1911, I was given charge of the manufacturing branch of the New York shop. In October, 1912, I was transferred to one of the foreign subsidiaries, the Bell Telephone Manufacturing Company of Antwerp, Belgium, where I was in charge of the shop as Shop

Superintendent. Shortly after the outbreak of the war, activities at this location ceased, and after devoting some months to getting out of the factory and out of the war area certain materials, tools and special machinery for a particular class of product, and arranging for the shipment of those materials and tools to the Hawthorne Works of the Western Electric Company, I returned to America about May, 1915.

I entered the Hawthorne Works of the Western Electric Company as a representative of the foreign subsidiary in introducing the manufacture of those particular products into the Hawthorne Works, so that orders which the subsidiary company had prior to the war could be filled from this location. These orders were from England, Norway, Australia and New Zealand. About February, 1916, I was made Operating Superintendent of the Hawthorne Works,
1645 and in December of that same year I was made Technical Superintendent of the Hawthorne Works. In 1920, I think in August, I was made Assistant General Superintendent of the Hawthorne Works, in charge of operating, technical and inspection activities. Early in 1923, I was made Works Manager of the Hawthorne Works. In January, 1926, I was made General Manager of Manufacture, in charge of both the Hawthorne and Kearny Works. In July, 1926, I was made Vice President in charge of all manufacture for the Company, and held that position until I assumed my present position, on January 1, 1928. My entire business career of almost 30 years has been spent in the Operating Department of the Western Electric Company. I am familiar with the plants where the Western Electric Company manufactures its products, with its methods of manufacture, and with the other manufacturing operations.

1646 I am likewise President and Director of the Teletype Corporation, owned by the Western Electric Company. I am a Director of the Northern Electric Company, in which the Western Electric Company has an interest, but not control. I am a Director of the Bell Telephone Laboratories, which is jointly owned by the Western Electric Company and the American Telephone and Telegraph Company, and of the

Western Electric Company itself, and in several Western Electric Company subsidiaries.

The Western Electric Company is a manufacturer of telephone apparatus primarily for the Bell System. It also acts as purchasing agent for the Bell System of supplies manufactured by others. It installs, warehouses and distributes telephone apparatus and supplies for the operating Bell Companies and the Long Lines Department of the American Telephone and Telegraph Company.

1647 The activities of the Western Electric Company under my supervision as Vice President in charge of operations cover:

Manufacturing, which, as its name implies, has to do with all the manufacturing operations of the Company.

Installation: a nation-wide organization of men skilled in the erection of telephone central offices manufactured by our Company.

Sales, which handles the warehousing and distribution of our manufactured products and purchased supplies for the operating telephone companies.

Purchasing: the organization which buys the raw materials used in our manufactured products, and supplies manufactured by others which are resold to the operating companies.

Personnel, headed by a Personnel Director, who is responsible for determining the personnel policies throughout the Company, for planning a co-ordinated effort throughout all the departments of the Company in obtaining technically trained men from colleges and universities to enter the employ of the Company, and for the operation of our Benefit Department and pension plan.

Publicity, which handles all the Company's general relations with the public and all publicity, supervises our Company employee publications, and handles the little advertising we do.

Commercial, which handles our contractual relations, the supply contract with the operating telephone companies and our contracts with distributors, the purchase of products

under contract from other telephone manufacturers, the establishment of prices on our products and purchased supplies to all customers, ~~and our~~ relations with ~~the~~ Bell Telephone Laboratories in the authorization of development work, the expense of which is to be borne by the Western Electric
1648 Company.

There is a distinction between the development work of the American Telephone and Telegraph Company and that of the Western Electric Company. The American Telephone and Telegraph Company authorizes and pays for fundamental research and development work basic to the communication art. The Western Electric authorizes and pays for the application of the results of that research and development work in the creation of specific new and improved devices
1649 for use in the communication field. The development
work which is carried on in behalf of the Western Electric Company relates primarily to the form of the manufactured article.

The following is an example of the above distinction: the American Telephone and Telegraph Company conducted a research into all possible combinations of iron and nickel, to determine the electrical and physical properties of each combination, also under varying degrees of temperature. The result was the discovery of permalloy, which possessed remarkable magnetic properties many times more magnetic than
1650 the irons and steels theretofore used in loading coils.

The work of the American Telephone and Telegraph Company ceased with the discovery of the alloy, its properties and its field of use. The Western Electric Company then took up the problem of substituting that alloy for the electro-magnetic iron powder used in the core of the loading coil, which resulted in the development of a loading coil about one-quarter the size of the old iron core loading coil and considerably more efficient. It permitted a much smaller winding of the copper upon the core in order to produce a coil. The smaller size coil permitted a considerably smaller containing pot, which, in turn, required less space in the street manholes of underground cable units.

The result of that single research and development over a 4-year period, from 1927 to 1930, saved the operating companies over $15,000,000.

1651 Development and research are necessary if the Bell System is to give its patrons the best telephone service that can be devised.

The practice of the Western Electric Company of charging development work to expense in the year in which it is incurred, is, in my opinion, fair and proper. The business of the Western Electric Company is a continuing one, and in order to supply its customers with the character of equipment which they require to give the best telephone service, this development work must be continuous, and the cost thereof must be recovered. In a business of this magnitude and complexity, in a rapidly changing art, detailed cost accounting in
1652 connection with each development would be burdensome and exceedingly expensive, and each item of product that we make is a composite of development over past years; any effort to allocate the development cost to an item of product would, in the last analysis, be an arbitrary one. Furthermore, to suspend development expense until some time in the future, when and if sales are realized, would be hazardous from a financial standpoint.

If a cost accounting system which would attempt to arrive at the approximate cost of the development work in connection with any particular project were to be attempted, the expense to both Bell and non-Bell customers would be substantially increased. Our present method is effective, economical in the conduct of the business, and equitable to the business and to our customers.

1653 The sales of our manufactured products represent the commercial utility of the ideas and inventions arising out of our development work, and every purchaser of our product must share in the expense of the development of those products. Keeping in mind that the development work is undertaken for the Bell System, any recovery of development expense through sales to non-Bell customers in excess of any development expense specifically incurred to do that business, has lightened the burden on the Bell business of development expense especially incurred for that business. We recover our development expense in the prices of our products from both the Bell and the non-Bell customers on the same basis.

The Western Electric Company has taken out patents, from time to time, as a result of development and research in its Engineering Department prior to the organization of 1654 the Bell Telephone Laboratories, and by the latter company since its organization. It has, at the present time, arrangements with other companies for the interchange of patent rights.

From many developments, patentable inventions arise, which we have the right to use without taking out a patent. The policy of the Western Electric Company concerning the taking out of patents is to do so in order to protect itself against interference and claims of infringement. This protection is of primary importance, owing to the magnitude of our operations. We also have cross-license agreements with other industries whose fields of activity are such that their developments might have application in the field of operations of the Bell System.

I am familiar with the corporation known as Graybar 1655 Electric Company. It was organized to do the business in telephone apparatus and lead covered cable, and telephone and electrical supplies, formerly done by the Supply Department of the Western Electric Company. It also sells some of our special commercial products, but its largest business is in the purchase and resale of products not manufactured by the Western Electric Company. There has never been any interchange of patents between the Western Electric Company and the Graybar Electric Company.

From 1916 to the present time, the Northern Electric Company has been engaged in the manufacture of telephone apparatus and lead covered cable, electrical power wires and cable, and in the purchase and sale of telephone and electrical supplies throughout Canada and Newfoundland. The Western Electric Company has never controlled the Northern 1656 Electric Company, but has a 43.6 per cent interest in its common stock. For a period of years, the Western Electric Company and the Northern Electric Company have had a contract for the interchange of patent rights, design and technical information, sales distribution and accounting methods, engineering and manufacturing service and advice, for which the Western Electric Company receives a 1 per cent royalty on Northern Electric sales of telephone apparatus to all of its customers.

1657 Under this reciprocal arrangement, the Western Electric Company has received relatively few patents, but has received some ideas of real and substantial value in its business in the United States.

A typical example of this is: enamel or japan type of coatings have been used as an insulation for fine wires for electromagnets for about 25 years. Over a period of years, experience with this process made it possible to apply this type of insulation to larger sizes of wire. When this stage was reached, our engineers recognized the value of using this type of insulation in place of the under-silk insulation on the wires of switchboard cables, especially in localities subject to high humidity.

1658 As the wires in these cables have a large number of soldered connections made to them, this copper wire must be tinned in order to prevent the oxidation of the copper and permit soldering readily. The commercial process of tinning wire that had been used up to that time resulted in an excess of tin remaining on the wire. When we came to apply the enamel coating to this type of wire, we found that the temperature of the enamel baking oven would melt the excess tin, with the result that globules and lumps of tin without insulation upon them would collect at frequent intervals along the wire. These lumps would often have sharp points on them, so that after the outer textile insulation was applied to the wire these lumps or sharp points would project through the insulation. When wire of this type was assembled
1659 into the cable, there would be frequent crosses or short circuits with adjacent wires. Consequently, large amounts of wire proved defective and had to be scrapped.

As we were, at that time, purchasing our tinned copper wire, we laid this problem before our suppliers, but, after many months of work with them, we had no success in overcoming the difficulty of removing the excess amount of tin on this wire.

The Northern Electric Company had been engaged for years in the manufacture of copper wire and tinned copper wire, and we laid our problem before them for consideration. In about 3 months' time the Northern Electric Company developed a rather novel process of tinning wire, which consisted of combining part of the wire drawing operation with the tinning operation. The new process utilized a wire about one-half gauge larger than was required, and as this wire emerged from the tinning bath, it was passed through a diamond 1660 die of the kind that is used in drawing copper wire, which die reduced the size of the copper wire to the desired size, and, at the same time, provided a smooth and even coating of tin without excess. This type of wire overcame all the difficulties in the enameling operations, and proved to be very satisfactory.

Over the period of 13 years in which we have been using this process, we tinned 50,000,000 pounds of wire and saved $6,000,000 in our business with the Bell associated companies. That was the result of an idea that we obtained by this reciprocal relationship between the Northern Electric 1661 Company and the Western Electric Company. The process was patented by the Northern Electric Company, and we acquired the patent for the United States through our relationship and without expense to ourselves. In my opinion, the arrangement between the Northern Electric Company and the Western Electric Company is a fair one for both parties.

I am acquainted with the International Standard Electric Corporation. The Western Electric Company sold the stock of the International Western Electric Company to the 1662 International Telephone and Telegraph Company on October 1, 1925 (at which time the name was changed from International Western Electric Company to International

Standard Electric Corporation). Since then the Western Electric Company has not had any ownership of any kind, either directly or indirectly, in the International Standard Electric Corporation.

Since October 1, 1925, the International Standard Electric Corporation and its subsidiaries have been engaged largely in the design, manufacture, sale, installation and distribution of telephone apparatus and equipment throughout the world, outside of the United States, Canada and Newfoundland. It and its subsidiaries operate important manufacturing establishments in England, Belgium, France, Austria and Japan. At the present time, the Western Electric Company has a contract with the International Standard Electric Corporation
whereby these companies exchange patent rights, de-
1663 signs, and technical information in connection with tele-
phone and telegraph apparatus and systems, and information on shop processes, tools and machinery. Since October 1, 1925, the Western Electric Company has received a royalty from the International Standard Electric Corporation of one-half of 1 per cent of the latter's sales of telephone apparatus. It has also received patents and ideas of value in the prosecution of its business and particularly in the prosecution of its Bell business. The International Standard Elec-
tric Corporation has received from the Western Electric
1664 Company information for filing patent applications on
3,711 inventions, of which they have filed on 311 in one or more foreign countries.

The Western Electric Company has received from the International Standard Electric Corporation information for filing patent applications on 1,250 inventions, of which it has filed on 154 which it considered to be of value in its business.

Fundamentally, the basic art of telephone communication is
the same the world over and the needs are quite sim-
1665 ilar, but the methods of accomplishing the result and
the devices that are employed are frequently different. There are differences between countries of Europe as well as between Europe and the United States, and those differences,

very frequently, go down to differences between different places in the same country, or even different telephone subscribers in the same city.

There is far less standardization of practices and equipment in Europe, undoubtedly because of the differing tastes and customs of the people, and of national pride and the desire to foster local inventions. There is not the same utility abroad for these manufacturing developments of the Western Electric Company as there is in this country. The International Western Electric Company and the International Standard Electric Corporation maintained substantial development organizations abroad for the purpose of providing their
1666 customers with specific forms of apparatus and equipment, in order to satisfy the varying needs, tastes and customs.

In my opinion, the arrangement between the Western Electric Company and the International Standard Electric Corporation is a fair and reasonable one for both parties.

Before the Western Electric Company sold the stock of the International Western Electric Company, the Western Electric Company had had foreign business done through subsidiaries for a great many years. For the period from 1916 to 1919, that business was carried on by the Western Electric Company, Limited, of Canada. From 1919 to 1925, it was conducted by the International Western Electric Company, and it did business throughout the world, excluding the United States and parts of South America. The
1667 Western Electric Company and the International Western Electric Company interchanged patent rights, complete design and technical information, and full information on machinery, equipment, tools and processes employed in the manufacture of telephone apparatus.

I am acquainted with a concern known as the Siemens and Halske Company, which was a very large telephone manufacturer in Germany. As a result of the contractual relation between the International Western Electric Company and

Siemens and Halske, the Western Electric Company acquired the American rights to the Siemens and Halske inventions.

(Objections by Mr. Adcock that the contract would speak for itself and a request made for a copy of the 1668 contract. Mr. Thompson pointed out to the Court that he was merely proving the fact that such rights were given by Siemens and Halske to the International Western Electric Company and that the contract was not in any way involved.)

1670 I was in Europe at the time the contract was executed and came in personal contact with acts under the contract, and I know there was that exchange of patent rights, irrespective of any knowledge of the terms of the contract.

1671 (The Court ruled that if the matter was not brought up again, it would assume that counsel for the plaintiff had satisfied defendants' attorneys with respect to the contracts.)

1672 The sales and manufacturing activities of the International Western Electric Company in the foreign field were interrupted from 1915 to 1919 by the war. Scientific and engineering minds were devoting their time to developing instruments of war, and manufacturing facilities were devoted to the production of war materials and supplies. Consequently, little effort was devoted to peacetime activities. Therefore, for the five years from 1915 to 1919, the International Western Electric subsidiaries were devoting substantially no effort to the development of 1673 the telephone art, and receiving substantially no advantage from the rights acquired from the Western Electric Company, because their sales were largely of war materials, or of telephone materials particularly adapted to the conduct of war.

In connection with the manufacturing business conducted in the foreign field by the International Western and its subsidiaries, there was a distinct hazard. It had established factories and investments in physical properties and plants in many nations in Europe and in the far East, and the businesses in those locations were subject to the laws, rules and regulations of those countries and the hazards were far greater than those of the Western Electric Company.

1674 The arrangement which existed between the International Western Electric Company and the Western Electric Company was a fair and reasonable one in my opinion.

Electrical Research Products, Inc., is a wholly owned subsidiary of the Western Electric Company, which commenced business on January 1, 1927, and took over a portion of the non-Bell assets of the Western Electric Company, including the exploitation of certain special commercial products.

Some of our ideas and inventions developed for the Bell System have application in other fields; some of them are applicable directly in the form used by the Bell System; in other cases, in order to develop a product of commercial utility, further specific development work was necessary. The term "special commercial products" is applied to the 1675 products upon which further specific development work must be incurred in order to make them available for commercial use. (Hereafter Electrical Research Products, Inc., will be referred to as "Products".)

Since the formation of Products, the Western Electric Company has not incurred any development expense specifically in connection with the apparatus manufactured by it for Products. That development is paid for by Products. The special commercial products which are dealt in by the Products Company are manufactured almost entirely by Western Electric. When Products was organized, there was not an established business in such articles which was turned over to Products. The Western Electric Company had sold about a million dollars worth of sound recording and reproducing equipment in 1926, but there was no established business in any sense of the term.

When Products commenced business, its first em-1676 ployees were former employees of the Western Electric Company. There were 25 of them. Products had to build up an organization of its own, including executive, administrative, financial, accounting and engineering departments. It had to build up a nation-wide organization of skilled engineers and mechanics for the installation, servicing and inspection of sound reproducing equipment installed in theatres and other places. It had to establish a large or nation-wide sales organization; it solicits licensees and contracts with them; it offers a financial service to customers who desire to pay on a time basis. It exercises supervision over an export business, maintains warehouses and carries stocks of finished merchandise.

1677 It had to establish an organization to handle music rights, in connection with the music programs used with the sound moving pictures or apparatus which Products sells or leases to its customers.

Money was risked in this business in order to carry on its operation and there was a distinct hazard; in the beginning it was difficult to interest motion picture producers in the sound picture idea, which was later to revolutionize their industry. In the first year, as well as in 1931, the Products Company incurred losses, while in the intervening years there were substantial profits made.

Over the past five years, practically all of the motion 1678 picture theatres in the United States have been equipped for sound motion pictures. The potential market in this field lies in the application to existing theatres of improvements in the art and mechanisms, and providing for a normal growth in the industry. There has been some work done in the application of sound motion pictures to advertising and training in the industrial field and also in religious and educational fields. However, there is no immediate prospect of any substantial development in those fields.

I am familiar with Plaintiff's Exhibit A-82, showing the income from the Western Electric royalties and patents sold, and expenses applicable thereto, for the period 1916 to 1931, in relation to the Western Electric Company, the International Western Electric Company, the International Standard Electric Corporation and the Electrical Research

Products. In my opinion, the arrangement which exists between the Western Electric Company and Products is a fair and reasonable one.

1679 The Western Electric Company is engaged in business on a far larger scale than any of the foreign companies conducting the business of manufacture, sale and installation of telephone apparatus abroad. When the Western Electric Company grants a patent right in the foreign field, the relative utility of such patent right is small as compared with the utility of the patent rights which it receives for use in this country; the relative field of usefulness is large in proportion. On the average, the sales of telephone apparatus in the foreign countries which have received our rights are, as a total, from one-fifth to one-sixth the sales of telephone apparatus made by the Western Electric Company.

The Western Electric Company locates its plants on the basis of a comprehensive economic study from the standpoint of cost of products delivered to the Bell System as a whole. The scope of the study includes the probable cost of land and buildings, transportation costs, the cost of materials 1680 delivered to the factory, the cost of labor, the adequacy of the labor supply and the transportation facilities for labor.

We have learned that for a long continuing business such as ours, the best building construction to employ is brick, steel and concrete, and that is what we employ. That type of construction is most economical from the standpoint of maintenance and economy of repairs and of minimum insurance rates.

The manufacturing activities of the Western Electric Company are carried on in a few locations to take advantage of the concentration of the requirements of the operating companies of the Bell System, and it is essential that we mass 1681 those requirements, in order to obtain the advantage of mass production and consequently low costs. Therefore, we operate large unified factories in a few locations.

We have learned over a period of years that for a specialized business of the nature of ours, we can obtain the best building

designs and insure the most economical building construction
by maintaining our own organization of architects and
engineers, who are intimately acquainted with our products
and processes and the equipment that we employ in our manufacturing
operations. This corp of architects and engineers
does not have to be educated into the needs and requirements
of our buildings, as would be the case if we employed outside
architects and engineers. We also maintain a Construction
Department, which acts as general contractor in the construction
of our buildings, thereby saving from 5 to 10 per cent in
the cost of buildings, which saving is reflected, of course, in
our investment account.

1682 Many of our products being of a specialized nature
for which there is no machinery available on the market,
we design and build that machinery. Other products are
made in such large volumes that we find it economical to
design classes of machinery which have higher productivity
than the machines available on the market, so we design and
construct those machines. Tools, which are a specialized
facility for the manufacture of a particular design or device,
we build ourselves, except such things as drills, chucks and
standard tools of that kind, which are available on the market.
We operate at each of our works a design organization for
tools and machines and a tool building organization. Occasionally,
under great stress, we find it necessary to go outside
to specialty tool manufacturers, to have tools built for us.
Our experience is that it is more expensive to have out-
1683 siders build our tools for us and is not so satisfactory,
and frequently repair and maintenance costs are higher
and average life shorter. This practice in connection with
our tools and machinery is reflected in lower investment and
lower maintenance and repair costs. We build them and they
go into our investment account at cost. If we bought them,
there would be a commercial sales expense and profit paid
to someone.

The Hawthorne Works was established, in a small way, in
1905. It grew rapidly, and in 1923 we were creating an
1684 undue drain on the labor supply and a strain on the

transportation facilities for the labor, so we started a
plant in Kearny, New Jersey. That plant grew more rapidly
than the available market for labor, so we laid our plans for
another plant at Point Breeze, Baltimore, Maryland. Each
plant on these new sites is laid out according to a fundamental plan, which determines the occupancy of the property
with buildings of different kinds and an arrangement for
properly co-ordinated manufacture.

1685 This planning insures a type of building suitable for
the class of products that are to be manufactured in
it for years to come, and, therefore, eliminates the necessity
of tearing down the old buildings to accommodate plant
growth, as it insures against errors in the location of the
buildings, and avoids obsolescence.

The Western Electric has distributing houses in over 30
cities in the United States, devoted to warehousing of materials and the operation of repair shops in the service of the
local telephone companies. In all but six, we operate in
rented quarters. These six have been well located with respect to service to the telephone companies, and with
1686 respect to both railroad and truck transportation facilities. Those six are of steel, brick and concrete, thoroughly modern, well designed and admirably adapted for the
purpose for which we use them.

The bulk of the property of the Western Electric consists of the manufacturing plants listed in Exhibit A-92 and the equipment and machinery located in them.

At the Hawthorne plant, we manufacture lead covered cable
of both the exchange and toll type, and also step-by-step and
panel type dial central offices, and certain other miscel-
1687 laneous telephone apparatus products and certain
special commercial products. At the Kearny Works, we
manufacture exchange type of lead covered cable, manual
central offices and P. B. X. equipment, carrier and repeater
type equipment for toll service, and certain special commercial products.

At Point Breeze, we manufacture toll lead covered cable for the Bell System in the eastern area and for the Pacific coast, rubber covered wire and certain types of sub-station telephone apparatus.

At the Queensboro Works, we manufacture the requirements of the eastern area of the Bell System for telephone booths, certain wood desks and tables and specialty wood products.

The Hawthorne plant, located on the western boundary of
Chicago, consists of a tract of 200 acres bought in 1903
1688 for $575,000. It is rectangular in shape, giving maxi-
mum utility in the layout of a manufacturing plant. It has exceptional transportation facilities, including direct connection with the Burlington and Illinois Central Railroads, and the Belt Railroad runs through the property above grade. It is in every way admirably adapted for our purposes, and I do not believe that there is any property, developed or undeveloped, in the vicinity of Chicago that would be more satisfactory than that which we have at that plant. The buildings are steel, brick and concrete, specially designed for the purpose for which they are used, and contain 4,000,000 square feet of floor space. Although some of the buildings are 25 years old, they are just as well adapted for the purpose for which we use them as the modern ones that we have designed.

These buildings cost $19,200,000, and the service equipment, including the power plant for both steam and electric genera-
tion, gas plant and service distribution facilities to the
1689 various buildings, cost $6,800,000. What I have said
generally about the Company's policy as to maintenance and repair is applicable to the buildings at Hawthorne. Any buildings that prove to be inadequate or obsolete are immediately torn down and written out of the investment account, and the buildings used are maintained in a high state of efficiency.

The Kearny Works are located on a tract of about 148 acres, between the Passaic and Hackensack Rivers, on the Jersey Meadows, at Kearny, New Jersey. The land, including filling, roadways and bulkheads, cost $3,250,000. 60 acres were acquired in 1923, and the balance in 1929. This tract also is rectangular in shape and therefore of maximum utility. The

plant was started in 1925, and is, therefore, new. It was built of steel, brick and concrete, and is thoroughly mod-
1690 ern and well suited to our purposes. The buildings have 2,850,000 square feet of floor space, and cost $22,900,000, and the service equipment, including the power plant, with both electric and steam generation facilities, and distribution facilities, cost $5,900,000. The buildings on the recently acquired tract present quite a contrast to the buildings erected on the original tract, which were on the land when we purchased it. They are not of the substantial construction of our own buildings, the cost of maintenance and repair is greater; nevertheless they can be used for our purposes, although they cannot be occupied as economically nor as efficiently operated. We contemplate abandoning those buildings in about 8 or 10 years, but, in the meantime, we figure we will be able to use them quite satisfactorily in our operations.

The Point Breeze plant consists of 179 acres of land
1691 near the eastern boundary of Baltimore, Maryland. It is located on the Patapsco River, which runs into the harbor of the City of Baltimore. This property cost us about $3,000,000, including the filling, bulkheads and roadways. The property is not rectangular; it is about seven-eighths of a mile long and one-third of a mile wide and lends itself very well to occupancy with rectangular groups of buildings. The land was purchased in 1929, and the first manufacturing operation got under way in the latter part of that year. The buildings are of steel, brick and concrete and thoroughly modern, comprising 800,000 square feet of floor space, and cost $6,200,000. The service equipment, which is of the same kind as I have heretofore described, cost $3,700,000.

Transportation facilities are excellent, the plant having railroad and highway facilities as well as deepwater transportation by way of the Patapsco River to Chesapeake Bay.

1692 The Western Electric Company bought the Queensboro Works from a company which for years had been supplying us with the Bell System's eastern requirements for telephone booths. The plant is located in the Borough of Queens, next to the Borough of Brooklyn, in the City of New York. The land comprises about 26 acres and cost 1693 $1,500,000. The buildings were constructed about 4 years ago by the previous owner. They are of steel, brick and concrete, and thoroughly adapted for the purpose. They comprise 100,000 square feet of floor space and cost $530,000, and the service equipment cost about $50,000.

As to the use of fundamental plans in the construction of our manufacturing plants, such a plan necessitates a thorough study from an overall standpoint of the activities and scope of the specialized industry. The purpose is to visualize 1694 the future and insure against error in the location of buildings and in the size of buildings, as these matters have an important bearing on the cost of manufacturing operation. The proper location of a building tends very much to reduce costs.

Furniture and fixtures is a classification which includes shop benches, stools and chairs, steel stock racks, all handling devices, such as trucks, trays, pans, boxes, even motor vehicles, and, of course, office furniture.

The machinery, tools and fixtures used by the Western Electric Company are the best we can buy or build, consistent with the purpose for which they are used. Our invest- 1695 ment in this class of equipment is roughly as follows: Hawthorne, $52,500,000; Kearny, $22,900,000; Point Breeze, $12,300,000; Queensboro, $325,000; a total of a little over $88,000,000.

The products we manufacture are designed by the Bell Telephone Laboratories. In the latter stages of design, and before final approval is placed on the design, models of the design are submitted to the Manufacturing Department of the Western Electric Company. The models are considered by a group of experts, who bring to bear upon this design their knowledge of the manufacturing art and determine if the mechanics of the design are such that it will facili- 1696 tate manufacture and yield the most economical manufacture and, consequently, the lowest cost. Consideration of this kind given to a new design results in suggestions to the Bell Telephone Laboratories for slight modifications in the design here and there that will make it possible to manufacture more cheaply. These comments are furnished the Bell Telephone Laboratories, with the estimated cost of production of the article as the model was submitted and the reduction in that cost if the changes suggested by the shop engineers can be adopted. As a result, a final design is employed which is a compromise, and the design is the result of co-operative effort between the engineers of the Bell Telephone Laboratories, from a design standpoint, and the engineers of the Manufacturing Department of the Western Electric Company, from a manufacturing standpoint.

That is the first step in manufacturing planning. Further manufacturing planning takes place after the stamp of approval has been placed upon the design. At the time the final model of the apparatus is sent to the Manufacturing Department of the Western Electric by the Bell Telephone Laboratories, the first operation is to make complete drawings, part drawings and assembly drawings. 1697

The part drawings give the dimensions of each of the parts, with the tolerances that will be permitted. The object of the tolerances is to define the limits within which the manufacturer is to be held so the part will go together with adjoining parts without filing or fitting; it provides what we term in the manufacturing industry interchangeable manufacture.

The assembly drawings show the assembly of the different parts and their proper relation to each other. These drawings also give the testing requirements to which the finished apparatus must be subjected, in order to be sure that the products will meet the requirements of the designing engineers.

The next step in planning is on the part of the manufacturing experts, who, taking the drawings of these parts, which also specify the kind and quality of material to be used in their manufacture, determine the exact process, and each step in the process, to be employed for the manufacture of parts. They will determine, for example, if it is to be made out of sheet metal, the economical size of 1698 the sheet, in order to get the greatest number of parts out of that sheet, and from that they determine the amount, in pounds, of raw material required per unit number. They specify each operation and determine the tools and character of tools that must be designed and built in order to manufacture that part. They determine the design of the gauges to determine that the part, as it progresses through manufacture, has been properly produced.

This manufacturing planning is constantly carried on by the Western Electric Company, and that has been true during the period we have been discussing. This planning has an effect on the cost of the manufactured article. The manu-
facturing planning by men who are experts in their
1699 portions of the art of manufacture to determine the
process of manufacture, the equipment to be used, the
design and construction of the equipment, etc., produces the lowest cost for the manufactured product.

The final result of this manufacturing planning is a manufacturing analysis, in which is shown the operation to be produced, the tool, and the number of that tool that is to be used, the machine upon which that tool is to be placed and the gauges that are to be used, and also the grade of labor that is to be employed in that operation.

By "grade of labor", we mean the degree of skill required to perform an operation. In a large manufacturing establishment, there are all kinds of operations employed, some
very simple and others intricate and delicate, requiring
1700 the highest degree of skill. In the removal of burrs in
drilled holes, the labor employed is not skilled, is the
simplest grade and is the cheapest. In the manufacture of tools, the very highest skill is required, and the highest price is paid for that class of work. For each of these skills or grades of labor, there is established a range of pay, and those wage ranges are determined in accordance with what other industries in the local market are paying.

This grade of labor study, in my opinion, insures the lowest cost, inasmuch as we determine it for each operation that is to be employed as a result of experience. We do not use higher skilled labor than is necessary, and that has the tendency of keeping our costs as low as possible.

We are a firm believer in incentive methods of payment
1701 for our labor, and we think that the individual should be
given the opportunity to demonstrate his ability, his
worth, and that he should be able to measure his ability and
his worth relatively with his fellow employees. About 80 per
cent of our factory work is paid on the piece work basis.

The selection of employees for a manufacturing establishment
ment is most important. We aim to employ a high grade,
intelligent and efficient type of employee. When a new appli-
cant arrives, we endeavor to determine what similarity there
is between the experience he has had and the classes of work
in our business, so we can devote our efforts to getting
1702 him located in a class for which his past work has
adapted him. We have various aptitude tests, which
are not perfect, but which help to get the employee in a class
of work where he will become most productive and derive the
greatest satisfaction for himself in the shortest time.

We give the new employee a physical examination, such as is required for insurance, and try to discover physical defects if they exist, so that we may take these into consideration in locating the man in a class of work where such defects will not be a handicap to him. The new employee is subjected to our various training plans, in order to place him where he can demonistrate and utilize his fullest ability and earning power in the shortest time.

1703 The training and the physical examination of em-
ployees and the other things I have described result in
better satisfied employees and in placing them in positions
where they are capable of rendering the best service to the Com-
pany. All this has a most decided effect on the Company's
manufacturing costs, as it is essential that the employee be
satisfied and content, and that he is earning a satisfactory
wage and being presented with an opportunity for progress.
That all results in having a state of morale which in itself
reflects low costs.

We take about every step possible to insure the safety of

our employees by thoroughly guarding our tools and the machinery. We try, in all instances, to make our equipment fool proof from the standpoint of safety. The prime factor in safety is education in safety. Through our employee publications we have written articles on safety particularly applying to the Works, and we conduct free first aid classes. I
1704 think some 45,000 of our employees have taken that first aid course in the last 4 or 5 years, all for the purpose of having our employees conduct themselves safely in their employment. We have a lot of interesting statistics, recently compiled, which show that at the Hawthorne Works there are fewer lost time accidents per 1,000 employees during their working time at the factory than during the other hours of the day when they are away from our factory.

At each of our work locations, the employees have organized a club for educational and recreational activities.

(Mr. Adcock objected that this testimony had no bear-
1705 ing on the case. Mr. Thompson stated that this testimony had a bearing on the reasonableness of the profit made by the Western Electric Company on its Bell System business; that it showed that the Company's plants are well located, well arranged and carefully planned, and had been built at a low cost (these are the figures which appear in the average investment mentioned),
1706 that the tools and machinery are efficient, that the Company takes every reasonable precaution in the training of its employees so that they may be well satisfied in positions that are adapted to them, and that, therefore, the costs of these manufactures which go out to the Bell associated companies are kept at the lowest possible level. The objection was noted and the witness was permitted to proceed.)

These clubs, with the assistance of the management, conduct evening schools in various subjects which pertain to the
1707 business, for the purpose of giving the employees the opportunity to better their knowledge of these subjects and to assist in their promotion in the business. All kinds of

recreational activities are fostered and facilities provided for them by the Company.

Manufacturing effort in a large industry is an organized effort, it requires team play to accomplish the working result. Anything that will encourage team play, whether that be in recreation or diversion, will contribute greatly to the satisfaction, contentment and morale of the people who are grouped together in their daily work. I believe all these activities make for better satisfied employees and lower costs in the business.

1708 We also encourage thrift among the employees, by offering to them the privilege of subscribing to American Telephone and Telegraph Company stock on an installment basis. We encourage them to authorize us to deduct small amounts from their weekly pay for deposit in a savings bank designated by the employee. We also operate a payroll deduction plan upon authorization by the employee in cooperation with an insurance company in payment of premiums on an installment basis for life insurance. Thrift activities in the last two years have resulted in our employees authorizing deductions from their pay of about 12 per cent of the annual payroll.

We have specifications for our raw materials used in manufacturing, and these specifications are compiled by our raw material engineers with the idea of defining the requirements that must be fulfilled in order to insure that, when used in our manufacturing operations, they will produce satis-
1709 factory products. These specifications form the basis upon which our Purchasing Department buys our raw material on a strictly competitive basis, and they are, therefore, certain that the material which they buy will be satisfactory to us.

We manufacture some of the raw material which we use in the business of the Western Electric, such as copper wire, hard rubber (sheet and tube), various kinds of phenol fibre, some glass products, porcelain products and certain carbon products. We also manufacture some primary raw materials from scrap, such as lead covered cable and line wire which

have been removed from the Bell System. We recover all of the lead sheaths and all the copper for re-use in new cable. As a result of this practice which we follow of manufacturing a portion of our raw material, we have most decidedly reduced the manufacturing costs of the Company. I am certain
1710 that our practice of making raw materials either from new or scrap materials has resulted in economies that run well over a million dollars a year.

We have a group of engineers known as cost reduction engineers. It has been our experience that if you expect to advance the art of manufacturing, you have got to organize for it, and we have set aside a group of 450 engineers, including scientists, devoted to that work.

We are spending in the neighborhood of two million dollars a year on this class of work, and over the period of years represented in this case, from 1916 to 1931, we have spent in the neighborhood of thirteen million dollars on cost reduction work and have realized savings by reason of that work of many times that amount.

1711 An example of cost reduction is found in connection with cable manufacture. Up to comparatively recent months, the conductor wires in lead covered cable have been insulated by a narrow ribbon of paper about one-quarter inch wide by two and one-half or three one-thousandths inch thick. This paper is wrapped around the conductor spirally and at relatively high speeds—about 3,000 revolutions per minute. As this paper is rather fragile, the strains placed upon it by this high speed operation are great and, therefore, a high quality of paper is required. In order to obtain the proper quality, the paper manufacturer finds it necessary to use manila fibre as the base for the paper. The source of this fibre is old rope abandoned from sailing vessels. Over a period of years, as our requirements for cable grew, the requirements for cable paper grew and the supply of old rope was decreasing so that our costs of paper were steadily increasing.

We assigned an engineer to the job of finding some other fundamentally different method of insulating the conductor

wires. He evolved the process of combining the paper
1712 making operation employed by the paper manufacturer
with the insulating operation employed by us, and produced a homogeneous tube of paper around the wire. This process removes all necessity for a high quality paper, and we, consequently, are able to use ordinary wood pulp. This new process is effective to-day on about 60 per cent of our exchange type of cable. On a normal basis, when we are fully equipped, the economies from this process will be about $600,000 a year.

As head of the Operating Department of the Western Electric Company, I am familiar with the standard shop costs used by the Company. There are three elements in a manufacturing cost, labor, material and expense, the latter sometimes called overhead or loading. The labor element in standard cost is the ideal, absolute minimum amount of labor
1713 that can be employed to perform a particular operation.
The basis would be the piece work rate per thousand of the part operation. That assumes that the tools are set up and the work so conducted that the operator could go along continually without any interruption or break and produce parts at that rate per thousand. That forms the basis of the labor element in the cost. However, we have to take into consideration an experience factor, derived from our records in the conduct of a particular class of work, to cover the time when that operator will not be actually performing the operation.

For example, it may be that in the blanking operation the manufacturer who supplied the raw materials did not shear the strip of material quite straight, so that, as the operator was passing this strip of material through the blanking die, it stuck in the die, and the operator could not get it out, but had to stop. He would go to the gang boss and tell him his troubles and the gang boss would come back with the
1714 operator and assist him to free that strip of material
from the tool, so that the operator could proceed. We will assume that from ten to fifteen minutes have been consumed in this interruption and the operator must be paid for

that time, and a time ticket is put in paying him for that time, although we get no production out of that operator. Another example is in the case of an operator who clips his finger on the edge of the material; he has to go over to the first aid department to get it dressed and ten or fifteen minutes would be lost in doing that.

We first have the ideal labor cost, and then, in order to arrive at the standard cost of labor, we take into considera-
tion factors of that kind. The experience factor would
1715 cover such things as vacations with pay, time off for
sickness, etc.

In connection with the material cost, the same thing applies. The basic or ideal cost of material is the minimum amount of material that is required, we will say, to produce a thousand parts. To that we add an experience factor, which is based on our cost records of the past, and it takes into account the waste on account of the material required per part not being exactly divisible into ten lengths of materials.

For an example of this, I will again take the case of blanking a part out of sheet metal. We will assume that eighty parts can be produced out of a strip of material of exactly five feet; that is, one part is produced out of every multiple of two inches. We buy our raw material in from five to eight foot lengths. We cannot get it all exactly the same length without paying a premium for wastage to the raw material manufacturers, and so we buy it in lengths of, say, from five to eight
feet. If the particular strip of material happens to be
1716 five feet one inch long, we get no more parts out of it
than if exactly five feet long, so the cost of that extra material enters into the experience factor that we take out of our records of the past.

A thousand things happen in connection with manufacturing operations, and all of the parts that are produced are not good; some of the parts have been spoiled in setting up the tools for subsequent operations; there is a waste of material; and some parts go to the scrap heap. The cost of material entering into those parts enters into this experience factor that comes out of the records of the past to be added to the absolute minimum material costs, in order to make the standard costs of material.

The matter of overhead is treated in somewhat the same way. There is an experience factor added to the ideal or minimum from that standpoint. After having taken the records and experience of the past and applied them to the ideal,
we look forward to our cost reduction and our en-
1717 gineering work to determine what improvement, what
new tools and equipment will be brought to bear on the manufacture of those products within the coming year that will result in reducing the cost of manufacture of those products, and we determine about when during the year they will become effective, and weigh that with the year's production, and adjust the standard shop cost accordingly.

All those elements that I have described are taken into consideration in arriving at the standard shop costs which are used by the Western Electric.

The fact that we have taken on the manufacture of raw materials that we formerly purchased is evidence that we can economize in our operations by bringing to bear our own engineering knowledge on the problems of others. In every case where we have undertaken the manufacture of raw mate-
rials, we have done so at from 20 to 50 per cent less than
1718 we were paying for them before. Of course, in making
the comparison with the price of the supplier, we must allow for commercial expense and profits, but the spread is so great that after making that allowance I feel satisfied that our costs are below the costs of the manufacturers.

We make it a point to maintain friendly relations with all kinds of manufacturing establishments, and one or more groups of our engineers have visited practically every important manufacturing establishment in the United States, some having been sent to Europe to study methods and processes and equipment employed in Europe, not only in the telephone industry but in all other types of industries, in order to bring back and apply such things of value as they have found to the operations in our business.

1719 In my opinion, during all the period covered by my experience with the Western Electric Company, its plants and machinery have been well designed and constructed, and operated efficiently by trained and skilled employees, and the Company's operations have been economically conducted.

1720 *Cross-Examination by Mr. Haight.*

March 22, 1932.

The Northern Electric Company, the International Western Electric Company and the International Standard 1721 Electric Company had design departments; I cannot say that they had research departments. They did nothing in the way of fundamental research. Prior to the designing, they did an engineering development job, by which I mean the development of physical devices to be made.

1722 "Q. And in what way did the non-Bell customers—I am now speaking of the Western Electric again—in what way did the non-Bell customers pay for the benefits derived from the fundamental research by the American Telephone and Telegraph Company, which resulted finally in the embodiment of those inventions in products made by the Western Electric Company?

"A. They shared in the development work, or development cost of those products, and in some cases paid royalties.

"Q. I am afraid you did not get my question. I am speaking now only of the non-Bell customers of the Western Electric Company, and I will put it to you directly, so that you will be sure of what I have in mind. Is it not a fact that those non-Bell customers made their payment towards the development and research work that finally appeared in the products sold to the non-Bell customers by the Western Electric Company, by an increase in price to those non-Bell customers? Such payment as a non-Bell customer makes for that work, appears in the price he pays for the goods?

"A. No; development expense was included in the cost upon which the price was based, and in addition, royalties were paid."

1723 On all the so-called restricted apparatus built by the Western Electric Company and sold to the non-Bell customers, we are required to pay a royalty to the American Telephone and Telegraph Company. I would not say that the non-Bell customers finally got the results of the development and research work done by the American Telephone and Telegraph Company for nothing. I think that they shared in paying for them through development expense that is in-
1724 cluded in the cost upon which the price of the products is based.

We pay the American Telephone and Telegraph Company royalties for restricted apparatus. By "restricted apparatus", I mean certain classes of apparatus on which the patents are held by the American Telephone and Telegraph Company, which we are released to manufacture and sell to other than the Bell System Companies upon payment of a royalty to the American Telephone and Telegraph Company.

If there is any research expense incurred in connec-
1725 tion with the development of the fundamentals in connection with the switchboard, the American Telephone and Telegraph Company paid for it and not the Western Electric Company. The Western Electric paid for its own development work in connection with it. I guess the non-Bell customer of the Western Electric Company does not pay for the development and research work done by the American Telephone and Telegraph Company with respect to those things for which the Western Electric Company pays nothing.

1726 At the time the Western Electric Company entered into the contract with the International Standard Electric Company for the interchange of patents, the International Company received the right to make use of the patents and inventions that had previously been obtained by the Western Electric Company and the American Telephone and Telegraph Company. The exchange of patent rights between the Western Electric Company and the International Standard

Electric Company was a part of a deal in which the Western Electric Company sold to the International Standard the physical assets of its foreign business, its going value and its patent rights. So all of these rights then in existence were part of the consideration in that transaction.

1727 I said on my direct examination that the Electrical Research Products Corporation dealt in certain of the Western Electric Company special commercial products, which is a class of products which used the basic invention or development that came out of the telephone art but upon which further specific development work was required in order to put the invention in a form for use in the commercial field outside of the Bell System; Products Company

1728 pays for that further development work. The Products Company did not pay for any development work that had been done in perfecting a device for the art of telephony up to the time it was lifted out of telephony and put over into, for instance, movietone.

1729 Siemens and Halske did fundamental research work. The General Electric Company and the Westinghouse Company conduct fundamental research work. The Teletype Corporation undertook fundamental research, prior to

1730 its purchase by the American Telephone and Telegraph Company, as applied only to printing telegraphy. The Department of Development and Research of the Teletype Corporation still continues to do that fundamental research in its particular field. The foreign subsidiaries in Europe, of which I spoke in my direct, had no fundamental research departments as such. Their work was largely confined to the development of physical mechanisms to be used in the communication field. So far as results of fundamental research work appeared in the products dealt in and used

1731 by them, that was transmitted to them from the Western Electric Company or from any other source that they may have been able to gather it.

"Q. The Electrical Research Products Company, you said in your direct examination, at the time of its organization took over 25 men from the Western Electric Company. In order to shorten my question, I am going to read to you a paragraph from the Western Electric News of April, 1929, and when I have read it, I am going to ask you if that is correct. ~~It~~ is referring to the Electrical Research Products Company, and it states:

> 'On January 1, 1928, there were on the payrolls of the company 189 names. On October 1, there were 776 employees, and by the end of the month the figures had mounted to 925 men, and is now'—

"That is, the date of the article; April, 1929,

> '—over the 1,400 mark, and is still growing.
>
> 'These employees might truthfully be considered as picked men. To its field division, men were drawn from the installation and manufacturing departments of the Western Electric Company; from the operating and engineering departments, telephone and other public util-
> 1732 ity companies, and from the Bell Telephone Laboratories.
>
> 'Its staff men were recruited from the commercial, accounting, purchasing and secretary's departments of the Western Electric Company; from the Bell Laboratories; from the American Telephone and Telegraph Company; and from the graduating classes of engineering schools; and from other sources.'

"Can you tell me whether or not that is a correct statement of the situation?"

I do not recall the figures representing the number of employees in the Products Company during that period; it recruited its men from all over the Bell System as well
1733 as from outside of the System. So far as the sources of the men, and where these picked men were obtained, the statement is correct.

I do not know what reason the Paramount Company had for entering into its contract with the Electrical Research Products Company for talking movies. I do not recall that a letter, stating that the reason was to enable the Western Electric Company to go into immediate production and the Electrical Research Products Company to go into immediate service, was used as advertising by the Products Company at that time.

1734 The prices to both Bell and non-Bell customers are based upon an estimate of current shop cost, plus expense and plus profit. We arrive at the profit in order to obtain a satisfactory return on the investment. The price-setting organization is furnished by Mr. Gregory with a picture of the going rate of business and a forecast of profit for
1735 the business and the return on investment that we expect to obtain currently. The basis of the "satisfactory return" is that we figure we should have a return of at least 10 per cent on the investment.

The last price reduction made by the Western Electric Company on its telephone apparatus was in 1929, on the basis of the going rate of profit and on a forecast of the volume of the business expected in the immediate future together with the return on investment that would be yielded by that
1736 business. In the fall of 1930, we increased our prices. I think generally other manufacturers do not increase prices in times of depression and I think also that in the commercial business they do not establish their prices on the basis of a look into the future, either.

We have looked upon the special commercial products business as one with considerably more hazard to it and one that is not necessarily a long continuing business. We get our profit out of that business as we go. We could not look so far into the future with respect to that business. I do not happen to recall any other manufacturers of any size that have been raising their prices during the depression period.

1737 The Point Breeze plant was established first for the manufacture of lead covered cable and rubber covered wire, with a view of later establishing a telephone apparatus shop there. The economic study indicated that the Pacific coast telephone companies' requirements for the toll type of lead covered cable could be more economically produced
1738 and shipped to the Pacific coast from the Point Breeze plant than from the Hawthorne plant here in Chicago.

The telephone apparatus plant at Point Breeze has not yet been constructed.

The Kearny Works, so far as cable was concerned, was built to supply the eastern part of the United States, but that was not true so far as telephone apparatus was concerned.

The Illinois Bell Telephone Company undoubtedly purchases telephone appliances made at Kearny or Point Breeze. If they use manual or P. B. X. equipment it comes from the Kearny plant. If they use certain lines of sub-station equipment or rubber covered wire, those items come from the Point Breeze plant. No part of the machine switching equipment of either type comes from either Kearny or Point
1739 Breeze. I do not know whether it is a fact that the Illinois Bell Telephone Company purchases most of its telephone appliances from Hawthorne; but I should imagine that it does. It is not true that the eastern telephone companies purchase most of their appliances from the eastern factories, because the greater portion of our production is from our Hawthorne plant here in Chicago. The eastern companies, generally speaking, purchase from the eastern plants those things that are manufactured in the east.

The Hawthorne plant manufactures both the exchange type and toll type of lead covered cable. It manufactures both the step-by-step and panel type of central office equipment. It manufactures loading coils for use in toll circuits and special classes of commercial products. The Kearny organiza-
1740 tion manufactures only the exchange type of lead covered cable. It manufactures manual central office and P. B. X. equipment, carrier current and repeater equipment for use on toll circuits, and a few classes of special commercial products. The Point Breeze plant manufactures only the toll type of lead covered cable; it manufactures rubber covered wire and some few types of sub-station instruments.

I do not believe that there was any portion of either the Kearny or Point Breeze plant that was vacant and idle in 1930 and 1931. The activities, of course, of both of these plants are below normal. There are no parts of these plants which have never been used since they were constructed.

1741 The investment on which we think we should receive 10 per cent is the gross investment less current liabilities. I mean by "current liabilities", our payables. I do not happen to recall what is set forth in the annual
1742 report under "current liabilities", so I do not know whether they are the current liabilities which I have in mind. The things I am calling current liabilities are, of course, our payables. I had nothing to do whatever
1743 with the preparation of the balance sheet in the annual
1744 report. By "investment", I mean every dollar that is invested in physical property utilized in the manufacture of our products, that is invested in finished merchandise, processed merchandise, raw material and cash to do our business; from which should be deducted the payables we owe for material that we have bought. I would include a payable to a bank due in 90 days among the payables to be
1745 deducted if I bought raw materials from the bank. What I said should be deducted was any money that we used to buy raw materials; the raw materials that had not been paid for would be a payable.

I do not know how many definitions are employed in the Western Electric Company of current liabilities, and I do not know whether there is more than one such definition. I have read the annual reports of the Company. I sometimes contribute to the written matter of those reports.

1751 The employees of the Western Electric Company purchase the stock of the American Telephone and Telegraph Company on the same basis that it is purchased by the employees in other parts of the Bell System; that is, on the installment plan. The Company deducts installments from the pay of the employee and remits them to the American Telephone and Telegraph Company and the Western Electric does not charge anything for the work done.

1752 Inasmuch as our sales vary from year to year, and the bulk of our sales is conducted through distributing houses, I should say that the distributing houses do not get the items of manufacture from the various factories of the Western Electric Company in the same ratio for each year.

In connection with the location of buildings and their plan and character of construction, tools and machinery, special equipment of various kinds, safety appliances, and so on, of which I spoke yesterday, I think perhaps some of our basic methods may be the same as those followed by other manufacturers of large size and good standing. The application of those methods and the development of particular methods for our own specialized products, have been developed by
1753 our own planning and engineering organization. I stated
that we maintained a large engineering organization at our Works for the express purpose of developing and improving the manufacturing art as it applied to our business, looking towards a reduction in the cost in the manufacture of our products. I stated also that we made it a point to have our engineers visit other establishments around the United States and also in Europe, with the idea of gathering such ideas and improvements out of those businesses as might be adapted to and made applicable to our manufacturing business. This was all done with the idea of improving our processes and equipment for the purpose of reducing cost.

I do not see at all that it contributes to the permanence of the business and to its stability. It seems to me that the permanence and stability of our business depends upon
1754 our maintaining our position with our customers and in
supplying our customers with the kind of products which they require at a reasonable price.

Keeping proper relations with employees, the matter of good health, the matter of keeping employees satisfied and efficient, and keeping them doing those things that they can best do, contribute greatly to the stability or permanence of the enterprise.

ALLAN B. CRUNDEN, recalled as a witness on
1755 behalf of the plaintiff, having been previously duly sworn, further testified as follows:

Direct Examination by Mr. Blackman.

March 22, 1932.

I am the same Allan B. Crunden who has testified
1756 previously in this case.

The chart showing the extent and employment of Bell System assets was prepared under my direction and supervision.

(Which said chart was marked for identification as Plaintiff's Exhibit A-99.)

The figures adjacent to the squares on this chart came, in the first instance, from the records of the Company, kept in the regular course of its business. For convenience, I have taken the figures showing the assets of the associated companies from the annual publication called "Bell Telephone Securities Manual," which was marked for identification by the defendants as their Deposition Exhibit 111. The Long Lines figures were obtained from the balance sheet of the Long Lines Department of the American Telephone and Telegraph Company, and the figures for the Bell Tele-
1757 phone Laboratories, Bell Telephone Securities Company
and the Cuban-American Company were obtained from the balance sheets of the respective corporations as of the date of the chart (December 31, 1929). The same is true of the 195 and 205 Broadway Corporations. The figures for the Western Electric Company and its subsidiaries were taken from the annual reports of those companies, which have been made available to the defendants by Mr. Gregory's organization. The items represented by the black squares at the top of the chart were taken directly from the books of the American Company, and represent certain assets employed by that Company.

The defendants have had access to, or have been furnished with all of the papers to which I have referred, with the possible exception of the annual report of the Cuban-American Company, which is one of the small items below the second horizontal line.

1758 The squares in the deeper blue represent the so-called associated operating companies, including the Long Lines Department of the American Company which is generally considered and referred to as one of the associated companies and which, along with the associated companies, receives the license contract service. The shaded or darker portion of the deeper blue squares represents the extent of the interest in the respective companies not owned by the American Telephone and Telegraph Company. In the Pacific System, for illustration, the assets corresponding to the proportionate ownership of the American Company are shown by the top portion of the blue square. The remainder is shown by that portion of the square below, which is ruled and somewhat darker.

The size of the squares are drawn roughly to scale and represents the total assets of the respective companies as shown by the assets side of the balance sheets of those 1759 companies. The Southern New England Company, to the extreme left of the sheet, shows that the American Company has a small ownership; the figures for this Company will be found on page 47 of the Bell Telephone Securities Manual to which I referred. The whole company receives the license contract service and not merely the part owned by the American Company.

The Long Lines Department is shown in darker blue, because it receives the license contract service.

The light blue squares (which include some of the companies below the first horizontal line) include the Western Electric Company and certain others, such as the 195 and 205 Broadway Corporations. They are companies engaged wholly or principally in furnishing services helpful to the associated companies.

There are three squares which are not colored. The largest is marked E. R. P. I. (Electrical Research Products, Inc.),

which is the company engaged in the business connected with
the talking moving pictures and what is generally known
1760 as "by-products." Just below that there is a small
square, also not colored, and entitled "Other Subsidiaries of the Western Electric Company," which relates to some small interest in securities, realty, and an industrial railroad used by the Western. That leaves only the black squares at the top of the chart, which represent assets employed directly by the American Company.

The chart, taken as a whole, shows that practically the entire property of the American Company, owned by it directly or indirectly, is represented by its interest in the twenty-odd associated companies and in facilities serving those companies.

(Chart marked for identification as Plaintiff's Exhibit A-99 offered and received in evidence.)

1761 The sheets marked for identification as Plaintiff's
Exhibit A-100 were prepared under my direction and supervision. They are six sheets, representing a series of ratios obtained by comparing certain Long Lines factors (such as plant, service, employees, expenses, total plant, messages, etc.) with similar factors for the associated companies, including the Long Lines Department and the Bell Telephone Company of Canada.

These sheets correctly show at the bottom the source, or
sources, from which the figures were obtained. In some cases
similar figures appear on more than one chart, in which case
I may have omitted the reference on one chart because it will
appear on another. Each of the sources recorded on the
sheets is a record kept by the American Company in the reg-
ular course of its business, with the exception of the
1762 figures pertaining to the Bell Telephone Company of
Canada, which are taken from the records prepared by
the Bell of Canada in the regular course of its business and
transmitted to the American Company currently. The ratios
developed on these sheets can be readily and easily checked
by taking the figures from the annual reports of the American
Telephone and Telegraph Company; the percentages developed

from the December 31st figures would be almost the same as those developed at the mid-point of the year. The figures on this exhibit represent the mid-point of the year so as to be average figures, and the annual reports give the figures at the end of the year; but it makes very, very little difference. If the figures for the end of the year were taken from the annual reports, as this is a ratio, there would be a corresponding change on each side.

The sheets marked Plaintiff's Exhibit A-101 for identification are ratios developed by comparing certain factors 1763 for the Chicago area of the Illinois Bell Telephone Company (such as stations, plant, expenses, etc.) with similar factors for the total associated operating companies, including the Bell of Canada, but excluding the Long Lines. The procedure in this case is similar to the one that I made on Exhibit A-100, and the references shown at the bottom of the pages correctly state the sources from which the figures came. Each of those sources was a record kept in the regular course of business by either the American Company or the Illinois Bell, with the same exception in the case of the Bell Telephone Company of Canada of which I spoke in connection with Exhibit A-100.

All of the records referred to by me have been avail- 1764 able to the defendants. I prepared these ratios at the request of Mr. Gherardi, and furnished them to him when they were prepared. I prepared the chart at the request of Mr. Blackman.

(Cross-examination reserved by agreement.)

B. GHERARDI, called as a witness on behalf of the
1765 plaintiff, having been first duly sworn, testified as
follows:

Direct Examination by Mr. Blackman.

March 22, 1932.

My name is Bancroft Gherardi. I am Vice President and Chief Engineer of the American Telephone and Telegraph Company. I was appointed Chief Engineer of that company in June, 1919, and was elected Vice President about February, 1920. I have been connected with the American Telephone and Telegraph Company since the summer or fall of 1907.

After graduating from the Polytechnic Institute of Brooklyn with the degree of Bachelor of Science, I went to Cornell
University and took the course in mechanical and elec-
1766 trical engineering. I was graduated from Cornell
University with a degree of Mechanical Engineer in
1893. After graduation, I returned for a year's postgraduate work, and received the degree of Master of Mechanical Engineering in 1894.

I started in business in the Engineering Department of the New York Telephone Company, where I assisted others with various classes of work and did various classes of work myself. I became familiar with switchboards, cables, wires, pole lines, and other parts of the telephone plant of the New York Telephone Company. I became Local Fundamental Plan Engineer, and, as such, prepared a new fundamental plan for New York City, working with and receiving assistance from the engineers of the American Bell Telephone Company. In November, 1899, I became Traffic Engineer of the New York Telephone Company, reporting to the Traffic Superintendent, in which position I had charge of the work ordinarily known
as traffic engineering.

1767 On January 1, 1901, I resigned from the New York
Telephone Company to accept the post of Chief Engineer
of the New York and New Jersey Telephone Company, which

was a sub-licensee of the New York Telephone Company, operating in all of Long Island, including Brooklyn, and all of northern New Jersey. In that position (which I held from January 1, 1901, until March 1, 1906), I was responsible for all the engineering work of that company. In March, 1906, the operating organizations of the New York Telephone Company and the New York and New Jersey Telephone Company were consolidated, and I became the Assistant Chief Engineer of both companies. In that position, I was responsible for the engineering work of both companies, subject to the general direction of the Chief Engineer. (For a period of the time of which I have spoken the corporate name of what is now the New York Telephone Company was the Metropolitan Telephone and Telegraph Company.). In the summer or fall of 1907, I resigned from the New York Telephone Company to accept a position in the Engineering Department of the American Telephone and Telegraph Company.

1768 The carrying out of the duties of those various positions gave me a general familiarity with all parts of the plants of those companies. It gave me a similar familiarity with their operating methods, especially as they concerned engineering. My experience up to the time I went with the American Telephone and Telegraph Company, in 1907, gave me familiarity with the entire plant and all of the properties (as far as they concerned or touched engineering), the telephone problems and solutions of those problems in the
1769 largest unit of the Bell System at that time. The problems of the various associated companies were, generally speaking, somewhat similar, and I became rather familiar with them. I had no special familiarity at that time with the problems of the Long Lines Department of the American Telephone and Telegraph Company.

At the present time, I am the head of the Department of Operation and Engineering of the American Telephone and Telegraph Company, sometimes called the O and E Department. My personal responsibilities are for the correct and proper administration of the department at all times and for seeing that the work is done in a satisfactory and helpful

manner. The work of the department consists of advising
and assisting the associated companies of the Bell System,
including the Long Lines, with reference to engineer-
1770 ing and operating problems. The operating problems
are broadly covered by the work of the Traffic Department,
which has to do with the handling of connections in the
central offices and putting the connections through; the Plant
Department, which has to do with the construction and maintenance
of the plant; and the Commercial Department, which
has to do with the sales, the business connections of the
company, and all of the dealings with the subscribers. The
duties of the O and E Department can be summed up by stating
that it teaches the operating companies the best use of the
methods and apparatus known to the telephone art.

There are somewhere between 700 and 750 people employed
by the O and E Department, who are, generally speaking,
operating and engineering men, with, of course, the
1771 necessary clerical assistance, such as stenographers,
comptometer operators, and people of that kind.

The principal part of the work of my department does not consist of specific jobs for individual companies. It consists of the development of engineering methods; the methods of using Bell System standards; the devising of operating schemes and methods; the analysis of operating results; the making of comparisons between the results obtained in one place and in another; and then, as a result of all that work, the assisting and advising, either in a general way or specifically, if specific advice is needed, as to the conditions thus developed. Generally speaking, I would say the results of our work are applicable to all of the associated companies. The results of a portion of our work are not applicable to the Long
Lines Department.

1772 The results of our studies are communicated to the
various companies of the Bell System by bulletins, circular
letters, specifications, drawings, drafts of operating
instructions, and by conferences and interviews. Sometimes we
have conferences at which representatives of the O and E Department
and representatives of all the associated companies

and Long Lines come together at one place (which is very often outside of New York). Sometimes we visit the associated companies in the field, and sometimes their people visit us at headquarters.

A few examples of the solutions of telephone problems which our department has made and communicated to the operating companies, and the manner in which they have been communicated, are as follows:

Here are the notes on "Service Order Practice", which is
one of our most important routines, controlling the operation
having to do with the steps necessary to be taken from the
time the prospective subscriber signs a contract for
1773 telephone service until that subscriber is connected up,
and until the auditors have the proper information for
billing him, the switchboard is properly marked, cross-connections
have been properly run, and everything else has been
done necessary to connect him. This routine was not issued
at one time, but is a series of advices in regard to that routine,
and is under a continuing state of development. I could not
state just what the bulk of this booklet is, but it consists of
several hundred pages and contains a number of drawings
and tables.

The amount of time elapsing between the time the subscriber
asks for service and the time he gets it varies with
individual cases. For some time the Bell System has been
putting in what is known as the Appointment Call Plan of
Installation. Under that plan, a subscriber is asked when he
would like to have his telephone installed, and, generally
speaking, we are able to install the telephone at that time.
If he wishes it done the next day, it is done the next day, or
if he wishes it done a week from the date of the appli-
1774 cation, it is done a week from that date, and if, in an
emergency, he wishes it done in an hour, it is done in an
hour. I have not studied this problem from the point of view
of just how many things have to be done between the time
the subscriber signs the contract and the time he gets the
service in order to have him properly recorded and hooked up,

and all the necessary accounting and engineering done, but I would suppose there would be fifty things to be done.

Another of the examples of the instructions communicated to the operating companies is "Local Operating Practice, Manual Offices." This is similar to the other one, and consists of several hundred pages. Parts of it are issued from time to time, as there is a continuous development of the subject. It describes in detail the methods used in handling telephone calls in local manual offices and the detailed methods of handling the various troubles when any irregularities happen in the handling of calls. While it instructs the various companies in the manner in which we think is the best way to
1775 meet these problems, it really goes further than that;
it is put in the form of instructions, which are used directly in teaching the operators. Formerly we got out our instructions in more generalized form, requiring further work by the associate companies in order to apply such matters to the direct training of their people. At the suggestion of the associate companies, we modified our method of work so as to put our matter in such form that, if considered satisfactory by them, it might be directly used in the training of their people.

During the course of the year we send out several thousand circular letters, bulletins, drawings, and advices of one kind or another to all of the associate companies, including the Long Lines. In some cases, these booklets are sent out in great numbers; we have had editions of booklets, which, at the request of the associate companies, have run into tens of thousands.

My department has to do with the method of handling
1776 telephone calls. In round figures, I should say twenty
to twenty-five billion calls are handled annually by the companies of the Bell System. Something on the order of $5,000,000 would be saved to the local companies of the Bell System from a reduction of one second in the time required for the A operator to handle a local call. During the period 1923 to date, new methods of handling calls have been developed by our department and recommended to the associate

companies, which have had the effect of improving the service and lessening the cost of giving the service, as contrasted with what it would have been had the new methods not been developed and used.

1777 The series of sheets marked for identification as Plaintiff's Exhibit A-102 is what is known as the Organization Diagram of the O and E Department as of April 1, 1930. It is prepared for the purpose of advising all those who work with the O and E Department (that is, the other departments of the American Company, the associate companies, and the Long Lines) as to the division of our work, who handles various classes of work, and who is responsible for the various classes of work in the department. In an organization the size of the Bell System, a great deal of time and motion would be lost if a man did not know whom to go to, to get advice on a particular problem. This diagram is prepared by the Office Manager of the O and E Department, in accordance with instructions requiring its preparation twice a year; it is issued as of April 1 and October 1. Copies are distributed within the department itself, to the other departments of the
1778 American Telephone and Telegraph Company, and to
the departments with which we work in the associate companies and in the Long Lines. It has been the custom to make up these diagrams and distribute them, certainly since I have been Chief Engineer (1919), and they have been in general use throughout that period and correctly show the kinds and classes of work which each separate group is engaged upon.

The expenditures for the O and E Department for the year 1930 amounted to about $4,500,000. These expenditures have been increasing substantially over the period from 1923 to 1930. There is a monthly record kept of the payroll expenditures and each of the other expenditures which go to
1779 make up the total expenditures of the department. Our
payroll expense is about three-fourths of the total expenditures of the department. The remaining expenditures are rent, traveling, printing, postage and stationery, telephone and telegraph service, and similar items. This expense is

divided between the large subdivisions shown on Chart 1
1780 of Exhibit A-102; that is, to the Plant Operation Engineer, the Traffic Engineer, the General Operating Results Engineer, the Office Manager, the Plant Engineer, the Commercial Engineer and to the general administration item consisting of Mr. Waterson (the Assistant Vice President) and myself, and our respective secretaries.

We do not keep, and have not kept since I have been Chief Engineer, any record showing the time spent, or cost incurred in doing any separate particular piece of work. We do not do that because such a record would not be useful in the administration of the department and would be exceedingly costly to make. So much of our work is rather general in character and applies to all, that such a record would be an allocation rather than a definite assignment of the different parts of the work on the basis of facts. Most of the
1781 work is not done at one time for one company and at another time for another company, but nearly every piece of work has a common application to a great many, if not all, of the units of the Bell System.

I am familiar with the extent to which the work of our department applies to the business and properties of the several units of the Bell System, and with the extent to which it is availed of by them. With my knowledge of the work done by my department and of the use thereof made by the several operating units of the Bell System, I can prorate the expense thereof between the associate companies and the Long Lines Department of the American Telephone and Telegraph Company on the basis of the use which is made of the work that we do. I have made such an apportionment, which is shown on the paper marked for identification as Plaintiff's Exhibit A-103.

1782 In this allocation, I have undertaken to deal with every year from 1923 to 1930, inclusive. The problem is to divide the expenses of the O and E Department which are incurred in rendering the license services between the associated companies and the Long Lines according to their use of the services. Some of our work (and the use made of it)

has to do primarily with the item of plant investment; it has to do with the plant which is in service in the associate companies or in the Long Lines. Another part of our work has to do peculiarly with the employees and the questions concerning employees. Still another portion has to do with items very directly reflected in the expenses of the Long Lines and associated companies. From my knowledge of the work, I have chosen these three items and the ratio of these three items of the Long Lines to the associate companies as a basis of allocation. As will be seen in the last line of the
1783 statement for 1930, the Long Lines plant investment was
9 per cent of the total investment of the Long Lines and associate companies, including Canada; in 1923, it was 6 per cent. The Long Lines employees in 1930 were 6.2 per cent of the total employees, and the expenses of the Long Lines for 1930 were 7.6 per cent of the expenses of this total group. I have composited these figures and arrive at a composite index of 7.6 per cent for the year 1930, and, by means of this figure, I have allocated $329,883 to the Long Lines and the remainder, $4,110,685, is to be divided between the associate companies, including the Bell Telephone Company of Canada, but excluding the Long Lines.

The detailed ratios shown in columns 2, 3 and 4, I have
1784 obtained from Mr. Crunden. The figure in column 5 is
a composite of the figures in columns 2, 3 and 4 and was developed by me. The figures in column 6 were taken from the records of the Engineering Department and represent the expenses of my department.

In my opinion, the method followed in preparing this exhibit gives a fair and reasonable apportionment of the expenses of my department between the Long Lines and associate companies on the basis of use, assuming the correctness of the figures furnished to me by Mr. Crunden.

I have made another apportionment with a different
1785 approach. This organization chart is for the same date
as the previous one, but has been enlarged photostatically for more convenient reference. It is in all respects identical with the chart which has been marked A-102, except

for certain additions which have been made in connection with my allocation. These additions, as will be shown on Chart 2, are certain rectangles in various colors, together with a key to the colors in the corner of the chart.

I know the classes of work that the people shown on this chart are and were doing; I could not tell as to each individual man, but I am familiar with the nature of the work of the groups and sub-groups.

1786 There are some sections of the department shown on the organization diagram (which is marked with various colors) whose work was confined solely to problems connected with the operation of the associated companies and had nothing to do with the toll plant or toll services of the Long Lines Department. There was no group nor individual in the department engaged upon work which related solely to the Long Lines. The groups having nothing to do with the Long Lines are those enclosed in blue rectangles. On the various sheets there is a total representative organization diagram for April 1st. The first group at the top of Chart 2 is a typical one; that is the local traffic engineering section. That section deals with problems concerning the handling of local traffic, and does not deal with the problems concerning the handling of toll traffic. Of course, the Long Lines has no local traffic and no local traffic problems and it makes 1787 no use of the work of that group. I have gone through the various sheets of the chart and enclosed in blue rectangles all the people whose work I knew had nothing to do with the Long Lines.

The largest interest of the Long Lines is in the groups enclosed in red rectangles, which are those groups whose attention is given to problems concerning the handling of toll traffic and whose problems do not relate to local traffic. The second group on Chart 2 is an illustration of that type of group. I have gone through the chart and enclosed in red rectangles all of the people engaged in that class of work. That class of work is not confined to the Long Lines, but is common to the toll business of the Bell System. By 1788 "toll business," I include all of the toll business of the associate companies and all of the Long Lines toll business.

For the year 1930, I have enclosed in blue 32½ per cent of the people, as doing nothing for the Long Lines; this constitutes 33 per cent of the total salaries of all of the people allocated in any one of the three colored rectangles.

For the year 1930, 15.8 per cent of the people in the department are enclosed in red rectangles, and this represents
1789 15.1 per cent of the salaries of all the people enclosed in the rectangles.

Those engineers shown in the yellow rectangles are engaged in work which is neither local nor toll, but is of such character that it has to do with both local and toll plant, traffic, or engineering; they constitute 51.7 per cent of the total. For an illustration of the character of the work performed by these people, I will take the Traffic Results Engineer, shown near the bottom of Chart 2. One substantial group of people under him are engaged on employment practices, which have to do with wages, working conditions, vacations, holidays, time off, and many other problems of that kind which are common to all of the operating units of the Bell System.

1790 I have analyzed the work of the second class of people to whom I referred (those enclosed in the red rectangles), in order to see to what extent they were dealing with problems affecting Long Lines and to what extent with problems affecting the associate companies. I am able to allocate the expenses of the groups of our operating and engineering forces enclosed in such red rectangles between the Long Lines and the associate companies on the basis of the use made by those companies of that work. This group has to do solely with toll work. They are not engaged in local work, and I have, therefore, selected certain indices to compare the toll work done by the Long Lines Department with the amount of toll work of the associate companies. These indices are toll plant investment, toll-board messages, total toll
1791 messages, and toll employees. For the year 1930, the toll plant investment of the Long Lines is 37 per cent of the toll plant investment of the Bell System, as shown by

the books. The toll board messages are 14 per cent, the total toll messages 5.1 per cent, and the toll employees are 21 per cent.

Having obtained those ratios, in order to obtain an allocation I composited them into a single figure, which, for the year 1930, was 19.3 per cent. In my opinion, the application of that percentage to the expenses of the people enclosed in red fairly allocates their expenses as between Long Lines and associate companies on the basis of use.

That leaves the yellow-enclosed people, who constitute 51.9 per cent of the total group. They are working on problems common to both toll and exchange. I have analyzed the work of that group and am able to allocate the cost of that work between Long Lines and the associate companies on the same general theory that I did the rest.

1792 In this case, as a basis for my final ratio I used plant investment (that is, the total plant investment, both local and toll), relative number of employees, local and toll, and total expenses; from these three figures I have made a composite figure. For 1930, the Long Lines plant investment was 9 per cent of the total Bell System investment; employees were 6.2 per cent of the total employees of the System, including Bell of Canada in all cases; and the expenses of the Long Lines were 7.6 per cent of the total expenses. These composited to 7.6 per cent. In my opinion, that fairly prorates or allocates the expenses of those people shown in yellow between the Long Lines and the associate companies.

1793 Having dealt with the three separate classes, I will illustrate how I arrived at my total allocation by telling what was done for the year 1930 as to the allocation made by people. 32½ per cent of the people were engaged on work for which there was no Long Lines use (those are the ones enclosed in blue); none of those people were allocated to the Long Lines. The next was the toll group, enclosed in red, which constituted 15.8 per cent of the people enclosed within any of the rectangles, and I applied the composite percentage of 19.3 per cent to the 15.8 per cent, making 3 per cent of the total department to be allocated to the Long Lines. I next took the 51.7 per cent of the people who were engaged on both local and toll work, and, by the use of my composite, I found 3.9 per cent of the total department should be allocated to Long Lines. This, added to the 3 per cent found before, gives 6.9 per cent as the total allocation (by people) to the Long Lines.

There are in the organization sheets certain people not enclosed in lines. They are in the Clerical Department
1794 (under the Office Manager), the heads of the divisions,
the Assistant Vice President (Mr. Waterson), and myself. They are overhead and clerical assistants, and I allocated them in proportion to the allocation of the other people. These clerical forces are called upon from time to time by each of the various groups of engineers which I have allocated, and I merely prorated them on the same basis as I prorated the engineers who call upon them for assistance. In my opinion, this is a fair and reasonable way in which to allocate that work.

The top line engineers generally supervise and direct the work of the people under them and are responsible for the results obtained by that whole group. I have prorated each
of them on the basis of the work which he was doing
1795 with respect to the people under him. In my opinion,
that is a fair way to prorate that part of the expenses of my department.

I have made a similar allocation for the year 1923. The second part of Exhibit A-104 is the organization diagram of the O and E Department as of April 1, 1923. I have examined and analyzed that organization diagram to determine what
part, if any, of the forces shown thereon works solely on
1796 problems affecting the local companies, and what part
works solely on toll problems, and what part works on both toll and local problems. I proceeded in the same way in regard to this 1923 chart as I did in regard to the 1930 diagram, which I have just explained. In the allocation of people for the year 1923, I found that the percentage of people on work of which the Long Lines made no use (those enclosed in blue rectangles) was 44.2 per cent of the total people. The

people in the group engaged on toll work only, of which the Long Lines makes relatively more use, was 12.1 per cent. The percentage of the people engaged in work which has application to both local and toll (those enclosed in the yellow lines) was 43.7 per cent of the total people enclosed in the rectangles.

The people enclosed in the blue are those who are engaged on work of which no use is made by the Long Lines. 1797 I have allocated no part of that group to the Long Lines Department. The people enclosed in red are those engaged in working on toll, but not on local problems; these I allocated according to certain ratios, arrived at in the same way as I arrived at the ratios for 1930, that is to say, the figures for toll plant investment, toll board messages, total toll messages, and toll employees; the figures, of course, are different, because the figures are for the facts of 1923. The ratios are corresponding ratios for the facts as they were in 1923. With regard to those working jointly on local and toll problems, I took the same four ratios with the facts as of 1923 (that is, the ratio of plant investment, employees and expenses), and arrived at a composite ratio as I did in the case of the year 1930.

4.1 per cent of the department in the year 1923 is 1798 allocated to the Long Lines on the basis of the number of people. We got a lower figure for 1923 than we did for 1930, because there was relatively less toll work being done in the department in 1923 than there was in 1930, and because the Long Lines was relatively a smaller proportion of the total system in 1923 than it was in 1930. It has grown relatively faster than the local business.

For both 1923 and 1930 I took the salaries which the people received and compared those salaries with the total salaries of the groups treated, and determined the percentages on the basis of pay.

The document identified as Plaintiff's Exhibit A-105 shows the allocation of the O and E Department expenses to the Long Lines on the one hand and to the associate companies (including the Bell Telephone of Canada) on the other hand, on the basis of salaries for the years 1923 and 1930. It also shows an allocation on the basis of numbers of people 1799 for every year from 1923 to 1930, inclusive. So two years are allocated by both methods and the intervening years are allocated by using the numbers of people only.

This exhibit (A-105) is divided into two tables. The first column in the top table shows the years 1923 and 1930. The second column shows the percentage of our salary expense for the group of people enclosed in blue, that is, where there is no Long Lines use; these figures were developed in the manner I have already described, and on the basis of the salaries of the people in the different groups. The third column gives the percentages of the salary expense of the people enclosed in red rectangles. In the next column, 1800 the zeros indicate that there is no portion of the salaries of this group allocated to Long Lines, because there is no Long Lines usage in the group. The fourth column gives the percentages of the salary expense of those people enclosed in red rectangles, and the fifth, sixth, seventh and eighth columns give indices used in the allocation and are, respectively, the toll plant investment, the toll board messages, the total toll messages and the toll employees; these are the ratios that I have already described. The ninth column is the composite of columns five, six, seven and eight, and is obtained by taking an arithmetical mean of the figures in those columns. The figures in the tenth column are the result of multiplying the percentage of the employees in the group by the composite percentage arrived at in column nine, and is the per cent of the total expense that is applicable to Long Lines because of the work of the people enclosed in red.

1801 The next group deals with the people who are engaged in work that has to do with both exchange and toll. In the first column under that subdivision is given the per cent of the salary expense of this group to the total salary expense of all those enclosed in any one of the three colored rectangles. The next three columns give the ratios which I have used and which I have already explained. The next column gives the composite of those three ratios, which is an arithmetical mean. The next column shows the percentage of the total department chargeable against Long Lines for those people who are in this group.

The last column shows the sum of the allocations of the red and yellow people, and is 4.2 for the year 1923 and 6.8 for the year 1930.

1802 In the lower chart for the years 1923 and 1930, I have done exactly the same thing that I have already described for salaries, except that the allocation in this lower chart has been made on the basis of the number of people enclosed in rectangles instead of on the basis of the salaries paid those people. For the years 1924 to 1929, inclu-
1803 sive, I have done exactly the same thing as to the allocation by numbers of people. That is, I have taken the organization chart for each of those years and marked the people off in blue, red and yellow, as I have already described, and then determined, by the kinds of ratios I have referred to, the allocation of each of these groups. I have not done that on the basis of the pay of those people for the years 1924 to 1929, inclusive. That would be an exceedingly burdensome computation; it involves going back to the payroll records, and for each diagram dealt with, taking many hundred individual entries. I did it both on the basis of the salaries and on the basis of people for the years 1923 and 1930 and found the results were almost identical, and, therefore, I did not go through the exceedingly laborious
1804 computations involved in doing that for each of the intermediate years. For instance, the second column shows that percentage for the year 1923 was 43.5 per cent on the basis of allocation by salaries, and 44.2 per cent on the basis of allocation by people, and the last column shows that the total allocations to Long Lines were 4.2 per cent on the money basis and 4.1 per cent on the basis of the number of people. For 1930, the allocations were 6.8 per cent on the basis of money and 6.9 per cent on the basis of the number of people. In my opinion, the reason for that close agreement was that, generally speaking, the salaries will average out and give the same result as the numbers of people; while they are men of somewhat different detailed experience, they

are men of the same general period of experience, the same kind of engineers, the same kind of operating men, and all getting about the same salaries. We make no difference in the pay of the people who are working on toll from the pay of the people who are working on local problems. This 1805 was true throughout the whole period from 1923 to 1930.

I developed the people ratio and, based on the facts developed in 1923 and 1930, assumed that the money ratio would be the same, or so nearly similar that it would produce no significant difference. So I have prorated the money on the basis and on the several bases shown on the table at the bottom of Exhibit A-105.

In my opinion, the figures developed in the last column to the right on Exhibit A-105 fairly set forth the full percentages of the entire expense of my department which should be allocated to the Long Lines Department in each of the years 1923 to 1930, inclusive, upon the basis of the use made of the work of that department for which those expenses were incurred.

1806 It seems to me that there is little or no opportunity for difference in judgment or opinion concerning the allocation of the people (or their expenses) shown enclosed in the blue rectangles on the 1923 organization chart. That, I should say, was a question of fact. I know of my own knowledge the classes of work done by those people, and I know that it has no relation to the plant, people, or problems 1807 of the Long Lines, although there is a microscopical and exceedingly minute part of such work that might be questioned; a part so small that it could not be allocated. I have in mind this: the Long Lines has a test station, 1808 and from that test station is run a pair of wires to the desk of the manager in charge of that station, on the end of which is an ordinary telephone instrument. It might be argued that that is a local line. There are, perhaps, a few hundred or a few thousand of such cases in the Long Lines, as compared to fifteen million regular stations in the Bell System. It might be argued that one one-hundredth or one one-thousandth of one per cent of this group should be charged to the Long Lines. I merely mention that in the interests of technical accuracy, but I believe that my first statement, that there is no opportunity for difference of judgment or difference of opinion as to the people enclosed in the blue rectangles, is, as a practical matter, entirely accurate.

1809 I do not think that any reasonable treatment of those people enclosed in the red rectangles could make a substantial change in the allocation which we are discussing. They are a relatively small portion of the total of the department, and the character of the Long Lines business and the Long Lines work is so related to the character of the associate companies toll business and the associate companies work that I do not feel there is opportunity for a question that would substantially modify the total allocation made. The people in this group constituted 12.1 per cent of the total in 1923 (which was the lowest percentage in this period) and
increased to 15.8 per cent of the total in 1930. There is
1810 no room for doubt as to the figure of 12.1 per cent for
the year 1923; that is definite, because I counted the people and I knew what they were doing.

I have applied to that percentage of people a ratio, which, if increased by 10 per cent thereof, might change the final figure of 4.1 to 4.2 per cent or 4.3 per cent; that would be the maximum effect of that change. I cannot conceive of the use of any reasonable factors in addition to those that I have used, or in place of those that I have used, that would make a variation in the allocation figure of as much as 10 per cent.

1811 There would be very small room for change in the group of people enclosed in the yellow rectangles and the expenses represented by them. That is overall work and there is nothing peculiar at all about it. It is work that applies both to toll and local plant, to toll and local people, to toll and local expenses, ~~and to~~ toll and local whatever the problem may be. There is so much more local plant, so many more local people, and so much more local expenses, that obviously the percentage applicable to toll is relatively small; and

then the Long Lines is by no means all of the toll. I got
a composite figure for this group of 5.1 per cent for 1923.
The highest ratio used in arriving at that composite for
1812 1923 was 6 per cent, representing plant investment. I
know of no higher ratio for which there would be any
logical support for use in developing the composite. If, in-
stead of using the several ratios that were lower than 6 per
cent, I had used the 6 per cent alone, the effect on the final
figure might have been to raise it from 4.1 per cent to 4.2
per cent.

If I were questioned concerning the similar allocation for
1930, my answers would differ only as to the detailed figures
appropriate to that particular year. There would, in each
case, be a similar definite limit of the extent of possible error;
by "possible error", I mean, of course, reasonable error.

In addition to the methods which I have already explained,
I made a still further allocation upon a third basis,
1813 which is shown on the papers marked Plaintiff's Exhibit
A-106 for identification. In this allocation, I took each
group in the department organization (and sub-groups within
that group if they were engaged in work which should be dif-
ferently allocated), and so finally divided the people who can
be allocated at all (the same people I have already been talk-
ing about in allocating) into a large number of small groups,
and gave specific consideration to each small group. Some-
times I have broken down to the last unit and the last man.
By that method, I developed, I think, 55 separate groups,
and, as this was an allocation on the basis of sal-
1814 aries, obtained the salaries paid to the people in each of
these small units. We allocated the people above the
separate groups according to the composite ratio of the group
itself, and distributed the clerical and overhead expenses be-
tween these different groups.

In effect, I did 55 times as much allocation as I did in
connection with my first allocation, and made 55 allocations
instead of the 3 allocations that I made in the second
method.

1815 For the purposes of illustrating this third method of allocation, I will take Chart 2, for April 1, 1930. The second section of this chart shows the Toll Traffic Engineer. Some part of his work applies to all classes of toll traffic, and there I have used as a ratio the total toll messages, because the work applies to all toll traffic. Certain other portions of his work apply to toll boards only, and for that I have used the ratio of Long Lines' toll messages to total toll messages. Another illustration is on Chart 5 for April 1, 1930. Here the first section shown is the Station Engineer and his group of people. They deal solely with subscribers' sub-station equipment, and for that I have taken a zero allocation to Long Lines. The next group of three men deals with building plans, and for that group I have taken 2 per cent, which 1816 is the ratio of the building investment of the Long Lines to the total building investment of the Bell System (including the Bell Telephone of Canada).

What I have done in this Exhibit A-106 may be summarized by saying that I have applied to each of the 55 or more groups the ratios which, in my opinion, are applicable to determine the prorating of the work of that particular group between the Long Lines and the associate companies on the basis of the use of that particular work.

The money figures, the ratios, and all other matters necessary to understand my method of procedure in connection with this allocation are shown on Exhibit A-106, unless it is desired to see the detailed computation.

I have used a great many more ratios than those that have already been referred to. Some of these ratios I got from Mr. Crunden and a few I made for myself. The ratios which I got from Mr. Crunden are easily identified by com-1817 paring his sheets with those that I used.

On Chart 5 as of April 1, 1930, is shown, at the lower right-hand corner of the chart, Note 1. That Note 1 comes down from a small section near the middle of the page, and is a group of people whose work is entitled on the organization diagram "High Frequency Systems". Those people are dealing with four classes of work; they are dealing with carrier

systems, and the Long Lines has 60 per cent of the channel mileage of the carrier systems in the Bell System; they are dealing with program transmission circuits, and the Long Lines has 40 per cent of such circuits; they do some work in connection with radio systems, and, during the year 1930, the radio systems existing and being engineered were three-fourths Long Lines and one-fourth associate companies; they deal with public address systems, and public address system service is rendered entirely to associate companies. I have composited those activities on the basis of 50 per cent to the Long Lines. In that particular group, Long Lines is
1818 getting an allocation of 50 per cent against a general allocation in the end of about 6 per cent.

Each of the ratios that I used that is not contained on the sheets Mr. Crunden furnished me was one that I developed myself from the records or information that we had in my department. These records or information were obtained in the regular course of business and we are dealing with them continually.

I made a similar detailed allocation of the people shown on the chart for the year 1923, as well as 1930. I made that allocation in the same way.

1819 I have prepared a table which shows by each of the three methods which I have described the percentage of the expenses remaining to be allocated between the Chicago area of the Illinois Bell and the remaining areas of all the associate companies. That is the sheet identified as Plaintiff's Exhibit A-107. It shows the percentage remaining after deducting from the total 100 per cent the allocation made to the Long Lines in the three allocations which I have described, and it shows that the three methods give very closely comparable results. This close agreement between the results obtained by the three methods indicates to me the validity of the methods used. In the first place, I made a general allocation on the basis of general use; I then broke the
1820 people down into different classes of work (of toll, of local, and of local and toll jointly), and applied ratios to them; I then broke it down into 55 different groups

and chose appropriate ratios for each of them. By these three methods, I obtained substantially similar results.

The separations and allocations which I have described heretofore are directed toward allocating to the Long Lines Department a fair share of the total expenses of the O and E Department. I first eliminated the expense properly prorated to the Long Lines before prorating the expenses of the O and E Department between the Chicago area of the Illinois Bell and the remaining areas of the associate companies, because the Long Lines being exclusively a toll operating company made certain ratios and methods appropriate to that allocation which were not available for the other allocations. There were also certain items which can be used in making allocations between the various associate companies that were not available in the case of the Long Lines. When I said "not available", I meant they were non-existent. For instance, an important element in allocating between various associated companies might be stations, or that 1821 might be considered as a significant item, but no allocation between associate companies and Long Lines can be made on the basis of stations, because the Long Lines have no stations.

After having made the allocation of expenses between the Long Lines and the associate companies and having taken out what I developed as the fair share to be allocated to the Long Lines Department, I made an allocation of the expenses remaining between the Chicago area of the Illinois Bell and the remaining areas of all the associate companies. The paper identified as Plaintiff's Exhibit A-108 is the sheet on which I have developed that allocation. In making 1822 that allocation, I have taken for each year from 1923 to 1930, inclusive, certain ratios as between the various associate companies as a whole and the Chicago area which are significant and have important relations to the work which we are doing and to the use of such work. The ratios which I have taken are stations, plant investment, employees and expenses. These I have composited by taking their arithmetical mean and so arrived at a single percentage for each year, which I have applied to the total expenses of the O and E Department in the license services to the associate companies (including the Bell Telephone of Canada), but after deducting the allocation to the Long Lines. By that process, I arrived at the last column on the table, which shows the expenses of the O and E Department which I have allocated to the Chicago area. I have done that for each of the years 1923 to 1930, inclusive.

1823 There might be one or two very minor groups in the Department engaged upon problems which do not have any application to the Chicago area of the Illinois Bell Telephone Company, but, broadly speaking, every group in the Department is engaged upon problems having an application to the Chicago area of the Illinois Bell.

In my opinion, the use of the percentages shown on Exhibit A-108 as I have used them will result in allocating to the Chicago area of the Illinois Bell Telephone Company no more than its fair share of the expenses of my department for 1930, on the basis of the proportionate use by that area of the total work performed by my department for which such expenses were incurred. The same is true with regard to each of the other years 1923 to 1929, inclusive.

I have not dealt with 1931, as I did not have the complete figures.

For separating out the Long Lines I selected the general ratio, that is the one I first presented in my testimony. I selected that because I had to select either the first or the 1824 second, because the third one is only done for two years and was done as a check to see whether carrying the question down into the most minute detail would result in any substantial change in the allocations. As a matter of fact, the differences are relatively minor between the two allocations which were available for each of the years in question, and, generally speaking, the first allocation allocated more to the Long Lines and left less to the associate companies than did the second allocation.

1825 (Plaintiff offered in evidence exhibits marked for identification as Plaintiff's Exhibits A-102 to A-108, both inclusive. Objections were reserved by the defendants until after the cross-examination.)

(Plaintiff offered in evidence exhibits marked for identification as Plaintiff's Exhibits A 99 to A 101, both inclusive. Objections were reserved until after the cross examination of Mr. Crunden.)

1827

Cross Examination by Mr. Haight.

March 23, 1932.

In the compilation of Plaintiff's Exhibits A-102 to
1828 A-108, inclusive, I first determined personally the methods and co-efficients which were to be used; I then determined the methods of computation which were to be used, and had the computations and the detail work done by the people in my department under my direction. I do not know the total number of people engaged on this work, but, including the clerical forces, I presume that at one time or another there were perhaps eight or ten people. The work was started last November and was finished just a few days ago,
1829 because just as soon as I saw that I was not going to testify last November, I turned to other matters.

In some cases, it would require turning to the original records to check these exhibits. I should not say, however, that it would require a force the same size as that employed in compiling them, to check them. To determine the correctness of each of the factors used and of each of the co-efficients used, and to examine the methods and to determine the correctness of the data from the original entries, would require considerable time. I should say that a couple of men
1830 in a day could do what I would call a spot check; but if every item and every computation is to be checked, and the principal work would be in checking the original data, it would require considerably more time than that.

The original records from which the data for these exhibits were taken are in New York. I do not remember any case where summaries were used in the compilation of these exhibits instead of original data, and I do not think there are any such cases.

The Exhibits A 102 to A 108 were not used in the Ohio Telephone Rate Case.

I have preserved the working papers employed in the compilation of these exhibits. Those working papers are
1831 in the court room, and are available for inspection by the defendants if they wish to do so.

(Counsel for plaintiff agreed that these documents would be retained for inspection by the defendants after the close of Mr. Gherardi's testimony.)

In my testimony and in the exhibits, the references in certain instances to long distance property or investment refer to the investment shown on the books of the Long Lines Department.

1832 Occasionally, in connection with manual equipment, there may be direct trunks from the private branch exchange of the subscriber to the toll board, but that is not the normal arrangement in connection with giving telephone service. I could not say whether there are any such arrangements in Chicago or not. There may be toll terminals in which the subscribers' lines go directly to the toll board in connection with dial equipment in Chicago, and also in connection with dial equipment in Chicago there may be direct
1833 trunks from private branch exchanges to the toll board; but I do not know definitely. With reference to dial equipment, I do not know of any direct lines to the toll board in Chicago that cut out the toll office operator so the subscriber in that way directly uses the long distance service.

Some of these situations at least exist in some places in the Bell System.

The toll engineers of the Department of Operation and Engineering get their information with respect to the methods, conditions, operations and facilities of the local plant largely from contacts with the field people in the various companies. In some cases, they get that information from their general and prior experience, and, in some cases, from other people

in the department. Our department is so organized that
those engineers can get information from the other engineers who pay more particular attention to the local exchange
plant and its problems; they can also get information
1834 from the circular letters, specifications and drawings
which are prepared by the local engineers.

From an engineering and operating standpoint, the problems of design, maintenance and operation of the local exchange plant are, in many respects, similar to those in the toll plants, and, in some respects, they are different. The local problem of interconnecting subscribers consists of the connecting together of subscribers with a single switchboard, or with a relatively small number of switchboards (depending upon the size of the city, the switchboards may run to 30, 40, 50 or 100), and is one of handling very large numbers
of calls between those switchboards. The toll switching
1835 problem, on the other hand, is one of handling a relatively very much smaller number of calls, scattered over very much larger areas and with a very much smaller number of calls to any given destination. There are also differences in equipment which make the problems different.

"Q. Speaking of your Department of Operation and Engineering, is it true that it furnishes the licensee companies advice and assistance in connection with general construction problems, and co-ordinates those programs and the manufacturing facilities of the Western Electric Company?"

No, sir. That is not my understanding of what we are doing.

1836 We occasionally do a little work which might be characterized as co-ordination of the programs of the various associated companies in the Bell System with the manufacturing facilities of the Western Electric Company. To illustrate that, there are times when the associated companies, due to very rapid growth, are greatly in need of certain types of apparatus, or cable, or some other piece of property, so that it is not possible at the particular time for all the associated companies to get just what each one of them would like to have. We undertake to assist the associated companies in that matter, so that each will get what it wants when it needs it as near as possible.

1837 My department gives advice in connection with provisional estimates in the Bell System. We have made suggestions to the various associate companies as to the most convenient method of approaching the estimate of their departmental expense. In many cases, we have also given suggestions as to the methods of preparing a construction program, so as to short-cut much of the detail work that is sometimes done in connection with such planning ahead of construction. Sometimes in connection with that we have sent out advices by way of letters, in the same general manner that I illustrated in connection with some other features on my direct testimony. Broadly speaking, we give our advice and assistance in much the same manner that we do in the things I illustrated on direct.

1838 After the provisional estimates come from the various licensee companies in the System, we look over each estimate, study the construction program and the departmental expenses provided in the estimate, and if, in any respect, it seems to us that a better or different provision of plant or expenditure of more or less money is desirable, we so advise the associate companies. The provisional estimates are available in our department for any one of the responsible people in our department who may find them of assistance in their work.

1839 *Re-direct Examination by Mr. Blackman.*

The choice of the ratios which I used in my allocation (that is, the three ratios on the general basis that I applied to the blue, red and yellow, including the allocation both on the expense basis and on the basis of the number of people, and the ratios in the 55 different classes treated by me in my detailed allocation) came from my judgment. The figures themselves came from records. The figures, with the exception of two or three, were furnished to me by Mr. Crunden, and appear in his exhibits. The money expended in my department came from the official records of the 1840 department. With one exception, a general examination of this matter, outside of an examination into my judgment, would take a very short time; that one exception would be where individual salaries were used as a basis of allocation, in which cases it would be necessary to go to the original payroll records of each individual in order to check the work, and that is the most laborious feature in the whole allocation. That was the feature, however, that I found agreed most exactly with the allocation on the basis of people. A check of the allocation on the basis of people could be done in a very few hours.

Some of the similarities between Long Lines operation and the operation of the associate companies are: both, in many cases, employ operators; they employ wires and switch-1841 boards; they employ linemen and use poles, lead covered cable and copper wire. The similarities are very numerous. The method of employing employees, for instance, is the same, as is the method of training them, except as to the exact detail of what they are taught; the general methods, however, are the same. The extent of training is the same, and the pay is the same in the same place. That is, in Chicago the people who are handling the Long Lines business get the same pay as the people who are handling the local business; they get the same pay when they are employed, and their schedule of progression is at the same rate. 1842 The people who are maintaining the plant are maintaining the same general kind of plant with, naturally, some variations, because the plant is not identical, although it has many similar elements. There is no difference between the Long Lines' pole lines and the pole lines of the associate companies. So far as lead covered aerial cable is concerned, the conductors are not necessarily identical, but the cable itself is the same general cable, and the sheath maintenance is the same. The underground cables of the local companies sometimes run in vitrified clay ducts (that is the general type), and sometimes in other types of ducts. The Long Lines' underground cables run in the same kinds of ducts. The 1843 general maintenance of that class of plant is the same.

The switchboards that handle the long distance calls of the Long Lines are not identical with the switchboards that handle the toll calls of the associate companies, but they consist of many of the same elements, and, generally, are a similar class of apparatus. The toll switchboards are similar in many respects to the local manual switchboards; that is, they consist of jacks, relays, plugs and cords.

(Plaintiff reoffered in evidence Plaintiff's Exhibits 1844 A-102 to A-108, inclusive, which were admitted.)

ALLAN B. CRUNDEN, recalled as a witness on behalf 1845 of the plaintiff, having been previously duly sworn, further testified as follows:

Cross-Examination by Mr. Goldstein.

March 23, 1932.

The Bell Telephone Securities Manual procured the information shown on Exhibit A 99 from records in the possession of the American Telephone and Telegraph Company. 1846 Those records are copies of the annual reports of the various companies referred to in the exhibits, and reports coming to the American Telephone and Telegraph Company in the ordinary course of business. Those latter reports are what are known as the M. R. reports (Monthly Reports). Both the M. R. reports and the reports to the stockholders of the respective companies would show the same figures. The M. R. reports are sent in to the American Telephone and Telegraph Company in the regular course of business.

1847 I was present a part of the time in the assembly room at the time of the taking of the depositions in New York; I was in and out. I may have been present when a request was made for the M. R. reports to be produced, but I do not recall at this time. I do know that they were refused to the defendants. I am talking of the reports of the individual companies. M. R. Report No. 2, in particular, shows the assets, liabilities, and income statements of the individual companies.

1848 I compiled the figures shown on Exhibit A-100 about a month ago. The figures on this exhibit were not, to my knowledge, used in the Ohio Telephone Rate Case. The percentages shown on this exhibit first appeared in the instant case in these exhibits. The other data is taken from various sources that have been previously made available to the defendants. I started to work on Exhibit A-100

1849 about a month ago. They are comparatively simple calculations, and were made by someone working under my direction; I should estimate that the whole business could be done in a day, and checked in one-eighth part of that time.

C. R. 64-A is a summary compiled from Monthly Report 6. Monthly Report 6 is a report sent by each of the associated companies to the American Telephone and Telegraph Company in the regular course of business. Monthly Re-

1850 port 6 was refused to the defendants in these depositions, but C. R. 64-A was not refused. C. R. 64-A was compiled from M. R. 6 from each of the associated companies, and M. R. 6 was withheld from the defendants. Monthly Report 6 for the Long Lines Department was not withheld from the defendants.

M. R. 23 is one of the reports of the associated companies that was refused to the defendants. It is a monthly report sent by each of the associated companies (including the

1851 Bell of Canada) to the American Telephone and Telegraph Company. C. R. 89 is a summary report compiled by the American Telephone and Telegraph Company from Monthly Report 23, which is a monthly report sent in by the associated companies.

C. R. 51-A is a summary compiled from the M. R. reports of each of the associated companies. The M. R. reports used as a basis for 51-A are M. R. Reports Nos. 1 and 2.

1852 Exhibit A-101 is a comparison of the Chicago area with the associated companies. The figures on this exhibit were compiled about a couple of weeks ago, and were not used in the Ohio case. C. R. 51-A and the M. R. reports referred to in connection with Exhibit A-101 are from the same sources as those referred to in connection with Exhibit A-100; exactly the same principle is involved here.

Exhibit A-99 has been in process of compilation for some months; I could not particularize. It was not furnished in the Ohio case.

The books and records underlying Exhibits A-100 and A-101 are in New York. Of course, the books of the individual 1853 companies are in the various states in which they operate, but the records which I used as the source of information for these exhibits are all in New York.

"Mr. Blackman: I offer in evidence now, if your Honor please, Exhibits A-99, A-100, and A-101, both inclusive.

1854 "Mr. Goldstein: I object on the ground that the original sources from which the data was taken have been refused to us, and not made accessible, and there is no way we can check them.

"Judge Wilkerson: What is your reply to that objection?

"Mr. Blackman: This, your Honor: As to Exhibit A-99, the data there, according to the testimony of the witness, came from, or he took from this pamphlet of the Bell Securities Company, which the defendants offered in the New York case. They themselves offered that. They have all of the figures in front of them—

"Judge Wilkerson: The defendants?

"Mr. Blackman: The defendants, yes sir. They came to New York to take depositions and examined a great number of witnesses, and that exhibit is Exhibit 111, attached to their deposition filed in this court. It has not been read in yet, but it seems to me that that is a very technical position for them to take, when they have the figures that we are dealing with.

1856 "Mr. Blackman: In their depositions they called for a great many things which we had not submitted to them before. We had submitted thousands of things before that; but there were perhaps a few score that they did not get. In those depositions they asked for them, and in the course of those depositions they identified this pamphlet of the Bell Securities Company, as Exhibit 111.

"Judge Wilkerson: They have not offered it here yet.

"Mr. Blackman: No, sir, not yet. But I say, I call your Honor's attention to that, that it has not been offered yet, but it seems to me that it is a good deal of a technicality, to object that there is no way of their checking this thing, when it is in the very document that they themselves have had introduced and attached to the depositions. Now, that is as to Exhibit A-99. This is the whole thing, your Honor—and I will have to give my friend Mr. Goldstein credit for a very adroit maneuver. We had this thing out last fall. These various reports of all of the different companies of the Bell System were asked for by the defendants. We declined. The matter came before this court, and this court decided that they were not entitled to them. It was a perfectly obvious fishing excursion, to get—

1857 "Judge Wilkerson: Well, is not what you are offering now a document which purports to be a tabulation of certain other documents which they have not been permitted to see?

"Mr. Blackman: Well, sir, this is the point: we have not permitted them to see the individual reports of the New England Company, the Southwestern Bell, and this, that and the other company, because there are certain things in those reports that we think they have no right to see, that have no bearing on this case, and we do not care to have our business spread broadcast any more than we have to.

"Judge Wilkerson: Well, if that is the situation, why do you not have to forego, then, the right to put in this tabulation, if you are not willing to let them see the reports?

"Mr. Blackman: Well, sir, I was just coming to that. From these individual reports, that is, the individual reports from the companies, which are not made up by the American Company at all, but are made up by the New England Company, and the other companies, in the ordinary course of business, the American Company makes up tabulations for

1858 all of the companies. Now those tabulations are what we are using. Those are the only figures we are using,

and all of those reports have been given freely to them. They have been given the individual figures for the Long Lines. We are using them. They have been given the System figures, and we are using them; and those figures have been freely offered to them. Now they say, 'Because you got those System figures from the individual reports of the New England Company, the Southern New England Company, the New York Company, and the 23 other companies, we object to this, because you have not given us those things.' Now we do not make this up at all—and by 'we' I mean the Illinois Bell, or the American Telephone and Telegraph Company. That is information that comes to us from the outside. So far as our reports that we make up are concerned, we have given them to them, and that is all that we are using. We are using nothing here, about these individual companies. We are using here only the System as a whole, as compared to the Long Lines, that is all. We have used those ratios. Now, it is a perfectly simple thing; there cannot be any doubt about the figures. Of course, that does not perhaps meet the legal situation, but I cannot see any doubt about the figures.
1859 These ratios can be checked by them; they have all of
the information with which to do it; they have been published broadcast in dozens of publications, and there is no possible doubt about them. The only thing is that my friend, Mr. Goldstein, is clever enough to take advantage of this, to try and extract from us these individual reports, which we have declined to let him have.

"Now, I do not think that there is a good legal foundation for it.

"Judge Wilkerson: Well, I am not so much concerned about the foundation for his attempted extraction of the information as I am about the legal foundation for admitting these documents in evidence—

"Mr. Blackman: Yes.

"Judge Wilkerson: —when the basic figures are not here, now.

"Mr. Blackman: Well, but the basic figures are, your Honor, in my opinion. These figures came from our reports—

"Judge Wilkerson: Requiring you to produce those reports is one question.

1860 "Mr. Blackman: Yes?

"Judge Wilkerson: And admitting compilations made directly or indirectly from them, it seems to me, presents a different question.

"Mr. Blackman: Certainly it does, sir. But those reports are only indirectly concerned here, and as I say, those are not our reports. The reports that we make up in the regular course of our business are the reports which we have submitted to them.

"Judge Wilkerson: But your reports deal with the business of these other companies.

"Mr. Blackman: Yes, sir, they do.

"Judge Wilkerson: And your reports are based in turn upon the information which you get from them.

"Mr. Blackman: Yes.

"Judge Wilkerson: Now you say, 'We should not be required to produce those reports because they contain information on a great many subjects with which these defendants have no concern'—'with which they are not concerned.'

1861 And we have agreed with you on that.

"Mr. Blackman: Yes, sir.

1862 "Judge Wilkerson: Now, then, you come in here, and you want to use certain ratios with a view to apportioning among these companies certain items of expense, the net result being, you get into the expense, on the expense side of the Illinois Bell, when we come to determine what is to be deducted from gross earnings, you get into that, a figure which is based on these ratios. Now, that is what it ultimately leads to, is it not?

"Mr. Blackman: That is true.

"Judge Wilkerson: That is to say, one of the figures in that column depends upon that ratio for its accuracy, and that ratio is one which is determined from the report of your Company, which in turn is compiled from the reports of these other companies. Now, of course, I understand that.

"The courts are in cases of this kind very liberal in permitting compilations to go in, and in the expedition, or in the

interests of saving time, do permit a great many things to go in which, according to the strict rules of documentary proof, would not have been admissible fifty years ago,
1863 to say the least.

"Mr. Blackman: Yes, sir.

"Judge Wilkerson: Now, I would have no difficulty about these compilations at all, if the other side had had the opportunity to inspect these figures. I would not require you to bring them all in here, nor would the court permit them to be brought in, when compilations could be made which would answer the purpose.

"Mr. Blackman: I might say this, your Honor: I do not think that there would be the slightest objection to the defendants inspecting those underlying reports, as they call them—although I do not think that they are really that, legally; I do not think that there would be the slightest objection to their inspecting those reports insofar as they relate to the figures which we have used. Now, insofar as they show—

"Judge Wilkerson: Well, that of course goes—that is a rule with which we are familiar, that where you have to go into book accounts, and the book contains matters with which the other parties are not concerned, the courts, of course, will not permit an inspection of all of the books, but only of that portion of them which is pertinent.

1864 "Mr. Blackman: That is our point here, sir.

"Judge Wilkerson: Well, will that satisfy you, if you are allowed to look at the portions of the reports which are pertinent to this matter? Now, of course, back of that—I know exactly what Mr. Haight is going to say. He is going to say that that leaves to the parties in the case a determination of what figures are pertinent.

"Mr. Blackman: No, if your Honor please; it does not in this case, no.

"Judge Wilkerson: But that is the same objection that comes up when we seal all of the pages of a book, except one page; that same question comes up in that case.

"Mr. Blackman: In this case it is a very simple question, your Honor. Those reports show the plant of the Company.

Now, insofar as they show the plant, plant figures, we will let them see them. Those reports show people; they show these specific things—this witness has said that—and those we will let them see. Now, those reports contain many other comparisons that have nothing in the world to do with what this witness has testified to. Now, those—

"Judge Wilkerson: I can see how that might be
1865 embarrassing—how there might be information there
which would be embarrassing to some of those companies.

"Mr. Blackman: Certainly.

"Judge Wilkerson: In their relations with the rate-making bodies—

"Mr. Blackman: Certainly.

"Judge Wilkerson: —of the states in which they are operating.

"Mr. Blackman: Certainly.

"Judge Wilkerson: I can understand that. If there is no such controversy as that existing now, it is a question whether in this lawsuit there should be stirred up a controversy in other states which are not contesting with you now. I understand that phase of it. I suppose that is a good objection.

"Mr. Blackman: Your Honor has put your finger directly on the point.

"Judge Wilkerson: I do not suppose that these gentlemen are interested in stirring up litigation any place else. They are interested in winning their lawsuit here, and if they have the basic figures relating to those things which you have put in, I suppose they will be satisfied.

"Mr. Blackman: I think I may say—although, of course,
I cannot speak for the Company; I would have to con-
1866 fer with Mr. Braeelen, but I think we would be willing—

"Judge Wilkerson: Well, are you through with this witness?

"Mr. Blackman: —to bring all of those in—

"Judge Wilkerson: Did you have any further examination?

"Mr. Blackman: No further questions.

"Judge Wilkerson: All right.

"Mr. Blackman: I would be willing to say, we would be willing, I think—

"Judge Wilkerson: I think we can dispose of this.

"Mr. Blackman: —to bring all of those papers here.

"Judge Wilkerson: I would like to leave it in such shape, now, that it will work itself out automatically—unless it is brought to the attention of the court in some other way. I think I will admit the documents in evidence, as I have the other documents, but let the record show, motion to strike, unless and until there has been a compliance with the request of counsel for an inspection of such portions of those underlying reports as are deemed by them material to the ratios which are introduced. Now, try to work that out among yourselves.

"Mr. Blackman: All right, sir, and if we have trouble—

"Judge Wilkerson: And if you cannot work it out,
1867 then counsel for the defendants may bring it before the
entire court, on the motion to exclude the exhibits. If such motion is not made by them, I shall assume that in some way or other they have satisfied themselves of the substantial accuracy of the ratios shown by the exhibits.

"Mr. Blackman: I would suggest this, that if we cannot agree with the defendants, we might bring them here, and submit the papers to your Honor—

"Judge Wilkerson: I have no doubt—

"Mr. Blackman (continuing): —we have no objection to your Honor seeing them.

"Judge Wilkerson: I have no doubt that you will find some way of working it out among yourselves. I think we understand what it is that Mr. Goldstein wants, and I think we now understand your objection to permitting an inspection of all of those reports. You are all lawyers, and I think you can work it out.

"Mr. Bracelen: I think Mr. Goldstein has understood our objection to giving him those monthly reports. It has been as Mr. Blackman has stated."

RICHARD H. GREGORY, recalled as a witness on behalf of the plaintiff, having been previously duly sworn, further testified as follows:

Re-direct Examination by Mr. Thompson.

March 23, 1932.

1868 The Graybar Electric Company on January 1, 1926, took over the business formerly done in the United States by the Supply Department of the Western Electric Company. The Supply Department of the Western Electric Company never did any business with the Bell associated companies and the Graybar Electric Company has never done any business with the Bell associated companies. So all of the transactions in connection with the Supply Department of the Western Electric Company, its sale to the Graybar Electric Company and the sale of the stock of that company to the Management Corporation of the Graybar Electric Company have no relation whatever to the profits on the Bell business of the Western Electric Company.

1869 During my cross-examination, there was marked for identification Defendants' Exhibits D-53, D-54 and D-55, certain balance sheets and profit and loss statements of the Teletype Corporation, and a statement showing the circumstances of the purchase by the Western Electric Company of the stock of the Teletype Corporation. The balance sheet so identified shows the physical assets of the Teletype Corporation at the end of 1930 were approximately $8,000,000, and the purchase price was $30,000,000. There are no assets of the Teletype Corporation included in the average investment used for the purpose of arriving at a return on Bell
1870 business in Plaintiff's Exhibits A-77 and A-78. In the consolidated statement (Exhibit A-84) figures are included for the Teletype Corporation for the period October 1, 1930, through December 31, 1931, and covering the investment of the Western Electric Company in the Teletype Corporation representing the purchase price that we paid for that

company, after giving due effect to the operations of that company since its purchase.

Exhibit D-54 shows that the Western Electric Company purchased the stock of the Teletype Corporation on a basis that shows earnings of between 12 and 13 per cent on the purchase price; that earning factor was taken into consideration in arriving at the amount paid for its stock.

We have made the investigation with respect to the depreciation practices of the 88 companies listed in the Exhibit A-85 which I was asked to make in my cross-examination.
1871 For 82 of the 88 companies there is no reference that I could find to the Federal Income Tax returns with respect to the depreciation rates; in 6 of the companies there is such a reference. The policy as to depreciation is mentioned in specific percentages in 50 companies, in general statements by 10 companies, and 28 companies make no statements at all.

29 companies have rates on buildings less than the Western Electric; 21 have rates on machinery less than the Western Electric; and 5 have rates on service equipment less than the Western Electric. There is one company that has the same rate on buildings; 14 that have the same rate on machinery as the Western Electric; and 3 that have the same rate on service equipment as the Western Electric. There are
1872 8 companies that show varying rates for buildings ranging above and below the Western Electric Company; there are 4 that show that spread above or below on machinery and 1 on service equipment; as to these cases there is no way of telling whether they are above or below the Western Electric Company. There are 4 companies which show a rate higher than the Western Electric on buildings; 3 higher on machinery; and 22 higher on service equipment.

The Air Reduction Company shows a rate on buildings ranging from 2 to 33⅓ per cent; Columbian Carbon Company shows a rate ranging from 5 to 33⅓ per cent; The National Supply Company shows rates ranging from about 3 to 10 per cent; A. O. Smith, 7 per cent; Du Pont, 3 to 6 per cent normal and 3 to 20 per cent special; International Cement, 6¼ to 6½ per cent; United States Gypsum, 4 per cent on buildings and equipment; and United States Industrial Alcohol, 21 to 36 per cent.

1873 In arriving at the 88 companies shown on Exhibit A-85, I started with industrial companies listed in the Standard Statistics Bulletin. There were 579 companies listed in that bulletin. 308 of these companies were excluded because they were not comparable. Some were foreign companies; some were engaged primarily in merchandising, such as Sears Roebuck and Montgomery Ward; some were extractive industries; and the steel companies were excluded for the reasons that I gave on my direct examination. This group was excluded because the businesses in which they were engaged were not comparable with the Western Electric Company.

1874 Of the remainder, 110 companies were excluded because of inadequate information, primarily with reference to the treatment of depreciation reserves. Of the number still remaining, 77 were omitted on account of size; that is, their net profits were, in more than one year out of the 5 years, less than a million dollars, and for that reason I did not believe them fairly comparable with the Western Electric Company on account of their size. This left 84 companies and we added the St. Regis Paper Company, the Torrington Manufacturing Company, the Dennison Manufacturing Company, and A. G. Spaulding; the data concerning all of these 4 companies are contained in either Poor's or Moody's Manual.

We did not deduct from the average investment figures appearing in Exhibits A-77, A-78, A-79 and A-80, the interest-bearing obligations due from the Western Electric Company to the American Telephone and Telegraph Company and 1875 to the Trustees under our pension fund, because they represented money invested in the business.

The Western Electric Company makes no guarantee to the Bell associated companies to whom it sells telephone apparatus and lead covered cable against any loss which might be sustained by those companies on account of patent infringement in connection with apparatus sold to them by the Western Electric Company.

At the time that the new contract between the Western Electric Company and the Automatic Electric Company was entered into, in 1927, there was a reduction in the price agreed to be paid by the Western Electric Company for the step-by-step equipment to be purchased from Automatic. This was a reduction of approximately two and one-half per cent
1876 on the purchase price of all apparatus which we expected to purchase during the contract period. That figure was based upon the estimated purchases of the Western Electric Company during the term of the contract. Later the Western Electric Company obtained additional price reductions from the Automatic Electric Company. In 1929, due to the large volume of business we were placing with the Automatic, arrangements were made whereby the Western Electric Company received an additional price reduction varying according to the quantities which were purchased; it was a quantity discount.

The licenses which we obtained from the Automatic Electric Company to use certain patents owned by it, gave the Western Electric Company the right to manufacture the step-by-step telephone apparatus made by the Automatic.
1877 These licenses were acquired by the Western Electric from the Automatic Electric prior to the Western Electric Company making any contract for the purchase of telephone equipment from the Automatic Electric Company.

I prepared the statement identified as Plaintiff's Exhibit A-109. This exhibit shows the sales of special commercial products by the Western Electric Company for the period 1916 to 1931, inclusive. It shows the various classifications of special commercial products sold by years and divided between Bell and non-Bell business. It shows that the total amount of the special commercial products was 3.4 per cent of all the Western Electric Company manufactures. In the last column it shows that the special commercial prod-
1878 ucts was 32 per cent of the total sales to non-Bell customers during the entire period 1916 to 1931.

Exhibit A-83 shows the annual effect of certain price reductions made by the Western Electric Company in the years

1921 to 1930 in its sales of telephone apparatus to the Bell associated companies. These price reductions shown in the exhibit are non-cumulative. I testified that, by reason of these price reductions, the telephone apparatus purchased by the Bell associated companies in 1930, at 1930 prices, represented a saving of $97,000,000 over apparatus purchased at 1921 prices. There was a slight reduction in raw material prices between 1921 and 1930, and there was an increase in wages during the same period. The effect of the wage increase more than offset the reduction in the price of materials, and we can, therefore, fairly ascribe the whole amount of $97,-
1879 000,000 as due to the improved efficiency of operations of the Western Electric Company during that period.

If, in the preparation of Exhibits A-77 and A-78 (showing the return on investment in Bell business), I had treated the property transferred from the Western Electric Company to the Bell Laboratories as remaining with the Western Electric Company, it would have added approximately $450,000 to the profit on the Bell business in the period, and would have increased the earnings on the Bell business .02 per cent for the period 1916 to 1931 and .03 per cent for the period 1923 to 1931.

1880 I have ascertained the fact as to whether or not the cost to the Western Electric of purchases aggregating $102,000,000 for the period 1921 to 1930 from others of apparatus and equipment designed entirely or in part by Western, but manufactured by others, was included in the cost of sales apportioned between Bell and non-Bell business in my exhibits. Those costs are included in the cost of sales, but are not included in the cost of sales in allocating the current variation of our shop results.

The sales expense of the Graybar Electric Company
1881 for the years 1926, 1927 and 1928 (during which time it was a subsidiary of the Western Electric Company), was 5½ per cent.

I know the profits that have been made by the Western Electric Company and the Electrical Research Products, Inc., out of the talking movies from the time the development of

sound picture equipment was started. For the period 1926
(which was the year prior to the formation of the Electrical
Research Products Company) to 1931, the profits of the West-
ern Electric Company and the Products Company, and the
Products Company's subsidiaries, were $18,000,000. Of this
total sum, $6,400,000 represents profits made by the Western
Electric Company on the sale of its manufactured articles to
the Products Company. This profit was realized by the West-
ern Electric Company after including in the cost of sales to
the Products Company $3,500,000 of development expense for
which it had made no expenditures and for which the
1882 Bell Companies received credit. $11,600,000 was made
by the Products Company and its subsidiaries. In its
first year of operation, the Products Company lost approxi-
mately $1,000,000 on the sound picture business. In 1931, it
lost $2,300,000 on this business, but in the intervening years,
that is, 1928 to 1930, it made $14,900,000 on the business. Dur-
ing this period of time, the Western and the Products Com-
pany have made approximately 14½ per cent earnings on in-
vestment from the sound motion picture business.

1883 In the limited time available, we have not been able
to cover the whole 88 companies to ascertain the ratio
of cash and cash items to total investment of each of those
companies. We have examined 14 of the large companies
whose investments aggregate 56 per cent of the total of the
88 companies. The ratio of total cash and cash items to total
investment of these 14 companies is 17.2 per cent, as com-
pared to the 5.4 per cent for the Western Electric Company
on its Bell business during this period.

Prior to the organization of the Bell Telephone Laborator-
ies, the Engineering Department of the Western Electric
Company did research and development work for the Amer-
ican Telephone and Telegraph Company, in addition to that
work done for the Western. That research and develop-
1884 ment work done for the American Telephone and Tele-
graph Company was paid for by it.

The profits made by the Western Electric Company in the
years 1916 to 1926, inclusive, on instruments sold to the

American Telephone and Telegraph Company, are included in the profits shown on Bell business in Exhibits A-77 and A-78. The sales prices of these instruments were determined in accordance with the terms of a contract dated February, 1882, which contract and a modification of it under date of April, 1908, were put in evidence on the former hearing of this cause as City's Exhibits 60 and 61. Because of this contract, this item of manufacture was dealt with in a manner different from
the manner in which we dealt with our other items of
1885 manufacture. A special study was made of the costs
and profits on that particular business.

1886 The document identified as Plaintiff's Exhibit A-110
shows this information, which was asked for by Mr. Goldstein. This exhibit shows the net profits on sales of new instruments to the American Telephone and Telegraph Company for the period 1916 to 1926, inclusive. It shows the sales year by year, the net profit on sales before deducting Federal taxes, and the per cent net profit to sales before Federal taxes. It shows the Federal taxes year by year and the net profits after deducting Federal taxes, both year by year and in total. It also shows that the per cent net profit to sales for this period of eleven years is 13.6 per cent. The sales were approximately 80 per cent of the average investment in this class of business and the earnings on investment during this same period were approximately 11 per cent.

Exhibits A-77, A-78, A-79 and A-80, show the profits
1887 and earnings on investment of the Western Electric
Company in its Bell and non-Bell business for the period covered by those exhibits. When these exhibits were prepared, we had as a starting point the actual earnings of the Western Electric Company on its total business for each of the years included in the exhibits. Having those actual earnings on the total business for each of the years, what we have done in these exhibits is to apportion the investment and earnings between Bell and non-Bell business for each of the years of the total period and for the total period covered by the exhibits on certain bases.

In making these apportionments, we did not have the actual

cost of each of the more than 100,000 items manufactured by
the Western Electric Company, nor did we have the actual
cost of each of the more than 20,000 assembled articles of
Western Electric manufacture. It was not necessary to
1888 apportion all of the investment and expenses as between
Bell and non-Bell business, as parts of the investment
and some parts of the expenses were directly allocable to Bell
and non-Bell business and required no apportionment. Where
such apportionment was necessary, it was made between Bell
and non-Bell business mainly on the basis of the shop cost
of sales. These standard shop costs of sales were not prepared specifically for use in this case; they were used currently, year by year, during the whole of the period.

The average investments of the Western Electric Company
and its earnings on investment in both the Bell and non-Bell
business were obtained each year during the period shortly
after the close of the year's business.

1889 Standard shop costs are quite generally used in industries throughout the United States.

In the Western Electric Company, the aggregate of these standard shop costs varies from the aggregate of the actual costs during the periods inquired into. This overall variation for the period 1921 to 1930 was 2/10 of 1 per cent. There was a variation for the period 1923 to 1931, amounting to 7/10 of 1 per cent.

In each year we ascertained the aggregate of the standard
costs for all of our manufactured products and compared such
aggregate standard costs with the aggregate of the actual shop
costs of such manufactured articles. We found that the aggregate actual costs are either above or below the aggre-
1890 gate of the standard shop costs, and the difference we
called "current variation". During the period 1923 to
1930, the greatest difference between the aggregate standard
shop costs and the aggregate of the actual shop costs was in
1925, when there was a variation of $10,047,000. That is, in
that year the actual costs were higher than the standard shop
costs by $10,000,000. This $10,000,000 variation was divided
$7,847,000 to lead covered cable, $126,000 to special commercial

products, and $2,074,000 to telephone apparatus. That
1891 division was made from the records on the books in the case of lead covered cable and by special studies in the case of special commercial products. (In 1931 the volume was relatively small and only in part was there a necessity for special study for special commercial products.) We made these special studies for these variations on special commercial products, but the records of our operations show how much of this variation arises out of the manufacture of lead covered cable and how much out of telephone apparatus.

The price at which copper has been included in the standard shop costs from 1925 to date is 15 cents a pound; the actual price of copper has varied substantially above and below that figure. There have also been some variations between the cost of lead and the figure at which lead is included in the standard shop costs. The variations in either cop-
1892 per or lead as between the actual costs and the standard costs could not in any way effect the apportionment of the variation of $7,847,000 applicable to lead covered cable for the year 1925 as between Bell and non-Bell business. This is true because the same types of cable are sold to both Bell and non-Bell customers. The variations in labor, materials, or overhead (which are the three elements in our standard shop costs), as between the aggregate standard shop costs and the aggregate of the actual costs would not affect the apportionment as between Bell and non-Bell customers of this $7,847,000 variation applicable to lead covered cable in the year 1925. That is true because, as I just pointed out with reference to the material, the same types of cable are sold both to Bell and non-Bell customers.

In addition to this variation of $7,847,000 on lead covered cable, we had a variation of $2,074,000 applicable to telephone apparatus, and of $126,000 applicable to special com-
1893 mercial products. What I have just stated with reference to the variation for the year 1925 with respect to lead covered cable applies equally to the apportionment of this variation of $2,074,000 on telephone apparatus. Here again this is true because we sell similar types and character

of telephone apparatus to both Bell and non-Bell customers. So the variation between the aggregate of the actual shop costs and the aggregate of the standard shop costs on telephone apparatus for that reason would make no difference at all in the apportionment.

On special commercial products, a special study was made to see what the current variation applicable to that 1894 business was, and that study resulted in this figure of $126,000, which was apportioned between Bell and non-Bell business on the basis of the cost of sales to Bell and non-Bell customers. 92 per cent of that business is with non-Bell customers, and only 8 per cent with Bell customers, so only 8 per cent of this item of $126,000 was in that particular year apportioned to the Bell business of the Western Electric Company.

"Q. Now, I have purposely taken the year 1925 in order that we might discuss this with definite figures before us. I want to know whether the validity of your apportionments for any other year than 1925 is in any way affected by the variations which we have been talking about in each of those years?

"A. It is not."

In addition to the apportionment of this variation, we also apportioned certain expenses between Bell and non-Bell customers on the basis of the aggregate standard shop cost 1895 of sales. These items so apportioned were development expense, distribution expense and inventory revaluations. Development expense was entirely apportioned on that basis. Some part of the distribution expense is directly allocable to Bell or non-Bell business, and the remainder was allocated on the basis of standard shop cost of sales (probably one third of the expense of distribution is directly allocable; 37 per cent was directly allocable for the year 1929 and the remainder was apportioned for that year on the basis of the standard shop cost of sales). The inventory revaluations were directly divided in part, so far as the study indicated that they should be so divided. Where it was impossible 1896 to make that division directly, the division was made on the basis of the standard shop cost of sales. So far as these expenses are concerned, in no one of the years could any variation between the standard shop cost of sales and the actual cost affect in any way the apportionment of those expenses between Bell and non-Bell business.

"Q. I want to direct your attention now to your testimony at page 1127 of the transcript, in which, in answering a question propounded to you by counsel for the defendants as to why the entire pension fund accrual for 1924 had been charged against the Bell business, you said, and I now quote your language:

> 'It was because, as I explained, during those years, and
> in all of these exhibits, what we are showing are the
> 1897 actual figures which were made up for administrative
> purposes in those particular years. Now, if we went
> back now and made a redivision in the light of our present
> information, we would find some that we would add
> to Bell, and some that we would subtract from Bell.'

"I also call your attention to your testimony at page 1578 of the transcript, where you were being asked by Mr. Goldstein about the amount of cash and cash items included in the average investment of the Western Electric Company for the year 1925, in which you were referring to reports made currently by the Western Electric Company year by year, and in which you said—I now quote your language—

> 1898 'And they were used for administrative purposes, and
> if you should go back now, in the light of present information,
> you would make changes all the way through.
> Now, my estimate of what that change would be as a
> whole, would be that there would be practically no difference
> in the rate of return, even if we made all of the
> adjustments that we might consider necessary.'

"I want you to state now the particular items which you had in mind when you made those answers. So that there may be no misunderstanding about this question, I desire you now to indicate what items there are which enter into your Exhibits A-77, A-78, A-79 and A-80, which you would treat in any way differently than the way they have been treated if you were now making the division between Bell and non-Bell business of the Western Electric Company?"

In 1924, an appropriation of $2,000,000 was made for the pension fund and charged entirely to Bell business. If I were to go back now and do it over again, I would charge $120,000 of that accrual to the non-Bell business, which would result in increasing the profits on the Bell business for that year by $120,000.

1899 Up to within four or five years ago, patents that were purchased have been charged to reserve for contingencies rather than included in the cost of sales, as shown in these exhibits. If I were to go back and do the job over again, I would charge those patents year by year against the cost of sales in those particular years. The result of that change would mean that I would add $2,208,000 to the cost of sales in the Bell business, and, therefore, reduce the return on the Bell business by the effect of that amount.

The next item that I have in mind is the reserve for machinery. In 1928 we made a reserve for machinery of $2,000,000, representing the difference between 7.5 per cent and 10 per cent, as a result of a study indicating that our rates had been too low for some three or four years preceding. This $2,000,000 in our exhibits was charged against 1928 earnings. If I were to go back and do the job over again, I would apportion it between the years 1924, 1925, 1926 and 1927; that
1900 would make no difference in the amount for the period 1916 to 1931 or for the period 1923 to 1931.

In the period 1924 to 1927, we made an extraordinary reserve for depreciation of $8,233,000. If I were to do that job over again in the light of our present knowledge, and if it were possible to allocate it by years, I would say that that amount should be allocated over the period during which the additions were made (which was the basis of this computation, that is, from 1917 to 1927, inclusive).

If I had had foresight as to what Federal taxes were going to be paid, of course, I would have included the amount that we paid during the year and not the accruals, but at the time we close the books in each year we have to go by the accruals, which are always different from the amounts we finally pay to the United States Government. There was approximately from one hundred to two hundred thousand dollars difference between our accruals for Federal income taxes over this period and the actual payments.

The items to which I have just referred are the only ones in which I would make any changes if I were making a redivision or reapportionment in the light of my present knowledge.

1901 If all these various changes which I have just been talking about should be made, it would reduce the return on investment on Bell business for the period 1916 to 1931 from 6.6 per cent to 6.5 per cent, and for the period 1923 to 1931, it would increase the return on investment for Bell business from 7.1 per cent to 7.2 per cent. These various changes would have only a negligible effect on Exhibit A-84 (which is a consolidated earnings statement for the years 1916 to 1931), which would be on account of Federal taxes. I did not make the apportionments shown on Exhibits A-77, A-78, A-79 and A-80, merely because they were made currently; I made them because they are right.

In response to the question on cross-examination with 1902 reference to the appraisal made in 1927 of the Western Electric Company, I stated that the appraised value of the plant and property of the Company, less depreciation, was somewhat greater than the book cost of the plant as I define that book cost. I furnished yesterday the underlying data on this appraisal to counsel for the defendants. There was nothing included in this appraisal for going concern value, for patents, or for development expense. What was done was to arrive at the reproduction cost, less depreciation, of the physical property.

During the period 1923 to 1931, the return on investment on Bell business was 7.1 per cent and on non-Bell business 1903 11.3 per cent. All of the profits on the sales by the Western Electric Company of telephone apparatus to non-Bell customers are included in those non-Bell profits. The prices to non-Bell customers on telephone apparatus are never lower, and are usually higher than the prices to Bell customers. The earnings on investment on telephone apparatus sales to Bell customers for the period 1923 to 1931 was 7.7 per cent, and to non-Bell customers was 13.4 per cent.

Re-cross Examination by Mr. Goldstein.

March 24, 1932.

1905 A study which I made indicated that the aggregate of the adjustments increasing or decreasing the gross profits neutralized themselves (with the exception of .2 of one per cent) for the period 1921 to 1930. The sheet
1906 marked for identification as Defendants' Exhibit D-80 is the study underlying that conclusion. That statement indicates the adjustments of the variations in shop operations during the year. The study includes the inventory revaluations which affect shop operations but does
1907 not include other inventory revaluations or other miscellaneous adjustments. In 1929, the amount of the adjustments which I took into account showed a net aggregate of $1,250,000. The study is intended to cover only the shop operations and the result of the inventory revaluation in the shop. It does not cover inventory revaluations of completed merchandise not in shop nor other adjustments which are now the subject of conference between accountants for the defendants and myself.

1908 My conclusion throughout my testimony that the extent of the variation was only .2 of one per cent is confined solely to those adjustments that enter into shop
1909 production and nothing else; but in the shop production is where there is a great possibility of variation. I think we will find, when we get through our conference, that the other adjustments are more directly allocable to different classes of business than are, perhaps, the shop operations. We do not allocate all of the adjustments on the basis of shop cost of sales; some are directly allocable. For instance, our program with the Electrical Research Products Company is that it will carry all the completed merchandise for sound

picture equipment; that is, we ship that merchandise to them as soon as it is made so there is no adjustment for completed merchandise inventory revaluation applicable to sound pictures; they are completed merchandise.

So far as the spreading of the inventory revaluations
1910 and inventory adjustments between the Illinois Bell
Telephone Company and the Bell System is concerned,
I considered that the Illinois Bell represented a fair cross-section of the entire Bell business of the Western Electric. In my opinion, over a period of years this fair cross-section will take care of the adjustments that decrease or increase the profits.

My conclusion throughout my testimony as to the effect of the adjustments was not confined to the subject matter
covered by this study; the study was involved only when
1911 I mentioned the .2 of one per cent. Similarly, when I
mentioned the .7 of one per cent for the years 1923 to
1931, it was only intended to cover the particular variations included in the study.

The study which I have been talking about and which has already been made is the one shown on Exhibit D-80.

In connection with my testimony on re-direct, I spoke of
the 1925 adjustments of which a greater part was cable.
1912 The excess of the current cost of the raw material over
the standard shop costs accounted for a large part of
that adjustment; I do not have in mind how much.

"Q. And that excess was provided for in the prices actually charged to the customers, in connection with cable, for that year; is that correct?"

The prices of cable since 1924 have been fixed on a commercial basis and not on a cost-plus basis; they have been fixed for the Bell Companies at a lower price than made to our distributors, but our distributors have been able to make a substantial profit in competition with other manufacturers of cable on that cable which was sold them by us.

"Q. The fact that I am trying to try out, or that I
1913 am trying to bring out, is this, that in 1925 this excess
of cost was absorbed by the prices charged during the

year for the cable, which was not an adjustment that was made, that resulted at the end of the year, when your prices had not absorbed it during the year."

We attempted, of course, to make our prices of cable commensurate with the cost, including the changes in the cost of material that went into the cable from time to time. This same general practice is not followed in the case of telephone apparatus, although if there is a material change in the cost of production of a particular piece of telephone apparatus, the price might be modified in any one year without
1914 having a general price level change, up or down. The cable prices are naturally more responsive to fluctuation because of raw material prices than are the prices for telephone apparatus; this is because lead and copper constitute such a large portion of the cost of the cable.

(Document furnished by plaintiff in response to request of the defendants showing the standard and current costs of copper and lead in the years 1918 to 1931, inclusive, marked for identification as Defendants' Exhibit D-81.)

The document marked for identification as Defendants' Exhibit D-81 is correct.

In 1924, we began to draw our own copper wire at
1915 Hawthorne. Prior to that time, we were buying our wire from the outside. Exhibit D-81 shows the copper bar price; we had no real information as to what the price was prior to 1924.

The standard price for copper is still maintained in 1932 at $15.00. We have purchased very little copper this year, as we had purchased our requirements prior to the end of 1931. The standard cost figures for lead since 1926 have been
1916 maintained at $8.00, and the standard is the same for 1932. Our purchases of lead are also very limited as to amount under present conditions.

In 1925, our adjustments on lead covered cable represented the major portions of the total adjustments in the factory. I do not carry in mind whether this was true of the other years, but it is a matter of record which can be obtained if counsel for the defendants desire.

1917 Defendants' Exhibit D-80 for identification was prepared shortly after the end of 1930; probably around a year ago. In that study the figures are related to a base of output to arrive at the .2 of one per cent. By "output", I mean the aggregate charges made by the shop for merchandise delivered to the Merchandise Department, whether
1918 sold or not sold. It is the cost of production of the shop for the year and not the cost of sales.

When, in the course of my re-direct examination, the following question was asked me:

"Q. Now did the aggregate of the standard shop costs vary from the aggregate of the actual costs during the periods inquired into?"

And the answer is:

"A. They did."

I understood "actual costs" to mean, when I later on related it to the .2 per cent of the shop, the shop production figures. To make it complete, the question should be, "Did the aggregate of these standard shop costs vary from the aggregate of the actual shop costs?"

And then the question is:

"Q. I believe that you have stated that this over-all variation for the period 1921 to 1930 was .2 per cent. Is that correct?"

1919 And the answer is:

"A. That is correct."

"Mr. Goldstein: Now by the words, 'over-all variation', you mean, over-all—or you understood that to mean, over-all shop cost variation?

"A. Yes, sir.

"Q. And not over-all variation for all factors of adjustment, is that correct?

"A. That is correct.

"Q. You were asked:

'Q. Was there a variation for the period 1923 to 1931?'

"And the answer is:

'A. There was.

'Q. What was the variation?

'A. .7 per cent.'

"Your answer was intended to show the extent of the variation of shop cost adjustments only?

"A. That is correct.

"Q. And the next question:

'Q. Do you in each year ascertain the aggregate of the standard costs for all of your manufactured products and then compare such aggregate standard costs with the aggregate of the actual shop costs of such manufactured articles in the same year?'

1920 "And the answer is:

'A. We do.'

"And the next question is:

'Q. You then find that the aggregate actual costs are either above or below the aggregate of the standard shop costs, is that correct?

'A. That is correct.

'Q. Now, when you get that difference, what do you call it?

'A. We call it, current variation.'

"Now, in each of these questions, and your answers, they were intended, were they not, to cover only the comparison between the standard shop cost and the actual shop cost?

"A. I was talking about shop operation.

"Q. Yes?

"A. Yes, sir.

"Q. And you understand the question to only include that—

"A. That is correct.

"Q. —comparison?

"A. Yes, sir.

"Q. And not the comparison between the total of the aggregate costs, and the actual costs?

"A. That is correct."

1921 When I speak of current variations throughout my testimony and in this connection, I mean the current variations in shop costs. To my knowledge we do not use the term "current variations" in connection with inventories; we call the other items "adjustments" rather than current variation. Current variation is really confined to shop results.

There has been delivered to the defendants a copy of the letter to which I referred in connection with the sale of the option on the International Telephone Sales and Engineering Corporation for $4,000,000.

1922 (Which said letter was marked for identification as Defendants' Exhibit D-82.)

When Mr. Edgar S. Bloom signed this as President, he was signing it as President of the Electrical Research Products.

1923 I know what Mr. Bloom had reference to when he said, "I agree that in the event the results should not conform to the expectations between now and December 31, 1930". At the time of the agreement, a study was made of the probable business that would be given the Automatic Electric by the Western Electric Company through the period ending December 31, 1930, and also of the profits on that business. That is the study Mr. Bloom had in mind, when he spoke of expectation, at the time the letter was written.
1924 The option price of $4,000,000 was to be reduced by an amount not exceeding $1,000,000, if the Automatic Electric Company did not receive a certain amount of business and a certain amount of profits from the Western Electric Company. The amount of business given to the Automatic Company is indicated on the sheet identified as Defendants' Exhibit D-83. The apparatus indicated on this exhibit (D-83) as purchased from the Automatic Company is
1925 step-by-step equipment and practically all, as I understand it, was sold within the Bell System.

The prices established by the Automatic for this equipment since 1927 were those established under the contract made in 1927, to which I referred the other day as part of the transaction in which the sale of the option was made. As

I stated, a study was made of the probable profits to the Automatic Company out of this future business. The actual amount of business and profits were more than were indicated in that study. Mr. Gary and Mr. Bloom are not in accord as to what they meant by "coming up to expectations". Mr. Bloom had in mind the expectations of the profits on the business for the period ending December 31, 1930. Mr. Gary had in mind the expectation of profits 1926 at any time during the period 1927 to 1930 and the succeeding years under the contract. In other words, Mr. Gary feels that now the profits are not coming up to expectations; that is the basis of his claim for a $1,000,000 reduction in the payment that he has already made.

The memorandum of agreement referred to in the letter is in existence and is on its way here. The study to which I referred I do not think is on its way here.

"Q. Would you please make available at the time that you make available the memorandum of agreement, likewise the study?

1927 "Mr. Thompson: I object.

"Judge Wilkerson: The question is whether the witness will do it.

"Mr. Thompson: I object to the witness producing it.

"Judge Wilkerson: If he answers in the negative, then your next step is to apply for the proper kind of an order, if you think you are entitled to it.

"Mr. Goldstein: Q. Will you make available for inspection the study which you refer to, upon the basis of which the million dollar adjustment was to be made as provided for in this agreement?

"Mr. Thompson: I object to the witness being asked to produce something that is obviously not in his possession or under his control.

"Mr. Goldstein: Q. Is that study in your possession or under your control?

"A. That study is a study that was made, not by me, but by Mr. Bloom.

1928 "Judge Wilkerson: Q. Do you know where it is now?

"The Witness: Yes, sir.

"Judge Wilkerson: In whose custody is it?

"The Witness: I think that Mr. Bloom has it.

"Judge Wilkerson: You will have to make application for a rule on the company to produce it. The witness cannot be required to do it."

As I recall, the study simply shows the expected volume of business and expected profits during the period involved and contains no other items; that is, it is a statement of figures.

1929 (Counsel for plaintiff agreed to make available to counsel for the defendants, memorandum of agreement between International Telephone Sales and the Electrical Research Products, dated May 26, 1927.)

In connection with Defendants' Exhibit D-83, there are also purchases from the Kellogg Switchboard and Supply Company and from the Stromberg-Carlson Telephone Manufacturing Company. The $11,000,000 of purchases shown
1930 as coming from the Stromberg-Carlson Company was telephone equipment, some of which was undoubtedly sold to the Bell System. I think part of it was sold to the Graybar Company. I do not have in mind the division of the sales. I think the same thing holds true in the case of the Kellogg Switchboard and Supply Company purchases.

1931 (Document furnished to the defendants by the plaintiff, showing rented area leased before and after July 1, 1929, was marked for identification as Defendants' Exhibit D-84.)

Exhibit D-84 represents leases on July 1, 1929, and
1932 thereafter. At the end of 1928, we had leased 439,000 square feet of floor space, and at the end of 1929, 1,771,000 square feet of floor space, of which 556,000 square feet was leased after July 1, as shown on this exhibit. That would leave 776,000 square feet that was rented sometime between the first of January, 1929, and July 1.

(Document furnished to the defendants by the plaintiff, showing additions to the pension fund and the credits for 1931, was marked for identification as Defendants' Exhibit D-85.)

1933 The actuarial computation for 1931 conformed to the conditions at that time as we figured it. Of course, we are all the time gathering knowledge on that, and if we should go back and do it over again, it would be an entirely different figure and probably higher, in my opinion. However, the actuarial computation for the particular year, as computed at that time, called for these identical additions.

1934 I said on my cross-examination that I was familiar with the principles involved in these actuarial computations, but that I was not familiar with the detailed mathematical computations made to determine the exact amount of the pension accrual needed in any particular year. By "principles", I mean that I know it is based on separation rates, salary basis and service, age of employees, and miscellaneous data of that sort; beyond that I am not familiar with it.

"Q. What is the fundamental principle which underlies the actuarial basis as applicable to the probable future separation of employees from the Western Electric Company?

"A. I cannot answer that question."

1935 I am not familiar with the details, but only with certain factors that are taken into consideration; I am not an actuary and I could not explain the details.

1937 "Judge Wilkerson: Are you familiar with the fundamentals so that you can state them?

"The Witness: If you mean by 'fundamentals' the underlying actuarial data that go back of these accruals, I am not familiar with them.

"Judge Wilkerson: All right.

"Mr. Goldstein: The actuarial principles, not the details.

"Judge Wilkerson: Well, now, substitute the word 'principles' for the word 'details'?

"The Witness: Well, I am not particularly familiar with the details. I have assigned that job to Mr. R. W. Burgess, who is Chief Statistician of the Western Electric Company, in my department.

"Judge Wilkerson: Well, is he here?

"Mr. Thompson: Yes.

"The Witness: He is here.

"Mr. Haight: Now, if Mr. Burgess is not produced, so
that we may inquire into it, of course it is valid ground
1938 for objection to everything computed thereon. That is
our position, your Honor.

"Mr. Thompson: We are going to put someone on on this question.

"Judge Wilkerson: Very well.

"Mr. Haight: All right; that is all we want to know.

"Judge Wilkerson: Very well."

I stated that in connection with the study of the 88 companies I used the Standard Statistics Bulletin. I do not know whether the Western Electric Company gets the Standard
Statistics Service individual cards; I presume it does.
1939 I personally have not seen them. I stated that the data
was determined entirely from Poor's and Moody's
Manuals and that the Standard Statistics Bulletin was no
more than an index to determine the companies, concerning
which we got the facts from Poor's and Moody's Manuals.

1940 I did not understand that I was to determine whether
Western guaranteed non-Bell customers against infringements on apparatus purchased from Western.

(Counsel for the plaintiff agreed to furnish the information concerning guaranty to non-Bell customers to counsel for the defendants.)

There was a revision in the prices of the Automatic to the
Western Electric Company from 1927 to the present
1941 time, which consisted of some lowering in the prices.
The prices from the Automatic are based on a cost-plus
basis, and the contract provides for a periodic investigation
of these prices.

Exhibit A-83 is intended to show the effect of the price reductions for the year in which they were made, irrespective of the date upon which the particular reduction took place.

"Q. If a million items were sold in the year 1924, for instance, and on the last item, on December 29th of that
1942 year, you reduced the price $1, for the purpose of this study, you would show a reduction of $5,000,000; is that correct?"

The question is so exaggerated as to hardly be representative. We will take as an example the price reduction of July 1, 1929; we computed the amount of the price reduction on the volume of business in the year 1929 as if the prices in effect after July 1, 1929, were in effect for the whole year. We related back the price reduction to the sales made before
1943 the reduction, and arrived at what saving would have been made if the price reduction had been made the first of the year.

In connection with my statement on re-direct examination concerning the ratio of cash to investment in the industrials, as shown by Poor's and Moody's, we took the average amount of cash, computed in the same way as average investment. We took December 31 of the two years and divided the figure by two.

For the amount of cash included in our average investment in Plaintiff's Exhibits A-77, A-78, A-79 and A-80, we
1944 took the average for thirteen months, but it would probably make very little difference. I do not know whether it would make any difference in connection with other companies, as I do not have the monthly statements of the other companies.

The net profits to sales on telephone instruments, shown in Exhibit A-110, is 13.6 per cent. I stated that the relation of sales to average investment is 80 per cent. The 80 per cent has nothing to do with the net profits to sales, but simply means this: for the purpose of illustration, if we had an investment of approximately $6,000,000, on which we made sales of $5,000,000, we had less than one turnover a year.
1945 Net profits to sales is determined by the sales to the gross profits and expenses, and has no relation to turnover; the turnover only affects the return on investment. When you bring in turnover, you have to bring in the investment

and relate the net profits to the investment; then, if you
have an investment which is higher than the sales, of course,
the return on investment is less than the net profits on
sales.

1946 Many manufacturing companies use standard costs.
One of the uses of standard costs is to have a measure
to determine the efficiency of the various departments and
various operations of the manufacturing companies.

The studies which I stated had been made to separate the
adjustments between telephone apparatus and special commercial
products were not engineering studies but accounting
studies. Of course, in making that accounting study we
tapped all of the information we could get, in order to get an
accurate result. It might be that engineers, and certainly
people connected with the manufacture of special commercial
products, were consulted concerning it, but it was not an
engineering study but an accounting study.

1947 I spoke of an adjustment of $2,000,000 for machinery,
made in 1928, and mentioned a study in that connection.
What I had in mind was that we had a statement at that time
showing how much of that $2,000,000 was applicable to 1924,
1925, 1926 and 1927. That study was not made available to
the defendants in connection with the statements concerning
the extraordinary depreciation and other depreciation; it was
an entirely different subject. I could not say whether
1948 that study is in Chicago now or not, but it will be made
available for inspection by defendants if it is in existence.
I can give the division of the amount.

I stated that the net earnings on the non-Bell business for
the years 1923 to 1931, inclusive, were 11.3 per cent, and when
asked if that figure included all profits on sales of telephone
apparatus to non-Bell customers, I said that it did. These
figures include the entire profit on the sales of the Western
Electric to its non-Bell customers. Prior to 1925, these customers
were the ultimate users, and, subsequent to 1925,
1949 they were the Graybar Company and the Electrical
Research Products and its distributors. The 11.3 per
cent does not include any portion of the profits of the Graybar

Company, or of the International Western Electric Company, or of the Electrical Research Products, or of the Northern Electric Company.

I furnished defendants a document entitled "Depreciation expense included in cost of plant made, 1916 to 1931, inclusive".

(Which said document was marked for identification as Defendants' Exhibit D-86.)

This exhibit shows that $3,000,000 was included as depre-
ciation expense in the cost of plant made by the Western
Electric Company during that period, and that $2,176,-
1950 000 was included for the period 1923 to 1931. It also
shows that during the period 1916 to 1931 there was
$72,000,000 of plant made by the Manufacturing Department,
and for the period 1923 to 1931, $54,000,000 of plant was made
by the Manufacturing Department. The $3,000,000 is deter-
mined by a study of the probable amount included; it
1951 had to be an approximation. We did not have any rates
and the study was made in New York while I have been
out here, so I am not familiar with the exact method by which
it was done.

We do not think it necessary at all to determine the amount
of depreciation expense that goes into cost of plant, because
we feel that the cost is entirely reasonable and that by manu-
facturing our own plant we are getting those facilities at a
considerably lower price than we would if we bought them
from outside sources. We did, however, include as one
1952 item of cost of plant depreciation expense. The study
as to the amount included in the cost was not made by
me, and I am not in a position to say how it was made. I do
not think that a study has ever been made before this one,
which was made up specially to give to the defendants.

We know that depreciation expense is included in the cost of plant, because machinery, buildings and service equipment, which are manufactured in our plant, carry a pro rata share of the load of the plant, and the load or burden of the plant includes depreciation. I cannot say if, when it is contemplated to make an item of plant, there is a cost study showing the probable cost of that item. I presume that items of plant are manufactured on the basis of a cost study, but I have never inquired into it.

I furnished the defendants the two sheets identified as Defendants' Exhibits D-87 and D-88.

1953 "Mr. Goldstein: Q. 'Total 1929 average investment Bell and non-Bell business, on percentage, apportioned on basis of standard cost of sales'?

"A. Yes.

"Q. I notice a footnote, 'Apportioned on the basis of sales'. Is that intended to be also different than the heading 'Cost of sales'?

"A. That applies to the item Receivables, and applies only to 5 per cent of the receivables. In other words, there are certain miscellaneous receivables of varying nature which are included there which have to be apportioned on some basis. They are not directly allocable, and we have used the basis of sales in that case."

When I say "basis of sales", I do not mean on the basis of the cost of sales, but the basis of sales.

1954 Arthur Young and Company have made yearly audits of the books of the Western Electric Company for the last four or five years. The only official certificate of Arthur Young and Company in each year is the certificate appearing in each of the annual reports of the Company. We have
1955 not asked for any certificate other than those. Arthur Young and Company have made other audits for us, in connection with special conditions, that we asked them to do, but the only audit, so far as the balance sheet and income statement as a whole is concerned, is covered by their certificate in the annual report.

The rental for the space occupied by the Western Electric Company at 195 Broadway is paid on the basis of the charges made by the 195 Broadway and 205 Broadway Corpo-
1956 rations; it is on a per square foot basis, and is made currently. The amount paid per square foot for any year depends upon the operating charges of the building. I think there is included a modest item of return on investment,

but I am not sure about that; those are details that I have not looked into for some time.

"Q. I understood you to say somewhere in the testimony here that you paid a portion of the operating expenses, and a certain per cent on the stock, as a part of your rent?

"A. I think you are mistaken.

"Mr. Thompson: Mr. Goldstein—

"A. I do not think I testified at all on that.

"Mr. Thompson: No.

"A. That is an entirely new subject to me.

1957 "Mr. Goldstein: Q. You also testified about space that you rented to the New York Telephone Company.

"A. Well,—

"Q. (Continuing) At 395 Hudson, is that correct?

"A. I might have testified that we owned the 395 Hudson Corporation in conjunction with the New York Telephone Company, but I do not recall any testimony that I have given with reference to rent charges.

"Q. Did you testify—did you base any of your rentals on the basis of getting back a proportion of the operating expense and interest at 7 per cent on the stock?

"A. I know that is the case."

1958 The 395 Hudson Corporation is a real estate corporation formed to construct and own the building, and it must get a return on its investment. That investment consists of stock, notes payable, and a 5 per cent mortgage, and the rent rates must be sufficient to pay the interest on the mortgage, the interest on the notes, and a fair return on the capital invested, on the stock.

"Q. And you figured that at 7 per cent, as I understood the testimony?

"A. Well, I don't recall testifying to that.

"Mr. Thompson: I don't think there was any testimony about that.

"Mr. Goldstein: Well, I will find out.

"Q. But the basis of it is as you described?

"A. Yes.

"Q. All right.

"A. That would be the fact, it is either 6 or 7 per cent.

"Q. Yes.

"A. I don't recall which."

(Copies of the resolutions of the Board of Directors for the years 1925, 1926, 1927, and 1928, authorizing the extraordinary depreciation, together with a document 1959 used in connection with the determination for each of those years, were identified as Defendants' Exhibits D-89 and D-90, respectively.)

These documents were furnished by me to the defendants, and contain all the data of which I know pertaining to that subject matter.

(Document entitled "Orders on hand December 31", pertaining to the years 1916 to 1926, marked for identification as Defendants' Exhibit D-91.)

We have not readily available corresponding data to that contained in Exhibit D-91 for the years since 1926. We did not file that information after 1926.

1960 "Q. Mr. Gregory, you testified on about June 17-19, 1931, in a case entitled 'In the matter of the Investigation and Inquiry of The Public Utilities Commission of Ohio, upon its own motion, of the Ohio Bell Telephone Company'.

"A. Yes, sir.

"Q. In connection with that testimony, I read you the questions and answers from the transcript which was furnished to us. I will ask you whether these questions were asked of you, and whether you made the following answers:

"Mr. Thompson: Are these questions in impeachment? Is that their purpose?

"Judge Wilkerson: Well, of course, obviously, it is the only purpose it could have; it must be. I assume that is the purpose.

"Mr. Thompson: I just wanted to inquire.

"Mr. Goldstein: Yes.

"Q. The question was: 'I believe you testified that your own prices are going up due to the depression, is that correct?

1961 'A. You mean our prices of materials?

'Q. Of materials, yes.

'A. Yes, sir, our prices have gone up because of the fact, to some extent, because of the fact that during the ten year period, we have reduced prices to too large an extent while other companies were increasing their prices with increased volume of business, we were decreasing our prices, and we decreased our prices in 1929 to a very large extent, not realizing that the depression was ahead of us.'

"Judge Wilkerson: How are you going to impeach the witness with stuff of that character?

"Mr. Thompson: Yes.

"Mr. Goldstein: It is next.

'In 1926 and 1927, you set aside an eight million dollar depreciation in anticipation of a construction program which hadn't yet been commenced, but which was to be written off in 1931 and 1940, and in 1929 you reduced prices, not anticipating the depression?

1962 'A. They are two entirely different things, Mr. Herbert. In 1929, as far as prices to the associated companies are concerned, we felt in every year as we did in 1929, that we should make such reductions in prices to the associated companies as we could and still maintain a fair return on the investment. As far as prices are concerned, we felt that if the depression comes and if there is a demand for increase in prices, as we have reduced, so in fairness, we could increase the prices. But when it comes to the construction of plant, this is not a reserve against construction of plant in 1931 to '40. It is a write-off, it is a reserve against a write-off which we may be forced to make on plant that has already been constructed from 1918 subsequent to the war up to the present time, the cost of which we feel should be apportioned and charged against that period rather than against the period in 1931 to 1940, which it seems pretty evident is not going to be as active years as have been in the last ten years.'

"Did you make those statements, and those answers?

"Mr. Thompson: Of course, it is not impeaching, but
1963 we have no objection whatever.

"Mr. Goldstein: All right.

"Q. Did you make those?

"A. I certainly did.

"Judge Wilkerson: Let the stenographers copy the report into the record by agreement."

I think that the Western Electric warehouses carry some stock for the Long Lines Department, but I am not entirely familiar with that subject, as it comes entirely under the Telephone Sales Department. I do not know whether the Long Lines Department has a warehouse.

Note: Witness pointed out that wherever in his testimony he spoke of the spread over the Bell and non-Bell business according to the standard cost of each class, he meant to testify that this was done in general according to the standard cost of each class of apparatus; that is, telephone apparatus, cable and supplies separately.

1965 F. O. HALE, witness on behalf of the plaintiff, having been previously duly sworn, resumed the stand and testified further as follows:

Cross-Examination by Mr. Haight.

March 24, 1932.

I have had no experience with a decrease in rates in Chicago but I have had the equivalent, that is, experience with lower rates. There has been no decrease in local exchange rates in Chicago during my connection with the Company.

My opinions were based on my general experience in the
1966 telephone business of twenty-eight years, on the history of the Company and its experience with the lower rates which have been in effect here in Chicago.

The service with lower rates, which I had in mind as the experience upon which I partly based my opinion, is the four-party coin box service; from 1912 or 1913, or somewhere in that neighborhood, up until 1921 there was a four-party coin

box rate on which the guarantee was $1.50 a month and the message usage included in that guarantee was thirty messages a month, or a call a day. There was no decrease in that rate. There was a guarantee of $1.50 a month and a message usage of thirty messages a month, which resulted in an average usage by the four-party coin box subscribers under that rate
1967 of 33.6 or 34 messages per month. That rate was in effect for several years and in 1921 the present rate was made effective. The present rate calls for a guarantee of substantially $2.75 a month with fifty-five message usage allowed under it. The rate in effect prior to the present rate was the one to which I referred, that is, the guarantee of $1.50 with an allowance of thirty messages under that guarantee.

I have not been calling attention to any decrease in rates; I am calling attention to a rate that was previously in effect. The change made in that rate was an increase up to the
1968 present rate. With that increased rate the average usage went from substantially thirty-four messages to forty-six messages; the message usage increased under the higher rate due to the increase in guarantee.

In speaking of residence coin box service, I gave it as my opinion that the decrease in rate in question here would bring in some ten or twelve thousand additional users. I based that estimate on my judgment and experience as to what that decrease in rate would produce in the way of additional users. I took into account the present high development that exists in Chicago. I also took into account that that appeal would merely be to marginal users who were counting the cost of service and whose need of service was necessarily somewhat less than the present average user, otherwise they would be users now.

My general opinion would take into account the spe-
1969 cific experience I have gained in the telephone business during twenty-eight years. I did not have in mind any specific analogy. I took into account the facts as to telephone

development here; I took into account the type of user it would appeal to and formed an opinion as to the additional number of subscribers we could expect to get with that reduction in the guarantee.

The four-party coin box service, generally speaking, appeals to the marginal users; that is, to the people to whom the rate is important and to whom the grade of service is 1970 not the controlling factor. There are a lot of users who are interested only in inward service; they have very little need for outward service. They take the cheapest grade of service because they can get it the cheapest that way. There are many railroad men who have to be called that way; many workers, such as scrub women and wash women who are called out for specific jobs. In many cases, it is their means of getting hold of a job.

The people who I have just indicated are not illustrative of the kind of folks who use that service. There are many people who use the service who are not in that class.

Those who use the two-party residence service are, generally speaking, a class to whom the quality of telephone service means more and price means less. There are some working people who use this service if they feel they can afford it.

Those who use the one-party business coin box are, generally speaking, the business people whose needs for telephone service are relatively light. In many cases, the character 1971 of their business brings many outsiders into their offices and they want a coin box so that when such outsiders come in and say they want to use the telephone they have an easy way of saying, "There it is," and the outsider pays for his own call.

The two-party business coin box users are of the same general type, but are, ordinarily, a poorer grade of business users; the man to whom the amount of money for which he is obligating himself means more and to whom the quality of service is not so important as to cause him to feel justified in taking a one-party line.

In my direct examination, I stated that the full effect of the reduction, in so far as the obtaining of new subscribers 1972 was concerned, would not become fully operative for about two years. This reduced rate would attract a certain number of additional subscribers, but before it had become sufficiently generally known and before the full number of users I thought might be attracted to it had been attracted, approximately two years would elapse; approximately two years would be necessary for all of them to have taken the service. I think the users in that class of service would have increased as general telephone use increased during the years beginning with 1923 and up to 1929, but I do not think that they would have increased any since 1929.

1973 Any effect in lowering the loss in subscribers by reason of the decreased rate is contained in the estimate of increased use I gave when I said the increased number of subscribers would have been ten or twelve thousand. I think that that would have been the limit of the additional subscribers who would have been attracted by the lower rate fixed by the Commission.

The fact that the population of Chicago has increased from 1923 has had an effect upon the number of subscribers we have, but that effect is there all the time and has nothing to do with this reduction in rate. The effect of the increased population had the rate been lowered would only have been by the additional number of people who would have been appealed to by that lower rate of forty-six cents.

The subscribers in the four-party residence class are 1974 going out of that class into the two-party residence coin box class if we can persuade them to. We do attempt to persuade them to do that.

If we had a lower rate for the four-party coin box service, I do not think that the subscribers who have a higher class of service instead of discontinuing their telephones would have continued in the four-party class; at least, this would have only been true so far as it is covered by this additional ten or twelve thousand stations. That covers all the additional stations that, in my opinion, we would have obtained from the lower rate wherever they came from, whether they came from non-users or from people who dropped back.

Economic factors have a bearing on inducing people 1975 to keep telephones.

In my direct examination, I said that the gross revenue which we would obtain from these ten or twelve thousand users would not amount to over $28.00 a year per tele- 1976 phone. I based that on the fact that only the marginal users would be attracted by that reduction in the guarantee. The guarantee as reduced would amount to $27.37 per year. Now, these additional users are marginal users and I do not think that the few months in which some of those would run above the guarantee would raise the average revenue from those stations over $28.00 a year. I have no details of that estimate. It is based entirely with reference to guarantee. It should be borne in mind in that connection that under the present rate we have some 65 per cent of the users who do not use up to the present guarantee and we have a lot of people whose use would be away under the new guarantee.

The study upon which I based the conclusion that 65 per cent of the users use under the present guarantee is based on a study of usage made in 1928. That study consisted of a selection of certain subscribers by lot. We obtained the usage 1977 each month for a period of a year for those subscribers distributed throughout the city and, of course, kept a record of that usage. We made a determination as to the percentages of that group having varying usages in steps of 5 up to 200 and in steps of 10 above 200. This study covered the four-party coin box service. I could not say whether there was any other class of service included in it. We made a similar study of the four-party coin box service in the years 1913, 1914 and 1915, when this thirty message $1.50 guarantee was in effect.

In coming to my opinions given in my direct examination, I was familiar with both the study of 1913 and 1928.

1978 I used the study of 1928 to the extent of knowing that 65 per cent of the present coin box users were using less than the guarantee. Save for that, that study would not have any bearing on the question, in my judgment, and I did not use it.

In my direct examination, I said that the estimated net telephone revenue would not exceed 10 per cent of the gross revenue of $28.00 a station. I was talking about additional subscribers attracted by the decreased rate whose usage would amount to $28.00 a year.

1979 I have no further details upon which I based my estimate other than those I have given. The figures in this case show that the net telephone revenue is 15 per cent of the gross revenue; that is the average of existing stations. It is likewise a fact that the existing stations produced an average revenue of about $54.00 during the period covered by this case, that is, from 1923 on. So far as these additional stations that would be attracted by this lower rate are concerned, the usage would not be over $28.00. Accordingly, I said that these stations could not produce a net revenue of more than 10 per cent of the gross they produced and I had some doubt whether they would produce any net revenue.

Perhaps 15 per cent net revenue is not strictly accurate; it ran, as I remember it, over the period from 1923 on, from 15 to 16.5 or something like that. That average of 15
1980 or 16 per cent of net revenue is for all kinds of subscribers. I mean that the net revenue was 15 or 16 per cent of the gross revenue; this is called net telephone revenue, which is a technical term and is after the deduction of taxes and after the deduction of depreciation and before the deduction of interest and before taking into account sundry net earnings. It is net telephone revenue from telephone operations. It is, broadly speaking, the gross less the cost of conducting those telephone operations.

1981 The tendency is to increase the number of customers if the rate is lower. The message use depends upon the number of messages allowed under the minimum rate the subscriber must pay. The decrease of the rate per message has very little effect upon the usage of the service; it is the number of messages allowed under the guarantee that is the controlling factor.

1982 So far as the business subscriber is concerned, it is rather self-evident that he uses all the service he would use under the lower rate per message. The telephone is an important instrumentality in carrying on his business and he would naturally use it to the extent to which it did him good and helped his business along. The rate may tend to eliminate some non-essential business, such as calls made by his clerks and his help if he allowed them to use the telephone, but so far as his needs are concerned I believe they are usually controlling.

"Q. Well, don't you think that if the delicatessen owner wishing to buy both goose livers and frankfurters had a low rate, he might order each one as he thought of them, but with a high rate, he may be so thoughtful as to telephone only once for the two?

"A. If he could get them both from the same place, possibly that is true."

1983 Service to an individual subscriber becomes more valuable as the total number of people he can reach increases. In certain individual cases the addition of the ten or twelve thousand four-party subscribers would result in the origination of additional calls for these subscribers from other subscribers in the exchange; but it probably won't raise the average calling rate. I know that because we have been growing here in Chicago for many years and our average calling rate remains fairly constant; it varies with business conditions somewhat because of the business influence.

Every call that is made has to terminate somewhere. An individual telephone will not have about as many out-
1984 going as incoming calls. For instance, in this four-party classification I was talking about a short time ago. Some of the subscribers of this service do not use 10 outward calls and we do not know how many inward calls they get; they may get 30 or 40 inward calls. I do not think it is true as to the individual telephone that the incoming calls will

about equal the outgoing calls. Each call out of an exchange area has to have a place to terminate; that is, if it is made, somebody answers and it terminates on some telephone. But as to an individual telephone, it is not true that the outgoing and incoming calls are about equal.

The calling rate is the average number of originating calls
per station. I have not the figures in mind as to what this
calling rate was from 1923 until the present time. It possibly
went up in some years and in some years it went down, but,
on the average, it has not changed very much. I think
1985 that as the exchange has grown the calling rate in recent
years probably was not as high as it was back in 1915
or 1916. That may seem to go directly contrary to our statement that there is added value in added stations but that added value comes only to those stations who want to call this added station and we do not know who it is going to be. We do not know when we are going to call one of these stations that may have been added, but it is a great convenience when it is there and we can call it when we want to.

Without consideration of the individual telephone, these ten or twelve thousand additional stations, as a whole, would have to have the effect of increasing the number of incoming calls within the exchange to about the same extent that it would increase the number of originating calls, because every call these stations originate would have to be an incoming call somewhere. This would not mean an increase in exchange
revenue per station, nor do I think it would be a substan-
1986 tial increase in exchange revenue. It would not be an
increase in net revenue. I estimated that the net revenue might possibly be increased by $30,000. I said further that that $30,000 would probably reduce our average net earnings on plant; that would be its tendency. It might be infinitesimal, but if these additional stations did not earn as much on the average as the existing stations did on the average, the tendency would be reduce that average rate of return. These additional stations would have to have plant to go with them and operating expense to go with them. They might not be in sufficient number to be of a serious amount.

I have been talking about the general effect of adding these ten or twelve thousand stations. These additional stations would receive incoming calls and I took that fact into consideration in my direct examination. They certainly would receive incoming calls.

1987 "Q. And in respect to that, do you figure that the incoming calls will about equal the outgoing calls?

"A. To that particular group of stations?

"Q. Yes.

"A. Perhaps a group of ten or twelve thousand, it would tend to equalize. I think we would have in this particular ten or twelve thousand marginal users a proportionately large number of people who wanted the telephone service for the sake of getting inward calls."

I call them marginal users because of the particular rate and cost, because if the rate was any more they could not stay; that is the general idea.

1988 The tendency is that if the rate goes down it would attract more and more subscribers. It probably would, but we would not be giving telephone service at a lower rate than we have been talking about.

Speaking of the four-party residence coin box service, the additional revenue, when there is taken into account incoming and outgoing calls in respect to those ten or twelve thousand stations, would not produce a net profit greater than the 15 or 16 per cent attributed to the exchange revenue. I have already said that the tendency would be to reduce that

1989 15 per cent as a return. The addition of these stations would carry with it the plant that was necessary to serve them, the operating expense and maintenance for them and everything else that goes with it.

Our exhibits as to the rates proposed by the Commission show that the guarantee would amount to $27.37 per annum. There is nothing there for messages originated with other stations that are incoming to these ten or twelve thousand stations because a great deal of their incoming calls would come right from within the group, and a great many would come from users already in that service who are using less

than the guarantee and for which we would get nothing. I do not think there would be anything added. As a practical matter I would allow nothing for the messages originat-
1990 ing with other stations incoming to these ten or twelve thousand additional stations. I am not saying that there would not be an occasional call, but I am saying that as the number of subscribers has grown our average calling rate does not go up, so there could not be anything added.

To a very slight extent, some of these ten or twelve thousand four-party subscribers are potential toll users. I did not consider that in my estimate, because I assumed that for their toll service they have been going to a pay station and getting their toll service. When people have no telephone of their own and have need for toll service, I think they get it from a public station. If these ten or twelve thousand addi-
1991 tional subscribers were to have telephones, they would use their own telephone for toll use, but it would not increase the total toll use any. In effect, I think we are getting their toll traffic now. I do not consider these additional subscribers as potential additional toll users at all. The fact that they have telephones upon their own premises might have a slight tendency to increase their use of toll service, but not enough to affect materially this problem.

These additional stations would probably not increase incoming toll calls. I assume that if there is need to call these people now, they have been called and messengers have been sent to call them to a telephone, and the call has been made. As far as any material effect is concerned, I think that is true.

"Q. In any event, you did not take that into consideration, whatever it may amount to, in arriving at your estimate?

1992 "A. No, because in my judgment it does not affect the proposition."

I cannot say positively whether the Company, in the regular course of business or otherwise, made any estimate of the annual revenue effect on account of the change of rates upon regular forms, such as those shown me by counsel for the defendants. I can say this, that as soon as the Commission order came down we became very much interested in what the revenue effect would be. I am not familiar with the form shown me by the counsel for the defendants nor whether that form was used in 1923 or 1924. I think I have seen the form, and it is probably used, but I could not identify it.

1993 A pamphlet handed me by counsel for the defendants is a copy of an address given by me before the Mid-day Luncheon Club at Springfield, Illinois, April 2, 1931, entitled "The Telephone Company as a Citizen of Your Community".

(Which said document was marked for identification as Defendants' Exhibit D-92.)

I think that economic conditions are a very considerable factor in respect to the changes in calling rates.

There is no minimum guarantee for toll and long distance rates.

"Mr. Thompson: Your Honor, during the course of 1994 Mr. Gregory's examination we had identified Exhibits A-70 to A-98, inclusive, A-109 and A-110. I think most of the exhibits were offered in evidence, and there was an agreement with Mr. Haight that they could make their objection at the end of the testimony.

"We now offer all of these exhibits, and each of them separately.

"Mr. Haight: If the Court please, we object to the admission of Exhibits A-77, 78, 79 and 80, being respectively, 'Sales, Net Profits and Average Investment, Bell Business, 1916 to 1930, inclusive, (Dollars in Thousands)', 'Sales, Net Profits and Average Investment Bell Business 1916 to 1931 Inclusive', 'Sales, Net Profits and Average Investment—Non-Bell Business 1916 to 1930, Inclusive', and 'Sales, Net Profits and Average Investment—Non-Bell Business, 1916 to 1931, Inclusive'.

"And also Exhibits A-93—I think it will not be necessary to read their titles,—I will just give their identifying numbers —A-93, A-94, A-95, A-96, A-97 and A-98, and A-110. The first ground of the objection is that each of these 1995 exhibits is either in whole or in part based upon and uses the pension fund accruals as items of expense, and no foundation has been established for pension fund charges against earnings.

"And also in respect to each year involved, each of these exhibits makes use of both Bell and non-Bell earnings, and also in expenses, with reference to Bell and non-Bell investment. These have not been properly segregated, and consequently there is no proper foundation for the introduction of those, on that ground.

"And, furthermore, in respect to each of the years involved, there has been no foundation laid or no proper showing made as to what the investment is, or what the earnings are in each of those years.

"Mr. Thompson: I think, your Honor, that the first objection, that is, that there has been no basis laid for the pension fund expense, which constitutes a part of the expenses included in these exhibits, does not go to the competency or admissibility of these exhibits. It is one of the expenses of the company. The comptroller has testified.

"Judge Wilkerson: In the end, we will have to decide whether it is a proper expense. If it is, the exhibit is the basis for the allowance of the expense. If it is not a proper
1996 expense, it will be rejected.

"Mr. Thompson: Exactly. And as we have already said, your Honor, it is our intention to put someone on on that; but I am not making as a point that the admissibility of the exhibits depends upon further testimony of that character.

"Judge Wilkerson: Where computations of this kind are offered in evidence in a case tried by the court, they are usually admitted. The objection goes to the weight of the exhibit rather than to its admissibility in evidence, and in view of the way in which the evidence in this case is being heard, the court will be liberal in ruling on exhibits offered by both sides. Any exhibit which plainly has no weight in the case will not, of course, affect the judgment of the three judges who hear the evidence.

"The objection is overruled."

Defendants except.

(Which said documents, so offered and received in evidence, were marked Plaintiff's Exhibits A-70 to A-98, both inclusive, and A-109 and A-110.)

May 9, 1932.

1999 "Mr. Goldstein: If the Court please, I would like the record to show that we desire to press our motion to strike Exhibit A-99, which is based on—which the record shows is based on the Bell Telephone Securities Manual, which in turn is based on M. R. 1 and 2, access to which exhibits we were denied by the Court's ruling on our motion; also Exhibit A-100, based on—

2002 "Judge Wilkerson: He is making the motion. Let the record show the motion, and then we will consider it later.

"Mr. Goldstein: Also Exhibit A-100, Exhibit A-103, Exhibit A-195, and Exhibit A-108; and the testimony of Mr. Crunden, and the testimony of Mr. Gherardi, which is based upon these exhibits; we desire to press our motion heretofore made, and desire to state for the record that we have not been able to get together with counsel on any method of examining these records.

"Mr. Thompson: Mr. Goldstein, these records that you are referring to now are in the office of the Illinois Bell, where you were permitted to inspect them. Is that not correct?

"Mr. Goldstein: No, sir, it is not correct. I was told to go over to the Illinois Bell, and I went with a representative of the Illinois Commerce Commission, and I was told that I could direct my eyes on a certain line; that I could not examine any exhibits, that I could not touch any exhibits, but I would have to look at a line that was checked with a pencil mark. I stated that I would refuse to look at them under those circumstances.

"Mr. Thompson: These exhibits are open to Mr. 2003 Goldstein's inspection at the offices of the Illinois Bell, and I understand that his purpose and desire was to withdraw them because they contained a large variety of information not at all related—

"Mr. Goldstein: There was nothing—

"Mr. Thompson: (Continuing)—to the subject-matter of Mr. Crunden's testimony.

"Mr. Goldstein: There was nothing said about withdrawing them whatsoever.

"Judge Wilkerson: Well now,—

"Mr. Goldstein: If they are not to be made accessible, we desire to have them produced here, so that we can look at them, under some order of court.

2004 "Mr. Blackman: Your Honor, as to this, may I say this one word: These documents that Mr. Crunden referred to as the basis of his testimony, were documents that were prepared in the regular course of business by the American Company. I think that they themselves would be sufficient foundation for his testimony, being prepared in the regular course of business, bringing together the information from many different sources, and compiling these figures.

"Now what Mr. Goldstein asks is to see the figures that underlie, the separate figures; that is, he wants to see some 350 different figures that have been compiled to make these figures that appear on the compilations prepared by the American Telephone & Telegraph Company. These compilations are the only compilations that the American Telephone & Telegraph Company itself makes up; they are the first 2005 figures which it prepared. Now, it does have, as we stated on the record before, the separate reports of each of the individual companies and it goes to those reports and picks off these figures.

"Now as we stated from the outset, there is no objection to the defendants examining those reports, as to any of the matters which we have used, but there are comparisons there, the reports are quite voluminous, they contain a great deal of matter which is of no real interest to the defendants in this case.

2006 "Judge Wilkerson: You may bring them in, yes.

"Mr. Blackman: —and the defendants—

"Judge Wilkerson: I will let you do it in the presence of the clerk, and let Mr. O'Sullivan preside at the inspection.

"Mr. Goldstein: That is all right.

"Mr. Haight: That is satisfactory."

IN THE

District Court of the United States

FOR THE NORTHERN DISTRICT OF ILLINOIS,
EASTERN DIVISION.

ILLINOIS BELL TELEPHONE COMPANY,
Plaintiff,

vs.

G. GALE GILBERT, J. PAUL KUHN, WALTER H. WILSON, WILLIAM M. BRINKMAN, PHIL W. COLLINS and PAUL SAMUELL, the persons constituting the Illinois Commerce Commission of the State of Illinois, and **OSCAR E. CARLSTROM,** Attorney General of the State of Illinois,
Defendants,

and

CITY OF CHICAGO, a municipal corporation,
Intervenor.

In Equity
No. [illegible]

Heard before
Hon. Evan A. Evans
Hon. George T. Page
Circuit Judges
and
Hon. James H. Wilkerson
District Judge.

ABSTRACT OF RECORD

PLAINTIFF'S EVIDENCE

VOLUME III—(Pages 607 to 1048)

WILLIAM H. SEXTON,
Corporation Counsel, City of Chicago.

GEORGE I. HAIGHT, and
BENJAMIN F. GOLDSTEIN, and
EDMUND D. ADCOCK,
On behalf of City of Chicago, Intervenor.

OSCAR E. CARLSTROM,
Attorney General of Illinois,
and
WILLIAM C. CLAUSEN,
Assistant Attorney General,
On behalf of Illinois Commerce Commission.

CHARLES M. BRACELEN,
WILLIAM H. THOMPSON,
KENNETH F. BURGESS,
EDWARD L. BLACKMAN,
On behalf of Plaintiff.

HORACE KENT TENNEY,
LESLIE N. JONES,
Of Counsel.

IN THE

District Court of the United States

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Plaintiff,

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Defendants,

and

CITY OF CHICAGO, a municipal corporation,
Intervenor.

In Equity
No. 3746.

—

Heard before
Hon. Evan A. Evans
Hon. George T. Page
Circuit Judges
and
Hon. James H. Wilkerson
District Judge.

ABSTRACT OF RECORD

Plaintiff's Evidence

Volume III—(Pages 607 to 1048)

ALLAN B. CRUNDEN, recalled as a witness on behalf of the plaintiff, having been previously duly sworn, further testified as follows:

2007 *Direct Examination by Mr. Blackman.*

May 9, 1932.

I prepared the sheet which purports to show the per cent that the Long Lines Department is of the total associated operating companies (including the Long Lines Department itself and the Bell Telephone Company of Canada), with relation to certain factors, namely, exchange and toll lines, central office equipment, and plant in service less land and buildings, all for the years 1923 to 1931, and plant in service as of June 30, 1931. I prepared this at the request of Dr. Jewett to furnish him the ratio shown on the last column. The sources from which I obtained the figures shown are indicated at the foot of the exhibit. I prepared it from the Comptroller's report containing those figures and from some monthly reports of the Long Lines and the Bell Telephone Company of Canada. The figures which appear on my 2008 Exhibits 99, 100, and 101, came from these same documents.

(Sheet was offered in evidence as Plaintiff's Exhibit A-111. Ruling on admission was reserved until the close of the cross-examination.)

I prepared the sheet purporting to show the ratio of certain figures for the Chicago area to the corresponding figures for the total associated operating companies, excluding the Long Lines but including the Bell Telephone Company of Canada. The matters covered are exchange and toll lines, central office equipment, and plant in service less land and buildings, all for the years 1923 to 1931, and plant in service and company stations for June 30, 1931, only. I prepared this 2009 similarly at the request of Dr. Jewett, and the sources of the information are the same as for Exhibits 100 and 101; the sources are indicated at the foot of the statement.

This paper and the other one which I have referred to were correctly prepared, and, I believe, are entirely correct.

(Said document was thereupon marked for identification as Plaintiff's Exhibit A-112.)

I prepared the paper purporting to show the ratio of plant in service of the Chicago area to the plant in service of the total associated operating companies, including the Long Lines and the Bell Telephone Company of Canada, for the
years 1923 to 1931, inclusive. I prepared this at the
2010 request of Dr. Jewett. It is correctly prepared and
correctly sets forth what it purports to show. The figures in this document were obtained from Exhibits 100 and 101, with the exception of the percentages in the third column, which are computed from the figures shown in the preceding column.

(Said document was offered in evidence as Plaintiff's Exhibit A-113.)

Cross-Examination by Mr. Goldstein.

Exhibits A-111, A-112 and A-113 were prepared subsequent to the hearings in the Ohio case and were never presented in that case.

The source of the information for Exhibit A-111 for total
associated operating companies is C. R. 64-A, which in
2011 turn is based upon M. R. 6. The source of the informa-
tion for Exhibit A-112 is M. R. 1 and 1-A.

In taking the central office equipment of the associated companies on, for example, A-111, I assumed it is central
office equipment; I have taken a certain account. I
2012 have not testified regarding the character of use of the
items found in the account. My exhibit depends upon the fact that certain equipment is included by definition in a certain account of the Interstate Commerce Commission's system and the computation is purely mathematical. The definition of the Interstate Commerce Commission does not appear on the M. R. reports from which I took the information. It is not correct that the M. R. reports state that the

compilation is not in accordance with the classification under the Interstate Commerce Commission rules.

2013 Monthly Report No. 1, identified as Defendants' Deposition Exhibit 79, states "these figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission and this fact should be recognized in quoting and using them".

That has nothing to do with the central office equipment, however. The central office equipment figures, as well as all the other figures in these exhibits, are merely the figures shown opposite certain wording for each of the accounts on these sheets. These sheets do not contain any definitions of the Interstate Commerce Commission.

(Defendants move to strike out the exhibits on the ground that the underlying records from which they are
2014 compiled were not made available to them and had been refused to them. Ruling on motion was reserved.)

Re-direct Examination by Mr. Blackman.

The phrase standing at the head of that paper referred to in my cross-examination had reference to the fact that Monthly Report No. 1 contains a section entitled "Earnings and Expenses", and in that section the revenues and expense and net earning items are shown in a form which was adopted by the Bell System prior to the issuance of the uniform system of accounts of the Interstate Commerce Commission. For convenience of comparison, this particular report has been carried along in the form which was in use prior to 1913, when the Interstate Commerce Commission system took
2015 effect. There is nothing in here which is out of line with the uniform system, but it is simply a slightly different arrangement of the items, and a slight difference in terms. For example, the Interstate Commerce Commission uses the term "gross income" as meaning substantially what is referred to on this report as net earnings.

The changes, whatever they may be from the Interstate Commerce Commission classification, have no bearing at all on any of the figures which I have used.

2016 *Re-cross Examination by Mr. Goldstein.*

This same report on which that statement is made also contains a condensed summary of the balance sheets.

The notation that the figures on this report are not arranged
in exact accordance with the book accounts prescribed by the
Interstate Commerce Commission and this fact should
2017 be recognized in using them and quoting them, refers
primarily to the revenues and expenses. My conclusion
that it refers primarily ~~to~~ that is not based upon anything
found on the sheet, but it is based on our knowledge as to why
we continued that for use. The only way you could determine
that the asset items are in accordance with the Interstate
Commerce Commission's rules is by checking back these
reports against the reports of the companies to the Interstate
Commerce Commission. Without that there is no way you
could determine whether the items of assets on these sheets
are in accordance with the accounts of the Interstate
2018 Commerce Commission if you fail to be satisfied that
these are correct reports in themselves. They are reports
made in the regular conduct of business. Without that
assumption there is no way you can tell, without that
analysis.

2019 *Re-direct Examination (Continued) by Mr. Blackman.*

The designation in the telephone company of the paper referred to as bearing the legend at its top "This does not conform to the Interstate Commerce Commission's requirements" is C. R. 51-A.

In connection with Exhibits A-111, A-112 and A-113, I have not used any part of that report, as to any assets.

No part of these asset figures shown on that paper were used in connection with my previous exhibits.

My statement in answer to Mr. Goldstein, that it would be necessary to see these individual reports in order to check the asset figures on those sheets, would have nothing to do with checking any figure which you used in this case. That statement is true, but it is not relevant, because I did not use

that report. I used C. R. 64-A, which is a report that
2020 has been submitted to the defendants.

The accounts and figures on that report are in exact order in accordance with the reports to the Interstate Commerce Commission.

Re-cross Examination by Mr. Goldstein.

64-A and 51-A cover the same assets. They represent the same items and are then computed in the same manner.

2021 **FRANK B. JEWETT**, called as a witness on behalf of the plaintiff, having been first duly sworn, was examined and testified as follows:

Direct Examination by Mr. Blackman.

May 9, 1932.

My name is Frank B. Jewett. I reside at Short Hills, New Jersey. I am Vice President of the American Telephone and Telegraph Company, and President of the Bell Telephone Laboratories, which position I have held since January 1, 1925. As Vice President of the American Telephone and Telegraph Company, I am responsible executive in charge of all of the development and research activities of that company, and of the Bell System. As President of the Bell Telephone Laboratories, I am the chief executive officer of that organization, which is the part of the Bell System in which the work of experimentation and physical and chemical research
2022 is carried out.

These two departments are in effect part of a single organization, the duties of which are to conduct fundamental research in the field of electrical communication; to conduct more specific research looking to the application of fundamental knowledge, whether obtained as a result of our work or from outside sources, to the end of producing improved instrumentalities for the giving of electrical communication services. In addition to that, the Department of Development and Research sets the general requirements to be met by new equipment, apparatus or circuits, and is the final judge as to whether the things produced meet those requirements. The requirements which we set for material to be developed and furnished, developed by the Laboratories or by others, are determined from our general knowledge in the communication field, and from our contacts with the operating units of the Bell System, either directly or through the Department of Operation and Engineering.

2023 In addition, it is our function, when new equipment has been developed and standardized, to prepare the fundamental requirements for its installation, operation and maintenance. That information is furnished to the operating units in the form of bulletins or circulars. It is the function of the Bell Laboratories at the same time to furnish to the manufacturer, the Western Electric Company, or whoever it is that is to manufacture, the requirements for the manufacture of that sort of material, in so far as requirements are required, and to check the product before it is put into the telephone plant. Further, the Bell Laboratories is the ultimate judge of whether the material to be furnished to the operating units of the Bell System meets the specifications which have been set.

The requirements, standards and specifications to which I have referred are standards, requirements and specifications for a number of things to be used in the plant of the Bell System.

2024 My primary education was in California, where I received in 1898 the degree of Bachelor of Arts in Electrical Engineering, from what is now the California Institute of Technology, then called Throop Polytechnic Institute. From 1898 to the spring or summer of 1902, I was a graduate student of the University of Chicago, and was research assistant to Professor Michelson during the latter part of that time. In 1902, I received my degree of Doctor of Philosophy in Physics and Mathematics at the University of Chicago. After spending the summer as an instructor at the

University of Chicago, I became an instructor in physics and electrical engineering at the Massachusetts Institute of Technology in Boston.

In the fall of 1904, I joined the Engineering Department of the American Telephone and Telegraph Company, which was then in Boston, and remained in that department, both in Boston and later in New York, until the spring of 1912. During the major part of that time, I was the Transmission and
Protection Engineer of the American Company, in
2025 charge of its transmission and protection problems, par-
ticularly those of a research character. In the spring of 1912, I became Assistant Chief Engineer of the Western Electric Company, and I remained in that capacity until the fall of 1916, when I became its Chief Engineer. In 1922, I became Vice President of the Western Electric Company, in charge of its engineering, manufacturing, installation and general merchandise business, in so far as it related to the Bell System, and I remained in that capacity until I became Vice President of the American Telephone and Telegraph Company, and President of the Laboratories, on the first of January, 1925.

At all times during that period I had contact with research work. My position as Transmission and Protection Engineer of the American Telephone and Telegraph Company was essentially in control of that phase of the research and develop-
ment work of the company at that time. I was instru-
2026 mental in inaugurating a research laboratory depart-
ment of the Bell System during that period.

At the time I became Assistant Chief Engineer of the Western Electric, there were two assistant chief engineers of that company, who divided, somewhat generally, the supervision of the work of the Engineering Department between them. My part was primarily concerned with the research and development activities as distinguished from the more purely operational activities. Of course, as Chief Engineer of the Western Electric Company I had general supervision over all of the research and development activities of the Laboratories. When I became Vice President of the Western Electric Company, although my supervision of the research and development in the Western Electric Company was somewhat more remote, I nevertheless was responsibly in charge of it, with the Chief Engineer reporting to me. Since January 1, 1925, my duty has been primarily that of supervisor of research and development.

2027 I am a Fellow of the American Institute of Electrical
Engineers, and a Past President of the American Institute of Electrical Engineers. I am a member of the National Academy of Sciences, of the National Research Council, and was for a number of years Chairman of its engineering and industrial research division. I am a member of a number of foreign societies, including the Institution of Electrical Engineers of Great Britain. As to degrees and honors, in addition to my Doctor of Philosophy degree, to which I have just referred, I have received the degree of Honorary Doctor of Engineering, or Doctor of Science, from Columbia University, New York University, Rutgers University, Dartmouth College, the University of Wisconsin, the University of Chicago, and the Case School of Applied Science in Cleveland. I have
received the Distinguished Service Medal from the
2028 United States Government, and the Order of the Rising
Sun and the Order of the Sacred Treasure from the Emperor of Japan.

At the present time, the Department of Development and Research of the American Company comprises a force of about 550 or 560 people, devoting all of their time to its activities. The Bell Telephone Laboratories at the present time has a force of something more than 5,000. These forces are somewhat smaller than they were a year or so ago. The total annual expenditures in the two departments have been, for all purposes, as high as $22,000,000 or $23,000,000 per year. They are running at a slightly lower rate at the present time.

A very considerable part of that $23,000,000 is paid for what we designate as fundamental research and development. Another considerable part is paid for more specific development, which might be termed the engineering application of

fundamental knowledge to the production of specific
2029 things. In addition to that, there is a certain amount
which is accounted for by so-called engineering services,
particularly in the Laboratories, and also a certain amount
which is accounted for by limited manufacturing services
which the Laboratories perform. That latter principally has
to do with the manufacture of vacuum tubes, and other
thermionic devices which are used in the Bell System and by the
Western Electric Company, and which, while they are of a
character that would normally be manufactured, would not
be a function of the Bell Laboratories; they are
manufactured in an organization under our control simply because
they are such new things that it is impossible to set the
requirements up so that they can be handled in an ordinary
manufacturing establishment.

Of all this money that is spent, that part of it charged to
my department for development and research of the American
Telephone and Telegraph Company varied considerably over
the last ten years. It has ranged, as I remember, from about
$2,500,000, or thereabouts, in 1923, to as high as $9,000,000.
At the present time it is running at possibly a little less
2030 rate than that. About half of the laboratory expenses
which are charged to development and research are
billed to the American Company. The other expenses are
billed principally to the Western Electric Company. A
smaller portion is billed to the Electrical Research Products
Company for work done on its order. So that of the total
expenses of the Laboratories, the Western Electric bears
two-thirds or three-fourths of the total development and research
amount. Of course, the manufacturing services, and the
manufacture, are all billed to the Western Electric, because that is
really not a development function, but is a service function
which is performed for the Western Electric and not for the
American Company. It would be performed by the Western
itself, had they the facilities for doing that sort of thing.

These sheets are the analysis of expense by classes of work,
the annual sheets of the Department of Development
2031 and Research for the years 1923 to 1931 inclusive. They

show the expenses of my department so far as the salaries, wages and other expenses of the 550 or more men are concerned. They also show the expenses which are incurred in connection with work in the Laboratories charged to the Development and Research Department, or, in earlier years (the first three years I think it was), expenses of a similar kind incurred by the Western Electric Company and billed to the American Telephone and Telegraph Company. Those were the years preceding the formation of the Bell Laboratories.

There was no difference in the source of the research information and work in the Bell System for a number of years prior to the organization of the Laboratories, in 1925, so far as the Department of Development and Research was con-
cerned. That department has been organized as a
2032 department longer than the Bell Laboratories. The
department as a department (separate from the Engineering Department of the American Company) was organized in 1919, but I was not a member of the American Telephone and Telegraph Company at that time, so I may be in error; but it is about that time. Prior even to 1919 that class of work was done. It was done in a part of the Engineering Department of the American Company, and was later split off, because of its growing size, to be a separate department of the American Company. The American Company has had no laboratories, except very insignificant ones, for experimentation in connection with new things it has sought to develop
since 1907. Prior to 1907, the American Company did
2033 have a laboratory for the conduct of the physical part
of the research and development department. From 1907 to 1925, when the American Company wished laboratory work done in connection with its research and development studies, it had that work done in laboratories which were maintained as a part of the Engineering Department of the Western Electric Company. All of the laboratorial functions of the Bell System were consolidated in a single laboratory in 1907, and that consolidation was in the Engineering Department of the Western Electric Company. The laboratory was

located in New York. That laboratory work in connection with the American Telephone and Telegraph Company development was paid for by billing to the American Company, that is, the Western Electric billed the American Company for work that it did for the account of the American Company. There were separate requests made on the Western Company to do this work.

When the Laboratories were formed, there was no 2034 real difference whatever in the way in which the work was conducted. The Laboratories were organized as a corporate entity, part of the Bell System, on January 1, 1925, and at the time of their organization were the entire Engineering Department of the Western Electric Company. The Western Electric Company at that time ceased to have an Engineering Department by name, and ceased to have an Engineering Department as a functional part of its organization in so far as the development of products was concerned. The physical apparatus and forces that constituted that department in the Western Electric Company were transferred in their entirety to this new company.

2035 The sheets to which I have referred are in slightly different form for the first three years than for the last period. The content is the same, but the arrangement and classification is slightly different; the sheets from 1926 onward are in the present standard form, which was introduced following the organization of the laboratory. Those sheets show payments to the Laboratories in various years.

All of the work which the Laboratories do for the account of the Department of Development and Research is done on the authorization of that department. At the time the authorization is given, the estimated cost of the work is a part of the papers in the case, so that in authorizing the Laboratories to undertake a piece of work for the account of the American 2036 Company, we authorize a rate of expenditure or a total amount of expenditure and that is the authorization for the Laboratories as they incur the expense under that authorization to render bills to the American Company for payment. Those bills are the cost incurred under the authorization with whatever the normal loadings are; they include all of the costs but no element of profit. The work is done without any profit, and so is of the general amount that would have been incurred had the American Telephone and Telegraph Company itself conducted the work in its own laboratory.

When these bills come back from the Laboratories for the work done in any case they are referred to the man or men who authorized that work. The amount billed is checked with the estimate originally given. The bills as they are rendered to the American Company by the Laboratories are referred to the department and sub-department heads, and, in the case of any considerable items, to the men who are in responsible charge of the work, to check as to accuracy with regard to the work rendered, the charge for the same, and as to whether it comes within the authorization.

2037 There is a wide variety of cases which are referred to the Laboratories and which they are asked to prosecute and make experiment upon. They cover a wide variety of things, but, in general, they all have the same basic element, that is, the element of acquiring physical information, scientific information which can only be acquired in a laboratory, or of creating something which involves that kind of information.

In many cases in connection with our theoretical studies in the Department of Development and Research, we are in need of scientific information which does not exist, and which can only be obtained by the conduct of experimental work, and, as we have no facilities for carrying on that experimental work, and the Laboratories have, that sort of work is submitted to them to be done. When it is completed, it may have no immediate application in physical things, but it becomes a part of our increased store of knowledge. Or we may be in need of some information of a physical character to enable us to advise the operating companies with regard to the installation or operation or maintenance of plant. That kind of work is submitted to the Laboratories to get the information.

2038 Or it may be that we have carried work far enough along so that the time has come to carry out those physical experiments which underlie the design of apparatus and those are submitted to the Laboratories. In general, as I have said, the kinds of work submitted to the Laboratories have to do with physical things, or the acquisition of knowledge which can only be acquired by experimental rather than by purely intellectual processes.

These cases for which we have been billed are confined to that general class of work except that sometimes in the conduct of our work we ask from the force of the Laboratories assistance of a kind where experimental work is not required, and that is billed to us.

Also, patent expense, incurred by the Laboraties organization in connection with patent matters of the American Company, is billed to the Department of Development and Research, and appears on these sheets, but is there only in transit to the Legal Department. It appears there simply because the Laboratories render all their bills to the American Telephone and Telegraph Company through the Depart-

2039 ment of Development and Research. Bills for that patent work are passed on to the Legal Department of the Company. The broad classification is that the work which is done by the Laboratories and billed to the Department of Development and Research is either work of a broad, fundamental character, which is required in the general studies for the advancement of the telephone art, or is work of a laboratory character, which relates to the problems of transmitting telephonic or telegraphic currents, but is not primarily related to the construction of apparatus. On the other hand, the work which is billed to the Western Company is that work which, in general, has to do with the development of

2040 specific pieces of apparatus or equipment, or the design of circuits which are to be manufactured, sold, installed, utilized, and maintained.

As these sheets show, the expenses of my department are classified under a number of general classes and sub-classes.

In the last five or six years, there have been, I think, nineteen general classes and over a hundred sub-classes. There are eighteen or nineteen general classes, and under most of them there are a considerable number of sub-classes. In some cases, the classifications, while appearing on the sheets, carry no charge. That is largely because this same general classification obtains in the Laboratories as well, and some classifications have charges there which do not appear on the D. and R. classification. In general, when work is authorized, the number or class assignment is given with the authorization, and all expenses, either direct or billed from the Laboratories, which pertain to that particular work, are
2041 charged to that classification. That is, in the case of direct expenses in the Department of Development and Research, the time of men on that classification is charged to that classification, and all expenses incurred, and billings from the Laboratories are charged to the classification.

Up to three or four years ago, we had an even finer division of the authorizations, in that every case in the Department of Development and Research bore a number or designation, and work was charged finally to those cases. But because these cases very frequently involved different general classifications, some years ago we came to the more general allocation of expense by these classes and sub-classes, and do not have the specific case number scheme in the Department of Development and Research. As the work is done, both the time and all the expenses which are incurred, such as material, or, if they involved traveling or outside expenses, are all charged to these classifications. These sheets are then made up by the Office Manager of my department from those time sheets.

2042 These sheets are the general current information which I and my subordinates have for the maintenance of control of the operations of the Department of Development and Research. They are relied upon by us and they are accurate. They contain information which is necessary for us in the proper conduct of the business. Well, including the two forms which are shown in this exhibit, these sheets have been maintained for considerably more than ten years. I don't know just how long, because they were inaugurated while I was an officer of the Western Electric Company, but in the form in which the first three years' sheets here appear, they were in existence for a considerable period prior to 1923, which is the first sheet shown here.

(Plaintiff offered Exhibit A-114 in evidence; admitted.)

2043 The expense figure of $23,000,000 a year, which I gave, was for development and research in both the Laboratories and Department of Development and Research, although that figure is not far wrong for the total laboratory expenditures. The expenses that are shown on these sheets are substantially less. The highest is for the year 1930, which is a total of about $10,000,000 in D. and R., including the charges of the Laboratories. In 1923, it was about $2,800,000.

2044 I have made no computation relating those expenditures annually to the amount of plant of the Bell System for each of the years in this period by years, but I have made a computation taking the average of research and development expense for that period related to the average plant investment of the Bell System in the same period. That relation is that on the average we have expended about $1.89 a year for each $1,000 of plant in service. Of course, that same average would be arrived at if you took the figure for each year and then averaged the result of that. As I remember the figures, it would be less in the years 1923 to 1925, and then more in the years 1925 to 1930.

I am generally familiar with all of the work which is covered by Exhibit A-114, but, obviously, I am not intimately familiar with the smaller details of so vast a thing. But, in general, both as to the main classifications and as to the subclassifications, I am cognizant of the kind and character

2045 of work, and the purpose for which it is done. Viewing the work from the standpoint of the purpose for which it is done, I think I can break it down into a few general classifications.

There are a number of divisions, four or five. First, put into one class that work which the Department of Development and Research does to get together, put in form and present the information which is required by the operating companies properly to install, maintain and operate the plant which they use in the giving of telephone service. Particularly it is concerned with that kind of information as it relates to the newer things, the things which have been the result of research and development work and are about to go into general use in the telephone plants.

It has to do, second, with the studies concerned with the protection of telephone and telegraph plant, for example, protection against inductive interferences from neighboring trolley wires or high-tension circuits, lightning, electroly-
2046 sis, and various things which may destroy either the plant or the use of the plant if not properly handled. That kind of work is undertaken by the Department of Development and Research for the benefit of the operating companies, in order that they may have the best knowledge and the best standardized methods for coping with that sort of thing.

Then it has to do, as I mentioned, with the acquisition of fundamental knowledge applicable to the development of the electrical communication art. In connection with that we endeavor to keep thoroughly informed of the progress of scientific work and the progress of the communication art in other parts of the world, to the end that we may at all times have the best information on which to do our research and development work.

It has to do with the fundamental studies which are required to set the requirements for the development of new circuits or new arrangements of existing apparatus, in new combinations, for new purposes as they may arise in the associate companies, and of formulating the rules for their use.

Then it has to do with the work underlying the setting of requirements for entirely new things, where the general information which has been acquired is sufficient to make possible the creation of new things.

2047 It relates to circuit and system designs and arrangements and combinations of things that exist, in new ways. It relates in part to work which is done and directed to a specific result, which, if successful, will result in the manufacture of telephone apparatus or material.

The figures that are shown on the sheets which have been received in evidence are confined to work of the character which I have just described there, which is ultimately charged to my department on the books of the company. There are a few exceptions to that in some of the years. I have already mentioned the patents and I think in some of the years there are some minor things. Scattered through these years, there are a few minor deductions, particularly as they relate
2048 (as I remember it) to services which were rendered by us for someone else, and were transferred on the books. In one case, I think it is for the year 1930, there was a considerable item which does not show in detail on this particular sheet; it amounted, as I remember it, to something like $260,000 or $261,000, which was charged to the Department of Development and Research for work done in the Laboratories for which the American Telephone and Telegraph Company had agreed to assume the cost, but which was not a proper charge against the Department of Development and Research. It was in the nature of this patent expense to which I have referred; it appeared on our books as in transit, because the Department of Development and Research is the one to whom the Laboratories renders its bills. I think that item is included in Exhibit A-114. I have had a careful examination of our records made for the purpose of eliminating that and all other charges that passed through our books, but which were not properly charged to my department. I have gone further and I satisfied myself that the charges which were reported to me as being charges which should be eliminated
2049 should have, in fact, been eliminated. I did this by checking the original records. The sheet marked for identification as Exhibit A-115 is the tabulation of these deductions.

(Which said exhibit, A-115, is offered in evidence. Ruling reserved.)

2050 This $260,000 item, to which I referred a moment ago, appears on this sheet.

After the deductions shown on Exhibit A-115 are made, the figure in the last column to the right of that sheet correctly shows the expenses of my department for the classes of work that I have stated in connection with the development of the telephone art. It is the net amount obtained by deducting from the gross amounts charges which were transferred to other departments, because of specific things, and after deducting certain items which were not done for the benefit of the associate companies and Long Lines, the principal item among which is this item I have referred to of two hundred and sixty odd thousand dollars. The principal reason for the research that we carry on, of course, is to advance, improve and cheapen the cost of giving telephone service through the application of scientific knowledge to the betterment of the equipment and methods which we have available for giving that kind of service. It was and is our belief that out of the new fundamental knowledge which has been made 2051 available through research work in physics, chemistry and the other sciences, there is much that, when properly studied, examined and amplified, and applied by competent men, is susceptible of many very material improvements in the giving of telephone and telegraph service in the items I have mentioned. The telephone art is most certainly not a static art. Up to the present, it has been one of the most rapidly moving arts that there is today.

In my opinion, there are reasons peculiar to the telephone industry, which do not obtain generally in other industries, why research such as we have done should be carried on. Because of the nature of the giving of telephone service, it does not have those elements of decreasing unit costs with increasing numbers of the units involved in growth, or has them to a lesser extent than is common in many industries. So, since the giving of telephone service in large metro-2052 politan areas, or where there are large numbers of subscribers, is involved with more expensive costs than in a scattered or smaller community, it is only through the reduction in the unit costs themselves that we can hope to prevent an increase in the inherent cost of service as that service increases as regards the number of subscribers to be connected.

For an example of this, take the general situation which obtains when there is compared, we will say, the cost of giving service in a large area like the City of Chicago, and in a smaller area, say a city of ten thousand people. It might seem that the elements which in mass production make these unit costs go down should apply there, and that a city like Chicago should be a mass production affair. Actually, of course, there is substantially none of the elements of mass production as they appear in ordinary industry prevailing in the giving of local exchange service. The fact that the switching plant is very much larger means little, because every call which the telephone company is called upon to make is a custom-made job. Every day in this city, or in any city in the country,
2053 there are hundreds of thousands of connections being put up which have never been put up before and which in all probability never will be put up again.

All that the telephone company knows is that in a given exchange area they will get about so many calls a day and that they generally will be distributed in about thus and such fashion, but as to where they will originate or where they will terminate, it has very little advance knowledge; there are wide fluctuations in the number of calls from individual stations, and wider fluctuations in the destinations of those calls. So the telephone company has practically none of the possibilities which most mass production presents of making preliminary provision for the handling of those things. If the telephone company knew more definitely as to where these calls were going, they might make provision in advance and obtain some of the benefits of mass production.

Then there is another factor which is inherent in the giving of switching service, and is one which obtains whenever growth takes place and which works exactly in the reverse direction to the reduction of the cost. That is, when the

number of subscribers increases beyond a certain point,
2054 and plant facilities have to be provided for giving service to additional subscribers, the unit costs in the case of some of the factors go up rather than down; they actually reverse in direction, and, so far as I know, they always tend in the same direction, upward rather than downward, although the size of their effect may vary under different conditions: I know of no case where these particular factors appear in the reverse direction.

An example which I have in mind of what happens when new subscribers are added and new facilities have to be made to take care of them has to do with the element of the switching plant, say in a local exchange area. The easiest illustration to understand would be one involving a simple manually operated switchboard (that is just by way of illustration, because the factors obtain by whatever means you do the switching). When you have a small area, all of the local connections are made by a single operator. In a small city you have one exchange and every local connection is completed by
2055 the operator who receives the order from the original subscriber. She has access to all the lines terminating in the exchange and one operator only is required as regards every connection, and no trunking plant. Now, because human beings have certain physical limitations and telephone operators are human beings, and their arms are only so long, there is a limit to the number of terminals that a single operator can reach. The standard in this country, using the type of plugs and jacks which we have in relays, is about ten thousand. Now, if you used smaller plugs and jacks, you could get more, but those bring in factors of increased maintenance and increased errors, so that for many years the standard in this country has been ten thousand.

Now, when the number of subscribers increases
2056 beyond ten thousand, with those limitations, it becomes necessary to connect a considerable number of the subscribers to an additional central office. That is, if we had a small city that had less than ten thousand subscribers, we would need only one central office and one operator to handle

each call. Now, if the city grows so that there are fifteen or twenty thousand subscribers, we have to have more than one office. The first step, of course, would be to have two offices, and then for all of the calls which originated by subscribers in one office and were destined for subscribers in another office, you would have to involve two operators instead of one in the completion of the connection, and, in addition to that, you would have to have a type of plant which you do not have in the earlier case, namely, the interconnecting plant between the two offices. Each office would, in itself, be more
2057 complicated than the original office was, because it would have to have the equipment needed for handling this interoffice business.

The same factor obtains as the number of new offices are added. If the city grows to need three offices, you still have to have two operators involved in completing every trunk connection and then you have to have three groups of interconnecting trunks instead of one. Those interconnecting trunks may become a very important part of plant as the telephone plant grows.

I don't know how many offices there are in the City of Chicago, but taking a city with fifty central offices, if you had your service given as I have described it, with direct trunking between every central office and every other central office, so that only two operators were required, the number of trunk groups that would be required in that case would be found by multiplying the number of central offices by that
2058 number, less one, and deducting a half of it. That would be 1,225 separate trunk groups.

These trunk groups consist of pairs of insulated copper wires, in a city of the kind described; if a sufficient number of them are put inside of a lead sheath, they become telephone cables, and they are installed in underground conduit, or, in the outlying regions, in overhead cable. One of the problems of my department has been to find means to try and cut down the number of those interconnecting trunks. In many cases, that is accomplished for the more distant and particularly the smaller central offices, which are likely to occur on the outlying fringes, by providing a third operator of some kind intermediate between the originating and the terminating operator, and handling the connection, not over a direct group of trunks from this office here to the office at the distant point over a separate group, but through this switching point.

That decreases the amount of plant required, at the
2059 expense of increasing the handling of each individual
call. It tends to decrease the amount of trunk plant, but increases the central office and operating cost. It enables the trunk group from one of these offices to be used for connection to many offices.

Where we have found means to diminish the effect of this increase in the trunk groups, we have not found any means to overcome it. I stated that, so far as I know, as regards this factor, it is always present and I don't know of a case where it has ever been reversed. The quantitative effect of these kinds of factors, where we have this peculiarity of the telephone business, of course, varies with different-sized cities and different locations and different conditions, but the effect is always apparently present.

"Q. Might it be said, then, Doctor, that the telephone business is, in a sense, a self-limiting business, and would be confined to smaller proportions if it had not been for the work of development and research which has continually substituted cheaper and more efficient means of doing the same thing?

2060 "A. I think that is correct."

It is largely through the results of research and development on a large scale, which have produced cheaper unit plant, that we have been able to keep the inherent costs from rising tremendously with the increasing numbers of subscribers connected.

Some of the work which has been done by the Department of Development and Research, shown on Exhibit A-114, resulted in the manufacture of apparatus by the Western Electric. All the work which we have done, shown on these sheets, has not so resulted.

The first classification of the work of my department to which I referred, that is, the contact with the associate 2061 companies and instructing them in the operation of new and standardized apparatus, did not have anything to do with the manufacture of apparatus by the Western. Expense incurred under that general heading has to do with the use of apparatus which they have, not with the manufacture of the apparatus. The expense incurred in connection with manufacture is precedent to that expense to which I have referred.

A very large part of that class of work which I referred to as the protection of our system from interference by electrical current of trolley lines and high-powered electric transmission lines has no connection whatever with the manufacture of apparatus. Some of it has some connection, particularly where it relates to protection from things like lightning; but where it relates (and this is a very large part of it) to the work which we do in connection with inductive interference or electrolysis, it has practically no connection at all with the manufacture of apparatus. I can say 95 per cent of our expense under that classification is directed to that kind of work. The work which has to do with circuits and 2062 system design has connection with the Western Electric Company to a considerable extent.

The class of work of a general nature which we have done in connection with fundamental research, may or may not have a connection with the Western Electric Company. A large part of it does not have any relationship to the manufacture of apparatus, but a considerable portion of it does, or is likely to. The other class of work which I have referred to, that is, work directed towards a specific result, has a direct relation to apparatus, either of Western Electric or somebody else's manufacture.

I think I could make an apportionment of the total expense of my department for each year shown on Exhibit A-114 among the beneficiaries of that work, which, in my judgment, would be a fair apportionment. Since practically all of

2063 our development and research department work is concerned with physical things and with the physical part of the associated companies and Long Lines plant, either directly or indirectly, rather than with operation costs or current costs of construction, the way I would make such an apportionment would be to take the total cost, as shown on these sheets, eliminate the items to which I have previously referred as being transferable or not properly chargeable to research and development (that is, the items shown on Exhibit A-115), and apportion the resulting amount (that is, the figure shown in A-115) to the beneficiaries in relation to the plant values of the telephone plants of the several beneficiaries. Before making that apportionment among the operating companies, I think I would make an adjustment or deduction in recognition of the connection between the Western Electric Company and our work. This statement is based on the assumption that the Western Electric Company has customers other than the associated 2064 companies and the Long Lines for the work to which this expense pertains; that is, cable and telephone apparatus. If it had no other customers, I would not make any such allocation, because the plant to which I would allocate this thing is not concerned with the way in which the expense gets to the allocation point. If the Western Electric sold only to the associated companies and the Long Lines, they would be the ultimate beneficiaries of our work and I would take no account of the Western in such an allocation. Since, however, they do sell some of this equipment on the outside, it would seem to me, since I cannot, from the very nature of the items of this work, apportion it very accurately, item by item, I would assume that all of it was related to the Western Electric Company's business, and find out what proportion of the Western Electric business is in this non-Bell field, and get a factor of value which resides outside of the Bell System.

2065 I have attempted to do that. The sheet marked for identification as Exhibit A-116 is the one on which I have attempted to do as I described. I succeeded as well as

I could; I think I have made an exceedingly liberal allowance for the Western Electric Company, because I have assumed that all of our work has relation to the Western Electric Company, but, as I just testified, a good part of it does not have a relation to the Western. In using these figures, however, I have used the total expenditures of my department, because, as I just stated, it is rather difficult to say which amount, in money, did not in any way contribute to Western Electric manufacture.

This exhibit (A-116) shows for each year of the period 1923 to 1931, inclusive, the Western Electric's sales divided
2066 between telephone apparatus and lead covered cable and between Bell customers and non-Bell customers. Column 1 shows the division for the Bell customers, and column 2 for the non-Bell customers. Those two columns are merely the volume of sales measured in dollars, that is, lead covered cable and telephone apparatus. Column 3 is the percentage which column 2 is of the total. Column 4 is the expenses of the Department of Development and Research, as obtained from the two exhibits which I have just put in evidence; specifically they are the figures shown on the right hand column of Exhibit A-115, which is the net result after deducting from the cost of the preceding exhibit (A-114) the transfer
2067 charges and certain special charges which are not shown.

The fifth column is the amount obtained from the fourth column by applying the percentage figures of column 3.

(Which said document, marked for identification as Plaintiff's Exhibit A-116, was offered in evidence. Right to object and ruling thereon reserved.)

2068 I obtained the figures in columns 1 and 2 from the Western Electric Company.

For determining the maximum reduction from the sales of the Western Electric Company which I referred to, I would prorate the net, after this deduction, on the basis of the plant investments of the recipients. That would be an allocation to the Illinois Bell Company on the basis of its plant investment, and if you were desirous of determining the proper allocation to the Chicago area of the Illinois Bell, I would carry it a step further and take the plant investment of the Illinois Bell in the Chicago area. I have done that; my calculations to that end are shown on the sheet marked for identification as Plaintiff's Exhibit A-117. The D. and R. expenses under the column headed 1 on this exhibit come 2069 from the preceding exhibits; specifically from the last column of A-115.

The figures in column 2 (of Exhibit A-117) came from column 5 of A-116. Column 3 is merely the difference between column 1 and column 2. Column 4 is the percentages which were given to me by Mr. Crunden and appeared upon the sheets which were offered by him in evidence this morning; they are the same figures as appear in the last column of Exhibit A-113. The last column on Exhibit A-117 is merely the multiplication of column 3 by the percentage figures appearing in column 4.

2070 In my opinion, that method gives a fair share and no more than a fair share of the expenses of my department which are allocable to the Chicago area of the Illinois Bell Telephone Company in each of the years 1923 to 1931, inclusive.

(Exhibit A-117 offered in evidence by plaintiff. Ruling reserved.)

2071 I could take each classification of expense as shown on my sheets heretofore introduced in evidence and make a pro rate of the expense separately for each classification, but I do not think that it would be as accurate or as fair a pro rate as the one I have just testified to. I believe that the general method which I have followed, as shown on Exhibit A-117, is better than an individual pro rate of the separate items and expenses, for a number of reasons. It deals with total expense of the Department of Development and Research, which, as I have already stated, in the last analysis relates to plant, and since, from its very nature, it deals with the future and it cannot be accurately determined as to the places in which it will appear in the plant of the Company, any attempt to prorate that future work against existing factors must of necessity deal with rather general

yardsticks. When you attempt to apply a pro rate by these
divisions shown in the expense analysis by classes of work,
large parts of the benefits derived from the expenses in
2072 many of the classifications appear under items which
you would normally associate with other classes of work;
that is particularly true with regard to the items having to
do with more fundamental things, and, consequently, the things
which are still remote from direct application, so while such
a pro rate by classification of work can be made and while I
have done it, I consider that if an allocation is to be made the
way in which it has been done in Exhibit A-117 is the best
that I know of to do it.

2073 For an example of what I have just said about work
on certain classifications affecting portions of the plant
that would be found in many other classifications, I will take
an item upon which we have spent a very considerable amount
of money over a period of years: the sub-classification
vacuum tubes. The development of vacuum tubes appears
under general classification 7 of these later years. Well,
vacuum tubes, in their direct or indirect values, appear in
practically every classification throughout the entire list.
They appear either as parts of apparatus or as the necessary
tools by which these pieces of apparatus were constructed.

After the deduction of the items shown on Exhibit A-115,
the expenditures shown on Exhibit A-114 have to no extent
whatever been incurred in connection with work of no value
to the associated companies, considered separately and apart
from the Long Lines Department of the American Tele-
2074 phone and Telegraph Company. To a very considerable
extent, the expenditures shown on Exhibit A-114 have
been incurred in connection with work which has been and
will be of little or no value to the Long Lines Department of
the American Telephone and Telegraph Company. This is
because some of the classifications under which the expense is
charged refer to classes of plant which the Long Lines does
not have at all, or, in other cases, has in very insignificant
amount. In other classifications, while the Long Lines does

have some of the general type of plant covered by the classification, its amount is small in comparison with the amount in the plants of the associated companies.

The plant of the Long Lines Department, in the main, consists of long distance toll lines, which connect the territories of the various associated companies and over which is handled the business originating in the area of one associated company and destined for subscribers in another. In general, the circuits used are long. The associated companies have similar plant, in all respects, except as to length; in general, the Long Lines circuits are longer than the circuits of the associated companies. That is, our lines from New York to San Francisco are longer than any of the lines of the associated companies.
2075

Many of the associated companies have lines as long as 50 or 100 miles. These lines are, in all respects, similar to the comparable lines of the Long Lines Department. They involve the same general problems and, in general, are constructed in the same general manner. The Long Lines also has a certain amount of switching machinery, which is similar in character to the corresponding machinery employed by the associate companies wherever that same kind of telephone service is given by the associate companies.

In addition to the character of plant that the Long Lines has, the local companies have other kinds of plant.
2076 For example, the associate companies have a large amount of local exchange switching plant and the Long Lines plant has no local exchange switching. The associated companies have a large amount of subscriber's loop and station plant, but the Long Lines has none of that kind of plant, because it has no subscribers. Considered from the basis of use, the associated companies have a large volume of short toll business similar, say, to that between Chicago and its outlying suburbs. Specifically, that type of suburban traffic involves, or may involve, a different application of the same general methods employed in the longer business. The associated companies have their local tolls, and, in addition,
2077 of course, have the more distant toll service within their

areas, which is, in all respects, similar to much of the stuff which the Long Lines does, and then they have this local exchange service, which the Long Lines does not have at all.

The volume of the local exchange business is many hundred times greater than the total business of the Long Lines. The Long Lines handles no business under forty miles; it has no subscribers, and only carries messages for the subscribers of the local companies.

I have made an allocation on the basis of the separate items of expense shown on my sheets. The sheet marked for identification as Plaintiff's Exhibit A-118 develops such allocation.

The figures shown in the first column to the left on these
2078 sheets were obtained from Exhibit A-114. Those figures
are identical, in all respects, with the figures shown on the sheet marked Exhibit A-114, except that the totals shown have taken account of certain deductions and transfers of the kind previously referred to and shown on Exhibit A-115. For example, on the sheet for the year 1930 it will be noted that at the bottom of the second sheet of that exhibit there is an explanation of certain single-starred items; this happens to be the one with that $260,000 deduction. Then there are certain items appearing above double-starred notations, which are transfer charges to other departments and have been taken account of in the total at the bottom. The figures appearing in column 1 are identical with the figures in A-114 and I have taken account of these deductions which are shown on Exhibit A-115 individually on the separate pages by starred references at the bottom of the sheet. They are, I
think, identical, except as to total, which takes account
2079 of those deductions and allocations. The starred items
at the bottom show the reasons for the difference between this total and the total on 114.

There are on the next column to the right, headed "Per cent Long Lines is of total", a number of percentage figures followed by some legend in each case. For example, take the

first group, for the year 1930, central office systems and apparatus; there I have set down the words "Central office equipment." By that I mean that when I attempted to allocate the expense under this classification as between the Long Lines and the associated companies, it was my judgment that the best factor which could be taken for that allocation was the investment in central office equipment. Obviously, it had little or no connection with outside plant or with sub-station
plant, and while there is a tremendous amount of inter-
2080 relationship between the sub-items of the general classi-
fication, the whole of that classification pertains essentially to central office equipment, so I determined as the basis for prorating that first division of our expense shown on the sheet for 1930, the relative amount of central office equipment in Long Lines as compared to that in all the associated companies, including the Long Lines. It would seem to me obvious that I could not apply the same factor of total plant investment used in the other attempt to allocate in a case where so much of the plant was not involved.

I will now take up in a little detail the work shown on this exhibit.

Sub-class 101 represents the expense incurred for the development work of the Department of Development and Research in connection with local manual equipment and circuits. That is, the fundamental work, or the work previously described as that which we do in connection with advice to the associate
companies on new things or on the acquisition of new
2081 knowledge, where it relates to the local plant. The Long
Lines Department of the American Telephone and Telegraph Company does not furnish any of that service which I have referred to, and does not own or operate any plant of that character.

The next item, manual apparatus, has to do with our expense in the Department of Development and Research of the same general character as relates to apparatus which is used in connection with manually operated switchboards. The Long Lines use, own or operate some of that class of apparatus, because that kind of apparatus is used in all kinds

of manually operated switchboards. It is to a very small extent as compared with the local companies, however, because switching, which is a major problem with the associate companies, is a relatively minor problem with the Long Lines; that is, switching is the work done in connection
2082 with the handling of calls, and, as I have already stated,
the local companies in their local work alone handle several hundred times as many calls as the total calls of the Long Lines.

The next item, panel equipment and circuits, 103, relates to the same general character of work in the field of panel machine switching equipment and circuits. The Long Lines does not own, operate or use any panel equipment whatever. The next item, 104, is panel apparatus. It corresponds to 102, and relates to the apparatus side of panel machine switching. Of course, it correlates with the item 103. The Long Lines does not own, operate or use in any way any of that class of apparatus.

The next item, 105, is the corresponding expense for the same purposes in connection with step-by-step machine switching, which is used by the local companies, and
2083 none is used by the Long Lines, that I know of. The
same is true of 106 and 107.

108, toll equipment and circuits, applies to the same general character of work previously described and covers all toll equipment and circuits for both Long Lines and the associate companies, and both long and short toll circuits. The amount of that equipment in the local companies is many times the amount in the Long Lines.

The next item is P. B. X. equipment and circuits, which occur solely in the plants of the associate companies.

The next item, power equipment, is of the same general character, and relates to the problems of power supply
2084 in exchanges and elsewhere in the telephone plant. That
is used by both the Long Lines and the associate companies, but relatively, of course, a great deal more is used by the associate companies than by the Long Lines. The associate companies' power equipment problem, because of the

vaster size of their unit, is, on the whole, a more exacting and larger requirement.

The next item, testing and maintenance equipment and apparatus, applies everywhere where central office equipment is used.

The next item, engineering on equipment orders, is just an insignificant thing; I do not know just what that is. Fundamental studies (A. T. & T. Co. only) are just what the name implies; they are fundamental considerations concerned with any of the problems of switching.

The next item, miscellaneous, covers, as I remember it, the odds and ends of things which cannot be easily differentiated between, but which all come under the problem of the classification of central office systems and apparatus. I think under this fundamental studies item are such things as the
2085 mathematical studies which are involved in probability
studies, which have to be made in order to determine how many pieces of equipment and how many trunks have to be put in in order that not more than a given number of lines will be found busy; and things of that kind.

After fundamental studies, there appears on this sheet, in brackets, "A. T. & T. Company only". That means that that was expense incurred only within the American Telephone and Telegraph Company, and while the classification might appear on the uniform classification in the Laboratories, there was no billing from the Laboratories. That designation has been there, I think, for a considerable time, and it is barely possible that some slight billings may be found in recent years from the Laboratories under that, but originally it was a classification appearing in which the expense was incurred only in the American Telephone and Telegraph Company Department of Development and Research. That is true with regard to all the items on these sheets where the same legend appears.

In view of all that I have said here, I lumped together all of the expenses of that class (central office systems and apparatus) and applied to it the percentage of central office
2086 equipment of the Long Lines as compared to the total

in the System. I think that procedure gives a fair and reasonable allocation of that work, although my feeling is that, if anything, it allocates somewhat too much of this cost against the Long Lines. I do not think that I have allocated any other items on these sheets on the same basis as central office equipment.

The next classification on the sheet is sub-station equipment. I have allocated that wholly to the account of the associate companies, because the Long Lines has no plant of that kind.

The next classification, No. 3, is outside plant. Since
2087 outside plant involves work connected with the line portion of the Telephone Company's plant, I have allocated it on the basis of the relative investments in exchange and toll line plant.

For the next item, transmitters, receivers and induction coils, I have allocated nothing to the benefit of the Long Lines, because they have no transmitters and receivers and only an insignificant investment in induction coils.

Skipping down to classification No. 8, other communication systems and apparatus; that relates to things which are not primarily telephony or telegraphy, as used by the units of the Bell System. It is indicated fairly there by the subclassifications. In an attempt to apportion that between the several units, since it is the type of thing which may appear anywhere, and since it has to do with the electrical
2088 transmission portion of the plant and does not apply to land or buildings, it seemed that the fairest thing to do was to take the ratio of plant investment less the investment in land and buildings, and that is what I have done. The last item on the first sheet of 1930 is lead covered cable. That follows the same rule as classification 3, outside plant, and for the same reason. That is, outside plant appears both in the plant of the Long Lines and of the associate companies, and I have apportioned it on the basis of the relative outside plants of those companies.

The next item, item 10, is submarine cable. That is a very general classification. Much of the expense incurred has not found any considerable application in plant anywhere. It is difficult to know where it is going to occur, but it seems clear, as far as one can see ahead, that the benefits are generally applicable, so that the only way I know of dividing that is to take the ratio of plant in service.

2089 Classification 11, materials and processes, relates to all sorts of things which apply to the parts of the plant, less land and buildings, everywhere; studies having to do with the paint finishes and matters which are of general concern in the electrical portion of the Telephone Company's plant are involved, so I have allocated that on the ratio of plant in service, less land and buildings.

The same thing with regard to 12, fundamental studies applying to communication; they are of general application and affect, or may affect, all parts of the electrical portion of the plant. That is comparatively small for the year 1930 after the deduction of the items that I have referred to and that are starred at the bottom of the page. It is small in 1930, but it is large in the next year apparently. The
2090 titles of the sub-classifications give a fair picture of where a considerable amount of our expense has been incurred. The telephone quality studies are fundamental studies designed not only to find out why deficiencies in telephone quality now exist, but how to build plant in the future which will have better quality characteristics; to get the basic knowledge of speech and hearing and transmission which will give for higher quality. The transmission theory classification has to do largely with mathematical considerations of the transmission of high frequency current and complex high frequency current over all kinds of structures; it affects all parts of the plant. There are numerous relatively small fundamental studies which come under the classification general here, but are not classified by separate divisions.

I have not allocated the next item, patent, because, as I have testified, that is transferred and I have excluded it.

2091 The next item, No. 15, is rate case testimony. I have allocated that entirely to the associated companies; the Long Lines have had no rate cases, or at least none in which we have participated in any way. This study is merely for the purpose of attempting to allocate the value of this expense of ours among the beneficiaries, and no billing of this kind has been made.

May 10, 1932.

2093 The next classification, No. 16, is interference prevention and protection. The work carried on under that classification is largely as indicated in the sub-classifications, and principally under sub-classifications .02, .03 and .05, which have to do with fundamental studies looking to the development of methods for protecting telephone plant against the deleterious effects of inductive interference disturbances from neighboring power or railway circuits, or protecting them against the deleterious effects of electrolytic damage in the case of underground cables, from stray currents which flow off from them. It involves, principally, studies in the field and studies in co-operation with the utilities which produce this interfering current, to the end that ways and means may be found for eliminating or reducing the deleterious effects. In addition to that, there is a considerable amount of work which is done and charged under sub-classification .01, which
2094 has to do with the negotiations side of this co-operative work, looking to the standardization of rules for joint use, and for the proper construction of plant, both in our telephone business and the plants of the interfering companies. For the apportionment of that work, I have selected the basis of exchange and toll line investment, because, in the main, that work is all applicable to that part of our telephone business. The next item, No. 17, is miscellaneous. That has to do with a large amount of miscellaneous fundamental work connected with all phases of the physical plant used in the giving of telephone and telegraph service but of such a character either that the individual items are relatively small in amount or of a character which involves work under a
2095 number of other classifications, and they are consequently lumped together under this miscellaneous item. I have dealt with that as allocable on the basis of relative investments of all plant in service, less land and buildings.

The next item, No. 19, is engineering services. I have not allocated those expenses, because they have been passed on to some other department.

The expenditures for all other years were treated by me
in the same manner for all of those years as they were treated
in 1930, about which I have been specifically testifying, and,
in detail, were treated specifically the same for classifi-
2096 cation subsequent to 1926, when the expenses, of course,
were kept in the form of the sheet at which we have just
been looking. That includes the year 1926 and subsequent
years. Throughout that period, I have applied the same basis
of allocation to each of the divisions of work shown on the
sheets of Exhibit A-114 as I have already testified.

As the charts show, the general classification and the sub-
classifications for the years 1923 to 1925, both inclusive, are
somewhat different in designation and somewhat different in
arrangement, although the character of all of the work done
is the same throughout. Specifically, take the thing
2097 which appears as classification 1 in the later years; in
the first three years that appears as three main classifi-
cations: local central office equipment, toll central office equip-
ment, and private branch exchanges. Those are the three
classifications on the sheets for the years 1923 to 1925, inclu-
sive, and all three of those classifications are lumped together
and appear under classification 1 on the sheets for 1926 to
1931, inclusive. By taking those three classifications together,
you get the same class of work that I have dealt with in
describing my pro rate of the first subdivision in the year
1930, and I have applied the same basis of pro rate as was
indicated to those three classifications.

The next classification of the first three years, sub-station
equipment, is divided and appears in the later years as two
classifications, 2 and 4, sub-station equipment, and transmit-
ters, receivers and induction coils. I have applied the same
basis of allocation for this consolidated classification of
2098 the earlier years. The classifications for the first three
years are such that I have been able to proceed in the
same manner and pro rate the same class of work on the same

basis which I used in subsequent years, and the figures that are set down in the columns on these sheets show the same pro rate in effect.

In those columns where there are set forth bases such as I have mentioned, like outside plant, toll and exchange lines, and things of that kind, there are percentage figures in connection with them. I did not develop those percentage figures. I got them from Mr. Crunden; from the exhibits that he put in yesterday. In classifications 5, 6 and 7, I applied one percentage to these three classes combined, and did not
2099 treat them separately. I proceeded this way because from the nature and character of the work under those classifications, I was not able to develop any individual classifications of allocation for them, or if I had segregated them, they would have all had the same classification as I have shown for the consolidated. The reason for that is that in these classifications (these three classifications, more than in most of the other classifications), the character of the work is peculiarly fundamental, and is farther in advance of current application than it is in most of the other classifications, and consequently, it is not only extremely difficult to find any current yardstick by which to measure a future use, but it is the fact that a large part of the work which is done under these classifications finds it application, or may find its application in practically all of the other classifications. So I have treated these three as a combined classification in this attempt to allocate, although the detailed story with regard to each of these classifications varies a little bit, but, in general, the net result is the same, namely, that they are all classes of general application of fundamental research and development work.

2100 "Q. Well now, with respect to all the classifications on the 1930 sheets, except 5, 6 and 7, have you made your allocations substantially on the basis of the use of the effects of your work in the year in question?

"Mr. Haight: That is objected to, a general conclusion of that sort, and incidentally, it does not correspond at all with the general facts put forth as specific facts by the witness.

"Why a conclusion of that sort should go into the record, I do not know.

"There is no foundation at all, also, for putting the word 'use' in there, not the slightest.

"Judge Wilkerson: I suppose it calls for the conclusion of the witness, to tell how he—

"Mr. Blackman: He is an expert, sir. It is not a conclusion. I think perhaps the question may be somewhat
2101 objectionable on the ground that it is leading.

"Judge Wilkerson: Yes.

"Mr. Blackman: But that objection has not yet been made.

"Judge Wilkerson: Let the witness go ahead and tell how he made that up.

"Mr. Haight: The fact that it is leading—we do not object to it on that account, but incidentally, also, what is the meaning of the phrase 'use of the effects'?

"Judge Wilkerson: Well, explain that phrase, and then answer the question."

The basis of the allocation in all of these cases is as indicated on the sheets. It is plant in service less land and buildings, or plant, or what-not, which seemed to me the best basis, as regards these separate classifications, for an allocation. Much of the work in all of the classifications has, in its very nature, no present application, and consequently, since I am not clairvoyant as to the exact places in which this will appear in the future, I have been forced to take the best current application which is available to me under that general basis, which are the ratios as they exist in the plant of today.
2102 They are ratios of investment in these several plant items as between the Long Lines and the associate companies; it seems to me, on the assumption that in the years ahead, when much of this work will find its place in the plant of the Bell System, the general ratios will not change very much, that is a fair allocation. Certainly the fairest one that I can make, because I have no ratios of future conditions.

"Q. Well, taking the year 1923, say, in your opinion do the allocations there allocate your expense on the basis of the use that was then being made in the various plants in the Bell System, of that work—

"Mr. Haight: I object to the question.

"Mr. Blackman (continuing):—or developments generally?

"Mr. Haight: The question obviously is right in the teeth of the last answer of the witness.

"Judge Wilkerson: Well, let him tell it.

"Mr. Blackman: That is not leading, sir.

"Judge Wilkerson: Let him state it in his own way.

2103 "Mr. Haight: I have no objection to that.

"Judge Wilkerson: State in your own way how you made it up, now.

"The Witness: Well—

"Judge Wilkerson: He has directed your attention to the subject. Now state it in your own way.

"Mr. Haight: The witness says, 'There is no use; consequently, I have to make a guess', and thereupon counsel says, 'Tell us the allocation made on the basis of use.'

"Mr. Blackman: That is about as—

"Mr. Haight: If that is logic, I do not understand it.

"Mr. Blackman: You do not understand it at all; that is the difficulty.

"Mr. Haight: Of course, I do not.

"Judge Wilkerson: He says he makes the allocation on the basis of the condition as he finds it now in the plant, does he not?

"Mr. Blackman: Yes, that is it.

"Judge Wilkerson: And in that sense you do not mean, on the basis of the use, present use of the things which you are allocating.

"Mr. Haight: That is it.

"Mr. Blackman: That is what I wanted the witness—

2104 "Mr. Haight (continuing): Of course, he cannot mean that.

"Mr. Blackman: Let me put it this way; I will put another question.

"Q. Doctor, when you say—

"Judge Wilkerson: You say, they are not in use now.

"Mr. Blackman: Your Honor, most of this stuff is used now, but he said he could not look into the future as to this and determine the relative future use.

"Judge Wilkerson: Now is there a serious difference here?

"Mr. Goldstein: It makes a difference in the whole thing.

"Judge Wilkerson: Maybe you had better give them the difference, rather than spend the time on it. I do not know. I think I understand what you mean, and I understand the basis of Mr. Haight's objection. After all, it comes down to some disagreement as to the meaning of words.

"Mr. Blackman: Yes. Well, I would like to have that clear.

"Judge Wilkerson: Apparently Mr. Haight thinks you have used the word 'use' in a double sense; is that it?

"Mr. Haight: In part.

"Judge Wilkerson: That is, you have used it in one
2105 way in your question, and the witness has used it another
way in his answer.

"Mr. Blackman: Well, sir—

"Judge Wilkerson: That seems to be the difficulty.

"Mr. Blackman: We can clear that up.

"Judge Wilkerson: Yes, clear that up.

"Mr. Blackman: Q. When you said, Doctor, that you have based your allocations for each year on the conditions as you found them in that year, what did you mean by that?"

I think just what I stated in the explanation just preceding. Now, it is probably true for the 10 years back that if one could make the very formidable analysis which would be required of the expenditures which were made in the year 1923, they might have developed a slightly different application from what we foresaw for them in 1923. But, in my judgment, in looking over these figures, the basis of allocation is substantially correct for all of the years, based on the condi-
tions of relative plant investments in those years, that
2106 is, the plant investments of the Long Lines and the asso-
ciate companies in telephone and telegraph plant of the various classes indicated in this allocation.

Taking this specific class, the central office equipment, I
have allocated that in the year 1930 and in the year 1923 on
basis of the relative plant investments of the Long Lines and
associate companies in that class of plant. I have allocated
the work shown in that period on the basis of the relative
amount of plant of the kind stated opposite our expenditures
as they existed in that year in the relative plant. I did this
because it seemed to me that since this work in each of
2107 these years, and at all times, is work of very general
application which finds its field of use, or may find its
field of use almost anywhere in the plant, this method of
allocation is the fairest if you attempt to try and divide our
fundamental research and development work by these separate
classifications. I have already indicated that I think the
best method of allocation is the method which I originally
used, of dividing the total net expense for each year against
the total plant in-service ratios.

Among the three classes that I have mentioned last, that
is, 5, 6 and 7, radio appears. In the period 1910 to 1931,
inclusive, that is 22 years, the total charge for work in this
classification of the Department of Development and Research
(that is, radio and related subjects) has been approximately
$11,500,000; and for the period of these charts, 1923 to 1931,
inclusive, it has been approximately $9,600,000. In other
words, the larger proportion of our total expenditures
2108 over the past 22 years has been in the period 1923 to
1931, inclusive. During that period the expenditures
represented by this classification were, to my recollection, less
than one-fifth of our total development and research expenses.
On the basis on which I arrived at the $1.89 figure yesterday
of the average expenditure over the period as applied to the
average investment in plant during that same period per
thousand dollars of plant, this would amount to a little less
than one-fifth of the $1.89, so that it would be about 36 cents.
The average expenditure over that period would then be
about 36 cents per thousand dollars of average total plant
investment.

Radio is now used in the Bell System to a very limited

extent. Practically the entire use of radio in the Bell
2109 System is in the trans-oceanic and ship-to-shore services, which are furnished by the Long Lines Department. There is a small incidental use, possibly a growing use of it, in the plants of the associated companies, three or four of which have in recent years established radio ship-to-shore for harbor craft, installations to give telephone service to ships in the neighborhood of harbors.

The Long Lines division has never run its various radio services at other than a loss, and they are now being run at a loss; so far as I can see, all of these services are destined to be run at a substantial loss for a considerable period of time ahead. Each individual one of the services has been run at a loss continuously up to the present time.

2110 As of January 1, 1932, the Long Lines' investment in radio plant, not including its investment in any wire connecting lines, but purely its investment in the radio plants themselves, was approximately $5,000,000. At that time, January, 1932, the rate of loss which the Long Lines division was incurring in connection with those services was approximately $600,000 per year. At the present time, because of increased investment in the extension of these plants and decreased business over them, I assume that that figure would be found to be considerably higher. However, it is at least $600,000 per year. In figuring the loss which I have referred to, no return on investment was included.

These services were begun, continued and extended
2111 because it was felt that this type of service, which extended the facilities for telephonic communication to include connection to telephone systems in other continents or to telephone stations on ships, was of advantage to the associate companies and their subscribers.

The radio services that I have referred to do not, in my opinion, measure the advantages which have come from our expenditures in connection with research work in the field of radio.

Our first investigations in the field of radio commenced in a small way very shortly after the Marconi experiments of the

late '90s developed the fact that radio, that is space conduction of electrical energy, had the possibility of giving distance communication, telegraphic communication, without the use of inter-connecting wires. Those experiments opened up an entirely new field of possible development of electrical communication. However, our interest was not very large in those very early years, because the art was very new, and very crude, and seemed very distant from any of our
2112 immediate problems. As a matter of fact, we did not begin to do anything very substantial in the way of research and development for 10 or 12 years after the Marconi experiments, because of this condition to which I have just referred.

But when the radio art, itself, still wholly in the telegraphic field, had developed the instrumentalities, or the beginnings of instrumentalities, which indicated the possibility of telephony carried on by those means, it became a very important matter for us, because, it being an entirely new kind of transmission from any which had heretofore been used and being in a field in which very little was known and for which very much was claimed, it was of the utmost importance to know not only all that could be known about it and its possibilities, but for ourselves to be in a position to make use of that knowledge, if, as and when the art developed to a point where it was a practical thing. Very great claims were made at that time, and have been made since, and are still being made for the influence which this art is likely to have in connection with the whole field of telephone and telegraph com-
2113 munication. The nature of these claims, their widespread character, and the fact that the radio art had possibilities, and a very great uncertainty as to what its future might or might not be if the claims made for it were substantiated, as a result of further research and development work, it obviously would have a wide bearing on the business of any organizations in the field of telephony or telegraphy.

Further than that, it was perfectly clear that since it was a new art, involving the same general kinds of considerations

that underlie all electrical transmission for telephony or telegraphy, there was grave danger that research and
2114 development work would produce patentable inventions of such broad scope as to be controlling in all fields of electrical communication. There was, therefore, every reason for us to be at all times in the fore front of knowledge concerning the possibilities and limitations which inhered in this new field. And in connection with the matter of patents which might arise out of the radio work, but which would have a broad application in the field of all communication, it was equally clear that if such patents did develop in the hands of outside interests, they might very seriously jeopardize the business of all of the Bell System, including all of its associate companies, because from the very nature of the patent property, the rights under those patents or to use those patents might not be obtainable for any monetary payment. In matters of this kind where rights under fundamental or controlling patents are desired, in most cases the best way in which to acquire those rights is for the party seeking to acquire them to be himself in a strong technical and patent position, because by that process he may be in a position to have a trading situation under patents which forces the availability of the rights he wants.

2115 In the very early years of the period which I have referred to, say from 1910 or along about 1910, we had no general information that any other large companies were actively engaged in prosecuting research work in the field of radio. But we did know that substantial companies and very able people all over the world were operating to develop this new art, and out of that work which was, of course, very early in the stage of the development of this art, very controlling patents might arise. A little bit later we had knowledge that some of the large electrical oganizations, not only in this country but abroad, and in this country particularly, were actually engaged in the development of that art, or portions of that art. And in pursuance of our desire to protect, and not only protect the existing property of the operating companies, but, likewise, to put them in a position to make use of anything which grew out of this art, we embarked early on a large program of research and development, as early in the development of the radio art as it became clear that there was some possibility of its use in the field of telephony.

2116 The business of the associate companies is the business of giving telephone and telegraph communication service; it is not the business of dealing with a particular way of doing that sort of thing. What we had feared might happen did actually happen, and we found ourselves about 1919 or 1920 in the position where not only the growth of the telephone business of the associate companies, but possibly its very existence, was tied up in the patent property of outside interests.

As a matter of fact, when that situation developed (and it developed at a time when we ourselves had a very strong patent position), it was actually found to be impossible to secure these controlling rights for a sum of money which was far greater than all that we had ever spent on radio development; but because we had ourselves a strong patent and technical position which controlled some of the things which the owners of these outside patents needed in their business, we were able to obtain the rights which were required for the development of the telephone business of the associated companies and the Long Lines without the payment of money.

My recollection is that these arrangements were
2117 effected by two cross license contracts, the first of which
I think was about 1920, and the second about 1924. This cross licensing involved among others the General Electric, the Westinghouse Electric & Manufacturing Company, the Radio Corporation, and the United Fruit Company, which at that time had in connection with its shipping business developed a very substantial position in the radio field.

Broadly, what we got under that agreement were complete licenses in the field of the business of the associate companies and the Long Lines as the givers of telephone and telegraph service, to utilize all of the existing and prospective patents of this group. When I speak of prospective patents, I mean any patents that they might thereafter develop, during the term of these cross license agreements.

2118 To get that we gave up rights under our existing and prospective patents in fields other than the telephone and telegraph communication business, and we gave up substantially all rights with regard to certain kinds of telephone transmission; notably, substantially all of the rights with regard to one way reception, such as is employed in news, music and entertainment broadcast distribution, and rights in the giving of two-way radio telegraph service for public use. Those rights which we gave up were of very great value.

Since we made those arrangements and obtained full opportunity for our Company to operate its telephone business under all these patents, we have continued to spend money on the investigation of the radio field. We have done this for identically the same reason, among other things, that had impelled us before that time, because while we had safeguarded the situation as regards this particular group, there was an increasing development going on, not only here, but abroad, in this field of radio, among groups and individ-
2119 uals who were not involved in these cross license agreements. While the radio art had developed very considerably since the Marconi days, it was still and is still a new art, and there are still possibilities of very substantial controlling inventions possible of being made, and we felt and feel that we must continue to do this kind of work in large measure as long as that condition exists, in order to insure the safety of the business of the associate companies and the Long Lines, to permit them to develop their business with the freedom to use whatever instrumentalities and whatever methods are most desirable at any given time.

There are other or additional reasons for the continuation of this work. Some of these are: among other things, our work in this field, in the field of this classification to which you are referring, and in the two adjoining classifications, 5 and 7, has indicated that many of the instrumentalities which first appeared and were worked on because they had a relation to radio, are things which have a broad application in all

communication development work, either directly or
2120 incidentally. Also many of the techniques which were
developed in connection with radio development, and in
the development of the arts of these other two classifications,
have application entirely outside of the field of their original
use.

The first important or fundamental objections that were considered as making radio not usable in the telephone field were:

Going back to the very early days, the years immediately following Marconi's work, when the whole radio telegraph art was essentially what is termed the spark transmission type, the very type of radio in those years was such as to preclude its use as a vehicle for telephone communication. At a somewhat later time, and particularly after the coming into the art of the vacuum tube, when it became possible to develop high frequency currents of uniform characteristics which could be modulated and amplified, and when radio telephony appeared, or the beginnings of radio telephony appeared as a possibility, there were still some very inherent obstacles to any considerable use of radio as a means of telephony.

Among those was the fact, first, that at that time practically
all of the energy which was radiated from the trans-
2121 mitting antennae spread out in all directions, with the
result that only a very small fraction of the energy
could be directed toward the point where you wanted to receive it. In other words, large powers for insignificant results were involved. That was particularly true because at that time the art was one involving relatively long wave lengths, and the only way that you could conceivably direct that energy was with enormous structures.

Likewise, at that time, because these wave lengths were long, the number of channels which might be available for this service were very limited in extent, and indicated that if the art never went any further than that, in the very nature of things, there could only be a very small usage.

Also the element of secrecy or privacy was absent. The radio transmission was essentially non-secret. The very fact which makes radio broadcasting what it is was a deterrent to the use of radio in the field of ordinary telephone service. Likewise the radio transmission in this particular range of frequencies is very subject to interference from natural causes, static disturbances, which would tend to make a circuit, any telephone circuit, a very uncertain and very 2122 undesirable kind of circuit. That static interruption characteristic is still present in that range, but has been minimized in recent years somewhat by the increased knowledge which we have of the directional situation, of the possibility of building directional receiving antennae so that we have reduced the amount of static interference by eliminating substantially the interference which comes from all except one direction.

The inventions of De Forest removed some of the fundamental and seemingly insurmountable obstacles to the use of radio in the telephone art. Since De Forest's invention of the so-called vacuum tube, or audion, which completely revolutionized the whole art of radio, very substantial progress has been made, not only by us but by others, in overcoming the objections of lack of secrecy, lack of directional control, or lack of power to direct the waves and interference by static.

We have taken a very major part in that development, 2123 and that development, in general, has been in these directions: the spectrum, the frequency spectrum of the days preceding De Forest's work, the one to which I refer, which limited the number of possible channels to a few in the longer wave lengths, has been very much broadened in the direction of making very much shorter waves utilizable.

Those short waves are in actual commercial use at the present time by the Bell System in our services to Europe and elsewhere.

Now, there has also been, of course, an enormous development in the perfection and cheapening of the instrumentalities which are used in connection with radio, either for the production of the signals or their reception. And, in connection with those transmitting and receiving instrumentalities, we have learned a great deal about how to direct the energy generally in the direction in which we want it to go, and to pick it up.

The effect of very materially shortening the wave length, or conversely, increasing the frequency, has been to make possible very much smaller transmitting and receiving
2124 station structures. In the art of the earlier period to which I have referred, the wave lengths which were used were thousands of meters or thousands of feet long. The wave lengths of the art to which I have just referred as being in use in the Bell plant largely are on the order of a few feet, and because they are very much shorter, the structures which you use in connection with your transmitting or receiving antennae are relatively small things, and are capable of radiating the energy substantially in the direction in which you want it to go rather than having it broadcast all over the 360 degrees.

Also the static effects which were so objectionable in the longer wave lengths area, and which are the things which we commonly witness in our radio receiving sets, are substantially absent in those things. Another kind of static trouble, or another kind of atmospheric trouble is there, but that kind of trouble does not exist elsewhere.

The thing that I have referred to here as the ability to more or less direct the energy in the direction in which you want it to go, with relatively small structures, is a commonly known problem of any wave transmission in geometrical optics;
2125 it is simply the statement that the shorter the wave length which you employ, the smaller the structure can be, to get a definite kind of result, to get a beamlike transmission. Every pushing down of the length of the waves which you can employ, or what is the same thing, the broadening of the spectrum at the shorter wave length end, tends to do two things. First, it tends to increase very materially the number of channels which are prospectively available; and second, it tends to cheapen the type and increase the efficiency of the transmitting and receiving apparatus. It affects the power

to direct the course of the waves of sound in the direction in which you wish them to go.

We have progressed in actual experimentation beyond the point of the short wave lengths as I have already described them. The wave lengths which are employed in the various so called short wave channels, which are employed in
2126 the transatlantic, South American, Hawaiian and other
transoceanic service furnished through the Long Lines, are approximately 15 meters, or 12 to 15 meters long; that is to say, three times that number of feet. Experimentally we have been able to carry the spectrum down so that the wave lengths are only a foot or two long, and to produce the necessary kind of apparatus for the generation and modulation of that kind of waves, and to detect and demodulate and make use of those waves as they are received. In other words, we have gone down to a fraction of even the short wave lengths which are now employed in the giving of long distance radio telephone service, and to a very small fraction of the wave lengths which were employed in the earlier art.

With respect to the short wave lengths which we use in our transoceanic service, we are able to so deal with them to a considerable extent so that the conversations will not be understood by persons who intercept. Radio in its very nature is not secret, because any element of secrecy or privacy which exists is inherent in the receiving equipment, and if the energy can get into one receiving equipment and be understood, it can equally be understood if it gets into
2127 another receiving equipment. The most you can hope
for, therefore, in connection with radio is privacy against a casual observer. But it is possible to provide a high degree of privacy in such services as the transatlantic service by so altering the form of radio transmitted energy that it is in space no longer intelligible, but it is made intelligible by the proper equipment at the receiving end. That means that even if the message is picked up by a person with apparatus capable of picking up these short wave lengths, but not provided with this special decodifying equipment, it is not understandable. So, in general, what we have is a system which is

private to all intents and purposes, but is not secret against the malicious tapper of the service. The term which is commonly applied to this is that we "scramble" the speech at the transmitting end and "unscramble" it at the receiving end. With this ability to make speech private, and with these ultra short wave lengths which I have talked of, there is, in my opinion, a prospective use of radio, without the use of any
2128 wires, in the plants of the Bell System. We are not actually employing those ultra short wave lengths in wholly commercial communication at the present time, but we are in actual experimental communication. I do not know all of the points where the experimental work has been carried on, but there is an actual installation between New York and Newark, a distance of eight or ten miles. We carry on conversations without the use of wires over this apparatus and with the use of the short wave lengths.

Because these wave lengths are so short, on the order
2129 of a foot or two in length, with even very small structures, we are able to direct the energy within an angle which is only a fraction of the angle of directivity of the wave lengths, we will say, of 12 or 15 meters.

We have found means to deal with radio communication, or communication in the nature of radio, and further direct it and confine it so that it reaches only the source we
2130 wish it to reach. We have been able to develop a form of cable structure in which the effect is that of having segregated out a small portion of the ether and localized it for use between any two predetermined points, without risk of the signals employed on it being radiated into space, or without the converse danger of signals in other parts of the ether being radiated into it and interfering with the messages. In other words, it is a form of localized private ether, if you like. That structure consists essentially of a pipe with a minimum amount of material inside of it, and with a conductor centrally located in the center of the pipe. By "conductor", I mean a copper wire or a small copper tube. So that the part of the ether with which you are dealing is merely

that ether which is enclosed in the pipe and between the inner surface of the pipe and the circumference of the central wire. We have not that apparatus in actual use anywhere. We have made various experimental installations of that type of structure, and know how to employ it. There are no
2131 technical obstacles to its use at the present time. The
obstacles are the normal, practical obstacles which inhere in any new development, of finding the ways and means of creating the structure that you want in the most economical and efficient fashion and at the lowest cost, and in developing the most efficient and most economical types of terminal equipment, or an intermediate amplifying device to make use of this band of ether transmission which the pipe structure gives you.

Assuming a pipe two inches in diameter, of the kind that I have referred to, would have roughly a capacity for transmitting a band of frequencies, as I remember it, about five million cycles wide. Not quite all of that band is utilizable. The lower end of it might not be quite utilizable. Certainly a band four million frequencies wide would be entirely utilizable for telephone or telegraph channels. And, if you
2132 take the width of the ordinary telephone channel as
about twenty-five hundred or three thousand frequency wide and make allowance for the fact that you cannot bring these channels absolutely together, have to make some allowance, you have certainly the possibility in a pipe of that size of getting at least a thousand independent normal telephone speech channels at the same time and without interference with each other.

I said a thousand telephone channels. In the present state of the art, to utilize those for two-way speech, you would have to divide that in two, you have the possibility of getting 500 ordinary two-way non-interfering speech channels through that; at least that number. That, too, would be utilizable for telegraphic communication as well as telephonic. If you
2133 used the thing exclusively for telegraphic purposes, you
would get some twenty-five or thirty times as many telegraph channels as you have telephone channels, so you would

get somewhere from twelve thousand to fifteen or twenty thousand through it at the same time without interference. It could be used quite easily partly for telephone conversation and partly for telegraphic conversation at the same time. It could be used for still other purposes in addition to telephonic and telegraphic, such as the transmission of music. It could be used for the transmission of television.

Not all of those uses are capable of being applied to the same telephone circuits. Some of them are. The telegraph to which I referred is possible over telephone circuits 2134 of the ordinary character, which are employed in the giving of two-way telephony. The transmission of high quality music, or high quality speech, such as is employed over wire circuits connected with radio broadcasting stations is not possible over the ordinary circuits employed in two-way telephony, except where they are very short. They require a special kind of circuit. It is a telephone circuit, to be sure; but it is a special kind of circuit, which has a very much broader frequency transmission range. When you come to things like television, of course, it is quite impossible to even conceive of those kinds of currents being transmitted over ordinary telephone circuits.

Ordinary speech, which we make with our mouths and hear with our ears, involves sound waves which are complex assemblages of waves of a large number of frequencies, but they fall within a range, which, at the lower end, is 2135 measured by, we will say, a few cycles per second, a few oscillations per second, and at the upper range, in ordinary speech, by a number of thousand vibrations per second. Now, to transmit intelligible speech, whether it be in the direct transmission such as I am employing here, or over a telephone circuit, the transmitting medium must be capable of transmitting that entire band of frequencies, otherwise, you don't get intelligible speech; or you get speech which is very badly distorted. So it is a necessary requirement of all telephone circuits which are used in speech transmission that they be capable of transmitting all, or substantially all of the frequencies which are involved in the sounds which are

produced when one speaks. And they must do that without substantial distortion of any of the frequencies. That means, then, that every telephone circuit must in some way provide that kind of a channel. Now, as you increase the number of frequencies which you must transmit, as you do in the case of music where important frequencies are away above the ordinary voice range, you automatically widen out the band of frequencies, and so impose an added requirement on the transmitting medium, whether it be the air or whether it be a
2136 wire, or a radio channel, or what not. When you get to things like the so-called television, where the number of frequencies is enormously great, you have the requirement of a tremendously wide band of frequencies which must be transmitted without substantial distortion if the end result is to be what you anticipate.

We meet that added requirement of width of band for transmission of music in the telephone plant by specially engineering and equipping the circuits which are employed in the transmission of that kind of material. Those circuits are adequate for the giving of ordinary two-way telephony, they give a very high quality of that, because they have this wide frequency band characteristic. The circuits which are provided by the Long Lines and the associate companies in the transmission of program material for radio broadcasting in these networks that are set up, are all specially created high quality telephone circuits having this wide band characteristic. That is true with regard to everything except the very short pick-up circuit, where the length of wire is so short that the amount of distortion would be negligible. As an illus-
2137 tration of how different these things are from ordinary telephone circuits, the ordinary telephone circuit, whether it be a long distance, or a local circuit, will quite readily transmit a band of frequencies of twenty-five hundred or three thousand, starting at the lower range and going up. The program circuits which are provided have a band transmission characteristic of eighty-five hundred or nine thousand as the range. In other words, they are three times as good, if you like, as the ordinary telephone circuit, or put

another way, each one of those would be capable of transmitting three telephone messages at the same time.

This concentric conductor that I have spoken of is capable of being used for a great many bands of small widths such as telegraph bands or a less number of wider bands. It has complete elasticity, that is, you can chop up this spectrum of four million cycles into pieces of whatever width you desire.

It has the characteristic that you can manipulate and 2138 obtain any combination or arrangement within its inherent capacity of four million cycles, we will say, without making any alteration in the physical plant itself between the terminals, or alteration in the intermediate amplifying device; merely by making modifications in the terminal equipment. In other words, if and when we have a plant involving that type of structure, if today we want to use that for ordinary telephone speech and tomorrow we want to use it for high quality transmission, all we have to do is to change the terminal equipment at the sending and receiving ends. So far as the conductor itself is concerned, no change would be necessary at all. That, of course, is not true of the ordinary wire telephone circuit. To produce the type of broadcast transmitting circuit which I have described at the present time, modifications in the connecting wire plant have to be made both as regards the repeater amplifier units which are involved in that and in the arrangement of the wires and their accessories.

In my opinion, there is a prospective use for that new discovery in the Bell System in the near future. I think 2139 there is prospective use for it, particularly in connection with new plant, both in the fields of the Long Lines and the associate companies. Looking at a time ahead, I should say there is relatively more use in the plant of the associate companies than in the plant of the Long Lines. Of course, you will appreciate that I am having to project myself somewhat into the future, but I am doing it because of my knowledge of the inherent characteristics of this new thing which has only recently come clearly into our art, and it is of a character which makes it available for use over distances which are such that it will be a substitute for existing types of plant now employed very largely by the associate companies and also by the Long Lines.

With regard to this ultra-short wave length transmission that I referred to, there is a limitation at the present time as to the distances over which that can be used successfully; not only at the present time, but to some extent fundamentally
as to all time, as far as we can see. The limitation is
2140 simply the limitation which inheres in the fact previously
referred to that it is a short wave transmission which
can be directed. Because it is ultra-short wave it is a type of radio transmission which approaches in its transmission properties the character of light, which is a straight line transmission. The result is that the maximum distance which you can hope to go between transmitting and receiving stations is the distance that you can see the transmitting station from the receiving station without the curvature of the earth, or some large earthy mass, like a mountain, intervening. That is unlike the regular radio waves. These go in a straight line, and if they hit anything they are stopped.

I should assume that on a level prairie country, with transmitting and receiving structures of moderate height, the maximum distance possible to send these ultra-short waves at the present might be forty or fifty miles, whereas, if you had a station like might obtain in a mountainous region, or does
obtain out in the Hawaiian Islands, where you have high
2141 mountain terrain separated by the curved surface of the
ocean, it might go several hundred miles. So far as I
know, there is no limitation of distance for these ultra-short waves, assuming that you get the right amount of energy imposed by the fact that they are short waves. The limitation of distance is imposed by the physical conformation of the earth in that these waves go straight.

The field of radio, together with our kindred investigations in subdivisions 5, 6 and 7 has furnished us with useful tools in connection with our wire communication business. A few of the most important of these are:

The work which is comprised in these three divisions of

our classification to which I referred has, of course, provided us with the vacuum tube and all of its development, which found an immediate and large field of application in the wire plant as telephone amplifiers or repeaters. It has furnished us with the so-called filter circuits, which enable us to make these splitups about which we have just been talking,
2142 of a wide channel into narrower channels, that is, using the same wire for a number of different conversations.

The work in these classifications has given us the entire so-called carrier telephone and telegraph art by which we can superimpose, even on our existing wire plants, a considerable number of telephone and a larger number of telegraph messages.

Also it has given us all of the tools for modulating, amplifying and detecting high frequency currents. It has further furnished us with a tremendously valuable aggregation of tools to be used in the development of all kinds of electrical equipment and apparatus and circuits. It furnishes us such things as the photo electric cells which are at the base of television and at the base of picture transmission and at the base of a considerable number of arts. As a matter of fact, the entire structure of the research laboratory has been completely altered by the coming of the things which have grown out of the work in these classifications.

Substantially all, if not all, of the developments which
2143 created the present day vacuum tube out of the original De Forest Audion tube, which was itself not available for any of the uses to which I have referred, were the result of the research of our department. The whole of the filter art came from our department.

In connection with that, there is one other thing that has come out of this work that I just recollect, and that is the development of the crystal oscillators as a means for accurately controlling high frequency current. That art has largely come out of our work, not the original idea, but the development of that idea for the multitude of uses to which we are finding it applicable. All of our work in the preliminaries of television and the amplifying devices for public address systems came from our department. There are a tremendous host of things which have come out of our work.

The tools which I mentioned yesterday are applied in all parts of the plant.

2144 Ordinary telephony involves the transmission of the frequencies involved in ordinary speech at their regular level of frequencies over a number of wires between the transmitting and receiving stations. With the advent of the perfected vacuum tube, filters and the other things in the art of these three classifications to which I have referred, which are utilized in radio telephony, there was given into our hands a tool to make possible the transmission, over a single pair of wires, of more than a single telephone message, without interference with other messages that might be on that pair of wires. In other words, a tool to open up the possibilities of utilizing the wire plant for many messages, where before only one pair of wires had been given, and that is what we call carrier telephony. Now, that tool consisted in the production of a high frequency current, or high frequency currents, if we have more than one carrier message superimposed, which frequencies are normally above the frequency which the ear can detect; in other words, they are inaudible. Then, by suitable use of filters, vacuum tubes and the auxiliary apparatus of this art, we take ordinary speech as it comes 2145 from the subscriber's station and superimpose it on this high frequency current—modulate it, as we call it—and then put that modulated current, or, if there are more than one channel, as is the case in most of this carrier work, put these modulated currents together with the original speech on the pair of wires, and send the whole conglomeration down the wire to the distant end, where the ordinary speech goes, just as ordinary telephony does, to the desired party, and the carrier speeches have these carrier currents taken out of them, and they are then reduced to ordinary speech such as they started with, and they are delivered to the separate subscribers.

The same principle is applied in carrier current telegraphy, except in that case the number of non-interfering messages is

usually much greater than in telephony. This is so for the reasons that I have described in connection with the concentric, that is, inherently narrower bands of frequency are required for telegraphy. These carrier methods are
2146 very largely in actual commercial use in the plants of the Bell System companies and in that of the Illinois Bell.

The first commercial use of carrier current was made at about the time of our entry into the war, on a circuit between Washington and Pittsburgh, a distance of about 400 miles. We had had experimental applications before, but that was the first commercial application.

This method of carrier telephony resulted substantially altogether from our investigations in the field of radio and of the two subdivisions 5 and 7 on my sheets.

Before we could have a successful carrier transmission, we had to have some of those specific tools of which I spoke as coming from our radio studies, principally the vacuum tube in all of its forms and for all of its uses, and filters. There are, of course, a considerable number of auxiliary things
2147 which have come from these arts, but those two are the principal things which made carrier telephony and telegraphy possible.

The filter is an arrangement of electrical wires and other pieces of electrical apparatus in the form of a circuit, which has the characteristic of transmitting only certain desired frequencies or ranges of frequencies, and of refusing to transmit all other frequencies. For example, it can be made so as to transmit with substantially 100 per cent efficiency all frequencies from zero up to some predetermined limit, and reject all other frequencies; or, conversely, it can be made to refuse all frequencies up to some point, and transmit all others, or it can be made to refuse all frequencies up to some point, and reject all others above a higher point, and transmit the band in between; or it can do the reverse of that. In other words, it is a device which grew out of our studies in these arts, which gave us what you might call the gates by which we could let things into a pair of wires, or take things out of a pair of wires without fear that other things which were on that pair of wires would produce interference.

2148 One of the uses of the filter is the separating of the various currents that are on the wires so that each message will go to the person for whom it is intended. At the other end of the circuit, it is the means by which those messages are assembled on the wires. This was invented by Mr. George A. Campbell of the Department of Development and Research. It was invented primarily as a radio device, but it has found its greatest application in the field of wire telephony and telegraphy.

The experience with the circuit between Washington and Pittsburgh in 1918 to which I referred a moment ago indicated clearly the practicability of this type of telephone transmission, by which the wire plant could be made to carry
2149 many simultaneous non interfering messages. The work in the further development was vigorously pursued, not only to extend the number of circuits over which this method could be applied, but also to reduce the cost and complexity of the apparatus required and the maintenance charges.

2150 A number of succeeding types of carrier systems followed in the years succeeding 1918. By 1923, I think, we had reached the stage of about a third of these developments of modified large forms of carrier. My recollection is that the first of the so-called type C carrier systems was installed in 1924, which means that it must have been developed along in 1923. Up to that time, this carrier telephony had been used substantially entirely on the longer toll lines of the Bell System, which meant the lines of the Long Lines Department and the longer toll lines of the associate companies. If the art had stood still as of that date, and we had made no further developments but had had available the art as
2151 of that date, it would have had a large usability in the plants of the Long Lines and the associate companies in the longer open wire circuits.

Since 1923, our work in connection with this subject has been mainly directed to the end of extending the range of applicability of this method of transmission, not only by improvements in its inherent characteristics, but also through the improvements which increase the efficiency and decrease the first cost and operational cost of the equipment.

In connection with the development of this carrier method, there have been different types of systems developed. The original type, that is the 1918 type, to which I have referred, was called type A, and the subsequent ones have been lettered alphabetically. Type A continued in use for only a limited time, and type B came in rather shortly after the installation of the first type A. That installation was quite efficient,
2152 but it was a rather expensive type of installation, and very shortly a multi-channel type with much improved apparatus (the type B) came into existence. Both types A and B were developed before 1923. We have gone two steps further down the alphabet.

As I have indicated, type C, as I remember it, was developed about 1923; I think the first installation was in 1924. Type C is still in general use. Type D has been developed since, and is in general use.

At the end of 1930, there were about 450 installations of type C in general service. About two-thirds of these installations were in the plant of the associate companies and
2153 about one-third in the plant of the Long Lines. By that time, types A and B had substantially gone out of use. I don't know exactly when the last of them went out; it may be that there are one or two somewhere still operating.

By the end of 1930, there were approximately 600 installations of type D in service. Of these, all but 4 were in the plants of the associate companies. I don't remember exactly when the D type was first introduced, but it was some time considerably subsequent to 1924. My recollection is that it was about 1927. It was a few years prior to 1930. The growth of that system has been extremely rapid in the plants of the associate companies because of its great availability for their type of plant and service. In recent years, the
2154 growth of that system has been many times as great in the plant of the associate companies as in the plant of the Long Lines.

Our research in the field of carrier current wires has led us to the research and development with regard to the use of the principle in connection with cables.

Initially, as I indicated, the application of this carrier art was confined to non-loaded open wire structures, essentially to long lengths, and in the early installations only a limited number of wires or pairs of wires on a pole line could be equipped with these facilities because of interfering effects. As the system and methods were developed for the arrangement of the wire plant, it became possible to extend the use, not only on shorter and shorter circuits, but also to apply more of them to pole lines; but still we were not able to employ this form of transmission to cable circuits because of the then existing inherent characteristics of those cable circuits.

However, the desirability of being able to do this, namely,
to operate carrier on cable wires, was so great that we
2155 spent a large amount of energy, time and money in an
attempt to solve that problem, and we have substantially
solved it so that we are now able to use the carrier principle on cable circuits, that is, on pairs of wires encased in lead pipes.

We are now in a position to use it. That is, we have carried our experimental development work to the point of having actually in operation a trial experimental installation of which this is the principle of operation.

My opinion is that this development will have a very considerable field of use in the future in all of the companies, that is, both in the plants of the Long Lines and in the plants of the associate companies. As to the exact ultimate length of circuits over which it may be applied, I cannot, of course, say with exactitude, but I have no reason to doubt that the field of its first application will be on circuits of inherently short length.

These carrier systems have advantages other than the
2156 multiplying of the number of conversations that may be
carried on simultaneously and without interference over
a single pair of wires. They have the same kind of advantages, but in a more limited amount, that I have described in

connection with the so-called concentric conductor; they have all of the advantages.

In connection with vacuum tubes, I have already explained in general the uses in the telephone plant. They are employed in all of our telephone amplifiers and repeaters, and all of this work which makes carrier telephony and telegraphy possible, whether over open wires or cables, in the whole field of radio, and in many of the measuring devices which are employed. The device itself involves a heated filament, a high-vacuum, and some terminals enclosed in the containing tube, a device which in one form is familiar to everybody
2157 who has a modern radio set. Its primary characteristic is that of enabling one to control, without distortion, a considerable amount of locally produced energy, with a very small amount of energy from some distant source. In other words, its primary characteristic of great value inheres in its amplifying properties. That is, we can take a voice current that is very weak and, with the use of this vacuum tube, make it very loud without destroying its qualities at all, and without distorting it.

Mr. Lee DeForest invented the vacuum tube. He patented it about 1908. The American Telephone and Telegraph Company shortly thereafter purchased rights under that patent, and ever since that time our department has worked on the development of those tubes. In the form in which DeForest developed it, the vacuum tube was not usable at all in the telephone system, for the reason that it would handle
2158 not even the small amounts of energy which are involved in commercial telephony. The first thing that had to be done before it could be usable at all was to remove that inherent limitation in the DeForest tubes. This was removed by simply producing a very much higher degree of initial and permanent evacuation of the tubes; that is, making the vacuum substantially perfect. This was a development of our department, and the so-called high vacuum tube is the present day foundation of a dozen or more different branches of the telephone art.

The first development was the one I have just described, of making the tube capable of handling larger amounts of energy, and of making the tube more stable. From that point on, the developments took a number of different directions. 2159 In one direction was a large series of developments looking to the production of a filament which would produce large quantities of electrons (the electrons being the working part of the vacuum tube) with a high degree of uniformity and at the least possible cost. And beyond that came a series of developments seeking to enlarge the capacity of the tube in the sense of handling greater and greater amounts of energy, and a large number of collateral developments concerned with vacuum tubes of particular characteristics, for particular purposes.

We have been able to make very considerable progress in all of these things, particularly with regard to the matter of the electron emission filament thing, and particularly with regard to the size of these vacuum tubes. Whereas the first DeForest tube, as I have indicated, was incapable of handling even the small amounts of energy which are involved at amplifier stations, it is now possible to make vacuum tubes with essentially perfect characteristics which will handle hundreds of horsepower of energy.

In the case of the developments relating to the filament, even the first types which we ourselves made of a character which was suitable for use as telephone amplifiers, the filament was a relatively short-lived affair; it probably 2160 would not last, on the average, more than 1,000 hours of service; it took about $1\frac{1}{2}$ amperes of current just to heat the filament up to the point where it would emit the electrons. Those early tubes cost $8 or $9 each to make. At the present time, the tube for corresponding service has a life in excess of 20,000 hours, or 20 times as long. It costs, roughly, one-third of the price of the tube of the earlier art (between $2 and $3), and the amount of current which is required to heat the filament, instead of being $1\frac{1}{2}$ amperes, is about $\frac{1}{2}$ an ampere, or about one-third of the energy formerly required.

So that, from the standpoints of the length of life, the initial cost of the tube, and the cost of operating the tube in whatever place we use it, tremendous reductions have been made. In addition to that, all present day vacuum tubes which we use in our repeater plants and other places are essentially stable during the period of their usability, that is, they have uniform characteristics as long as they are usable at all, whereas the earlier tubes did not have those characteristics.

2161 The effect of these improvements has been to greatly extend the field of use. For an example of the extension of this field of use in the Bell System, I will take the case of telephone repeaters, which was the first field of use of the vacuum tube; it has enormously extended its use in that field.

The first application of these vacuum tubes as telephone repeaters was in the so-called transcontinental telephone line which was installed in 1915, and at that time the art was such that telephone repeaters were available only on long open wire circuits. By that I mean that they could be used on physically relatively long wires, and were of such operating cost that they were not attractive for shorter wires, even had we been able to use them. Each time a reduction in the cost of the tube itself and in the incidental apparatus which is concerned in its application as telephone repeaters was made, it opened up wider and wider fields of economical use in the plant.

2162 From the first set of installations in 1915, the use of these repeaters extended quite rapidly. By the end of 1920, we had about 1,000 repeater installations in service, practically all of which were in the plant of the Long Lines. Five years later, that is, by 1925, that usage had grown to approximately 7,500, of which about one-third were in the plants of the associate companies. By the end of 1930, the total number had grown to about 81,500, of which still about one-third were in the plants of the associate companies, and about two-thirds in the plant of the Long Lines.

As the improvements are made in that vacuum tube, and as reductions in cost occur, they will increase the rate of growth of tubes in the associate companies more relatively

than in the case of the Long Lines. That is so because, in the use of repeaters in the very long lines of the asso-
2163 ciate companies, it has already reached well on towards the point of saturation, as determined by the length of the circuits. The Long Lines Department has essentially long circuits. It has no circuits under 40 miles. Consequently, further reductions in the length of circuits over which it is economical to use repeaters will not substantially affect the Long Lines. Their increase in use will be measured substantially by increasing numbers of circuits; that is the ordinary growth factor. Whereas, in the case of the associate companies, they are affected by that factor also in the circuits on which they can now use repeaters, but the studies and research and development work which is still continuing, and is continuing to decrease the length of circuits on which it is economical to employ repeaters, in addition opens up fields of use in regions not hitherto available to the application of repeaters, and of which the associate companies have very large numbers. That new field of use is practically confined to the associate companies because it involves circuits under 40
2164 miles in length. The rate of growth of repeaters in the plants of the associate companies in the two years 1928 to 1930 was double the rate of growth in the Long Lines.

I expect that characteristic to continue with the further development of the tube, and the further reduction of its price, although the sum total amount of reduction of length of the circuit which is possible is not so great as it once was, obviously. That is, the present state of the art has reduced the length of open wire circuits on which it is economical to use repeaters to something in the neighborhood of 35 to 50 miles, and on cable circuits it has reduced it to something on the order of 10 miles.

In addition to the uses of the filter which I have already described, it has further uses in the Bell System. I have described its use in connection with things like carrier current, but it has found a field of application in a large number of other places. For example, it is employed in connection

with the elimination of deleterious currents, from the charging circuits which we use in supplying current. It is
2165 used, not in our plant but in the plants of power, light and railroad companies, the circuits of which tend to produce interfering disturbances in our circuits, as a means of eliminating those disturbances, eliminating them from being present on the wires which are in inductive relation to our wires.

In particular, in recent years the street railway art was very materially changed by the introduction of the so-called mercury arc rectifier as a means of producing direct current to supply the trolley wires direct from alternating current without the necessity of introducing the use of rotating apparatus. But the first introductions of those mercury arc rectifiers bade fair to wreck the service of the local telephone companies, because of the vast amount of high-frequency induction. That problem has been solved by introducing filters which we have made available to the street railway people, or the manufacturers of that kind of apparatus, and in the specific development of which we gave them the benefit of any advice which we had. That is, we procured the installation of these things in their plant as a protection to ourselves. For that particular kind of trouble, it is imperative that the source of the trouble be eliminated. It is noth-
2166 ing we can cope with in our plant, once it is introduced in our plant, because it is in the voice range.

Now, filters are used in numerous other places. One place where they are used to a considerable extent, and bid fair to be used to a much larger extent, is in connection with the elimination of the noises which are produced in subscribers' radio receiving sets whenever, say, the dials of dial telephones are operated, or frequently when they are operated, an objectionable type of noise, and one which, before the introduction of filters (very simple and cheap filters) into the subscriber's set itself, was a very difficult thing for the telephone companies to consider coping with. In some cases, it would have been very expensive to cope with it. But, by the introduction of the filter art into that part of the plant, we have developed the means for handling that kind of problem very simply and cheaply.

These two uses of the filter (that is, to protect against trolley currents and to protect the radio receiving sets) are substantially all in the plants of the associate compa-
2167 nies because it is in their plant where this difficulty occurs mostly.

In addition to the devices which I have described as actually in use in the plants of the local operating companies and the Long Lines as a result of our studies of the vacuum tubes, filters, radio and other subjects under sections 5, 6 and 7 of my analysis of expense by classes of work, there has been indirect effect of that work upon the plants of the various operating units of the Bell System.

In an earlier answer, as related to all or some of these things, I referred to some of the indirect results which have grown out of this work in the production of new laboratory tools which we use to create new things.

The coming of the vacuum tube and the other items of these three classifications has completely revolutionized not only the way in which we do the research and development work on practically everything with which we are concerned, but has resulted in our ability to develop things which we could not otherwise have developed, and to improve the characteristics of many of the things which existed before, simply because of the fact that it has given us very accurate
2168 yardsticks or measuring instruments with which to judge the effects of our work.

Also, some of these devices like the filters, have made it possible for us to investigate characteristics which are fundamental in the design of apparatus or equipment or systems of circuits by the process of segregating the whole band of frequencies which are involved in speech transmission into narrow bands, or bands of any predetermined width, and finding the effect of the individual parts; whereas, before the introduction of filters and vacuum tubes, we had to make our examinations wholly by the over-all effect, without any ability to go into the individual factors which made up that result, now we are able to dissect and measure the influence of the parts, and to dissect and measure the influence of modifications, one at a time, which we make.

For example, when I first went into the business, and for many years thereafter, when we were attempting to develop transmitters or receivers or circuits or anything involving speech transmission, the only measuring tools which we had were our ears, and the only sources of the currents which
2169 we measured were the sounds produced by our voices.

And, since those were composite sounds in their production, and since the ear could measure only relatively gross variations of these composite things which it received, the only way that we could get any accuracy in the determination of the efficiency of a piece of apparatus was by a tremendous number of repeated tests, by the statistical method, and the individual variations in those observations might be enormous. The net result of that was that not only were certain kinds of development barred to us, but even where we could make development, the end result was so concerned with the uncertainties of the measuring implement that, in order to insure against deleterious apparatus, or inefficient apparatus getting into the plant, we had to make large allowances, and consequently the plant was, on the average, not as efficient as we knew it might be, and was certainly more expensive.

Now, that whole thing has been changed by the coming of these new devices. And, more than that, the coming of these devices has enabled us to make that analysis of speech and the production of speech sounds, and that analysis of the ear and of the effect of various parts of the frequency range on the efficiency of hearing, which are fundamental to the
2170 design of everything in the telephone plant.

The telephone plant, in the last analysis, is measured by its ability to interpret speech sounds, to transmit them, and to reproduce them for some distant party to hear, so that, by the use of these new tools which enabled us to go clear back into the fundamentals of speech and hearing, we have opened up an entirely new realm of possibilities which we have adapted in the development of highly efficient apparatus, systems, circuits and equipment of all kinds, throughout the plant. You can hardly go into a room in the research laboratory today without finding some or many of the elements of the art of these three classifications there employed as accurate measuring tools. That is certainly true of the electrical parts, and is largely true of the parts of the laboratory devoted to mechanical things; so that the indirect results of the techniques alone have had a vast influence everywhere in our development work, and their results appear in all of the classifications that are shown on these sheets, in so far as those classifications relate to physical things.

That is, this matter that I am now referring to is the ability that we have now to improve the parts of the plant that
2171 are old through the means of these new measuring instruments, to develop entirely new things, either to take the place of old things, or to supplement those old things. What I was trying to convey was that in some classification which appears to have no connection with these three classifications, work is done and results are obtained which could not be done, or the results not obtained, were it not for the tools which are provided by the arts covered by these three classes. That is one of the reasons why, at the beginning of this examination, I said that these three arts are so fundamental that they underlie all that we do.

I can mention some specific illustrations where our improved design and method and measuring technique have resulted in improved apparatus in the plants of the local companies. Take, as an example, the modern handset, which has become so much a part of the telephone plant, the instrument in which the transmitter and the receiver are assembled together in a rigid handle. If it had not been for the
2172 techniques involved in these three classifications, it would not have been possible for us to develop that instrument with its high efficiency and quality characteristics, characteristics which are required if it is to be introduced into the general telephone plant of the Bell System, or to assemble those together in the rigid handle which makes up their

mounting, and to give to the instrument its essentially positionless effect; that is, its efficiency, irrespective of the position in which you hold it; the old desk set instrument was usually held in upright position, and if it was not, its efficiency would be very much impaired.

You could not take the transmitter and the receiver on the old desk set and put them together in a rigid handle, to give you the handset. That was so partly because of this positional effect, and partly because of the structure of the transmitter, particularly. The structure was such that when you tried to put that particular transmitter into a handle and maintain its efficiency, you had great tendency for the instrument to do what we call "sing", that is, to produce a
2173 sustained note determined by its own natural period, the same phenomenon that occurs with an ordinary desk stand if you take the receiver and put it in front of the transmitter.

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2175 Among other illustrations which I had in mind were some which I have previously referred to, but which I will here repeat. For example, I mentioned factory and repair shop instrument tests, which have grown out of the application of this technique, and which make for a more uniform output of new and repaired instruments. The same thing also with regard to field measuring instruments, which enable the telephone companies to operate and maintain their local plant with a higher degree of certainty, efficiency and economy. The use of these tools and techniques also has permitted us, as I have referred to before, to engineer the plant on a more improved and accurate basis.

Then specifically with regard to the improvements in the elements of the plant, it has enabled us to develop improved types of station equipment, which bid fair to have a very wide application in the plant; specifically what we call
2176 the anti-side tone circuit, which will make it possible for us to use instruments of the maximum transmitting and receiving efficiency, with a minimum amount of what is

known as sidetone, which is the effect of the feed back from the transmitter to the associated receiver. That has a double advantage, in that it tends to remove the interference of the speaker with his own hearing and more particularly it has the effect of eliminating, or minimizing the effect of noise where the instrument is in noisy places, and makes the efficiency of the instrument very much greater.

These tools and techniques have also had the effect of enabling us to design and make very much lower cost loading coils, which are largely used in the inter-office trunk plants of the associate companies, in their local exchange areas; and the same thing applies to the design of improved systems of loading, enabling us to transmit wider bands of frequencies, and so better the quality of the transmission.

They have also, as I think I have referred to before, put us in a position to develop higher quality transmitters and receivers, or, in other words, to improve the transmitting
2177 efficiency of the receivers and transmitters from a quality standpoint, that is, from the standpoint of distortion elimination. This is an extremely important thing because of the fact, which I mentioned before, that in the last analysis the aim of a telephone system is to give as nearly perfect transmission as it is physically and economically possible to give, and we have been and still are quite a distance from the ultimate, which we have felt was a desirable goal, and which the introduction of these tools has enabled us more closely to approach.

Then there is another very large field in the local exchange plant, which has been materially benefited by the introduction of these new tools, and that is the ability which they have given us to build a better balanced local exchange plant. By that I mean, a plant which is better balanced from the standpoint of its susceptibility to picking up extraneous interfering currents such as those produced by electric light and power installations, street railways and what not. The ideal of a telephone system operated in proximity to interfering sources would be a perfectly balanced plant in which interfering electro-magnetic disturbances would not produce the sound

2178 effects in the receivers of the users of the service. The use of those tools has not only enabled us to find ways and means of bettering the plant construction itself, but of locating specifically the places in which this interfering disturbance occurs, and so eliminating it.

Then there has been the interaction, or the reaction of the whole filter art, which I have previously testified to, on the acoustical and mechanical parts of our transmitters and receivers. The development work in connection with the filter art showed us how to segregate portions of the electrical circuit within the frequency band, into whatever parts we wanted and to study those separate parts as to their influence on the whole. It also showed us that since mechanically vibrating systems are analogous to electrically vibrating systems, oscillating systems, the same general rules could be applied to mechanical systems as they appear in transmitters and receivers, and we have been enabled by the extension of this filter art to improve the acoustical and mechanical parts of the transmitters and receivers, which, of course, are at the heart of the business, and are the things primarily used in the local exchange plants.

I have already referred, I think, to the case of the 2179 extension of our knowledge of the filter art to its application in the dial system, sub-station instruments, where the operation of those instruments tends to produce objectionable noises in adjacent radio receiving sets, and where, through the use of this art, we have found a feasible and reasonably economical way of obviating that kind of trouble, which was very serious, and bade fair to be more serious, and very very difficult and expensive to obviate without some such thing as we have gotten out of the filter art.

There were handsets in use in Europe for many years. 2180 The difficulty in using them in this country was found in the high efficiency of the transmitters and receivers which were the standards of the Bell System, and those standards were, roughly, the standards of all telephony in this country. Wherever handsets outside of the United States were employed, the efficiency of the transmitters and receivers

had been sacrificed for the sake of convenience, that is, for the sake of the convenience of having the transmitter and the receiver mounted in a rigid handle. I think at some time or other I indicated that a transmitter and a receiver associated together in a rigid handle, and connected to a source of power, have a tendency to vibrate in their own natural period, or to sing, as we call it, to produce a noise which not only is
2181 objectionable, but which destroys the efficiency of the transmitter. That is characteristic of any electro-mechanic vibrating system to which power is applied, and the higher the efficiency of the transmitter and the receiver, the greater is this tendency to sing. With the very high efficiencies of the transmitters and receivers which were standard in this country, and on which the whole plant of the Telephone Company had been engineered, this tendency was very great; and we found it impossible to associate those two instruments together in the form in which they were normally used in a rigid handle, without producing this deleterious effect, and we could not do what they had done in other countries, degrade the efficiency of the sub-station instrument for the sake of convenience, without completely deteriorating the whole basis of telephony.

So our problem was that of finding ways and means of designing transmitters and receivers of efficiency as great as was needed to maintain this general efficiency, and at the same time which were susceptible of association together in a rigid mounting. That problem was one on which we worked
2182 for many years, but which we never were able to solve until we had the facilities afforded by the tools of this art covered by these classifications.

The matters which I referred to in all of the 12 classifications which I have mentioned are in actual use today in the Bell System. They are in use in all parts of the Bell System, but those illustrations which I have given are primarily in use in the plants of the associate companies, and primarily, also, in the plants of the local exchange areas. Many of them are only in use in the local exchange plants. Some are confined to that particular class of plant and others are general to the whole System. The handset, for example, is purely a local exchange affair. This matter of the anti-side tone circuit, the type of loading coils to which I have referred, the work which is being done in connection with improved transmitters and receivers, of course, are all essentially local exchange plant affairs, and confined to that class of work. Some of the others have wider application.

2183 These 12 matters to which I referred have reacted most beneficially on the general design of the plants of the operating companies as a whole. They have reacted on the design to better it, largely to cheapen it, and to make it more reliable and satisfactory in giving the telephone service for which it is intended.

I have mentioned some specific matters where they have reacted on the plants and resulted in a decrease in cost; for example, the development of those much cheaper loading coils which are used in large quantities in the inter-office trunk plants of the local exchange areas; the whole matter of balanced plant to minimize or eliminate the effects of extraneous noise has tended to cheapen the construction and make more reliable the construction of the plant in the local exchange area. Those improvements have had an effect upon the kinds of wire used in the local exchange plants and elsewhere. They have had the effect of making more avail-
2184 able the economies which reside in the development of the so-called fine wire cables by making it possible, without reduction of transmitting and receiving efficiency, and, conversely, with an improvement in the efficiency, to use a cheaper connecting wire plant such as the type of plant provided by the fine wire connecting plant I referred to.

We commonly refer to fine wire in our connecting plants as wire of less than 22 gauge, that is, specifically, 24 and 26 gauge. The Long Lines Department does not use any conductors of that class. They are to be found wholly in the subscriber's loop and inter-office trunk plants of the local exchange areas. I have never made any specific study to determine the economies that have flowed and are likely
2185 to flow from the extension of the use of fine wire as to

any actual difference, but it is perfectly clear from the character of the cable which is made possible by this, and the extent to which it is employed, that those savings are measured by many millions of dollars.

These developments to which I have referred are, still proceeding.

On the basis of the new technique and the new devices which we have already developed along the lines stated, there are further substantial economies which it is now actually contemplated introducing into the plants, and this introduction is one for the near future.

The matters to which I have referred do not constitute all or even most of the improvements that have been introduced in the plants of the local companies by reason of our
2186 knowledge gained through the development of the vacuum tube device and the art that has been developed thereon. What I have mentioned have been merely illustrations.

There are important prospective uses of our knowledge and development under classifications 5, 6 and 7 which have not been introduced into the plant to any substantial extent.

In the course of answering questions, I have indicated a considerable number of specific applications and incidental values; specific applications of the things that have come out of this art, and the incidental values which have resided therein; but I have not, so far as I remember, touched upon a field in which there are large prospective values, but in which we have made no beginning at all in introduction, or have made only a very slight beginning. For example, I think
2187 I have mentioned the introduction of such things as the actual use of devices as amplifiers in all parts of the plant; but there are other uses for these amplifiers or repeaters, as we call them, particularly in the plants of the local companies, the local exchange plants, where we have either not made as yet any material application, or have made only a very limited amount. Illustrations of that would be the use of automatically switched in repeaters, in the handling of long inter-office trunk calls through manual or step-by-step central offices; that is, an automatic dialed call from one office

destined for a distant office, to which there was not interstate traffic, passing through an intermediate office, would have repeaters automatically switched into the connection at this intermediate office, to provide the necessary grade of transmission; and such repeater would automatically not appear in service if the call from the originating office was destined for an office in which it was not required. Now, that is a use which as yet is very limited, but which bids fair to be very extensive, because of the growth, and not only because of the growth of these dial type local exchange areas, but primarily because of our ability to utilize repeaters on shorter and 2188 shorter circuits. That business would be an intra-city business practically or, at least, an intra-local exchange area business, as city and suburban business.

Then similarly, there is the use of repeaters on long local and toll inter-office trunks, not automatically switched in, and repeaters on long station lines connected to private branch exchanges, of which there is a growing number, particularly where the private branch exchanges are large, and have many long lines; and on some of those, repeaters or amplifiers are available; and the same sort of thing on the inter-connecting lines between the private branch exchanges.

In many cases, the local companies are giving service to organizations which have more than one private branch exchange, because their business is located in different parts of the city, and they are connected by their own connecting trunks and, where these trunks are long, they afford the possibility of use of repeaters, and that use is a prospective large use, although at the present time it is not very great.

2189 Then, of course, there is the thing which is already in use to a considerable extent, and which bids fair to be a considerable use, the provision of special sub-station sets for those whose hearing is defective. In those sets, the receiving element is provided with an amplifier to raise the volume of the incoming sound to the point where persons can hear. That use is likely to be very considerable when you consider that 10 or more per cent of the population is affected with deficiencies of hearing.

Then there is the whole system, not yet touched at all, of program distribution through the wire plant of the local exchange areas; in other words, the distribution of news, music and entertainment, not by radio broadcast, but by wire distribution. If that service should come into the picture, of course, it would involve an enormous application of this art, strictly in the local exchange area. Our developments are
such that we are equipped from a practical standpoint
2190 to conduct that kind of business at the present time.

I have noted down here a couple of other illustrations, one of which, while it does not involve a large number of these amplifying devices of this art, involves them in a widespread service in the local exchange area, and that is in the giving of time service, such as is in effect here in the City of Chicago. The giving of that service would either not be possible, or would be extremely expensive, if it were not for the use of these devices from this art, in the giving of that service.

This art has also provided us with the tools for an entirely new usage in the local exchange area, as in other parts of the system, in that the provision of the carrier system, by giving
us the ability to assemble a multitude of communication
2191 channels on a given pair of wires, or on a single pair of
wires, provides us not only with means for using those channels for actual speech transmission, but using them for signaling purposes. So it has opened up to us the whole field, a field not yet attacked at all, but which seems promising, of using the voice frequency or carrier method, particularly in the lower range of frequencies, for dial signaling, the carrying of the signaling current throughout the plant, where it is now carried by direct current.

Then there is a field of service which is of very recent introduction into the system, this so-called switched teletypewriter service, in which a printing telegraph service on a switching basis analogous to that by which telephony is given is being introduced; that is, the subscriber with one of these printing telegraphs asks to be switched to somebody else with whom he wishes to communicate, and the telegram is typed on the sender's machine and is repeated on that of the receiver.

That service was inaugurated very recently, within the
2192 last four months. It bids fair, if the expectations are
at all realized, to have a widespread use, not only on
interstate business, but on intra-city business; that is, if a
large number of these instruments are on the premises of
subscribers in a given city, they will be used not only for
telegraphic communication to distant points, but for such telegraphic communication as is required within the areas of the local exchange; and this art provides much of the means which can be made available for that service.

In the same way, the use of this type of instrument is finding a field of application in the automatic recording of troubles in the telephone plant, particularly in the machine switching plant, where it is very difficult, or at least, has been very difficult, to locate a transient kind of trouble. This art has provided us with the means of making a permanent and definite record of where that trouble occurs.

Then there is the whole field, which has not yet been
attacked at all so far as application is concerned, or almost
not at all, of the use of this art and the devices of this
2193 art in the switching plant of the telephone companies,
which forms so large a part of the telephone companies'
equipment. These devices, particularly the vacuum tube, and the other thermionic devices which grew out of our studies of the vacuum tube (and they are very numerous, and increasing in amount and number all the time as our knowledge increases) have properties not alone of amplification without distortion, but they have properties which make them available for many other uses. And some of those properties make them available for application where, in things like relays, certain circuits have to be closed or opened, and where in the past the only way of performing that operation was through an electro-mechanical device. This art, and the properties of these devices which have grown out of it, are such as to indicate that the application in the field of switching may be very very large in the years immediately ahead.

The emphasis until very recently in the development of this art and the devices of this art, has of necessity been on the side of their use as amplifiers rather than for other purposes. That was partly because there was an immediate and otherwise unsolvable urge to use them there, and partly 2194 because the quantitative values of these properties were not available until a large amount of research and development work had been done; so that that whole field which we are actively engaged in considering at the present time, you might say, has practically not been touched at all as yet. And it is the field primarily of the local exchange area, although to whatever extent these devices develop in that field, they will be used, or they will be usable wherever the switching of electrical circuits together is involved.

The things that I have referred to in these last answers will have their field of greatest application in the plants of the associate companies, and primarily in the plants of the local exchanges, rather than in the toll plants. Many of the things that I have referred to this morning have had to do wholly with the local exchange plant, and others are more largely concerned with that. This last element which I have just referred to, this element of prospective use in the 2195 switching field, of course, is essentially a use of the local exchange plant, because it is there that switching is done in vast amounts. With regard to that class of improvement, it would be confined wholly, or practically wholly to the local operating companies.

All of the matters to which I have referred are matters of importance and many of them will involve, when they come into use, apparatus of plant in large amounts. Of course, some that I have mentioned have to do with methods and techniques which in themselves do not involve large apparatus, but enable us to engineer, manufacture, install and operate the plant more efficiently and economically.

The transmission of music, entertainment, etc., over the wires of the local companies would be of advantage to 2196 those companies in that it would provide them with another use and source of revenue for the type of plant which they have installed for the giving of the ordinary telephone and telegraph service.

Considering all the uses and effects of the results of our studies and work under classes 5, 6 and 7; my opinion is that so far as the expenditures in these three classifications are concerned, as related to present benefits and prospective benefits measured in plant investment units, the benefits will be greater for the associate companies than for the Long Lines per
2197 dollar of plant investment. That is largely because many of these things to which I have referred have such an enormous application in the plants of the associate companies.

As indicated in Exhibit A-118, I have consolidated these three classifications (that is, 5, 6 and 7), and have allocated them on the basis of the total plant in service; that is, on the basis of the relationship of the Long Lines plant to the total plant. In my opinion, that method allocates to the Long
2198 Lines the full share of the expenses of our department under these classes.

The next column to the right indicates the expense allocated to the Long Lines in dollars for each of the classifications, using the basis of allocation indicated in the second column and applying the percentages indicated also in the second column.

The next column to the right is the difference between the first column to the left and the amount which I have allocated to the Long Lines.

2199 The fourth column of figures I have allocated to the Chicago area on the basis shown in the fifth column, in which the basis of allocation is indicated, and the percentages are given on the basis which the investment in the Chicago area bears to the total investment of the remainder of the System less Long Lines; that is, the Chicago area's portion of the associate operating companies. I have in each case used the same factor that is used for apportioning the Long Lines. The last column to the right shows the dollar result of applying the percentages of the preceding column to the figures of the column preceding that, that is, the fourth column of figures. I proceeded in the same manner

2200 with regard to each of the years dealt with on these sheets.

The sheet which is marked for identification as Plaintiff's Exhibit A-119 is a summation of the amounts of our expenses allocated to the Chicago area, obtained in the way which I have just described, because I have made a correction for credit against our expense involved in the non-associate sales of the Western Electric Company of telephone apparatus and lead covered cable. By "telephone apparatus" I use the expression that the Western Electric uses less what it calls its special commercial products. Now, in attempting to make an allocation in the way in which it is made in this exhibit, and for the reasons that have been indicated throughout my testimony, it was not possible to make a preliminary correction for any credit on account of these non-associate 2201 Western Electric sales because of the nature of the work done under the several classifications which spread all over the entire field of our work. In the original attempt to allocate, I was dealing with totals. I was not dealing or attempting to deal with classifications, which are the artificial divisions of our work for the purpose of executive control, and, as I was dealing with totals, I was at the same stage that I am now at with regard to this other method. 2202 That is, when I was dealing with the totals, I took off the total allowance for this Western Electric outside business, so to speak, first, and then allocated what remained. In this case, because of the split-up into classifications, I could not do that, so I found the amount that would be allocated to the Chicago area of the Illinois Company without deducting for the Western Electric outside sales, and then I made a pro rate deduction. That is what this sheet shows, and the figures are all taken from the other figures that appear in the other exhibits.

(Sheet marked for identification Plaintiff's Exhibit A-119, offered in evidence. Objections and ruling reserved.)

2203 Very little of the work that is shown on these sheets which we have been dealing with finds use in the plant

usually in the same year in which the work is done and the expense incurred. Usually it follows by a year or two years, or something of that kind, and sometimes more. A very small amount of the work covered by these sheets (Exhibit A-114) which are the work sheets, finds application or use in the plant or business of the operating companies in the year in which it is done or the expense incurred; a small amount of it does. Obviously, this item of the expense which we incur in connection with the rate case testimony is a very current expense, and in the same way some of the other classifications, such as the one on interference where a large amount of consulting work is done with the operating companies, involve a moderate current application. Our consultation work with the operating companies is work which they get the benefit
2204 of directly. Whether they can apply it or not, they get the benefit directly. Except for these kinds of classifications, the benefits from our work are available in the plants of the associate companies and the Long Lines at intervals ranging from a year or two, in the case of the kinds of work which are more nearly in the situation of actual immediate manufacture, installation and use, to very long periods in advance with regard to this more fundamental work. Some of it may not find its place in the plants for 10 years.

I should say that a much larger proportion of the expense incurred under subdivisions 5, 6 and 7 than in many of the other classifications was of the character which would find its place in the plant further after the time when the work was done. Of course, there is a classification covering fundamental studies applying to communication (I don't remember the exact title) which is of such a fundamental character
2205 that it may be a very long time in advance. There are also items in others of these classifications which are like the majority of the items under classifications 5, 6 and 7.

I have prorated our work on the basis of the plant existing in the years in which the work was done. I have already explained that in my attempt to prorate the expense of the Department of Development and Research on any basis, I found one base which seemed to me a proper one on which to attempt a proration, and that is the base which involves the investment in physical things; because our work in the Department of Development and Research deals essentially with physical things, and not primarily with the operation of physical things or with the current introduction of those physical things. Therefore, the logical base, in my judgment, to use is a base of physical things. In the first analysis, I took the totals and took the entire base and that, in my 2206 opinion, is the most accurate allocation or base for allocation of work of this kind which can be used.

Now, having taken that base (and it would be true of any base that I might take), and having eight or ten such years to allocate, I am limited to the factors which appear in those years. I could not take factors preceding the year 1923 of plant values because I would then be dealing with a situation in fact at a time much antecedent to the period in which the value would obtain, and I cannot take the time following the present, because I have no knowledge of what those factors will be in the years ahead. Consequently, in any attempt to allocate these expenses between the recipients of the values in a year by year fashion, the only thing that I can do is to take the plant values as I find them in the year in which the expense is incurred, and I think that is a reasonable base on which to proceed as well, because the expense which was incurred in that year was charged against the size of the plant as it existed at that time. Obviously, if the plant had been but half the size, we could not have justified that amount of work. In my opinion, that method gives a fair result.

2207 *Cross-Examination by Mr. Haight.*

"Mr. Haight: If your Honor please, there are some subjects on which we might interrogate Dr. Jewett but which have been fully covered on depositions already taken, so that I will not attempt to cover some of these and hope to avoid such."

I spoke of certain tools that had been developed in the Department of Development and Research of the American

Telephone and Telegraph Company and in the Bell Laboratories and that had been beneficial to the industry. In my opinion, the investment for those developments has been justified economically and, in my opinion, the results of that work have been rather large and favorably large economically. A great many of them have been beneficial to the associate companies and to the local exchange plants.

2208 It is my opinion that they had been or would be more largely beneficial to such plants than to the Long Lines.

Referring now to the tools and their effect, and not to the specific use of the devices as devices, in my judgment I should say that there is no question that, in the total value, the effect of those tools has been much more largely valuable to the associate companies than to the Long Lines. By that I mean their value as a whole to the whole group of associate companies on the one hand, and the Long Lines on the other hand.

I am speaking economically.

2209 In respect to the things themselves, and not as tools, I should say that the value of the use of the things themselves, or many of them, has been greater to the Long Lines than to the associate companies. I say that, carrying in mind, of course, the fact that many of the things which have found a use only in the plant of the Long Lines have not only not been of benefit to the Long Lines, but have been quite the reverse, and have involved expenses incurred for the benefit of the associate companies, particularly radio. I think if I could appraise the total value to the associate companies as a whole on the one hand, and to the Long Lines on the other hand, the value would be much greater for the associate

2210 companies as a whole than for the Long Lines; but as related to the plant in dollars per plant, it probably would be in favor of the Long Lines. For some of the units, it would be very much in favor of the Long Lines.

The results of the development of what I have denominated as the tools have been the making of things cheaper, the making of installations cheaper, the operating costs less, and the service better. The effect has been a continuing one over the last 10 or 15 years, year by year, but not uniformly continuing. In each of those years, there has been that beneficial effect in those four regards, although the pace has been different in different years.

The same thing is true in regard to these developments in
respect to the tools, in so far as the Long Lines are
2211 concerned, but the pace of increase has not been so great in
the case of the Long Lines as it has in the case of the
associate companies.

In respect to the things as distinguished from tools, those developments have resulted, as far as the associate companies are concerned, in the making of the things cheaper, in the installing of them more cheaply, in the operation of them
more cheaply, and in the giving of a better and a more
2212 extended service. The same thing is true, and in the
same regard, in respect to the development of things
relating to the Long Lines.

If it should appear that through the use of these things, large profits had been gained by the Long Lines, I would not necessarily expect even larger profits from the associate companies through the use of these developed and improved things, since the effect is greater upon the associate companies. This is because the business of the Long Lines is a very much simpler business than that of the associate companies. The business of the associate companies involves very large quantities of types of service with which the Long Lines have nothing to do, and I am not in a position to make an appraisal of the effect of these particular things which have come out of the work, in relation to the relative profits of these two groups, in the face of the very complicated situation which is involved by the fact that you are not comparing
two things which are alike in kind. That is the
2213 difference which immediately occurs to one: that the Long
Lines Department is dealing essentially with a transmission problem in the handling of toll service; it is not dealing with a switching problem and it is not dealing with a local exchange service.

I mean that the Long Lines has to do only with the trans-

mission problem and does not have to do with the telephone instruments or their connections, or switchboards in the local exchanges, or connections to a toll board. I also mean that I am trying to keep my mind to the things which have resulted from the work in the period in question, and in both of those two groups (the Long Lines on one hand and the associate companies on the other hand) there are tremendous factors which inhere in the work which was done in the period preceding the first year here, and that work has a vast influence on the relative and absolute results, not only on the
2214 absolute, but also on the relative commercial results of the two organizations; and I am not competent to appraise the whole thing.

"Q. Because of these developments and improvements in things made over the years, when we speak of a transmitter, for instance, today, save in its most general aspect, we mean a different thing from what we meant when we spoke of a transmitter of fifteen years ago, do we not?

"A. No, not for a large number of transmitters that are in operation today."

If we go back to the days when we had a separate transmitter for long distance and a separate transmitter for the local exchange, then we would mean a different thing than we do today. That same general idea is sound in respect to many of the things that are used in this art, if you go back far enough.

2215 If I were to build a plant today, it would look like a plant in 1914; they would have many things in common, and I presume to a casual non-engineering observer they might look quite similar in some respects.

In many of the details, the plant of 1914 was different
2216 from the plant of 1932. In their essential elements and in their fundamentals of switching and transmission, the same fundamental elements would appear; they have been in the telephone art since its beginning.

"Q. And the things which you would put in today, speaking of them generally, would be better things in so far as their results and service are concerned, they would be cheaper things to make, they would be cheaper things to install, and they would be cheaper things to operate, would they not?

"Mr. Blackman: Cheaper than what, Mr. Haight?

"Mr. Haight: Q. (Continuing) Than what went before, at any time you wish to choose.

"A. On that basis, in answering your question, one has to make an assumption as to price and wage levels as they might ~~affect it~~. I take it that you are referring to the inherent costs on the same basis of the fundamentals of prices and wages.

"Q. My postulate is your testimony.

"A. Yes.

"Q. (Continuing) That because of this contribution of the Department of Development and Research and the Bell
Laboratories, and the similar work done before its cre-
2217 ation, they have brought to this industry, both in the
Long Lines service and in the work of the associate
companies, things that are better, that give better service, that are cheaper to make, that are cheaper to install, and that are cheaper to operate, and that that benefit most largely is to be reflected in the associate companies. That is my postulate throughout all of this examination.

"A. Yes; I see. Well, on that basis I would say that as the result of the work of the Department of Development and Research, that is true. As I understand the question, it referred to all parts of the telephone plant, many of which have not been touched by the work of the Department of Development and Research."

The Department of Development and Research has had to
do with transmitters, telephone instruments, wires,
2218 cable, conduit, switchboards and poles. It has not in
any large measure had to do with the tools with which
many of these things are installed. It has not had to do, and certainly not in recent years, with the types of buildings in which we put those things. It has had to do essentially with the electrical parts of the plant. Not in recent years has the Department of Development and Research had anything to

do with the devices for setting poles. When I speak of 2219 tools, I mean types of tools, such as trench digging machines, and all of that type of equipment.

As I envision the future as to the use of the things that have not yet been made commercial, and as to the adaptation of the things we now have to new or better uses, the effect is going to be greatest on the associate companies and more than upon the Long Lines. I mean that, as I look into the future, on many of those things which we are working on at the present time the results are going to be still cheaper things to make, still cheaper to install, still cheaper to operate, and a still better service, and those things are going to appear more largely in the plants of the associate companies.

However, anyone looking ahead in 1923 would have 2220 had no right to expect the same thing for the immediate period ahead, because at that time much of this work which has been covered in my testimony of the last two or three days related primarily to the things which were of a transmission character, and which would certainly find their application and have found their first and largest application in the plant of the Long Lines.

2221 In my testimony, when I referred to the Bell Laboratories, I referred to that part of the Bell Laboratories whose expenses were billed to the Department of Development and Research. When I refer to the Bell Laboratories, I mean the Bell Laboratories and its predecessors.

I think, as I explained in the last part of my direct testimony, that in an attempt to allocate the expense for a specific and limited period of years to the beneficiaries, par-2222 ticularly when that limited period of years ends in the current time, the application of the expense for the particular year in which the expense is incurred is not only fair, but is the only way in which that allocation can be made.

I do not know whether it is the common method to carry the costs in the development of a particular thing until the work is completed and then allocate the expense to the particular thing on which the work was done when it goes into use. I have tried to indicate that on a very large part of this work

of ours the value was not in the thing itself, and it would be
unfair to assign it wholly to the thing; that the value resided
in the collateral effect of the thing. I believe that research
and development work should somewhere, somehow,
2223 some time, pay for itself, because if it doesn't, it cannot
exist. This work about which I am talking must at some
time be translated into things, or the values which inhere in
things. Sometime, certainly, as to that work that does finally
come into use, it goes into things, but they may not be values
in the thing elements on which the expense was incurred.

I don't know exactly how long we were working on the semi-
mechanical and machine switching equipment. It was a long
period of time; a very great many years. The work upon
the loading coils for open wire toll lines went over quite
2224 a good many years; it was probably 15 or 16 years. The
work on the machine switching equipment is still going
on in a very large measure, and I presume it has been going
on for 20 years. The reason that I could estimate the length
of time of the work on open wire loading coils is that that
work came to a conclusion.

There was a physical embodiment as a result of the machine switching work in Chicago in 1923. I don't know when large, active work on machine switching began, because it began before I was associated with that kind of work, but I should assume that it had gone on for 15 years before that, possibly.

The work on loading coils for toll cables is still going
2225 on and has been going on ever since we began to work
on loading, that is a period of 30 years, and it is going
on in increasing measure at the present time. The same is
true of loading coils for exchange cables.

We began the work on vacuum tubes in 1912 or 1913, and that is still going on, and, as far as I can see, will continue to go on. The work on vacuum tubes went on for about two years before we actually used a vacuum tube in repeater work, and the work went on about a year before we had trial installations. There was work on repeaters before our work on vacuum tubes was commenced. Those repeaters were the so-called mechanical repeaters, but for the most part they had to do with the attempts to make a telephone transmitter speak to a telephone receiver supplied by a local source of energy. Those attempts, as I understand it, had been made from the very early days of the telephone business.

2226 I have not a clear picture of when we began serious work on the 24 and 26 gauge cable, but it was a considerable number of years ago. The whole history of the lead covered cable art has been a continued attempt to reduce the size and so to increase the number of conductors in the lead sheath; and this fine wire cable development, which is the most recent stage of it, is the work which was done in the most recent years, and was largely made possible by the tools which had been made available to us in other fields of our development and research work. I have not looked up when we started to use cables containing wires that were finer than the 22 gauge, and it is a guess on my part, but I should say that the first beginning was approximately 10 years ago.

The work on transmitters has been going on ever since
2227 the work began. I can only very roughly group the results into any period based upon the character of the transmitter, because I am not personally cognizant, nor have I made an attempt to familiarize myself with the very early days and the various kinds of transmitters. Coming to the time which is within my own knowledge, there was, of course, a period of 15 years or more in which the transmitter art, so far as large advances were concerned, practically stood still, when we had the type of transmitter which was commonly used in the desk stands and wall sets, and that period began to merge into the present period some years after we had begun our work in the general classifications that I referred to as 5, 6 and 7. In the earlier period, the changes in transmitter structure were, from an engineering standpoint, of a detailed character, rather than a fundamental character. Since that time, the changes have been of a more fundamental character.

This new art, which has been so potent in influencing
2228 the whole trend of our research and development work,

started subsequent to 1913 in any large form, because it was at that time that we got the first tools to make it available; and, as I have indicated, the first urge when we got those new tools was to use the tools themselves as things in the telephone plant, and the art of using them as tools for the development of other things may have been delayed a year or so and then commenced to operate.

The work on receivers has been going on ever since the business began.

Work on the hand telephones was started before I came into the business, nearly 30 years ago. The first attempt to use them was made quite a good many years ago, and was disastrous because of the fact that we did not then know how to combine these high efficiency transmitter and receiver units in a solid handle, and we could not degrade them in efficiency so as to combine them. As I have testified, it was only after we had developed the art both as regards the transmitter itself and as to the assemblage that we got our present 2229 instrument. My recollection is that they began to go into service possibly six or seven years ago in a small amount. They worked all right in local work over in France and other European countries. I say "all right," but they weren't all right from the standards of American telephony.

The whole basis upon which the Bell System has been built up (and, so far as I know, it is a basis which has carried over into all American telephony) was that the transmitter and the receiver (which are the dynamo and the motor, if you will, of the electrical communication system) should be each of the highest possible efficiency, and uniformly at that high efficiency. The whole urge has been always, over the entire history of telephony in this country, to increase the efficiency of the transmitter and the receiver. As those efficiencies were increased, so that you had more energy given out and less energy required at the receiver, they have resulted in an extension of telephony, because it has been possible by 2230 those means to go farther with a given size of connecting wire plant, or to cheapen the wire plant by making it smaller for a given distance. One of the most sacred and rigidly enforced rules in the Bell System has had to do with the standards of the transmitter and the receiver as they are operated in the associate company plants.

Now, the result of that long course of rigid adherence to a principle was to build up a vast local intercity and interstate communication plant which required the high standards of transmission and reception of the transmitter and receiver, and all plant was engineered on the basis that those high standards were in the plant. Any attempt on a large scale, for whatever purpose, convenience or otherwise, to degrade the transmitting efficiency of the transmitter or the receiving efficiency of the receiver, would immediately have degraded not only the service of the person who had those instruments, but everyone with whom he was connected, and there was an impossible barrier to that degradation. The development of these high efficiency transmitters and receivers, used as they were in this plant, in desk stands and in wall sets, was not involved with this characteristic with which they are involved when you associate them together in a handset and rig-
2231 idly connect them. You can get the effect in a wall set or a desk stand, particularly if you are on a short loop, by the simple operation of putting the receiver in front of the transmitter, touching the two things together, and they will start to howl. You can get it by taking a wall set or a desk stand transmitter and receiver and rigidly connecting them together, and starting them, and they will continue to howl. But we had found that, to bring in the convenience of the handset, we had to solve the problem of associating these very highly efficient transmitters and receivers together in a rigid handle, and having them of such a character that this instrument, which can be used in many positions in which the desk stands and, certainly, wall sets are not usually used, would have very little positional effect. This would not only be used in many positions, but could be used in all services, whether local, long distance or Long Lines.

2232 The reason why this handset was not used in the American system was not because it would not work in giving service; that was not the reason. It would not work in either local or long distance service; it would degrade local service as well as any other kind. It would degrade all service.

That service had been engineered to a point when the phone on one's desk must be one that could be used either in local service or a call to New York City.

The same instrument is used for all service; take this plant here in Chicago: if the plant of The Illinois Bell Telephone Company for some reason or other were divorced from any necessity of connecting outside of Cook County, it would not make one iota of difference so far as the subscriber's loop and trunk plant is concerned, except possibly in the number of circuits that are required in the engineering of that 2233 plant today. The same transmitters, the same receivers, the same transmission requirements for sub-station apparatus would apply.

"Q. You know, don't you, Dr. Jewett, that right here in Chicago we had one kind of transmitter, then long distance came, then we put in long distance transmitters because the others would not work in long distance; you know that history ~~in~~ respect to Chicago itself, don't you?

"A. That ancient history was true of all cities, certainly."

When the long distance transmitter began to be used in local service, we had a better transmitter for local service also. When I said that the bringing of the French telephone into our system would degrade the service, I meant not only 2234 that it would not work at all in long distance service, but that it wouldn't work at all in local service. It worked in local service in Europe, but it would not have worked in the local exchange plant here without degrading the service to the point where it would have been unsatisfactory.

The local plant had been engineered on the basis of getting the best service at the lowest possible cost, and when you refer back to the time when the long distance transmitter, as you call it, was made standard for local service, the net result of that on the local plant was either to cheapen the local plant in its transmission characteristics, or to extend the range of the local plant transmission with the same unit grade of transmission service. At the present time the local plant, so far as its transmission characteristics are concerned, is engineered substantially without relation to its use in long distance service, and the service which is sufficiently good for the local exchange area from what transmitters and receivers you use will give you long distance service over any distance that you want to go.

2235 I don't know whether someone in connection with the American Telephone and Telegraph Company gave a picture of our telephone system by saying that we might look at it all just as one exchange. I never heard that, or, if I did, I have forgotten it. I have heard of Mr. Vail, and have read some of the annual reports put out by the Company when he was President. It has not been the theory of the American Telephone and Telegraph Company for years that the Bell System is regarded as one big exchange and engineered on that basis. With all due respect to Mr. Vail, if he said that, I don't think I would make that statement.

There was a time when it was proposed to give long distance service by the process of so increasing the power of the transmitter and receiver used in that service that you could
2236 give the long distance service. But, as a result of our
work, we came to the conclusion that if long distance service as a universal thing in this country was to be largely and economically used, the interconnecting plant between local exchange areas must be of a character which would permit of the service being given through local exchange plants which were engineered for the local exchange area, and that has been done. As a result of that, we have standardization in all local areas in the sense that at any given time, so far as fundamental instrumentalities are concerned, things that are installed in a given kind of plant in one part of the country are the same as in any other part of the country. That does not mean that we are in a static art; those standards may change, and they change from time to time whenever we have made an improvement which makes possible a step forward for all. They are standards in the sense that I have indicated,

and not standards like the yardstick or the pound, which are invariable.

2237 Certain standards are commonly applied. The transmitter and the receiver, which are the heart of the thing, are the same everywhere, so far as it is humanly possible to make them. Now, that does not mean that we can be sure that the 17,000,000, or whatever number there are, of transmitters that are out are all identically the same. There are obvious variations, through use and age. Nor does it mean that, when we introduce an improvement in the transmitter, we will say, which enables us to make a transmitter with a somewhat higher efficiency, and we are sufficiently sure of it to start to manufacture it on a large scale, we go out and junk all of the old transmitters. It means that on all new plant and on all replacements that new transmitter goes in, and that in time the average level of transmission efficiency from all sub-stations has been raised, and ultimately all of it, or substantially all of it, brought up to this upper level. The effect of that improved transmission is taken account of by the engineers in engineering their entire wiring connecting plant.

They must have standards of transmitting and receiving 2238 efficiency if they are to do any engineering work in their wire plant.

In Europe (France in particular), where there were no standards, there was no engineering of the plant, and there could be no engineering, because there was no standard on which to base it. The result was that some subscribers, over whatever wires were put in, got reasonably good service when they would talk to certain other subscribers, and certain others could not talk at all. But what we have aimed at, and what, largely, we have succeeded in doing by engineering which makes the local exchange plant independent of the toll plant, has been to provide a reasonably uniform grade of transmission service for both local and toll purposes with the same instrumentalities.

These same instrumentalities are used in the long distance service, but, as I said, if the long distance service should disappear today, it would not change one iota the engineering of the local exchange plant in the City of Chicago, so long as it maintained its present standards of local transmission, except in so far as elimination of long distance service eliminated plant.

2239 – The Department of Development and Research is the final judge as to whether things produced meet the specified requirements for new and improved service. In general, but not necessarily, after that judgment has been made, that particular thing is made standard. The exception to that would be that a thing which had been developed by the Department of Development and Research, and found to be satisfactory for the service, was found by the Department of Operation and Engineering not to be desired at the time that it was ready for use, and it might, under that kind of a condition, not be standardized at that time.

In general, the associate companies are advised that a new device has been made standard through letters or bulletins issued by the American Telephone and Telegraph Company, through its Department of Operation and Engineering, and, if it involves apparatus, usually coincidentally by advice 2240 from the Western Electric Company indicating the way in which the apparatus should be ordered.

The Bell Telephone Laboratories, of course, is a company which has a capital of $100,000, and there are no dividends paid on that capital. The remainder of the money, which is represented by the plant in operation and the necessities of the Laboratories, is obtained from the owners of the Laboratories by borrowings, on which interest is paid. That interest is a part of the charge which makes up what we call cost. There are two regular rates of interest. For the majority of the money involved it is one rate. Then there are certain recurring borrowings during the year, mostly for short periods of time and varying somewhat in amount, which 2241 are at a slightly lower rate. The rate of interest on the main amount is 7 per cent and on this temporary recurring borrowing, it is 6 per cent.

"Q. I understood that the Department of Development and Research in doing what at one place you called intellectual work, would turn over its study for further study and development by the Bell Telephone Laboratories, and an estimate would be made of the amount to be spent thereon, or some basis of cost. In a general sense, each one of those projects would be budgeted. Did I get the wrong idea?

"A. You are referring now to the part of the development
and research expense which is represented by the
2242 amount that they pay to the Laboratories?

"Q. Yes."

Possibly a specific explanation of how that is handled would give you what you have in mind. Before the beginning of each calendar year, both the Laboratories and the Department of Development and Research make up budgets, which budgets are approved. Now, those budgets constitute substantially nothing more than the authorization to the two departments to proceed with the year's activities on a certain scale of operation. That is, they are the advice which I, as Vice President, finally get from the President and the Board of Directors, that the D and R can proceed on such and such a basis, organize for that, and the advice which I get as President of the Laboratories that the customers of the Laboratories have authorized us to proceed on a certain general basis.

Now, in making up those budgets, which determine the size
of our force in large measure, and the size of the force deter-
mines everything else, the general scope of the work likely
to be done during the year, either for D and R or the Western
Electric Company is outlined, and we have a general broad
understanding that in this particular field we are likely
2243 to be called upon to do so much work in laboratories
for D and R. Some of it we know more specifically
about, because it happens to be current at the time the budget
is made up. If, during the course of the year, a project arises
in D and R which requires the assistance of the Laboratories,
it falls in one of these classifications that have been previously
generally considered, and the requirements of that work and
the amount, as to character and general amount, are trans-
mitted to the Laboratories. They, in turn, study that particular

request and make an estimate both of time and money that it will cost to carry out, and they certify that to the American Company, the Department of Development and Research, in a work sheet which outlines the work, the basis for that work, and the estimated amount that they think it is going to cost to do this thing. That work sheet goes to the Assistant Vice President, and from him to his associates for a check against their original request on the Laboratories. If they agree that it is all right, or if, after consultation with the Laboratories, they modify it and then agree, that work sheet comes back to me, as the Vice President of the American Telephone and Telepgraph Company, and if I approve of that work being carried on in the Laboratories at the expense of the American
2244 Company, I sign that authorization on behalf of the American Company and return it to the Laboratories, and a copy goes into our D and R records. It then becomes the authorization for the Laboratories to do the work and to bill the expense of the work to the American Company and the authorization to the American Company, or its proper officers, to pay those bills if, as and when rendered, when they have been certified to by the D and R people as being correct. And, in the process of certifying to me that the work requested to be done is not only proper, but as to kind and amount, the examination which is made by our people runs back to the general consideration of work in that whole classification as it was at the time that the budget was made up, so that I am not put in the position of authorizing work in excess of what we originally had in mind at the time that the budget was made up. Now, many times I do authorize work in a given classification in excess of that which appeared in the original budgetary study, because that general budget, which is approved at the beginning of the year, was not a rigid approval of the division of expense among all of these
2245 numerous classifications. There are a great many of these work sheets, on the average, during the year. If I were to give the number, it would be the roughest kind of a guess. I would not say that they run into the thousands. The work sheets might run up between one and two hundred.

There are a large number of projects that go on. Of course, the way the accounts are kept the number of specific pieces of paper referring to the work are very much greater in the Laboratories than they are in the Department of Development and Research, because of the thing that I testified to a day or two ago; that is, in recent years we have charged the D and R work to classes of work rather than to specific jobs.

Taking both the Department of Development and Research
of the American Telephone and Telegraph Company and
2246 the Bell Laboratories, if you were to go down there to
examine the sheets for one year's work you would find in
the Laboratories a very large amount of material, because of the way in which the things are kept up there. How much, I cannot tell, because personally, even though I am President of the Laboratories, I practically never see the things referring to Western Electric Company work which correspond to these things that I have been describing to you for the American Telephone and Telegraph Company. That is carried on directly by the Vice President of the Laboratories with the Vice President of the Western Electric Company. I would think you would be confronted with thousands of sheets containing these various matters.

These studies cover many things, the matters of opera-
2247 tion of existing apparatus, and also the improvements
of existing apparatus. They also cover new apparatus.
I do not think these records are classified on any such basis as that. In the D and R this work is classified in accordance with the classification shown in Exhibit A-114.

The American Telephone and Telegraph Company and the
Western Electric Company are billed for the work
2248 authorized to be done by them. In general, the majority
of the work billed to the American Company has to do
with the fundamentals of things which may underlie apparatus and do underlie operational studies, but even in the billing to the American Company there are certain things where these fundamentals involve the fundamentals of apparatus. Now, conversely, in the case of the billing to the Western, while most of it does relate to the preliminaries of

manufacture of physical things, there are billings from the Laboratories to the Western which are somewhat analogous to the principal billing to the American Company. You cannot sharply segregate and say that the billings on apparatus go one way and the billings on the other things go the other way. The same is true with regard to the smaller billings from the Laboratories to its other customer, the Electrical Research Products.

2249 Most of the research laboratories that I know of are connected with manufacturing companies, and their problems are the problems involved almost exclusively in the development of things to be sold, but, as I explained at the time my deposition was taken, the research function of the Bell System is a very different thing from that in its larger aspects. The thing which we sell ultimately is not apparatus, but it is service.

In distinguishing between the preliminary development work and the work upon specific things, in so far as the Laboratories do any of the former, it is all one enterprise and in one laboratory, and usually handled that way in connection with other manufacturing concerns. It would be quite possible to have the Department of Development and Research of the American Company and the Laboratories housed in a single housing. As a matter of fact, they do operate essentially as a unit in so far as it relates to the business of the American Company, and I am chief executive officer of

2250 the whole operation. One of the reasons for the segregation as we have it at the present time is the fact that a very large part of that division of the work which is done by the Department of Development and Research brings them in such intimate contact with the Department of Operation and Engineering that it would be a considerable inconvenience and handicap to have them separated physically. It is the same kind of a situation which developed many years ago in the laboratories of the Western Electric Company, which might better have been, from a purely Western Electric standpoint, associated with the factory, but which were separated from the factory at Hawthorne and taken to New York.

because so much of their work had direct contact with the American Telephone and Telegraph Company.

In relating the expense of the Department of Development
and Research over a period of years to the plant investment
in the Bell System, procuring a result of $1.89 per year per
thousand of investment, the plant figures which I used
2251 were given to me by Mr. Crunden. I think I got them
from Exhibit A-111. What I got was the average plant
during the period in question, which I related to the average
expense for the same period.

2252 (Defendants moved to strike the answer in regard to
the $1.89 cost, inasmuch as it was based upon Exhibit
A-111, for which a motion to strike was pending. Court
ruled that the motion to strike this answer should be
argued together with the motion to strike Exhibit A-111.)

"Q. You gave five classifications of the work of development and research. One of them was the work of supplying information to properly install new plant. Does that cover the specifications for installation of plant items by Western Electric?

"A. No, that is not what I had in mind."

What I had in mind was the information which was given
by D and R to the associate companies, either directly, or,
more generally, indirectly through the Department of Operation,
to enable them either to install plant or to see that it is
properly installed. It did not refer to information to the
Western Electric Company in regard to the installation of
central office plant. It did not necessarily have to do with
directions in relation to items produced by the Western
2253 Electric Company. It may have to do with such items,
but I would not say that it almost always has to do with
such items with some exceptions. For example, in connection
with all inductive interference matters which involve the
installation of the wire plant of the associate company in its
relation to the interfering plant, it has little or nothing to do
with the Western Electric Company. It may have little or
nothing to do with the current relation with the Western Electric.
It may have to do merely with the rearrangement of

existing plant. What I had in mind, I should think, generally
did not have to do with apparatus manufactured and sold by
the Western Electric Company. It does have generally to do
with the installation of the items in the plant account of the
company, because all of our work primarily deals with physi-
cal things. But, to give another illustration which is closer to
the Western Electric: in the early years of the telephone
2254 repeaters and in the improvement in telephone repeaters
as they have come along, and with the introduction of
carrier, the thing to be installed was a piece of apparatus
made by the Western Electric Company. The information
which we furnished to the associate company was not con-
cerned with the installation of that thing by the Western
Electric Company, or possibly not even by the telephone com-
pany as a specific thing, but it had to do with its relation to
the balancing of the plant and the kind of plant on which it
could be used, the kind of information which the telephone
company itself must acquire from us or somebody else in
order to utilize this physical thing which may have been made
by the Western Electric Company.

If the telephone company had not had this information
from us of the kind I refer to, it would have required more
than engineering in the building of a new plant. It would
have required the acquisition of new engineering knowledge.
It is that new engineering knowledge which I had in mind as
being furnished by us to the associate companies. After they
have got it with regard to any particular thing, if the art
2255 does not change, it is not a continuing thing that we do;
it is the thing that we do at the time that the thing
becomes a new factor in the plant; it is to give the engineering
departments of the associate companies that new information
which they must have to operate.

It would be necessary for the engineers constructing a new plant to have that information and it would go in as a part of the engineering cost of constructing the new plant if they acquired it. When the associate companies get that information, however, they do not pay a specific charge for it. We never bill anybody for that kind of work. I do not mean that it is done for nothing, but what I mean is that that kind of information is not billed to the recipients of the information as a specific billing; it is one of the services under the license contract.

In respect to these five general classifications of the work of
development and research, I am not able to tell the
2256 amount spent in respect to each, because those are not
classifications in connection with the Company's business, but are merely classifications of the way in which I presented the illustrations.

I have forgotten exactly what I had in those several classifications, but I think it is safe to say that there is no sharp line of demarcation between them, although, as I remember giving them, they did relate to rather distinct kinds of things given by way of illustration. The specific items of expense in Exhibit A-114 that I have included in Exhibit A-115, under
the column "Transfers to Other Departments including
2257 Patent", I think are all as indicated by the notation at
the bottom of the sheet. Take the year 1930 as an example; they are all marked by asterisks. On the 1930 sheet is an asterisk under "Engineering Services, Ship-to-Shore Radio", followed by the legend, being the last entry upon the sheet, "Expense Chargeable to Other Departments of the A. T. & T. Company". Then the reference goes up to the nineteenth item, "Engineering Services", and under that indicates "Ship-to-Shore Radio".

2260 There is not included in Exhibit A-115 any intra-departmental charges. There is no intra-departmental billing in the D and R. There is no inter-departmental billing for the normal functions of the department.

The deductions shown on Exhibit A-115 were made only for the purposes of allocation. Those deductions in those two
columns were made to give a net balance of expense
2261 incurred directly or by billing from the Laboratories
which appears to me to be the proper amount to attempt an allocation of. I had the figures on Exhibit A-115 compiled and went over them shortly before coming out here on

this trip. While I have been here, I have rechecked the validity of the items in the classification "Non License Expenses" against the original records, to make sure that I agreed that these deductions which had been found for me were proper things to deduct as non license expenses. We have been working on the figures on Exhibit A 115 for a considerable time. This particular printing of that exhibit that I have before me certainly was within the last few weeks. These figures were never given to Mr. Heiss of the American Telephone and Telegraph Company by me. As far as I know, they were not given to him by anybody.

2262 "Q. I understood you to say that the telephone industry is not subject to the economic principle of reduced costs due to mass use, and that the Department of Development and Research expenses are to produce lower unit costs to offset increasing costs, due to increase in number of subscribers, is that correct?

"A. No, I think that is an expansion of what I said."

It involves what I said, but I think I said that the telephone company did not have the element of mass production entering into it in the same way or to the same extent as it is commonly assumed to enter into mass production as a means of bringing about an inherent unit reduction in the cost of the things produced when you increase the number of them. I went on to indicate that there were some factors in connection with the telephone business which inherently operated in a directly opposite fashion; but I do not think that I ever said that no element of mass production appeared in the telephone business, because that is certainly not true with regard to the manufacture of apparatus. Mass production in a factory, whether it makes telephone apparatus or whether it makes any other apparatus, has that factor in it. What I said, 2263 and what I attempted to illustrate was that in the plant required for serving increased numbers of subscribers, there were certain factors which brought about, under certain conditions, the inherent requirement of a greater and more expensive plant per subscriber than under other conditions, and I illustrated it by the inter-office trunk plant and central office equipment of exchange areas as they grew from the capacity of a single office to the requirements of two or more offices.

I think, considering the toll broadly to include both local and longer distance toll, that that same factor appears under certain conditions in the toll plant, but not to anywhere nearly the same extent that it does in the local plant, because the problem of toll is either primarily or more largely a transmission problem and not a switching problem. That particular factor comes in because of the switching element, which is so predominantly local exchange. What I just said about toll would apply to the Long Lines plant of the American Telephone and Telegraph Company. Where the factor
2264 applies, that particular factor is concerned with switching, and, to the extent that the Long Lines service is involved in switching, it there appears also. I have not the slightest idea what proportion of the Long Lines plant is involved in switching. I should say it was a very considerable portion.

The work of development and research, in my opinion, had an effect to increase the number of users of long distance service. It led to an increase of the fields of use of the Long Lines. I mean by the fields of use, new services. One of the fields is one to which I referred this morning, the switched typewriter service, which our work has opened up, both
2265 to the Long Lines and to the associate companies. Some of the others are: the field of picture transmission, which our work has opened up to both the Long Lines and the associate companies, but which so far, with one exception, has been made use of only by the Long Lines, to its very considerable financial cost. In the radio field, of course, it has opened up the possibility of giving telephone service to Europe by radio plant furnished by the Long Lines, but that is not a new field of use, that is an extension of telephone service. There is one thing which, while you might call it telephone service, of course, is not telephone service in the ordinary sense. It is the provision of the program transmitting circuits which are used in conjunction with radio broadcasting. There is a field which has been opened up to both the

Long Lines and the associate companies and is availed of by both. I do not think of any other fields at the moment.

2266 There have been tremendous extensions, both in the Long Lines and in the associate companies, in the use of leased telegraph wires, but that was a service which is old in the telephone art, it really is not new. That is a considerable field; it has been. I do not know just what it is at the present moment.

When I was asked the following questions and made the following answers:

"Q. Now, take the class of work which you have referred to as protection of your system from interference by electrical currents or trolley wires or high-powered electrical transmission lines.

"A. A very large part of that has no connection whatever with the manufacture of apparatus. Some of it has connection, particularly where it relates to protection from things like lightning, but where it relates—and this is a very large part of it—where it relates to the work which we do in connection with the inductive interference, or electrolysis, 2267 it has no substantial connection, practically no connection at all with the manufacture of apparatus.

"Q. Is a large part of your expense under that classification directed to that kind of work?

"A. Yes, I should say 95 per cent of it."

I think what I had in mind was that the 95 per cent applied to the whole classification, and I think the answer is correct, because (while that title has interference prevention and protection and I have made a reference to the things concerned with lightning as a qualification to indicate that in that it had to do with apparatus) very little expense is incurred by the Department of Development and Research in that field where apparatus is involved. The expense in that field, the development field, resides primarily in the Laboratories, in the construction, development of apparatus, and that expense is not billed to D and R, but is billed to Western; it follows the 2268 apparatus. I think I had in mind qualifying the original statement that it did not relate very much to apparatus, simply to indicate that there was in the designation a thing which did involve apparatus. The 95 per cent, I still feel, holds against the whole classification, so far as expense and application in the Development and Research Department is concerned, because the amount which relates to the apparatus item under lightning protection is so very insignificant.

In Exhibit A-116 (that is the one "Maximum Amount of D and R Expenses Allocable to Non-Bell Sales of Western Electric Company (Excluding Special Commercial Products)"), I classify all the development and research
2269 expenses into apparatus and lead covered cable. The same qualification which I made with regard to the allocation of expense against associate company and Long Lines beneficiaries runs in these classifications, that is, work of our department done in the year 1923 does not, in general, appear in the business of the Western Electric Company in that year. It may appear at some later date. But, in order to make this allocation, I had to assume that it did apply in that year and I made the further assumption, as I testified to, that all of our work which we did ran to apparatus, and I testified that I thought that was a very liberal estimate, because so much of it has no concern, so that I felt that I was making a maximum allowance of the expenses of our work in connection with the Western Electric telephone apparatus and lead covered cable. In a word, what I assumed was that, as a result of our work in the telephone apparatus and lead covered cable field, the Western Electric Company developed a large number of baskets of things, all alike to each basket, and that they sold some of those things out of each basket to the Bell associate companies, and a very much smaller amount of things, but still some out of each basket, to
2270 non-Bell customers, and that if you were going to make a deduction from the benefit of our work on account of this non-Bell sales of these identical things, it was fair to assume that a proportionate part of that deduction was represented by the relation of the non-Bell to the Bell associate sales.

Save for this question of time which I have explained, this exhibit assumes that all of the development and research

expense that I have allocated here to particular years has led to the manufacture and sale of things by the Western Electric, which is an over-liberal assumption. I apportion each of the expenses of development and research between the non-Bell customers on the one hand and the Bell customers of the Western Electric on the other hand entirely on the basis of sales. I do not think that I could testify as to whether I was the originator of that idea or not. In order to answer
2271 the question before the Court of attempting to make the allocation of expense, it first appeared to me to be an impossible one in much of our work, because of the fact that it was, in its very nature, of a kind which can only be applicable many years in advance, and at first I felt, except with a broad general yardstick, it could not, class by class or year by year, be done. I and my associates had numerous considerations of how we could do these kinds of things and out of it grew, so far as this particular item is concerned, this, which seems to me an entirely reasonable way of doing it, a very large over-emphasis of amount of deduction which should be taken on account of these non-Bell sales. I will take the
2272 full responsibility for the use of this in support of my judgment. I think if I had simply been told that I had to make an allocation with this kind of a credit given, I am quite sure I would have come to identically this kind of an answer. I think that that sales basis is a liberally fair one under the circumstances. None of my associates disagreed with me in thinking it was liberally fair.

When it came to distributing it among the various entities in the Bell System, I abandoned the sales method and put it on the basis of what they already had, because I was dividing the different kinds of things; I had a different denominator. I was allocating costs in both cases.

"Q. And in the first case, between the non-Bell and the Bell customers of the Western Electric, you took it on the sales basis, and you considered that a fair basis, apply-
2273 ing it to the goods that were sold? That is right, isn't it?

"A. I did,—the Western Electric Company did not,—because there was not a tremendous accumulated investment in the things as of that time. The only things that we had at that time were the things that were in transit.

"Q. But when you came to dividing them among the various Bell entities, you used this kind of a philosophy; that if Mr. Bracelen has a 10,000 acre farm, and I have one of ten acres, and we hire you to develop a rat-trap to put in each of our granaries, you will charge him in proportion to the value of his ten thousand acre farm, and me in proportion to the value of my ten acres, that is your philosophy, isn't it?

"A. Well, otherwise I would assume you had more rats per acre on your farm.

"Q. Then that is the sales philosophy again, isn't it, your rats per acre?"

I have stated very positively, and it is my firm belief, that any allocation for any purpose of the cost of this work of ours has to be related to physical things, as the fairest way of doing it, because it involves physical things. Now, in the one case I was trying to make an allocation for the sake of making deduction which was not going to be applied to anything concerning the Western Electric Company, but it was going 2274 to be applied to a deduction from our expenses, because a benefit had arisen to somebody who was not one of those whom I was ultimately going to divide it among. I still have to stick to my physical things. How was I going to, year by year, get that amount to be deducted without relating it to the physical things which I found at that time? I had not the slightest means of knowing what the total amount of all this stuff was that the Western Electric Company had sold to everybody over that period. The only physical things I had were the things which were in transit and through the Western Electric Company at that time, and it seems to me that of the factors I had available, the fairest ones which related to physical things were measured by the sales of those physical things.

I did not follow the principle that cost of development and research should follow the goods when I came to make this allocation of expenses among the units of the Bell Sys-
2275 tem, because, as I have already tried to explain, any

attempt to make an allocation among the associate companies and the Long Lines year by year, for a definite period of years which terminates at the immediate present, when none of our work of the last year has appeared in the plants, or substantially none of it has appeared in the plants, and when at the beginning of the period I obviously cannot take ratios of something in the years preceding because the things do not apply, I am limited, if I am going to have an allocation year by year, to the ten or eight or ten things which I found in that interval.

"Q. Did you try this consistency of applying that same doctrine in allocating between Bell and non-Bell, relating to Western Electric sales?

"A. Well, how can I? I don't know all of the things in the non-Bell field. All I know is what the Western Electric Company has sold in the non-Bell field.'?

"Q. But each one of these had an investment, each one of the non-Bell customers, each telephone company, had an investment primarily ascertainable?

"A. But it was an impossible task for me to find out what that was for all of their customers.

"Q. But it was not an impossible task when it came to a distribution in allocation of these expenses within the Bell System, to find what the sales of goods were there, the same as it was to find what sales were to Bell and non-Bell in making that allocation, was it? You had that information, didn't you?

"A. The sale of goods?"

2276 Of course, I made an over-liberal estimate here, as I thought, for the non-Bell sales of the Western Electric Company, but a vast part of our effort has nothing to do with this when it comes to the associate companies.

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2279 The Western Electric Company was never billed for
the amount proportioned to the non-Bell business of the
Western on Exhibit A-116. We make no billings of the
expense of development or research for development matters.
The portion of that expense which I have allocated to the
non-Bell business was never paid for by the Western Electric
Company.

The figures appearing on this exhibit (A-116), representing
the sales figures on the non-Bell business for the period beginning
with 1925, represent the sales of the Western Electric
Company to their customers, and, in so far as Graybar was a
purchaser of telephone apparatus or lead covered cable, they
represent the sales to it. They do not, as I understand
2280 the figures, represent Graybar's sales of those things to
the ultimate consumer. The price would be the price to
Graybar and the distributors.

The development work of the Department of Development and Research, I assume, only goes to a portion of the 100,000 items and 20,000 combinations of the Western Electric Company. I do not know what all of those items are, but I think it would be a fair assumption that there were a considerable number to which you could apply little, if any, of this cost of which we are talking.

"Q. And of those 100,000 items, and 20,000 combinations, I suppose it is a fair assumption that the non-Bell sales are only of a portion of those items, is it not?

"A. I should think that was a fair assumption in these classifications; yes, sir."

I do not know to what portion of the 100,000 items the
development and research expense in a given year
2281 applies. I do not know what per cent of those items on
which development and research expense was had,
applies to the Bell items, and to the non-Bell items.

"Q. Now, by apportioning among the Bell customers on the basis of plant, you assume, do you not, that the Bell customers each purchase a cross section of the sales to all of the Bell customers?

"A. On the average of the total, yes; that is the assumption."

That is the assumption in each year. I do not make that assumption and lump it over the entire period of years, but in the first allocation which I made, and which I think is the best allocation, of course, the net result is the same, whether you take it year by year, and add the results together, or whether you take the average of sales over those years and apply them. It does not necessarily assume an average in the various sub-classes of goods dealt in. The allocation
2282 which I made was based on percentages of our work, and not to the classes of goods. I do not entirely leave out of consideration the goods to which the result of our work may be applied, but I leave it out of any detailed attempt to allocate because it is quite impossible for me to do that for the reasons that I have mentioned, that the work, or the effects of the work, appear in so many different classes of goods.

I presume that the different classes of goods are purchased in different quantities in a given year and also the purchases vary throughout the year considerably.

2283 In Exhibit A-116, I am not assuming that the non-Bell customers paid, as part of the purchase price of the plant items which go into their capital account, for any part of the development and research, which are the figures which we are here concerned with, because there has never been any billing of that expense. They are undoubtedly paying for their proportion of the development expense of the Western Electric Company in the creation of the things which it sold. I do not think that the benefit of any items of development and research reflects itself in the price charged by the Western Electric Company to the non-Bell customers, except in the extent to which that benefit has made it possible for the Western Electric Company to sell this type of product at a lower price than they would otherwise have been able to do. I
2284 do not say that the Western Electric sells to non-Bell customers for a price that is less than the price to Bell customers, by the amount of development and research expense that may be allocated to those goods.

So far as I know, the development and research expense reflects itself in the goods that are sold by the Western Electric Company to non-Bell customers only in its effect, and in the manner which I have indicated in the answer to the question just preceding.

The results of the work of development and research are reflected in the goods sold by the Western Electric Company to non-Bell users and it is for this reason that I assumed that it was fair to make an allocation of benefits.

"Q. And if the results of that work as far as prices are concerned, are found in the selling price of the Western Electric Company to the non-Bell customers, in that case it goes to capital accounts in respect to those customers, while in the case of the Bell customers it goes as an operating expense by reason of the license contract, does it not?

"A. Well, I cannot answer that question because I do not know; I am not an accountant, and I do not know how people keep their books."

2285 In Plaintiff's Exhibit A-116, I do not include in the non-Bell field special commercial products; those are specifically excluded, as indicated in the heading of the exhibit. I do not, in any of the exhibits which I have presented, consider that any portion of the development and research expense is allocable to special commercial products. I do not do that for two reasons. First, that if any were included, I would not know how to make up an allocation, but that is an incidental reason. In the second place, because to whatever extent the benefits of the research and development work of the American Company are found in the special commercial products, those values have been paid for in 2286 ways other than by an allocation of the credit for expense of development and research.

The special commercial products which I have in mind are essentially the non-telephone and telegraph things manufactured by the Western Electric Company, which are sold and distributed either through Graybar or through Electrical Research Products. They are such things as the talking motion picture equipment, both recording and reproducing, the phonograph devices, public address systems, and any of the things which are founded on the same fundamental considerations which underlie telephone and telegraph apparatus, but which do not have a use, or only an incidental use in the plant of telephone and telegraph companies. They are things which are for use in fields outside of the communication 2287 field—radio. Those are the results of development and research work. I said that there were two reasons why I did not take them into account in my allocations, of which one was possibly an incidental reason; that is, if there were values there which should be considered in the allocation I did not know how to make that kind of allocation, but I said as the second, that is, those values have been taken care of in an entirely different way by the payment of royalties to the American Telephone and Telegraph Company by the Western Electric Company.

In making my allocations for the Bell portion of the development and research expense between the associated Bell Companies on the one hand, and the Long Lines on 2288 the other hand, on the basis of plant investment, I assume that the problems of the exchange and the problems of the Long Lines are in some respects identical, in some respects similar and in some respects quite dissimilar. So far as the fundamentals are concerned, and this is increasingly true, the more fundamental is the type of research and development work, they are similar. As you get toward the part of research and development which is more specially directed to a particular end, the dissimilarity increases. Those differences are not taken into account in the allocations which I take into consideration for this very difficult thing. They were taken into account in the attempt to check the results of that preferred method by utilizing these artificial classifications of our analysis of expense accounts, and they are reflected 2289 there by the fact that different kinds of items are used as the basis of allocations in those classes.

I am only familiar in a general way with the contracts under which the royalties from the Electrical Research Products and the Western Electric Company, to which I referred

a moment ago, are provided for. The general basis is that the Electrical Research Products pays, or the Western Electric Company pays, to the American Telephone and Telegraph Company, a percentage on the sales price of apparatus which is sold for use in this special commercial products field and also that in some cases (I am not sure whether it is in all cases, but I think it is) where royalties for use of these kinds of things are paid to Electrical Research Products or the Western, a portion of such royalty is paid to the American Company. I am not familiar with the exact details of
2290 how that is worked out. I presume that there is only a small number of contracts between the Western Electric Company, American Telephone and Telegraph Company and Electrical Research Products. I am not sure that they are all in the form of contracts, they may be in the form of an interchange of letters.

The Western Electric Company and Electrical Research Products pay no compensation to the American Telephone and Telegraph Company for the benefits of the research and development work of the American Company which
2291 applies on business to the associated companies. I do not know why it was that the American Telephone and Telegraph Company did not adopt the same method of compensation for its development and research work on sales of goods to the associated companies; it goes away back; it goes far back of my time.

The percentage figures in column 4 of Exhibit A-117 were given to me by Mr. Crunden and are in evidence on this case.

"Mr. Haight: We wish, if your Honor please, to note a motion at this time to strike, in respect to that, for the reasons given in objecting to Crunden's Exhibit A-113."

2292 In the first exhibit which I put in as the summation of the allocation divided down to the Chicago area, in making my allocation of the Chicago area I considered it as a unit made up of exchange plus toll on the one hand, as against Long Lines and exchange and toll for the balance of the System. The figures in the last column (column 5), which are expenses allocated to the Chicago area, are the result,

first, of taking out the benefit to the non-Bell sales and then allocating the remainder to the Chicago area in the ratio of its plant investment to the total plant investment, and in that sense they take whatever plant is found in the Chicago area and relate it to the total plant, both local exchange, local toll and long distance toll plant of the entire System. In
2293 the Chicago area there is included whatever plant is in
the Chicago area, both plant used in exchange as well as in toll. On the other hand, it is the Long Lines, plus both exchange and toll plant, referring to use of all of the other associated companies. I cannot, for the reasons I have stated, separate the expense of development and research for the Chicago area allocating to toll plus the Long Lines on the one hand, and the expense allocable to exchange on the other hand.

2294 On Exhibit A-118, on the sheet for 1927, the per cent that I have allocated to Long Lines, in the second column of figures, for central office systems and apparatus, is 4.5 per cent. That is central office equipment. That is made because of the long distance toll boards and the fact, as I understand it, that on the books that portion of invest-
2295 ment in repeaters, which is large in the Long Lines and
which does not relate to the fundamental things referred to below, is classified as central office equipment. I do not know what the board-to-board theory is.

"Q. Well, you assumed that as far as the Long Lines are concerned, they end at the toll boards, and you did not include in Long Lines anything in the exchange plant that should be allocable to Long Lines. That is the basis on which you have arrived at this 4.5 per cent in regard to the first block, central office systems and apparatus, is it not?

"Mr. Blackman: Just a moment, Doctor, just a moment. I object to that. I think that is introducing a pure question of law. The witness has stated that he has dealt with the plant owned by the Long Lines and the plant owned by the other companies. Now, of course,—

"Judge Wilkerson: Well, you understand his answer to be this, then, that in determining the part of the aggregate plant which is owned or which is represented by the Long 2296 Lines, he has not included any percentage of the plant of the local companies.

"Mr. Blackman: Yes, certainly. His answer is perfectly plain.

"Mr. Haight: All right.

"Mr. Blackman: And may I say—

"Judge Wilkerson: We all understand it alike, then.

"Mr. Blackman: May I say right here, if your Honor please,—

"Mr. Haight: That answer satisfies us.

"Judge Wilkerson: I so understand him.

"Mr. Blackman: Yes.

"Judge Wilkerson: I so understand his testimony.

"Mr. Blackman: Yes.

"Judge Wilkerson: He has not gone into—

"Mr. Blackman: No.

"Judge Wilkerson (continuing): —the question of how much of the value of the local plant is to be taken out of the local plant and put over into Long Lines for the purpose of making these different allocations.

"Mr. Blackman: Right.

"Judge Wilkerson: He has dealt with Long Lines as he finds it.

"Mr. Blackman: Yes.

"Judge Wilkerson: And with local plant as he finds it.

2297 "Mr. Blackman: Certainly.

"Judge Wilkerson: And as to these other theories, he leaves them to the court.

"Mr. Blackman: Yes, sir, and whatever the court determines the allocation to be, will allocate the proper amount.

"Judge Wilkerson: It may be that these figures which he gives are subject to some correction, and if after considering it, the court will say that the percentage of local lines should be put over into the Long Lines, it might increase that.

"Mr. Blackman: Yes, sir, and the way we have treated it is allocating some of them to the Long Lines, because we have allocated a part of our total expense, including the license contract payments, to the Long Lines.

"Judge Wilkerson: Well, your tables show the basis on which they are made, do they not?

"Mr. Blackman: Yes, sir, and whatever basis the court takes will automatically allocate this.

"Judge Wilkerson: I understand.

"Mr. Haight: Of course, we are not forgetting that the Supreme Court has already taken a basis."

2298 In item 4, on the page for 1927 of Exhibit A-118, I allocate nothing to Long Lines. The first subheading under Item 5, on the same sheet, which is "Voice Frequency Telephone Equipment and Circuits", I should not think has to do with toll systems only; I would not say so. I do not see why that should apply. Voice frequency telephone equipment and circuits might apply to any part of telephony.

2299 I think our work applied to things other than toll systems. Without having examined in detail all of the different things that were done in all of the years to find that there was a year in which they did not apply to all, I would say that in all the years the work under this subhead applied to all. In making my allocations on my exhibits, I did not know whether it did or not. This classification is one which, as the table indicates, is lumped with the two following ones and all of the matters referred to in all three of these classifications are of such a fundamental character and, in many cases, are so remote from the immediate application of the plant, that their benefits, direct and indirect, are found in many, if not all, of the other classifications and in proportions which make it impossible for me to allocate them narrowly against classes of plant and conditions of use. The

2300 specific application of the work under the next subhead, "Carrier Telephone Equipment and Circuits" (which is a very new work), at the present time has its present-day uses only in toll lines to any considerable extent. But it is a character of work which, because of the reduction in the length of the lines over which it is economical to employ it, is approaching and will reach the place of a possible large use in the local exchange area. All of the work which relates to transmission in its initial specific application, where there are very new things, almost inevitably finds its first direct use in toll service and grows down into the local exchange service, just as the great bulk of all work relating to switching, which is fundamental in character, follows the reverse course.

2301 I think as a broad statement that most of the things as things, which I have grouped under items 5, 6 and 7 as being of a more fundamental nature, have so far found use in the toll service. It is not true of all of the items, as you can see by going down the list. Take in classification 7 (Apparatus), which on this sheet happens to be a small item; that sort of thing, I presume, would be found, if we could analyze it, to be as much or more in the local exchange

2302 thing. Presumably the next item similarly. Loading coils have been used enormously in the local exchange area. But, in general, the newer things, as things, have appeared in toll rather than in the local exchange area; I am referring now to items 5, 6 and 7. Special commercial products have come substantially very largely from those classifications 5, 6 and 7, plus, possibly, something out of classification 4, and, in so far as it involves things used in switching, out of classification 1. That, however, is a relatively small matter. The main values have come out of classifications 5, 6, 7 and 8.

2303 Uses that have come out of these classifications have been largely in Long Lines and in the toll plant of the associated companies. Not all of those uses, as I have indicated, are benefits to the Long Lines. Some of them have been serious burdens to the Long Lines. All of the radio uses and all of this picture transmission of classification 5 have not been benefits but quite the reverse.

I am not competent, I think, to testify accurately on whether the benefits that have been derived as between Long Lines and toll have been mostly to the Long Lines, because some of these uses in the local toll-plants have been extremely large, as, for instance, the case of certain of the carrier installations, where in the later types of carriers, they practically all have gone into the plant of the local companies. Further, I am not competent from my knowledge to testify to the relative benefits of, say, such a thing as loading, where there has been an enormous usage in the plant of the associate companies.

2304 Broadly speaking, these devices, as classified in items 5, 6 and 7 in Exhibit A-118, have, in general, found their uses first in the Long Lines, because of the fact I mentioned that these new things of transmission, when used as things and when in the stage of being crude and expensive, are, because of the value or the cost of that kind of service, first employed there. Oddly enough, some of these things that we are talking about found almost as early an application in the toll plant of the associate companies as they did in the plant of the Long Lines, as, for instance, such things as carrier; but, if I am not mistaken, the second installation of carrier was on the toll lines of the associate companies.

"Q. And that would be with companies over many states, would it not, and not in a concentrated area like Chicago, is that not true?"

That kind of thing would not be likely to happen in a concentrated area like the local exchange area of the City 2305 of Chicago, unless by chance there happened to be some very peculiar condition existing. However, it would occur on the lines of associate companies of considerable length. My understanding is that the Long Lines did a large intrastate toll business within the territories of the licensees prior to 1925, but how large it was I am not in a position to state, as I do not know. I know that short-haul toll business was more a part of the Long Lines before 1925 than it was after 1925. I do not know when this 40-mile limit was instituted.

2306 The Long Lines have what are known as full or part time telephone subscribers, but my understanding is that the instruments which these subscribers use in availing themselves of that service and the plant which they use in reaching the terminals of the Long Lines are the same local plants which they use in connection with their other telephone service. As I understand it, the Long Lines does not put in special sub-station terminal equipment which is connected only to the Long Lines' plant. In that sense, the Long Lines does have subscribers; both telephone and telegraph. The American Telephone and Telegraph Company has direct subscribers in the sense that they have made an arrangement with people to furnish a service which the Long Lines proceed to furnish with the help of the associate companies and for which the associate companies, as I understand it, are remunerated.

I did not intend to say on my direct examination that 2307 the rate case expenses are allocated to all of the licensees.

So far as Development and Research Department expense in connection with rate cases is concerned, it becomes simply a part of our general expense. No attempt is made to allocate or apportion such expenses. The only allocation, so far as I know, that has ever been made of these expenses is this allocation which I have made in an attempt to arrive at a figure. Since they are a part of the general license contract services, in effect they are pooled among all of them.

The expense of the Development and Research Department does not include expense incurred by the American Telephone and Telegraph Company in purchasing licenses or patents from owners outside of the Bell System. The only item referring to patents there has to do with internal expenses in the Bell System and that is transferred out of my 2308 department into some other, but it relates only to expenses which are charged to that general classification and which are incurred by our own people.

2309 "Q. Development and research work, let us say, is done upon two items during one year, and the cost of each is $1. One of those items is used immediately, and the other item is not used for nine years. Now there is the simplest situation imaginable, too simple to actually occur, of course.

"Now, what I am trying to get at is this: when you take the expenses for a particular year, you ascribe those expenses to that year, but you do not thereby make any division as to results in uses, do you?

"A. No.

"Q. Now in looking at your allocations, how shall we size them up?" Shall we say that we have distributed those benefits in use over the entire period, or would you say that there is any relationship between the allocations which you have made and those year by year results?"

I think I can give the clearest indication of the base on which I worked by taking as an example the year 1931.
2310 Take the last allocation in that book, the year 1931, the year just passed, in which a large over-all expenditure for research and development work was made. Now I have already testified that in my judgment the fairest way to attempt an allocation of that expense between the several corporate recipients of that benefit is to apportion the net cost of the work, after deductions and allowances, on the basis of the plant values, because this work relates to physical things, which are plant. Now, what base have I on which to apply this allocation? I obviously have not the base of a plant ten years hence, because I know nothing about it, nor five years hence, nor one year hence. I can guess, but I have no base. I obviously cannot apply that base to a year preceding the present year, because I would apply a future condition to a past situation. Consequently, I am driven between those two alternatives, to the one gross base which I have available, which is the size of the groups as they exist at the present time, namely, the basis of the relative plant investments as of the year in which they occurred. And the same pertains with regard to every year back.

Now you might argue with regard to the earlier years,
2311 taking the year 1923, that eight years have elapsed, and that I consequently could apply a better figure in regard to the allocation to the year 1923, because of the fact that I have lived eight years beyond that. I might admit that that was so, but if I admitted that, and did it, I would be in trouble with all of the subsequent years, because it would force me into an assumption as to what was going to exist at some time in the future. So that the allocation has been made on both bases, both on the basis which I think is most fair when we come to consider a character of work of this

kind which is dealing with the future, and also in the attempt which I made to check that against these artificial classifications by taking each year, year by year.

2312 I have here a memorandum which was prepared for me some months ago, showing the total expense incurred under the classification Radio by the Department of Development and Research for the years 1910 to 1931, inclusive, which, of course, includes both the directly incurred expenses and the expenses billed by the Bell Telephone Laboratories or its predecessor, the Western Electric. I have forgotten who prepared this memorandum. I have no reason to doubt its accuracy. It was taken off from our records in the regular course of business. It is something that was prepared in my department and under my direction and I am satisfied with it.

2313 I have not gone back and personally checked it against the figures but I am satisfied with it. It is the kind I use every day in the conduct of our business.

2314 (Which said document was marked for identification as Defendants' Exhibit D-93.)

The pencil marks on this exhibit are just my notations; summations of some sort or other.

"Mr. Haight: Yes, and the pencil notations there will be disregarded."

2315 The items of expense appearing on this sheet (D-93) relate to the items of main classification 6 and its subclassifications. Of course, in any particular year the expenses under some of the sub-classifications are different from others, because in this year I am looking at, which is 1927, there are some items on here which existed at that time, such as ship-to-shore, which did not exist in the earlier days. But, in general, they relate to the work of that main classification and I am not in a position at the present time to make any finer division than is shown in the last column of this sheet.

As I have stated on two or three occasions, the Long Lines has run its radio service at a loss. In saying that, I included as to plant the Long Lines' investment in the radio plant utilized or employed in the giving of the transoceanic

2316 service: that is, the transatlantic, the South American, Bermuda, Central American and Hawaiian services, and

the radio plant involved in the giving of ship-to-shore service, but did not include investment in the wire lines which connect those radio plants into the main network. I did not include revenue from leased lines used in broadcasting service; the figures that I gave relate strictly to the radio telephone service of the American Company. I understand that the revenue from the leased lines used for broadcasting service is a large gross revenue, but I do not know what the net
2317 revenue is. I did not include any profits of the Western Electric Company or of the Electrical Research Products Company on the sale of vacuum tubes; I included merely the plant investment of the Long Lines in its radio plant. There is no relation between the radio plant and the sale of vacuum tubes or transmission for broadcasting.

I have not in detail the figures of the loss incurred in the ship-to-shore and transatlantic services. I gave somewhere in my testimony the rate of loss at which the service was being conducted as of two or three months ago, which was, at
2318 the time, about $600,000 annually. They are the only figures I have. The best way to check that, if it has to be checked, would be to get someone from the Long Lines Department who is conversant with the details of those figures.

The figure which I used with regard to the investment of the Long Lines as of January 1, 1932, in its radio plant was approximately $5,000,000. Specifically, the figure which was given to me and which I have here is $4,947,000. The figure which was given to me as the rate of annual operating loss on that service was approximately $600,000. I do not have with me the figures on the gross earnings and the expenses.

2319 *By Mr. Goldstein.*

"Mr. Goldstein: Doctor, there were furnished—I would like to identify as Defendants' Exhibits D-94, D-95 and D-96, the sheets showing the expense of the Department of Development and Research for the years—1920 being D-94, 1921 being D-95, and 1922 being D-96, those sheets comprising the expenses of the Department of Development and Research of the American Telephone and Telegraph Company, and that portion of the expenses of the Bell Telephone Laboratories which is chargeable to Development and Research, which sheets were furnished to us by the American Telephone and Telegraph Company.

"The Witness: These are

"Mr. Goldstein: Your exhibits.

"The Witness: These are photostat copies of the sheets corresponding to that?"

2325 *Re-direct Examination by Mr. Blackman.*

The only assumption that underlay my prorating of the expense of my department between the Bell and non-Bell sales was that per dollar of sales to the non-Bell customers there would be as much of our development work as per dollar of sales to the Bell customers, which, as I indicated, I 2326 felt was a very liberal assumption. In making that, I included the sales to the Bell Telephone Company of Canada, which is one of the licensee companies and from which we receive revenue. This apparatus and this work with which I was dealing was done primarily for the Bell customers and to fit into the plant of the Bell operating companies. On that basis, in my opinion, it is safe to assume that there was at least as much of our work included in the apparatus which they have used as in the apparatus which the non-Bell 2327 people have used. For a given distance and a given class of service, the character of the toll lines of the associate companies and the toll lines of the Long Lines is substantially the same. The American Telephone and Telegraph Company has some lines which are longer, although in some of the associate companies their long toll lines are almost as long as the longest American Telephone and Telegraph Company lines and they are much longer than the average of the American Telephone and Telegraph toll lines. At the other end, the associate companies have toll lines which are shorter than the shortest toll lines of the Long Lines, and, on the average, the length of toll lines which the associate

companies employ is obviously less than the average
2328 length of the lines of the Long Lines; but the average
length of the toll lines of the Long Lines is much less
than the length of the longer lines of many of the associate
companies. It is not unusual to find lines of a thousand miles
or more in some of the associate companies.

I think that carrier and other developments to which I have referred under 5, 6 and 7 would be found on the intrastate lines of the Illinois Bell reaching out from Chicago to points such as Cairo and Springfield, and my recollection is that it is so found. Certainly, the distances and character of plant are such as to make it available there.

The one device which is absolutely fundamental to
2329 talking motion pictures, both as a direct tool and as an
indirect tool, is the vacuum tube. Without the vacuum
tube, the talking motion picture art as we know it today could
not exist. As I have already testified, the original vacuum
tube patent was granted to De Forest in 1908, and that means
that it expired in 1925. We never obtained a patent on the
high vacuum tube which was developed by our department.
There was patent litigation over it for many years, which was
decided finally by the Supreme Court last year.

The thing which came to be known as the high vacuum, as
applied to these tubes, was a thing which was done by
2330 Dr. H. D. Arnold, of the Bell Laboratories, at the time
the De Forest vacuum tubes were first brought to our
attention as possible repeaters and were found to be unsatisfactory.
Neither Dr. Arnold nor Mr. Colpitts, his immediate
superior, nor our Patent Department, nor I at that time
thought that the mere bettering of the vacuum was a subject
matter for patent protection, and we made no attempt to patent
that thing which was so vital to the vacuum tube and
changed it from an incidental tool to a very powerful weapon.
And that went on for some time until we found out that a
patent had been applied for by the General Electric Company
on identically this work, and that caused us to make an application
for a patent on this work of Dr. Arnold, which we submitted
to the Patent Office with the statement that we did not

think that this thing was a patentable invention, but if we were wrong in our judgment and they held that it was a patent, we thought that we were entitled to that. That commenced a litigation, or a long train of contests in the Patent Office, interference contests, and later in the courts of the District of Columbia, and in the Federal Courts, particularly in the Wilmington District, with regard not only to the matter 2331 of patentability, but with regard to the inventor, if patentable novelty were found. And that, to make a long story short, was finally decided by the decision of the Supreme Court this past year, in which they held, in the line of our original contention of no patentability, but made the statement that had patentability been shown, Dr. Arnold would have been adjudged the inventor. And during the course of this litigation and interference contest a patent on the high vacuum did issue to Dr. Langmuir of the General Electric Company on this very identical thing, and this patent was later, of course, by this decision and by the decision of the lower courts, declared to be invalid and of no effect. Throughout that litigation, the position of the American Telephone and Telegraph Company was always consistently that the device was not patentable and many of us testified to that effect.

There were other devices which were developed by the American Telephone and Telegraph Company, or the Western Electric Company, which are fundamental to the talking 2332 moving picture; there are two which I would consider as fundamental: One was the filter patents (which are the Campbell patents which I referred to previously and which were issued, I think, in 1917). These were basic patents which were very instrumental in the development of this talking motion picture art, but which in themselves are not fundamental to the art itself. Then there is the so-called Lowenstein Negative Grid Battery patent, which is owned by the American Company and has been developed by it, although the invention was not made there. That was a patent which was purchased and developed by the American Company. Those two patents, so far as I can think, are the two, in addition to the vacuum tube, which I would call fundamental.

There are, of course, a large number of incidental patents, but they are different in character from these very basic 2333 ones, and, I think, would not prevent the development of the talking motion picture art. I have been given to understand since I have been here this week, that in the decision of the Federal Court in a case involving this Lowenstein patent and other patents of a like nature, the Lowenstein patent has been declared to be invalid, but I have not seen the decision and I do not know just what the court said.

2334 Under the exchange of licenses which I referred to heretofore, the General Electric Company, the Westinghouse Company and the Radio Corporation of America each obtained from us the full freedom to enter into the talking motion picture field under our patents. Some of these companies actually entered into that field, and are in it today. Others have also entered the field.

Of the local exchange business, the toll business of the associate companies and the business of the Long Lines, it is the local exchange plant which is most affected by that factor in the telephone business which I referred to as the reverse 2335 of economies coming from mass production and illustrated by an example involved in the increase of the number of subscribers. That is because the element of switching, which is a large and predominant factor in the cost elements of local exchange service, is a relatively small factor in the case of Long Lines service.

I was asked in my cross-examination whether the profits of the Long Lines, as compared to the associate companies, did not show that our development work had benefited the Long Lines more than the associate companies. I should say that there is not the slightest connection between the two, because the whole question of rates and price paid for service is involved and that might completely overshadow this thing wherever service can be given, and, as a matter of fact, I think it has.

2336 I did not intend to make any claim, on my direct examination, that fine wire was introduced during the period covered by my exhibits and I do not think I made any such statement. The only thing I remember having claimed with regard to fine wire was that the results of the technique and tools developed as a result of that work under those classifications we discussed so much (5, 6 and 7) had made the use and benefits of fine wire cables much greater to the associate companies than would otherwise have been the case; it extended the use. Fine wire circuits are both cheaper and less efficient telephonically than circuits with wires of larger diameter, larger gauge. From the standpoint of cheapness, it is desirable to use them. From the standpoint of their reduced efficiency, it is sometimes difficult to use them. But, because they are less efficient than wires of a larger diameter for a given set of conditions as regards terminal apparatus 2337 and all other things, and with a given standard of transmission, the introduction of fine wires limits the distance over which you can give service with a predetermined standard of efficiency. Now, what I meant in that answer was that the work growing out of the efforts under classes 5, 6 and 7, had improved the efficiency of the things other than the fine wire, the terminal apparatus, the matter of extraneous noise, and other things there, so that you had a greater efficiency in the things other than the fine wire cable than before this work had been done, and so a greater margin of use to employ circuits of less efficiency than those which existed in the art before; and that means that you had an opportunity to use longer lengths and more fine wire cable without reducing the efficiency and reliability and general satisfactoriness of the service to the subscribers, and, in many cases, with the elements of actual improvement. That is, before we did this work, fine wire might be usable, say, for distances of two or three miles with satisfactory results. Now, after we did the work, it was usable for four, or five or six miles, we 2338 would say. Using these distances as illustrations, that is what I had in mind.

In speaking of the gauges of wire, the size of the wire goes down as the number goes up. In the standard wire gauges, the largest wires have the smallest numbers.

There is no research or development organization, that I know of, anywhere in the world comparable to that of the American Telephone and Telegraph Company, either as to size, or scope or object.

I was asked in my cross-examination if the kind of information we furnished to the operating companies would not go in as a part of the engineering cost of constructing the new plant. What I had reference to was the kind of information derived from development and research which provides new engineering knowledge, utilizable by men who have to
2339 engineer specific plants, and is usable either to permit
them to employ new things or to remove old things from the plant. It is an addition to the store of their engineering knowledge, and without it they cannot make application of these new things. It is the kind of information which they can only obtain themselves, on the assumption that the associate companies themselves maintain research and development organizations comparable in size and scope to that maintained by the American Company, if the American Company did not furnish this information to them.

None of our work is the kind that enters into the cost of general engineering. It would be over and above that kind of thing, if by "cost of general engineering" you mean those costs which become a part of the cost of constructing a plant. The information to which I referred as being furnished by the Department of Development and Research is of the char-
2340 acter of furnishing new engineering knowledge to people
to use as they want to use it.

I was asked in my cross-examination what proportion of the Long Lines plant was involved in switching, and I stated that I did not know. I was then asked whether I knew that the proportion was small or large, and I said, "I should say it was considerable." I have looked into that matter and refreshed my recollection since my answer, and have satisfied myself generally as to what that proportion is. That proportion is certainly less than 10 per cent and certainly not to exceed that amount.

I do not think the use of the filter is a necessary thing in the making of a satisfactory talking motion picture. However, I think it is a convenience, and, in some cases, probably can be used to slightly improve.

In answer to Mr. Haight in my cross-examination I said that the results of the development of the kinds I was referring to, both the tools and the things that were used in
2341 the plant, had the effect of making costs of construction and costs of operation less. I did not mean by that that it costs any less, because of any work that we have done, to install a mile of a particular kind of underground conduit, or a mile of a particular kind of underground cable. I did not have that in mind at all. I did not have in mind at all the cost of actually installing a mile, say, of full sized cable today as compared to some preceding time. I have no knowledge as to what that relationship is, because it involves such an enormous number of factors, of labor costs and obstructions in the streets, and what not. What I had in mind was that, as a result of our work, cable so installed provided, we will say, more circuits for the use of the telephone company. That is, we would get more wires in a given size of lead sheath and by our carrier we would make each wire do double duty. That is the kind of thing I mean. As far as I know,
2342 the cost of installing a pair of wires on a pole line today, assuming the cost of the wires themselves to be the same, is higher than it was some years ago, and yet that same pair of wires, because of this work, is capable of carrying many messages. Now, I did not have in mind anything relating to the cost of actual installation.

I think these transoceanic services have a very large publicity value and a valuable publicity value. My reason for that feeling is not only the tremendous amount of free advertising which the installation of those services has produced, but is also the result of the conversations which I have had with innumerable people who look upon that as a great achievement, and also because of the fact that in connection with the opening of these services the associate compa-
2343 nies have considered it important to make, particularly in the early days of the extension of the transatlantic

service, public functions out of the inauguration of that service as an extension of the service of their business.

I am not competent to say whether the loss that the Long Lines incurs on this is worth the money in its advertising and publicity effect on the associate companies. I can say that in my opinion the expense of the loss incurred by the Long Lines for the benefit of the Bell System, which means the associate companies, is thoroughly worthwhile, not only to the Bell System, but to the public which we serve.

Re-cross Examination by Mr. Haight.

The information furnished by the Department of Development and Research in connection with the building of plants is, in my judgment, necessary for the introduction of new things into the telephone plant to improve it, to build
2344 new plant involving those things. I cannot see how
many of these new things can be introduced without the engineers of the local plant knowing what they are, what they can be expected to do, and what they cannot be expected to do. Obviously, I can postulate the building of a plant of the art of today without the introduction of any new information from development and research beyond what has already been given, but I cannot postulate the building of the plant of tomorrow, involving new things, without the Department of Development and Research, or some similar department, furnishing the engineers of the operating companies with the information regarding those new things. In other words, I cannot postulate an improved plant being installed without somebody furnishing information about the things to improve it.

If I postulate the construction of a plant in 1923, let us say, without all of this information furnished by the Department of Development and Research, that plant would
2345 not be a practical plant for the services that are now
furnished. Such a plant I could not contemplate as being then constructed outside the Bell System, that is, certain parts of that plant as it was constructed in 1923 it is difficult

for me to postulate being constructed outside the Bell System in that year.

In mentioning some of these patents, like the Lowenstein patent and the invention of Dr. Arnold, I was not suggesting that there should be a reduction in the license payments on account of having collected what in effect are royalties on void
patents. I did not call attention to the De Forest radio
2346 patent, issued in 1908, and its expiration to indicate
that nothing had been done since. That is, I still justify the expenditures made upon investigations relating to vacuum tubes since the date of the De Forest invention. Even the De Forest invention in its particular embodiment at that time had to be changed to adapt it to the use of telephone repeaters. We did develop it and that instrumentality so developed was later used in these various radio uses.

The Campbell patents that I referred to related to filters. I do not know that the specifications of these two patents are identical; I have not looked at them for a long time.

"Q. Did you know that the applications in those two pat-
ents of the inventions were in connection with wireless
2347 telegraphy, wireless telephony, multiple high frequency
wire telephony, composite telegraph and telephone lines, and in particular with telephone repeater circuits? It does not mention radio at all.

"A. What was the first thing that you read?

"Q. The first thing I read was wireless telegraphy.

"A. Well, isn't that wireless?

"Q. Quite true.

"A. You said that it did not mention that at all.

"Q. No, but these other radio uses, I mean, the other uses of the vacuum tube.

"A. Oh, certainly not."

Those uses were all developed after that and I think I testified that the influence of this filter art was in permitting us to do many things which were not contemplated by the inventor.

Through the efforts of Dr. Arnold and others we secured a more perfect vacuum, that has been a benefit, notwithstanding the fact that the patent was not secured. In my discussion of patents, I have not intended anywhere to imply that our failure to secure the patent has not justified our research 2348 and development work. So far as we are concerned, I doubt whether we would have changed the character or amount of our development work one iota if the patent law had been abolished.

Many of these things that are of an engineering type are things in which no invention resulted whatever, but they were nevertheless mechanical improvements and improved the devices that were in use in many parts of the Bell System. There were no patents upon fine wire as such. I presume there are patents on fine wire cables or on the parts of fine wire cables, and I presume there are patents upon various arrangements and uses of these arrangements.

2349 The figures in column 2 of Exhibit A-119 come from Mr. Crunden's Exhibit A-113.

"Mr. Haight: We point that out, if your Honor please, only that we may make a motion to strike this exhibit and the testimony regarding it, for the same reasons that are assigned in connection with Exhibit A-113, presented by Mr. Crunden.

"Judge Wilkerson: I think, before you start this 2350 other witness, I think the record is closed as to that motion for the inspection of documents, is it not? Judge Evans and I granted the motion as to certain documents, and I think it was understood that upon the present record we were not inclined to order inspection of the other documents mentioned in the motion. I think Mr. Adcock took an exception to the ruling.

"Mr. Adcock: Yes.

"Judge Wilkerson: We have gone over the matter again since the argument, and adhere to that view about the inspection of any documents other than the ones the inspection of which we directed at the time.

"Mr. Adcock: Of course, our exception may stand to the Court ruling on that?

"Judge Wilkerson: At the time we directed the inspection of certain documents, we said we were not inclined to direct the inspection of the other documents, but that we would look at them again and consider the grounds which were assigned in the motions, but we think we have gone as far as is proper upon this record in directing the inspection of documents.

"Mr. Adcock: Then the exception that we asked to appear in the record may apply to this ruling now?

"Judge Wilkerson: We wanted to make sure that the record was closed, and no one expected the Court to do
2351 anything more on that motion."

ALLAN B. CRUNDEN, recalled as a witness on behalf of the plaintiff, having been previously duly sworn, further testified as follows:

Direct Examination by Mr. Blackman.

May 12, 1932.

I prepared the sheet marked for identification as Plaintiff's Exhibit A-120. I obtained the information from certain reports of the Comptroller's Department, which are stated at the foot of the document. All of these documents have been available to the defendants. The individual reports of the separate operating companies which have been under discussion here do not immediately underlie those or any of them. That is, the reports underlying this sheet are cited on the document and they do not include reports of the individual companies other than the Long Lines and the Bell Tele-
2352 phone Company of Canada. The rest of the information is contained in a report described there as C. R. 51-A. That is a report made in the regular course of business of the American Telephone and Telegraph Company.

(Plaintiff offered sheet marked for identification as Plaintiff's Exhibit A-120 in evidence.)

2353 Plaintiff's Exhibit A-120 is the per cent of the Long Lines of the total telephone revenues, of the total exchange and toll and miscellaneous operating revenues of the Bell System, including the Bell of Canada combined. It shows the percentage relationship between the revenues of the Long Lines and the revenues of all the other companies combined, including the Long Lines. That is shown in the last column to the right.

The sheet marked for identification as Plaintiff's Exhibit A-121 is similar in general form to Exhibit A-120 but it shows the ratio of percentage of the total telephone revenues of the Chicago area to similar revenues of the total associate companies, excluding the Long Lines and including the Bell Telephone Company of Canada. I got the information for this exhibit from the same sources as I did with regard to Exhibit A-120.

2354 (Plaintiff offered document marked for identification as Plaintiff's Exhibit A-121 in evidence.)

2355 *Cross-Examination by Mr. Goldstein.*

In both Exhibits A-120 and A-121, I compiled the statistics as to the operating revenue of the associated companies from C. R. 51-A. C. R. 51-A is a summary statement which is compiled, in turn, from M. R. 1 from each of the associated companies of the Bell System. Each of these reports of each of the associated companies that come from the associated companies to the American Telephone and Telegraph Company were the M. R. 1 reports to which the defendants were denied access.

"Mr. Goldstein: We object to the introduction of A-120 and A-121 on the ground the sources have not been made available to us.

"Judge Wilkerson: He says you are introducing a tabulation or document that you have not let him see. Now, is that true?

"Mr. Goldstein: Sure, they have got this Court to rule that we are not entitled to them, and then they are using the same document.

"Mr. Blackman: We offered to let them see them.

2356 "Judge Wilkerson: We want to have the record clear on that.

"Mr. Blackman: We offered to let them see anything on those documents that relates to any of the figures which have been used. This is the same precise point that was raised with regard to Exhibits 99, 100, 101 and 113.

"Judge Wilkerson: You will note your objection. We will rule on it.

"Mr. Adcock: I think this relates to the matter that was to be presented to the Clerk, doesn't it?

"Mr. Goldstein: No, this is the first time we have had operating revenues involved.

"Mr. Blackman: They all come from the same sources.

"Mr. Goldstein: The sheets we have asked for in the motion that was denied to us are the identical sheets that they have taken every figure from for every exhibit from A-99 to A-121. The only figures they have not taken are the percentage calculations on those exhibits. These exhibits are taken in the aggregate, and every figure of operating revenue, every figure of operating expense and every figure of plant from every company of the associated companies was used as a basis for A-99 to A-121, and yet they have refused to let us have the documents.

2357 "Judge Wilkerson: Well, bring it up before the close of the case, we will rule on it, we will hear the motion, and rule on it.

"Mr. Blackman: I understood, your Honor, we had agreed on the procedure. We offered to bring it into court here, and your Honor said they could look at it under the supervision of the Clerk.

"Judge Wilkerson: Mr. Goldstein says he has not seen it yet.

"Mr. Blackman: We will do it any time he fixes.

"Judge Wilkerson: You may remove the basis of the objection before the evidence is closed, and, if it is not removed, bring it to the attention of the entire court, and we will rule on it.

"Mr. Goldstein: That is all."

ARTHUR W. PAGE, called as a witness on behalf of the plaintiff, having been first duly sworn, testified as follows:

Direct Examination by Mr. Blackman.

May 12, 1932.

I am Vice President of the American Telephone and 2358 Telegraph Company and have been since the first day of January, 1927. I have direction of the Information Department of that Company, which means charge of the advertising and publicity which the American Company does for the Bell System and also to advise with the associated companies of the Bell System on their public relations. That is, I advise the associated companies as to how to conduct their own publicity and I conduct general publicity in their interest. That has been the scope of my duties throughout the time I have been connected with the American Telephone and Telegraph Company.

Previous to my connection with the American Telephone and Telegraph Company, I was an editor and publisher for about 22 or 23 years.

2359 The paper marked for identification as Plaintiff's Exhibit A-122 is the chart of the organization of the Information Department of the American Telephone and Telegraph Company, which is my department. That chart is made up in the regular course of business and correctly shows the people that are employed under me, and, in a general way, their duties.

The principal expenses of my department are payment for advertising space, salaries, and the service charges that go with it, and the payments for printed matter.

The sheet marked for identification as Plaintiff's Exhibit A-123 is the sheet showing the cost of advertising placed by my department in the years 1923 to 1931. This sheet was made up under my supervision and is correct.

The first column of this sheet (A-123), headed "Paid 2360 by Long Lines Department", is the addition of the bills sent to us by the advertising agency which places the business; that is, the cost of white space, so to speak, to us. There is no pro rate of any kind involved in that; it is just the direct bills for the advertising ordered by the Long Lines Department. The Long Lines Department has a general information department of its own, which is similar to mine. We do their advertising for them, but they take care of certain other publicity of their own. We take care of this national advertising in national magazines for the Long Lines and for all associated companies. The character of this particular advertising is designed to increase the use of toll and long 2361 distance telephone, particularly in commercial business. The beneficiaries of this advertising are the Long Lines of the American Company and the associated companies. That is, the advertising of one class of long distance would tend to increase all toll and long distance telephone.

The figures in the second column are the similar figures for the advertising placed for the Bell Securities Company and paid for by the Bell Securities Company. This advertising was for the purpose of bringing to public attention the securities of the Bell System. These securities consist of the stock of the American Telephone and Telegraph Company and its bonds, the preferred stock of certain associated companies and bonds of the associated companies and any securities in the Bell System.

In the last column is the advertising of general good will and sales and service advertising of all kinds paid for 2362 by my department. That advertising is designed to make people appreciate their telephone service, to take more telephone service, to take telephone service if they have not got it, and, in all ways, to increase the use of telephone service and the good will toward the telephone company. The beneficiaries of this advertising are the associated companies, and, to some extent, the Long Lines.

(Plaintiff offered in evidence sheet marked for identification as Plaintiff's Exhibit A-123.)

2363 The sheet marked for identification as Plaintiff's Ex-
hibit A-124 was prepared under my supervision. It
shows my estimation of the proper allocation of the charges
of my department to the Chicago area; that is, the proportion
of my department that is fairly allocable to the Chicago area
of the Illinois Bell Telephone Company. The figures in
column 1 represent the employees in my department. In
column 2 are two groups of figures, the top one of which is
the last figure on Exhibit A-123 and means the cost of
2364 white space, and the second figure under it all the way
through each year is the rest of the expenses of my de-
partment. All the way through in each year the first figure
of the group of two is taken from the last column of Exhibit
A-123 and represents this advertising space that I speak of.

The figures in column 3 are the cost of the part time of one
man who looked after the placing of the Bell Securities' adver-
tising. I got that on a pro rata basis by taking the cost of the
advertising division, as is seen here under Mr. Cook, and the
percentage of my time, and allocating that against all the
advertising we placed on a cost basis and putting the Bell
Securities in for its part. Mr. Cook does not write the ma-
terial that is published; he merely sees that the advertising
agency does what we pay it to do. The advertising agent of
the Bell Telephone Securities writes its material and the
2365 advertising agent is paid for that; that is, he gets his
commission out of the magazines in which it is placed.

2366 The figures in column 4 are the figures in column 2 minus the figures in column 3.

The figures in the two columns headed "(5)" are the percentage figures that were offered by Mr. Crunden just a few moments ago, and the figures in the column to the right are merely the application of those percentage figures in column 4. The figures in column 6 are the deduction of these amounts from what you had left in column 4; that is, when you deduct column 5 from column 4, you get column 6. The figures in the last two columns are the percentages of Mr. Crunden's that were offered in evidence and the result is the direct mathematical result from that percentage.

The figure of $217,000 in the year 1923, which is the second figure in column 2, is the cost of editing, printing and issuing two periodicals and distributing them and various
2367 pamphlets which are issued by the Information Department. The periodicals are the Bell Telephone Quarterly and the Bell Telephone Technical Journal, and the pamphlets are various ones like the Magic of Communications, the Bell Telephone Almanac, and various similar ones of that kind. The magazines are circulated primarily within the Bell System for the information of the people in the Bell System, but the pamphlets are for public distribution. My department, which prepares and prints them, gives them to the associated companies and the associated companies distribute them to the public. The associated companies get practically all the pamphlets except for a few that trickle out in one way or another from my office; the means of distributing them is through the associate companies. There is something like a million and a half copies of the Almanac printed; that is
2368 the largest. The Bell Telephone Quarterly has a circulation of about sixteen thousand copies, of which about ten thousand go to the people in the associated companies and six thousand go to libraries, colleges, foreign telephone administrations, certain magazines and newspapers and certain lists of people that the associate companies have given us that they wish it to be distributed to. In that distribution there are probably four or five hundred copies that go to people in the Western Electric or the Bell Laboratories, and perhaps one hundred or more that go to other telephone manufacturing people in this country and abroad. The purpose of sending these to people outside the Bell System is partly publicity and partly to inform them of our business. People like the Western, of course, ought to know what is going on in the Bell System in order to serve it better. When we send these abroad, in the case of the Technical Journal, which is the one which goes abroad most, the hope would be that in return for the technical information contained in that that we give to foreign telephone administrations, we get back material
2369 of a similar nature. They do send us similar material; there is a courtesy interchange. You see the matter is a

very small amount of money. The Technical Journal, differing from the others, has about two thousand paid subscribers, and the money we get from them is a credit. If we were to count all of the distribution of our national advertising of every kind, I think there would be about six hundred million pieces a year.

(Plaintiff offered in evidence document marked for identification as Plaintiff's Exhibit A-124.)

2370 *Cross-Examination by Mr. Goldstein.*

There is only Mr. Cook's and my salary that is represented by the work that is done to advise the associated companies in connection with their own advertising. I would not know what proportion.

2371 The same kind of ads, the expense of which is included in my calculations, may also appear in the Bell Telephone News and Directories. They can if they want to. If such an ad does appear, there would be no payment made to the local company for that. We prepared that for their use and they use it in any way they like. We did not charge them anything for preparing it for them, only as included in this general expense. No specific charge for preparing it was made to the associated companies. In fact, they use anything we do in any way that they like.

2372 This institutional and sales advertising does not relate to the sale of stock and to the dividend returns on the stock of the American Telephone and Telegraph Company. That is the Bell Telephone Securities that I have omitted in my exhibits.

I have not available here a copy of the advertising of a character the expense of which is included in the two columns of A-123 headed "Paid by Long Lines Department" and "Paid by Bell Telephone Securities Company."

2380 "Mr. Goldstein: That A-124 is based upon Crunden's figures.

"Mr. Blackman: Yes.

"Mr. Goldstein: Our motion to strike is the same."

(Plaintiff offered in evidence exhibit marked for identification as Plaintiff's Exhibit A-122.)

2382 JOHN R. TURNER, called as a witness on behalf of the plaintiff, having been first duly sworn, testified as follows:

Direct Examination by Mr. Bracelen.

May 12, 1932.

My name is John R. Turner. I live in Glen Ellyn, Illinois. I testified in the former hearing and then stated my training and experience in the telephone business. From that time until now my duties have consisted principally of engineering pertaining to costs, that is, costs analyses of various types of telephone construction, inventories, appraisals, depreciation studies and numerous types of special studies generally pertaining to cost work. My title is Inventory and Costs Engineer, the same as at the time of the last hearing.

I have a folder, comprising ten sheets, entitled "Illi-
2383 nois Bell Telephone Company, Chicago Area, Annual
Depreciation Rates, 1923 to 1930, inclusive" (which folder was marked for identification as Plaintiff's Exhibit A-125).

These papers were prepared by me or under my direction. This exhibit contains the tables of annual rates of depreciation that were in effect during the period 1923 to 1930, inclusive. The tables of rates have been arranged to show first the more recent ones, that is, pertaining to 1930 on pages 1 and 2, and the earlier rates are shown thereafter. Referring to page 1, for the purpose of illustration, the first column shows the names of each property account and the separate sub-classes of property or kinds of property for which it is necessary to determine depreciation rates. The first column of figures, under the general title "Basic Rates", shows the estimated average service lives of the different kinds of property. The second column shows the net salvage expected at the time of retiring the property, and the third column of
figures shows the resulting annual rate of depreciation.
2384 The last column, designated "Composite Rates", are
rates which have been determined for application to the

total investment in each primary account. Pages 3 to 10 contain similar information for previous years.

For illustration as to how the rate is derived from the service life and salvage, I will take the first item on page 1, that shows both the life and salvage. That would be the second item, designated "Manual Central Office Buildings" under the account "Buildings." There we have estimated an average life of twenty-five years for this type of building, and have also estimated a net salvage, on the average, of 20 per cent at the time of retiring each building. That means that the loss which will occur upon retirement would represent 80 per cent of the original cost of the building. This 80 per cent is apportioned over the service life of the buildings, that is, twenty-five years, resulting in an amount of 3.2 per cent of the original investment which it is necessary to provide each year in order to accumulate the 80 per cent at the time of retirement. This accumulation, together with the expected
2385 net salvage of 20 per cent, will restore the original investment in these buildings. That method is known as the straight line method, the straight line depreciation expense account.

The composite rate, which, as I stated before, is the rate which has been provided for accounting purposes in order to apply a rate to the total investment in each account, is the result of applying the sub-class rates, or component rates, as we sometimes refer to them, to the investment in each subclass of property, and the sum of that resulting depreciation expense is then divided by the total investment in the account. In other words, it is a weighted average of the various component rates within each account.

At page 10 of this exhibit, covering the period beginning January 1, 1921, is a copy of Plaintiff's Exhibit 19 on the former trial. These rates were in effect until December
2386 31, 1923. The rates that were made effective on January 1, 1921, were continued during the year 1923. The clearing account rates which are shown on page 9, that is, the depreciation rates that are used for certain items of general equipment, such as motor vehicles, and so on, were not

shown prior to 1923. We have on page 9 the rates of this type that were started January 1, 1923. The rates other than the clearing account rates were revised, and new rates placed in effect on January 1, 1924, as shown on page 8. These general account rates were not revised again until January 1, 1928, as shown on pages 5 and 6 of the exhibit, but during that interval the general equipment rates were revised as of January 1, 1926, as shown on page 7. Subsequent to January 1, 1928, new rates were determined as of the beginning of each year, January 1, 1929, as shown on pages 3 and 4, and January 1, 1930, as shown on pages 1 and 2. In other words, the way this set of tables is arranged is that the rates continued in effect from the effective date shown on the tables until the next effective date, working in reverse order through the exhibit.

2387 I have two sheets headed "Illinois Bell Telephone Company, Annual Depreciation Rates, Chicago Area, January 1, 1931" (which said sheets were marked for identification as Plaintiff's Exhibit A-126).

This exhibit shows the rates made effective January 1, 1931, and is similar to the sheets contained in Exhibit A-125.

The exhibit marked for identification as Plaintiff's Exhibit 127 shows the annual expense of depreciation which has been charged in the records of the company for each of the years 1923 to 1931, inclusive, together with the related investment on two bases, first, the total investment in plant and office furniture and fixtures, excluding land and right of way; and second, the average investment in depreciable property only, that is, property requiring depreciation accounting.

2388 This expense shown on Exhibit A-127 is the result of the application of the rates which I have referred to in the previous exhibit to the average investment in property in each of the years under consideration. That application is made by the Accounting Department of the company. The amount of depreciation expense annually is computed on the basis of the rates shown in Exhibits A-125 and A-126; those rates being applied to the dollar amounts of the corresponding plant accounts. The dollars appearing in the second column of Exhibit A-127 are the actual charges for expense of depreciation made by the company during each of the years.

The purpose of this exhibit (A-127) was to show the percentage relation of the annual depreciation expense in 2389 each year to the average investment. This is done in two ways. For management comparisons, the first method that I have shown is usually employed, that is, we simply relate the depreciation expense to the total investment, excluding land and right of way. For engineering purposes, however, we usually confine the investment to that investment which is associated with property for which the depreciation expense is set out, and in order to clarify that point and have a correct understanding of just what we are speaking of, I have set it up in both ways, so that we can make reference to either one, and understand of what we speak in that respect. These percentages, by the way, are usually referred to as composite rates of depreciation.

The term "composite rates" may be a little confusing, because we employ it both for separate accounts and for the property as a whole. The composite rate is simply a weighted rate of two or more other rates. In the case of accounts like "Buildings," that have several rates, we determine a composite rate for that account which will automatically set 2390 up the expense associated with all classes of buildings, involving several different kinds of rates. In connection with the composite rates for the entire property, such as this Exhibit A-127 refers to, that simply means the composite rate derived from the total expense which has previously been determined by individual rates for separate classes of property, related to the total investment on either of these two bases that I have described.

The dollar amounts appearing on Exhibit A-127 have been taken from the books of the company.

An examination of the composite rates shown on this Exhibit A-127 would not disclose the trend of the individual rates, due to the fact that these composite rates are influenced not alone by changes in the component rates, but also by changes in the relative investment. That is, if the investment in a class of property having a higher rate than the average should increase in greater proportion than the other items, it would naturally have the effect of increasing the com-

2391 posite rate. An indication of what has happened to the rates without the influence of the changing investment can be determined, however, by applying the component rates for each year to a common base or a common investment, and doing this has indicated that the rates have been the same in their composite effect for this entire period with the exception of the year 1923, at which time the rates were higher. I have, for example, applied the class rates, or the component rates of each of these years 1923 to 1931, inclusive, to the investment in each class or sub-class of property as of December 31, 1929 (this is on the engineering basis of depreciable property only), with the result that the composite rate for the year 1923 was 5.6 per cent, and for all subsequent years, 5.2 per cent. It should be kept in mind that the rates I am speaking of are comparable with the last column to the right on this exhibit. That comparison which I have just stated is one which shows the trend, whereas, the composite rates shown on Exhibit A-127 may vary from year to year solely on account of

2392 the different weightings of different elements of plant, even assuming that the actual depreciation rates have remained the same throughout.

The folder having the legend on the cover page "Illinois Bell Telephone Company, Chicago Area, January 1, 1930, Depreciation Study, Life and Salvage Data", and containing thirty-six pages of charts and computations, followed by a separate section consisting of fourteen pages of text, was prepared by me or under my direction (which said folder was marked for identification as Plaintiff's Exhibit A-128).

The purpose of this exhibit (A-128) was to illustrate rather fully the methods employed in studying life and salvage experience of the past, in arriving at conclusions. We selected for this purpose what happened to be the latest study at the time, that is, the 1930 depreciation rate study, and used

2393 that for descriptive purposes in this exhibit. There are twenty-three classes of property in the Chicago area for

which it is necessary to develop annual rates of depreciation. These different classes of property have rather greatly varying physical and functional characteristics that make it necessary to employ different methods of studying life and salvage. All of the classes of depreciable property in Chicago are listed on page 1 of Exhibit A-128 by their descriptive titles, arranged in the first column in accordance with the customary listing in accounting reports, and rearranged in the second column into four groups which accord with the methods employed in considering life. The next two columns on page 1 show the importance of each class of property as indicated by the relative investment and relative annual depreciation expense associated with each of those classes. It may be of interest to note that Group 1, which consists of just two accounts, has an investment in excess of 41 per cent of the total investment in all depreciable property, and an annual depreciation expense of more than 47 per cent of the total depreciation expense in Chicago. The similar facts for the subse-
2394 quent groups are shown also on the same page.

Page 2 was prepared to give some idea of the growth that has occurred in Chicago in stations, lines and investment. It was thought that it would be of interest, in view of the fact that growth is probably the chief cause of retiring telephone property. The chart at the left on page 2 shows the actual growth in stations, lines and investment, while the chart at the right offers the same information as a percentage of the amounts in 1914. The right hand chart, therefore, probably gives a better idea of the rate of growth in recent years for these three items. The lines have increased from 150,000 in 1914 to 460,000 at the end of 1930. I am using round figures as I cannot read the charts very closely, but that is approximately the extremes. The investment
2395 has increased from about $45,000,000 to $195,000,000.

The stations have increased from 400,000 to 1,020,000 at the end of 1930.

The fact that the investment has increased faster than the stations and lines have increased is due to several causes. One of the inherent causes in the telephone business is that

as the business grows and as the stations and activity in operation grows, the amount of property increases. That is a fundamental characteristic of the business, and that, of course, brings an increasing investment per station in itself, unless it is offset by developments or economies, or some other means of overcoming that fundamental increase in cost. Another thing that has occurred during this period is the great upward shift of cost levels which have affected not only the additions and extensions to our property, but replacements as well, that is, removal of cheaper plant and its replacement by more expensive plant. There is also some effect in here of the greater first cost of dial equipment and apparatus. Furthermore, during this period there has been
2396 a demand for better classes of service, which has been evidenced, at least in part, by regrading of lines from four-party and two-party to single lines, and an increasing number of trunks serving private branch exchanges. That is shown on the graph here by the fact that the lines have increased faster than the stations.

May 13, 1932.

2398 A comprehensive discussion of the methods of arriving at life and salvage, and the basis for conclusions, for all of the numerous classes of property that are involved in depreciation accounting, would require considerable time, and in view of the fact that many of the classes of property have a negligible influence in the total depreciation expense, I have selected the principal accounts, of which there are seven, for explanation, and have included them in this exhibit. These seven accounts which are shown on page 3 have been selected due to their predominance in the investment and in the annual depreciation expense. It will be noted on page 3 that the combined investment in the seven accounts is in excess of 91 per cent of the total investment in all depreciable property, and also the annual depreciation expense for these seven accounts is in excess of 91 per cent of the total annual depreciation expense. In other words, the total investment in all

other accounts, of which there are sixteen, amounts to less
than 9 per cent. of the total investment, and the deprecia-
2399 tion expense for all sixteen accounts is less than 9 per
cent of the total depreciation expense.

As I further explain the subsequent pages of the exhibit, the basis upon which I have divided these seven principal accounts into four groups as sheet 3 shows I have done, will be made to appear.

On page 4 I have indicated the two general classes of property that are included in Group 1, together with the segregations, or sub-classes of property within each of those accounts. I have also shown on this page the relative investment in each sub-class of property, the estimated average service life, the expected average net salvage, and the resulting annual rate of depreciation for each sub-class of property.

There is also shown on the page the composite annual rate of depreciation applicable to the total investment in each of the two accounts. The Central Office Telephone Equipment composite rate is 6.8 per cent, while that for buildings is 2.8 per cent.

These two main classes comprising Group 1, that is, Central
Office Telephone Equipment and Buildings, are grouped
2400 together here because of the methods employed and the
procedure followed in arriving at the service life and salvage, and deriving the depreciation rates applicable to those classes. They are also grouped because of the fundamental similarity of the life characteristics of those two general classes of property as they differ from most other property.

These two main classes of property in Group 1 comprise a little more than [illegible]1 per cent of the entire investment of the company in Chicago in depreciable property.

The procedure which we have followed in studying the life of the property included in Group 1 is illustrated by the computations shown on page 5 of the exhibit. This statement shows the methods employed in computing the average life of the manual equipment at Kedzie central office. The same procedure has been followed for equipment in all other offices in the city. The initial equipment, that is, the first in- 2401 stallation, was made in Kedzie office in 1906. I am now dealing with the actual history and the actual facts applicable to the Kedzie office. This statement, of course, covers both the actual facts as disclosed to the latest available date and our estimate as to the future. The exhibit necessarily is projected to the year 1936 as, according to our engineering forecasts, the Kedzie office will be retired in 1936.

2402 The life characteristics of most of the telephone properties differ somewhat, or differ largely, I might say, from those of the property contained in Group 1. Most of the items of telephone property are placed and retired as individual units of property. In the case of the property contained in Group 1, however, this property is built up by an initial installation and a series of subsequent additions; and then all of the equipment, or building, is retired simul- 2403 taneously, except for relatively small retirements that occur during the over-all period.

In that connection, it is important to keep in mind the fact that each subsequent addition to the initial construction or installation has a composite shortening effect upon the average life of the property as compared to the over-all life. An illustration of that would be in the case of central office equipment, where we might start with an office, let us say, having perhaps an "A" board, that is, an originating board, of twelve positions, or twelve operators, and a trunk board, or, as we term it, a "B" board, of, say, six operators. As the business in that district grows, and the number of stations increases, the amount of equipment required per new station added is progressively larger; that is due to the fact that the ability to connect with each subscriber's line must be made available to every operator. In the case of six operators, there only need be enough appearances on that line so that the six operators, or any one of them, can make connection with the line. When that board has increased, let us say, to twenty-six operators, the equipment must be repeated, or, as we say, multipled, sufficiently to make every line available to

2404 every operator. Furthermore, the lines that were available to the six operators originally must also be ~~extended~~, so that you have the double influence of not only making new lines available to a large number of operators, but increasing the availability of the existing lines. For that reason the additions grow progressively larger, for a given amount of new business, and, of course, result in increasing costs for later additions.

As the additions are made, the life of such additions is consequently shorter than previous additions, because the entire equipment is limited to the time of complete retirement of the office. For example, take the Kedzie office again; the initial equipment, or that portion of the initial equipment installed in 1906, which will survive to the time that the office is retired, which we estimate to be 1936, would be 30 years old. Additions, however, placed in 1926 would be only 10 years old at the time of retirement. So that you actually have in this type of property a composite life of all the various lives of the different additions that are made throughout the over-all experience of the office.

On page 5 I have shown the various additions, retire-2405 ments, and amounts of equipment in service for each year, and other information for analyzing life to the latest available date of actual experience, which is the end of 1929 (the point where the horizontal line crosses the sheet), and, in addition to that, the further additions and retirements down to the expected date of complete retirement, which is based on engineering forecasts. From this information the dollar years of service life are computed, and shown in column 5, which, when divided by the cost of equipment shown in column 6, results in the average life of the equipment at any given age of the office. The figures shown in the last line of column 7 indicate that an average life of 12.6 years is expected at time of retirement, which is 30 years after the initial installation (the final figure in column 8). Column 8 merely proceeds in numerical order throughout the years 1906 to 1936.

On page 6 there is shown the results of the application of

the method described on page 5 for the Kedzie office to each
of the offices in the Chicago area.

2406 Page 6 shows the actual year in which the initial
equipment was installed, and the estimated year of final
retirement. It is our view that the change from manual to
dial service in Chicago may reasonably be expected by 1945,
and my estimates of the average lives for each of these offices
are based upon a program predicated upon that view. The
average life of the manual central office equipment in each
office to the time of retirement is shown in column I. This
has been composited on the basis of the investment at the end
of 1929, resulting in an average life for all manual equipment
in Chicago of approximately 11.7 years, which is the last
figure in column I, on page 6.

I have not incorporated in this exhibit, or in any of the
exhibits which we intend to offer in connection with my testi-
mony, a study for each of these offices corresponding to
2407 the study for the Kedzie office shown on page 5. Those
studies are in my office, in the original form (I believe
pencil work sheets), and have been made available to the City
of Chicago for examination. They were made available at the
time this exhibit and the other exhibits that have been and
will be identified were delivered to the other side the first
of last August.

This study was the basis of my conclusions as to the average service life for manual central office equipment in Chicago.

This study was made in 1929, before we had knowledge of
the effect of the business depression, although in 1930 when
I arrived at my conclusions, I realized that we might expect
a very severe reaction on certain types of plant. In view of
that situation, I made some tentative studies of what certain
deferments might result in, in the way of average life, and
concluded that thirteen years would adequately provide for
such deferments as we might expect under rather severe busi-
ness depression conditions. I have used thirteen years
2408 in the rates, although the computations indicated 11.7
years. The result of using the greater number of years
was, of course, to reduce the depreciation expense rate and,

therefore, to reduce the charges to expense on account of depreciation.

By deferments I mean two things that might happen; one is that we might defer the final retirement dates of the offices as we now have them programmed; and the other is that we might defer not only those final dates of retirement but all additions expected in the earlier years. Of course, there is a possibility that a condition of this kind might result in a shorter life. I do not think it will in this case, but if the final retirement dates are not deferred, but the additions are, the result would be a shorter life than that which we had computed in 1929. I do not anticipate that situation.

Having determined the average service life for units
2409 of manual central office equipment, it is then necessary, in order to derive the depreciation rate applicable, to make a similar determination of the expected salvage to be recovered upon retirement. Page 7 of this exhibit (A-128) takes up that subject matter.

Page 7 shows in graphic form the actual salvage experience for manual central office telephone equipment from 1914 to 1929, inclusive, both for complete office retirements, and piecemeal retirements. The latter are relatively small, being associated with additions and rearrangements of the existing equipment, and probably represent, according to some of my studies, about 6 per cent of the total equipment retirements over the entire life of the office. The upper chart on page 7 shows gross salvage obtained; the center chart, the cost of removal; and the lower chart, the net salvage (gross salvage less the cost of removal). All of these charts have the
2410 salvage and costs of removal expressed as a percentage of the original cost of the retired property.

In general during recent years the net salvage on the average has approximated 10 per cent. The high salvage that is shown for the year 1929 is not significant, as it involves an acounting adjustment of a carryover from 1929 to 1930. The salvage experience in 1929 was 30 per cent net salvage, while in 1930 the salvage was 50 per cent negative; and it is necessary to combine the two years to get the true salvage.

I have done that, and found that the salvage for both 1929 and 1930 combined, was 14 per cent. The net salvage for complete office retirements, according to our examination of completion reports of recent years, ranged from 5 per cent to 12 per cent for individual offices. In the past, of course, partial re-use of central office equipment has been reflected in the net salvage figures, and in view of the expected complete elimination of the manual equipment, we naturally cannot expect quite so favorable salvage conditions in the future. In spite of that, however, I have used in the depreciation rates an average net salvage of 10 per cent, which I think is the maximum that we can possibly anticipate for the future.

2411 Turning back to page 4 of the exhibit, in order to keep in mind the plan and arrangement of the exhibit, I have now explained how I found the life of thirteen years for manual central office equipment, and 10 per cent for salvage, resulting in the depreciation rate of 6.9 per cent, as shown on page 4. The next sub-class of Central Office Equipment is Dial.

Our experience with panel-type dial equipment has been limited to the period subsequent to 1923, at which time we installed our first office. Therefore, we have not enough

2412 past history available to offer a significant life analysis.

It occurred to me that the best method of approach in estimating the life of dial equipment was to compare it with the experience of the manual equipment and make allowances for such differences as we could see. There are several factors that should produce a longer life for dial equipment than has been experienced for manual equipment. In the first place, the initial installations, which, of course, have the longest life in the composite effect, are expected to be relatively larger in the case of dial than they have been in manual installations. We also anticipate a longer life for dial buildings than we expect for manual buildings. That, in turn, should produce a longer life for the dial equipment than for the manual.

The life experience that we have analyzed for manual equipment has been influenced to some extent by changing cost levels, wherein the later additions, which are, of course,

of shorter life than the earlier additions, have somewhat greater weight in the composite effect, due to having been more costly per item of property installed. The net effect of that has been to reflect a shorter life than would have
2413 been experienced had costs, for example, remained uniform. We do not expect cost levels to operate in the same direction in the future, that is, as far as we can foresee it, and we think due allowance should be made for this difference, which will result, if our predictions are true, in a longer life for dial than for manual.

We have attempted to keep in mind, also, factors which may produce a somewhat shorter life relatively in dial than in manual experience. One of these is the possibility of change in equipment design, due to the newness of the panel-type equipment, which may result in economical replacements at some future time.

Another factor that we have considered is that improvements in manual offices have been brought about through changes in operating practices, whereas similar improvements in dial offices must come, at least to some extent, through changes in equipment.

After consideration of these factors, and in view of the influence of the shorter-lived later additions over perhaps a rather long period of office life, I have estimated that the dial equipment will experience an average life not in excess of eighteen years. I have used eighteen years in the rates.

2414 In view of this longer life that we are anticipating for dial equipment, as compared to manual, and keeping in mind the possibilities of the supercession of existing equipment which may affect possible re-use after removal, I have concluded that we may expect a relatively low net salvage for this equipment upon retirement, and have estimated the net salvage at 5 per cent.

The third sub-class of Central Office Equipment is Toll. We have in Chicago two general types of toll central office equipment; first, the switchboard equipment at which connections are made to toll lines, and second, the types of equipment that are associated with the lines, those designated by us as toll line equipment, consisting of such items as repeaters, carrier current equipment, Morse telegraph equipment, and so forth.

Our present toll switchboard, which is located in the Bell Building at 212 West Washington Street, was installed in 1929, so that we have very little experience with that
2415 particular group of equipment. However, we have available the actual experience of the two former toll offices, which contained somewhat similar switchboard equipment. This, because of the fact that the present equipment contains about the same amount of long-haul and short-haul service facilities as those former offices in their combined effect, should give us a very good indication of what we may expect in regard to the present equipment life.

This experience is shown on page 8 of the exhibit. The upper left-hand table is that of the former toll office used in Long Lines service. The table to the right of that shows the life experience of the other toll office, which was used for short-haul business. The combined experience of all this former equipment, as shown on page 8, resulted in an average life of about 7.5 years upon retirement, although one of the offices was in service 21 years, and the other in the neighborhood of 18 years.

Based on this previous experience, and keeping in mind the possibility of some shortening effects on the present equipment life, due to possible decentralization of toll operations in Chicago, and also possible replacement, or partial replacement of existing manual equipment with dial, I have
2416 estimated an average life of eight years for the switchboard equipment in the present toll office.

The lower left hand table on page 8 shows our actual experience, to the latest date available, for the toll line equipment at Morrell Park, which has resulted in an average service life of 5.6 years at the end of 17 years' office experience. The lower right-hand table shows that the average life of the equipment in the Franklin Building was 2.6 years at the end of 7 years over-all experience. The shorter average life relative to over-all age in the Franklin Building is due to the more rapid growth of the equipment in that office, which is expected to continue in the future.

From this experience, which is largely based upon that of the Morrell Park office, it would appear that an average life of not to exceed eight years may be expected for toll line equipment.

The actual net salvage obtained upon the retirement of the two former toll offices is available in the records of the company, and has been analyzed, and results in a net salvage
of approximately 25 per cent of the original cost of the
2417 retired property. This retirement, however, occurred
under very favorable conditions. That is, a very large amount of the retired equipment was incorporated in the new toll office, and it also occurred at a time when there was a very large demand for that type of equipment on the part of other companies, and we made a number of rather favorable sales. We do not anticipate quite such favorable conditions from both of these sources at the time of retiring the present equipment, and for that reason I have modified the actual salvage experience somewhat as an estimate of what we may expect in the case of the present office. On that basis I have estimated an average net salvage of 20 per cent for the toll switchboard equipment in the present office.

In the case of our actual experience with toll line equipment salvage, we have actually had very little experience with this type of equipment. I think, however, that our retirements in the years 1929 and 1930 in Chicago might be considered fairly representative of what we may expect on the average upon the retirement of this equipment. The average net salvage for those two years, as actually shown on the
books of the company, was 18 per cent of the original
2418 cost of the retired equipment. I have investigated some
of the retirements which we have made outside of Chicago in order to get as broad a picture of the situation as possible. I found that the rather meager experience there resulted in actually obtaining a net salvage approximating 15 per cent of the original cost of the retired equipment.

I have made some computations that would indicate that under the most favorable conditions, where the materials are very largely re-used, we might expect as much as 40 per cent, and as little as possibly 4 per cent—that is where we junk the equipment.

In view of all these investigations I have come to the conclusion that an average net salvage of 20 per cent for toll line equipment would be a reasonable expectation. A life of eight years, and a salvage of 20 per cent, gives the 10 per cent rate for toll central office equipment.

Page 4 of the exhibit shows that the composite for the three sub-classes of Central Office Equipment is 6.8 per cent, and I have already explained how that is derived.

2419 "Q. Am I right, Mr. Turner, in my understanding that under the accounting rules of the Interstate Commerce Commission, and of the Illinois Commission—which I believe are identical with those of the Interstate Commerce Commission—the actual charge to expense, the dollar charge, is determined by applying the composite rate of 6.8 per cent to the total main account of Central Office Telephone Equipment, rather than by applying the specific rates for Manual Dial and Toll, to each of the sub-classes.

"A. That is my understanding, except that I believe the accountants take one-twelfth of the annual rate and apply it to the monthly investment."

2421 "Mr. Goldstein: Is it that the bookkeeping figure is determined, or the expense in dollars; which is it?

"The Witness: In my opinion it is both.

"Mr. Adcock: We move to strike out the answer because it is not within the province of the witness to determine what the statute requires and it is simply a conclusion.

"Judge Wilkerson: So far as that is concerned, it may be that this type of testimony should be disregarded, because if it is a matter of interpretation of the statute, it be-
2422 comes a matter for the court to determine. If the witness has put anything into the record here under an erroneous interpretation of the statute, the court, of course, will disregard it."

The second main class of property included in Group 2 is

Buildings, and the first sub-class, specifically Manual Central Office Buildings.

The life experience of manual central office buildings has been studied in a manner similar to that which I have previously described for central office telephone equipment. On page 9 I show the results of these studies. The buildings shown in the first column, that is in column A, are separated, those in the upper group being the buildings that we expect to dispose of at the time of changing from manual to dial equipment; and those buildings shown in the lower group being those which we expect to incorporate in the new projects and continue in service. As this statement is similar to the one that I have already described for central office equipment on page 7, it is only necessary to call attention to the results shown in column I. The upper group of buildings are estimated to have an average life of 18.1 years. The buildings in the lower group are estimated to have an
2423 average life of 36.6 years; while the average of all buildings of this type is 21.5 years.

As in the case of central office equipment, I gave some consideration to the effect of the business depression upon the possible life of these buildings, and estimated an average life of 25 years for all buildings in this group. That differential between 25 years and the 21.5 years found by this study, I think is a liberal allowance for reasonable expectation of deferments.

2424 I could not say definitely that the relative size of the initial installations for manual central office buildings are similar to those of manual central office equipment, but the buildings do have the same life characteristics as central office equipment in that in almost every building that we have, we have started, as we economically should do, with a building only large enough to take care of a certain number of years of growth, and we have added to that building by placing either additional stories or lateral additions. That has invariably been our procedure in the past and we expect the same condition for the future. We could not economically build the ultimate building required at a given location. It

would result in an enormous amount of idle space, or the alternative of having others renting space from us in a building upon which we have very severe restrictions as to fire hazard, access and so forth. The effect of that factor
2425 will appear from the statistics given in the exhibit on page 9.

In determining salvage for these buildings we have investigated, in the first place the salvage that we have actually obtained in the past for buildings which we have sold, and, of course, we have recognized any buildings that may have been wrecked. This past experience that we have had is not particularly comparable, however, with what we may expect, due to the difference in the size of the buildings, and their general layout or design. The past salvage has been extremely small, but that is to be expected for a telephone building that is sold for other purposes. In the first place, the building is decidedly overbuilt as to floor loads, for, let us say, apartment use, or residential use. It also has very high ceilings and many other features that are not desirable to a prospective purchaser. Many of our buildings are located in districts that are zoned for apartment or residential purposes, where the re-use of the building would be extremely limited, and I think probably quite undesirable.

2426 I have made studies of the possible salvage that we might obtain through sales, by grouping the buildings in accordance with their attractiveness and possibility of sales. For example, I have grouped the buildings in more favorable commercial areas, where we think the prospects are best for disposal. I have placed others in a group that would be in commercial areas where the type of surrounding structures would indicate very little salvage and a great deal of difficulty in the sale of the buildings. Then further groupings have been made of apartment districts, districts zoned for apartments and residential districts.

I have arrived at what I think to be a fair sale value for each of the groups of buildings. This amount of money resulting from that computation has been assigned to the individual buildings for the purpose of determining the relation of that amount as compared to the original cost of the building at the time of retirement, which furnishes the net salvage percentage that we seek. That is shown on page 9 of the exhibit, in column L, that is, the net salvage assigned to each of these buildings. The composite or average net salvage for all of the buildings as shown at the bottom of column L, is 17.8 per cent.

2427 I have rounded that out for use in depreciation rates and used 20 per cent average net salvage, which I think is the maximum that we can possibly expect from these buildings. That salvage, of course, includes buildings which are definitely scheduled to be wrecked to make way for other telephone buildings on the same site.

A life of 25 years and a salvage of 20 per cent gives the rate of 3.2 per cent for this class of buildings.

Like dial equipment, we really have had insufficient experience with dial buildings to analyze past life experience, and again I have relied to some extent upon comparisons with the experience expected from manual buildings. I have come to the conclusion that we may expect a substantially longer over-all life for dial buildings. I think that would be the result of modern engineering and would make due allowance for perhaps more additions than has been the case in the past.

2428 The foundations would be designed to take perhaps more stories than we have previously allowed for, and the general design of the building I think will offer greater flexibility for replacement of equipment; all of this will make for a longer over-all life of the buildings.

Our experience with manual buildings has resulted in an average over-all life of slightly more than 30 years and I think it reasonable to expect as much as 50 years on the average for the dial buildings. When I say "over-all life" I mean from the beginning of the initial structure to the time of the disposal of the complete structure. The effect of the shorter lived additions, however, reduces the average life experience by reflecting the lives of the various increments that are made to the building. On the basis of a typical dial building as we see it today, the average life resulting from the use of an

over-all life of 50 years would approximate 30 years. The Franklin Building, which is a dial building, however, is not susceptible of any further expansion, as far as I can ascertain, which is contrary to the usual case in connection with a typical operating building. The Franklin Building was
2429 originally 11 stories, and has been increased to 18 stories. It is my understanding that the foundations will not support any further additions and that we are restricted from making lateral additions. In view of this elimination of the effect of later additions, the average life of that building based on a 50-year over-all life, would be 40 years rather than 30. Weighting this average life of the Franklin Building, with the average life expected for all other dial buildings in Chicago (30 years) on the basis of the relative investment, results in an average life for all dial buildings of 35 years, which has been used in depreciation rates.

Although the buildings are expected to have a longer life, and will therefore be older at the time of disposal, I have estimated the same net salvage for dial buildings that I have used for manual buildings, that is, 20 per cent. I did this because I think a larger percentage of these buildings will be located more favorably with reference to commercial streets or areas. There are also certain parts of the design of the building more attractive to commercial purchasers; one of these is that the first floor is placed at street level, whereas in most of our existing buildings the first floor is several
2430 feet above the level of the street. The average realized life of the dial buildings in relation to their over-all life from first to last is substantially greater than has been true and is true of the manual central office buildings.

The next sub-class of buildings shown on page 4 of this exhibit (A-128) is the General Office Building. Because of its character, it has to be treated upon its own peculiar considerations.

We have only the one building (that known as the Bell Building at 212 West Washington Street) of that general type and no predecessors. To arrive at the depreciation rate, it was necessary for us to investigate the life experience of

other commercial buildings that might be available. Such an investigation of as nearly comparable buildings as pos-
2431 sible in Chicago indicated an average over-all life of about 40 years, but in view of the fact that the Bell Building was constructed some 20 years later than the buildings investigated, I felt that with a more modern design we might expect a longer over-all life, which I estimated at 50 years. Of course the investment in a building of that type, or any other type I presume, is made up not alone of the structure, which has a relatively long life, but of various items of building equipment, such as plumbing and heating, elevators, electrical equipment and so forth, which has a relatively shorter life. The fixed and movable equipment in the Bell Building represents about one-fourth of the total investment in that building. I have estimated an average life of 30 years for the building equipment, which I think is a very liberal estimate compared to some that I have seen by other concerns which are interested in these matters. With
2432 an estimated structural or over-all life of 50 years for the building, and an average life of 30 years for the equipment in the building, the composite average life would be 40 years. That is what I used in deriving the rate.

As to the salvage for the Bell Building, there are no definite plans at all that I can ascertain for the ultimate disposal of that building. It is the engineering view that when the building has served its purpose we will probably remove it and place a new building on the present site, a building of a somewhat different design. On that expectation I have considered that the building will be wrecked. Investigations of the wrecking of buildings around in the loop, such as I could obtain, indicated that the cost of removing a building was in excess of the gross salvage obtainable from the recovered materials. However, having rather indefinite information on that subject, I assumed that the materials recovered would pay for the cost of removal, and have used zero net salvage.

Forty years life and zero salvage gives the depre-
2433 ciation rate of 2.5 per cent on that building.

The three classes of buildings which I have now discussed, that is, Manual Central Office, Dial Central Office and the General Office Buildings represent approximately 97 per cent of the total investment in the building account. Page 4 of the exhibit (A-128) shows the percentage of total investment in depreciable property in Chicago for each of those three classes. The remaining three per cent is made up of one garage and warehouse that we have and the investments for improvements we have made in quarters which we rent.

2434 In determining the depreciation rate for garages and warehouses, I have used an average life of 25 years and an average net salvage of 15 per cent, resulting in an annual rate of 3.4 per cent. For improvements to rented quarters I used an average of 25 years and zero net salvage, resulting in a rate of 4 per cent.

The composite depreciation rate applicable to the entire building account is 2.8 per cent.

The segregation of the property into Group 1 includes only two accounts, both of which are covered by this exhibit (A-128) as distinguished from the other groups, wherein perhaps only a few accounts are furnished in this exhibit as examples. In other words, I have covered everything in Group 1 in this exhibit. That means that I have covered 41 per cent of the investment in Chicago in depreciable property, and 47 per cent of the total expense of depreciation.

2435 The several classes of property which have been included in Group 2 are shown on page 10 (A-128). The investment in property in this group is represented principally by just three accounts, which are shown above the horizontal line drawn across the page. These are: Private Branch Exchanges, Exchange Aerial Cable, and Exchange Underground Cable. The total property in this group has a combined investment of about one-third of the total investment in depreciable property. Of the property in this group the three accounts which I shall discuss have a combined investment of approximately 93 per cent. It is, therefore, my intention to confine my explanation of the methods of studying the life and salvage, and our conclusions, to these three accounts. As I said before, the three accounts are 93 per cent of the total of the accounts in this group and represent 30 per cent of the total investment in Chicago in depreciable property. They account for between 25 per cent and 26 per cent of the total depreciation expense. That is what we are dealing with now when I take up this branch of my testimony.

2436 Here again the grouping of these classes of property into Group 2 is based upon the fact that similar methods of ascertaining the lives have been employed. That is generally true. Of course there is one exception to that, which I will describe a little later.

The various classes of property contained in Group 2, with the one exception which I shall describe a little later, consist of numerous individual units of property, which are placed and retired as individual units. We are therefore able to analyze life by determining the average experience of large groups of such units. Our methods that are employed in this analysis are known as mortality studies, and are very similar to the methods employed by insurance companies in the analysis of human mortality experience. The data re-
2437 quired for the analysis of human life is the number of persons at each age who survive until the following year. From that sort of information, which is determined for all ages, survival rates are computed and these survival rates in turn are translated into what are termed life tables. A graphic description of a life table is shown on page 11. This is known as the American Experience Table for Human Lives. The heavy curve starting at the upper left hand corner of the page and descending diagonally to the lower right hand corner, shows the percentage of an original group of persons starting at age 10 who survive to each subsequent year of age. The lower curve (which we term a mortality curve) shows the percentage of the original group of persons starting at age 10 who die in each year of age subsequent to age 10.

For example, if you wish to ascertain the percentage of an original group of persons starting at age 10, who will survive at age 50, you will find the figure 50 at the bottom of the page, and following the vertical line upward until it intersects the life curve, it may be noted that this occurs at the horizontal line, which at the left of the page shows the figure 70. That means that 70 per cent of the original group

2438 survive at age 50. The lower curve shows that of the original group of persons starting at age 10, approximately three fourths of one per cent die in each year of age up to about age 40, as indicated by the readings at the right of the chart. After age 40 the percentage dying in each year increases rapidly, reaching the maximum of about 2.6 per cent dying, at age 75.

This mortality curve for human lives such as used by life insurance companies is presented here merely as illustrative of the mathematical processes that are employed.

The data required for these studies as applicable to the telephone property are the placing dates and retirement dates of all retired property as far back as our experience is available, and the placing dates of all surviving property. In order to obtain this information the company has established what is known as a mortality routine that currently provides the necessary information.

2439 This data originates in the plant department of the company, where a direct contact with the placing and removal of the property occurs. It is then submitted to the Accounting Department for reconciliation with disbursement and recovery records and finally sent to the Engineering Department for use in the mortality studies. Before using the data the Engineering Department prices the various items in each sub-class of property at uniform costs in order to properly weight them together and thereby reflect the life experience on a basis comparable to the investment to which the rates are applied.

I think the simplest way to explain the necessity for reducing these to a uniform price level is to take the case of cable, for example. One cable costing $2 a foot has a certain life, another cable included in this same grouping, costing one dollar a foot, has a different life. Now, it is necessary for us to give twice as much weighting to the $2 cable as the one

dollar cable, in order that the dollar years of life, which is in the final analysis what we seek, may be properly ascer-
2440 tained through a correct method of weighting.

The data that is summarized, as I have just described, is shown on page 12 in the form of a summary statement, which in this case happens to be an actual copy of a work sheet for non-multiple private branch exchanges. This statement shows the amount of this type of property that was placed in each year, the amount surviving, and the amount retired in each subsequent year. From information of that character, as I explained in the case of human mortality, survival rates may be readily computed for individual years and an average life determined. However, if we analyze the experience of individual years, for example, the year of 1898, it would be of little significance in drawing conclusions for the life of the present property. This is because conditions change, that is, factors controlling life change over so long a period, so it is desirable to make the life analysis on as recent a basis as possible. This can be accomplished by analyzing the information shown in the lower rectangle of each of these columns, which are the years subsequent to the year of
2441 placing. The lowest rectangle in each column represents the experience in the year 1928 for property which was placed in all previous years. From that information we can determine for the experience of 1928 what the survival rates are at each age of the property. We have felt that it is advisable to include in our analysis more than one year, because of temporary conditions that may occur in individual years, and also to secure a greater volume of data in the study. For that reason we combine three years into a group, or band, as we call it, for purposes of analysis. For example, on page 12 we show the band of years which has been analyzed to determine average life covering the years 1926, 1927, and 1928, the experience for which is shown below the heavy jagged line extending diagonally upward from left to right. From that information below the heavy line we have computed the life table which is shown on page 13. In order to avoid the use of decimals, which would be required if we

expressed the life table as a percentage, we use a starting point of 100,000 units, so that the surviving portion of all classes of plant is expressed in relation to an original group of 100,000. On page 13 the average life to be derived from this life table may be readily computed by summing up
2442 the number of units remaining at each age, and dividing that total by the 100,000 units exposed to this experience. That results in an average life as shown on the chart of 6.6 years.

I am dealing here with actual historical data of the company, and this is not a theoretical but an actual curve.

Although many of the life tables from the present available data are not complete, that is, they do not cover a sufficiently long period to completely exhaust the amount of property under consideration, there is a method available for extending these life tables to express a complete retirement of the original group of property. This process, which not only completes the life table, but smooths it to offer more representative experience, or, in other words, eliminates individual yearly fluctuations in order to get a more representative basis, is known as the graduation of observed data. The mathematical formula which accomplishes this purpose is known as the Gompertz-Makeham formula, and has been carefully investigated, tested and approved, and submitted to us by the American Telephone & Telegraph Company for use in our work.

2443 Page 14 (Exhibit A-128) shows comparisons of life tables which have been computed from observed, or actual data, and those which have been graduated to represent the complete experience of the non-multiple private branch exchanges for four bands of years, as noted on the charts. The curves shown as dotted lines represent the life tables resulting from the observed, or actual data, while the heavy solid lines show the life tables resulting from the graduation of the actual data. The average life shown on each of the four charts was computed from the graduated data.

Page 15 shows one of the tests which we have made here in Chicago of the application of the formula to incomplete

observed data. Chart A is based on an analysis of experience covering twenty-four and a half years, during which 75 per cent of the original plant was retired. The graduation of this experience resulted in an average life of 16.7 years. Various assumptions as to eliminating parts of the actual experience were made and graduated life tables computed through the gradual stages shown by the several charts on page 15 down to the most extreme assumption which was predicated upon the assumption that only fourteen and
2444 a half years of experience was obtainable for this plant and that only 45 per cent of the original group had been retired. The result of the computation of average life from this graduated life table was sixteen and one-half years, so that the variation between the two extremes was but two-tenths of a year in the final result.

The chart at the bottom of the page (Page 15—Exhibit A-128) shows the differences resulting from all six computations, and these differences are confined to an extreme of but four-tenths of one year, which approximates three per cent of the average life determined on the basis of the more complete experience, although we have a difference in the over-all period analyzed of ten years, that is, from fourteen and a half to twenty-four and a half years.

I said a moment ago that in the case of the lowest chart in the right hand column I made the assumption that I had an experience of fourteen and a half years. Another way of stating it would be to say that I took the actual experience which we did have covering fourteen and a half years and dealt with that experience in that table.

2445 I actually had an experience of from fourteen and a half to ~~twenty-four~~ and a half years, and have taken the experience of fourteen and a half years, sixteen and a half, eighteen and a half, twenty and a half, twenty-two and a half, and twenty-four and a half for the purpose of these studies. The conclusion from this study is this: that if we had had the experience ~~of~~ only fourteen and a half years, used in the lowest right hand table, and had applied the mathematical processes which I have described, we would have obtained the

average life of sixteen and a half years, which corresponds to the average life of 16.7 years indicated in the upper left hand table, where the experience covers the span from zero to twenty-four and a half years; a difference of one-tenth
2446 of one per cent in the average life. In other words, with the shorter amount of available data, we would, for all practical purposes, have obtained approximately the same average life as we did with the more complete data.

While the mortality studies are based on the experience of our larger units of property in each classification, there are some items that should be reflected in the life conclusions which are not practically susceptible to mortality recording. These items are, for example, terminals associated with cable, cross arms associated with poles, and so forth. There is also some lag in the receipt of the mortality records due to the time required to report work finally completed and to the reconciliation processes that insure accuracy in the reports submitted to us. In order to care for both of those factors, we determine the retirement rates for the complete property in each classification by analyzing the experience shown by the books of the company. That is, we determine the relation of the dollars retired in a given year to the investment at the beginning of that year. This provides information that
2447 may be compared with the retirement rate resulting from the information furnished through the mortality routine, and permits a means of adjusting the survival rates determined under the mortality study to conform with the complete plant experience as indicated by the records of the Accounting Department. These retirement rates which, as I said, are expressed as percentages of the investment at the beginning of each year, are shown on page 16 for the several classes of property in Group 2.

Page 17 shows the results of these studies of life for non-multiple private branch exchanges. In the upper chart on that page we show the computed average life in the form of dots placed at the center year of each three year band and connected together merely for the purpose of helping to indicate the trend that the average life has taken during this

2448 period. This study shows that in the earlier part of the experience, that is, prior to 1920, we were obtaining an average life of from seven to eight years for these non-multiple or smaller types of private branch exchanges which are located on subscribers' premises. The later experience has shown a downward trend of life, culminating in slightly less than six years, but approximating an average of six years for some period during recent experience. This tendency toward a shorter life in recent years is due, I think, to the replacement of many of our boards because of the introduction of dial operation and to the development of new types of private branch exchanges, of which there has been a number, both manual and dial types, and to a slight extent to the increasing use of centralized power plants, which have eliminated numerous small power plants in the larger buildings in Chicago. I think probably it is also due, to some extent, to increased moving of business firms as the result of the availability of larger modern buildings during recent years, and perhaps, in the last year or two they are moving back to cheaper quarters, which process may be expected to be reversed, perhaps, when business picks up again.

The substantial period during which the life indica-
2449 tions have stabilized around six years, and the prospects of continued factors affecting the life similar to those which have been recently experienced, indicates to my mind that we may safely use an average life of six years for our present equipment. So, notwithstanding the fact that the curve on page 17 shows less than six years, with a downward trend, I have used six years for the reasons stated. Of course, the longer the average life the lower the charge for depreciation.

We have just completed an analysis of the years 1928, 1929 and 1930, which we expect to consider in connection with the new 1932 rates which indicates an average life of five years. I don't think that I will let that influence my conclusions too greatly, however, because of the present conditions which I considered and hope to be of a temporary nature. In other words, we are having heavy retirements of certain items of equipment which are controlled by public demand. Station apparatus and private branch exchanges are among 2450 them. I think that this severe loss in stations and switchboards should not be considered or given too much weight in considering the life of property over a long term of years in the future.

Page 18 shows the salvage experience for the only two years during which this experience was available separately for this particular class of property (non-multiple private branch exchanges). Prior to 1928 the records covered the combined experience of non-multiple and multiple switch boards. Page 18 shows in the upper chart the gross salvage, in the second, or center chart, the cost of removal, and in the lower chart the net salvage derived from the retirement of this type of property. This is shown by the solid lines. The dash lines show the salvage that would have been derived had the cost levels at the time of retirement been the same as at the time of installation. The latter basis of determining salvage for depreciation purposes, which look well into the future, is considered the most reliable means of predicating salvage 2451 on a basis that will conform with actual experience. It eliminates speculative predictions as to what we may expect during the long period of years over which the existing equipment will be retired. This procedure, that is, uniform pricing in connection with salvage, has been followed in considering the salvage experience of practically all other accounts contained in this exhibit. It eliminates the necessity of attempting to predict future price levels.

I might explain just how we retire these classes of property, and how I expect the current cost levels to affect both the original cost of the retired plant and the resulting salvage. In the first place, practically all of this property for which we consider the uniform price level in obtaining salvage is retired at average book costs, not at the original cost of the 2452 individual item, because there is no practical means of maintaining a record of such expenditures. The book cost is, of course, affected by changing price levels. When prices are rising, the effect of the units placed during that

period at higher costs will result in retiring items placed in earlier years at a greater cost than the original cost. In other words, on a rising price level, the property is undoubtedly retired at something in excess of its original cost, speaking of the individual units of property. That has the effect of making the book costs follow the current cost levels, and it is reasonable to expect that as costs increase and decrease, they will from time to time be above and below the average book cost at which the property is retired, and due to the fact that we have a constantly growing plant, if I may exclude the very recent experience and look forward again to a resumption of our normal progress, we have this increasing amount of new plant coming into our capital accounts each year, which quickly compensates for differences in the past between actual salvage and salvage at uniform price levels. In other words,
I am convinced that over a period of years the uniform
2453 price level method of ascertaining salvage is the only
one that will approach accuracy in estimating salvage for depreciation purposes.

Although the adjusted net salvage percentages shown on page 18 for the years 1928 and 1929 are in the neighborhood of 65 to 70 per cent, I have used 55 per cent in developing the depreciation rate. The salvage used in depreciation rates should reflect the proper weighting of equipment re-used and junked. In a growing plant, the purchase of new equipment gives undue weighting to the re-use of all equipment, and does not reflect the salvage derived from junking in its true relation. In order to obtain the correct salvage for items of this kind it is necessary to ascertain how many times, on the average, the equipment will be re-used before it is junked and then to determine what salvage may be expected upon re-use and upon junking.

Our studies have indicated that in the case of non-multiple private branch exchanges with a six-year life in one place,
two re-uses may be expected before final junking. The
2454 net salvage which we obtain upon re-use of this equip-
ment approximates 80 per cent, the other 20 per cent being the cost of installation and other things that are lost

upon removal, and when the equipment is finally junked we obtain about 5 per cent net salvage. On this basis, obtaining salvage at 80 per cent twice, and 5 per cent once, the average net salvage per service life is 55 per cent, by arithmetical computation.

The life of six years and salvage of 55 per cent gives the rate of 7½ per cent applicable to non-multiple and small dial private branch exchanges.

The other sub-class of private branch exchanges is multiple and large dial. These boards, which are the larger switchboards placed at subscribers' premises, are very similar in their life characteristics to central office equipment. While the switchboard is placed and retired as a unit, in accordance with the requirements of the subscriber, there is a grad- 2455 ual process of building up from the initial installation to the equipment finally retired as the subscribers' requirements increase. Some of these boards are very similar to central office equipment, consisting of large switchboards of many positions, that is, many operators. Of course, the effect of additions upon the life of this equipment is not so great as in the case of central office equipment, because the additions are relatively smaller and perhaps placed less frequently. The result of a study which I have made of a large number of these switchboards to ascertain the relation of the average equipment life to the age of the initial installation is shown in the upper chart on page 19 (A-128). This curve which is plotted in the chart shows that at any selected given age the life would be as indicated by the curve. Of course, it is necessary in the use of this curve to estimate or ascertain, if possible, the average over-all life of the installation. This is not available as in the case of central office equipment. There we have a fairly good idea of about when our offices will be retired. Here we have no idea as to specific dates for individual installations. We are, however, able to estimate (I think with a reasonable degree of accuracy) the aver- 2456 age over-all life of this type of installation and in arriving at a conclusion as to that I have conferred with commercial men and engineers who are continuously in touch with this type of equipment, and I might say it was our joint conclusion that the average over-all life of the multiple private branch exchanges would not exceed fifteen years. With an over-all life of fifteen years, the average life may be ascertained by following the heavy vertical line on the upper chart from age fifteen upward until it intercepts the life curve which is at approximately twelve years. That is the average life that we have estimated for that type of equipment. The lower chart on page 19 merely indicates the volume of data available at all ages for the study of the relation of average life to over-all life, that is, the volume of data in the company's records which was available and which was used in the curve at the top of page 19.

I might say here that in connection with this estimate of average over-all life of fifteen years, we analyzed the average over-all age of the boards which have been retired over quite a number of years, and found that they were retired at
2457 an average of nine years. We also ascertained the average age of the existing boards, which was but six years. These two results compare with the fifteen years which we estimated for the existing equipment.

2458 The actual salvage derived from the retirement of multiple private branch exchanges is shown on page 20 (A-128). As I said before, the separate recording of this salvage experience in the Company's records or books was only available for the years 1928 and 1929, but, as a very large portion of these boards were placed under a record system that permits of an analysis of the salvage experience by investigation of the individual records, we made such an investigation back to 1925, with the results shown on this chart.

It was not possible to convert this salvage to the uniform cost level, because of the lack of index numbers for the numerous types of boards that are involved. We did, however, study the two principal types, which showed but little difference between the actual and the uniform price salvage, which is due largely to the fact that these boards are not greatly re-used, and the salvage is consequently small.

The net salvage for the period analyzed ranges generally from 20 to 25 per cent, as shown in the lower chart, except for the year of 1927, at which time the salvage increased 2459 to approximately 35 per cent, but which was due to one or two rather unusually favorable opportunities for re-use. This experience, however, has been based upon switchboards which have been retired at an average over-all age of nine years, and would, of course, have to be modified if associated with equipment expected to survive to an average age of fifteen years.

In view of this and the experience indicated on page 20 (A-128), I estimated an average net salvage of 15 per cent for this type of equipment.

So with twelve years as the average life, and 15 per cent the salvage, the rate of 7.1 per cent for the multiple and large dial private branch exchanges is obtained.

That, composited with the 7.5 per cent in the case of non-multiple and small-dial, gives, as shown on page 10, the rate of 7.3 per cent as the applicable rate for computing depreciation expense for the main class of private branch exchanges.

The next principal class of property in group 2 is exchange aerial cable. Page 21 (A-128) shows the results of the 2460 analyses which we have made of life for various bands of years from 1912 to 1928. It will be noted that prior to the World War the indicated life was less than 15 years for this class of property. During the War and the period of high prices immediately following, the life indications increased temporarily to quite some extent. This was due primarily to the curtailment of retirements during the war, and the period immediately following, resulting from our inability to secure cable, labor shortage and restrictive curtailment during the period of high prices.

Recent experience, as shown by this chart, indicates a rather relatively short life, the latest band indicating a life of about thirteen years. I, in considering this matter, however, concluded that advanced engineering methods and certain other factors pertaining to the character of the plant in question, would safely permit me to use an average life somewhat in excess of that most recently shown, and I estimated an average life of sixteen years for exchange aerial cable.

The actual salvage experience for exchange aerial cable is shown on page 22 (A-128) for a considerable period of years.

The net salvage which we obtain from this class of 2461 property is usually derived through the re-use of terminals, and the junking of the cable. A very small amount of aerial cable is re-used, because it is cut up into short lengths in service by the frequent placing of terminals in which the splice interrupts the continuity of the cable, and furthermore, it is difficult to rehandle aerial cable in such a manner that it is satisfactory for re-use, in view of the fact that the cable itself, the material, is not a particularly costly item in relation to the total cost in place.

Our average experience over quite a number of years has indicated a net salvage averaging approximately 10 per cent, and although changes in the character of the type of materials might justify a lower percentage than that in our depreciation rates, I have considered that it would not be of sufficient magnitude to justify an estimate differing from this more recent experience, and have used 10 per cent.

The sixteen year life, 10 per cent salvage, gives the rate of 5.6 per cent for exchange aerial cable.

The next class in group 2 is exchange underground 2462 cable. The exchange underground cable is segregated into four well defined groups. The various segregations are indicated by the four charts shown on page 23 and the life experience for each group is shown thereon. Main subscribers' cable, the life experience for which is shown in the upper chart, has had an increasing life trend from the pre-war experience of about 17 years to a maximum of some 28 years, resulting from the conditions which I have described for exchange aerial cable, and more recently a downward trend in the life, culminating in the latest band analyzed, which showed twenty years.

I have kept in mind in basing conclusions upon the results of these studies that we have an increasing amount of full-sized cables, which are probably not fully reflected in the result shown. In order to make adequate allowance for a longer life for the full-sized cable, I have estimated an average life for main subscribers' cable of 25 years.

In the case of trunk cable, we expect a somewhat longer life than we do for main subscribers' cable and, in spite of the indicated life on the second chart, which is less than 25 years,
I have used 27 years for this class of property. As
2463 shown in the third chart, the life of subsidiary cable is substantially shorter than that of the former two classes. This is due to the influence on these cables of changes in the distributing plant. Although recent experience has indicated an average life in the neighborhood of twelve years, I have used fifteen years, in the belief that the future experience will show an increase over these studies.

The final class of property, that of house cable, is shown on the lower chart on page 23. While there has been some variation in these life indications, principally due to the unusual conditions which I have previously referred to, I have used the latest indicated life shown on the chart in our depreciation rates, that of twenty-two years.

The salvage from the retirement of underground cable is rather largely dependent upon junk prices, as a very large proportion of the cable is junked upon removal. The salvage experience for the various types of cable is shown on page 25. Unfortunately, we had no separation between main subscribers,
trunk and subsidiary cables in the salvage
2464 records of the company prior to 1929. The salvage
experience for the separate classes of property, however, with relation to the combined experience as shown for years prior to 1929 is indicated by the small cross lines on the year of 1929. The net salvage for the several classes of property has ranged generally from 20 to 40 per cent, the higher salvage being in the earlier period, at which time somewhat greater re-use of the cable was necessarily made because of some restrictions in obtaining new cable.

The combined salvage experience shown in the lower chart is also influenced by the proportionate amounts of the different classes of cable included in the retirement. We know, for example, that subsidiary cable produces either no salvage, or a net loss, on retirement, so that if that was in undue proportion in any year, as I happen to know it was in the year 1921, it would account for a reduction in the combined average net result.

Due to the similarity of the cables contained in the main subscribers' and trunk classifications, we expect the same net salvage for both groups, and the actual experience for the year of 1929 indicates that to be a fact. Studies of the costs of these cables indicate that where a cable is re-used, we
2465 may expect a net salvage approximating 70 per cent,
and where it is junked, a net salvage of approximately 20 per cent. Studies of recent retirements have indicated that around 20 per cent of retired cable is re-used, and 80 per cent junked.

On the basis of these relations and the computed salvage derived through both classes of retirements, the average net salvage is 30 per cent for both main subscribers' and trunk cable.

Practically all of the subsidiary cable is junked, and our previous estimates have placed the net salvage at zero per cent. The amount of this salvage shown for the year 1929 was about 10 per cent loss. However, we concluded that until we had further actual experience on which to base a new estimate, we would adhere to the former estimates of zero salvage.

In the case of house cable, there is no question as to the amount of salvage derived. The chart on page 26 shows the net salvage to have averaged about zero per cent for a considerable period. That is not true for house cable based on experience down to the beginning of the present year. We are finding that the salvage experience of house cable
2466 during the last three years is in the nature of a loss. In
other words, the cost of removal is in excess of the value of the recovered materials. We are, however, still dealing with house cable at zero salvage.

The reason that we have no example in this exhibit of the results of our studies of the life of load coils is that we were unable to study them separately between exchange and toll, so that they have been included in another exhibit, but we did make a mortality study of the life of the combined exchange

and toll load coils in Chicago, and arrived at certain
2467 conclusions. Load coils are included as a part of this
class of property, with a finding of ten years as the
average life, and 40 per cent salvage, giving a 6 per cent rate.

The composite rate for the class of plant as a whole is 3.4 per cent.

That covers the complete explanation of methods of studying life and salvage for all property in group 2, and also explains the bases of our conclusions with respect to life and salvage used in the depreciation rates for the principal accounts in that group.

The several classes of property contained in group 3 are shown on page 27 (A-128), together with the relative invest-
ment, the average service lives, expected average net
2468 salvage upon retirement, and resulting annual rates of
depreciation for each sub-class of property, and the
composite rates applicable to the investments in each account.

While the life characteristics of the property contained in this group are similar to those which have been included in group 2, it is considered impracticable, if not impossible, to make mortality studies of life for this property, due to the burdensome requirement of ascertaining and then maintaining the required data as to the placing and retirement dates of individual items. For that reason, these classes of property have been studied by a somewhat different process, known as the turn-over cycle method of analyzing life.

In order to illustrate the principle involved in this form of study, I have arranged the example shown on page 28 of the exhibit of a non-growing plant with an average life of five years. Referring to the five lower diagonal lines of rectangles, which indicate the surviving property from all previous installations and the retired property in each of the years 1924 to 1928, the sum of the upper figures shows that 500,000 units were in service at the beginning of each year,
and the sum of the lower figures shows that 100,000
2469 units were retired in each of the five years. This simply
means that a plant of 500,000 units was maintained in
static condition by the replacement of 100,000 units each year.

for simplicity. The information shown in the summarized tabulation at the upper right hand corner of the chart has been transferred to the table at the bottom of the chart designated "Summarization of Data by Years", which represents the kind of information that is available in the Company's records. In other words, the information that I have assumed in this tabulation as to placing and retirement dates is not available for this property, but the amount in service and the amount retired each year is available. By accumulating the retirements shown in column 2 (Page 28, Exhibit A-128) in reverse chronological order, or backwards until they equal the amount of plant in service at some previous date, the average life may be determined. This computation has been made in column 3, and the result shows that it requires five years to accumulate the 500,000 units in service in column 4. This is in accord with the known life used in the example. For convenience, this information is shown in the form of curves in the small chart at the lower right hand corner of the page, in which the diagonal line representing the accumulation of retirements covers a period of five years, to equal the amount of plant in service at some earlier
2470 date.

That chart deals with an assumed non-growing property. In the next chart I take into consideration the factor of growth. I do that because the turn-over period in a growing plant, unlike that of a static plant, is always less than the correct average life, and it is, therefore, necessary to make certain computations to provide for this difference. The difference between the period shown by the turn-over method and the correct average life is brought about in a growing property by the effect of units retired at less than average life more than offsetting the units retired at ages greater than average life. In other words, in a growing plant, the younger plant is retired in greater proportion to the whole than is the case in a static plant.

Page 29 (A-128) offers an example of a property having a five-year average life and a 10 per cent annual rate of growth. It will be noted in column A that instead of merely offsetting the retirement each year, the additions grow progressively larger, otherwise the form is similar to that shown on page 28.

Following the same procedure which I have described
2471 for the computations with respect to page 28, we note in the lower right-hand corner of the chart that an average turn-over period of 4.6 years is developed, although we know that the life used in the example is five years.

Page 30 (A-128) will serve to illustrate the method employed in compensating for the effect of growth on the result indicated by the turn-over cycle method. Figure 1 on page 30 shows certain actual data of recent years for station apparatus arranged in tabulated form similar to that which I have used and described in the preceding examples. Figure 2 has also been arranged to show the graphical description of the turn-over period results in a manner similar to that which I have previously described.

One of the steps necessary in determining the amount of compensation to be added to the results of the turn-over period to represent correct life is to find the rate of growth during the period under consideration. For convenience, this is determined as the ratio of the amount of plant at the end to the amount at the beginning of the turn-over period. The amounts used in these computations are based on an equivalent uniform annual rate of growth in order to elimi-
2472 nate fluctuations in individual years that may distort the results from a more representative basis desired. This ratio is most conveniently determined by the use of logarithmic paper, as shown in figure 3 on page 30, in which the result of the period under consideration with respect to station apparatus is a ratio of 1.2.

Another factor which must be considered in providing for the proper compensation in the results of the turn-over periods in a growing plant is that of the age distribution of the retirements. Where a higher rate of mortality occurs at early ages, the effect of plant placed and retired during the turnover period is greater than where the mortality rates are high at later ages of life. For instance, on page 29 we note that this property has an average life of five years, although the turn-over period indicates but 4.6 years. We are therefore able to determine that with this type of age distribution of the retirements and the annual rate of growth of 10 per cent, the period shown by the turn-over analysis requires an adjustment of four-tenths of one year, or an increase of 9 per cent of 4.6 years. This compensation, that is, percentage increase to be applied to the results indicated by the turn-over cycle method, varies with the rate of growth and the 2473 type of life table involved, and has been determined for various representative life tables and growth ratios, one of which is shown in figure 4 on page 30.

I have explained the turn-over cycle method as I have applied it in arriving at the depreciation rates charged by the Company in the Chicago area. The classes of property to which I apply the method are classes for which I have adequate data in the recorded experience and records of the company for its appropriate and sound application. I have used this method in analyzing the life experience of all the classes of property in Group 3.

In this exhibit, I show the details of the application with respect to the principal class of property contained in the group. Station apparatus, which is the first class in group 3, comprises about 10 per cent of the total investment in 2474 depreciable property in Chicago, and about 80 per cent of the depreciable property included in the group. In view of that fact, for the sake of brevity, I thought it would be satisfactory to merely explain conclusions with respect to that classification, sub-station equipment.

On page 32 (A-128) I have made that application. The upper chart on page 32 shows the results of our turn-over study analysis for station apparatus for various periods over quite a long time. These results show a variation in the average life of from about four and a half years for the period ending in 1917 to a high indicated average life for the period ending in 1924, at which time the life indicated was eight and a half years, and back to an average life of approximately four and a half years for the period ending in 1929. The long turn-over periods shown in this chart subsequent to the

war were due primarily to abnormal restrictions brought about by the war and the conditions prevailing immediately thereafter. The influence of the restricted retirements, with their resulting indication of an increase in life, natur-
2475 ally continue until sufficient time has elapsed to eliminate their effect. This will be seen by comparing the retirement rates for station apparatus, as shown on page 31, with the results of the turn-over studies as shown on page 32.

Referring to page 31, it will be noted that the lowest rate of retirement for station apparatus as shown in the upper right hand chart on that page occurred in 1920. Returning to page 32, it will be seen, however, that the longest life indicated by the turn-over studies does not occur until 1924. The 1924 study reflects the low retirement rates back to 1918, but has no weighting of the higher rates prior to that time. In other words, there is a considerable lag between the incidence of low retirement rates and their reflection in the turn-over cycle studies.

Turning again to page 31 (A-128), it will be noted that by 1924 the retirement rates had risen to 16 per cent from the low point of 10 per cent in 1920. Since 1924 the retirement rates at no time have been less than 19 per cent, and in the three most recent years they have been between 27 and 28 per cent. The conclusion I draw from the increasing retirement rates as shown on page 31 is that this greater rate of retirement has not yet been reflected in the results of the
2476 turn-over cycle studies, and, making due allowance for that, and with a consideration of the possibility of a further shortening effect of the introduction of new types of station apparatus as compared to our past experience, I have estimated an average life for that class of property of four and a half years.

The lower chart on page 32 (A-128) shows the results of a turn-over study of telephone typewriters, or, as we now call them, teletypewriters. This property represents a negligible part of the investment in the station apparatus account. From this information, a service life of three years was estimated.

Page 33 (A-128) shows the salvage experience for station

apparatus since 1914. Separate salvage percentages are shown for complete station retirements and partial retirements, which we refer to as component parts on the chart, as well as the composite salvage derived from both types of retirements. While the actual salvage has varied to a considerable extent during the period shown on this chart,
2477 the adjusted salvage, that is, the salvage at uniform cost level, has remained rather consistently around 75 per cent.

As explained, for private branch exchanges, the salvage shown on page 33 (A-128), which is the salvage set up on the books of the company, reflects the various weightings that may occur in our normal experience of re-used and junked apparatus. As the effect of growth produces a disproportionately large reflection of the re-used salvage in the actual experience of the Company, it is necessary, as I explained, with the private branch exchanges, to consider how many times we may re-use this type of equipment before finally junking it. Our investigations have indicated that, based on an average service life, or life in one place, of four and a half years, we may expect, on the average, three re-uses before the final junking of the station apparatus. Investigations of possible salvage derived through both processes of recovery have indicated that for equipment re-used, we may expect an average net salvage of about 92 per cent on the original cost of the equipment retired, and when junked, about 5 per cent. Computing the salvage on the basis of three re-uses at 92 per cent and final junking at 5 per cent, results in an average net salvage per service life of 70 per cent, which has been used in the depreciation rates.

2478 Computations similar to those for station apparatus have been made for telephone typewriters, based on three service lives, the re-use salvage of 95 per cent and junk salvage of 5 per cent resulting in an average net salvage per service life of 65 per cent for that type of apparatus.

That completes the study for both sub-classes of station apparatus, giving the rate of 6.7 per cent for sub-station apparatus and of 11.7 per cent for telephone typewriters and a rate applicable to the entire class of property of 6.8 per cent.

The life and salvage conclusions as to the remaining minor classes in group 3 have been based upon a careful investigation of not alone the result of similar studies of life and salvage, but upon all available information, in the nature of conferences with various telephone people in our company who may be in a position to know what has influenced 2479 past experience, and what we may expect to find influencing our future experience. In other words, because the accounts represent a very small part of the investment and the depreciation expense, we have not neglected them and arrived at any arbitrary conclusion. We have gone through the same careful process with respect to all accounts as we have in the case of this one account which I have selected for explanatory purposes.

With that explanation, it is sufficient to refer again to page 27 of the exhibit, where are shown the life, salvage, the basic rate and composite rate for each of those classes. The rates there shown are, in my judgment, arrived at by correct and sound methods, upon adequate data, and are correct results.

May 16, 1932

2482 The classes of property which I have included in group 4, together with the relative proportions of the investment, average service lives, expected net salvage and depreciation rates, are shown on page 34 of Exhibit A-128. Aside from the underground conduit, all of the property in this group represents a negligible part of the total depreciable property. While 10 per cent of the total investment in depreciable property is in underground conduit, due to the low rate of depreciation, the amount of depreciation expense associated with that item is but 4 per cent of the total. The depreciation expense relating to all of the other classes of property included in group 4 is a combined depreciation expense of but 2 per cent of the total.

I am attempting to emphasize the rather negligible amount of expense involved in these items, for the reason that, unlike the other three groups of property, we have no experience relating to life that would be significant in arriving at conclusions. In other words, the past experience for these classes of property is short, relative to the average life of each class of property. For that reason it has been necessary to 2483 refer to other classes of property that are of somewhat similar types, and arrive at conclusions respecting life from that information and all other types that can be obtained, or rely solely upon judgment.

It will be noted that the element of salvage is not a very vital problem in this group of property, as there is practically no salvage associated with any of the classes except cable.

As appears on pages 35 and 36 of Exhibit A-128, I have selected for explanation of the methods employed in arriving at the depreciation rates for this group, the main account in this group, which is underground conduit.

This particular method that we have followed in analyzing such information as is available for underground conduit, is not identical with the other procedures followed in connection with the classes of property in group 4. This is merely an illustration of one of the types of methods followed in attempting to aid judgment in arriving at conclusions respecting life. Underground conduit, as in the case of central office equipment, is influenced by an initial construction 2484 and subsequent additions. That is, in the same trench we will place an initial amount of conduit and later add to it, so that there is a decided difference in many cases between the average life of the conduit and the age of the trench. In that connection, the characteristics of the life are somewhat similar to central office equipment.

Information regarding the placing and retirement dates of underground conduit is available in the Company's records, and I have analyzed that experience, with the results shown on page 35 of Exhibit A-128. The purpose of the upper chart on page 35 is to show the relation of the average life of the conduit itself to the life of the trench, ~~or to the~~ age of the initial conduit placed in the trench.

While an average life has been estimated for main underground conduit of 50 years, which includes manholes, this life will allow for a much greater average life of the trench. As may be noted in the upper chart, at an average initial age of 40 years, the average life of conduit is but 26 years. With that ratio in mind it can be foreseen that we may experience an average trench life of our conduit of upwards of 100 years on the basis of an average life of 50 years for the conduit.
2485

There is another point about this chart that I just want to mention briefly, and that is that we were unable to analyze the dollars of underground conduit with respect to placing and retirement dates. In other words, we were unable to earmark the dollars themselves, but our analysis was made on the basis of the property itself; and in order to properly weight it together, we used a common cost level pricing. That means that we have not given as much weight by that process to the later additions as would be justified by the increasing costs, and as the later additions are of shorter life, naturally, the ratio based on the actual investment would be in excess of this. That is, if we could estimate that with a life of 50 years for the conduit, a trench life of 100 years on the average would be experienced, for the common cost level. The trench life would be even greater if an analysis were available of the book dollars, so that the use of a life of 50 years makes allowance for a very long average trench life.

2486 The lower chart on page 35 merely shows the volume of data available for this analysis at all ages. It is expressed in millions of dollars. Due to the shortening effect on the lateral conduit of rearrangements of the distributing plant, I have estimated an average life of 30 years for subsidiary conduit.

The entire salvage experience for underground conduit back to 1914 is shown on page 36, and shows very conclusively that our retirements throughout this entire period resulted in losses. That is, that the cost of the removal or abandonment has exceeded any salvage that we might derive from recovered materials. This experience, however, has been based

rather largely upon the rebuilding of manholes in Chicago, where there has been a great deal of that work in the past; and although this experience that we have analyzed would justify perhaps a net loss of 10 per cent, we have continued the use of zero salvage in expectation that our losses associated with the conduit proper as distinguished from the manholes, will not be of a material amount. We actually expect losses for all types of conduit, but we do not expect it
2487 to be as severe as this analysis would indicate. So for that reason we have used zero net salvage.

Because of the long life of this class of property (50 years for main exchange underground conduit, and 30 years for the subsidiary underground conduit) and zero salvage, we get the very low depreciation expense rate of 2 per cent for the main conduit, and 3.3 per cent for the subsidiary, making a composite rate for all conduit of 2.3 per cent.

The property comprising group 4 represents about 13 per cent of the depreciable property in Chicago on the investment basis. The exchange underground conduit which I have studied here in detail constitutes approximately 10 per cent of the total depreciable property in Chicago.

I have described the methods employed in finding life and salvage for all depreciable property in each group. I
2488 have also shown the results derived from these studies, and described the basis for my conclusions in regard to the lives and salvage percentages used in determining the depreciation rates for the principal classes of property. I have followed the same procedure for the other classes of property in each of the four groups. (Document entitled "Illinois Bell Telephone Company, Chicago Area, January 1, 1930, Depreciation Study, Life and Salvage Data" was marked for identification as Plaintiff's Exhibit A-129.)

This exhibit (A-129) shows the life and salvage investigations made by me for the remaining classes of property in each of the three groups (I say, the three groups, because group 1 was studied in its entirety) in a manner similar to that which I have already explained in my testimony, and which has been set forth graphically in the preceding exhibit.

so far as there were data available for these classes shown in A-129. I think that reference to pages 1-A and 2 will show that the same form of showing the results of life and
2489 salvage studies respectively, will indicate that the exhibit is self-explanatory after the explanation that I have given for Exhibit A-128. The charts and data in this exhibit will be readily understood from the testimony I have already given concerning the next preceding exhibit.

This exhibit, as well as the others that have been identified in my testimony, was furnished to counsel for defendants, and the underlying data made accessible to them also, last August.

Less than 9 per cent of the investment, and also less than 9 per cent of the depreciation expense is represented by Exhibit A-129. The depreciation rates for the classes of property covered by this exhibit appear in Exhibit A-128 on pages 10, 27 and 34.

2490 The fourteen pages of explanatory text, which is a part of Exhibit A-128, are correct, and are to be understood as a part of my testimony in the case. It is in effect a brief summary of the testimony which I have given.

(Exhibits marked for identification A-125 to A-129, both inclusive, offered in evidence by plaintiff. Objections reserved.)

"Mr. Thompson: If your Honor please, during the cross-examination of Mr. Edgar S. Bloom, President of the Western Electric Company, he was asked as to what information the Western Electric Company had received from the American Telephone and Telegraph Company, in connection with
2491 provisional estimates, delivered to the American Telephone and Telegraph Company by the Bell associated companies, and by the Long Lines Department of the American Telephone and Telegraph Company. He testified in substance that the portion of the provisional estimates of each of the Bell associated companies and the Long Lines Departments containing information respecting the estimated quantities of material required to be delivered by the Western Electric Company was delivered to the Western Electric Company, although he did not personally inspect these estimates.

He said that what he received were summaries showing the future plant requirements and station growth. We have assembled in folders for each of the years 1923 to 1932, inclusive, that portion of the provisional estimates of each of the Bell associated companies, and the Long Lines Department, which were delivered to the Western Electric Company by the American Telephone and Telegraph Company.

"These are identified for the years 1923 to and including 1930, as Statement C of provisional estimates, and for the years 1931 and 1932, as Statement E. There is also included in these folders for each of the years, the summary 2492 showing plant requirements and stations expected to be gained. In some cases these summaries were made up by the Western Electric Company, and in others, by the American Telephone and Telegraph Company, but without respect to whether they were compiled by one or the other of the companies, they have been included in these folders.

"Similar data for 1922, and the preceding years, have been destroyed by the Western Electric Company in the regular course of its business, and are not available.

"And now we are in open court offering these provisional estimates and the summaries which I have described, to counsel for the defendants. They are the original papers, we have no copies of them, and we would like to have them carefully preserved; and if they are to be used in evidence, we would like to have you make copies, and return the originals to us.

"Mr. Goldstein: Mr. Thompson, may I ask if there is included in here the letter from the President of each of the associated companies explaining the character of the requirements and describing the purpose of them, and their plan of use?

"Mr. Thompson: I was sure you would ask that question, Mr. Goldstein, and I called Mr. Stoll, the Operating 2493 Vice President of the Western Electric Company, this morning, and he advised me, although I did not speak to him directly, that so far as he knows, there were no such letters of transmittal.

"Mr. Goldstein: That is, there were no letters from the

President of the Company to the American Telephone and Telegraph Company, or from the American Telephone and Telegraph Company to the Western Electric Company?

"Mr. Thompson: From the American Telephone and Telegraph Company to the Western Electric.

"Mr. Goldstein: That is the situation?

"Mr. Thompson: Yes, sir.

"Mr. Goldstein: Very well."

ARTHUR HUNTER, called as a witness on behalf of the plaintiff, having been first duly sworn, testified as follows:

Direct Examination by Mr. Thompson.

May 16, 1932.

My name is Arthur Hunter. I reside in Montclair, 2494 New Jersey. I am an actuary and am now employed by the New York Life Insurance Company, as Chief Actuary and Vice President. I have been Chief Actuary of that company for about 10 years. Prior to that time, I was Actuary and Assistant Actuary. In all, I have been 34 years in the service of the company in actuarial work.

In my position as Chief Actuary of the New York Life Insurance Company, my duties, in a general way are: to determine the premiums under all conditions; to determine what extra premiums should be charged to meet cases of hazardous occupation, of persons with medical impairments, such as heart murmurs, albumin in the urine, tuberculosis in family history; to determine what extra premiums should be charged for residence in tropical countries; to ascertain the surplus at the end of the year; to distribute the dividends; and also at the end of the year to determine what the valuation of the liabilities of the company should be for both life insurance policies and annuities. That merely gives a very brief explanation of my work.

2495 In general, I am responsible for the actuarial determination of all liabilities of the New York Life Insurance Company from year to year.

Before my connection with the New York Life Insurance Company, I had been the Actuary for the Fidelity Mutual Life Insurance Company of Philadelphia for 5 years.

I was in the Life Association of Scotland, at Edinburgh, for a period of 6 years. During that time I served under the old apprenticeship system. I was guaranteed to receive training in each department of the company, and was permitted sufficient time to attend lectures which were given by the Faculty of Actuaries. In order to obtain my degree as actuary it was necessary to study about 4 hours each night for 6 or 7 months a year, for 6 or 7 years, and in that way I obtained both the practical and theoretical, under what may be termed the hardest task masters in the world.

2496 I am a fellow of the Actuarial Society of America, the American Institute of Actuaries, the Faculty of Actuaries of Scotland, and the Casualty Actuarial Society of America. I was President of the Actuarial Society of America during the World War. I was Chief Actuarial Advisor to the Government during the war, and was Chairman of the Advisory Committee which handled all of the insurance for the soldiers and sailors. That was called the War Risk Bureau. During the war I was Chairman of the Committee which handled all of the insurance for the National Red Cross, and I also did similar work as a member of the Committee for the Young Men's Christian Association.

2497 I have the honorary degree of LL.D. from Edinburgh University, which is the highest honor granted by that university. That was given to me for scientific work along actuarial lines.

I am the author of the Makehamized American Table, which is used by many states to make calculations of reserve valuation for joint life policies and other complicated calculations. I am also the author of the American Annuitants' Table, which was prepared from the experience of the principal American companies, and is used as the standard of valuation in many states. I am also the author of Hunter's Disability Tables, which is the standard of valuation for disability benefits practically throughout the country.

I was Chairman of the Committee of the Actuarial
2498 Society of America which was first to investigate the
subject of blood pressure, during which we had something like 700,000 lives to analyze. I have also been Chairman for 20 years of the Joint Committee of the Actuarial Society and the Medical Directors' Association, which has charge of making investigations of all kinds for life insurance companies. During that time we have published volumes covering about 1,200 pages, involving over 4,000,000 lives, on all kinds of investigations, finding out what the mortality would be of people who had various types of heart murmurs, who had a history of tuberculosis of every kind; and practically all of that I have written myself.

I have been engaged in the past by the United States Steel Corporation, the Pennsylvania Railroad Company, the Norfolk and Western Railroad Company, the National City Bank of New York, and the American Car and Foundry Associa-
tion with respect to the establishment of pension fund
2499 plans or the revision of plans already in existence. In
some of these cases the work I did was to establish systems for them; and other times it was to revise what they had already in force.

I was Chairman of the Committee of Actuaries that advised both with the Carnegie Foundation and the Association of Professors of American Colleges to draft plans for a pension plan for the benefit of the universities and colleges of America, which would succeed those plans which had been in effect by the Carnegie Foundation.

On March 28, 1932, I was employed by the Western Electric Company to make a study in connection with its Pension Fund Plan. Prior to that time, I had never had any employ-
ment with the Western Electric Company of any kind,
2500 or any knowledge of its Pension Fund Plan or the ad-
ministration of that plan by the company. I was asked to determine, from their records, the facts necessary to find out what contribution should be made by the company, and what its accrued liability should be.

In order to do that I had to check the statistics which the company had employed in various tables and had to find out the accrued liability at the end of specified years. I did not know at that time, and I do not now know, what amounts had been placed in the Pension Fund by the Western Electric Company. My sole purpose was to determine what should be done and not what had been done.

In connection with this employment, I first investi-
2501 gated the shape in which the records had been kept by the Western Electric Company. I did endeavor to find out how well these had been kept and whether they were in such shape as to enable me to determine accurately the contribution which the company should make towards the Pension Fund and how much it should have on hand at certain periods. I investigated thoroughly the records of the company, so far as it seemed necessary to do so. I found that the company had its records in as good shape, if not in better shape, than any industrial corporation which I have seen. I received a very large amount of work from Mr. Burgess, Chief Statistician of the Western Electric Company, or through him. He made a great many calculations for me under my direction, but I could not estimate just how much that would be. In addition the members of my own staff checked up on whatever seemed necessary.

I found that I had enough records and enough available data of the Western Electric to enable me to perform
2502 the work that I have been employed to do.

I have examined the pamphlet entitled "Plan for Employees' Pensions, Disability Benefits, and Death Benefits, Western Electric Company" and I am familiar with the provisions of that plan in so far as they affect the Service Pension Plan of the Western Electric Company.

(Which said plan was marked for identification as Plaintiff's Exhibit A-130.)

2503 The Service Pension Plan of the Western Electric Company provides for the retirement of male employees at 60 years of age, after 20 years of service; and for female employees, at age 55, after 20 years of service. There are two smaller classes with an earlier retirement age. The

employee, under the present plan, must retire at age 65, unless granted permission to remain longer. The pension consists of 1 per cent of the average annual pay, during the 10 years next preceding the retirement, for each year of service, but the committee has the power to base the pension on the average annual salary for the 10 consecutive years in which the highest rate of salary was paid. The minimum pension is $30 per month. The pensions are payable monthly, and cease at the death of the retired employee. The employees do not contribute to the Pension Fund. Layoffs are provided for; that is, credit may be given for past services without any loss to the employees. For example, at the end of four and a half years of service, the employee would receive credit
for his service if he were employed within a period of 12
2504 months. Provision is also made for bridging breaks in
service, as it is technically called; for example, if a man had been 5 years in the service, left it, and returned after 3 years, he would be automatically given credit for his 5 years of service after he had been continuously in service for another period of 10 years.

The net effect of the provision for bridging breaks in service is that if an employee leaves the service and returns later, and has that term of continuous service which the plan provides for, he may still avail himself of the Pension Fund features of the Western Electric Company and get credit for his service before he left the company's employment, although the term of service has not been continuous.

In my opinion, it is an important feature of the Pension Plan that provision should be made year by year for the cost of the pensions.

The simplest illustration which I can think of, showing the method of providing for such accrued liabilities or reserve, is that of a bond with a sinking fund, providing for the pay-
ment of the face of the bond, of, say, ten thousand dol-
2505 lars, at the end of 30 years. There interest only is
involved. If, however, a life insurance company were to undertake to pay an annuity at the end of that period another factor would be involved, namely, mortality. At the

end of these 30 years, it might be said that it called for ten thousand dollars to purchase an annuity of one thousand dollars per year, so that the company must have in hand, at the end of that period of 30 years, ten thousand dollars, just as in the case of the sinking fund bond; but a smaller amount will be required because the element of mortality is also included. Now, I am talking, of course, of a group of people, not of one individual. There must be enough to provide an average over that period. If an industrial corporation were to decide that they wished to provide for a pension, there would be another element involved in addition to the two already mentioned, and that would be the discontinuances which had happened, voluntarily or involuntarily, during the period before the pension became due. That would make the sinking fund, if we may so call it, or the contribution by the company, smaller than in either of the other two illustrations which I have given. That is because there is introduced the additional factor of discontinuances.

2506 I first determined the liability or reserve for those now pensioned; that is one of my first problems. There are four factors involved in this determination. First of all we must know the age at which the pensioner retires; second, the amount of the pension which he is to receive; third, the period over which the pension would be payable, which involves the mortality table; and fourth, the rate of interest which would be necessary in the calculation.

I determined the average age of retirement directly from the records of the company. The amount of pensions to be paid on retirement was also determined from the records of the company by obtaining the salary scale according to the groups of age at entry and according to the period of service. In order to determine the period over which the pensions were likely to be payable, I adopted for that factor the American Annuitants' Table of Mortality, which is a 2507 standard, and generally used by life insurance companies. After making investigations I came to the conclusion that that was the most suitable table to use.

I used the rate of interest of 4 per cent, after considering the matter very carefully. This is the highest rate of interest used by any life insurance company (and these are very few). The rate of three and a half per cent is used especially by what are known as non-participating or stock companies. The conservative companies, the large mutual insurance companies, generally use 3 per cent in determining the value of their future obligation under life insurance policies and annuities.

If interest is compounded semi-annually at the rate of 4 per cent, it is equivalent at the end of the year to 4.04 per cent. So when I have used 4 per cent as my interest assumption, there is that additional factor of .04 per cent
2508 because of the compounding of the interest semi-annually. The higher the rate of interest assumed in the calculations, the lower the amount of accrued liability.

In order to determine how many of the company's employees will continue to live and be in the service of the company at the time they will be entitled to receive pensions, I need to know the distribution of the employees by age and by periods of service, which I obtained from the statistics. I also need to know the rate at which the employees leave the service, either voluntarily or involuntarily, so that I may know, when the pension age arrives, how many of them are still in service to obtain the pension. That requires a voluminous study.

After determining the number of employees expected to receive a pension in order to ascertain the amount of the pension liability, I first determined the distribution by age and by period of service. Then from the salary scale I determine how much pension the employee is entitled to.

2509 The company should determine by what methods its contributions for the purpose of meeting its liability under the plan are to be determined. It is not a sound method to make no provisions for meeting the pension obligations until the pensions have become due. There are other methods whereby provisions are made from year to year for meeting the obligations on account of the pensions which will become due. In my opinion as an actuary, the best method of meeting this liability is to provide, by a flat percentage of the payroll year by year, a sum sufficient to meet the pensions as they become due. This is equivalent to saying, to meet the reserve liability at the end of each year. By a flat percentage I mean the same percentage of the payroll, irrespective of the age of the employee.

At the present time the Western Electric Company has detailed statistics available with regard to its employees from which I could and did obtain the average age of retirement,
the probable pension payments, and the various other
2510 factors to which I have already referred in my testi-
mony. I have already mentioned certain information which is necessary in order to make a valuation of pension liability, which consists of the following: first, the value of the pension at the date the employee is retired; second, the distribution of employees according to sex, age and length of service; third, the annual rate at which employees continue in service after making allowances for voluntary and involuntary discontinuances; fourth, the average salary at the various ages and the various years of service, which is called a salary scale, or schedule; and last, the interest rate which should be assumed for the future. I have been able to obtain with reasonable accuracy all of the foregoing factors in order
to determine the amount which should have been contrib-
2511 uted by the Western Electric Company in any stated
period of time, and also the accrued liability.

In determining these factors, I used the four censuses which were made by the Western Electric as of March 31, 1925, 1927, 1929 and 1931. That census data, for those 4 years, was full and complete. I also had available a census taken as of March 31, 1923, which was not in so much detail as the data in the censuses for the later years, but entirely sufficient for the purpose for which I needed it. The data furnished to me by the Western Electric Company gave me all of the information which I as an actuary found necessary for my calculations.

I made reasonable tests to determine whether this material had been correctly compiled by the Western Electric Company. These tests showed that the work had been done

2512 honestly, that no attempt had been made to omit any material which I should need. By tracing various groups it was quite apparent that the persons in the group had been followed down from one year to the other. I could not find in going over the detail that there was any evidence but what the work had been done entirely satisfactorily.

The statement, in two sheets, entitled "Western Electric Company, Inc., Present Value of Pension Payroll as of March 31, 1931," was prepared under my direction and supervision.

(Which said document was marked for identification as Plaintiff's Exhibit A-131.)

This exhibit shows the amount which the company should have in hand in order to meet the payments of the pensions as they become due, taking account of the rate of interest, and of the mortality table which has already been specified. The first sheet of this exhibit gives the information as to men only and the second as to women, and then the summary for men and women which comes to a total of $1,637,265.48.

2513 In the first column of this exhibit the age of the pensioner is given (I am referring now to men only); in the second column, the number of men as of that age; and in the third column, the aggregate monthly pension. As shown by the first line covering the age 54, there were 4 men of that age who had an aggregate monthly pension of $395.34. Therefore, since at the value of $1.00 per month we have $148.585, the total amount necessary to meet the pensions of these 4 men was $58,741.59. By following this throughout, we get the total amount at the foot of column E of the value of these pensions to the 225 men on the basis of the American Annuitants' Table with 4 per cent interest. Page 2 of this exhibit contains similar information for women, compiled in a similar way.

This exhibit, of course, refers only to those persons who are actually receiving pensions at this time. It does not purport to show contributions by the company for those not on the pension payroll, but only those who were pensioners at the 31st of March, 1931.

2514 In the 1931 calculations the continuance rates were based on the census for the 6-year period 1925 to 1931, which I have already mentioned. These censuses were made as of March 31 of the years 1925, 1927, 1929 and 1931. I smoothed or graduated these rates by established principles. I made tests by the usual established rules to determine whether these graduated rates compared with the actual rates determined from the company experience and found that they came very closely to the actual conditions. In my judgment, and from my experience as actuary, these continuance rates which I have arrived at are proper and fair rates to apply in view of the experience of the Western Electric Company as I found it. The exhibits marked for identification as Plaintiff's Exhibits A-132 and A-133 were prepared under my 2515 direction and supervision. They show the graduated rates of continuance based on the 6-year census. Below the horizontal lines they show the rates of continuance based on the American Man Ultimate Table, which is a standard table of mortality. I assumed that after a certain number of years there would be no persons leaving the service of the company except by death. The information shown on these two sheets was compiled in the same general way except that Exhibit A-132 shows the continuance rates for men, and Exhibit A-133 for women.

By the term "continuance rates" I mean the proportion of the employees who will continue from year to year in the service. For illustration, I will use as an example the column on Exhibit A-132 headed "Entrance at age 20". This shows a figure in the first year of service of .5791. That means that if there were 10,000 men in the service, according 2516 to the census made of those men which were in service, there would be only 5,791 in service one year later, and if to those 5,791 men were applied the percentage of .7097 we would then obtain the number who would be in service one year later. That process is followed through year by year in the manner that I have indicated, in order to obtain the number of men or women respectively in the other various entrance age groups, who would remain in service at the end of this succeeding year, or the middle of the succeeding year, as the case may be.

The salary scale was obtained from the census. In that census we need the number of employees, and also their aggregate salary for each year of service, subdivided by a number of groups of ages at entry, generally the quadrennial ages at entry. I smoothed or graduated these average salary scales and they agreed with the actual salaries which were paid.

2517 The instruments marked for identification as Plaintiff's Exhibits A-134 and A-135 were prepared under my direction and supervision from the records of the Western Electric Company. They show the average salaries for certain entrance ages according to years of service. Under age 18 is self-explanatory. In the group under age 20 there appears the quinquennial group of ages from 18 to 22, inclusive, with a central age of 20, and the same is true for each of the others. These show the graduated rates or average rates for each year of service, starting with the first and running down to the thirty-third year. For example, under the heading 20, the average salary of the employees of that group (that is of the quinquennial group) for the first year of service would be $1,080, and in the second year of service, $1,290, etc. In the case of men I found that these graduated
2518 salaries were within one-fifth of 1 per cent of the actual salaries paid by the Western Electric Company, and in the case of women, within one-half of 1 per cent of the actual conditions. The phrase "average man" and "average woman" in Exhibits A-134 and A-135 means the average salary according to each year of service but irrespective of the age of entry. In other words, there was no differentiation under the head of "average man" by the age at which he entered the service. I used the information contained in these two columns principally for checking purposes and in order to make certain tests.

The instrument identified as Plaintiff's Exhibit A-136 was prepared under my direction and supervision from material I had obtained from the Western Electric Company. The

primary purpose of this exhibit was to determine what
2519 percentage of salary should be in hand to meet the value
of pensions at age 63, which happens to be the pension
age in this exhibit, and also to determine what amount the
company should contribute each year per employee to meet
the accrued liability. This particular calculation refers itself
to a group entering the service at a group age of 33 to 37,
or a central age of 35. This calculation is so important in
determining what contribution should be made by the company
in order to meet its liability, that if it is understood
everything else becomes easy:

This (Exhibit A-136) is one of a number of other similar
tables which we have called service tables. It starts with
10,000 employees in the middle of their first year of service,
which is shown under column B. We could have started with
100,000 or 1,000 employees instead of 10,000, and it would
make no difference, because we are getting a percentage to a
total group. This number of 10,000 is followed to the middle
of each year of service up to the twenty-eighth year,
2520 when there are 1,939 employees in the middle of the
twenty-eighth year applying to the original 10,000. The
gredited continuance rates which we found were based on the
experience of the company. In column C there appears the
average annual salary, also taken from the records of the
company, and this shows how the salary on the average increased
for a certain number of years and then became
stationary. That is traced all the way down to the twenty-eighth
year. Now, if the number of employees in B is multiplied
by the average annual salary in C, the total annual
earnings of the group are obtained, which, in this case, in
the first year of service is $18,500,000. These next two columns,
E and F (A-136), are merely the process whereby these
annual earnings are accumulated from year to year at the rate
of interest at 4 per cent, or the semi-annual rate of 4.04, so
as to obtain at the end of the twenty-eighth year, the accumulated
salary of the assumed group of 10,000 persons. This
can be seen rather clearly by taking the first line under F.
The salaries are $18,500,000. The interest for one year, which

can be seen at a glance by subtracting $18,500,000 from $19,247,400 in E, is $747,400. Now, if that $747,400 is added to the annual earnings in the second year, which appear 2521 in D, $12,675,150, the amount at the end of the second year in F is obtained, $31,922,550. That column F simply represents the accumulations of that group, with interest, to the end of the twenty-eighth year.

The purpose of this can now become more apparent. The number of employees at the middle of the twenty-eighth year is 1,939. Now, these people retired at age 63, which is the end of the twenty-eighth year. Deducting from the 1,939 the deaths according to the table, we would have 1,908 persons who are to receive a pension. As these people have been twenty-eight years in the service, they are entitled to 1 per cent for each year of service, that is, 28 per cent. Their average salary is $2,700. Therefore, as a pension, as may be seen from the second line under the total, they are entitled to receive 28 per cent of the $2,700, which is $756, per pensioner.

Now, we want to find out what the value of that pension is, and we turn to the American Annuitants' Table, and find that the value of $1 per annum payable monthly at age 63 is $9.77. The multiplication, therefore, of the pension of $756 by the value of the annuity of $1, that is, $9.77, gives the value to each employee of his pension, namely, $7,386.12. As there were in this group 1,908 employees who were entitled to a pension, the total value is, therefore, $14,092,717. The 2522 next process is to determine how much of the salary should be accumulated during these twenty-eight years in order to have in hand that amount of $14,092,717, and it can be readily obtained by a similar proportion. If the amount required is $14,092,717, and if the salaries accumulated for these twenty-eight years are $427,500,832, as shown in the last figure of column F, therefore, 3.297 per cent of the payroll would provide the pension requirement. That covers the means of getting at the proportion of the payroll which should be laid aside to meet the pension, taking account of the discontinuances.

2523 The rest of the exhibit is intended to show how much reserve, per employee, the company should lay aside to meet the accrued liability, or, in the last column, the reserve expressed as a percentage of the salary. It is hardly necessary to explain columns J and K, as they speak for themselves. One reads "Accumulation of 3.297 per cent of payroll at middle of year", because the valuations are mid-year valuations and are not yearly valuations. The other columns speak for themselves. It shows in column M that 1.65 per cent was required from the first year of salary to be accumulated, 6.56 per cent in the second year, and so on all the way down.

In my explanation I referred to the average annual salary of the group entering at the age 33 to 37, or a central age of 35, as being $2,700. That is because under the pension plan of the Western Electric Company it is the salary for the last ten years of service. It was not because that is the aver-
2524 age salary throughout all the years of service.

The figure of $7,085.14 at the bottom of column L is the middle of the year figure. There must be added to that figure one-half year's interest and one-half year's contribution from the company, so as to bring it to the end of the twenty-eighth year. If that is done, and the result divided by 1,908, the result is that it becomes $7,386 against $7,389, a difference which is entirely negligible.

I made calculations similar to those set out on Exhibit A-136 for other employees of the Western Electric Company by groups of ages at entry.

The instrument identified as Plaintiff's Exhibit A-137 was prepared under my direction and supervision. It shows
2525 the percentages which the company should have laid aside, based on the statistics as of March 31, 1931, for the groups of men and women according to the groups of age of entry which were used in the calculations. These are by groups of age at entry which I referred to before. The instruments identified as Plaintiff's Exhibits A-138 and A-139, showing, first as to men and second as to women, the 1931 pension reserve factors expressed as percentages of annual

salaries of employees at the various ages of entry, were prepared under my direction and supervision.

Exhibit A-138 shows the percentage reserve factors for each age of entry and for each year of service, interpolated from the results shown for A-137; that is, for the 7 groups which were prepared, usually by quinquennial ages at
2526 entry.

If you refer under age 35 in Exhibit A-138, you will find a percentage corresponding to that appearing in column M on Exhibit A-136, carried to a smaller figure or decimal.

I have calculated the accrued liability on active employees of the Western Electric Company as of March 31, 1931, both with respect to men and women employees, by applying the factors found in Exhibits A-138 and A-139 to the payroll for that year. I have tabulated the result of these calculations in these three exhibits, identified as Exhibits A-140, in two sheets, A-141 and A-142. These exhibits were prepared under my supervision and direction from the records of the Western Electric Company.

2527 Exhibit A-142 shows the total pension liability of the Western Electric Company, including those who are now pensioners, as of March 31, 1931. The total amount so arrived at on that exhibit is $57,768,000. In this Exhibit A-142, I have arrived at a summary of the total pension liability of the Western Electric Company as of March, 1931.

I then proceed to obtain the percentage of contribution, both as to men and women, applicable through all of the ages at entry combined. Exhibits A-143 and A-144 were prepared under my supervision and direction. They show the method of obtaining the percentage of contribution applicable to all ages combined. Prior to that time we had it for certain individual ages. In column A appears the aggregate
2528 annual salary under 46 years of age of entry, and under the retirement age. It is not taken beyond 45, because they are not entitled to a pension. In the next appears the percentage which has already been determined by the method outlined, and the multiplication of A and B gives the amount of contribution at each age. The total at the foot is the contribution for all ages.

The reading matter which appears at the bottom of Exhibit A-143 below the two summaries under columns A and C, explains itself.

The two exhibits identified as A-145 and A-146 were prepared under my supervision and direction from the Western's record. They show the pension reserve for accrued liability as of December 31, 1930, and also as of December 31, 1931.

These exhibits are self-explanatory, except the lower 2529 part of Exhibit A-146. In that exhibit (A-146), I found it desirable to make a certain adjustment, because of the changing conditions which applied to 1931. First of all, there was an adjustment to the normal salary scale. The percentage of 3.49 which appeared at the foot of that last exhibit for men was obtained from the full time salary scale effective as of March 31, 1931, but the actual payroll for 1931 was below normal due to the shorter working hours. This condition I assumed to be temporary, and not likely to affect the amount of the pension becoming payable, and so, accordingly, an adjustment of the payroll was made so that the percentage of 3.49 was applied to the normal scale in order to obtain the company's contribution. It seemed also desirable to make an adjustment of the payroll on account of the lower continuance rates, or to put it another way, the larger number of resignations, either voluntary, or involuntary, occurring part of the year 1931. As you will remember, the continuance rates were made up for the six years including March 31, 1931, but during part of 1931, the continuance rates were 2530 lower than the six-year average. The payroll was, therefore, reduced by the amount of the salary estimated to have been paid in 1931 to those who withdrew in excess of the number expected by these continuance rates.

There also was some adjustment made with respect to reserve liability for 1931; as the withdrawal rates in 1931 were in excess of the 1925-1931 rates, there was a release in the reserve on account of past service. Some of this, of course, will be offset by rehiring of men who will be entitled to credit on account of service which they had before leaving the service of the company, and after making the calculation and considering all of the factors involved, I came to the conclusion that I should use one-half of the reserve released, deducting that from the accrued liability.

In determining the reserve released, I first found how many would have been in the service at the end of 1931 if the continuance rates for 1925 to 1931 had lasted. I then found out how many were in service and the difference were those who had left the service in excess of those assumed in
2531 the calculation, and I applied to this excess number the proper reserve factors, which gave me the total amount of the reserve which might be released. I used one-half of that. One reason which may be mentioned, I assumed, naturally, that those who did leave were those who were a comparatively short time in the service, and were probably making less salary, and would leave anyhow.

In my judgment as an actuary, this reserve calculation is a fair and just method in arriving at what should be released from the reserve for 1931.

The instrument identified as Exhibit A-147 shows the accumulation of the pension fund of the Western Electric Company for each of the years 1922 to 1931, and for that entire period, with the contribution percentage on the basis of 1931 census adjusted for distribution by sex and age at entry. This exhibit was prepared under my supervision. The
2532 principal purpose of this exhibit is to show that the percentages obtained by me in the previous exhibits and the total amount of the liability comes reasonably close to the figures obtained by previous calculation. If one starts with the reserve at the end of the year, or the accrued liability, adds to that the contribution by the company, adds the interest and deducts the pension payment, the amount at the end of the year should be approximately the reserve for that year.

Now, with this explanation, I would like to go over one or two of the columns. In the first column there appears
2533 the annual payroll. To that has been added the percentage which the company should contribute, based on the statistics of the company prepared as already stated by me.

That figure for 1931 was 3.49. It has been adjusted for each of the preceding years, running from 3.48 to 3.51, these very minor adjustments being made because there was a slightly different distribution by sex and by age of entry. By multiplying the annual payroll by these percentages, the contribution which the company should make on these assumptions appears in column C. The interest is then added, which appears in D, the pension payments are deducted, which appear in E, resulting in F, the net additions. That, added to the fund, gives the assumed reserve at the end of the next year. That has been followed down throughout, and it will be noted that at the end of 1931, by the yearly process, the fund is $59,027,000. In the column of computed reserves, which I made as of the end of the year, it was $60,139,000, a comparatively small difference, especially when an adjustment was made to provide for the lower continuation rates, which I have already explained. As you will remember, I took one-half of the reserve. If I had taken two-thirds, the
2534 amount would have been practically identical.

The amounts included in column C of Exhibit A-147 opposite each of the years 1923 to 1931 represent the amounts which, in my judgment and opinion as an actuary, should have been contributed by the Western Electric Company in each of these years under this pension plan.

So far as I can determine, I have not included in the annual payroll figure set out in column A of Exhibit A-147 any portion of the payroll for the Supply or Engineering Departments of the Western Electric Company. I asked the question directly of Mr. Burgess, the Chief Statistician of the company, whether any of the figures which he furnished me in connection with the payroll contained the figures for the Supply and Engineering Departments. He assured me that they were not included, and in the various work which I have done, and my assistants, we have found no evidence whatever that they were included.

The instrument identified as Exhibit A-148 was pre-
2535 pared under my supervision and direction. It shows for the years 1912 to 1922 the same character of information as appears for the period 1923 to 1931 on Exhibit A-147.

It was prepared by the use of the same general method which I used in the preparation of Exhibit A-147. I have prepared a statement in exhibit form, which has been identified as Exhibit A-149, which shows how I arrived at the figure $3,880,000 appearing in the top line of column H, under the heading "Computed Reserves", in this Exhibit A-148. The reserve factors were obtained in the same general way as those appearing in Exhibit A-136; that is, they were based on the continuance and salary rates observed at the time.

2536 The figure $17,600,000 shown on the last line under column H of Exhibit A-148, was prepared in the same general way as the Exhibit A-136 indicates, and also the Exhibit A-149, based on the salary scales and the continuance rates for the years prior to 1923.

"Q. According to Exhibit A-148, am I to understand that the contributions required by the company are shown in column C for each year 1912 to 1922?

"A. That is my judgment, after the various calculations, and in fact proof is shown in column G that these amount to a very small sum in addition to the calculation of the reserves as of the 31st of December, 1922."

I have in the courtroom now, so that defendants' counsel may inspect them, the work sheets which I have used in compiling these several exhibits, and also the data from the Western Electric Company which was used in the preparation of these exhibits.

(Plaintiff offered in evidence Exhibits A-130 to A-149, both inclusive, identified during the course of Dr. Hunter's direct examination. Ruling reserved.)

2537 CHARLES A. HEISS, called as a witness on behalf of the plaintiff, having first been duly sworn, testified as follows:

Direct Examination by Mr. Blackman.

May 16, 1932.

I testified at the first trial of this case about two years ago. I was called by the defendant, City of Chicago. I was and am Comptroller of the American Telephone and 2538 Telegraph Company. I have been Comptroller of the American Telephone and Telegraph Company approximately twelve years. I have been connected with the American Telephone and Telegraph Company approximately nineteen years. During all that time, I have been connected with the Comptroller's Department, first as an accountant for two years, two years as an Assistant Chief Accountant, about two years as Chief Accountant, one year as Assistant Comptroller, and the remainder of the time as Comptroller.

I am a graduate of the Bloomsburg State Normal School, Bloomsburg, Pennsylvania; I attended Franklin Marshall College, then attended the College of Political Sciences, and also took courses in Columbia Law School in Washington, D. C. There I specialized in accounting and economics, and 2539 later received an A. B. degree from George Washington University, and thereafter spent considerable time at the University of Michigan, specializing in accounting and economics and related subjects, and subsequently received a Master's degree from that institution.

Previous to my employment by the American Telephone and Telegraph Company, I was doing accounting work. I spent seven years with the Interstate Commerce Commission, part of the time in its Statistical Department, and later in its Bureau of Accounts as an examiner.

I receive monthly from the Personnel Department of our Company their approved expense bills and supporting statements. These are classified according to our classifications established by my department. We audit these bills and tabulate them for entry on our books, and also for the purpose of preparing for the Vice President in charge of
2540 the Personnel Department an administrative report.

That gives me a very definite familiarity with the expenses of the Personnel Department. Then, in addition, representatives of my department and I have many conferences with the Personnel Department staff. We have numerous problems on which we work jointly, and in these ways we have become very familiar with the work and expenses of our Personnel Department.

This paper was prepared by my direction and under my supervision (paper marked Plaintiff's Exhibit A-150 for identification). It purports to show an allocation to the Chicago area of the fair proportion of the expenses of the Personnel Relations Department, a division of the Personnel Department, incurred in rendering license contract services during the years 1923 to 1931, inclusive. The general foundation for this exhibit is Exhibit 193, included in the deposition of Vice President Carter, taken recently in New York City.

2541 "Mr. Blackman: At this point, your Honor, I would like to present to the Court the deposition of Mr. Carter. I don't know whether you desire it read in, in question and answer form.

2542 "Judge Wilkerson: It may be considered as if it were read in full in the record, and may be abstracted with the testimony, in its regular place.

"Mr. Haight: That is quite all right.

"Mr. Blackman: Then, just to make the record correct, I will offer in evidence the deposition of Edwin F. Carter, called as a witness on behalf of the defendants, and examined pursuant to an order for examination issued by this Court."

(The deposition of Edwin F. Carter last above referred to was thereupon received in evidence, and made a part of the record.)

979 EDWIN F. CARTER, for defendants:

Direct Examination by Mr. Goldstein.

I reside at 1192 Park avenue, New York City; I am vice-president American Telephone and Telegraph Company. My work relates to the policies and practices affecting the employees and in addition in certain connecting company relations. I am in charge of the department of the American Telephone and Telegraph Company called Personnel Department. I have been the head of that department since May 1, 1930, and have been with that corporation since that time.

980 Prior to that I had no connection with it as a corporation, but was president of Ohio Bell from August, 1926, to May 1, 1930; before that I was vice president of Southwestern Bell located at St. Louis. I was made vice president Southwestern in spring of 1926; prior to that I was general commercial manager from spring of 1921; prior to that I was general manager for that company for the State of Texas; prior to that, general manager for Kansas. I entered the employ of the old Bell Telephone Company of Missouri at St. Louis in June, 1900; I have been employed with the Bell System since that time, but there was an intermission in my service of something between two and three years.

The Personnel Department was organized as it now 981 stands by Mr. E. K. Hall in 1920 or 1921. There has been some change in the functions of the department since that time. Some part of the work has been transferred to another department. Under Mr. Hall's administration, department had a great deal to do with public relations. Since I have been connected with it, it has been confined to personnel and connecting company relations. Public relations I consider to be matters relating to policies and practices of the company as having to do with public attitude.

982 A great deal was done in the way of helping public relations through employee contact. The Bell System has

scattered throughout the United States some 300,000 employees. If the attitude of the employees is right toward the public, if they are courteous, if they are willing to accommodate, if their work is splendid, that all supplies good public relations, but my department has only that type of public relation work,—that is, we have nothing to do with advertising, institutional advertising and matters of that sort.

Taking the period prior to the time I came with the department. I am not familiar, however, with the character of public relation work done at the time. I haven't anybody in my department who I think would be familiar with it. Prior to the time I came with this department I was in the field as a
983 president of an Associated Company and as a vice president of another Associated Company; prior to that for some time as its general commercial manager, and I was during that time in contact with this department from the field side.

I don't know what was done by my department prior to 1930 covering the subject matter of public relations. Since I have been with the department, I have somewhere between 90 and 100 in the Benefit & Medical and between 35 and 40 in Personal Relations. That is about the number that I have had since January 1, 1930. There have been some small changes. I have not the chart showing the organization of my department. There are no charts of my department put together for the department as an entirety.

984 The expense of the Personnel Division of the department, plus the administration of the Benefit and Medical, plus the Benefit and Medical payments, plus the Service Pension Accruals, all that goes into the Expense Account, runs between ten hundred and fifty and eleven hundred thousand dollars a year.

I have not with me any compilation of such expenses. I am quite sure Mr. Heiss' department would have that.

I have a statement, however, here showing the departmental expenses for the period from 1923 to 1930. There are
985 two divisions of the department. The document which I

have before me which is the statement, is marked Defendants' Deposition Exhibit 193 for identification. This Exhibit 193 consisting of two sheets is entitled American Telephone and Telegraph Company Excluding Long Lines Department, apportionment of departmental expenses between (a) those related to the furnishing of license contract services, and (b) those comprising other expenses of the Company, years 1923-1930, "Benefit and Medical Department", was prepared by me with clerical assistants. The figures shown on page 1 were prepared in my office from records in my office. Column 1 is entitled "Total Department Expense"; column 4 is entitled "Amount not specifically allocated, apportioned on basis of study". All columns were prepared from records in my office.

Both sheets were prepared by me from records in my office.

987 The occasion for the preparation of these two sheets came as a result of a discussion with Mr. Heiss about a year ago, probably in March. Of course the figures for 1931 were subsequently added.

Referring to columns 4, 5 and 6, the figures from column 4 are taken from the departmental reports. The items are charged so that they can be taken right from the reports. The 80 per cent of the staff expense in the Benefit and Medical Department is that part of the time which very clearly is given to Associated Companies and Long Lines. Column 7 is the remainder in dollars. Column 8 is a percentage. Column 6 bearing the per cent and column 5 the amount of the total expense for each year 1923 to 1930 is allocated to license contracts because that expense represents the services clearly allocable to Long Lines and the Associated Companies. It is columns 5 and 6 that the 80 per cent produces. The services which I stated are clearly for each of the Licensee Companies and Long Lines embrace the general staff which is engaged in giving advice and assistance to the Associated Companies and to Long Lines in the administration of their benefit plan, in giving them information in regard to their sickness experience, and the sickness experience of other companies, and in promoting health activities. They give all the health statistics; they have collected very valuable health statistics. That is the basis from which they start on approving health conditions. They compile the statistics of all companies in the Bell System, thereby exchanging information.

989 The 20 per cent is intended to cover the contact with Western Electric and with the Laboratories, which is perhaps not service directly rendered to the Associated Companies of the Long Lines, but the Associated Companies and the Long Lines benefit from that, so that it is making a clear division between the services rendered the Associated Companies and the Western Electric. The basis of the 80-20 division instead of some other ratio was the basis of reviewed work and the best judgment that could be applied to it. It was not on a time sheet basis, just a matter of judgment.

The number of employees of the Bell System to which all of this was applicable, has varied at different times. At the present time there are almost 300,000, there being 340,000

990 to 350,000 in the associated companies and the Long Lines, Western Electric and the Laboratories; something under 300,000 are in the associated companies and the Long Lines; there are between 15,000 and 16,000 in the Long Lines. That figure that I gave includes the employees of the General Department of American Telephone and Telegraph Company.

The number of employees in the different companies were taken into consideration in a general way only in determining the 80-20 per cent division. It was considered in this way: Whether or not some divisions would be out of line considering the number of employees, but the division of 80 and 20 was made on the basis of what the departments were doing in that work. The division 80 and 20 was made on the amount of work done and not according to the number of employees. The same kind of work is not done for the Western Electric as is done for the associated companies. The Western Electric has different problems. They are a factory, for example, We have an employees' representation plan which my department works with all the time. That is a plan where employee

representatives and management representatives sit down and discuss problems that affect management and affect employees, say such a problem as we have at the present time in the Division of Work, which means part time employment and reduces income for employees. We are in contact with
992 that all the time, watching the trend and the attitude of employees. I don't think the Western Electric has any such plan; at least, we have never had any contact with it.

I haven't the total amount of expense by year covered by that specific service, but I have the expense by departments. I haven't the amount of expense covered by that particular service which is only done for the licensee companies that is not kept. I don't think I could make up a statement with any degree of accuracy covering that. I could approximate it to determine what portion of my total amount put in for the 80 per cent would be represented by that expense. I don't know that I could go back as far as 1923, but I will attempt to prepare such a statement.

The employee representation plan I think was introduced in the Bell System early in 1919, so that that particular service covers each of the years 1923 to 1930.

993 I don't think of any specific work other than I have mentioned that has been done for Associated Companies and Long Lines that has not been done for Western Electric, other than that there is more consultation with Associated Companies than Long Lines.

On one of those sheets there is an item which is allocated 100 per cent.

I have been talking about the personal relations appearing on page 2, and my answers to your questions have been directed to that.

"General Staff Services, Benefit and Medical Dept." covers work for Western Electric and its subsidiaries and associated companies, including the Bell Telephone Laboratories. There is contact all through there, with all the companies of the System, including 195 Broadway.

I don't think that item covers the Bell Securities Com-
995 pany as I don't believe it has any payroll employees. That

item does not cover Graybar for any year. I apportioned the expense of general staff for 1923-30 on the basis of 80-20, which resulted from a study and review of work done, contact with all companies, and is my best estimate of that part of the work that can be directly allocated. The 80 per cent to associated companies and the Long Lines.

I have available data in my department of the number of employees of the associated companies, Long Lines, Western Electric and its subsidiaries, 195 Broadway, Bell Telephone Laboratories, for each of the years with whom my department has contact. I will prepare such a statement.

The staff of the Medical Department shows the sickness
996 records of the companies and tabulates those studies then
and reports back the sickness experience to all of the companies. It is the Statistical Division of the Benefit Department. They also give detailed information to the associated companies on request and discuss statistical work with the associated companies. They also give the detailed information on request and voluntarily to the Western Electric and its subsidiaries.

As regards this division, everything that is done is done for the entire Bell System. I am not sure whether the statistics cover the entire System. I will have to refresh my recollection. The reports are in my department.

998 Referring now to the Benefit Division,—it administers the Benefit Plan of the General Departments, American Telephone and Telegraph Company, except Long Lines. Long Lines has its own Committee on Benefit. The Benefit Department is confined exclusively to the General Department. The Third Division is the Medical Division, that is the medical course given to employees of the General Department. That is not the Medical Department. The Medical Department may give medical attention to an employee of Western Electric or an employee of Long Lines or an employee of the associated companies, but that would be charged to that company whose employee receives the medical attention. That is the figure for the services to the General Department for which no charge is made. But if medical attention is given

to employees of associated companies or the Long Lines or the Western Electric a charge is made to the Company.

999 The Fourth Division is benefit payments. Benefit payments cover sickness and death benefits, service pension accruals of the employees of the General Department, which relates to the American Company only. It applies to the General Department. The 80 per cent of the $43,587 in column 4 applies to staff and is applicable to license contract. For the remainder of these figures there are no percentages. That was all determined by Mr. Heiss. It was the over-all picture that gave him a percentage on those figures.

I did not make that allocation relating to the $24,424 in column (4), it having been determined by somebody else.

1001 There are some items which you can now and then specifically charge. In the column "Total (4)" is the total not specifically allocated. Then that is allocated on the basis of 80 and 20. The allocation begins with column 5. The general staff has been allocated on the basis of 80 and 20 per cent. There is no allocation of the figures in column 4 for the Divisions of Benefit Medical and Benefit Payments.

Referring to page 2, there are four subdivisions,—Administration, Personnel, Public Relations and Special Training under Personnel Relations. Administration represents cost of my office, it being engaged in the Administration Work of the Department, in conference and counsel with the associated companies and the Long Lines Department on all matters affecting employees. It also covers some, but very little, consultation work done with the employees of Western Electric and its subsidiaries. It also covers consultation work with employees of 195 Broadway, Bell Laboratories and Long Lines. My statements apply to the work done by the department before I came with the department. The work of the Administration Division I had contact with when I was

1002 in the field, and my own idea is that conditions are about the same now as they were before I came with the Department.

The Personnel Division has contact with the associated companies and Long Lines on the administration of employees' representation plan, on the administration of employees thrift plan, a contact with the personnel men of the associated companies and Long Lines in connection with their employee problems and following the general trend of labor conditions outside and inside the industry. That division does not do the same work for the Western Electric and its subsidiaries. That division's contact with the associated companies and Long Lines is different from their contact with Western Electric. It covers a different subject matter. That was the particular division I referred to when I mentioned employee representation and said that I did not think the Western Electric had an employee representation plan.

Apart from the representation feature, that division would have the same kind of contact with Western Electric and its subsidiaries, but they do not give the same amount of attention to the work. They give whatever attention is necessary to the work of Western Electric and its subsidiaries.

1004 Public Relations Division consists of a man and his secretary located in Cleveland, Ohio, the central part of the associated companies' territories. He has contact with the different connecting companies, with the state and national associations and he advises and plans with the associated companies and those only, because they are the only companies that have connecting companies and connecting company problems and connecting company matters. He has no contact with Long Lines nor with the Western Electric nor with the laboratories. Long Lines has no contact with the connecting companies. The traffic problems of con-

1005 necting companies are between the connecting companies and the associated companies, but the contacts cover long distance service. The connecting company can go over the Long Lines just as over the associated lines.

The state and national associations I referred to are organizations of so-called independent telephone companies. That work has been going on for years. I had very close contact with that division in Cleveland because it was located there.

My contact with that particular division was a little bit more intimate when I was in Cleveland than it is now. I think that division goes back to the year 1923, but I would have to check.

Special Training Division covers the work growing out of our relationship with the colleges. The Bell System employs a great many college graduates. This department has contact with the colleges and universities and co-ordinates
1006 with the colleges on recruiting problems, keeps in touch with the college graduates and follows their record after they enter the Bell System. They also follow the record of promising material other than college graduates, colleges such as the State Universities, the Eastern Universities, say Cornell and Princeton, Yale, Massachusetts Institute of Technology and schools of that character. That covers persons who would be likely employees for any and all portions of the Bell System. Western Electric and Bell Laboratories take a substantial number over the long run of college graduates.

Referring to column 6 and column 8, I will say again that all of this division is on the same basis, a study of the work done, a study of the contact with the associated companies and Long Lines and Western Electric and Bell Telephone Laboratories, and as a result the percentages appearing in column 6 is the percentage of the amount of time and effort of this division given to the associated companies and the Long Lines.

1007 For the years prior to the time I came with the Department, I made the allocations between the contract and the other services. When the allocation was made, I did not have the time sheets or records of the effort for each of the years 1923 to 1930 before me, but I knew what the departments were doing in those previous years. I knew that there had been no material change in the work of the department. I had the further knowledge that I was in the field, and in contact with this division in those years and also with the other divisions.

1008 Colonel Rees is at the head of the special training division that deals with the colleges and universities, and I was in frequent contact with him in the field, especially in

Cleveland. There are two universities in Cleveland, and I was in contact with Colonel Rees in college employment matters right up to the time that I came here. While I was in the field I talked with him on this particular subject matter. That did not involve also the question of time and efforts spent in connection with likely candidates for Western Electric and its subsidiaries; so that all my contact was with reference to the amount of work and effort in connection with candidates who would be likely employees for the associated companies. I have reviewed since I have been here, with Colonel Rees, the work of those years. He is with my department now and he knows the activities of that particular division prior to the time when I came with the department.

I don't know how many men were employed in the Special Training Division for the year 1929. Colonel Rees has
1009 two assistants stationed here, at 195 Broadway. He also
has perhaps three or four clerical workers. The total expense of the Special Training Division for the year 1930 was $91,131; 1929, $89,109.

The work done in 1930 by that division was with the universities, associated companies, Western Electric and the Laboratories. That division maintains contact with the colleges and universities all through the year by traveling and by correspondence. I think we have a complete record of all college employees. The recruiting is done in this way: There may be two or three associated companies and the Western Electric recruiting at one university, but, say, for example, the Ohio Bell Telephone would not come on here in the East
1010 and recruit. If a likely candidate was found in the East
that would like to go to Ohio, that application would be referred to Ohio, so that the recruiting is done during a certain period at the universities all over the country. Western Electric recruiting is done in a greater number of universities but not in all of them. Long Lines may recruit any number. Recruiting for a particular associated company is not restricted to its territory. It may go out of its territory and may go to an adjoining state. But it is a more restricted territory than the Western Electric and Long Lines.

Cross-Examination by Mr. Blackman.

1011 The Bell System, including Western Electric and Bell Telephone Laboratories, has now between 340,000 and 350,000 employees. The employees of the associated companies and Long Lines are daily in contact with the public. The Bell System requires an organization of high productivity and a great deal over and above that, an organization of men and women of good citizenship who have the right attitude toward their company and toward their work and toward one another and toward the public, because without that this great system cannot succeed.

The endeavor to obtain it is applied along many different lines. The training of employees goes on daily, usually handled by the supervisory organization. The securing of the right type of employee begins with the time that employee is selected and placed; it carries on through with his promotion, securing the right attitude, which is determined pretty much by whether the employee is fairly treated, whether his wages are fair, whether his working conditions are good. The efficiency is somewhat affected by his own mental attitude. He should be reasonably thrifty to be a good citizen; he should be relieved in so far as it is practical to do so, of that type of worry which destroys his efficiency, so that in addition to what the line organization does below and in addition to the help that any personal staff, working in connection with the line organization and helping obtain the right material, and helping to train that material, and helping to place that material in the right place, there are many other things that can be done that can add to the citizenship and character of the employee.

Some of those things, for example, are the employee thrift plans. The company does not require an employee to save, but it makes it easy for them to save, and the saving is entirely at the employee's discretion, yet, as I recall, in the year 1930 there were 80 per cent of the employees of the Bell System using one or more of the company's savings plans.

The employees' benefit and pension plan is looked upon as an aid in securing the right type of men and women and holding that right type of men and women in the organization.

1013 To a utility operating all over the United States, it is especially important that its employees are that type of employee, that they are courteous and that they are considerate, accommodating as well as efficient.

On top of that general administration of the business, there are these things which I mentioned which are over and above technical efficiency, and this department which I head is interested in improving the organization along those lines as well as the lines of technical performance.

The activities of the various divisions of my department are devoted in one way or another to promoting those objects that I have mentioned, except the connecting companies, of the small public relations, and that is promoted by the relationships with the connecting companies of the Bell System.

There are now in the associated companies, the General
Department and the Long Lines, about 295,000; 16,000 in
Long Lines; small number, comparatively, in the Gen-
1014 eral Department; about 275,000 in the Associated Com-
panies; in Western Electric, 40,000 to 45,000; Bell Labo-
ratories something over 5,000.

Column 8 on the exhibit I have mentioned, shows the percentage of work done by these divisions which we cannot say can be definitely and directly allocated to the associated company and Long Lines. The figures in column 6, ranging from 80 to 100 per cent, can be directly allocated. The associated companies and the Long Lines benefit from all the
work done by my department. I cannot think of anything we
do that would be significant in amount that is not in the
1015 end directed to the benefit of the associated companies
or Long Lines.

Annual reports American Telephone and Telegraph Company for years 1918 and 1919 to the stockholders offered in evidence by defendants as Defendants' Deposition Exhibits 50-A and 50-B, respectively, to which objection was made by plaintiff for irrelevancy, incompetency and immateriality.

EDWIN F. CARTER, recalled:

1028 *Re-direct Examination by Mr. Goldstein.*

In connection with the number of employes listed under the column of Western Electric Company, its subsidiary E. R. P. I. was included and E. R. P. I. only.

I don't know whether the Graybar Company from 1926 to 1928 had an Employes' Benefit Fund. Assuming that the Graybar Company had the benefit plan and was wholly owned by Western Electric, they would have the same access to my department as the Western Electric would.

In my figures relating to Western Electric shown on Defendants' Exhibit 195, I did not include any of the employes of Graybar. I don't know the number of employes of Graybar from 1926 to 1929.

My figures under Western Electric do not include International Western Electric employes.

To my recollection, there was practically no contact by my department with the employes of International Western Electric from 1923 to 1925, and I am not sure whether services were rendered to it, for I was not here at that time. To the best of my knowledge no services were rendered.

Column entitled "Associated Companies" only includes employes of Associated Companies located in the United States. We have contact with the employes of the Bell Telephone Company of Canada. We have no contract with the North Electric. I don't know how many there are there but I will furnish a statement showing that we have never furnished any services to the employes of the Northern Electric.

1033 Plaintiff states that the employes of the Graybar Company for the years 1926, 1927 and 1928 are as follows:

12/31/1926	2110
12/31/1927	1917
12/31/1928	1972

Plaintiff offers in evidence Defendants' Deposition Exhibit 193, to which defendant objected on the ground not proper and further on the ground of incompetency, irrelevancy and immateriality.

ARTHUR HUNTER, recalled as a witness on behalf of the plaintiff, having been previously duly sworn, further testified as follows:

2545 *Cross-Examination by Mr. Goldstein.*

May 17, 1932.

2546 It would not make any difference in my calculations whether I took 1 per cent of the average annual salary for the last 10 years, or 1 per cent of the average annual salary for the 10 consecutive years in which the highest rate of salary was paid, because they were the same under present conditions. I took that condition directly from the statistics, and, therefore, it did not make any difference which interpretation I used.

I took into account in my calculations the factor of 2547 the bridging of breaks in service to the extent that the statistics showed the experience; the bridging of breaks was followed exactly as it occurred.

I stated that an industrial corporation setting up its own pension fund would have a factor of risk which the insurance companies would not take into account in their plan; that is, the factor of discontinuance, which happens voluntarily or involuntarily during the period before the pension becomes due. I mean discontinuance for causes other than death. The insurance companies do not take into account in determining the rate under their plan the voluntary or involuntary withdrawals for causes other than death.

2548 There are a number of different forms which life insurance companies issue. In the question of life insurance, the surrender values paid take care of the factor of discontinuance. In the case of the usual type of annuity, provision is also made so that the prospective annuitant 2549 gets value for his money if he cannot continue. The usual practice is to provide that if, for example, the annuity were deferred for 30 years and he was paying it by annual premiums, if he dropped it at the end of 15 years the annuity would be reduced one-half, payable at the same time as the original annuity.

There are a number of group annuity contracts. The one which is probably the most popular does not provide for a credit back to the employer for a portion of the premium in case the employee withdraws from the service; it provides that each year the employer will purchase a single premium annuity of the specified amount payable at the time of the pension. That may or may not remain the property of the
employee if he should leave, either voluntarily or invol-
2550 untarily. If the employee withdraws from the service,
the employer gets credit for it by means of some surrender value or otherwise.

In order to determine the amount of the pension under the Western Electric Company's plan, it is necessary, first, to get the wage scale at entry, and, second, to get the salary progress to the date when the pension will become due. For the purpose of my study as of March 31, 1931, I accepted the company's experience on both of those factors. If either the wage scale or the salary progress were varied subsequent to March 31, 1931, so that the wage scale for all classes were
lower, or the salary progress was narrower in range
2551 than the experience prior to that date, the reserve as of
March 31, 1931, would either have become excessive or be available, in part, for release. If the turnover were greater or the continuances lower than the experience for the period 1923 to 1931, the reserve as of that date would likewise become excessive or be available, in part, for release. The insurance companies under their plan make no allowance for any change in wage scale or change in salary progress; the
plan is totally different.

2553 If the experience subsequent to 1931 were of the character which has just been described, whether the amount to be put into the pension fund each year out of current earnings would have been less would depend, of course, on each one of these factors and their relation with one another. I cannot say that it would have been less or not, because I do not know in what way these factors might relate into or with one another.

A lower continuance rate would have provided for a smaller amount to be put into the fund, and a lower wage scale 2554 would also have had that effect; it might have required as large a percentage, but in amount it would have been less. A slower salary progress would have resulted in a smaller amount in the fund. If there were a deficiency in the reserve at any time from 1923 to 1931, the amount to be released as of March 31, 1931, would tend to make up that deficiency. I made an adjustment in 1931 for the period from March 31 to December 31 for the factors which I found had varied from the normal factors which were used in my study as of March 31, 1931. Turning to Exhibit A-146, I took into account as of December 31, 1931, in so far as the reserve on March 31 of that year was concerned, the effect of the lower continuance rate.

2555 I did not take into account in my calculations any other factor of variance between the normal which I used for my study as of March 31 than the low continuance rate in so far as it affects the reserve on March 31, 1931. I did not state that there was a lower wage scale for the period from March 31, 1931, to December 31, 1931; there were shorter working hours.

2556 "Q. Now, what would be the effect—or what is the effect of the shorter working hours on the wage scale that you would use in connection with your calculations, that is, if there were shorter working hours for the period from March 31 to December 31, 1931, than there were from—during the period 1926 to 1931, how did—or what effect would that have on the wage scale which you had assumed as normal in connection with your study as of March 31, 1931?

"A. I am not sure that I understand such a long question, but I take it that the actual payments received by employees would be less than in previous years when they were working on full salary, and I accordingly made an adjustment therefor."

In determining whether the reserve as of March 31, 1931,

was available for release, I took into account all the factors
which then appeared to me to meet the case and then I used
my judgment, as I mentioned, in saying that one-half of the
reserve released I assumed should be deducted from the
2557 reserve as calculated at December 31, 1931. I should
like to add to that that if I deducted four-fifths instead
of one-half, it still would have come within the amount which
appeared in the next to the last column, from accumulating
the contributions there stated. I did not take into account
either a lower wage scale or a slower salary progress; it was
based on the conditions as they then existed. The other fac-
tors were taken into account in the other two calculations
which I had made and which I referred to. These other
2558 two calculations were concerned with the contribution of
the company, which naturally enters into the reserve re-
quirements. That is, the contribution of the company to take
care of the reserve requirement of December 31, 1931. Fol-
lowing this progress which I endeavored to explain, the
reserve at the end of one year, to which is added the com-
pany's contribution, plus the interest required, minus the
pension payments, should be at the end of the time the fol-
lowing year's reserve. I examined figures for the period
from January 1, 1932, to March 31, 1932, and checked the
conditions for the three months of this year as compared to
1931; I took the year from March 31, 1931, to March 31, 1932.
I have no figure comparable to the figure shown in
2559 A-146 extended to March 31, 1932. I made no observa-
tions or calculations for the first three months of 1932 to
determine whether the continuance rate was lower or higher
in the first three months of 1932 than from March 31, 1931, to
December 31, 1931; that would seem to me to be rather ab-
surd. In making the calculations in connection with the low
continuance rate, we took account of the year from March 31,
1931, to March 31, 1932, in determining the continuance rate
which we used in connection with the pension reserve as of
December 31, 1931. I did not give a statement which had the
pension reserve as of March 31, 1932, because that was
2560 not called for; I was asked to prepare it year by year

and not according to sections of years. As all the censuses were made as of March 31 in each year, naturally I did the same thing for 1932, so as to have a complete year in connection with the census. Speaking from memory, my impression is that from about October, 1931, there were no discontinuances. In other words, the company put the force on shorter working hours and did not dispense with the services of any of them, or practically any of them, so that the continuance rates from January to March, 1932, did not exist at all; it would rather be the opposite of what had been provided in the calculations. In other words, I had provided
2561 for a discontinuance rate, and, on account of the economic conditions, there was no such discontinuance rate. I stated that I had found there was a lower wage scale due to the factor of shorter working time, but I considered it temporary. In determining the cost, it did not seem to me to be advisable to take that into account, because under the custom of the company the pension is based on the ten years in which the wages are highest. Therefore, it was quite within the function of the company to disregard the years, say, of 1930, 1931, or 1932, and base the pension solely on the 10 years prior to the present economic conditions and prior to the decrease in the actual wages. A number of
2562 the questions asked of me have not taken into account a very serious factor which has largely nullified those questions. They have assumed that there would be a smaller wage scale and that in the future the continuance rates would be very much lower; that is, the dismissals would be higher. But what actually happens is that if the company came to what might be called a static condition where there would be about the same force for a number of years to come, there would be a very distinctly lower rate of dismissal and a much higher continuance rate. That is to say that any man who held a job would not be willing to let it go, because it would be the most valuable thing he had, and, therefore, there would be more men remain in the service to get the pension, and, therefore, the cost of the pension would be a higher proportion of the wage scale, and might cost even distinctly more

money than under conditions where there was a large labor turnover.

It might or might not have the effect of releasing a part of the reserve as of March 31, 1931. That is something that no one can tell, because again it would depend on the
2563 three factors and principally on the question of how large that continuance rate might be.

(Statement given to defendants by the Western Electric Company, entitled "Number of Employees of the Western Electric Company, 1916 to 1930" marked for identification as Defendants' Exhibit D-97.)

2574 *Re-direct Examination by Mr. Thompson.*

The continuance rates which I use in the calculations contained in my exhibits are based on the company's actual experience covering a long period of time, and as shown by carefully compiled census data for the years 1925, 1927, 1929, and 1931. I had no regular census data of the company's employees subsequent to March 31, 1931; I had the number of employees on the payroll, but no regular census.

I found that subsequent to the 31st of March, 1931, there had been what I thought was a temporary condition that
2575 should be allowed for in my calculations. I did two things: first, I adjusted the payroll for 1931 on account of this lower continuance rate, and then I made an adjustment on account of reserve to the extent of one-half of $3,100,000. In my opinion that was the proper and accurate amount to adjust the reserve in order to care for the conditions as I found them.

If the company's labor turnover becomes less because of less industrial activity, that results in a reduced force of employees as compared to the time when the activity of the company was higher. It also results in and I found from the experience of the company that subsequent to October of 1931 there had practically been no discontinuance. Even if I should premise a continuance of this situation, it

2576 operates towards higher continuance rates, and, therefore, a higher percentage of payroll than I have found in my calculations.

The questions regarding life insurance companies and the comparison made between them and an industrial pension scheme of this kind might be misunderstood. The life insurance companies naturally must charge more, because they do not take account of the number who discontinue, except by giving a value to those who do discontinue. Accordingly the charge for a pension fund, a pension or an annuity, must be larger for the life insurance companies than it would be by an industrial corporation, which took account in advance of the discontinuances which it expected to have and for which it has applied no value.

Cross-Examination by Mr. Goldstein.

2577 "The life insurance companies' plans are predicated not on a wage scale, but on a definite amount that provision is made for. That is, paying the pension on the salary which the man has at that time and which would not be changed in the future or by reason of any reductions. There was a substantial reduction in the number of employees as of March 31, 1932, as compared to March 31, 1931; I could not remember just what it was.

(Plaintiff again offered in evidence exhibits marked for identification, A-130 to A-149, both inclusive. Admitted.)

CHARLES A. HEISS, recalled as a witness on behalf of the plaintiff, having been previously duly sworn, thereupon resumed the stand and further testified as follows:

Direct Examination (Continued) by Mr. Blackman.

May 17, 1932.

2579 The figures in column 1 of Plaintiff's Exhibit A-150 are taken directly and without change from column 4 of Exhibit 193. The figures in column 2 are taken directly and without change from Exhibit 193, from the column headed "Other". The figures in column 3 are computations made by me. The figure 10 appearing in the first portion of that column is a percentage figure developed by me. The figure 10 is to be used to eliminate from column 2 that portion of the expense which should be excluded as applicable to
2580 non-telephone activities. The second half of column 3 shows merely the dollar figures obtained by applying the 10 per cent figure to the figures in the preceding column. The figures in column 4 (there is very little difference between the amounts stated in column 3 and the amounts stated in column 2) are just the remainder after deducting column 3 from column 2.

Column 5 was taken directly and without change from Exhibit 193. They are the amounts which Mr. Carter, in that exhibit, allocated directly to the license contract.

2581 Column 6 is the sum of the figures in column 4 and column 5. That is, column 6 purports to show the amounts which Mr. Carter allocated directly to the license contract, plus the proportion of the sums which he set up as indirect costs.

Column 7 is an allocation to the Long Lines of its fair proportion of the amount stated in column 6. The figures in the left hand section of column 7 are percentages. The figures in the right hand section are amounts computed by applying the percentages just mentioned to column 6. The percentage, let us say, for the year 1923 of 3.5 represents the ratio of the

Long Lines employees to the total employees of the associate companies, including the Bell of Canada and the Long Lines. I took employees for the reason that the work
2582 of Mr. Carter—or rather of the Personnel Department—particularly the work which we are here discussing, that is, administration, personnel and special training, is all work which is in connection with employee relationships, and; therefore, in my opinion, the best basis for allocation to the Long Lines is the ratio of its employees to the total employees.

The other ratio of 5.08, in the line immediately below, is a composite ratio taking into consideration plant investment, employees, expenses and total revenues. I took a composite ratio for the purpose of allocating this particular type of work, that is, public relations work, to the Long Lines, for the reason that this public relations work is of a broad general character affecting all phases of the telephone business, principally the relations with our connecting companies, in matters of plant revenues, expenses and employees, and it seemed to me that a composite ratio which took into consideration all of those factors produced a fair and proper allocation. The 5.08 is, as I said, a ratio which does that.

2583 The application of these ratios to the figures immediately preceding gives you the figures in the right hand side of column 7. Then, deducting those figures from the figures in column 6 gives you what purports to be the amount to be allocated to the associate companies, including the Bell of Canada, but excluding the Long Lines. Having that
2584 figure, in column 8, to develop the fair share of that class of expense that should be allocated to the Chicago area of the Illinois Bell, I proceeded on the same basis as was followed in making an allocation to the Long Lines Department; that is, so far as the work of administration, personnel and special training is concerned, I used a ratio of employees; that is, comparing the employees of the Chicago area to the total employees of the associate companies, including the Bell of Canada, but excluding the Long Lines. For the year 1923, employees of the Chicago area were 7

per cent of the employees of the associate companies, including the Bell of Canada. Now, the amount in the right hand section of column 9 is merely the application of the percentage figure in column 9 to column 8. In connection with the public relations expense, I used a composite ratio made up of plant investment, employees, expenses and telephone revenues. That was made up in the same way as I have described, but including stations. That ratio was 6.6 of the plant investment, employees, expenses, revenues and stations of the associate companies and the Bell of Canada, and 6.6 of column 8 gives you the $5,002 appearing at the right hand of column 9. I used one additional factor, stations, in developing this ratio in column 9. I did not use stations in the case of the Long Lines because the Long Lines had no
2585 stations, but I used them in the case of the allocation to the Chicago area, because I wanted to bring into the picture all of the factors which should be considered an allocation affecting all of the phases an allocation of expenses affecting all phases of the business. And, therefore, I used this public relations factor, which is the one I am dealing with. I have proceeded in precisely the same way in each of the years subsequent to 1923 as shown on this sheet. There is a small typographical error in the figures for the year 1925, in column 8. The amount of $13,914, appearing against public relations in column 8, should be $13,924, that is, $10 more; and that change affects the total in the same amount, making that total in column 8 for the year 1925, $303,806. No other
2586 figures are affected by that. The amounts as carried out are correct.

In my opinion, the methods which I have followed are proper to develop the results which I purport to show.

In my opinion, these figures in this last column to the right on the paper which I have been describing, Plaintiff's Exhibit A-150 for identification, are the minimum amounts of expense of the Personnel Department for the matters referred to, which should be allocated to the Chicago area of the Illinois Bell Telephone Company.

Mr. Carter, in his testimony, referred to a change which had taken place in his department. That change took place May 1, 1923, so that practically throughout the period dealt with, the work of the department and the general character of its relations has been the same.

"Mr. Blackman: I offer the sheet in evidence as Exhibit A-150 for identification.

"Judge Wilkerson: Is the objection reserved?

2587 "Mr. Haight: Yes, if the Court please.

"Judge Wilkerson: The ruling is reserved."

This sheet (marked for identification Plaintiff's Exhibit A-151) was prepared at my direction and under my supervision. It is an allocation to the Chicago area of its fair proportion of expenses incurred through the years, expenses incurred by the benefit and medical section of the Personnel Department, in rendering license contract services.

The figures in the first column on this sheet came directly and without change from Exhibit 193, already referred to. Such figures as appear in the second column also came
from Exhibit 193 directly without change. The figures
2588 in column 3 are computations made by me. The figure
10 appearing against General Staff—the figure 10 in the
case of the year 1923—is the same percentage which I have
already explained, used in Exhibit A-150.

The figure 5 is a percentage which I have computed and used to eliminate that part of the expense or cost incurred by the Benefit and Medical Department, which was not of benefit to the associate companies and the Long Lines Department. The percentage is made up by taking into consideration the amounts eliminated by each department which were not of benefit to the associate companies and the Long Lines.

For instance, Dr. Jewett made an elimination from his expense for work which was of benefit to other than the associate companies and the Long Lines. Mr. Gherardi, of the Department of Operation and Engineering, considered the
matter; Mr. Page made an elimination; and other elimi-
2589 nations have been made of expense which is not of benefit
to the associate companies and the Long Lines—for

work not of benefit to the associate companies and Long Lines; and I have taken all of those eliminations and have computed them for the departments as a whole, and the percentage for the departments as a whole which should be eliminated, was about 3.5 or 4 per cent; and in order that there might not be any question, in order that all contingencies might be covered, I have used a 5 per cent figure for making the elimination. That is, there are five or six so-called general departments of the American Telephone and Telegraph Company, such as Dr. Jewett's Department of Development and Research, Mr. Gherardi's Department of Operation and Engineering, and so forth.

This work, benefit and medical, which is shown on this sheet, is the benefit and medical in connection with those departments, and it is confined to those departments.

The three items, benefit, medical and benefit payments, represent work done and expenses incurred in connec-
2590 tion with the several general departments in New York, after excluding the Long Lines. What I have attempted to do here is to prorate these three items of expense on the same basis that the general expenses of the departments which they serve were prorated—on the same basis as the general expenses as a whole were prorated. And, in my opinion, that is a fair and proper way to proceed.

This sheet is carried through in the same manner in which I carried through the previous sheet, with the same column numbers. The figures in column 4 are the remainders after deducting column 3 from column 2.

This sheet is developed in the same way. The columns
2591 headed 3, 4, 5, 6, 7 and 8 on this sheet have the same significance generally as they do on the preceding sheets: I might add that the amount in column 5 was taken directly, without change, from Exhibit 193. I have developed on this sheet the percentages in the same way as I did on Exhibit A-150. In my opinion, the figures shown in the last column to the right on this sheet show a minimum allocation to the Chicago area of the Illinois Bell Company of its fair share of the expenses shown in the first column to the right on

this sheet. I might add, as regards benefit, medical and benefit payments, Mr. Carter made no allocation, and the amount allocated is based on, or is according to the methods indicated in the notes at the foot of the sheet. That is,
2592 I made the allocation. I made it on the basis which I have just described. That is, the 5 per cent figure.

The figures for the year 1931 were not on Exhibit 193, and I therefore modify my statement already in the record that, in so far as 1931 is concerned, they were not on the exhibit which Mr. Carter introduced. I have added them here, and applied the same method of allocation as we used for the other years. I obtained these figures from the books of the Company, and I proceeded in precisely the same way as in previous years, with Mr. Carter's approval. Each of those years subsequent to 1923 is dealt with in the same manner in which I dealt with 1923.

2593 "Mr. Blackman: I offer this sheet, Plaintiff's Exhibit A-151 for identification, in evidence.

"Mr. Haight: May our objections be made at the conclusion of the cross-examination?

"Judge Wilkerson: Yes."

2594 This sheet, Plaintiff's Exhibit A-152 for identification, was prepared at my direction and under my supervision. The sheet is merely a summary of the two sheets just discussed. It brings together the amounts shown in column 4 of Exhibit 193, total expense incurred for personnel, benefit and medical relations, and shows in the next column the amounts thereof allocated to the Chicago area for each of the years 1923 to 1931, broken down as between expenditures, costs incurred in connection with personnel relations, and those incurred in connection with medical and benefit work. Those personnel relation services were services that were rendered to the Illinois Bell Company, or in part directly to the Illinois Bell Company. The benefit and medical was only an indirect service to the Illinois Bell Company.
2595 That was a service to the general departments, which were, in turn, serving the Illinois Bell.

"Mr. Blackman: I offer this sheet, Plaintiff's Exhibit A-152 for identification, in evidence.

"Mr. Haight: We make the same reservation."

This sheet, Plaintiff's Exhibit A-153 for identification, was prepared at my direction and under my supervision. It is an allocation to the Chicago area of its fair proportion of the public relation expenses incurred in rendering license contract services for the years 1923 to 1931, inclusive. I am familiar with the work shown on this sheet. The work is shown on this sheet divided into two parts. The first is described as "Representation of Companies before Federal Government and National Trade Organizations". That work started in 1924, and has continued throughout the period, until
2596 just recently there was a slight change in the organization of the work. The work represents, in part, representation of the companies before the Interstate Commerce Commission in the matter of obtaining from that body approvals to purchases of property, and is work which is done entirely for the associate companies. Another part of that section deals with relations with such national organizations as the United States Chamber of Commerce, large local chambers of commerce, the International Chamber of Commerce; relations with the Department of Commerce, census bureaus, and also such national organizations as the American Management Association, the American Society of Sales Executives, work done in the broad general interest of the business of the associate companies and the Long Lines, and stimulating good relations, finding out the problems which confront different types of industry, and so on.

The second section pertains to the development of telephone use in different types of business. Now, that is
2597 work done in connection with the survey and study of the telephone needs of various kinds of businesses and ways of meeting them. For instance, we consider the best type of telephone service for farmers, and different lines of business, in the most effective distribution of products, and so on. That work began in 1929.

The figures in column 1 are taken from our books and records. The figures in column 2 are taken directly and without change from our books. The ratios appearing in the left hand section of column 3 represent percentages based on the composite ratio of plant, employees, expenses and total tele-
2598 phone revenues; that is, the character of the representation of the companies before the Federal Government and national trade organizations is broad and general in character and affects all phases of the business, and in making the allocation a ratio was used which took into consideration that fact. In my opinion, that is the proper type of ratio to be used in making the allocation.

The ratio used for allocating to the Long Lines its fair share of the expenses of developing telephone use is revenue. That particular activity is developing revenue, and we have used a revenue ratio in making the allocation.

In the allocation to the Chicago area, we took into consideration the same factors; the representation of the companies before the Federal Government and national trade organizations was allocated by using the composite ratio just described.

The allocation of the second section of the work, developing telephone use, was made on the basis of revenue.

In my opinion, the figures shown in the last column to the right on this sheet are the minimum figures for the fair share of the Chicago area of the Illinois Bell Telephone Com-
2599 pany of the work and the expense shown on this sheet.

"Mr. Blackman: I offer Plaintiff's Exhibit A-153 for identification, in evidence."

This paper, Plaintiff's Exhibit A-154 for identification, was prepared at my direction and under my supervision. It purports to show an allocation to the Chicago area of its fair proportion of the Treasurer's Department expenses incurred in rendering license contract services during the years 1923 to 1931, inclusive.

"Mr. Blackman: I will offer in evidence the cross-examination of Mr. Blair-Smith in New York under the order of this Court for his examination.

"Judge Wilkerson: You may offer the rest of it, if you desire.

2600 "Mr. Haight: Yes.

"Mr. Blackman: I offer the cross.

"Judge Wilkerson: And at the request of counsel for the defendants, the remainder is put into the record, for convenience in this place, but really as part of the defendants' case.

"Mr. Blackman: All right, sir."

(The deposition of H. Blair-Smith last above referred to was accordingly received in evidence, and made a part of this record.)

366 HUGH BLAIR-SMITH, for defendants:

Direct Examination by Mr. Haight.

I reside at Englewood, New Jersey. I am treasurer of the American Telephone and Telegraph Company and have been for nearly ten years, my office being at 195 Broadway. I also have an office at Boston, Mass.

My department's work is divided into three main divisions —Administration, Stock and Financial. The Adminis-

367 tration Division is divided into Personnel, Office Services, including Mail Services and Stenographic Services. Stock Division is divided into Transfers and Registration, Bookkeeping and Dividend and Statistical Work.

There are two main divisions and then there are several subdivisions. The two main divisions are the transfer of stock and the records of stockholders, the issue of dividend checks and payment of dividends. That department also has charge of the registration and records of bonds outstanding. In other words, that department handles the issue and transfer of capital obligation and related records of the company.

The financial division is subdivided mainly into the work of the cashier, purchase and custody of securities and there is another division respecting verification of dividend bank accounts and paid interest coupons. My department does about as much work for Long Lines as it does for associated companies, possibly a little more.

368 The assistant treasurer of American Telephone and Telegraph Company is the acting treasurer of Long Lines Department. It is not a division in my office, but it is necessary under the by laws of the company for an assistant treasurer to be the treasurer of Long Lines. Long Lines is separately handled from the other three divisions and that has been true ever since I have been treasurer. The same organization in respect to divisions has existed practically from 1923 to 1930, inclusive. In the administration division in 1930 we had about 106.

369 I am familiar with the articles appearing in the Bell Telephone Quarterly for October of each of the years 1924, 1926, 1928, 1929 and 1930 which were written by me.

371 In the middle of this summer (1931) we made a study of the number of employes of the different divisions for 1930: Administrative Division 106; Stock Division 198; Financial Division 55. I don't know during the same year how many men were in the Long Lines Treasurer's work.

372 The Treasurer of Long Lines is Mr. H. W. Roscoe. He has been in that position about a year. Mr. E. C. McAllister preceded him. I think 12 or 14 men work under Mr. Roscoe. During Mr. McAllister's time the number was fewer.

In the Administrative Division we have one bureau that is in charge of the development and improvement of department methods and preparations of instructions, analysis and research work necessary to advise associated companies in matters affecting treasury work, preparation of bulletins and letters advising associated companies of recommended practices and consultation by personal visits or correspondence of general treasury problems. There are 11 employes engaged in that work.

373 We have another bureau in charge of the development of treasury statistics, relation with bank commissioners on securities, special studies of finance and related questions, preparation of financial booklets and publications, special

financial correspondence, listings of securities on exchanges; there are 14 employes so engaged.

Another bureau, of study and analysis of the various operations, including the preparation of work reports and cost statements reflecting general operating results, selection and training of employes and other personnel activities. Twelve employes.

Then we have another bureau for the departmental budget cost statement; storage and distribution of office supplies, messenger service, archives, other general services relating to the work of the department as a whole; 18 employes.

Another bureau is in charge of the receipt and dispatch of mail, maintenance of correspondence files, and the storage and cremation of records; 23 employes.

Then we have a general stenographic service for the department; 28 employes. That is all the Administrative Division.

374 In the Stock Division we have one bureau charged with the issue, registration and transfer of the capital stock of the company; the issue, registration, exchange, conversion and redemption of bonds and the maintenance of records relating to the funded indebtedness of the company; the payment of bond interest, contacts with the company's security holders by correspondence, by telephone or in person; assistance to associated companies in the engraving and issue of securities. There are 82 employes in that bureau.

A second bureau is in charge of the maintenance of accounts of stockholders, issue and delivery of dividend checks, stockholders' statistics and reports, mailing of circulars and notices to stockholders; returns of information required by law at the source; tax information and reports. There are 83 employes so engaged.

Another bureau is engaged in handling subscriptions of the Bell System employes for stock to be paid for by assignment of dividends and maintenance of related records. Verification of all lists of completed payments by employes; 13 employes.

375 A fourth bureau is the office at Boston, which performs

mainly duties concerning transfer of stock and the payment of coupon interest and maturing obligations and does any other work that is required locally; 20 employes. That is all the work of the Stock Division.

The Financial Division has four main bureaus. The first one is engaged in the purchase and sale of temporary investment securities, custody of securities owned by the company, acceptance of subscriptions under the salary reduction provision of the employes' stock plan, for general department employes; safekeeping of Bell System and United States Government securities owned by employes and placed with the company by employes of the company for safekeeping; all related correspondence, records and reports. There are eight employes in that.

Another bureau, in charge of the receipt and disbursements of the company funds, including payrolls, verification of bank statements (except the dividend bank account), related correspondence, records, reports and similar activities for Bell Telephone Securities Company and 195 Broadway Corporation. That has 15 employes.

376 The next bureau, verification of dividend bank statement, placing and withdrawal of bank stop payment orders for dividend checks, verification of paid bond interest, coupons, related correspondence and records, preparation and cremation of records for paid bonds and coupons; 17 employes.

We then have the Bell Telephone Securities Section, which is engaged in the purchase of American Telephone shares under the plan to assist small investors throughout the country. Application and accounts of purchases in the New York office; all related records and correspondence; employes and miscellaneous purchases and sales of securities. That has 15 employes. That is all for the Financial Division. That is as of August 25, 1931.

On January 1st of each year we had—

Administration Division, 1923	31
Stock Division	220
Financial Division	61

I have a chart which shows the number of employes as of January first of each year with the Treasury Department for years 1923 to 1931, both inclusive, for each of the
377 three divisions and each of the bureaus of such division which said chart is offered in evidence as Defendant's Exhibit 5.

I have a chart which I use in my testimony in regard to the number of employes in the three principal divisions and in the principal bureaus thereof, which chart is offered in evidence as Defendants' Exhibit 6.

378 The character of the work in these various divisions and the various bureaus thereof has remained about the same during the years 1923 to date.

I have a document consisting of several typewritten sheets and dated April 30, 1931, generally with respect to expenditures by divisions from 1923 to 1930. It was prepared at about that time under the supervision of the assistant
379 treasurer, Van Cise. This statement was prepared for the comptroller and in preparing it we prepared it along the same lines that he had asked us to observe in the preparation of it, the purpose being to set forth, first, the minimum amount of expenses incurred in the Treasury Department which we felt was chargeable because of the license contract. The second basis was to add to those expenses the cost of security issues, extraordinary expenses that were incurred during the particular years 1923 to 1930, inclusive, and that is known as basis two.

The column entitled "Total Expenses" in the first page gives the total expenses of the General Department for each of those years. There is also included in that column "Unusual Security Issue Expenses." The next column is entitled "Charges to License Contract, Basis 1," which is the basis that I have previously described. We arrived at the figures opposite each year by taking the expenses of each division of the Treasury Department, starting with the Financial Division, and we included in the expenses chargeable under basis one to license contract, the following:

380 A. Handling the temporary investments.

B. Paying of salaries and the performance of keeping books and banking work for that part of General Department 381 operations which are devoted to license contract services under the theory that we were working on.

C. Making of advances to associated companies and the handling of their notes, and

D. Handling of General Department employes, stock subscriptions under the Employes Stock Plan.

We then took the stock division expenses and we have included the cost of issuing of stock to employes of the Bell System, under the Employes Stock Plan, and the handling of subscriptions payable by the assignment of dividends in the Employes Stock Bureau, which has been operating only in 1930. We made certain eliminations from those expenses, including all of the cost of handling that work in connection with the employes of Western Electric, of Bell Telephone Securities Co., of the 195 and 205 Broadway Corporations, of E. R. P. I. We eliminated 70% of the expenses attached to the work for employes of Bell Telephone Laboratories and 15% of the cost performed for employes of the General Department, American Telephone and Telegraph Company.

We eliminated those percentages. Next we took the 382 administrative expenses which appear on page 4, under the heading, "Allocation of Administrative Division Expenses." We took the expenses attaching to executive administration and methods work allocated to the financial and stock divisions and in turn allocated to license contract activities. Also the methods and development work in behalf of associated companies, and third, the cost of the Bell System Treasurers Conference, which was held in 1927, and on that basis we allocated the expenses as the expenses chargeable under license contract, Basis 1.

In handling the security issues it was necessary to organize a new division and to bring in a large number of additional employes. We have usually had to employ or rent additional space. I think we began in 1924 to use space that was outside of our own offices. In organizing the work we have necessarily taken quite a number of the regular employes of

the department and placed them in charge of the various activities and drawn in new people to perform the reg-
383 ular activities performed by those whom we had withdrawn to the stock issue. The costs that we have kept of our stock issues, and we have in our records kept those costs, are such as we have incurred in addition to the normal expenses of the department.

Those expenses of the various divisions, excluding the extraordinary expenses of the security issues, appear in the figures contained in those papers. They appear on page 2 and in the first column there is shown the expenses of the Financial Division, excluding the security issue expenses. On page 4 in the top table are shown the total expenses of the stock division, excluding security issue expenses, and at the bottom of that page are shown the total expenses of the Administration Division, excluding security issue expenses.

There is a large sheet entitled "American Telephone and Telegraph, Excluding Long Lines Department," (entitled Exhibit A, which is a summary of what has gone before.)
384 There are the various initials which constitute the key, the key being shown at the bottom of the sheet.

On page 2, referring to the distribution of Financial Division Expenses and the first column, in addition to salaries there goes in rent, stationery, telephone service, postage and stationery and other miscellaneous expenses. The same is true as to other divisions of the department in this exhibit.

Additional rent is included under "Expenses Charged to License Contract" as to Basis 2, but not as to Basis 1. When Basis 1 is employed in the figures relating to each of those three divisions rent is included in Exhibit A, specifically allocated "Other," column 3.

385 (Paper described by the witness is marked Defendants' Deposition Exhibit 7, for identification.)

My department includes among its employes those that receive the dividends from stock of licensee companies owned by American Telephone and Telegraph Company.

I believe the statements, charts and graphs in the following articles, prepared by me, are correct: Article in the

October, 1930, issue of Bell Telephone Quarterly, pages 250-261. Article in the October, 1929, issue of Bell Telephone Quarterly entitled "1929 Convertible Bond Offer of American Telephone and Telegraph Company," pages 316 to 327. Article in the October, 1928, issue of Bell Telephone Quarterly entitled "1928 Stock Offer of the American Telephone and Telegraph Company," pages 253-265. Article in the October, 1926, issue of Bell Telephone Quarterly entitled "1926 Stock Issue of the American Telephone and Telegraph Company," pages 253-265. Article in the October, 1924, issue of Bell Telephone Quarterly entitled "1924 Stock Issue of the American Telephone and Telegraph Company," pages 262-269.

(Articles by witness in various October issues of Bell Telephone Quarterly for the years above mentioned, 1924, 1926, 1928, 1929 and 1930, were marked for identification as Defendants' Deposition Exhibits 8, 9, 10, 11 and 12.)

Referring to the peak period mentioned in those various issues of the Bell Quarterly, we start out with a small number of extras and go up to the peak and gradually go down until we get rid of all of them. The total expenses in regard to each appear in Defendants' Deposition, Exhibit 7.

388 Another thing I want to explain is that some of these temporaries went into the regular organization to replace the permanents that went out and went into the stock organization. The number of employes at the peak issue of the stock work was as follows:

1924, 480
1926, 636
1928, 705
1929, 607
1930, 950

The total expenses with regard to each of these appear in Defendant's Exhibit 7.

(Mr. Blackman reserved right to make cross-examination of Mr. Blair-Smith later.)

907 HUGH BLAIR-SMITH, recalled:

Cross-Examination by Mr. Blackman.

The Treasury Department of American Telephone and Telegraph Company has the custody of the cash and the securities of the company. It receives and disburses the funds, providing financial services to the several general departments; this includes the payment of payrolls and expenses. It makes advances to the associated companies, invests the surplus cash on hand in short time securities so as to have it always liquid and available. It issues, transfers and registers the securities of the company, including the issue to the employees of stock under the employee stock plan, and it conducts financial research and development methods for improving practices in our own and in the offices of the associated treasurers. It issues letters and bulletins concerning those practices, and it also engages in personal consultations and in correspondence with the treasurers of the associated companies and their offices in specific questions.

During the period January 1, 1923, to December 31, 1931, my department obtained in the way of new financing $1,820,000,000. In that period the company has accumulated in undivided profits $293,000,000. As to what was done with the money,—first we advanced to the associated companies $1,438,000,000, later taking their securities for that and
908 we now hold those securities. To the Long Lines Department of the company we advanced $306,000,000 for the construction of property. To the Western Electric Company we advanced $89,000,000. We added through advances to the Bell Telephone Securities Company, $4,000,000. We advanced to the 195 Broadway Corporation, which is the corporation owning the Headquarters Building, an additional $8,000,000 in connection with building operations, and we retired debt of the company to an amount of $133,000,000 and the balance of the money amounting to about $135,000,000 was added to the liquid funds of the company. We still have that, or we

had it January 1. That is the amount of liquid funds over and above the amount that we had on January 1, 1923.

During the period that we are talking about from 1923 to 1931, we had three issues of debentures, and we were concerned with five stock issues to stockholders, and one
909 issue of convertible bonds, to stockholders.

The three debenture issues do not involve as much detail as do the offers of securities to stockholders. These debenture issues were sold to syndicates and all in bulk, and the amount of work in connection with those,—take, for instance, the 1930 issue of $150,000,000,—that is done in a short period of time.

We first have to have what we call temporary bonds printed. These are delivered to the syndicate, and then we receive our money.

As soon as we can after that, we have definitive bonds prepared, and these definitive bonds, as soon as executed, are given in exchange for the temporary bonds. The bond forms, there are six, in this issue of $150,000,000 we had to issue altogether about 152,000 pieces.

In connection with stock issues which are made to the stockholders, we have a much more complicated operation. I should like to describe the 1930 issue to give you an idea of it.

At the time of the issue, there were 508,000 stockholders involved. It required that we send to each of these stockholders a notice telling him of the issue and describing its terms.

910 Then after the record date it was necessary for us to
issue and deliver to stockholders some 750,000 warrants evidencing their subscription rights. With these we sent another circular outlining, in as much of an A. B. C. detail as possible, how to exercise these rights or how to dispose of them, telling them by all means not to sacrifice them because they had money value.

We did a great deal of work in educating the stockholders to use and understand the rights.

We organized immediately a separate unit, we got 45,000 square feet of floor space, equipped it with all that is necessary in an office, desks, chairs, typewriters, filing cabinets, stationery, adding machines, etc.

We answered some 25,000 letters of inquiry. We took in 283,000 separate subscriptions. We made innumerable transfers of warrants from one person to another. We received in cash during the few months $225,000,000—practically all of which we put into short term, high grade securities, so as to keep that liquid and always available, so that when associated companies needed the money it would be there.

To do this work it was necessary for us to interview something over 3,000 employees, or prospective employees, out of whom we selected about 1,000, and it was necessary to give those employees a very excellent training, so that they might do their work accurately.

911 Of course, in doing this work—it is all very definite and must be done accurately and precisely,—it is necessary not only to do the work, but to have verifications of the work going on at all times.

It is money that we are dealing with and negotiable paper of value that we are issuing, and we must, of course, not only do it as cheaply as possible, but we must also do it accurately.

As to the interest rates we were able to get on the short term investments I spoke of, they depend on the period when you have the money available. In 1930 we started getting fairly good interest rates for that paper—2¾ per cent, tax exempt—but as they matured, we got to the point where we were getting less than 1 per cent, while the funds were being carried. It is very necessary in carrying large sums of money like that to keep it in the highest grade, ever maturing securities, so as to avoid losses if you have to have the money. We want the securities to mature so that they will be paid off at their face value and we know then what we are getting. Our
912 first consideration is safety, and with due regard to safety, we did get the best trades we were able to make. We had four issues of stock during this period and the winding up of a fifth stock issue which started in 1922 and came over, and the final payments of which were made in 1923.

Also during that period, we had an offer of $219,000,000 of convertible bonds of the company. The handling of the convertible bonds and the other stock issues involved the same routine that I have described in connection with the 1930 stock issue.

When the stock is sold and issued, the work of the company is by no means finished. There is then an annual service, in fact a day-to-day service, that is necessary in order to take care of the securities. For illustration—in the financing, we have developed a list of about 125,000 bondholders. Those bondholders can exchange coupon bonds for registered bonds, or they can have the coupon bonds registered as to principal,
or they can exchange bonds of one denomination for
913 bonds of another denomination, and the company is the
agency that carries on that work—the Treasurer's department carries on those exchanges.

We have also developed up to December 31, 1931, a list of 645,000 stockholders.

We had that many different stockholders on that date. We have considerably more now.

Those stockholders are continually changing their holdings in the stock and changing their addresses. During the nine-year period, as an illustration, we had 875,000 transfers of stock. In connection with those transfers, we canceled 2,100,000 stock certificates and we issued 1,800,000 new stock certificates.

The bondholders holding coupon bonds have interest coupons attached to their bonds and these coupons, as you know, are cut off at periods of six months and they collect their interest through surrendering these. The Treasury Department pays the coupons as they mature and are presented.

During the nine-year period we paid 7,325,000 coupons.

The stockholders are entitled, likewise, to dividends declared, and these have always been paid quarterly.

During that period they were paid quarterly. We
914 issued about 14,800,000 dividend checks which must be
delivered through the mails to the proper addresses and

when paid must be checked up, verified, and proper accounting records kept, and from the payments made we must make reports to the Federal Government of the information at the source as to income taxes and also to some of the State Governments that require the same kind of service.

During that period, in handling the work in the Treasury Department we received and dispatched 3,000,000 letters. I think that gives you an indication of the amount of work that goes on day to day in the office.

The total amount expended by the Treasury Department for doing its work of all classes in the nine years was $13,034,000. It was as follows in the separate years:

1923	$ 954,861
1924	1,258,097
1925	944,914
1926	1,381,752
1927	1,103,130
1928	1,648,226
1929	1,591,063
1930	2,499,674
1931	1,652,282

The total cost of handling the new security issues was $3,154,000 for the nine-year period. For each of the years separately it was:

1923	$ 74,255
1924	389,093
1925	55,773
1926	444,595
1927	80,575
1928	588,071
1929	404,130
1930	979,305
1931	138,122

The total cost of the financial service rendered to the General Departments, American Telephone and Telegraph Company, was $469,000. For each of the years separately it was:

1923	$ 26,130
1924	36,188
1925	42,253
1926	43,714
1927	54,884
1928	56,617
1929	61,452
1930	71,850
1931	76,325

Under the employees' stock plan the cost of handling our work was approximately $600,000. For each of the years separately it was:

1923	$ 24,526
1924	41,871
1925	11,136
1926	17,634
1927	51,986
1928	55,496
1929	36,384
1930	178,091
1931	183,614

The expense in my department during the period in ques-
tion in connection with advice to the associated compa-
917 nies in regard to their treasury work, getting out bulle-
tins for them and their guidance, etc., was $210,000. By
years it was:

1923	$ 8,677
1924	10,445
1925	15,856
1926	18,219
1927	32,687
1928	25,373
1929	29,216
1930	34,410
1931	34,592

The cost of handling the custody of the company's funds and the advances thereof to the associated companies during the period was $721,000. By years it was:

1923	$ 40,158
1924	55,614
1925	64,934
1926	67,179
1927	84,343
1928	87,009
1929	94,437
1930	110,418
1931	117,296

918 With respect to the nature of the advisory work to associated companies,—the main problem which the licensee companies have in the Treasury Department is the drawing in of funds which are collected throughout the territory and deposited in banks, and getting them into headquarters cities so that they are ready for disbursement, and then the disbursing of the funds.

Our studies have been in connection with banking relations, in dealing with the balances justified in the various points, with the safety of the banks and with the methods of getting the money in.

They have also been in connection with the disbursing of the money and with the writing of payroll checks and the delivery of payroll checks.

They have been in connection with the requirements of the transfers of stock of those companies and the servicing of the bonds which are outstanding, the paying of the coupons, the accounting for the paid coupons, the cremation of those coupons and dealing with the trustees in connection with that cremation, and they have been with many other general and related problems that go on in the ordinary work in the Treasury Department.

919 The purpose of all of it is to work in the best and most economical way and to conserve the funds of the company, to get them ready for disbursement as quickly as possible, and to use as little money in carrying on the transactions of the company as is justified. That is accuracy and economy.

The amounts that I have stated total about 40 per cent of the expenses of my department, which leaves 60 per cent, or about $7,880,000. That expense is very largely concerned in servicing of the outstanding securities of American Telephone and Telegraph Company, the transfer of the stock, handling the dividends, paying interest coupons. That is something that an ordinary corporation would have to do that has securities outstanding in bulk—in numerous hands. That is, the treasurer's office of any corporation with a large list of stockholders would have as part of its work the work that I have referred to here. That cost was $7,879,000 for the nine-year period.

920 The employees' stock plan was first established as of May 1, 1921. That is a plan offered to all the employees of the Bell System, whereby those of six months' services or more are entitled to subscribe to stock on the basis of pay.

There is also a provision in the plan which authorizes those who have secured shares under any of the plans of the American Telephone and Telegraph Company and hold those shares, to subscribe for additional shares and assign the dividends in payment for them. We handle the issue of the stock and all the subscriptions of the General Department employees.

The treasurers of the associated companies handle the 921 subscriptions of the employees of the associated companies up to the point where the shares are fully paid for. We issue the stock and we also keep full records of the dividends, assignments and subscriptions. The treasurers of the associated companies do not keep those records. We keep them in the Treasury Department. The plan is that they may pay either $3.00 or $4.00 per share per month, or, if they pay weekly, they pay 75 cents or $1.00 per week for four weeks of each month, and they cannot pay for it as long as they are employees otherwise than in that way, so that at the present time it runs over a period of around from 36 to 40 months. During that period the employee has a right at any time to cancel his subscription and to receive back the amount of money that has been credited to his account through deductions of pay or through assignment of dividends, plus interest

on that money. Recently the stock has fallen below the
922 subscription price and there have been a large number of cancellations.

When the plan was first adopted, the employee was required to pay par or $100 per share. It has been changed several times; first change was from $100 to $105; then to $110; then $115; then $118; then $121; then $125; then $130 and lastly $150.

Prior to 1921 there had been three employees' stock plans in effect. Also prior to that time the employees to whom stock was issued including employees of the subsidiary companies. That plan was carried out by delivery to employees of only such stock as has already been issued; that is, reacquired and placed in the hands of trustees. There was a change in the 1921 plan whereby the stock was issued to employees might be either issued from the treasurer or picked up in the market and transferred to the employee.

923 Prior to the adoption of the 1921 plan the law of New York State did not permit stock to be issued to the employees of subsidiary companies. There was a law shortly before 1921 which authorized stock to be issued to employees of the company but not to the employees of the subsidiary companies, and as soon as the law was changed permitting it, the terms of the law were embodied, or at least were taken advantage of by American Telephone and Telegraph Company in the adoption of the plan of May 1, 1921.

The objects of those several stock plans were to benefit the employee and hold him to the service of the company, to prevent turn-over, which is expensive—labor turn-over which is expensive to all companies. It was to give the employee an interest in the business and cause him to be more interested in his work and in the service of the company. The plans, without question, had that effect. Very generally the employees of the Illinois Bell have subscribed for the stock of American Telephone and Telegraph Company under this plan.

924 Basing the values of the stock on the market price on the day that the employees were entitled to receive the

shares, the market value of the stock issued to employees of Illinois Bell has been in excess of five million dollars over the subscription price. That is if they had turned around and sold the stock on the day on which they were entitled to receive it they would have made a profit of more than $5,000,000 over and above their salaries.

I am familiar with the general nature of the work that goes on in the offices of the treasurers of the associated companies. That work differs from the work done in the office of the treasurer of an ordinary commercial or utilities company in three main particulars—first, when the treasurer of an associated company needs money, as they often do, because all of the companies have been growing during this nine-year period, they have arranged with the American Telephone
925 and Telegraph Company for advances to be made to them; and those advances have been made to them when they were desired, and consequently they have not been required to carry these amounts on hand, idle. They have been able to get them just at the moment that they have asked for them. Second, through the fact that they have gotten these from one source, their securities have been issued to one holder, the American Telephone and Telegraph Company, and they generally have only one stockholder. Some of them have a few more, but the bulk of the stock of those associated companies that is outstanding is in the hands of American Telephone and Telegraph Company, so that with one stockholder they are not required, they do not have to have elaborate stock books to make transfers, to pay dividend checks to a large number of people, and consequently they save the expenses that would otherwise be incurred to do those operations.

The third difference is the fact that because the treasurer's office of American Telephone and Telegraph Company maintains a staff for research and methods, they are not put to the expense of doing so themselves. When they want
926 studies made, when they want special information, they write to us or they talk with us about it and they get the services from the treasurer's office.

Many of the expenses incurred in our office are for particular services directly assignable to the associated companies and during the nine-year period amounted to $1,720,000.
027 By years they are:

1923	$ 85,363
1924	123,205
1925	116,199
1926	127,103
1927	194,147
1928	193,483
1929	191,899
1930	337,044
1931	351,456

The remaining services are very largely for the benefit of the associated companies to the extent of 90 per cent to 94 per cent. The larger part of the services, that are not directly assigned as just stated are for the services rendered in getting money and in paying out money in handling the temporary investments and keeping them invested in high class securities and in servicing the securities of American Telephone and Telegraph Company now outstanding,
928 the registration of dividends, etc. The 6 per cent in the part of our services that I have eliminated as not of direct benefit to the associated companies although they do benefit to some extent.

The amount of money that has been raised by American Telephone and Telegraph Company and invested in Western Electric, in Bell Telephone Securities Company; in Bell Laboratories and in the 195 Broadway Corporation, is about 6 per cent of the assets of American Telephone and Telegraph Company. That is where I get my 6 per cent.

The assets of the associated companies represent more than 90 per cent of the total assets of American Telephone and Telegraph Company, and I have figured that the expenses of my department follow those assets.

The 195 Broadway Corporation is the holder of title and the operating unit for handling the Headquarters Building of American Telephone and Telegraph Company.

So that to the extent that the occupants are rendering service to the associated companies, the expense of my department in connection with that company should fairly be said to apply to the associated companies, to the extent that it is only a matter of financing that is involved because any services performed for the 195 Broadway Corporation are charged to that corporation and the accounts of the 195
929 Broadway Corporation are entirely separate from the accounts of American Telephone and Telegraph Company. The expenses of my office consist in getting the money for them that is all that remains in my expenses.

The Bell Telephone Securities Company has received advances from American Telephone and Telegraph Company in order to carry on its work. American Telephone and Telegraph Company owns the entire amount of the capital stock of Bell Telephone Securities Company outstanding, amounting to $1,000,000. They hold advances at the present time of about $6,500,000.

During the period that we have been discussing, the amount of money advanced to Bell Telephone Securities Company is $4,000,000 more than it was at the beginning of the period. Getting the money and handling it in connection with those advances constitute practically all we have done for that company. We have attempted to eliminate in the figures I
930 have given you the expenses of the Bell Telephone Securities Company. They are taken out of the expenses directly apportionable. There is some little expense included in the totals in the nature of rent,—otherwise the expenses are all taken out. The Bell Telephone Securities Company undertakes to inform the public of the securities of the Bell System. It issues yearly a pamphlet in which a description is given of every Bell Telephone security issued and outstanding. It tells the story of the Bell Telephone System, of the soundness of its securities, and that has a very wide distribution. It is sent to bankers, brokers and to individuals who are interested in it.

The Bell Telephone Securities Company also issues and distributes widely a pamphlet known as "Some Financial

Facts," which tells the story of the Bell System for about fifty years.

The Bell Telephone Securities Company undertakes to distribute the stock of American Telephone and Telegraph Company as broadly and as widely as possible, and it performs for investors the service of buying American Telephone and
Telegraph Company stock for them and allowing them to
931 pay for it either in one payment or in installments over
a period of months.

It is all for the benefit of American Telephone and Telegraph Company and the Bell System, generally.

The Bell Securities Company does not deal in securities of any other company or companies except the Bell System. The services that we performed for the Western Electric are mainly in the fact that we have advanced to Western Electric or have bought stock of that company and through those operations have furnished that company with about $157,000,000, —during the nine-year period $89,000,000. The cost of the financing of Western Electric mentioned is in what we term the "Residue of Expenses" and the $7,880,000 of extra expense incurred over the nine-year period has not been charged
as expenses directly allocated to the license contract.
932 The Associated Companies get the benefit of some of that
indirectly.

The fact that we allow the employees of Western Electric to participate in the stock plan is of substantial value indirectly to the Associated Companies in that it cuts down the costs of manufacture by Western Electric in behalf of the Associated Companies, or cuts down the cost of goods which it manufactures for the Associated Companies.

The financing that we do for Western Electric furnishes the money on the cheapest basis that the Western Electric could get it. American Telephone and Telegraph Company does not buy, sell or deal in securities in the accepted sense. It makes advances to the Associated Companies and takes their securities. It does not sell them. It does not deal in securities of any companies. It is not a dealer in securities.

It does not make purchases of any securities except the
933 securities of the Associated Companies and its own subsidiaries. In one case I recall it bought some stock of the Radio Corporation of America but the amount that it held during this period was less than $160,000 and that was only part of the period when it had that. Its surplus funds that it is not needing at the moment for advances to its subsidiary companies, it invests usually in Government certificates, bills, short term securities and in t[illegible] notes of very high grade issued by cities and states.

Re-direct Examination by Mr. Goldstein.

The licensees get the benefit of the financing by American Telephone and Telegraph Company of Western Electric because Western Electric gets cheap money and there is also a more satisfactory personnel of Western Electric.

934 American Telephone and Telegraph Company finances the cash requirements of the licensees which requirements are mainly for construction purposes for improvements of their plant account. I don't know what percentage of the purchases by licensees from Western Electric go into plant account. I don't know how much the Western Electric receives in cash from the licensees each year for purchases made. I know how much the licensees require from American Telephone and Telegraph Company but not the amount that they pay to Western Electric.

I should say that the Western Electric would be satis-
935 fied by this plan that the licensees' credit is good and enables them to do business without considering the question of cost of credits, knowing that the licensees will have all the cash available for all requirements, and that the money will be forthcoming. I don't know what the cost of credit is ordinarily to a manufacturer.

$157,000,000 represents the total investment of American Telephone and Telegraph Company in Western Electric to December 31, 1931.

That includes temporary advances and money of all kinds.

It is the total amount as of December 31, 1931. The American Telephone and Telegraph Company had advanced to the licensees $1,438,000,000. When I say advanced that amount of money, I mean that the general process is to advance them the money, loan them the money when they require it, ask for it, or arrange for it. If in a particular year the licensee did not have any borrowings and did not owe the American Telephone and Telegraph Company any money, I would include that in the departmental expense also. So that $1,438,000,000 is really the amount of money which the American Telephone and Telegraph Company used to purchase stock as a stockholder of the licensees and to advance money in the form of credit obligations, if in the original case they issued stock. It is in effect true that where the licensees owed the American Telephone and Telegraph Company money when the stock issue was authorized, that the American Company would accept the stock and pay for the stock by cancelling the note. All of the service of the American Telephone and Telegraph Company is to raise this $1,400,000,000 for the licensee. The expense of the department incurred in raising that money I gave as $3,154,000. It cost the American Company that $3,000,000 to raise $1,820,000,000 used to purchase stock, and also to lend money to the subsidiary companies. The purpose of the Bell Telephone Securities Company is the acquainting of investors with the facts regarding the outstanding issues of the subsidiary companies and of the American Telephone and Telegraph Company. Outside of the one issue of bonds in 1923 of $50,000,000, the Illinois Bell Company has made several issues of stock and that stock was subscribed for to the extent of 99 per cent, or whatever the percentage is by the American Telephone and Telegraph Company. So that other than the minority interest in stock there were no other public issues made from 1923-1931 other than the $50,000,000 bond issue which was sold to J. P. Morgan & Company. The direct acquainting of the issues of the Bell System, so far as the Illinois Bell issues are concerned, would be to acquaint the investors with the merits of that bond issue. The Illinois Bell sold that bond issue to J. P. Morgan & Company. I don't recall the discount paid, but there was some discount. I should say the American Telephone and Telegraph Company holds approximately 90 to 92 per cent of the stock of all of the licensee companies in the Bell System. So that the Bell Telephone Securities Company acquainting investors with the merits of the Bell System Licensees, refers to the 8 per cent of the stock outstanding and all of the bonds, which bonds amount to about $500,000,000.

They were in each case sold to bankers, American Telephone and Telegraph Company not buying them. I know there was a difference between the price at which the syndicate bought them and the price at which they offered them to the public.

940 During the period American Telephone and Telegraph
Company sold to the bankers three debenture issues at
less than par, and during the same period American Telephone
and Telegraph Company sold to the public not through bank-
ers but through its stockholders, an issue of bonds of $215,-
000,000 in 1929 and issues of stock of $800,000,000 or $900,-
000,000, which bonds and stocks were sold to stockholders
941 at par. Some parts of the unsubscribed portions of bonds
and stock were sold to the public. None was sold below
par.

In 1921 the Bell Securities Company was organized, its purpose being at that time merely to disseminate information to the existing investors of the Bell System. In 1923 the Bell Securities undertook to interest investors in the stock of American Telephone and Telegraph Company through the employees of the Bell System largely. The Bell Telephone Securities Company is a skeleton organization which directs the work of the employees of the licensee companies and the work of disseminating information to investors, and has done so for several years.

That work began the middle part of the nine-year pe-
942 riod. Beginning with 1923 the number of stockholders in
American Telephone and Telegraph Company started to
grow and it has been growing right along. In 1921 the num-
ber of stockholders was about 160,000; at the end of 1931,

645,000. I consider it of benefit to the Bell System to have widespread ownership of American Telephone and Telegraph Company stock and it was of benefit to American Telephone and Telegraph Company because of the ability to secure the funds needed to carry on its work and furnish money to the Associated Companies of American Telephone and Telegraph Company. The American Telephone and Telegraph Company could have secured funds by selling the stock to bankers. Between 1921 and 1930 we have never offered stock to bankers, except as stockholders.

944 The purpose of having a widespread ownership was to get money. The employees of the Bell System in connection with sales of stock assisted those who asked for assistance at the business offices of the Associated Companies. Some employees did undertake to reach the investor before the investor came to the office and asked for the assistance, which work was done at the direction of the president of the subsidiary company.

945 At the suggestion of one of the presidents of one of the subsidiary companies, we made a study to see what could be done to avoid losses to the stockholders, who are all patrons of the company locally, the president making the statement that it would be of distinct public advantage, an advantage of public relations if the ignorant stockholder were protected in his rights, and we developed the plan whereby, during each stock issue we would secure the names of the stockholders who at the last offer had failed to take advantage, and the presidents of the associated companies were told that those cards were available for them if they cared to use the information, and then they asked for the information and all of them had it given to them and they, on their own initiative, turned those cards over to their people to ferret out those stockholders to see that they lost nothing.

Mr. McCulloch of the New York Telephone Company suggested it. He would be interested in the sale of the stock of American Telephone and Telegraph Company because it would give him an excellent opportunity of making an excellent friend in his own territory. He would not be interested

in anything outside of the Bell System. He is interested
946 in the general well-being of the Bell System and in seeing that funds are raised to take care of his company's requirements, the sale of stock of American Telephone and Telegraph Company being the main source. The issue of stock of his company to American Telephone and Telegraph Company as a stockholder is the medium by which funds are raised for the New York Company. He is interested in the American Telephone and Telegraph Company buying stock of the local company as a medium of getting his funds. He is also interested in seeing that American Telephone and Telegraph Company has enough money to buy the stock of the local company. As to whether he would be interested in seeing that the minority stockholders of Illinois Bell also have money to buy the stock of the Illinois Bell. I don't think that would reach him. If he had them in this locality, I think he would serve them. If he had the stockholders of the Illinois Bell here and they went to him for help, he would give it to them.

948 The licensee company is interested in raising money; so, if it issues stock to raise money, then it is interested in selling the stock. The Illinois Bell 1923-30 was interested in selling its stock. The purchasers of the stock would be the stockholders of the Illinois Bell. The Illinois Bell is therefore interested in seeing that the stockholders purchase that stock. I assume that the Illinois Bell is then interested in seeing that the largest purchaser of that stock, American Telephone and Telegraph Company, has the money called for to buy the stock. There are minority stockholders of the Illinois Bell, but American Telephone and Telegraph Company owns 99 per cent plus of the stock.

I cannot say ~~whether the Illinois~~ Bell concerns itself at all with the ability of the minority stockholder to purchase any portion of its stock. I don't know whether the ordinary
949 corporation takes any steps to help its stockholders to raise money to purchase its stock. American Telephone and Telegraph Company never took any steps to help people raise money to buy its stock. If the employees of the Bell System who purchased stock had sold the stock on the day of

purchase according to the market prices of that stock at that time, there would have been a profit to those employees of $5,000,000. The first subscription for employees was at par. After that it went up. The stockholders of American Telephone and Telegraph Company that subscribed to issues from 1923 paid par for the stock. I have never determined what the market price of the stock was on the date when they purchased that stock at par, and I never determined how much profit they would have made if they had sold their stock on the day that they purchased it at par. If the licensees wanted to give stock for the advances, we took it. If they wanted to give notes, we took those. I am sure that the Illinois Bell got such consents as were necessary of the Illinois Commerce Commission in connection with each stock issue 1923-1930.

As to who determined whether a licensee company was to give note or stock for the moneys which American Telephone and Telegraph Company turned over to it, I should say it would be a negotiation with the American Company as to which they would take. The negotiations would not be carried on with me.

As to the amount of money required by the licensee companies, we know at the time the provisional estimates are completed as to the approximate amount that would be
952 required. We get that information from the associated companies. We get it in the form of a statement from the comptroller of the American Company. He must get it from the reports that are sent by the associated companies, —provisional estimates. The comptroller tabulates the approximate amount of money that will be required by each of the associated companies for that year. That tabulation is received by me some time after the first of the year. The comptroller advises me whether for the money advanced I am to take stock, a note or an open account. The authorization for each advance or each payment to a licensee comes
953 from the comptroller, and at that time I am advised whether to take a note or to take stock. I do not get a

notification in advance of the actual transaction of the probable amount of stock of open accounts or notes which will come from the financing for the succeeding calendar year. The comptroller gives me an estimate of the amount of money I need to have on hand in order to fill all requirements.

I used the same amount of money to pay the associated companies $50,000 or $500,000, whether they give us a note for it or whether they give us stock.

The three stock issues and the one bond issue I testified about were 99 per cent subscribed. I think in the last one there is less than one-third of 1 per cent unsubscribed.

An ordinary corporation of large size would incur expense of the character of the $7,000,000 expense I testified about. I think that if an ordinary corporation wanted to get the amounts of money that the American Telephone and Telegraph Company has gotten, it would have to sell its securi-
955 ties in the same manner the American Telephone and
Telegraph Company did. I do not know of any large corporation that sells its securities through bankers. Many corporations sell their bonds to bankers. I think that the usual method followed by corporations in disposing of bonds is to sell them to bankers. I would assume the same con-
956 dition existed with the other corporation,—ordinary cor-
poration,—as existed in the case of American Telephone and Telegraph Company. By that I mean I assume they sell their bonds through bankers and sell their stocks to the public.

The bond issue of 1929 of American Telephone and Telegraph Company was a convertible bond issue but it was sold to stockholders. Not all temporary funds are invested in Government securities. Some are invested in notes issued in anticipation of taxes by municipalities. We did not buy any railroad or utility bonds.

The Bell Securities Company performed a service to the Bell System in widely distributing the stock of American Telephone and Telegraph Company. Wide distribution of stock furnishes a source of money supply,—people that know the security and are willing to put more money into the security.

Diversity of ownership is preferable to a concentrated ownership by a few people because no few people could possibly own a company of this size. We also think it of benefit to have American Telephone and Telegraph Company stock owned in the locality in which the service is rendered to foster public opinion.

I have not seen the contract between the American Telephone and Telegraph Company and the Licensee companies in connection with the stock sold to the employees of each of the companies, but it must provide that the services performed by the Licensee Companies in connection with the stock shall be without compensation from the American Telephone and Telegraph Company because the licensee company is the only person that can perform service in connection with the sale of American Telephone and Telegraph Company stock to licensee employees. The licensee company does not get paid from the American Telephone and Telegraph Company for this service but they get their expenses from the Bell Telephone Securities Company; that is, any extraordinary
959 expense that they are put to in handling, such as for postage, printing, etc.

I cannot definitely answer whether any portion of the time of an employee of a licensee company consumed in selling stock, is paid for by the Bell Securities Company.

960 We make up monthly and annual reports of the cash receipts and the cash disbursements. The same cash being counted several times during the year. The moneys I stated went to the licensee companies, went there and stayed there. I cannot say definitely whether that came alone from the sale of securities, because American Telephone and Telegraph Company during that period accumulated $293,000,000 in undivided profits. Both the money from the proceeds of the sale of securities, the proceeds of the securities and undivided profits were intermingled in the treasury, and we don't know which went where.

961 I considered 195 Broadway Corporation as a separate corporation, apart from the Bell System in the treatment I gave to the expenses. All expenses of that company are in

the expense accounts of that company and no part of those expenses have gone into the expenses of the treasury department. All money advanced to that company was considered when I made the elimination of 6 per cent of the residue of expenses; that is, I eliminated all advances to 195 Broadway.

962. The Bell Telephone Laboratories I also treated as outside the Bell System, just as I did the 195 Broadway, and in the 6 per cent elimination I eliminated that portion of the expense attributable to investments. I treated Bell Telephone Securities Company the same way.

Employees during the entire period cancelled subscriptions to stock and did so when the market price was above the subscription price. They received back the amount of the deductions or assignment of dividends, plus interest. That rate of interest has varied. They got back all their principal. We had cancellations of subscriptions when the market was up and also when the market was down.

Recross Examination by Mr. Blackman.

963. The $7,000,000 expense which I spoke of was character of expense that any large company that had its stock well scattered would be bound to incur. That is, it would incur it not to the same extent but ratably in proportion to the amount of stock it had out.

Redirect Examination by Mr. Goldstein.

If American Telephone and Telegraph Company wants to raise additional funds, it is particularly interested in having its stock widely scattered. If it does not care to raise funds from its stockholders, it would not be concerned. The associated companies, if they expected to get money from the American Company, would be concerned. From the standpoint of public relations, the associated company is quite interested in having as many stockholders of American Telephone and Telegraph Company as possible located among its patrons. Probably if it could get all other things in equal benefit, it would be more interested in having as many stockholders as possible in its own company. By "other thing" I mean 965 if it did not have the expense of handling its securities, if it did not have the expense of finding a market and did not have an expense of distribution and all the other expenses that go with it, and also if it did not have competition with all the other companies in getting money out of the market.

I don't think that the Illinois Bell would be better off in having widespread ownership of its stock if it turned out that the licensee companies paid for the expense of issuing the securities and paid for the things which I have said were the other things that a company would have to take into account in determining whether it would be better off to have a concentrated ownership or to have a widespread ownership of its own stock, because I think that one well nationally 966 known security as a source of money supply is much more certain. We can have conditions in different parts of the country that may affect local securities and that would affect the widespread securities only in those localities, and furthermore, it would be a difficult thing for that company to acquaint people with its own stock to the extent that they are acquainted throughout the whole nation with American Telephone and Telegraph Company stock, and in many localities the local companies would not find enough people with enough wealth to float its own securities in its own locality.

I think it is to the advantage of each of the associated companies to have stock of American Telephone and Telegraph Company owned by the public instead of their own securities by the public and by their stockholders, than their own securities, or their own stock.

967 Some companies do think it would be of advantage to them to have some of their own stock owned in the localities and in that case they have issued preferred stock and they offer that to their security holders.

I think it is of advantage to each of the associated companies to have stock of American Telephone and Telegraph Company outstanding as the stock of the nation wide tele-

phone business than to have the individual stock of any company or every company outstanding throughout the nation, or even throughout its own locality, because American Telephone and Telegraph Company stock is a nationally known stock and people move from one section to another of the country and they all know about it; it is written up in the
968 newspapers and in the periodicals; it is bought by their
own employes, it is bought by other telephone company employes and those employes are interchangeable and they shift from company to company and they know the stock of the parent company. I think there is little distinction made by the public as to whether it is the stock of the individual company or the American Company that they own. They know that it is Bell Telephone stock and I think the ownership of the nation-wide stock is a safer and saner stock to give to the public than the stock of a local company. For all reasons, as I see it, it seems to me better that the stock that they own or the stock that is owned by the public and by the employes, is the same stock and a nation-wide stock.

I consider that part of the service of American Telephone and Telegraph Company to each of the licensee companies is the financing of their needs in the manner in which it has in fact been done during the last nine years. American Telephone and Telegraph Company stock is considered for the reasons stated a high-grade stock. All Bell System securities are considered high-grade issues. I mean rated high by the agencies that rate them—Moody's, Standard Statistics. They are high-grade securities and the institutions that do rate them, rate them highly, such as Moody's and Standard Statistics, but their rating has no effect on what I consider them to be, but they are rated as high-grade securities.

CHARLES A. HEISS:

Direct Examination Continued by Mr. Blackman.

2601 The source of the figures shown in column 1 of this sheet (Plaintiff's Exhibit A-154 for identification) is the books of the Company. The figures in column 2 were taken from page 914 of the deposition of the Treasurer, Mr. H. Blair-Smith. The figures in column 3 are a computation made by me, but the computation is based on a percentage given by Mr. Blair-Smith in his deposition. That is, the 6 per cent that I use in column 3 is the figure which Mr. Blair-Smith said should be allocated outside of the license contract work in his department. Column 4 is merely the remainder that I get by deducting column 3 from column 2. Column 5 is an allocation to the Long Lines, and this allocation was made by me. The left hand section of column 5 shows the
2602 percentages used, and those percentages are a composite ratio of plant, employees, expenses and total telephone revenues of the Long Lines in relation to the associate companies, including the Bell of Canada and the Long Lines. This is the same ratio that I have used on some of the preceding sheets. It was taken from Exhibit A-100, composited, I believe, in A-103. In my opinion, that is the proper ratio to use to make an allocation of that part of the work that I am dealing with through the Long Lines, because the work of the Treasurer's Department affects all parts of the business, and every phase of the business, and I consider that a proper ratio. I consider the ratio used a proper one. Column 6 is merely the remainder that I get after I deduct the Long Lines portion from the total portion shown in 4. Next I allocate to the Chicago area, in column 7, and I use the same type of composite ratio, but include in the composite the factor of stations. Throughout all of these years, the
2603 ratio as shown in 7 for the allocation to the Chicago area is the same as the ratio shown in 5, modified only by the use of stations, in order to make the ratio as comprehensive as possible. In my opinion, the figures shown in the

last column to the right on this sheet are a minimum allocation to the Chicago area of the Illinois Bell Telephone Company of its fair share of the expenses shown and dealt with on that sheet for each of the years in question.

"Mr. Blackman: I offer the sheet (Plaintiff's Exhibit A-154 for identification) in evidence.

"Mr. Haight: The same reservation."

These sheets, Plaintiff's Exhibit A-155 for identification, were prepared at my direction and under my supervision. They purport to show an allocation to the Chicago area of the fair proportion of the expenses of the Comptroller's Department incurred in rendering license contract services 2604 during the years 1923 to 1931, inclusive. I am dealing now with my own department.

I will take these figures up a little in detail, and discuss them very briefly. Beginning with the Bell System methods, which is the first line for expense: the division of Bell System methods is 66 employees, and its work is almost entirely concerned with the preparation of efficiency accounting methods and practices in respect of plant, revenues and disbursements. We have, for example, the job of putting out in the Bell System, eighteen million telephone bills a month. Now, to do that job efficiently, promptly and economically, it takes a very high type of method, and a continuous survey of methods, to keep the costs down to the very minimum. Now, that is just a little illustration of one type of method work that is done by this section.

Other types relate to plant and disbursement accounting, 2605 motor vehicle accounting, estimates, standard methods of preparing estimates, approval, and so on.

Another section deals with the preparation of the Federal Income Tax return annually. We may say, briefly, that the work of this department is practically confined to devising efficient and cheap methods for the associate companies and the Long Lines to use in connection with their accounting.

There is very little work done by this department that is of benefit to the Western Electric Company, or the Electrical Research Products Company, and to the companies not included among the associate companies and the Long Lines.

We do not devise methods for those companies to follow in their accounting, except indirectly. They may get slight benefit from such plans as the employees' stock plan, or some method that we devise for the associate companies may be of slight benefit to them, but no methods are prepared for those companies. These are essentially telephone methods, to fit the needs of telephone companies.

2606 The chief traveling auditor makes an audit of each associate company and the Long Lines. He does not audit the Western Electric, nor the Electrical Research Products.

He makes an audit, in conjunction with the Western Electric, of the Bell Laboratories, but that audit is indirectly of benefit to the associate companies. But the Bell Laboratories is the only audit which he makes that is not a direct audit of the associate companies and the Long Lines, except that he makes an audit of the Bell Securities Company, too, and of the 195 Broadway Corporation, but that corporation, again, is a service organization, useful in rendering service to the associate companies and the Long Lines.

The 195 Broadway Company is a company which owns the building occupied by these departments which are serv-
2607 ing the associate companies and the Long Lines.

Next, general books and records is the division of my department which contains the books and accounts of the American Company, and also has to do with advancing funds to the associate companies and the Long Lines. It keeps the records of employees' stock plan transactions of the American Company, certain summary records for the System, and, in addition to that, prepares such reports as we must file with public authorities. I think that covers, in general, the work of that section.

A considerable part of that work is of direct benefit to the associate companies. For instance, the relations with the companies in the advancement of funds to them from time to time is one direct relationship; the matters relating to the employees' stock plan is another. Then, as regards the keeping of the books, this department keeps the books and the records for the several departments, and for the Company as a whole, and in that respect it goes back indirectly as a benefit to the associate companies and the Long Lines.

2608 Considering the Chief Statistician, any large business that encounters the volume of business activity encountered in the telephone business must have a very well developed organization for analyzing the business, and for pointing out, bringing out of the various volumes of business and activities that take place, the essential facts for the executives and the officers, for administrative purposes.

Now, it is the function of our Chief Statistician in New York to develop the methods for use by the statisticians of the associate companies in analyzing the various phases of the business, what is happening in plant, what is happening in respect of revenue, what is happening in respect of expenses, in the growth of stations, and growth of business, and business conditions.

The Chief Statistician's organization in New York has as one of its large functions the development of methods of making analyses of that character. Then, the Chief Statistician's organization does, and has done in the past ten years, a large amount of work in the development of principles for applying mortality data to the depreciation problem, and in the development of proper depreciation rates. We develop the basic factors underlying our pension accruals, 2609 not only for our Company in New York, but the basic factors underlying the pension accruals of all of the associate companies and the Long Lines. This department also studies the question of fire insurance: is it cheaper to take out premium insurance, or can we self-insure our properties, and what are the best types of policies, what are the best methods, the most economical methods of providing protection for our properties throughout the System? This work is done for all of the associate companies and the Long Lines.

Now, none of this work is done for the benefit of the Western Electric Company, nor the Electrical Research Products Corporation, nor the Bell Laboratories.

The next division is the Chief Accountant's. The Chief Accountant has charge of all accounting matters taken up with

the Interstate Commerce Commission. For instance, our companies are required to follow a uniform system of accounts. In a business as large as ours, there are hundreds of problems of classification and accounting that arise each year.
2610 Now, these problems are referred to New York by the associate companies.

Many of these problems we can answer because of past rulings ~~which we have ob~~tained from the Interstate Commerce Commission, but on the other hand, there are numbers of them that we must take up with the Commission in order to provide the proper accounting for our various activities, and the Chief Accountant's work is to discuss these problems with the Commission, to obtain through one central source rulings for the companies; to take care of any matters involving changes in the system of accounts, changes in the annual report to the Commission, and so on.

The next division is Bell System Reports. Bell System Reports is a small division which combines for our executives the reports of the various associate companies of the System into a combined Bell System report. Those reports are furnished to our executives to give them a better understanding of the business, in order that they may, in turn, better serve the associate companies and the Long Lines; also to have a picture of the over-all volume and trend of the entire Bell System business.

2611 My next is an undistributed item. The undistributed item is merely expense incurred in connection with rents and house service, and so on. That is expense that should be prorated over the six sections preceding, and also part of it should be prorated to my own section, administration. My own section consists of myself, two stenographers, and one office boy. The word "administration" sufficiently describes just what I do. I supervise all of the activities.

In column 3 I develop a percentage, 5 per cent. The 5 per cent is an estimate. I discussed very carefully and at length with my division heads, what work they could possibly do which was of benefit to others—which was in connection with work other than that which benefited the associate companies

and the Long Lines, and, as I have already said, the only
2612 work that is done there is possibly an audit of the Bell
Laboratories, of which 95 per cent, at least, is of benefit to the associate companies.

Then, the work we do in connection with the development of thrift plans, to the extent that the Electrical Research Products Company, or the non-Bell portion of the Western Electric, or the Bell Laboratories, benefits from those thrift plans. A little of the benefit of my work percolates out to those companies, and possibly an adjustment of my expenses should be made for that reason.

Now, we make up the consolidated income tax return, we get the data all prepared by the different companies, and so far as our work in New York is concerned, it is pretty largely a folding together of the companies. Now, we fold into that income tax return the data for the Electrical Research Products Corporation and the Western Electric Company and the subsidiaries of the Research Products Corporation, so that after I analyzed carefully my expenses from every angle, I came to the conclusion that over the period not more than about 2 per cent of the expenses of my department could, under any way of looking at this situation, be considered as incurred in connection with work which benefited
others than the associate companies and the Long Lines.
2613 Now, in order that there might be no question, to take
care of contingencies I took 5 per cent, and excluded 5 per cent.

Column 4 is merely the remainder after I have deducted column 3 from column 2. I develop another per cent in column 5. That is the same composite per cent about which I have testified, and is the percentage which I used in making the allocation to the Long Lines of its fair proportion of this expense. The work of my department is of a broad, general nature, and the accounting touches every phase of the business, and I have used a ratio which took that fact into consideration. The Long Lines Department has a large accounting organization of its own.

In column 7. I develop another per cent. That is the same per cent which I developed in the sheets that I have

2614 testified about previously, except that it includes stations, as testified to in the other instances, in instances in which it was used to make an allocation to the Chicago area. I have proceeded in each of the years in question in the same manner.

In my opinion, the amounts shown in the last column to the right of these three sheets which have been marked A-155 for identification, show a minimum amount that should be allocated to the Chicago area of the Illinois Bell Telephone Company as its fair share of the expenses dealt with on the sheets.

"Mr. Blackman: I offer the sheets (Plaintiff's Exhibit A-150 for identification) in evidence.

"Mr. Haight: The same reservation, if we may have it."

2615 This paper, Plaintiff's Exhibit A-156 for identification, was prepared at my direction and under my supervision. It purports to show an allocation to the Chicago area of the fair proportion of the expenses incurred by the Secretary's department in rendering license contract services for the years 1923 to 1931, inclusive. The figures in column 1 are taken from the books, directly and without change. In column 2 the figures are also taken from the books directly and without change. They represent the total expenses of the Secretary's department.

The figures in column 3 are estimates made by me, in co-operation with the Secretary, considering the general character of his work, the amount of work that he might 2616 possibly do that was of benefit to other than the Long Lines and the associate companies. Taking all those factors into consideration, and taking also into consideration that the Secretary holds a general administrative position, we considered that an exclusion of 5 per cent was a fair and proper exclusion to make from his total expenses.

My knowledge of the work of the Secretary's department comes from the fact that I have almost daily contact with the Secretary. In the discussion of matters of joint interest to his department and mine, I receive from him, monthly, his approved bills, classified in the manner in which I have asked him to classify them. I summarize them and prepare for him a monthly administrative report, and, in that way, obtain from him a rather intimate knowledge of the work which he does.

This 5 per cent that I have taken off here in column 3 represents such possible work as he might do which was of benefit to Electrical Research Products Corporation, or which was of benefit to the Western Electric; but keeping in mind that the larger part of the work done which is of benefit 2617 to the Western Electric is, in turn, of benefit to the associate companies. This last factor that I have mentioned is what we might call the non-Bell business of the Western Electric, which is about 4 or 5 per cent. Dr. Jewett testified it was about 4 or 5 per cent. Then there might be some strictly corporate matters of the American Company that the Secretary might consider; and taking all of these items into consideration, we considered that 5 per cent was a fair and proper exclusion. There is one other factor there. The Secretary acts as Secretary for the Bell Securities Company, and, in that respect, a very small part of his time, probably a half a day a month, has been included in this estimate.

In column 4, I make the deduction for the amount developed in column 3 and the amount shown in that column is the remainder after that deduction is made. The amount in column 4 for any year is divided into two parts. The (A) portion is the amount which the Secretary has specifically indicated as allocable directly to the Long Lines and the 2618 associate companies. For example, of the amount of $4,372 in the year 1923, I was told that $1,093 should be allocated to the Long Lines. That represents his time in connection with keeping the minutes of the Long Lines board and such other direct services as he renders in connection with the keeping of the minutes of our state companies, which is a minor task, since they have very infrequent meetings. The Secretary renders services direct to the associate companies.

One character of that work is that he prepares and furnishes a list of the officers and administrative personnel of each company, and combines it with that of other companies, and distributes such a list to all of the companies for their information. That is one type. The other type of service which he renders directly for the associate companies is that in case they have a problem requiring the formulation of an executive resolution, or a vote, our Secretary, having had many years of experience in that work, is very familiar with it and is frequently called upon by the secretaries of the 2619 local companies for advice as to procedure and methods of setting up votes for the consideration of the Board of Directors. But the greater part of this expense that I deal with here has only an indirect benefit to the associate companies. It deals largely with the work of the American Company, which in turn is largely incurred for the benefit of the associate companies and the Long Lines.

"Judge Wilkerson: The amount involved here is not very large.

"Mr. Blackman: It is very small.

"Judge Wilkerson: Is there anything in the license contract which entitles an associate company to require an officer of the American Telephone and Telegraph Company to do anything?

"Mr. Blackman: I think so.

"Judge Wilkerson: Or are the services rendered under some general clause of the contract?

"Mr. Blackman: Well, they are rendered under the general clauses of the contract.

"Judge Wilkerson: That is, there isn't anything specifically touching the officers of the parent telephone company?

2620 "Mr. Blackman: Nothing specifically.

"Judge Wilkerson: That gives to the associate company the right to require those officers to do anything for the associate companies?

"Mr. Blackman: I don't think there is anything specifically requiring the Secretary to do anything for the associate companies.

"Judge Wilkerson: This is offered under the general welfare clause?

"Mr. Blackman: Yes, sir, under the general welfare clause, and under the direction of the Supreme Court to show the fair proportion of the expenses of the American Company that should be allocated to the Chicago area. Of course, we could not have the operation of this contract and the operation of these departments if we did not have a secretary's office.

"Judge Wilkerson: Yes, I understand."

I have developed some percentages for allocation on this sheet. Wherever percentages appear in the left hand column of section 5, the percentage is a composite ratio of plant, employees, expenses and total telephone revenues, and
2621 where percentages appear in column 7, they comprise the same composites, plus stations, and I used the composite ratio in making all the allocations, again because the Secretary's work is of a general over-all character affecting all phases of the business.

In my opinion, the figures shown in the right hand column of this sheet show a minimum amount to allocate to the Chicago area of the Illinois Bell Telephone Company as its fair share of the expenses of the Secretary's Department of the American Telephone and Telegraph Company.

"Mr. Blackman: I offer this sheet (Plaintiff's Exhibit A 156 for identification) in evidence.

"Judge Wilkerson: The same reservation?

"Mr. Haight: Yes."

This sheet, Plaintiff's Exhibit A 157 for identification, was prepared at my direction and under my supervision. This purports to show an allocation to the Chicago area of the fair proportion of the expenses of sundry items, including administration incurred in rendering license contract services
2622 during the years 1923 to 1931, inclusive. This sheet covers the administration section of the American Company, including various sundry expenses.

The figures in column 1 come from our books. The figures in column 2 are taken from our books also, directly and without change. The red figures are a credit made to the expenses for the years 1923, 1924 and 1925, in respect of restaurant activities. In those years the American Company conducted its own restaurant for employees, and these red figures represent the profits earned by that restaurant, and, inasmuch as we had not charged up the restaurant with any rent specifically, we credited the profits back against expenses. The figures that I show in those years are the figures of expense for the Administration Department after the deduction of the restaurant profits.

I will state in a very general way, and briefly, what the
character of the work consists of: under the head of
2623 administration, we have the expenses of the President's
office, his secretary and staff, and in addition we show
here the expenses of the office of Vice President Wilson, who
reports to the President.

In later years, say, for example, in 1926, 1927, 1928 and 1929, Vice President Guernsey was also treated as a part of the Administration section, and his expenses are shown.

Now, in addition to the usual and ordinary expenses, such as salary, rent and house service, periodicals, books, and various items, there are included in these expenses such items as directors' fees, audits, expenses of an annual audit, the expenses of any contributions that might have been made in the interest of the business, and so on. That, generally, covers the character of these expenses.

I am familiar with the work of the Administrative department. I have fairly close contact with the President's office;
there are many matters that my department has taken up with
the President. In addition, I receive the approved expense
vouchers, monthly; and prepare his administrative report,
and in that way have a reasonable familiarity with all the gen-
eral character of the work of the President's office.

2624 "Judge Wilkerson: Just why do you charge to the
Illinois Bell a part of the salary of the President of the
American Telephone and Telegraph Company?

"A. Because the American Telephone and Telegraph Company —

"Judge Wilkerson: The American Telephone and Telegraph Company, as I understand the set up, owns a controlling interest in the stock of the Chicago Bell Telephone?

"The Witness: Yes, sir.

"Judge Wilkerson: And votes the stock?

"The Witness: Yes, sir.

"Judge Wilkerson: And the Bell Telephone has its own officers?

"The Witness: Yes, sir.

"Judge Wilkerson: Now, on the theory of this case we heard advanced here before, besides the services rendered under this contract, all the American Telephone and Telegraph had to do was to vote the stock of the Illinois Bell. Now, why should you charge a part of the salary of the President of the American Telephone and Telegraph Company to the Illinois Bell?

2625 "The Witness: Well, your Honor, let's look at the functions of the American Company. First we have the Long Lines Department. Now, the expenses of the Long Lines Department are entirely excluded from these figures. Now, what is left of the work of the American Company is very largely the work done in serving the associate companies under the license contract, and generally.

"Take, for instance, the work of Dr. Jewett, he has three or four hundred employes; the work of Mr. Gherardi's office, about five or six hundred employes.

"Judge Wilkerson: I understand that; but I wanted to know in particular in regard to the President.

"The Witness: All right. Now, the President supervises all of this work, and if the work of these various departments is chargeable against the associate companies, then the expense of the executive who has general supervision and directs generally all of those activities should be likewise apportioned.

"Judge Wilkerson: You have made this set-up on a 2626 theory which disregards, really, corporate form, and treats the business as—looks at it as an entire organization?

"The Witness: Substantially that. That is, that the expenses of the American Company are expenses in addition to those of the associate companies.

"Judge Wilkerson: That is, you have made this on the theory which the defense is contending in this case, namely, that the corporate form is to be eliminated, and that we are to look at it as if it was one organization. Now, accepting that as the argument, you have made that on this theory; do I understand it?

"Mr. Blackman: I think that approaches it, sir. What we have done is this: we have tried to give what the Supreme Court said we should give, and that is the fair share of all our expenses connected with this license contract which we should allocate to the Chicago area.

"Judge Wilkerson: Now, on the other hand, as an offset, may there be charged against this anything that the Illinois Bell does for the American Telephone and Telegraph Company, on that theory?

"Mr. Blackman: Why, on that theory it might be an offset, perhaps, if the Illinois Bell does—

2627 "Judge Wilkerson: We will just forget for a minute that we have a series of corporations here, and look at this as one organization.

"If you allocate a portion of the expenditures of the American Telephone and Telegraph Company to the Illinois Bell, and it is really benefited by those—by this service—because, stripping this thing of its corporate form, and looking at it as one organization, this is really for the benefit of that department.

"Now, if the Illinois Bell, on the other hand, spends out its money for something which went to the supervision of that portion of the plant of the Illinois Bell which was used, for instance, in interstate commerce, that would be a legitimate set-off, on that theory?

"Mr. Blackman: No, sir, not these things. It might be a charge against the Long Lines. It would probably be allocated properly to the Long Lines, but not against this.

"Judge Wilkerson: Not against the license contract?

"Mr. Blackman: Oh, no, sir. Today our theory is 2628 this, sir: that is, we have figured this license contract as something against which we did not have to prorate our expenses. For years we went along charging fixed percentage rates for the license contract service, and we did not undertake to show whether we made a profit or a loss. Our books do not allocate at all, and in a number of cases before the Supreme Court that practice was apparently upheld, on the showing that we were rendering a valuable service, and that the associate companies could not get that service for anything like the amount that we charged them; that they would have to pay a great deal more than that if they did it themselves.

"Now, in this case the Supreme Court has said that that was not enough, the showing that we rendered them a valuable service, and that it would cost them more to do it themselves than we charge them, but the Supreme Court wanted to know what it cost us to do the service.

"Judge Wilkerson: Just the cost to the American Telephone and Telegraph Company?

"Mr. Blackman: The cost to the American Telephone and Telegraph Company.

2629 "Judge Wilkerson: That is in the opinion.

"Mr. Blackman: Now, the opinion is not specific in what use is to be made of that cost. We assume that the Supreme Court wants to make sure that it is a fairly reasonable cost.

"Judge Wilkerson: If you show the cost is substantially what you charge for it, I should say that a conclusion might be drawn from that that a contract, which was not an arms-length contract, but a contract made between the company with another company—

"Mr. Blackman: The controlling company.

"Judge Wilkerson (continuing):—that owned a controlling interest, that it was not unreasonable. That the dominating company had not overreached the other, if you show it cost substantially what the contract covers.

"Mr. Blackman: That's it.

"Judge Wilkerson: All right.

"Mr. Blackman: And in that little chart that I put in evidence at the beginning of this branch of proof, that divides up the assets of the Bell System into little grooved squares.

You will see that there is practically nothing but the associate companies and the Long Lines.

2630 "Of course, there is the Western Electric, which we colored in light blue because while it was not an associate company, itself, its activities were directed 95 per cent, or thereabouts, to the service of the associate companies, and the proof that has been introduced tends to show that it sells its goods to them at a price that is not only reasonable, but lower than it would have the right to charge for an ordinary manufacturing profit.

"Now, Mr. Heiss has allocated these things on the basis, as I understand it, that the Administrative Department of the American Telephone and Telegraph Company administers all the other departments, which, of course, it does.

"Now, the energies of those other departments are directed, about 95 per cent, to the service of the associate companies under this license contract.

"Judge Wilkerson: Well, I think I understand the purpose of the testimony. I won't say what the effect of it is."

Referring to column 3, Exhibit A-157 for identification, I made certain deductions. My first step was to go through the expenses of the Administration Department, or the several departments included under the head of Administration, and eliminate certain special payments or items which I felt

2631 should be excluded. For instance, in the year 1923, I excluded two items totaling $93,000. In the year 1924, I excluded $18,000, and so on throughout the years.

In the year 1923, the year of the Japanese Earthquake, all of the companies, individuals in this Company, were asked to contribute to the relief fund for that catastrophe. The American Company, for itself and its associate companies, contributed $75,000. That amount is excluded. I have excluded the entire amount. Another item in that year was a payment of $18,000 made to a former President of one of our associate companies. I excluded that. It was a payment made to enable the Company to retire its President and put in his place a younger man, because at that time the conditions in that Company required a young and active man to administer the work, it being just following the war, and the operating conditions required very careful attention. So, in order 2632 that the associate company might be relieved of that expense, the American Company assumed it. That item I have excluded. Those two items total $93,000. I have eliminated from each of the years any items of that kind. Take, for instance, the year 1930; I have eliminated $250,000, roughly.

Anything there was any question about, that was not an ordinary operating expense, I eliminated. In addition to these definite amounts, I eliminated 5 per cent of the remainder. In a discussion with the President, it was his judgment that we should eliminate for his department the average of the amounts eliminated for all of the other departments. Now, the average of the amounts eliminated for all of the other departments was about 3 per cent, so that there would be no question, to take care of any contingencies that I had overlooked.

2633 The percentages in column 5 and in column 7 are the same percentages I used in connection with other departments. The work of the Administration Section being, of course, general in character, and touching all phases of the business, I used a composite ratio which took into consideration all phases of the business.

In the allocation to the Chicago area, I included stations which I did not include in the allocation for the Long Lines, because the Long Lines had no stations.

In my opinion, the amounts shown in the columns at the extreme right of this sheet show a minimum amount to be allocated to the Chicago area of the Illinois Bell Telephone Company for its fair share of the expense of the Administration Department of the American Telephone and Telegraph Company.

"Mr. Blackman: I offer the sheet (Plaintiff's Exhibit A-157 for identification) in evidence."

This sheet, Plaintiff's Exhibit A-158 for identification, 2634 was prepared at my direction and under my supervision. The sheet purports to show an allocation to the

Chicago area of a fair proportion of the expenses of the general service bureau.

The general service bureau is an organization which had, during the years 1923 to 1931, employees ranging from 113 to 203. Its function is to handle the service work of the Company, more or less common to all the departments of the Company, which work can be handled most advantageously by a central organization.

For instance, this bureau takes care of the purchasing and handling of supplies, distribution of supplies, or any mimeograph work, blueprint work, off-set process work, printing, and so on. In addition, it maintains a list of available material, supplies, clerks, stenographers, and office boys, as needed, it maintains a training school for office boys, and any work of a general character; it receives the mail, and distributes it to the different departments, and collects the outgoing
2635 mail and sees that it is cared for.

The figures in columns 1 and 2 were taken from the books of the Company, directly and without change. Column 3 is a computation made by me, and the 5 per cent used as the basis for the deduction is the same 5 per cent which I discussed in the case of the other departments here. It represents the composite of the eliminations made by the various departments to remove from their expenses costs incurred for work other than that which benefits the associate companies and the Long Lines. That is, because their work was less than 5 per cent, and this department was serving all of them, I have taken 5 per cent as a liberal allowance here for this department. The over-all percentages were about between 3 and 4, and so there would be no question, I took 5.

This department does no work except serving the
2636 other general departments. For instance, if the Operation and Engineering Department did this work itself, its expenses would be increased to that extent, and each department doing the work for itself would considerably increase the total cost of doing the general service work. It does not serve Long Lines. Its work is done directly for the departments furnishing license contract service. This organization

does not serve the Western Electric, except as it serves the Western Electric through the other departments of the American Company. It does nothing for E. R. P. I. If it does anything for the Long Lines Department, it bills that department for the cost of the work.

I have made an allocation to Long Lines of its share of this expense on the basis of the composite ratio of plant, employees, expenses and total telephone revenues. Again, the work of this department is of a general character, affecting all the departments of the Company, and the departments, in turn, deal with all phases of the business. That is, 2637 because the other departments, D. & R. and O. & E., are doing work for the Long Lines as well as the associate companies, I have taken a share of the expense of this department and allocated it to Long Lines on the basis of the percentage of the other departments. The percentages I use in column 5 are the same percentages we have dealt with in the other exhibits. And the same is true as regards column 7, allocations to the Chicago area.

In my opinion, the figures that appear in the last column to the right of this sheet are the minimum figures to allocate to the Chicago area of the Illinois Bell Company for its fair share of the expenses of the service bureau of the American Telephone and Telegraph Company.

"Mr. Blackman: I offer this sheet (Plaintiff's Exhibit A-158 for identification) in evidence.

"Mr. Haight: Same reservation as heretofore."

This sheet, Plaintiff's Exhibit A-159 for identification, was prepared at my direction and under my supervision. It 2638 purports to show an allocation to the Chicago area of the fair proportion of the expense of the Department of Operation-C, that is, Department of General Operation. No, let us change that a minute; the expense of the Department of Operation-C, commonly referred to as "Operation (General)", in rendering license contract services for the years 1923 to 1931, inclusive.

The figures in columns 1 and 2 were taken from the books of the Company, and in this instance they were given to me by the head of the department. As a matter of fact, all of these figures were given to me by the head of that department, except the employee figures in the first column, which I took from the books.

Those allocations in columns 5 and 7 were also made by the department, and given to me. So that, really, I am not 2639 responsible for any of the figures on this sheet, except to make up and do the clerical work, or have the clerical work done, in preparing the sheet, and general discussion of the whole set up from time to time.

Mr. Blackman: "I have asked that this sheet be marked for identification and I won't offer it at this time, as I have up the matter with counsel for the defendants as to how we will deal with this."

TESTIMONY OF CHARLES P. COOPER.

May 18, 1932.

2640 Mr. Blackman: I just want to state to the Court that we have made a stipulation with regard to the testimony of Mr. Cooper, that he would testify if called, as follows—and I will just hand this statement to the stenographers—in support of that sheet which was put in at the last of yesterday's hearing.

Judge Wilkerson: Very well.

Mr. Blackman: Cooper is one of the Vice Presidents.

Judge Wilkerson: It may go into the record.

(Pursuant to said stipulation, the testimony of Charles P. Cooper is as follows:)

2641 "I reside in the City of New York and have my business office at 195 Broadway in that city. I am Vice President of the American Telephone and Telegraph Company and have held this position since August, 1926. Prior to holding this position I had the following training and experience:

"In 1907 I was graduated from Ohio State University and in 1908 entered the employ of the New York and New Jersey

Telephone Company as Plant Engineer at Newark, N. J. In 1912 I was appointed General Plant Engineer of the New York Telephone Company and in 1916 Division Plant Superintendent of that company. In 1918 I went to the Chesapeake and Potomac Telephone Company and was in charge at Washington, D. C., of all matters pertaining to plant. In 1919 I became General Superintendent of Plant of that company at Baltimore. In 1920 I was appointed General Superintendent of the Cleveland Telephone Company at Cleveland, Ohio, and later in that year General Manager. In 1921 I was appointed Vice President and General Manager of the Ohio Bell Telephone Company and in 1923, President of that company, which position I held until 1926 when I was appointed to my present position.

2642 "My duties as Vice President of the American Telephone and Telegraph Company consist of the following:

"Responsibility for the Department of Operation-C of which I am the head and general supervision of the Department of Finance, the Department of Accounts and of the General Service Bureau. The expenses of my office are confined to the salaries of myself, and of Assistant Vice President Bickelhaupt, together with the salaries and expenses of the employes of the Department of Operation-C together with the appropriate loadings for rent and other incidental expenses.

"No part of the expenses of the General Service Bureau, of the Department of Accounts in charge of the Comptroller, or of the Department of Finance in charge of the Treasurer, is included in the expenses of my office.

"Attached hereto marked Exhibit "A" and made a part hereof is the organization chart of the Department of Operation-C, dated February 1, 1931. This chart shows a total of 35 persons constituting the department. In the years prior to 1931 the numbers were fewer, except perhaps in 1929 and 1930. The expenses of said Department of Operation-C for the years 1923 to 1931, both inclusive, were as follows:
2643 1923, $241,740; 1924, $241,069; 1925, $243,589; 1926,
$271,875; 1927, $265,671; 1928, $286,718; 1929, $317,727;
1930, $341,080; 1931, $327,647.

"These figures include the salaries of Mr. Bickelhaupt and myself.

"I have examined into these expenses and have determined what part thereof are in my opinion fairly allocable to the Chicago area of the Illinois Bell Telephone Company. Those amounts are as follows: 1923, $12,525; 1924, $11,952; 1925, $11,659; 1926, $13,059; 1927, $12,393; 1928, $13,640; 1929, $14,558; 1930, $14,441; 1931, $12,862.

"The following is a general description of the work under my supervision and of the manner in which I reached the allocation set forth in the table immediately above:

"The General Service Bureau, in charge of Assistant Vice President J. L. R. Van Meter, performs for the departments of the company those things more or less common to all departments which can more advantageously be handled by a central organization than by the several departments individually and independently, namely,

"1. The purchase and distribution of office supplies, 2644 stationery, furniture, printing and office appliances.

"2. The production or purchase of reproductions by the photostat, mimeograph, zincograph and kindred processes.

"3. General drafting work.

"4. The receipt and distribution of incoming and outgoing mail, express and freight matter.

"5. The employment, instructions and general supervision of all messenger forces.

"6. Finding suitable candidates for positions as clerks, stenographers and typists, and such other grades of employes as may be requested by department heads, and

"7. Miscellaneous general services.

"The books of the Accounting Department record the expenses of the General Service Bureau.

"The work of the Comptroller's office and that of the Treasurer's has been described.

"The Department of Operation-C performs the following classes of work:

"1. Advice and assistance to the associated companies

on matters of business and commercial policy, including revenue requirements, policies to be followed in regard to new business projects, new types of telephone service and
2645 wide usefulness of existing services.

"2. Advice in matters pertaining to negotiations of purchases and sales of operating properties.

"3. Supervision and recommendations with reference to contract relations with manufacturing companies including the Western Electric Company, also relations between the associated companies and the Long Lines Department, and broadly with matters that arise in connection with the general administration of the License Contract.

"4. Advice and assistance to the associated companies in connection with general agreements with railroads, electric light and power companies, oil and pipe line and telegraph companies, governmental departments, and similar general contracts and arrangements.

"5. Supervision of agreements and arrangements arising out of the ownership of patents by the American Telephone and Telegraph Company.

"6. Maintenance of official point of contact between Bell System and the Federal Radio Commission and co-ordination of Bell System relations with all government agencies as regards use of radio.

"Department of Operation C is under the immediate
2646 direction of Assistant Vice President Mr. C. O. Bickelhaupt, who has reporting to him a secretary and five department heads in charge of different phases of the work. Considering these departmental heads in the order in which they appear on the chart:

"Assistant Vice President, Mr. E. V. Cox, has the following responsibilities:

"1. Supervision over the development and administration of the Standard Supply Contract which the Western Electric Company has made with the American Telephone and Telegraph Company, and the associated companies. All changes therein and interpretations thereof are subject to his review. He makes studies comparing the contract prices with the prices obtainable from other suppliers and determines the amount of savings through the contract. When such information is required by the associated companies for public hearings he furnishes the facts.

"2. Matters affecting the License Agreement and extensions of the Agreement by sub-licenses.

"3. Obtaining and compiling information as to the territory and affiliations of non Bell Telephone Companies and reports thereon to the associated companies.

"Staff Engineer, Mr. Elam Miller, has the following 2647 responsibilities:

"1. Contracts and licenses for manufacture, sale and use under patents owned or controlled by the American Telephone and Telegraph Company.

"2. Consultation with and advice to associated companies on request for wire facilities for various special purposes other than telephone.

"3. Consideration of new services which might be rendered by the Bell System.

"4. Consideration of proposals and suggestions of interest to the business from people outside of the Bell System.

"5. Consultation and advice to other departments and associated companies on radio, such as broadcasting, ship-to-shore, harbor craft, aircraft and police systems.

"Special Representative, Mr. B. A. Kaiser, has the following responsibilities:

"1. Development and administration of the Standard Operating Agreement with railroads; and the preparation, negotiation and administration of specific contracts thereunder.

"2. Preparation, negotiation and administration of contracts with railroads for repeaters and loading coils.

2648 "3. Negotiation, administration and assistance in the preparation of special contracts with the War Department, Navy Department, Coast Guard and Forest Service of the Federal Government and, in general, maintaining points of contact with Federal departments requiring service.

"4. Preparation, negotiation and administration of contracts with oil, natural gas, and pipe line companies.

2649 "Special Representative, Mr. C. F. Craig, has the following responsibilities:

"1. Development and administration of Bell System contracts with telegraph, power and light companies.

"2. Development of new types of telephone service, and wider usefulness of existing services and facilities, as for example, teletype service.

"Special Radio Representative, Mr. L. E. Whittemore, who heads a new department established January, 1931, has the following responsibilities:

"1. Maintains official point of contact between the Federal Radio Commission and the Bell System.

"2. Co-ordinates Bell System relations with all Government agencies as regards use of radio.

"3. Prepares and handles all applications for radio permits.

"4. Represents the Bell System at conferences and conventions of communication companies with radio interests.

"Under my orders and supervision the work done by the Department of Operation-C has been reviewed for the years 1923 to 1931, inclusive, and the expenses of these years apportioned to two classes, namely, 'Expenses on account of License Services' and 'Other Expenses (including general supervision)'.

2650 "In making this review the work done by each department head as described above was considered separately and all of the work was found assignable to 'License Services' except that portion in charge of Mr. Miller, Staff Engineer, which related to contracts and licenses for the manufacture, sale or use outside the Bell System under patents owned or controlled by the American Telephone & Telegraph Company. The costs of this latter work were assigned to 'Other Expenses'.

"The expenses of Assistant Vice President, Mr. C. O. Bickelhaupt, and his secretary have been assigned to 'License Services' and 'Other Expenses' in proportion to the total assignments to these classes for his division heads. Expense representing time paid for but not assigned has been allocated to 'Other Expenses'.

"My own expenses and those of my secretary I have assigned 75 per cent to 'License Services' and 25 per cent to 'Other Expenses,' the latter including certain amounts covering supervision of general activities of the company which are properly allocable as costs of rendering License Contract Service.

"Summarizing these apportionments gives the following results:

2651 "Apportioned to License Services:

1923	$213,551, or 88 per cent.
1924	209,788, or 87 per cent.
1925	211,565, or 87 per cent.
1926	240,549, or 88 per cent.
1927	233,029, or 88 per cent.
1928	254,250, or 89 per cent.
1929	268,793, or 85 per cent.
1930	277,792, or 81 per cent.
1931	273,631, or 83 per cent.

"Apportioned to Other Expenses (including general supervision):

1923	$28,189, or 12 per cent.
1924	31,281, or 13 per cent.
1925	32,024, or 13 per cent.
1926	31,326, or 12 per cent.
1927	32,642, or 12 per cent.
1928	32,468, or 11 per cent.
1929	48,934, or 15 per cent.
1930	63,288, or 19 per cent.
1931	54,016, or 17 per cent.

"I consider all of the above fair and reasonable.

"Having determined the amount of expenses assignable to 'License Services' for the respective years, I than had
2652 these expenses apportioned between those for the benefit of the Long Lines Department and those for the

benefit of the associated companies, including the Bell Telephone Company of Canada.

"Such apportionment cannot be exact because practically all the work of the Department directly or indirectly affects both the Long Lines Department and the associated companies. However, the ratio which the plant investment of the Long Lines Department bore to the total plant investment of the Associated Companies, including the Long Lines Department and the Bell Telephone Company of Canada, will furnish a basis for such apportionment. The Long Lines portion so determined was as follows: 1923, 6.0 per cent; 1924, 6.1 per cent; 1925, 5.9 per cent; 1926, 5.7 per cent; 1927, 6.2 per cent; 1928, 6.8 per cent; 1929, 7.6 per cent; 1930, 9.0 per cent; 1931, 9.5 per cent.

"The total operating revenues, Accounts 501 to 526, inclusive, of the Long Lines Department compared with the same total revenues for the associated companies, including the Long Lines Department and the Bell Telephone Company of Canada, shows the Long Lines portion of the total percentages to be the following: 1923, 7.7 per cent; 1924, 7.1 per cent; 1925, 7.2 per cent; 1926, 7.1 per cent; 1927, 7.2 per cent;
2653 1928, 8.1 per cent; 1929, 8.7 per cent; 1930, 8.6 per cent; 1931, 8.4 per cent.

"Both the plant investment and the revenue relations reflect activities of Department of Operation-C and my supervision thereof and in my opinion a composite ratio should be made of the two relations by taking their arithmetical mean, the result being as follows: 1923, 6.9 per cent; 1924, 6.6 per cent; 1925, 6.6 per cent; 1926, 6.4 per cent; 1927, 6.7 per cent; 1928, 7.5 per cent; 1929, 8.2 per cent; 1930, 8.8 per cent; 1931, 9.0 per cent.

"In my opinion the composite ratio just stated is the most appropriate for apportioning to the Long Lines Department the expenses of Department of Operation-C which have been assigned to the 'License Services' for the years 1923 to 1930, inclusive. For the year 1931 the composite ratio is, in my opinion, also appropriate for all the expenses except those incurred by Mr. Whittemore's department which was established in that year.

"The expenses of that department, including a pro rata portion of Mr. Bickelhaupt's administration, should, in my opinion, be apportioned two-thirds to the Long Lines Department and one-third to the associated companies, 2654 including the Bell Telephone Company of Canada. If various other possible bases for apportionment such as expenses, stations, employees, were taken there would be little difference in the result.

"Using the composite ratios already stated and applying the special correction for the year 1931, gives the following amounts assignable to the Long Lines Department: 1923, $14,735; 1924, $13,846; 1925, $13,963; 1926, $15,395; 1927, $15,613; 1928, $19,069; 1929, $22,041; 1930, $24,446; 1931, $39,433.

"The balance of the expenses in each year were assigned to the associated companies, including the Bell Telephone Company of Canada, with the following results: 1923, $198,816; 1924, $195,942; 1925, $197,602; 1926, $225,154; 1927, $217,416; 1928, $235,181; 1929, $246,752; 1930, $253,346; 1931, $234,198.

"The services of the Department of Operation-C are applicable to the Chicago area as defined in this case. A basis for an allocation to that area is, in my opinion, the ratio which the plant investment for the Chicago area bears to the total plant investment for the associated companies, 2655 including the Bell Telephone Company of Canada. This is as follows: 1923, 5.6 per cent; 1924, 5.4 per cent; 1925, 5.2 per cent; 1926, 5.2 per cent; 1927, 5.2 per cent; 1928, 5.3 per cent; 1929, 5.3 per cent; 1930, 5.1 per cent; 1931, 5.1 per cent.

"The percentage relation which the total operating revenue, Accounts 501 to 526, inclusive, of the Chicago area bore to the same total revenue for the associated companies, including the Bell Telephone Company of Canada, was as follows: 1923, 7.0 per cent; 1924, 6.8 per cent; 1925, 6.5 per cent; 1926, 6.3 per cent; 1927, 6.2 per cent; 1928, 6.2 per cent; 1929, 6.5 per cent; 1930, 6.3 per cent; 1931, 6.2 per cent.

"Since both the plant investment and the revenue relations reflect activities of the Department of Operation-C, a composite ratio of the two relations is in my opinion the best measure. The arithmetical mean of the two percentages is as follows: 1923, 6.3 per cent; 1924, 6.1 per cent; 1925, 5.9 per cent; 1926, 5.8 per cent; 1927, 5.7 per cent; 1928, 5.8 per cent; 1929, 5.9 per cent; 1930, 5.7 per cent; 1931, 5.7 per cent.

"However, before making this apportionment, I de-
2656 ducted from the total so assigned for the year 1931 the portion of Mr. Whittemore's expenses and administration thereon included therein. The amount thus deducted is $8,559.

"Applying the composite ratios above stated to the totals found applicable to the associated companies, including the Bell Telephone Company of Canada less the adjustment for radio, gives the following as the amounts of expense of Department of Operation-C applicable to the Chicago area: 1923, $12,525; 1924, $11,952; 1925, $11,659; 1926, $13,059; 1927, $12,393; 1928, $13,640; 1929, $14,558; 1930, $14,441; 1931, $12,862.

"Regarding the allocation to the Long Lines of a portion of the expenses of the General Service Bureau, the cost of the activities of the several company departments served by that Bureau pertain (in so far as Long Lines are concerned) to one or more of the following factors:

"Plant Investment; Employees; Expenses; Revenues.

"An allocation of the General Service Bureau costs to the Long Lines should therefore be made on the basis of a composite of these four factors; namely, the ratio that the
2657 Long Lines composite of these items bears to the total of the same items for all associated companies, including the Bell Telephone Company of Canada and the Long Lines. An allocation of the balance of the General Service Bureau costs to the Chicago area should similarly be made on the basis of the composite of the above factors plus stations (which is a comparable factor) in the ratio that the Chicago area composite ratio bears to the total composite ratio of all

associated companies and the Bell Telephone Company of Canada."

2658 Mr. Blackman: Now, as a part of our stipulation, it is agreed that I should state on the record that the ratio figures in so far as they come from revenue, plant and the other matters dealt with in the Crunden exhibits, come from those same exhibits, and that the defendants make the same objection to this sheet that they have made to the others, on the ground that the figures underlying the ratios have not yet been proven in evidence.

CHARLES A. HEISS, called as a witness on behalf of the plaintiff, having been previously duly sworn, resumed the stand and further testified as follows:

Direct Examination (Continued) by Mr. Blackman.

May 18, 1932.

This sheet is an allocation to the Chicago area of the fair proportion of the expenses of the Legal Department for the years 1923 to 1931, incurred in rendering license contract services.

(Sheet marked Plaintiff's Exhibit A-160 for identification.)

The sheet was prepared at my direction and under 2659 my supervision. The figures appearing in columns 1 and 2 were taken directly and without change from the books of the company. The figures appearing in column 3 were given to me by Vice President Bracelen, who is in charge of the department. I had no responsibility for developing these figures. He developed them and gave them to me. From that point on, I proceed in this exhibit in precisely the same manner that I have proceeded in the five or six exhibits that I described yesterday. The columns are numbered in the same way, and each column stands for the same general thing. The only ratio used in making allocations on this exhibit is that

of total telephone revenues, as stated in the footnote
2660 appearing on the exhibit. Mr. Bracelen selected that
ratio as the basis.

I think that ratio is a fair and proper ratio to use for allocating expenses. Assuming the correctness of the deductions shown in column 3, in my opinion the figures shown in the last column to the right of this sheet allocate to the Chicago area of the Illinois Bell Telephone a minimum amount as its fair share of the cost of the Legal Department of the American Telephone and Telegraph Company as related to the business of that Company.

"Mr. Blackman: If your Honor please, we have an understanding with counsel for the defendants that Mr. Bracelen need not be called to substantiate these figures, provided that certain facts connected with them be put in evidence. We have examined into it among ourselves, out of court. One
of the facts that the defendants wish to establish is that
2661 these figures contain payments for patents. Part of the
expense of the Legal Department is outright payments
to outsiders for patents."

I can tell whether payments for patents are included in the figures that appear in column 2, and carried forward to column 4.

Mr. Goldstein requested the cost of patents purchased from persons outside of the business. Now, the figures which I have here include also the patents which the American Company purchased from the Western Electric Company, and the small amounts paid from year to year as honorariums to men in the business who developed patents. The second group is not large, the amount is not large, but we are giving him more than he asked for.

"Mr. Goldstein: The total figure will be satisfactory. I mean, I thought at first it only included the outside, but if you give us the total patent purchases expense, that will be satisfactory.

"The Witness: If you are satisfied with the total fig-
2662 ure, I can give you that. For the year 1923, the amount
—or cost of the patents purchased, that is, the actual

cost paid for patents, including those purchased from the Western Electric Company, and the honorariums, was $180,696."

For the year 1924, $220,417; 1925, $137,002; 1926, $80,138; 1927, $155,445; 1928, $314,570; 1929, $77,818; 1930, $298,976; 1931, $136,692—that is exclusive of the expenses incurred in connection with the purchase and litigation of the patents.

For the year 1923, legal expenses in connection with purchase, litigation, and so forth, of patents, $157,621; 1924, $129,691; 1925, $151,239; 1926, $196,848; 1927, $218,680; 1928, $185,627; 1929, $192,921; 1930, $220,199; 1931, $389,788.

Those figures that I have just read include the cost of litigation of patents as well as the cost of acquiring. These 2663 are the figures, in so far as we have been able to keep a record of those expenses. In this sheet I have taken the cost of those patents, and have expensed them. That is the term that we accountants use in charging them up in the year when this expense was incurred.

I followed that method of accounting, because, in my opinion, it is a conservative procedure. We have followed that method, to the best of my knowledge throughout the history of the business, but I might say that I can speak only of the years during which I was Comptroller. I know during the past ten years, or twelve years, we have expensed all patents. At the present time there are no patent charges in our capital accounts.

In so far as the amount to be allocated to the City of Chicago is concerned, whether we expensed these patents, or capitalized them would make very little difference 2664 year by year over the period. Of course, the amounts which I have read vary slightly from year to year, and if you include the expenses of litigation, and the legal expenses in connection with acquiring patents, with the direct amounts, with the amounts paid out directly for patents, the amounts through the years run along fairly uniform, increasing as the size of the business increases.

Now, I might add that in the uniform system of accounts of the Interstate Commerce Commission which is, of course, my

guide in keeping my accounts, question and answer 176 says: "The character of the patent purchased should determine whether or not the cost of any portion thereof should be charged to account 203"—that is, the capital account. They say further: "Any amounts paid for patents having an estimated service life of less than one year, patents of doubtful service value, patents in an undeveloped state, patents of small cost, and similar expenditures on account of patents,
may be charged direct to account 675, Other General
2665 Expenses." And that is the account to which I charged
them.

In regard to many of the patents which we buy, part of the life has already expired. In other cases we purchase ideas, speaking generally, or we purchase devices that have been developed to do a certain thing, but before that thing, that particular thing—or before that patent can be used in the telephone business it is necessary to do a very considerable amount of research work and adaptation. It may develop in the course of the study of the patent that it will not do in the telephone business what we had hoped it might do. Many of the patents, therefore, are in an undeveloped state. The individual cost of these patents may not be small, but in many
cases it is. We have eleven thousand patents. Some
2666 have been small, and some have been substantial. Now,
I do not know as to each what the result was, but taking the patents generally, the character of the patents is such that it is a more conservative treatment to charge them to expenses than it would be to capitalize them. Now, assume that these patents, we will say, had an average remaining life of ten years at the time purchased, and take into consideration that some of the patents are found (before the end of the seventeen-year period for which the grant was given) not to be useful in the business. Let us take the ten-year life, and amortize our total patent cost on a ten-year basis. Uniformly over the years the charges for amortization in my opinion would be more, or rather, would be equal—would at least be as much as the charges which I have put into my accounts by charging them directly. Now, if we capitalize

them, we would carry in our capital accounts a capital figure on which we should be entitled to a fair return. Under our present method of treatment, we have charged them to expenses; no amounts are capitalized; and the expenses are fairly uniform from year to year; and the practice, I 2667 believe, is the more conservative of the two practices that are available for their treatment.

During the period 1923 to 1931, the total direct payments for patents were $1,601,754. The legal expenses in connection with purchase, litigation and so forth were $1,842,614, or a total of $3,444,368. Now, if we took a seventeen-year period and added to this amount certain engineering investigation costs of patents, I think our figure to the best of my recollection is about $6,400,000.

"Mr. Blackman: I offer the Legal Department allocation in evidence, which has been marked Exhibit A-160, subject, of course, to the objection of the defendants as to the Crunden exhibits, the figures taken from the Crunden exhibits.

"Mr. Haight: We would like to reserve any objection we may have until the conclusion of the cross-examination.

"Judge Wilkerson: Very well."

2668 These three sheets are an allocation to the Chicago area of a fair proportion of the taxes of the American Company for the years 1923 to 1931, inclusive.

(Sheet marked Plaintiff's Exhibit A-161 for identification.)

These sheets were prepared at my direction and under my supervision. The figures appearing in column 1 I have taken from the books of the Company. The figures in column 2 are an allocation of taxes to so-called non-license activities, made by me. The figure in 1923 of $65,335, appearing in column 2, is 5 per cent of the total of the figure appearing against New York Excise, New York Franchise, Federal Capital Stock, and Stamp and Miscellaneous. I made the deduction of 5 per cent for the same reason as stated in my testimony yes-2669 terday for the Service Bureau, and for those other general items and in respect of any activity which the American Company might carry on which was not of benefit to the Long Lines and the associate companies.

Note in connection with the year 1923, and the same is true for other years, the last item reading, "Less amount excluded from statement of estimated costs", column 1, $14,911, and the same amount in column 2. In setting up this exhibit, I endeavored to reconcile it with the exhibit which I used in the Ohio rate case and which was furnished to counsel for the defendants. In that exhibit I deducted directly certain items amounting to $14,911. I also made other deductions—or, I also gave further consideration to the taxes in this general over-all blanket deduction which I made from expenses in that case. But, having deducted the $14,000 in that case, and that deduction having been carried through into this exhibit, I felt it proper to show that deduction here, and to deduct it from the $65,000, leaving a net deduction from the $2,982,657
2670 of $50,424. In other words, my $14,000 is really included in the $65,000. If I speak of my taxes before deducting the $14,911, then my deduction is $65,336. If I speak of my taxes after making the Ohio deduction, then my deduction in column 2 is $50,424. Now, the figures in column 3 are the difference between those appearing in column 1 and those appearing in column 2, and represent the amount which we consider allocable to the associated companies, including the Bell of Canada and the Long Lines. The figures in column 3 are merely column 1 figures—the remainder I get by deducting column 2 from column 1. In column 4 I have developed ratios. The ratio in the left hand section of column 4 is a composite ratio of plant, employees, expenses and telephone revenues. That is the same composite percentage which I developed and dealt with yesterday. And I consider that
2671 ratio applicable because taxes have a relation to all of the activities of the business. The fifth column shows the amounts remaining after deducting the amount allocated to the Long Lines in column 4, but let me add here that we start with the taxes of the Company after having in the first instance excluded from the amount all of the taxes applicable to the Long Lines, and charged in their accounts in our routine day-to-day accounting; so that this allocation is an additional allocation to the Long Lines of its portion of the

general department taxes, or the taxes belonging to the department giving a license contract service, to give to the Long Lines its fair proportion of those costs.

The Long Lines Company, as an operating telephone company, has certain taxes of its own; and they are all charged against it, and none of them are included here. Those 2672 taxes run into several million dollars in a year. Having developed these figures here in column 5 for allocation to the associated companies, including the Bell of Canada and excluding the Long Lines, I have made an allocation to the Chicago area, and in doing so it was necessary to use a different treatment in respect of the various taxes. Where the tax was a common tax and related to the associate companies, including the Illinois Bell and the Chicago area, I have used the composite ratio, plant, employees, expenses and total telephone revenues, including stations.

That is the same ratio that I used yesterday to allocate between the associate companies, excluding the Long 2673 Lines, and the Chicago area of the Illinois Bell. I used that because I felt that that was a proper ratio, since taxes related to the entire business. I explained that yesterday. It is the same ratio developed in the same way, and for the same reasons.

Going back to column 1, the first line is, Instrument, Illinois Bell. I will state very briefly what that is.

During the period that the American Company owned the instruments, the contracts generally provided that any taxes in respect of the instruments, that is, the receiver and transmitter, which were assessed on that property, should be paid by the associate companies. But in the case of the contract with the Illinois Bell Company, and I think the Pacific Telephone Company, and the Cincinnati and Suburban Bell Telephone Company, there was a provision that any such taxes could be billed to the American Company, and those companies followed that course. They arrived at what was considered the amount of taxes applicable to the instruments

in the properties here in Illinois, and billed that amount
2674 to the American Company, and we paid the bill. We
paid what they said was their instrument tax. And to that extent the Illinois Bell, the Cincinnati Company, and one other company that I mentioned, had a little preferential treatment over the other associate companies.

I might add that we have shown here separately the amount of the Illinois Bell tax billed to the American Company, and in the second line we have the amount billed by the other companies which had this special arrangement in the license contract. Now, the amount of taxes billed to the American Company by the Illinois Bell in 1923 was $58,913. I have allocated that against the Illinois Bell, and have allocated to
the Chicago area 70.7 per cent, which is the ratio of the
2675 instruments in the Chicago area that year to the total
instruments in the possession of the Illinois Bell.

In the next line is the word "Other". That represents the tax which we reimbursed to other companies than the Illinois Bell, and none of that is allocated to the Illinois Bell nor to the Chicago area.

My next item is Massachusetts Franchise—the Massachusetts Franchise Tax. None of that was allocated to the Chicago area. That is a tax in connection with doing business in Massachusetts.

The next item is New York Excise Tax, $84,503. I have
allocated a part of that to the Chicago area.
2676 The next one is the New York Franchise Tax. I have
allocated a part of that to the Chicago area. The New York Excise tax is an excise tax which we pay in the State of New York, and the New York Franchise tax is a tax which we pay in the State of New York, because the home of the American Company is in the State of New York; it must have a home somewhere, and New York happens to be the home State, and the State which assesses the tax for our being there. Now, the business of the Company, of course, extending over the United States to all of the associate companies, it is, in my opinion, proper to allocate a part of the New York Excise tax, or New York Franchise tax, to the Chicago area, and in

that allocation I have used the composite ratio. That is on
the assumption that I would have to have a corporation to
carry on these services, and that corporation would have to
pay taxes to exist as a corporation.
2677 The portion allocated to the Chicago area of the New
York Franchise and New York Excise taxes I believe
would be a little more than one-third of the $59,564, or approx-
imately $20,000, in the neighborhood of that. That is just a
rough approximation. I have not figured it out. I have all
of the figures there, however, to make the computation.

The next item is Federal Capital Stock tax. The Federal
Capital Stock tax in 1923 was $604,736. I have allocated to
the Chicago area those three taxes and one other, together.
The total is the $59,000 that appears in the last column.
2678 There are four items. A small item of stamp and mi-
cellaneous taxes is included in the credit which I
have allocated to Chicago on the composite ratio, giving
$59,000—or producing $59,564. I have allocated all of that
amount of Federal Income Tax to the associate com-
panies, and the Bell of Canada, and the Long Lines, for the
reason that all of that tax, in my opinion, was allocable to
those companies.

We made a study and we found that, after assigning against
each classification of revenues, the Long Lines revenue, the
revenue from the license contract, and other revenues, we had
more deductions in the miscellaneous group of revenues than
we had taxable income, and that exhausted, of course, that
revenue, and the remainder of the deductions, in order to be
conservative here, were applied against the license contract
sources,—the income coming from license contract sources.
After we gave the license contract sources all of the deduc-
tions which belonged in that category, we gave an additional
deduction for the balance of the deductions which we could not
use up in connection with the non-license revenue. That
2679 is, we paid a great deal more taxes than are shown here
as income taxes to the government.

Now, the effect of that is shown, if you look at the years 1929 and 1930, where, as a matter of fact, a red figure appears.

which figure is in part due to the fact that the deductions applied against the revenue from license contract sources in conjunction with adjustments, were sufficient to eliminate all of the taxable income in connection with our license contract activities.

The American Company paid in the year 1923 approximately three or four million dollars income taxes. I do not have any figures with me, and I hesitate to quote a figure definitely. That payment was on the amount due under the technical terms of the Income Tax Law, after deducting a large amount of bond interest which we had. And what
I have just said is, in effect, that in determining the tax in
connection with the license contract revenue, I have
2680 given credit for a considerable amount of the bond inter-
est in arriving at the amount of the taxes allocable. And
I have thereby reduced the amount of the taxes shown on
these sheets, which I carry as an expense of the license con-
tract. I have proceeded in precisely the same way in the years
1923 to 1927, inclusive.

In 1928 the capital stock tax shows a credit. In 1927 it
was only about one fifth or one sixth as much as it was in
1923. That is because the capital stock tax passed out of
existence, I think in 1926. This small payment in 1927 was a
hold over payment. Then in 1928, when the returns were
finally settled with the government, or an agreement was
reached as to what we should finally pay, we received a credit,
and that is reflected in 1928, because that is the year in
which it appears on my books.
2681 The Federal Income Tax had been reduced to very
small proportions by 1928, and in 1929 and 1930
I show credits for Federal Income Tax. That is due to three
factors. We sold the instruments in 1927, and in connection
with the sale of the instruments reduced the license revenue
or the license contract charge, 2 per cent. We had also pre-
viously made another deduction of one half per cent, so, as
compared with 1923, we were collecting 2 per cent, and 1½ per
cent, in the later period, as against the 4½ in the earlier period.

Now, then, in the later period also we had other interest deductions, bond interest deductions. Then, as I have already stated, some small part of the credit in the years 1929 and 1930 is due to adjustments in our tax accruals. We account for taxes on an accrual basis, and from time to time as we receive rulings from the government as to the taxes payable under a particular return, we review our accruals and adjust the amount in our tax reserves; and to the extent that such adjustments were in the picture—they were not large 2682 in amount—they are reflected in the red figure in the years 1928 and 1929. With the exception of these credits that appear in 1928, 1929 and 1930, I have proceeded in those years in the same manner in which I have proceeded in the years preceding.

In my opinion, the figures which appear in the last column to the right on these three sheets represent a minimum amount of allocation to the Chicago area as representing its fair share of the expenses of the American Company for taxes, in connection with the operation of its license contract.

"Mr. Blackman: I offer the sheets, Plaintiff's Exhibit A 161 for identification, in evidence.

"Mr. Haight: We wish to make the same reservation of our objection, if your Honor please.

"Judge Wilkerson: Very well."

These sheets, Plaintiff's Exhibit A 162 for identification, were prepared at my direction and under my supervision.

The first of the two sheets is a statement of the number 2683 of telephone instruments, receivers and transmitters charged to associate companies, Long Lines, and the Chicago area during the years 1923 to 1927, and when I say "charged" I use that term in the technical sense, that is, on our books in New York the instruments are set down company by company and charged out against the companies to which you have delivered them. And they are there charged out against the particular company that is in possession of them for the time being. This sheet shows no money figures. These are instrument figures.

The figures shown in the first column were taken from the books of the American Company. Those in the second column

were also taken from the books; that is, the first column shows all of the receivers, transmitters and induction coils that we had issued to the various operating units of the
2684 Bell System. Column 2 shows the very small amount ~~that is,~~ .06 per cent, which was charged to the Long Lines. They practically use none of these instruments, only a few head sets for Central Office use. Column 3 is just the balance after deducting the Long Lines figure. Column 4 shows the instruments in the Chicago area; that is, the actual number as shown on the reports of the Illinois Bell Telephone Company for the Chicago area, for the years indicated. And that is a percentage of 6.6 per cent in 1923, of the total instruments of the associate companies, excluding Long Lines.

The figures to the right are merely the Illinois Bell figures for the whole Company, and the relationship between the Chicago area figures and the Illinois Bell. The figures
2685 in column 4 are the instruments which we have charged out against the Illinois Bell Company on the American Company's books. The American Company's books do not show a charge-out for instruments to the Chicago area, but the Illinois Bell Company's books do show that; and their reports to us show what their books show. So all of these figures that we are dealing with here are merely book figures, which I have not changed or modified in any way.

"Mr. Blackman: I will offer the first sheet, Plaintiff's Exhibit A 162 for identification, in evidence.

"Mr. Haight: May we again make the usual reservation with reference to this exhibit?

"Judge Wilkerson: Very well."

This second sheet of Plaintiff's Exhibit A 162 for identification was prepared at my direction and under my supervision. It is an allocation to the Chicago area of its
2686 fair proportion of instrument expense incurred by the American Company during the years 1923 to 1927, inclusive, and by "instrument expense" I mean both the expense of repairs and the expense of depreciation. The total figures shown in column 1 were from the books of the American Company.

The percentage .06 shown for the year 1923 in the left section of column 2, is the same percentage which was shown on the preceding sheet. I have just taken it bodily from the preceding sheet. It was the actual instruments; it represents the percentage of instruments actually held by the Long Lines.

I then proceeded in the same manner in which I have proceeded generally in my other allocation exhibits, to allocate to the Chicago area its fair share. Those figures are shown in the last column to the right. In my opinion, they show a minimum amount to allocate to the Chicago area for its
2687 fair share of the expense of the American Company in connection with maintenance and annual depreciation charges of this class of property.

The table below is a statement of the depreciation expense included in the figures appearing in the upper half of the sheet. Those figures are also taken from our books directly and without change. The same is true of the figures in columns 1 and 2 of the table above. Of course, I have stated that we have no allocation on our books of figures to the Chicago area. And the figures in column 4, for allocation to the Chicago area, come from the figures on the preceding sheet which I have previously testified to. The figures for
2688 the Long Lines are a computation. This paper was prepared under my supervision.

(Paper marked Plaintiff's Exhibit A-163 for identification.)

The statement is a computation showing the fair allowance or credit to the American Company, against its license revenues received from the Chicago area, in recognition of the American Company's furnishing the instruments used in that area. These figures here are not in addition to those that were just put in, with regard to the instrument expenses. That is, they are not, in addition in the sense that these figures shall be added in their entirety to the figures which I have already given. Some of the figures already
2689 given are included in these and should be deducted in determining the total amount; or, putting it another way, the figures which I have in the record are one approach

to the problem, and this statement is another approach to the same problem—in meeting the same problem. The figures in the record represent the actual dollar costs to the American Company as shown by their books. This sheet shows what is, in my opinion, a fair allowance to be made on the basis of all factors concerned.

Taking the first line, average current cost: that is the current cost of the instruments to the American Company, taking the instruments in service in 1923. New instruments, purchased from the Western Electric Company, would
2690 have been this amount; that is, if an equivalent number of instruments had been purchased, they would have cost this amount, equivalent to the number here stated. The number here stated are those in use by the Illinois Bell in the Chicago area. And so I have just applied to those actual figures of instruments in use—or rather receivers, transmitters and induction coils in use, the figures of what those classes of apparatus were costing the American Company in the year in question, that is, its actual payments to the Western Electric Company. Those payments were somewhat, even substantially, lower than the published prices of the Western Electric Company. I am taking here the actual payments made by the American Company. This is based on the actual prices paid by the American Company in that year.

2691 Line 2 is designated as Actual Depreciation, 8 per cent of column 1. I took the 8 per cent figure from Plaintiff's Exhibit A-32, pages 8 and 9, in the record in this case, as representing the actual depreciation in the instruments in question.

Line 3 is the difference between line 1 and line 2. It is the current cost less 8 per cent Actual Depreciation. And that would be reproduction cost new, less actual depreciation.

In line 4 I have Depreciation Expense. That is the annual charge for depreciation. That is the same rate that I have used in the computations already in the case, and taken from the books of the American Company. It is the rate which it had used for some time previous to this period.

2692 In line 5 I have assumed that the American Company should receive a return of 8 per cent on the amount invested, or on the amount represented by these instruments, at current cost, less depreciation of 8 per cent. In other words, line 5 is an application of 8 per cent to the figures in line 3. Line 6 is merely a total of 4 and 5.

I have line 7, Margin for Additional Instruments. As to that: in addition to the instruments actually in the Chicago area in these years, it was necessary for the American Company to maintain the reserve supply, and that reserve supply was considered at 6 per cent of the amount of instruments actually in the Chicago area. I have taken 6 per cent. of line 6. I might have carried the computation through, but in the interest of simplicity I have just added 6 per cent.

Line 7 is 6 per cent of line 6. As a matter of fact, those 2693 instruments that are held in reserve are all new instruments. And this method of treatment is, in effect, considering them as of the same depreciated character as those that were in the hands of the Illinois Bell.

Line 8, Instrument Repairs; that comes bodily from my preceding exhibit. The last line on this sheet, line 9, purports to show the result that I am after. In my opinion, that line shows a minimum amount that should be allowed for the use by the Chicago area of the instruments furnished to it by the American Telephone and Telegraph Company, and the service which the American Company gave it in connection with those instruments.

"Mr. Blackman: I offer the exhibit, A-163 for identification, in evidence.

"Mr. Haight: We would like to make the same reservation, if your Honor please."

(Sheets marked Plaintiff's Exhibit A-164 for identification.)

2694 These sheets were prepared at my direction and under my supervision.

They show the average cost of the funds used in the business of the American Telephone and Telegraph Company for the years 1923-1931, inclusive. The figure showing that fact

is the last figure at the lower right hand corner of the statement. It is 6.87 for the year 1923. I started with the capital stock of the Company. The average amount outstanding for the year appears in the first column of figures. In the second column are shown the dividends paid on that stock. The third column shows the percentage relation of the dividends to the average amount outstanding during the year. The second line shows the capital stock premiums, total premiums re-
2695 ceived by the American Company up to the end of 1923.

There being no charges made directly on these premiums, I have no figure for the second column, nor the third column; but, of course, the item of capital stock premiums must be taken into consideration. That is, in effect I have treated this as if I got that money for nothing. But it must be considered in conjunction with capital stock. The third line shows the total for the capital stock and capital stock premiums.

The last column to the right shows the average rate stated in per cent on the total money in the business, received from capital stock and capital stock premiums. And that produces the rate that I have put down there as the rate the money cost us: 8.19. Now, in the fourth line, you see Surplus Unappropriated and Appropriated of the Company, the average amount on the books of the Company for the year 1923 being $110,176,041. I show no figure in the second column, treating this surplus as not costing the Company anything directly by way of fixed charges, or capital payments. I have no percentage in the last column.

2696 Now, taking the total of the capital stock, capital stock premiums and surplus, the facts are shown in the fifth line. That is 7.17, which is the average rate paid, per cent, on our capital stock, including premiums and surplus equity.

The next line shows the facts as regards capital stock installments. The average amount in the business during the year was $19,431,657. On those installments we paid interest of $1,444,819, or at the rate of 7.44 per cent.

The next item is Funded Debt. The average amount in the business during the year is shown in the first column of

figures. The interest and amortization charges applicable to that debt for the year 1923 are shown in the second column. The third column shows the average rate paid in per cent on bond money during the year—that is, on funded debt during the year 1923. Then the last item, Loans from Associate Companies, shows the average amount of money we had in
that year from our associate companies, total interest in
2697 dollars paid thereon, as shown in column 2, and, in col-
umn 3, the average rate paid per cent.

Now, that last item is surplus funds which the associate companies left with the American Company, or, in other words, loaned to the American Company, pending their need for funds at a later date.. All of these figures shown in columns 1 and 2 on this sheet come directly from the books. That is, they can be derived from the books. These figures are averages, and, of course, the books do not show averages; averages must be computed from the figures on the books. That is the only extent to which I have made any computations from the books. Of course the items of interest and amortization charges require us to bring together the various accounts on the books, of interest and amortization—or debt discount and amortization charges. That is all I have had to do, purely an arithmetical procedure with regard to the actual figures shown on the books. Anyone desiring to do so can take this statement, and go to the books, and make
identically the same computations which I have made.
2698 Now, the average total funds in the business in 1923
were $1,135,740,062, and on that, dividends, interest and amortization charges amounted to $78,037,037, or an average rate of 6.87. I have made up a similar sheet for each of the years following 1923. The interest rate is somewhat lower there. That works out for the last year, 1931, as 6.42.

The lowest rate is for the year 1930. At that time we had used in the business something over $3,000,000,000. And our
dividends, interest and amortization charges were
2699 $195,000,000. The capital stock premiums in that year
were in excess of $264,000,000, the surplus included here

in excess of $381,000,000. I computed all of these sheets in precisely the same way, so that the information is the same in each case.

"Mr. Blackman: I will offer the sheets, Plaintiff's Exhibit A-164 for identification, in evidence.

"Mr. Haight: The same reservation, if we may have it."

In these sheets, in developing the cost of money, I have included surplus. That is, I have included the surplus as without direct cost. I treated it as if the surplus had cost us nothing. I have made another calculation based on 2700 excluding the surplus. This is the sheet where I have developed those costs.

(Sheet marked Plaintiff's Exhibit A-165 for identification.)

I have developed them correctly to the best of my knowledge.

"Mr. Blackman: I will offer that sheet, Plaintiff's Exhibit A-165 for identification, in evidence.

"Mr. Haight: The same reservation."

If it were desired to determine the cost of money in my Exhibit A-164 on the basis of excluding the surplus, and not including it, all I would have to do would be to substitute the figure shown in the right hand column for each of the years on this sheet, for the figure shown in the lower right hand column on each of the sheets of Exhibit A-164. It merely means the substitution of the figure opposite the particular year in the right hand column of this last sheet, for the figure in the lower right hand corner of the sheet of Exhibit A-164 of the corresponding year.

2701 Exhibit A-166 for identification was prepared at my direction and under my supervision. It shows an allocation to the Chicago area of cost of carrying investment in telephone instruments used in rendering license contract services. This is an actual cost computation and I should add, in regard to the heading, telephone instruments used by the American Company in rendering license contract services. The figures were taken from the books of the Company, directly and without change, excepting where the figures are computations.

The figures for the year 1923: the figure for total investment is an actual book figure, and the figure for depreciation reserve is a book figure. The same is true as to other years. The remainder of the figures are computations based on book figures, merely an arithmetical computation from the book figures. No judgment, or anything of that kind, 2702 enters into that. The figures in column 1 are the aggregate charges at 6.87, or the rates that have been used for the various years applied to the difference between the total book investment of the American Company, and the depreciation reserve appearing on the books. That is, the figures in column 1 show the total cost of carrying the investment in the instance which we are considering. And that total cost is obtained by applying the rate figure of carrying charges, in the case of 1923, to the figure of $16,318,631. 6.87 is a percentage taken from the exhibit just introduced.

I have proceeded in the other columns to the right to allocate to the Long Lines and to the Chicago area on the same basis that I followed in the exhibits which I put in yes- 2703 terday. I used the same general method. I used a ratio of .06 per cent for Long Lines. That is the percentage of instruments in possession of the Long Lines to the total of all instruments in the hands of the Company—the same percentage I testified to previously today. And the same basis was followed in arriving at the allocation to the Chicago area; it is also based on instruments allocable to the Chicago area. It is the same figure that I dealt with on the other exhibit this morning.

I have proceeded in precisely the same way with regard to each of the following years. I start with 1927 on this 2704 sheet because the instruments were sold at the end of 1927. In my opinion, the figures that appear in the last column to the right on this sheet show a minimum amount to be allocated to the Chicago area of the Illinois Bell Telephone Company as its fair share of the expense of the American Company in carrying the cost of its investment in the instruments. And it represents the cost to the American Company of carrying the precise number of instruments that were delivered to or held for the benefit of the Chicago area of the Illinois Bell Telephone Company.

"Mr. Blackman: I offer Plaintiff's Exhibit A-166 for identification, in evidence."

These sheets, Plaintiff's Exhibit A-167 for identification, were prepared at my direction and under my supervision. The sheets purport to show an allocation to the Chicago area of the cost, net, of carrying investment in real estate and office furniture and fixtures used by the American Company in rendering license contract services to the associate
2705 companies and Long Lines for the years 1923 to 1931, inclusive.

Taking the year 1923: the item, "Total Investment", is derived directly and without change from the books. That is also true of the figure shown for "Depreciation Reserve". The fourth item, "Rent", can also be obtained from the books. The third item is a computation representing 6.87 per cent of the difference between the total investment and the depreciation reserve, as shown on the two lines immediately above. That $638,374 has already been accounted for in my figures. That is the amount that is spread over the other departments of the American Telephone and Telegraph for rent.

In keeping our accounts on a departmental basis, so as to make them of value for administrative purposes, we spread the rents into the departmental expense accounts. Now, here I am excluding all those rents, and am also giving credit for any outside rents which we received on this investment. I deducted that from the figure of $859,149 in the year 1923; developed by applying our cost of money for
2706 that year against the net investment in that year.

I consider that in 1923 every dollar in the business cost us 6.87. Now, I have applied the 6.87 to the $12,505,000 in line 3 for the year 1923. Now, I have offset against that carrying charge, computed at the rate 6.87, whatever rents we received or charged in that year, in respect of the property here considered. And the difference is that figure of $220,775 in my first numbered column.

The rent that I credit here, $638,374, for the most part was

a bookkeeping charge, and, to the extent of the bookkeeping charge, it represents a rent figure covering house service, plus a 5 per cent return on the property. That is, all that the American Telephone and Telegraph Company charged on against the tenants of its New York building, these various
departments that have shown their expenses before this
2707 Court, was a 5 per cent return on the money. I should
change that. It represents the floor space—or the house-service charges, plus the interest, plus 5 per cent on the capital stock of the building corporation. Now, to the extent that the other rentals accrued here, they are the actual rentals received.

Now, then, in column 2 I have "Non-License". I get at that as follows: for the year 1923, the last line of the data is marked "Balance". The amount in the column "Non-License" is 5 per cent of the amount in column 1. I have excluded 5 per cent of the cost for the same reason that I yesterday excluded 5 per cent of the departmental costs, because of services rendered by the American Company of benefit to others than the associate companies and Long Lines, so I have carried the 5 per cent deduction through to this computation.

Now, immediately above the line I just referred to, is the line, "Less Amount Excluded from Statement of Estimated Costs, Etc.'"; that figure is included here to reconcile these statements with the exhibits introduced in Ohio. In those ex-
hibits, I excluded directly $14,147. That is the same
2708 figure that I spoke of before, put in here for the same
purpose.

I excluded as a total $24,478, $14,000 already excluded from the figures from which I start, and $10,000 additional excluded now. I have proceeded in precisely the same way in each of the following years in these columns 1 and 2.

Column 3 is the difference between columns 1 and 2, arrived at by deducting column 2 from column 1. From that point on, I have proceeded to allocate to the Long Lines and to the Chicago area in precisely the same general way that I testified to yesterday with regard to it. In making the allocation, I used the composite ratio of plant, employees, expenses and total telephone revenues for the Long Lines, and included in that ratio, in applying it to the Chicago area, the stations. I have proceeded in the same way for each of the years subsequent to 1923 in each of these columns 2 to 6, inclusive.

2709 In my opinion, the last column to the right on these
two sheets represents a minimum amount to allocate to the Chicago area of the Illinois Bell Telephone Company as its fair share of the cost to the American Company of carrying this investment in real estate, office furniture, etc. This is the building space and the furniture and so on used by the people who were working on license contract services. This is the additional amount I figure they would have had to have over and above the rent charges that were actually made in order to meet their expenses. These amounts are not included in any other figures which I have introduced.

During the first three years shown on this exhibit, the American Company owned approximately one-half of the headquarters building, the section known as the 205 Broadway section. The portion of the building known as the 195 Broadway Building had been built earlier, and it was owned jointly by the
American Company and the Western Union, 70 per cent
2710 by the American Company and 30 per cent by the West-
ern Union. And in that case we owned stock representing our interest. In the case of the 205 Broadway Building, we actually owned the building for the years 1923, 1924 and 1925. At the end of 1925, the building was sold to the 205 Broadway Corporation, and we took stock and notes for our interest. That explains why the figures are larger in the first three years than in the later years.

I have not included in these figures anything for expenses of the 195 Broadway Company excepting as we paid rent to the 195 Broadway Corporation. But this is a computation based solely on the additional carrying charges with regard to the 205 Broadway Company, which we owned for four or five years outright, and which we then transferred to a corporation which we owned outright, plus office furniture and fixtures

The rent to which I just referred, paid to the 195 Broadway Corporation, would not appear in this statement at all. That would appear in our departmental costs. I call this
2711 "Cost of Carrying Investment in Real Estate, Furniture, Etc." The "Etc." covers such things as partitions and little odds and ends, temporary partitions, and we might have an automobile, something of that kind; trivial things.

"Mr. Blackman: I offer these two sheets, Plaintiff's Exhibit A 167, for identification, in evidence.

"Mr. Haight: We would like to reserve any objection as to these until cross-examination."

This sheet, Plaintiff's Exhibit A 168 for identification, was prepared at my direction and under my supervision. The sheet is merely a summary of the two exhibits just introduced. That is, a summary of the exhibit showing the cost of carrying the telephones, and the cost of carrying the investment in the real estate and office furniture, and combining the two under the caption, "Total Physical Property Used by the American Company in Rendering License Contract Services".

"Mr. Blackman: I offer this sheet, Plaintiff's Exhibit A 168 for identification, in evidence."

2712 This sheet, Plaintiff's Exhibit A 169 for identification, was prepared at my direction and under my supervision. It purports to show the average funds held available by the American Telephone and Telegraph Company to meet the current cash requirements of the associate companies, Long Lines, American Telephone and Telegraph Company, and for the Company's general purposes, separate from the needs of the Long Lines Department. There are two sheets.

The first sheet is my summary, and the other sheets show how I developed some of the figures on the first sheet. The first sheet shows the total amount of funds held available during the year, and the allocation of the principal amounts as between the various units. Taking my first sheet, I get the figures that appear in column 1 from the books of the Company. They are the amounts of money I have held dur-
2713 ing the year available for general use, that is, the average total amount held available during the year for all

purposes. I have made an allocation of that in the following column.

Column 2 is my estimate of the amount which the American Company would require for its immediate general purposes, and I want to be specific regarding that. When I say, "For its immediate general purposes," I mean for purposes other than performing its services to the associate companies and the Long Lines. Those amounts for the years 1923 to 1928 are small amounts, $5,000,000 and $7,000,000.

In the years 1929, 1930 and 1931 they are vastly greater. That is because from 1923 to 1928, inclusive, we made no attempt whatever to finance the Western Electric Company. There were small amounts borrowed from that Company, and we loaned, from time to time, small amounts of surplus funds to the Western Electric Company, merely as a convenience and to get the best over-all return for the System from our money. But in the year 1928 we definitely undertook
2714 to finance the needs of the Western Electric Company, and that is one reason why the amount for 1929 is considerably higher than the amount for 1928.

Now, a special situation arose in the years 1930 and 1931. The amounts in those years included here in the column for the general purposes of the American Company for non-license contract activities, are simply arbitrary amounts of cash put there to keep the amount held available for the associate companies at what, in my judgment, was a minimum figure required for the associate companies and the Long Lines.

We found ourselves, due to the business depression, in a position in 1930 where we had a very large cash balance, which situation arose from conditions which were entirely out of our control, and, instead of assigning that cash balance to the associate companies as held for them, I simply put the bulk of it into the column as held by the American Company, and have excluded the costs to the American Company in respect of that money, although I would have been entirely justified in having kept it with the funds available for the associate companies.

2715 Briefly, here was the situation: at the end of 1929 the associate companies, in reporting to the American Company their construction programs for the year 1930, advised us that the construction programs would be in the neighborhood of $680,000,000 to $700,000,000.

Now, that was the picture we had to look ahead to. We used up practically all of our money in 1929, and early in 1930 we were forced to finance, and we put out a bond issue, to carry the needs of the associate companies for the early part of the year.

Now, that money, at the rate the associate companies and Long Lines were drawing, would have been consumed by March. We were up to the task of new financing. We had issued two bond issues, one in 1929 and one early in 1930. We then put out a stock issue in May, and, in conjunction with the stock issue, there were paid into the American Company large amounts of premiums from persons who had bought the convertible bonds of 1929.

Now, everything would have been fine and we would have required that cash, but the business depression began to have its effect in the summer of 1930, and the associate companies that had told us they would need large amounts of cash
2716 began, one by one, to advise us that they would not need it, that they would not have the requirements that they told us, and, as a result, we had no immediate occasion to use the funds, and they were left in the possession of the American Company.

Now, I might very properly include those funds as held available for the companies, because they were acquired to meet the needs of the companies, but I have not done so in this statement. I have taken the bulk out, and have set them aside, and have not included in my license contract costs the cost of a considerable part of the funds that were held, and that is true for 1929 and 1930.

The amounts that I have set down here as held for the associate companies appear in column 3. Those amounts are the difference between the amounts appearing in the first section of column 2 and the amounts appearing in column 1. Column 2 is deducted from column 1.

2717 In making the allocation to the Long Lines here, I used a new composite, a composite of ratio of estimated requirements, plant investment and gross additions. Those factors, in my judgment, represent the best measure of the demands of the Company for money, estimated requirements being the picture that the Company has ahead for the year, the plant investment representing the size of its property, and the gross additions the gross volume of construction activity.

Now, the use of that percentage allocates a considerably larger portion to the Long Lines than other composite percentages which I have used in connection with other exhibits. Having allocated the amount to the Long Lines and deducted that, I get the balance that should be allocated to the associate companies. That is shown in column 5.

My allocation to the Chicago area is also made on the basis of estimated requirements, plant investment and gross

2718 additions. There the percentages reflect the estimated requirements for the Chicago area.

In my opinion, the figure shown in the extreme right hand column on this sheet represents the minimum amount that should fairly be allocated to the Chicago area as its part of the funds held available by the American Telephone and Telegraph Company for the associate companies during the years in question; the amount of the funds actually held available for the Chicago area.

The second sheet is an allocation to the Chicago area of the estimated costs incurred by the American Company of holding funds available for the years 1923 to 1931, inclusive; and the figures in the first column are the total costs of all funds held available by the American Company.

The ratio appearing in column 2 is the same ratio which appears in the exhibit immediately preceding. It is

2719 the ratio of the amount of funds which I have set aside for the non license activities of the American Company.

in relation to the total funds held available, and I have carried that ratio over into column 2 as the basis for allocating costs.

Column 3 shows the amounts remaining after deducting the amounts in column 2 from column 1. That purports to show the amount to be allocated to the associate companies and the Long Lines. In column 4, I proceed to take out the Long Lines portion. I take it out by using the same ratio that I used in allocating the funds held available, that is, the composite ratio of estimated requirements, plant investment and gross additions. It is the identical figure. Having done that, that leaves me with the amount to be allocated to all the associate companies. This is in column 5. Then I allocate the part of that which, in my opinion, should go to
2720 the Chicago area. I do that in column 6. My ratio
there is the composite ratio of estimated requirements, plant investment and gross additions. Those are precisely the same figures that appear on the other sheet of this exhibit.

In my opinion, the figures which appear in the last column to the right of this sheet show a minimum amount to represent the fair share of the Chicago area of the Illinois Bell Telephone Company of the cost to the American Company of holding funds available for the use of the associate companies.

"Mr. Blackman: I offer the two sheets, Plaintiff's Exhibit A 169 for indentification, in evidence.

2721 "Mr. Goldstein: So that the record will be clear, in our calculations on license contract, there is to be no allocation to the Chicago area for losses on loans?

2722 "Mr. Blackman: We will make, as we now propose, no specific allocation to the Chicago area. We are including that item in our general expenses, general costs.

"Mr. Goldstein: Is there to be some more evidence on the license contract, to show some more allocation of costs, or are you completed?

"Mr. Blackman: We have completed. We are going to give you a summary figure, which will include a general figure for that."

Cross-Examination by Mr. Goldstein.

The telephone instruments were sold to the Illinois Bell on December 31, 1927. They were also sold to the other licensees on that date. I have not available for production this morning the bill of sale of the telephone instru-
2723 ments to the Illinois Bell. It is available. I am familiar with the contents of it, generally, or the basis upon which the sales were made.

"Mr. Goldstein: Will you please state the basis upon which the selling price was established?

"Mr. Blackman: Of course, this is not cross-examination. The witness has not been asked anything about that. I merely wish to call the attention of court and counsel to it.

"Mr. Goldstein: I will connect it up.

"Judge Wilkerson: We will allow pretty liberal cross-examination. If he has anything that is not relevant to the case, it is not considered. If what he has is revelant to the case, and you haven't gone into it on direct examination, if you call our attention to it, we will consider it as a part of his evidence, whatever that means."

I include in my exhibits an item for depreciation expense on telephone instruments. That depreciation expense was established on the straight-line method. There was a depreciation reserve that was built up as of December 31, 1927, on the books of the American Telephone and Telegraph Company.

May 19, 1932.

2726 My department, in the determination of the principle underlying depreciation, and in giving advice to the
2727 associate companies in connection with that subject matter, works in conjunction with the Operation and Engineering Department. I co-operated with the other departments in representing the Illinois Bell Telephone Company and the American Telephone and Telegraph Company in connection with depreciation matters before the Interstate Commerce Commission.

Our Company expressed its views on behalf of the Illinois Bell Telephone Company and the American Telephone and Telegraph Company for purposes of depreciation, and the factors to be taken into account, and so forth.

Our position was presented in a public hearing, at which we had witnesses present—Mr. Crunden; and the pres-
2728 entation was in charge of our Legal Department; but prior to that time, I think it was back in 1921, I did prepare and send a letter to the Interstate Commerce Commission. That was the very first chapter in the depreciation hearing. I am thoroughly familiar with the accounting phase of the principles underlying the depreciation expense; I assume I have gathered some knowledge over the years.

In determining the depreciation expense on telephone instruments, while the title was held by the American Telephone and Telegraph Company, my procedure was to ask our Operation and Engineering Department for their recommendations as to service life and salvage, and their views as to what would be a proper rate.

I had to do with the determination of the rate of depreciation on telephone instruments to the extent that I discussed the rate with the engineers, because I wanted to be satisfied when a charge was made in my accounts, that it was a proper charge.

2729 The only factors that I know are taken into account in determining the depreciation expense on the telephone instruments are service life and salvage, which we have taken into consideration.

I depended on the engineers to give me the factors of the service life. I imagine the factors of service life would be the period in which the instruments are in service; one factor is the time that the instruments are in service.

There are many factors that determine the life of a telephone instrument. A receiver and transmitter might be put into a telephone, and in a few weeks' time it might, for
2730 no reason at all that was apparent at the time it was introduced, be shown to be defective. That instrument would simply be bad, and it would have to be taken out. I do

not think obsolescence enters into it as a factor. Inadequacy would not enter into it materially as a factor. It might; as the telephone art progresses, as better transmitters and receivers come along, we endeavor to keep the service at a high standard. Supersession by a new type of telephone instrument might enter into it in a measure, because, as I just stated, as the art develops, parts of the instrument might be changed to improve the service. I do not think you can measure exactly in percentage how any one of those factors enter into the picture. The whole story is: the instrument goes in, and it goes out, and that is largely influenced by the judg-
2731 ment of the management as to what is necessary to keep the standard of service in excellent condition—a very high standard of telephone service.

As to whether the same factors enter into the determination of the depreciation rate on telephone instruments, as would enter into the determination, say, of station apparatus, I am not an engineer; I am just an accountant, but I would say that each type of property would have to be considered by itself. That is, the situation as to the receivers and transmitters is one which, as I have said, is influenced by our endeavor to maintain a very high standard of telephone service. It is influenced by the research work that Dr. Jewett so thoroughly described, and all of those factors enter into the life.

Now, so far as the telephone stand is concerned, that is a piece of mechanism which might be influenced entirely by other factors.

2732 As to whether the telephone instrument would ever be taken out of service because of inadequacy, or obsolescence, or because of a change in the art; take the inadequacy first. I presume if our people found that the instrument was not adequate to give a high type of service, and they had found something better, the instrument would be taken out for inadequacy, because it was inadequate to provide the
2733 standard of service that we sought to give.

It would sometimes be replaced because a new type of receiver or transmitter came into service. We would not withhold from the public a better type of telephone service, if there were a better type available, or if there were better facilities available than we had in place, and we had those facilities developed.

Service life and salvage were facts that were developed in our Engineering Department, and I do not know what the exact salvage or the exact service life was. I only know the rate which came out of the considerations. The rate as I have it was 7 per cent, and in earlier years it was 10, and then 2734 it was reduced to 8, and in 1923 it was reduced to 7.

Exhibit A-163 was prepared within the last week. Ex- 2735 hibit A-166 (this particular exhibit) was also put in this form within the last week, but similar data had been prepared for other cases during the last year. As far as I know, Exhibit A-163 was not delivered to the defendants until yesterday in the court room.

Copy of the bill of sale of telephone instruments to the Illinois Bell on December 31, 1927, is produced.

(The document was thereupon marked Defendants' Exhibit D-98 for identification.)

2736 Exhibit D-98 shows the total amount of the selling price of the telephone instruments to the Illinois Bell for the whole Company. That was $3,497,535.26.

Defendants' Exhibit D-99 for identification, being a sheet prepared by me, shows the basis upon which I arrived at the selling price. Of course, that caption states that this was the average for nine months, the period ending September 30, 1927.

(The document was thereupon marked Defendants' 2737 Exhibit D-99 for identification.)

I think the sheet marked Defendants' Exhibit D-100 for identification, entitled "American Telephone and Telegraph Company, Analysis of Reserve for Depreciation of Telephone Instruments, years 1923 to 1927," looks like my handiwork.

(The document was thereupon marked Defendants' Exhibit D-100 for identification.)

Defendants' Exhibit D-100 shows that on December 31, 1927, prior to the sale of the telephone instruments, there was a depreciation reserve against telephone instruments of $23,345,905. On that date, there were also on the books of the American Telephone and Telegraph Company instruments used by the Long Lines Department, and instruments used by the licensee companies. But there were very few 2738 with the Long Lines. There were about 17,000 with a book value of $35,893, and the book value of the telephone instruments to the licensee was approximately $46,583,000. That would make the reserve somewhere around 49 per cent.

On December 31, 1927, we sold the telephone instruments that were used by the Long Lines Department to the Long Lines Department, at book cost less the full depreciation reserve of 49 per cent. That was because the Long Lines was a part of the American Company, and it was a transfer of the instruments to ourselves. For the purpose of the 2739 license contract, we have in a measure always treated the Long Lines as if it were a separate company; that is, so far as the accounts are concerned. The Long Lines keeps its own subsidiary accounts, and we keep the subsidiaries separate from the general departments.

At the end of every month, and at the end of every year, these accounts are combined, of course, into one, and all of these inter-departmental financial transactions disappear. But, as an operating unit, we have treated the Long Lines substantially in the same way that we treat the associate companies.

We sold the telephone instruments to the associate companies on the basis of current cost less 20 per cent.

2742 The figure in the first column of Exhibit A-163 of $46,583,314 is, as stated at the top of that column, the book value with certain adjustments made in respect of instruments held by the Western Electric Company. Now, that is not the current cost; that is the book value before the sale, reduced by certain adjustments. That one adjustment was the instruments held by the Western Electric 2743 Company. That was $651,078. They were owned by the American Company, but were in the Western Electric Company's storehouses.

Now then, there is another deduction here of $35,893, which was the book cost of the instruments held by the Long Lines.

Now, I have not summarized here the figures representing the current cost of all of the instruments we had, computed as of the date of sale, but if you take this $38,000,000 here
and consider that as 80 per cent of the current cost, you
2744 can get your current cost. It would be approximately
$47,730,000. That is, however, excluding the current cost of the instruments in the warehouses of the Western Electric Company, and the Long Lines instruments. That is the $600,000 item plus the $35,000. And if you want the current cost of the total instruments, you ought to add in the current cost of the other instruments.

It is approximately correct to state that we sold to the licensees the telephone instruments, which had a book value before the sale on the books of the Company of $46,583,214, for $47,730,000 less 20 per cent, or $38,183,000, with those
slight adjustments that I mentioned. The current cost
2745 before deducting depreciation was slightly in excess of
the amount which we carried.

It is not true that all but a million of that 20 per cent cut from current cost, would represent depreciation. You overlook the important factor that, between the time that those instruments were bought, and the date of their sale, there was a very substantial change in the value of the dollar, and the purchasing power of the dollar. Now, of course, we have got to
take that into consideration. The dollars that were on
2746 the books of the American Telephone and Telegraph
Company represented the cost of those instruments over
2747 a period of years to December 31, 1927, and that was
$46,500,000. There was at that time a depreciation reserve of $22,000,000 against it.

The sale was made on the basis of $47,000,000, or $1,000,000 over the book cost, less 20 per cent, which gave $38,000,000 in round figures. However, the $47,000,000 is not comparable, so far as value is concerned, with the $46,000,000 book cost.

The value of the dollar has changed in that period very sub-
stantially. Property values have increased. We determined
the measure of the increase by taking the current West-
ern Electric price for the nine months from Janu-
2748 ary 1 to September 30, 1927. The current price of the
Western Electric Company, of course, was the then cur-
rent price, and reflected the then value of the dollar. But
some of the instruments that were on our books at $36,000,000
had been bought some years before at lower prices.

If the Western Electric Company were asked to sell those
instruments that were on the books of the American Telephone
and Telegraph Company on December 31, 1927, assuming that
they were brand new, the Western Electric Company would
have charged $47,300,000. The purpose of cutting that
2749 20 per cent was to arrive at a very reasonable sale price.
I said yesterday, I believe, that the record shows that
the condition of those instruments was 92 per cent. Now, we
took off 20 per cent to produce a sale price that was, in our
judgment, very fair and reasonable to the companies. The
20 per cent is to take care of the condition of the instruments
and considerably more, so that the price to the companies
would be reasonable.

2751 We had a reserve on December 31, 1927, of approxi-
mately $23,000,000 against the book value of those in-
struments. And the purpose of the moneys accumulated in
that reserve was to take care of the ultimate retirement of the
instruments, due to factors that enter into depreciation, or
any ultimate disposition we might make of them. The factor
of depreciation might be varied because of a change on De-
cember 31, 1927, in the title to the instruments.

It is true that the telephone instruments were used by the
Illinois Bell the day before and the day after the title
2752 was transferred, but conditions change. I do not know
that the conditions changed because of the transfer of
the title, although that is simply my opinion.

2753 Speaking now about those things which were used by
me in determining the depreciation expense prior to
1927, which resulted in the accumulation of a reserve of

$22,000,000, the mere bill of sale of those same instruments from the American Telephone and Telegraph Company to the Illinois Bell would not change the rate of depreciation expense but there are other factors that might change it 2754 very substantially.

Immediately after the sale, it proved that the amount that we had accumulated was more than was necessary to take care of the depreciation; but the day before the sale, or a month before the sale, I would say that the amount we had in the depreciation reserve was absolutely essential to the protection of our investment. We knew that the reserve was too much the minute we had negotiated the sale, and knew what we were going to get for the instruments, and knew what was left in the reserve after we wrote off our book value.

2755 If the Illinois Bell had those instruments under the same conditions that the American Company had them, I should say that it would be foolish if it did not have the same size reserve; but conditions change, and the conditions under which the Illinois Bell holds those instruments, and the changed condition since, may give you another picture.

According to Defendants' Exhibit 100, the depreciation re- reserve was more than we needed. There was $14,000,000 2756 left. We transferred it to surplus, from which part of it came. That part of it that came from surplus, came in 1912, and was $5,629,447.

The situation was this, briefly: prior to 1912, there were very few businesses in this country that carried depreciation accounting. They met the depreciation as it came along. In 1912 I think our business was one of the pioneers in 2757 setting up depreciation reserve. In 1912 we felt it wise to set up a depreciation reserve, and we reached into our surplus to take out $5,600,000 odd, and set it up distinctly as a reserve. We set it up as a foundation for a reserve for depreciation, which was then, I believe, 46 per cent of the book value of our instruments. Then we kept on for a number of years, and set aside 10 per cent, and then 8 per cent, and as we set aside 10 per cent, the reserve crept up to about 40 per cent—34 per cent, I believe; and then, with the use of the 8 per cent, it came down a little bit; and then, with the use of the 7 per cent, the relationship dropped still lower, until I think in the last year or so, for some temporary condition, or in the last two or three years, because we were putting in a great many new receivers and transmitters, our reserve momentarily went back to about 49 per cent. Now, the factors are perfectly clear on our books.

2758 Telephone instruments were furnished to the licensees for many years. We collected 4½ per cent under the license contract, the same as we did from 1912 up to 1926. But there is no relationship between the depreciation expense which we carry on the books of the American Company, and the license revenue which the associate companies pay, no relation whatever.

2759 We set up this depreciation expense because we knew that we had an expense of retirements to meet. We had depreciation accounting in one form or another in effect since 1909, and earlier than that. From 1909 to 1912, we charged into our expenses amounts to take care of retirements to come.

2760 As to whether there was a reserve account prior to
1913 on the books of the American Telephone and Tele-
graph Company for telephone instruments, I would have to
refresh my memory, because I just came to the telephone
business in 1912. I can and will check that. This $14,000,000
was left after we had written off the book value of the instru-
ments. That did not represent a profit to the American
2761 Telephone and Telegraph Company. And that is be-
cause, in the first place, you cannot take $5,600,000 out
of your surplus and then put it back and say that you have
made a profit of $5,600,000.

Then, on the $9,000,000 balance there was no profit; this I do not consider to be a profit, because, prior to 1925, we simply charged to our expenses the rates of depreciation that we felt were proper, and we accumulated that amount of money in a reserve. We might have put into our operating

expenses 4 per cent or 5 per cent, and carried the rest to surplus as the years went on, and when we came to 1927, we would not have had any $8,000,000 difference. We had just as much one way as another. It was not charged against the licensee companies; the depreciation money was taken out of our earnings from whatever source those earnings came.
2762 We thought it wise and prudent business management to carry a good reserve against those instruments.

Exhibit A 162 shows that the depreciation expense that we were charging against the license contract revenues from 1923 to 1927 was $13,200,000, if I have added those correctly.

"Mr. Goldstein: And the purpose for that is to show that out of the moneys you collected from the licensees, you would use up $13,000,000 to take care of depreciation expense for those five years, is that right?

"Judge Wilkerson: I suppose the lawyer knows more
2763 about it than the witness does. I think you had better put that question to Mr. Blackman.

"Mr. Blackman: I will be glad to answer, your Honor.

"Mr. Haight: Well, since Mr. Blackman says he will be glad to answer, let us have the answer.

"Judge Wilkerson: Yes. You want to know what the purpose of the exhibit is.

"Mr. Goldstein: Yes.

"Judge Wilkerson: I think counsel would be the proper one to state it. Counsel says you may state it, Mr. Blackman.

"Mr. Blackman: Well, sir, that merely is a computation which we make here. As I say, and as I have said before
2764 to the Court, we charged nothing and have never charged anything against the license contract. We have charged 4 per cent as the rate which we required them to pay for the services rendered. Now, we do not try, and never have until this case tried to figure up the items that we would contrast against that. Now, we feel that we are in that position, and are doing it. With that end in view, we have set forth what we think are the reasonable charges to

set off against that; and among those charges is a reasonable depreciation on the instruments.

"We were carrying it on our books at 7 per cent for depreciation, so we set that up here in this exhibit as one of the things that this Court should consider in contrasting what we got with what we expended and suffered."

Witness continues: The items aggregating $13,000,000 are intended to represent real costs to the American Telephone and Telegraph Company in furnishing the telephone instruments.

2765 They were amounts which were considered by our operation and Engineering Department, and by myself, as reasonable costs to take care of our investment in the instruments. We found on December 31, 1927, that there was $14,000,000 left in that accumulated fund that we were not going to use.

As to whether, if we had that money to take care of our cost and we were not going to use it, I would consider that a profit to the American Telephone and Telegraph Company, the answer is: I would not. Of course, as I have already said, the $5,000,000 was transferred out of surplus, and should not be considered as such. And the $9,000,000 was 2766 simply a return to our surplus of moneys that had previously been set up as depreciation; that is, moneys set up for the purpose of taking care of losses that we are going to have at the time of retirement.

During the years when we set up those amounts they were considered as necessary and proper costs. But at the end of 1927, we found that we did not need the $9,000,000 exactly for the purpose for which we had provided it. We did not need it for any purpose in connection with telephone instruments, but it was a proper charge in the years in which it was made.

2767 I have stated that part of this $9,000,000 is due to the change in price factors. Whatever it amounts to can be ascertained. Now, as regards the remaining $8,000,000, let us not overlook the fact, as I stated a few moments ago, that we charged 10 per cent depreciation for a good many years.

and we built this reserve up to 54 per cent, in the years prior to the time we are considering in this case, and we used 8 per cent. We used 8 per cent for the years prior to this case, and you certainly accumulate more in a reserve by using 10 per cent, and by using 8 per cent than you accumulate by 2768 using 7 per cent; and so, when we come to the year 1923, when we start the 7 per cent rate, the amount that we have in that reserve as a basic amount is there because of the 10 per cent rate, and the 8 per cent rate, and you cannot say that the $8,000,000 at the end of the period, or the $9,000,000, is due to an excessive amount of depreciation charges during the years 1923 to 1931, inclusive, because, if you will look at the reserve, you will find that during those periods it just about kept the same ratio to book investment as it had at the beginning of the reserve account.

If we had not charged a single dollar to depreciation expense for the years 1923 to 1927, we would have come out exactly whole at the time of the sale, so far as reserve is concerned, but that would have thrown the burden of the years 1923 to 1927 into a period away back before this case ever came into existence. That is the burden of the American Company in taking care of its instruments.

2769 In accounting, every year should take care of its own expenses. The function of accounting depreciation is to record the facts as we know them at the time we record them. Our depreciation expense is based upon our experience of the past, looking to the future. Looking at the future as of 1923, we were justified in setting up that depreciation expense. And we did. We did not take into account at that time the size of the depreciation reserve already existing.

We compute depreciation on the basis of the service life 2770 and salvage, as we see it. The reserve has nothing to do with it. The reserve simply reflects the results of your accounting, that is all.

When I set up the depreciation expense in the year 1927, I took into account, as I said, the advice given to me by the Operating and Engineering Department as to service life and salvage. I do not see why anyone, in determining that depreciation expense, should take into account the depreciation reserve or the size of it.

I read the opinion of the Supreme Court in this case a long time ago, quite a while ago; I am not familiar with it. I think mention is made about the size of the reserve being an element in determining depreciation expense, but I do
2771 not know just what they did say.

Referring to Exhibit A-163: the 20 per cent was the deduction which the management, in its judgment, made as a fair deduction, so that the instruments would not be sold at other than a reasonable price to the companies.

Now, the 8 per cent that I have used here was taken from the testimony that had been put in in this case—I think it is in Plaintiff's Exhibit A-32, pages 8 and 9, where testimony was given by people who know the property, and who have intimately studied it, as to their judgment of what the actual depreciation in the property was.

The officers of the American Company and its Board of Directors, those who manage the property, determined the price at which the instruments should be sold. The matter of selling the instruments was discussed with the licen-
2772 sees, probably three or four years prior to the sale.

In 1927, on December 31, we sold those instruments at the current cost less 20 per cent. I don't know whether the President of the Illinois Bell was consulted specifically at that time or prior thereto as to the price which the Illinois Bell should pay for those instruments, but I know, as I have said, that for three or four years prior, the matter of sale of the instruments was discussed pro and con by the officers. I do not know what was discussed by Mr. Gifford with the presidents of the companies. I know the sale was discussed; I was so advised by the officers, and I was in conferences where it was discussed pro and con.

2774 The certified copy of a letter to the Chief of the Depreciation Section of the Interstate Commerce Commission, which is dated March 24, 1921, and which is identified by Mr. Goldstein as Defendants' Exhibit D-101, is a copy of a letter sent by me and referred to by me this morning.

When the instruments were sold to the Illinois Bell, I presume they were taken up on the books of the Illinois Bell, according to the accounting instructions, at the price paid. That is my impression; that is what would naturally be done.

As to whether the President or any official of the Illinois Bell was consulted at the time of the sale as to the price to be paid for the telephone instruments, I have no definite knowledge that any specific request was made upon any
2775 man, or any specific discussion was carried on with any president as to the price. I assume that such discussion did take place. I don't know who set the price, but I know it was approved by our Board of Directors.

I took the price for the billing from the official action of the Company. The entire price was determined at one time. As to what was the reason for selling them on that
2776 day, it was considered a wise and proper thing to do.

Prior to December 31, 1927, the associate companies did not purchase telephone instruments from the Western Electric, as the license contract of the American Company provided that instruments would be furnished under the license contract arrangement.

Concerning the reason why the arrangement was made that the telephone instruments should be rented from the American Telephone and Telegraph Company prior to 1927, in-
2777 stead of purchased direct, that arrangement was in existence a great many years. The American Company, as the parent organization of the Bell System, was interested in developing a very high class of telephone service throughout the country, and saw the need of a fine service, and the benefit of a good telephone service. Now, it felt that by owning these instruments, and by establishing an arrangement with the companies whereby they could get these instruments and return them promptly to the American Telephone and Telegraph Company without cost as soon as the instruments became in any way defective, or did not contribute to this fine standard of service, there would be an inducement to the license company to work for the maintenance of a high standard of telephone service.

Now, on the other hand, the situation might have been that, if the license companies had bought these instruments and owned them outright, they would have kept them in the plant just as long as they possibly could, to save expense, to the detriment of a fine telephone service. But, by making the arrangement of having the companies in a position to pass these instruments back to the American Company and the Western Electric Company, and getting a new instru-
2778 ment as soon as one became defective, or as soon as a better instrument should be put into the plant, we were able to assist in the elevation of the type of telephone service.

Now, this matter of selling the instruments was discussed for some years before, but men like Dr. Jewett, who were interested in the high standards of service, advised strongly against the sale of the instruments. When 1927 came along, we felt that we had established a sufficiently high service consciousness, or exchange service standard, throughout the entire United States, in our local companies so that we could afford to sell the instruments because that pride of the companies in maintaining this high type of service would be such that they would take these instruments out and buy new ones as quickly as it was necessary to do it. Now, then, there was another factor that should not be overlooked. We were passing through a period of great scientific investigation and great research in the art of electrical communication and changes were possible and occurred, and it was felt by the American Company that it would be better to hold onto the ownership and control of these receivers and transmitters (which
2779 are really the heart of the instrument) so that they could develop them and keep pace with progress, and provide them to the companies whenever something came along that improved the service.

The cradle telephone first came into existence in our business about the latter part of 1926, I think. It had been approved for use by the licensees in 1927. It was not standard. There has been a real increase in the use of the cradle set throughout the Bell System.

2780 In determining what the current cost was in 1927, I did not personally consult the records, but the Western Electric price lists are in the possession of my department, and were used during 1927 in checking the Western's bills that were rendered to us. We had those price lists likewise from 1923 to 1927, in checking the bills for instruments.

2781 With respect to the sheets Mr. Goldstein identifies as Defendants' Exhibits D-102 and D-103, and states are price lists sent to defendants, Exhibit D-102 being entitled "Prices of transmitters, receivers and induction coils sold to both Bell and non-Bell customers from January 1, 1916, to December 31, 1925," and consisting of three pages; and Exhibit D-103, "Prices of transmitters, receivers and induction coils sold to Bell and non-Bell customers from January 1, 1926, to December 31, 1930": the first sheet appears to be a tabulation prepared by someone else than my people; and this second document is apparently a price list prepared by the Western Electric. I have undoubtedly seen these price lists prepared by the Western Electric, but I have not committed to memory the prices on the list. I have seen price lists

2782 such as mentioned here, as the second document, but to the best of my knowledge, I have never seen the first sheet.

I was generally familiar with the volume of the sales of telephones, receivers, transmitters and induction coils by the Western Electric to the American Telephone and Telegraph Company over the period of years. I did not commit the sales to memory. They are on my records.

Defendants' Exhibit D-104, which Mr. Goldstein states is a statement sent to defendants representing the sales of telephone receivers, transmitters and induction coils from 1916 to 1930, inclusive, appears to be a statement prepared by the Western Electric Company, and I had not seen that before.

2783 I did not consult with Mr. Cox as to the reasonableness of the prices of the telephone instruments sold to the licensee company. I never saw any studies of the profits to the Western Electric on the sale to the American Telephone and Telegraph Company of the telephone instruments. We reduced the license payment from 4½ per cent to 4 per cent on December 31, 1925. Up to 1926, the taxes on the telephone instruments in the Chicago area were paid by the American Telephone and Telegraph Company.

2784 The American Company continued to pay some taxes on the instruments of the Illinois Bell through 1926, and small amounts in 1927; but considerably reduced amounts below those paid in 1923, 1924 and 1925.

Referring to Exhibit A-161, in 1925 the American Telephone and Telegraph Company paid $61,824 for the taxes on the telephone instruments. In 1926, the American Telephone and Telegraph Company paid $1,540 for taxes on the telephone instruments in the Chicago area. The amount that the Illinois Bell paid is $2,187 and 20 per cent of that was passed. And that $2,100 compares with the $87,000 in 1926.

Now, the situation is this: without being too definite, 2785 I have a recollection that, at the time the license contract rate was reduced to 4 per cent in the case of all the companies, we also took up with the Illinois Bell Company the matter of their assuming the taxes. But the taxes were a very small percentage of the reduction comprised in the one-half per cent.

It is correct that there were three companies which, under their license contract, had the American Telephone and Telegraph Company pay the property taxes on telephone instruments up to 1926 (one was the Chicago Telephone Company, another was the Pacific Telephone Company, another was the Cincinnati and Suburban) excepting as to such minor modifications as might have been made at the time of the reduction.

To the best of my knowledge and belief, it is correct that, prior to the reduction, up to December 31, 1925, the American Telephone and Telegraph Company was obligated to pay the personal property tax on the telephone instruments used in the Chicago area by the Illinois Bell Telephone Company.

After January 1, 1926, the Illinois Bell was obligated 2786 to pay this tax.

Now, we did ~~pay~~ some personal property taxes in

1926, and a few in 1927, which were holdovers from the previous period. But we did not pay those for the period beginning January 1, 1926.

The other licensees, prior to 1926, under their license contracts, assumed the obligation of paying the personal property taxes. They continued that obligation until after January 1, 1926. The reduction of one-half of one per cent in the license contract payment was made to all the licensees, including the Illinois Bell, on January 1, 1926. I am not familiar with the amount of personal property taxes paid by the Illinois Bell in 1926, except as stated on Exhibit A-161.

2787 I am not familiar with the amount paid by the Illinois Bell locally. I am making my statement on the basis of what they previously billed us, and I assumed they were diligent in billing us all that should be billed to us.

Exhibit A-169 was prepared within the last two weeks. This particular exhibit wasn't furnished to the defendants until yesterday, but they did receive similar data. I think last summer, at the time we sent them the data in the Ohio case, it was the same data, set up in a little different form.

2788 I should say we did furnish defendants the data on the second page, which shows the average total amount held available during the year by the American Telephone and Telegraph Company for general purposes, and for the Long Lines and the associate companies, and the basis of allocation. The amounts shown there as held available for general purposes were, I believe, on the exhibits we sent defendants. We never made the allocation to the Chicago area before because we had no occasion to do so. When we sent defendants the documents last July, we did not send them any allocation to the Chicago area.

Exhibit A-169 is different from the form in which we set exhibits up in the Ohio case.

2790 Referring to Exhibit A-169, we held available [illegible] 000, as an average amount of total funds for the year 1924, of which I here allocated three million to the Chicago area. That money was held available, as far as the Chicago area is concerned, to meet the current money demands of the

Chicago area, that is, money demands for any purpose for which the Illinois Bell would require money.

Those demands would be made known to us in two ways: In the first place, the provisional estimate of the Illinois Bell filed at the end of 1923 would show that they required a considerable amount of money, or that they would require certain sums of money, and then throughout the year we would receive advices stating more definitely when the money should be delivered to them.

The provisional estimate that I am referring to as of the end of 1923 appears to be the Statement E, "Provisional Financial Plan, 1923," identified as Defendants' Exhibit D-105. That was sent to us.

Q. The sheet which you have shown me here is the provisional estimate prepared in 1922 for the year 1923 and has nothing to do with the year 1924 at all. These requirements of Defendants' Exhibit D-105 are the requirements for the year 1923, and are $6,690,000, which corresponds to the figures shown in City's Exhibit 142-C (Rec. Vol. VI, p. 2681) as "estimated requirements" for the year 1923, $6,690,000.

A. Referring to the statement of the Company covering the financial plan for the year 1924, which is identified as Defendants' Exhibit D-106, according to this sheet, taking just a straight mathematical computation, it would be seven million odd dollars, $7,[illegible], but this is not the final story as to the estimated requirements. These requirements may be modified from time to time. This would be the starting point.

The total requirements shown in City's Exhibit 142-C for 1924 are $10,050,000, according to my records in New York.

Mr. Goldstein: Now, accompanying this Exhibit E was a letter of transmittal, as accompanies every provisional estimate, which I will identify as Defendants' Exhibit D-10[illegible], dated November 14, 1922, addressed to Mr. W. S. Gifford, Executive Vice President, American Telephone and Telegraph Company, and is, I presume, signed by the President of the Illinois Bell, there is a place for his signature. Will it be understood that that is the letter of transmittal which accompanied the estimate.

Mr. Bracken: Certainly, upon your statement, it that is in evidence."

A copy of the letter of transmittal accompanying the provisional estimates goes to my department.

2794 I saw the statement in this letter (Exhibit D-107) which reads as follows: that the proposed program totals $19,000,000 for gross additions to plant, including approximately $2,000,000 for additional plant for the Long Lines department in Chicago. "The completion of this program during 1924 will require $2,630,000 beyond our estimated current resources, but will not require any new financing." But that does not establish that this is the amount of the estimated requirements of the Illinois Bell for the year. This letter would establish a starting point.

Mr. Goldstein states that on December 20, 1923, there was sent a letter by Mr. Gifford to Mr. Abbott, President of the Illinois Bell, and on December 26, 1923, a letter from me to Mr. Tancey, the Vice President of the Illinois Bell, and handing what he states are copies which are marked Exhibits 2795 D-108 and D-109, respectively. They appear to be correct. According to these letters, there was owing on open account from American Telephone and Telegraph Company to the Illinois Bell $11,124,796.52 on December 31, 1923. To the best of my knowledge, that is the correct amount.

The Illinois Bell put out a bond issue in the middle of 1923, amounting between ten and eleven million dollars to meet future financial needs of the Illinois Bell. Now, they did not require the money, so they loaned the money to the American Company during the summer and fall of 1923. We had agreed with the Illinois Bell that we were to pay them the same rate of interest on this ten million dollars as they were required to pay on the 10½ million dollar bond issue that had been put out in June to retire the bonds which fell due in December, I think December 1, 1923. The Illinois Bell paid 5½% on this new money; and we agreed to borrow it from the Illinois Bell at 5½%. Now, we had it on our books as an open account; it was a large amount, and at the end of the year we felt that it would be better for the Illinois Bell, and all concerned, if the Illinois Bell had that money invested in some form of Government security. We then transferred to them Government securities, but with a commitment to transfer those securities at a 5.5% rate, because we had previously agreed to borrow this money from them at that rate until they needed it in the business, and we wanted to live up to our commitment, so we gave them the Government securities, with the additional security afforded by the Government securities, and granted them the 5.5% rate. Now, the certificates that we sold to them in themselves were due on March 15, and we knew that they would be paid off at least by March 15, 1924, so, in order that we might make the best possible deal for the Illinois Bell Company in connection with those certificates prior to March 15, we put a clause

2797 in the letter that we could at any time prior to March 15 repurchase them, and if we did repurchase them, we would then take the money back into the business again at the same rate.

The American Telephone and Telegraph Company owed the Illinois Bell $11,124,000 on December 31, 1923, and as we might owe the Bank of England, or anybody else, that amount of money. We owed them $11,000,000 in December, and we gave them the $11,000,000 Treasury Securities on a 5.5% basis. The notes were retired, and we took the money back again on a 5.5% basis. When I say "again" I mean on an open account loan.

2798 During the year 1924 we liquidated the loan to the Illinois Bell, all but $2,000,000. We had to provide the funds to do it.

2799 Referring to provisional estimate F for the year 1924, is it not entirely correct to say that it calls for repayment by American Telephone and Telegraph Company of outstanding money due to the Illinois Bell, as a method of financing their requirements of $6,600,000. Where it reads, "loan financing proposed for above", "net requirements", and "loans to American Telephone and Telegraph Company repaid, $6,600,000", it means that the American Company would repay money to them that they had borrowed, just the same as if the Illinois Bell had resources from anybody to whom it had loaned money that would be repaid, as distinct from their being required to go and negotiate for new funds. That's all that means.

It is not correct to say that the estimated requirements of $6,600,000 that I speak of are the estimated requirements on the one hand that the Illinois Bell needs for its operation, and from the provisional estimate that same $6,600,000 would be estimated requirements that the American Telephone and Telegraph Company would require to repay its own loan.

The American Telephone and Telegraph Company had 2800 borrowed the money from the Illinois Bell, just as if it had borrowed it from anybody else, anywhere. And it paid the Illinois Bell a proper rate, and, while the American Telephone and Telegraph Company had that money, it was American Company money, just the same as when you go to a bank and borrow $5,000, I assume you feel that you have the right to spend it in any way that you please. The only obligation you have is to repay it when it becomes due.

The provisional estimate I simply said that the estimated requirements of the Illinois Bell Company for 1924 would be met by a repayment of a loan that they had made to the American Company. But, when the American Company came to repay that loan, it had to reach in its pocket and find the money. When it got the money originally from the Illinois Bell it did not tag the dollars, it put those dollars in its treasury, it spent them in the business, and when the Illinois Bell wanted the money back, the American Company had to find it, so that the estimated requirements of the Illinois 2801 Bell are its gross requirements, and the financing service which the American Company renders the Illinois Bell is the gross financial service which is rendered. That is the view which you must take of the picture.

In Exhibit A 1695 the funds that the American Telephone and Telegraph Company held on hand in 1924 were to meet a requirement of the Illinois Bell. The requirement to pay back something that is owing to the Illinois Bell is a bookkeeping matter.

The money which the American Company held available, the $77,800,000 in the year 1924, was American Company money. It didn't make any difference whether it 2802 borrowed the money from the Illinois Bell or the Bank of England, or anyone else, it was its money. The Illinois Bell had given up responsibility for it, as long as it was getting a good return. We allocated a part of that as being held against the ten million demand which the Illinois Bell would make, because it had a ten million estimated requirement. Whether that demand was met by paying them back a debt which we owed them, or whether it was met in some other way, in advancing the moneys and taking a new note, that, I say, is a bookkeeping transaction which does not go to the merits of the problem here at all.

In Exhibit A 169, I show as being part of the costs of the American Telephone and Telegraph Company in rendering this service of holding funds available, $111,000 for the year 1924, but I don't charge it against the license revenue 2803 at all.

I simply say this, that, in the year 1923, in so far as the pro rata part of the funds held available for the Chicago area are concerned, it cost the American Company $111,000 to carry those funds, and that $111,000 is the difference between what that money cost the American Company and what it realized on this money of the Illinois Bell, and all other surplus money that was in the possession of the American Telephone and Telegraph Company.

In 1924, the Illinois Bell's estimated requirements were $10,000,000. In November, the Illinois Bell sent us a statement showing its estimated requirements were $6,600,000. The $7,000,000 stated in the provisional estimate was 2804 only the preliminary advice as to what the Illinois Bell expected its estimated requirements to be. We passed to the Illinois Bell in 1924, in gross cash, about $11,770,000. We owed them on December 30, 1923, before we gave them the Liberty Bonds, $11,000,000. Then we sold them the Liberty

Bonds on that day, with an agreement to buy them back
2805 on March 15, and to establish an open loan again. If you ask me what we owed them on March 15, I would say $11,000,000. We had borrowed $11,000,000 again from them on March 15. But we might have borrowed that $11,000,000 anywhere. We paid them back during that year, $10,584,000. We did not pay them back in 1924 in excess of the amount that we owed them during that year. But we had borrowed the money from them, and when we had to pay it back, we had to reach into our pocket and pay it.

We rendered a very good service in 1924 in adjusting the estimated requirements of the Illinois Bell under the new contract, for which we set up a charge of $111,000 shown in Exhibit A-162.

2806 That service was, the Illinois Bell had $11,000,000 in March. In fact, we go back to January, because we were paying them 5.53 per cent on their money. They had that money. They probably could have invested it at 3 or 4 per cent in that period of time. We took it off their hands and gave them 5.53, held them free of all responsibility in connection with it; all they had to do was to say, "On such and such a date, we want $1,000,000. On April 2, we want $1,000,000. On May 2, we want $500,000; on June 21, $1,500,000; on June 30, $700,000; on July 1, $1,000,000; on August 30, $500,000; on September 30, $500,000; on October 1, $1,000,000; on December 1, $2,000,000; on December 21, about $1,100,000."

Now, they were relieved of all responsibility of investing the money and of safeguarding it; they could get it when they wanted it, as contrasted with the picture of taking the responsibility themselves for it, and taking a lower rate of return on it.

2807 It was a fact that we carried the Illinois Bell Company's funds for them during all that time in 1924 and relieved them of all of the responsibility, and paid them 5.53. But that is just one year you have picked here. I want to make this clear. You have picked one year here, where the financial relations with the Illinois Bell are different in some respects from other years. But just confining ourselves to

1924, the Illinois Bell received a very distinct financial service from the American Company, in that we took all the responsibility for the $10,000,000, or $11,000,000, and paid them 5.53 on it, and gave them the opportunity to call it back when they wanted it; and I doubt whether the Illinois Bell
2808 could have gone anywhere, or anyone could go anywhere, and put money out on as favorable conditions as the conditions under which the Illinois Bell left this money with the American Company. It just isn't done in business. When the American Telephone and Telegraph Company lends money to the associate company, the American Telephone and Telegraph Company gets 5.88. The American Telephone and Telegraph Company might get 5.88 somewhere else besides from the associate company.

As to why, if the American Telephone and Telegraph Company could get 5.88 from other sources, the Illinois Bell could not get at least 5.53 for its $10,000,000 in 1924, the answer is that on the conditions under which the Illinois Bell wanted the money, it certainly could not get more than 4 per cent, and I don't have to prove that. You can go to any banker and ask whether he would take $11,000,000 off your hands, and pay you 5.53 for it, and have you call upon him at any hour, or any day, to pay it back.

I haven't the figures in mind as to how much it cost the Illinois Bell to get the 5.53, that is, how much the net return on that $10,000,000 to the Illinois Bell was. It can be
2809 calculated. I have never calculated it.

Picking out at random a year which is a different year than 1924, so as to illustrate the situation that is covered by Exhibit A-160, take the year 1926.

On March 10, the Illinois Bell called upon us for $1,500,000; on March 31, for $3,000,000; on June 1, for $500,000. On June 9, they had a small amount of cash available, about $250,000, and they used it to pay off some of the money they had borrowed. On June 30, they asked us for $1,000,000; July 1, $1,500,000; September 30, $1,000,000; October 1, $1,500,000. Then, on October 20, they had a little surplus cash, and they paid us off about $750,000 on the borowings up to that time.

On December 1, they borrowed $1,000,000, and on December 9, $300,000; December 18, $700,000. On December 23, they repaid us $700,000. On December 31, $1,500,000 was borrowed.

Now, the gross borowings from the American Tele-
2810 phone and Telegraph Company during the year 1926 in these small amounts, constituting eight different borrowings through the year, were $13,500,000. All those amounts they had the convenience of paying back to us through the years, and reducing their interest charge by the interest on $2,700,000. Now, in my estimated requirements, I show that their requirements were $13,500,000. What I am now stating are advances from the American Telephone and Telegraph Company to the Illinois Bell, in the year 1926.

The figures showing the transactions between the parties beginning with 1930 are rather voluminous. There is a different type of financial service entering into this year.

On January 2, we paid the Illinois Bell $9,925,825, as the second installment on stock. That is, we were paying the Illinois Bell what we, as a stockholder, owed them
2811 in connection with our subscription of stock. Instead of coming to us and borrowing money, they said: "Instead of giving you a note, we will give you a stock certificate". They made subscriptions available to all stockholders. It was an open subscription for stock to all stockholders, but we owned the very large bulk of the stock, and before they issued this stock, they had to assure themselves that the money would be forthcoming, and whether they could finance in this way or not. We didn't guarantee to buy the stock.

We do not agree to finance them under the contract. We agree to give them financial service, but the practical application of the contract is that we will assist them in
2812 every way in getting money to develop their properties.

Now, the Illinois Bell had large needs for the development of its property in 1929 and 1930, and it had two choices. It could have come to us and borrowed money from us, on open account or on notes, and carried along the notes, and then issued us stock at some future time; or it could come along and say: "Instead of issuing notes here, we will issue you stock on an installment basis". From the point of view of meeting their requirements, the problem is just exactly the same, whether in our arrangements with the Illinois Bell we decided to proceed on a note basis for the time being, or whether we decided to proceed on the stock issue basis.

There is a difference between our relationship to the Illinois Bell in purchasing stock from the Illinois Bell, and that which exists in the case of the stockholders of the American Telephone and Telegraph Company, who are told that the American Telephone and Telegraph Company will need money, and they are given the right to subscribe.

The difference is that we have a contract to render service,— to serve the Illinois Bell, and we have no contract in the

2813 other relationship. The contract that appears as Plaintiff's Exhibit 7 (Rec. Vol. IV., p. 1196), is an old license contract. It is the one that was in effect in 1923. There has been a modification, or rewrite of it since; I think in 1930. But this contract, shown me by Mr. Goldstein, was in effect up until 1930. And in saying that, I don't want to be understood to say that this is identically the provision in all the contracts, because I would like to check it. I think it is the same.

"Mr. Goldstein: But this is the provision in the contract with the Illinois Bell which you say distinguishes your position as an investor in the stock from that of an ordinary investor, is that right?

"A. Well, it is this plus all of the contract. The general spirit of the contract is that we render service of all kinds, of every description to the Illinois Bell in helping it give telephone service."

2814 The section of the license contract referred to is:

"Advice and assistance in any financing required to be done by the Licensee in the extension, development or improvement of its telephone system within its said territory and in the general matter of its finances; aid in securing funds on fair terms, as and when needed for new construction and other expenditures, but not, at any time, to a greater extent than the then condition of the finances and the credit of the Licensor may permit; active assistance in the marketing of the Licensee's securities; and such other necessary financial support and assistance in the premises as will tend to serve the best interests of both companies."

"Mr. Goldstein: Is there anything else in the license contract that existed during the period from 1923 to 1930 which contains any obligation of the American Telephone and Telegraph Company regarding the financing service to the Illinois Bell?"

I cannot point to any other particular provision there, except the general spirit of the contract, which contains any obligation of the American Telephone and Telegraph Company regarding the financing service to the Illinois Bell. But may I call attention to the fact that even that paragraph is very broad, and there are great limits of interpretation as to what constitutes advice and assistance in financing, and
2815 what constitutes the scope of the other provisions. That
provision is broad enough to comprehend financial assistance of almost any type, if you desire to interpret it that way. The Illinois Bell would not have an enforceable right to force the American Telephone and Telegraph Company to finance it, because it says that we shall not go beyond our ability.

Turning to 1930 again, I started to state the nature of the transactions between the Illinois Bell and the American Telephone and Telegraph Company. There are quite a few of them. On January 2, we paid the second installment on stock of $9,925,825.

We paid them, and the money was at that time,
2816 because of the peculiar tax situation in Illinois, not
needed by the Illinois Bell, and was turned back—$2,200,000 of that payment was used to repay the advances that we had previously made to the Illinois Bell, and the $7,725,825 was turned back or was left with the American Telephone and Telegraph Company at interest at 6 per cent, whereas, if the Illinois Bell had taken it, it would have received, I am sure, a very much lower rate of interest.

We subscribed and paid for stock on January 2 of $9,925,825, the dividend on which is 8 per cent. The Illinois

Bell has paid 8 per cent for some years, as far as I know.

The dividend would not start to accrue on that $8,000,000 2817 from the date of the payment. This was an installment.

I think this installment carried 8 per cent. We paid an installment of $9,000,000, and it started to draw 8 per cent dividends and then, out of that installment, $7,000,000 stayed with the American Telephone and Telegraph Company on a 6 per cent basis.

In connection with that, let me say this, that this nine million was a part of a forty million stock issue which the Illinois Bell had planned to put out before the depression came along. I will take the time to clear up this picture so it is fully understood. Take the time the first installment came along: the Illinois Bell had borrowed money from the American Company, nineteen million or twenty million dollars, and when the first installment was paid, the first installment just canceled the amount of the Illinois Bell debt to us.

Now, in laying these plans, it had been fully contem- 2818 plated that by the time the second installment came due, the Illinois Bell would again have borrowed from us considerable in excess of ten million dollars; but the depression came along, and when the second installment (which had been put out in a circular to all stockholders long before) came due, the Illinois Bell had no option but to accept the second installment, and it was paid, and we took it back from them at 6 per cent interest, which was a higher rate than the Illinois Bell could have obtained anywhere. And its contract with all of its stockholders was that it would pay 8 per cent on the installments.

That was its contract with every stockholder. We did not receive any preferred treatment there at all. We got 8 per cent on that seven million which was left with us. We paid them 6 per cent, and we took their money off their hands at 6 per cent, as against their being put in a position of investing it at about 2 or 3.

I have just read a statement from the President of the Illinois Bell to the President of the American Telephone and Telegraph Company, dated November 13, 1929, handed to me

by Mr. Goldstein, covering the financial
the year 1930.

2819 This corresponds to the situation
of the Illinois Bell saw it on November
let us not overlook the fact that the Illinois
was planned almost a year prior to this
issue stock at that time, and the terms
have been offered, were made long before
written.

Our service in 1930, in connection with
stock in 1930, and in holding the
first, to have available for them nine million
the installment; and, second, our service
them with funds at a later date through
ing left this nine million with us.

This money was left with us from
ruary 14, and it was repaid to them
all in cash to them, on January 2.
large part of this money, between

It is true that, while we held the
2820 ting 8 per cent in the form of
ment, and we were paying them
a net of 2 per cent, because the circular
before provided that every stockholder
cent on his installments, and we were
a service,—we had every right on earth
Bell on January 2, "Here is your
Take it, invest it as you see fit, and
all right, it is no concern of ours."
service of taking it off their hands

The American Telephone and Tel
probably a billion of stock during
1930. And when it sold that
2821 holders the right to subscribe
gave its stockholders the right
ments, it gave what it agreed to give
cular was issued; it gave them

earlier installments it paid 8 per cent. In the later ones it got the installment down, I think, to 6.

In 1930 we got the installments down to about 5 per cent. But keep in mind in that connection that we had over $8,000,000 from those stock issues that we took in and held for those companies.

I never heard of an American Telephone and Telegraph Company stockholder coming to us and taking it all out [illegible] and letting us use it until we needed that money, at a [illegible] at a 6 per cent rate of interest.

When the American Telephone and Telegraph Company, as a stockholder, is ready to pay its money and the Illinois Bell takes it and says, "We will take it, but we don't need it," and the American Telephone and Telegraph Company retains this money, I think anyone would consider that that is a service which the American Telephone and Telegraph Company as a stockholder renders the Illinois Bell, and I believe it is. I do not consider it the same kind of service, when the stockholders of the American Telephone and Telegraph Company turn over installments to the American Telephone and Telegraph Company.

It would not be a service to the American Telephone and Telegraph Company to be able to hold that money until the Illinois Bell actually needs it, rather than to pay it at the time of the installment. It couldn't, under any possible way of looking at it, be a service because, if it is left with us, we would probably have to take 3 or 4 per cent on it, and we would lose money on it.

One of the factors in the value of that service that I mentioned is the difference between what the American Telephone and Telegraph Company paid the Illinois Bell on the installment, and what the Illinois Bell could get if it put this money out. The other factor is the general overall convenience that enters into the picture there, having this easy working arrangement for the Illinois Bell.

If the Illinois Bell had put the money out on call in some of the banks lately, I imagine they couldn't get it back at any time.

In the year 1929-1930, they could not put the money out on call and get the same convenience that they got from the American Telephone and Telegraph Company. Call money could be called any time, but call money was only a brief factor in the picture.

If the Illinois Bell put the money with the American Company, it was sure to get it back, because the American Company would handle it in a most conservative way, in Government bonds and into certificates, where they would be sure that all of this surplus money would be protected. The Illinois Bell could buy those same bonds and certificates that the American Telephone and Telegraph Company bought and it would suffer the same loss that the American Telephone and Telegraph Company suffered.

The loss I referred to is the difference between what the American Telephone and Telegraph Company paid the Illinois Bell and what the American Telephone and Telegraph Company got. That would not necessarily be the measure of the value. I said that would be one factor. There would be many other factors in this financial arrangement.

Another factor was the ease and promptness with which the Illinois Bell could get the money available without having any responsibility for it at all in Illinois. It just simply hands it over to the American Company, gets a good rate of return on it, and when it needs it, calls up on the telephone or writes a letter and says, "Send us back $500,000 or $1,000,000."

Cross Examination (Continued) by Mr. Goldstein.

May 20, 1932.

I was present in the court room when Dr. Jewett testified. I recall the questions and the answers of Dr. Jewett in discussing the development and research expenses and the allocations to the Chicago area. I recall his stating that he did not consider that any portion of the development and research expense is allocable to special commercial products, for the reason that he would not know how to make such an allocation and because, to whatever extent the benefits of the research and development work of the American Company are found in the special commercial products, those values have been paid for in ways other than by an allocation of the credit for expense of development and research through the payment of royalties.

The American Telephone and Telegraph Company re-
2829 ceives royalties on special commercial products. We
have, I think, a statement showing the royalties received
by the American Telephone and Telegraph Company. I will
find it in just a minute.

(A sheet which Mr. Goldstein stated was sent to defendants covering the royalties for the year 1931 was thereupon marked Defendants' Exhibit D 110 for identification.)

That statement, Exhibit D 110, looks as if it were prepared in my office. I presume it is correct, but I would like to
check it.
2830 I now have here the sheet for the years 1923 to 1931,
inclusive, showing the royalties received from the Western Electric Company and Electrical Research Products. That is not the sheet that I sent defendants last fall.

(Sheet produced by Mr. Heiss marked Defendants' Exhibit D 111 for identification.)

2831 This is a new sheet that I prepared. This sheet rep-
resents a statement of all royalties received by the
American Telephone and Telegraph Company from every
source.

Exhibit D 111 is a statement of the royalties received from
the Western Electric Company, Incorporated, the Elec-
2832 trical Research Products, and others received by the
American Telephone and Telegraph Company. I gave
no credit in any of my allocations to the receipt of these royalties by the American Telephone and Telegraph Company. I do not know that there is a contract in existence governing those royalties which were received from the Electrical Re-
search Products and paid to the American Telephone
2833 and Telegraph Company. There is an arrangement

existing between the companies, but I do not believe it is
embodied in the form of a contract. It is probably just an
informal advice, or letter form. There are probably a num-
ber of such letters that show the arrangements. I think the
arrangements between the American Company and Electrical
Research Products is that the Electrical Research Products
Company is authorized to use a certain idea or patent for
which the American Company will receive a stipulated roy-
alty payment. Now that arrangement in some cases is
through the Western Electric Company; in fact, I think that
in most cases, I think in all cases the arrangement for the
definite release of the use of the patents, and these ideas
used in the non telephone field, is made with the West-
2834 ern Electric Company, because the Western Electric
Company is the owner of the Electrical Research Prod-
ucts Company stock.

2835 Part of the legal expenses was the cost to the American Telephone and Telegraph Company of purchasing patents outside of the Bell System.

2836 When the American Telephone and Telegraph Com-
pany buys patents from outsiders, and the Western
Electric Company gets the license to use them, the accounting
practice is briefly this: if the American Telephone and Tele-
graph Company buys a patent on the outside, consideration
is given as to the character of the patent. If it is something,
if it is a patent that the American Telephone and Telegraph
Company should own itself, and the Western Electric is
licensed under the patent—that is, if it is a patent that goes
to the Western Electric Company, or should go to the West-
ern, something pertaining to apparatus or appliances, the
Western is billed with the cost of acquiring that patent, and
is given a license under it, and that license—or that
2837 license payment, rather, has been credited by me against
our expenses, excepting in the case of a few small pay-
ments which were made in the years 1925, 1927, 1928, 1929
and 1930 that were shown on this statement, which we did
not credit back against the license—our expenses, because of
the difficulty of segrgating between accounts.

But ordinarily, it is our practice to credit back to the
expenses of the American Company any amounts that the
Western pays us for the patents. If the American Telephone
and Telegraph Company paid $250,000 for a patent,
2838 from some source outside of the Bell System, and the
Western Electric Company received a license to use that
patent, the Western Electric Company would pay for the cost
of acquiring—for the cost incurred by the American Company
in acquiring the patent. That would reimburse the American
Company, and the amount would be credited against the
account which included the original payment by the American
Company and it would be taken out of my accounts.

2839 "Mr. Goldstein: We will identify as Defendants' Exhibit D-112, a copy of the option agreement which was sent to us by Mr. Bracelen, dated July 8, 1919, between the International Telephone Sales and Engineering Corporation, and the American Telephone and Telegraph Company.

(The document was thereupon marked Defendants' Exhibit D-112 for identification.)

I think I have seen the document before, but I have no recollection of anything ever arising in my accounting work which required my referring to that document. If at the expiration of this option one was given the Western Electric by the International Telephone Sales and Engineering Corporation, I had no knowledge of it.

2840 In 1927, the American Telephone and Telegraph Company received a dividend of approximately $48,000,000 from the Western Electric Company. I did not give credit anywhere in my computations to the license contract, of any portion of that dividend that was received by the American Telephone and Telegraph Company. There was no occasion to do so. There was no reason why I should do so.

I prepared the summary, Compilation of Costs Incurred in rendering license contract services, and amounts thereof allocated to the Chicago area, as shown in Exhibits A-103, A-108, A-117, A-124, A-152 to A-162, and A-164 to A-169, inclusive, which was handed to defendants yesterday.

"Mr. Goldstein: May I ask if that will be offered as
2841 a plaintiff's exhibit?

"Mr. Blackman: For Mr. Goldstein's benefit, we
2842 will offer it now."

(The document was thereupon received in evidence, marked Plaintiff's Exhibit A-170.)

2843 In Exhibit A-170 for the whole company I show, Cost of Temporary Financing, $1,535,913, in 1923, and no portion of it is allocated to Chicago.

I consider the service of temporary financing to be part of the services under the license contract so far as the American Telephone and Telegraph Company is concerned. I have endeavored here to present a statement of the costs of rendering license contract service, to the American Company, and under those costs, costs of temporary financing, are distinct costs.

I have in other cases considered the service of temporary financing and the cost of temporary financing in connection with our license contract services in an allocation to other licensee companies.

2844 I prepared City's Exhibit 142, and City's Exhibit
142-A. I show in City's Exhibit 142 that the loans which
we made to the Illinois Bell in 1926, were approximately
$6,000,000. Those were loans made to the Illinois Bell
2845 Company. The average stated on this sheet is a quar-
terly average, divided by four, and the amounts to which
I testified yesterday were the detailed amounts from month
to month.

I did not include the losses on these particular loans, as a part of the cost to the Chicago area because I personally did not feel they should be so allocated, and on advice of counsel, that matter was left out.

2846 According to City's Exhibit 142-A, the Indiana Bell Telephone Company 1923 license payment was $363,065.37.

We had average loans outstanding during 1923 of
2847 $16,427,375 to the Indiana Bell, but it was an accumula-
tion of a number of years.

I did not compute the losses to the American Telephone and Telegraph Company by having outstanding the $16,427,000 of loans at 5.88, nor compute from that how much was left of the license payment of the Indiana Bell Company to pay for any other services. I did not relate the matter at all to the license payment, because the license payment is a payment made for a blanket of services, and the character of the services rendered under that arrangement differs from year to year. One year the company might take a large amount of Operation and Engineering assistance, and another year might take considerable accounting assistance, and another year it might be financial. There is no attempt to relate the particular cost of any particular activity to the revenue paid for the year. But I did figure my loss on the $16,000,000, because the money cost me more than 5.88, cost the American Company more than 5.88, and if it was out at 5.88 and cost us more, why, it is just a plain and simple proposition, that we incurred a loss on it.

"Q. If you incurred a loss on holding funds to make temporary loans and included that in the license contract, why did you not include as a charge against the license contract the losses that you make after you have the loans outstanding?

"A. Because the situation is entirely different."

2848 "The loss on holding funds available is the loss on money which we hold in New York subject to call, and the loss on temporary financing is the loss which we incur on money that has left the possession of the American Company, and has gone to the associate companies, and is probably invested in the property of the associate companies."

"Q. That is your theory, as I get it, is that losses are chargeable before the American Telephone and Telegraph turns over the money to the Indiana Bell, but after it turns it over, then the loss is not according to the license contract, is that it?

"A. Well, I just felt that I did not want to put it in here." In the interest of conservatism, I did not want to put it into the Chicago area, but I still maintain that it is a

2849 definite loss on the part of the American Company.

The license contract provisions with reference to advice and assistance in financing, are the same for all of the licensee companies.

I stated and still state that the service which justified setting up a charge against the licensee payment from the Chicago area for holding funds available, was that we were holding the funds so that the Illinois Bell could receive aid from us to meet its requirements, and give us either stock, or whatever security was agreed upon. That same sort of service was applicable to the other licensees as well.

When we turned over the money to the Illinois Bell, 2850 or to any licensee, it did not make any difference to us whether we received a note for it or had it on an open account, or received stock, just so that we have something to evidence the fact that we have passed money out. Of course, there is this, there is a real difference; when we loan money on notes, or on open account we are in a creditor position, as against the companies. When we take stock we enter into an investor's relationship, with all of the obligations or all of the contingencies I should rather say that go with stock; but when we loan money, we take notes, or an open 2851 account, and that comes ahead of the stock. We are in a better position.

"Q. You own either 100 per cent of the stock or 99 per cent of the stock of practically all your licensee companies, is that correct?

"A. Oh, no! Oh, no!"

We have the same arrangement with the New England Companies where we own, not much more than 60 per cent, and in the Southern New England Company, where we own about 30 odd per cent, and in Cincinnati, where we own about 30 per cent, and with the Pacific Coast Company, not over an 80 per cent control; so that the same arrangement applies to all of the companies that have the license contract, whether we control them or not.

Looking at Section 212-A of the Annual Report of the American Telephone & Telegraph Company to the Interstate Commerce Commission, you will read in the first one

there, the New England Company—that is a licensee
2852 company, and that is 57.95 per cent owned. Take the
Ohio Bell common, and you will see 100 per cent, and 59
preferred. Of the Mountain States Telephone & Telegraph
Company we own 72.8 per cent.

2853 In 1923 we had 99 per cent ownership in the Indiana
Bell, and we had $12,081,022 book value investment in
stock in the Indiana Bell. We received no dividend on that
investment for that year, and that was one of the contingencies that I referred to here a while ago. In that same
year we had with the Indiana Bell, $16,427,000 in loans accumulated over a number of years.

We had in the Indiana Bell in 1923—this is shown on
City's Exhibit 142-D that I sent defendants—in Indiana we
had 7 per cent 3 years' time notes in 1923, paid in 1925. They
were the notes that the Indiana Company issued at the time
it bought the major part of its property, and that is
2854 included in the exhibit I sent defendants—7 per cent.

Now there may have been—I am not certain without
referring to my records, but there may have been some 6 per
cent money also, but I know that there was a considerable
volume of 7 per cent money to the Indiana Bell in that
period, and up to 1925. In the same year we had $23,498,945
investment on which we were receiving 1 per cent dividend
from the Ohio Bell, that was all that it could afford to pay
under the rates that it received. Now in that same year
2855 we had $9,530,000 of notes, of the Ohio Bell. That
money was on a 6 per cent less 2 per cent, basis.

We charged as a part of the cost of license contract
2856 services the difference between what we received on
moneys held available for the licensees, and our cost of
the funds. The American Telephone & Telegraph Company
loaned money to the Indiana Bell, for instance, and was paid
5.88 for that money. And the cost of the funds in that particular year we will say was 6.87.

2857 I charged up as a part of the cost of the license contract service the difference between the 5.88 and the
6.87, in figuring the costs of the American Company, the total

cost to the American Company, but none of it was allocated to the Chicago area. I have allocated it against the other licensees' payments in other cases. I did in other computations that I made; I included the cost of temporary financing, but as one grows older, one gives further consideration to things, and has the right to change his mind. I did that in Ohio in 1931 and I have changed my mind since as to
2858 the allocation. I did it in 1929 and 1930 in Michigan.

"Q. And when you did that you found there were no moneys left from the licensee payments to pay for any service, is that correct?

"A. I did not make that check at all.

"Q. You don't know whether, do you?

"A. I never took occasion to inform myself as to that fact. It would mean nothing to me if I did.

"Q. What caused you to change your mind, Mr. Heiss?

"A. What caused me to change my mind?

"Q. Yes, as to whether it is proper to put it in or not.

"A. It was in the interest of presenting the most conservative statement of allocation of cost to the Chicago area, that I could present. I can put it in if you want it put in, but I felt that in the interest of conservatism, I should not put it in."

I never made a comparison between the amounts available from license payments for the particular services for which we charged the Illinois Bell, in the case of the Illinois Bell and the other licensees.

2859 If you are referring to specific costs for any particular services, of course, I was curious enough in this case to see what cost we had allocated to the Illinois Bell, and what we had received from it, just as a matter of curiosity.

"Q. If you found that this loss on loans and loss on stock absorbed all the license payment, would you consider your allocations fair, in which you charged the Chicago area a portion of your costs when there was nothing left from the other company?

"A. Mr. Goldstein, it would not have entered into my consideration at all. I would have stated the facts of cost as I found them and let the chips fall where they may.

"Q. All right.

"A. With regard to the comparison of revenue."

2860 Referring to Exhibit A-169, I use as a basis of allocation a combined or composite ratio of estimated requirements plus Plant Investment and Gross Additions. The sources of the estimated requirements were C. R. 13, which we furnished to your people for inspection and I think they were in defendants' possession for quite a long time. C. R. 13 is a compilation made by the American Telephone & Telegraph Company, by my department.

2861 "Mr. Goldstein: I will ask to have identified as Defendants' Exhibit D-113, C. R. 13 reports for each of the years 1923 to 1931, inclusive."

(The documents were thereupon marked Defendants' Exhibit 113-D, collectively, for identification.)

"Mr. Goldstein: We will also identify as Defendants' Exhibit D-114, the C. R. 13 reports for 1920 to 1922."

(The documents were thereupon marked Defendants' Exhibit D-114, collectively, for identification.)

2862 As to the sources of the information on C. R. 13—I might say first, C. R. 13 is nothing more than a tabulation which I make up each year for my internal purpose, to take the record of my performance under the authority given to me by the Board of Directors and the Executive Committee to make advances; and this is merely a record, now, of what I am authorized to advance, and what I advanced, and then the statement C. R. 13 varies from year to year, depending upon my point of view as to what I want to show throughout the years in question. C. R. 13 is not

2863 entirely uniform in its preparation. At the end I finally come to the point of net cash advanced. Now I think that explanation is necessary to show the character of the document.

The figures in C. R. 13 are based on the provisional estimates received from the various companies which we finance. The estimated requirements shown in C. R. 13 would be in the first column. In the first column there generally is a compilation, a summary compilation of the provisional estimates received from each of the licensee companies.

2864 We receive provisional estimates from the companies, that show their requirements, and we check that figure, and then the amount of a company's requirements is first submitted to the Board of the Executive Committee for approval, and if the Board or the Executive Committee approves it, then I put the amount in the first column. Generally it is the same amount as appears in the provisional estimates. But, now, take this year 1923. The first column of C. R. 13 shows $139,928 as the total amounts which the Board or Executive Committee have authorized me to advance to the companies, but as the year went on there was given to me an additional $28,350,000 authority.

To determine whether the figures which I used as a basis for my allocation in Exhibit A-169—it would not be necessary to get the provisional estimates of each of the licensee companies in order to determine whether these figures in C. R. 13 are correct. One can work from C. R. 13 with very sub-
2865 stantial accuracy. That C. R. 13 computation represents the estimated requirements of the companies after they have gone through the scrutiny of the American Company, is correct. The starting point is the original estimates. But, C. R. 13 is a sufficient compilation of those, and that has been in defendants' possession.

Each licensee company sends a provisional estimate in the same form as we discussed yesterday, which is the starting point, in giving its estimated requirements, as they see
2866 them. We review them, but it is very seldom that we make any changes unless there are obviously miscellaneous items of financing and so forth that should be handled—that might be handled on some other and better basis. So that we might change the amount of the estimated requirements slightly, but generally it is the amount of the provisional estimate. My department and others in the company review it, and it finally terminates in an authorization by

2867 the executive committee. And those are the amounts
that are stated in C. R. 13.

The next item which I use, as the basis for allocation, is
Plant Investment. That was taken from C. R. 64-A for the
associate companies, which as I understand was avail-
2868 able to defendants; and taken from Long Lines monthly
report 6—Illinois Bell Telephone Company Monthly
Report 6, and for the Chicago area monthly report 6. All of
which I understand defendants have available.

The figures in C. R. 64-A are a tabulation of the monthly
reports of the companies. They are the monthly reports that
contain the corresponding data in C. R.—or monthly
2869 report 6 I think. I can say with sufficient accuracy that
C. R. 64-A is taken from monthly reports No. 6 of the
companies.

The gross additions were taken from the identical records that I used in getting Plant Investment, M. R. 6, and C. R. 64-A.

I used a composite figure of the Estimated Requirements,
Plant Investment and Gross Additions, for the reason that
they give three different pictures of the use to which money
held available is sooner or later applied. For instance, the
estimated requirements measure the picture, the general
2870 picture presented to us by the companies. Plant Invest-
ment gives you the size of the plant, and indirectly
reflects something of the need of the money.

The Gross Additions in any year give you the gross construction activity going on in the company, which is another indication, general indication of the money requirements; so I felt that by compositing the three, I would bring into the percentage a rather broad range of information in measuring this factor of holding funds available.

The estimated requirements are for future construction and this money is for future additions. The Plant Investment is the result of the moneys that were gotten over a long period of years. I said that simply showed the size of the property.

2871 "Q. You have a definite determination of the estimated requirements, is that correct?

"A. The size of the home determines the size of the running expenses.

"Q. But you are using this money not for running expenses; you are using it for gross additions?

"A. Yes, and the size of the home would determine the amount you might spend putting additions to it, if you were a growing family.

"Q. But you are not speculating as to the amount required. You have their estimated requirements, you have them definitely determined, have you not?

"A. I have.

"Q. So having definitely determined how much they need, why did you include the plant investment, which represents accumulation of the past?"

I felt that a composite of the three in my judgment was a better picture than taking estimated requirements alone. The more factors that you bring into the picture, the better, or the more fair—the better and fairer judgment you
2872 can reach. That is the only reason for including Plant Investment.

I did not take into account the possible fact that the Illinois Bell had very small estimated requirements, and a large plant as compared to other companies that had small investments and large requirements. It never entered into my accounting, in making the allocation. And I would use the same allocation anywhere, in any other company.

The money that is held available by the American Telephone and Telegraph Company is generally for Additions to Plant. The materials for additions to plant come practically or entirely from the Western Electric Company purchases. Some of the installation comes from the Western Elec-
2873 tric. The labor element is quite large. A large part of the money which the licensee companies, including the Chicago Company, need, is for buying materials and installation.

The Western Electric Company is one of the creditors.

"Q. And so, as they draw it down—so that the Western Company knows in advance, doesn't it, each year, as to the purchasers of the Western Electric Company, that they will have the money available for the merchandise purchased, is that correct?"

Well, I suppose, based on past experience, the Western Electric can say that its bills have always been paid, and 2874 they will be paid in the future. The Western Electric Company, as anybody else might have, has the knowledge that the American Telephone and Telegraph Company is holding this money available for the licensees. The Western Electric does not have any more access to my books than anybody else. No officials of the American Telephone and Telegraph Company are on the Board of Directors of the Western Electric Company. There are not any common directors to my knowledge. There is no exchange of information between the two companies, in the sense of their giving us information, in exchange for what they get from us. After we get up the provisional estimate requirements at the end of any one year, we may advise the Western Electric Company as to what the possible needs of different types of plant are for the companies for the following year, but that is 2875 simply so that the Western Electric can better serve the associated companies. Then of course the other way, from the Western Electric to us, there are certain limited reports that we get about what is going on in the Western Electric business, but beyond that there is no exchange of information.

The American Telephone and Telegraph Company owns 98 per cent of stock of the Western Electric Company. We furnished the Western Electric Company with data as to the physical units of property, but it would be of no interest to the Western Electric Company at all to know whether the Illinois Bell needed ten million dollars from us or twenty million dollars.

"Q. But would it be of interest to the Western Electric Company to know that the Illinois Bell needed ten million

dollars of purchases from the Western Electric Com-
2876 pany, and had arranged to secure the ten million
dollars.

"A. . No, sir."

In all of my experience as comptroller, the Western Electric Company has never asked me for, nor have I furnished to them, to my knowledge, the financial requirements of any company in the System for the year—the year ahead, or for the current year. What we give the Western Electric Company is information as to the physical units which they furnish. The money end is our concern; that is our relationship with the associated companies.'

I imagine the Western Electric Company would know of the practice of the American Telephone and Telegraph Company to furnish the funds necessary for the Illinois Bell to purchase from the Western Electric Company. If they did not, I should say, that it would be rather strange, after years of association with us.

There is no occasion to reflect, in my calculations, the benefits, if any, to the Western Electric Company due to the fact that the American Telephone and Telegraph Company at the
beginning of each year provides all of the money neces-
2877 sary for the customers of the Western Electric Com-
pany to pay their bills to the Western Electric Company during the year because anything that we do, that helps the Western Electric Company, to the extent of 95 per cent flows right back into the associated companies, as a benefit to them in lower prices, in a better building, a finer, better building of the local plants. Any benefits that may flow out from the Western Electric Company come right back again into the associated companies.

I am in charge of the accounting department. And as such, I know the accounting procedure in placing on the books of the
associated companies, the purchases of plant.

2878 When the associated company, an associated com-
pany buys material from the Western Electric Company, it may either put it into Materials and Supplies Account, or directly into its Plant Account, depending on

whether it is immediately installed or not. Ultimately they come into plant account.

If the Western Electric Company benefits from any information which it gets from the American Company, whether
we give it direct, or whether it picks it up indirectly, it goes
to help the Western Electric Company do a more efficient
job, and to the extent that the Western Electric Com-
2879 pany can do an efficient job, a more efficient job, it is
reflected in the prices, in all of the prices; and in all of
the relationships with the associated companies.

I have allocated against the Illinois Bell—the Chicago area
proportion for holding those funds around $150,000 per
2880 year. The license payments which cover these charges
are treated as an operating expense.

As to any saving to the Illinois Bell by having the Western
Electric prices lower as a result of this relationship between
the American Telephone and Telegraph Company, providing
money and the Illinois Bell having the money available to pay
the Western Electric Company, so that the Western Electric
Company has no credit risk, I cannot in the first place pick
out in any great minute detail, the benefits, the material bene-
fits that the Western Electric gets. I know that there is a
benefit there, and we assume it does go to the Western
2881 Electric Company. The benefit then goes back,—and
much of that benefit goes right directly into the operat-
ing expenses, and even if it does go into capital account, in a
very short period of time, all capital accounts find their way
into the operating expenses, so that over a period of years
every dollar of benefit that the Western Electric Company
would get, or that would pass through the Western back to
associated companies, comes right back home into the operat-
ing expense of the associated companies. It is just a question
of time until it gets there.

Referring to the quotation from the license contract which says that the American Telephone and Telegraph Company is to give financial support and assistance as will tend to serve the best interests of both companies, I cannot appraise the

portion of the benefit which flows to the American Tele-
2882 phone and Telegraph Company. I do not know as I could appraise that at all. I do not know what the benefit—what benefits there would be. As I understand the situation, the thing we do is something that flows out, flows out to help the companies.

It is true that the American Telephone and Telegraph Company had an investment in the Illinois Bell in 1930 of $154,000,000. But I would not say that the American Telephone and Telegraph Company's investment in the stock of the Illinois Bell of $154,000,000 get any measurable benefit whatsoever because of this relationship, and the assistance which the American Telephone & Telegraph Company gives to the Illinois Bell.

2883 We own the stocks of the Illinois Bell as any other investor would, as any other investor would own any other stocks, and I have never yet heard of any owner of stocks being so generous as to take a part of what is a reasonable earning on his stock, and turning it back to the company to meet its expenses.

Now, we hold our stock, we hold this stock as an investment; we get the same dividend on it that any investor in Illinois Bell stock gets, and there can be no allocation of the license contract expenses to the American Company as I see it, except such as we have taken out in the 5 per cent.

I have never heard an interpretation placed upon nor have I interpreted the language "the best interests of both of the companies," in so far as the American Telephone and
2884 Telegraph Company is concerned, because as I look upon the license contract, it is one of the services to the associate companies. And in all of my experience as comptroller, I have never heard any interpretation put on that, that any consideration should be given to the thought that when we do this financing, we should also look out for our own interests, except such interests as any prudent investor, or any prudent banker—such care as he would give to his own interests, to see that his investment was a proper one, properly secured, properly safeguarded.

And in determining what would be a fair allocation
2885 to the Chicago area, I did give some thought as to what
would be fair under the express provisions of that contract. And in connection with that, I did also take into account the express provision which says that the financing should be for the best interests of both companies. I gave it such weight as I thought should be given to it. I did not use any yardstick, such as the investment that the American Telephone and Telegraph Company had in the Illinois Bell, as a measure of the benefit because I did not feel that the whole relationship justified anything of that type.

The primary activities of the American Telephone and
2886 Telegraph Company taken as a whole are three. One is
the operation of its Long Lines. That has been taken out in my allocation. The Long Lines expenses, and assets and everything have been excluded. The second activity is
the license contract—is to render service to the com-
2887 panies under the license contract arrangement. And
the third activity is simply the miscellaneous—minor miscellaneous activities that we may carry on, which is reflected by the very first diagram I think that Mr. Blackman introduced in the case. That is also reflected by the elimination which I have made in this case. That is my picture of the American Telephone and Telegraph Company.

"Judge Wilkerson: Is it a fair statement of the situation to say that it is a holding company with some activities of its own?

"A. In one sense you might say that the American Telephone and Telegraph Company is a holding company, but your Honor, I would say that the American Company is not in the usual sense a holding company."

It differs from the companies that are ordinarily spoken of as holding companies in this respect, that a company organ-
ized to be purely a holding company, buys and sells
2888 securities with the idea of making a profit on those
securities, that is, finally getting something more out than was put in. Now, the American Company has never bought securities of its associated companies from that

point of view. If you go back to the very beginning of the license contract arrangement, the financial assistance to the companies grew up along with the research work.

"Judge Wilkerson: I just wanted to find out whether this was a peculiar kind of company, which was called a holding company, or whether it was a company that had dominance over a large number of subsidiary corporations, but carried on some activities in its own name and on its own account.

"Mr. Blackman: In a very broad sense of course it is a holding company. It holds the stocks of these companies.

2889 "Judge Wilkerson: I am not using it in any limited sense, as meaning that it speculated in the stocks, buying and selling. It buys for the purpose of controlling operations, or in relation to the operations of other property, but instead of actually taking title to the property, it permits the title to remain in the underlying companies.

"Now, as to the underlying companies it controls those through its stock ownership, and it carries on business of its own of course, in its own name, with its own corporate organization.

"Mr. Blackman: Yes, sir, that is all perfectly true, but what Mr. Heiss had in mind, I think, is quite an important distinction in this sense, that this company did not go out to acquire the stocks of these other companies, to become a holding company. What it did in the first instance was to own and control patents, and in the early days it licensed
2890 companies throughout the United States to operate under those patents. Then from time to time it took interests in those companies, usually minority interests. The companies that it was licensing got into financial difficulties and it loaned them money, and in that way its interest grew and grew until in most of the companies its interest has grown to a majority and in some a 100% interest.

In the case of the Canadian Company, it owns something like 26 per cent; and in the case of the Southern New England and the Cincinnati Companies it owns minority interests. In most of the companies its interest has grown to a majority.

"Judge Wilkerson: That is to say, instead of starting out with a definite intention of doing this thing, by a process of evolution it grew into it.

2891 "The Witness: Through all of this period the American Company has never traded in the stocks of these companies. It has taken them in, and held them, and accumulated them, and it has held them, in my opinion, as the credit pool which furnishes the possibility of the American Company going out and getting the money that is needed to finance these companies."

2892 The total investment of the American Telephone and Telegraph Company in stocks of associate companies as of December 31, 1931 was $1,939,270,421.51.

The capital stock of the American Telephone and Telegraph Company increased from $719,000,000 at the end of 1923 to $1,841,000,000, in 1931. That is the average for the year. That will not agree of course with the December 31 figure.

2893 The dividends paid to the American Telephone and
Telegraph Company on its investment in the licensee
companies, in practically every case, at least since 1926, have
not been on an 8 per cent dividend rate. Take the
2894 period 1923 to 1931, a number of the companies paid 8
per cent, but Mr. Goldstein called my attention to one
that was only 1 per cent. The dividend rate of the Illinois
Bell to the best of my knowledge it was 8 per cent during the
period.

The investment of the American Telephone and Telegraph
Company in the Illinois Bell at the end of 1923, that is the
stocks owned in the Illinois Bell, was $74,335,134. That
2895 amount includes a few installments. Now, in addition
to that, I do not think there was anything more than
that, at the end of 1923. At the end of 1931 our investment,
book value, was $154,212,653. That was an increase of about
$70,000,000. That seventy odd million dollars was invested
from 1923 to 1931 and there was a dividend rate paid of 8
per cent. The Illinois Bell earned its dividend each year
according to my understanding.

2896 "Q. Now, your cost of funds from 1923 to 1931 was—in 1923 was 6.87; 1924, 6.85; 1925, 6.93; 1926, 6.83; 1927, 6.86; 1928, 6.55; 1929, 6.53; 1930, 6.25 and in 1931, 6.42, as shown on A-64; so that the cost of funds to the American Telephone and Telegraph Company was going down from 1923 to 1931. It put its money into the Illinois Bell and received 8 per cent on that money. Do you consider that as part of the activities of the A. T. & T. to make money on its investment in the Illinois Bell?

"A. I have said, Mr. Goldstein, that so far as the A. T. & T. Co. investment in the Illinois Bell is concerned, it is just the same—in stock, it is just the same as any other investment, and the Amercian Company is entitled to its dividend."

It is entitled to its dividend the same as any other investor.

2897 It is entitled to its return, just as any other investor is entitled to his return, and the investment, the stock ownership feature, should be entirely segregated from this question of funds held available, and temporary financing. Now, in arriving at our cost of the money, the average cost of the money, that simply says what every dollar in the business of the American Company during those years cost us, and the dollars are not tagged. Every dollar cost us this amount of money, and if we held money available for the Illinois Bell, those dollars cost us on the average the same amount as any other dollar, and if there was temporary financing those dollars cost us the same amount of money as any other money.

One of the activities of the American Telephone and Telegraph Company which was considered by me was Long Lines. I have taken that out. The second activity which I have taken into account is license contract activity to serve the
2898 licensees. And the third activity which I have taken into account is whatever miscellaneous things we do.

The investor relationship of the American Telephone and Telegraph Company can be included in the third group, the miscellaneous, but divided into two parts. All we have to do as regards that third group is to see that our investment in stocks is so much, our dividends are so much, and those are the same dividends that anybody else receives. Now, the cost of holding those stocks, and the cost of the custodianship of them, is a pleasure rather than a burden.

"Q. Well, now, having stated that there was the interest of the A. T. & T. as the investor, would you interpret that sub-section D as to financing, which says that it shall serve both interests of the company, to include the interest of the A. T. & T. as the investor?

2900 "A. I don't believe that should be considered in my license contract computations at all.

"Q. No, I didn't ask you that. I asked you whether, in the interpretation of that sub-section D of the license contract, which says that the financing shall be for the best interests of both companies, that you should take into account that the interest of the A. T. & T. is the interest of the A. T. & T. as an investor?

"A. So far as the interests of the A. T. & T. are concerned, the interests would be such as any prudent person would exercise in making an investment."

The American Telephone and Telegraph Company takes that into account in carrying out that sub-section D. It would be foolish if it didn't give some consideration, when it advanced money to the Illinois Bell, that there was going to be a return, because the American Company has the responsibility for upwards of seven hundred or eight hundred thousand investors in the business.

In my allocations I did not take anything out of the cost of service to take care of the interests of the American 2901 Telephone and Telegraph Company. From what I have said, there was no occasion to take it out, except the amounts of 5 per cent, and so on, that we take out in our deductions.

In arriving at the 5 per cent I did not take into account the amount of the investment in stocks of the American Telephone and Telegraph Company on the one side and the plant or whatever the investment of the Illinois Bell was.

I took into consideration the fact that there might be some little consideration given to the corporate activity that was

necessary, expenditure by the American Company in connec-
tion with the corporate meetings of the Illinois Bell and
other companies in which it held stock, just the same
2902 kind of expense that I would incur if I were an investor
in United States Steel, and wanted to see that my inter-
ests were safeguarded. I did not use the number of dollars
of investment of the American Telephone and Telegraph
Company as a yardstock in determining the 5 per cent separa-
tion.

I charged as part of the license contract costs the fees paid to the Directors of the American Telephone and Telegraph Company when they met, because they deal to the extent of 95 per cent of their activity with license contract activities.

"Judge Wilkerson: How much was that fee?

2903 "Mr. Goldstein: It is $24,000 in 1923, $29,000 in 1924;
$33,000 in 1925; $32,000 in 1926; and $31,000 in 1927;
$32,000 in 1928, $52,000 in 1929 and $49,000 in 1930."

"The Witness: You take into consideration there that there
are twenty members of the Board, or nineteen. A number of
those men are members of the Executive Committee,
2904 meet every week or two weeks.

"Mr. Goldstein: Pardon me, that is the same Executive Committee whose records you refused to show us, is that correct?

"A. Yes, sir."

Now that Executive Committee meets quite frequently, and the Directors meet at least once a month, and if a man takes responsibility for a concern as large as the American Company, I don't think there should be any question if he receives as much as twelve hundred dollars a year, or some average figure of that type.

I also charged against the license contract the annual reports of the American Telephone and Telegraph Company because the business of the American Telephone and Telegraph Company, after you take out the Long Lines, is almost entirely license contract. They didn't send out those reports, as incident to their acquiring or holding stocks. The people throughout the United States, the Associates are interested in those reports.

2910 I have Exhibit A-155. Those are the expenses of the Comptroller's Department. One of the functions of the Comptroller's Department is to get up forms of reports for the licensee companies. That includes the forms of reports that are to be sent to the American Telephone and Telegraph Company by the licensee companies. Those forms of reports that are sent to each of the licensee companies have instructions accompanying them as to how they should be filled out. Part of our function is to advise the companies how to fill out these reports. Not all of the reports carry instructions, because it is self evident what they are. The reports are

2911 sent back to the American Telephone and Telegraph Company. When they are sent back, they are sent back in my department. My department studies them and distributes them to other departments that need them, and it combines them so as to get an over-all picture.

Included in those reports, the forms of which we have sent to the licensee companies, and which we get back in completed form, are, as I recall it, report M R 1, M-R 1-A, M R 2, M R 3, M R 4, M R 5, M R 7, 21, 22-A, 22-C, 23 and analysis number 10.

The provisional estimates are also of the same character. That is, we prepare the form and send out the instructions and we get them back, and we study them, and we compile reports from them.

2912 The reports which my department compiles from these M R reports specifically mentioned, include C R-52, 53, 53-A, 54, 54-A, 67, 67-A, 67-B, 76, 86, 91 and 97. There are various forms of presentation.

"Q. And those are the M R reports and the C R reports, access to which has been refused to the defendants, is that correct?

"Mr. Blackman: Now, I think I can state that as well as the witness, perhaps a little better.

"Mr. Goldstein: All right. Let's state the facts.

"Mr. Blackman: Of course, the work which the witness and his department do with regard to these reports and compiling, is relevant to this case, and if the defendants want to seriously question that work, why, of course, that may be an issue which they have the right to raise, and in order to permit them to raise that we have given them the forms of all of these reports. So far as these reports are concerned, the forms have all been submitted to them, and they are fully familiar with them. Now, the particular figures which have been written in for each of these companies have no bearing on the amount of work of the Comptroller's Department.

"Mr. Goldstein: Is it up to the Comptroller's department
2913 ment to compile those figures and put them in the report?

"Mr. Blackman: Of course it is.

"Mr. Goldstein: Is that of benefit to the licensee?

"Mr. Blackman: Why, yes.

"Mr. Goldstein: If it is, we have a right to see what they are.

"Mr. Blackman: That is where I differ with my learned friend.

"Mr. Goldstein: If the information on those reports is a part of the service rendered under the license contract, we have a right to see the nature of that work.

"Judge Wilkerson: Was that one of the matters taken up on the motions?

"Mr. Blackman: Yes, sir; and which this Court denied.

"Mr. Goldstein: Right. And we, therefore, will challenge the expenses of Exhibit A-155 to the extent that any work was done in connection with those reports, and that is the reason for the cross-examination.

"Mr. Blackman: My position, your Honor, is just this: That they have those reports. They have the forms, not
2914 the figures. They have got the reports, they have every opportunity to develop any point in connection with the work of this department. Now, what those particular figures happen to be, whether the depreciation rate in one company

was 5 per cent, and another 7, makes no difference to the work of this Comptroller.

2915 "Mr. Goldstein: And as we have developed here, and as has already been developed, they have made use of plant and of revenues, and of expenses appearing on those reports, there isn't anything they have given us with reference to those excepting computations, which it would take us ten years to make.

"Judge Wilkerson: You must remember in a case like this, it is just possible to prevent relief by piling up an enormous record here which, in the end, is incomprehensible. Now, you ask to see these documents. If they permit you to inspect them, they are entitled to have them in. Or the Court is entitled to see them, if they are testified to. You cannot insist on seeing things without creating a situation where somebody is entitled to have it in the record.

"Mr. Goldstein: Right.

2916 "Judge Wilkerson: And when you come just simply to shovel carloads of material into the record in that way, the Court will scrutinize carefully whether or not it really helps the Court in arriving at a conclusion, or whether it is farfetched and fantastic.

"Mr. Goldstein: But it is our contention that they have used the very reports in every one of the allocations, and that the benefits of their services involve the comparisons which they are making on those reports. Now, if they don't want to give us access to them, they have no right to make use of them themselves.

"Mr. Blackman: That point, sir, is well taken, and we concede it, and we have offered them access, the papers have been here.

"Mr. Goldstein: You have not offered us access to the provisional estimates of the other licensee companies.

"Mr. Blackman: We have offered them access to every figure that we have ever used in any way in this case, we have said, 'We wish you to limit your scrutiny to the figures which have any bearing on these things,' these sheets and reports are very long ones, they contain figures dealing with fifty or sixty different matters. Now, one particular line of 2917 that report is what we have used in many cases, that is, the plant investment of these various companies. It is shown on one line, in so far as we have used plant investment as a ratio, we concede freely their right to scrutinize the plant investment figures on this report, and we have offered, and we now offer, to let them see every plant investment figure. We have offered to let them see every figure on any report that in any way deals directly or indirectly with the figures that we have used in building up our ratios.

"We do say that we think it manifestly unfair for them to get these voluminous reports and scrutinize the whole report from beginning to end in the hope that they may find something somewhere in the report that they may use in some way, unrelated to the subject matter with which those reports were used by us.

"Now, in so far as we have used them, they are free to see them. Every line of those reports is open to them for their inspection, in so far as we have used it in any way. But 2918 there is no connection between revenues and plant investment, as reported on those reports.

"Mr. Goldstein: But you used the revenues and plant investment in your allocation, did you not?

2919 "Mr. Blackman: We will let you see everything; but I am directing my argument to one specific thing at a time. They say we have used plant investment. We say, 'Yes, and you are free to examine all figures that relate to plant investment on these reports.' But they say, 'We want to see what your revenues on these reports were.' We say no. When we come to revenues, and have used them, we say, 'Yes, you can see the revenues.' But we haven't used hundreds of other things that appear on those reports, and we say, as to those, we do not think you have any right to see them, and I understand that is the position which the Court has sustained.

"Judge Wilkerson: We have sustained that position. Of course, the mind of the Court is always open to additional argument, if you can convince us that you should have the right to inspect them.

"Mr. Bracelen: May I say this, your Honor, repeating what I did say upon the argument of the motion before your Honor and Judge Evans, if there is anything contained upon these reports that we have not used, but which is relevant, material in this case, they may have that.

2920 "Mr. Goldstein: And when will we get a chance to use it? That is the purpose of withholding it, so we can't use it, as a practical matter. If we have got to examine three thousand pages of documents when it is relevant, at the end of the case, as a practical matter it is impossible for us to make use of them, and we have asked for them for a year.

"Mr. Blackman: The figures on those reports do not make them relevant or irrelevant.

"'Mr. Goldstein: We will develop it.

"Mr. Bracelen: It is now, I think, ten days since Mr. Goldstein was told that these reports were available for examination by him.

"Mr. Goldstein: I couldn't stop the case to examine those reports, could I?

"Mr. Bracelen: Of course, we can't help that.

"Judge Wilkerson: Well, Judge Evans and I both felt that there should be some limit to the question of production of this list of documents, and where the section of the Constitution is invoked by a company which is operating in one local community as to which the production is invoked, but is operating a large number of utilities in other sections, if it is a rule of evidence that the company put in evidence 2921 practically everything relating to the entire business all over the country, the net result is that a rule has been laid down which simply makes impossible a suit of this kind.

"Now, this practical question, if the decision of the Supreme Court in the end should say that that is the end of it, there is something vastly more at stake than the mere matter of rates in this case. That is, whether this form or organization can continue and be afforded the protection of the Constitution as to the particular limits in which it is operated. It may be that a rule of evidence will be laid down which makes it impossible for a company to get that kind of redress in a court, but it would seem to us that the rule which is invoked here by the defendants in this case, carried out to its logical conclusion, would simply make a case of this kind impossible.

"Mr. Goldstein: Your Honor, it is our position that if the court's position is that you cannot use the comparative test within the system, then the company who comes into court cannot itself use that comparative test in this case.

"If it uses the comparison of revenues, expenses and plant of the Illinois Bell, compared to the others, then it has laid itself open, and we have a right to see all of the things 2922 bearing upon the revenue, whether or not they are proper.

"Judge Wilkerson: Now, let's stick to the particular thing we have here. We have expense of the comptroller's office. That expense of the comptroller's office is the labor of preparing and examining certain reports, and of analyzing them. They come in here and say that they expended so much work on that. They justify that by saying it is of benefit.

"Mr. Goldstein: Now, how do we know it is of benefit? If it was of benefit, we have a right to measure it, the relative benefit to the Illinois Bell.

"Judge Wilkerson: How can you tell whether it is of benefit by looking at the reports? How can the Court tell it by looking at the reports?

"Mr. Goldstein: They speak for themselves. The comparison of those reports goes to the licensees.

"Mr. Blackman: And precisely what those comparisons are have been in Mr. Goldstein's possession for months.

2923 "Mr. Goldstein: 86 has never been in our possession.

"Mr. Blackman: The only thing is, he wants to see what the precise comparison is. It does not affect the work of the comptroller whether the comparison shows up well for this company, or poorly for that company.

"Mr. Goldstein: No, but it does make a difference, when you use plant revenues and expenses, that we can see the character of the revenues that you have included, and the character of the plant that you have included.

"Mr. Blackman: He has all that, your Honor.

"Judge Wilkerson: Now, of course, coming down to this matter of a great regulating body in one state, we will assume such a body imposes a confiscatory rate on the utilities operating in that state. The threat which is held over the company is this: You may not have relief against the action of that state body unless you expose to the scrutiny of that body your business all over the country.

"Mr. Blackman: Precisely.

"Mr. Goldstein: No, your Honor, we say that is not so. The only time that becomes of importance is when they pool the expenses of all the companies, and then say, 'We are entitled to charge you one-twenty-fifth of the expenses,' and don't want to show us the character of the expenses of the other twenty-four-twenty-fifths.

2924 "Judge Wilkerson: Well, it might be that that item of the comptroller's would be of value; but let's go on."

These same reports are distributed to the people that are interested. The distribution is various. So far as I know they are used as a basis for the determination of the policy of the general staff and of the various departments of the American Telephone and Telegraph Company. I distribute them. I don't know what is done with them after they leave my office. I assume that they are used as sources of information, so as to give a better license contract service. I think there are one or two of these C. R. reports that go back to each of the companies.

2925 C. R. 86 goes back to the companies. C. R. 86 goes back to the Illinois Bell, and shows the unit expenses for each of the years for each of the companies, containing such information as current maintenance expenses per station, the traffic expenses per station, the commercial expenses per station and the miscellaneous expenses. That is related to plant and is related to stations.

C. R. 86 is sent to the Illinois Bell for the information of the president. It is a service we render to the president of the Illinois Bell under the license contract and not as an investor.

2926 I consider that the sending of this is of service to each of the licensee companies, because he sees there the performance of other companies and he can gauge his own performance, in a measure, by it, and he has that much more information as to what is going on elsewhere in the telephone business. As to whether the experience of the companies are on a comparative basis, or on relatively the same basis, so that these relationships have value to each of the licensee companies, I know so far as they are based on 2927 the accounts that the same system of accounts as used in the classification of the various items of expense is the same. And as to what benefit it is to each of the companies to see these ratios of each of the companies for the same item, I should think any operating man would say, if he had comparisons of a number of companies, he could better gauge whether he was doing a good job or not. He might get a lot of things from the comparison.

There would have to be some degree of similarity to be of benefit.

C. R. 52, 53, 53A, 54, some of them involve compara- 2928 tive statistics of the various companies. Those comparative statistics are send around by my department to the various departments, portions of the general staff, for them to work on.

"Q. And the purpose of sending that to them is so that they can formulate a policy for all the licensee companies, is that correct?"

I said I didn't know what use they made of them. I send them around because I have been requested to send them, and I assume they want them because they want to educate themselves, to better serve the company.

The expenses under the license contract include the expenses of the employees of the various departments that make use of these C. R. reports.

2929 Referring to Exhibit A-164; what I have done is shown right on the exhibit. In the first column is the average amount of capital stock and premium installments and funded debt and so on. And in the second column I have shown the dividends paid and the interest paid, and the amortization charges. Take 1923, for instance, I show a cost of funds as 6.87 per cent. That may not be expressed as saying that for the year 1923 the cost of funds to the American Telephone and Telegraph Company was the cost of paying the interest and amortization on this funded debt, the interest on this capital stock installments, and the dividend of 8.79 on this capital stock, because that statement has omitted premiums and surplus.

The American Telephone and Telegraph Company did not pay 8.79 on its capital stock. When we talk about capital stock, you have got to add premiums and surplus in.
2930 It paid at the rate of $8.79 on whatever the capital stock was worth. We paid a $9 dividend.

The reason we have $8.79 is that we have a slight adjustment of moneys deposited with us by subscribers to the stock in connection with the new issues of stock.

Our cost of funds is really the amounts we pay out to take care of our interest and amortization on our funded debt, and our $9 dividend after making allowance for surplus and capital stock premiums. That cost we used in connection
2931 with all of my exhibits is the annual charges as representing the cost of the American Telephone and Telegraph Company under the license contract because that is what every dollar in the business cost.

Under Exhibit A-165 I showed another possible method of determining cost of funds, merely to make a showing of what the cost of money would have been if we hadn't given credit for surplus. I did not, in other cases, use a cost of funds on the same basis as I use it in A-164. I determined cost of funds in this case in the manner that I have in Exhibit A-164, because I think after long and mature consideration it is the right way, it is a fair and reasonable way to determine the average cost of all funds used in the business.

As to whether upon the supposition that the American Telephone and Telegraph Company, instead of paying a $9 dividend, would have paid at the rate of $15, I would have considered the cost of funds to include that $15 also, 2932 ordinarily I would not have used the $15, but if it took a $15 dividend to get the money into the business, I would have used it.

If the company couldn't pay any dividend, I would not then have said it cost nothing to get this money because that would have been unreasonable. I draw the line at this point: If you will look at '23, you will notice that if you add to capital stock, capital stock premiums and surplus, that we were paying $7.17.

Now, stock money, of course, takes all the contingencies that go with it, and I did not consider in the first place that $7.17 was an unreasonable return on common stock money.

Mr. Gifford's statement of the Company's policy, that there would be no melons or extra dividends, but that it aims to pay dividends on stock sufficient to bring money into 2933 ~~the business, the~~ reasonable, fair dividend, and that we wanted to continue on that basis, is another factor to take into consideration.

Another factor to take into consideration is the tremendous volume of money that we have had to obtain for the business in the last few years, and I took this $9 dividend, which is $9 paid on say, roughly, $140 of equity, or around about 6.4 per cent on the dollar.

Now, I take that as a reasonable dividend. I certainly would not have taken a $15 or $20 dividend in this case, because that would have been unreasonable. I certainly would not have taken a 1 per cent dividend. But I took the dividend as a reasonable one,—what, in the opinion of our board of directors was a reasonable payment to make to get the money.

I have used another method within the last two or three years. In the Michigan case a few years ago, before I had quite as much experience as I have gotten this last two years in getting up license contract exhibits, I took the cost of funds in the immediate period. For instance, I took into con- 2934 sideration what we paid for money in the immediate year, and I took into consideration what we had paid during the last two years, or the last three years. For instance, on temporary financing, I took a three-year period, what we had paid over a three-year period, and averaged that. On holding funds available, I took from a one to a two-year experience. But the absurdity of the thing was that if in one year we issued capital stock, and the next year we would issue bonds, why, this rate would bob up and down. In one year it might be 8.5 per cent and the next year it might be 5 per cent.

Now, where I was working with a period of nine years, why, it was obvious that it would be absurd to follow that basis. I testified in Michigan, in the case of Michigan Bell Telephone Company *vs.* Samuel Odell, on the 12th day of April, 1929. And in connection with my testimony, I offered an exhibit which purported to show a study of the license revenue and the expenses, as one of my exhibits.

2935 The exhibit identified as Defendants' Exhibit D-115 is an exhibit that I offered in the Michigan case on April 12, 1929. I have since filed in the same case an exhibit using the method of computing funds on the basis used
2936 in this case. I filed the amended exhibit in May, 1931, the first occasion I had to file a revised exhibit. That was subsequent to the Supreme Court opinion in the instant case. And in the second exhibit I used the cost of funds as used in our case and I also explained the differences.

2937 I explained that I felt that this method used in this case was a more reasonable, conservative method.

"Q. Now, Mr. Heiss, depending upon the method that you used would depend the margin that you have left from the license revenue after taking care of the charges, is that correct?

"A. Yes, that would follow."

If we used a method of determining the cost of funds, which cost was high, 8 per cent, it would leave us with a smaller margin than if we used one that involved a 6 per cent cost. Two items of license contract to which the cost of funds would be particularly important would be losses on loans, the temporary financing, and the holding of funds available.

"Q. And in those jurisdictions where the losses on loans were high, as they were in Michigan, it would be of advantage to use a high cost of funds, is that correct?"

The volume of the loans in those jurisdictions never 2938 entered into my mind in selecting the method for computing the cost of funds.

Three years ago, before we had much experience, we were considering the method I used in the Michigan case. Since then we have changed to this method, and we would use this method in any jurisdiction.

For the year, 1928, for instance, my method used in this case, and my method used in the Michigan case would give some difference. What it would be, I haven't the figures in mind.

I furnished defendants with a copy of an exhibit which showed the revenues and the expenses in the year 1928 2939 as shown in the Ohio case, using the present basis of calculation. I have not a copy of that exhibit with me.

The exhibit that defendants were furnished on the present method is the exhibit entitled "Heiss Exhibit 10", which is identified as Defendants' Exhibit D-116.

Now, Defendants' Exhibit D-116, which I furnished in this case, and in which I used the present method, showed that the services cost the American Telephone and Telegraph Company an amount which leaves a net deficit for the year 1928 of $1,467,205.

In Michigan, for the same year, using the Michigan method for the same year, instead of showing a deficit of one million dollars, I show a deficit of seven million dollars, and the computations are entirely different computations.

2940 There are three different factors, all of which were explained to the Master in Michigan. In the year 1928, if you will look on the Ohio exhibit, you will find a deduction of, I think, two million.

2941 You will find a deduction of $2,000,000 that I made, an empirical deduction, to take out unlicensed expenses; I can explain that in a minute.

Now, that two million deduction was not in Michigan at all.

Now, another factor in Michigan was the difference in
2942 the cost of money. At the time, in 1928, when I hadn't
much experience in this matter, I was told in conjunction with our people to set up the money costs in the way that I described. Now, that will make a difference of two or three million dollars.

We had a method which I used in 1928, and I saw fit to change that method, after mature consideration, for these present cases. Now, the third difference is that the taxes allocable to the Long Lines were put on a better basis, as a current accounting proposition, since 1927. Now, the three factors, the adjustment of the tax accounting of the Long Lines Department, the change in the method of computing costs of money, and the deduction of two million dollars, will
make up any difference, any substantial difference that
2943 you have between my 1928 Michigan exhibit and my
Ohio exhibit. Now, the whole effect of this has been to produce a lower license contract cost for these present cases, that is, the net effect is that we are coming here with a lower license contract cost.

2943 "Q. Does your cost shift with the case, or does it shift with the facts?

"A. Oh, no. If you had listened carefully to what I said, you must admit that a man has the right to change his opinion.

"Q. As to what they cost?

"A. Yes, honestly, if he studies it and comes to an honest determination, why, he has a right to shift his method to what he thinks is right, if he feels that his former method needs adjustment, why, he certainly is privileged, in a later case, to put in a method that, in his opinion, is a better method."

The method here is more favorable to the Chicago company,
finitely more favorable. In the Michigan exhibit I
2944 showed losses on temporary financing as a cost of the
service, of $4,100,000; and in the Ohio exhibit I showed there was a temporary financing cost of a million, making a difference of three million dollars in that item; and when I came to allocating to the Chicago area in 1928, I did not take

that item into account at all, although there were loans outstanding to the Illinois Bell.

I followed that procedure because I changed my method of computing the cost of money held available, and adopted for the former method, what, in my opinion, was a more conservative method, and after I had my total cost of funds held
2945 available for the American company as a whole, I decided that it was a conservative procedure not to allocate any part of it to Chicago and I would have done the same thing if I had been in any other jurisdiction at this time. It wasn't because Michigan had loans and I could justify the license contract on that item alone; that never entered into my mind at all.

The Michigan method is not ridiculous. At the time that I developed the figures on that basis, it was the best thing that I had up to then developed, but since then I have developed what I think is a better basis, and, as an accountant, I have enough pride to change my mind to the thing that
2946 I think is correct, when I find out that a change should be made.

I read the Stockholders' Annual Reports for the period 1921 and 1922 and 1920. I helped write them. I recall there the description as to the computation of costs of the license contract. I don't know very much as to the method used then in determining the cost of funds to the American Telephone and Telegraph Company in the 1919 and 1920 statement. I was not Comptroller then. I worked on the statement in the New York Telephone case presented by Mr. Gifford, showing the cost of funds. We used at that time, in determining the cost of funds, substantially the same basis that we used in Michigan.

"Q: But reflecting now, you think that was also ridiculous?

"A. I didn't say ridiculous. It is not ridiculous.
2947 If you do the best you know how to do at the time it is not ridiculous and any man has the right to change his views if he finds he has been wrong."

Referring to City Exhibits 157 to 157-J, which Mr. Goldstein stated cover the financial data regarding the Central

Union, I couldn't say now whether I prepared them or not. They don't look familiar to me at all.

I know at the time I testified here two years ago, or three years ago, there was some question of Central Union data, but it was my impression that it was decided that that data would not be furnished, as the Central Union situation was not material to the case.

2950 Referring to Exhibit A-16[illegible], I include in the invest-
ment of buildings twelve million, thirteen million 1923
to 1925, and then I have no more investment in build-
2951 ings. The reason for the change is that our headquarters
building at New York which is located at 195 and 205
Broadway, had its first section building built about 1914-1915, I think, and it was owned by the 195 Broadway Corporation, jointly by the American company and the Western Union company; we owned 70 per cent, and the Western Union, 30. Now, later, we needed more office space, and the American company built the section at the corner of 205 Broadway, and for several years it had the deed to that property, to the physical property. That was during the years in question here, 1923, 1924 and 1925.

Now, after 1925, at the end of 1925, this section of the headquarters building was sold to the 205 Broadway Corporation, and after that we owned stock in the 205 Broadway Corporation. So that it passed out of this picture.

The building, while the title was in the American Telephone
and Telegraph Company was occupied by some other
2952 tenants than the American Telephone and Telegraph
Company. If we received rent, we gave credit for the
rent. The Western Electric was a tenant. A jeweler was also a tenant. The Western Electric paid an amount representing the cost of house service, and the interest on the money invested in the building. That is during 1923, 1924 and 1925. The rent was billed to the Western Electric on the cost basis, plus a return on the capital that we had invested.

2953 As to the following statement which Mr. Goldstein said Mr. Bracelen made in a letter dated September 22, 1931:

> "That the basis of rental charge is as follows: with the exception of a few minor leases and fixed rentals, the rents charged to all tenants, including Bell System and others, are based on (a) the cost of operating and maintaining the building, including the depreciation apportioned on a square foot basis; plus (b) taxes, actual interest charges and 5 per cent on the issued capital stock apportioned to the tenant on the basis of an appraisal of the square foot value of space occupied by each, this value being dependent upon the location of the space."

2954 That would be true in the case of the buildings that were owned by the building corporations, and there was stock outstanding. In this particular building, while we had the deed to the property, the rentals would be figured on the basis of our costs, including taxes, depreciation and everything else,—all other things.

The basis of determining how much the Western Electric should pay as a return on the investment in the building was the house service, and depreciation, taxes and interest charges. I don't know just exactly the rate: I think it was 5 per cent.

It was 5 per cent on the money that the American company had put in that building. The Western Electric occupied a certain percentage of that building. And on that per cent or portion of the building, the Western Electric paid rent to the American Telephone and Telegraph Company on the basis of 5 per cent of the investment. The American Telephone and Telegraph Company occupied a certain percentage also. And other tenants, if there were any, occupied a certain percentage. 2955

2956 We give credit to all the rent received. The effect of it is that the difference between 5 per cent that the Western Electric paid and the 6.87 that we charged, the licensees absorb through the license contract. If the Western Electric had paid more, the Western's cost to the companies would have been more. We aim to run the building corporation on a cost basis; and that is what these figures reflect. We aim to make no money from our tenants in the building corporation, whether it be the Western Electric or ourselves. We make the difference between what we get from them and what it costs us through the license contract, but by the time that difference is allocated to the Illinois Bell, it would be almost infinitesimal. I have never figured out how much it is, but looking at the thing generally, it would not be worth while.

I consider that the buildings down in New York as 2957 owned for the licensees' benefit. And they get the credit for all the tenants' rent. I do not consider that the American Telephone and Telegraph Company as a holding company owns that investment, like any other investment, and charges the licensees on the same basis that it charges the Western Electric, because the American Telephone and Telegraph Company as a holding company probably would have needed two or three little offices, if it were simply a holding company. The Western would need just as much space as it does now, if it served the company. But I don't consider this building as being jointly for the Western Electric and for the licensees, because it wasn't built in that way. The Western is just renting space in it, as any other tenant would rent, and we saw no reason why we should pile up rental on the Western Electric, and increase their costs, and increase our revenues, and in turn have the Western Electric's cost go back into the prices of goods sold to the companies.

2958 The Western Electric costs would be distributed between the Bell and the non-Bell customers, but a very small part would go to the non-Bell. That part of the Western's cost which goes to the non-Bell is taken out by the Western before it distributes, and the amount would be so small you would not notice it. There would be a little infinitesimal part.

I don't believe any associated company occupies any of the space. I think the New York Telephone Company had a few pay station telephone booths in it at one time. I don't 2959 know what rental they paid. I think it was on the regular basis. The statement that all the tenants, including the Bell System, paid on the basis of apportioning the cost plus 5 per cent return, if we made it at the time, is the fact. We would not give you a statement that was not true.

Speaking now about the period, beginning with 1926,
2960 when the title to the buildings was held by the 195 and the 205 Building Corporation, the basis that I computed the rentals as reflected in my exhibits was the same basis as quoted awhile back, it was house service, depreciation, taxes, interest, if any paid; and a 5 per cent dividend on the stock.

2961 Subsequent to 1926, the rental is a computed figure, taking into consideration the taxes, the house service, expenses, the depreciation, any interest which the building corporation pays, and if there is any stock out, we include a 5 per cent return on the par value of the stock; the idea being to compute a rental figure which is a minimum reasonable rental figure. Now, that is simply the yardstick for computing the rental. And that is the rental. Now, that goes into our departmental expense account, and it comes out again, in so far as it represents payment to ourselves, it comes out again in this cost of money used,—or cost of the phys-
2962 ical property used in the business.

That does not reflect itself in my figure on Exhibit A-167, because subsequent to 1926, it doesn't come out, because there are no payments on our own property. But prior to that time, it does come out. Subsequent to 1926, I do not put in as part of the charges against the license contract, first the investment of the American Telephone and Telegraph Company in that stock, and the cost of 6.87, or whatever it is, to procure funds, and give credit for the 5 per cent. All we deal with subsequent to 1926, is the rental.

"Q. Then why do you not use the same methods prior to 1926?

"Mr. Blackman: Well, we are going to ask the Court to do that, Mr. Goldstein.

"Mr. Goldstein: No, I want to show the reason why, in one case, they have got the title, and in the other case they own stock.

"Mr. Blackman: We think it is the same thing, substantially, and we are going to ask the Court to make us that allowance.

2963 "Mr. Goldstein: With that explanation we are satisfied.

"Mr. Blackman: We have based it on our physical assets, in making this cost, as it was not strictly a cost.

"Mr. Goldstein: We will accept the answer of counsel as an answer to the question.

"Mr. Goldstein: To clear up the record, I stated yesterday that we were advised by Mr. Bracelen that the figures used in arriving at depreciation expenses of the telephone instruments at the 7 per cent rate in 1923 to 1927, were as follows:

"Life, 11 years, and salvage, 24 per cent. Mr. Blackman asked that we produce the letter.

"Mr. Goldstein: Now, here is the letter, the original letter, signed by Mr. Bracelen, dated September 22nd, 1931.

2964 "Mr. Blackman: I have no objection to the letter going in evidence, it is signed by Mr. Bracelen, and I have no objection, but I would like to read the letter before I consent to some characterization of what it says.

"Mr. Bracelen: Well, I doubt whether the letter should go in. It is probably a letter of many pages, containing

2965 many hundred items. If I signed it, I suppose it is all right.

"Mr. Goldstein: We would just like to get the fact in as to the life and salvage on telephone instruments; a life of eleven years, and salvage of 24 per cent.

"Mr. Bracelen: Yes, that is the rate which the witness testified to.

"Mr. Goldstein: No, we are not questioning the 11 years, but we want to make use of the fact that it was 11 years. Therefore, we ought to have the fact in.

"Judge Wilkerson: I guess you have got it in now.

2966 "Mr. Goldstein: Mr. Heiss, to complete the eleven million dollar transaction, we will identify the letter, copy of which was sent by Mr. Bracelen subject to your check, it is a letter from Mr. Blair-Smith, dated March 4, 1924, to the Illinois Bell, as Defendants' Exhibit 117."

I did not include in my exhibits the losses by the Bell Telephone Securities Company in the purchase and sale of securities, or in its operations. My exhibits are absolutely clean of any Bell Securities expenses or revenues. I did not, in any of my exhibits, give credit to the Illinois Bell for selling stock of the American Telephone and Telegraph Company, because the Bell Securities Company does that, I understand. It makes settlement with the Illinois Bell or whatever services are rendered to the Securities Company.

2967 It is my understanding that there is a payment made by the Bell Securities Company to the Illinois Bell for the use of the Illinois Bell's facilities in selling stock to the American Telephone and Telegraph Company. I do not know whether that payment covers special service, special expenses or a portion of the return on investment, taxes, etc. That is a little removed from my jurisdiction.

Referring to a memorandum covering pension fund accruals which we sent to the Illinois Bell, with my letter of September 22, 1931, that memoradum is just as good today as it was when we sent it. The agreement with the Bankers

2968 Trust Company and the American Telephone and Telegraph Company provides a termination of the trust in ten years. That was put in to comply with the peculiar legal situation in the State of New York. That same sort of provision, and the same method, is used by the licensee companies, including the Illinois Bell in connection with pension funds. We would have been very happy, at the time we established this trust, if we could have created a permanent trust, but we could not do it under the peculiar legal situation in New York.

As to whether if in ten years from now the agreement is

terminated, and the American Telephone and Telegraph Company comes into possession of the pension fund moneys, the American Telephone and Telegraph Company would hold it in trust for pension fund purposes, and for no other
2969 purpose, that bridge has never been crossed, because we don't expect moneys to ever come back.

There is no provision now as to the disposition of those funds, except that which is stated in the company's Employees' Benefit Plan, that these funds will be used for pension purposes, to meet the company's obligations.

Now, we do not figure any ten-year period here, or anything of that type. We would have been glad to have made the trust agreement a permanent agreement, and we did not feel it was necessary to cross the bridge as to what would be done with the funds if they were returned. The agreement I am referring to is the Employees' Benefit Plan.

There are two pamphlets. There is first our Employees' Benefit Plan, which is the Plan we hand to every employee that comes into the business, so that he may know what benefits he gets as an employee of the business. The second is a trust agreement with the Bankers Trust Company.

We will be glad to supply defendants a copy of the
2970 pamphlet, which shows how the American Telephone and Telegraph Company will dispose of the money, apart from the agreement with the Bankers Trust Company. I might add, Mr. Goldstein, that the particular matter that you were referring to is specifically—is covered in Section 4-8,—Section 4, Pensions, paragraph 8.

Cross-Examination (Continued) by Mr. Goldstein.

May 23, 1932.

2973 I had nothing to do with the preparation of Exhibit A-49. My exhibits refer to the Chicago area, or the area involved in this suit.

2975 "Mr. Blackman: And that is, we have made no allocation between interstate and intrastate on these figures.

and the same percentage of interstate will have to be taken out of these as was taken out of the other expenses of the company.

"Mr. Goldstein: All right. Now,—

"Mr. Blackman: That is my impression now. I have not considered it carefully, but I do not think there is much doubt about that.

"Mr. Goldstein: Well, that is the fact we want to establish, whether—

"Mr. Blackman: This fact is certain—

"Mr. Goldstein: —the items of cost—

"Mr. Blackman: This fact is certain, that we have taken out nothing for interstate in producing these figures; we have allocated to the Chicago area on the basis of the people, and the plant.

"Judge Wilkerson: Well, the allocations to the Chicago area so far as distribution between the interstate and intrastate business is concerned, will have to be treated the same as the other items—

"Mr. Blackman: I assume so.

"Judge Wilkerson: —with respect to the Chicago area.

2978 "Mr. Goldstein: We object to each and all of the exhibits offered through Mr. Heiss, beginning with A-150 and including A-169, and the summary sheet to be
2979 offered by plaintiff as A-170, on the following grounds:

"First: That the sources of information from which the calculations therein shown purport to be made, have not been made available to the defendants.

"Second: The exhibits and the testimony show that the expenses allocated to Chicago represent a part of a larger amount of expenses of a pool consisting of many participants who share in some of the same services that the City of Chicago shares in, and in some that the City of Chicago does not share in. No showing has been made as to the character of the services of the pool, whether the other participants pay for the services, and the records have been denied to the defendants from which can be determined whether

the rest of the pool in fact paid anything, whether the expenses for the particular services also furnished in the City of Chicago absorb the entire payment from the rest, whether the services not furnished from Chicago absorb the entire payment from the rest, leaving the Chicago Company to pay all of the expenses of the other services, or leaving the Chicago Company as the only one to pay for services rendered to the others without pay. The records have been denied from which we can tell the extent to which the alleged
2980 pool services benefit the others as compared to Chicago.

"Third: These exhibits contain and have not separated the portion of the pooled expenses admitted to be incurred in the preparation of the reports for many participants in the pool, and for performance of services predicated on the reports from many participants, the character and contents of which reports from such participants defendants have not been given access to, or information about, other than the statement of the plaintiff's witnesses that they are of the same character as those furnished to Chicago, and whose testimony can in no way be checked.

"Judge Wilkerson: Have you anything to say in reply to the objection?

2981 "Mr. Bracelen: If your Honor please, as to the objection that the original sources of information have not been made available to the defendants and their counsel: I desire to make this statement, that we have tendered to the defendants all of the reports which the witnesses have identified in their testimony, and specifically in the case of this witness, those which he has referred to, for complete examination by them. They have been advised that they may see all of these reports in their entirety, that they may check the data contained in those reports which has been used by the witnesses in any way.

"For the most part that data has been used to furnish a basis of allocation of the license contract costs. It seems that that tender would dispose of this objection, the objection to these exhibits.

"But I wish your Honor to know that the tender we have

made has gone beyond that. We have tendered to them for examination in their entirety, all of the reports which they have asked for. I include in that statement the provisional estimate reports for all of the companies. They have
2982 already had furnished to them, as I believe the record shows the provisional estimate reports of the plaintiff. This inspection that I now refer to of the M. R. & C. R. reports and the Provisional Estimate reports, going beyond our exhibits and the underlying data for our exhibits, has been made upon this basis, that if they will indicate that they consider any information upon any of these reports as being material and relevant to any issue in this case, we will consider whether we will permit them to take such information and data from the reports.

"That of course is merely a suggestion for the convenience of everyone concerned. It may be that if they will point out what there is in these reports beyond anything that we have used as a basis for our exhibits, and testimony, which they desire to use for any purpose on their part, we can agree and it will not be necessary to take the time of the court upon that. If we do not agree, then we have stated to them that of course the matter presumably will be presented to the court for a ruling as to whether the data they desire are material or relevant, and are data to which they are entitled.

"I am at a loss to understand how that tender can be in any respect unsatisfactory to counsel for the defen-
2983 dants. It seems to us that it is a complete tender. It makes available to them for inspection all of the reports and all of the information they contain, and we merely ask them in so far as they desire information beyond that which we have made use of, to indicate to us in the first instance, if they will, but if not, to the court, what it is they think they are entitled to have, for a ruling.

"I think that there will be no disagreement between us and counsel for the defendants, as to the accuracy of my statement just made, as to what the tender has been. I may say that in so far as the reports which we have used in connection with the testimony of witnesses who have been on the stand ahead of Mr. Heiss are concerned, those reports were tendered to them, I think a week ago last Thursday, or possibly it was a week ago last Friday, but they have understood that these reports have been available to them either at the Illinois Bell Company offices, or here in court, in the custody of the clerk, at any time they might indicate that they desire to examine them.

"Now if that tender is not satisfactory to counsel, I 2984 think we are entitled to have them state in what respect it is not satisfactory; and in that connection I wish to say merely this further, that we are very near now to the point of resting our case on direct. I do not mean to hold out any hope that we will do that today, and probably not tomorrow, but I should think Wednesday, provided the question as to the admissability of all of the evidence we have offered is disposed of.

"Of course, we cannot rest until we know whether our evidence is in the record or out, and if any of it so far offered is ruled out we will wish to supply the deficiency, and of course, will do so.

"Mr. Goldstein: Saturday, accompanied by Mr. Rainwater, of the Illinois Commerce Commission, I conferred with Mr. Jones, and had a memorandum prepared—or Mr. Jones, rather, had a memorandum prepared at that time, as to just what transpired. I would like to read the first paragraph of it, which will indicate the whole nature of the tender.

> 'Mr. Jones stated that he was offering to Mr. Goldstein all of the figures used by the plaintiff in the preparation of its exhibits as hereafter detailed, and that the figures could be copied.
>
> 'He further stated that if Mr. Goldstein wanted other 2985 figures, and would indicate what they are, he would consider the matter, and if unable to agree, would submit it to the court.
>
> 'Mr. Goldstein asked whether these offered exhibits included any provisional estimate statements and letters of transmittal of companies other than the Illinois Bell, and Mr. Jones stated, no.

'Mr. Goldstein asked what documents and figures were offered and the basis upon which they were offered, and suggested that in view of his unfortunate experience with Mr. Cleveland, Mr. Ohlander and Mr. Rainwater would go over the documents and figures, and should dictate a memorandum containing specifically the terms of the offer; that as soon as this memorandum was typed, Mr. Rainwater would start inspection according to that memorandum and otherwise.'

"On Sunday afternoon there was delivered to us the typewritten memorandum, and there was attached to it a sheet—two sheets which were not part of what was dictated on Saturday, which did expand the offer to include:

'Any other M. R. or C. R. reports not above referred to that underlie these exhibits, and the same offer is
2986 hereby made as to those. The same offer is also made with respect to all such reports, whether or not they underlie or relate to plaintiff's exhibits; that is, counsel for the city may see any M. R. and C. R. reports, also any provisional estimate reports; and if they will indicate what data contained in them they wish to take off, we will consider the matter promptly, and if unable to agree, will submit it to the court.'

"Now the terms of the offer both as to these and also as to the documents which were tendered to us on Saturday, are these: We can look at several thousand sheets of paper that contain figures; on each of these sheets there is one line marked 'total', and that total, which is a summary of probably 25 or 50 figures, may be copied. We may not copy, and so as a practical matter not use, any other figure on the sheet, for obviously, to look at several thousand pages, and to commit them to memory—and even then as a practical matter we could not use them anyway—means as a practical matter that we are limited to checking the mathematical accuracy,
and there is no question about the mathematical accu-
2987 racy of a figure; but we are not given any opportunity
to make use of any detail involved in that summary which we may desire to use as a basis for our contention; and

therefore, we say that that sort of a tender as a practical matter makes it impossible for us to check the information which they are using as a basis for that character of compilations, unless we accept their theory of the case. If we have a right to look at them, we should have a right to make any test check we want on the basis of the figures, to test out our theory.

"They have used for instance total plant; it may very well be that on our theory, instead of total plant, exchange plant is the proper basis. If we should find that exchange plant is the proper basis, there is not any way we can have the figures because we are only allowed to look at them, and not make use of them.

"Judge Wilkerson: Well, take your last point there: If the figure which they give you is total plant, and not exchange plant, and it should be held by the court in the end that exchange plant is the proper figure to be considered in this particular connection, and that is not in the record, then all of that testimony—

"Mr. Goldstein: No.

"Judge Wilkerson: Does it not lose its effect?

2988 "Mr. Goldstein: No, but the big element in the license contract is going to be this—the big issue is this, and it is for that reason in our opinion that they have withheld the information.

"It will be our contention that as between the various participants in the pooled services, some of these services on our theory of allocation absorb the entire payment, and if we are not permitted to get the information so that we can prove that—

"Judge Wilkerson: Why do you concern yourself about that?

"Mr. Goldstein: Because as between the two bases of allocation—there may be two bases of allocation.

"Judge Wilkerson: But I say, why do you concern yourself about it? They have picked out a theory on which they are justifying this license contract, and if that is not the correct theory, they fail.

"Mr. Goldstein: No, they may have a theory—pardon me.

"Judge Wilkerson: But it is not for you, you are not required to establish what the facts are on some contradictory theory. If their theory is right, and they have all of the facts in the record that are pertinent on that theory, they win; and if they have not all the facts in, they lose on
2989 that license contract, that is all.

"Mr. Goldstein: No, but—

"Mr. Haight: So far as that goes, that is very well, but they are in a court of equity, and they have announced through counsel in court that their policy is not to reveal or disclose except as they are forced to, and we have a perfect right in a court of equity, where the suitor comes in here asking for relief, to investigate, to support our theory, and not to be left only to the negative position that that course suggests.

"Mr. Goldstein: There is specifically—they have come into this court, and they have eliminated in this case—

"Judge Wilkerson: If the whole license contract allowance should be thrown out, they lose this lawsuit.

"Mr. Goldstein: They have come into this court, and they have adopted a theory within the last few days which eliminates the question of loans. Now, if we have these figures we can show that the losses on those loans to the other participants, absorb the entire payment. We need no argument as to whether it is proper or not. By withholding the information, they prevent us from pointing out to this
2990 court the importance of these other services that the others are getting, that are not made available to us, or that we are not participating in, and therefore, we are left only to argue as a matter of logic, and not to use the facts, the experience of the companies, as to what has been going on.

"Judge Wilkerson: Well now, what is the total volume in point of physical size of these papers to which you want access?

"Mr. Goldstein: They are offering us access—why should they worry how long it will take us to copy them?

"Judge Wilkerson: Well, how large an array of documents is it?

"Mr. Bracelen: Well, your Honor,—

"Judge Wilkerson: Because I cannot see—they have put in their case on a certain theory; they introduce evidence which they say sustains that theory; and they say this other information on their theory has no place in the record at all. Now in order to get any benefit from their documents, they must have established their theory of the case. If their theory falls, then there is no evidence.

"Mr. Goldstein: But suppose there are two theories.

"Judge Wilkerson: Well,—

2991 "Mr. Goldstein: Why should we be limited to their theory?"

"Judge Wilkerson: I say, if their theory is erroneous, their case falls. On the other hand, you say you want to examine these documents to build up a case on another theory. That necessarily means that these documents get into the record, because if you can look at them, the Court has the right to look at them, and the Court must look at them in order to see whether you have properly applied your theory. That is to say, if they are the figures which you want to use, the Court must look at them if you look at them. That brings us to the question suggested here the other day, whether after all the Supreme Court in this case has laid down a rule under which nobody situated as this plaintiff is, can make out a case. That is what it amounts to.

"Mr. Goldstein: So far as he wants to use the pool figures—

"Judge Wilkerson (continuing): Because if they laid down a rule under which this record must be multiplied so that there are tens and hundreds of thousands of pages in the record, it simply makes it impossible within the limitations of time which a court has at its disposal, to consider a case of this kind.

2992 "Mr. Goldstein: It is our contention—

"Judge Wilkerson: The case is so large—

"Mr. Goldstein: —they have used that method of procedure—

"Judge Wilkerson (continuing): If would fall of its own weight. That is the situation, if your theory is followed out.

"Mr. Goldstein: Now they have used a method of proof to comply with the Supreme Court, which involves the use of these documents. Now they cannot withhold the documents from us on the theory that it is going to clog the record, when they use the same documents for their theory.

"Judge Wilkerson: Well,—

"Mr. Goldstein: And we have a right to offer them in the record for that purpose. Now if they can go in the record for their theory, why should they object to us having access to them on the thought that they would go in the record?

"Judge Wilkerson: After all now, the question is as to the admissibility of these particular documents, and they are offered here as tabulations—

"Mr. Haight: I think it narrows down to something that may obviate the necessity of the introduction of the 2993 documents entirely. It narrows down to this: they say, 'You look at a sheet of paper, and you use only one figure.' We say, when we look at that sheet of paper, we want the opportunity to use other figures in order to check—

"Judge Wilkerson: Yes.

"Mr. Haight: That is where we land.

"Judge Wilkerson: Yes.

"Mr. Haight: If that can be resolved, the difficulty of introducing the documents can be resolved.

"Judge Wilkerson: But the difficulty is this: if you look at these other documents, or these other figures, and you do not agree as to the conclusion to be drawn from them, then you get them into the record, you get them into the case; they must be copied into the record, and you pile up here a record which is measured, not by volume, but by carloads.

"Mr. Goldstein: Then their tender resolves itself into the offer, solely, of the total figure, if that is correct.

"Mr. Bracelen: No.

"Judge Wilkerson: Well, after all, is not this true, that if your theory of the evidence in this case is correct, this case simply cannot be tried in any court.

"Mr. Goldstein: No, our theory is, that if they use
2994 that method of proof, they have got to take the legal consequences of it.

"Judge Wilkerson: All right.

"Mr. Goldstein: They cannot use a summary total.

"Judge Wilkerson: They may have to take them.

"Mr. Goldstein: All right.

"Judge Wilkerson: I am not saying.

"Mr. Goldstein: All right.

"Judge Wilkerson: It may be the court will rule that way in the end, but the question here is as to whether these documents should be received in evidence.

"Mr. Goldstein: Well, we—

"Judge Wilkerson (continuing): Or wether you are entitled to have them ruled out because they have not granted your request for inspection. Now, your request for inspection has been denied up to the present stage of the case by the court.

"Mr. Goldstein: Yes.

"Judge Wilkerson: The Court, not the judge sitting, has passed upon your application for inspection. They offer tabulations of the figures which they have used. It seems to me the documents are admissible in evidence. I am not passing now on the weight to which they are entitled, or as to whether they are entitled to any weight or not. It
2995 may be that in the end the court would reject them entirely from consideration, but just now the question is whether they are to be received in evidence, as tabulations of something which the court has said you have the right to know, but has denied you the right of inspecting certain other documents.

"Mr. Goldstein: Well, it is our position that the manner of their tender resolves itself into a tender of one figure on the sheet, which itself is a summary, without any opportunity for us to use a pencil, to even see whether the additions were correct, or to make use of them.

"Mr. Bracelen: No, no.

"Judge Wilkerson: Now then, I shall admit these documents into evidence, and overrule your objection, and you may save your exception.

"Mr. Goldstein: All right.

"Mr. Bracelen: I submit, your Honor,—

"Judge Wilkerson: Now with the document in the record, the documents having been received formally in the record, if you desire to renew at any time before the entire court, your motion for further inspection of the documents, you may do so. I cannot deny you that right because the documents are here, now, they are in evidence, they have been received.

2996 "Mr. Bracelen: I wish to make this statement, which is a repetition of what I said at the outset, that we are concealing no figure from them—and I want to be sure that counsel understand our position and that the Court understands it. We have tendered to them, and we now tender to them every report they have asked to see. The list of the reports, as I have it in mind, was read to Mr. Heiss when he was on the stand on Friday. The list of reports is the same as that which was contained in the motion to produce, which was argued before your Honor and Judge Evans some two weeks ago.

"We tender to them now, as we have done heretofore, every one of those reports; they may see them freely, and see everything, every figure that they contain. Insofar as we have used certain total figures to which counsel has referred now, and those reports contain specific or detailed figures which go to make up the total, they may check the total, they may use their pencil and paper to whatever extent they please, they may take off the figures that we have used for the purpose of checking our exhibits.

"Now, that all goes to the competency of the exhibits which we have offered. That is one question.

2997 "Now, then, separate and apart from that question, is their demand for other data contained upon those reports, which we have not used. Our offer to them is that they indicate to us, if they will, what figures upon those reports they consider material and relevant to this case. If they will do that, we may agree. Failing to agree, the matter is to be submitted to the Court for a ruling. No fact or figure is being withheld from them or concealed from them.

"Now, I am utterly unable to understand why that is not satisfactory. But the point I wish to make is that no figure upon any of these reports is being withheld from their inspection and examination. I am not going to take the time now, unless it seems to become necessary, to take up those various reports,—

"Mr. Goldstein: May we introduce this memorandum, which will show the terms of the offer?

"Mr. Bracelen: Please do not, now; I am not going to be very long.

"Mr. Goldstein: Pardon me.

"Mr. Bracelen (continuing): —to discuss those report forms, which were before your Honors when the last
2998 motion to produce was argued here. Your Honors, your Honor and His Honor, Judge Evans, examined those somewhat during the course of the argument.

"Judge Wilkerson: Yes.

"Mr. Bracelen: And it appeared that they contain an enormous mass of detailed and specific data of all kinds pertaining to the plant, to the property and the business of every operating telephone company of the Bell System, beginning with the New England Telephone and Telegraph Company, and sweeping across the country. And it seemed to us, and it then seemed to the court, that obviously not all of that information should be brought into this case, which involves an issue here as to rates in the City of Chicago. But let there be no mistake about our position. If there is anything upon any of those reports which they desire in addition to the figures which we have used, let them indicate to us, or to the court, what figure they desire. It may be that we can save your Honor the necessity for any consideration of the matter.

It may be that we will give them the figure, possibly, whether we think they are entitled to it or not. But at all events, they need only indicate what they want, and ask for a ruling.

"Now, we are not standing upon the position that they 2999 must force something out of us. On the contrary, we are tendering them all of these reports, and they have understood that, and in fact, the statement which Mr. Goldstein read from, the memorandum which was prepared by Mr. Jones in consultation with Mr. Goldstein, so states very clearly. But after stating the tender correctly, as I think Mr. Goldstein did, then he proceeds to say that we are withholding something and concealing something. The tender is in direct contradiction to that statement, your Honor.

"I think the record is clear upon it.

"Judge Wilkerson: Well, the difference between you, as I understand it, is simply this: You have offered an inspection of certain portions of the documents.

"Mr. Blackman: No, sir, the whole of them.

"Mr. Bracelen: All of them.

"Mr. Blackman: The whole of the documents.

"Mr. Bracelen: All of them.

"Mr. Blackman: The whole of the documents in every case.

"Judge Wilkerson: What more do you want?

"Mr. Bracelen: (Continuing) Every document.

"Mr. Goldstein: But we cannot make use of it. We can look at a thousand documents, and what good does it do 3000 to look at them if we cannot use a pencil to make any test?

"Judge Wilkerson: What do you want to do—

"Mr. Goldstein: (Continuing) Or do anything with them.

"Judge Wilkerson: What do you want to do?

"Mr. Goldstein: Just read them.

"Judge Wilkerson: Do you want to take them away?

"Mr. Goldstein: No. But we would like to have the opportunity to work on them, and if there is for instance any portion of the detail that we think is relevant, we want to have the right to use that figure.

"Mr. Blackman: And we say, sir, if they can point out to us

"Mr. Goldstein: Well,

"Mr. Blackman: or to you

"Mr. Goldstein: is your offer —

"Mr. Blackman: any reason for that

"Judge Wilkerson: Yes.

"Mr. Blackman: we will allow it

"Mr. Goldstein: Is your offer.

"Judge Wilkerson: The point is this. You say they must point them out to you.

"Mr. Goldstein: Yes.

"Mr. Blackman: Yes.

3001 "Mr. Goldstein: The reason

"Judge Wilkerson: (Continuing) What it is about; that they must point out to you what it is, as to which they desire information.

"Mr. Blackman: Yes, sir.

"Judge Wilkerson: And they say they wish the right to fish, to see whether their examination

"Mr. Blackman: Exactly.

"Mr. Goldstein: No.

"Mr. Bracelen: Yes.

"Mr. Blackman: Exactly.

"Mr. Goldstein: No.

"Judge Wilkerson: Whether they want

"Mr. Goldstein: Let us

"Mr. Blackman: Now the point comes down to this

"Mr. Goldstein: We say this, that we cannot tell what we will want until we make a test to see how the figures will line up. We may have a theory, and our theory will not be worth anything unless

"Mr. Bracelen: Precisely, sir.

"Mr. Goldstein: (Continuing) —until we know where we stand on it. We have to know the significance. We do not want to burden the court with too much—

"Judge Wilkerson: —There is a word that has been used from the earliest decision, that applies to the thing that 3002 you say you want to do.

"Mr. Bracelen: Precisely.

"Judge Wilkerson: There is something to that effect in an early decision, which applies

"Mr. Bracelen: Precisely.

"Mr. Haight: We do not want to fish.

"Mr. Bracelen: That is precisely the point.

"Mr. Haight: We simply do not want to be denominated as that particular kind of fish that comes up the Illinois rivers early in the spring, from which this state gets its name, that is all.

"Mr. Goldstein: May I ask whether the terms of the offer this morning, are any different

"Judge Wilkerson: Well, I do not think anybody could accuse you of being a sucker, Mr. Haight.

"Mr. Goldstein: May I ask whether the terms of the offer are different than those contained in this memorandum? If the terms of the offer are contained in this memorandum, we want it identified as Defendants' Exhibit D 118.

"Judge Wilkerson: You may have it identified.

"Mr. Goldstein: All right.

"Judge Wilkerson: I have ruled

"Mr. Blackman: Your Honor, I think the whole thing

"Judge Wilkerson: I have ruled on the whole thing.

3003 "Mr. Goldstein: And we preserve an exception.

"Judge Wilkerson: And I have said that if counsel desire to make a motion after the documents have been received in evidence, relating to further inspection, and it is done in the proper way, and on a proper showing, I will have my associates on the bench convene at some convenient time and consider the application. But it will have to be presented in the regular order, and supported by a proper showing."

(The document was thereupon marked Defendants' Exhibit Number D-118, for identification.)

"Mr. Blackman: So that we will have the record straight, if your Honor please, I will re-offer in evidence the plaintiff's exhibits that have been submitted to the court, Exhibits A-150

to A-169, both inclusive. I will also offer in evidence the tabulation of royalties, which was identified by Mr. Goldstein
3004 as Exhibit D-111. That will be Plaintiff's Exhibit A-171.

"Mr. Haight: If your Honor please, we ask that our objections already placed on the record stand to the offer at this time.

"Judge Wilkerson: Overruled. It will be understood in this case I suppose, as it is always understood in an equity case, that where the court overrules an objection, it in unnecessary to formally note an exception of record. At least in this case the point will be treated as saved, whether counsel formally notes an exception or not.

"Mr. Haight: We will be very glad to do that. Is that agreeable to you also, Mr. Blackman?

"Mr. Blackman: Oh, yes."

(The documents were thereupon received in evidence as Plaintiff's Exhibits A-150 to A-169, both inclusive, and Plaintiff's Exhibit A-171.)

3005 *Re-direct Examination by Mr. Blackman.*

I was asked by Mr. Goldstein with regard to the sale to the Long Lines Department of telephone instruments in 1927. There was no sale, nor could there have been any sale to the Long Lines. Those few instruments were merely transferred on our books to the Long Lines Department accounts. The Long Lines is a part of the American Company, and the American Telephone and Telegraph Company owned the instruments before this date and continued to own them afterwards. They were simply continued on the books of the Long Lines on the same basis that they had previously been carried upon the books.

I stated in answer to Mr. Goldstein that there was no
3006 relationship between our depreciation expense that we carry on the books of the American Company and the license revenues which the associate companies pay. We do not charge up on our books any specific amount for any specific service under the license contract to any associated com-

pany, or against the license contract as a whole. My books show the license revenue received from the companies, and in an entirely separate and distinct book of records, we show the expenditures that we incur in rendering that service as a whole but not allocated to that service. That is, those expenditures are carried on our books just like any other expenditures.

Mr. Goldstein asked me whether prior to December 31, 1927, the associate companies could purchase telephone instruments from the Western Electric Company; that is he said they could not purchase telephone instruments from the Western Electric Company, and I said "That is correct". I will 3007 amend my answer to Mr. Goldstein; they could purchase instruments, but they would have been decidedly foolish to have done so when the instruments were being made available to them under the license contract and they were paying for them through the license contract payment.

I was asked with regard to the experience of the Company with the so-called hand set or cradle telephones since 1927 and I said I did not have the figures, but would look them up. I have familiarized myself generally with them. I think there are now somewhat over a million hand sets in use, slightly over a million in use throughout the Bell System, or about 18 per cent, I think, of all instruments in use. That is, in the six years that they have been in use they have increased to a point where they are now about 18 per cent of the whole.

3008 I read a portion of a letter from the President of the Illinois Bell, in which this phrase occurred:

> "The completion of this program during 1924 will require $7,636,000 beyond our estimated current resources, but will not require any new finances."

That was merely a statement by the President of the Illinois Bell Company that, in respect of a large construction program which he had for 1924, no further arrangements for financing that program were required, because he knew that he had loaned to the American Company at the beginning of 1924 in excess of $10,000,000, and he also knew that that money could be withdrawn from the American Company; or, in other words, that if he asked the American Company for the money, they would repay the loan to him at any time that he wanted it, and that he had, therefore, his construction program amply covered as to finances.

3009 In answering a question about the cradle phones in use, I said that they were 18 per cent, and about a million in number. I made an error there. The 18 per cent is right, but the number is 2,800,000 instead of 1,000,000.

I was asked concerning a contrast made by Mr. Goldstein between the rate of 5.53 which the American Company paid to the Illinois Bell in 1924 and the rate of 5.88 which the American Company customarily receives for money which it advances to the associate companies. When the American Company advances funds on demand notes, or on open account to its associate companies, on the 6 per cent basis (that is, 6 per cent less 2 per cent for prompt payment of interest monthly), it advances those funds with the full understanding that

3010 they are to go for all practical purposes into new construction and new additions to property and be permanently separated from the American Company, or that the money will be permanently invested in the Illinois Bell plant or the plant of any other associate company to which the money is advanced. That is, the American Company cannot get it back if it wants it back; it hands it out, it advances it with the understanding that the transaction is final. But on the other hand, the company receiving it has the opportunity to repay it at a later date before these advances go into more permanent financing, such as stock; if the associate company that has received the money has in its possession spare funds, that is, if there should be funds left from earnings, or from other sources, or if property should be sold, or if for any reason the associate company has money, it can repay to the American Company the advance which was made on the 6 per cent basis. But the American Company from its point of view does not expect that the money will be repaid.

3011 Now, take the other transaction, the receipt by us of moneys from the Illinois Bell and the payment of 5.53: In 1924 we received slightly in excess of $10,000,000, and we paid the Illinois Bell 5.53 for the money. Now, the 5.53 rate in the first instance was the cost of that money to the Illinois Bell Company, and in taking it off of the Illinois Bell's hands, we assumed the burden of carrying that money until the Illinois Bell required it in its plant. I say, we assumed the burden; that is not quite a fair statement. We relieved them of any loss on that money during the period from the time they sold the bonds until they subsequently needed the money in the business.

3012 Such money as we received from the Illinois Bell, or any money that we held in New York for the companies, we had, of course, to keep in rather liquid form, and on that class of money that we received in 1923, we received in that year 3.51 as an average on all the money held during the year. Now, that is understandable for this reason: When we had funds of that type in our possession, the money that we had loaned from the Illinois Bell with the understanding that we would repay it as they needed it, or money that we might have gotten from our stockholders to invest in telephone property with the commitment to invest it in telephone property, we did not in respect to that money have any right to speculate or to look around for some long-term investment that might yield 5 or 6 per cent, or to use for call money transactions. In fact, we have never put any money in any call money transaction. But we feel an obligation to put that money into such forms of investment as government securities and treasury certificates, and short term state and municipal paper;
3013 something that we can on a few days' notice collect on, and yet at the same time it will be an investment that embodies all of the factors of safety, integrity and maintenance of the principal. Now, on that type of money, of course, the rate that is paid is low.

So that during all of the time we were actually holding that money in our possession as money and paying a 5.53 per cent return on it, all we were getting was 3.51 on the average for all money. In 1924 we got 3.15; in 1923, 3.51.

In making up my exhibits where I show the amount of the cost of this money to the American Company and allocate a

part of that cost to the Chicago area, as to whether I first give full credit for all of the money that we received, I will take, for example, the matter of holding funds available, in that category. If we are holding, say, $70,000,000 of funds available, on the average, through the year, and those moneys produce a return to us, invested as I have just described, of,
say, 3.5 per cent, we give full credit for every dollar
3014 earned by the American Company on that money in
computing our cost of carrying that money for the companies. In other words, if that money cost the American Company as a whole 6.8, and we earn on it 3.5, then we figure the cost as the difference between 6.8 and 3.5, or 3.3. That is the percentage which we use to determine the cost to us of carrying that money.

It is those figures which I have used in my exhibits, both for the cost of holding money available and for the cost of temporary financing. I might say that in the case of temporary financing we give credit in our computations for the 6 per cent rate that we receive, or 5.88 with a discount for interest, so that if money cost us 6.8 as a whole on all of the money used in the business, and we receive on this money put out on the temporary financing basis 6 per cent, your percentage, or your factor of loss there is only the difference between the 6.8 and 6 per cent, or only .8 per cent. That is the only thing
that I have used in my exhibits. Now, one further
3015 thing: In the matter of cost of carrying physical prop-
erty, there instead of crediting any interest we credit the rents that we have on those properties.

In answer to Mr. Goldstein I gave certain figures with regard to our financing of the Illinois Bell in the year 1926. In the year 1926 we furnished the Illinois Bell Telephone Company $13,500,000, gross. There was repaid to us during that year $2,700,000, made up of four payments; January 21st we received $1,000,000; June 9th, $250,688; October 20th,
$749,312; and on December 23rd, $700,000. The service
3016 rendered was the service of making available to them
$13,500,000 in that year. The net amount that they took

after giving credit for all repayments was $13,500,000 less $2,700,000, which would be $10,800,000.

For the year 1926 my computation, Exhibit A-169, shows that the part allocable to the Chicago area was $4,211,000. Now, that is approximately 70 per cent, which would mean about $6,000,000 was held available that year for Illinois Bell Telephone Company. The Chicago area is about 70 per cent of the entire Company, which would mean for the Illinois Bell as a whole about $6,000,000. In making my allocation for the year, I disregarded the fact that they had actually received $13,500,000 as gross and $11,000,000 as net and charged only on this $4,200,000; that is, we held a certain amount.

We arrived at that $4,200,000 in this way: We took the total money that the American Company held in its treasury in more or less liquid form available for advances, and
3017 we excluded from that an amount of $6,500,000 which we were holding for our general purposes, and we took the rest and allocated it to all of the companies on basis of a composite ratio of estimated requirements, plant investment and gross additions. In other words, we would not have held available in New York on an average through the year an amount of money equal to the total estimated requirements of the companies. We hold as little as possible, and yet enough to see that the needs of the companies can be met at any time; and also another factor, we cannot finance any time, or any moment that we want to finance. In financing such a large undertaking as the American Company has before it, they must pick their times of financing, so they get money on the very best basis they can get it on. So we aim to hold what in the judgment of the management is a minimum amount and yet an amount that is adequate to meet the programs of the companies as they come along without embarrassement to them; and that minimum amount or that adequate amount for meeting these requirements is allocated to the companies
3018 on the basis of a composite of the estimated requirements, gross additions, and plant in service.

In the year 1926 our average earning on money was 3 per cent straight. So what I carry in my exhibit is the difference between 3 per cent and the cost of the money in 1926 applied to this amount of $4,200,000.

The estimated requirements of the Illinois Bell for 1926 were given to us as $15,612,000.

I was asked certain questions by Mr. Goldstein with regard to the years 1923 and a part of 1924, and the last years of the period. The situation which he brought out there is not in any way typical of the conditions that existed during the period in between. The earlier period was one that involved the bond financing transaction of the Illinois Bell; that is, the Illinois Bell put out a bond issue of $50,000,000. It
3019 would have been foolish for the Illinois Bell (which had,
I think, a $19,000,000 or $20,000,000 bond issue to retire) to go to all the expense of bond financing and to just have issued a $19,000,000 bond issue when at the same time it had also about $19,000,000, $18,000,000, or $19,000,000 of notes to pay for the purchase of property. In order that it would have a round figure for a bond issue and have money for the future, a bond issue of $50,000,000 was deemed wise at that time and that left it temporarily with funds upon which it was paying 5.53. We took those funds at the same rate and relieved it of any possible loss on the funds until they needed them. We fed them back in small amounts over the year 1924, and,
3020 at the same time, in safeguarding that money we had the
obligation to keep it so invested that it was available at any time the Illinois Bell wanted it.

The period, say, from 1929 to 1931, so far as the Illinois Bell is concerned, was also a very unusual period. I recall very distinctly coming to Chicago (I think it was early in the summer of 1929) and discussing with Mr. Abbott the matter of financial requirements for the latter part of the year 1929, 1930, and the future. Then the depression had not yet come into the picture. It was thought by the President of the Illinois Bell that with very heavy construction requirements ahead, as he then saw them and had every reason to believe that he would need them, a forty-million-dollar stock issue would not be an unusual financial program, but that the program should be spread out over the period in such a way that

he would not receive the money that was paid in on the stock until after he had borrowed money from the American
3021 Company and carried it for brief periods on a 6 per cent basis. It was deemed wise to put out the $40,000,000 issue, and that was announced, I think, in the summer of 1929. Approval was obtained from the Commission, and the issue was announced. The first installment was, I think, $20,000,000 or $19,000,000 (it was a 50 per cent installment). The American Company's first installment amounted to nearly $20,000,000.

Now, up to that time the Illinois Bell had borrowed from us nearly $20,000,000, so that when the first installment was due the funds that they had already borrowed from us were simply repaid to us as an offset against the first installment on the stock, and the notes were cancelled. Now, if Mr.
3022 Abbott had decided at that time to put out two stock issues of twenty million dollars, when the first installment of nineteen million odd was paid, if the stock had then been issued, it would have been on the same basis as any other stock that was outstanding. But the stock was not to be issued until the forty million was paid, so that there was paid on the installments the 8 per cent interest which was paid to all stockholders.

Now, it was the plan that between the payment of the first and second installments there would be required by the Illinois Bell something in the nature of more than ten million dollars, which we were to advance on notes at 6 per cent. We did advance money, but the business depression came in and the Illinois Bell's needs were not as great, so that by the time the second installment came into the picture we had, I believe, advanced only between two and three million dollars. I am speaking now of early in 1930. Now, the second installment was due, I believe, in June or July of 1930. The Illinois
3023 Bell did not need the money it had asked for, because of the depression. Another situation crept in the picture, and that was the inability of the Illinois Bell to pay its taxes in the City of Chicago, with the result that for the years 1930 and 1931 we found ourselves with from eight to ten or

twelve million dollars of funds that we had taken off of the hands of the Illinois Bell and carried for them at 6 or 5.88 per cent, when the American Company was not getting over 2½ and 3 per cent on the money.

At page 2810 of the record I am quoted as having made this statement: "All those amounts they had the convenience of paying back to us through the years, and reducing their interest charge $2,700,000. Now, in my estimated requirements I show that their requirements were $13,500,000." I am not
correctly quoted there. That situation refers to the year
3024 1926 and what I said was this: "That we had advanced
them, the Illinois Bell, $13,500,000, and had given them the opportunity of repaying any amounts that they might have available, and that they had repaid during that year $2,700,000, thereby reducing their interest charges." The interest charge was nothing like $2,700,000. The $2,700,000 refers to the principal amount paid back of the thirteen million five in order to save interest thereon.

I was asked concerning the course of the transaction when the American Company bought a patent and gave a license to the Western Electric under that. In reading the record I find that apparently I did not state that whole transaction. The question that was asked me was that if the American Company paid, say, $250,000 for a patent, and gave the Western a license thereunder, whether the Western paid the American Company $250,000, and, if so, what was done with the
$250,000. I should have made this distinction: that
3025 under any patent which the American Company buys,
the Western Electric receives a license, but that the Western Electric reimburses the American Company only for the cost of acquiring the patents in those cases where the patent is one that should go to the Western. For example, a patent pertaining to telephone apparatus and appliances, something with which the Western deals, should go to the Western, and, in that case, if the American Company buys such a patent, it bills the cost of it to the Western and gives the Western a license under that patent, the Western reimbursing the American Company for the full cost. But if the

American Company buys a patent which is related to the telephone, or anything entering into transmission, why, the cost of that patent under the license contract is borne by the American Company, and no part of it is billed to the Western Electric, but the Western is given a license to manufacture under that patent.

Those charges for purchasing patents for the years 1923 to 1931 that were shown on the exhibit of the expenses of the Law Department are expenses that were paid by the 3026 American Telephone and Telegraph Company and were not passed on to the Western Electric, because anything that was passed on to the Western Electric was repaid by the Western Electric and has been credited in my costs, with the exception of a few small amounts which are shown on the royalty statement D-110, I believe, or 111.

I was asked whether the reason I had included the plant investment as one of my factors in making this allocation of cost of money was not because the Illinois Bell had very small estimated requirements and a large plant. It is not a fact that it did have very small estimated requirements. The estimated requirements of the Illinois Bell are relatively as large as the requirements of any other company. And, of course, they may vary from year to year. Some years they may be slightly below, other years slightly above, but, taking it throughout the period, the Illinois Bell's requirements are proportionately just as large as any other company's requirements.

I was asked concerning a forty-eight million dollar dividend of the Western Electric to the American Telephone 3027 and Telegraph Company, or received principally by the American Telephone and Telegraph Company as its principal stockholder. As I understand the situation, one major source of that money was the sale of the International Western Electric property. Then, in addition to that, I believe there were some additional earnings that the Western had accumulated in the non-telephone field over a period of many years in the past, so that this $48,000,000 was just a house cleaning by the Western in connection with the sale of the International Western Electric property and certain non-Bell earnings, or non-telephone earnings that had accumulated over a great many years in the past.

The sale of the International Western Electric took place about 1925. At that time the International Western Electric had a surplus on its books which it had built up from undistributed profits throughout the period of its existence. Just what that surplus was, I am not in a position to say.
3028 I know it had a substantial surplus. In that sale, of course, that surplus was taken into account and paid for by the purchaser and when the property was disposed of the surplus was distributed to the American Telephone and Telegraph Company through this dividend, and this forty-seven million dollar dividend, I may say, was included in the surplus that I have credited in my computation of average cost of funds. That is, every dollar of this forty-seven million dollars has been used to reduce the average cost of funds used by the American Company in the business, and that is also true in respect of the fourteen-million-dollar item shown on our books as the result of the sale of instruments. It has been applied to reduce the cost of money used in the business.

In developing my cost of money, I used, largely, the
3029 stock of the company and the surplus. I was asked concerning the stock issues of the company. I have prepared a tabulation which shows all of the stock issues and what was received for those issues. That is the sheet marked for identification Exhibit A-172.

This statement (A-172) is an analysis of the capital stock of the American Company, to show to whom it was sold, how it was sold, in what connection and substantially when it was sold, and the consideration received, as well as the amount of premiums realized in excess of par value. For example, in the upper section there is a block (a), sold to American Bell Telephone Company. The first item of $17,500,000 was sold for money. I may say that the American Telephone and Telegraph Company was organized in 1885, and from then to 1900 all of the stock that was in issue was taken by the American Bell Telephone Company. The first block of $17,000,000 was sold for cash. The next block of $2,500,000 was issued 3030 for a franchise, the third block, put out between 1889 and 1900, was issued for cash, and in 1899 to 1900 there was issued $51,772,600 par value to acquire the stock of the American Bell Telephone Company; that is, two shares of American Telephone and Telegraph Company stock at a par value of 100 were issued for each share of American Bell Telephone Company stock, which stock had a book value in 1900, when this transaction took place, of $228 a share.

In the second block is shown, first, the stock issued in conversion of bonds. There were four convertible bond issues under which we finally issued $426,952,100 par value of stock for a consideration of $643,116,764, or at a premium of $216,164,000, roughly. We got $216,000,000 more than par for our stock in that case.

Now, I may say, as regards the first block at the top of the page, we received more as a consideration than $83,883,000, but those who were responsible for the accounting back in those days did not record the excess as a premium and the excess is in our surplus accounts.

Then, we exchanged $6,000,000 of American Tele- 3031 phone and Telegraph Company stock for $7,500,000 of Bell of Pennsylvania stock. The American Telephone and Telegraph Company stock at that time was paying an 8 per cent dividend, and the Bell of Pennsylvania stock was paying a 6 per cent dividend. Then, we issued $15,000,000 in exchange for the common stock of the Teletype Corporation in 1930, and we issued under circular offers to stockholders, both through subscription and by selling unsubscribed, $1,148,976,600 par value at a premium of $5,016,394, and under our Employees' Stock Plans the last ten years we have issued $185,024,400 of par value at a premium of $30,887,527. Now, the figures in the last line at the foot of the page correspond with the figures in the published annual report to the stockholders for the year 1931.

With regard to this Teletype transaction, we have received cash, or the equivalent of cash, for the entire $30,000,000.

(Plaintiff offered in evidence document marked Plaintiff's Exhibit A-172.)

3032 *Re-cross Examination by Mr. Goldstein.*

Prior to 1927, the associated companies could purchase telephone instruments from the Western Electric if they wanted to; that is my understanding.

"Q. I would like to read to you from City Exhibit 60, the contract of 1882 between the American Bell Telephone Company and the Western Electric Company, and I will ask you, after I have read certain sections, whether you are still of the same opinion, that the licensees could purchase telephone instruments from the Western Electric. Page 2069 of the record, volume 6, provides that the first party, and the first party is the American Bell Telephone Company, 'agrees that it will employ the said second party, that is, the Western Electric, during the existence of this contract, to manufacture telephones required by it, the American Bell Telephone Company, whether for use in the United States or for export, upon the terms and conditions following, that is to say: and
3033 then there are provisions as to the price, and so on, and then the last section is, or the second to the last section is, 'Except as in this article provided for, the second party shall not engage in the manufacture of telephones within the United States'. Now, if you care to read that, you may.

"A. I can't get anything out of that.

"Mr. Blackman: What was the date of that contract?

"Mr. Goldstein: 1882.

"Q. Do you know of any modification of that agreement?

"A. Well, you have read such a sketchy section of it there and I am not an attorney."

I have read the contract between the American Bell Telephone Company and the Western Electric. I am not competent to pass an interpretation of this contract. My opinion is just as I have stated it, that there was nothing that would prevent the associated companies from buying telephones from the Western Electric prior to 1927 if the asso-
3034 ciated companies had wanted to be foolish enough to do so. I did not take these agreements between the Western Electric and the American Bell Telephone Company

and the American Telephone and Telegraph Company into consideration at all. I am stating what was my understanding of the situation. I have read the contract between the manufacturer and the American Telephone and Telegraph Company and I know of nothing in it that would change my opinion. My opinion is with such knowledge as I have of the situation.

I said generally the estimated requirements of the
3035 Illinois Bell were relatively as large as those of any
other company in the System. I didn't say they were
larger. In order to check that opinion of mine that it was relatively as large, it would not be necessary to check the estimated requirements of each of the licensee companies as compared to the total. All you need to do is to look at C. R. 13 compiled by my department, which defendants have had available for many months.

C. R. 13, as I have stated before, was compiled from the
provisional estimates together with other data, so unless you
accepted C. R. 13 you would go back to the provisional esti-
mates of the other companies, and if you didn't accept
3036 the provisional estimates, you would have to go back to
the basic data of the company. At least you would have
to use the provisional estimates if you didn't accept C. R. 13.

There are twenty-five companies in the System that we
finance. You would not have to compare the Cincinnati Sub-
urban, I think, because they borrowed very little from
3037 us. I have seen people who could make that comparison
and keep all the figures in mind without using a pencil.
I don't know whether I could.

The gross advances by the American Telephone and Tele-
graph Company to the Illinois Bell in the year 1926 were
$13,500,000. I would say that is an average condition.
3038 If you will look at 142-C, you will find the figures stated
there. I said those years where the advances were made
to the American Telephone and Telegraph Company were
unusual financial relations with the American Telephone and

Telegraph Company, because they are the outgrowth of unusual conditions existing in those years.

3039 The gross advances which the Illinois Bell Company asked the American Company to borrow from it through the year 1931 were $17,620,702, of which the American Company in that year paid back a substantial sum in thirteen different transactions. The Illinois Bell asked the American Telephone and Telegraph Company to borrow $17,000,000 from the Illinois Bell, or to put it this way, the Illinois Bell said, "Here we have $17,000,000 that we don't know what to do with unless we put it into banks and get what we can for it, 2 or 3 per cent. Will you take it?" We said, "Yes, we will take it, and we will pay you 6 per cent on it, or 5.88."

3040 That money was not the proceeds of the sale of a stock issue. There might have been in the very early part of the year a little left from the stock issue, but in 1931 the large amounts left with the American Company were largely due to the fact that the Illinois Bell could not pay its taxes in the City of Chicago. I am talking about the whole tax situation. The tax bills had not gone out. The company had the money in the bank ready to pay. It could not use the money and asked the American Company whether the American Company would take it on a 6 per cent basis and
3041 we said yes. We didn't want it. It would have been the finest thing that could have happened if we didn't have to take it or if we were not asked to take it.

The Illinois Bell did not issue any stock in 1931.

3042 In the year 1930 the Illinois Bell left with the American Company $23,022,185. That is, the gross amount of money which the Illinois Bell asked us to carry for them and to borrow from them and pay them 6 per cent interest on, was $23,022,185.

I started to explain a while ago when Mr. Blackman was examining me, where this money came from, and I think I gave about half the transaction. The second stock installment on the 1929 offer was $9,925,825, and was payable on January 2, 1930.

That is the forty million issue. At that time the Illinois

Bell had borrowed from the American Company $2,200,000 in notes, which it paid off. They had then left 3043 $7,725,000, which was left because the business depression had come into the picture. They asked the American Company to take that $7,725,000, and then in February they left with us another $3,000,000; where they got that money, I don't know, but I presume it was money that they had available for taxes, and couldn't use it. They asked us to take it. Then in February, on to June, they called back from the American Company, in nine different transactions, quite a large amount of the money they previously had with us.

Now, then, in June of that year, they borrowed $700,000 for a day or two, and paid that back. Now, the last of the three installments on this 1929 stock offer was due on the 1st of July, 1930, $9,925,825. Now, the business depression had gotten so bad that up to that time, between the second installment and the third installment, the Illinois Bell did not have to borrow any money from us, and they asked us to leave with us all but $2,000,000 of that installment. We paid back the $2,000,000 in cash, and they asked us to hold $7,900,000 for them until they needed it. And from then to the end of the year they left with us another four million odd, making up in total money left with us that year, which we were 3044 to carry for them, conserve for them and invest safely for them, and at the same time do what no other borrower would do, give them 6 per cent on it, $23,022,000.

The explanation of why the Illinois Bell had to issue this stock with the depression coming on is as follows: In 1929, when this stock offer was put out, nobody knew of the depression; we had come to a new high level. When you put out a circular offer to all stockholders (and there are a number of minority stockholders in the Illinois Bell Company) you are presumed to live up to it; and the circular put out in 1929 called for a payment in December, 1929, one in January, 1930, and one in July, 1930. Now, you are presumed to go through with a circular that you offer to your stockholders and 3045 that was just what was done in this case. The Illinois Bell Telephone Company never asked the American

Telephone and Telegraph Company to defer the issue of stock. They could have asked it, but it would have been very bad business to have done so. It would not have saved 2 per cent on $40,000,000, as $20,000,000 of that sum had been wiped out entirely by the first installment.

3046 There was a stock issue of the Illinois Bell Telephone Company in 1927. The first payment was due on the 15th of January, amounting to $14,887,350. Previous to that time, that is in 1926, the Illinois Bell had borrowed from us $13,300,000; that is the amount of debt that the Illinois Bell owed us at the end of the year. They applied the $13,300,000 against the $14,800,000 of the stock installment, and had a balance of $1,552,700. They asked us to keep that for them, so that they did not have to have the burden of carrying it at 2 or 3 per cent in the bank. And we did, we paid them 6 per cent, and within a month thereafter, they drew it away from us. They asked us to keep this on the 15th day of January, and on the 3rd of March they called for $552,700, and on the 31st of March they called for a million, so that cleaned up that transaction. Now, then, on the 31st of
3047 March they borrowed another $1,200,000, which they repaid on the 20th of April. On the 2nd of May, they borrowed $500,000, which they repaid on the 21st of May. On the 1st of June, they borrowed a million, and on the 13th of June, $750,000.

Now, on the 30th of June, there was a stock installment of $7,443,675 and the Illinois Bell owed us $1,900,000. They cancelled the $1,900,000, and kept some of the money and asked us to take $3,500,000 and carry it a little while for them. We did, and they began to draw it down in August. In September, there was another stock installment. There was no debt to cancel. Of that they asked us to keep $5,250,000, which they drew down between the 1st of December and the end of December, leaving the account at the end of the year $315,632 with the American Company.

Now, the gross cash that we held available for the needs of the Illinois Bell Company that year was, in my judgment, about $18,000,000, $17,980,000. That was the service we rendered to them.

3048 In the year 1924 there was a stock issue installment
of $1,979,500 on the 31st of March. That was paid the
Illinois Bell in cold cash, as they wanted it that way. They
left with us on the 2nd of January, $1,000,000. On the 4th
of March we took back the Liberty Bonds, which were redeemed
by the Government, and the Illinois Bell left
$11,235,462 of cash with us, which we conserved for them and
on which we paid them 5.53 per cent. On the 31st day
3049 of March they left another $793,000 with us. Of that
money they drew down during the year, in eleven transactions,
$10,584,632, leaving the American Company still
owing on loan from them at the end of 1924, $2,443,944. That
was carried over into 1925 and was repaid by the American
Company in small amounts early in 1925.

In 1923 the Illinois Bell loaned the American Telephone and Telegraph Company amounts ranging from $10,700,000 to $12,300,000. The American Company loaned the Illinois Bell $10,573,000 the first part of the year. You have got to take the year as a whole. Part of that loan was converted into stock and part of it was advances; nearly $3,000,000 were advances.

3050 The first half of 1923 and the year 1926 are not the only years in which the American Telephone and Telegraph Company loaned money to the Illinois Bell. The American company practically advanced money through all the years to the Illinois Bell. When it advanced money it did not necessarily have balances on hand as a credit. It might have had at one part of the year small balances on hand and those were handed back, and then for a while the American Company would finance the Illinois Bell, and then the Illinois Bell would begin to pay back again.

"Q. Now on your Exhibit A-164, in determining the cost of funds as a charge against the license contract payments, you included the interest paid on loans from associated companies?

"A. I did not charge anything against the license contract payments."

3051 I simply endeavored to figure the cost of the license contract service to the American Company and its portion allocable to the Chicago area. In that case I took the cost of funds as a basis of my determination of costs. The Chicago area should bear its proportionate part.

The American Telephone and Telegraph Company holds this money available for all of the companies in a single treasury, it tags no dollars, and it could not, by the very nature of the situation, say at the beginning of the year, "We will take so much for the Chicago area, and so much for the New England Company, and so much for the Pacific Company." We have one common treasury of funds held 3052 available and that is available for the drawings of any company. The reason we cannot do it any other way is that the companies have such wide latitude through the year in cancelling the requirements they state to us at the beginning of the year and obviously the American Company cannot pick out a single company and say, "We hold so much for you, and we hold so much for you, and so much for you," because the companies have an opportunity to cancel ad lib their statement of requirements.

The money that came from the Illinois Bell to the American Telephone and Telegraph Company went into its treasury and that, together with moneys from all other sources, was held for all licensees, including the Illinois Bell. There were several licensees outside of the Illinois Bell that had these unusual transactions during this period where the American Telephone and Telegraph Company was asked to borrow money from the associated companies, but there were at the time none that had the same benefit of getting 6 per cent on money which we had to carry at 2.5 and 3 per cent.

3053 City Exhibit 142-F is not a statement of all the temporary funds loaned to the American Telephone and Telegraph Company by the associated companies. This is, in the majority of cases, proceeds from public financing.

The Illinois Bell case in 1930 was public financing, because the Illinois Bell has, I do not know how many minority stockholders, and this stock circular was a public offering. The money which the Illinois Bell left with us was the result of a public offering of stock.

Where a company had surplus funds that were obtained from any source other than public financing, they are not shown on City Exhibit 142-F, but are included in Exhibit A-164.

3054 In 1923 the Illinois Bell had, roughly, $19,000,000 of notes to pay for property in connection with its purchase of the properties of the Central Union. I have not a definite figure in mind. In 1923 it repaid the Central Union 3055 notes out of a bond issue.

We might have made a few dollars one way or the other during the period 1923 to 1931 on the sale of these temporary and government securities. When we made such a profit, it is all in this rate that I gave ranging from 2.3 to 4 per cent through the years.

"Q. Well, as I understand it, it does not include a profit on the sale of securities in 1923 of $1,471,000; in 1928, $158,870.86; and in 1929, $539,652?

"A. Well, I don't know what you are reading from.

"Q. I am reading from the Annual Reports of the Interstate Commerce Commission, your surplus adjustments to the Interstate Commerce Commission show excess of sales price over book value of securities sold $1,471,048.90 in 1923."

That is simply reporting to the Interstate Commerce Commission on the basis that we are required. If we bought 3056 and sold government securities, we would consider any profit in connection with this surplus as a part of the rate on them. Every dollar of profit that has ever been made on government securities has been composited in the figures which I gave as showing the rate of return which the American company earns on temporary cash invested.

The Long Lines Department makes actual payments for license contract services to the American Telephone and Tele-

graph Company. The Long Lines Department is a sepa-
3057 rate department, and its earnings and expenses are kept separately, and out of its earnings it transfers to the General Department the same license payment of 1½ per cent of its gross revenues. Now, of course, you cannot pay yourself anything. In one sense, it is a bookkeeping transaction. In the other sense, considering the Long Lines as we do in this case, as in the same category as an associate company, it becomes a real transaction.

We do not consider the sale of the telephone instruments by the American Telephone and Telegraph Company's General Department to the Long Lines in the same category because that is a matter of bookkeeping.

"Q. That is, the sale to the Long Lines is a matter of bookkeeping, but the Long Lines transfer of funds to the American Telephone and Telegraph Company is not a matter of bookkeeping, but is a real one?

"A. Well, I told you a few minutes ago that there was a transfer of assets from one account to another account within the same company."

3058 I said very distinctly if you look at this thing you cannot pay yourself any money, you do not have any more when you quit, but if you look upon the Long Lines as we have in this case, as a separate unit, then your transfer of money does take on some reality.

"Q. But is there a separate unity in your consideration of the sale of the telephone instruments?

"A. I have here for this cost study treated the Long Lines as if the Long Lines were a separate entity.

"Q. Then the sale of the telephone instruments should be considered—

"A. No, it has nothing to do with it.

"Q. Nothing, all right.

"A. That is a matter of routine accounting on my books."

In connection with Exhibit A-172: the American company issued one share of its stock for each share of Teletype stock,

and then sold the Teletype stock to the Western Electric
3059 for $30,000,000. We took the Western's note for the
$30,000,000 for the time being and the Western has paid
that note off substantially since that time.

In connection with the sales of stock under the Employees' Stock Plans with premiums in the period 1923 to 1931, in the same year there were issues of stock at par in accordance with the terms of an offer and we also issued to employees stock on the completion of their subscriptions under the plans on the installment basis. Then, in the same year, we would issue stock in conversion of bonds. The price at which we would convert for bonds, say in 1929, was above par. The stock that was issued to the stockholders was at par. The stock that was issued to the employees was above par.

3060 I think Exhibit A-164 is very clear. What I have done,
I have said that there are so many shares of stock outstanding; there are so many dollars of dividends paid on that stock, and then to that par value I have added the premium and to the sum of the two I have added the surplus, and I have related the dividends paid to the sum of the par value capital stock premiums and surplus. It has nothing to do with Employees' Stock Plans or the convertible bond issue or anything else.

The company did not pay 9 per cent dividends. The stockholders got a $9 dividend on the stock after it was issued. They paid $100 for an additional interest in the business.

"Q. And they got $9 on the additional interest for
3061 each $100 of additional interest they paid for?

"A. No, that $100 was added to whatever they had, and they got the $9 on whatever the average value of the share was worth.

"Q. Then, if, on January 1, 1924, I owned a thousand shares of American Telephone and Telegraph Company stock and I was given the right to subscribe for a hundred shares more, I paid a hundred dollars a share for the hundred shares, and I received $9 on each share of stock of the additional one hundred as well as on the old, is that correct?

"A. No, that is not correct. Take your facts as you find them. You have had a thousand shares and the thousand shares had a book value—

"Q. Paid me how much in dividends?

"A. Just a minute. (Continuing.) The thousand shares had a book value of 150.

3062 "Q. What dividend did it pay?

"A. Just a minute, just a minute. If you had a thousand shares, and the shares had a book value of $150 a share, the dividend was $9, your return was 6 per cent. Not 9 per cent, it was 6 per cent.

"Q. All right.

"A. Now, then, if the company asked you to take an additional interest in its business, and they offered you an additional interest for $100 a unit of interest, and you bought a certain number of units, you would simply add that investment to that which you already have, and the dividend that you thereafter receive would be a return on all of your investment, and it would not be $9 on the additional amount put in, at all.

"Q. Will you please stick to this example, and we will get the facts? You had a thousand shares on January 1st, on which there was $9 a share paid?

"A. What was the book value of it? What was the book value of it?

"Q. The book value was X dollars or Y dollars.

"A. Well, I can't answer your question on that basis."

3064 Exhibit A-164 includes every dollar ever brought into the business for capital funds.

(On permission of the Court, witness corrected a former statement, as follows: instead of the Illinois Bell issuing a circular in 1929, the circular was issued in December, 1928.)

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Vol. II

TRANSCRIPT OF RECORD

Supreme Court of the United States

OCTOBER TERM, 1933

No. 440

BENJAMIN F. LINDHEIMER AND OTHERS, CONSTITUTING THE ILLINOIS COMMERCE COMMISSION OF THE STATE OF ILLINOIS; OTTO KERNER, ATTORNEY GENERAL OF THE STATE OF ILLINOIS, AND THE CITY OF CHICAGO, APPELLANTS,

vs.

ILLINOIS BELL TELEPHONE COMPANY

No. 548

ILLINOIS BELL TELEPHONE COMPANY, APPELLANT,

vs.

BENJAMIN F. LINDHEIMER AND OTHERS, CONSTITUTING THE ILLINOIS COMMERCE COMMISSION OF THE STATE OF ILLINOIS; OTTO KERNER, ATTORNEY GENERAL OF THE STATE OF ILLINOIS, AND THE CITY OF CHICAGO

APPEALS FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF ILLINOIS

FILED SEPTEMBER 8, 1933

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SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1933

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J. G. Wray (recalled)	2012
R. C. Rainwater (recalled)	2024
W. M. Hammond (recalled)	2047
Stipulation re methods used in compiling exhibits	2051
Offers in evidence	2052

IN THE

District Court of the United States

FOR THE NORTHERN DISTRICT OF ILLINOIS,

EASTERN DIVISION.

ILLINOIS BELL TELEPHONE COMPANY,
Plaintiff,

vs.

G. GALE GILBERT, J. PAUL KUHN, WALTER H. WILSON, WILLIAM M. BRINKMAN, PHIL W. COLLINS and PAUL SAMUELL, the persons constituting the Illinois Commerce Commission of the State of Illinois, and OSCAR E. CARLSTROM, Attorney General of the State of Illinois,
Defendants,

and

CITY OF CHICAGO, a municipal corporation,
Intervener.

In Equity
No. [illegible]

Heard before
Hon. Evan A. Evans
Hon. George T. Page
Circuit Judges
and
Hon. James H. Wilkerson
District Judge.

ABSTRACT OF RECORD

PLAINTIFF'S EVIDENCE

VOLUME IV—(Pages 1049 to 1437)

WILLIAM H. SEXTON,
Corporation Counsel, City of Chicago.

GEORGE I. HAIGHT, and
BENJAMIN F. GOLDSTEIN, and
EDMUND D. ADCOCK,
On behalf of City of Chicago,
Intervenor.

OSCAR E. CARLSTROM,
Attorney General of Illinois,
and
WILLIAM C. CLAUSEN,
Assistant Attorney General,
On behalf of Illinois Commerce
Commission.

CHARLES M. BRACELEN,
WILLIAM H. THOMPSON,
KENNETH F. BURGESS,
EDWARD L. BLACKMAN,
On behalf of Plaintiff.

HORACE KENT TENNEY,
LESLIE N. JONES,
Of Counsel.

BARNARD & MILLER PRINT, CHICAGO

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FOR THE NORTHERN DISTRICT OF ILLINOIS,

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G. GALE GILBERT, J. PAUL KUHN, WALTER H. WILSON, WILLIAM M. BRINKMAN, PHIL W. COLLINS and **PAUL SAMUELL**, the persons constituting the Illinois Commerce Commission of the State of Illinois, and **OSCAR E. CARLSTROM**, Attorney General of the State of Illinois,
Defendants,

and

CITY OF CHICAGO, a municipal corporation,
Intervenor.

In Equity
No. 3746.

Heard before
Hon. Evan A. Evans
Hon. George T. Page
Circuit Judges
and
Hon. James H. Wilkerson
District Judge

ABSTRACT OF RECORD

Plaintiff's Evidence

Volume IV—(Pages 1049 to 1437)

DONALD R. BELCHER, called as a witness on behalf of the plaintiff, having been first duly sworn, testified as follows:

Direct Examination by Mr. Blackman.

May 23, 1932

3065 I am Assistant Chief Statistician of the American Telephone and Telegraph Company, which position I have held about six or seven years. I am in general charge of those phases of statistical research which involve actuarial or other mathematical procedures lying beyond the scope of ordinary statistical analysis. That has been the character of my duties for the whole period during which I have been Assistant Chief Statistician. I have been associated with the Bell System a little more than twelve years. Prior to the time when I became Assistant Chief Statistician, the character of my work was substantially the same as it has been since.

I was graduated from Kalamazoo College, Kalamazoo, Michigan, in 1909, with the degree of Bachelor of Arts,
3066 having specialized in mathematics. For a period of about nine years thereafter I devoted my attention to the teaching and further study of mathematics, and, in connection with this further study, I was granted the degree of Master of Arts by Columbia University in 1915. My teaching experience was very largely in the field of college mathematics, and for four years, beginning with 1914, I was a member of the mathematical faculty of Columbia University. Then, with one year of service in the Army, I entered the employ of the American Company in the fall of 1919.

My work as Assistant Chief Statistician brings me in contact with the pension plan of the American Telephone and Telegraph Company. Shortly after I entered the employ of the Company, I was asked to familiarize myself with the provisions of the Employees' Benefit Plan, and, in particular, with the pension plan which is a part of it, and also the

operations under that plan, and to analyze the experience of the companies in administering this plan and study the trend of current and probable future costs of operation under
3067 it. I have been responsible for the determination of the basic accrual rates upon which the charges of the various companies of the Bell System were made, and upon which the payments of those companies to the trustee of the pension fund were also made.

Each of the associated companies has a pension plan, and all of them are identical with the American Company plan.

In determining those accrual rates, I have had available and have used various censuses of the employees of the Bell System companies. In the early years, there was a census in 1912, one in 1914, one in 1917 and one in 1920, and there has been one every year subsequent to 1920, as of the end of each year. In addition to that census information, which covers active employees, I have a record of all the cases of pensions granted, or pensions on the roll subsequent to 1913, showing age at date of granting of the pension, the sex
3068 of the pensioner, the amount of pension and the date of death of the retired employee, in case that death has occurred, down to the present time. The census did and does show the number of employees by sex, age, term of service, full term of service, rate of pay, and classification as regular, part-time, or temporary.

I heard the testimony of Dr. Hunter here the other day. The methods which I followed in determining these accrual rates which I recommended to the associate companies are substantially the same as those to which he testified. There are possibly two significant differences. One of them is that in our analysis we use, first of all, the combined experience of all of the Bell System companies, exclusive of the Western Electric Company, and determine the basic rates of accrual on the basis of that combined experience, representing in the last few years an average of over 300,000 employees; and then we apply those basic rates to the proper distribu-
3069 tion of payrolls of the separate companies, whereas I understood Dr. Hunter to say that he had limited his

analysis to the experience of the Western Electric Company, whose pension accruals he was determining. The other difference that would seem important enough to mention is that I understood Dr. Hunter to say that the accruals which he determined included provision for the additional liabilities incurred by the Western Electric in connection with the bridging of breaks of service of the employees of that company, whereas the accruals which I have determined made no provision for a similar situation in the telephone companies.

3070 The Telephone Company bridges its breaks and the general rule and policy, as I understand, prevails in the Western Electric. I believe the Telephone Company has published to its employees a definite schedule in regard to bridging the breaks. I do not know the extent to which that has been circulated, but it is generally understood as a definite and accepted policy, namely, that after an employee has been in the Company and out again, if he later returns to the employ of the Company, or of any other of the affiliated companies within the benefit plan, upon the completion of ten years of uninterrupted service after the date of his last return to the Company he is automatically credited with all prior service prior to his break. The liability with respect to that additional time is a real substantial liability. It may be slight in the case of some people whose additional credit is a matter of a few months, but in the case of many employees the additional credits amount to a good many years.

3071 The pension plan of the Bell System companies was established as of January 1, 1913. The method of making annual accruals on a mathematical basis was begun as of January 1, 1927. The amounts or rates which I have recommended have not taken into account any differences between the liabilities which accrued prior to 1927 and the provisions made to meet those liabilities. They have been designed to take care of the liabilities accruing only subsequently to January 1, 1927. That is, these rates which I have recommended and which have been put into force and effect by the several associated companies have not attempted to fill up the hole, if any, that existed prior to 1927. They have merely been designated to take care of the accruing liabilities that accrued from that time forward.

3072 Prior to 1927, the companies made no advance accrual provisions. They charged to expense only those amounts which were actually disbursed in the way of pension payments to retired employees under the pension plan.

In my opinion, the rates which I recommended in 1928 and subsequent years were no more than the minimum amounts required to meet the liabilities of the companies, which accrued in each of the years which I have mentioned, with respect to their obligations to their employees, exclusive of all obligation in connection with the bridging of service breaks.

In addition to determining the pension accruals for the Bell System as a whole, exclusive of the Western Electric, I established the individual rates for the various associated companies, including the Illinois Bell. In obtaining the rates which I recommended to the Illinois Bell, in the beginning, on the basis of Bell System experience, we determined twelve basic rates of accruals analogous to the group of basic
3073 rates Dr. Hunter described in his testimony. That is, we divided all employees as between male and female into age-at-entry groups, because we found greater homogeneity by that type of analysis. For each of those age-at-entry groups for the Bell System as a whole we found appropriate rates of accrual through the same kind of procedure that Dr. Hunter described. That gave us, then, for the Bell System as a whole twelve basic rates for a given year.

Our problem then, since those rates varied somewhat by age, sex, and by age at entry, was to properly weight those twelve rates so that they would be a proper accrual for the individual company. In the case of the Illinois Bell Telephone Company we took the census data as to payroll distribution of the employees of that Company, showing the distribution as between male and female employees, and further as between the six age-at-entry groups for male employees and six for female employees, and by means of that payroll distribution weighted together these twelve basic rates, and arrived at the composites for male and for female representing the proper accruals for the year in question.

I mean by that that I found out the number of employees on the payroll and the money that they were getting in each of those twelve classes with respect to the Illinois Bell.
3074 I applied the separate rates developed for each class to the several employees in that class. Perhaps to make it clear I ought to explain that we have that type of data only once a year. The regular payroll routines of the telephone companies would not show a distribution as between these different age-at-entry groups; it is only when the employees census is taken that we have that information, as we use that information to fix the composite rate for male, and the composite rate for female employees, and then the company is able to use that rate in conjunction with payrolls for the year.

The assumption that underlies that procedure is that the experience of the Illinois Bell Company as to all of the basic factors, such as rate of separation of employees from service and rates of salary advancement, and similar factors, is sufficiently in harmony with the average for the System as a whole so that it is proper and fair to apply these basic rates to the payrolls of the Illinois Company. That is the only
3075 assumption that I have made in order to make it mathematically correct to use the Bell System rates for application to the employees of the Illinois Bell.

I have made the following checks in order to determine the reasonableness of this assumption. I have from time to time examined the matter of rates of separation and the matter of rates of salary advancement. From year to year there are fluctuations in each company and over a period there are deviations as between a single company and the System average, but those deviations in the case of the Illinois Bell Company were not such, in my judgment, as to justify a separate determination of accrual rates for that Company. I did go far enough to find out that if we had taken those differences into consideration over this period in question, the accrual rates would have been slightly higher, in all probability, for

the Illinois Company, than the results of applying the Bell System rates to the payroll of the Illinois Company. I
3076 am not speaking now of the rates which would have been required to meet the annual accrual liabilities including those arising from the bridging of breaks in service; in all that I have said, I have consistently excluded the liabilities in conjunction with the bridging of breaks in service.

The document marked for identification as Plaintiff's Exhibit A-173 was prepared under my direction and supervision. This paper shows a tabulation of the basic accrual rates for service pensions; that is, based on Bell System experience, which were used in the determination of the annual accruals for the separate Bell System companies. That is divided between male employees in the upper half of the paper and the female employees at the bottom, and shows for each of the years 1928 to 1931, inclusive, the rates applicable to the payrolls, according to the age-at-entry groups.

3077 The paper marked for identification as Plaintiff's Exhibit A-174 was prepared under my supervision and direction. This paper shows for the Illinois Bell Telephone Company for each of the years 1923 to 1931, inclusive, the accruable payroll of that Company; that is, the total accruable payroll for each year, and in the last column shows the amounts of accruals which were made by that Company; that is, the amounts that were charged to expense and that were paid over to the trustee of the pension fund. By "accruable payroll", I mean that payroll upon which the provisions of the pension plan are based; that is, that represents the payroll which most accurately defines the obligations of the company under the pension plan. It differs somewhat from the
3078 actual payrolls. In general, it is considerably below, I mean, under normal circumstances it is considerably below, because it includes no overtime payments, or payments to telephone operators, for traffic differentials, or things of that kind. On the other hand, it does represent full time pay of all regular employees, so that in a period like the present, when there is some degree of part time employment, this so-called accruable payroll may be higher, and, in the case of the Illinois Bell Company, is higher than the actual payroll.

I deal with the accruable payroll rather than the actual, because it represents the obligations of the Company in respect of service pensions.

The paper marked Plaintiff's Exhibit A-175 was prepared under my direction and supervision. It shows for the years 1923 to 1931 inclusive, and also as a total for the entire period, the disbursements of the Illinois Bell Telephone Company for its service pensions. By "disbursements" I mean
3079 payments actually made to the beneficiaries under the pension plan. It has been necessary to divide those figures up a bit in order to have them check out with the books. The first column shows the amount actually charged to expense during the years 1923 to 1926, inclusive. During that period the Company had a benefit fund reserve, which had been set up out of surplus in the past, to which these disbursements were, in the first instance, charged, and at the end of the year those charges were cleared and the reserve was restored through charges to expense, so that in the last analysis these amounts shown in the four years were charged to the expenses of the Company. These are the transactions that are shown on the books of the Illinois Bell itself. I say they are shown on the books; it has been necessary in the years 1923 and 1924 to go to subsidiary records in order to exclude certain payments for disability pensions, because we are concerned only with service pensions.

The next column, headed "Charged to Benefit Reserve", shows charges for 2 years arising from this situation, that when the pension trust fund of the Illinois Bell Telephone Company was established, as of January 1, 1927, no
3080 initial contribution was made to that fund in excess of the actual accrual applicable to the year 1927, and for that reason it was determined that only those pensions which were granted subsequent to January 1, 1927, would be charged against the trust fund, so we find, in the year 1927, that only the small amount of $2,485, shown in the column headed "Charged to Trust Fund", was charged to the trust fund. That represented disbursements to pensions granted subsequent to the establishment of the trust fund. The balance of

the payments, namely, $34,153, represent payments to pensioners then on the roll who had been on the roll prior to this date, and those were charged against the benefit reserve. That situation continued into the next year, I think the middle of the year, at which time the Company transferred the entire benefit fund reserve over to the trust fund, and in the case of this Company that reserve was very much in excess of the liability with respect to previous pensioners, and, consequently, after that date all payments for all service pensions granted under the plan have been charged against the trust
fund. That explains the split there in the years 1927
3081 and 1928 and the fact that some $50,000 of disburse-
ments for service pensions have never been charged as expense.

Then the following column, "Charged to Trust Fund", shows the amounts actually disbursed from the trust fund by reason of service pension payments under the plan. That is the total in the final column.

The paper marked Plaintiff's Exhibit A-176 was prepared under my supervision and direction. This shows for the general departments of the American Telephone and Telegraph Company figures as to accruable payroll and amounts of accrual analogous to those which I showed in a previous exhibit for the Illinois Bell Telephone Company, the accruable payroll being defined in the same manner here as it was in the case of the Illinois Bell Telephone Company. That is, this figure shows the same facts for the general departments of
the American Telephone and Telegraph Company that
3082 Exhibit A-174 shows for the Illinois Bell, and was pre-
pared in the same way and on the same theory.

This tabulation did not require any apportionment as between general departments and the Long Lines. The payroll representing expense figures are separately maintained by the Long Lines Department as separate from the general departments and the accruals were determined by us separately.

In my opinion, those figures shown in the years 1928, 1929, 1930 and 1931 are the minimum amounts to meet the liability which accrued against the American Telephone and Telegraph Company with respect to its liability to its employees in the general departments for the several years mentioned.

In the year 1927 in both the case of the Illinois Bell and the general departments, I determined the amounts set aside for accrual, but by a somewhat different procedure than that used subsequently. In the year 1927 instead of an actuarial determination, which meant distributing the cost of the pensions
3083 over the entire service of employees, we employed a different procedure, namely, to spread the cost of pensions only over service after fifteen years. In other words, during the first fifteen years of an employee's service we would accrue nothing, and during the balance of his service we would accrue enough to provide a pension. That was used as a transition basis as between 1926, when no accruals were made, and 1928, when they were made on the full service basis. In the case of the Bell System total and in the case of nearly all of the separate companies, that pension accrual represented a smaller accrual than the full service pension accrual would have represented. It happened, however, in the American Company, on account of long terms of service and relatively high salaries at those long terms of service, that the fifteen-year basis resulted in a higher accrual in 1927 than we would have had on the full service basis. That was due to the long service and high rates of pay of the members of the Department of Development and Research, Operating and Engineering, and similar departments.

3084 The paper marked for identification Plaintiff's Exhibit A-177 was prepared under my direction and supervision. It shows for the general departments of the American Telephone and Telegraph Company the facts as to disbursements for service pensions for the years 1923 to 1931, inclusive, and the total. The description of the columns is the same as I stated in regard to A-175, and the transactions with regard to the benefit fund were analogous.

The paper marked for identification Plaintiff's Exhibit A-178 was prepared under my direction and supervision. It shows what the accruals would have been in respect to the general departments of the American Telephone and Telegraph Company during the years 1923 to 1926, inclusive, and the total for that period, if in those years accruals had been made on the basis of the basic accrual rates which were 3085 actually used in the year 1928. In my opinion, it is proper to apply those rates backwards to determine the amounts which I purport to show.

In my opinion, the figures which I show as the rates which would have been accrued from 1923 to 1926 and the rates which were accrued from 1926 to 1931, inclusive, all represent minimum charges or minimum amounts to provide in recognition of the accruing and increasing obligation of the American Company to its employees, or to the employees of this department in those years, with the single exception that I have included no provision for the bridging of service breaks. That would make it still more conservative and would make the rates more insufficient.

(Plaintiff offered in evidence Exhibits A-173 to A-178, inclusive. No objection. Exhibits admitted.)

3086 *Cross-Examination by Mr. Goldstein.*

As I recall it, the Bell System or the Illinois Bell made a study in 1927 to determine if there was a deficiency in the reserve as of that date on the basis of the mathematical calculations used thereafter. I have not seen them for some years. I think we did at that time, though.

"Q. Do you know whether the Illinois Bell made up that deficiency in 1926 by transferring from the large surplus to the pension fund?

"A. Oh, no. The amount transferred from the— you said 'surplus', I suppose you mean the benefit fund reserve which was built out of the surplus. That amount was not adequate to cover the accrued liability on that date."

So far as I know, the deficiency existing in the reserve fund of 1927 was not made up in any way by the Illinois Bell through a transfer to the fund from the surplus of the 3087 Company. The deficiency has not been made up in any way only to the extent that the Illinois Bell transferred to the fund its balance in the benefit fund reserve which had previously been built up out of surplus or undivided profit. There still was a deficiency after that transfer. That deficiency has not been made up in any way.

JONATHAN G. SHARP, called as a witness on behalf of the plaintiff, having been first duly sworn, testified as follows:

Direct Examination by Mr. Blackman.

My name is Jonathan G. Sharp. I am a member of the firm of Woodward, Fondilla and Ryan, Consulting Actuaries, in New York City. I have been in the active practice of
3088 the actuarial business about ten years. I studied and specialized in mathematics at Toronto University, and I am a Fellow of the Actuarial Society.

A few of the important corporations in the United States for which I do actuarial work are: The American Telephone and Telegraph Company, the International Telephone and Telegraph Company, the Commercial Cable, the American Locomotive, the Panama Railroad, John A. Roebling and Sons, F. C. Heit and Sons, New York City, New Jersey Teachers, and the Church Pension Fund, I think are the principal ones.

In connection with the pension plan of the Bell System, we have audited the accrual rates of the Bell System for the years 1927 to 1931, inclusive. That is, the accrual rates in connection with the pension plan that was referred to by Mr. Belcher.

3089 The exhibit marked for identification Plaintiff's Exhibit A-179 was prepared under my supervision and direction. It shows the amount which should have been accrued in the period 1923 to 1931 in order to accumulate the proper reserve to meet the benefits promised under the pension plan. In my opinion, the figures that are set forth in the third column of figures, headed "Excluding service breaks bridged", represent conservative figures which should have been provided in each of the years in question to meet the accruing liability which I speak of, exclusive of service breaks. I have computed that liability, including service breaks; that is shown in the fifth column of the same exhibit.

The columns show the actual deficiencies in the years 1923 to 1931 by subtracting the amount that was charged to expense from these amounts that, in my opinion, should 3090 have been charged. Those deficiencies are shown in columns 6 and 7 of this exhibit. In column 6 they are shown exclusive of the liability, the accrued cost, rather, for service breaks bridged, and in the last column they are shown inclusive of the accrued charge or incurred cost for service breaks bridged.

(Plaintiff offered in evidence document marked Plaintiff's Exhibit A-179.)

3091 "Q. Now, did you verify the computations of Mr. Belcher with regard to the same accruing liabilities for the same years with regard to the employees of the general departments of the Illinois Bell?

"A. We have never gone in, in very great detail, to the individual companies, but I made a study recently in connection with that to see that the amounts charged for the general departments were minimum charges, and I found that was so. It is very obvious, to an actuary, at least, on looking over the factors, that they would be minimum amounts. The principal factors involved, that would involve any difference, the rate of retirement, there would be no change there."

I examined those elements and found that if the general factors for the Bell System as a whole were right that then the accruals for that department would be at least as high, or higher.

"Q. Now, in the course of your regular business, did you audit the accounts or rather the accruals and the methods followed by Bell System in building up its general accrual rates in the years 1928, 1929, 1930 and 1931?

"A. You mean, did I prepare accrual rates that could 3092 be applied to the general departments?

"Q. No, did you examine into their rates, the ones that Mr. Fletcher has prepared, and verify the correctness of his figures as minimum rates?

"A. Yes."

With regard to examining into the general rates for the Bell System, I did that currently as an ordinary employment in the general course of my business. I was specially employed recently to make this computation in regard to the Illinois Bell and I did that, and I was specially employed to check the rates of the general department of the American Telephone and Telegraph Company and I did that.

A. D. GROTE, called as a witness on behalf of the plaintiff, having been first duly sworn, testified as follows:

Direct Examination by Mr. Blackman.

May 24, 1932

3094 My name is A. D. Grote. I am Chief Accountant of 3095 Illinois Bell Telephone Company. I have held that position about two years. I have been connected with the Illinois Bell almost 22 years, all in the Accounting Department. My duties as Chief Accountant are to supervise the preparation of general accounting methods, care for the cost accounting work, statistical reports, and make special studies. I supervised the preparation of the document marked for identification as Plaintiff's Exhibit A-180. It shows the estimated annual additional cost to the Illinois Bell Tele- 3096 phone Company if all of its capital stock had been held by the public instead of chiefly by the American Telephone and Telegraph Company.

In estimating the number of stockholders that the Illinois Bell would have had under those circumstances, I assumed that all of the residents of the state of Illinois now holding American Telephone and Telegraph Company stock might be stockholders of the Illinois Bell Telephone Company and prepared this first statement on the basis of an average holding of 15 shares per stockholder. That is the average holding of the stock of the American Telephone and Telegraph Company for the residents of the state of Illinois. Then I assumed that the average holdings of all of the shareholders of the American Telephone and Telegraph Company might be the maximum number we might expect the holders of the Illinois Bell Telephone Company to have, and prepared the 3097 second statement on that basis; that is, about 30 shares per stockholder, which is the average shareholding for the holders of the American Company throughout the country.

The reason for the difference between the average shareholdings in Illinois and the average shareholdings throughout the country as a whole is that there is a greater number of larger holdings in the eastern section of the United States and in New England. In the central group of states, that is, Michigan, Wisconsin and so forth, the holdings of the American stock average about 20 shares per stockholder.

The figures shown in Column 1 of this exhibit is the estimated number of stockholders based on those 15 shares per holder, in the state of Illinois. I developed the figures in column 3, headed "Additional cost of maintaining rec- 3098 ord of stockholders, transferring stock", etc. I also developed the figures in column 4 and I used the schedule of charges set by the Corporate Fiduciary Association, principally. Column 5 is just the sum of those two.

This sheet marked Plaintiff's Exhibit A-181 for identification is the one I said I prepared on the basis of 30 shares per stockholder. This sheet is prepared in a manner exactly similar to the one that I have already described. The sole difference is that I have assumed a holding of 30 shares per stockholder instead of 15, as shown on the previous sheet.

3099 I supervised the preparation of these papers marked collectively Plaintiff's Exhibit A-182 for identification. On this third page of this exhibit I developed the figures which you used in columns 3 and 4 of the two preceding sheets. The first item on the first page, $10,000, is the cost of having an annual audit made by an outside concern to meet the customary requirements of the Chicago Stock Exchange. That is an expense that we do not have now. The

next item, $12,000, in the first column to the left, and $6,000 in the other column are the registrar's fees for transfers. I obtained the individual charges per transfer from the
3100 schedule of charges set by the Corporate Fiduciary Association. The next item, $88,000 and $44,000 is transfer agent's fees. I developed those figures in our office and I used also in that connection the schedule set by the Corporate Fiduciary Association. These are just the compilation of the individual amounts that the Corporate Fiduciary Association sets forth as their schedule of rates for doing this kind of work for large corporations.

The first figure on the second page, "Cost of Stock Certificates, 15 cents per certificate", I based on the present cost to us of the stock certificates, taking a discount for using a greater quantity.

The next item, Dividend Payment, of $40,000 and $20,000 I developed from our experience. That is our own
3101 experience in doing similar kinds of work. For annual notices and proxies I used the cost of the forms, the envelopes, postage, and so forth. That is merely adding together a number of small items of cost with which I am familiar.

For the last item, Annual Reports, I used our past experience on annual reports, and took a liberal discount for a much larger quantity of them.

The total figure there is $169,500, in the column to the left, and $89,750 in the column to the right. I deduct from that $3,000, which is the present cost to us of doing work of that kind with the very few stockholders that we now have. The difference is my estimation of the additional cost which we would have to incur if we had to do this work for our-
3102 selves, and had our own stockholders, instead of having one big stockholder who splits up the stock among many others, and does this kind of work for me. These figures that I have been talking about are summarized and appear on my first and second exhibits in column 3. The figures in column 3 come entirely from the figures shown on this third exhibit about which I have just been talking.

The figures in column 4 are the cost of handling additional stock issues. I took into account the cost of issuing warrants, registering those warrants, receiving the money, making a record of it, in connection with subscriptions, issuing the stock certificates, and registering the stock certificates, mailing them, and so forth. The items are set forth in detail on the third page of this third exhibit of mine.

3103 In my opinion these figures that I have set forth in my first and second summary exhibits, and the detailed exhibit, No. 3, are all fair and reasonable figures to indicate the additional cost which the Illinois Bell Company would incur if it had the number of stockholders which I have dealt with on these sheets; they are conservative figures. In my opinion these additional amounts set forth here are fair annual charges to consider as additional costs which the Illinois Bell would incur in such situation.

Cross-Examination by Mr. Goldstein.

These exhibits are predicated upon the investor in the Illinois Bell having only 15 shares in one case and in the other case having 30 shares apiece.

"Q. Yes. Now the American Telephone and Telegraph
Company in 1923 had approximately $70,000,000 invested in
the Illinois Bell; if the American Telephone and Telegraph
Company only had 15 shares of the Illinois Bell, on an
3104 investment of $68,000,000—or—$68,000,000—that would
be 680,000 shares. How many companies would the
American Telephone and Telegraph Company have had to be
an investor in to have that sort of an investment? It would
be about 40,000 companies, would it not? Is that right?

"A. Roughly, yes."

I have never figured how much the cost to the American Telephone and Telegraph Company would have been if instead of having one company in which it had an investment of $68,000,000, it had that investment spread over 40,000 companies.

I assume that the American Telephone and Telegraph Company having an investment equivalent to its investment in the Illinois Bell, but spread over 40,000 companies, 3105 would have had to have more bookkeeping to keep track of that investment than it has to take care of its investment in one company. I assume it would have had to have more supervision over those companies. I would assume that, in order to take care of an investment in 40,000 companies, it would have to have a large number of stock certificates.

"Q. All right. It would have to have a large number of stock certificates to take care of. What else would it have to take care of—what else would it have to have?

"A. Why, I have not gone into that subject, Mr. Goldstein."

It probably would be fair to assume they would have 3106 to have additional employees in order to take care of the investment. It would have other items of expense also such as supervision over those companies.

"Q. And its risk in these various companies would be much greater than it would be if it was concentrated in one company over which it had control, and could control its management, would it not?

"A. You are taking me away—

"Mr. Blackman: I think, sir,—

"A. —quite a ways.

"Mr. Blackman: This witness has testified to nothing about the American Telephone and Telegraph Company.

"Mr. Goldstein: But then—no, but this witness has testified as to the benefits to the Illinois Bell, as an investor, and I am trying to get the other side of the picture from him as to what benefit it was to the investor, under those circumstances, to have this situation. He has made an assumption here that is a pure speculation.

"Now I just want to test him as to how far his speculation goes; he has made an assumption, and I am trying to get the consequences of the assumption.

"Judge Wilkerson: Can you answer that?

"The Witness: No, sir, I cannot.

3107 "Mr. Goldstein: If the American Telephone and Telegraph Company were an investor in 40,000 companies, would it require the attendance in each of those companies at meetings, or supervision of those companies in one form or another?

"A. I do not believe that is a question I can answer.

"Mr. Goldstein: All right."

I have not gone into the question as to what benefit the Illinois Bell was to the American Telephone and Telegraph Company by having all of the investment of the American Telephone and Telegraph Company in one company, instead of having it scattered into 40,000 or 50,000 companies.

3108 W. K. KRUSE, recalled as a witness on behalf of the plaintiff, having been previously duly sworn, further testified as follows:

Direct Examination (Continued) by Mr. Thompson.

May 24, 1932.

I am the same Mr. Kruse who has testified before in this case. The Illinois Bell Telephone Company made additions to its plant account in the year 1923. All of those additions for the year 1923 were not made as a result of purchases from the Western Electric Company. The additions which were not purchased from the Western Electric Company consisted of materials and supplies purchased from other than the Western Electric Company; that is, contract work performed by other than the Western Electric Company; the purchase of real estate, various overheads, such as engineering, plant supervision, tool expense, general expense charged to construction, and labor performed by the Telephone Company on construction work. Those additions to plant which did not consist of purchases from the Western 3109

Electric Company in the year 1923 were substantial in amount; I would say they would run into millions of dollars. What I have said with respect to the year 1923 is also true for the other years involved in this period, 1924 to 1931.

I have prepared five new separation exhibits which have been identified as Plaintiff's Exhibits A-183, A-184, A-185, A-186 and A-187 for identification, all related to the
3110 year 1930. These five exhibits are identical with the 1930 statement in each of the following exhibits which have already been introduced in evidence; A-49, A-50, A-53, A-54, and A-55, with a single exception. That exception is that I have changed the item of taxes shown on the exhibits which I have referred to, to agree with the actual tax payments made for 1930. The actual taxes were $149,331 less than the estimate used in the previous exhibits and that resulted, of course, in a corresponding increase in the balance available for return. At the time of my former testimony I had not received all of the tax bills for the Illinois Bell Telephone Company in its Chicago area for 1930. I think I mentioned at that time that they were just coming in, and they were all received shortly after the time I had been on the witness stand. These five exhibits show the actual amount paid for taxes by the Illinois Bell in its Chicago area for the year 1930.

3111 I have also prepared five other exhibits which have been identified as Plaintiff's Exhibits A-188, A-189, A-190, A-191 and A-192 for identification. Those are for the year 1931. They are identical with the 1931 statement in each of the following exhibits: A-49, A-50, A-53, A-54 and A-55, with the exception of the item of taxes. The principal change in the tax item was in connection with the South Town capital stock tax. In the year 1931, we accrued on the records an amount of $904,911 for this particular item. I recently determined, however, that the assessment with respect to this particular item was made final some time ago. The tax rate, however, is not yet determined, so I have taken the tax rate for 1930, and applied it to the established assessed valuation.

which resulted in a figure of $404,400, which I have used
3112 in preparing these exhibits, in place of the previous
figure of $904,911. There were certain other minor adjustments in the other tax items, but the total reduction was $517,553 in the tax item. That resulted in increasing the balance available for return for the year 1931 by the same amount. The accrual on the Company's books for this tax for the year 1931, was made in an amount substantially larger than our present estimate of the Company's tax liability because there had been a considerable difference of opinion between the Company and the tax officials with regard to this tax. In 1928 the Company paid $797,992.50, and in 1929 it paid $738,000. The Company determined to litigate this item for 1930 unless it could secure a satisfactory reduction, and it was not until the early part of 1931 that an assessment was finally agreed upon. In the meantime, the accruals for 1930 which were on the higher basis in view of this situation were continued, and carried on through 1931.

The loss of stations which the Company has sustained
3113 in its Chicago area in January, 1932, was 6,579; in
February, 7,295; in March, 6,949; in April, 8,680; and for the first 19 days of May, 11,725. At the present time there are more stations being lost per day than were lost per day during the year 1931, and in the early months of 1932.

There has been a decrease in the calling rate for the first four months of 1932, as compared with the first four months of 1931. The calling rate for January, 1931, was 4.21; January, 1932, it was 4.02; February, 1931, 4.09; February, 1932, 3.98; March, 1931, 4.27; March, 1932, 3.99; April, 1931, 4.20; April, 1932, 4.07. That is the number of calls per day per station.

The net telephone revenues of the Illinois Bell Telephone
Company in its Chicago area for the first four months
3114 of the year 1932, adjusted for taxes, were $2,968,814.
The net telephone earnings for the first four months of 1931, adjusted for taxes, were $3,751,840, which is $783,026 more than the net telephone earnings for the first four months of 1932. Or stated another way, our net telephone earnings

for the first four months of 1932 were $783,026 less than our net telephone earnings for the first four months of 1931.

The net telephone revenues which I have given for the first four months of 1931, and for the first four months of 1932, excludes non-operating revenues.

(Cross-examination reserved.)

3115 R. H. GREGORY, recalled as a witness on behalf of the plaintiff, having been previously duly sworn, further testified as follows:

Direct Examination by Mr. Thompson.

May 24, 1932.

I am the same Mr. Gregory who has testified before in this cause. It has always been the practice of the Western Electric Company to give preferment to those employees who have been laid off, when business conditions of the company call for additions to their forces.

The exhibit which has been identified as Plaintiff's Exhibit A-493 entitled "Western Electric Company Pension Fund, Comparison of Charges to Operating Costs, with Required Contributions" was prepared under my supervision and
3116 direction. This exhibit shows for each of the years, and for the total of the period 1916 to 1931, in the first column, the charges to operating costs for pension accruals. In the second column it shows the amounts year by year, and in total, of the required contributions as computed by Dr. Hunter, as shown in Exhibits A-147 and A-148, column C. In the last column it shows the excess of the required contributions over charges to operating costs year by year, and in total; and at the bottom of the exhibit is shown the amount of each of the figures, or the columns, under each of the headings of the columns, for the years 1923 to 1931, inclusive. The amounts shown in column 2 of this exhibit under the total charges to operating costs are the amounts which were

included in my Exhibits A 77, 78, 79 and 80, on account of pension fund accruals.

The Western Electric Company in the period 1926 to 1931 charged to operating expenses a lesser amount by $742,000 than the contributions which it should have made as shown by Dr. Hunter's testimony.

3117 The actual fund of the Western Electric Company for service pensions, as of December 31, 1931, was $34,990,000. The reserve which would have been required in accordance with Dr. Hunter's Exhibit A 147 was $59,027,000.

In the year 1925, the Western Electric Company made a charge to expenses in our non Bell business of $1,400,000 on account of pension accruals for the employees of the Supply Department of the Western Electric Company. This item entered into the expenses included in Exhibit A 78 and 80, showing the earnings on non Bell business. No part of this sum of $1,400,000 has ever been included in any of my exhibits dealing with the Bell business, or has that amount been charged in whole or in part to expenses incurred in connection with Bell business.

There are certain changes and corrections which I desire to make in the transcript of my testimony on cross-3118 examination. I have prepared a list of those changes and corrections in exhibit form.

(It was agreed that these corrections be made, in accordance with this sheet subject to defendants' right to question witness.)

Since I was last on the witness stand, figures have become available which show the earnings of the Western Electric Company on its Bell business expressed in percentage of sales and in percentage of average investment for the 3119 first three months of 1932. Those figures show that during the first three months of 1932, there has been a loss of $1,600,000, which is 4.2 per cent on the sales, and 2.4 per cent on the investment. I am speaking of the Bell business. By extending this three months' experience for the full twelve months this would show a loss of $6,400,000 for 1932 on the Bell business. In my opinion the figures for the first quarter projected as indicated are not fairly representative of the loss which we may expect on the Bell business of the Western Electric Company for the year 1932; in my opinion that is the minimum loss that we may reasonably expect for 1932. It may be very much greater.

The instrument identified as Plaintiff's Exhibit A-194 was prepared under my direction and supervision. It shows
3120 the earnings of the Western Electric Company on Bell business, expressed in percentages of sales, and in percentage of (a) average investment, and (b) average investment less amount of depreciation reserve account, 1916 to 1932, inclusive, and for each of the years; and also it shows for the period 1923 to 1931, inclusive, and 1923 to 1932, inclusive. The Western Electric Company made in its Bell business for the period 1923 to 1931, 7.4 per cent on average investment in plant. On the same basis, the Western Electric Company's earnings on its Bell business for the period 1923 to 1932, will be 5.8 per cent.

The Western Electric Company made in its Bell business during the period 1923 to 1931, 9.4 per cent on average investment less the depreciation reserve account. On the same basis its earnings will be, on its Bell business, 7.9 per cent for the period 1923 to 1932.

3121 (Plaintiff offered Exhibits A-180 to A-194, inclusive, in evidence. Objections reserved until after cross-examination.)

3122 *Cross-Examination by Mr. Goldstein.*

May 25, 1932.

3123 Among the corrections to my testimony was the following: "And that would not necessarily be the spot labor rate paid at that particular moment?" The answer should be: "The standard labor costs have as their basis the piece rate currently effective on the operation for which the standard cost is being computed."

The standard labor cost that is included in the total standard cost is the piece work rate that is in effect currently at the particular time. Of course, those piece work rates may be changed from time to time, and it would not necessarily follow that the standard costs would be changed, at that
3124 time. But the attempt is at the time that the standard rates are made, that we get as near as possible to the current cost of the labor, and the current cost of the loading, and the actual cost of the article, except for the item of material, and over a long period of time the material item is the actual cost. Let us assume that on January 1st, the current rate of piece work is X cents and the standard cost for that item is based upon X cents for the labor; now, the standard cost of that item would include that X labor until the next standard cost study is made. Between the time when the first standard cost study is made and the second standard cost study is made, there may be changes in the current piece rate from X to Y. So that our standard cost for a particular item does not necessarily change each
3125 time that we have a change in the current piece rate.

The standard cost study at the time it is made and the standard cost rate for labor is the piece rate at that time. That continues until we make a new study and at that time again we apply the then current piece rate. But you want to bear in mind that piece work rates in a large manufacturing company are not changed very often. You can realize the reason why they should not be changed. You can change a piece work rate upwards without getting into trouble with your employees. But a piece work rate downward, however, is difficult. The current piece rate to which I referred in this answer is the current piece rate at the time when
3126 the study is made. But I want to make clear that there are not very many changes in those piece work rates.

Exhibit A-194 is the first exhibit of all of the exhibits that I have offered which shows the deduction of the depreciation reserve account on the Bell business. I made an allocation of the depreciation reserve between the Bell and the non-Bell business in order to arrive at the average investment less amount of depreciation reserve account in column F. The basis of the allocation, in a general way, for each of the 3127 years was the same. That is the principle was the same in general. The method followed of allocating this depreciation reserve is the same as allocating the gross value of the plant. We first allocate those items which can be allocated directly, such as Installation, and Distributing House Plant Investment, which is practically all against the Bell business. We then take the investment, or the reserve, in either case, which is applicable to Telephone Apparatus, Cable and Supplies, and we divide that between the Bell and non-Bell on the basis of standard shop cost of sales.

The deduction in column F includes not only the depreciation reserve resulting from the accumulation of the normal depreciation expense but also the accumulations resulting from what we have designated before as the extraordinary depreciation.

I have this information for non-Bell business (Similar to Exhibit A-194) but I do not have it in exhibit form because there are certain pencil changes that I have made.

We do not make a detailed allocation of each of the adjustments in arriving at your estimated profits for the first three months of 1932. To do that would necessarily mean 3129 that we would have to take an inventory, and of course we take an inventory but once a year and consequently we do not have that information at this time. What I did was to arrive at the basic gross profit, and then with my adjustments for Telephone Apparatus, Lead Covered Cable and Supplies, and then I made my adjustments and then when I arrived at the operating profit, I divided the operating profit on Telephone Apparatus, on Lead Covered Cable, and on Supplies between the Bell and non-Bell according to the sales made; not the cost of sales. In that respect it differs from the previous years. Included in my adjustments for the first three months there was a deduction for inven- 3130 tory of about $1,500,000, that is a reduction to fair value.

When I arrive in my calculations at $1,600,000 as the loss on the first three months in the Bell business, and $125,000

for the loss for the first three months on non-Bell business, I multiply the $1,600,000 by four, to arrive at the estimated loss for the full year. That multiplication would not assume that within the next nine months we would have a shrink in inventory to fair market value below that which you had on hand on March 31st, below the fair value of March 31st, or three times $1,500,000, or $4,500,000. The answer to that is this, that the outlook for the year 1932 is so much blacker than the outlook that you would get by multiplying the first three months by four, that even if you had only the same amount, or a slightly excess amount of this $1,500,000 reduction to fair market value, I still, to the best of my knowl-
3131 edge, and as the result of my experience in making these
estimates over a great many years would say the loss that we will get will be at least $6,400,000 for the year. I do not multiply by four the losses for the first three months because the same factors of loss in the first three months would continue for nine months, but gauged by the loss of the first three months, I determine the last nine months.

I made a forecast about June, 1931, of how much our profits would be in 1931 and 1932. That estimate was unusually good. In June, 1931, I estimated that the profits on Bell business would be $10,500,000. At the end of the year they were $10,500,000. I do not recall the exact figure, but I estimated
on June 10, 1931, that the sales from which this
3132 $10,500,000 would come, would be approximately
$256,000,000. At the end of the year we had $219,000,000 of sales, and we still had $10,500,000 of profits. So that an estimate on June 10th of $256,000,000 of sales, and $10,500,000 of profit, at the end of the year resulted in $10,500,000 of profit on $37,000,000 less of sales.

I made an estimate on January 1, 1932, as to what our profits would be for 1932. Each year in our budget we estimate what our profits will be.

In connection with our standard costs each year we assume an estimated volume for the year. We assume an estimated volume for Bell and non-Bell business.

3133 At the end of three months here I made the adjustments to our profits on the basis of the information we had for the first three months. Those adjustments were based on the best information we had, all of the information we had from all sources throughout the country: distributing houses, manufacturing department, merchandise department and as the result of our experience.

The adjustments as related to standard costs would necessarily result from the fact that our actual experience 3134 was off from our estimate.

One of the estimates that we made on January 1, 1932, in arriving at our standard cost for Bell and non-Bell would be the estimated volume for each.

"Q. Well, you take an estimate of $50,000,000 for the first three months on Bell business, and an estimate of $20,000,000 on non-Bell business.

"A. That is right.

"Q. And you figure your profits are going to be on a certain basis, a certain amount. Now at the end of the three months you find that your non-Bell business, instead of 3135 being $20,000,000, is $1,000,000—or $5,000,000, we will say, that is 25 per cent; and your Bell business, instead of being $50,000,000, is $40,000,000—in other words, your Bell business came within 80 per cent of your estimate, and your non-Bell business came within 25 per cent of your estimate.

"On your basis of adjustment with the adjustments on the basis of the Bell business, the $40,000,000, and the non-Bell business of $5,000,000, would not the Bell business absorb the errors due to the greater amount of error in your judgment as to the non-Bell business?

"A. If your illustration was in accordance with the facts, yes, but the situation is exactly the contrary, Mr. Goldstein."

The Bell business is falling off to a larger extent than the non-Bell and our method means that a larger part of the loss is apportioned against the non-Bell, than against the Bell. I am saying, I make this apportionment on basis of sales.

3136 Now I will say, I think that the soundest principle is to make it on the standard cost of sales; but that information is not available. 95 per cent of our business is with the

Bell Companies, and whatever method you use, if there is any error there at all—and I do not think from a common sense viewpoint that there is any error that need be taken into account; but if there is any error, it is utterly negligible.

"Q. But in any event it would be necessary to arrive at a conclusion, to compare the budget each year with the actual experience each year on the Bell and non-Bell business,
3137 and for each class of apparatus taken into account.

"A. It is not necessary to compare it with the budget."

The budget does not have anything to do with our earnings. Our estimate of profits is on the basis of the exact sales for the period. We based our profit for the first three months on the sales for the three months and on the costs for the three months.

Each year we estimate our sales at the beginning of the year and we estimate what profits we expect to get. These estimates are what we call a budget. But that does not have anything to do with our profits for the first three months;
3138 no relation whatsoever. It would have nothing to do with a check on the profits for the year except to find out how we differed from what we estimated at the beginning of the year. But the real facts are there as the result of inventories, and what the result was for the year.

There was no change in the prices on Bell business in 1932; no general change at all. There was no general change in non-Bell. Our standard cost of copper and lead did not change in 1932.

We calculated the return on investment on telephone instruments in 1927 at the request of counsel for the city.

3141 There is no uniform policy with relation to the guarantee of non-Bell customers against patent infringements. If a customer asks for the guarantee, why, we give it. If it is included in the contract form which they ask us to sign, we give it without any question, but there is no uniform policy.

I am not familiar with the form of contract handed me
3142 by counsel for the city. When we do give the guarantee there is no additional consideration.

Re-direct Examination by Mr. Thompson.

3143 The amount of Bell sales included in Exhibit A-194 for the year 1932 is $151,472,000. That would be the first quarter projected for the year. Our present estimate of what those Bell sales will be for the year 1932 is $121,500,000.

U. F. CLEVELAND, recalled as a witness on behalf of the plaintiff, having been previously duly sworn, further testified as follows:

Direct Examination by Mr. Thompson.

May 25, 1932.

I am the same U. F. Cleveland who has testified pre-
3144 viously in this case. I am a Vice President of the Illinois Bell Telephone Company and as such Vice President I am in charge of its Accounting and Financial Department.

The American Telephone and Telegraph Company has an Employees' Stock Plan which is made available to employees of the Illinois Bell Telephone Company. The pamphlet which has been identified as Exhibit A-195 is a copy of the Stock Plan to which I have just referred. That plan was adopted by the American Company on May 1, 1921. The Illinois Bell Telephone Company took advantage of the provisions of this plan soon after it was adopted.

This plan is one which permits the employees of the American Company and its subsidiary companies to subscribe for stock of the American Company upon certain conditions, and make these payments in installments over a period. There is no attempt to influence the employees to purchase stock; it simply is a privilege which is given them. The condi-
3145 tions are that the employee must have at least six months continued service before he can subscribe under

the plan. The price at the present time is $150; it has increased gradually during the period since its adoption. It has ranged from $100 to $150 per share. The subscriptions are payable either by deductions from the pay of the employees, or by application of the dividends on stock which the employee owns. The installment payments are subject to an interest credit of 6 per cent per annum compounded quarterly. There is a limit to the number of shares which an employee may subscribe for. He may subscribe for one share for each $300 or fraction of his annual pay upon which the installment deductions are $3 per month; or one share for each $400 of his pay, on which the deductions are $4 per month. At the present time there is no possibility of paying cash for
3146 these shares; they must be covered over an installment period. There is also a limitation on the number of shares which may be subscribed for in any consecutive twelve months' period, of 50. At the $150 rate, with the $3 deductions, it takes a matter of 45 months for the employee to pay for his stock and with the $4 deduction, about 35 months.

The employee has a right to cancel his stock subscription at any time before its maturity in which event he is returned the entire amount of his salary deductions, with interest compounded quarterly at a rate 1 per cent less than that which is granted him if he goes through to maturity. That would be 5 per cent, at the present time, as against six which he receives credit for as he completes the purchase.

3147 When the market price began to descend to the price at which maturing subscriptions had been made the Company called to the attention of each employee who had a maturing subscription the possibility of his acquiring that stock through other channels and canceling his subscription agreement, using the proceeds to make that acquisition. That was done through the lines of organization. Each employee individually who was involved was interviewed, and the facts called to his attention. There was not any effort made to influence him as to what he should do, and some of them, in spite of the fact that they were shown that it was to their immediate financial advantage to make the change, insisted on going through with their contract, and acquired the stock.

The circular identified as Exhibit A-196 is the one 3148 which was sent out by the Illinois Bell Telephone Company to all of its employees who are at present making payments under the plan. It is for their information.

There has been cost incurred by the Illinois Bell Telephone Company in connection with the administration of this Employees' Stock Plan. I do not have with me the figures showing the exact amount of that. The nature of the cost which has been incurred by the Illinois Bell Telephone Company in the administration of this Employees' Stock Plan is the cost of keeping the records of the subscriptions which are made, making the collections periodically, and remitting the amounts to the American Company; also of course the 3149 cost of making the refunds in the cases where subscriptions are withdrawn. Aside from these costs that I have just referred to, there are no other costs which the Illinois Bell Telephone Company incurs in the administration of the plan. We have the actual cost of certain of those transactions. With the rest of them, it is necessary to make some sort of apportionment, but my best judgment is that they never run over $45,000—around $45,000. These costs have been included in the expenses of the Illinois Bell Telephone Company as they are shown in the exhibits in this case.

In my opinion such reasonable costs as are incurred in connection with the Employees' Stock Plan are proper 3150 items of expense. This encourages thrift habits on the part of the employees. It gives them the opportunity to become interested financially in the business in which they are employed; it generally makes them better citizens, as far as we are concerned.

In my opinion it has an effect upon the Illinois Bell Telephone Company that justifies it in meeting these expenses.

Around 118,000 shares of stock have been delivered to the Illinois Bell Telephone Company employees under this plan during the years 1923 to 1931. At the end of 1931 there 3151 were 73.5 per cent of the employees of the Illinois Bell Telephone Company who are eligible to subscribe under the plan who were actually subscribing. That is lower than it has been for some time; at one time it was as high as 90 per cent.

I referred just a moment ago to the right of the employee to cancel his subscription and to receive back the amounts which had been deducted from his pay or which had been credited on account of dividends on stock purchased by him under the plan. During the period 1923 to 1931 we have refunded to employees approximately $7,000,000, of which about $200,000 represented interest. For the first four months of this year refunds have been approximately $3,000,000, of which about $170,000 represents interest. The amounts which I have referred to as having been refunded,
principal and interest in the first four months of 1932
3152 are in addition to the figures which I gave for the prior
years. The rate of refunder has been much greater during 1932 than it had ever been previously. That is probably because of the difference between the market price of American Telephone and Telegraph Company's stock and the price at which the employee has subscribed for it.

There is also a plan for the sale of stock of the American Telephone and Telegraph Company through the Bell Securities Company. The circular which has been identified as Exhibit A-197 describes in a general way what this plan is. This stock is purchased by the Bell Telephone Securities Company on the open market, and resold either to the public, or the Illinois Bell Telephone Company employees, if they
desire to purchase under this plan; it is sold to anyone
3153 who desires to purchase it. Recently a good many
employees of the Illinois Bell Telephone Company have purchased under the Bell Securities Plan. They have used the accumulated installments which were refunded under the Employees' Plan to acquire stock at the market price through the Bell Securities Company Plan. In connection with the administration of the Bell Securities Stock Plan we accept the subscriptions for stock from the general public, making collections for either shares or installments, and remit those amounts to the Bell Securities Company. The amount of those costs are not more than half the cost of operating the

Employees' Stock Plan. Those costs have been included in the operating expenses of the Illinois Bell Telephone Company as shown in the exhibits in this case, to the extent 3154 that we have not been reimbursed by the Securities Company for those costs. They are included in the exhibits. We get some reimbursement from the Securities Company, but are not reimbursed for our entire expense.

So far as those sales are made within our territory, (and that is where practically all of them are made) I think there is a very decided advantage to the Illinois Bell Telephone Company in the sale of stock of the American Telephone and Telegraph Company through this Bell Securities Stock Plan. The advantage that I have in mind is the advantage which obtains by having our customers interested in the business which is serving them; it makes for better public relations.

At the time the American Company is putting out new issues of stock, there are a good many transactions in 3155 the rights prior to the filing of subscriptions with those rights, and our Company handles those transactions for the public within its territory, and also the subscriptions under the rights.

We have maintained an office for the exclusive use of the accountants and engineers of the Illinois Commerce Commission since November 21, 1921, since which date they have been constantly examining our books and records, and have had access to whatever they desired to inspect and examine of our accounting records.

I am familiar with the loss of stations in the Chicago 3156 area of the Plaintiff Company in the year 1931, and for the first four months of 1932, and the first nineteen days of May, as testified to yesterday by Mr. Kruse; also with the decreased calling rate in the first four months of 1932, as compared with the first four months of 1931. It is rather difficult in these days to make any very definite prophecy. We figure that we will lose as many as 75,000 stations during the year. That represents my best judgment at the present time of what the loss will be.

There was a decrease in the net telephone earnings of the

Chicago area of the Illinois Bell Telephone Company for the first four months of 1932 as compared with the first months of 1931. That decrease was about $783,000. If this decrease
in net telephone earnings were extended for the year,
3157 it would give a figure of something in excess of $2,300,000
in 1932 over 1931, of net telephone earnings. In my opinion such decrease of net telephone earnings for the year 1932 over 1931 is fairly representative of what will occur. It looks as if we were going to lose at least $2,000,000 over 1931.

We have records which show the extent of loss or decrease for the first four months of 1932, as between exchange revenues and toll revenues. For the gross exchange revenues the rate of decrease is 7.2 per cent, and for the gross toll revenues it is 8.2 over the corresponding period of last year.
3158 The rate of decrease in gross exchange revenues at
the present time is increasing at a greater rate than the rate of decrease in toll revenues, so it would seem that the greater margin of the loss for the year 1932 would apply to the exchange business—that means the intrastate business, rather than to the interstate, although there will be some loss in the interstate as well. In my opinion the de-
3159 crease of approximately $2,000,000 in net telephone
earnings for 1932 over 1931, will be proportionately larger in our intrastate business than in our interstate business.

In my judgment the loss of revenues which the Company would sustain in the year 1932 should it put the rates in suit into effect is that it would represent a decrease of about $1,270,000. That was computed from the first four months of 1932 provision which we currently make for possible refunds to subscribers involved in this case, by assuming the same relation between those figures and the figures for the year which existed in 1931, and also the same relation between the amount of our provision for possible refund, and the amount estimated as shown in the exhibit for 1931, as being our loss if the rates had been put into effect. The testimony in this case discloses on behalf of the Company what the loss in
3160 revenue would have been in the year 1931 if the rates in
suit had been put into effect.

That figure I think is approximately $1,450,000 for the total Chicago area. We had certain provisions made for refund during the year 1931 which was made on the basis of what subscribers we actually had. So I found the ratio between the provision for refunder and the reduction which would have occurred from putting the rates in suit into effect for 1931, and applied that same ratio to the provision for refunder which we are going to make for the year 1932. It is in that way that I arrive at the figure of $1,270,000.

3161 *Cross-Examination by Mr. Goldstein.*

When I said that the purchase of stock by the employees made them "better citizens" I said with respect with their relation to the business. I did not mean generally. I would not think that the same reasoning would apply if for instance the employees should ask the Illinois Bell Telephone Company or the United States Steel Corporation to work a similar plan on stock of the United States Steel Corporation, or Halsey, Stuart Company, or J. P. Morgan and Company, should ask the Illinois Bell Telephone Company to have
3162 employees purchase stock offered by these companies.

The American Telephone and Telegraph Company stock represents to a degree ownership in the business of the Illinois Bell Telephone Company, the business in which these employees are engaged. That makes it more definite, and interesting to the employees. I do not think the same reasoning would apply to the purchase of the stock of the International Telephone and Telegraph Company, or the Associated Telephone Companies. I did not say it was because the
3163 stock was of the telephone industry. When the employees buy stock of the American Telephone and Telegraph Company on the installment plan, it is my thought that the employees buy an interest in their own business.

3166 I do not recollect that I made any statement that we did not cover all of the costs of our Company in connection with the employees' stock plan in its expense accounts.

If I did, I want to change it. All of the costs which are incurred by this Company in its administration of the Employees' Stock Plan, appear in its accounts, and will appear in the statement of Mr. Kruse. The American Telephone and Telegraph Company does not reimburse the Illinois Bell Telephone Company for those costs; they appear in our expense accounts, and rest there finally.

I did not give any consideration whatever to benefits to the American Telephone and Telegraph Company as a
3167 result of having its stock sold to the employees of the Illinois Bell Telephone Company on the installment plan.

I do not know what percentage of the employees of the Illinois Bell Telephone Company own stock of the American Telephone and Telegraph Company. My impression would be that a large proportion of them are stockholders.

3168 I have been in charge of the accounting of the Illinois Bell Telephone Company for a great many years. As such I am familiar with the method in which the costs of operations both in the long distance service and in the exchange service are allocated as between the two on our books. The allocations of joint costs which are incurred in the exchange and in the long distance service, are the result of judgment by the employees as to what proportion should go to one or to the other.

3170 The reason why the Illinois Bell Telephone Company receives an advantage in having the stock of the American Telephone and Telegraph Company sold to persons outside the employees, through the employees of the Illinois Bell Telephone Company is: there is certainly an advantage to the telephone business in having the subscribers of the business know something about the operation of the business, and have a participation in its ownership. The fact is evidenced constantly by the interest which a small stock ownership in the business brings out with respect to the ordinary subscriber. That is the ownership in the telephone business in which they are directly interested, as a subscriber.

They subscribe to the services of the Illinois Bell Tele-
3171 phone Company. They know with respect to the owner-
ship of this Company that the largest stockholder is the
American Telephone and Telegraph Company, and that when
they buy stock of that company they are interesting them-
selves in the ownership through that stock of the telephone
company with which they are connected as a subscriber,
3172 that is, the Illinois Bell Telephone Company. The Illi-
nois Bell Telephone Company has paid its 8 per cent
dividend for the first quarter. We paid it out of available
funds. We did not quite earn our dividend the first quarter.
I do not have the figures in mind by which we fell short. We
had a sufficient amount of surplus however so that it was
thoroughly covered.

3174 I spoke of the estimated reduction in net income if
the rates in suit were put into effect as twelve hundred
and seventy thousand dollars—meaning $1,370,000. The effect
of my calculations for 1932 was to take into account the
same factors as affecting the net amount of reduction due to
the reduction in rates as was done for the year 1931. I say
I think that the effect of that calculation is the same
3175 basis as 1931. I am not familiar with the basis of the
calculations giving the estimated effect on the business
of the putting into effect of these rates, but I assumed that
there would be very little difference between the conditions of
1931 and those of 1932. The situation between 1931 and 1930
did not enter my calculation at all. If there had been a dis-
tinct change in the calculation which was testified to by the
president as between 1930 and 1931, that did not enter into
the situation as far as my calculation was concerned.
3176 I have seen publications that indicated that every com-
pany of the Bell System has the stock plan in effect and
that a substantial proportion, more than half, have the Bell
Securities Plan in operation.

In my direct examination as to the Bell Securities Plan, that is covered by A-197, I gave no consideration to benefits to the American Telephone and Telegraph Company resulting from this plan.

3177 CHARLES A. HEISS, recalled as a witness on behalf of the plaintiff, having been previously duly sworn, further testified as follows:

Direct Examination By Mr. Blackman.

May 25, 1932.

The paper marked for identification Plaintiff's Exhibit A-198 was prepared under my direction and supervision. The figures in line A of this exhibit are taken from the books of the American Telephone and Telegraph Company. They are taken directly from the books of the Company at December 31st.

They show the amounts that the American Telephone and Telegraph Company collected under its license and con- 3178 tract arrangements from the associated companies, and the Bell Telephone Company of Canada. The figures appearing in line B were taken from Exhibit A-170, and reduced by the allocations to the Long Lines Department as shown on exhibits which I have introduced during the past few weeks. That is, my starting point is Exhibit A-170. A-170 included amounts which I had allocated to the Long Lines, in other exhibits and I have gone through these other exhibits and taken out the allocations to the Long Lines in each case. Line C is merely the remainder after subtracting line B from line A. These figures that are blotted in red indicate losses.

3179 The figures opposite D (1) were taken from Exhibits A-178 and A-177, and modified or reduced to eliminate the amount allocable to Long Lines on the same basis that similar expenses of the Personnel Department were allocated, in the exhibit introduced with respect to the expenses of the Personnel Department. The figures shown against subdivision 2 of Item D were prepared by me on the same basis as Exhibit A-163. The figures here shown against Item 2 are the figures for all of the associate companies, whereas

the figures on A-163 were the figures for the Chicago area but the figures here are comparable and built up on the same theory, and the same basis that I used and explained in connection with the Chicago area with Exhibit A-163. Line E is merely the remainder after deducting the sum of the
3180 two items under Item D, from Item C.

Below Item E, there are some additional items. At the top of the page there appears this statement, "Also additional items which should be considered on the assumption that American Telephone and Telegraph Company is a contracting party entitled to make a fair contract with associated companies and a fair profit therefrom." Now, the figures in lines A and E represent the revenues and the basic costs, costs and deductions which should be set off against them. Now, then, below I have set forth additional items which should be considered in connection with the amount appearing on line E. That is before assuming that line E is profit, or that there has been an excessive amount collected by the American Company from the associate companies in respect of these license contract services, there are certain additional items that must very definitely be taken into consideration in determining whether the balance there shown is a profit or balance.

With regard to that line E, that shows a loss of $28,000,000 as the sum total of the results for the nine years in
3181 question: it shows a small positive balance for four years and a loss for five years and the net is $28,193,600 in the red.

The consideration of these additional items is to reduce the black figures and to increase the red figures.

The first item (a) is the liability of American Company to associated companies under guarantee to protect and save harmless these companies from all actions and suits charging infringement of patents, as provided in Section 2 of our license contract. Now, during the period 1923 to 1931 inclusive the American Company actually transferred from its surplus to a Reserve for Contingencies, the amounts here shown against this item aggregating $30,395,800. In other

words, the American Company during the period 1923 to 1927 actually put in a contingency reserve $30,389,800. Now, before that time, four or five years before that time I think, the American Company had set aside similarly large amounts,
I think beginning with 1919 regularly each year through
3182 to 1927 it had set aside provisions in its Contingencies
Reserve. Now, briefly the reason for doing it was that during the war there was a great incentive to stimulate or to develop the communication art and the use of electricity in communication. The war demanded it and the research bureaus in this country were seeking everywhere to find ways in which the electrical communication could be expanded. Our own people, along with other research laboratories, many other research laboratories in the country, developed the art. At the end of the war there were a great many ideas and there was considerable advancement; we had during the war for the first time been able to talk from Arlington to Eiffel Tower in France. There were a great many ideas that were in process of development and our own people felt then that the time had come when there was a rather serious situation in the patent field relating to the application of electricity to communication, and that there were a great many questions to be unraveled and rights of different parties to be decided; and they felt that while they had previously set
up a Reserve for Contingencies, the time had then come
3183 when they must seriously face this situation; and in
the judgment of our management, it was a wise policy to establish definitely a Reserve for Contingencies primarily against this infringement liability. From my own knowledge of what transpired I know that a controlling factor in the establishment of this Contingencies Reserve was this particular situation that I have just outlined, and its related possibilities of incurring infringement liability, liability for infringement of patents.

During the extreme period covered by my exhibit, there were serious patent suits brought against the Company. There is one pending now—in fact there are two suits I think pending the courts in Michigan. They are test suits, but the claimants claim damages running almost into the amount of the value of the telephone property; and this situation is continually in the picture, where you have, as we have, 11,000 patents or patent licenses used in one or the other phase of our business.

3184 During the years covered by this period our provision to the Reserve for Contingencies was as follows: 1923, $3,000,000; 1924, $3,000,000; 1925, $6,000,000; 1926, $4,000,000; 1927, $14,395,800. For purposes of this statement I have taken the $14,395,800 and have spread it in three million dollar amounts during the remaining years of the period, except for the year 1931, where I have included $2,395,800. I know from my own knowledge of this appropriation in 1927 that it was the intention that it should cover for several years the provision which we felt ought to be made for contingencies. That was the balance remaining in the depreciation reserve after the sale of the instruments, that was transferred to surplus, and in the judgment of our management they felt that that balance should be definitely ear-marked against future contingencies arising in the business; that is contingencies of the character which I have just described.

Now, Item (b) is the acquisition for benefit of associated companies of rights under General Electric Company and
Radio Corporation of America patents by surrender of
3185 rights in radio field worth upwards of $10,000,000. I
believe that that situation is very adequately and sufficiently described in the testimony of Dr. F. B. Jewett, pages 2107 to 2122 inclusive of the transcript.

Item (c) is an allowance sufficient to yield a fair return, plus profit, on the value of all property used in rendering license contract services, including value of the Development and Research, and other General Department Organizations of the Company, less costs already included in Exhibit A-167 and Item D (2) above. That is we did not want any duplication here and so while we believe we are entitled to a fair return plus profit (that is, under this theory, under this assumption on which I am proceeding) on the value of all property; we should exclude such accounts as have already been

included in our costs. I have gone through these figures care-
fully and eliminated all possible duplications, and whereas in
this item I call attention to the fact of an allowance and that
there have been items in connection with that taken into
3186 our cost figures I have set forth clearly what these items
are and that they should be deducted. Of course I have
not cumulated these different amounts: I have however here
earmarked the places where the costs appear that should be
excluded.

Item (d): Under Item (d) we merely call attention to the
fact that in all computations involving the average cost of
funds used in the business these average costs give effect
to the inclusion with capital funds paid into the business,
all of the surplus of the Company, whether appropriated or
unappropriated (even Reserve for Contingencies, which I
have just discussed, has been included there) on the basis of
no capital charge cost to the Company. That is not really
a separate item. It is merely calling attention to the con-
servatism with which my costs were computed, so that that
would not be overlooked. And incidentally, it also explains
the situation that developed a few days ago here as
3187 regards the difference between my cost computations in
Ohio, and here, and the computations made in Michigan.
In Michigan I did not give credit for surplus, and that in
itself accounts for substantially all of the difference. These
differences that were called attention to were confined to the
differences in my costs with respect to money and I say it
accounts for substantially all; it is not all, but it accounts
for the major part. The rest, the remainder, was a current
tax adjustment which we made on our books as a matter of
current accounting practice as between the General Depart-
ment and the Long Lines. This method of procedure that I
have here indicated reduces materially the percentage rate
for cost of funds wherever that rate is used in the business,
for determining costs.

(Plaintiff offered in evidence Plaintiff's Exhibit A-198. Objection reserved by defendants until close of cross-examination.)

3188 The paper marked Plaintiff's Exhibit A-199 was prepared at my direction and under my supervision. It purports to show a statement similar to that just discussed but modified to take into consideration a different assumption of the relationship between the American Company and the associate companies. The figures contained in the block of lines beginning with A and ending with E are the same figures as those shown on the preceding exhibit; they 3189 are identical figures, because in the interests of conservatism here I have used these figures under this assumption (although if I had wanted to make refinements I could have reduced these figures to some extent on the assumption under which I am proceeding).

Item (a), under the box, is the same item that appears on my previous exhibit. What I have said applies in the same manner and to the same extent to this item and with equal force.

Item (b) is different. Item (b) calls attention to the fact that in connection with the costs and deductions stated, there should be considered a fair return and amortization charges upon the value of approximately 11,000 patents and patent rights, including patents acquired from the General Elec- 3190 tric and Radio Corporation of America at a cost of over $10,000,000, for the benefit of the associate companies, and other patents acquired by purchase at a cost of over $6,200,000, together with patents taken out by employees, less amounts included in Exhibit A-160 for patents purchased and enumerated at pages 2661-2667 of the minutes in this case. That is during this period there were charged to the Law Department and included in the expenses of the Law Department a number of purchases where the amounts were usually small. I explained that and gave the amount for each year in my testimony in connection with that exhibit and those amounts should be deducted here.

In regard to Item (c), on the assumption under which we are proceding: This is an allowance equal to the difference between a fair return and the amount computed by using average cost of funds used in business—and those average

costs as I have just explained, were extremely conserva
3191 tive — ranging from 6.25 per cent to 6.93 per cent during the period, as shown on Exhibit A-164; on the following items of property of the American Company used in the telephone business of the Bell System:

1. Working capital measured by the average amount of funds held available for the use of the business (Exhibit A-169) ranging from $70,000,000 to $300,000,000 per annum throughout the period 1923 to 1931 inclusive. That is a fair return on the working capital less the amounts which I have already included by using the average cost of the funds used in the business, conservatively computed, by adding back surplus.

3192 Item 2, under the caption, is allowance equal to the difference between a fair return and the amount already included in the cost on the physical property of the general department of the American Company used in the business, as shown by Exhibit A-170, ranging from about a million to twelve million dollars per annum throughout the period, 1923 to 1931, inclusive. During that period the headquarters of the American Company were in 195 and 205 Broadway. During the early part of the period, it was the 195 Broadway Corporation that owned the 195 Broadway building, in which the American Company had a 70 per cent interest and the Western Union had a 30 per cent interest. Then the other corner, the 205 Broadway, was owned by the American Company outright. Then later the 205 Broadway Corporation was formed, and later still, the Western Union sold out its interest in the 195 Broadway, to the American Company.

3193 At the end of 1930 (one year of this period) there was just one corporation, the 195 Broadway Corporation, taking in all of the property formerly held by the two corporations. That company had issued stocks and bonds against this property which amounted, I think, in excess of two and a half million dollars at the beginning of the period and now my impression is the stocks went up as high as fifteen million dollars.

The total assets of the corporation now are in the neighborhood of twenty eight million dollars, and I think the debt and the stock is about equally divided; that is just an offhand impression. It may vary a little one way or the other.

I have included nothing in this sub-division of Item C for the stock holdings of the American Company in those building companies. I have gone on the assumption that whatever stock we have in those corporations is a permanent investment, and we will take whatever dividend is paid on that stock, which up to now has been limited to 5 per cent, I
3194 think, or 6. Respecting the 205 Broadway Company I took into this figure the investment of the American Company in the 205 Broadway Building as long as it owned that outright. But, when it organized the corporation and owned 100 per cent of the stock of that corporation, and continued to occupy the building in the same way, and for the same rent, I ceased to include any allowance for that item of property, in so far as it is covered by stock. For the 195 Corporation (which was always covered by stock) I have included nothing for that building in any year; nothing on our stock investment; no loss on our stock investment, if there were any.

Item D is the same as Item D on the previous sheet; it is merely for the purpose of completing this statement.

Item E is sub-divided into two parts and the two items are those which we believe should be given consideration in the picture. The first item is cost of temporary financing,
3195 the annual amounts included in Exhibit A-170 for the period 1923 to 1931, inclusive, no part of which was allocated to the Chicago area in Exhibit A-170. Now, the amounts included in this exhibit, which is for the American Company as a whole, are as shown for the different years. Now, our reason for including it here is merely to bring attention to the fact that it may be pertinent to give some consideration in respect of a deduction for this item. All the transactions of the Company are viewed on the basis in which I am viewing them here, and all the transactions are based on the assumption which I have here explained. But this same

deduction for temporary financing does not apply under the assumption previously discussed.

As to sub-division 2 of Item E: Similarly we have felt that in making up this summary statement we should call attention to the royalties which the American Company received during the period in question, and we offer the suggestion that if any part of these royalties should be deducted, it should be a reasonable portion only thereof. That not all of the royalties should be deducted. The total of all 3196 the royalties and license fees received by the company annually for the period 1923 to 1931, inclusive, are as stated for the different years, totaling $5,229,141.

(Plaintiff offered in evidence document marked Exhibit A-199, for identification. Received in evidence.)

3197 In sub-division 2 of Item B I have a reference to an exhibit that is left blank. That exhibit is not yet in the record, but it is an exhibit prepared identically in the same manner as Exhibit A-163, and it shows the facts for the Bell System as a whole of the instrument values less 8 per cent depreciation, expense at 7 per cent, and a fair return of 8 per cent thereon. The factors are absolutely the same as those stated on Exhibit A-163. I explained that in connection with Exhibit A-196. There is no necessity for an exhibit on that subject.

I have developed the same class of figures for the Chicago area as I developed them for the whole Company. 3198 All of the figures shown on the sheet marked Exhibit A-200 were developed in precisely the same way as I have already described in reference to A-198, except that they relate to the Chicago area only instead of to the entire associate companies. Sheet 1 of the Chicago area exhibit is identical to A-198, except that it covers data for the Chicago area.

I prepared the sheet marked for identification Exhibit A-201 for the Chicago area and it was marked "Sheet 2" at the top. This is a companion sheet to Exhibit 199 and is developed on the same assumption. The major factor for the substantial difference in result that is shown on Exhibits

A-198 and A-200 is that Exhibit A-200 includes nothing for cost of temporary financing, while A-198 does. That is, I did not carry out and allocate that to the Chicago area and if you will look at sheet 2, the last exhibit introduced, at the bottom, you will notice that we make no suggestion in 3199 respect of cost of temporary financing. That is because it was not taken in in the first instance so far as the Chicago area was concerned. There is one other difference and that is that this sheet 2 contains a statement that the Chicago area constitutes approximately 6 per cent of the Bell System and allowances made in respect of these items should be allocated accordingly.

"Mr. Blackman: I will offer the sheet A-200 for identification and A-201 for identification, in evidence.

"Mr. Adcock: Subject to the same objection.

3200 "Mr. Thompson: Your Honors, during the testimony of Mr. Gregory and Mr. Cleveland, the plaintiff offered in evidence Exhibits A-193 and A-194, with respect to Mr. Gregory's testimony, and Exhibits A-195, 196 and 197 with respect to Mr. Cleveland's testimony. I would like to re-offer them. The objections were reserved on those until cross-examination. Are you objecting now?

"Mr. Goldstein: Well, the Gregory exhibit, A-194, I take it, is the 1932 profits, and the rest; that is subject to the same objection we made to the other Gregory exhibits that involved profits.

"Judge Wilkerson: Very well.

(Which said documents, so offered and received in evidence, were marked as Plaintiff's Exhibits A-193, A-194, A-195, A-196, A-197, respectively.)

3201 "Mr. Goldstein: Before proceeding with the examination of Mr. Turner, we would like to have the record 3202 show that the defendants move to strike Mr. Turner's testimony, including the exhibits offered, on the ground they are incompetent, irrelevant and immaterial, for the following, among other reasons:

"First: The rate of depreciation has been fixed by the Illinois Commerce Commission pursuant to statute, and no attempt is made by the plaintiff to show, and no showing in Mr. Turner's testimony appears, that the Illinois Commerce Commission action was arbitrary.

"Second: The plaintiff's bill does not set forth any claim that the Illinois Commerce Commission's action in fixing the rate of depreciation or the expense of depreciation
3203 was arbitrary, and therefore it cannot now attack it as arbitrary.

"Third: The plaintiff sought, on the former hearing, and on appeal to the Supreme Court, to void the Commission's action in fixing the depreciation rate and expense by the claim that the Interstate Commerce Commission had acquired exclusive jurisdiction over that subject matter by act of Congress, that the Interstate Commerce Commission had not yet exercised finally its exclusive jurisdiction, but had ordered the Company, upon its final action, to follow the accounting rules, which left it to the Company to fix the rates based on its own judgment, and, that in the absence of a showing that such judgment was arbitrary, the Company's judgment should stand.

"The Supreme Court found against that position, and the plaintiff cannot now take another position, which it is now taking under the well-known principles.

"Those are our objections.

"Judge Wilkerson: Have you the decision of the Supreme Court? Have you anything to offer in support of the motion except what you have already said?

"Mr. Goldstein: No. It is a statement which corresponds to the position we took in connection with the motion which is now pending, which covers the matter of depreciation, which the Court refused to pass on heretofore. The
3204 third specification of our motion is in addition to those set up in the other motion.

"Judge Wilkerson: Have you anything to say about Mr. Goldstein's motion?

"Mr. Bracelen: I think it is necessary to say no more than this, your Honor: That the opinion of the Supreme Court is perfectly definite to this effect, that the amount of depreciation expense which is to be allowed in the computations, to determine the issue of confiscation in this case, is to be fixed by this Court.

"Judge Wilkerson: I find this language: 'The experience of the Illinois Company, together with a careful analysis of the results shown, under comparable conditions, by other companies which are part of the Bell System, and thus enjoy the advantage of the continuous and expert supervision of a central technical organization, should afford a sound basis for judgment as to the amount which in fairness both to public and private interest, should be allowed as an annual charge for depreciation.'

"And, 'accordingly, the Court should make appropriate findings with respect to the amount to be allowed in this case as an annual charge for depreciation in connection with intrastate business.'

3205 "Is that the portion?'

"Mr. Bracelen: That is the portion.

"Mr. Goldstein: But the Court did not say in that opinion as to what effect this Court should give to the statute of the State of Illinois. We are under the statute of the Illinois Commerce Commission, in so far as the rate is concerned.

"Judge Wilkerson: You will have to argue that to the Supreme Court, I suppose. Their mandate to us is imperative.

"Your objection is overruled.

"Mr. Goldstein: Exception."

JOHN R. TURNER, a witness on behalf of the plaintiff, having been previously duly sworn, resumed the stand and testified further as follows:

Cross-Examination by Mr. Goldstein.

May 25, 1932.

I have been in charge of making studies in connection with depreciation expense since about the latter part of 1927. The first rates that went into effect under my supervision were

January 1, 1928. While I probably am not specifically
familiar with the factors that were taken into account in
connection with the studies of depreciation rates estab-
3206 lished prior to 1927, I would, of course, know from my
own experience what factors might have been consid-
ered. And in the early experiences there may have been
factors considered of which I am not aware. I am not familiar
enough with the factors that were used prior to 1927, in deter-
mining the depreciation rates established by the Company
prior thereto and which are offered by the Illinois Bell in this
case so that I know how they were established, the principles
underlying them, what methods were used in determining
them, and things of that sort. Of course, I have available
now the analysis of the actual experience of the Company in
those years, so that I am in a position to find out just what
did happen at that time, regardless of what factors may
3207 have controlled. I am familiar with the methods that
were used and as I said before, I am familiar with some
of the factors that would have controlled back there, as they
have since that time. I am not familiar with the factors which
were taken into account in the years prior to 1927 in exercis-
ing the judgment, where judgment was used to vary the
studied figures, to arrive at the actual depreciation rate.

I have in the courtroom the working papers on which the
depreciation rates were established in the years 1923 to 1931.
I cannot speak of the assistance of the American Telephone
and Telegraph Company in the determination of the deprecia-
tion rates of the Illinois Bell for the Chicago area, prior
3208 to 1927. Since that time they have furnished us a great
deal of basic information regarding methods and have
checked the results that we have worked out by the applica-
tion of those methods to determine whether our application of
them was correct. The American Telephone and Telegraph
Company sent to the Illinois Bell instructions regarding the
methods of studying life and salvage. Of course, we have
been attempting to find ways and means of improving any
methods that we are using locally, and I could not say that
we have not made any variation in the methods that were

originally applied. Those methods that came through the written instructions of the American Telephone and Telegraph Company were the basic methods used by us subject to local variation.

3209 I don't know that we have furnished defendants any written instructions that were sent out by the American Telephone and Telegraph Company but we have done the equivalent of that in explaining precisely what the methods were and are. My understanding was that we were to make available to defendants anything that their people thought essential in their investigation of our methods and results. We had available all data that we used, and all documents that we used in our determinations. I have always had those written instructions of the American Telephone and Telegraph Company available, if anyone had desired to see

3210 them. I delivered all other data and documents and made them available to the defendants and explained the methods to them. I did not deliver those particular documents, that is the documents containing instructions from the American Telephone and Telegraph Company covering the methods used in determining depreciation expense.

3211 In forecasting, we analyzed our past experience, and in some cases projected that experience into the future. Such information that we have worked up for that purpose may be similar to the provisional estimates, but we have not relied upon the provisional estimates. They cover, in the first place, too short a period. Some of the things that were matters of fact in those provisional estimates were similar to those which we used in forecasting for those years.

I was in the courtroom only part of the time when Mr. Redmund testified on per cent condition. I testified in downstate cases on per cent condition.

3213 I stated that growth is probably the chief cause of retiring telephone property in Chicago. The factors that cause growth, I should say, are increasing population, increasing business and perhaps an increasing ability to afford to secure services or conveniences of this type. That is, one factor would be new customers. I have been speaking

of the factors that bring about the acquisition of new
3214 customers. The factors that enter into this growth
factor in depreciation are new subscribers, additional
facilities to existing subscribers and increasing calling rates
and holding time. The Chicago area practically covers the
entire city of Chicago now. The gradual extension of residences and business and so on into vacant areas within the
city would be a factor that would give rise to this growth
element.

Growth may result in inadequacy. The retirements that
we refer to as having been made due to inadequacy are
brought about by an insufficiency of plant which has
3215 caused the retirement. Just now, I do not think of any
other factor besides the growth that leads to this inadequacy.

I testified that in the case of central office equipment and buildings the property is built up by an initial installation and a series of subsequent additions and then all of the equipment or building is retired simultaneously, except for relative small retirements that occur during the over all period.

I further stated in this same connection, with reference to central office equipment and building, that each subsequent addition to the initial construction or installation has a composite shortening effect upon the average life of the property as compared to the over-all life.

To illustrate that principle this is what I have in mind:
On January 1, 1932, we install a manual office having an
initial construction of $500,000 for the building and $500,000
for the equipment. We forecast that the equipment constructed on January 1, 1932, will be retired at the end
3216 of twenty years. Eliminating now the question of salvage, instead of taking one twentieth of the cost of the
equipment, we forecast that within that twenty-year period,
say ten years from now, 1940, we estimate that we are going
to put in another $100,000, and then fifteen years from now we
estimate we are going to put in another $100,000, and seventeen and a half years from now, we will say, we are going
to put in another $100,000, so that we will have $300,000 of

additions not yet put in, but which we are going to put in in the next twenty years, which will have a shorter life than twenty years. Then we say that in determining the present rate, we will take the sum total of the twenty year life of the equipment now installed, and what we estimate will be the life of the property that we expect to put in ten years from now, that we expect to put in fifteen years from now, and that we expect to put in seventeen and a half years from now, and we arrive at a composite life and that gives us the composite rate.

With respect to the buildings we would estimate that the
buildings that we build on January 1, 1932, would have a
3217 life, we will say, to 1980, and we estimate that in 1940
we are going to add to that five hundred another hundred thousand, and in 1950 we are going to add another hundred thousand, and in 1960 we are going to add another hundred thousand and in 1970 we expect to add another hundred thousand. So that we are going to add together the 500,000 that we now have and the 100,000 that we expect to put in in 1940, and the 100,000 that we expect to put in in 1950, and the 100,000 that we expect to put in in 1960, and in 1970, and we say that the one in 1970, if we put it in at that time, will only, therefore, have a life of ten years, and the one in 1960, if we put it in, will have a life of 20 years, and the one in 1950 we expect will have a life of 30 years, and the present one should have a life of 50 years, and the composite of all that will be less than 50 years, so you arrive at your total composite rate which we apply from today until 1980.

3218 "Q. And in connection with that you take the dollars
that you are going to put in in 1960, without taking into account what a dollar in 1960 is worth today, on the basis of either 3 per cent or 4 per cent or 5 per cent or 6 per cent compound interest, that is correct, that you do not take into account the earning power of the dollar today to 1960 or 1970 or 1975. You don't estimate that earning power do you?

"A. I don't understand how you could do what you have in mind, Mr. Goldstein.

"Q. That is, if you expect that you will have to provide a dollar in 1970, do you take into account that, to get a dollar in 1970, you would now need only 6 cents or 10 cents, at 3 per cent compound interest until 1960?

"A. That wouldn't give us anything, if we did that.

"Q. But you don't take that into account?

"A. What we are trying to get is the.—

"Q. Please answer the question, and then you may explain it. Do you take the interest factor into account, if the answer is no?

"A. We cannot do it.

3219 "A. We cannot do it, to arrive at what we are seeking.

"Mr. Goldstein: Then you don't. But you do take into account the fact that you estimate in 1932 that in 1970 you are going to put in $100,000 in an addition?

"A. If that assumption you are making is something that is in accord with what we do, yes."

This is what we call the detail forecast method.

3220 The shortening of the composite life as against the over-all life of the initial construction will tend to increase the depreciation rate, and so the depreciation charge for operating expense. It will, in a case such as counsel has used as an example, where you are starting out with a new building, but I think that in the case of our actual plant as it exists today, it lowers the rate.

3221 This work sheet for the Merrimac office was prepared similarly to page 5 of Exhibit A-128, referring to the Kedzie office, which runs to 1936, (which sheet entitled "Historical Data Relating to Equipment" was marked for identification as Defendants' Exhibit D-119).

D-119 shows that in 1926 we installed $378,000 of initial construction. In 1927 we installed (in round figures) $212,000; in 1928, $22,000; and in 1929, $12,000. Up to the time that we made our study similar to the one on page 5 for the Kedzie office, we had made actual installations of $625,412. We

3222 forecast that in 1930 we would put in $61,300; in 1931, $71,000; in 1932, $289,000; in 1933, $109,000; in 1934,

$170,000, and so on each year thereafter to 1940, when we would put in $63,800; in 1941, we expected to put in $51,900; in 1942, $56,300; in 1943, $55,000; and in 1944, $26,000. The total of these expected additions in the future ($1,400,000) makes a total of $2,000,000 for this office; that is, $600,000 up to and including 1929, actual installations, and the estimated additions of $1,400,000. During the same period we expected to take out the following amounts: In 1943, $300;
in 1942, $500; in 1941, $100; in 1940, $200; in 1939, $200;
3223 in 1938, $400; and so down to 1933, which would be
$3,500; and in 1931, $3,100. The total retirements up to 1929, the date of our study, are $4,900, and then we estimated for each year in the future the separate retirements (the final retirement in 1944 being $1,990,000) so that by 1944 all of the equipment will be out.

In 1942, we will have $56,000 of installations, which will last two years. We will not in those last two years accumulate the moneys to take care of the retirement of that $56,000. We will accumulate throughout the over-all experience of the office enough money to cover the total loss in the using up of that equipment. Now, as far as that retirement goes, of course if we were to accumulate in these two years the amount of money necessary to take care of that specific loss, we would
have to use a higher rate. That is not the reason why
3224 we accumulate it before we put it in. The reason that
we accumulate it throughout the over-all experience of the office is that we understand the purpose of depreciation is to allocate the ultimate losses as evenly as may be
throughout the average life of the property. The pur-
3225 pose that we have in mind is to determine a rate which
throughout the life of the office, applied to the varying investments, will restore the amount of investment we have in the equipment, less any salvage that we may obtain. The purpose of that is to get a similar rate that may be used throughout the over-all experience, so that we do not burden our expenses along toward the end of the life of an office, as compared to the amount that we set up in the early part of the experience. It is not to take care of the investment we

now have, in the initial construction. My reference to the investment meant the complete investment in central office equipment in an individual office.

3226 We start off (in the case of Merrimac) with $378,000 and we expect to increase that investment up to 1944 to two million dollars, and beginning with 1926 we establish a rate which will, by 1944, repay us not only the $378,000 but the balance to make up the two million, to restore the entire investment in central office throughout the over-all life. Coming back again to 1943, we expected to put in $55,000 in that year in the Merrimac office, and that represents an investment we expect to make. The funds to pay us back that $55,000 one year later is starting to accumulate, beginning with 1926. As a matter of fact the funds that we require to pay us back the entire investment throughout the entire experience of the office are accumulating throughout that experience.

"Q. Yes. And the portion of the $55,000 that you will not use until 1943, but which you start to accumulate in 1926, who gets the money, who holds that money? The Company?

"A. I don't know.

"Q. It comes out of their revenues, and goes into the treasury of the Company, does it not?

3227 "A. Why, I presume so, I don't know.

"Q. And what becomes of the income on that money while it is being held from 1926 to 1943, when you expect to put it in?

"A. The income?

"Q. Yes.

"A. I don't know. I have nothing to do with the disbursements, or the use of the income from any moneys that the Company gets."

I do not take into account that before we expect to use the money, or to make any investment, we will have these dollars from 1926 to 1943, or seventeen years; I do not take into account that during these seventeen years these dollars will earn money.

3228 I have here the work sheets for the Merrimac office building (which said sheet, entitled, "Historical Data for Mortality Study of Buildings" was marked for identification Defendants' Exhibit D-120).

The Merrimac Building was built in 1926 at an actual cost of $235,560. From that day to 1930 which was the date of our study we had increased our investment by about $3,000.

Now, according to our forecast, in 1931 we would put in
3229 $152,000. Our forecast indicates the following additions in the following years: in 1944, $645,000; in 1954, $95,000; in 1964, $100,000; and in 1974, $62,000. We expect to retire $9,000 in 1974; in 1964, $11,000; in 1954, $10,000; in 1944, $75,000; and in 1931, $10,000. Then in 1984 we expect to retire $1,176,880.

On the principle as I just have stated it, we start in in 1926 to establish a depreciation rate and a depreciation charge against income so that by 1984 we will get back
3230 the $235,000 that we put in in 1926, the $3,000 that we put in by 1930, and the approximately one million dollars that we expect to put in at varying times in 1931, 1944, 1954, 1964 and 1974. Of course, we are using a rate that will restore the total amounts that I spoke of, but only applying it to the investment we actually have. That is, we apply it to the investment that we actually have as a measure, in order to get the number of dollars which will enable us to come out whole on $1,176,880, in 1984.

"Q. The fact that you use the plant as a measure for your rate does not mean that you are only accumulating dollars to take care of the investment in that plant? The investment that has to be covered by the rate is not only your plant investment, but the future investments?

"A. Yes, that is right. In determining the rate, that is correct."

3231 Our fundamental plans go about twenty years in the future. The $95,000 addition to Merrimac building shown on D-120 for 1954 is based on our estimated growth in lines, and that is translated into terms of central office equipment, and that, in turn, into building requirements. We estimate that in 1974 we would need $62,000 additions and that we would retire $9,000 in the following manner: the additions were determined, or estimated in the same way that I

have explained for the other item and the retirements are predicated upon the per cent relation of retirements in the past which have been associated with additions, that is, whenever we make an addition to a building, we, of course, in our
rearrangements, retire some part of the existing build-
3232 ing, and that is based on the percentage that we found
by our actual past experience.

In D-120, for the Merrimac office building, when we figured the number of dollars to accumulate, to take care of these investments that we expect to make, we did not take into account that those dollars that accumulate in the meantime would earn anything; that is, I did not take into account in my calculations the earnings on those dollars.

Referring to Exhibit A-128:

"Q. The principle that you use of providing from the date of the original installation to the date of the final retirement of the original installation not only investment in the original installation, but all these future additions,—that principle is applicable to what is designated on page 3 as group 1, is that correct?

"A. Yes, sir."

Group 1 covers buildings and central office equipment, which represent 41.21 per cent of our total investment in property,
and 47 per cent of our depreciation expense. From page
3233 6 it appears that the investment in manual central of-
fice equipment, to which this principle is applicable, on
December 31, 1929, was $31,081,268, or 19 per cent of our investment. That thirty-one million which is our investment for manual is in addition to the dial central office equipment, which, from page 4, represented 10.25 per cent of our total investment on that date. The dollar investment in dial cen-
tral office equipment at the end of 1930 was $17,253,456.
3234 I stated that the method used in connection with dial
equipment was predicated upon the principles of the
manual equipment, excepting for certain modifications which I indicated would tend to lengthen life, or shorten it, but the variations did not vary the principle, namely that we take the initial construction plus the future additions to the date

of the ultimate retirement of the initial construction; we accumulate it, and determine a composite rate which, from the beginning to the end, remains constant.

3235 The principle that I have explained I think was used back beyond 1923. That is, we used the principle of accumulating additions. The difference between the earlier years and the later years is that in the earlier years we used it as a factor to be considered in reaching our judgment, and in the later years, we had greater detail upon which we based our judgment. Beginning as far back as 1923 the same principle was used in connection with this type of investment. In connection with the buildings: as shown in group 1 (Exhibit A-128, page 3) the buildings constituted 8 per cent of our total investment in depreciable property in 1929. On page 4 the buildings are divided into manual and dial central 3236 offices, and the general office. The general office is subject to the same principle but naturally to a much less extent. The building is not susceptible of further structural additions, but we will have replacements of such things—as boilers and elevators and so on that are handled through the depreciation accounting.

"Q. Will you please turn to page 9. If I read this correctly, in arriving at the computations on depreciation expense, your principle involved the assumption that the Merrimac building will go to 1984; that is, that you have similar expected lives for other offices such as Beverly, 1980, Kildare, 1983, South Chicago, 1978, and Pullman, 1979; is that right, and so you run down others the same way?

"A. Yes."

In D-119, we estimate that the equipment in the Merrimac office will all be retired in 1944 and estimate that the building will be retired in 1984. We only take additions in our office equipment to 1944, but take the future additions on buildings to 1984. We stop with equipment at 1944 and do not accumulate additions to 1984, because it is our estimate that in 1944 the present manual equipment in that office will be com-3237 pletely eliminated, and we will change to dial equipment, a different type of equipment entirely.

Under this same principle in 1945, if we put in $500,000 of dial equipment, we would establish a depreciation expense which would take into account not only the $500,000 in 1945, but the additions to that dial equipment from 1945 to 1984. We arrived at 1944 as the date of retirement of equipment for the following reasons: the entire city has been studied by our Equipment engineers with a view to determining the most desirable time to complete the entire conversion to dial operation, and the individual offices have been studied in accordance with the time when either growth requirements might cause a major addition to the office, at which time it would be most opportune to change to dial, or for other desirable reasons, based on traffic requirements, consideration of calling rates and so forth, and this office was designated for that particular year. That date of 1944 was determined in 1929,
3238 and on the conditions existing in 1929 as we saw them in 1929.

In 1929, we did not foresee the conditions in 1930, 1931 and 1932 so we did not take that into account. Since that time our dial program has been changed to give effect to present conditions. That change has deferred the date of ultimate retirement. That was the allowance that I made, as I explained in my direct testimony, for using a longer life than the one resulting from our analysis based on the 1929 group.

"Q. And as you deferred your dial equipment program to 1945, or to 1950, you would likewise defer the additions to be made subsequent to 1933 in your manual office? That is, you have a manual office, the equipment to last until 1944. In 1944 you are going to take out that equipment, and put in dial equipment; on the basis of that program you estimated that in 1942 you would put in a certain number of additions and in 1941 you would put in a certain number of additions. Now, you have deferred since 1929,—you have changed your
3239 plan, and your dial installation will be 1950, we will say, or 1948, or some year subsequent to 1945. Will that affect the ultimate retirement date of your manual office?

"A. If we did that, it would, of course."

If we were now to make a sheet for the entire city under

the assumption of the above question and similar to D-119 for the Merrimac office, the ultimate retirement of the initial construction would be deferred. We have just completed a study of that kind, that shows the average life to be 12.8
3240 instead of 11.7. I figure that the manual equipment of the Merrimac office will go out in 1944. I still expect to take out that equipment in 1944, and we intend to put in dial equipment in its place. We are going to put in our dial equipment in 1944. That is our present program. We have not changed our program as to the initial installation of the
3241 dial. That is what I wanted to explain before. We have not as to these offices that we have estimated having retirements in remote years, like 1942. We do expect quite a bit of deferment of the earlier part of our project, which is seriously affected by the present business conditions. We expect (although we are going ahead with some offices next year) that some which we have scheduled will be deferred perhaps several years: that is, the earlier schedules. In respect to Merrimac we do not expect any change because of present business conditions. We do expect changes in the additions to Merrimac for the period from 1933 to 1944. They will be deferred.

In 1929 we expected that we would need to put in $95,000 in 1935. In 1931 we expect that we won't need that
3242 $95,000 until some date later than 1935. That is, we have deferred the future date when we will require the additions. In the case of this office we have not deferred the date when we expect to retire the office ultimately. The result of the change in the program for this office will tend to shorten the life of this office. As we shorten the life then since 1929, our depreciation rate will become greater, and our depreciation charge will become greater assuming no change in the salvage.

3243 As I explained before the additions are based on our estimate of growth in lines, our requirements to meet the growth in subscribers and lines and calling rates, and to some extent in other items. For instance, as new dial offices are cut into service, there is additional equipment required in all other manual offices to take care of the interconnection with the dial offices.

"Q. Yes. I would like to know what conditions you assumed in 1929 would exist in 1974 with reference to the Merrimac Building that would require an addition of $62,000 so that you have to start to accumulate the money back in 1926?"

The Merrimac Building is one of the lower groups shown in Exhibit A-128. Now, the way we got at this estimate of life and this ultimate retirement date was in this manner: We have a pretty good estimate of when the change to dial equipment will be made, and that estimate was, as I stated before, in 1944. Now, in the case of our dial offices, for
3244 the reasons which I have stated in my direct examination, we estimated an over-all life of fifty years. In the case of existing manual buildings that we think can be continued in service during the period of the dial operation, we have estimated an additional life of forty years, that is, an over-all life beyond the time when we make the change to dial, and at which time we will have a very extensive addition to the present manual buildings of forty years, and that is how we get that date of 1984. Now, we know about how our buildings are added to, they are actually added to on an economical basis of periods of about ten years, and it is on that basis that we happened to get that particular date you referred to for the additions.

The Merrimac Building is located out on the north-
3245 west side.

"Q. What conditions did you assume in 1929 would exist in that neighborhood in 1974 that would require you to add to the Merrimac Building in 1974 $62,000? Did you estimate any conditions there? What was the picture that would require this money added as you saw it in 1929?"

We did not attempt to visualize any conditions that might exist in 1974 with reference to a particular neighborhood. All we did was to add to all of these buildings that would be given a new period of life, forty years, and then we merely assumed that the additions would be made in about the normal manner that our experience indicates. We were dealing with a concrete object in our study, namely, the Merrimac Building.

"Q. Now I ask you what conditions did you assume would exist in 1974 here in the building or surrounding the building that would require an addition of $62,000 in 1974? Now that is my question."

3246 We did not attempt to predict what conditions would exist in any particular neighborhood in Chicago over so long a period. We did consider that a certain growth in the city of Chicago would continue for that length of time, and we treated all of the offices that are to get a new period of extended life at the time of dial operation in accord with that over-all expectation for the city of Chicago. Now, that may be erroneous in some neighborhood, it may be that we have estimated too low for one office, and too much for another, but I think that in general, because our past experience has shown that we do grow in buildings at an interval of about ten years, that it is a fair estimate of what we may expect for all of these buildings.

May 26, 1932.

3250 By "over-all life" of buildings, I mean the life from the period of the initial construction to the retirement of the initial construction.

3251 I do not know whether the principle underlying depreciation rates on property included in group No. 1, that is, central office equipment and central office buildings, is used throughout the entire Bell System covering similar items of plant. I know that it is in some other companies and I know that it is a method that has been developed by engineers of the American Telephone and Telegraph Company, but I do not know whether all the other companies use it. I am quite sure that one or two of the other companies use it. I could make a statement to this extent, that in discussing the matter with other men of other Bell System companies whose work is similar to mine, we have covered the method that we have used here in Illinois, and they have indicated that they are using it.

I do not know whether the same principle that is used
3252 with reference to toll equipment and buildings is used
by the Long Lines Department of the American Telephone and Telegraph Company. The Illinois Bell Telephone Company uses it in connection with the plant devoted to toll use.

I do not know whether the same principle is used with respect to equipment and buildings used by the Bell Telephone Laboratories of the American Telephone and Telegraph Company. I do not know whether it is used by the Western Electric Company, nor whether it is used by the American Telephone and Telegraph Company in connection with its properties used in connection with the services of the general staff.

With respect to dial office buildings, the depreciation
3253 rates are predicated upon the use of the same principle
of accumulating the additions, plus the initial construction.

3256 I have the Beverly office equipment study here.

(Which document was thereupon marked "Defendants' Exhibit D-121" for identification.)

D-121 is historical data relating to equipment of the Beverly central office, and shows the initial construction, in 1914, was
\$77,148. Our last retirement, in 1940, is \$1,251,155. From
3257 1914 to 1929 the figures on D-121 representing the in-
stallations and retirements for each year represent our actual experience. We did not have a study in 1914, when the office went into existence, estimating what the experience would be. This is a retrospective analysis of what has happened in the past as far as the period prior to 1930 is concerned.

3258 The \$62,000 of expected additions for the Merrimac office (shown in D-120) for 1974 was predicated upon costs prevailing in 1928 or 1929. The additions to equipment which we expected to make in the years from 1930 to 1940 were based on the average cost per line of equipment installed in 1928 and 1929, as I recall it. The additions to buildings were based on approximately the same cost level as of 1928; that is, the cost levels of the buildings in 1928 and 1929.

I previously stated in connection with the factors which I
took into account in estimating the life of dial equipment that
I "do not expect cost levels to operate in the same direction
in the future, that is, as far as I can foresee it". Specifically,
that had reference to a rising cost level of the past which
3259 we do not expect to occur in the future. I have been of
the opinion for some years that prices in the future
would not increase above 1928 and 1929 as they had increased
above 1914 in the past. I have been of that opinion, I might
say, ever since the peak of prices in 1921.

The plan of future additions on the Merrimac Build-
3260 ing from 1926 to 1984 as stated in D-120 is a collaborated
effort with the Building engineers as to buildings. Of
course as to buildings I sought and obtained the advice of our
Building engineers as to costs, and we analyzed the normal
growth of buildings, and, as the result of our combined dis-
cussion of the matter, I arrived at those conclusions. I did
not get any help from the American Telephone and Telegraph
Company's general staff in any way in connection with ar-
riving at these conclusions. That is entirely a local problem
that we are dealing with here.

3261 The plan outlined in D-120 was not based on any discussions with the Building engineers. I had reference to the aid that I sought and obtained in regard to costs and the normal growth of buildings, but as to the plan, that is, the method of arriving at depreciation rates, the Building engineers probably have very little knowledge of that. That was based on the general plan we have of determining depreciation rates on the realized life basis.

In arriving at my conclusions that $62,000 of additions would be made in the Merrimac Building in 1974 and that there would be $9,000 actual retirement in 1974, I consulted directly with the Building engineers, of course. Behind that are certain forecasts that I have had to make in collaboration with the Commercial engineers and others, but those particular sums were the result of my discussion of the matter with the Building engineers. I got no help from the American Telephone and Telegraph Company in connection with my forecast of 1974.

3262 In discussing the studies based upon conditions in 1898, I stated:

> "If we analyze the experience of individual years, as for example the year 1898, it would be of little significance in drawing conclusions for the life of present property because conditions change; that is, conditions and factors controlling life change over so long a period."

The same reasoning would not apply to cover my judgment in 1929 as to the year 1974, when I expected that we would invest an additional $62,000 in the Merrimac Building. I think that I ought to clarify that point a little bit. You are discussing in one instance buildings, and I had in mind chiefly property that was more or less controlled by public demand, such as station apparatus, private branch exchanges, and so forth. The development of new types of apparatus and equipment might have a marked difference over so long a period, but when it comes to the planning of a building, we naturally look well into the future, and if there are possibilities of decided changes in the controlling conditions in respect to a

3263 building, we attempt to foresee those things when we plan the original unit, because naturally we have to plan the original unit of a building to permit of expansion; that is the economical thing to do and it is the method that we follow at all times. But when you deal with station apparatus, which has a very short service life, you are getting many turnovers of the property and complete elimination of property, during a period as long as you are referring to. For instance, a great deal of the equipment, if not all of it, that we had in 1898, is no longer in existence, if you consider station apparatus.

The depreciation rates established on buildings in 1930 were established upon the principle of realized life to retirement plus the additions, as just discussed. The principle used in determining the life for the rates effective January 1,

3264 1928, was the same. There has been a slight change in the method of making the studies, but the effect is the same. The principal change was that in the earlier years we did not attempt to make a detailed forecast of when future additions would occur, and what their specific and individual effect would be. At that time we used a life curve related to the initial age; that is, we determined what the average life would be, obtained from the equipment and buildings if they survived to a certain initial age or overall life, and we estimated the average life on the basis of the relation of that curve and our expectation of over-all life. Starting with 1930, we made our detailed forecasts as we now do; that is, we estimated the additions in the future and worked out by mathematical computation the average life resulting from those specific estimates.

3265 Of course, we do not attempt to project our views so far into the future as would be represented by dial buildings, for example. There we have merely taken the experience that we have analyzed for manual buildings and made such adjustments or modifications of that experience as we think proper to suit the conditions as we see them in the dial buildings, but we do not attempt to forecast detailed additions so far into the future. We did it in one case that has been referred to a number of times here because we were compelled to do that or use a higher rate of depreciation as an alternative. Our dial life in those years was a matter of judgment.

3266 If I am not mistaken, one of the methods of analyzing experience for both 1923 and the period 1924 to 1927, during which a constant rate was used, was based on turnover cycle studies. I am not sure whether the turnover cycle method was used for buildings but we usually study buildings and central office equipment in the same way. I know they studied central office equipment by the turnover cycle method, but I am not sure about buildings.

"Q. As a matter of fact, did you not use for your rate in 1923 the experience of five office buildings, central office buildings, that were sold, and as the result of the experience under those five office buildings you arrived at a judgment as to what the life would be, and so the rate?

"A. Well now, you are asking me what reasoning was used in arriving at judgment by my predecessors—

3267 "Q. No.

"A. (Continuing)—And I can hardly say that. But now that you mention that, I believe that I have been informed that in considering what life would be proper for use in depreciation rates, an analysis of the experience of buildings actually retired prior to the time of the determination of the rates was relied upon to some extent."

I do not know whether the life determination was based upon any other factor, or based upon any other data than the experience of these five office buildings, in connection with the establishment of the depreciation rate on buildings in 1923. I did not do the reasoning at that time and formulate the judgment. I do not know just what factors the men who made the earlier rates had in mind; I do know, however, that what has been referred to was one of the things they did, that is, to consider the life experience of buildings that had previously been retired.

3268-3276 (At this point there was a colloquy concerning rates of depreciation for the years prior to 1928. Counsel for the City stated they would object to the exhibits covering depreciation rates and expenses for all years prior to 1928 and all testimony offered in relation thereto by this witness on the ground that there had been no witness and no evidence stating the basis upon which said rates and expense had been established and no way in which they can check the basis. Counsel for City further stated that "we want a witness who can tell us how these rates were established in the years prior to 1928". Counsel for City also served notice that he would object to plaintiff's exhibits in which it had set up depreciation expenses for the years 1923 to 1928 on the ground that there had been no foundation laid for the method by which they arrive at the expense. Mr. Bracelen pointed out that the specific sheet referred to by Mr. Goldstein, page 8 of Exhibit A-125, was offered in evidence by the defendants at the previous trial as City's Exhibit A-140, appearing in the printed record in the Supreme Court at page 2284. Counsel for City stated it had not used that sheet to establish the expense which the plaintiff was establishing and stated that plaintiff was using those figures to establish the expense for 1923 to 1930. Mr. Bracelen further pointed out that the depreciation expense charges of the Company for the years 1923 to 1928, both inclusive, were proved in evidence on the former trial and the witnesses were cross-examined by counsel for the City, all of which is present in the record. Counsel for City stated: "No, but the issue is entirely different than it was then, and we have a right to examine now in the light of the present issues which the Supreme Court has established under that opinion." Counsel for City stated that none of this colloquy constituted an objection or motion to strike upon which a ruling was required; but was a notice.)

The central office equipment studies which I used in establishing the rate as of January 1, 1928, differ from those which I used in connection with the establishment of the rate of January 1, 1930, in the same manner that I have described for buildings; that is, in the later studies, those of 1930, we used a detailed forecast of future additions and retirements, whereas in the 1928 study we determined the ratio of
3277 average realized life to initial age and estimated the
over-all life, and by that process determined the average life.

"Q. And I take it that your answer as to the methods used prior to 1928 will be the same as it was before, 'I do not know', is that correct?

"A. Why, I did not say that I did not know what the methods were."

What I said was that I do not know what the reasoning processes were that the men in charge used in arriving at their rates.

I know the character of the studies that were used for central office equipment in the period from 1924 to 1927. Those methods were turnover cycle studies. That was the basic
3278 method in analyzing life, and it was supplemented by
some method that had for its purpose the determination

of the trend of life during the period of the turnover of equipment. That was the logarithmic formula that we used. It analyzed the past experience.

3279 The purpose of the first method (that is, the one used from 1924 to 1927) was to determine the length of time that it required to completely eliminate a given amount of plant at some previous year. In the later case, the method was to determine the composite life of the various lives of the different increments of equipment throughout the over-all experience of an office. The second method dealt with the actual experience of the past plus the estimated experience of the future. I did not abandon in 1928 the method used in 1924; I never used that method. I did not use the method in 1928 that was used by my predecessor in 1927 because I considered the method that was adopted in 1928 an im-

3280 provement over the method which was used prior thereto. The turnover cycle method was also used in establishing the rates from 1921 to 1923 for central office equipment.

We made no adjustments for price level in our studies from 1921 to 1923. I have in the courtroom the records which show the various methods used from 1921 to 1930. I have examined the methods that have been used throughout that entire period, and I have used the methods that have been employed since I have had charge of this work in arriving

3281 at conclusions respecting depreciation rates.

The method used for the period from 1921 to 1923, December 31st, and the method used from 1924 to 1927 for central office equipment fundamentally are similar; they are both turnover cycle studies. The only difference is that in the earlier studies, those of 1921 to 1923 inclusive, the period covered was the period represented by the accumulation of gross additions until they equaled the plant in service and the period of accumulated retirements until they exhausted that plant. The turnover period was represented by the period of elapsed time between the average period of the gross additions and the average period of retirements. In 1924 the method that was employed dealt solely with the accumulated

retirements, just as we do today in some other classes of property. That is, the turnover period was that period represented by the reverse chronological accumulation of re-
3282 tirements until they equaled the plant in service at some previous time.

In our later studies we have made adjustments for price level.

"Q. But you did not—but they were not made from 1921 to 1923?

"Mr. Bracelen: I think, your Honor, that the witness is not shown to be competent—

"Mr. Goldstein: He has stated that he knows about it.

"Mr. Bracelen: (Continuing) And this is not cross-examination. The point I have in mind is this: It appears from the evidence in the former trial that Mr. Hale had charge of the determination of the depreciation rates during all of that period. He was the witness who put in the testimony for the plaintiff upon the former trial. Now, counsel is asking this witness about a judgment factor used by somebody else—

"Judge Wilkerson: Well,—

"Mr. Bracelen: —in the years 1921 to 1923.

3284 "Judge Wilkerson: What do you know about it?

"The Witness: Why, your Honor, the only thing I know about the previous work is that I am familiar with the methods that they employed in analyzing the past experience, but I have no knowledge of what reasoning they used in arriving at their conclusions.

"Mr. Goldstein: We are not asking for the reasoning.

"A. (Continuing) As to the life and salvage that should be used.

"Judge Wilkerson: Is the witness who did that work available for cross-examination?

"Mr. Bracelen: No, your Honor.

"Mr. Goldstein: He is President of the Company.

"Mr. Bracelen: No, he is not available. Mr. Hale is here, of course, but Mr. Hale testified upon the former trial. He was not then President of the Company. He then had charge of the depreciation rates of the Company. He was cross-examined and that incident was closed.

"Mr. Goldstein: How will we ever be able to get the comparable experience with Chicago with the rest of the country under the Supreme Court's opinion for those years unless we know what they did?

3285 "Judge Wilkerson: You may cross-examine this witness about anything as to which he has testified on his direct examination, or as to which he says he knows anything.

"Mr. Goldstein: Well, he has testified that he knows about the methods and I am asking him about that method.

"Mr. Haight: And he vouches—

"Judge Wilkerson: You need not get into an argument with the witness. If you have an exhibit here based upon the testimony of somebody else, do not try to cross-examine this witness about it.

"Mr. Haight: All right. Then we will take this position, that these exhibits and the exhibits of Mr. Kruse that have been offered by the plaintiff in this case in relation to depreciation expense, in view of counsel's position that there is no cross-examination to be had of the men who vouch for these exhibits that go back over the period, they disqualify their own exhibits, and there we will rest.

"Mr. Goldstein: Yes.

"Judge Wilkerson: You may cross-examine this witness about anything as to which he is able to testify and you may cross-examine on anything that was gone into on direct,
3286 I mean in connection with the producing of these exhibits.

"Mr. Goldstein: Yes.

"Judge Wilkerson: So far as he knows the facts, you may cross-examine him upon them."

I know the method used from 1921 to 1923 in connection with the study of life of central office equipment. The method of analyzing the life experience of central office equipment at that time was what we term a turnover cycle method, and it involved an analysis of the period during which a given amount of plant was completely exhausted. At that time it took the form of accumulating gross additions until they equaled the plant in service and then accumulating in reverse chronological order the retirements until they reached the same point. The average life was determined by the elapsed time between the average date of the accumulated gross additions and the average date of the accumulated retirements. That method did not make an adjustment for price levels from 1921 to 1923.

3287 We used the turnover cycle method in establishing the rate for station apparatus effective January 1, 1930. In connection with the turnover cycle method, I make adjustments for growth. The same method was used in establishing the rate effective January 1, 1928. I know what method was used in establishing the rate effective January 1, 1924. It was the turnover cycle method. The turnover cycle method used in 1924 to 1927 differed in this respect from the turnover cycle method used from 1928 on, as far as the records that I have in my files disclose: The fundamental of the turnover cycle method was employed at that time, as it is today, but I am unable to find any record of the growth

3288 adjustments. They did not use the logarithmic formula in connection with the method in 1924 for the purpose of growth adjustments but for the purpose of determining the life trends during the interval of the turnover period, as I understand the use of it.

I used the method effective January 1, 1928, instead of the method that had been used for the period prior thereto because, in that particular case, when I started on this work in 1927, a new method had been developed which I considered a very splendid method of arriving at these results and I adopted that method. I examined the previous method to some extent, but concluded that the new method was perhaps more accurate in its final result.

I established the new method about which I speak in 1927. I did not develop the new method; I established the process of analysis here in the Illinois Bell Company. I say I found a new method had been developed for making the growth

3289 adjustments; I am not speaking now of the basic turnover methods, because that has been in effect for quite a number of years. I obtained the information that this new method had been developed from the American Telephone and Telegraph Company. I think it was developed by the American Telephone and Telegraph Company.

The turnover method in the form which I have already described was used in establishing the rate effective from 1921 to 1923 as to station apparatus. That is, the accumulation of gross additions and displacements. In connection with that method there was no adjustment made for price level.

3290 I used the mortality studies in establishing the rates effective January 1, 1930, for private branch exchanges. We used the graduation process of determining the average life in its application to observed or actual data. I used the same method that I have just described for 1930 in 1928 in establishing the rate effective in 1928. As a basis for my study in 1930 I did not use any more facts or classes of facts as to private branch exchanges than I did in 1928.

The method used from 1924 to 1927 in connection with 3291 private branch exchanges was the turnover cycle method. We also used the logarithmic formula as a supplementary aid to confirm our conclusion. There was an adjustment for price level.

In arriving at conclusions as to what life should be used in depreciation rates that look into the future for at least two years until new revisions of basic rates occur, we consider as far as we can what factors have controlled the actual experience analyzed and to what extent future conditions may affect the life and cause a variation from the actual experience of the past.

"Q. The question I am directing to you now is this, in whatever study you used during these periods, after the life was determined as a certain figure, you used the life 3292 figure as found there, plus a revision due to the factor of judgment; that is, you modify the experience and do not use the exact figure found according to this study that you have used, is that correct?

"A. Well, of course the way you word that question, Mr.

Goldstein; you would think that we only find one life figure. As a matter of fact we find a series of life figures."

We determine what the life was, based on the experience in a certain group of years, and then in a later group of years, and so forth, so that we establish a trend of life for the purpose of aiding us in judging whether or not there is a tendency for the life to increase or decrease. And, in that respect, if the life has stabilized, that is, if there is a tendency for the life to remain more or less fixed, and we cannot see any reason why we should deviate from the actual experience, we use the actual experience; but if there is a trend
upward or downward, and we can establish a reason for
3293 the continuation of that trend, we will use a longer or
shorter life than the last indication resulting from our
studies.

It is pretty hard to say, without reviewing the entire experience, whether I used for any specific item the life figure found by my study without revision, but I think that I did.

I do not recall just what we did in connection with buildings, but in 1930, of course, we increased the life, as I stated in my direct testimony, over the actual experience, in view of what we anticipate for the depression period. I do not recall whether we increased the life in 1928 over our actual
experience as found then; I think we did. The revision
3294 was due to the factor of judgment. We did not have in
mind in 1929 the factor of depression which we used
in revising our figure for 1930. As a matter of fact, we did not vary greatly from the actual experience in 1928. We consolidated the fireproof central office buildings and nonfireproof central office buildings at that time and rounded out the life, which happened to be an increase to 25 years; but the study was based on a detailed forecast, so that we merely rounded out the actual results of our study.

Judgment enters as a factor into the life figures that we use as compared to our study figures. It enters to the extent of considering what factors may affect life of existing property in the future as compared to the factors that controlled in the past. For example, in our private branch exchange account we have been obtaining a life of about six years, 3295 and it has been pretty well stabilized until the most recent experience, when the life has shown a decline, which may be partly due to present conditions; but for that class of property we have developed quite a number of new types of equipment. Now, the attractiveness of some of the dial private branch exchanges will undoubtedly bring about retirements of the existing manual type, and, furthermore, there are types of manual equipment having greater capacity for the same general class that will bring about retirements as subscribers' needs will grow. Now, those sort of things are given consideration, and if we think that they may result in accelerating the retirements or shortening the life, we would make an adjustment.

I would be inclined to say that as the period 1923 to 1930 progressed we used more and more facts and less judgment as a factor in arriving at our life figures than we did in the earlier years.

3296 (Witness agreed to make available to defendants record of factors taken into account in exercising this judgment. He pointed out these factors were not recorded prior to 1930.)

3297 In determining the proper depreciation expense, it would be necessary to some extent to take into account the maintenance policy of the Illinois Bell Telephone Company. I think it would be more or less confined, however, from a practical viewpoint, to any major changes in accounting, rather than to what you may have in mind with respect to maintaining the condition of the property in good shape.

The depreciation rates are based solely upon the life 3298 and salvage of the property. I would not take into account at all the size of the depreciation reserve. I did not take it into account. Some of the processes of analyzing life and salvage require us to obtain from the records of the Company the retirements and the salvage figures, and other things that may be included in that very general statement of credits and debits to the reserve. I would take into account the gross additions to property and the retirements of property.

3299 In exercising my judgment as to prospective growth, I would take into account principally the estimated forecasts as to numbers of stations, and lines, and calling rates, and so forth, for the future. I did not say that these estimated forecasts are the ones that are also included in the provisional estimates. I think I was asked about the fundamental plan. They would be the estimates that are included in the fundamental plan, which looks ahead much further than the provisional estimates. The fundamental plan looks ahead twenty years.

In some accounts we might take into account the estimated growth for a shorter period as disclosed by the same sort of data as shown by the provisional estimates—a five-year period. In other accounts we have to approach the thing somewhat differently. We have to distribute our future
3300 expectancies over a long period of years, and in that distribution we may differ somewhat from the provisional estimates.

Our fundamental plans are not, in general, corrected every year, or every two years, for the city. We get the facts bearing upon the forecast for the immediate future (for the next five years) from the same source, which is the Commercial Engineering forces, which furnish the information for the fundamental plans. I believe they also furnish the information for the provisional estimates.

In the case of buildings, I would have to know the plans of the Illinois Bell with reference to its plan of future additions, such as was indicated in its plan for the Merrimac office building, in order to determine whether the depre-
3301 ciation expense was proper. I think we would also have to have it in the case of central office equipment. We would have to know of any changes in the accounting methods of the Illinois Bell that are of sufficient importance that they might result in affecting the depreciation accounting. So far as any major item is concerned I would have to know whether it is included in the depreciation expense or in the maintenance expense.

I would have to know something about the accounting

methods used as to extraordinary repairs. We would not have to know whether the property that was shown on the books was new property, or whether it was property purchased as second-hand property or as property from
3302 independent telephone companies. Under the present accounting system it would make no difference whether the book value of the property represented the cost of new equipment, or the cost of equipment that had already been depreciated or that was second-hand. Within my knowledge there never was at any time a necessity to determine that.

"Q. Would the policy of the Company as to retirements of properties purchased from others be an important factor in determining the depreciation expense?

"A. I do not believe I understand what you mean by 'policy'.

"Q. Well,—

3303 "A. (Continuing) Regarding the retirements.

"Q. Well, would your policy regarding—that is, if the Company purchased equipment, we will say, from an independent telephone company or purchased from a second-hand telephone company—I should say second-hand merchandise, would the policy of the acquisition whether or not it was going to retire it quickly or retire it in the normal course, affect the depreciation expense?

"A. That is, the policy of the company which had purchased—

"Q. Yes, that had purchased the property.

"A. That purchased the equipment?

"Q. Yes.

"A. Yes, I think it would, if the company elected to base its depreciation rate on the life of the property while in its possession."

In connection with the causes of retiring property, I have in mind wear and tear; that is, wear and tear not cov-
3304 ered by current repairs. I have in mind obsolescence and inadequacy resulting from physical age, supersession by reason of new inventions and discoveries, changes in popular demand and public requirements.

I also consider the same factors with reference to property not yet in existence but to be added in the future, such as that described before as to central office equipment. By that I mean consideration is given to the factors that will affect a group of property which we treat on a unit basis with respect to additions still to be made in that particular group.

3305 I consider the retirement of property (either in existence or not yet in existence) because of these causes, should be taken care of through the depreciation expense, because the uniform system of accounts of the Illinois 3306 Commerce Commission prescribes that procedure, as I understand it. I think it is the logical way to recover the losses and that it is the equitable way to do it. That is, the owner of the property is entitled to get back his investment which is being retired through these causes, either through salvage or the accruals under the depreciation accounting.

"Q. And the purchaser of that property, would a purchaser of that property take into account those same factors of loss, the factors that would retire the property when he made an investment in that property?"

I think a purchaser of the property would take into account principally the earnings that he could get from the property in arriving at the amount he would be willing to pay for the property.

"Q. And the earnings that he would get from the property would be determined primarily by the length of the service life, wouldn't it, that would be one of the essential factors?

3307 "Mr. Bracken: That is objected to as calling for a conclusion of law, calling for the opinion of the witness upon a matter that is not the subject of expert testimony, it is argumentative, is not proper cross-examination.

"Judge Wilkerson: I don't know that I understand it.

"Mr. Goldstein: Well, the witness has answered that a person buying a piece of property, telephone property, would take into account the earnings that he would expect to get out of that property, and I asked him whether the service life would be—whether the earnings of the property during the period would be determined by the length of service life. It is perfectly obvious that if I am buying a piece of property, and I expect to get out of my thousand dollar investment—

"Judge Wilkerson: Well, if it is perfectly obvious, why ask him about it?

"Mr. Goldstein: Q. Will you answer? I want to know whether it is just as obvious to the witness. I may be wrong. I am not testifying.

"Judge Wilkerson: I think he has answered sufficiently. You can argue that to the court."

3308 With reference to the station apparatus, I estimated an average service life of four and a half years and an average net salvage of 70 per cent. The average service life of four and a half years means the length of time that a station is on the premises of a subscriber, on the average. I consider in connection with that four and a half years that there are a certain number of times that the same piece of station apparatus will be re-used. I estimate that there will be an original installation and three re-uses of station apparatus. I arrived at that estimate of three re-uses by analyzing the salvage experience over a long period of years, in order to determine how much junking had occurred of 3309 apparatus, which, in turn, was for the purpose of determining how long a period was required to represent the complete junking of all of the apparatus in service at some earlier period, similar to the turnover cycle method study. The result of that analysis indicated about nineteen years, as I recall it. There was a slight tendency downward in the last band or two. We then examined the rate of junking, just as in our turnover cycle study we determined the rate of retirement, and we found that there was some increasing tendency in the rate of junking which would indicate that a shorter over-all life was occurring, there was a tendency toward it, and while we estimated that it would only affect the actual experience to the extent of reducing that from 19 to 18 years, I am now of the opinion that it would perhaps be somewhat more severe than that. At any rate, our conclusions based on that form of analysis were that the total experience from the cradle to the grave, as you might say, for station apparatus was 18 years, during which the apparatus would, on the average, experience four service lives, which means three re-uses, before final junking.

I have never made a separate study for the telephone
3310 instruments, the receiver, transmitter and induction
coil. In 1928, when the telephone instruments were purchased from the American Telephone and Telegraph Company by the Illinois Bell, they were placed in the station apparatus account, and thereafter we used the life figure for station apparatus account to include the telephone instruments as well. We merely used the normal life and salvage expectancy for the total station apparatus account, including those instruments. We show for salvage the 70 per cent average salvage, but we show on ultimate retirement 5 per cent salvage for station apparatus. That 5 per cent was based
upon a study. I think I have already shown these
3311 studies to defendants. I have shown everything that I
could to the defendants regarding my studies on station apparatus. That is, all that we used in connection with our establishment of the rate.

"Mr. Goldstein: We now desire to enter our objection to the offer of Plaintiff's Exhibits A-125 to A-129, both inclusive, on the same grounds as stated in support of defendants' motion to strike all of Mr. Turner's testimony, which motion was made yesterday at the beginning of our cross-examination of Mr. Turner.

"We object to the offer of such exhibits and move to strike Mr. Turner's testimony on the further ground that it appears from the cross-examination of Mr. Turner that the depreciation rates of expense shown by such exhibit for each of the years in controversy were so calculated and established that there was charged to operating expense each year an amount to take care of the cost of displacing property not installed or a part of the plant in the year that the expense item was charged.

"We further object as to the portion of the said exhibit covering the years prior to 1928, because it appears that the witness does not have knowledge of the facts and
3312 circumstances relating to the establishment of depreciation
rates which the Company used as a basis for its depreciation expenses and charges charged to operating expense. We renew our motion to strike all of Mr. Turner's testimony on the same grounds as stated yesterday as to the motion to strike his direct testimony.

"Judge Wilkerson: Have you anything to say about that, Mr. Braelen?

"Mr. Braelen: No.

"Judge Wilkerson: Overruled."

Re direct Examination by Mr. Braelen.

When I stated a moment ago to counsel, in answer to his question, that I showed the representatives of the City all of the data that I could, I meant that I had available everything that I had used and showed them all they indicated they desired to examine. For instance, some of the data is in the form of price lists that are furnished us by our pricing department. If Mr. Goldstein would care to go back into the pricing department to find out how they analyzed
3313 prices, why, that is something that I haven't got in my
department, and he would have to investigate that further. But we have the facts that are the basis of the Company's normal business computations and activities in our office and those have all been shown to Mr. Goldstein's representatives.

In the course of my cross-examination, I stated that I received certain instructions from the American Telephone and Telegraph Company in reference to my work of finding service life and salvage and determining depreciation rates since I took charge of that matter for the plaintiff in 1928. They were not instructions to follow any process of analyzing life and salvage. They were merely instructions as to what constituted the methods of analyzing life and salvage should it be desired to follow those methods. They consisted of an outline of how to proceed in following certain methods 3314 of making these analyses. One or more of the pamphlets that I have, showed how data might be most easily accumulated as to placing and retirement dates, and then as to how the mortality method might be applied to the resulting historical data. Another one indicated what processes would be followed in developing turnover cycle methods of analysis, and processes of making adjustments for the effect of growth. In my testimony on direct examination as well as on cross-examination, and in my exhibits, I have explained how I made use of those methods and other methods to which I have referred in doing my work of determining the depreciation rate to be applied by the Company.

Page 5 of Exhibit A 128 relates to the equipment in the Kedzie central office, and, as I testified before, the figures on that exhibit are the actual figures, the true historical 3315 data for that office from 1906, when it was first established, down to the end of the year 1929. That was an exhibit prepared, as its caption shows, to illustrate the effect of additions to central office equipment upon the average life of the equipment, the matter about which Mr. Goldstein has cross-examined me at great length yesterday and today.

The average life of the equipment in this office found by the method that the Company followed, and to which I have testified this morning, is in accordance with the system of accounts that covers our accounting and is shown at the foot of column 7 as 12.61 years.

For the purpose of this discussion, I will confine my consideration to service life, as Mr. Goldstein did in his cross-examination.

The average life of 12.61 years for the Kedzie office equipment gives a depreciation rate, an annual depreciation 3316 rate of 7.95 per cent. That means that the Company throughout the history of this office would apply a rate of 7.95 to the actual book investment from the original instalation of the office until its final retirement, which is set here for the year 1936. In other words, when I have testified heretofore that the straight line method of depreciation accounting, prescribed by both the Interstate Commerce Commission and the Illinois Commission and followed throughout this period by the Company, results in distributing the net cost of the investment evenly throughout the years of the average life of the property, from original installation to retirement, I have meant by that that an even rate per cent is applied to the investment as it exists from year to year.

So that in 1906, with an investment in this office in that first year of $69,000, using round figures, the strict theoretically exact application of the method would result in the application of 7.9 per cent (of course we derive that by dis-
regarding the salvage for our discussion here) would
3317 be to apply that rate to the $69,000 of investment, deriv-
ing directly the sum of money to be charged on the Company's books during the year 1906, or, to be more accurate, during half of that year, that being the first year. Actually the charges are spread monthly in practice. Then, the same rate of 7.9 per cent would be applied continuously as the investment in that office grows year by year, so that in 1907, when an additional investment of $14,000 was made,—and I say "was made", this being the actual fact—the same rate would be applied to that investment. That would continue all the way through the life of this office, so that throughout the period of time that this Kedzie central office was furnishing telephone service to the people in Chicago, the Company would be charging as expense on account of that office for annual depreciation the same identical percent-
age of the dollars of investment from first to last, so
3318 the burden of the cost of service as represented by
depreciation expense would be distributed evenly and equally at the same rate throughout the life of the office.

These items of additional dollars of investment subsequent to the initial investment in 1906 represent money spent for additional equipment required to provide the necessary facilities to subscribers that were added to that exchange and for the purpose of permitting us to continue the office in service.

I testified in my direct examination that the engineering of these central offices is illustrated in its general aspect by this particular exhibit, the facts, of course, varying for the
3319 different conditions in different central office areas.
That is, in this case the Company established the Kedzie office in a residential district in Chicago. At that time an investment of $69,000 in central office equipment was all that was necessary to serve the telephone subscribers in that central office area. I testified that the Company in its engineering adopts what it deems to be the most economical plan as to the amount of original equipment it will put in and when it will add extensions to the office to take care of growth, and this office grew from an investment of $69,000 in 1906 to one million and a half dollars at the time of retirement scheduled for 1936.

To get at the actual growth of that office to this present date, the year 1932, we would have to subtract the additions appearing here for part of the year 1932 and for the
3320 years 1933, 1934, 1935 and 1936. We would have an office representing an investment of about $1,300,000 at the present time.

With reference to the original installation of $69,000, if the first addition made to take care of growth had not been made, the result would have been that the office would have been retired because of inadequacy, or else another office would have been built in the immediate vicinity and this office continued in service. The latter, of course, would be entirely uneconomical and impractical, so that the addition would have to be made from any sound engineering view. The point is that these additions must be made to avoid the necessity of retiring that office, and it was engineered on that basis from the beginning. If we indulge the assumption for
3321 the purpose of testing the theory here that the original investment of $69,000 is made and the office is not added to the next year, it follows from what I have said that we have a service life of one year for that office; it is outgrown at the end of the year.

The depreciation rate applicable to that investment under those conditions would be 100 per cent. That is to say, the whole investment being retired in one year, we charge it all during the year. That neglects salvage, of course, as we are neglecting it throughout this discussion.

Now, assume that the office is going to be kept in service by adding to it, as was done throughout this period of the past 26 years and as my exhibit proposes to do during the next 3 or 4 years, we get an over-all life of 30 years.

3322 On the basis of the additions to be made subsequent to 1906, which would permit the continued use of the property involved in 1906, that property would have a life of 30½ years on the basis of excluding interim retirements. In other words, the property placed in 1906 would continue in use, under this assumption, until the end of 1936, a period of 30½ years. The depreciation rate for that specific increment of equipment would be 3.3 per cent annually.

The addition to the office made in the second year (1907), which is $14,000, being placed one year later, would have a remaining life of 29½ years, which would require a de-
3323 preciation rate of 3.4 per cent annually. The investment of $39,000 in 1908, being placed two years later, would have a remaining life of 28½ years, and an annual depreciation rate of 3.5 per cent. For the next year, 1909, the life becomes 27½ years and the rate 3.6 per cent. In 1910, 3.8 per cent; 1911, 3.9 per cent.

The rate that I have given for each of these years is, of course, the rate applicable to the additional investment simply of that year.

Going on down now to the year 1931, the last year, still assuming that this office is going to be retired in 1936, according to the Company's best forecast: the addition of $51,100 in 1931 would have a remaining life of 5½ years, until the end of 1936, which would require a depreciation rate for that particular part of the investment of 18.2 per cent. In
3324 1932 the addition of $50,000 would have a remainnig life of 4½ years and a depreciation rate of 22.2. In 1933 the addition of $54,000 would have a remaining life of 3½ years and a depreciation rate of 28½ per cent. In 1934, the $51,000

addition would have a life of 2½ years and a depreciation rate of 40 per cent. In 1935, an addition of approximately $40,000 would have a life of 1½ years and a depreciation rate of 67½ per cent. An addition of $37,000 in 1936 would have a life of ½ year, a depreciation rate of 200 per cent. That is to say, in the last year of this Kedzie office, against an addition necessary to keep it in service of $37,000, the Company, upon the method of depreciation accounting underlying the cross-examination, would have to charge to expenses in half of that year the entire investment.

Going back now: in the year 1935, the Company having made an addition to the office of nearly $40,000, the Company would by that method have to charge to the expenses of that
year 67½ per cent of that entire investment of $40,000.
3325 In 1934, upon the investment of $50,000 for additions and
extensions to the office, the Company would have to charge as expense 40 per cent of that $50,000 invested in that year. The 40 per cent depreciation rate applicable to the additional investment of $51,000 made in 1934 continues to apply during the year 1935 and the year 1936.

At the present time, in 1932, using the Company's method and deriving the rate solely from the consideration of average life, we get, as I have already said, a rate of 7.95 per cent. That rate of 7.95 per cent compares with a rate which
would be obtained as of this same year by the applica-
3326 tion of City's theory, of 8.7 per cent, representing an
average life of 11½ years. In other words, during this present year the City's method would result in a charge to expense this year of 8.7 per cent of the investment, as against a charge by the Company's method of 7.9 per cent of the investment. For the year 1933 the average life would be 10½ years and the depreciation rate 9½ per cent, as contrasted with the rate of 7.9 by the Company's method, which rate applies evenly all through the life of the office. For the year 1934 the average life would be 9½ years and the depreciation rate 10½ per cent. For 1935 the average life would be 8.2 years and the depreciation rate would be 12.2 per cent. For the year

1936 the average life would be 6 years and the depreciation
rate 16.7 per cent.

By the Company's method of computing the depreciation
3327 rate for each of the years, specifically now for the
year 1932, upon the basis of keeping that office in service,
extending its life by making additions to it, the present
telephone subscribers, and those who will be telephone subscribers
until the office is retired, are paying rates which, in
a case of the character of this case, a confiscation case, reflect
an expense of 7.9 per cent evenly, as against the corresponding
figures which I gave, beginning in this year with
8.7 per cent and increasing to 16.7 per cent.

3328 The small sums for interim retirements, such as shown
in column 2, page 5 of the exhibit that we have just been
examining, are small retirements associated with the necessary
rearrangements of an office when additions are made to
it. They are usually very small. They are based on what
experience has shown to be incident to adding to an office.

Counsel asked me on cross-examination whether it was not
true that less facts were relied upon and greater reliance was
placed upon judgment in determining service lives in the
period of years prior to 1928 and 1929 than in the period
3329 since I took charge of this work of determining depreciation
rates. My testimony in that respect had reference
to this: that I think throughout all of these periods that
we have under discussion, the facts relating to the influences
upon life and salvage were equally available, but in the earlier
studies the methods in regard to some classes of property did
not develop the average life to the extent that the later
methods have done, so that a somewhat greater exercise of
judgment was necessary in arriving at conclusions in the
earlier years of this entire period, judgment relating to the
analysis of actual experience and not to the factors affecting
life. The mortality studies represent an improvement over
the predecessor types of study.

3330 Concerning the pamphlets and such other things that
I received from the American Telephone and Telegraph

Company, I testified that I employed the principles set forth in those instructions with some local variation. In so far as the American Telephone and Telegraph Company sent us pamphlets setting forth the principles of the mortality method of life analysis, we did not apply any local variations to those. We adhered strictly to the principles enumerated in the outlines of procedure submitted to us by the American Telephone and Telegraph Company. When I referred to local variations, I meant that in working out the fundamental principles as forming the basis for the method, if some condition here would require us to change the method of the resulting application, we might follow that. To take a very simple case, for example instructions regarding the best procedure known at the time to accumulate data for mortality studies.
3331 Now, that, of course, might vary in this Company from
any general procedure that could be prescribed; that is, our records, certain of our basic records might differ to some extent and make it advisable for us to modify the procedure to accord with the information we have here in this Company. Fundamentally there was no change whatever in any of the principles forwarded to us by the American Telephone and Telegraph Company.

In connection with my work since I took charge of the matter of determining depreciation rates, I have also gone back and studied the life and salvage experience of the Company during the entire period of years involved in this case, 1923 to 1927 (which brings us down to 1928, when I took charge), in so far as the Chicago area is concerned. Based on a retrospective view of the actual experience as to life and salvage developed from our present methods and the conclusions which I would draw from that information and from all other factors ascertainable, I am of the opinion that the depreciation charges for the period 1923 to 1927, inclu-
3332 sive, were slightly less than they should have been. There
was a slight under-accrual, as I determined, based on methods that I have employed and the data for those years, as against the actual charges made. Those actual charges

are the amounts that have been shown and are being shown for the expense of depreciation in this case, as I understand it.

(All exhibits identified by Mr. Turner offered in evidence. Ruling reserved until close of re-cross examination.)

Re-cross Examination by Mr. Goldstein.

3333 "I justify the plan whereby we spread these charges, which include also the future additions, equally over the entire life of the original construction to its end, on the ground that the subscribers get the benefit in the later years, because they would otherwise have had to pay a much larger depreciation rate in that year on that particular office."

"Q. Well, now, haven't you overlooked the actual experience of the Company in that each time the subscriber living at the end of the life of an old office, gets the benefit of your practice he starts to pay on the future additions of a new office that is being built during that year or during that period? Have you taken that fact into account?

"A. No, he doesn't."

Turning to page 5 of Exhibit A-128 (the one regarding the Kedzie office), the subscriber, beginning with 1926, would be getting a benefit through our method, because from 1926 to 1936 the additions would have to be retired in a shorter period than the original construction, and, therefore, he would be paying more on that new construction.

"Q. And if you took that office alone and considered that was the only office there was then, of course, that would be true in your theory. But in 1926 we had the Merrimac Building constructed as shown in D-119 and D-120; in your Merrimac office you started to depreciate in 1926 not only the $378,000 you put in in 1926 but the $2,000,000 you expected to put in by 1984. Now did you take into account the additional contribution that this subscriber would have to make towards the future additions for the next fifty years when you said he had the benefit out of this office?"

3334 Of course, our problem is broader than just for the city of Chicago; we have numerous exchanges outside of Chicago that have but a single office, and there you would get this inequitable condition that I spoke of. I mean by "inequitable" that it would place a burden on the subscribers attached to the office towards the end of its over-all life. Even in the city of Chicago the situation resulting from the consideration of future additions would not necessarily 3335 equalize the condition unless it so happened that at a particular time the new offices, with their lower depreciation rate, would exactly offset the older offices with their higher depreciation rates.

With reference to this Kedzie office, I said if we took the additions from 1926 to 1936 and treated them alone, we would have a higher rate. In a growing company like the Chicago area of the Illinois Bell, in those years we would also have new offices, and those new offices, being for a very long life, such as Kedzie, if we treated that new construction we would have a much lower rate on the Merrimac new construction than we would have on the additions in Kedzie. I have in mind the fact that simultaneously while the additions in the old office would go along on this unit theory, there would also be units that would have a 50 year life that would come 3336 in at the same time, but I would not make the statement that such new units would neutralize the effect that I was talking about with respect to Kedzie. I considered that in connection with my calculations given on re-direct, and I considered the fact that most of our offices in Chicago are in the later stages of over-all life, and, for that reason, I would be of the opinion, I have no figures to support this, but I would be of the opinion that it is quite likely the composite effect would be a higher rate than the one we are using.

In my discussion in my re-direct examination concerning the life and the per cent of depreciation that would have to be charged on these additions to the Kedzie office in the later years of its life, I did not take into account the new construction of any other office, or the existence of any other office in the city of Chicago; I was just speaking of the Kedzie office.

In 1906 there was $69,000 of initial construction for the
3337 Kedzie office. That was to last 30 years, and the depre-
ciation rate would be 3.3 per cent. On the composite
rate it would be 7.95 per cent in 1906. The purpose of that
accumulation of the difference between 3.3 per cent and 7.95
per cent was to use an equitable uniform rate of depreciation
throughout the entire over-all life experience, so that no par-
ticular group of subscribers would be burdened by undue
charges.

It would take 30 years to have accumulated the money to
cover the initial investment on the basis of 3.3 per cent. On
the basis of 7 per cent, it would take 12 years to accumulate
the same investment for which we estimated a life of 30
years if all of that money was to retire the investment
3338 put in in 1906. The method we use, the application of
a higher rate to the first addition, necessarily starts the
provision for subsequent additions. When we base our rate
on the basis of 7 per cent instead of 3 per cent, part of that
7 per cent was to accumulate for the future additions.

3339 I would not say that the principle that I use in group
I is specifically stated in the rules of the Interstate Com-
merce Commission but from their instructions I think they
may have had that in mind.

The purpose of the expense of depreciation under the rules of the Interstate Commerce Commission is to accrue the original investment, less the net salvage expected at retirement, over the entire life of the property.

My understanding of the rules of the Interstate Commerce Commission is as follows:

> "Telephone companies should include in operating expenses depreciation charges for the purpose of creating proper and adequate reserves to cover the expenses of depreciation currently accruing in the tangible fixed capital." (Extract from rules.)

I have an interpretation as to what they mean there.

"Q. What do you understand by 'current accruing depreciation'? Can you have a currently accruing depreciation in property that is not yet to come into being in fifty years?"

Under the group basis we are considering a central office equipment installation, and under that method of dealing with property on a unit basis, that is, considering the group a unit, I think you could interpret their rules to permit of that. As a matter of fact, I am of the opinion that the Interstate Commerce Commission in its new order on depreciation has interpretated it that way itself.
3340

"Q. The next part of that sentence says: 'currently accruing in the tangible fixed capital'. Do you construe that to mean tangible fixed capital as shown on the books of the Company or does it include tangible fixed capital as shown in the books of the Company plus tangible fixed capital that you expect within fifty years to put in the books of the Company?"

I would take that to mean the tangible fixed capital involved in any unit of property, the logical grouping of property for depreciation purposes. It is my understanding that the rules of the Interstate Commerce Commission refer to accruing depreciation to recover parts of the investment other than that shown on the books of the Company. I interpret that, as I stated, to mean that as the Commission prescribed that this matter of depreciation may accord with the rule of the Company, that we may include future additions to a present unit of property. I do not believe that we can, under
3341 any interpretation, set up anything for a new building yet to be started, or a new equipment installation yet to be started, but I do believe that where the group basis is the most equitable, as we see it, and the most practical and logical, the Interstate Commerce Commission would probably interpret its own rules to include those additions to the existing units of property.

I would not construe the rules to permit us to start a new building 50 years from now to cost a million and a half dollars, nor to start a new building that is to be built next year. We cannot accrue the depreciation now to cover such new building.

3342 I did not state that I determine the rate from the present investment. I determine the rate from the over-all experience of the property, which may include some future additions. It does, as a matter of fact, in all cases. Then the rate applied to the present investment gives the dollars not only to recover the present investment, but also to recover a part of the future investment of that particular group.

3343 If a building is filled up, we may add to it, or we may, for certain economical or other reasons, retire it by replacement with another building. We couldn't economically build a new building in substitution for these cases where we propose additions, because if we could do that economically we would not propose additions.

Both things happen in smaller communities, and both
3344 things happen in a big city.

I have taken into account the fact that at the same time that we would have the higher rates of depreciation on older buildings, we would have some compensating effect from new buildings for which there was a low rate applying at the same time.

In the case of the Merrimac Building, we would start off in 1926 to accumulate money to reimburse ourselves in 1984 for the depreciation that would accrue on the additions from
3345 1974 to 1984, plus the reimbursement required for interim retirements during the period.

I did not take into account in those calculations the fact that from 1926 to 1974, when we did not have any investment and the depreciation did not start to accrue, the moneys that we are starting to accumulate would be invested in plant and would earn an income.

3346 We engineer an office in such a manner that we can provide for growth over a considerable period of years in the future by making additions to the initial installation. The Merrimac Building would be engineered in 1926 to provide these additions to 1984. In connection with that engineering, and in connection with the placing of that plant, there would be a cost study developed to determine the advisability of putting in that building.

"Q. And in that cost study to determine the advisability of that building, the earnings contemplated come from that building until the end of its life would be taken into account, would they not?"

In that cost study it is necessary for us to consider 3347 the interest involved in determining the present worth of future expenditures, in order to determine the comparative economies of items to be constructed at different intervals in the future. By the expression "the present worth of future additions", I mean that if we were to add in 1974 $100,000, we figure what the present worth is, taking into account that during the period to 1974 there would be an interest factor.

Subsequently to my taking charge of this subject mat- 3348 ter, I made up a set of rates which, in my judgment, would have been reasonable and logical rates of depreciation to be used in the years 1923 to 1927, which checked the rates actually used. That was based on a retrospective view, as you might say, through the analysis of past experience during those years and prior to those years, utilizing our present methods of analyzing that experience. That study was made several months ago.

(Witness agreed to make available for defendants' examination papers showing the basis of this study.)

Re-direct Examination by Mr. Bracelen.

Page 9 of Exhibit A-128 shows two groups of buildings, a larger group of buildings occupying the upper part of 3349 the sheet, and the smaller group, that is, ten buildings, the lower part. Those are central office buildings of the Company in Chicago. The upper group consists of those buildings which we expect to retire, abandon or wreck, whatever may be necessary to eliminate them from our operating service, at the time of converting the equipment to dial operation. Those in the lower group are buildings which we consider suitable for continued use in dial operation. In other words, the upper group of buildings are buildings whose life cannot be extended by additions. The lower group comprises buildings whose life can be and will be extended by additions.

The average life of the buildings in the upper group is 3350 18.1 years. The average life of those in the lower group is 36.6 years. The lower group, that is, the buildings that will have additions and a lengthened life as a result thereof, will have a depreciation rate of approximately one-half that of the other group of buildings.

3353 CHARLES A. HEISS, called as a witness on behalf of the plaintiff, having been previously duly sworn, thereupon resumed the stand and further testified as follows:

Re-cross Examination by Mr. Goldstein.

May 27, 1932.

"Q. Mr. Heiss, will you explain where in A-198 you 3354 deduct any portion of the costs in an amount equivalent to the item which you showed in D-116—that is Heiss' Exhibit 10 in the Ohio case, which we have offered here—and also in the sheet, page 2 attached to 116, which you sent to us in March of this year, which shows a deduction for 1931 from the expenses allocable to holding company operations for 1931, $2,500,000: 1923, $1,000,000; 1924, $1,200,000; 1925, $1,400,000; 1926, $1,600,000; 1927, $1,800,000; 1928, $2,000,000; 1929, $2,250,000; 1930, $2,500,000; and 1931, $2,500,000.

"Where do you account for that deduction in your latest exhibit, A-198?

"A. Well, Mr. Goldstein, I made those deductions that you have read in the Ohio case, and I also made them in the Michigan case.

"Now to understand fully what was done, I think I must say a few words in explanation of the reason for those deductions."

I also made them two months ago when a letter, dated March 17, 1932, signed by Mr. Bracelen, was sent defendants, in which was estimated the costs incurred in rendering the

license contract services for 1931, and the sheet that we sent is the second sheet attached to D-116, and shows a deduc-
3355 tion of $2,500,000. Now, on the 1931 exhibit I might say that that was sent to defendants to be comparable with the exhibits that they had previously received that were introduced in the Ohio case.

Now, the situation was this: the Supreme Court's opinion was handed down, I believe, in about December, 1930. The Ohio case was pending, and we were asked to go at this matter of license contract costs from an entirely new angle, an approach different from anything that we had previously been asked to consider, or had in consideration, and I was given the task of working out the costs. I was under very heavy pressure, and, in order to get the task done for April and May in the Ohio case, it was necessary for me to go to the different department heads and discuss with them their costs generally, to have them give me certain facts which they had which would help me to analyze those costs, so that, after I had all of these facts together, I could set up an exhibit which was a conservative statement of our costs.

3356 Now, I appreciated in setting up this exhibit in the Ohio case that there were deductions that should be made. The whole matter of appraising the deductions was a strange one, was an unfamiliar one to our department heads, and the task of making the proper deductions, or of making a deduction from our departmental costs, was put up squarely to me. Now, after I had set down the costs of the different departments and had taken out certain specific items of cost, I then said, "To make the Ohio statement conservative, I am going to deduct at the foot $1,000,000 for 1923", and I stepped the amounts up to $2,500,000 in 1930 and later I used the same figure for 1931. I did that with the view of making whatever statement of costs I presented a conservative one, and I said in the Ohio case, in the Michigan case, and in any other case that I testified in, that I had the basis of this deduction and why I had made it, and I further stated that I could not, with my knowledge of the business, find enough things that, in my opinion, should be deducted to make up the amount; that the

amounts that actually should be deducted were very much
less than I had taken out, but I took out the large
3357 amounts in the interest of conservative statements.

Now, in preparing for this present case we had a little more time to consider the matter, and we went back and had each department study the problem very much more carefully than before, and we had each of the major departments make their own deductions. For example, Dr. Jewett testified here as to what deductions should be made from his department, to take out the non-license item; Mr. Gherardi testified as to his department, and said nothing should be taken out; Mr. Page testified, and took out an amount for his department; and Mr. Bracelen took out an amount for his department, according to my testimony. The figures which I took out for the Legal Department were figures which Mr. Bracelen definitely gave me. Now, when I came to the other departments, I took out certain direct expenses, and in addition I took out 5 per cent of the costs, in order that I might from any viewpoint, any reasonable viewpoint, make the proper eliminations.

Now those deductions—the sum of the deductions by Dr.
Jewett, by Mr. Page, by Mr. Carter, for the Personnel
3358 Department, and for the Legal Department, and those
which I made for the President's office and for my own and for the Treasurer, all total up, taken together, to the deductions shown in Exhibit A-170, and they are less than the amounts that I deducted in Ohio and which are contained in the figures which you have for Ohio.

"Q. In March,—in September, 1931, Mr. Heiss, you sent the defendants in this case a statement showing the revenues and the expenses, and the assets of the entire company, and the distribution between the license contract, Long Lines, and the holding company, is that correct?

"A. Based on the exhibits which I had made in Ohio—

"Q. Yes.

"A. (Continuing) —and still based on the exhibits I had made in Ohio.

"Q. And those exhibits in Ohio were intended to be the substance of the exhibits in this case, were they not—

"A. That is a matter—

"Q. —at this hearing.

"A. That is a matter that the lawyers will have to answer.

"Q. You do not know what purpose the exhibits and the testimony in the Ohio case were furnished to the defendants for, do you?".

3359 What I know is this; that I made up the exhibits in the Ohio case, and I stated to Mr. Goldstein the basis on which they were prepared. I was told that they were being sent to defendants and my work on the preparation of the definite exhibits going into this case was not completed until I came to Chicago, and for this case I prepared the exhibits which I have introduced in this case; the Ohio exhibits, so far as I am concerned, were prepared on the Ohio case; and the analysis that I sent defendants of the balance sheets and of the earnings, everything broken down according to the Interstate Commerce Commission, was based entirely on defendants' request to have the exhibit in the Ohio case broken down.

I testified in Ohio that in making my figures and estimates as a basis for Ohio Exhibit 10, Heiss' Exhibit 10 which is D-116, I proceeded not only from my own knowledge 3360 but after consultation with the heads of the various departments, such as Department of Development and Research, Department of Operation and Engineering etc., and that is just what I said here. I went to the departments and got all of the information I could get from them, and after I had all of the information I could get from the departments, I had to take the data and on my own responsibility finally bring the amounts together in an exhibit which I presented in the Ohio case, and in that case I deducted the empirical amounts, because I wanted the exhibit to be conservative.

The item that I defined in Ohio was: "Deduct from Indirect Costs Estimated Amount of Corporate Expenses Attributable to Ownership of System Securities and Related Expenses."

That is the item that is contained in the exhibit which
3361 I sent to defendants on March 17, 1932, and those same elements are in the deductions which I have made in this case. In March, 1932, when I prepared and sent that exhibit to defendants, I felt that the $2,500,000 was excessive. I sent it to have my exhibit comparable with my Ohio exhibits, and I expected at that time that the attorneys preparing the case for the City of Chicago might wish to have that amount analyzed, and instead of showing an empirical amount as I show to make the exhibit conservative, the attorneys would certainly want to have the deductions exact, because there would be no occasion for our giving away a million or so if there was nothing for which the deduction should be made.

3362 In the Ohio case, I was asked the following questions by Mr. Thompson and made the following answers:

"Question: Do you mean, Mr. Heiss, that from these indirect costs ascertained by you for each of the years in question, you have deducted an estimated amount for corporate expenses attributable to ownership of system securities and related expenses?

"Answer: I have, and I will explain my basis for that.

"Question: I wish you would do that, please.

"Answer: Now on the other hand, some part of the costs of these various financial undertakings may reasonably be considered as incurred in a strictly holding company capacity. On this assumption, the indirect costs, as set forth in the statement, including as they do costs of a joint character, must be apportioned between those which should be assigned as part of the cost of performing license contract service, and those on the other hand which should be excluded because they are a cost of conducting financial activities in a holding company capacity. Such apportionment because of the interrelated character of the activities must of necessity be
3363 based on an estimate, and on reasoned judgment, and in the figures which follow in this statement an allocation has been made on that basis.

"Question: Does this amount of $1,000,000 which you have deducted from Indirect Expenses represent in your judgment and opinion a fair and just amount of the cost of the activities of that company for the year 1923, not attributable to rendering the license contract service, after you have excluded the Long Lines expenses?

"Answer: Yes; this amount, based on my knowledge of the business of the American Company, this amount of

> $1,000,000 for the year 1923, is fully adequate.

3364 "'Fully adequate'—I do not say it represented the amount; I said, it was 'fully adequate'.

> "—to cover these non-license contract activities, and even somewhat larger than the facts warrant."

Then I go on to say:

> "We have of course in addition excluded from the statement the cost of expenses incident to other non-telephone activities."

And there is another statement here that should be taken into consideration.

> "Now the American Company after excluding its Long Lines' activities, obviously exists primarily for the performance of what I have described as major activities, namely, the rendition of services to the companies having license contracts, and to this activity should be assigned its proportionate share of the cost of maintaining the general corporate structure necessary to such existence. There should likewise be set forth under license contract costs as definitely incurred in that field, a reasonable part or portion of the expenditures incurred by the company in its various financial activities, which materially enhance the scope and quality of

3365 the service which we render under the license contract. The financial activities of the company being distinctly related—are in fact indispensable to the complete performance of the license contract services, and from every standpoint they materially supplement and improve the character and the scope of the service which we render under these contracts. Any statement of costs incurred in rendering these license contract services must therefore in my opinion include a substantial part of the costs of the several financial activities just enumerated, as well as its pro rata part of the cost of maintaining a general corporate organization of the company."

Now it is on that basis that my Ohio statement was built.

3366 In the 1931 dividends received by the American Company on the permanent investments in securities were $139,443,081, and that would include the Western Electric Company.

"Q. Yes, and your disbursements applicable to that $139,000,000 were $117,000,000 in the form of dividends and interest to the stockholders, and the holders of credit obligations of the American Telephone and Telegraph Company, is that correct?

"A. That is the amount that I apportioned—of dividends and interest, that I apportioned against dividends, 3367 but that is not all that I have excluded."

I simply say on A-198 that we received so much for license revenue and our costs are so much, and the difference for 1930 is a little in excess of $11,000,000; that is, our revenues were $11,000,000 odd less than our expenses. With an earning of $139,000,000 from our holding company op- 3368 erations, which was used to the extent of $117,000,000 to pay dividends, and with a total income, as shown on A-198, from our license contract operations of $15,000,000, which would show a loss of $11,000,000, I am still of the opinion that the license contract operations have been the major activity of the American Telephone and Telegraph Company in 1930 and 1931, and the holding company operation was incidental, because the holding of the securities of our license companies is an incidental activity in connection with the rendition of the license contract service. The purpose of holding those securities is to provide a better basis for raising the many millions of dollars we need in the business, and I say it is a help, it helps to that end very materially. I said, a 3369 few days ago, that while the American Company might be termed a holding company, it is not a holding company in the ordinary sense that one speaks of a holding company. Go back to the beginning of the business; the American Company (I am now speaking of the American Bell, the predecessor company) licensed the companies under its patents and, at the same time, it found that it was necessary to finance the companies.

3370 In line 1-H of Exhibit A-170, you will find a deduction for holding company operations. I want to make an
explanation about the $750,000 for the year 1931 on this line
1-H. This sum is net after I excluded therefrom a large
amount of cost incident to holding funds available. If
3371 you will turn back to the exhibit for the year before, it
gives a better picture. For the year 1930, the deduction
for non-license expense is $1,152,350. As Comptroller of the
American Company, I cannot, under any stretch of my imagination, make myself believe that we need to spend any such
sum of money to do our corporate activities today; that is, our
strictly corporate work not related to license companies and
our work in connection with the Electrical Research Products
Company, or any non-Bell activity; I cannot understand how
we could spend $1,150,000. Even the $1,152,000, in my
3372 judgment, is too high. When I estimated $2,500,000 before, it was too high, because I have excluded expenses
in my own department that I do not have any justification
for excluding, because the amounts that I excluded for the
Comptroller's Department in relation to the work that I do
are clearly out of proportion, but I did it in the interests of
conservatism.

The $361,000 for the year 1923 in line E of Exhibit A-200
is the balance remaining from the license contract serv-
3373 ice for the Chicago area after deducting the average cost
to the American Company of holding money available
for the Chicago area and also deducting a return on the American Company's investment in the telephone instruments in
the Chicago area. I assume, in setting them up, that we are
entitled to just as fair a return as the Chicago property is
entitled to.

3374 Line E of Exhibit A-198 corresponds to line E of A-200, except in respect of one thing, which is explained, and that is that line E on A-198 is after taking consideration of the costs of temporary financing. Now, when we come to A-200, we state definitely that we have not included any of the costs of temporary financing in the Chicago area. It is a cost to the American Company, but I just did not feel it conservative to allocate it to Chicago.

3375 Line E in Exhibit A-198 in each case represents that amount of money which is left over out of the license payments after the American Telephone and Telegraph Company has taken care of all the expenses and has allowed itself an amount equal to the annual charges on carrying the investment, taken on the assumption that the American 3376 Telephone and Telegraph Company is a contracting party and is entitled to make a fair contract with the associate companies, and a fair profit therefrom. The American Company would get the revenues shown on line A. There is no profit in this. Line B shows the actual expenses incurred according to Exhibit A-170. Now Exhibit A-170 has in it, so far as the American Company is concerned, all of our costs of holding funds available.

"Q. Mr. Heiss, does it also include all the costs of holding the investment in telephone instruments—A-170?"

Exhibit A-170 does not give consideration to item D-1 and item D-2 on Exhibit A-198, except that A-170 does include the book investment less depreciation reserve multiplied by the average rate to find the average cost of funds used in the business. In other words, line B shows the very minimum figure for the cost of instruments that we could include. Now in D-2 I approach it from the point of view of what is a fair allowance, and I say right in that caption, "Less amounts already included in item B above (the costs shown on Exhibit A-17)". In other words, in D-2 I am only claiming the excess between the very minimum charges that I could make 3378 on instruments, and what I could claim for instruments on basis of a fair return plus expenses.

3379 EDWARD E. BROWN, called as a witness on behalf of the plaintiff, having been first duly sworn, testified as follows:

Direct Examination by Mr. Blackman.

May 27, 1932.

My full name is Edward E. Brown. I am Vice President of the First National Bank of Chicago and the First Union Trust and Savings Bank. I have been Vice President of the First National Bank of Chicago for twelve years, and Vice President of the First Union Trust and Savings Bank for five or six years. Prior to that time I was General Counsel for both banks for approximately ten years. I was a salaried employee of the First National Bank and First Union Trust and Savings Bank since 1910.

The First National Bank of Chicago has deposits today of around $460,000,000, and the First Union Trust and Sav- 3380 ings Bank has deposits of around $200,000,000. On the last published statement of the First National Bank and the First Union Savings Bank, it was somewhat smaller than the Continental-Illinois Bank and Trust Company. I think it is approximately as large as the Continental today. I think there is only one other bank west of New York City that is as large as, or larger than the First National Bank of Chicago and the First Union Trust and Savings Bank combined.

In my capacity as an officer of that bank I have had to do with securities of various kinds. I am what is called a General Vice President of both banks, ranking officially immediately under the President of both banks. For a number of years I have had direct supervision of the division of the First National Bank which makes loans to stockbrokers, bond dealers, and security houses, and, in the case of the First Union Trust Company, for a number of years part of our organization, the officers of the Bond Department are sup- 3381 posed to consult me before making any commitments on the purchase or underwriting of securities. I am also

Vice President and Director of the First Chicago Corporation, which, from time to time, has underwritten stock issues of various corporations, and I am on the Executive Committee of the First Chicago Corporation.

I have been familiar with the principal underwritings in the city of Chicago for the last ten years and the prices at which the securities were sold to the public and the prices which the corporations obtained. In a general way I am familiar with the market prices of the principal securities of the country. I am familiar with the securities of the American Telephone and Telegraph Company and its subsidiaries. I am familiar with the securities of the principal utilities in Chicago, and all of the principal local companies in Chi-
3382 cago, and pretty generally with the principal utilities throughout the country.

"Mr. Blackman: Now I may say for the record we have agreed to ask Mr. Brown only one question in the interests of expedition.

"Q. Mr. Brown, have you read the testimony of Mr. Hoyt given before this court, direct and cross?

"A. I have."

I agree substantially with what he (Mr. Hoyt) said. I believe that he stated that in 1928 and 1929, as I remember his testimony, it would have been possible for a corporation to have obtained money at 7.5, or possibly 7 per cent, as against 8 per cent the years prior thereto. I think that that would be true as to those years. However, I believe that a large corporation such as the Illinois Bell, which requires additional sums of $20,000,000 to $30,000,000 per year, or has in the past few years, for construction, cannot afford to press the market too hard; it has got to sell its securities at a price to the public which will enable underwriters, dealers, and
3383 the ultimate investors under normal conditions to have a reasonable expectation of a profit, if they are to be in a position of going back year after year. I think that if the market had been pressed in 1928 or 1929, and capital obtained at as low a rate as 7 per cent, it would have meant having probably for the corporation to pay more in the latter part of 1930, 1931 and 1932.

Cross-Examination by Mr. Goldstein.

Included among the members of the Board of Directors of the First National Bank of Chicago and the First Union Trust and Savings Bank, are William Rufus Abbott, Chairman of the Board, Illinois Bell Telephone Company, and Bernard E. Sunny, Director of the Illinois Bell Telephone Company.

The Illinois Bell Telephone Company is a depositor of the First National Bank, and has been such for a great many years. I think the original Chicago Telephone Company was largely financed and owned in the early days by people connected as directors of the First National Bank of Chicago.

3384 Mr. Sunny has been a director for a good many years.

Mr. Abbott was a director of the Union Trust Company, and became a director of the First National Bank of Chicago when the Union Trust Company was merged with the First National Bank of Chicago in 1929.

3385 CHARLES A. HEISS thereupon resumed the stand and further testified as follows:

Re-cross Examination (Continued) by Mr. Goldstein.

May 27, 1932.

In the following discussion of Exhibit A-170 I will concentrate on the year 1923 and the first column. The first number which it shows is Cost of Rendering Contract Service, and I have in there "Departmental". None of these costs include what it did cost the American Telephone and Telegraph Company in dividends and interest to get the capital in the performance of the service. Item (b) Instrument Mainte-
3386 nance, does not include any item for that. In item (c), Taxes, there is not included an amount of dollars equal to what the American Telephone and Telegraph Company paid in interest, amortization of discount, and dividends on the funds which were used in the performance.

Item (d), amounting to $1,327,000 (Cost (Net) of Carrying Investment in Physical Property) contains an amount 3387 which is arrived at by taking the investment of the American Company used in license contract service, deducting depreciation reserve therefrom, and multiplying that amount by 6.87, the average cost of funds during the year.

"Q. And the reason why you include that is that you consider that part of the costs of furnishing the license contract service, is the expense which the American Telephone and Telegraph Company had in paying interest and dividends to its stockholders attributable to investments in that—is that it?

"A. No sir, I include it because the laborer is worthy of his hire and the American Company has put so much money at the disposal of the license company, and it is entitled in a statement of costs, such as I have built up here, to get 3388 back the cost of that, that is as a minimum.

"Q. And that cost is what it paid out in dividends and interest attributable to that investment?

"A. That is what the money cost the American Company. I do not know whether we have dividend money in here, or surplus money, or interest, or bond money."

The 6.87 which I used as a measure of that cost is arrived at by taking the total amount of dividends paid in the year, the total amount of interest paid in the year, the amortization on the discount during that year, and dividing it by the dollar investment as shown in A-164. The dollar of investment includes capital stock, surplus, premiums and bond money.

3389 It is not a fact that that item which I have in here as a cost, is part of the dollars equal to what the investors in securities of the American Telephone and Telegraph Company have taken from the American Telephone and Telegraph Company, attributable to that investment. It has nothing to do with that. It is simply what the American Company paid out in interest and dividends on the money it had from investors, but that enters into one element, one side of the picture, and the other is the total amount of money in the business regardless of where it came from; and applying one against the other, you get your ratio of 6.87.

Exhibit A-164 shows the 6.87. That is the same figure that I use in A-170. 6.87 is the average rate which the American Telephone and Telegraph Company paid, which includes
3390 the result of paying 8.79 in dividends on capital stock.
The amounts in A-170 include the amount which I arrive at by applying the average cost of funds during the year, against the investment, and that average cost of funds is fully explained on A-164, and you there see that the average cost is the composite of capital stock, surplus, premiums and bond money.

"Q. So that you start off—so that you include in A-170, do you not, an item of cost which includes a return to the American Telephone and Telegraph Company equal to
3391 what it spent in dividends, interest and amortization, to get the capital which you say it used in the license contract services?

"A. No. You have got to include the surplus factor in there."

I have included the surplus factor in arriving at the 6.87. It is substantially correct to say that for every dollar invested in the license contract service in the year 1923, I have included as part of the cost before I arrive at my balance, an item of 6.87 (or for every one hundred dollars, $6.87) which I say is a cost, because the American Telephone and Telegraph Company had to spend $6.87 to get that $100.

Exhibit A-198, line C, shows $3,713,096 as the balance remaining for the year 1923 from license contract revenues after there has been deducted the expenses including an amount which the American Company has spent to acquire the investment as shown in A-170 at the rate of 6.87
3392 which is the bare cost of the money invested in property used in rendering the license contract service, that is (for 1923) instruments, buildings and the furniture and fixtures (less depreciation reserve).

That bare cost is the bare cost indicated in A-164, which represents 5.73 on loans from the associated companies as part of the capital required, 5.69 on funded debt, 7.44 that was paid on capital stock installments, and 7.17 that was paid on every dollar of capital stock, capital stock premiums 3393 and surplus. It is the composite of all of those.

I arrive at item D-2, (A-198) "Fair Allowance for Telephone Instruments less costs already included in Item B above" in just the same manner that I used in developing Exhibit A-163. As I said before, these figures in A-198 show the total for the entire Bell System, whereas on Exhibit A-200 I show only the figures for the Chicago area. Now, the method was identical. I used the same method as for A-163.

The first item in Exhibit A-163 is "Average Current 3394 Cost". That is the average current cost of telephone instruments for the years 1923, 1924, 1925, 1926 and 1927, for the Chicago area. I have here a document which shows the figures I used in arriving at D-2.

(Which document was thereupon marked Defendants' Exhibit D-122 for identification.)

3395 D-122 is an instrument credit for Bell System on the basis that the American Telephone and Telegraph Company is the lessor and leases instruments to a contracting party as lessee, under the assumption stated, at the top of A-198.

"Q. Yes. Now, your figures in column B, "Costs Incurred in Rendering License Contract Services", were those costs figured on the basis of the American Telephone and Telegraph Company being on one side, and the Illinois Bell Company on the other side, or were they considered on the basis that the Illinois Bell was a department of the American Telephone and Telegraph Company, and the American Telephone and Telegraph Company owned the property?

"A. The figures in B represent just the—in so far as the instruments are concerned, represent just the bare costs of the American Company.

"Q. No. I am forgetting the instruments. I mean the other costs as shown in item B of A-198: do they represent costs on the basis that the American Telephone and Telegraph Company owns the Illinois Bell properties, and therefore these directors' fees of the American Telephone

3396 and Telegraph Company are properly chargeable or do they represent costs on the basis of contracting parties—which?

"A. Mr. Goldstein, costs are costs.

"Q. Well, but on the theory that you use in determining those costs, in justifying those costs—

"A. I have used that which a practical business man would use. We had certain costs on our books, and I collected those together in showing my license contract costs.

"Q. Did you hear Mr. Blackman state here that the theory upon which you justified the directors' fees of the American Telephone and Telegraph Company being charged to the Illinois Bell, was on this theory, that the Illinois Bell was considered a department of the American Telephone and Telegraph Company?

"A. I do not know.

"Mr. Blackman: I doubt if he heard that, because I do not think I said it.

"The Witness: Mr. Blackman will have to answer that question for himself.

"Mr. Goldstein: Q. Did you in the allocation of 3397 costs included in column B, consider the Illinois Bell a contracting party as against the American Telephone and Telegraph Company—

"A. As I said—

"Q. (Continuing)—other than telephone instruments?"

As I said, I took the costs which we had on our books for rendering that service and I collected them together in the statement of costs in A-170. Now, it does not make any difference for either, in either Exhibit A-198 or A-199; so far as the basic fundamental costs are concerned, they are the same in my judgment under both assumptions, excepting that when I come to A-199, I think I have the right to compute them even more conservatively; I have a right to compute them more closely than I do on A-198, for the further reason that A-198 assumes that I might be able to get a little profit out of my contract, whereas A-199 assumes that I was not entitled to a profit. Therefore I would figure my costs carefully.

Now, taking D-122, which is the detail for item D-2, "Fair
Allowance for Telephone Instruments": I deducted from
that certain costs as shown in A-170 in arriving at it.
3398 For item E, I took the current cost of telephone in-
struments, and used that as a base instead of the actual
cost of the instruments. The current cost was the current
cost as shown on our books. In 1923, I used $36,712,948 as
the average current cost which was arrived at by taking
the number of instruments that we had in 1923 and multiply-
ing it by the then current cost.

In A-166 I show that our total investment in telephone
instruments in 1923 was $31,329,013. Instead of using
3399 the $31,329,013, I used as a base $36,712,948. The rea-
son for that difference is apparent on the face of the
exhibit. The figures shown on A-166 are those which are the
accumulated costs in our accounts for all instruments up to
that time, and the figures shown on D-122 are the number
of instruments multiplied by the current cost per unit in
1923; and I assume that the difference is the difference due
to the change in the price per unit.

All we took as a basis for the average current cost of tele-
phone instruments for the years 1923 to 1927, inclusive, was
the average number of instruments charged against each
company during that year multiplied by the prices of
3400 that year which the Western Electric Company charged
us for the instruments. Those prices correspond to
the price list of the Western Electric Company. I should
hope they are identical with those. My people when they
receive a bill from the Western Electric Company always
check it to see that the prices are right.

I then deducted depreciation for the purpose of A-198
which for the year 1923 was $2,937,036. That is 8 per cent
off of the average current cost. I deducted that when there
was a depreciation reserve on our books against the instru-
ments of $15,010,382 as shown in A-166. I used
3401 $2,900,000 instead of the $15,000,000 for the deduction
because the $2,900,000 is based on the same factor that
I used in compiling A-163, and that 8 per cent figure used

there was taken from Plaintiff's Exhibit A-32, pages 8 and 9, showing that the actual depreciation in those instruments was 8 per cent. I deducted in this statement the actual depreciation and in the other I deducted the depreciation reserve.

3402 "Mr. Goldstein: Mr. Heiss, did you make this statement in the Ohio case in response to a question as follows:

'Q. Well, do you know, or can you tell us whether or not there was a profit derived out of that sale by the American Company to the Associated Bell Companies of those instruments that they had bought from the Western Electric Company?

'A. There are two answers to that question. The sale of the instruments to the associate companies and the concurrent cut in the rate of license revenue was decidedly advantageous to the companies. Now, 3403 on the other hand—

'Q. To which company?

'A. To the local company.

'Q. To the local company?

'A. Yes.'

"Now, here is the thing; this is the statement that I am directing your attention to.

"The Witness: There is no implication there, I said there was a profit.

"Mr. Goldstein: No, no, I mean, this is the statement—

"The Witness: All right.

"Mr. Goldstein: Here is the statement:

'A. Now, on the other hand, the American Company carried its investment in instruments on its books, going back many years. I think in 1912 we came under the control of the Interstate Commerce Commission's accounting system; we had a reserve of nearly 50 per cent on those instruments; and through the years we kept the reserve at about that figure because the instruments involved very delicate patents, and the art of telephony was developing, and it wasn't clear in those

earlier years but what somebody would come along with
3404 a patent and make obsolete the instrument, so a high depreciation reserve was just a common sense procedure. Now, as the years went on and the instrument became more definitely an article of use, why, probably the same necessity for a large depreciation reserve was not in the picture. But when we sold the instruments, we had a good reserve on the books, and under the accounting practices of the Interstate Commerce Commission in closing our accounts on our books, closing out our depreciation reserve, we transferred to surplus I think approximately $14,000,000, not on profit from the associated companies at all, but as excess reserve that we had accumulated over many years in protection of our investment.'

"Did you make that answer?

"A. I made it—

"Q. Yes.

"A. —and I stand by it."

We had at the time we sold the instruments, and cleared our books, $14,000,000. That was transferred to our surplus, and from our surplus to our contingency reserve; and I think in this case, and in every case that I have tes-
3405 tified in, the facts as to that are clear.

In connection with A-198, when I used the $2,900,000 deduction instead of the $15,000,000 deduction for depreciation, I did not have in mind also the fact that there was danger regarding patent infringement, or obsolescence due to patent development. I took 8 per cent off, which is the accrued depreciation which our engineers estimated was to be found in the instruments, and it is just a simple matter of subtracting the 8 per cent from the average cost, to get the cost less depreciation; that is all that is.

In the last item of D-122 for 1923 ($6,674,720), I include a return of 8 per cent on the current cost less 8 per cent depreciation.

3406 "Q. And that is your return. Now, then, as against that, you then take that figure to arrive at A-198, and you deduct from that certain items shown in A-170. Now, which items do you deduct as shown in A-170?

"A. Well, I deduct the amount on A-166, and there is another—

"Q. You say you deduct A-166?

"A. Yes, sir."

I took A-166, and then I deduct also my instrument maintenance and depreciation. I am positive that I deducted the return on investment. I have checked and rechecked that.

In Exhibit A-200 for the year 1923, the fair excess 3407 allowance for the Chicago area is shown to be $145,625. That $145,625 is simply the difference between the net cost computed as I have explained, by applying the average cost of funds to the investment less depreciation reserve, on the instruments, as contrasted here to a computation on the basis of fair allowance with an accrued depreciation at 8 per cent, and 8 per cent return. Now obviously before I could claim anything under item D-2, I had to eliminate that which I had already claimed in item B, and this amount in D-2 is just the excess over and above the costs already included in item B.

3408 I say that we are entitled according to A-200 to an additional $145,625.

"Q. Now my question is this: the $145,000 additional is over and above the $73,948 which you have already included in A-166 as a cost to the American Telephone and Telegraph Company in acquiring that investment."

It is over and above anything, whether it is cost on money, or instruments, instrument maintenance or depreciation. 3409 It is over and above anything that I have claimed in A-170. It is an additional amount that I feel we are entitled to, to put us on a parity with the Illinois Bell Company, if it owned those instruments; that is we are entitled to the same consideration in respect to those instruments as any other owner of them, because we devote them to public service.

"Q. Then, Mr. Heiss, am I correct in saying that the amount of money out of license payments for the year 1923, for the Chicago area, over and above the actual expenses, that is, maintenance, depreciation and taxes, included in your Exhibit A-200, is the $145,625 plus the $73,948 shown in A-166?

"A. Well, no, I could not follow you on that."

3410 The costs for the year 1923 which are included in
3411 A-170, are $73,948 for carrying investment (that is that 6.87); and $212,366 for depreciation and maintenance. Now, those are all of the costs that are in A-170.

3412 In A-198, the line D-2 for the year 1923, $2,332,636 is the amount over and above the costs which costs include the carrying charges on the actual investment in instruments, less depreciation reserve. D-2 in A-200 for the Chicago area would be on the same basis.

I have never computed how much the American Telephone and Telegraph Company would earn on its actual investment in telephone instruments for the year 1923 from an allowance which would include $146,625 over and above the costs
3413 as just stated. The $73,948 in A-166 represents a carrying charge of 6.87 for 1928; that is on the total investment less depreciation reserve. I do not want to testify as to whether the $145,625 is 13½ per cent on that investment because that is just a mathematical computation.

The total return on actual investment on my calculations in A-200 would not result in a 20 per cent return on actual investment on telephone instruments. I never made a calculation on how much the return would be on actual in-
3414 vestment as the result of A-200.

"Q. Your statement that it would not, is based upon your knowledge that you don't know anything about it?

"A. Just my broad general knowledge of figures over many years. It just seems unreasonable that it could be 20.

"Q. And if it were found that the actual return on the telephone instruments leased to the Chicago area as a result of your computations in A-200 for the year 1923 resulted in 20.40 per cent on actual investment to the American Telephone and Telegraph Company, would say that was an unreasonable return?

"A. I don't care to answer the question.

"Q. You don't care to answer it?

"A. No."

Exhibit A-200 shows that the balance over and above the
costs as stated above, in line E, is $361,183 for the year 1923.
It shows for the Chicago area for the period 1923 to 1931
that the net balance over and above the costs for the nine
years from 1923 to 1931 inclusive is $658,225 black, or
3415 excess over and above its costs. Exhibit A-199 shows
that for the entire system, including the Chicago area,
there is a loss of $28,193,600 for the same period but the two
figures are not comparable. In order to arrive at the figure
for the balance of the system, exclusive of the Chicago area,
I could not add the $658,225 to the $28,193,600. The red figure
of $28,193,600 includes the Chicago area, and the red figure
$28,000,000 odd is also derived by including the cost of temporary financing in that figure, but no part of that is in the
Chicago area.

3416 We would have a bigger loss if we didn't have the
black in the Chicago area. I wouldn't want to say that
our total loss for the balance of the system would be
$28,193,600, plus $658,225 before I checked it. I don't believe
it would work out quite as the addition of those two. I would
want to check up first what the effect of the cost of temporary financing is. The difference between those two figures
is, that included in the costs for the entire system, I have
charged a loss for the temporary financing, and the Chicago
area is not charged with any part of it. In the year
3417 1926, in A-200, I show for the Chicago area a balance
of $221,000. I show in the red for the entire system
$686,000. You would have the same adjustment then of increasing that by the amount in black for the Chicago area,
taking into that computation the effect of the cost of temporary financing.

I think it was in 1928, we cut the license contract payments
from 2 to 1½. We had a four and a half license payment
to 1926, and cut it in 1926 from 4½ to 4. In 1927 we sold the
telephone instruments and cut 2 per cent off. At the
3418 end of 1928, we cut it, effective as of 1929, to 1½.

"Q. Why did you make the cut from 2 to 1½ effective in 1929 when you were in the red for the system $2,700,428 and you were in the red in 1929 $6,983,259?

"A. At the time, as a matter of fact, Mr. Goldstein, that we made the cut, we had not made any computation such as I have here."

That is, we had not made any computation of what it cost us to render services, in the same meticulous way that we have here, although we had made computations back there that showed generally how we were running. But my answer to that question, why did we cut it in the face of the loss, is that it was the judgment of the management that we should reduce it from 2 to 1½, that's all I can say. It was the action of the Board of Directors of our company, they considered it was good business to do it.

"Q. As a matter of fact, wasn't the reason that, beginning with 1926, all of the licensee companies were on an 8 per cent dividend basis, and you are investing your money and getting 8 per cent, and your costs of funds were getting less, so that you had financing profits?

"A. No, I have never heard that in all my years around the company, I have never heard that advanced."

We have always looked upon these permanent invest-
3419 ments of ours as in a distinct and separate category. If
a man invests money in stock, he takes all the risks of
stock, and is entitled to the return on it. Now, this other matter of cutting the license contract was just a matter of what was considered good judgment by those who are managing the business.

In A-199 I show as an additional item: liability of the American Company under guarantee to protect and save the associated companies harmless in connection with patent matters. This reserve for contingencies was determined upon by myself and the President and was set up by the Executive Committee. There was a resolution of the Executive Committee making the appropriation.

"Q. And the place where we would find it would be in
the minutes of the Executive Committee, that you have
3420 refused to show us, is that correct?

"A. Yes.

"Q. And you having refused to show us, you now state the controlling purpose was to protect against patents?

"A. I don't believe, Mr. Goldstein, you would find that in the resolution at all, but the reason I say what I do here is that as Comptroller, such a matter as this, the matter of setting up reserves, is one of the things that comes very close to my functions, and in all my discussions with the President and the officers of the Company, I am giving your here the considerations that led us to recommend the setting up of this reserve."

My authority for setting up the reserve was finally the formal authority got from the Executive Committee. There may have been a whole lot of discussion prior to the action by the committee. It crystalized itself, in that resolution, because in large reserves of that type, I always like to have the formal approval of the committee of the board back of my action. There are ways the city can check anything 3421 I have said without looking at those minutes. Defendants have here the annual reports of the company to the Illinois Commerce Commission and they show for each year the amounts set aside.

"Q. But your authority for doing it is the Executive Committee authorization, which we have been refused, and about which we have been told it was a fishing expedition, to look at it?

"A. It is mentioned in the vote of the committee."

We set up as part of that same reserve for contingencies three million dollars, from 1927 to 1931. The Executive Committee did not authorize that but I state right on that sheet that the fourteen million was set aside in 1927 and I know, for the same reason that I just stated, that at the time we decided to set that to the reserve for contingencies it was considered that in view of the fact that we had put aside three million, and four million and so on in the years prior, that this fourteen million would carry us along for several years 3422 on about the same basis.

There was an Executive Committee resolution in 1927 transferring $14,395,000 to reserve for contingencies. It is one of the resolutions in the minutes of the Executive Committee which the city was refused.

"Judge Wilkerson: What is it you have been refused?

"Mr. Goldstein: We have been refused access to the minutes, and when we filed our motion, we were resisted on the ground that we were going on a fishing expedition, when we wanted to inspect the minute books of the Executive Committee of the A. T. and T., we were refused access to 3423 those, and it has developed through this witness that two things come out of that Executive Committee. One, this purported reserve for contingencies that they are now claiming, and second, the authorization to make the returns.

"Judge Wilkerson: Well, do you want those minutes of the Executive Committee? That would not give you the right to look at them all. If you call for that, you can have it, or his testimony regarding it goes out; or you may have the resolution put in. But we have had no such motion.

"Mr. Blackman: We will produce them at once.

"Judge Wilkerson: All right.

"Mr. Blackman: What we do object to, and what the Court sustained us in was a blanket demand to examine all minutes.

"Judge Wilkerson: Of course, you may have access—not access, but you are entitled to the production of the original document about which he testifies, or his testimony about it will go out of the record.

"Mr. Goldstein: That is our position."

3424 This protection provided for by the Reserve for Contingencies is against patent infringements and includes apparatus as well as telephone instruments and anything to which our patents extend and which our guarantee covers. Section 2 of the lease contract provides that the American Company shall indemnify the licensees against infringements on everything that the American Telephone and Telegraph Company recommends.

"Judge Wilkerson: I think there have been during the course of the trial a good many allusions to inspection and examination and access of documents, or to the production of documents. I think that where such an indication has been made, unless the attention of the Court is brought to it before the record is closed, the Court will assume that 3425 direction has been followed. It is brought to my attention just now by a ruling that Mr. Goldstein have access to certain minutes. Now, I shall assume that has been complied with, unless he brings it to my attention, and that will apply to both sides in this case about the inspection of documents. But I do not want this record closed and the argument made that somebody was ordered to do something, and the record does not show affirmatively that it was done. I will assume it has been done unless the contrary is made to appear."

This liability is a liability on whatever the contract states as to patent protection. I stated there were two lawsuits that indicated the seriousness of this situation, and they were both up in Michigan. I have reference to the Kellogg suit, with respect to manual switchboards.

3426 The Western Electric, to my knowledge, has never set up a reserve for contingencies to protect itself against infringements when manufacturing this apparatus because I understand that that liability is the liability of the American Company. I don't know whether the Western Electric set up any reserve for contingencies against that same sort of an infringement of the same sort of apparatus sold to the independent companies, which it does guarantee. (Mr. Goldstein stated that Western Electric does not set up such reserves for contingencies. The Court said as no one denied that statement they would assume it is a fact.)

3428 Dr. Jewett's testimony will speak for itself on whether it actually cost the American Telephone and Telegraph Company ten million dollars to acquire the General Electric and Radio Corporation patents as shown in additional item B on Exhibit A-199. It is my exhibit but the word "cost" means just what Dr. Jewett said on those pages referred to. I understood Dr. Jewett to mean that over this period, and for a long time before, the D. and R., the Laboratories and the Western, had spent more than that amount—

or approximately $9,000,000, say through this period alone
on that type of research, and when we came to acquire from
the General Electric and the Radio Corporation their
3429 ideas, they would not sell them for any price. They
would not give them to us for any price, so we gave up
in that connection ideas on which we had spent, as Dr. Jewett
said, I think in the record there, nine to ten million dollars
to get these rights for the associate companies.

That nine or ten million dollars which was spent by the Development and Research Department itself, or was paid for by the American Telephone and Telegraph Company to the Bell Telephone Laboratories in charge of the Development and Research is included in the license contract expenses. I claim this as an additional credit because we were not obligated to do what we did here in acquiring those patents.

"Q. That is the A. T. and T. made a deal to turn over something that the licensees are paying $10,000,000 for to get something from the General Electric, and for that you say the A. T. and T. is entitled to a separate credit from the licensees?

"A. No it is not that, Mr. Goldstein."

It is this: the job that the American Company had
3430 in those years was to explore this whole matter of the
radio and the new things in the electrical communication art, to advise the associate companies as to whether there was anything in this matter that would affect their plants and to clear the situation for the associate companies. The American Company had finished its task, when it did that. There was no obligation upon the American Company to go on and to give us these ideas to the General Electric, or to anybody else.

"Q. Who paid for those ideas?"

The ideas were the by-products that developed from an
entirely different undertaking. The Development and Re-
search Department did a real job of investigation, to give
to the associate companies the satisfaction that there
3431 was nothing in the radio that should make them uneasy
about their telephone plants and their telephone set-
ups. Now, the American Company might have stopped

there. But it had all of these ideas. It had all of these by-products, it might have stopped right there, and said, "We will not do anything with them beyond that." The money that it spent in making this investigation was to satisfy the companies on that one point. Now, it took the by-products, and it went one step further, it said, "We want to give to the associate companies the benefit of these by-products ideas", and it took the ideas, the by-product ideas that it had, that it might have sold to other people at a considerable sum of money, and traded them with the General Electric and the Radio Corporation of America to get the valuable patent rights for the associate companies. Now, there was no obligation under the license contract for the American Company to do that. It was away beyond what the license contract requires the American Company to do, and that is why I say we rendered them a very special service there in making these things available.

"Q. Mr. Heiss, if the A. T. and T. makes the investigation in the radio field and charges all the expense to the licensees, to satisfy them that there is nothing in the radio field that is going to hurt them, and as a result of this investigation the A. T. and T. get an idea, gets ideas, and the A. T. and T. can sell those ideas for ten million dollars, it is your thought, is it, that the A. T. and T. can keep the ten million dollars, or is entitled to a credit for the ten million dollars?

3432 "A. Looking at it from the approach that we have here, where we are contracting parties, if we give the service to the companies that we agreed to give them under the license contract agreement, and if out of that research we get certain by-products that we can sell in other fields, it is not any concern of anyone what the American Company does with those by-products, that is, if we are contracting parties. That is the property of the American Company to use it as it wants to. But in this instance, it did a very valuable thing, it took those rights and traded them for other rights, and made the patents available to the associate companies when there was no real obligation under the license contract to do ~~so.~~"

3435 In connection with footnote (e) in Exhibit A-199 the word "deductions" may be read as "additions" so far as (e) 2 is concerned.

I meant that there should be considered whether or not we should give credit for those items, in getting ~~a~~ fair, conservative picture, but I do not mean that credit ~~should~~ be given for the entire royalties. My own personal view is that you should not give credit for more than about one-
3436 third of them.

In C-1 (Exhibit A-199) I say, "Working Capital," and show the figure seventy million to three hundred million dollars. That seventy million to three hundred million on this statement is not the amount in A-169 for the licensee companies but for the licensee companies plus the holding company operations. I said that before you could say that the $1,303,744, which is the difference between the revenue the American Company received and the costs and deductions taken off, that there were other things that must be considered, and I said one of those things (I didn't
3437 appraise the amount) that must be considered is the fact that the American Company has cash balances ranging from seventy million to three hundred million. I might as well have said ranging from seventy millions to two hundred and fifty million. That is, the principle would be the same if I had fifty million more or less it wouldn't make any difference. It was just to call attention to this fact, that here was a factor, whatever consideration was to be given to it, that must be considered.

"Q. One other thing about that explanation you made in the record, which you laid down as a basis for your study in A-199, that there is a certain conservatism in your figures, in which you use the average costs, the costs in A-164. 'I did not take into account the cumulated surplus, appropriated and unappropriated surplus, as a capital charge.' You stated that in Michigan—it explains the difference between Ohio and Illinois on the one hand, and Michigan. In Michigan you say you did not make an allowance for the appropriated and unappropriated surplus in the calculations. Am I to understand

from that that when you figured the cost of capital in Michigan, you took it as applicable to the investment represented by stock, and that the cost was not to be considered as the
3438 yield on the stock plus the surplus?

"A. Now, Mr. Goldstein, I think we can shorten the thing very much if you will just refer to City Exhibit 142-E that I put into this case two years ago, and I brought it up to date for you. Now, that City Exhibit 142-E shows that if I followed the method I used in Michigan over the years, I would get some very peculiar costs of money. For instance, I would have gotten for 1926, 8.42 because that was a year in which we put out a stock issue.

"Q. But, Mr. Heiss, that is not the question.

"A. And then I would have gotten, in 1929, an average cost of funds of 4.98, because that was the year we put out a convertible bond issue at 5 per cent.

"Q. My question is not that at all, Mr. Heiss. You testified yesterday, 'In Michigan I did not make this allowance or give credit, I did not give credit for surplus, and that, in itself, accounts for substantially all of the difference, except certain minor items.'

"Am I to understand from that that your cost of funds in Michigan, as you now explain it, did not take into ac-
3439 count that whatever you paid was supposed to be a yield on surplus also?

"A. It did not, it did not. I can give you the facts in Michigan. The inclusion of surplus in Michigan, or the inclusion of surplus in this case and not in Michigan, accounted for $3,200,000 of the difference.

"Q. Right.

"A. And the remaining factor—that is, if I had omitted surplus, if I had omitted surplus and compared the cost of money to us, the average cost of funds, omitting the surplus, with the method I used in Michigan, the difference would have been about $700,000.

"Q. But the Michigan method, as you now explain it, would have had the entire cost allocable to the investment in capital stock and not in surplus?

"A. Well what I did in Michigan, Mr. Goldstein, I stated I took the three-year period, and I said, 'What money did we get in the three years?' We got $100,000,000 or $150,000,000 of stock, and I put it in at the dividend rate for stock. And I said, 'We got bonds', and I put it in at the rate we got for bonds, and so on, and the Michigan cost of money was just a composite of the base rates, the dividend rates or the base rates on the bonds, including amortization, over the two or three-year period.

"Q. Applied to the actual amount of money you re-
3440 ceived, and not to that amount of money plus the surplus?

"A. Applied to the actual amount of money that we used in the business.

"Q. That you received during those years?

"A. It was in connection with the actual amount of money received in those years.

"Q. But you applied the per cent to the actual amount of money received in those years, and did not take into account surplus?

"A. I did not take into account surplus, no, sir."

Re-direct Examination by Mr. Blackman.

For the year 1923 in the Ohio case, I deducted a
3441 million dollars plus $28,905 additional for direct items
excluded. In this case I have taken out $772,000. The difference is not over $250,000. That is, my estimate in Ohio was $250,000 greater than the actual deductions that we accumulated in our study in this case, based on the deductions made by each department head for his own department. In Ohio I undertook to do the whole thing and took a lump sum of a million dollars.

Re-cross Examination by Mr. Goldstein.

For 1928, I deducted $2,000,000 in the Ohio case and in
this case I deducted $907,000. Now, the reason for my
3442 larger deduction in Ohio was that I felt, inasmuch as I

was making an estimate, I ought to include in that estimate something reflecting the growth of the business. For 1924, in Ohio, I estimated $1,200,000, and in this case used $751,888. In Ohio for 1925, I used $1,400,000, and in this case used $864,890; about $500,000 difference. For 1926 I used in Ohio about $1,600,000, and here I used $942,486; for 1927, I used in Ohio $1,800,000 and I used here $859,528;
3443 for 1928, I used in Ohio $2,000,000, and I used here $907,149. For 1929, I used in Ohio $2,250,000, and used here $1,056,028; for 1930 in Ohio I used $2,500,000 and here used $1,152,350; for 1931 in Ohio I used $2,500,000 and here I used $750,011. The last year is not comparable, because I have excluded there the factor in connection with the large amount of money which we had available in New York, and which I did not charge up against the license contract.

"Q. But the difference of that factor is an additional $700,000 there?

"A. I think it amounts to $700,000 or more, but it all goes to show, Mr. Goldstein, my conservatism in the Ohio case where I was on my own.

"Q. Yes.

"A. And in this case I was at the mercy of my attorneys, and I had to make the deductions as they outlined the specifications."

In connection with the Ohio case, I discussed the matter (but not the deduction) with the heads of the depart-
3444 ments. As I said a while ago, this matter of separating expenses here, license contract expenses from other expenses, was quite a mystery, and the department heads could not tell me very much.

"Q. Do you have the same attorneys here as you had in Ohio?

"A. Yes.

"Mr. Blackman: I wasn't in the Ohio case."

Re-direct Examination by Mr. Blackman.

In the Ohio case I undertook to do this thing myself after consultation with the heads of the departments. In this case counsel insisted that the head of each department make his own allocation of the amounts for which he was responsible. That is the difference. 3445

"Mr. Goldstein: We object to the introduction of those exhibits on the same ground as the initial exhibits to which they have application, and on the additional ground that we have not yet had available the minutes of the Executive Committee meeting.

"Judge Wilkerson: I shall overrule the objection, on the assumption you have access to the minutes of the Executive Committee.

"Mr. Blackman: Oh, yes, they will have access to those.

"I will offer in evidence D-122 for identification. I thought I was going to save time by leaving that out, but I find I have not saved any time, it has just led to more cross-examination, so I will offer it in evidence now, and ask leave to supply the blank in Exhibits 198, 199, 200 and 201.

"Judge Wilkerson: It is admitted."

(Which said document marked D-122 for identification was thereupon received in evidence as Plaintiff's Exhibit A-202.)

3446 "Mr. Bracelen: If your Honor please, I think your Honor did not rule upon our offer of Exhibits A-125 to A-129, inclusive, being exhibits identified by Mr. Turner.

"Judge Wilkerson: What is the nature of the exhibits?

"Mr. Bracelen: They were the depreciation exhibits.

"Mr. Goldstein: They were subject to our motion. We moved to have them stricken.

"Judge Wilkerson: You objected to them?

"Mr. Goldstein: We objected.

"Judge Wilkerson: And stated the grounds, and the grounds are similar to those urged against other exhibits which I have admitted. Are there any objections peculiar to these exhibits?

"Mr. Goldstein: We have read into the record our specific objections to them.

3447 "Judge Wilkerson: What is the objection?

"Mr. Bracelen: I understood the objections were overruled, but I want a definite ruling.

"Judge Wilkerson: They may be admitted.

"Mr. Bracelen: If I may have it, that they are received in evidence.

"Judge Wilkerson: Yes. It may be understood in this case that when an exhibit has been offered, and there is no objection to it, it has been received in evidence, even if the record does not show affirmatively the Court has received it; if it has been objected to, the objection has been overruled; it may be understood it is in the record, even though the record does not show an affirmative ruling of the Court.

"But if you call my attention to it, I will rule affirmatively, so that it will be in the record. If that question should arise hereafter, in view of the large number of exhibits, where there has been a ruling on the objection, it will be understood that the document is in evidence."

(Which said documents, so offered and received in evidence, were marked Plaintiff's Exhibits A-125 to A-129, inclusive.)

3448 L. G. WOODFORD, called as a witness on behalf of the plaintiff, having been first duly sworn, testified as follows:

Direct Examination by Mr. Bracelen.

May 27, 1932.

My name is L. G. Woodford. I live in West Orange, New Jersey. I am in the employ of the American Telephone and Telegraph Company in the Department of Operation and Engineering in New York. I have been continuously employed by the American Company for about nine years and have been in the employ of the Bell System twenty-one years.

I entered the employ of the Iowa Telephone Company in 1911. With that company I had about four years' experience in various kinds of Commercial and Plant Engineering work. In 1915, I was made Appraisal Engineer of the Northwestern group of the Bell Companies, which was later consoli-
3449 dated to form the present Northwestern Bell Company.

In that position my duties were directed to making inventories and appraisals of plant for various purposes, making various kinds of cost studies, and making studies of depreciation rates. In 1923 I was transferred to the Department of Operation and Engineering of the American Telephone and Telegraph Company, and in 1924 was given the position which I now hold.

I am Plant Inventory and Costs Engineer for the American Telephone and Telegraph Company in the General Department. My duties are largely in connection with the development of methods for studying service life and salvage of the various classes of telephone property, and in advising and assisting the operating companies in the application of those methods. I am also responsible for work on methods of making inventories and appraisals of plant, but work in that connection has been a very minor portion of my total work. Practically all of my time has been devoted to the subject of service life and salvage studies.

The Northwestern Bell Telephone Company did and
3450 does operate in five states: Iowa, Nebraska, Minnesota, and North and South Dakota. My work, while with that company, extended over the entire area of the company, from 1915 to 1923. Prior to 1915 my work was in Iowa only.

I am generally familiar with the methods that have been used in Chicago in the year 1923 and succeeding years, in ascertaining the average service lives of the various classes of property, and in determining salvage expectancies, and deriving the depreciation rates, although I have had direct contact with the work only during the latter years of the period. I heard Mr. Turner's testimony given in this case and have made some examination of the exhibits that he identified and used in his testimony.

I am familiar with the methods of the other operating units of the Bell System with respect to the same sub-
3451 ject matters through my contact with the people who are doing work in the other operating companies. The methods used in Chicago and in Illinois by the Illinois Bell Telephone Company are substantially the same and the principles are substantially the same as those of the other operating units of the system.

The line of demarcation between charges to maintenance, on the one hand, and charges to depreciation expense, on the other, are drawn upon substantially the same considerations for all the companies. That is accomplished through the use of a set of units of property, which establish the dividing line between maintenance and depreciation, expressed briefly. These units of property designate the size of items or parts of items which, when replaced, shall be given fixed capital and depreciation accounting treatment. All items, when retired, are of course given fixed capital and depreciation accounting treatment. But items smaller than those speci-
3452 fied in the list of units of property are charged to maintenance when replaced. That list of units of property is, I believe, uniform throughout the system, the general list is established by our Accounting Department, and as far as my knowledge goes, all companies are following that with substantial uniformity.

As an illustration of some relatively small unit that is cleared through the depreciation account, and some smaller unit that is charged to maintenance that has nothing to do with the depreciation account, take the case of aerial cable. The various matters which are charged to the aerial cable account are cable cable terminals, the strand on which the cable is hung, and the rings in which the cable is placed. The terminals are treated as units of property. If a terminal is retired for any reason, and must be replaced, when it is retired it is credited to the capital account, and its cost charged to the depreciation reserve, less, of course, any salvage that is obtained. If rings are replaced, however, they

are not given fixed capital and depreciation accounting treatment. The cost of depreciation is charged to current maintenance. Also, if a small section of cable had to be re-
3453 placed for any reason, less than a span of cable, if there were a fire in an alley and we had to replace 50 feet of cable, but that did not constitute a complete span of cable, the replacement of that 50 feet would be charged to current maintenance. If, however, we replaced a span or more of cable, at one time, under those conditions, fixed capital and depreciation accounting treatment would be given. If we replaced a span or more, due to its destruction by fire, we would clear it through the depreciation accounting precisely as if it were retired for some other cause. It makes no difference what the reason for retirement is. In the list of causes of retirement which Mr. Goldstein enumerated when Mr. Turner was on the stand, I noticed he gave them as stated in the I. C. C. system of accounts, except that he omitted the last one, which is "Storms and casualties". A fire would be a casualty.

3454 A pole is a unit of property; a cross-arm is also a unit of property. For another item which is in the pole line account, but which is not a unit of property: take a guy, or an anchor. If we replace a guy or an anchor without replacing the pole to which they are attached, that cost of replacement is charged to current maintenance. If we replace the pole, anchor and guy, then the whole is given fixed capital and depreciation accounting treatment. The pole, anchor and guy do not constitute one unit. The two units in the pole line accounting are the pole and the cross-arm, as I stated. Anchors and guys are not treated as units of property.
3455 Other minor parts of a pole associated with the pole, we do not set up separate retirement unit costs for them, we do not retire them separately from the pole, and if we replace them while the pole is still in service, we charge the cost of replacement to current maintenance.

The two illustrations which I have used now, the cable and the pole, serve to illustrate the principles that are employed in this accounting. The units, of course, are different for different kinds of property.

It is my understanding that throughout the Bell System the depreciation rates are applied monthly to the cost of the depreciable property as shown on the books in order to arrive at the monthly charge to expense for depreciation.

3456 The methods used by Mr. Turner in Chicago and the methods used by other companies are similar. There are, of course, some variations. In some cases companies are able to make mortality studies of more classes of plant than other companies can. But, as a general proposition, the methods are similar, and similar methods are used for the same classes of plant throughout the system. So that throughout the system the classes of plant fall into the same four groups used by Mr. Turner in his testimony and in his exhibits. With reference to the central office equipment and buildings, I am familiar with the method employed, as explained by Mr. Turner, of arriving at the average service life by taking into account the additions in the one case to the equipment, and in the other case to the buildings.

I have had occasion to consider the problem presented by the cross-examination of Mr. Turner by Mr. Goldstein.

3457 I think the principle that is involved would be brought out clearly by considering the alternative plans that a telephone company might follow in building central offices. It seems to me that there are just three courses of procedure which could be followed in providing any building and its associated equipment.

One would be to build a small building, one which would not be capable of expansion, and to put in that building a relatively small amount of equipment, which would take care of the service requirements for a relatively short period of time. Then at the end of that short period of time, when the equipment was no longer adequate, the service might be moved into a larger building with a larger amount of equipment.

Now, another plan which might be followed would be to construct a very considerably larger building and to put into it at the start an amount of equipment which would take care of the service requirements for many years, perhaps until the equipment would have to be retired, because it was worn out.

Now, those two plans of procedure would be clearly uneco-
nomical, no telephone company would consider doing
3458 either thing. The costs would be high, the costs of giv-
ing service would be high, under either of those plans.
In the first case there would be a very high depreciation rate for the building, and another high depreciation rate for the equipment, and while the amount of investment would be small, the dollars of expense would be large, because of those high rates. In the second case, while the rates of depreciation for the building and the equipment would be low, the expense would be still high because of the large investment.

There are other carrying charges to be considered in addition to the expense of depreciation, of course. With a large initial investment, large idle equipment, idle space in the building, the carrying charges for interest, for taxes and for maintenance would be high. Now, if a company should follow either of those plans, you would not have this question that has been presented here, of whether the use of an average depreciation rate throughout the life of an office does not result in advance accruals before investments are made; that question would not be present in either of these two cases which I say the telephone companies would not follow, be-
cause there would be no additions to consider. But if
3459 the company were to follow either of those plans, it
would certainly be open to criticism because of the un-
economical way in which it had engineered its plant.

What the telephone companies actually do is to build a building which is capable of expansion as additions need to be made, and to put in central office equipment which can be added to as the number of subscribers or the amount of service increases. That is done because it is the most economical thing to do, because the charges for service over the whole period, the life of the office, will be less on that basis than on either of the other bases. Now, we do not add additions to the building or additions to the central office equipment solely for the benefit of the service which is furnished after those additions are made. Those additions are made as a part of the whole plan of extending the life of the office, and of furnishing service in the most economical manner.

Each addition that we make to a building or to a central office equipment is of value, is of benefit, to all of the previous investments that we have made in that building or central office equipment.

What we do is to determine the average service life of
3460 all the investment that we expect to make in the building, the average service life of all the investments that we expect to make in the equipment. We set up depreciation rates on the basis of those average service lives, and we apply the one level rate for the building throughout the life of the building, we apply the one level rate for central office equipment throughout the life of the equipment.

Now, the rates are applied, however, only to the investment that we have in any particular year. As a result, we are charging in each year the same amount for depreciation per dollar of investment throughout the life of the building, throughout the life of the central office equipment. The result of that is a tendency to produce a more uniform charge per unit of service throughout the lives of those items of property.

This method which I have described is what is known as the group plan of depreciation accounting. That is the application to the particular classes of plant. And here we are treating a building as a group, or the central office equip-
3461 ment in one building as a group.

The group plan is applied to classes of plant, all classes of depreciable property, the classes of property for which we make charges for depreciation in our operating expenses.

To illustrate the application of the group plan to some other class of plant than central office equipment or building we might take our aerial cable plant again, and consider any original group of units of aerial cable, say 100,000 feet of aerial cable installed in one year. Let us assume that that 100,000 feet of aerial cable will have an average life of twenty years. Some of it will go out after one year of service, some after two years of service, some after three years of service, and some of it may last for forty years, but the average would be twenty years.

Now, under the group plan of accounting, and neglecting salvage in this case in order to simplify the example, under the group plan of accounting, a depreciation rate of 5 per cent
would be applied to the cost of all of those units of
3462 cable as long as they were in service, would be applied to
all of the units in service throughout all the forty-year life span (forty years being the assumption I made as to the time that the last units would come out). The charges per unit of cable over that period in each year would be uniform then, 5 per cent.

Now, under the plan which has been suggested here, it will be necessary to charge a depreciation rate on each of the units, depending upon its life, the units which lived one year, again neglecting salvage, would have 100 per cent depreciation rate. Those which lived two years, or went out of service at the end of two years, would have a 50 per cent depreciation rate, and so on. Those which lasted forty years would require a depreciation rate of 2.5 per cent.

Under that plan of accounting, you would start with this original group of 100,000 feet of cable, you would start out with a high depreciation rate, and as parts of the 100,000 feet dropped out that have had short periods of service, we would gradually decrease our depreciation rate, getting down,
as I said before, to the point during the fortieth year,
3463 where the last units would have applied to them a depre-
ciation rate of 2.5 per cent. I was discussing the plan brought out by Mr. Goldstein's question to Mr. Turner on buildings and central office equipment.

(Counsel for City stated that they had not suggested any plan but were cross-examining on the one shown by plaintiff's exhibits. Mr. Braeelen stated he merely wanted to clarify the record and that the witness had been testifying about a plan that was implicit in Mr. Goldstein's cross-examination. Counsel for City stated that the plan was inherent in plaintiff's exhibits.)

May 31, 1932.

3465 The exhibit of six sheets identified as A-203 was prepared under my supervision.

3466 I believe it to be correct.

It is designed to show the extent to which the depreciation rates of the other Bell companies have differed from the Chicago rates during each of the years 1923 to 1931. The differences were determined by comparing the actual charges to operating expenses made by the other companies for the depreciation of plant and equipment with amounts representing what those expenses would have been if the Chicago rates had been in effect in each of the other companies in each of these years.

As I testified last Friday, the general practice of all Bell companies is to apply class depreciation rates to the book costs of the several classes of depreciable property. For that reason, if we take any given company and use those same book costs, applying to them the depreciation rates of any other company, and compare the result with the actual charges made by the first company, we have a direct comparison of the over-all level of depreciation rates of the two companies. That is the basis on which the differences in this exhibit were determined.

3467 Take some of the figures on page 1, the three columns headed "1923", the first line, for the New England Telephone and Telegraph Company. The figure in column A, $5,787,000 was the actual charge of operating expenses for depreciation of plant and equipment made by the New England Company in 1923. The figure in column B, $6,173,000 represents what that charge would have been at Chicago depreciation rates. In the third column, the ratio of the first column to the last is given, in this case .94. That means that for the year 1923 the depreciation rates of the New England Company taken as a whole, were 94 per cent of the rates for Chicago taken as a whole. Similarly, on the second line, the figures indicate that the rates for the Southern New England

Company were 102 per cent of the Chicago rates. And in the third line, for the New York Company, they indicate that there was substantially no difference.

The figure of $66,264,000 in the last line is the actual charge to operating expenses for depreciation made by all the com-
panies other than the Illinois Bell Company. The figure
3468 in the second column, $69,156,000 is the sum of the
charges, at Chicago rates, for all of those companies.
The ratio in this case is .96, which means that the rates of all the other companies, save the Illinois Bell Company, were 96 per cent of the rates for Chicago. In other words, they were 4 per cent below the Chicago rates.

Sheets 2 and 3 are like sheet 1, merely continuing the same statistics of those subsequent years down to and including the year 1931.

The relationship between the Chicago rates and the combined or composite rates for all the other operating companies, appears in the percentage figure in the last line, and in the third column for each of the years, being 99 per cent in 1924, 98 per cent in 1925, 96 per cent in 1926, and 97 per cent in 1927, 103 per cent in 1928, 105 per cent in 1929, 106 per cent in 1930 and 103 per cent in 1931. Those are the ratios
of the over-all depreciation rates of the other companies
3469 to the Chicago rates for those years.

For the year 1923 expressed in terms of the composite depreciation rate that we are accustomed to talk about when we say that the annual depreciation rate of the companies is a stated per cent over all and if we take for purposes of illustration a base rate of 5 per cent, this 96 per cent would be equivalent to 4.8 per cent.

Sheet 4 of this exhibit is merely a summary of the preceding three sheets for the entire period. It shows for each company, for the entire nine years, the relationship between its depreciation rates and the Chicago rates; also the relationship for all companies, excluding the Illinois Bell Company.

The figure of 101 per cent in the last column of the last line means that taking the entire period of years 1923 to 1931, and all of the operating telephone companies of the system, other

than the Illinois Bell, the combined depreciation charges made by those companies during this period were slightly in
3470 excess of the charges they would have made if they had been applying the Chicago rates throughout the period. Stating it differently, the charges for the rest of the operating companies of the Bell System were 101 per cent as related to the Chicago rates, considered at 100 per cent.

Turning back to the first sheet I would call attention to the last line of the heading reading as follows, "Omitting Charges for Station Installations, Interior Block Wires, and Exchange Aerial Wire". We omitted those three classes of plant from these comparisons in order to make the comparisons valid. In the case of the first two, Station Installations and Interior Block Wires, there have been no charges to operating expenses for depreciation in Chicago during any year of this period, whereas, many of the other companies, up until the beginning of 1929, did make such charges in small amounts to care for unusual extensive replacements in those classes of plant. Now in the case of the third class of plant,
3471 Exchange Aerial Wire, there is a marked difference in characteristics between the wire in Chicago and in most of the other companies. During all of this period the Exchange Aerial Wire in Chicago has been wholly or almost wholly insulated wire which is used mostly to connect the subscribers' inside wires with the distributing cables. Many of the other companies have substantial amounts of bare iron wire and bare copper wire, in addition to covered wire used for drop wire purposes. For that reason a comparison between Chicago and the other companies would have been a comparison of two entirely different types of plant of the same classification. On pages 5 and 6 are shown the amounts deducted from the total actual charges for depreciation appearing in the records of the other companies for these three classes of plant. Those amounts were obtained from the companies.

I could not make a valid comparison by taking the actual charges of each company in every instance, because of the differences between their depreciation charges in this re-
3472 spect as I have explained, and the comparison is made

after excluding from the charges for all companies, whatever the actual charges were on account of these three classes of plant.

The figures in columns A throughout the first four sheets of this exhibit, represent the total charges for depreciation as made by the companies, less the charges shown on pages 5 and 6. The figures appearing in columns B, which are the amounts calculated at Chicago rates, eliminate those charges by the simple process of not applying rates to book costs of those three classes of plant.

To sum that up I could not make a valid comparison with those items in, and I can make a valid comparison with those items out, and that is what I have done.

This book of 59 pages (indicating) plus an index page in the back of it, bearing the legend on the cover "Associated Operating Companies of the Bell System; Computation of Amounts of Depreciation Expense based on Chicago Rates, 1923
3473 to 1931" contains the work sheets from which the figures in columns B on Exhibit A-203 were derived.

(It was agreed that Exhibit A-203 and these work sheets about which witness had just testified, and a short memorandum explanatory of the procedure followed, were delivered to counsel for the City about two weeks before, so that they had an opportunity to examine and check them.)

Cross-Examination by Mr. Goldstein.

In discussing the propriety of computing depreciation rates on the basis that we have in connection with the cen-
3474 tral office equipment and buildings, I stated that as I viewed it, there were two alternative plans, to engineer a building; that one was to build a small building that was incapable of expansion, and the other was to build a building that was much larger than needed for present use; and either one of those two were economically unsound.

"Q. Now, did you ever consider the third alternative of building a small building with a foundation capable of carrying a much larger building? I take it that is the ordinary situation—assume a one-story building would cost $100,000 with a foundation for nine stories and you plan to build one story every five years for 45 years, and each of those new stories will cost $100,000 and then the entire building and the additions will be torn down in 50 years. Now as I take it you would justify the initial investment of the $100,000 plus the additional cost of the foundation to take care of the nine additional stories by saying that it prolonged the life of the initial investment: Is that correct?

"A. Yes, that is right. Of course, your example is just
3475 a little bit extreme, Mr. Goldstein.

"Q. Well, I am taking 50 years because the Merrimac Building was a 50-year proposition and your additions were scattered over that period including the last ten years so I take this as an example and for the sake of our argument I want to get the principle.

"A. All right. The principle is all right.

"Q. You justify the original investment plus the initial additional investment for the foundation on the basis that the initial investment is prolonged in life. Now what is the reason for making the present users of the one-story in the case I assumed to reimburse the owner 45 years in advance for the proposed investment that he expects to make 45 years off if and when conditions would require in the 45 years and if he is able and willing to do so at the end of the 45 years; what is the justification for that?

"A. It is only by making the additions, Mr. Goldstein, that we would be able to keep the building in service that long."

3476 If we never made the additions we would probably not keep the building in service that long. We could tell during the first 45 years whether we were going to make that additional investment or not; we plan to make them when we start the building. It is on the basis of planning to make it for 45 years, that we keep the investment alive for 45 years. We cannot tell until the 45 years arrive whether we are going to make the last investment or not. We cannot tell defi-
3477 nitely what we are going to do with any building far in

advance. Our service life for the 45 years depends upon our hope or expectancy to build at the end of the 45 years. I say we justify the payment by the present users of that one-story, because the additions extend the life of the initial structure. It is the additions when made that actually extend the life.

"Q. I am talking about the last addition now, your justification for reimbursement of that last addition, as I get it, is the fact that the expectancy of making that last addition prolongs the life of your first initial construction?

"A. Yes, that is correct.

3478 "Q. Now is there any guarantee or any provision made during the 45 years which assures the present users that at the end of the 45 years you will use the money which you have collected prior thereto for the purpose for which you say you are going to use it? Is there anything in your plan of operations that assures them that?

"A. Well, I do not know what you mean by a guarantee, Mr. Goldstein. We are building, we are planning our buildings in the most economical way, and we believe that we can forecast, not for specific buildings, but for the buildings as a group, about what we are going to make in the way of additions, and it is on the basis of such forecast that we determine our average service lives. Now there is no guarantee I
3479 suppose in that, that we are going to make the additions, but if we do not make them we will probably have higher depreciation rates."

In this assumed case, of a one-story building, where we expect to make nine additions of one story each, the last one 45 years from now, if at the end of 30 years we decide that on account of growth we do not have to make that addition, we have already collected that money for the first thirty years. I presume that the money so collected would be balanced against some other case where we had a much shorter life and a much higher depreciation rate than we had anticipated. That will be balanced against some other situation of a different character. What I mean now is that if we were short on our depreciation of some other item in our calculation, we would apply this excess against it; all of our accruals go into one reserve.

"Q. Well, now, your accruals are predicated upon a basis of reasonable accuracy so that there won't be deficiencies to make up, one against the other, is that right?"

3480 As I said before we do not think that we can forecast exactly what we are going to do with individual buildings, but we do think that we can do a reasonable job for all buildings as a group.

Under the assumption heretofore made for the first 45 years we have accumulated money, and during these 45 years that money, like all the rest of our depreciation expense, finds its way into the general funds of the Company and it goes into plant or into working capital.

That part of the plant serving the public during these 45 years would then become part of our rate base.

"Q. Now I would like to ask you where in connection 3481 with your plan for depreciation expense, or in handling the depreciation reserve, have you taken into account the fact that during these 45 years every dollar that you have collected, before you have used it for the benefit of the public, or for the purpose for which it is intended, will earn, will have earnings, because it goes into the plant, and those plants will have earnings?

"Now where in your plan have you made provision for that?

"Mr. Bracelen: Just a moment. That question is objected to as not cross-examination. Also as a matter of argument, calling for the conclusion of the witness on a matter which plainly is for counsel to argue to the Court.

"Mr. Goldstein: They have calculated a depreciation expense. Now what I want to know is, where in their calculation of depreciation expense do they take that into account, if they do?

"Judge Wilkerson: Do you take that into account?

"A. No, we do not."

3483 In the accounting, in connection with the assumed case, we would apply an average depreciation rate throughout the life of the building (in the above assumption).

3484 If the rate were applied to any amount other than cost the amount of the accrual produced would be different than the amount based upon cost; that is obvious. If the reproduction costs were higher, the accrual would be higher, and if the reproduction costs were lower, the accrual would be lower than on the book cost basis. Actually, we do not make our accruals on our books on that basis; we make our accruals on the basis of cost.

The percentage which we apply on our books is for the
purpose of accumulating over the entire life of the building,
3485 the amount which we expect to have invested in that
building including the initial construction and the additions.

We have made no provision in our calculations, or in our plans and I do not know of any, whereby if the Company ceases to do business, or if the Company abandons the project, or if there is a sale of the Company's property, credit will be given to subscribers for the accumulations which have been made for future additions.

3487 In 1928 I testified before the Interstate Commerce Commission in their depreciation hearings.

"Q. In discussing net salvage you stated:

"Answer: While such percentages, that is percentages determined upon the basis of a uniform cost level, may not represent the amount of net salvage which will be recovered from the particular plant in service at any given time, they do represent the average amounts which will be recovered over long periods, since variations in wage and price levels, affecting, as they do, both the cost of the plant installed and the amount of net salvage recovered, tend to be compensating in their effects.

For example, during periods of temporarily high cost levels the amounts of salvage realized are higher—although offset to a considerable extent by the higher costs of removal—than the average reflected by the percentages used in determining the depreciation rates, owing to the fact that the plant from which the salvage is being recovered was installed at lower cost levels.

3488 But during such periods new plant is also being installed at the temporarily higher cost levels, from which the amounts of salvage later recovered will be lower than the average reflected in the percentages used.

Due to this compensating tendency, the consistent use in the depreciation rates of percentages of net salvage which exclude the temporary effects of changes in cost level, will, we believe, produce substantially correct results.

"Is that a fair statement of your position?

"A. That sounds like the statement I made in 1928, yes."

I would not apply the same reasoning in connection with central office equipment, and say that if we have an initial construction which would have a low depreciation rate and later additions which will have a high depreciation rate, the high depreciation rate of our later additions will be compensated for by the low depreciation rate on a new building which would go up during the same period, because we

3489 are not dealing with the same question at all. The same reasoning would not apply at all. In the case of salvage, we are confronted with this problem: We have no exact way of definitely determining what the price levels are going to be at which salvage will be recovered, during all of the period in the future during which plant will be retired. We cannot determine them definitely. We do know from experience, we have had fluctuations in price levels, and we have had fluctuations in wage levels, and we know that those things are likely to balance out; so that all we are getting at is an estimate of an average amount of salvage which will be recovered. Now that is the most practical way to get at it. If we knew of any better way of getting at it, we would use that way.

Now when you come to a building, you have got a dif-

3490 ferent situation. We have got to look ahead to what we are going to do with a particular building, or with a group of buildings, and determine average depreciation rates on the basis of what we expect to do. I do not think the principles are inconsistent, because I do not think they relate to the same thing.

"Mr. Goldstein: But in the quotation which I gave you from your testimony, the factor which you used to balance the additions, which will accrue in a period of high prices, is the fact that when you are taking out the plant—one portion of the plant, you are getting new plant.

"Now why do you not take that same factor into account, namely, that when you are paying high prices, when you are having the additions in the later portions of the life of one building, you will have new plant which will have a low 3491 depreciation rate. Why do you not take the same fact into account?

"A. Well, here is the answer to that, Mr. Goldstein: What we are doing is, determining to the best of our ability a depreciation rate, and average depreciation rate for each building, so that when a building drops out of the picture, we can drop it out of our studies of depreciation rates. We cannot come into a case with buildings included in a study of depreciation rates which have been retired 10 or 15 years ago. We must determine rates for existing buildings. Well, it seems to me the two things are just entirely unrelated.

"Q. But you determine salvage on existing buildings, or salvage on existing equipment, in a certain manner, because you say that you take into account the fact that when the time will come to realize that salvage, you will have the effect of new plant, and I am asking you, why do you not adopt the same reasoning when you establish the rate on the building, which takes into account the effect of life, that at 3492 the time when the building will go out of service, you will also have new plant that will come into service.

"A. You are talking about new plant in another building now, are you not?

"Q. Yes.

"A. Well, I just explained why we do not do that; it is because of the fact that we set up depreciation rates for individual buildings, as far as we can."

In some cases we set up salvage rates for individual buildings, and in those cases that we do set them up, the principle which I have just stated, and which counsel quoted, does not apply. As a matter of fact, in most cases where salvage studies are made for individual buildings, an estimate is made of the salvage that will be derived from the particular building. In connection with that we do not use the uniform cost level. I think it is rather hard to say whether we ever used the uniform cost level for a single building because going over a period of years in the past, there have been a lot of different methods used in determining salvage percentages. In a good many cases, the estimates have been made on an over-all basis for a whole group of buildings, based to some extent upon past experience, and to some extent upon consideration of different cost levels prevailing
3493 at the time. As far as I know, no study has been made
on a level cost basis for salvage in the case of buildings.

I was trying to determine the other day whether we ever had issued any bulletins to the Illinois Bell covering the method of determining life of central office equipment and buildings. I do not believe we have; I think that matter was discussed in conference in New York, and then my testimony before the Interstate Commerce Commission was sent to all of the companies. I do not believe there were any bulletins issued on it.

I used in my direct testimony an analogy of Aerial Cable Plant as another example of group accounting. The
3494 principle of that example is comparable to the situation
in the case of central office equipment and central office buildings. It is not quite correct to say that, in the case of Aerial Cable Plant, our entire investment is a present investment. What we do in the case of Aerial Cable, and also other classes of plant, is just this: We consider the plant placed, we will say, in one year or in one group of years, as the group of plant. We determine an average life for that group of plant. Now, when you say, is that not confined to the present plant, that is not quite correct, because the present plant consists of survivors of those groups.

In the case of Aerial Cable Plant, we are dealing with the existing investment, plus the investment that we had made 10, 15, or 20 years earlier which had been retired, and the cost of which we are still accumulating during the last 3495 surviving item of that plant. In the case of Aerial Cable with an assumed investment 20 years ago of $100,000, 5 per cent of which was retired 19 years ago, and 5 per cent each year during the 20 years, to the present time, we are still accumulating a portion of the cost of the plant which was retired the first year, plus the portion of the plant that was retired each year to the present time. In the case of Aerial Cable Plant, we have no problem whatsoever of after acquired property. We do have the problem in the case of Aerial Cable Plant of accumulating through the depreciation rate today moneys to compensate the company for plant which had 3496 been retired many years ago, and does not now appear in the plant account; that is the basis of the group accounting plan. In the case of Aerial Cable Plant, when we retired that 5 per cent, we will say, 19 years ago, we took out of the depreciation reserve its cost. We took out its cost from the depreciation reserve before we had accumulated the money in the reserve to cover the cost of that particular plant.

I should say that the growth of the depreciation reserve in relation to the growth of the property is not an indication of the correctness or the incorrectness of the annual 3497 depreciation charges. I never use the depreciation reserve as a check on our annual depreciation rates. I think that is true throughout the Bell System, including the Illinois Bell. You cannot check your rates by referring to your reserve in any way at all.

In depreciation accounting the effect of the straight line depreciation charges is to build up a reserve in connection with each class of plant for which the depreciation is taken. The reserve is intended to compensate in part for the ultimate retirement of the several units from the fixed capital account. The reserve, set up for a group of plant units, is ultimately consumed through charges to the reserve concurrently with credits to fixed capital when those units are retired.

3499 On January 1, 1929, the method of accounting for Aerial Wire was changed. Drop wires were eliminated from the classes of depreciable property. Prior to that time the accruals which were made by some of the companies for drop wires were made on the basis of taking care only of the occasional extensive replacements. Now, in addition to that, there was a change in the classification of drop wire. Some companies had treated only the last span, the span from the pole to the subscriber's premises, as drop wire, while others had treated the wire all the way from the cable terminal

3500 to the subscriber's premises, as drop wire. I believe that up to January 1, 1929, in Chicago the last span was classified as drop wire, and that from the cable terminal to the last pole was classified as line wire. I am not sure of that, but I think that was the situation. In 1928 drop wires were taken out of the depreciable property, and became a part of the maintenance.

I do not know that there was any depreciation reserve which had been accumulated prior to 1929, with respect to drop wires. There was depreciation expense charged during that period, but not to set up a reserve against the ulti-

3501 mate retirement of that drop wire. There was a depreciation rate used for covered line wire. There have been no accruals since the beginning of 1929 for Exchange Aerial Wire in Chicago. The reason for that is the changes in the classification that we were just talking about. There were accruals in Chicago prior to 1929 on account of the line wire portion. It is my understanding that no depreciation rate was used for the drop wire portion of our covered wire at any time during this period. There has not been an accrual since 1929 on line wire. That is due to this change in the classification that I just spoke of. If there is any bal-

3502 ance in the depreciation reserve in connection with line wire, it is still in the reserve account. I have my own doubts as to whether there is any line wire balance there, however.

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I made the following statement before the Interstate Commerce Commission in 1928:

> "Before discussing these methods, I wish to direct attention to one factor which, more than any other, affects the service life of most of the classes of telephone property, at least in the larger companies. This factor is growth—growth in the number of subscribers, growth in the use of the telephone and growth in the requirements as to plant facilities resulting therefrom.
>
> "Growth eventually causes buildings, central office 3503 equipment, cable and other classes of plant to become inadequate and, in most cases, is the largest single factor affecting their service lives.
>
> "It is not the only factor, of course, and its effects cannot be isolated from those due to others, but it is the largest single factor."

In the same hearing I was asked the following question and made the following answer:

> "Question: Does the volume of the telephone business fluctuate with business conditions to any extent?
>
> "Answer: It does to some extent, yes, sir, but not to a considerable extent."

3504. I also made the following statement:

> "To sum up my views on this point, I do not think that the average service life of a class of existing plant can be determined with absolute precision, nor do I think that it should be expected that a conclusion as to what this life will be should be susceptible of exact proof.
>
> "I do believe, however, that a competent man who is familiar with the property in question, who has ascertained the facts shown by the experience of that property and who knows the forces and conditions now present and in prospect, can forecast the average service life with a reliable degree of accuracy.
>
> "The determination of service lives is not a mechanical process. It is not a matter of computation alone, but is a combination of the determination of facts based on actual experience and the tempering of these facts

in the light of the best engineering judgment as to the probabilities of the future.

"The result cannot be demonstrated to be mathematically accurate, but, as stated in the Commission's order, it is not essential that absolute accuracy be achieved to serve the purposes of depreciation accounting."

3505 I was also asked the following questions and made the following statements:

"Question: Before you go into that let me ask you a question I asked some of the railroad witnesses, that is, with respect to the so-called obsolescence. Is it or is it not the experience of your engineers that you can see a change in type of property on the horizon before it arrives; in other words, that you know a certain type of property is becoming obsolete before that condition actually comes or it actually does become obsolete?" (Question by Commissioner Eastman to Mr. Woodford.)

"Answer: Wherever changes are made in types of property we can foresee those changes generally a good many years in advance. Furthermore, in making changes from one type of material or apparatus to another the process is generally very gradual and extends over a long period of years, so we can forecast what the effect of those changes is going to be.

3506 "Question: In other words, you can see a change in the art coming before it actually arrived?'

"Answer: Yes, sir.

"Question: (By Mr. Bell.) May I ask you a question before you proceed? You carry on your own experiments, do you not?

"Answer: We have a Research Department which is continually experimenting, yes, sir.

"Question: You yourselves primarily bring about the changes that happen in your particular art, do you not?

"Answer: Yes, sir. I think they are primarily due to our developments.

"Question: Of course, you know what you are doing yourselves?

"Answer: Yes, sir."

Also the following statement was made by me in speaking of uniform cost levels:

3507 "Answer: In some cases it is possible that the use of such percentages would obviously produce incorrect results, and, if so, of course some other method should be used. That is just saying again that the determination of salvage percentages, like the determination of service life, is not a mechanical process but requires the exercise of judgment.

"I do not want to leave the impression that this thing was a purely mathematical proposition without requiring the exercise of judgment."

Also the following questions and answers:

"Question: (By Commissioner Eastman.) What is the range of service life estimated in the case of these main line conduits?

"Answer: The range is in the order of 50 to 60 years at the present time, yes.

"Question: 50 to 60 years?"

Then a question by Commissioner Eastman:

"Question: So far as that group 1 is concerned. I take it you feel more doubt with respect to the service 3508 lives that you estimate in the case of those classes of property than in the case of any of the other classes; is that right?

"Answer: Yes, sir. That is why I put those classes into one group by themselves.

"Question: It is largely a question in the case of those classes of property of judgment as to the future rather than any experience of the past?

"Answer: It is largely a case of judgment based upon the experience which we have had with other classes of property, yes, sir. That is, we cannot in many cases determine service lives on the basis of the experience of the particular classes of property in this first group. That is, on the basis of their own experience."

I also made the following statements:

"The retirement of station apparatus is brought about principally by moves of subscribers, although retirements also occur because of change in type of service, such as from magneto to common battery and from manual to dial, and because of changes in type of apparatus, such as from desk stands to hand sets. Also losses of station apparatus occur to some extent by reason of fire." 3509

"In answer to one of Commissioner Eastman's questions yesterday, I think I left the impression that the soundness of that hypothesis could be checked from our experience, and that lacking such a check the hypothesis was open to question. That is not the case.

"The basis for my opinion that substantially correct results will be produced is the fact that the average costs of our plant are close to present cost levels, and at the present time I see no reason to believe that there will be substantial variations from these cost levels."

3510 In connection with A-203: I have said that the basis of life and salvage, the principles, are the same in all Bell companies. It would not be necessary to know the extent to which other companies have calculated future additions in order to determine how they arrive at life as to central office equipment and buildings in other states. I have said they arrive at average life in the same way as is done here in Chicago. Whether or not an amount which would be 3511 sufficient for another company would be too high here, or an amount which is sufficient here would be too high for another company, would depend upon the factors which would determine the judgment of the respective companies as to the length of life of the initial construction, and the rate of growth in the future which would justify additions. The depreciation rates will vary as the conditions vary, but the principles upon which they are established are the same. Unless the conditions in the balance of the system were known to be the same as in Chicago, the fact that they had a certain depreciation expense in another company, which was lower or higher than Chicago, would not in any wise determine whether the Chicago rate was too high or too low, or theirs were too high or too low. You cannot prove the Chicago rates are correct by comparison with other companies. All you can do is to show how the rates do compare with the other companies.

The significance of Exhibit A-203 is that it shows that last fact, how the rates of Chicago do compare with the rates 3512 of other companies. What this exhibit shows is this: That, taking this entire period in all of the companies, the rates in Chicago have been substantially the same as the rates in the other companies, there being fairly sizable variations between individual companies and Chicago.

We have not made available to defendants the studies in the balance of the system which show the factors upon 3513 which judgment was exercised in each of these companies in determining the depreciation rates. We could not make them available to defendants.

The rate of growth would be an element that would have to be taken into account in fixing the depreciation rate. It would be an element which would affect the depreciation rate. In order to get the significance of any depreciation rate anywhere, whether Chicago or anywhere else that is one of the factors that would have to be taken into consideration. 3514 The rate of retirement is another factor. Other factors are: the history of each company as to the purchases of going telephone plant, the condition at which it was entered on the books, and the amount of depreciation reserve which was set up on the books with respect to such purchases. I don't think the same thing would be true as to data as to sales of going plant. Ordinarily, plant which is sold is excluded from our depreciation studies. Growths of the depreciation reserve, and the net charges to the depreciation reserve by primary plant accounts for each year would have to be 3515 taken into account. Another factor would be the extent to which other companies took into account the fact that on account of the depression there would be a deferment in these additions.

The varying amounts of investment in central office equipment, such as manual and dial, central office buildings, manual and dial, has all been considered in setting up this exhibit. If you were making an examination of salvage percentages by classes of plant for all other companies one thing that you would need to know is the policy of each of the other companies in respect to the re-use for its own equipment and material.

3516 A-203 is a comparison of rates for the Chicago area with the rates for the entire areas of the other companies and not a comparison of Chicago area with New York City or with any other large city.

Re-direct Examination by Mr. Bracelen.

In testifying before the Interstate Commerce Commission, in the depreciation case to which Mr. Goldstein has referred, I was the engineering witness on the subject for the Bell System Companies. Mr. Manson, of the New England Company and Mr. Brooks of the Southern New England Company were called in to present specific application of the study method which I have described. With that exception, I was the only engineering witness representing the Bell companies in that case.

3517 In the course of the cross-examination, Mr. Goldstein read to me certain parts of my testimony before the Interstate Commerce Commission, among others the testimony which I will characterize generally as being to the effect that in the Bell System we are generally able to look forward a longer or shorter period of time and foresee developments in the art, which bring about changes among other things in the types of equipment used. Mr. Turner has already pointed out that in the case of a manual central office, the Illinois Bell Company here in Chicago foresees, and has definite plans for the substitution of a dial central office to take the place of the present manual central office equipment. That situation is common to practically all the large cities in the

Bell System. In the meantime, in the intervening 5
3518 years or 10 years between the present time and the
projected substitution of the dial office, the company goes ahead and does whatever is necessary in a manual office; if it is necessary to add equipment, it does it. It adds manual equipment. The Western Electric Company continues to manufacture and sell the manual equipment. The additions that I speak of are necessary in order that the telephone users may continue to have telephone service at that office. The company obviously cannot discontinue buying and paying current prices for the new kind of equipment because something else is expected to come into use a longer or a shorter distance in the future. If they need to make additions, they have got to get the equipment to make them with.

It appeared in the exhibit showing the historical data and the projected data for the Kedzie office, that although
3519 for some years the Kedzie office has been scheduled for
retirement here in Chicago in 1936, the Company has been adding large amounts of investment to that office for the existing type of manual equipment. That may be taken to illustrate what happens in cases of any and all classes of plant, so far as prospective improvements that we foresee are concerned, except that in the case of classes of plant other than building and central office equipment, the additions of plant are not linked with something which has been placed before. We have the same situation, of course, in the case of the replacements of existing items, as they have to be retired for one cause or another.

"Mr. Bracelen: I offer in evidence Exhibit A-203.

"Mr. Goldstein: We move to strike the evidence of Mr. Woodford, the testimony of Mr. Woodford, on the same grounds that we have stated in connection with our motion to strike Mr. Turner's testimony and exhibits, and on the additional ground that on his Exhibit A-203, plaintiff did not make it available to the defendants, and there is no way that we can check the conditions in the balance of the System,
3520 and the fact from which we could make such determination as contained in the provisional estimates and the

M. R. reports were refused to us until the offer was made the other day, and the terms of the offer were such that, as a practical matter, it is impossible for us to make use of them in connection with this work, and, therefore, so far as we are concerned, the evidence, the data, applicable to the balance of the System which we consider essential as a condition precedent to his offer, has been refused to us:

"Mr. Bracelen: Of course, your Honor, the offer which we made the other day stands in connection with the testimony of this witness precisely as it was made. Now, I understand that Mr. Goldstein, pursuant to the offer we made in court recently a few days ago, has indicated to us the particular figures and facts that he desires to take off these various reports, and that examination of a part of the reports is going forward, and I expect this *afternoon* to check over the specifications that Mr. Goldstein has given to Mr. Jones in connection with the whole subject, and let Mr. Goldstein know whether any part of the information he seeks will be withheld from him, so that a ruling by the Court will become necessary.

3521 "Mr. Goldstein: So that our position will be clear, for one solid year there has been a demand upon the plaintiff to make available to us this very information, in the light of the Supreme Court's opinion, which asks that the inquiry taken into account the balance of the System, under comparable conditions. In the face of the fact that we went before this Court on motion, and they argued that there was nothing in those that was pertinent; in view of the fact there are thousands of pages they have now given us, and as a practical matter with the closing of this case, it is impossible for us to make use of this information—the tender they are now making, in our opinion, is, as a practical matter, no tender at all, and we consider it the same as if it had been a refusal, because there is not a ghost of a chance to make use of a single figure there, so as to present any kind of a case, when for a solid year, or a year and a half, they had knowledge of the opinion which called for it. We made repeated requests, and we came before this Court on motion, which was twice argued, twice they resisted, and now at the last minute they cannot throw ten thousand pages on us, and say that is a proper offer.

3522 "Mr. Bracelen: Of course, ten thousand pages—

"Mr. Goldstein: We will bring them in if there is any question.

"Mr. Bracelen: That ten thousand pages is an overstatement.

"Mr. Goldstein: We will bring them in tomorrow.

"Mr. Bracelen: Now, if the Court please, not for a year, or for a year and a half, but since some time early in November last, the defendant city has been demanding that we make a disclosure to them of practically every fact and figure pertaining to the detailed operation, plant and business of each one of the operating units of the Bell System, from the year 1920 down to date. It is not until within a few days that they have been willing to point out in these records what they say is of any materiality or relevancy in this case. Until two or three weeks ago, their demand was a sweeping demand for everything; it was properly resisted by us, and properly denied by the Court. If there has been any delay down to this time, it has been due to the fact that they would not say what it was that they claimed had any bearing on this case, so that we and the Court were confronted with the alternative of opening this case up, to bring into it the operating 3523 facts, figures, of every kind, as shown on all of these reports, for all of these companies, for all of these years.

"Now, the Court's observations about that are upon the record. The point now is that within the past few days Mr. Goldstein has been going over these reports, all of which have been laid fully and completely before him, and he has designated within the past three or four days the particular facts and figures he wants, and has been engaged in that work as late as yesterday, and his work has not been held up.

"He stated in the first instance that he would write us a letter, in which he would set forth all of this information, and we waited a day or two for the letter; then Mr. Goldstein explained to Mr. Jones that he had been very busy on other phases of the case, and Mr. Jones might rely upon a memorandum that he had made at the request of Mr. Goldstein when the preliminary examination of the report was being made for the purpose of designating what they wanted. Now, that I have not had time to check, and will not have time to check until this afternoon. But I say his work upon the reports has not been delayed at all.

"Mr. Goldstein: I just want to say that with reference to the so-called details of operating results, as Mr. 3524 Bracelen calls them, every fact as to revenues, expenses, plant and depreciation on those reports, the plaintiff itself has made use of in connection with its license contract, in connection with the depreciation. Yet we were not allowed access to those records on the ground that we would be on a fishing expedition. Now, how could we ever determine what we desire to have from those records, in the face of their refusal to even give us access to look at them, and the requests I am now making of the plaintiff, so that the plaintiff will know it, are only those minimum requests which we feel we can at least make use of in the two or three days we have available within which to prepare our case. But it is an utter impossibility to make use of those reports of thousands of pages for these companies on the subject matter of depreciation, on the subject matter of license contract, which they themselves opened up by taking the experience of each of the companies involving revenues, expenses, plant, and depreciation.

"Mr. Bracelen: That has become an impossibility, evidently, since the matter was presented to your Honor a few days ago, when they were still pressing for exactly what they are asking for now.

3525 "Mr. Goldstein: We are going to take what we can use, certainly.

"Mr. Bracelen: Very good. They will take what they can use. They have it all laid before them, and I will report to them, and if it becomes necessary report to the Court whether we think they should be refused anything that they are asking for.

"Mr. Goldstein: We don't intend to keep this case open until we can go through a lot of things, because it is our understanding that this case is to proceed, and we agreed to it.

"Judge Wilkerson: It is to proceed.

"Mr. Goldstein: That is right.

"Judge Wilkerson: The case is to be closed before the summer adjournment.

"Mr. Goldstein: And it was with that in view that I made my request.

"Judge Wilkerson: We have all made our arrangements accordingly, and if you don't go through with that program, I don't know when we will finish the case. Now, the record, of course, shows the motion that was made by the defendant for the inspection of documents.

"Mr. Adcock: That was argued four weeks ago.

"Mr. Goldstein: That is right.

"Judge Wilkerson: It shows the ruling of the Court, 3526 on the motion, it shows the renewal of the motion for the inspection of documents, and the replies that were made to that during the progress of this trial, as the evidence has developed. Your motion now is to strike the testimony of this witness?

"Mr. Goldstein: Correct.

"Judge Wilkerson: I will overrule it at this time. I understand that these documents are available? You say you cannot use them?

"Mr. Goldstein: Well, within the period. If we attempted to do anything on depreciation now with those documents, it would take us weeks. In the first place, we would have to transcribe—we haven't got the right yet to take a figure off, we don't know.

"Judge Wilkerson: Yes.

"Mr. Goldstein: But assuming we get that—

"Judge Wilkerson: We will not halt the case.

"Mr. Goldstein: No.

"Judge Wilkerson: That much is certain, we will not halt the case. We will proceed with the case. I will not strike the testimony. It remains to be seen at the close of the record what disposal the entire Court will make of the testimony, in the light of the record as it has been made.

3527 "Mr. Bracelen: They may have all of the depreciation facts. That may be disposed of now. I hope this situation will not develop, your Honor: That counsel will not proceed immediately to take these facts from these reports, and then come in and say later that our testimony must be stricken because they have not taken these facts and figures from the reports. Now, they are available to them, they have been taking such facts and figures as we have used, and Mr. Jones now advises me that specifically we have tendered to Mr. Goldstein the data used by Mr. Woodford from the reports. During the afternoon I will let Mr. Goldstein know with respect to each of the items listed on any of these reports, whether we have any objection to his taking them off.

"Mr. Goldstein: We worked Saturday, Sunday and Monday, we are working day and night, and we will continue to work on these records, as we have in the past, consistent with our primary obligation to proceed with this case.

"Mr. Bracelen: It is only within a few days that they have finally recognized that they must—

"Mr. Goldstein: We could not tell, until we looked at your documents what we wanted.

3528 "Mr. Bracelen: They have had the forms of reports which show exactly what is included in them, since away last fall. That is shown by the motion that they presented to the Court, and argued to your Honor and Judge Evans, on November 3rd; it is shown by the depositions which were taken in New York, and which are here in the record. They have known for a year, more than a year, exactly what each one of those reports shows.

"Mr. Goldstein: And you have known for a year what facts contained in there were pertinent to depreciation and to the other evidence that you offered as part of your case, and you withheld that, and stated to this Court that we were on a fishing expedition, in looking at any part of the exhibits, or any part of those records.

"Mr. Bracelen: And the Court properly so held.

"Mr. Goldstein: Under the facts as represented to him, certainly.

"Mr. Bracelen: There cannot be any question about the soundness of that ruling by the Court. If there was ever a fishing expedition, they were engaged in such an expedition.

"Mr. Goldstein: But you brought up the fish.

3530 "Mr. Bracelen: Now, if the Court please, Mr. Haight and Mr. Goldstein have called my attention to an article appearing in the Bell Telephone Quarterly, issue of October, 1929, beginning at page 259, entitled "The Straight Line Depreciation Accounting Practice of Telephone Companies in the United States", this being a paper presented to the International Congress on Accounting, in New York, September 9 to 14, 1929; the article being by Mr. Belcher ~~and~~ Mr. Crunden, of the American Telephone and Telegraph Company, both of whom have been witnesses in this case. Counsel for the City have said that they desire to offer this article in evidence. I have stated this morning to Mr. Goldstein that that may be done without objection by us. I refer to it now, your Honor, for this reason: Mr. Goldstein and I have discussed this this morning, that upon the understanding that the defendant will offer this article, we deem it unnecessary to put Mr. Belcher on the stand now to give certain additional testimony upon the subject of depreciation and depreciation accounting, since the article which is by him, in collaboration with Mr. Crunden, sufficiently covers that subject, and we dispense with the necessity of taking that testimony
3531 orally.

"Mr. Goldstein: That is correct. We will identify that now as Defendants' Exhibit D-123."

(So marked.)

"Mr. Bracelen: The plaintiff now offers in evidence the entire deposition of Mr. George E. Folk, which was taken in New York by the defendant city.

"Plaintiff also offers in evidence the entire deposition of Dr. George Campbell.

"Plaintiff also offers in evidence the entire deposition of John E. Otterson."

(The depositions of George E. Folk, Dr. George A. Campbell and John E. Otterson, last above referred to, were accordingly received in evidence and made a part of this record.)

233 GEORGE E. FOLK, for defendants:

Direct Examination by Mr. Haight.

I reside at New Rochelle, New York; I am patent attorney for the American Telephone and Telegraph Company and have been since 1915; I have been general patent attorney since 1918; from 1915 to 1918 I had charge of the patent division of the American Telephone and Telegraph Company at New York, the main patent department being at that time in Boston. The general patent attorney retired about 1918 and I took his place, moving the office to New York.

234 In handling the patents we follow the system of classification that the Patent Office has. We make no attempt to classify the patents themselves. We do not attempt to classify the applications according to any subject matter after the patents are issued. We keep our files in exact conformity with the Patent Office so that when we make a search we have the same files that the Patent Office has to make the search with.

235 We have means of telling from our records how many patents we have relating to some specific subject matter. With respect to radio, we could look through our files and pick out the ones that have been assigned to us which would require an examination of the patents themselves.

The American Telephone and Telegraph Company owns or controls about 8,000 U. S. patents, and about 2,000 applications pending. That includes patents of Western Electric. In my department we do not handle the patents of Western Electric. About half the 8,000 patents are owned by the American Telephone and Telegraph Company and about half

236 by Western Electric. There are some patents that we control, but do not own such as De Forest patents, under which patents we have exclusive licenses except for certain non exclusive rights reserved to the De Forest Company itself. The De Forest patents relate largely to the vacuum tube and its uses, circuit arrangements which are applicable to
237 both wire and wireless telephony and telegraphy. The original De Forest patent on the vacuum tube which was basic to the tube structure, has expired. There are various circuit arrangements used in the system quite extensively, such as for the generation of high frequency oscillations, or for detectors or modulators. The principal one relates to the generation of high frequency oscillations. They are used in the radio art but not exclusively. They are used in the arts of wire telephony and telegraphy.

The Western Electric patents in the main relate to what are called by us as telephonic appliances, as distinguished from those patents which relate to the creation or modulation or improvement of the speech itself. For example, a patent on a switch or switching mechanism would be a Western Electric patent. A patent on a switchboard would be a Western Electric patent. A patent on a call bell. Those are examples of the kind of patents referred to.

238 Patents owned by Western Electric cover apparatus manufactured by it. There are other patents owned by the American Telephone and Telegraph Company that likewise cover apparatus manufactured by Western Electric. Other companies and Western Electric own patents under which others manufacture for us or for the associate companies rather than Western Electric itself doing the work.

239 Some of the patents owned by the American Telephone and Telegraph Company that are applicable to communi-
240 cation over wires would also be applicable to communication by wireless telephony. Some of the patents that are applicable to communication by wire telephony are also applicable to communication by wireless telephony or by wire telegraphy or by wireless telegraphy. Some of the patents also relate to apparatus that is used in connection

with wire telephony systems such, for example, as earth boring machines, such as are used for digging post holes for telephone poles.

I have no doubt some of our patents cover public address systems and undoubtedly some cover apparatus used in talking movies.

241 We have a list of our patents and if we have reason to believe that any of them are infringed by apparatus, when we notice them being put on the market, we quite frequently write and call attention to that particular patent.

If there were in the room a switchboard manufactured by Western Electric, our records would not show patents whose inventions are embodied in the switchboard. If any records would show it, it would be the records of the Bell Laboratories, and I do not know to what extent they keep those records. My records would not show what patents cover local exchange service and what cover inventions embodied in long lines.

I do not recall any suit that was instituted by the American Telephone and Telegraph Company or against it involving infringement on patents on transmitters, receivers and induction coils.

242 The records of the Boston office go back much further
243 than 1915. I will check back on our records for twenty years and see whether there is any suit brought by or against the American Telephone and Telegraph Company involving infringement of patents on receivers, transmitters and induction coils.

Foreign patents are obtained on inventions that come to my department for handling. It is true of the American Telephone and Telegraph Company and also of Western Electric. The American Telephone and Telegraph Company, however, does not take out the foreign patents. Those inventions are offered to companies which have contract relations with the American Telephone and Telegraph Company. The offer is made through the Laboratories.

244 Inventions covered by foreign patents and made by

employees of American Telephone and Telegraph Company were made available to International Western Electric. Prior to the organization of the Laboratories that was handled through the Western Electric and since the organization of the Laboratories up until the contract with the International that work was done by the Laboratories.

245 We have records of patents we have purchased.

I have heard of the term "by-products" as it is used in the Bell System.

With reference to patents owned by the American Telephone and Telegraph Company covering inventions relating to by-products, there has been litigation. Suit was brought by Western Electric and E. R. P. I. against infringers of talking motion picture apparatus and some of our patents were involved in that litigation. Among those patents involved in that litigation there were some owned by the American
246 Telephone and Telegraph Company as distinguished from Western Electric. The suit, however, referred to was against the Pacent Electric Company. I think the suit is on appeal at present in this circuit in the Southern District of New York. I could give you the information in a little while as to the patents involved in that suit. I can only recall one now, namely, the Loewenstein patent on the negative grid.

247 This company has granted certain rights to the General Electric Company and radio companies associated with it and there have been suits brought by those companies under patents owned by the American Telephone and Telegraph Company. Those patents relate to broadcast receiving sets or to vacuum tubes.

We have complete records of contracts granting licenses under patents of the American Telephone and Telegraph Company. There are agreements between the American Telephone and Telegraph Company and Western Electric concerning patents, the invention of which are embodied in products sold by E. R. P. I., but I think the contracts are in

248 the form of letters principally. I think there are no contracts directly with E. R. P. I. as distinguished from Western Electric, but there may be some with both.

I do not recall that we have ever handled any patent applications on inventions made by an employee of Bell Telephone Laboratories. We have received assignments of patents on applications filed on behalf of employees of the Laboratories.

Those inventions relating to what we call telephones have been assigned to the American Telephone and Telegraph Company, the theory being that in any event, whether they went to Western direct or to the Telephone Company direct, they would ultimately rest in the American Telephone and Telegraph Company.

249 I do some work in connection with the purchase of patents by Western Electric. Since we are interested in telephonic appliances, having exclusive right to use those inventions, we are naturally consulted when patents are purchased.

The records of our department do not show whether the inventions embodying patents come from employees of the American Telephone and Telegraph Company, from the Laboratories or from subsidiaries in the Bell System, but that could be obtained by checking off the names of the inventors and finding out in what department they were employed at the time.

GEORGE E. FOLK, recalled:

799 *Direct Examination by Mr. Adcock.*

With respect to induction coils, receivers and transmitters, there are no infringement suits pending and none have been brought against American Telephone and Telegraph Company or any of its subsidiaries or associated companies since my connections with the company.

Cross Examination by Mr. Blackman.

I have found, however, that there have been some liti-
800 gation or controversies concerning those matters. There
was litigation with Frederick R. Parker of Chicago. On
May 20, 1913, a patent was issued to Craft & Reynolds, No.
1,262,082, and assigned to American Telephone and Tele-
graph Company. The patent related to the present standard
telephone receiver having a permanent steel magnet with soft
iron pole pieces. After the patent was issued and after the
device had been standardized and placed in extensive use,
Parker provoked an interference suit in the Patent Office with
a patent of his which was then pending and attempted to get
the claims of the patent for himself. The case was finally
disposed of by the Court of Appeals of the District of
Columbia in favor of the patentees. This matter might have
been of very serious consequences by reason of the enormous
number of these things in use, being practically universal in
the Bell System. In some cases there have been threats of
infringement suits where we have settled without the neces-
sity of suits being brought.

801 The litigation referred to was terminated in 1916 or
1917. My department has a record of the patents owned
or controlled by American Telephone and Telegraph Com-
pany or Western Electric, but that list does not distinguish
between those which originate in the System and those which
are purchased from outsiders. We do have a separate list of
those patents under which we are licensed from others.

About 1910 a very systematic and determined effort was
undertaken to acquire certain rights in outstanding patents
relating to automatic telephony, in order that our Research
and Development Department and Engineering Departments
might be free to develop whatever they determined should
be desirable or necessary. As a first step in that direction
802 the Lorimer-Lundquist patents were purchased in 1911
for the sum of $650,000. These patents related to trunk
selection and group selection in automatic telephone exchange

systems, which is a feature of all telephone panel type apparatus inventions used in all multi office automatic exchanges, especially in large cities.

Next, in the following year, and again a few years later, the patents of the North Electric Company were purchased in some cases and in other cases, licenses acquired, the price paid being $725,000. This was followed in the same year, and also in the same year 1916 by purchases from the Stromberg-Carlson Telephone Manufacturing Company, the price paid to that company was $250,000. The purchase was of patents in the one case and licenses in the other. I might say that whenever licenses were acquired, there was always a cross license arrangement, in which we paid, in addition to giving licenses under our patents in certain fields and the purchase price mentioned. The Stromberg-Carlson price was $250,000.

About the year 1913 the patents of the American Automatic Company were purchased for the sum of $75,000, which related to signaling over two wire circuits. From 1916 to 1919, inclusive, at various times in each year, licenses were exchanged with the Automatic Electric Company and Automatic Electric was paid in money the sum of $2,000,000 in addition.

Licenses were exchanged with the Kellogg Switchboard & Supply Company and in addition $250,000 was paid.

When I say exchange of licenses, licenses relating to automatic telephone, I mean licenses were given and received.

In 1930 licenses were acquired by American Telephone and Telegraph Company and Western under the patents of H. N. Friendly, some relating to automatic telephony and among other things relative to straightforward trunking, and $700,000 was paid for them.

804 In addition to purchasing patents outright, we have acquired licenses under approximately 100 groups of patents covering almost every feature of telephony. Each group I mentioned related to the automatic switch field but not exclusively to that field. The policy of American Telephone and Telegraph Company has been to supplement the activities of its own D. & R. Department by the purchase of any

patents that might be useful in such development work or that might interfere with such development work, which accounts for the extensive purchases from time to time. Before apparatus is standardized and before patent release is given, careful search is made to ascertain whether any patents which would interfere with such use, exist, and if any are found, an attempt is made to acquire such rights as would be necessary. In some cases the attempt is made in order that the development work in its initial stages may be 805 unhampered by the necessity of having the men's attention directed to those patents.

Almost invariably when we standardize a new type of apparatus, some claim of infringement is made by somebody. Frequently the claims are without merit but sometimes we find they are meritorious and we endeavor to clear the situation by acquiring the rights, avoiding litigation and controversy. Of course we have the risks that everybody has of some application for patent being pending in the Patent Office, of which we would know nothing until the patent is issued. But in spite of all our precautions, infringement suits have been brought.

Suit was brought against this company along about 1919 or 1920 by General Owen Squire under his so called "Wired Wireless Patents", claiming that our new development 806 in carrier current telephony and telegraphy infringed those patents. In that litigation we were successful. There was a suit brought by Peter Cooper Hewitt when American Telephone and Telegraph Company adopted the three element vacuum tube as a repeater, Hewitt having patents relating to mercury vapor vacuum tubes which had claims in them reading on the three-element vacuum tube. Suit was brought and we were successful in that.

Frederick R. Parker, who was mentioned before, brought suit in 1915 against the Chicago Company for infringement of a patent relating to a signal lamp in the main circuit. We settled this matter by obtaining licenses for the Bell System under the patent before suit actually came to trial.

At present we have two pending suits of considerable consequence brought by the Kellogg Switchboard & Supply Company against American Telephone and Telegraph Company and Michigan Bell Telephone Company at Detroit 807 and a similar suit brought against American Telephone and Telegraph Company and New York Telephone Company at Buffalo, in which there are eleven patents involved, Kellogg Company claiming infringement by reason of straight forward trunking employed in every exchange throughout the System and especially in large cities. There are two suits against the New York Company and two against the Michigan Company.

In the other suit involved is a claim of infringement of patents by reason of the use of our No. 11 switchboard, which has various features claimed by the Kellogg Company as covered by its patents, such things as automatic disconnect. The No. 11 switchboard is in very extensive use throughout the country. The matter is one of serious consequence if the claim of the Kellogg Company should be found to be correct. We do not believe that we infringe, and we are defending those suits. Testimony is being taken on such a scale that it seems it is going to be almost of monumental size so far as the record is concerned.

808 Before suit was brought, the Kellogg Company offered licenses to American Telephone and Telegraph Company and the offer as finally made was that American Telephone and Telegraph Company pay $5,000,000 in cash to the Kellogg Company for the non-exclusive license and in addition, give non exclusive licenses to the Kellogg Company under American Telephone and Telegraph Company patents, and that American Telephone and Telegraph Company should guarantee to the Kellogg Company $100,000,000 in business to be given over a period of 20 years at the rate of $5,000,000 of business each year, the business to be on a cost plus 20 per cent basis and related to telephones and switchboards. A penalty of $1,000,000 a year was to be paid for years in which the American Telephone and Telegraph Company failed to give that amount of business.

While obviously this is an extravagant claim on the part of the Kellogg Company, it does indicate what they consider the seriousness of the situation, and the nature of the undertakings we have to make to defend our associate companies and save them harmless from the use of apparatus when used by these other companies.

809 The development of the field of radio was responsible for my being with the company, and I have been rather closely connected with the development of the patent situation in the radio field. That familiarity extends to the patents of the General Electric, Westinghouse and other companies.

There is no clear line of demarcation between radio and certain modern wire development. The three element vacuum tube has frequently been referred to as the heart of radio. It can with equal truth be referred to as the heart of carrier current, wired telephony and telegraphy. As in radio, this tube is used for amplifying currents, generating frequencies, for modulating frequencies, for splitting up frequencies, for detection or demodulation.

The same is true with reference to carrier currents, wire telephony and telegraphy. Practically the same type of apparatus is used. Certainly, so far as the patents are concerned, there is no distinction whether it is a wired or wireless device.

810 A number of the developments in wire telephony and telegraphy have been carried over into the wireless art. Our wave filter patents which were gotten up primarily for wire work are extensively used in the wireless art, which is true of the attenuation equalizers having their use in the wireless art. Any one working in the one art is working in the other art, but to all intents and purposes neglect to either art is, to a certain extent, neglect of the other art. That would apply equally to the patents of the American Telephone and Telegraph Company, the General Electric and Westinghouse.

854 GEORGE E. FOLK, recalled:

Re-cross Examination by Mr. Blackman.

In my former testimony I had overlooked the fact in stating that we had license agreements with the North Company, that there was still a third agreement in 1923 by which the parties exchanged licenses with each other.

There was another suit pending against American Telephone and Telegraph Company and the Michigan Bell Telephone Company. This suit was brought by the Standard Register Company under seven of its patents and relates to the form feed attachments for teletypewriters. Those machines are used very extensively both by American Telephone and Telegraph Company and its associated companies, and this suit against the Michigan Company is in the nature of a test suit.

There is also a suit brought by the same Standard Register Company against American Telephone and Telegraph Company in New Jersey, we being joined in that suit as contributory infringer, the suit having been brought against the paper manufacturer that supplies the paper used in those machines. I think the suit is pending in New Jersey.

I have also within the last few minutes and just before 855 coming down here, been served with a summons in another suit brought by Thomas B. Dixon against American Telephone and Telegraph Company, Western Electric and E. R. P. I. on patent No. 1,197,470 in the Southern District of New York. We were threatened with this suit but our investigation led us to the conclusion that we did not infringe. I have not examined carefully the bill of complaint, but it is substantially along the lines of the contention made by the patentee in his letters to us, he claiming that a certain patent owned by this company relating to the so-called push-pull amplifier circuit, was covered by the patent on which he has brought suit. That circuit is extensively used both in the wire and wireless art, and is another illustration of the fact that there is no real distinction between the wire and wireless art.

The Dixon patent itself relates to telegraph systems and application.

We also consider the Kellogg suits as test suits.

856 In the exchange of licenses with North Electric, we acquired certain additional rights in Clements and McBerty patents which are important to us as they cover certain features of the panel switch and of the so called all relay system of automatic and also some features of all metallic signalling in automatic telephone systems.

Re direct Examination by Mr. Goldstein.

The suit involving teletypewriter inventions mentioned by me involved patents purchased at the time when the teletypewriter was bought and also patents that the Western Electric or American Telephone and Telegraph Company owned prior to that time. Before the purchase of the Teletype Corporation there had been an exchange of licenses with the Morkrum Company, its predecessor. Teletype machines purchased from the Teletype Corporation embodied inventions both of American Telephone and Telegraph Company and Western Electric and the Morkrum Company, the particular form feed mechanism involved being a development of the latter company. Since the purchase of the Teletype Company in conjunction with Teletype Corporation we have developed still other forms of feed and all those forms of feed are involved in this controversy. So it is difficult to say just whose patents are involved.

When I speak of patents owned by American Telephone and Telegraph Company or by the Western Electric, I mean those patents to which American Telephone and Telegraph Company or the Western Electric have legal title, as the case may be.

859 When we had the license agreement with reference to the exchange of patents with the North Electric, it was directly through the Western Electric, though of course

the American Telephone and Telegraph Company was required to assent to that agreement by reason of its exclusive licenses under patents involved.

The North Electric contract involved the Western Electric Company patents owned by the Western Electric Company.

The expense in the 1915 litigation with Frederick R. Parker was not very considerable because the matter never came to the point of taking testimony. We made a motion to dismiss. The patents involved in that suit were owned by American Telephone and Telegraph Company. Those patents which were issued to Kraft & Reynolds related to a receiver in which the permanent steel magnet had soft iron pole piece.

I am not sure whether our records distinguish between pat-
ents owned by American Telephone and Telegraph Com-
861 pany and those owned by the Western Electric. I do
not keep those records myself. To a very limited extent
American Telephone and Telegraph Company acquires inven-
tions from employees of the associated companies. That is
almost a negligible matter. In addition certain inventions
relating to telephony are developed by the employees of
American Telephone and Telegraph Company. The title to
those patents goes direct to American Telephone and Tele-
graph Company.

In certain cases patents relating to telephones are developed by employees of Western Electric. The title first goes to Western Electric and later the patents are assigned to American Telephone and Telegraph Company.

A third group of patents are those developed by the
862 Bell Laboratories. In that case those patents are assigned
directly to the American Telephone and Telegraph Com-
pany. Patents relating to telephone as defined by the 1882
agreement between American Telephone and Telegraph Com-
pany and Western Electric, are assigned directly to American
Telephone and Telegraph Company.

All inventions of employees of American Telephone and
Telegraph Company are in the first place asigned to Ameri-
can Telephone and Telegraph Company. If they relate
863 to telephones under the 1882 contract, the title remains

in American Telephone and Telegraph Company. If they relate to telephonic appliances under the 1882 agreement, they are offered to the Western Electric and purchased by it.

In the D. & R. Department there are inventions of both kinds.

Defendants' Deposition Exhibit 189, is entitled "Patents and patent applications costing $1,000 or more purchased by Western Electric Company, Inc., 1909 to 1930," received in evidence.

864 The statements in that exhibit are true.

Defendants' Deposition Exhibit 190, entitled "Licenses Costing $1,000 or more paid by Western Electric Co., Inc., to others than American Telephone and Telegraph Company 1909 to 1930," is correct.

I could furnish a statement showing patents and licenses purchased by American Telephone and Telegraph Company from others outside the Bell System. Also, a statement by American Telephone and Telegraph Company to the Western Electric.

Where American Telephone and Telegraph Company acquired licenses from the companies I named, such as the Automatic Electric and so on, we also gave licenses; that is, there was an exchange of licenses and in addition a certain sum of money paid by American Telephone and Telegraph Company as further compensation.

The cross license agreements between these other companies, American Telephone and Telegraph Company and the Western Electric, were all substantially the same.

867 I am generally familiar with the radio patents and was so familiar in 1920. I participated in the matters involved in the giving of license contracts covering the radio patents between American Telephone and Telegraph Company and the General Electric, dated on or about July 1, 1920, and 868 also the subsequent extension of such license contract.

The contract of July 1, 1920, covered exchanges of licenses. That contract is in existence as it was modified on July 1, 1925. The modification related to some misunderstanding regarding certain features of the previous contract and to clear up that misunderstanding it was redrafted. The changes were not substantial.

The contract of July 1, 1920, involved the exchange of licenses under two groups of patents, (1) those that had been developed and were then owned by American Telephone and Telegraph Company; (2) those to be developed both through the Research Department of American Telephone and Telegraph Company and the Research Department of General Electric.

I am familiar with the Federal Trade Commission investigation on the radio industry pursuant to House Resolution 548, 67th Congress, and the report made entitled "Federal Trade Commission, Radio Industry," which has been marked Defendants' Deposition Exhibit 191. On page 103 of this report appears a list of patents under the heading "American Telephone and Telegraph Company (including Western Electric Company) patents resulting from its own development work," and on page 105 appears another list entitled "Patents under which licenses exclusive, except personal rights retained by the grantor, were acquired from DeForest Radio Telegraph & Telephone Company." On page 107
871 is another list entitled "Miscellaneous patents acquired from time to time from patentees," and on the same page there is another list entitled "Patents under which licenses were acquired from Atlantic Communication Company."

Those lists were probably furnished by my department or under my direction and I have every reason to believe the facts stated are correct.

872 On page 100 of that report appears the title "General Electric Company, list of United States patents," and on page 101 appears the title "Applications for patents," and I have every reason to believe that the facts stated under the headings mentioned are correct.

At pages 110 and 111 are similar titles relating to Westinghouse Electric Manufacturing Company, and I believe the statements made under those headings are correct.

873 I will check the introductory statements at chapters 1 and 2 and the exhibits appearing in the said report to see

whether I agree with the statements made in the parts mentioned. The specific contracts referred to appear at pages 130 to 139, both inclusive, pp. 141, 150, 151, 197.

My recollection is that American Telephone and Tele-
876 graph Company has furnished to the General Electric a list of patents at the time of making the July 1, 1920, contract and has not furnished any since.

It is barely possible that we furnish General Electric Company with complete list of all our patents. I will check that up and if the list furnished was more extensive than the one in the Federal Trade Commission report I will furnish it.

Further Re-direct by Mr. Adcock.

877 I have only a general familiarity with the patents involved in the Kellogg Switchboard suits. Those patents are directed generally to straightforward trunking and No. 11 switchboard. I was generally familiar with the negotiations carried on with reference to the Kellogg patents. I know of no counter-offer that American Telephone and Telegraph Company made to the Kellogg Company. I do not recall what is claimed in the patents.

I understand straightforward trunking, in a general
879 way, to be the passing of a call over an interoffice trunk. I haven't any detailed knowledge, and is supposed to save time in completing a call. Our system of straightforward trunking is recognized as an important feature of the telephone system. It was first used by the Bell System many years ago,—I don't recall the exact time. I should say it was far back of 1921 or 1922. I haven't looked into the feature as to when the Kellogg Company claims its inventions were made with reference to straightforward trunking. Whatever the claim may be, however, as to that, my recollection is that we were able to show use of straightforward trunking long prior to that time. We have given most careful consideration to those patents, the very patents on which suit was brought, and have reached the conclusion that we did not infringe any

valid claims. It sounds as if you were trying to get some 880 information which might be used against us in the Kellogg suit, but their claims are quite positive and very broad and to the effect that our use of straightforward trunking infringes their patents, and that we deny.

With reference to the No. 11 switchboard, there are certain features of this that the Kellogg Company claim infringe their patents. There are several of those features, such as the flashing recall and automatic disconnect and probably three or four other features embodied in that switchboard which they claim are covered by their patents.

No. 11 is a manual switchboard. It is my recollection that that patent relates to non-interfering answering. All of these are important features of that switchboard. I don't know when they first commenced to use those features, but our use of them and the relations of the patents was carefully investigated before the suit was brought. We were convinced that we had a good defense to them.

974 **GEORGE E. FOLK**, resumed:

Re-direct Examination by Mr. Goldstein.

I have reviewed those portions of the Federal Trade Commission's report entitled, "Radio Industry," Defendants' Exhibit 191, to which my attention was called. I refer to pages 1 to 50, inclusive, which include the letter of submittal, and chapters 1 and 2, as well as the exhibits in the appendix referred to in said first fifty pages. While there are some inaccuracies, those portions of the report above referred to are remarkably accurate in their statements of fact. There are a few instances of slight inaccuracies to which I wish to call attention.

On pages 13, 26 and 49 are statements to the effect that "the DeForest Company maintains a personal non-transferable right to manufacture and sell under these patents." This might well give the impression that the rights retained related to all fields of use, while such is not the case. For example, the DeForest Company retains no rights with respect to public service, wire or wireless telephony or telegraphy, and in certain instances reserves exclusive rights in a limited field.

On page 3 appears the statement that "the Radio Cor-
975 poration has entered into agreements with the various
companies which own or control practically all patents
covering radio devices considered of importance to the art."
This statement I believe is too sweeping. The same is also
true with reference to a similar statement at the top of page
39 of the report.

From a statement on page 27, it might be inferred that Dr.
Langmuir was responsible for the development of the high
vacuum tube, though reference is made there and in other
places to the fact that his application for patent was in inter-
ference with a similar application of Arnold, owned by the
Western Electric Company. Our contention was that Arnold
was prior to Langmuir in the development of such improved
vacuum tube, and this contention was upheld by a rather
recent decision of the Supreme Court of the United States.
On page 27 is the statement: "There are patents covering
the character of filaments used in vacuum tubes. There are
two types of filament now generally used, one known as
Wehnelt type and the other tungsten. American Telephone
and Telegraph Company uses the Wehnelt type, to which it
owns the patents." While the Wehnelt type of filament is
the one used in its amplifying circuits, both wire and wireless,
American Telephone and Telegraph Company's use was not
confined to that particular type of filament, since it used
976 then and now uses tungsten filament in its high power
tubes, the uses of which are of importance.

On page 28 is a reference to the Armstrong patent relating to the feed-back circuit. The invention relating to the feed-back circuit for the generation of oscillations was then in controversy between the Armstrong application and a DeForest patent, the latter being controlled by this company. Since the report was written there has been considerable litigation respecting this matter, the outcome of which was favorable to DeForest.

On page 38 occurs the statement, "The Western Electric Company is practically the only concern which has the right under the patent situation and is manufacturing and selling transmitting apparatus for commercial broadcasting purposes." And again, referring to American Telephone and Telegraph Company, the statement is made, "It secured the exclusive right to manufacture and sell broadcasting transmitting apparatus. * * *" This was the Commission's conclusion as to the scope of the licenses, which conclusion was not acquiesced in by the other parties to the cross license agreements. There was some doubt and difference of opinion between the various parties regarding this matter, and it was one of the things modified in the amended agreement of July 1, 1926, in which the several parties to the agree-
977 ment were each given the right to manufacture and sell broadcasting transmitting apparatus.

On page 39, referring to the Radio Corporation of America, it is stated, "It also has acquired the patent rights by license agreements to the patents owned or controlled by * * * American Telephone and Telegraph Company * * *." Of course, this statement is too broad if taken literally, since American Telephone and Telegraph Company retained exclusive rights, even, in the fields, for example, of public service, wire and wireless telephony.

Defendants' Exhibit 191 for identification, subject to the foregoing statement, correctly states the facts therein recited, so far as I know.

Defendants' Exhibit 191 offered in evidence, to which plaintiff objected for irrelevancy, immateriality and incompetency.

Defendants' Exhibit 192, consisting of pages 2 to 59, both inclusive, bearing at the top of each even numbered page "Appendix to Appellant's Brief" and on page 59 bearing the legend "American Telephone and Telegraph Company Interprets 4½% Modification" and purporting to contain copies of various contracts between Southwestern Telegraph & Telephone Company, American Bell Telephone Company or

American Telephone and Telegraph Company and Southwestern Telephone & Telegraph Company and Resolution of Board of Directors Southwestern Telephone & Telegraph Company relating to such contract, and copies of various letters and memoranda relating to same, offered in evidence.

Plaintiff admitted the authenticity of the various papers referred to, but objects to them as being incompetent, irrelevant and immaterial.

70 GEORGE A. CAMPBELL, witness for defendants.

Direct Examination by Mr. Haight.

71 I reside at Montclair, New Jersey; I am telephone engineer for American Telephone and Telegraph Company and have been since 1897; I studied at Massachusetts Institute of Technology and at Goettingen, Germany, Vienna and Paris.

I first came into the Mechanical Department of American Telephone and Telegraph Company at Boston and was transferred with that when it was consolidated with the Engineering Department in Boston and came to New York when that department was moved there in 1907. About 1919 I went with the Development and Research Department of
72 American Telephone and Telegraph Company when it
was organized.

In the Mechanical Department at Boston there were investigations of new and difficult problems, but I do not think it was then called research work. There was some similar work done by Western Electric in New York and Chicago which continued to about 1907, when we came to New York, and it was then the announced plan that all those various
73 research departments were to be consolidated, and so far
as experimental work was concerned in the Laboratories at the Western Electric in New York, they were consolidated. The research activities remained with the Western Electric until the Bell Telephone Laboratories was formed January 1, 1925.

Prior to 1907 I worked upon experimental problems in connection with transmission; also mathematical problems and transmision on lines and transmission through electric circuits; I did some work prior to 1907 upon new equipment in the telephone field, such as repeating coils, induction coils, operators' sets, loading coils and a little telegraph work also; transmission over wires, and loading coils on cables, and capacity of cables, and cross talk on cables.

I had something to do with changing the circuit for 74 the operators' sets in the switchboards.

After 1907 at New York I had practically no experimental work. For a little while there was one man kept on experimental work, but that did not last very long. Since then my work has been mathematical.

When I have spoken of experimental work, I meant laboratory work.

Ever since 1907, they have had people doing work in the field on telephone plant and in the central office investigating the behavior of the actual plant. All that might have to do with operation, but more particularly it had to do with the actual behavior of the plant, tests on the plant, tests which had some relation to the operating but were not operation in themselves. After 1907 the department that did that 75 work was the Engineering Department of the American Telephone and Telegraph Company.

The Western Electric at that time was doing some research and development and constantly doing more and more. The American Telephone and Telegraph Company has always done a great deal of forward-looking work. The research work done by Western Electric at that time related to telephone repeaters, loading, cable construction, switchboards and every phase of the plant was under forward-looking investigation. From 1907 to 1918 the Engineering Department, American Telephone and Telegraph Company, did work which would now be classified as research and studying 76 the needs of the business at that time, and when the needs were worked out, a good many of the problems were solved by means of inventions by the men in the Engineering

Department. Other problems were taken up with the Western Electric engineers and other assistance in experimental work was obtained.

The work of developing new apparatus or improving old apparatus during that period was done in the Western Electric Laboratories by its Engineering Department.

My present title is Research Engineer, in the Development & Research, American Telephone and Telegraph Company, and I have been such since that department was organized.

77 The Development & Research Department, American Telephone and Telegraph Company, has to do with the study of the conditions in the communication art, particularly problems that are presented by Bell Telephone System, to see how well those problems are met from a development point of view and what further developments are required.

I don't know of any problems of any magnitude other than those that are presented specifically by the Bell operating companies. I am not familiar with the work on problems that result in by products, but that department would have something to do with those where they relate to the telephone art.

Since the organization of Development and Research, American Telephone and Telegraph Company, my duties have been making mathematical investigations along lines requested by my colleagues and developing mathematical solutions along similar lines. Those problems have had a little to do with the subject of radio, but not directly with
78 television; none with talking pictures or aids to hearing.

Problems coming to Development & Research, American Telephone and Telegraph Company, resulted in new apparatus such as wave filters. I cannot think of anything more brand new, but I do know that engineers in Development & Research have applied for and been granted a great many patents on improvements to apparatus, for instance, in the field of subscribers' equipment, central office equip-
79 ment, machine switching, radio relating to interference prevention, and I understand that broadcasting systems

have been investigated, but I am not familiar with that sub~~ject; also television~~ but am not familiar with that. Mr. Parker, my associate's name, occurs to me in that connection, but I don't know how far he has gone into it.

There is a distinction between telephotography and television in that telephotography is reproducing a picture at a distance, while television is seeing the movement of a person or object at a dstance.

I understand my department has had to do with telephotography and secret telegraph systems during the war, but I don't know of any work on that since.

80 I understand my department has had to do with the development of apparatus for sending and receiving pictures by telegraphy. The service of the distribution of time by telephone is given so that I assume that the department of Development and Research has had something to do with it. My department also has to do with investigations of arrangements for secretly transmitting and receiving handwriting and pictures, which is a part of telephotography.

I assume that my department has had to do with the development of amplifiers and testing means for use in broadcasting systems, in connection with WEAF.

WEAF was the radio station which was owned and operated by American Telephone and Telegraph Company.

I don't know whether my department had anything to do with the development and application of loud speaking apparatus, public address systems, printing telegraphs. I
81 have always regarded it as primarily a Western Electric
development.

Prior to the organization of Development & Research, American Telephone and Telegraph Company, the Engineering Department of American Telephone and Telegraph Company did the same kind of work. The Development & Research Department, American Telephone and Telegraph Company, kept posted on the development of the radio art. I do not know how much farther it went.

I have no knowledge as to whether any problems have come to my department, the Department of Development & Research, American Telephone and Telegraph Company, from the Bell Telephone Laboratories.

82 Mr. Colpitts is in general charge of the Development & Research Department, American Telephone and Telegraph Company. Dr. Jewett, however, is the vice-president in charge of the department, Mr. Colpitts reporting to him. I don't know what brought about the organization of the Department of Development & Research, American Telephone and Telegraph Company. So far as I know, there was not any great change in the character of the work of the Engineering Department of the American Telephone and Telegraph Company after the organization of Development & Research. The department, however, was divided, some of the men going into the Operation and Engineering Department and some into Development & Research. The line of demarcation between those two departments is that the

83 men who were more directly concerned with engineering work in the associated companies, went into the Operation & Engineering Department. Those who had more to do with the development of new apparatus, new circuits and new equipment and the more fundamental work connected therewith, went into Development & Research Department. Prior to the organization of Development & Research Department the Engineering Department did that work and did so as far back as I knew anything about the company, and by that I refer to the Mechanical Department originally.

The Development & Research Department principally investigates requirements of the associated companies and formulates those requirements and follows the development work. My work is mathematical. Of the work connected

84 with the development of new apparatus I have only hearsay knowledge. My mathematical work at various times related to a number of circuits, subscribers' loops, central office circuits, toll lines, long distance lines and to radio. In radio I devised a selecting circuit known as a wave filter, widely used in radio, and took out patents on that which went to American Telephone and Telegraph Company. I

took out patents also on antennae arrays now used in radio. I began work on antennae arrays during the war. That work continued for a couple of years during the war. Some of my patents issued in 1921 or 1922.

85 My work on filters employed in radio commenced probably in 1908 or 1909 and may have continued for five years. The filters may have been used in 1919 and 1920 and ever since, the Western Electric manufacturing them. It also manufactured loading coils which I had a part in designing in 1900 and later, being put in commercial use in 1901 or 1902.

Machine switching system embodied a great many inventions developed by my associates in Development & Research, American Telephone and Telegraph Company, or in the Engineering Department prior to that which was manufactured by Western Electric. I do not remember any more. Machine switching inventions were made as early as 1910. I don't know about later developments. I have not been familiar with that work since 1923. I am not at all familiar with patents taken out by Development & Research, American Telephone and Telegraph Company, since 1923. Roughly, there were 100 people in Development & Research Department when it was organized. There are about 500 now. I assume between that time and now it has been somewhat larger, probably 600. That is an outside figure.

87 Development & Research Department, American Telephone and Telegraph Company, passes on work to the Bell Telephone Laboratories, Inc. The Research Engineers Division of Department Development & Research does not pass work on to the Bell Laboratories.

88 In Development & Research, American Telephone and Telegraph Company, there are divisions of Apparatus Development, Plant Development, Interference Development and the general departments. Radio work comes under Transmission Development Division; television comes under apparatus development, but I have had no contact with it. I know of no work on any such things as movietones.

The divisions of apparatus development and transmission development pass work on to the Laboratories, but I have nothing to do with that part of the work.

As to the distinction between the work done by the Bell Laboratories, Inc., and that done by Development & Research, American Telephone and Telegraph Company, I
89 know that the latter is in touch with the actual plant and
operation of the Bell System and that they are also in touch with the laboratories and that they do not do the laboratory experimental work which is done by the Bell Laboratories. They do not compete in such work.

The Department of Development & Research, American Telephone and Telegraph Company, has worked on new types of cable from time to time. There has been cable development ever since I came with the company and the departments I have been with have always been connected with that work. I don't remember any inventions on that subject, as I do not see the list of inventions or applications that are made except very rarely. I know that there have been improvements, whether they have been inventions or not, in the matter of twist in cable, varying the twist so that the adjacent layers do not have the same twist, and varying the lay of different layers has been proposed and adopted.
90 I do not know whether the Department of Develop-
ment & Research has had anything to do with the development of pulp insulated cable, but it has had to do with the development of carrier systems over a period of probably 15 years, to the present time; also with cable loading coils for 30 years, and with iron dust cores in loading coils, which work I associate with the Laboratories in my own mind. Development & Research Department, American Telephone and Telegraph Company, has certainly followed that development and I imagine they have contributed something but I cannot answer as of my own knowledge.

Development & Research Department had a great deal to do with the development of the hand set, which goes
91 back 25 years, and that work was finally embodied in
commercial apparatus for general use roughly five years ago. My own contact with that work, however, stopped ten or more years ago.

A development of that kind is passed upon by Development & Research Department, American Telephone and Telegraph Company, before it is adopted as the standard in the Bell System.

I have heard of the difficulties which the hand set presented which seemed almost insuperable, but I never went into details and I have not had any connection with it myself since 1910 or 1915. I was in on conferences but made no studies of my own.

It is safe to say that department had something to do with new toll switchboards, but I don't know of my own knowledge.

92 Transmitters, receivers and induction coils have been the subject of study by the departments with which I have been connected ever since I came with the company. I know it has been going on. The same is true of manual central office equipment. When I first came with the company the common battery was being given its first tryout. That was one of the prominent subjects of conversation and has remained so ever since. I don't know the details of that work, nor the responsibility of Development & Research Department for any improvements.

Before 1907 development of machine switching was under way experimentally in the department. That experimental work of the department as a laboratory problem I suppose ceased when it came to New York but I know that the Development & Research Department has been in as a critic and initiator of the work since.

93 L. F. Morehouse is the head of the Division of Apparatus Development Division. F. L. Rhodes is the head of Plant Development Division. H. S. Warren is the head of Interference Development Division. O. B. Blackwell is head of Transmission Development Division, and H. S. Shepard is head of General Services of the Department. Mr. Carty at the time I was familiar with making of apparatus standard in the Department of Development & Research, finally passed upon the making of such equipment standard,

GEORGE A. CAMPBELL, recalled.

133 *Cross Examination by Mr. Blackman*

The Development & Research work of the American Telephone and Telegraph Company is highly specialized. The ultimate groups cover small fields out of the total. The total number of people in my unit including myself is five. I do not originate any investigation as to changes in apparatus or systems. My work consists of mathematical analyses and has for 20 years. The character of my work in the last 20 years has not changed except that it has become more specialized and more mathematical all the time. Usually 134 I have no contact with matters considered in the Development & Research Department and that has been true for 20 years. I was more familiar 10 or 15 years ago with the work that went on in the Engineering Department and Mechanical Department that preceded the Development & Research Department, because the departments were much smaller then. When I came into the Mechanical Department the men were all on one floor and just 30 or 40 men and we naturally used to see more of each other. There was then less specializing and no organization in the present sense. Soon after I came I began doing a large part of all the mathematical work.

Each organization now has its own mathematicians. They are not always classified as mathematicians but a great deal of mathematical work is done in the several divisions.

Special work is referred to me. Patents were issued 135 to me between 1903 and 1928. The more important inventions embodied in patents were made over ten years ago. In prior years, I had, in some cases, direct responsibility for meeting commercial problems and was more closely in contact with the work of others on such problems, and for that reason my patents were more numerous then.

About 22 years ago I was one of the persons delegated to look into the Fessenden Wireless System. An important

part of that system was the selective circuit which he was using for selecting the particular station which he wished to receive and differentiate it while excluding stations on nearby frequencies. That was an important part of the system. I decided from a mathematical standpoint that it
136 could not accomplish all he claimed for it. That being a very important part of the whole wireless project, I continued the investigation for a considerable period of time, which investigation eventuated in the invention of the electric wave filter which led to a patent issued to me. The Professor Fessenden referred to was claiming then that radio would entirely supersede wire transmission in telephony.

Redirect Examination by Mr. Haight.

It has not done so.

The Department of Development & Research has an organization chart which shows the grouping of the men and that is the easiest source of information to determine that the work is highly specialized, but that is not the only source as I have contact with a considerable number of men and know personally the fields in which they are working and my mathematical work takes me to each of the divisions of the department to a limited extent and in all of those divisions there are mathematical problems arising.
137 In that way I have to do with each of those divisions.

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236 **JOHN EDWARD OTTERSON**, for defendants.

Direct Examination by Mr. Haight.

Reside New Haven, Conn.; am president of E. R. P. I.; have been for about four years; Mr. Bloom was the first president for about a year when it was organized in January, 1927. At the same time he was president of Western Electric. I was E. R. P. I.'s general manager before I became president. I was general commercial manager of Western

Electric for about 3 years. I was in the selling depart-
337 ment and had a number of different titles during the
3 years I was with the Western Electric Company.

Prior to coming with Western Electric I was president of Winchester Repeating Arms Company for about 9 years and was president of it about 5 years. Before that I was an officer of the United States Navy which takes me back to my training at Annapolis.

I was familiar with the organization of E. R. P. I. Its
assets came from Western Electric, the latter company
338 taking all the stock of E. R. P. I. Western Electric
owns all its stock now.

The business of E. R. P. I. is the exploitation of that portion of Western Electric's business that lies outside of the telephone field, that is, outside of the business done with the associated companies, the Graybar Company, Northern Electric Company and International Standard Electric Company.

E. R. P. I. does not itself manufacture anything, its ac-
tivities being confined to selling and licensing. It sells ap-
paratus for the recording and reproduction of sound, com-
monly known as talking picture recording apparatus, talking
picture reproducing apparatus; also sells talking picture
339 testing apparatus; it sells also reproducing apparatus
not in synchronization with pictures, so called non syn-
340 cronous reproducing apparatus. It sells hearing aids,
sells submarine cable terminal apparatus, public address
systems, measuring instruments in connection with acoustic
testing and acoustic measuring instruments. It has to do
with phonograph recording apparatus in the sound record-
ing.

E. R. P. I. licenses others to make electric phonographs
for theatres. We use the term non-cynchronous reproducing
equipment to designate what is equivalent to a large electric
phonograph that we use in the theatres. It has to do also
with electrical reproducing equipment for broadcasting
341 stations; with amplifiers for submarine cables, which

would come under the classification of terminal apparatus for submarine cables; testing apparatus for submarine cables also comes in the classification of terminal apparatus for such cable.

We have done practically nothing with picture transmission apparatus although we have the right to deal in it.

Contract between Western Electric and E. R. P. I. of December 30, 1926, identified as Defendants' Deposition Exhibit I, which was offered in evidence, and to which plaintiff objected on ground of irrelevancy and immateriality.

We lease phonograph recording apparatus to our licensees.

Respecting talking motion picture equipment of the various kinds, we lease the recording equipment and the testing equipment to our licensees and the reproducing appa-
343 ratus we lease to exhibitors who are not our licensees except as their leasing of equipment conveys license to them. Public address apparatus for theatres is leased. The electric phonograph for theatres called non synchronous reproducing equipment, is leased to theatres. In some instances we may have sold these. The general practice is to lease them.

We lease also electrical phonographs for broadcasting stations; also amplifiers for submarine telegraph cables which is classified with terminal apparatus for submarine cables. Those are leased to the cable companies. We also lease testing apparatus for submarine cables.

344 Picture transmission apparatus—we have not done any business on that, but we have certain rights with respect to that.

Hearing aids are sold. We grant licenses on sound recording both in the phonograph and the talking picture fields. We license submarine cable manufacturers in connection with the manufacture of submarine telegraph and telephone cables. We have sold them some manufacturing equipment in connection with those licenses, but that was not a regular branch of our business; that was merely in the initial stages to get them started as licensees.

With respect to phonograph recording apparatus, we have

leases with two phonograph companies and those leases are approximately in the same form for the two companies, the Victor Phonograph Company and Columbia Phonograph
345 Company, and then we have their affiliates, the Gramaphone Company, generally called H. M. V., His Master's Voice, in England, and the Columbia Graphaphone Company, which is the English affiliate of the Columbia Phonograph Company in this country. Those companies are authorized to operate in other countries throughout the world. These two companies cover substantially the whole phonograph industry. There are smaller companies, but we do not license them. We lease to those companies the apparatus with which the recording is done, that is, with which the master record is made. The record is made on wax and the manufacturing process of transferring it from the wax to the commercial record which is sold, is not our apparatus. We are only concerned with the master record.

The foreign companies mentioned are granted licenses
346 directly by us. The territorial extent of those licenses granted to the English Company or Companies is the world, outside of the United States and Canada, and I think, in one instance, the Far East. The American Companies are licensed for the territory in which they operate and the English Companies in the territory in which they operate. The Canadian business is handled by us through an arrangement with the Northern Electric Company, the latter being our associate in Canada, but we have to share royalties with them in connection with those phonograph records as relate to Canada.

347 E. R. P. I. has about twenty foreign subsidiaries. They do not grant licenses as the licenses are granted by the parent company. The foreign subsidiaries that administer these licenses supervise the operation under them and render the technical service called for in connection with them. They sell or lease or distribute apparatus in the foreign
348 countries in the same manner that their parent company does in this country.

The rights granted relate only to the making of the master records.

With respect to talking motion picture equipment the licensees for recording and testing and reproducing apparatus generally are the same. Generally speaking, those who are licensed to do recording use testing apparatus. These licensees are principally motion picture companies or producers such as Paramount Publix Company, Metro Goldwyn Mayer, Warner Bros., Fox Film Company, Metropolitan Sound Studios, Universal Pictures Corporation, Audio
349 Cinema, Harold Lloyd, United Artists, Balsey & Phillips.

There is one company that is licensed to do recording that is not in the picture field, that is the Sound Studios; they do recording for broadcasting purposes.

The portion of the motion picture field covered by these licensees in this country is about 90 per cent. (This question was answered over Mr. Thompson's objection on the ground of immateriality.) There is generally a standard form of contract with the licensees. I can produce one
350 of those standard forms but I haven't it here.

We lease apparatus which records the sound in the
351 motion picture business. Reproducing apparatus in connection with talking motion picture equipment which I stated was leased to exhibitors, is leased for the most part to owners of theatres. That apparatus reproduces the sound in connection with talking pictures. There is service called for by the leases, the leases running for ten years, serv-
352 ice running for the period of the lease, the service being generally periodic inspection and testing and overhauling of the equipment, which is performed by engineers employed by us under the so-called service department. There is no service of that character performed by Bell Telephone Laboratories or by Western Electric or by any other entity.

Public address apparatus is leased to theatres and they are permanent installations. Generally they are leased with the talking picture apparatus and fall under the same service agreement.

Talking motion picture equipment is practically all sold on

time. In the case of the recording apparatus, the time
353 varies; sometimes cash, sometimes over a period of three
years. Payments on reproducing apparatus extend over
three years, generally. There are a few cash contracts. The
service maintenance continues for the life of the lease. This
equipment is bought from Western Electric. Approximately,
our selling price is twice what we pay Western Electric. (This
question was answered over Mr. Thompson's objection on
the ground that it was far afield.) When the payments are
over a period of three years, the amount is slightly
354 higher, enough to cover the financial carrying charges of
the deferred payment and the credit risk. In the first
three years the payments called for in the leasing contract
cover both payments on account of the apparatus and payments on account of the service; and after the three year
period the payments are only on account of service, and the
payments on account of service continue during the balance
of the seven years. These payments represent the cost with
a profit.

Where recording apparatus is leased to licensees, the
355 arrangement is not quite the same, as we lease the apparatus to the licensees and then we maintain an engineering staff in the vicinity of the studios in which the apparatus is used for the inspection and overhauling of that apparatus and to give technical assistance to the producers as called for in our agreement; and that technical service is partly paid for under the agreement and partly borne by us as a charge against the royalties that we receive.

Contracts relating to recording apparatus require payments sometimes in cash and sometimes running over the period of three years. In some instances we have to extend the time where the companies are in financial difficulties. Originally the terms of the leases were seventeen years.

The same thing is true approximately in regard to costs as obtains in regard to reproducing apparatus. Public address apparatus for theatres and reproducing apparatus are furnished at the same time and are embodied in the same

contract. Sometimes they are furnished, however, at dif-
356 ferent times, and then supplementary contracts are made.
Substantially the same arrangements for payments and service arrangements are made, except that where the public address equipment is furnished separately and subsequently, it is more likely to be paid for in cash as it is a relatively small item.

Electric phonographs are leased also and fall generally under the same contracts as the talking picture apparatus and the same general facts obtain.

Electric phonographs for broadcast stations are leased on the basis of a certain fixed sum a month, varying on the degree of use and for what, the lease being generally ten years. The idea was a flat payment as a continuing rental for the
period of the lease, the rental including the use of the
357 material and service. Payments are distributed over the
entire term of the lease. I cannot say just how soon we get our investment out of the actual apparatus, but I should say during the first half of the lease. (This was over Mr. Thompson's objection on the ground of irrelevancy.)

I think amplifiers for submarine telegraph cables is at the rate of a fixed sum per terminal per year. The lease runs for the period the apparatus is actually used. The same is true for terminal apparatus for press telegraphy on submarine cables. There is really no distinction in the apparatus and for testing apparatus on submarine cables.

The right to exploit picture transmission apparatus is contained in the contract, Exhibit 4.

358 We sell hearing aids only in a limited field as the general sale is carried on by Graybar which has an arrangement with Western Electric. My recollection is that our sales are confined to theatres or places of public entertainment where we have our other equipment installed. We buy substantially all of our articles from Western Electric, including those sold and those leased.

When the company was organized, personnel was re-
359 cruited generally from the Bell System, mostly from the

Western Electric, some from the Laboratories and subsequently from the associated operating companies when we were establishing our field service organization.

Western Electric does not do any work for our company outside of that of buying or making things. It keeps the records that a parent company would keep of its subsidiary but none of the operating records of the company. We have an organization of something around 2,000. We have a treasurer with his department, an auditing department, engineering, installation and maintenance, comptroller departments, and educational talking picture department, including legal and patent department and secretarial department.

360 Western Electric does no accounting, treasury, secretary or publicity work for us. However, the secretary and the head of the publicity department are the same for E. R. P. I. and Western Electric, but we maintain a separate department and pay for our own services.

Western Electric has nothing to do with employees' benefit fund except that we run it in the same manner. We have employees that work for both companies in the legal, secretarial and publicity departments, the charges and expenses of them being divided according to the costs of the service. Records are kept of the time men are employed in the work of the two companies and divided in that manner. Western Electric does the paying and bills us.

361 E. R. P. I. has offices uptown in the Fisk building on 57th street and the term "Broadway Service" refers to the services we get down town, such as legal, secretary and publicity.

None of our departments are under the supervision of Western Electric. However, two departments are located at 195 Broadway down town. One has to do with submarine cable work and the other has to do with shop processes.

Our company gets a royalty under patent license contracts as we license manufacturers to make use of manufacturing apparatus, machines or processes developed in the factories of Western Electric. No extra payments are made by us to

Western Electric as it is included in the other payments that we make. I think there is no contract with American Telephone and Telegraph Company itself.

363 The twenty subsidiaries of E. R. P. I. mentioned have no rights directly from Western Electric. They get their rights from Electric Research. We do not enter into formal contracts with them. We supervise their operations and direct their operations, in an executive sense and they engage in such activities as the parent company direct them to carry on from time to time, their activities being the same.

E. R. P. I. has to some extent taken out patents on inventions developed by it but not in all instances. The patent departments of the Laboratories and of Western Electric also handle our patent matters. We have all to do, however, with the taking out of foreign patents on the inventions developed by the Laboratories or in the System, that being handled through either the Western Electric Patent Department, that part which is assigned to our business, or through our

364 Patent Department which we maintain in London. The rights under foreign patents in our field covering foreign countries are handled by our company through these various subsidiaries.

717 JOHN EDWARD OTTERSON, for defendants:

Cross-Examination by Mr. Thompson.

In my direct examination I stated that the sales price of the products of E. R. P. I. is about double the price which it pays to the Western Electric for goods purchased from that company. The difference constitutes a profit plus the expenses of doing business.

In addition to selling, E. R. P. I. has many other activities; for instance, in connection with the purchase and sale of equipment, apparatus, etc., it buys the equipment from Western Electric and others and assembles and installs it in places to which it is sold. It purchases about 10 per cent of its total sales from other suppliers than Western, carries

on in Bell Laboratory development research in connection with its fields of activity and makes payment to Bell Laboratory on account of those services, and during the years 1927 to 1931, both inclusive, it paid to Bell Laboratory for
718 such services about 4½ million dollars.

E. R. P. I. maintains also business organizations of its own, including executive, administrative and financial, sales, engineering and accounting, and an organization for the servicing of the installations which it makes in theatres and other places after the installations are made. This is an inspection and maintenance service. It carries on promotion activities in other fields which it is endeavoring to exploit, such as industrial, educational and religious. It does legal and patent work, maintains warehouses, carrying merchandise therein. It exercises supervision over export business in foreign countries in connection with all of which it has expenses.

719 It offers a financial service to purchasers of its equipment who buy this equipment on a time payment basis; maintains an organization in connection with music rights, obtaining music rights from publishers and extends them under license arrangements to licensees of E. R. P. I. It maintains an organization for soliciting licensees and for negotiating with them.

In connection with these activities, E. R. P. I. pays directly all the expenses except in connection with the legal patent services, secretarial department, publicity department, and the research work done by Bell Laboratory. In the case of legal, secretarial and publicity work, the expenses are paid by Western Electric and billed to E. R. P. I on a time basis and E. R. P. I. reimburses Western on account of such expenses.

720 In the case of laboratory expenses, the Bell Laboratory bills E. R. P. I. and is reimbursed by it. The bills, however, actually go to the Western and then are rebilled to E. R. P. I., but the arrangement in connection with those bills is made directly between the laboratories and E. R. P. I. All

these expenses enter into and are part of the cost of the business of E. R. P. I., and are taken into account in connection with such business.

Referring particularly to motion picture recording and reproducing apparatus sold on a time payment basis, the entire sales price of the apparatus is taken up on the books at the time of sale and distribution and the deferred payments are carried on the books as receivables. The amount of 721 payments that is deferred is that related to service charges which are rendered later, which services are to be performed by E. R. P. I. later in servicing the apparatus. The non-synchronous broadcasting equipment sold up to date has been about one-half of 1 per cent of the business done by E. R. P. I.

Referring to my statement in direct examination to the effect that after half of the payments of this broadcasting apparatus had been made and E. R. P. I. had recouped its investment, the remaining payments do not constitute profit but they are payments on account of the financial expenses and services that E. R. P. I. has in connection with the apparatus.

722 *Re-direct Examination by Mr. Goldstein.*

I think I stated at the former hearing that there were four classes of transactions—namely: (1) Outright sale of equipment; (2) Sales of equipment on the installment plan; (3) Licensing or renting of equipment where title to the equipment is retained by E. R. P. I.; (4) Royalties for use of processes. That covers it in a general way, but is not a complete statement.

723 With reference to sales of equipment on the installment plan, the purchase price of the equipment is entered on the books as in the year in which the sale is made; that is, the entire sale price of the equipment on the installment plan is considered as income in the year in which it is sold, and the entire expense, including the cost of equipment, is deducted in the first year against that income.

Concerning equipment, where the title is retained by E. R. P. I. and a license given for the use of the equipment over a period of years, the entire amount of license payments called for by the contractor is entered as income in the first year except where the payments relate to service and not to apparatus—where the services are to be performed later.

724 If we sold equipment to a theatre, generally on a 10-year lease, the payments on account of the apparatus itself would be spread over a three-year period. The service payments run over the 10-year period. The entire payments which are due over the three-year period on account of the apparatus are shown upon the books as income in the year of sale and the expenses in connection with the cost of that apparatus are shown also on the books at the same time. The profit will be indicated during that year as the difference between those two. The amount of payment which has not been made at that time is carried as receivables. The service charges are taken up as they are received during the year in which the service is rendered.

The title to the equipment remains with E. R. P. I. during the entire period of the lease, 10 years.

725 The amounts called rental are distributed for the first three years to include the service charge plus what is considered to be the selling price of the equipment. The selling price is the regular price plus such additional charge as may be necessary to cover expenses with respect to these additional payments—a financial charge.

The difference between the second and the third class is, the second class was a sale on the installment plan, the third class, the lease or rental of equipment with deferred payments. In the case of sale. The rental for the three years covers the total amount which is considered as the selling price of the equipment in the case of a sale.

726 In the third class, the entire cost of the equipment, together with all expenses of installation and all expenses of the transaction, together with service charges, are all taken in the first year.

Royalties are determined currently by the volume of business which the licensee does in some form, with minimum guarantees. The guarantee is during the life of the contract. The income from the royalties is entered on a cash basis as received and the costs are entered as incurred. There is no income in connection with any of these transactions which is received in any year against which expenses are to be incurred in any future years for which there is to be no further compensation.

727 There have been many cases where contracts have been canceled or where we have had to take back equipment. The equipment is taken back under such circumstances into our inventory at a depreciated value, taking account of wear and tear and of cost of reconditioning it and of the lower price at which it would have to be resold because of its being used equipment and the receivables which are at that time on the books as unpaid in connection with the original transaction are then taken off the books and the revaluation of this equipment is credited against this deduction from receivables.

728 The federal income tax is computed on the basis of the accounting system which I have described.

I stated that 4½ million dollars was paid by E. R. P. I. to the Bell Telephone Laboratories covering the years 1927 to 1931, both inclusive.

As to whether any part of those payments covers services for which E. R. P. I. bills its customers, in a very minor degree that might be true. For example, if one of our licensees wanted the services of a special engineer out in Hollywood then we would bill the licensee for the services of that engineer and his expenses in going there.

Generally speaking, the expenses that we incur in the Bell Laboratories are deducted from the income that we receive without special billing. In the case of special representatives coming from the laboratories, the instructions to the laboratories are given by E. R. P. I.

729 I think the billing for that sort of service is to the Western Electric by E. R. P. I. The provisions of our

agreement permit us to add 25 per cent to the direct expenses of such representatives.

When we sell on the deferred payment basis or on an installment basis, we carry the investment until such time as the payment is actually made and we make a financial charge for the interest and credit risk during that period. We follow the practice of credit companies and industrial companies generally in that line, having made a study of the General Motors plan at the time we installed our own, and we are governed somewhat by its practice.

730 There is a contract between E. R. P. I. and the Western Electric but how specifically the basis on which Western Electric bills E. R. P. I. for legal, patent, secretarial and research work services is set forth, I don't know. But it is a definitely established arrangement and practice between the two companies.

The contract I produced on my direct testimony is the only one I know about. The basis of the billing by Western Electric is on a time basis. However, patent services are on a case basis for each piece of work. Secretarial service is on a time basis; research on a case basis; services are
731 done by Western Electric on a cost basis, there being no profit added.

Where E. R. P. I. requires the laboratories to furnish special engineers and the billing is done by the Bell Laboratories to the Western and re-billed by the Western Electric to E. R. P. I., Western does not add any profit to the charge made by the laboratories. The laboratories charges the Western Electric for the services of an engineer on the same basis as it makes all other charges, that is without any profit to the laboratories. E. R. P. I.'s books have been audited by Arthur Young & Company and E. R. P. I. has copies of the audit, the audits having been made for each of the years 1927 to 1931, inclusive. Arthur Young & Company's auditors are currently and constantly in touch with our accounting department.

Mr. Goldstein: Mr. Otterson, to avoid asking you to produce detailed statements covering those various transactions both as to income and expenses we would like to have you produce the audits of Arthur Young & Company covering the years 1927 to 1930 inclusive.

Defendants' request that plaintiff produce copies of the audits of Arthur Young & Company of E. R. P. I. covering years 1927 to 1930, both inclusive, taken under advisement by plaintiff.

732 Mr. Thompson: I have here certain contracts and assignments which we have been requested to produce:

First, an assignment dated October 13, 1927, from International Telephone Sales and Engineering Corporation to Automatic Electric Company.

Second, an assignment dated September 30, 1925, from International Western Electric Company, Inc., to Western Electric Company, and a consent by Western Electric Company dated September 30, 1925, to this assignment.

733 Third, a consent by Northern Electric Company, Ltd., dated October 8, 1925, to the assignment last mentioned.

These assignments show on their face what contracts they relate to.

Also the following contracts between Western Electric Company and Victor Talking Machine Company:

An agreement dated June 26, 1925, assigned to E. R. P. I. by Western Electric on January 3, 1927.

Second, an agreement between Western and Victor Talking Machine Co. dated March 18, 1925, and assigned by Western to E. R. P. I. on January 3, 1927.

Third, an agreement between International Western Electric Co., Inc., and Victor Talking Machine Co., dated May 1, 1925, and assigned to E. R. P. I. by Western Electric Co. on January 3, 1927.

Fourth, a modification of agreements of March 18, 1925, and May 1, 1925, dated July 19, 1926, between Western Electric and Victor Talking Machine Co. and assigned by Western Electric to E. R. P. I. on January 3, 1927.

734 Five, memorandum of agreement between Victor Phonograph Co. and E. R. P. I. dated January 11, 1928.

The following agreements between Western Electric and Columbia Phonograph Company:

1. One dated February 26, 1925, agreement between Western Electric Company, Inc., and Columbia Phonograph Company, Inc., assigned by the Western Electric Company to E. R. P. I. on January 3, 1927. Agreement dated April 22, 1925, between International Western Electric Co., Inc., and Columbia Graphophone Company, Ltd., assigned by Western Electric Company to E. R. P. I. on January 3, 1927.

Agreement dated January 19, 1926, between Western Electric and the Gramophone Company, Ltd., assigned to E. R. P. I. January 3, 1927.

Agreement between International Western Electric and Gramophone Co., Ltd., dated May 1, 1925, assigned by Western Electric to E. R. P. I. on January 3, 1927.

Agreement between E. R. P. I. and the Gramophone Company, Ltd., dated August 10, 1927.

I also produce an assignment by Western Electric to E. R. P. I. of one of the agreements with the Victor Talking 735 Machine Company. I am informed that the assignments to which I have referred with respect to the other contracts are substantially in the same form. It is my further understanding that the contracts which have just been produced in which Victor Talking Machine Company and Columbia Phonograph Company are parties are the main contracts now in existence. I am unable to state that they include all minor modifications or changes.

In response to requests 9 and 11, made during the progress of this hearing, I now produce two folders which contain certain correspondence, memoranda and contracts between Kellogg Switchboard & Supply Company and Western Electric and between Western Electric and Stromberg Carlson Telephone Manufacturing Company. I want to identify these various papers for the record.

The Kellogg file consists of a letter dated September 18, 1922.

Another dated November 11, 1922.

Another dated November 15, 1922.

Another dated December 4, 1922.

A memorandum from Western Electric files dated April 14, 1923, and letters dated May 8 and 16, 1923.

The Stromberg Carlson file includes the following:

736 An agreement between Western Electric and Stromberg Carlson Telephone Mfg. Co. dated February 16, 1922.

Letters dated as follows: January 4, 1923; December 21, 1923; March 20, 1928.

Minutes of a conference dated April 3, 1928.

Letter dated April 16, 1928, with certain price lists attached and a letter dated October 20, 1928; another November 5, 1928; December 6, 1928; February 20, 1929.

Also an agreement between Stromberg Carlson Telephone Mfg. Co. and Western Electric dated June 1, 1920.

I understand that the requests made were with respect to the basis of prices and that no request has been made that we produce all of the bills or other information which do not relate to the price bases.

Mr. Goldstein: Except, Mr. Thompson, that that request is in and Mr. Wray has that up with Mr. Cox.

Mr. Thompson: I understand, but the request made orally here was of the character indicated.

Mr. Goldstein: That is right.

846 JOHN E. OTTERSON, recalled:

Further Direct Examination by Mr. Goldstein.

As to the audit which I spoke of as having been made by Arthur Young & Company each year, I now find out that Arthur Young & Company makes no comprehensive report. It is merely a certificate to the effect that they found the accounts correct, confirming the balance sheet, statement of assets and liabilities as it appears on the company's 847 books. That certificate is in the possession of E. R. P. I. and I will produce a form of that certificate.

Referring to monthly report No. 1 entitled "Condensed Summary of Results for Years 1927 to 1930, inclusive, of ERPI," I am generally familiar with the figures contained on that statement, but I have no way of identifying it. I 848 think it is a statement prepared in our office and is a statement of our accounts. Said statement was offered and received in evidence as Defendants' Exhibit 187, subject to plaintiff's objection as to irrelevancy and immateriality, but no other objection subject to check.

Referring to Defendants' Exhibit 187, line 2, "Investments, December 31, 1930, $10,170,000; December 31, 1929, $19,675,000; December 31, 1928, $10,597,000; December 31, 1927, $12,761,000," we have in the records of E. R. P. I. statements, or data, showing the detail of those investments, that is, which of the portions making up this total represent investments of subsidiary companies and what represents investments outside of subsidiary companies. (The witness was requested to furnish a statement showing the breakdown of the item on line 2, showing the cases of investment contained in each of those totals, and he stated that he did furnish that.) I do not think that I can state offhand what the term "Deferred receivables" found in the column "December 31, 1929," is supposed to include. I would have to check that up. I will do so. We have a comptroller in E. R. P. I.

3532 W. K. KRUSE, a witness on behalf of the plaintiff, having been previously duly sworn, resumed the stand and testified further as follows:

Cross-Examination by Mr. Goldstein.

May 31, 1932.

The American Telephone and Telegraph Company has not paid the Illinois Bell for any of its advertising appearing in the Bell Telephone News. However, they have furnished the plates from which the ads were printed.

3533 (The back cover sheet of the Bell Telephone News of June, 1930, with the heading, "It Keeps Faith with your Needs", an advertisement of the American Telephone and Telegraph Company, was identified as Defendants' Exhibit D-124. The back cover page of the Bell Telephone News for February, 1931, entitled, "What is the A. T. & T.?" was identified as Defendants' Exhibit D-125.)

As to all other advertisements of the American Telephone and Telegraph Company appearing in the Bell Telephone News, the same thing is true as is true with respect to these two; that is, nothing was paid by the American Telephone and Telegraph Company, but the American Telephone and Telegraph Company supplied the plates.

The Illinois Bell has a transfer agent at the present time. It has a registrar at the present time. I do not know the basis upon which the fee for the transfer agent and registrar was established.

3534 Defendants' Exhibit D-126, "Estimated Costs in connection with subscriptions for A. T. & T. Stock, under the Employees' Stock Plan, Chicago, Exchange" was prepared under my supervision. No portion of the cost which

I estimate as shown in the last column was paid by the American Telephone and Telegraph Company. I esti-
3535 mate the costs for the year 1923 at $29,701; 1924, $32,800; 1925, $32,900; $33,000 in 1926; $34,000 in 1927; $35,000 in 1928; $39,000 in 1929; $44,000 in 1930 and $45,000 in 1931. Those are the costs which I estimate are allocable to the carrying out by the Illinois Bell of its functions in connection with the subscriptions by the employees of the Illinois Bell, Chicago Exchange, to the stock of the American Telephone and Telegraph Company. In my estimates, I took into account items of cost to compensate the Illinois Bell for the use of its facilities. It is included in the costs shown for each of the departments. I took into account the portion of the rents. I computed the return on investment at the
3536 basis of 8 per cent on book costs. I charged against this service 8 per cent on book cost of the plant. I did not take into account going value nor reproduction cost of the plant.

The expense in the first column, "Special Stock
3537 Group", represents the cost incurred in the Accounting Department in connection with a special group of employees who work solely on the Employees' Stock Plan. It includes the salaries and expenses of that particular group; it also includes the rent and the house service for the space occupied by that force, as well as the annual charges on the equipment which we have allocated. At the present time that force is located on the 16th floor of the Bell Building, but its location has varied from time to time. I have taken space for this group on the basis of 75 square feet per employee.

The next column represents the expense incurred in
3538 the Disbursements Division of the Accounting Department in handling the subscriptions received from the employees, and making the deductions on the payrolls periodically, and handling any cancellations, or special treatment forms, and it also includes allowance for rent, use of space and the furniture and equipment used by such employees.

The column "Revenue" is similar costs, which are incurred in the Revenue Division of the Accounting Department. The "Treasurer's Office" is intended to represent the same sort of items.

The figure representing a portion of salary to these employees was determined by consulting the particular employees, or the supervisors who were in charge of the work during the nine years. We had a very good record of the employees who were payroll clerks, and who handled this particular work during that nine-year period. They
3539 handled other work. I determined the percentage of time by consulting the individual employees who were engaged in the work, and obtained their judgment as to the amount of time they spent on Employees' Stock Plan Work. This study was made just recently, in 1932. I consulted the immediate supervisor, who in turn consulted his employees as to what their judgment was, all the way back to 1923. We keep no records of the exact time. The only record of exact expense is that which is recorded in the first column, marked "Special Stock Group".

The "Traffic Department" is the same thing. The employees in that department that I cover are the payroll
3540 clerks who receive the subscription cards, make the deductions on the payrolls, and make necessary entries on the employees' service record, and other work that is similar to that, which I described under the disbursements. They are regular telephone employees who use part of their time for this purpose.

The "field" is under the heading of Plant Department. Those are the costs incurred by the employees in the various divisions of the Plant Department. We had a Maintenance Department at that time, and the Construction and Engineering Department, and I have shown that separately from that designated as Accounting. We had in the Plant Department, up to the early part of 1930, a section which handled the accounting work, and it was merely with the idea of separating the Plant Department costs between the two sections.

Defendants' Exhibit D-127, entitled, "Estimated Costs in Connection with Subscriptions for A. T. & T. Stock Under Bell Telephone Securities Plan" was prepared under 3541 my direction. That represents the costs which I estimate were incurred by the Illinois Bell in connection with its employees selling to the public in this area stock of the American Telephone and Telegraph Company under the Bell Securities Plan.

The last column shows that the estimated costs ranged from a low of $15,000 in 1923, to a high of $29,400 in 1926; that is the total costs for those particular years.

3542 The amount of billing to the Bell Securities Company, shown in the next to the last column of Exhibit D-127, was established by the President, Mr. W. R. Abbott, as the result of a conference and discussion he had with the Vice President of the Bell Securities Company. In 1924, it was determined as a result of that conference, and was agreed to by both the Bell Securities Company and the Illinois Bell, to bill $9,000 a year, or $750 a month. In addition to that particular billing, we also billed amounts for incidental or miscellaneous expenses which we incurred in connection with the handling of this Bell Securities Company, for example, mailing annual American Telephone and Telegraph Company reports to the purchasers, and some printing costs.

The employees and the allocations which I took into account in D-127 were similar to the methods used in connection with my estimate of costs in D-126. They are prepared under the same general basis.

In connection with Exhibits A-49 and A-53, I did not include as part of the operating income any interest on loans which the Illinois Bell made to the American Telephone and Telegraph Company. I did include as an operating 3543 expense the entire license contract payment to the American Telephone and Telegraph Company. We have not had any discount on stock that I know of, it always sold at par or over par. In connection with the fifty million dollar bond issued in 1923, there was some discount incurred and none of that was included in the expenses shown on my Exhibits A-49 or A-53.

We put in the capital account our investment in tele-
3544 typewriters. We put into the capital account our purchases of dial apparatus. It all goes into the capital account.

Where we purchase appliances from the Western Electric, we charge the entire purchase price to capital account without taking into account whether the Western Electric paid the American Telephone and Telegraph Company for any portion of the patent expense or things of that sort. That does not enter into our consideration, as to whether or not we put the item in the plant account, provided it is used for construction purposes.

3545 Defendants' Exhibit D-128 (an advertisement entitled, "Our Slogan"), is the one item that appeared in the Official Directory. It appeared in the April, 1924 issue. The American Telephone and Telegraph Company did not pay for that advertisement. In January, 1925, a display was shown in the window at the corner of Washington and Franklin Streets, consisting of canceled stock certificates furnished by the American Company, and also appropriate signs and decorations, and this display was later shown throughout the state, in eight other towns. There was no charge made to the American Telephone and Telegraph Company for that; they
3546 furnished all of the material and we furnished the window space.

We also furnished a number of cardboard signs printed at one time or other that were placed in the commercial offices, which invited the public to inquire regarding the placing of their money in a safe investment wth reference to the American Telephone and Telegraph Company's stock. No part of the small costs, amounting to approximately $5, was ever billed to the American Company.

3548 Defendants' Exhibit D-129 covers an additional plan whereby, when the American Telephone and Telegraph

Company issues rights in connection with new stock issues or bond issues, we assist the public in either purchasing additional rights or disposing of some of their rights, and in this case we billed the Bell Securities Company the full costs incurred by the company. It is outside of what we call the Bell Securities Stock Plan. By "full costs", I mean that we include in the costs billed the Bell Securities Company all of the salaries and expenses incurred by the employees engaged on that particular work. I don't think there have been any costs included for floor space in connection with those particular transactions, nor any overheads, supervisory overheads, or anything of that sort except the supervisors in charge of the immediate employees handling that work.

I prepared Defendants' Exhibit D-131, amount of collections and amount of remittances made to American Telephone and Telegraph Company in connection with the Em-
3549 ployees' Stock Plan, 1923 to 1931, and Exhibit D-132, the collections and amount of remittances made to Bell Telephone Securities Company in connection with the sale of the American Telephone and Telegraph Company stock under the Bell Telephone Securities Company plans for the years 1923 to 1931, and Exhibit D-133, the amount of collections and amount of remittances to American Telephone and Telegraph Company and Bell Telephone Securities Company in connection with the rights, transactions and related stock and bond subscriptions.

I haven't here any record of the amount of stock sold each year, although I believe Mr. Cleveland testified that under the employees' stock plan there was 120,000 shares issued to employees during this period.

3550 We have, at various times, taken money for surplus and put it in the Pension Fund. I don't recall the specific dates right now. I think that has been done during this period of 1923 to 1931.

"Q. Mr. Kruse, you were asked to furnish us a statement showing the kind of service that was taken over by the Illinois

Bell in 1926, which prior thereto was conducted by the 3551 American Telephone and Telegraph Company, intrastate, and you furnished us a document which we will identify as D-134, but which contains no explanation. Will you explain what that document is intended to show?"

Prior to October, 1925, the American Company handled all of the business between certain points which the Illinois Bell at that time had no facilities to take care of, and this list shows the various points between which the American Telephone and Telegraph Company handled the intrastate traffic, prior to October, 1925. At that particular date such business was taken over and handled by the Illinois Bell.

"Q. Prior to 1926, was there a contract with the American Telephone and Telegraph Company or with anybody else that prevented the Illinois Bell from dealing direct with the telephone properties in those cities? Could the Illinois Bell, the Chicago Telephone Company, connect up its plant with the plants in these cities, in the Central Union territory, under a traffic agreement, or was there a prohibition against that connection, and a provision that the American Telephone and Telegraph Company alone could furnish the service between those communities?

"A. No, I don't think there was any such prohibition, to stop the Illinois Bell from going in there. The Amer- 3552 ican Telephone and Telegraph Company at that time had the facilities to take care of this particular business.

"Q. Was there any prohibition against the Central Union connecting up its plant with the Illinois Bell in those communities?

"A. The Central—

"Mr. Thompson: Just a minute. I think that is going rather far afield, to ask this witness about whether there was a prohibition as to what the Central Union could or could not do. The witness has explained that the American Telephone and Telegraph Company had the facilities which connected these cities that are listed on the exhibit marked D-134 prior to a certain date, and that after that date the Illinois Bell took it over.

"Mr. Goldstein: But he slipped in a statement that the reason was that the Illinois Bell could not handle the traffic, did not have the facilities, and the real reason is that the Illinois Bell could not connect, they took away the profitable business and gave it to the American Telephone and Telegraph Company prior to 1926, and it was not because the Illinois Bell did not have the facilities.

"If he stated the facts, let's get all of the facts.

"Judge Wilkerson: Do you know anything about it?

"A. All I know is, the American Telephone and Telegraph Company had the facilities, and the Illinois Bell didn't
3553 and the American Telephone and Telegraph Company handled it."

I don't know why the Illinois Bell did not have the facilities.

In Exhibit A 51, I show a net amount of credit to the Chicago division because of the use of the plant in Chicago for the downstate. In calculating the amount of credit to the Chicago division, I took into account the depreciation and a return on investment. I used 8 per cent, calculated on the book costs as the return on investment.

I estimated the amount of property that I allocated for downstate uses as follows:

In the case of the buildings, we had floor plans which showed the amount of space in company-owned buildings assigned to the respective departments, and from those blueprints we were able to determine the amount of space to each department, and that was related to the total space in
3554 the building, to determine the amount of space in the building, or percentage of the building used for State area purposes.

Exhibit A-55 was prepared by me. It shows the depreciation expense on a reproduction base. The depreciation expense was determined by taking the rate of depreciation expense for each class of plant (as we determined it in connection with our determination of depreciation expense on book costs) and applying it to the reproduction cost base as determined by Mr. Sloan. I took Mr. Sloan's reproduction cost new. All we did was to apply the rate that we had

determined in connection with the book costs to the figure
3555 of reproduction cost new. We had no other working
papers or calculations. I have not computed deprecia-
tion rates on reproduction costs in any other statements. The
depreciation expense shown on our books is on the basis of
book costs.

Exhibit A-56 shows the number of stations in use. In the illustration of a hotel with a thousand telephones it would be a thousand stations.

In Exhibit A-58, I used book cost of the State area prop-
erty in my calculations. Exhibit A-58 was a statement which
I was requested by counsel to prepare. I don't know
3556 what his intention was. That exhibit includes general
equipment and construction work in progress. The
Illinois Bell Telephone Company has a portion of its property
in the state of Indiana; that property is included under the
heading of "State Area" in this exhibit. The State area
includes the balance of the property of the Illinois Bell in
Illinois and in Indiana.

In connection with Exhibit A-61: the items pur-
3557 chased from the Western Electric that go into main-
tenance and are included in this exhibit are, in a general
way, minor material items which are used in the repairing
of plant, including also shop repairs which are performed
by the Western Electric Company. It does not include any
house service supplies, such as brooms, and cleaning com-
pounds; that is really a house service charge, which is included
in the departmental operating expense account finally.

In my exhibits showing net income available for return,
and the rate of return, I have used the amounts accrued
3558 for depreciation expense on the Company's books. The
amounts accrued on the Company's books were not based
on either the 1920 order of the Public Utilities Commission
or the 1923 order of the Illinois Commerce Commission.

The dividend rate of the Illinois Bell during this period 1923 to 1931, and at the present time, has been and is 8 per cent.

The Illinois Bell, as of December 31, 1927, put on its books the telephone instruments purchased from the American Telephone and Telegraph Company at the price paid to the American Telephone and Telegraph Company for those instruments. It did not carry over any depreciation reserve.

Plaintiff's Exhibit 13, record volume 4, is Illinois Bell Telephone Company's schedule of toll rates. It refers to the Illinois Bell's intrastate toll rates, and not to the long distance rates of the American Telephone and Telegraph Company.

Re-direct Examination by Mr. Thompson.

3559 At Mr. Goldstein's request, I made a search through all the directories issued in the city of Chicago to discover whether there was any advertising included in those directories which might be termed advertising on behalf of the American Telephone and Telegraph Company. I was able to find no advertising of any kind or character that answered that description, except and save only the statement appearing on Defendants' Exhibit D-128, which was for an issue in 1924. That was not a page advertisement in that directory, but was just a portion of a page. It appeared at the bottom of the alphabetical listings and was more or less used as a filler on that particular page.

3560 The Bell Telephone News is a publication that is circulated practically exclusively among the employees of the Illinois Bell Telephone Company; it is issued primarily for employees and has no general circulation outside.

Exhibit D-127 covered only the costs in connection 3561 with the sales to the public. In the last year or so there was a substantial amount of stock purchased by the employees of the Illinois Bell, under the Bell Telephone Securities Plan. This began the latter part of 1931, when the stock market price on American Telephone and Telegraph Company stock came below the subscription price at which the employees were subscribing for stock under the Employees' Stock Plan. Those costs are included in D-127.

No portion of the principal of the amount loaned by the

Illinois Bell to the American Telephone and Telegraph Company was included in our valuation figures at all.

3562 From time to time during this period we made appropriations of surplus for Pension Fund purposes. It is my understanding that it is not true that those appropriations were made for the purpose of making up past deficits. The appropriations were authorized by the Board of Directors, and carried as a part of our Benefit Fund Reserve.

We have only included in the plant investment of the Illinois Bell Telephone Company such purchases made from the Western Electric as went into our capital accounts. We have not included in our plant accounts any purchases from the Western Electric that entered into maintenance or any other expense accounts.

Re-cross Examination by Mr. Goldstein.

3563 There were no institutional advertisements in the directory; I can state that. I am positive about that.

3564 A search was made covering the period from 1923 up to and including 1931. I am reasonably certain that there is no institutional advertising of the American Telephone and Telephone Company in those directories. I had a very careful search made by the Publicity Department, and also the Directory Department, each one of which reported back there were no such ads in the directory. The only American Telephone and Telegraph Company advertisement appearing in those publications is the one advertisement to which we have referred in the cross-examination and re-direct.

The Bell Telephone News is published monthly. A large number of these Bell Telephone News has on the back sheet an advertisement of the American Telephone and Telegraph Company; I don't know if it is all of them or not.

3565 There was a study made by the American Company as of 1926 to determine what the Pension Fund should be on an actuarial basis. I couldn't say that a transfer of surplus to the Pension Fund was at that particular time. I think it was prior to that time. This study I am referring to, I think was made in the year 1927, after we had established our Pension Fund; but any transfer from surplus to the Benefit Fund Reserve was made prior to that time, 3566 around 1926, 1925, 1924 or somewhere in there. The books would show it.

Re-direct Examination by Mr. Thompson.

We had no accruals to our Pension Fund Plan in the Illinois Bell prior to January 1, 1927, when this new plan started. So any appropriations that were made before January 1, 1927, out of surplus could not have been made to cover any deficit under this new plan, until January 1, 1927. What had been appropriated theretofore had been under the old Benefit Fund Reserve. There has not been included in any of the exhibits shown in this case, upon which the Company is claiming a return, any property valuation for any property outside of Chicago.

3567 "Mr. Thompson: Now, we offer, or ask the Court to rule upon offers previously made of Exhibits A-48 to A-63, and A-183 to A-192, both inclusive, which were offered during the course of Mr. Kruse's testimony.

"Mr. Goldstein: We object to them on the grounds heretofore stated, and we object that they include figures taken from exhibits or based upon facts to which we objected.

"Judge Wilkerson: Overruled for the present."

(Which said documents, so offered and received in evidence, were marked Plaintiff's Exhibits A-48 to A-63, and A-183 to A-192, both inclusive.)

3568 "Mr. Thompson: I will ask to have identified Exhibits 204 and 205. That is 204, in 18 sheets. They are nothing you will object to, Mr. Goldstein.

"The plaintiff offers in evidence his instrument identified as Plaintiff's Exhibit 204, consisting of 18 sheets, which consists of certain supplementary sheets to the Western Electric supply contract introduced on the former hearing and also Plaintiff's Exhibit A-205, which is the standard supply contract between the Western Electric Company, Incorporated, and the Illinois Bell Company, dated June 2, 1930.

"Mr. Goldstein has copies of all these papers.

"Plaintiff also offers in evidence Exhibit A-206, which consists of certain resolutions of the Executive Committee of the American Telephone and Telegraph Company, correspondence between the American Telephone and Telegraph Company and the Illinois Bell Telephone Company, a resolution of the Board of Directors of the Illinois Bell Telephone Company, all relating to the execution of the latest license contract agreement between the two companies, dated September 25, 1930, which is also a part of this Exhibit 206.

"Plaintiff now offers in evidence Plaintiff's Exhibit A-207, which is the Plan for Employees' Pension and Disability Benefits and Death Benefits of the American Telephone and Telegraph Company. 3569

"Mr. Goldstein: Mr. Thompson, is that the memorandum stating what the plan is, descriptive of it, or is it the plan itself, the personnel?

"Mr. Thompson: It includes the plan itself, plan for employees' pensions.

"Plaintiff also offers in evidence Exhibits A-208 and 209 to the Plan of the Illinois Bell Telephone Company for Employees' Pensions, Disability Benefits and Death Benefits, and Amendments Thereto, which were effective January 1, 1930."

(Which said documents, so offered and received in evidence, were marked Plaintiff's Exhibits A-204, 205, 206, 207, 208 and 209.)

3572 M. H. RILEY, called as a witness on behalf of the plaintiff, having been previously duly sworn, resumed the stand and further testified as follows:

Direct Examination by Mr. Bracelen.

June 1, 1932

The four sheets which comprise the exhibit I now present, marked A-210, correspond to four sheets in exhibits that were introduced as a part of my testimony in chief.

The first sheet of this exhibit correspondents to sheet No. 10 of Exhibit A-35, Account 242, Exchange Aerial Cable. The purpose of this sheet now being identified by me is to correct the sheet of the previous exhibit for a slight error. The changed figures are shown in red ink on this sheet.

3573 Referring to the item, Sheath Defects in reference to Cable, shown in the first horizontal column: the column lettered (a) shows a 2 per cent allowance for defects found by inspection in the cable sheath.

I testified on direct examination that this 2 per cent was arrived at by evaluating the sheath defects in dollars, and relating the dollars to the original cost of cable, so that my testimony was that the number of dollars that I estimated would be necessary to restore the cable to substantially new condition, so far as the sheath defects were concerned, represented 2 per cent of the original cost of the unit of cable.

"Q. Then in the original cost you apply to that 2 per cent, as well as to the 2.77 per cent of depreciation for defective pairs, the factor of 82 per cent, that being the per cent depreciable value allowance for net salvage in the column marked with the letter (b) in the original sheet, and marked with the letter (c) in the substituted sheet.

"A. Well, except that the 82 per cent there is the per cent depreciable value after allowing for salvage, after deducting for the net salvage."

3574 The point to my testimony here this morning is that the 82 per cent factor was not properly applied to the 2 per cent for sheath defects, by reason of the fact that it was based on dollars.

I have made the correction shown in the red figures and get finally in the lower right-hand rectangle on this sheet, a total of 88.81 as the composite per cent condition for the entire account as against 88.92. I testified on my former examination that in all instances I dropped the fraction so that the difference resulting from this correction is that I now drop a fraction of .81 as against having dropped a fraction of .92 before. So the figure carried into the per cent condition figures that were shown in Mr. Redmund's summary exhibit, of course, is not changed at all.

3575 Sheet 2 of this exhibit is the same as sheets Nos. 1, 3 and 14 of Exhibit A-37. In Exhibit A-37 there were two similar sheets, except that one was smaller than the other, so this takes the place of both of them. This makes a similar correction for the same factor of sheath defects and for the same reason.

Sheet 3 of this exhibit is sheet No. 5 of Exhibit A-38, Account 252, Toll Aerial Cable. The same thing is true of this sheet.

Sheet 4 is the same as sheet No. 13 of Exhibit A-38, covering Account 255, Toll Underground Cable. The corrections in this sheet are also explained in the same way.

(Plaintiff offered Exhibit A-210 in evidence. Received.)

3576 W. K. KRUSE, recalled as a witness on behalf of the plaintiff, having been previously duly sworn, further testified as follows:

Direct Examination by Mr. Thompson.

June 1, 1932

During the cross-examination of Mr. C. F. Cleveland, Vice President in charge of the Financial and Accounting Department of the Company, the other day, a request was made that a statement be prepared showing for the first three months of this year the revenues, expenses and net income of the Telephone Company, particularly with respect to from what sources it had procured the money with which dividends and interest were paid during the first quarter of the year. I have prepared such an exhibit.

3577 (Which said exhibit was identified as Plaintiff's Exhibit A-211.)

The dollars by which the Illinois Bell Telephone Company failed to make its interest and dividend requirements for the first quarter of 1932 out of its telephone operations are shown by the third line from the bottom as $747,904. As shown by the next to the last line on this exhibit the Company received during this quarter certain net non-operating revenues (from other than telephone operations) amounting to $727,201.

A small portion of that item of $727,201 arose out of or from property which is included in the book cost of the plant as shown in my exhibits, or in Mr. Sloan's reproduction cost new. The amount applicable to the Chicago plant, included in the valuation figures in this case, amounts to approximately $8,000 and for the Company as a whole slightly less than
3578 $25,000. So more than $700,000 of the non-operating revenue as shown on the second line from the bottom of this exhibit, arose out of property which is not included either in book cost of the plaintiff's plant in the exhibits in this case or in the reproduction cost new. A substantial part of this non-operating revenue of $727,201 applied to the period prior to 1932, but was received in the first quarter of 1932. Between $450,000 and $500,000 of this amount applied to the period prior to 1932. This $727,201 covered a period of approximately four years; from March 1, 1928, to Decem-
3579 ber, 1931. That was revenue from a warehouse owned by a subsidiary corporation of the Illinois Bell Telephone Company and leased by it to the Illinois Bell Telephone Company and to the Western Electric Company.

Cross-Examination by Mr. Goldstein.

We carry our expenses on an accrual basis.

Those expenses for the first quarter as shown in the statement representing accrued expenses are really negligible items. I am trying to think of a few cases like bills
3580 which we have received, taxes, payrolls which have not yet been paid as of the end of the month and bills where the cash would be actually paid in the following month. I have also included in this statement liabilities for which the actual cash will be paid later.

Re-direct Examination by Mr. Thompson.

3581 I have included in Exhibit A-211 that portion of our tax liability for the year 1932, which is applicable to the three-month period and also have included in our liabilities, items incurred during the three-month period with respect to business transacted in the period but where the cash will be paid maybe 10 days or 15 days later.

"Mr. Bracelen: I desire to inform the Court that yesterday afternoon, pursuant to my promise and statement made in open court, I examined all of Mr. Goldstein's requests for specific portions of the provisional estimates, and for definite facts and figures from the various reports that had been submitted to him for inspection, and we are prepared to permit Mr. Goldstein to take all of that data and information as thus specified by him, and it will not be necessary for us to take the Court's time in any dispute about the matter.

"Mr. Goldstein: I would just like to make this comment: the request that we made on the C. R. reports, is the 3582 identical request we have made in connection with the motion. We have made no specific request for information; that is, we asked for the C. R. reports in their entirety in the same manner as before. As to the provisional estimates, we have asked for such portions thereof as we think we can use within the few days' time that is available to us, and we will proceed with as much expedition as possible.

"Judge Wilkerson: The statements of counsel will go into the record, for whatever use may be made of them hereafter on the motion, to be addressed to the Court."

Plaintiff rests.

4085 R. H. GREGORY, a witness on behalf of the plaintiff, having been previously duly sworn, resumed the stand, and testified further as follows:

Re-cross Examination by Mr. Goldstein.

June 7, 1932

I testified that when the Electrical Research Products was organized, the Western Electric transferred to the Prod-
4086 ucts an option which Western Electric Company had acquired to purchase the capital stock of the International Telephone Sales and Engineering Corporation. That assignment (or transfer) was covered in the general clause in the contract, and the assignment was actually made a few days later, I think in the early part of January.

(Document purporting to be assignment from Western to Electrical Research Products acknowledged January 3, 1927, marked for identification Defendants' Exhibit D-135.)

4087 I had reference, in the first place, to a resolution of the Board of Directors, which authorized the contract, Defendants' Exhibit 4 in Depositions. I presume that same clause is in here, although I have not examined it for that particular purpose.

4088 The clause I refer to is Clause Number 14, which states that:

"All right, title and interest which the Western Company has the right so to transfer in and to all contracts, good-will, patents, trade-marks and trade names of the Western, in so far as, but only to the extent that the same respectively pertain to the business of property agreed to be transferred pursuant to the provisions of an agreement between the Western Electric Company and the Products Company, dated December 30, 1926, and subject to all of the reservations, terms, conditions and limitations in such agreement contained."

The agreement to which that clause refers is Defendants' Deposition Exhibit 4. That is the clause that I rely on.

4089 Defendants' Exhibit D-136, entitled "Net profits on sales of new A. T. & T. instruments, 1916 to 1927 inclusive" brings down the net profits to sales to include the year 1927.

A portion of the penciled memorandum furnished defendants which reads: "Average investment in A. T. & T. instruments business 1927, $6,093,000". That figure means that the average amount of investment applicable to new American Telephone and Telegraph Company instruments for the year 1927, including plant, merchandise, receivables, or less payables applicable, cash, amounted to $6,093,000.

Investment in plant, was figured on the cost of plant, the book cost of plant, the proper proportion of the book cost of plant applicable to instruments.

We made for this particular year at the request of Mr. Goldstein, an apportionment of the total operating plant of the Western Electric between telephone instruments on the one hand, and all other Western Electric manufactures on the basis of ratio of cost of sales of one to the other. We 4090 made no study, either of profits or of plant investment, or total investment, for the year 1927, as we were not particularly interested in those results, as it would affect our profits to no extent whatsoever, whatever the results were. We had to do this five years after the event; in order to give defendants a figure for the investment during that period; what we did was to give defendants the figure which represented the average condition during the previous years, ending 1926, and it is broken down on the basis of the average conditions, that is the best that we could do at this time, in order to satisfy defendants' request.

"Q. Mr. Gregory, did you make each year, or about the end of each year, a study, from 1916 to 1926, inclusive, showing your net profits and return on investment of telephone instruments in the regular course of business?

"A. In the regular course of business each year, we made the study of the net profits on sales, but not the net profits on investments."

We discontinued that practice for the year 1927 be-
4091 cause from 1927 on the instruments were sold generally
to all Bell customers, and not solely to the American Telephone and Telegraph Company. Prior to that time they were sold to the American Telephone and Telegraph Company under the contract of 1882, which was on a cost plus basis, and it was necessary for us, therefore, to make a study each and every year, to see how we were coming out in accordance with the provisions of that contract. At the end of 1926, the prices were set for 1927; at the end of 1927 the change in practice was made, and it was not necessary for us to make any study to set the prices for 1928 on the basis of the cost plus contract of 1882.

I have no recollection as to the exact date when Defendants' Exhibit D-137 was prepared. My statement is that we were
interested in the net profits on sales, and this statement
4092 was made up at the time, when, as I recall it, I was
trying to get some idea of the turn-over, that is, the relation of investment to sales, to which I testified here previously, which was eight tenths of one time. It was on the basis of these figures that I testified in that way. These figures are only approximate figures, and that is the reason why I testified on the basis of eight tenths of one time, rather than to attempt to give the exact figure.

I would not say that no study was ever made showing a return on investment to the Western Electric, resulting from the sale of telephone instruments, but all I am trying to emphasize is, that our purpose was to know what the net profit on sales was, and we were not particularly interested in the net return on investment. We might have made that from time to time, but we were not particularly interested in return on investment.

To the best of my knowledge, and the best of my belief
4093 I have not seen a return on investment figure, although
I might have in those earlier years, 1916, 1917, (ten or twelve years ago). We may have made them up, and it may

be those are in the files, but I have never paid any particular attention to them, because they were of no interest to me.

Whether a study of the net profits to investment was made in the regular course of business at the time when we made up the study of net profits on sales, I couldn't answer without going back. My recollection, though, is as I have testified, that we were not interested in it, and I did not pay any particular attention to the return on investment.

Defendants' Exhibit D-137 was prepared under my supervision.

I presume most of these figures could be found in the details in each of the years.

4094 I do not know whether the figures for the investment
~~shown on sheet~~ Defendants' Exhibit D-137, were computed for the first time in connection with the preparation of Defendants' Exhibit D-137, or whether they are taken from studies that were theretofore made. I will have to repeat, as I said before, that I was interested solely in the return on sales, and these figures on investment may have been made in those various years.

The figures shown in the second to last column of Exhibit D-137, "Average Investment", were based on the best estimate we could make of the average amount of plant;
4095 merchandise, receivables, cash, less payables, applicable
to instruments in each of those years. The average investment as used in that sheet was to the best of my knowledge arrived at in the same manner as we arrived at average investment in connection with Exhibits A-77 and A-79, which we introduced.

The sales of the telephone instruments are included in the sales to Bell customers, as shown in Exhibits A-77 and A-79. In computing the cost of sales, we took those into account also.

Re-direct Examination by Mr. Thompson.

Our sales of telephone instruments, prior to January 1, 1928, were sold to the American Telephone and Telegraph Company and subsequent to that date, to the various Bell associated companies.

4327 **JOHN R. TURNER**, recalled as a witness on behalf of the plaintiff, having been previously duly sworn, further testified as follows:

4328 *Cross Examination (Continued) by Mr. Goldstein.*

June 9, 1932.

(Document entitled "Illinois Bell Telephone Company, comparison of depreciation expense actually charged to certain accounts and as modified on basis of present view. 1932" was marked Defendants' Exhibit D 138, for identification.)

That is for the years 1923 to 1927, inclusive.

On page 6 appears the heading, "Illinois Bell Telephone Company, Chicago area, comparison of depreciation expense actually charged for certain accounts, and as modified on basis of our present view, 1932", and underneath that
4329 is the year 1923. The first column is entitled "Actual expense", and underneath that is shown "Central Office equipment, $2,003,375.89". That represents the application of the rate for central office equipment that was actually used in the year 1923, to the average investment in that type of property during that year. I make that statement because I have not taken into consideration any possible accounting adjustments. What we are trying to determine here is a comparison of the rate of depreciation that was actually used in that year, and the rate that I now view as a proper rate based on my analysis of past experience. That is the actual expense using the rate that was used as the result of Mr. Hale's computations.

My present view for the same item is $1,853,122.70. That is my present computation of what the 1923 expense
4330 should have been on the basis of the rate as I would have computed it in 1923, applied to the investment in central office equipment. According to my calculations, the actual expense as the result of Mr. Hale's studies, was excessive, according to my view at this time, for the year 1923, in the amount of $150,253.19.

Similarly according to Mr. Hale's computations the actual expense as recorded on the books applicable to Station Apparatus for the year 1923, was $585,153.58. That amount was $108,671.38, in excess of the amount that I would have set up on the basis of my view of the rate at this time. The amount which I would set up at this time is $176,482.20.

I do not want any misunderstanding about the word "ex-
cessive". When I use the word "excess" or "exces-
4331 sive" there I mean that the amount of depreciation ex-
pense resulting from the application of the former rate in 1923, for that particular item of property, was greater than would result from the application of the rate that I would now estimate for that year, by the amount stated. That is if I were doing the same thing Mr. Hale did, but with the knowledge that we have acquired since 1923 to the present time, I would have had a depreciation expense $108,671.38 less than Mr. Hale showed, and which was used on the books of the company.

On Booths and Special Fittings, my view would have resulted in a depreciation expense of $9,235.30 less than the result of Mr. Hale's view on a total actual expense as charged of $21,100.26.

On the charges made under Mr. Hale's computation for Exchange Pole Lines of $160,246.98, I would have had a charge less than that amount, by $45,899.14.

For Exchange Underground Cable Mr. Hale's com-
4332 putations resulted in $471,739.42 and my computations
show that that was too low by $157,246.42.

For the year 1924 for Exchange Pole Lines I found that according to my view Mr. Hale's computations resulted in a recorded actual expense which was $53,056.71 too great on a total charge of $173,010.99. On Booths and Special Fittings I found that Mr. Hale's computations resulted in a depreciation charge that was $10,329.19 too high on a total charge of $23,609.57. Similarly on Station Apparatus, for 1924, I find that Mr. Hale's computations resulted in a charge that was too high, by $28,537.61 on a total charge of $570,452.31. On

Central Office Equipment I find that he was too low by $88,713.56 on a total charge of $1,961,269.54.

4333 For the year 1925 I find the result of Mr. Hale's computations was too high for Exchange Pole Lines by $57,679.51 out of a total charge of $188,085.36. On Booths and Special Fittings, I found that he was too high by $13,036.26 out of a total charge of $29,797.16. He was $21,146.65 too high on $634,399.36 charged for Station Apparatus. He was too low by $131,823.62 on his actual expense on Central Office Equipment of $2,208,049.05. He was too low for all of the accounts for that year.

That is, for the year 1925, if you take the $131,823.82 when he
was too low, and then add up the sum total of the three
items he was too high on, you get a net result that was too
low on those four items. On the same basis, for the
4334 year 1923, if you add the four items on which he is too
high, and the one item on which he is too low, you find
the result is, on those five items, he was still too high
$156,842.53. If you add the three items upon which he was
too high, and the one item where he was too low for 1924, you
find that he was still too high in the net result on those four
by $3,209.95.

I examined all of the accounts. These are the accounts in
which I would substitute my judgment for that of my predecessor.
I have here in court data concerning the other accounts.
This data was not included in D-128 because, as
4335 I say I did not consider that the differences between
my view and my predecessor's view justified the substitution
of a rate by me for the rate that was actually in effect.
I will make this data available to defendants. This data was
prepared a little in advance of that statement. That was I
believe some three months ago or so. The results of the total
accounts are shown here. I have in the book a brief discussion
of my consideration of every depreciable class of property.
Now, I have not the details of certain accounts,
4336 because that merely consisted of an examination of the
past analyses which have already been made available
to defendants and a determination as to whether those would

justify any difference in the life or salvage estimates of my predecessor. If I concluded that they would not, why, that is all the supporting data we have. But that phase of the study is available to defendants in our detailed studies of life and salvage.

“Q. When you say that is available, you mean that the studies upon which you based your conclusion, are available, but you have no other data other than what is shown here, as to the items as to the data which is not shown, other than the conclusion which you drew from these particular studies?

“A. An outline of that conclusion is contained in here, and the reasons for not varying from the former estimate of life and salvage, in that book.

“Mr. Bracelen: May I say at this time, of course, it is all available to Mr. Goldstein, and has been.

“The Witness: Yes, sir.

“Mr. Goldstein: We are talking now about the—

“Mr. Bracelen: Let us have it clear.

4337 “Mr. Goldstein: the data upon which he based his conclusion as to the items which are not contained in these two documents.

“Mr. Bracelen: I am talking about all of the data there is.

“Mr. Goldstein: Yes.

“Mr. Bracelen: All right.”

For the year 1927 I found my view here that Mr. Hale's computations resulted in an actual expense for Central Office Equipment which was too low by $174,577.20 on a total charge of $2,924,168.22. He was too high by $19,828.11 on a total actual expense of $39,656.22, for Booths and Special Fittings. He was too high by $71,456.49 on a total charge of $214,369.47. The total of the one adjustment where he is too low, and the two adjustments where he is too high makes the three items too low by $83,292.60.

4338 In connection with this study for central office equipment for the year 1923 I have used the same life and salvage that I now find to be proper for the offices that were in service in 1923, and are now surviving. For the offices that have been retired prior to the present time, I determined the

actual life and the actual salvage associated with those offices, and from that information I determined the annual rate of depreciation applicable to the investment in the year 1923, in central office telephone equipment. That was deter-
4339 mined for each class of central office equipment, manual, toll and other equipment of central offices, and composited on the basis of the relative investments in that year, resulting in a composite annual rate of depreciation for central office equipment of 7.4 per cent. The rate that was actually used by the company in that year was 8 per cent.

I have applied the rate of 8 per cent to the average investment representing equipment in service during the year 1923, and I arrived at the depreciation expense which you have referred to, and which is shown in this exhibit as $2,003,375.89, as the expense resulting from the rates actually used in 1923. I then applied the rate resulting from my examination of my own analysis of past experience (that is, 7.4 per cent) to the same average investment, deriving an expense of $1,853,122.70; and in order to determine the difference in depreciation expense between the two views, I subtract the latter from the former figure, and I find that the expense resulting from the rate actually used was $150,253.19 greater than would have been the case had the rate that I now consider proper, been used at that time.

4340 I do not give effect at all to the existence of dial offices in 1923. Our rates are determined on the basis of the various weightings of property at the beginning of each year and each year that composite rate is changed, in accordance with the changing investment that occurs during the previous year. The dial office equipment had a lower rate than the manual office equipment. If in 1923 there had been dial office equipment in service and if I had had the rate for the dial office equipment there would have been a slightly greater discrepancy between my view and Mr. Hale's.

4341 The dial office went into service in the latter part of 1923. You can get a pretty good idea of what the effect of that would be by comparing the rates in this statement for the years 1923 and 1924. The rate in 1923 which excluded dial equipment (because dial equipment was placed in the latter half of the year) was as I stated before 7.4 per cent. In the year 1924 with the same life and salvage for all the other items in that account, because of the influence of the dial equipment throughout the entire year, the rate was 7 per cent. Now it is obvious that the rate would have been undoubtedly somewhere between 7.2 per cent and 7.3 per cent instead of 7.4 per cent. What I had in mind when I said that the 4342 difference would be slight was that that difference would have been about one tenth to two tenths of one per cent on the investment.

4343 I have computed the approximate effect which would have resulted had we applied the lower rate to the dial central office equipment. It would range somewhere between $25,000 and $50,000 for the year, I would say. Of course, I am only estimating the length of time that the dial equipment was in service. I have not the exact figures on that, because we do not account for the property in that manner, but comparing the rates that I have found for 1923, without any dial, with the rates I have found for 1924 with dial throughout the entire year, you have a difference of four tenths of a per cent, so from that comparison, I would say that the rate in 1923, if dial had been included, would have been somewhat in excess of 7.2.

In my computations I have considered that the dial equipment was in service something less than six months. As I recall it it was in service about 5 months, although I am 4344 not certain of that. Were I to assume that the dial equipment was in service as of June 30th, the difference would be somewhat greater. It would be something less than 7.2 per cent and the difference in money would probably be something over fifty thousand dollars. That is a very rough approximation.

You would get the same result if you took the rate that we used for dial, say in 1924, of 5.3 per cent instead of the 7.2 per cent which we used in 1923 for manual, and applied it to the book investment of the dial for the part of the year that the dial was in service.

If you accounted for it by including the dial equipment as
of June 30, 1923, the amount by which Mr. Hale's com-
4345 putations differed from those I made, on the basis of our
present experience, would have increased by $50,000 or
thereabouts.

The reason we did not include the dial was as follows: What we do is to determine the rates for each class of property within an account. Then, in order that the accountants may apply a composite rate to the total dollars within an account, we weight together these various component rates of the different classes of property within the account, on the basis of the relative investment at the beginning of the year in which the composite rates are to be applied.

Page 10 of Exhibit A 125 shows the depreciation rates
applicable to classes of plant effective January 1, 1921, for
the Chicago area. It shows the life, the salvage and the de-
preciation rate, and the composite rate by accounts for cen-
tral office equipment. That rate was applied in 1923.
4346 They did not do that annually in those days but had
they done it, the depreciation expense would have been
greater than the way it was done.

The rate that was applied in 1923 to the central office equip-
ment was the rate established in 1921. It was not changed
until January 1, 1924. Since the beginning of 1928 we have
re-composited the class rates annually. In 1923 we applied
to the central office equipment the rate that was established
in 1921, and that rate did not take into account any dial
4347 equipment. Therefore the results of Mr. Hale's study
did not include any effect of the existence of dial equip-
ment in service in the year 1923. My computations as of 1932,
showing the present view of these rates, does not give any
effect to the dial equipment, in the year 1923, because it was
not in service throughout the year. I am just talking about
1923.

My conclusion as to life differed from Mr. Hale's conclu-
sion for central office equipment. As a matter of fact, in the
former studies there was a composite life estimated for
4348 the various classes of central office equipment, while I

have estimated life for each of the several classes, so that I naturally get a difference as shown by this statement which I gave counsel for the defendants.

I don't recall the exact result of the study upon which the 1923 rate was based. The life that was actually used was ten years. I have in the court room the papers showing the studies of 1923. That study made in 1921 shows that an analysis over a period from approximately 1900 to 1920 indicated an average life of 10.51 years. They used ten years.

In 1932 I made a re study of the conditions as of 1923,
4349 and my studies showed that for the offices in service
there was a life of 11.8 years instead of 10.5 as shown in the 1921 study and I lengthened the life of 11.8 years to 13 years. That is, I increased the life developed from my study as I have explained in my testimony to make allowance as I see it for a longer life resulting from business conditions.

One of the steps that I took was to find out what the study showed and then modified that, as a result of what has been called here judgment, as to the actual life figure used.

"Q. Now, then, as I understand it, the study that was used for the actual 1923 expense showed a life of ten and a half years, and that ten and a half years was shortened to ten years. Your study for the year 1923 showed 11.80 instead of ten and a half years, and, instead of cutting that down, as was done in the 1923 study, you lengthened it to thirteen years in your figures, is that correct?

"A. No, there is an implication in your question, Mr. Goldstein, that my predecessors would have to use a
4350 study that represented the experience of 1900 to 1920 in
getting at some life estimate in 1921 on into the future. Now, I don't know anything about that. I know they used ten years, and I am using thirteen years for a particular type of equipment.

"Q. Yes.

"A. But, then, on the other hand, I am using seven and a half years for toll equipment.

"Q. Let's stick to this one thing. I am trying to get methods.

"A. You are talking about two different things. I want to bring that out."

In 1923 a study was used which was modified by the fact as of judgment, that is a study is an aid to judgment. That was the practice then and is the practice now. We make a study and we formulate a judgment. The estimate of 4351 life is not necessarily based on that study. That is, the study shows what has happened in the past, for instance, and then the man who is responsible for determining what is proper for the present and future considers anything that might affect life. He is guided by that actual past experience to whatever extent he thinks it is advisable to do so.

"Q. You said that the study refers to things in the past. Are we to take it, from that, that your original testimony and the exhibits predicated on that, in which you also considered the future conditions, that that is not to be considered as a study?

"A. I am speaking of the study made in 1923 and I understood you were."

I have a figure which is arrived at as the result of a study, whether the past or the future, depending upon the character of the study.

One way of expressing it is as you state; that is that we either accept the result of that study or modify it by the factor of judgment.

4352 The 1923 study showed that the life was ten and a half years and that was modified by the factor of judgment to ten years. In my study in 1932, for a different kind of equipment, taking into account the knowledge that I now have, and the difference in the method of making our studies, and the different factors that we take into account, I find the life was 11.80, as of 1923, and I modified that by increasing it to thirteen years.

I did not use thirteen years for the same central office equipment that Mr. Hale used in connection with his study, and which I compare on page 1 of Exhibit D-138, and the exhibit is very clear that I did not. The exhibit shows very clearly that where they used ten years for all types of central office equipment, I used twelve and a half years for manual, seven and a half years for toll, and nine years for other 4353 equipment for central office, so that that is the true comparison.

Neither the 1923 study nor my study for 1923 includes any dial. I am afraid that Mr. Hale's study does not disclose whether he included toll but it is my opinion that his study includes both toll and other equipment of central office.

His study and mine did not include a study of the identical property in connection with the thirteen years that was referred to. The study that I used to obtain 11.80 and 4354 Mr. Hale's study do not include identical property. The 11.8 is just for local manual central office equipment. Now, as to the toll equipment, the rate that I have used in 1923 as a comparison with Mr. Hale's work is the actual rate of depreciation experienced by the toll equipment, and it is set up separately on this summary sheet.

The items of equipment which are used in the Hale study correspond in total to the items of equipment which I used in my study. That is, the rate that I have used of 7.4 includes all of the items that are included in Mr. Hale's rate of 8 per cent.

4356 Page 21, entitled, "Manual Central Office Equipment, Calculation of Composite Average Service Life for Offices in Service December 31, 1932" shows 11.80. That figure is the average realized life of all offices in service, December 31, 1922. This was a study of realized life of the 4357 offices in existence on December 31, 1922, from which we obtained 11.8 years. Now, in order to be consistent with our present views, which, as you have stated, resulted in an estimate of thirteen years against a study of 11.8, I increased this life expectancy to thirteen years, and then, as the figure just below it shows, I determined the actual life of the retired offices, that is, the offices retired subsequent to 1923, but which were in service at that time, which was 10.87 years, and that, weighted by the relative investment with the thirteen-year estimate, resulted in twelve and a half years, which I used in this comparison. Now, with that explanation of the computations which resulted in 11.80 I used the method that I have described in connection with my direct testimony, and on cross examination, of getting the composite rate from the entire experience of the unit of property.

I take into account the future additions in getting at 4358 the rate. In arriving at 11.80 as of 1923, and taking into account the future additions, I have taken the future additions at the actual figures of the additions and retirements as made from 1923 to the date of my study. If I were making this rate in 1923, I would put in the figure for the future additions up to 1932 representing the actual experience.

4359 (Statement containing two headings: One, "Investment in Manual and Dial Central Office Telephone Equipment", and the other "Gross Additions and Displacements, Kedzie Central Office Equipment", marked for identification as Defendants' Exhibit D 139.)

I show on page 5 of Exhibit A 128 the estimated requirements for the future additions for the Kedzie office, for the year 1930 as $36,000. The study on page 5 of A 128 4360 was made fairly early in 1930. According to D 139, the actual gross additions for that same year were $122,411, instead of the estimate of $36,000. I estimated displacements for the year of only $700. That also is part of my study made in the early part of the year.

"Q. But according to A 139, it turned out that these displacements were $16,884, is that correct?

"A. Well, Mr. Goldstein, I think you misunderstood the direct testimony, as to just how we make our additions to central office equipment; if I may explain that just briefly."

In estimating future additions, we do not attempt to determine just how the additions will go into service. It is 4361 customary in manual central offices to put in an addition that is good for about three years growth, and we could not very well ascertain just how those additions would be made in the future, so what we did was to translate the line growth for each year into terms of central office equipment, and merely showed the additions for individual years on that basis, realizing, of course; that they might go in in the first of the three years, or the last of the three years. In order to get a true comparison, if you are attempting to criticize my estimate for 1930, if you will compare the gross additions in the year 1930 with the estimates for the years 1930, 1931 and 1932, you will find that it was a very good estimate on that basis.

The figures on page 5 of Exhibit A 128 show an estimated gross addition for the year 1930 of $36,000. I used that figure in arriving at my result with what I thought was a clear
4362 explanation, that we do not contend that that is all that would be spent in that year. It is the equivalent of the line growth, and, therefore, we have distributed the three year addition over the three years individually, in accordance with each individual year's growth.

The result mathematically would be somewhat different if, instead of having thirty six thousand in 1930, I had one hundred and twenty two thousand in 1930. In other offices it would work in the other direction. That is the reason for doing it. The result would be somewhat different in an individual office but we are studying the life of manual equipment in some thirty offices in the city of Chicago.

4363 In the year 1931, as shown on page 5 of A-128, we used $51,100 as the estimated additions for the Kedzie office. The actual gross additions for that year was only $14,527.

The estimate for 1932 appears on page 5 of A-128. I am not talking about the actual in 1932. We have not got it yet. I am talking about the actual expenditures in the years 1930-31 covering a three year period. If you will examine our estimate of those three years, (1930-32), you will find the sum we estimated was $137,000, and the actual was $137,000. When we put in equipment in 1930 we expect that to take care of our estimated requirements in 1930, 1931 and 1932.

4364 I have stated repeatedly that we make our additions to manual central office equipment on approximately a three-year interval basis. Of course, we have small additions that occur in intervening years, such as this fourteen thousand dollars you refer to in 1931. Well, the sum of those two items is approximately the same as the estimate for the three years of 1930, 1931 and 1932. In making our estimates, as I have said before, we do not attempt to determine in just which of the three years the equipment will go in. That is a very difficult thing to forecast, but we can forecast the amount of equipment that will be needed in the immediate future on the basis of increasing lines and calling rates.

My computations take into account the estimates for the particular years as indicated in the study and we do that
because we believe that, with thirty offices, there will be
4365 an equalizing effect. If you pick out one office, you may
be able to criticize the method to some extent, but we are
dealing with the city of Chicago.

The actual gross construction for the year 1930 was $122,411 in the Kedzie office and on page 5 the estimate is $36,000. (Plaintiff objected as repetition. Overruled.)

My study of the salvage of central office equipment consists of my present estimate of salvage for those offices which now survive and were then in service in 1923, and the actual salvage derived from offices that were in service in 1923, that have since been retired, weighted together in accordance with
the relative investment in the two groups. I have my
4366 own study of the salvage that has occurred in all years
back to 1914, in Exhibit A-128.

4368 The 1921 study, which was used as a basis for the
conclusion for 1923 did not show the salvage any later
than 1921, but apparently that salvage was made up at the end of the year. It does not show anything later than 1921 so I could not make a comparison there. Mr. Hale's study used the experience up to 1921. He used 20 per cent for salvage.

"Q. Now, you used 10 per cent instead of 20 per cent as your final figure for salvage, is that correct?

"A. Well, again, you are getting a distorted picture here. You are dealing in one case with offices which were in service then, some of which have since been retired. Now you are
dealing with the surviving offices."

4369 As I explained we used the same salvage that we are using now for the offices which are now surviving, that were in service at that time, and the actual salvage on the others. I used 10 per cent as a salvage figure for manual, and 22 percent for toll, and 50 per cent for other equipment, as compared to Mr. Hale's composite percentage of 20 per cent. That 20 per cent is the composite percentage for manual, toll and other equipment of central offices the same classes of property as mine. Instead of using the one composite, as he used, I used 10 per cent, 22 per cent and 50 per cent for the individual classes. That is because we are now studying those things individually; we think we have better answers for them.

In arriving at the 10 per cent, I took into considera-

4370 tion the experience that we expect from offices in service in 1923 and still surviving, with the present view as to the dial situation, which was probably not as well understood at the time, in the year 1921, when the former rates were made up. I also took into consideration the actual net salvage derived from retired offices that were in service in 1923.

In the case of salvage I did take into account the dial situation in its effect on the manual equipment when that is retired. I took the dial equipment into account in the case of life of manual equipment. I explained that quite thoroughly in my direct testimony. We did not apply a rate for dial equipment in 1923, but I do not see any connection between that and the fact that we have taken into account the effect of dial equipment in determining the life of manual equipment.

4371 In connection with the salvage figure of 10 per cent we examined the actual salvage experience for this type of property and decided whether we might be so fortunate in the future as to derive the same amount of salvage, and came to a conclusion of 10 per cent for this particular type, local manual. The study that I used as an aid in arriving at the conclusion of 10 per cent as a fair net salvage for the present equipment is shown on page 7 of Exhibit A-128.

4372 In Exhibit D-139 I have shown a difference between the study that I was examining, and my own re-study

for central office manual equipment for the year 1924. My predecessors used a composite rate for all types of central office equipment, of 6.7 per cent, which was based on an average life of 12 years, and a net salvage of 20 per cent. My estimate of the various types of central office equipment in 1924 is as follows: Local manual equipment, a rate of 7.2 per cent, based on an average life of twelve and one-half years, and a net salvage of 10 per cent. Dial equipment, a rate of 5.3 per cent, based on an average life of eighteen years and a net salvage of 5 per cent. Toll equipment, the actual rate which was determined from the actual experience of this equipment, which has been completely retired and the in-
4373 formation made available, 10.4 per cent, based on an average life of seven and a half years and an average net salvage of 22 per cent. And for other equipment of central offices, a rate of 5.6 per cent, based on an average life of nine years and an average net salvage of 50 per cent.

I examined the 1924 study. I don't know that any study will show the method of arriving at a conclusion of life. The 1924 study showed that the turn-over-cycle method was used and 15.3 years was the life that was shown by this study for the turn-over period ending in 1932. I don't know whether or not the other studies made at the same time called the logarithmic method for all years, showed a life of 20.5 years. The study shows something that I think is to indicate a trend somewhat like a rate of retirement trend would indicate.
4374 But I don't say that that indicates a life, such as you say.

I find in this volume, which is supposed to cover all of the 1924 life and salvage study, statements which use a logarithmic formula, and show greatly varying life in the last column, so-called life in years. That shows 8.4 years in 1923. That study shows for all years, and also gives the average for 1911 to 1923, inclusive, and an average, 1911 to 1923, excluding 1918 to 1921. The average for 1911 to 1923, inclusive, shows 20.9 years. For 1911 to 1923, excluding 1918 to 1921, it shows 12.6 years; but I would like to have it understood that while it shows just exactly what I have stated, it was my understanding that it was merely used to establish a trend, that it does not mean that is the life of the property at all.

4375 They actually used a life of twelve years in 1924. I found for the offices in service in 1924 which continued in service to the date of my 1932 study, a life of 11.78 and I lengthened that to 13 years. I then made a composite in which I took into account the actual life of the offices that went out of service, subsequent to 1924.

My study showed 10 per cent salvage for 1924 for local manual. The figure used in the previous study was a composite of 20 per cent for all types of central office equip-
4376 ment. I have not a composite for all types in the present study but I can give you the individual salvage percentages; local manual was 10 per cent, dial 5 per cent, toll equipment 22 per cent, and other equipment of central offices, 50 per cent. I don't know how the composite of those individual figures would compare with the 20 per cent; it was unnecessary for the study. All I had to do was to weight together the several rates into a composite to make the comparison.

For central office equipment, this study used the same life and salvage throughout the period 1924 to 1927. I used the same percentage rate for the period 1925 to 1927 as for 1924; there is a slight difference in the composite rate, of course, because of the changing investment.

I cannot say whether when they made the rates in 1924, they foresaw the Merrimac office coming into service
4377 in 1926. The rate in 1926 as actually applied was no different than it was in 1924; but whether they anticipated anything of that kind in making the rate in 1924, I cannot say. I cannot say whether they anticipated the new dial installations in the period subsequent to 1924. They did not vary the rates from 1924 to 1927 with the coming into service of the additional dial installations. That is one of the reasons why I get a difference in my view from theirs, perhaps.

"Q. Now, for each of the years 1924 to 1927, in connection with your computation, you used a method in determining the life of the central office equipment which took into account the gross additions to the ultimate retirement of the original construction, is that correct?

"A. There has been some confusion on that subject here in this case, Mr. Goldstein. I want to say at the outset that the rate that we use is applied to the investment in property in existence at the time the expense is set up, but the rate itself is a uniform rate throughout the life of a unit of
4378 property, and that is affected by additions that occur throughout that over all life of the unit, which, in the case of existing offices, would include the effect of certain future additions.

"Q. When you use the word 'unit' you mean, in the case of central office equipment, the original construction plus all the additions to the ultimate retirement of the original construction?

"A. We consider the entire central office equipment installation in one location, and of one kind, a unit, in that respect.

"Q. You do not answer my question.

"A. Which includes all the additions throughout the experience of that unit of property, yes, sir.

"Q. Yes. So that the unit is made up of two things, the original construction, plus the estimated future additions?

"A. Yes.

"Q. All right.

"A. Of course, you say the initial construction. Now, you may be talking about an office that has been in service thirty years, and has only two more years to go; the rate in that case would be based on thirty years of actual additions, as recorded in the books of the company, and only two years estimate."

In the case of the Merrimac office, that was built in
4379 1926, and continues to 1984, I consider as a unit the original construction in 1926, plus all the additions to 1984. In my re-studies in 1932, for the period 1924 to 1927, as

to central office equipment, the method I used in my re-study is identical to the method used in connection with determining the life of the Kedzie office, shown on page 5 of Exhibit A-128, except for the offices which I have explained were retired, having been analyzed as to their actual experience. As to those offices which were in service as of 1923, and also in service as of the date of the 1932 study, I used in my calculations the method of estimating *life which was identical* to that shown on page 5 of A-128, as to the Kedzie office. Not only the method, but the rates.

The principal reason why I arrived at a different result than Mr. Hale for station apparatus is the difference in our view as to estimated life. There is some difference in the salvage, but not serious, perhaps. My estimated life for the year 1923, in the 1932 study, was seven years. My study is in Exhibit A-128. I arrived at seven years according to the
method that I have already described.

4381 I stopped in my calculation subsequent to the year
1923, as to certain items; in the case of underground cable I stopped at 1924; and in the case of station apparatus I stopped in 1926 and 1927. My reason for stopping there was that the rates that I estimated for that subsequent period in both cases were not sufficiently different for me to substitute my opinion for that of my predecessor.

In connection with the difference between my study and Mr. Hale's in reference to exchange underground cable in 1923, there are several things here that would probably have to be analyzed to some extent, but let us take subsidiary cable, for example. My predecessors estimated that they would obtain 20 per cent net salvage from subsidiary cable. I know very well that they won't obtain any black salvage, that is, it will be in the red, because the removal cost will exceed it. We have used zero because we are awaiting a little further information on the subject before we set a red net salvage,
but they used 20 per cent salvage and that is impossible
4382 to obtain for subsidiary cable. That subsidiary cable
has a life of fifteen years.

What I have just stated as my conclusion regarding salvage is not based upon my opinion as to what is going to happen during that period or at the end of that period. That is what is going to happen when the cable in service in that period comes out. It may come out thirty or forty years from then.

"Q. I notice, according to your calculations on pole-lines, Mr. Hale's studies differed in results from this, in percentages, ranging from 28 per cent to 38 per cent per year, and in each case 1923 to 1926—1923, 1924, and 1925, Mr. Hale's computations resulting in an excess charge of 28 to 38 per cent, and in the case of booths, an excess charge for the years 1923, 1924 and 1925 of about 43 to 44 per cent. What is the principal reason for the difference in your calculation from Mr. Hale's?

"A. All those percentages you have enumerated there are simply a difference in the life estimates between Mr. Hale and myself.

4383 "Q. That is, they are not differences in the life estimates, but they are differences in the dollars in the percentage of total annual expenses, due to your difference in the estimated life?

"A. Yes, that is right, applied to a relatively small investment."

The principal difference in this whole matter of exchange pole lines is that Mr. Hale estimated a life of thirteen years in 1923, and fourteen years in all subsequent years after 1923. I am estimating a life of 20 years for untreated poles, and 27 years for treated poles, and on the basis of the relative amounts of those two kinds of poles, I got 20 years in 1923, 21 years average life in 1924, 1925 and 1926, and 22 years in 1927. Now that is the whole answer to it.

The document identified as Defendants' Exhibit D-140 is a statement which I furnished defendants subsequent to my testimony at the hearing, and is entitled, "Illinois Bell Telephone

Company, Average Realized Life Study, Central Office Equipment, Merrimac Central Office, Schedule No. 1, Common Battery Equipment". It shows the 1932 re-study of the esti-
mated additions and retirements for the Merrimac cen-
4384 tral office equipment which was combined in D-15. It
shows the change that I have made as a result of restudying the conditions since the 1929 study. This was completed about February or March, as near as I can remember it, of this year.

Exhibit D-140 differs from Exhibit D-15 in that we have deferred the estimated additions to a later year. The reason for deferment is the fact that, owing to the depression
and the unusual conditions, we estimate our growth will
4385 not come as soon as we estimated it. It may come
faster.

I made no change as to the ultimate retirement of the office in 1944. The conditions which would lead to deferring the additions would not lead to deferment of the ultimate retirement of the office. We still estimate the ultimate retirement for 1944 and have merely deferred additions.

5750 And thereupon the plaintiff, to further maintain the
issues in its behalf, by its solicitors, introduced in rebuttal the following evidence, to-wit:

W. F. SLOAN, recalled as a witness on behalf of the plaintiff in rebuttal, having been previously duly sworn, further testified as follows:

Direct Examination by Mr. Thompson.

June 29, 1932.

I am familiar with Defendants' Exhibit X-6, in which there appear tables for the years 1921, 1922 and the first six months of 1923, attempting to compare my appraisal method with what is termed "Company experience", and I heard Mr. Cummings' testimony relating to it.

There were 3,056½ poles of various kinds included in the

gross additions in Account 241, Exchange Pole Lines,
5751 for this two and a half year period, as set out in Mr.
Cummings' exhibit. Of these poles, 365½ were under
specific estimates and 2,691 under routine. Of the specific,
66½ were Commonwealth Edison poles.

I have ascertained whether the poles included in this two
and a half year period of Mr. Cummings' exhibit were in
part tank-treated poles. I obtained this information from
the Western Electric Company invoices. In 1921, 23 per cent
were tank treated; in 1922, 85 per cent; and for the first
5752 six months of 1923, 80 per cent. In poles of the same
type, that is, an eastern cedar pole or a western cedar,
treated and untreated, the difference is about $3 to $5. The
difference between a western tank-treated pole and an eastern
cedar untreated pole varies from about $1.10 to $3.25. In
each of the cases to which I have referred, the tank-treated
pole is the higher priced pole.

In Exhibits 1 and 50, introduced at the former trial of this
case, I used, for the purpose of arriving at my trend or conversion
factor on poles, the price of eastern cedar untreated
poles. The price, at the level of June 30, 1923, for an eastern
cedar untreated 35B pole was $18.95, so when Mr. Cummings
used this figure of $18.95, and corresponding prices for other
sizes of poles, what he did was to convert the poles which had
been put in during this two and a half year period, including
all of the expensive tank-treated poles, to the level
5753 of the less expensive untreated poles as of June 30, 1923.

I have also examined Mr. Cummings' work papers to ascertain whether he made any allowance whatever in his figures as of June 30, 1923, for the waste which is incurred in cutting and splicing the cable, and I refer to both Accounts 242 and 245, Exchange Aerial Cable and Exchange Underground Cable. He did not make such an allowance. He took off from the Company's estimate ledgers for the two and a half year period, 1921 to June 30, 1923, the dollars expended by the Company for all of the cable added to plant during these respective periods. These dollars contained the total cost of the cable, less, in some cases, a small credit for salvage.

The footage which he took off was the net footage of the cable. Mr. Cummings has applied to this net footage the June 30, 1923, price of cable, as taken from our Exhibits Nos.
5754 1 and 50, and, in so doing, he is comparing the June 30, 1923, cost of the net footage of cable against the actual cost of the gross footage.

What he did was to take off the dollar prices for the cable appearing on the books. Those dollars were the total cost of the cable. When he came to put the footage in and apply his prices at the later level of prices, he used the net footage; the records from which he took his information show the net footage.

To obtain his prices on cable as of June 30, 1923, Mr. Cummings has taken the actual gross cost of the various quantities of cable erected in each of the three years, and has repriced these net quantities as of June 30, 1923. The prices which he has used as of June 30, 1923, represent the prices of the particular types of cable which I had used in arriving at our conversion factor. As a matter of fact, there were several types of cable erected in each of the three years, most of which were more expensive than the type which we had selected for our index conversion factor. The effect of
5755 this procedure is, of course, to convert the more expensive types to the particular type which we had used. For 22 gauge cable, I had selected Type ANA; and for the 19 gauge cable, I had selected Type ANB. Of course Mr. Cummings has converted everything to these two types.

I also found a mathematical error made by Mr. Cummings in Account 245, Exchange Underground Cable, for the six-month period ending June 30, 1923, in his material cost trend. The nature of this mistake was that if the mistake had been corrected Mr. Cummings' results would have given him a higher answer on his theory than it should have; that is, it was against him, or in favor of the Company. That mistake, as well as certain other errors, has been corrected in our exhibits, to which I will refer later.

Mr. Cummings has not carried out on sheet 1 of Exhibit

X-6 the total result of his computations for the two and
5756 a half year period. I have made this calculation. On Exhibit X-6 Mr. Cummings has derived certain figures for each of the two and a half years, which he has called "Company experience", and given the relation of those figures to the figures which we had shown in Exhibit 1 for each of the years; but has not given it for the total two and a half years. His results are within 96.28 per cent of ours for the two and a half year period on Exhibit X-6.

I have prepared a statement (identified as Plaintiff's Exhibit A-243) which corrects sheet 1 of Cummings' Exhibit X-6 for his errors in material prices only, but includes the mathematical error that I have just referred to. This exhibit shows that if you just correct material errors only in Mr. Cum-
5757 mings' Exhibit X-6, the correct answer is 97.28; that is, his corrected theory would give a result 97.28 per cent of our figure.

Mr. Cummings, in arriving at the labor cost which he uses in compiling the so-called "Company experience" used by him in Exhibit X-6, has used the productive hourly rate for the first six months of 1923, adjusted by relatively small factors to bring it to what he says would be the level of June 30, 1923. Of course he has not done that, but that is his assumption in making that correction.

I have made a study of the plant forces of the Illinois Bell Telephone Company in its Chicago area for the period 1911 to 1931, and have set forth the results of this study in an instrument which has been marked as Exhibit A-244. I prepared this exhibit from an analysis of the Company's records. I determined the average number of plant employees of the Company for the Chicago area, for each of the years 1911 to 1931, inclusive. I have tabulated the results of these
5758 investigations as shown on this sheet, and I have also plotted the results in graphic form as shown in the curve on the Exhibit A-244. It will be noted that from 1911 to 1917 the average number of employees varied from 1,069 up to 1,452. It will also be noted that during the years 1918, 1919, 1920 and 1921, which were the years during and immediately

following the war and covering the period of the 1921 depression, the plant forces of the Company were nearly cut in half. Beginning in 1922, the plant forces were suddenly expanded, and in the first half of 1923 were in excess of what they had been before the war. That is rather graphically shown on the curve in A-244. Mr. Cummings arrives at his productive hourly labor rate by dividing the total dollars of money paid for wages by the number of hours worked.

These construction forces went down, as shown graphically on Exhibit A-244, until they reached their low level in
5759 1918. Then they started up with the period of construction until, in the first six months of 1923, the number of employees reached the peak that the Company had had in its construction forces since 1911. There was a very sudden expansion in their forces in 1922 and the first half of 1923.

I did not use this productive hourly labor rate in my appraisals at all. I used a typical gang, representing what I believed to be that which would be used during construction, and then adjusted the wages of this typical gang in accordance with the wages paid by the Company in each of the years.

The effect of the employment of a large number of new men on the productive hourly labor rate is perfectly obvious. When you take on a large number of new men, they are taken on at a lower wage level than the older and more experienced men, and a sudden increase in the number of
5760 employees results in a substantial reduction in the productive hourly labor rate. If you take the productive hourly labor rate for a given period of time when the forces have been suddenly expanded, you get a very low productive hourly labor rate.

The productive hourly labor rate for the first six months of 1923 of the Illinois Bell Telephone Company was the lowest in this entire two and a half year period. Mr. Cummings testified, and it is a fact, that it is not only the lowest for the two and a half year period, but it is the lowest since our entrance into the war.

Telephone construction work in general is done by groups

of men, which are known as construction gangs. These
5761 gangs are usually composed of foremen, linemen, ground men, splicers, helpers, and so forth. When any company contemplates an extensive expansion in its construction program, the construction forces are immediately expanded by the employment of large numbers of new people. The new men in general are taken on at the minimum wage, and after a short period their wages are increased. Eventually the helpers are advanced to the status of splicers, and the ground men are advanced to the status of linemen. Because of this situation, very rapid changes may take place in the productive hourly rate, with a relatively minor change in the basic wage rate. The converse of this situation will, of course, arise when construction forces are contracted. Now, that is very clearly illustrated by what happened between the year 1929 and the year 1931. After 1929 the plant forces were rapidly diminished, and there was still a slight wage increase, however, between 1929 and 1931; wages actually increased about 4 per cent, and yet the productive hourly rate increased from 13 per cent to 20 per cent for the different accounts during that period, just because of the fact that the lower priced men had been dismissed.

I have prepared a table in exhibit form which illustrates this situation.

5762 (Which table was identified as Plaintiff's Exhibit A-245.)

A very striking illustration of this situation occurred in 1923. In 1922 and 1923 the construction forces were rapidly expanding, and the average number employed in the year 1923 was nearly double those employed in 1920. Now, to take one account, the Pole Line Account, the productive hourly rate for pole line labor in the first six months of 1923 was slightly under 91 cents per hour. As a matter of fact, it was 90.78 cents per hour. And in the second half of the same year that productive hourly rate had increased to 98 cents per hour, an increase of over 8 cents per hour, although the wage rate had increased less than 3 per cent. Going back to Mr. Cummings' Exhibit X-6, he has used that extreme low point

which occurred in the first six months of 1923, except that he has modified it by one one hundredths of one per cent;
5763 that is, instead of using 90.78, which was the exact figure, he has used 90.79. He alleged that the modification was merely to get this productive hourly labor rate for the first half of 1923 to the level of June 30, 1923. As a matter of fact, the correction of a wage rate will never correct a productive hourly rate, and it cannot do it in that way. Now, if he feels that he should use the productive hourly rate to convert our figures or to test our figures, he should certainly have taken a point somewhere between the 91 cents that occurred in the first half of the year and 98 cents in the second half, with any modification of wages that he might have wanted to apply to that. That would have certainly been a more nearly correct figure than the one that he did use.

5764 There is a case where Mr. Cummings found that about 30 poles had been erected in the first half of 1923 on specific estimates. Now, there is another illustration of what happened to the productive hourly rate. It happened on those 31 poles that the productive hourly rate was slightly over 84 cents an hour in the first half of the year. As a matter of fact, there were about the same number of poles erected in the second six months of 1923, where that productive hourly rate had increased to slightly over $1.03. That is, there was an increase of over 22 per cent there, with a wage increase of only about 3 per cent. It should be pointed out that the productive hourly rate which was reached in the first six months of 1923 is the lowest point which the company has experienced since our entrance in the war, and that low point has never since been experienced.

5765 I have prepared a simple little graph which shows the use of this productive hourly labor rate and how it relates to productive hourly labor rates of other periods of time.

(Which graph was marked for identification Plaintiff's Exhibit A-246.)

There are two graphs on that exhibit. The one on the left-hand side of the sheet is the one that Mr. Cummings used in Exhibit X 6. I will discuss that first. The first horizontal line which is up at the upper left hand side indicates that the average productive hourly rate for 1921 was almost $1.08 an hour. The second horizontal line part way down the graph shows that the average productive hourly rate in 1922 was somewhat over 98 cents. And the very bottom one is the 90.79 cents that Mr. Cummings has used in converting our entire pole line account down to that temporary rate that was reached in the first six months of 1923. The last horizontal line shows what happened to the productive hourly rate 5766 in the last six months of the year 1923.

Mr. Cummings used this productive hourly labor rate, which, on the left hand of this chart, is identified with an arrow, for the purpose of converting the labor costs in these three accounts which he analyzed for the entire two and a half year period, which was at a little above 90 cents, and which was lower than it had been during that period at any time.

The right hand side of the chart (A 246) simply illustrates what he has done in Exhibit X-9. As I pointed out before, he found that some 30 poles had been erected on specific estimates in the first six months of 1923, so he has accentuated the error that he made in his first calculation in X-6 by pulling everything down to about 84 cents an hour. That was done by the study which he explained in getting the productive hourly labor rate from specific estimates as counter-distinguished from using it on specific and routine combined.

5767 The next thing this graph shows is how violently or how quickly a productive hourly labor rate can change with hardly any change in the wage rate. If we look at the last horizontal line in this right-hand graph, we will see that jumped up to over $1.03 there and yet there was only 3 per cent change in the basic wage rate.

This chart, Exhibit A-246, deals with exchange pole line labor. The same comparisons exist in the other accounts used by Mr. Cummings but in varying degrees.

I think the application of productive hourly labor rates for the first six months of 1923 with the minor adjustments made in them by Mr. Cummings, when used to obtain the labor costs for the gross additions for the period 1921, 1922 and the first six months of 1923, is obviously incorrect from an inspection of those graphs. In my opinion, from a practical standpoint, it would have been absolutely impossible to have reproduced the Chicago property at the productive hourly rates which were experienced in this relatively short period of six months.

I have prepared an instrument, identified as Plain-5768 tiff's Exhibit A 247, in two sheets, the first of which shows a comparison of my index of labor costs for an aerial construction gang, based on the trends which I actually used in Exhibits A 2 to A 10, and an index based on the productive hourly labor rates for Class "A" labor, and the second sheet of which shows this comparison graphically.

"A" labor is the predominant type of labor that is used in erecting poles and aerial cable. It is apt to be mixed; however, with other types of labor. For instance, in erecting poles you will frequently find that — well, say 20 per cent of "G" labor, that is a different type of labor from labor used in connection with pole line work; but "A" labor constitutes about 80 per cent of pole line labor and a lower percentage of aerial cable labor. The other aerial cable labor would be "D" labor, pertaining to splicing. But from certain of 5769 the Company's records it was possible to get the rates for the specific kinds of labor, without making a very long, detailed analysis of labor costs, so I have taken this "A" labor to illustrate what I mean.

Now, discussing the table first (A-247), I have given our index that we used on labor from the period June 30, 1923, to the end of 1931. You will notice that the index starts at 100 per cent, in 1923, goes to 102.7 by the end of the year, and goes up to 115.8 per cent at the end of 1931. Now, if you take this Class "A" labor on a productive hourly rate, as Mr. Cummings has implied might be proper from his exhibits, you can see what has happened and what sort of a result you get if you use that as a measure of your conversion factor.

On sheet 1, the column based on trends used in my Exhibits

A-2 to A-10 illustrates how my gang set-up, the labor cost based on that method has increased from June 30, 1923, to December 31, 1931, in that "A" labor class. If I had used the productive hourly labor rate that Mr. Cummings used in his Exhibit X-6, the increase, instead of being 15 per cent, would have been 66 per cent.

5770 Sheet 2 is the same thing applied graphically. Now, the rapid rise in the years 1930 and 1931, and even 1929, is due to the fact that the construction program was nearing completion and that the lower-priced men had been dropped out and the higher-priced men retained.

Where a productive hourly labor rate is so distorted as the Company's experience was in the first six months of 1923, I have never used such a rate in arriving at labor costs in an appraisal; not for any such period as six months, and not under conditions where such a sudden and violent expansion of forces had taken place. I think the graphs I have introduced prove very conclusively that it was a temporary condition; I know it was.

I have never used less than a year for a productive 5771 hourly labor rate, and in a job of the magnitude of this Chicago telephone investigation, I would hesitate to even use a year, unless it were modified by some very close study of the type of men and the average wage rates paid.

I prepared Plaintiff's Exhibit A-248, which shows the average productive hourly labor rate for Class "A" labor for aerial construction from 1921 to 1931. That exhibit merely shows by blocks of six months the average productive hourly labor rate in this account. The other graph that I put in simply showed the trend of the index. Now, this is plotted to show the cents per hour that were paid for Class "A" labor. You will notice that the first half of 1923, which Mr. Cummings used, is the extreme low point and was a temporary situation that only lasted six months.

I have made a calculation, which is set up in exhibit form and identified as Plaintiff's Exhibit A-249, as to the effect on

sheet 1 of Cummings' Exhibit X-6 of a correction in his
5772 labor factor by merely substituting for his productive
hourly labor rate the average productive hourly labor
rate for the entire year 1923, adjusted to the June 30, 1923
level for the difference in weight trends. I have combined
this correction with the correction for his errors in material
costs so as to re-state sheet 1 of Cummings' Exhibit X-6 for
these two factors. It shows that if the combined two and a
half year period is revised, the result would be different;
97.86 per cent of the result which we reached in our Exhibit 1.
That is, 2.14 per cent difference.

I do not approve of the method of using this productive hourly labor rate for so short a period as a year in this connection. I do not think it is proper to use it.

The errors which I have testified to on sheet 1 of
5773 Cummings' Exhibit X-6, also reflect themselves in each
of the other 16 sheets of his exhibit. Sheet 1 is merely
a summary sheet based on the other 16 sheets.

If I had used the average productive hourly labor rate in my appraisals (Exhibits A-2 to A-10, both inclusive) for the period 1923 to 1931, instead of a typical gang, the result would have been a substantial increase in the labor costs used in my appraisals. I have not made any calculations to determine just how much that increase would have been, but I think that if you will refer back to Exhibit A-245 you can determine approximately what that would have been in two years. If you look at the first sheet of Exhibit A-245, you will see that we increased our pole line work from 1923 to 1929 by 12.47 per cent, whereas, if we had used a productive hourly rate factor we would have increased it by 35.2 per cent. That is the basis on which I say the increase would be substantial, even though I have not attempted to evaluate it in dollars.

If you will look at one other account there, 245, under-
5774 ground cable, we increased 36.22 per cent, but the pro-
ductive hourly rate method would have given 47.26 per
cent. It is those things that lead me to believe that our
results in all the subsequent exhibits would have been much
greater than they actually have been set out.

Exhibits X-8 and X-9, prepared by Mr. Cummings, constitute an attempt to show a comparison of labor hour performance between specific and routine estimates of the Illinois Bell Telephone Company in the following accounts: Exchange Pole Lines, Account 241; Exchange Aerial Cable, Account 242; Exchange Underground Cable, Account 245. When Mr. Cummings has obtained his labor-hour performance on specific estimates, he applies such performance on the specific estimates to all work done in these three accounts for the two and a half year period, both on specific and routine estimates, except Building Cable 35-C, which is a sub-account of 245.

The data contained in the various sheets of Exhibit X-8 is made the basis of the comparisons appearing in Exhibit 5775 X-9, so that Exhibit X-9 depends for its validity upon the correctness of Exhibit X-8.

From my examination of Mr. Cummings' work papers, I have ascertained that he made an error even on his own theory in calculating the hours of labor performance in exchange pole lines. It has already been discussed. He included 75½ poles under specific estimates without including any labor hours associated therewith, but he also included 70 hours of labor not related to any poles. The result was a substantial error. The result was that Mr. Cummings showed in his exhibit that poles would have been installed during this period on specific estimates with less labor hours than the Company actually experienced on specific estimates for the period.

5776 In connection with the 290 poles included in the specific estimates used by Mr. Cummings (excluding now the 75½ poles where there were no labor hours associated with them at all), I made a study of construction records to determine for how many of the poles set on specific estimates it was necessary to cut through pavement. I also made a similar study to determine how many of the poles that were set on routine estimates were cut through pavements. Only 4 poles out of the 290 that Mr. Cummings used after he made his correction were set through pavement; those were poles that were set on specific estimates. We could not get the records

of all of the poles set on routine estimates, but we got the records of 2,050 out of a total of about 2,700; I guess the exact number is 2,691. Out of that 2,050 we found
5777 that 13.4 per cent were set through pavement. The labor cost of setting poles is increased about 50 per cent where it is necessary to cut through paving. That is the labor cost only; I am not talking about the total pole cost.

If you take the corrected figures for this account given by Mr. Cummings orally, and make a proper additional allowance for average conditions under which poles would be set in the pavement, it would show that the experience of the Company shows that it costs just as much to set poles under specific estimates as it does under routine estimates.

I am familiar with sheets 13, 14 and 15 of Exhibit X-8, in which Mr. Cummings has attempted to arrive at the trial labor hours for the installation of underground cable on combined specific and routine estimates. I am also familiar with the work papers which Mr. Cummings used in this con-
5778 nection. Mr. Cummings applied to the quantities of cable, both main and subsidiary, shown in the exhibit, trial labor hours applicable only to main cable.

The records of the Illinois Bell Telephone Company do not disclose how much of the cable installed in the two and a half year period is main and how much is subsidiary. There was a substantial amount of subsidiary cable installed in this two and a half year period. There are two or three reasons for knowing that. First, because the Company is constantly installing that kind of cable. I do have the records of the entire cable plant of the Company, which show that about 15 per cent of all of the cable is subsidiary cable. There is also an indication to be found in the number of pairs of cables: in the underground cable most of the cable that is less than 200 pairs in size is subsidiary cable.

For his trial labor hours for exchange underground
5779 cable, I understand that Mr. Cummings used an exhibit that had been put in in the New Jersey case of the New York Telephone Company, which had been designated as Exhibit P-23 in that case. Trial labor hours were shown in

this exhibit in the New Jersey case for both main and subsidiary cable of the various numbers of pairs and various gauges. There is a difference in this exhibit in the New Jersey case between the trial labor hours for the same gauge and number of pairs of cable as between main and subsidiary cable; it showed that the trial hours for subsidiary cable were approximately twice, in some cases more than twice as much as trial units for main cable.

As a result of this process, which I have described and which Mr. Cummings has described on the stand, he got a total computed hours of 598,100 in this account for the two and a half year period, against actual hours of 708,743, which gave him a correction factor of 118.5 per cent, which he
5780 then used to correct his trial labor hours. After having
corrected his trial labor units by this 118.5 per cent, he then ascertained that the hours of labor performance under the specific estimates were only 81 per cent of the labor hours shown on the specific and routine estimates combined, and then he applied that 81 per cent to all the work done on both specific and routine estimates.

Mr. Cummings has stated that this correction factor of 118.5 per cent took into consideration the fact that a substantial portion of the underground cable installed during this period was subsidiary cable, where the labor hours required for installation were about twice those required for the installation of main cable. Here is the situation: Mr. Cummings has applied the trial labor units for main cable only to a composite group of cable consisting of both main and subsidiary. That is, he has just taken these units that applied to one kind of cable only and applied it to a composite group containing both, and, of course, he found that a correction factor was necessary. So he applied this correction fac-
5781 tor against all of the sizes indiscriminately, and it is,
of course, perfectly obvious that the correction factor should have been applied against the sizes that belonged in the subsidiary group. This means that his main cable units are very badly distorted. So he then takes these distorted

main cable units which he has arrived at in this way and applies these distorted units to the quantities of cable that he has arrived at under these specific estimates. That would convey the impression that the specific estimate jobs would require less time than they actually do; it gives a very distorted answer. The reason it is distorted is because the proportion of main and subsidiary cable in specific estimates is entirely different from the proportions under routine or under specific, or under routine and specific combined. You cannot use the units in that way without getting a distorted result.

The trial labor hours which are shown on this Exhibit
5782 P-23 in the New Jersey case for the main cable units are
just about half of the subsidiary.

On sheets 22 to 29, inclusive, of Exhibit X-8, which deal with specific and routine estimates on house or building cable only, Account 245, Exchange Underground Cable, Mr. Cummings found that the labor hour performance on specific estimates was higher than the labor hour performance on the combined routine and specific estimates. There he changes his method. In all of the other accounts he found the reverse situation; he found that the specific took somewhat less hours than the routine, but here he found the reverse, so he changes his method and uses the labor hour performance on combined routine and specific. The result is that Mr. Cummings here
follows the method which we used in all of our reports,
5783 but, of course, in this particular instance he gets a lower
dollar result for labor than he would have if he had used
the method which he had followed in all of the other
accounts.

5784 Account 35-C is building cable. I have made a very
careful study of what has happened to the building cable. Now, building cable means the large cables that serve all these big office buildings, and, of course, smaller buildings too, in Chicago. Now, as a matter of fact, ~~most~~ of that cable was erected when the building itself was being erected; that is, as the building went up. Just like this new Marshall Field Building over here, they are putting in that cable as the building itself goes up. If we tried to reproduce that same cable

today, after the building is completed and all the marble finish is put in and the interior decoration is completed, and after all the other utilities have also got their cables in the same shaft, the cost would be increased tremendously. I visited 10 or 12 buildings in the loop here, just to get some idea of what that situation was. A very good example is across the street here, in the Continental Bank Building; the cable shafts are just filled with cables and terminal boxes of all sorts; if you tried to reproduce that cable today it would cost you tremendously more than it did when the building was erected.

5785 In Exhibits A-2 to A-10, inclusive, which show the cost to reproduce this property for the years 1923 to 1931, no element of cost is included on account of that tremendous increase of labor that would be incurred if the cable were to be installed under the conditions existing today or for a period of four or five years back. That is neither included in that account nor in any other account.

Mr. Cummings has repeatedly stated that routine work represents what he calls piecemeal construction. He has been at some pains to emphasize the fact that piecemeal and routine are the same thing, and he claims that if the property were to be reproduced, the cost of routine work could be reduced to that of work done on specific estimates. Now, the way I look at it, the real reason that routine work 5786 costs more than specific is because, in many cases, the nature of the work itself is different. Much of the aerial cable and much of the subsidiary cable is in short lengths, and it is this class of plant that is erected under routine estimate. A piece of aerial cable may extend for only one or two blocks and a piece of subsidiary cable maye be only 50 or 100 feet in length. Now, much of the routine cable splicing work is done on live and operating cables, the plant is an operating plant, and, as it is built, there is some extra cost, due to the fact that cable is spliced on live and operating cable.

"Q. That would be true not only under the method you have adopted in your appraisals, but that would also be true under any reproductive condition where you were cutting plant in service as you went along?

"A. It would seem to me to be utterly foolish to think of reproducing this property without cutting a large part of it into service as quickly as you could."

If you do that, then you have got to do some of this cable splicing in these various shafts in the way it is now done
5787 by the Company under routine estimates.

If the property were to be reproduced today, it would be uneconomical to carry the entire project to completion before putting any part of it into operation. The volume of construction work done in every year of the Company's history has been very large in amount. Prior to 1923, I think I testified that the average yearly gross construction was between seven and eight million dollars. Since 1923, up to 1930, the average yearly gross construction has been about twenty million dollars.

From 1923 down to 1930, the Illinois Bell Telephone Company has been adding, in its Chicago area, gross construction at the average rate of twenty million dollars a year. It
5788 was fairly large in 1931, too. Even with this large volume, it has been necessary to do a part of the work under routine estimates. I certainly think it would be necessary to do that if the property were to be rebuilt in its entirety today. I do not think the property could be reproduced if all labor were reduced to the level of that experienced on specific estimate work only.

Mr. Cummings offered this fact as an explanation why building cable was a special job; that they were individual jobs.

I have prepared an exhibit (identified as Plaintiff's Exhibit A-250) which shows the apportionment of book costs to
5789 specific and routine construction. The left-hand column of that exhibit shows the book cost as of December 31, 1930, by accounts. It gives the dollars for each account, and you will notice at the bottom there that the total is about $169,000,000, the total book cost on December 31, 1930. Now,

we have gone back on each account and added up gross additions in reverse order, until we got an amount equal to this book cost.

I wanted to find the work that had been done under specific and under routine estimates in these various accounts. In order to do that, I went back and added the gross additions up until the amount of the gross additions in each account equalled approximately the present book cost of that account. In adding them up in reverse order, we kept the amount
5790 that was done under specific and the amount done under
routine separate, so that the results are tabulated in the last two columns of this exhibit.

It (A-250) shows that of $169,000,000 odd nearly $104,000,000 was under specific and about $66,000,000 was under routine. But that does not give quite the true picture, because if you look up at Account 222, "Other Equipment of Central Office", and look at Account 231, "Station Apparatus", those combined represent about $18,000,000 or $19,000,000. The total dollars of those two accounts are material only; they have no labor connected with them at all. So if you consider that on the specific side, you get the figures shown at the bottom of the page there of about $121,000,000 as being a true picture of the specific work and about $48,500,000 as routine.

"Other Equipment of Central Office" is mostly furniture,
lockers, and things of that sort. "Station Apparatus" is
5791 telephone instruments. So, when you get a portion of
them under specific and routine estimates, you are just talking about materials anyway, because whether you erect your plant under specific or routine does not matter; you buy that same quantity under the same price anyway. That is why I have thrown them over under the specific side at the bottom of the page. You will notice that is $121,000,000 of specific and $48,500,000 is routine, or a percentage there of 28.57 per cent. Now, if you consider that about 50 per cent of that $48,000,000 there is labor, that is the only part that is affected by this routine thing, because the other part is material, and that reduces it; out of the total construction about 14 per cent would be what you would call routine labor.

That is the amount that is involved in this question of routine or specific work.

I do not think there is any doubt at all that under reproductive conditions there would be a substantial element of work that would necessarily, by its very nature, be required to be done under conditions approximating those of the present routine estimates.

5792 I have prepared an exhibit (which was identified as Plaintiff's Exhibit A-251) which corrects Mr. Cummings' Exhibit X-9, sheet 1, for errors in material. I testified to errors in Mr. Cummings' method in arriwing at Company experience under specific estimates and also corrections for the use of the average productive hourly labor rates for the first six months of 1923 by using the average productive hourly labor rate for the entire year, adjusted to the June 30, 1923 level. This exhibit shows the per cent of the so-called "Company experience" to the appraisal method pursuant to Cummings' exhibits as corrected.

In the next to the last column there is "J. G. Wray Exhibit X-9", and then in another column, "J. G. Wray Exhibit X-9-A". That is on account of the correction exhibit 5793 which was put into the record yesterday. There was a correction put into the record yesterday by Mr. Wray, and we just put in three figures there on the original which showed he got a result 91.79 per cent of our answer, and when he corrects it, he gets 92.36 per cent. When we correct his work for the factors indicated only, we get 96.78 per cent; a variation of a trifle over 3 per cent. That is, however, using his theory entirely. I do not think his theory is right, but if you take his theory and correct it, that is what the answer would be. So, in this exhibit by merely correcting what I believe to be errors even in Mr. Cummings' own methods, we show that when corrected the result is within approximately 3 per cent of my appraisal.

I am familiar with Defendants' Exhibit X-13, which attempts to make a comparison between Gregory's state-
5794 ment "B", appearing in the last column on page 1, and the materials in Account 221, Central Office Equipment;

Account 231, Station Apparatus; and Account 234, P. B. X., as found in my appraisals for the several years 1923 to 1931. There are not included in these three accounts, or any of them, for the years 1923 to 1927, as shown in my appraisal, any receivers, transmitters or induction coils. The Company did not own them up to that point; they were owned by the American Telephone and Telegraph Company and leased to the Illinois Bell. For the period 1928 to 1931 Mr. Cummings has included all receivers, transmitters and induction coils purchased by the Illinois Bell Telephone Company for its
5795 Chicago area after the original purchase which has already been mentioned. I do not know accurately how much these amount to; it is about $2,500,000.

There are not included in these three accounts in my appraisal for the years 1923 to 1931 any loading coils or cable terminals. It is hard to get the exact amount of loading coils and cable terminals added to the Chicago area during this period of time, but from the investigations we have made there is about 1,800,000 loading coils and about 1,500,000 of cable terminals, totaling about 3,300,000.

Class "C" material is material which is turned in to the distributing houses of the Western Electric Company, reconditioned and reissued to the same telephone company. There is quite a lot of Class "C" material included in these three accounts in my appraisal, shown on sheet 1 of this
5796 exhibit, but I cannot say how much it amounts to. There is some in the appraisal, quite a substantial amount.

During the period involved in my appraisals, there has been no delay in materials delivered directly to the job after they were purchased from the Western Electric Company. The average turn-over on materials from the warehouse to the job is about three weeks.

In converting the gross additions, I used average prices paid the Western Electric Company throughout the year. My method of dealing with this price situation which Mr. Cummings criticized has not had any substantial effect upon the dollars shown in my appraisal year by year.

Since my appraisal exhibits were submitted to the
5797 defendants in this case, representatives of the firm of
J. G. Wray and Company have inspected the prices which
I used and the price lists of the Western Electric Company.

I am familiar with sheet 2 of this exhibit, which purports to show a comparison between my appraisal and what is termed Western Electric Company average, both with respect to manual and dial equipment as to both installation and equipment specification costs. There has been one installation of No. 1 manual switchboards in the Chicago area during the period 1923 to 1931. There have been some fairly large additions of manual switchboards to the existing plant during that period. There has been no installation of the new No. 11
manual switchboards in the Chicago area; they are not
5798 used in Chicago. The No. 1 manual switchboard has
been standard for approximately twenty years prior to
1923. The new No. 11 manual Western Electric switchboard first came into general use about the latter part of 1923 or 1924.

During the years 1924, 1925, 1926 and 1927, there was a substantial amount of installation labor which had theretofore
been done in the field transferred to the factory; there
5799 has been a very decided change in their installation
methods. The result was that the amount of installation labor on both manual and dial equipment, in proportion to the material, was decreasing rapidly.

In general, I treated the labor and material costs with reference to both manual and dial installations just the way it was installed. That is, my figures were based on performing the installing operations in the field and including them as a labor factor to the same extent with respect to a given central office installation throughout the entire period. Take the case of this State central office, this large dial office over here. That was one of the earlier types of dial equipment, and a large proportion of that labor was installed in the field; that is, after the material had been delivered. Now, in one of the later types, like the Franklin-Randolph, the design 5800 of equipment had changed, and it was possible to do a lot of that installation work—or work that was formerly done in the field, it could have been done in the factory. Of course, the thing balances back and forth; that is, if you take it out of the field work, then it appears as a cost on the material side.

If an office was installed in 1923, 1924, or 1925, whatever the case might be, I took all material prices as determined for that year from the Western Electric Company and related them to the things which they charged as material at the time that installation was made. Then I arrived at the labor factor for the work of installation. In my later appraisals, I did not increase the price of the material because of a change in policy in the Western Electric Company in transfer- 5801 ring work from field to factory. Nothing like that was done at all. It was just carried forward as it was originally erected.

Our answer is correct, because we have carried the material forward as it was and the labor forward as it was. If you take your labor out of the field, you will, of course, have 5802 to put something over on the material side. We have done neither one of those. We have just carried that forward as it was, but, of course, the factors that you get taking our study based that way you cannot compare with another set of index factors where that transfer of labor to material has been shown as part of the index.

Reference has been made to the fact that I included Commonwealth Edison poles in the item of incidentals which was in the labor part of the material and labor proportions in the appraisal prior to June 30, 1923. That is true. In the exchange pole line account from 1911 to June 30, 1923, the materials increased at a very much greater rate than labor. The inclusion of these Commonwealth Edison poles in incidentals in the appraisal as of June 30, 1923, makes our appraisal for the pole line account slightly too low. In Exhibits A-2 to A-10, inclusive, these poles have been treated separately.

5803 If you refer to the first two columns in Exhibit X-10, you will notice that from the period 1918 to June 30, 1923, over 1917, and that beginning with July, 1923, there is a very substantial drop; that is, the material drops and the labor percentage increases during that period. This very wide difference shown on this exhibit is due largely to the factor I have just mentioned, that is, the inclusion of the Commonwealth Edison poles on the incidental side of the construction account for labor. The Illinois Bell Telephone Company began to acquire an interest in Commonwealth Edison poles in a substantial amount, about 1918. In fact, it was in 1918, although prior to that time there had been a few small acquisitions of half-interest in Commonwealth Edison poles. That increase in labor costs, as shown on these 5804 sheets to which I have just called attention, is due largely, for the period 1918 to 1923, to the inclusion of the Company's interest in Commonwealth Edison poles as an incident to the labor factor. Of course, the construction work in every year is somewhat different from that of any other year, and there is some of that also reflected.

In connection with Defendants' Exhibit X-11, sheets 1, 6 and 7, Mr. Cummings used the number of hours as 9,242 hours for aerial cable for 1929. I have examined the routine estimates of the Illinois Bell Telephone Company in the Chicago area in this account for the year 1929. About 189,000 hours of labor performance were included in connection with the routine estimates of the Company in this account for 5805 this year. The result of that is that Mr. Cummings has considered, in arriving at the results shown by him on page 1 of this exhibit, about 5 per cent of the labor hours of the Illinois Bell Telephone Company in this account. The total labor expense involved in the account for the year 1929 was about $200,000.

By the use of this 5 per cent of the Company's total labor in this account for the year 1929 he then arrived at a correction factor of 63.32 per cent. He applies this correction factor to the entire account so far as labor is concerned. Having gotten only 5 per cent of the total labor involved in this

account for the year 1929 on both specific and routine, he then uses this correction factor of 63.32 per cent based on a study of only 5 per cent of the labor, and applies it to the entire labor of over $200,000. He implies that if the
5806 entire aerial cable plant existing in 1923 were to be reproduced in 1929, the labor portion should be reduced about 37 per cent, and~~, of course,~~ that is based on only a 5 per cent study of the 1929 performance.

He showed that the increase of labor efficiency in the underground cable account as between 1923 and 1929 was about 5 per cent. That study was based upon an examination of 245,000 hours of labor performance. Even on that, though, his result was not correct. He failed to consider the increased cost of building cable construction in 19[illegible] over 1923. Now, as a matter of fact, it cost over 16 per cent more to put cable in these buildings in 1929 than it did in 1923. I do not think this method that he followed was a correct one.

When Mr. Cummings gets this correction factor, he then applies it to the total exchange aerial cable account, so far as labor is concerned, found in my June 30, 1923 appraisal, to get that labor to the level of December 31, 1929, in
5807 accordance with his method. By this method he succeeds in reducing the appraisal in this one account by about $1,000,000. In making this comparison, he did not use the productive hourly labor rate of 1929. If he thinks he has got a reduced labor performance in 1929, he certainly ought to at least give us the benefit of the higher productive hourly labor rate which the Company experienced, but he made no effort to apply any such productive hourly labor rate, which he used in criticizing my 1921, 1922 and the first six months of 1923 appraisal. The cost conversion factor as derived from the productive hourly labor rate for 1929 in this account was about 18 per cent higher than the cost conversion factor resulting from my typical gang set-up.

In Exhibit X-11, Mr. Cummings did not make any comparison of labor performance for the sub-account 35-C,
5808 building cable, between the years 1923 and 1929. I think I have already touched on the result of this omission.

The result is to give a lower labor hour performance for the underground cable account as a whole than if the building cable had been included, because the work done on specific estimates in building cable required 16 per cent more labor hours per unit in 1929 than was required for similar work in the period 1921, 1922 and the first six months of 1923. If he had applied his 1923 labor units to the materials added to the building cable sub-account for 1929 and combined the results with those for the other underground cable sub-accounts, he would have obtained a result showing that the combined performance in 1929 was 99 per cent of the 1923 performance.

I do not think it follows from the fact that work is done under the routine estimates that it is so-called piecemeal construction.

5809 "Q. Now, Mr. Sloan, in order to shorten this testimony as much as we can, I am going to read you certain extracts from Mr. Cummings' testimony, appearing at page 3695 of the transcript, and merely ask you to say what you have to say in connection with the same subject-matter.

"The questions are by the Court:

'Judge Wilkerson: On this piecemeal construction, is it your idea that the method which has been used by the plaintiff in this case results in a larger figure for the reproduction cost than would be arrived at if you undertook to assume a city like Chicago today, without any telephone system at all, and you undertook to install a telephone system *de novo*—

'The Witness: Right.

'Judge Wilkerson: —in such a city?

'The Witness: Yes.

'Judge Wilkerson: You think that would result in a larger reproduction cost?

'The Witness: Yes.

'Judge Wilkerson: Notwithstanding the added expense of putting the wires into the buildings and tearing up the streets, and everything else, which would cost so much more today?

'The Witness: Yes.'"

5810 We have attempted to reproduce this property, assum-
ing the conditions under which it was actually built. We
have not injected any of the additional costs that would be
incurred today, except as these costs have been incurred in
the current work of each year. We feel very strongly (and
Mr. Hagenah, I think, corroborated that statement at the pre-
vious hearing) that if the property were being reproduced
today, the tremendously congested condition of the streets,
both as to traffic and as to underground obstructions, would
so greatly add to the cost of reproduction as to far outweigh
any differences between routine and specific performance
which Mr. Cummings has been at such pains to emphasize.
When I talk about "the conditions", I am not talking about
the necessity of cutting pavement which did not exist when the
work was put in, but am talking about the traffic conditions
in the streets, the general underground conditions, where it is
necessary to shovel the dirt out, in some instances three
5811 or four times, in order to put in underground conduit;
things of that sort, things that I mentioned about this
building cable. There are many things that would so far out-
weigh the original cost, in my opinion, that I do not believe
the property could be reproduced today for even the figures
I have estimated it.

In connection with Defendants' Exhibit X-5, which attempts
a comparison of my gang set-up as of June 30, 1923, and the
set-up used in Exhibits A-2 to A-10, inclusive, as I recall,
there is no difference in our pole line gang. We used the same
gang throughout on that. In the exchange aerial cable, we
increased the size of the splicing force, because the practice
of the Company about 1923 had been to greatly increase the
number of cable terminals per 1,000 feet of cable, and their
own practice showed that they increased their splicing forces
in proportion to the line installing forces about that time.

5812 Now, in the case of exchange aerial wire, the Company
discontinued using the so-called line gang for aerial
wire, and used gangs made up entirely of line installers. Of
course, the wage of one line installer is as typical as a dozen
to arrive at a comparative factor. Now, I might add that

that change in aerial wire is due very largely to the fact that most of the aerial wire in Chicago now is just drop wire and put up by line installers.

As to exchange underground conduit: it seemed that the practice of the contractors had been to gradually increase the size of their gangs. We had formerly used 30 men in a gang, and now, in the later appraisal, we used 50. Of course, most of the conduit labor is the so-called common labor, although they are very skilled in that particular class of work, so a conversion factor based on 30 or 50 does not change the index number to any great extent.

5813 The Company in the last 10 or 12 years has been making use of very much larger sized cables. They have been using the 900 and the 1200, and, in more recent years, some of the 1800 pair cable. Of course, that has meant that they have had to enlarge their splicing gangs in proportion to their pulling in gangs, and we tried to reflect that situation in our later exhibits.

I did not mean to indicate that there was a sudden change as of June 30th; that prior to that time they had used a certain gang, and that then, on the first day of July succeeding, the gang had been entirely changed. It was simply a gradual transformation, and we tried to reflect it in our later work.

The following is an excerpt from the transcript of Mr. Cummings' testimony, appearing on page 3687 of our transcript:

> "I can illustrate it in this way: You might have a gang set a pole in South Chicago, you might move that gang to Beverly and set another pole; you might move that gang out to Austin and set another pole; you might move them up to Rogers Park and set another pole; you
> 5814 would be setting a few poles in a piecemeal way at an enormous cost because you would be spending a great deal more money than if you set those poles in a wholesale way."

No such thing ever happens in the construction experience of the Illinois Bell Telephone Company in the city of Chicago. That is absolutely contrary to the facts. The Company has never followed any such practice as that.

In sheets 4, 11, 20, and 30 of Exhibit X 8, which covers the two and a half year period 1921, 1922 and the first half of 1923, and in sheets 6, 8 and 10 of Exhibit X 11 for the year 1929, Mr. Cummings shows certain specific estimates and the "total construction charges" to those estimates, under certain accounts and sub accounts, and then has prepared tables attempting to show that, with respect to many of these estimates, the average dollar cost is relatively small. I have examined Mr. Cummings' work sheets used in this connection and also the specific estimates of the Illinois Bell Telephone Company, to which he refers in this exhibit and from 5815 which he got his data. He took only the dollars charged for labor and materials in the particular year, even though the work was commenced in the preceding year or finished in the subsequent year, and much of his data for that reason represents partial costs and not complete costs.

If one of these exhibits concerns the year 1929 and if there was a particular estimate that had been commenced in 1928 and finished in 1929, then he took the total charges to construction in that particular estimate for 1929 and did not consider those for 1928. Likewise, if an estimate of work was commenced in July, 1929, and was finished in 1930, all that his figures reflect are the actual charges to construction for materials and labor for 1929. With respect to some 5816 of these estimates he got a minus quantity. In a particular year, if there was an adjustment made on account of cost incurred in a preceding year, it would result in a red adjustment. Of course, it would not mean that no work was done at all in that particular year, but only that an adjustment was made in that year with respect to labor performance for material installations in a prior year. That is probably the way he arrived at the figures that he got.

The result is, then, that he has not shown the total cost of the materials placed and the work performed under many of these estimates. He then divides the total work done under

the estimate into the various accounts and sub accounts.
5817 In other words, in order to make this comparison, if
work was done in the exchange pole line account, in the exchange aerial wire account, and the underground cable account, these figures of Mr. Cummings' do not aggregate the work done in the three accounts, but they divide it between the three for the purpose of making the comparison, so that when he repeatedly points out the fact that the total dollars charged to a given account under one estimate is less than $2,500, he ignores the fact that the minimum amount of $2,500 which the Company has set for specific estimates is intended to cover the minimum cost of the estimate, including all accounts to be charged thereto, and not just one account.

For one or two concrete illustrations of the result obtained
by this method of Mr. Cummings', I will have to refer
5818 to his list of exhibits. Now, taking estimate No. 22,194,
that estimate number is shown under both aerial cable and underground cable. Now, the charges which he considered for aerial cable show $605. Now, the total cost of aerial cable shown on that particular estimate was $1,568, over twice as much. Take the next, in that same estimate of underground cable he showed in that year a charge of $1,352 for exchange underground cable. Now, the actual total cost of the underground cable was $58,000; nearly forty times as much. In his analysis for exchange pole lines, he had three accounts on No. 23,074. He had pole lines, aerial cable and underground cable. He got most of the dollars on poles; he got $616 out of $623. But for aerial cable he got $234 out of a total cost of $3,114, and on underground cable he only got $344 out of a total cost of $6,591.

That was not because he did not include properly for the particular period where he considered the charges, the
amounts shown in the period, but because he failed to
5819 include the total charges for labor and material on the
estimates during the entire period in which work was being done and labor installed. If he derives results to show that an estimate is only so many dollars, the average size

is only so many dollars, of course his result is entirely erroneous.

In two accounts included in Exhibits X-8 and X-11 I have taken the specific estimates included in Mr. Cummings' exhibits, ascertained the total dollars charged under these estimates to these particular accounts, and then compared the results of such a calculation with Mr. Cummings' results shown in Exhibits X-8 and X-11.

(Which comparison, consisting of eight sheets, was identified as Plaintiff's Exhibit A-252.)

This exhibit does not show what the result would be if you combined all the work done in the several accounts on a different estimate.

5820 If you will look at page 1 of Exhibit A-252, on the second to the last column here, you will notice that Mr. Cummings has set out that 53.39 per cent of all of the estimates were less than $600 in amount. That, of course, is based on his study of the partial estimate. Now, we have compiled in a parallel column there the figures that would obtain if you would consider the entire estimates rather than partial estimates, and you will find there it is only 33¼ per cent.

This exhibit also shows the average cost on these estimates as computed by Mr. Cummings and my own average cost. Less than 5 per cent of the total charges were included in estimates under $600 in amount.

5821 Mr. Cummings has also, in his direct examination, regarding Exhibit X-8, page 20, stated that 34.14 per cent of the exchange underground cable estimates ran less than $1,000, and that 49.4 per cent of the estimates ran under $2,500. After taking into consideration the total charges to this account on these estimates, I find, instead of 34 per cent of the estimates being less than $1,000 in amount, less than 16 per cent are; and of the total charges to these estimates for this account, less than .7 of 1 per cent are included in this cumulative group. Instead of 49 per cent of these estimates being less than $2,500 in amount, only 31 per cent are actually in that cumulative group, and the total dollar charges to this group constitute less than 3 per cent of the total construction charges to this account for these estimates. The average cost of each of these estimates in this account, when the total charges are included, amounts to $12,079 instead of $7,249 as shown on Mr. Cummings' exhibit.

5822 On Exhibit X-11, page 6, Mr. Cummings stated that in the case of aerial cable, 83.87 per cent of the total number of estimates for 1929 were for amounts less than the $2,500 minimum which has been referred to. After taking into consideration the total charges to this account upon completion of the estimates, I find that only 62 per cent of the estimates were less than $2,500 in amount, and that these estimates involved less than 20 per cent of the total charges to this account for these estimates and that the average cost of each estimate was $2,805 instead of the $1,480 shown by Mr. Cummings. Referring again to Exhibit X-11, page 8, Mr. Cummings testified that 54 per cent of the estimates for main underground cable ran under $2,500 each during that year. After including the total charges to this account for these estimates, I find that, instead of 54 per cent of these estimates being under $2,500 in amount, only 18.9 per cent were, and that the total cost of these estimates under $2,500 amounted to less than .5 of 1 per cent of the total charges
5823 to this account on these estimates. I also find that the average cost of all of these estimates was $34,894 instead of the $6,932 shown by Mr. Cummings. That appears on the last sheet of Exhibit A-252; "Average cost of each estimate", shown by Mr. Cummings as $6,932, is found by me, taking into consideration the total work done on the estimate, $34,894.

I have examined Defendants' Exhibits X-1, X-2 and X-4. I have also examined City's Exhibit 95 introduced at the former trial. In Exhibit X-2, Mr. Cummings found the material cost of typical plant in the pole line account as I had obtained it in each of the years 1911 to June 30, 1923. He then ascertained for the first six months of 1923, the relation of labor cost to the material cost and arrived at the dollar cost of labor, which was, in this case, $3,737.78. He then converted the dollar cost of labor for each year backwards, solely by the use of my labor cost conversion factor.

5824 The result of this method is to assume that the labor conditions in each of the preceding years were identical with those of the six months' period ending June 30, 1923. This assumption is absolutely not true.

I obtained my percentages of labor and materials for each of the years by a consideration of the conditions actually existing in each year. One of the factors affecting this calculation is the inclusion of a large number of Commonwealth Edison poles in incidentals in the years 1918 to 1923. Where Mr. Cummings shows a labor cost on poles for the year 1915 of $2,539.33, the labor cost as I ascertained it was $863. The principle used in this Exhibit X-2 is substantially the same as that used in old City's Exhibit 95, and in X-1 and X-4.

Mr. Cummings, in his testimony in connection with 5825 Exhibits X-6 and X-9, has pointed out the fact that the difference between the results which he obtained by his so-called "Company Experience" and the results I obtained by my appraisal method, showed an increasing difference in each year from 1923 backward. The reason for this increasing difference is due almost entirely to Mr. Cummings' use of the productive hourly rate in obtaining his labor cost trends. However, as I have shown on Exhibit A-247 this tendency is reversed and the results obtained by Mr. Cummings from the use of such method would be considerably in excess of our results. Now, of course, part of that spread between 1921 and 1923 is due to the different labor conditions that may have existed between the two years. The conditions 5826 for doing work in any two years are never the same.

Secondly, if you corrected the exhibits as we have done for the errors which Mr. Cummings has made, the spread between 1921 and 1923 is very much reduced, but the principal difference for that spread between 1921 and 1923 is the fact that he converted from the very high peak of 1921, which was the highest productive hourly rate that had ever been experienced by the Company up to that time, to the very lowest productive hourly rate which they experienced, in the first six months of 1923. A conversion factor in any other year when they do not go from one extreme to the other, would not show any such spread as he gets.

The amount of taxes accrued by the Company in 1923, which I used in my computation to arrive at the amount of this item in the undistributed construction costs was $1,802,765. The amount of taxes accrued by the Company in 1930, which I used was $4,811,781. Those amounts that were accrued
5827 were almost identical in 1923 with the amount actually
paid for tax purposes, and was about $4,000 less than the amount paid in 1930. The percentage of increase in the actual dollars accrued between the two dates was 167 per cent. The percentage of increase in the amount of taxes which I have calculated as between these two years, 1923 and 1930 in my undistributed construction expenses is the same figure, 167 per cent.

I tabulated the amounts for taxes during construction as follows: In the 1923 study, the annual amounts were set down opposite the year in which the assessment was made. In the 1930 study, the annual amounts were set down opposite the year in which the taxes would be paid.
That is, in one, we set them down against the assessment
5828 year, and in the other, against the year of payment.
We dropped two years' taxes in the last calculation. That should have been included, and it is entirely proper in our calculation to include them.

I have re-calculated the 1930 taxes on the same basis as used in the 1923 study and tabulated the results in the same way. The result obtained in this manner check within 51/100 of 1 per cent with the result contained in Exhibit X-11. The re-calculation of the 1930 tax on the 1923 basis is about $29,240 lower than that I have shown. I believe that the amount against which taxes are calculated should include overhead expenditures in accordance with the way it is actually done in the Company's experience.

Reference has been made in the testimony of Mr.
5829 James G. Wray, to the inclusion of construction work

in progress in the study which I made as of December 31, 1930, Exhibit A-11, in computing structural overheads. In making my computation, I included the plant as it was being built. I, of course, did not include any additional amount for construction work in progress, as such work is carried on the Company's books. That is, my dollars were just reproduction dollars, exclusive of any amounts carried on the Company's books for construction work in progress.

In making my study for structural overheads, I did not proceed, so far as the South Town capital stock tax is concerned, upon the assumption that the capital structure of the Illinois Bell Telephone Company would be the same over the period of construction; just on the contrary. I proceeded on the premise that all taxes would relate themselves to the amount of property then being constructed. I have not 5830 assumed with respect to this tax, or any other tax, that the amount paid in 1930 would control, in any other year, but I have related my structural overheads to the plant existing in each year.

"Mr. Thompson: I now offer the exhibits that were identified by this witness."

5831 R. H. GREGORY, recalled as a witness on behalf of the plaintiff, having been previously duly sworn, further testified in rebuttal as follows:

Direct Examination by Mr. Thompson.

June 29, 1932.

Testimony has been given in this case that there is included in the Western Electric Company's balance sheet, con- 5832 tained in certain of its stockholders' reports under the title "Current liabilities", certain notes payable. In Exhibits A-77 and A-80, both inclusive, in arriving at "Average investment", I have not deducted such payables. In making up a balance sheet, among other things, you have to show current liabilities. Current liabilities include notes on demand, and other payables for a short period of time. In as much as there were no notes payable given for merchandise, I have not deducted any notes payable, as the money represented by them is included in the business, and at the risk of the business, and the company is entitled to a return thereon. This method is a proper one to follow in arriving at "'Average investment", in my opinion as an accountant.

The Western Electric Company first commenced to borrow money from the Bankers Trust Company, trustee of the
5833 pension fund for the Western Electric Company, in 1927. These loans are evidenced by demand notes. The Western Electric Company has continuously from 1927 (when it commenced to borrow this money) to the present time, borrowed all the money in its pension fund from the trustee. None of this money evidenced by these demand notes has ever been repaid to the trustee.

The form of the payables of the American Telephone and Telegraph Company to the Bankers Trust Company, trustee of pension fund, are the same as the form of the payables of the Western Electric Company to the trustee of its pension fund. Such notes of the American Telephone and Telegraph Company are payable to the order of the Bankers Trust Company, trustee, on demand.

I prepared Exhibits A-222 and A-223 which contain a list of information submitted to Touche' Niven and Company for examination at New York and Chicago, subsequent to
5834 the list which was introduced in evidence as Exhibit A-73. These exhibits contain a correct statement as to the information furnished and made available to representatives of Touche' Niven and Company during the period referred to on the exhibits.

I have also prepared a list identified as Exhibit A-253, which shows information furnished to counsel for the City of Chicago, subsequent to the information shown on Exhibit A-73. This exhibit contains a correct statement of the information furnished and records made available for the period referred to in the exhibit.

I have examined Defendants' Exhibit X-294, which consists of a single sheet, and Exhibit X-295, which consists of 20

sheets. Shown on these exhibits is certain preferred stock of
the Western Electric Company of New York, which was
5835 called for redemption in 1920. (All of the items to
which I will refer in this connection are shown on the
exhibit, A 233.) The Illinois Corporation, the predecessor of the New York Corporation, had a capital stock of 150,000 shares, of $100 par value, aggregating $15,000,000. It had a capital and surplus of approximately $40,000,000. The stock I refer to is common stock; it had one kind of stock only. It was decided to form a New York Corporation, and the New York Corporation was organized, and issued 150,000 shares of 6 per cent preferred stock redeemable at $120 per share, and 150,000 shares of no par common stock. The effect of that transaction was that a man who had one share of stock in the Illinois Corporation received in payment therefore one
share of 6 per cent preferred stock in the New York
5836 Corporation, and one share of no par value common
stock of the New York Corporation.

In 1920 it was decided to redeem this preferred stock, together with an issue of June 30th, 1917, of a similar amount of 6 per cent preferred stock and to issue in exchange therefor common stock. This was done on March 9th. The resolutions of the Board of Directors were made on February 19th. One of them called for the redemption of the preferred stock, and the other called for the issuance of the common stock. The American Telephone and Telegraph Company owned practically all of the preferred stock, and turned in to the company all of its preferred stock in payment for the new issue of common stock. In the whole transaction, there was approximately $350,000 to $360,000 of cash paid to preferred stockholders who did not take common stock. The American Telephone and Telegraph Company received no portion of this $360,000.

On Exhibit X-294 this transaction is treated in part
5837 as a cash dividend received to the extent of $2,936,940.

The transaction is also treated as a cash dividend in Exhibit X-295 as follows: on sheet 3, to the extent of $21,000,000; sheet 4 over $16,000,000; sheet 5, $3,000,000; and in the summary sheet 12, to the extent affected by the previous sheets.

I am familiar with sheet 1 of Defendants' Exhibit X-13,
which shows a trend prepared by Mr. Cummings in connection
with Western Electric Company's prices and with the
last column on that exhibit entitled "Gregory Statement B".
There were included in the figures on which I based my statement
as to price reductions by the Western Electric Company
and their effect, all loading coils and cable terminals sold
during this period of time by the Western Electric Company.
I also included all receivers, transmitters and induction coils
sold by the Western Electric Company to the American Telephone
and Telegraph Company during the years 1923 to
5838 1927, inclusive, as well as all receivers, transmitters and
induction coils sold to the Bell Associated Companies
from 1928 to 1930, inclusive. No receivers, transmitters or
induction coils were sold to Bell Associated Companies prior
to 1928. Receivers, transmitters and induction coils were
sold to the American Telephone and Telegraph Company subsequent
to 1927 only in small amounts to the Long Lines
Department. The figures upon which this trend was based
do not include any sales of Class "C" material to the Bell
associated companies.

Under the column "Approximate effect of price changes—
annual basis" on Exhibit A-83 is shown the effect of the price
change applied to the total quantities sold during the
5839 year, regardless of the date of the price change. The
price changes were effective for varying periods from
two months to twelve months' periods. Statement "B",
which is referred to in Mr. Cummings' Exhibit X-13, is a
statement which I prepared and delivered to counsel for the
City of Chicago at their request. Statement "B" was prepared
on the same basis as Exhibit A-83, and it shows that
fact upon its face.

I know of certain index numbers developed by Mr. R. W. Burgess, which have frequently been referred to in this case. R. W. Burgess is Chief Statistician of the Western Electric Company, in the Comptroller's Department. These index numbers were developed for the use of the Chief Statistician, to give information in connection with trends.

There are manufacturing concerns other than the Western Electric Company which use a standard cost system.
5840 I have prepared a statement (which was identified as Exhibit A 254) of certain companies which use a standard cost system.

"Q. I call your attention to the following testimony of Mr. McCann, at page 4137 of our transcript:

"Question: You included in Exhibit X 67 all of the profit on the sale to the International Telephone and Telegraph Company, and you allocated all of that profit to the period since the organization in 1918 to 1925, is that correct?

"Answer: Yes.

"Question: And the reason?

"Answer: I allocated it to the period 1918 to 1925 for the reason that the annual reports of the Western Electric Company for the years prior to 1920, show that the foreign business of the Western Electric practically ceased during the war, and that the business was operated in the years immediately preceding 1918 at a loss, and that there were large losses in the investment itself, due to wartime condition.

"When Mr. McCann was asked in his cross-examina-
5841 tion to give the annual reports to which he referred in his above testimony, he indicated certain portions of the annual reports of the Western Electric Company for the years 1914, 1917, 1918 and 1919. Have you prepared in exhibit form the extracts from the annual reports for these years to which Mr. McCann referred, which exhibit has been identified as A-255?

"A. I have."

While the foreign business of the Western Electric Company was interfered with to a large extent by the war, there was considerable activity among some of the companies, and in other companies there was no activity at all. Our Antwerp factory was taken over by the Germans in 1914. When, however, the facts were known as to the earnings for each of the years, we find that in each of the years a profit was made from 1914 to 1918, inclusive.

There was a situation with respect to the prevailing unfavorable rates of exchange which it was thought at one time would cause a loss to the Western Electric Company.
5842 That did not turn out as unfavorably as we expected.

The facts to which I have just testified, that is, about the International Western and its predecessor, and its subsidiaries having made a profit in each year, was shown in the underlying data which was made available to Touche' Niven and Company. That the underlying data was in connection with the consolidated earnings statement which was delivered to them on February 11th.

The profit on the sale of International Western Electric Company stock owned by the Western Electric Company related to the profits of the Western Electric Company and its foreign companies from 1882 to 1925.

Dr. Arthur Hunter, Chief Actuary of the New York
5843 Life Insurance Company, who testified in this case, was employed to make an investigation of what amount should have been accrued by the Western Electric Company under its Plan for Pension Fund purposes on March 28, 1932.

The two statements, identified as D-25 and D-26, were furnished to the defendants in this case on October 28, 1931.

Up to March 28, 1932, the Western Electric Company had never employed or had in its employment any actuary for the purpose of ascertaining the proper amount of accruals for pension fund purposes, although Mr. Burgess used methods employed by actuaries, in making his computations. Until after Dr. Hunter had been employed and had done his work, the officials of the Western Electric Company did not know that their actual accruals for pension fund purposes had been too low for the period 1923 to 1931, inclusive. But without actual knowledge as to the facts, I doubted whether the
5844 accruals had been too high. We employed Dr. Hunter on account of the objection given by the defendants to

my giving any testimony on the actuarial computation for pension fund purposes.

"Q. Attention has been directed to the fact that a reconciliation was furnished to the defendants in this case from which Mr. McCann inferred that no claim had been made by the Western Electric Company that it had the right to deduct as an expense for the years 1924, 1925, 1926 and 1927, in its income tax reports to the government, the item of $2,000,000 set up as an additional depreciation reserve on machinery in 1928.

"What is the fact in this connection?

"A. The field examiners in the latter part of 1930 went over our 1924 and 1925 figures. At that time we made a claim for that part of this $2,000,000—

"Mr. Goldstein: If the Court please, we object to this answer, and the question, on the ground that they had refused to make available the correspondence and the findings in this transaction, and they are now testifying to something that there is no possible way for us to check up on to see whether—

"Mr. Goldstein: It is all hearsay.

5845 "Mr. Thompson: This question was not involved in this case until Mr. McCann testified.

"Mr. Thompson: I would just like to make a brief statement. He testified that the Western had asserted no claim on account of this extra $2,000,000 for depreciation, and he based his testimony upon a reconciliation that had been furnished to him in which he said this amount was considered as a difference between the Western Electric Company's depreciation, as set up in Exhibits A-77 to A-80, both inclusive; and that allowed by the Government.

"Now it was only because of that fact that I have asked Mr. Gregory about this matter. He has here a copy of the text that was filed in this connection with the Federal Income Tax authorities.

"Now, if Mr. Goldstein is willing to admit—or is willing to withdraw Mr. McCann's statement that no claim was made by the Western Electric Company, why, I will pass it. Then I will have no point about it.

"Mr. Goldstein: We are not willing to withdraw anything—

"Mr. Thompson: All right.

5846 "Mr. Goldstein (continuing): —that was based upon information that we had, and if you refuse to give us information—

"Judge Wilkerson: How do I know what they refused to give?

"Mr. Goldstein: Well, they refused—he is discussing now the transaction with the field examiners.

"Judge Wilkerson: I do not know anything about it.

"Mr. Goldstein: The record shows that they refused to give Mr. McCann the correspondence with the field examiners, and that is one of the things in this record.

"Mr. Thompson: We refused to turn over to Touche' Niven all of the files between the Western Electric Company and the Government in connection with matters that were then pending, naturally, of course we did.

"All I am after is the ultimate fact, as to whether—

"Mr. Goldstein: That is one of the—

"Mr. Thompson (continuing): —as to whether the Western Electric Company is making a claim that it is entitled to this allowance for depreciation by the Government.

"Mr. Goldstein: Well now,—

"Mr. Thompson: It is to meet testimony which Mr. 5847 McCann was allowed to give, and he stated—he stated as a matter of fact in his direct examination that we had not made any claim for it.

"Mr. Goldstein: And you refused to give us—

"Mr. Thompson: Now, Mr. Goldstein—

"Mr. Goldstein: —the items—

"Mr. Thompson: Just a moment. We—

"Mr. Goldstein: And you are now asking this witness to give this, and there is no way, if we go down to New York, to check to see whether that is the only item, or what there is to it, your Honor. We are opening up an issue, now, which they have refused us the information on.

"Judge Wilkerson: Well, I do not know what you are talking about.

"Mr. Goldstein: Well, it appears in the record now that we asked them to give us

"Judge Wilkerson: No, no, let us confine ourselves to just what

"Mr. Goldstein: The witness is about

"Judge Wilkerson: Let us confine ourselves to the question.

"Mr. Goldstein: Yes.

"Judge Wilkerson: I understand the attention of the witness is directed to an affirmative statement by a witness
5848 produced by the defendants.

"Mr. Goldstein: Yes.

"Mr. Thompson: That is right.

"Judge Wilkerson (continuing): To the effect that the Western Electric Company made no claim with reference to certain matters. This witness on rebuttal is asked whether it did or not. The objection is overruled.

"Mr. Goldstein: No, that is not the question, as we understand it.

"Judge Wilkerson: It is to meet the testimony of your witness, to rebut the testimony of your witness. Now, if you were permitted to ask one witness a question, why should they not in rebuttal be permitted to ask another witness?

"Mr. Goldstein: That is not the question. The question is—

"Mr. Thompson: All right. I will make it that way.

"Mr. Goldstein: The question is, did he file a paper with the Government?

"Mr. Thompson: No.

"Judge Wilkerson: The objection is overruled. You may save your point.

"Mr. Thompson: I will ask you the question, Mr. Gregory; did the Western Electric Company make a claim
5849 for this?

"A. It did.

"Mr. Adcock: We object to that.

"Mr. Thompson: There was identified during

"Mr. Adcock: If it is in writing

"Mr. Goldstein: If there is something in writing we want to see it, and they have refused us

"Judge Wilkerson: Do you withdraw the testimony of McCann?

"Mr. Goldstein: No.

"Judge Wilkerson: The objection will be overruled."

There was identified during Mr. McCann's testimony, and there has been introduced in evidence, Exhibit X 94 which shows certain surplus adjustments of the 88 companies, about which information is collected in Exhibits A 85, A 86 and A 87. I have determined what the effect would be upon the return as shown in Exhibit A 85, if all of these adjustments were made. The total effect would be .3 per cent, reducing the return from 12.2 per cent to 11.9 per cent. When 5850 I say "return", that is the return of the 88 companies, shown on Exhibit A 85.

I collected and put in binder form the underlying data showing the profits on the Bell and non Bell business of the Western Electric Company for the year 1931 to which I testified in this cause. This underlying data was submitted to Touche' Niven and Company for inspection at the request of Mr. McCann. This inspection was actually made by Mr. McCann and his assistants in the latter part of April, and the early part of May, 1932.

I have examined Defendants' Exhibits X-84, 85, 87 and 88, which are entitled "Western Electric Company, Incorporated, and Subsidiaries. Consolidated Average Investment, Profits, and Percentage of Returns". In arriving at the figures 5851 contained in these exhibits Mr. McCann has deducted from investment the sum of almost $12,000,000 for the year 1930 on account of an item of "good will" appearing in the balance sheet of the Teletype Corporation. When the Western Electric Company purchased Teletype, it paid actual cash for this good will equal to the amount of good will set up on the books of the Teletype Corporation. In my opinion, the deduction of this good will in computing average investment in these exhibits, is not a proper one.

In Exhibits X-51, 52, 84 and 85, Mr. McCann has reduced average investment by excluding notes payable, but has not decreased the earnings by a reduction of the interest applicable to the notes taken out of investment. The reduction made on account of Notes Payable in Exhibits X-51 and 52, for the period 1916 to 1930, is $278,000,000. That is the cumulative effect. For the period 1923 to 1930, the cumulative effect is about $165,000,000. The amount of interest 5852 paid on these obligations during the same period of time was: for 1916 to 1930, $15,753,000; and for 1923 to 1930, $8,626,000. The same data for Exhibits X-84 and X-85 is as follows: for the period 1916 to 1930, the cumulative effect was $275,000,000, and for the period 1923 to 1930, $146,000,000. The interest is the same as I have given for X-51 and X-52.

I think the method followed by Mr. McCann in Exhibits X-51, X-52, X-84 and X-85 is clearly wrong, but since he has deducted the amount of the notes payable, he should have deducted the amount of interest on such payables from earnings before computing his percentage.

In Exhibits X-51 and X-52, Mr. McCann also excluded certain amounts which he claimed were excess cash in the following amounts: for the year 1916, $2,558,000; 1917, 5853 $2,299,000; 1920, $901,000; 1921, $3,343,000; 1922, $3,660,000; 1924, $1,644,000; 1925, $20,561,000; or a total of $34,966,000. After he had taken out this excess cash, he decreased the profit on some of the exhibits by $874,000 by excluding the interest earned on this claimed excess cash. But in Exhibits X-51 and X-52 he did not decrease the profits at all. The failure of Mr. McCann to exclude the interest on such claimed excess cash in these Exhibits X-51 and X-52, also results in his overstating the per cent return on average investment.

5854 In the exhibits where he did exclude the earnings he allowed the Western Electric an average of 2.5 per cent on such claimed excess cash. The Western Electric Company actually earned approximately 5 per cent on its cash and cash items in 1925. The result of Mr. McCann's applying an average per cent to claimed excess cash when almost two-thirds of the claimed excess cash excluded by him is applicable to a year in which the Western Electric Company actually did earn 5 per cent on its cash and cash items is that he has overstated the profits in 1925 by a little over $500,000. This error is reflected in Exhibits X-54, X-55, X-57, X-58, X-60, X-61, X-63 and X-64.

Comptroller's Report 7.14, referred to by Mr. McCann contains the following phrases: "Normal Working Cash Balance"; "Normal Cash Balance". These phrases represent a bogey, which the Western Electric set, and at which they hope to keep their cash balances. They do not at all
5855 represent the amount of cash that was actually in the business. Mr. McCann had deducted the amount of cash that we actually had when it exceeded the bogey. But when it is under the bogey, he has not given any counterbalancing effect. In 1918, 1919 and 1923, our cash requirements were below the bogey and he made no adjustment of any kind at all in connection with that. He did not give us the benefit.

I think the amount of cash working capital included in Exhibits A-77 to A-80 is extremely low. I know of no manufacturing company that is able to get along with as small a cash balance as the Western Electric Company. As compared with the 88 companies, the cash balance for the Western Electric Company for the period 1925 to 1930 is approximately one-third of the average of the 88 companies.

5856 I am familiar with Exhibit X-97 compiled by Mr. McCann. Mr. McCann attempts to compare concerns which have an entirely different turn-over (and when I refer to "turn-over" I have in mind the relation of sales to plant). For instance, he compares the International Cement Company, which has a turn-over of .4 times, with the Chrysler Company, which has a turn-over of 1.6 times. In making up my exhibits, Exhibits A-77 to A-80, inclusive, the turn-over on sales to Bell and non-Bell customers is practically the same. Therefore, any comparison of this sort has no significance to the apportionment that is made by the Western Electric Company.

The defendants have followed a different method for the period prior to 1925 and for 1925 and subsequent years in apportioning pension fund accruals between Bell and non-Bell business. Subsequent to 1925 they have based their 5857 apportionment on the basis of the payrolls, which is the Western Electric Company's method. Prior to that time they based their apportionment on basis of the cost of sales, including supplies which were sold in large quantities to non-Bell customers. This method has resulted in overstating profits on the Bell business by approximately $1,500,000. This overstatement of earnings is reflected in Exhibits X-50 and X-53 to X-58, inclusive.

I am familiar with Exhibit X-35, prepared by Mr. Hagberg. In my opinion, if the shop variations to basic gross profits and other adjustments had been apportioned on the basis of the plus and minus adjustments instead of net, there would have been no difference in the result. You have to use some yardstick, some measure of apportionment, and if you 5858 use the net or the gross in my opinion it would make absolutely no difference, for the reasons that I have already given in my testimony.

I am familiar with the method which was used by the Western Electric Company in financing Electrical Research Products, Inc. It was in large part by loans from the Western Electric Company. I have prepared an exhibit which shows the average loans from Western Electric Company to Electrical Research Products for each of the years 1927 to 1930, inclusive.

(Which document was identified as Plaintiff's Exhibit A-256.)

In the year 1929 (in which Mr. McCann shows a return of 309.4 per cent for the Electrical Research Products, Inc., on the upper half of his Exhibit X-79) 74 per cent of the total capital employed in the business of Electrical Research Products, Inc., was represented by loans made to it by the Western

Electric Company. The facts in connection with these
5859 loans which are stated on this exhibit, were furnished to
Touche' Niven and Company, on January 19, 1932.

I am familiar with the sale by the Western Electric Company of its common stock in the Graybar Electric Company to the Management Corporation of Graybar Electric Company. The Graybar Electric Company was organized in the latter part of 1925, to take over that part of the Supply Department's business of the Western Electric Company which related to the United States, within the territory of the United States. This business consisted of the distribution of telephone apparatus and cable manufactured by the Western Electric Company, and sold to non-Bell customers, and the purchase of supplies manufactured by others and sold to non-Bell customers. The company was organized, and was maintained as a 100 per cent owned subsidiary of the Western Electric Company for the first three years, that is, 1926, 1927 and 1928.

5860 In disposing of this company, the Western was activated by the desire to maintain its capital entirely for the use of the Bell business, in so far as that was practical. It was also desired to avoid any criticism of being in competition with customers of the Bell System Companies. Competitors of the Graybar Electric Company are large users of telephone service. It was also desired to sell to the employees of the Graybar Electric Company, many of whom were of long standing with the Western Electric Company. The sale was made, and at a price of $9,000,000, which was approximately the book value. Payment was made therefore by $3,000,000 in cash, and $6,000,000 in participating preferred stock. To effect the transfer, the Graybar Management Corporation was formed, which took over all of the voting common stock of the Graybar Electric Company. No employee of the Western Electric Company, or any of its subsidiaries, nor any
5861 company in the Bell System owned a single share of
stock in the Graybar Electric Company after December 31, 1928; not a share of common voting stock, but we had the participating preferred stock.

The participating preferred stock shared in the earnings after deduction for all taxes except Federal taxes, for pension fund accruals, for the 7 per cent dividend on the preferred stock, and the sum of $150,000, which is equivalent to 15 per cent on the $3,000,000 of voting common stock held by the Graybar Management Corporation. The extent of the participation is one per cent for each thousand shares of preferred stock outstanding, and from the amount thus determined is deducted the Federal tax on the 7 per cent preferred dividends, and also on this additional dividend, and the balance was paid over to the Western Electric Company, or whatever subsidiary owned the company at that time.

The Western Electric Company or its subsidiary had an option to re purchase the stock on giving 90 days' notice,
5862 but within that time the Graybar Management Corpora-
tion could redeem the preferred stock, or purchase that stock, and if it were redeemed or purchased the Western Electric Company would have to give up its preferred stock. Thus Graybar Management Corporation was in a position to prevent the Western Electric Company from exercising that option.

The preferred stock has been reduced since the date that it was first issued. It now stands at four million dollars as compared with six million dollars, which was the amount outstanding at the time of the sale. The employees had the right to require the Western Electric Company to take back the property on or before December 31, 1933, on payment of the purchase price, with interest at 6 per cent after making due allowance for any dividends which have been received by them in the meantime. The sale was a bona fide sale, under
5863 an agreement which made the necessary provisions to
protect the seller's right if full cash payment was not made for the property. In other words, only $3,000,000 of cash was obtained, and $6,000,000 was outstanding, to be paid for at a later date.

"Mr. Goldstein: I move to strike out the answer on
5864 the ground—that part of the answer which says that
'The agreement contained the necessary provisions to

protect'—or whatever it was, because the terms of the agreement will speak for themselves; it is contained in the instrument, and it is in the record.

"Mr. Thompson: I shall not object, your Honor, to that portion of the answer going out in which Mr. Gregory has stated the terms of the writing between the Graybar Management Corporation, and the Western, and the Graybar Electric.

5865 "Mr. Goldstein: Then I also object to that portion of the answer in which the witness has said it was a bona fide transaction, because that is a matter of law, and the conclusion of the witness, which he is not justified in making.

"Mr. Thompson: I think it should stay in if your Honor please. It has been openly charged in court by counsel that this was a sham transaction.

"Mr. Goldstein: The instrument speaks for itself. He is drawing a legal conclusion from the document.

"Judge Wilkerson: Are all of the documents introduced?

"Mr. Goldstein: Yes.

"Mr. Adcock: Yes.

"Mr. Goldstein: They are all in the record.

"Mr. Thompson: But they have tried to create the impression here—Mr. Goldstein has—that there was something unusual—

5866 "Mr. Goldstein: There is.

"Mr. Thompson (continuing): —or unfair or improper about this transaction.

"Judge Wilkerson: You say, there is?

"Mr. Goldstein: Yes.

"Judge Wilkerson: He may answer the question. Complete your answer.

"The Witness: The question is, whether it is bona fide—

"Mr. Thompson: The answer is in the record. We have the answer.

"Mr. Goldstein: It is a legal conclusion from the documents, and not the witness' testimony. I am not the witness. He is drawing legal conclusions from the documents themselves, and they are in the record. Now, if there are any other facts that this witness has other than those that are in the record, we should have them, because we have attempted for four months to get all of the facts, and we did not get them until toward the end.

"Now, we want to get all of the facts we can, but we object very strenuously to this witness expressing an opinion as to the legal conclusion of these documents.

"Judge Wilkerson: Well, so far as he has expressed any legal opinion, it may go out.

5867 "Mr. Goldstein: He says it was a bona fide transaction.

"Judge Wilkerson: Any legal opinion--he used the words 'bona fide'.

"Mr. Goldstein: Yes.

"Judge Wilkerson: What do you mean by that?

"The Witness: I mean it was a sale made in good faith, with full intent—

"Judge Wilkerson: Well, leave out the 'good faith'.

"The Witness: I mean it was a sale—everybody connected with the sale knew that the Western Electric Company wanted to dispose of that property; we did not want to have that property—carry on that business any longer; we wanted to go out of that business, and the method of selling it to our employees was a way of taking care of our employees, who had been in long term service, and at the same time dispose of the business.

"Judge Wilkerson: Is there anything about this transaction which does not appear in the documents here?

"The Witness: Not that I know of.

"Judge Wilkerson: All right.

"Mr. Thompson: The Graybar Electric Company—

5868 "Judge Wilkerson: He says that there is nothing about it that does not appear in the documents themselves.

"Mr. Goldstein: All right.

"Judge Wilkerson: Now, if it is an unfair transaction, or in bad faith, a bad faith transaction, on the face of the documents, it is. He says there is no secret agreement—

"The Witness: No, sir.

"Judge Wilkerson: —or any understanding, so far as he knows.

"The Witness: Nothing.

"Judge Wilkerson: (Continuing) Nothing about it except what appears on the face of the documents.

"The Witness: That is correct.

"Mr. Adcock: Then his answer should be stricken out.

"Mr. Thompson: No.

"Mr. Adcock: That it was a bona fide transaction.

"Mr. Goldstein: What is his answer—

"Judge Wilkerson: He used the words 'bona fide' in the sense in which a layman generally uses the term.

"Mr. Thompson: Yes.

"Judge Wilkerson: And that there is not anything about it except what appears in the papers themselves.

"Mr. Goldstein: With that understanding, his answer may stand.

5869 "Judge Wilkerson: All right. That is the understanding.

"Mr. Goldstein: That is the understanding.

"Judge Wilkerson: Yes.

"Mr. Goldstein: All right.

"Judge Wilkerson: That is what he meant by it.

"Mr. Thompson: In setting the candles around, I do not want any misapprehension. I want the facts, about the fact that these men were employees of Graybar, and that this business was a non-Bell business. I do not want those to go out.

"Mr. Goldstein: The record shows that very clearly and completely.

"Judge Wilkerson: And he said that it was openly discussed there among all of the parties that the company wanted to sell this business.

"Mr. Goldstein: All right.

"Judge Wilkerson: And that the employees wanted to take it over.

"The Witness: That is right.

"Mr. Goldstein: All right.

"Judge Wilkerson: Go on.

"Mr. Thompson: Has the Graybar

"Judge Wilkerson: That was a matter that was discussed openly?

"The Witness: Negotiations were carried on for nine months to a year.

5870 "Judge Wilkerson: All right."

The Graybar Electric Company has never done any business with the Bell associate companies.

When requests were received from Touche' Niven and Company, or from any other sources, which required the Western Electric Company to furnish information in a form in which it did not exist, and where it did not exist, and where it was necessary to prepare one or more statements, we started immediately in the preparation of these statements and delivered them to Touche' Niven and Company, or to the representatives of the defendants as soon as they were completed. I furnished to Touche' Niven and Company for their inspection the underlying data for Exhibits A-93 to A-98, both inclusive.

With respect to item 2, on Exhibit X-312, the data underlying the consolidated earnings statement of the Western Electric Company and its subsidiaries, the facts about the submission of this underlying data are that the pre-
5871 liminary statement was sent to Mr. Goldstein on December 19, 1931, and he was informed at that time that that was a preliminary statement which gave information from 1916 to 1931 inclusive, 1931 on the 8 months basis raised to a 12 months basis, and also he was informed that it was necessary to make certain checks, and that we were going to have the statement audited. After those checks had been completed, and the audit completed, the revised statement was sent to Mr. Goldstein on February 11th, and the underlying data delivered to Mr. McCann of Touche' Niven and Company on the same date.

I am familiar with Exhibit D-61 which was delivered by me to Mr. Goldstein while I was on the witness stand. I received from Touche' Niven and Company, while I was in

New York, a letter dated April 21st, making a request in connection with this matter. The letter is addressed to the Western Electric Company, 195 Broadway, Attention of
5872 R. H. Gregory, Comptroller, and reads as follows:

> "Will you kindly make available for our examination the working papers showing the details by years underlying Defendants' Exhibit D-61, entitled 'Analysis of Profits on business other than with Bell Telephone Companies from 1881 to 1927 inclusive'.
>
> "Very truly yours,
>
> "Touche' Niven and Company,
>
> by G. B. McCann."

In response to that request I delivered to Touche' Niven and Company, an instrument which has been identified as Plaintiff's Exhibit A-228, showing the details by years. On the day of the receipt of this letter, counsel in charge left for Indianapolis, where he was for several days. It was necessary for me to get in touch with him at Chicago, after he had returned to Chicago. About 85 per cent of the amount involved in this D-61 statement had been available for the examination of Touche' Niven and Company, in the underlying
5873 data, which they had since February 11th. Later, on a request from Touche' Niven and Company, one of their employees was permitted to copy the underlying data in connection with this matter. Touche' Niven and Company had an opportunity to inspect all of the records in connection with this statement, of the Western Electric Company, and its subsidiaries back to 1916.

I was asked a number of questions about having included in average investment in Exhibits A-77 to A-80, both inclusive, for 1926 and subsequent years, certain so-called working reserves. Under the caption "Working Reserves" are included reserve for moving expenses, federal tax accruals, accruals for pension fund purposes, and for others of similar character. While they are proper charges to cost of sales, they are not expended until some later date; in some cases for considerable length of time. They are therefore moneys invested in the business, and at the risk of the business, on which we are entitled to make a return.

5874 The actual purchases of the associate companies are not always the same as the amounts contained in their provisional estimates as the estimated amounts of various classes of telephone apparatus which they think at the time they will purchase. These provisional estimates are received by Western either in November or December of the year, for the succeeding year. They are based on facts which are compiled in some cases as far back as July 1 of the preceding period. They in no way represent sales. Many changes must be made in these provisional estimates prior to the end of that year, and during the year for which it is compiled. The sales for the year differ from the provisional estimates not only in the aggregate, but in sub classifications.

The instrument identified as Exhibit A 257 was prepared under my supervision. This shows the earnings of the 5875 Western Electric Company on the Bell business expressed in percentages of sales, and in percentage of (a) average investment, and (B) average investment less amount of depreciation reserve account, 1916 to 1932, inclusive, and 1923 to 1932, inclusive, with adjustments for certain items as listed on page 2 of the exhibit. The purpose of this exhibit is to show the per cent earnings on sales and on average investment, both before and after deducting the depreciation reserve account and after taking into consideration adjustments with respect to certain controverted points upon which I have heretofore testified. This exhibit is self explanatory. I have testified in detail about each one of the items that appears on this exhibit.

5876 I have prepared two exhibits (identified as Plaintiff's Exhibits A-258 and A-259) which show the relation of gross additions to depreciation reserve to the cost of small tools and furniture and fixtures, during the period 1916 to 1932. Under the heading "Gross Additions to depreciation reserve" are shown the amounts which have been charged into cost of sales obtained by maintaining a reserve of 100 per cent depreciation. The second column shows the cost at

December 31st of each year, and the average for the periods shown. The last column shows the relation of the third column to the second column, and it shows that during this period of time taking the two accounts together, the amount charged off represents rates on the average varying from 14.1 to 15.7 per cent of the cost value of the plant.

I know about the contract between the Western Electric Company, the General Electric Company, and the Phonic 5877 Laboratories. The Western Electric Company never received any royalties under that contract. The contract was made in 1921. In 1922 the Phonic Laboratories found that they could not finance the proposition, and the company practically went out of business, and was dissolved in 1927.

(Plaintiff offered in evidence all exhibits identified during the course of this witness' examination. Cross examination deferred.)

5878 F. M. WILLIAMS, called as a witness in rebuttal on behalf of the plaintiff, having been first duly sworn, testified as follows:

Direct Examination by Mr. Thompson.

June 29, 1932.

My name is F. M. Williams. I reside at Summit, New Jersey. I am at present employed by the Western Electric Company as General Installation Engineer. I have occupied that position about five years. Before that time, I was employed by the Western Electric Company about 18 years. The first year I was on the student apprentice force; for about two years following that I was engaged in preparing central office equipment specifications; for about six years following that I was engaged in standardization work, associated with the equipment engineering; and from that time until April, 1927, or about nine years, I was engaged in various 5879 supervisory capacities in equipment engineering work. The last five years of that time I was in charge of all of the central office equipment engineering for the Western Electric Company.

I have been familiar for the period commencing January 1, 1923, and continuing up to the present time, with the charges made by the Western Electric Company for its equipment engineering specifications and for installing central office equipment in plants of the various Bell associate companies and with what such charges included from time to time.

I am familiar with sheet 2 of Defendants' Exhibit X-13, which attempts to make a comparison between the equipment engineering and installation prices of both manual and dial equipment used by Mr. Sloan in his appraisals and with certain indices taken from an index number study of Mr. R. W. Burgess. I heard Mr. Sloan's testimony in this connection as to how he had figured his installation cost in connection with manual and dial equipment in Chicago.

I furnished to Mr. R. W. Burgess, the Chief Statis-
5880 tician of the Western Electric Company, the material
which he used in compiling his index numbers so far as installation and equipment specifications prices are concerned. The index numbers, which I furnished, reflected the trend of prices of that work for the Bell associate companies.

During the period under consideration, 1923 to 1931, there has been a gradual transfer of installation work from the field to the factory which has contributed substantially to reducing the installation prices as reflected in the Burgess trend. This transfer of installation labor from field to factory has affected both manual and panel installations, but it has affected the panel installation to a greater extent than the manual.

In the earlier panel installations, such as State-Central and
Superior offices in Chicago, it was the practice at the
5881 shop to perform only a minor test on the wired equip-
ment. It was then necessary for the installer to perform a detailed operation test on the equipment, involving considerable installation labor, and also the use of expensive equipment. On the later jobs the shop performs this detail operation test, thereby insuring that the equipment was in

operating condition when it was shipped, and this has provided a very much more accurate test of the complicated circuits involved. It was then necessary for the installers only to perform a simple inexpensive routine test on the equipment to insure that no defects had developed during transit or installation. That resulted in lower installation cost in the field and, probably, higher material cost in the factory.

On the earliest jobs, the shop only assembled and wired the equipment on the selector frames, leaving to the installer the job of assembling and wiring this equipment on the sender and test frames.

5882 In our earlier panel jobs, such as State-Central and Superior, it was necessary for the installer to perform the cabling and connect all of the apparatus mounted on the relay rack. He also performed an operation test to insure that the equipment functioned satisfactorily. To a very large extent this apparatus is now mounted on the relay rack units in the shop. It is there given an operation test, thereby insuring that it is in operative condition when it is shipped. It is then necessary for the installer only to connect the cabling to the terminal strips at the top of the unit, and perform a minor routine test to insure its functioning satisfactorily.

In arriving at my price trends for internal uses and in determining reductions made in installation prices, I dealt with this situation just as I found it except to exclude the effect of design changes. The Burgess index numbers, 5883 so far as installation prices and equipment engineering specifications are concerned, in no way indicate anything to the contrary of what I have just said.

With respect to the installation prices on manual central office equipment, there have been factors which affected reduction of such costs in one or more types of such equipment more than in others. The Number 1 Western Electric Company switchboard was introduced into general use at least twenty years prior to the beginning of this period under consideration. By 1923 the installation work on this equipment had reached a high degree of efficiency, and very little improvement in that efficiency was made after that time, affecting installation prices. On the other hand, the Number 11 switchboard was introduced during the early part of this period, and very considerable economies were made in the installation work on that equipment. Furthermore, there was a marked increase in efficiency in the repeater equipment. Both of these were included in the Burgess price trend studies.

5884 The transfer of a portion of installation labor from field to factory has affected equipment engineering specification prices. It has had the effect of reducing the prices of equipment specifications, because it has permitted the Bell associate companies to order the equipment in standardized units, thereby reducing the engineering effort and price. The conditions which brought about increased efficiency in installing the new Number 11 manual switchboard and manual repeater installations has affected our manual equipment engineering specifications price. The equipments referred to were comparatively new, and as time went on we were able to make considerable economies in the prices.

This transfer of a portion of installation labor from field to factory has been going on continuously during this period, but more actively during the middle years of the period.

5885 The trends shown on page 2 of Exhibit X-13 are not trends of comparable situations.

I doubt if all of the data and information necessary for a study to obtain a trend on a comparable basis with the Sloan appraisal for installation labor and equipment engineering prices, is available. It would be necessary to ascertain the prices of equipment specification and installation on a large number of manual and panel installations, and then apply the current price information to each of those installations for each of the subsequent years. It would take at least five men working continuously for a year, I would imagine, to prepare such a study. The Western Electric Company has never made such a study.

5888 ALLEN G. HOYT, recalled as a witness on behalf of the plaintiff in rebuttal, having been previously duly sworn, further testified as follows:

Direct Examination by Mr. Blackman.

June 30, 1932

I am the same Mr. Hoyt who testified previously in this case. I have examined Defendants' Exhibits X-227 to X-259, inclusive.

"Q. Referring to the comparisons set up in Exhibits X-227, X-228 and X-229, in your opinion are those comparisons appropriate to prove anything of value in determining the fair rate of return to the American Telephone and Telegraph Company or the Illinois Bell?

"Mr. Goldstein: I object to the form of the question.

5889 "Judge Wilkerson: The objection is sustained. It is not for him to say whether they are valuable. He can criticize them, and give his opinion on the subject himself, but I do not think he can characterize them."

Those exhibits indicate the cost of certain bond financing, in the rate of return to the Bell System, as compared with the cost of bond financing for certain railroads and public utilities. The spread paid by the Bell System in its bond financing was relatively small, because it issued only high-grade bonds; that is, those rated Triple-A, or Double-A. In selling bonds of high quality, the selling resistance is low and therefore the bankers are able to underwrite issues on a relatively low margin, whereas lower-grade bonds are usually more difficult to sell; they usually require more expense in merchandising, and therefore require a higher margin of
5890 profit. Therefore the comparison in these exhibits is
in my opinion of practically no significance.

"Mr. Goldstein: I move to strike out the answer, that it is of no significance.

"Judge Wilkerson: The objection is sustained. Strike out what he says about it being of no significance. That is for the Court. He can tell what the exhibit shows."

5891 The average yield on a miscellaneous assortment of bonds, that is to say, rating from high down to a medium or low grade, would naturally be higher than the yield on an assortment of bonds confined to the high rating; that is to say, rated Double-A or Triple-A. In this comparison, the Double A bonds and Triple A bonds of the Bell System are compared not only with bonds of similar rating, but with bonds of all classes.

"Mr. Blackman: Now in your opinion, is the effect upon the value of the comparison of the matters which you have just stated?

"Mr. Adcock: We object to the question.

"Mr. Goldstein: It is not for this witness to say what value the exhibits have.

"Judge Wilkerson: If he is being examined as an expert, it is necessary to put to him a hypothetical question, which includes all of the elements. He may not give an opinion as an expert in which he assumes these facts about the

5892 Bell Companies, unless they are all incorporated—

"Mr. Blackman: He is only assuming—

"Judge Wilkerson (continuing): —in the question, because—

"Mr. Blackman: He is only assuming the facts which he has stated, and sees on the face of the exhibit.

"Judge Wilkerson: I sustain the objection to that.

"Mr. Blackman: Mr. Hoyt, in your opinion are the facts which are shown in the comparison which we have referred to, sufficient to furnish a proper basis for making the comparison?

"Mr. Goldstein: I object to the question on the same ground.

"Judge Wilkerson: Is that not the same thing again, in just another form?

"Mr. Blackman: It is a very customary form of interrogating a witness—

"Mr. Goldstein: Well—

"Mr. Blackman: —in matters of this kind. I cannot see how else you can really get at it.

"Judge Wilkerson: I do not think it is proper, but if you press the question, I will take his answer. I will not 5893 deprive you of a record. I will take it subject to the objection. I do not think it is proper, myself.

"Mr. Blackman: Well then, I will withdraw it.

"Judge Wilkerson: There are several things—either this witness is being examined as an ordinary witness, or he is being examined as an expert.

"Mr. Blackman: Surely.

"Judge Wilkerson: (Continuing.) Now, if he is being examined as an ordinary witness, he testifies to the facts about the Bell financing—

"Mr. Blackman: Yes.

"Judge Wilkerson: —and he testifies to the facts of the financing of these other companies.

"Mr. Blackman: Yes.

"Judge Wilkerson: Now, if he is testifying as an expert, the question should be so framed that you are not examining him at the same time as an ordinary witness—

"Mr. Blackman: No, sir.

"Judge Wilkerson: —while he is testifying as an expert.

"Mr. Blackman: I am examining him solely—

"Judge Wilkerson: (Continuing.) So that if he is testifying as an expert—

5894 "Mr. Blackman: I am examining him solely as an expert, and I am asking for his opinion as to the effect of the things he sees before him. Of course, you cannot put a hypothetical question in a matter of this kind, because there is no hypothesis; the thing is there, it is actual; and I am simply asking him whether those things give him as an expert enough information to determine anything.

"Judge Wilkerson: I will take his answer subject to the objection. What is your answer?

"The Witness: Will you just read that question to me again, please?

(Read by the Reporter.)

"Mr. Adcock: What facts?

"A. I think not.

"Mr. Goldstein: Yes, what facts?

"Mr. Blackman: He has just mentioned the facts.

"Judge Wilkerson: I am taking the answer in order that the record may be made here. I have told you what I think about it. Go on. Answer the question."

I think not because the classification of bonds into different ratings is not rigid. Because two bonds are rated Triple-A does not mean that they are identical in security, and 5895 would command identically the same price yield on the market. A very large number of bonds are rated Triple A; naturally, some are better security have better security than others. The comparison of Triple A bonds of one corporation with the Triple A bonds of another corporation proves little in my own opinion, unless all of the pertinent and relative facts regarding each security are available.

"Mr. Goldstein: I move to strike out the answer as not responsive to the question.

"Judge Wilkerson: The record will show your motion.

"Mr. Adcock: And also

"Judge Wilkerson: The ruling is reserved—what is it?

"Mr. Adcock: —particularly the statement that it proves little, and what follows.

"Judge Wilkerson: Yes. The record will show your objection."

5896 One of the comparisons I have referred to is a comparison between an indiscriminate lot of railroad and utility bonds ranging from Triple-A down to BAA.

"Q. And they are averaged and compared with the average of the Bell System bonds. In your opinion, is that a proper comparison to make?

"Mr. Goldstein: I object to the question.

"Judge Wilkerson: The record will show the objection, and the same ruling. Go ahead.

"A. I think the comparison has little bearing on the situation.

"Judge Wilkerson: Well, what situation now are you 5897 talking about?

"The Witness: On the question of determining what is a reasonable rate of return.

"Mr. Goldstein: That is a question of law.

"Judge Wilkerson: There are a good many things to be taken into consideration in determining a reasonable rate of return—

"Mr. Blackman: Does it have—

"Judge Wilkerson (continuing): —and it is conceivable now that a table made up on the basis of bonds of entirely different classes of Triple A bonds might throw some light on the subject. But it does not seem to me that it is for this witness to tell the Court whether it throws any light or not.

"Mr. Goldstein: No.

"Mr. Blackman: He is only

"Judge Wilkerson: However, I will take the answer. I was merely indicating to you—

"Mr. Blackman: Yes.

"Judge Wilkerson: —that I do not think the Court is bound by the opinion of this witness on this subject.

"Mr. Adcock: And we move to strike out the answer.

"Judge Wilkerson: But he can say, and he has said, that, a table that is made up on a mixed basis like this, will 5898 show—or tables made up on that basis will show many results dependent upon the particular bonds which are included.

"Now, whether they throw any light on what the Court shall say in this case as to rate of return, is an entirely different question. It may be that the Court in arriving at or in determining what is a fair rate of return, on this kind of property, should compare this property with other properties, and it may be something that may enter into arriving at a conclusion.

"Mr. Blackman: Yes, sir.

"Judge Wilkerson: But that goes to the question—

"Mr. Blackman: And all we are doing is giving the Court the benefit of this man's expert opinion.

"Judge Wilkerson: as to whether it is material

"Mr. Blackman: Yes, sir, as to whether

"Judge Wilkerson: as to whether it throws any light on the subject.

"Mr. Blackman: As to whether it is appropriate.

"Judge Wilkerson: would seem to me not to be a matter for expert testimony.

"Mr. Blackman: All right, sir.

"Mr. Adcock: May we have the answer stricken out?

5899 "Judge Wilkerson: Well, the motion shows is shown on the record; the record shows your motion.

"Mr. Adcock: Very well.

"Judge Wilkerson: Go ahead. I will let you make a record on this, Mr. Blackman.

"Mr. Blackman: All right, sir.

"Judge Wilkerson: His answer will be received subject to the objection, and subject to the motion to strike it out.

"Mr. Blackman: All right.

"Mr. Adcock: And will the record be made in the nature of an offer of proof—

"Judge Wilkerson: No.

"Mr. Adcock: —in this respect.

"Judge Wilkerson: I will let him put the question to the witness.

"Mr. Adcock: And we object.

"Judge Wilkerson: And let you object, and let the record show your objection, and let the witness answer the question, and let the record show in each case your motion to strike.

"Mr. Adcock: Very well.

"Judge Wilkerson: So that it will all be before the Court when it comes down for final determination. I think that is the quickest way to get it.

"Mr. Adcock: Very well.

5900 "Mr. Blackman: Now, Mr. Hoyt, in Defendants' Exhibit X-236, comparison is made of Bell System bonds of certain grades with bonds of corresponding grades of railroads, public utilities, and industrial companies. In your opinion, does that comparison furnish any basis for determining relative marketability of the bonds dealt with?

"Mr. Adcock: Objection.

"Mr. Goldstein: We object to that.

"Mr. Adcock: May our objection go to the same line of questions—

"Judge Wilkerson: The record will be made, as to the entire line of questions.

"Mr. Adcock: All right.

"Judge Wilkerson: I am doing that in order to save time. Go on.

"A. I think not."

It is an attempt, it seems to me, to compare things that are not similar. The bonds of the Bell System have a certain classification as to security, and a certain credit standing.

The other bonds in some cases are of different classes
5901 of corporations and of different rating. The security
varies, while the security of the Bell System bonds is very high. The security of a miscellaneous assortment of bonds may be high, or may be medium.

"Mr. Adcock: I want to move to strike out that portion of the answer as to bonds having certain classifications.

"Judge Wilkerson: The record will show—

"Mr. Adcock (continuing): You cannot tell what the witness is referring to.

"Judge Wilkerson: The record will show your motion."

What I referred to was this: The exhibit shows railroad bonds, public utility bonds and industrial bonds. Those are different classifications, in the character of the issuing corporation. With a railroad or an industrial bond, the measure of credit of the railroad or the industrial may be quite different from the measure of credit of the telephone com-
5902 pany. There is a variation in the character of the cor-
poration and there is of course a very material variation in the security behind the bonds—bonds having the same rating. In my opinion the same holds true with regard to the comparison set up with regard to X-238, X-239, X-240, X-241, X-242, X-243, X-244, X-246, X-247, X-248 and X-249.

"Q. Now, in X-250 a comparison is made between what is called the average yield on common stocks, and what is
5903 called the average yield on bonds. In your opinion, is that a proper comparison to make, to prove any facts of value in connection with the marketability of securities, or rate of return, to the American Company or the Illinois Bell?

"A. It is not.

"Q. Why not?

"Mr. Adcock: We are asking that the same objection apply to this same line of questions.

"Judge Wilkerson: Yes."

The primary consideration which is effective in determining the market value of a stock is not merely the yield on dividends paid. The earnings per share are a much more important factor in determining the market price, than the dividends actually paid. For that reason, the yield of a common stock based on the dividends paid at any particular time has far less significance than the earnings per share of the stock at that particular time. I think the same is true with
5904 regard to X-251, X-252, X-257 and X-259.

X-259 is a tabulation showing the high and low price at which American Telephone and Telegraph Company common stock sold in the years from 1901 to 1931 inclusive. And then there is another column showing the rate of dividend paid on that stock during each year. Then there is another column showing the yield of the stock at each of the high and low prices, based on the dividends paid for that particular year, and then there is another column giving the average of these two yields for each of these years. In this tabu-
5905 lation (A-260) I have taken the high and low prices of American Telephone and Telegraph Company stock for the years 1921 to 1928, inclusive, from X-259. I have assumed they were correct. Next, I have had prepared the earnings of the American Telephone and Telegraph Company per share annually calculated for those years that I have used. Then I have shown the percentage of these earnings upon the market price of the stock, the high and low of

each year. That is, I have proceeded precisely as Mr. 5906 Hammond proceeded in the city's exhibit, except that I have substituted for the dividend payments made by the company, the annual earnings per share of the company. The last column shows the average of these percentages calculated in a similar way to the average yield in the exhibit. I carry this tabulation only through the year 1928 because in the year 1929 the stock of the American Telephone and Telegraph Company sold at such a price that it indicates that the purchaser was not interested primarily in the yield of the stock at that particular time. It was, as we know, a period of enthusiastic optimism, and the stock was purchased by people who it is quite evident anticipated a return in appreciation very much in excess of the yield of the stock at the prices ruling. The yield of the stock or the dividend paid, or the dividends likely to be paid in the near future during that year, was lower than could have been obtained on the senior 5907 obligations of the company, namely, on bonds, and it is quite evident that the purchaser of the stock during those years was not primarily concerned with the yield of the stock from the dividends paid or likely to be paid during the next few years.

(Plaintiff offered sheet marked Exhibit A-260 in evidence.)

The condition that I have described as existing in 1929 existed to a substantial extent in 1928 also at the time 5908 when the stock sold at the highest price, during 1928.

The dollars per share earned annually shown on this sheet do not include the $48,000,000 dividend paid by the Western Electric Company in 1927. They do not include the undistributed profits of the Western Electric Company. The inclusion of those figures would show a higher percentage return in the last column.

In my opinion the average percentage of return shown on this sheet does not indicate the full amount of return that would be required to finance the American Company. The price at which stock sells from time to time in the open market is no indication of what price a large block of stock would

have to be sold at in order to have it subscribed by the stockholders to whom it might be offered. When one individual sells a block of shares of a company to another individual, there is no additional capital enlisted in the industry.
5909 On the other hand, when a company desires to attract additional funds, for its purposes, by offering a new block of stock, then there is enlisted further capital for that particular corporation. For instance, in 1930, the American Telephone and Telegraph Company offered, as I recall it, over $250,000,000 worth of stock at par. Naturally, the stockholders who subscribed for that stock did not at the time the stock was first offered, have on deposit, $250,000,000. Many subscribers must have sold other securities in order to exercise their subscription rights. Other stockholders must have arranged to go into debt to take up their shares of the stock. The price at which an additional large block of stock may be issued by the company is invariably, I believe, below the price at which the stock may have been ruling just prior to the time of the offer.

"Q. Now, Mr. Hoyt, referring to Exhibit X-229, you find there an average worked out for the Bell System, for cost of its bond money, of 5.62 for the years 1921 to 1931, and 5.44 for the years 1923 to 1931,—does that fact fur-
5910 nish any indication as to what rate of return is necessary to attract capital to a venture such as that of the American Telephone and Telegraph Company?

"Mr. Goldstein: We object to that question.

"Judge Wilkerson: He may answer the question subject to the objection. There will be the same arrangement about the record."

The exhibit shows that the average cost of bond money for the Bell System was approximately 5.5 per cent. The average from 1921 to 1931 was 5.62; the average from 1923 to 1931 was 5.44. This indicates that if the bond money, having in mind the fact that the bond debt of the company is less than one-quarter of its total assets—if its bond money cost it about 5.5 per cent, it indicates to me that in order to obtain

all of the money needed, the balance having been derived by
the issuance of stock, the total return on all capital invested
in the enterprise would have to be approximately 8 per cent,
inasmuch as the risks and hazards undertaken by the stock
purchasers were of course very much in excess of the risks
taken by the bondholders, who had a first lien on the
5911 property in an amount representing a very small pro-
portion, a very moderate proportion, of the total assets.

Cross-Examination by Mr. Goldstein.

I had Exhibit A-260 prepared. The figures in the second
column entitled "Dollars per Share Earned Annually" were
provided by the Comptroller of the American Telephone and
Telegraph Company. I know what the dollars per
5912 share earned annually is intended to cover. It is in-
tended to cover the earnings of the telephone compa-
nies on the consolidated basis, showing the earnings of the
subsidiary applicable to the stock of the parent corporation.
It includes in other words undistributed earnings of the sub-
sidiaries in excess of the amount actually paid by such sub-
sidiaries in dividends to the parent corporation, excluding of
course the excess of the Western Electric Company. Deduc-
tion is made for minority interests. It is, I believe, a true
picture of the earning power of the stock of the American
Telephone and Telegraph Company except for the exclusion
of the Western Electric Company surplus earnings.

"Mr. Goldstein: Now, am I to understand that the second
column in 260 covers--comes from CR-53, is that cor-
5913 rect?

"Mr. Blackman: Yes, I understand that is the source."

If I were getting a true picture of the earnings of the American Telephone and Telegraph Company, I would take the earnings and the undistributed earnings from all of the subsidiaries. I omitted the undistributed earnings of the

Western Electric Company and its subsidiaries, simply because it seemed to be a custom of the company to treat that as an investment, and not as a telephone operating prop-
5914 erty. They include in their earnings, in that particular company, only the dividends received by the American Telephone and Telegraph Company. From an investment standpoint, if you were to figure the value of securities as having a bearing on the price, the investor would take into account also the fact that there were additional earnings that the American Telephone and Telegraph Company had that it did not disclose in its earnings statement.

"Q. So that you would consider all of the profits of the Western Electric Company, and all of the profits of all of the subsidiaries of the Western Electric Company, and their sub-subsidiaries.

"A. I would give consideration—

"Q. Is that correct?

"A. (Continuing): —to the fact that that was in effect, an understatement of the earning power."

A-260 is really not a full statement of all of the earnings. It is just a partial statement. The footnote that it
5915 does not include the dividend of $48,000,000 and the undistributed profits of the Western Electric Company; that is the undistributed profits of each year.

"Mr. Blackman: I understand there is no objection to Exhibit 260.

"Mr. Goldstein: None at all."

(The document was thereupon received in evidence, marked Plaintiff's Exhibit A-260.)

5916 F. M. WILLIAMS, recalled as a witness on behalf of the plaintiff, having been previously duly sworn, further testified as follows:

Cross-Examination by Mr. Goldstein.

June 30, 1932.

On direct examination I spoke of the trend shown on page 2 of Exhibit X-13, and Mr. Sloan's trend with respect to installation cost of equipment specifications, as not being comparable. They are not comparable in the following respect: I understood that Mr. Sloan took the equipment as it was shipped originally, and carried it on from year to year on the same basis. We prepared our trend information on the basis of the manner in which the installation work was being done, year by year.

5917 R. H. GREGORY, recalled as a witness on behalf of the plaintiff, having been previously duly sworn further testified as follows:

Cross-Examination by Mr. Goldstein.

June 30, 1932

"Q. Mr. Gregory, on direct examination you spoke of notes payable as not being properly deductible even if they were for short periods, and you said these notes payable were not given for merchandise. If the notes payable had been given for merchandise would they be deductible?"

I think the notes payable would be deductible if they were for a short period. If they were for merchandise over a long period of time I would question whether they would be deductible. The difference there would be the question of the length of time.

5918 Now, suppose we gave a note to a bank for 30 days, to pay taxes, or to provide money to pay taxes, or to pay payrolls. I would not deduct that note because at the particular period when we were making bank loans, or borrowing from banks, it was more or less of a continuous process; we were paying them off in some months, and then we were borrowing in other months; and I think it is perfectly fair to take the average condition outstanding, on that particular item.

The reason why I would not make any deduction for the notes payable was that the money represented by them was included in the business, and at the risk of the business. I think the loan for temporary working capital and the note which is given for merchandise, and the merchandise used in
the business are both at the risk of the business. The
5919 determining factor is more the time element, and also
the risk; they are both at the risk of the business. By
5920 "time element" I mean if the time element is a month
or so, I would say that would be considered more as a
current payable, and deductible; but if it is more than a month, if it was a continuing process of borrowing money from the banks, the average condition of such a situation could be considered properly as money invested in the business and at the risk of the business.

Exhibit A-253 is entitled "Information submitted to counsel for the City of Chicago March 14, 1932, to June 15th,
1932". That is in the same form as, and a continuation
5921 of A-73. The same sort of condition applying to A-253
with reference to the various items would apply also to all of the items I furnished; that is some of them were made up specially, some of them were already prepared, and some
of them had been prepared for other cases.

5922 Gregory's Exhibits 1 and 5, referred to in the correspondence and motions in this case are the same as Exhibits A-77 and A-79 in this case.

I was asked regarding Defendants' Exhibits X-294 and X-295, and I gave the financial history of the Western Electric Company up to 1920. In 1915 there was outstanding $15,000,000 aggregate par value common stock of the Illinois
Corporation. Of the $15,000,000, $6,250,000 had been
5923 paid in in cash from 1881 up to 1915. The total capital

and surplus at the end of 1915 was approximately $40,000,000. The New York Corporation paid for the assets of the Illinois Corporation. It paid to the stockholders
5924 150,000 shares of 6 per cent preferred stock of the New York Corporation and redeemable at 120.

The fact is that a man who was a stockholder in the Illinois Corporation and owned one share of stock in the Illinois Corporation received therefor one share of preferred stock
5925 of the New York Corporation and one share of the common stock of the New York Corporation. He received it for the surrender of that stock. The New York Corporation turned over to the stockholders, for each share of common stock in the Illinois Corporation, one share of preferred stock and one share of common. That preferred stock was redeemable at $120. In 1917 the New York Corporation issued again $15,000,000 worth of preferred stock and it was subscribed for at par. That was likewise redeemable at $120 per share.

In 1920, thirty million dollars of preferred stock was retired at $120 per share and two hundred thousand shares of
5926 common stock were issued at $180 per share.

I said that the exchange was made on March 9th under two separate resolutions. One resolution called for the redemption of the preferred stock at 120 and the other for the issuance of the common stock to the common stockholders in the ratio of 4 shares to 3. I spoke yesterday of the effect of that transaction as merely being a transfer, and not a cash redemption, and not a transaction of the purchase of the stock. I was speaking from the point of view of the Western Electric Company and I was speaking also from the point of view of the American Telephone and Telegraph Company. The American Telephone and Telegraph Company had something like 297,000 shares of preferred stock, and they received in payment therefor the common
5927 stock without the payment of or transfer of one dollar in cash.

I do not know the accounting procedure followed by the American Telephone and Telegraph Company in connection with this transaction. I have never seen the books, or any records of the American Telephone and Telegraph Company bearing upon this transaction. So I have no knowledge how the American Telephone and Telegraph Company treated the transaction.

5929 I prepared Exhibit A 254. The information for this
exhibit was obtained from various sources. The principal information was obtained from the records and files of
the National Association of Cost Accountants. It was
5930 also obtained by telephone and from consultation with
various representatives of different companies whose names are listed on this statement.

"Mr. Goldstein: We want to note an objection to this exhibit on the ground that the sources from which it is taken, are hearsay, and there is no way we can check them.

"The Witness: It is quite generally known, Mr. Goldstein, that a standard cost system is used."

I got this information from the files of the National Association of Cost Accountants, and I also got it from direct contact with the comptrollers or accounting officers of the various
companies, by telephone. The National Association of
5931 Cost Accountants is an association of cost accountants,
which has in its membership representatives of most of the manufacturing companies in the United States. It holds annual meetings and discusses various problems in connection with cost systems in the manufacturing business. I think they publish a list of the members. These names were taken from the files in their possession. I did not do that myself but my representatives did go to their files. Now, in just what form they found that information, I am not in a position to say at this time.

5933 The Association is located at New York. I do not know whether they have files in Chicago similar, or not. These files that we looked at, were in New York.

"Judge Wilkerson: Well, now, let me say, if you press
your objection, and you make application to the Court
5934 to issue a subpoena for the officers of this association

to bring in their books and papers—if you press it, I will do that.

5935 "Mr. Thompson: I understand, Mr. Goldstein, that your witness, Mr. Hagberg is a member of this Association."

5936 (The Court stated that if the city had any difficulty about verifying the correctness of this exhibit it might renew its motion to strike.)

I spoke of the profit on the International Western Electric Company's sale being related to profits to 1882. I am 5937 familiar with the agreement for the sale of the International Western Electric Company to the International Telephone and Telegraph Corporation which is identified as Defendants' Exhibit X-68. I am familiar with the agreement of October 1, 1925 between the Western Electric Company and the International Western Electric Company. (Defendant's Exhibit X-68-A.) I am familiar with the franchise that was given to the International Western Electric Company under these agreements, to make use of the inventions of the American Telephone and Telegraph Company and the Western Electric Company. I took all of the facts 5938 into consideration in my answer in so far as they are relevant to the point at issue.

I spoke of a claim which we made to the Internal Revenue Department in connection with the Field Examiner's inspection in 1930. I have a copy of that claim here. I do not know anything about any refusal of this document to Mr. McCann by my department; I do not think he ever asked for it. I know of a request for correspondence with the Internal 5939 Revenue Department. This is not correspondence. It was the claim made to the Field Examiner while he was right in the office. I did not consider that as coming within that request. If he had asked me for the claim, I would have been very glad to give it to him.

5942 (The above mentioned document was identified as Exhibit A-261 and was received in evidence. The Court held that since counsel for the city had called for the production of said document it was in evidence. Defendants moved that the oral testimony of the witness be stricken because it was based on a written document.)

5943 I spoke of the surplus adjustments of the 88 companies and stated that there was a certain ~~effect~~ produced by that. I have here no working papers upon which my conclusion was based. All of the working papers in that connection are simply the comptometer records, if available, of the adding up of the figures on defendants' exhibit.

5944 What we did was to add the plusses and minuses together, to get the net result, and figure out the percentage to the investment which was shown on the exhibit (I think it was A-85). That is, I took the adjustments, and added them, or subtracted them, as the case may be, whether they were red or black, for the five-year period, lumped those together and then related them to the consolidated investment for the five-year period.

5945 I spoke of the Western Electric Company having paid actual cash for the good will of the Teletype Corporation. It paid the cash to the owner of the stock of the Teletype Corporation at the time of the purchase. The owner at the time was the American Telephone and Telegraph Company. The American Telephone and Telegraph Company as I previously testified in detail paid for that stock by the issue of 150,000 shares of American Telephone and Telegraph Company stock, for 150,000 of the Teletype Corporation stock.

In connection with the 88 companies (Exhibit A-85), I think that in every case where good will appeared I deducted it in computing the net investment.

5946 I do not know whether the good will in any one of those cases was paid for by the stockholders to other stockholders.

5947 I examined X-51, X-52, X-55 and X-88. If the heading "Net profits per Exhibits A-77 and A-79" is correct on these exhibits, as I assume it is, there is no adjustment then to any of the profits shown in my exhibits.

I did not personally examine all of Mr. McCann's exhibits bearing upon the Bell and non-Bell profits, but it was done under my jurisdiction. I have seen Exhibits X-55 and X-88, where the headings appear, "The Investment Adjusted" in one column and "The Profits Adjusted" in another column.

As far as the mathematics of these two exhibits is con-
5948 cerned, that is the additions and subtractions, I have
no criticism; that is, of the particular profit columns,
and so on. I am not talking now about the relations or percentages at all, nor the methods, at all.

I spoke of the 1925 cash deduction by Mr. McCann. I stated that the Western Electric earned 5 per cent. This 5 per cent was on the cash items that were included in the amount. I don't carry in mind how much it earned on the cash alone, but it would probably be the prevailing amount allowed by banks at that time for money on deposit.

CR-714 of the Western Electric, which is X-200, does
5949 not show all of the cash and cash items. As far as cash
is concerned it shows the rate of interest received on all
the cash of the Western during 1925.

Mr. McCann deducted not only cash, but the cash items as well. This twenty million dollars he deducted was cash and cash items. My criticism of his deduction and his inclusion of 2.5 per cent interest is based upon my understanding that what he deducted was cash and cash items in the amount of twenty million and not cash alone.

I criticized one of Mr. McCann's exhibits where he had
combined Chrysler and another corporation to show the
5950 turn-over. I stated it had no application to A-77 and
A-79 and A-80. What I was talking about is the turn-over for the various classes which we discussed at some length in March. They were the three classes, telephone apparatus, lead-covered cable, and special commercial products or appliances, as you have described them. When I said on direct examination, yesterday, that the turn-over was the same for Bell and non-Bell business, I did not have in mind all the telephone apparatus (including commercial products) sold to Bell customers, on the one hand, and all the telephone

apparatus (including commercial products) sold to non-Bell customers, on the other hand. I had in mind telephone apparatus by itself, and special commercial products, or
5951 appliances, in another class by itself. I treated them by separate classifications.

I spoke of Mr. McCann overstating the profits of the Bell business for the earlier years by a million and a half, because of something that he had done with reference to pension accruals. That million and a half was over a period of years prior to 1925. The composition of that million and a half by years is as follows: In 1916, $62,000; in 1917, $103,000; in 1918, $82,000; in 1919, $109,000; in 1920, $255,000; in 1921, $213,000; in 1922, $265,000; in 1923, $363,000; in 1924, $30,000. The aggregate is $1,482,000. I used the round figure of
5952 a million and a half dollars.

In connection with A-256, "Average Notes Payable": the Western Electric, in its income account in its annual reports, treats interest on loans made to subsidiary companies as income. I treat only the interest and whatever dividends are received as income. All there is, of course, on loans in the way of income is the interest. The only income that we show from loans is the interest paid by the
5953 subsidiary to the Western Electric Company; that is the only possible income that can be obtained.

I spoke about delivering to the defendants in December a consolidated statement with a notation that it was temporary, and that it was subject to check. The document which I delivered in December was similar to A-84, and contained only three lines, in addition to the heading. One entitled, "Net profits", and the other, "Average investment", and the other, "Per cent return on investment". Exhibit A-84, and the sheet which I gave defendants in December covered the consolidated earnings of the Western Electric and all of its subsidiaries. It covered all of Western's subsidiaries for the period from 1916 to 1931, inclusive, with the year 1931 on an eight months' basis, raised to a twelve months' basis.
5954 Those subsidiaries included not only the American subsidiaries, but the foreign subsidiaries and the Canadian

subsidiaries, to the extent that we owned an interest. The underlying papers on this consolidated statement were in the hands of our auditors until about February 11, when it was turned over to representatives of the defendants.

When, in connection with D-61 I spoke of 85% of the information having been made available to defendants, I meant that the information for the period from 1916 to 1931 was made available, and the profits of that period represented 85 per cent of the profits of the entire period.

5955 "Q. You spoke of some document having been copied by our representative?

"A. Yes.

"Q. Where were you on May 6, 7, 8 and 9, Mr. Gregory? As a matter of fact, you were in New York?

"A. Yes; I got out here on the 13th.

"Q. Yes.

"Mr. Thompson: Is it denied that that was copied?

"Mr. Goldstein: Well, I certainly do not intend to have the record show as it now stands, and I would like to have the witness on because the delivery of those documents have something very important attached to them. When the documents were delivered, and the representative came to my office in connection with that, we wrote the letter that the information was not what we wanted. Now, the record as it now stands would seem to appear that we got everything we wanted, so Mr. Gregory's statement is on hearsay, and I would like to have somebody who will give the whole transaction.

"Mr. Thompson: Do we have to waste the time of the Court, if you admit that your representative did make a copy of the information?

"Mr. Goldstein: I will admit that the representative 5956 made a copy of the letter which is referred to in our Exhibit X-344, and is the document referred to in the letter of May 31, 1932, addressed by me to Mr. Bracelen; if you will stipulate to that I am perfectly agreeable to have the record stand as it is.

"Mr. Thompson: Let's see it.

"Mr. Goldstein: That refers to the same matter.

"Mr. Thompson: Yes. Well, we will see about that later. There is no use stopping now about it.

"Mr. Goldstein: All right; I just wanted to know.

"Mr. Thompson: I know you got the copies, and if necessary, I will call the witness.

"Mr. Goldstein: All right. But I want to show that the document that I was referring to—that Mr. Gregory has referred to, is a document that was delivered here in Chicago, that Mr. Gregory knows nothing about excepting by hearsay.

"Judge Wilkerson: If he knows nothing about it, why ask him about it?

"Mr. Goldstein: But he made the statement it was delivered. I will have the answer stricken, as being based on hearsay.

"Judge Wilkerson: Do you know anything about it?

"A. Yes, I do know something about it."

5957 I was here May 13th. As I recall, to the best of my recollection, we first sent to defendants a statement analyzing the data by years, which they said was not what they wanted. Then they asked for the underlying data back of that. And I was in Mr. Thompson's office at the time when we decided to send that document over to them and give them a chance to copy it. I know that it went over to them. Now, as to whether it was copied or not, I wasn't there, I was not present when they copied it. I know it was sent to them for the purpose of copying it.

"Q. Yes, but you testified it was copied. We ask the answer be stricken unless we can get a stipulation as to

5958 what the facts are.

"The Witness: I know you wanted to copy it, and I presumed you did copy it.

"Mr. Goldstein: There are a lot of things I wanted and didn't get. I ask it be stricken, unless we can stipulate that document is the document referred to as of May 31, 1932, because the record as it now stands, qualifies that letter.

"Judge Wilkerson: The matter is too complicated for me to rule on without examining the record. The record will show your motion. You may call it up in argument, hereafter.

"Mr. Thompson: The statement, I believe, is not an accurate statement, but I will check it."

5959 Exhibit A-257 shows on its face that it covers the
periods 1916 to 1932, inclusive, and 1923 to 1932, inclusive. The last column is for the entire period, for each of the periods. That is on the first line, for 1916 to 1932, and the second line, 1923 to 1932.

"Q. In connection with your statement as to the option, Mr. Gregory, did you know about a license contract given on May 24, 1927, or an extension of a license contract in which the American Telephone and Telegraph Company participated, to the Automatic, on the day when the money was paid over to the Electrical Research Products?

"A. I am not entirely familiar with that, but I know there is such a license contract in evidence.

"Q. You did not take that into account in any of your calculations in connection with the exhibit X-257, did you?

"A. The basis for the calculation has been testified
5960 to, and is also stated in the explanation of the adjustment.

"Q. And is limited solely to the considerations given there, and not to all of the considerations in connection with the option contract?

"A. I think it is clearly stated in the record.

"Q. All right. You spoke of working reserves. Mr. Gregory, when you set up your working reserves, you set up the full amount, do you not, as an operating expense, without taking into account that between the time when you set it up and the time when you use the money, the money might earn an income?

"A. Why, we set it up currently, from month to month."

We set up whatever we think is a proper amount of accrual, and charge that amount against the cost of sales. If we need, say, $100,000 a year from now, we set up one-twelfth, of the
full amount that we were estimating at that particular
5961 time. The next month it might be a different amount.

If we estimated that we would need $1,200,000 twelve months from now, we would take one-twelfth of $1,200,000, or $100,000 currently.

Re-direct Examination by Mr. Thompson.

When the Western Electric Company of New York was organized it took over all of the assets of the Western Electric of Illinois and issued stock in payment for those assets.

Mr. Goldstein has spoken about the purchase by the Western Electric Company from the American Telegraph and Telephone Company of the stock of Teletype Corporation, which had been acquired by the American Telephone and Telegraph Company from the owners of that stock. The
5962 American Company issued 1[illegible]000 shares of its stock.
The market value of that stock at the time of the issue was $215 a share.

We did not carry cash as large as $20,000,000 currently in our business. When I talk about twenty millions of cash being deducted in 1925, that means cash and cash items.

Exhibit A-257, which has been introduced in evidence, about which I was asked on my cross-examination, merely contains a brief statement of the facts in connection with each one of the controverted points set out on this exhibit, and in preparing this I took into consideration not only the facts set out on this exhibit, but all the facts I have previously testified to.

"Mr. Thompson: That is all. We offer in evidence
5963 Exhibit A-261, which is the document which was produced by Mr. Gregory while on the witness stand, at the request of Mr. Goldstein.

"Mr. Goldstein: With reference to some of these exhibits, there are the same objections to them that we had to the earlier Gregory exhibits, of which these are merely extensions or modifications, and we would like to follow the same procedure here as we followed with reference to the other exhibits; we will preserve formal objections, and place them with the exhibits, and the other side can state theirs."

(Which said document, so offered and received in evidence, was marked Plaintiff's Exhibit A-261.)

5965 WILLIAM H. EGAN, called as a witness on behalf of the plaintiff, having been first duly sworn, testified as follows:

Direct Examination by Mr. Thompson.

June 30, 1932

My name is William H. Egan. I reside in New York City. I am senior accountant in the firm of Arthur Young and Company, who are accountants and auditors with offices in New York City, Chicago and other cities. I have been engaged in the accounting business 18 years. Prior to the war I was with other accounting houses and in commercial practice. Subsequent to the war, from 1919 to 1926 with Patterson and Ridgeway, Certified Public Accountants of New York City, and since that time as a senior accountant with Arthur Young and Company.

The firm of Arthur Young and Company has audited 5966 the books and records and certified to the published accounts of the Western Electric Company for the five-year period ending December 31, 1931. That firm has also audited the books and records of the following subsidiaries of the Western Electric Company for the period of time indicated: Electrical Research Products Inc., for the period 1927 to 1931, inclusive; Graybar Electric Company, Inc., for the year 1927 to 1928; Bell Telephone Laboratories, Inc., for the four years ending December 31, 1930; Manufacturers Junction Railway, for the five-year period ending December 31, 1931; 395 Hudson Street Corporation, for the five years ended December 31, 1931; Weco Realty Corporation for the years 1930 and 1931; Weco Corporation for the years 1930 and 1931, and Teletype Corporation for 1931.

These audits were made in the regular course of business. All the work of auditing the books and records of the Western Electric Company, and of its subsidiaries to which I 5967 have specifically referred, was done under my personal direction and supervision.

In my opinion, from the audits which I have made in the regular course of business, the books and records of the Western Electric Company during the five years ended December 31, 1931, and the books of the subsidiaries which I have named during the period for which I audited them, were correctly and accuratedly kept and the entries made therein in accordance with sound accounting practice.

The firm of Arthur Young and Company was employed for the purpose of examining certain exhibits which had been prepared by Mr. R. H. Gregory, Comptroller of the Western Electric Company, which have been introduced in evidence in this case and for the purpose of checking the figures contained in these exhibits against the records of the Western Electric Company and its subsidiaries and in the case of certain exhibits, against figures contained in Poor's and Moody's Manual, for the purpose of determining whether these exhibits correctly and accurately set forth the figures which
5968 they purport to show. I have a list of the exhibits which I examined there.

(Which said list was identified as Plaintiff's Exhibit A-262.)

Exhibits A-75, A-77, A-78, A-79, A-80, A-81, A-84, A-85, A-86, A-87, A-88, A-89, A-90, A-91 and A-83, are the exhibits which I checked and audited as against the records of the Western Electric Company. The firm of Arthur Young and Company was employed to do this work about December, 1930.

"Mr. Adcock: If the Court please, I don't see how this is rebuttal testimony. It does not rebut any questions we have raised.

"Mr. Thompson: Yes, it does.

"Mr. Adcock: How?

"Judge Wilkerson: What is the objection? To the
5969 whole line of questioning?

"Mr. Adcock: Yes.

"Judge Wilkerson: Well, I suppose because Mr. Gregory is an employee of the company.

"Mr. Thompson: Beg pardon?

"Judge Wilkerson: I say, I don't know on what theory it is offered. I suppose it is offered on the theory that is followed in a large number of instances, that he is employed by an interested party, and this is offered as being made by somebody who is disinterested.

"Mr. Thompson: Of course, and then when they are challenging, we are here to prove the accounts are correct.

"Mr. Goldstein: We have not challenged any accounts.

"Judge Wilkerson: For instance, when we have a receivership here, when a property goes into the hands of a receiver, they have an accounting department, they have a comptroller, but the first thing is to have the books audited—usually, I would say, the first thing is to have the books audited by some disinterested firm of accountants at the time that the Court takes the property over. Nobody may be assailing the accuracy of it, but it is the act of an interested party.

"Mr. Thompson: His testimony will go somewhat 5970 further than that in rebuttal too.

"Judge Wilkerson: But on that theory, it is perfectly proper."

In addition to the time spent on our regular auditing work, from December, 1930, until about the middle of May, 1931, we worked continuously on this job with an average of 10 to 12 men. We again took up the work about the middle of November, 1931, and have worked practically continuously until the present time, with an average of about four men. In checking Mr. Gregory's exhibits, I had access to and used the same books and records which he used in the preparation of his exhibits.

"Q. I hand you now Exhibits A-75, 77, 78, 79, 80, 81, 83, 84, 85, 86, 87, 88, 89, 90 and 91, and ask you to state whether you did in fact supervise the checking of these exhibits against the records of the Western Electric Company and its subsidiaries, and in cases wherever referred to, to Poor's and Moody's Manuals, against these manuals?

"A. I did."

5971 We have audited for the five years ended December 31, 1931, the books and records of the Western Electric

Company at its head office in New York, at its Hawthorne and Kearny plants, and at its New York and Chicago distributing houses. We have also audited its previously mentioned subsidiaries for the various periods referred to. For the other distributing houses and subsidiaries of the Western Electric Company, we examined records made to the Comptroller of the Western Electric Company, in the regular course of business, which are the same reports testified to by Mr. Gregory. For the years 1916 to 1926, not previously audited by us, we have examined the books and records that were available at its head office in New York, at its Hawthorne and Kearny plants, and at its New York and Chicago distributing houses. For the other distributing houses and subsidiary companies, we have examined reports made to the Comptroller of the Western Electric Company in the regular course of business, which are the same reports testified to by Mr. Gregory.

These exhibits which I have listed, correctly and accurately reflect the entries on the books of the Western Electric Company and its subsidiaries, where they related to Poor's
5972 and Moody's Manuals, or the figures in those manuals which the exhibits purport to show.

I have checked the allocations and apportionments made by Mr. Gregory and used by him in his Exhibits A-77 to A-80, both inclusive, of net profits and average investment as between Bell and non-Bell business. I think they were correct and proper methods and that the use of them will give a substantially accurate result. Sales as shown on these exhibits are actual sales and were verified by us from the records and the books of the company. The company allocates expenses not included in the shop cost of sales, directly to Bell and non-Bell business where possible, but expenses which cannot be directly allocated, are pro-rated on the basis of shop cost of sales. This distribution was reviewed by us.

In my opinion, the methods used for making these vari-
5973 ous allocations and apportionments are correct and in accordance with sound accounting practices.

I have seen Exhibit X-35 which was prepared by Mr. Hagberg and which has been introduced in evidence in this case.

This exhibit shows for a number of groupings of years, between 1916 and 1931, and for the entire period, that the net shop variations and other adjustments which were made to basic gross profits by the Western Electric Company in order to make apportionments between its Bell and non-Bell business were the result of certain gross adjustments, plus and minus, which were much larger when added together, than the net adjustments. I am familiar with this fact. In connection with the propriety of the company's method in this connection I believe that the apportionments are substantially correct and that it would have made no appreciable difference if the gross variations, plus and minus, had been apportioned.

This is true, in my opinion, because in the main, these
5974 apportionments relate to telephone apparatus and lead-covered cable which are manufactured by the company, both for its Bell and non-Bell customers in the factories and on the same machines and are of the same general type and character.

In my check of Mr. Gregory's exhibits I found two items in which I would make a change and I found other items which I would treat in years, differently from what they are treated in his exhibits.

First, in 1924, an appropriation was made for pension fund purposes, of $2,000,000 and charged entirely to the Bell business. $120,000 of this should have been assessed to the non-Bell business and I would now make this change if I were recording the facts. This would result in increasing the Bell profits for 1924 by $120,000.

5975 Secondly, patents had been charged, up to four or five years ago, to reserve for contingencies instead of being included in the cost of sales. Such patents, in my opinion, are a proper charge against cost of sales, and this would result in decreasing the Bell profits on the Western Electric if so treated.

Third, in 1928, the Western Electric Company made a reserve for machinery depreciation of $2,000,000 representing the difference between annual depreciation rates of 7½ and 10 per cent. This was entered on the books for 1928. As

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a matter of fact, this reserve was applicable to the years 1924, 1925, 1926 and 1927, and I would so record it now, if I were making new apportionment between Bell and non-Bell business. I would make no difference in the amount to be recorded, but would merely distribute it among different years.

Fourth, for the period 1924 to 1927, the Western Electric Company made an extraordinary reserve for depreciation of $8,233,000. This was to cover a loss in value for the years 1917 to 1927 in its physical plant. I think that this item would not affect the profits, but I would decrease the average investment by reducing the cost value of the plant.

Fifth, with respect to federal taxes, the company
5976 bases its yearly results on accruals. There is no other
way in which it can do this. If I were re-stating Mr. Gregory's exhibits, I would use the actual payments instead of accruals which would make a difference of about $200,000. In case changes were made other than the extraordinary reserve for depreciation for the period 1916 to 1931, it would reduce the return on investment on the Bell business one-tenth of 1 per cent. For the period 1923 to 1931, it would increase the return one-tenth of 1 per cent. In regard to the change in regard to handling extraordinary reserve for depreciation, I figured that that would increase the Bell profits in the neighborhood of two-tenths to three-tenths of 1 per cent.

5977 JOHN R. TURNER, recalled as a witness on behalf of the plaintiff, having been previously duly sworn, testified in rebuttal as follows:

Direct Examination by Mr. Bracelen.

June 30, 1932

Defendants' Exhibits X-190 and X-191 which were
5978 introduced as part of the testimony of Mr. Tholin were
sheets obtained from my office. X-190 shows the maximum net junk salvage that may be obtained from three typical stations constituting 96 per cent of the total stations in

Chicago, if all of the potentially usable piece parts within the junked instruments are re-used. For the three stations shown on X-190, the range is from approximately 16 per cent to 25 per cent. X-191 shows for the same three typical sets the range of junk salvage that is obtained when no piece parts are re-used. That represents the minimum junk salvage, and ranges from 1.6 per cent to 2 per cent for the three instruments shown.

In reference to Exhibit X-190, only certain of the parts
are ever re-usable as salvage. Take the sub-set, for
5979 example, in the first station shown on X-190, the poten-
tially re-usable parts within that sub-set are the ringers,
gongs, condenser and induction coil. The balance of the items
are always junked. So that if we do get any salvage from
the balance of the items, it will be merely junk material salv-
age, and not re-use salvage.

I arrived at 5 per cent junk salvage for the station apparatus as follows: Of course, my problem was confined to these limitations of 1.6 per cent to 25 per cent for the complete range of possible salvage from junked instruments and compositing the three sets on the basis of their relative quantity in service, reduced the range from 1.9 to 21 per cent, being a composite of the three instruments in each class. My problem, of course, was to determine to what extent piece parts are re-used, and I had several conferences with the supervisors in charge of recovered instruments and their dis-
posal. I found that this percentage of re-use varies from year
to year. It is dependent upon several conditions, of course,
5980 conditions of excess stock, conditions regarding the
specifications of junking for certain types of piece parts
and so forth. We found that the range of re-use of piece
parts from year to year would be from approximately 10 per
cent to 25 per cent, so that in order to determine the net junk
salvage for the complete station, I determined what we would
get if 10 per cent of the potentially re-usable parts were re-
used, and if 25 per cent were re-used. That resulted in an
average net junk salvage ranging from 3.8 per cent to 6.7
per cent, a very slight range of variation. I used 5 per cent

as a reasonable estimate between those two slightly differing extremes. Furthermore, the purpose for which this determination of net junk salvage was used, that is, in the determination of the over-all life, does not require any greater accuracy than that range of 3.8 to 6.7, because an extreme variation in that range would not change the depreciation rate for station apparatus.

"Q. Proceeding now to the point to which you have just reverted, the over-all life of station apparatus, the over-all life as determined upon the basis of 2 per cent junk salvage on the one hand and 5 per cent junk salvage on the 5981 other, you will recall that Mr. Tholin gave some testimony upon that point?

"A. I do."

Mr. Tholin has testified that he studied the over-all life of station apparatus, using 2 per cent junk salvage as compared with the Company's use of 5 per cent, and that he found the over-all life to be an approximation in the neighborhood of 21 years. In support of this statement Mr. Tholin offered a work-sheet, which was identified as Plaintiff's Exhibit A-234. In his re-direct examination he explained that this work sheet was incomplete. Later that day, after his testimony, I took the matter up with Mr. Tholin, and he then gave me the rest of his computation; he gave me the information over the telephone on the same day that he testified, I believe, June 20. He explained to me the method he had employed in arriving at this approximation of 21 years that he referred to. He stated that his method consisted of comparing the number of junked stations developed by the 2 per cent 5982 method for the year 1925 with those developed by the Company on a 5 per cent basis. This gave him a decrease in the number of junked stations of 3½ per cent. He then applied the 3½ per cent to the over-all life found by the Company for that particular period of years, which was 1911 to 1929, in which we found the life to be 19.77 years. That resulted in Mr. Tholin's finding the life to be 20.46 years, a difference of 69/100 of a year. That was the information furnished me by Mr. Tholin.

The method which Mr. Tholin used as I have just stated it is not a correct method of computation. I made a correct computation substituting 2 per cent for 5 per cent. I made this computation before I knew what period Mr. Tholin had used as the basis for his comparison, so that I used the turnover period ending with the next year, that is, the year 1930, instead of the year 1929, which Mr. Tholin used. I found that where our original studies based on a 5 per cent junk salvage resulted in an average life of 19.3 years, if we substituted 2 per cent salvage for the 5 per cent, we would obtain a life of 19.5 years, a difference of 2/10 of one year.

5983 I have testified on my examination in chief in this case that in determining the average over-all life of units of property of a class I do not employ fractions of years, but round out the figure to an integer number of even years.

The turn-over period on the basis of the 5 per cent net junk salvage was 17.8 years. On the basis of 2 per cent junk salvage, it is 18 years.

I have prepared an exhibit to show the method for computing the annual rate of depreciation for station apparatus, and also to show on the second sheet of that exhibit the depreciation accounting. 5984

(Which exhibit was identified as ~~X~~A-263.)

The first sheet of the exhibit shows the various factors involved in the determination of the annual rate of depreciation for station apparatus, which I have covered, I think, fully, in the previous testimony. The only item on page 1 that I would like to call specific attention to is the last line, which shows that upon final retirement there is an investment loss of 95 per cent. As far as the second page of the exhibit is concerned, I am sure that is self-explanatory, showing, as it does, the depreciation accounting treatment for an average station on an assumed cost of $10 per station.

That shows the accounting for the entire over-all life of the apparatus which consists of four lives in one place, on the average. As to the 5 per cent salvage upon final retirement, the Company intends by the accounting shown here to recover a 95 per cent loss on that investment in station 5985 apparatus between its original installation in service and its final retirement from service.

I was cross-examined by Mr. Goldstein concerning the unit method of depreciation accounting as contrasted with the group method used by the Company and in that connection in my re-direct examination I applied the two methods to the data for the Kedzie office shown in one of my exhibits, and showed in that testimony that the rate under the unit method tended to be lower in the earlier years of that office, increased year by year throughout the life of the office, became higher in the later years as compared with the uniform rate applied by the Company under its method over the whole life of the office. Since I gave that testimony I have made an investigation to determine what would have been the increase or the decrease in the depreciation expense of the Company
5986 for each year and for the total period 1923 to 1931, both inclusive, for the entire Chicago property if the depreciation rates had been determined on this alternative unit method instead of the method which the Company actually used. The results of that investigation show that had the Company determined its rates throughout this period on the basis of the unit method instead of the method they did use, the depreciation expense would have been lower in 1923 by $146,000 (I am giving round figures); in 1924, $125,000; in 1925, $61,000; that under the unit method the depreciation expenses would have been greater in the following years in the amounts which I shall state: 1926, $26,000; 1927, $195,000; 1928, $383,000; 1929, $353,000; 1930, $107,000; 1931, $91,000. Under the unit method, the depreciation expense for the entire period 1923 to 1931, inclusive, would have been greater by $823,000 than the amount determined by the Company method, or group basis.

5987 I have already testified that the Company periodically reviews the depreciation rates which it is applying to the several classes of plant for the purpose of making any changes that may be then indicated by the review. Referring now to the part of the testimony given by Mr. Hill in this case, at the time of making each review of the rates we exclude from our calculations all buildings and central offices previously retired, and include in our calculations all buildings and central offices that have been placed in service since our last review. So that our re-examination of the rates, whenever we make them, is based solely upon the buildings and central offices at that time in service.

Mr. Hill in the course of his testimony on cross-examination (appearing at page 4644 of our transcript of the testimony) made the following statement: "Exhibit A-125
5988 shows that the same depreciation rate was applied over
periods of three or four years without change, during which time certain buildings were dropped and certain other buildings were added without any change in the depreciation rate. Now, where that occurs, the discrepancy to which
5989 I have referred will creep in." The facts are these:
there were no buildings added or retired during the three-year period that the rates were in effect from 1921 to 1923, inclusive. For the period 1924 to 1927, inclusive, a period of four years, during which time we did not change the rates as Mr. Hill states, we retired in the year 1924 the South Division Barn, a very small investment that could not and did not affect the composite depreciation rate for from 30 to 40 buildings. In November, 1924, we placed in service the Superior Dial Building. I have investigated to determine whether the composite rate of 2.5 per cent which was in effect at the time, would have been changed on January 1st of the following year, 1925, had we reflected within it the Superior Building, and I find that we would have made no change; the one building would not change the composite rate.

The next building that was added was Merrimac, in June, 1926. There, again, under the theory of changing our rate annually, we would have changed our rate on January
5990 1, 1927, had we been following that practice, and had
it been necessary to change the rate. I find that, taking both buildings, Superior and Merrimac, which would come into that calculation as of January 1, 1927, that the combined

effect of the two buildings would not have changed the composite rate of 2.5 per cent.

Now, that is all that we had during that period that would require, under the other theory of changing rates as of January 1st, any change in the rate, if it was in sufficient magnitude to compel a change. We had, during the year 1927, one building retired, Randolph, in June, 1927, and we had one dial office, namely, Longbeach, added in December, 1927. We did review and revise our rates on January 1st, 1928, so that those buildings would not be involved in this discussion of the effect of infrequent changes of rates upon the composite rate.

In that statement I have covered every building that was retired during the period, 1924 to the end of 1927, and every building that was added during that period.

5991 In cross-examination, Mr. Goldstein asked me what would have been the effect of taking into that rate in 1923, five millions of dollars of dial equipment installed, going into service June 30, 1923, and I estimated that the difference in money would have been something over $50,000. I have since made a computation, and the correct figure is that, had we included the dial in the rate on the basis of using an average balance of investment during the year,
5992 the depreciation expense would have been $50,085 less.

I have computed the effect of taking the average investment in the various types of central office equipment during each year involved in this case, 1923 to 1931, inclusive, as compared with taking the January 1st investment each year. I find that had we used the average balance for the year, in 1924, the depreciation expense would have been $29,571 greater. I find that for all subsequent years, 1925 to 1931, inclusive, there would have been no change in the depreciation expense between the two methods.

5993 In Exhibit X-178, Mr. Tholin compares the percentage of salvage recovered on central office equipment retired in 1929 with the percentage of salvage used in the Company's depreciation rate in 1919. It is an incorrect comparison for the reason that the 20 per cent net salvage estimated in 1929.

was for 35 offices. Of course, it is always recognized by the engineers in charge of depreciation that we do not anticipate getting the same exact salvage from every central office. Mr. Tholin has compared the salvage obtained from the retirement of 2 of the 35 central offices which happened to go out in 1929, 10 years later than the estimate.

To make a proper comparison of actual experience with the salvage estimated in 1919, it is necessary to find out what average salvage we have actually obtained from all of the central offices included in that original estimate. Now,
5994 of course, these offices have not yet been retired, so we
cannot find out what the actual salvage is, but I have determined what the average actual salvage has been for 8 of the 35 offices which have been retired to date, and I have determined what the estimated salvage is on the average, that is from our recent depreciation studies, for these surviving offices of the original group of 35. I have that in the form of an exhibit.

(Which was identified as Exhibit A-264.)

I made, a moment ago, a statement that might be misconstrued. I said Mr. Tholin made the comparison with the two offices I named which happened to go out 10 years after the estimate. I did not mean to imply that the buildings went out 10 years later than they were expected to go out. I
5995 meant that 10 years after the salvage of the 35 central
offices was estimated.

This exhibit gives all of the offices that were in service in Chicago on January 1, 1919, with respect to which the Company then made the estimate of 20 per cent average salvage for the group to be recovered whenever they might be retired in the future. I have shown in the succeeding columns all of those offices which have been retired, the year in which each one of them was retired and the per cent of salvage actually realized by the Company upon retirement.

5996 L. G. WOODFORD, a witness on behalf of the plaintiff, in rebuttal, having been previously duly sworn, testified as follows:

Direct Examination by Mr. Bracelen.

June 30, 1932.

Exhibit A-203 is an exhibit identified by me when I was on the witness stand before, and offered and received in evidence.

Counsel read the following question and answer from witness' testimony on cross-examination:

"Q. A-203 is a comparison of the Chicago area with the entire area of the other companies. It is not a comparison of the Chicago area, we will say, with New York City or with another large city, it is on the whole Company, is that right?

"A. It is a comparison of rates for the Chicago area with the rates for the entire areas of the other companies."

5997 While that statement was correct, and I do not wish to make any change in it whatever, it is a fact that the property of certain of the companies with which the comparison is made in Exhibit A-203 consists so largely of property in what may be called large cities that that fact should be pointed out for whatever it is worth. There are three companies shown in Exhibit A-203, all or the major portion of whose property is in a single city. Those three companies are the Chesapeake and Potomac Company of Washington, D. C., the Cincinnati and Suburban Company, whose property is largely located in the city of Cincinnati, and the Southern California Telephone Company, whose property, up to and including 1929, was largely in the city of Los Angeles. In 1930 the Southern California Company acquired a considerable amount of property from the Pacific System in the southern part of California outside of the city of Los Angeles, so, for the years 1930 and 1931, the Southern California Company had
5998 a great deal of property other than in a single large city, but for prior years, practically all of its property was in the city of Los Angeles.

Now, I would like to point out in that connection, however, that in the comparisons shown in this exhibit for the Southern California Company, they should be considered as comparisons between the Chicago rates and rates for the city of Los Angeles only for the years 1927, 1928 and 1929. Prior to 1927 the same rates were used by the Pacific System for the Southern California property as were used for the balance of the Pacific System's property. The Southern California Company was a part of the Pacific System.

In this case, the plaintiff has been able to offer in evidence separate depreciation rates for the city of Chicago, notwithstanding the Company's property extends generally throughout the state, and some part of it in the northwest corner of Indiana. There is only one other instance in the Bell System in which a company determines depreciation rates sepa-
5999 rately for a single city, that is, New York City. That has been true for New York City only since the beginning of 1929. Prior to that time the New York Telephone Company had only one set of depreciation rates for its entire property. Its entire property extended throughout the state of New York, and, in fact, for an early part of that period, into New Jersey and Connecticut.

I have prepared an exhibit which shows a comparison of the Chicago rates by classes of property with the New York City rates for the three years (1929, 1930 and 1931) for which it has been possible to make that comparison.

(Which said document was identified as Exhibit A-265.)

I think the exhibit is pretty largely self-explanatory.
6000 Briefly, it shows for each of the years, 1929, 1930 and 1931, first, the investment, the book cost of the Chicago property as of the end of the year; second, the rates for New York City by classes of property, and the amount of depreciation expense which would result from the application of those rates to the Chicago investment.

Next, the Chicago depreciation rates and the amount resulting from the application of those rates to the same investment.

At the bottom of the sheet for each of the years is shown the composite rate which would result from the application of the rates for each of the cities to the Chicago property. That is as of the end of each year.

6003 (A cover page of the Bell Telephone News was marked Plaintiff's Exhibit A-266 for identification.)

W. K. KRUSE, recalled as a witness on behalf of the plaintiff, in rebuttal, having been previously duly sworn, further testified as follows:

Direct Examination by Mr. Thompson.

June 30, 1932.

6004 Plaintiff's Exhibit A-266 is the back cover page of the Bell Telephone News, for June, 1932, containing an advertisement which at the bottom says: "American Telephone and Telegraph Company". I am familiar with the publication, the Bell Telephone News. That publication is a monthly publication of the Illinois Bell Telephone Company circulated largely among its employees.

The American Telephone and Telegraph Company furnished the plate from which this advertisement was printed at the request of the Illinois Bell Telephone Company.

This publication is issued once a month. The cost to the Illinois Bell Telephone Company for the paper and printing of the cover page of this monthly magazine averages about $50 an issue, or $600 per year. It was published during the entire period 1931.

6005 I have read the testimony of Mr. James G. Wray in regard to the amount of compensation to the Chicago area for use of State area property included in Exhibit A-51. The amount of return allowed to the State area on the Chicago property used for State area purposes, and State area property used for Chicago purposes, was computed at the rate of 8 per cent on the book cost of such property. In order that the return computed on the State area property used for Chicago area purposes would be on a basis comparable to the return computed on the Chicago area property used for State area purposes, it was necessary that the book costs be used, because there were no reproduction cost figures available for the State area property. The last appraisal of the State area property involved was made in 1919.

I have made a computation of the increase in the compensation figure had it been based on reproduction cost, 6006 other than book cost. I start on the assumption that the same ratio between book cost and reproduction cost new less depreciation in the Chicago area, would apply to the State area. The compensation to Chicago for the use of State area property in the several years would be affected as the result of this computation as follows:

For 1923 the amount is $50,617; 1924, $47,519; 1925, $49,283; 1926, $30,759; 1927, $15,738; 1928, $13,206; 1929, $19,520 and 1930, $2,046. Up to this point it would have been an increase. For 1931 it would have been a decrease of $5,913. The effect on the rate of return shown on my various exhibits would be very slight, if these increases for the years 1923 to 1930 and the decreases for 1931 were given effect; in fact, in some of the years it would not be reflected at all in the percentage which I have shown on Exhibit A-53. On that exhibit 6007 the percentages were carried two places beyond the decimal, and for the years 1927 to 1930 it would not have affected those percentages at all. For 1923 it would have increased it .03 per cent; 1924, .02 per cent; 1925, .03 per cent, and 1926, .02 per cent.

With reference to insurance premiums, it was necessary in figuring the net compensation to Chicago for use of State area property, to estimate such items instead of using the actual premiums because individual insurance policies are not carried by the Company on the property involved. All property in the City of Chicago, with a few minor exceptions, is carried on a blanket insurance policy, and it was necessary to estimate the portion of the premiums paid on the blanket policy, which were applicable to Chicago property used for State area purposes.

Mr. Wray in his testimony, on page 5457 of our transcript, stated that, "The taxes were computed by applying to the

book cost a rate which is obtained by dividing the amount paid by the taxable value, which in every instance is higher than the book cost, and this would necessarily result in too low a rate, and, consequently, in too small an amount
6008 of compensation". Those are not the facts. In every year the tax percentage factor was computed by dividing the taxes for each parcel of real estate and buildings, by the book cost of such land and buildings. For the years 1923 to 1929 the actual tax payments were used. For 1930 and 1931, estimated taxes were used. These estimated taxes were determined by applying to the assessed taxing valuation for each of the years, an estimated real estate tax rate for the taxing districts involved.

With respect to concession telephone service to State area employees residing in Chicago, to which Mr. Wray referred in his testimony, I have made an estimate of the possible additional compensation to Chicago on account of additional messages not considered in Exhibit A-51. The amounts are as follows: For 1923, $3,125; 1924, $2,481; 1925, $2,952; 1926, $3,518; 1927, $3,932; 1928, $5,268; 1929, $6,327; 1930, $6,772; and 1931, $6,795. When I was figuring compensation to
6009 Chicago for these concessions, so-called, which are really free telephone service furnished to State area employees residing in Chicago, I figured it on the commercial rate because the Company does not keep a cumulative record of those calls. To arrive at these estimates which I have just given, I applied to the number of employees' concession telephones, the average annual exchange revenue received from our subscribers, and applied that by classes of service. To that computed amount I applied the concession rate allowed the employees, and from that I deducted the amount shown in Exhibit A-51, and that remainder is the figures that I have quoted. In view of the circumstances, I would say that is a fair way to arrive at an answer to this question. We have no other information, no actual data, and I think it gives a very fair picture of the additional messages.

6011 W. K. KRUSE:

Direct Examination (Continued) by Mr. Bracelen.

(Sheet entitled "Illinois Bell Telephone Company—Chicago Exchange; comparison of depreciation and amortization of landed capital based on book cost, and reproduction cost new", identified as Plaintiff's Exhibit A-267.)

The dollar figures shown on this sheet are all shown in the exhibits and testimony that have already been introduced, or they are directly computable from figures that have been introduced.

Those figures, in the first column of figures headed "Based on book cost", are the amounts which were accrued on the Company's records during each of the years for annual depreciation on its plant and equipment. Those figures are shown in Exhibit A-49 exactly as they stand in this column.

6012 The next column, "Based on reproduction cost new", are identical figures taken from one of the previous exhibits; one of the other exhibits in the 50 series, I do not know just the exact number. The third column is just the difference between these two.

Regarding the next three columns, under the heading of "Account 340, Amortization of Landed Capital":

The amounts shown under the heading, "Based on Book Cost", are the amounts accrued on the Company's records and are included in Company's Exhibit A-49, as a part of the item designated as "Other expenses and deductions".

In the next column headed "Based on reproduction cost new", are the figures which appear in one of my exhibits; I think it is Exhibit A-55; and the next column is the difference between those two. The last three columns are
6013 merely the sum of the figures appearing in the other columns.

The purpose of this exhibit (A-267) is to bring together on one sheet the figures which will show, as the exhibit does show in the final column, the dollars of difference, year by year, for the period involved in the case, between the Company's depreciation and amortization charges based on book cost, and corresponding figures based on reproduction cost new.

I have another tabulation prepared by me, which is now identified as Exhibit A-268, entitled "Illinois Bell Telephone Company,—Comparison of rates of return for Chicago area, with all Associated Operating Companies, including Long Lines". For the most part, as indicated on the exhibit, the figures have been taken from exhibits already in the case. Outside of the computations, all of the figures were taken from various exhibits already in the record. Column (C) in
6014 the upper half of the exhibit for each of the years 1923
to 1931 shows rate of return upon average fixed capital for all of the associated companies in the Bell System, including the Long Lines; and Column (e) in the lower part of the exhibit shows the comparable rate of return for the Chicago area of the Illinois Bell Telephone Company, under the rates which have been in effect throughout the period. Column (f) shows the rate of return for the Chicago area under the rates which have been enjoined, the rates which are involved in the lawsuit. Line (g) shows the percentage of the estimated reduction under rates in suit, as shown on Line (d), is of the balance available for return under our present rates, as shown in Line (b). In other words, it states the reduction in earnings under the rates in suit, if they had gone into effect, stated as a percentage of the Company's net earnings.

6015 This comparison between the entire system, in the upper half of the sheet, and the Chicago area in the lower half of the sheet, is a comparison between earnings upon the entire business, intrastate and interstate, toll and exchange. The comparison here is not made and cannot be made upon the basis of the intrastate business in both cases, excluding the interstate business, because, while we have figures available for the Chicago area showing the interstate business, we do not have figures for the other associated companies, including the Long Lines, showing their interstate and intrastate business separately.

The books are not kept that way, and we have not attempted to make any separation. We have it in the Chicago Case for the intrastate business separately, because, as an incident to this lawsuit, it was necessary to make that very elaborate and difficult separation but, of course, the thing is not done in the Bell System excepting under the necessity of rate cases. It is not kept or done as a regular thing.

The next sheet (marked Exhibit A-269) deals entirely with the Chicago area total intrastate business only. The last line (g) shows the reduction under the rates in suit as a percentage of the net earnings under the present rates. That is, the reduction in earnings, under the rates in suit as compared with the net earnings under the present rates. That is to say, the actual net earnings as shown by the books in the latter case. This exhibit deals with intrastate business only for the Chicago area throughout.

(Plaintiff offered these exhibits, introduced during examination of Mr. Kruse, in evidence.)

6017 *Cross-Examination by Mr. Goldstein.*

In connection with my testimony as to the effect on net compensation to Chicago, had the figures been based on reproduction cost:

I computed the 8 per cent on reproduction cost less depreciation shown as a result of Mr. Redmund's testimony. That is, that proportion of reproduction new that was deducted for the purpose of calculating the rate of return in A-53. I did not include construction work in progress, going value, material and supplies, or working capital.

6018 (It was agreed that during this period there has been carried on the back cover page of the Bell Telephone News, for each month, an advertisement substantially similar to the one contained on Exhibit A-266.)

In the calculation of the compensation upon Chicago property for downstate area, I included that portion of the property that had interest during construction—interest, taxes and engineering.

6019 In Exhibit A-268, "All Companies" includes the Chicago area.

As to Exhibit A-269: I have intrastate rate of return; that means intrastate exchange and intrastate toll both; total intrastate business.

As to A-268 and A-269: I give effect only to one change in the present rates, and that is the reduction under the rates in suit. That is the only reduction I have made.

Re-direct Examination by Mr. Bracelen.

That reduction is shown here as taken from Exhibit A-49.

6020 *Re-cross Examination by Mr. Goldstein.*

For 1923, my reduction for rates in suit is on a 12-month basis, computed on an annual basis to show the effect on an annual basis.

July 1, 1932

6026 "Mr. Thompson: If your Honor please, by agreement with Mr. Adcock, the record may show the following stipulation:

"It is agreed by the parties that when Mr. R. H. Gregory was on the witness stand in March, he furnished to Mr. Goldstein, at his request, Exhibit D-61, showing the net profits from the non-Bell business of the Western Electric Company for the years 1881 to 1927; that a letter from Mr. Goldstein to Mr. Bracelen, dated April 21, which is identified as 6027 Exhibit X-......, relates to Exhibit D-61; that on May 5 the plaintiff furnished to counsel for the defendant a copy of Exhibit A-227; that the letters of May 7, 16, 17 and 31, and June 2, 1932, contained in Defendants' Exhibit X-344, relate to the underlying data in connection with Exhibit D-61, about which Mr. Gregory testified on June 29 and June 30, 1932.

"It is also agreed that the defendants made a copy of Exhibit X-229 on May 31, 1932."

WILLIAM H. EGAN, recalled as a witness on behalf of the plaintiff, having been previously duly sworn, further testified as follows:

Cross-Examination by Mr. Goldstein.

July 1, 1932

The only audit reports which have been issued by my firm in connection with the audits of the Western Electric Company, or the Electrical Research Products Company, are the certificates on the back of the annual reports of the Western Electric Company where Arthur Young's name appears.

6028 When I stated:

> "The apportionments are substantially correct between the Bell and non-Bell. It would make no possible appreciable difference if the gross variation plus or minus had been apportioned, because in the main these apportionments relate to telephone apparatus and lead covered cable which were manufactured by the company both for its Bell and non-Bell customers, in the same factory, on the same machine, and are of the same general type and character."

I meant that the same general type that is sold to both the Bell and non-Bell customers is made on the same machine.

That is, the same identical item, if sold to both Bell 6029 and non-Bell, is made on the same machine. I am not expert enough on the manufacturing to know whether a switchboard lamp and a panel frame are made on the same machine, but I know the general structure of the company is such that the same goods that are sold to the Bell and non-Bell are made on the same type of machine. That is the identical item, for instance a switchboard lamp, is sold to Bell and non-Bell customers. It is only in that aspect that I am referring to it when I say that they are of the same character. I had that in mind at the time of my answer.

6030 JAMES CAMPBELL BURTON, called as a witness on behalf of the plaintiff in rebuttal, having been first duly sworn, testified as follows:

Direct Examination by Mr. Thompson.

July 1, 1932

My name is James Campbell Burton. I live in New York City. I am a partner of the firm of Arthur Young and Company, Accountants and Auditors. I have been connected with that firm since the year 1921. For a period of eight years prior to that I was out of the accounting business, but prior to that eight years I had eight years before in the accounting business. During the eight years that I was out of the accounting business, I was in a department store.

I am acquainted with the Western Electric Company.
6031 The firm of Arthur Young and Company has done work for the Western Electric Company in auditing its records and the records of its subsidiaries, and in checking certain exhibits which have been introduced in evidence in this case. That work has been done under my personal direction and supervision. I know of the work which has been done and I have approved the results obtained. I supervised the work that has been done, have instructed the various accountants on the work, and have approved the findings made by them.

I have heard the testimony of Mr. Egan in this court room yesterday and today, in connection with the work of Arthur Young and Company in the auditing of the Western Electric Company's books and those of its subsidiaries and in auditing and checking certain exhibits of Mr. Gregory. I agree
6032 with Mr. Egan's testimony. I have knowledge of the facts as to which he testified.

(No cross-examination.)

W. K. KRUSE, recalled as a witness on behalf of the plaintiff, in rebuttal, having been previously duly sworn, further testified as follows:

Direct Examination by Mr. Thompson.

July 1, 1932

In connection with the net compensation to Chicago for the use by the State area of Chicago property, a statement was made by Mr. Wray in connection with the maintenance charge for the building space occupied in Chicago by
6033 State area employees. I have looked into that matter.

We have found that the maintenance cost in the downtown group of buildings is higher per square foot than the average cost of all buildings in Chicago on a per square foot basis. The employees of the State area who occupied space in Chicago area buildings were housed in those downtown buildings. We estimate that the maintenance cost in the downtown buildings would not exceed 40 per cent of the average cost of all buildings in Chicago on a square foot basis. In my exhibit I have included $10,755 per annum,
6034 which was computed on an average for all buildings.

Now, increasing that amount by 40 per cent, we find that the compensation figure would not be increased more than $4,000 per year.

(No cross-examination.)

ALLAN B. CRUNDEN, recalled as a witness on behalf of the plaintiff in rebuttal, having been previously duly sworn, further testified as follows:

Direct Examination by Mr. Blackman.

July 1, 1932.

Referring to Defendants' Exhibit X-111, I am familiar with the manner in which the figure of 59.53 per cent,
6035 being the last figure on that page, is obtained. The percentage figure of 63.39 on page 4 of Exhibit X-108

directly determines the 59.53. It is used essentially in the capacity of a divisor. Being used as a divisor, the percentage on the last line of Exhibit X 111 goes up. It goes up as the 63.39 would go down. That is inevitable from the arithmetic of the proceeding. It has nothing to do with these particular examples, but it would be so in any comparable computation.

6036 This 63.39 is obtained by dividing the last figure in the first column of figures on page 4 of Exhibit X-108, being $135,740,062.82 by the first figure in that column, $719,964,600. The first figure on the exhibit is the $719,000,000 plus and the other is the last figure on the exhibit in the first column. The first figure is called capital stock and the last figure is the sum of all of these figures representing capital stock, capital stock premiums, capital stock installments, funded debts, and loans from associate companies.

As a matter of elementary arithmetic, if the capital stock remains the same and any of the other figures that follow it are increased, the percentage attributed to the capital stock decreases. So if the capital stock premiums were in-
6037 creased, the percentage figure that we are dealing with would decrease. If the surplus were increased, that percentage would decrease. The decrease in that figure would increase the result which is obtained on Exhibit X-111 for the per cent return on investment, expressed in per cent of return to American Telephone and Telegraph Company stockholders on their average capital stock investment. The method followed on these pages dealt with, as a matter of mathematics, inevitably results in showing a greater return to the stockholder from the same amount of dividends the more he pays for his stock, provided he pays direct to the company for it. If you deal with all the stock, or with a part of it, along the lines of this exhibit, it would be the same. That is, the
6038 mathematics are the same. It is a fundamental principle that brings that about.

Exhibit X-112 takes certain figures representative of the actual results to the American Company of furnishing telephone instruments to the Illinois Bell Company, Chicago

division, and it includes a showing of per cent return on investment ranging from 6.83 to 6.93 in different years during the period 1923 to 1927; and it builds up these percentages to 25.65 to 30.71 per cent. That is done by two processes; first, an additional return on investment is introduced in an amount equal to the difference between, first, the estimated cost, per books, to the American Company of providing instruments for the Chicago area, and second, an estimate of what that cost would be if the company were allowed depreciation
6039 and 8 per cent return upon current reproduction cost of
instruments, less actual depreciation. The second process is that the return on investment is finally converted into a return to stockholders of the American Telephone and Telegraph Company on their proportionate investment in the capital stock. This conversion process is on the same basis as was referred to in the record in connection with Exhibit X-111.

The comparison which I have referred to is, in my opinion, a comparison of things that are not comparable.

Exhibit X-115 relates to telephone instruments used in Chicago, and purports to make a comparison between, first, certain data that the Company presented at the 1929 hearing, referred to in column 1 of this exhibit; and second, certain data that is presented at the present hearing; and third, the actual experience of the Company as presented at the
6040 present hearing. The data presented at the former
hearing were provided by a witness who testified as to what it might cost the Illinois Company to furnish telephone instruments, if it had no arrangement for instrument service with the American Company. In other words, the data had to do with an arrangement which was not in effect in 1923 and could have been in effect in that year only by hypothesis.

The data referred to in the second column of Exhibit X-115 refer to data presented at the present hearing, purporting to show what would be a fair allowance for instrument service in Chicago for the year 1923 if it were proper to base the allowance as to depreciation and 8 per cent return upon the

1923 reproduction cost of the instruments, less the then existing depreciation. The third column of the exhibit has to do with the estimated cost of the Chicago area instrument services for the year 1923. The side heading on line 7, "Actual Return on Investment Obtained", is therefore unsuitable. It has no application to the first two columns and as regards the third column, it has reference to return on book investment.

6041 Consequently, the exhibit should not be read as it might easily be read from mere inspection of the column headings, that the Company presented one showing during the 1929 hearing and another during the 1932 hearing, both of which were at variance with the actual experience as evidenced from the bookkeeping for the third column of the exhibit.

"Mr. Thompson: Your Honor, plaintiff withdraws its objection heretofore made to Exhibits X 220 and X 221, which are trust agreements between the American Telephone and Telegraph Company and the Bankers' Trust Company, trustee—that is Exhibit X 220; and X 221 is a blank form of agreement between the Bankers' Trust Company, trustee, and the various Bell associate companies.

"In that connection the plaintiff also offers in evidence Exhibit A-269, which is an agreement between the Illinois Bell Telephone Company and the Bankers' Trust Company, trustee, dated December 31, 1927, and it is agreed by the 6042 parties that the agreement set out in Exhibit A-269 has been continuously in force since the date of its execution.

"Judge Wilkerson: Very well."

(The document was thereupon received in evidence; marked Plaintiff's Exhibit A-269.)

6043 I have completed my statement with regard to Exhibit X-115, except to call attention to the fact that this exhibit converts the so-called percentage of actual return on investment obtained into a per cent of actual return on the net investment converted to average return to American Telephone and Telegraph Company stockholders. The return here referred to was not the actual return and the stockholders did not get any such return, and the method of conversion is, in any event, made on the same basis as was referred to by Mr. Rainwater in connection with Exhibit X 111, the method of which was described by me today. The comparisons that were set up there, in my opinion, were not comparisons of comparable things.

Exhibit X 121 shows data regarding the sale of telephone instruments by the American Company at December 31, 1927, to the licensee companies. It shows in parallel that there was no profit on the sale of instruments to the Long Lines 6044 Department but there was a profit on the sale of the instruments to the licensee companies. The Long Lines Department is a part of the American Telephone and Telegraph Company, and that company could not make a profit on a sale to itself. The caption "Sale Price", as applied to the Long Lines, is, therefore, unsuitable, and it is not consistent to so refer to the transaction in question.

Exhibit X 127 purports to show average return to American Telephone and Telegraph Company from dividends on its investments in capital stocks of licensee companies converted into average returns on their investment in the American Telephone and Telegraph Company. This is arrived at in the following manner: the procedure may be illustrated by reference to Illinois Bell Company and the year 1930, where the percentage of 11.24 per cent is shown. It first appears that by dividing average book value per share of Illinois Bell stock in the hands of the American Telephone and Telegraph Company into the 8 per cent dividend, the yield to the American Telephone and Telegraph Company is 7.67. From this is subtracted the average cost of funds to the American 6045 Telephone and Telegraph Company in that year of 6.25, leaving a balance of 1.42.

On Exhibit X-108 it appears that the American Telephone and Telegraph Company has outstanding capital stock, premiums, surplus, capital stock installments and payables of various kinds aggregating $2,746,000,000 plus, and that the capital stock alone is $1,585,000,000 plus, or 57.53 per cent.

Dividing the 1.42 previously mentioned by 57.53 gives a product of 2.46. To this is added the average rate of dividend paid by the American Telephone and Telegraph Company on its capital stock in this year, 8.78, making a total of 11.24, which is expressed as a percentage of 11.24 per cent, purporting to represent the total return to stockholders of the American Telephone and Telegraph Company per $100 of American Telephone and Telegraph Company capital stock invested in Illinois Bell Telephone Company.

Exhibit X 108, from which the American Telephone and Telegraph Company capital stock figures for 1930 above mentioned were taken, also shows that the American Telephone and Telegraph Company had outstanding $200,000,000 plus of capital stock premiums and $366,000,000 plus of surplus.

6046 The manner in which that return of 7.67 is jumped up to 11.24 is due primarily to taking account of these capital stock premiums and surplus on the wrong side of the equation. Had these items been greater in amount, and the remainder of the items, that is, the capital stock and outstanding indebtedness remained constant, the computed return of 11.24 per cent would be still higher. That is one of the factors I have already referred to in connection with Exhibit X 111. Subtracting the 6.25 from 7.67 purports to leave a profit, but, of course, it is not the ordinary use of the term "profit". That is in no sense a net profit, in the usual sense in which the term is used.

6047 Exhibit X-128 sets down for each associate company a yield to the American Telephone and Telegraph Company on the book value of its capital stock holdings in each of the associate companies of the Bell System. The yield is calculated in terms of the percentage of the amount received during the year in dividends to the American Telephone and Telegraph Company's book value of capital stock. There is subtracted from such yield the percentage cost of funds to the American Telephone and Telegraph Company in the same year, bringing down a balance which is entitled "Per cent of profit to American Telephone and Telegraph Company".

The same criticism which I have applied to the word "profit" in the previous exhibit applies to this one.

The exhibit (X-128) bears the general heading "Profit on Investment of Capital Stock of Licensee Companies", 6048 and the investment referred to is the book value of holdings of the American Telephone and Telegraph Company. No consideration is given in this exhibit as to whether the existing investment of the American Company in the stock of these companies is worth more or less than the book value at which it is stated on the American Company's books. Neither is any consideration given to any profits of the associate operating companies which were not divided in the years for which computations are shown. There is also no consideration given as to the manner in which the undivided profits of the associate companies might be affected because dividends were not earned in some of these years.

Exhibit X-129 purports to show percentage of profit to American Telephone and Telegraph Company on stock holdings in Illinois Bell in comparison with percentage of profit to American Telephone and Telegraph Company on stock holdings in other licensee companies. The comments made with reference to Exhibit X-128 as to the manner of calculating the profit ratio and the use of the word "profit" also apply to this exhibit.

6049 Exhibit X-132 contains the same inaccuracy in respect to average loans which has been referred to in the record in connection with Exhibit X-151. It also combines what purports to be profits to American Telephone and Telegraph Company on its stock holdings with losses to American Telephone and Telegraph Company on loans to associate companies to bring down a net profit to the American Telephone and Telegraph Company. This procedure commingles two very different things and does so in varying degrees with respect to the numerous different companies involved. The relation of the American Company to the associate companies evidenced by its capital stock holdings is an investor relationship, and the book value of the stock investment is not the same as the worth of the investment.

The loans made by the American Company to the associate companies are advances, a class of relatively short-term financing, and the American Company in connection with them sustains a credit relationship to the associate companies. In some cases the associate companies paid no dividends; in some cases they obtained no loans. The ratio
6050 of outstanding loans to book value of American Telephone and Telegraph Company stock holdings varies considerably in the different companies and in the same company at different times. It appears to me the exhibit does not ~~use the~~ words "net profit" in the ordinary sense of the term.

Exhibit X-133 purports to show the average return to the American Telephone and Telegraph Company from dividends and interest on its investments in licensee companies. The purported investment to which reference is made in this exhibit is merely the sum of the American Company's book value of stocks of associate companies owned and the outstanding loans which it has made to licensee companies. Also the sums used in the preparation of this exhibit are incorrect, because based on the erroneous figures for loans referred to in the record in connection with Exhibit X-131.

Exhibit X-134 takes the average return to the American Telephone and Telegraph Company from dividends and interest on stocks and loans in associate companies and
6051 converts such average return into a so-called average return to stockholders of the American Telephone and Telegraph Company on their investments in capital stock of the American Telephone and Telegraph Company. The average loans used in these computations are incorrect for the reason pointed out in connection with Exhibit X-131, and the method of stepping up the investment to the stockholders is incorrect for the reason pointed out in connection with Exhibit X-127. This exhibit contains three of the matters which I have previously referred to as incorrect.

Exhibit X-135 contains incorrect figures representative of average loans and it also confounds the investment relationship and creditor relationship of the American Telephone and

Telegraph Company with the Illinois Bell. On line 5 of this exhibit items are starred, indicating losses. The fact is that the American Company received substantial returns on its investments referred to on this line and the existence of red figures is due solely to the peculiar manner of computation adopted in the exhibit.

6052 Exhibits X-142 and X-143 cover the same general subject matter, except that on X-142 dollars are shown, whereas X-143 deals with percentages and with dollars per average station.

Using Exhibit X-143 and the Indiana Bell Telephone Company for convenience of illustration, a purported showing is made that because the Indiana Company was yielding a low return during the early years of the period involved in the present Illinois Bell rate case, the amount of the license contract payment from the Illinois Bell to the American Company should be reduced or the license payment of the Indiana Bell should be increased to 18 per cent. The derivation of the 18 per cent is as follows: In Exhibit X-130, under the heading "Indiana Bell Company" and year 1923, the amount required to equal average Illinois Bell Telephone Company return on capital stock is shown as $863,796. In Exhibit, X-137, the above amount is added to the outstanding loans of the American Telephone and Telegraph Company to the Indiana Bell Company upon an incorrect average quarterly rating, and the figure is thereby increased to $1,111,829.

6053 On Exhibit X-142, the American Company's license revenue from the Indiana Bell for the year 1923 is shown as $363,065. Dividing $1,111,829 by $363,065, the product is 306.24 per cent, which is stated on Exhibit X-143 to be the amount required to equal average Illinois Bell Telephone Company return on investment expressed as a percentage of the Indiana Bell Telephone Company's license payment. Adding 100 per cent of the Indiana Bell Telephone Company's license payment to this percentage, we obtain 406.24 per cent, and 406.24 per cent of the 4.5 per cent license contract payment in effect in 1923 produces a hypothetical license contract payment requirement of about 18 per cent for the Indiana Bell Company.

Exhibit X-144 contains percentages which are the same as those shown opposite the words "Balance available for additional return to American Telephone and Telegraph Company" as shown on Exhibit X-143 just referred to.

Exhibits X-148, X-149, X-150 and X-151 are related exhibits. Exhibit X-148 confuses a showing of total costs for
the American Company with a showing of costs assign-
6054 able to licensee companies. The comparison in this ex-
hibit is misleading because the line "Balance available for additional return to the American Telephone and Telegraph Company" does not set forth the same elements under the heading of totals as it does under the heading Illinois Bell Company.

These exhibits assume that inasmuch as the American Company's presentation of its total costs under the license contracts includes losses on loans made to the companies for temporary financing, whereas the costs which the company has assigned to the Chicago area include no such costs, it is fair to compare the Chicago area costs, exclusive of such losses, with the remainder of the costs of the American Company under the license contracts inclusive of such losses. This is incorrect for the reason that the losses on loans due to temporary financing were excluded from the showing for the Chicago area, not because there were no such losses, but because the Company claimed no amount under that heading and if a statement were made for any or all of the other
license companies on the same basis, no claim would
6055 be therein made for such losses. That is, the effect of
these exhibits is based on the fact that in Mr. Heiss' exhibits he claimed as apportioned to the Illinois Bell no part of the losses on temporary financing. The first column was the American Telephone and Telegraph Company side of the picture and it showed certain losses. I do not know what these exhibits are designed to do, but I know that they do not make a fair comparison.

Exhibit X-279 computes a percentage by dividing undivided profits of associate companies by American Telephone and Telegraph Company book investment in stocks of associate companies plus the amount of loans made by American Telephone and Telegraph Company to such companies.

Exhibit X-280 is a companion exhibit to X-279, and takes
the percentage derived in X-279 and converts it into an aver-
age return to stockholders of the American Telephone
6056 and Telegraph Company on their investments in capital
stock of American Telephone and Telegraph Company.
The investment of such stockholders in American Telephone and Telegraph Company stock is assumed in this exhibit to be the par value of stock regardless of capital stock premiums or surplus.

Exhibit X-285 purports to be a comparison between divi-
dend payments of the Illinois Bell to the American Company
with dividend payments of other companies to the American
Company. It is just a comparison of dividend payments with-
out regard to the earnings of the companies. It has
6057 nothing to do with earnings, as I read it. The figures
that are shown on Exhibit X-131, of which we have had
some discussion concerning the seven million and the twelve million, are used to develop the figures on Exhibit X-136, so any error in Exhibit X-131 is carried into X-136 by the identity of the method with respect to the matter that we have been talking about.

Cross-Examination by Mr. Goldstein.

6058 I understand that Mr. Heiss stated that you could not
tag the dollar. All of the funds of the A. T. & T. go into
one pot and in any calculation involving the average cost of funds of the American Company you draw the same proportion of bonds, stock, premiums, and bonded debt funds for specific investment the same as the whole.

6059 It uses that hypothesis. I do not see any connection
between that hypothesis and Mr. Rainwater's exhibits.
I did not find that he changed that hypothesis. He has used the same average cost of funds that Mr. Heiss has used and

the same ratio of bonded debt, premiums, and capital stock that Mr. Heiss used, applied to the total funds.

If you had $1,000, $500 of which came from credit obligations, $250 came from surplus and premiums, and $250 6060 from capital stock, you would have your total fund of $1,000 composed one half of bonded debt, one quarter of premiums and surplus, and one quarter of capital stock.

"Q. Now, suppose out of that $1,000 you took $500, and you put it into an investment in telephone instruments, and you wanted to figure what your return was on that $500, and then you wanted to divide up that return, or the return on the $500, to the return on the portion which came from capital stock. Your $500 then would be, one half came from bonded debt, one-quarter would come from premiums and surplus, and one-quarter would come from capital stock; and so you take your earnings on the $500, and you would deduct that portion applicable for interest on the bonded debt, and you would have the balance available for the stock, would you not?

"A. Well, answering the last part of the question, whatever earnings you would have, out of them you would provide for bond interest, and the balance would be available for return on stock.

6061 "Q. And in figuring $500 was stock, you would take one-quarter of the $500 as being applicable to stock, would you not, because your total had a quarter of stock, one-quarter of premiums, and one half bonded debt?

"A. Observing the definition of stock as given in the question that is correct."

6062 If you have $1,000, and $500 came from bonded debt, $250 from surplus, and $250 from common stock, the ratio would be one-half, one-quarter and one-quarter. If you varied that $1,000 so that its composition was $1,000 composed of $500 bonded debt, $300 of surplus and premiums, and the balance in common stock, the ratio of each of them would be different to the total. Whatever the ratio is of your total funds, if you maintain the ratio, when you take a portion of the total fund and invest it in a specific investment, you always have a proper basis of comparison between your return on the whole and your return on the part, and even though your theory about the whole may be wrong you get a consistent comparison.

6064 "Q. If the American Telephone and Telegraph Company set up a standard to show the effect of its total operations, that is, that after payment of expenses it could build ten office buildings during the year on the profits of its total operations, and you wanted to show the effect from part of its operations, if you adopted that standard of comparison, whether the part of its funds would produce a profit which would enable it to build more than the ten office buildings, you would have a proper basis of comparison between its total operations, and the part, would you not?

"A. That is equivalent to saying that if you make this assumption with regard to the ten office buildings to the total, it is then fair to assume the same thing regarding one office building."

6065 The fact that the basis of ten office buildings might not be the proper standard of comparison for prosperity as a general proposition, would not affect the comparison between the whole and the part; I would hope for equal prosperity on one building.

"Q. Now, did Mr. Rainwater do any different when he used the return to the American Telephone and Telegraph Company on its total operations, and he took the figure of return for the telephone instruments from part of its funds, using the same basis of ratio as Mr. Heiss did?

"A. No, I understand that both of these gentlemen assumed that you cannot tag the dollar."

6066 I have a quarrel with Mr. Rainwater as to whether he has made a correct computation, to get from 39 per cent to 59 per cent on the assumption that every dollar of the funds invested in telephone instruments put in by the American Telephone and Telegraph Company, had the same source, in the same ratio as Mr. Heiss used in Exhibit A-164.

"Q. Well, now, Mr. Crunden, will you please, to save time this morning—I have put down on paper the computation

which you stated to Mr. Blackman, showing—appearing in Exhibit X-127—also the method used in Exhibit X-111; and I have also put down the method by which you would arrive at the $10.44 for the year 1930, in the annual reports of earnings of the American Telephone and Telegraph Com-
6067 pany. I have also listed the source of all of the figures. For our purposes will you please assume that these figures are taken correctly from the source stated. I am now interested in determining whether the same identical mathematical computation would be used to arrive from 7.21 for the total return of the American Telephone and Telegraph Company from all of its operations on its entire investment, to 10.44 on its stock, on its average stock outstanding, as shown in its annual reports; and comparing that method with the mathematical computations used in Exhibits X-127 and X-111; and when I have finished the questioning, I will defer cross-examination, and Mr. Rainwater will help you, and it will only take about five minutes to check the mathematics, to see whether the mathematics are the same in each of the three cases. So will you just please hold that—and that is Exhibit 438—X-438."

Exhibit X-112 is not on a comparable basis because it
6068 refers in part to actual results in respect of instruments, and then introduces calculations regarding what might be the condition if the company were getting depreciation and 8 per cent return on reproduction cost. As to whether I am complaining about the mathematics or the purpose of the exhibit: I suppose when you come down to it, I am primarily noting the language of the side headings because it says "Per cent of total return on investment" and there isn't
6069 any such thing. I am not criticizing the mathematics.

In Exhibit X-128 and the other exhibits where I talked about "profits" it is perfectly clear as to what was meant by the term "Net Profit". In reading the exhibit, you would know from reading it that it meant transferred to surplus. There was no attempt to sneak up on the company or on the
6070 Court, on that point. My criticism about it is that it is not the net profit because you haven't any profit. I am

not objecting to the definition stated there. Its just like persimmons; if you like that sort of "net profit" that is all right, take it, and God bless you.

You will have to ask Mr. Heiss whether, when, in his license contract exhibits he put in the cost of holding funds, those funds that he claimed were being held, were being held for both loans and stock. I am generally familiar with
6071 Mr. Heiss' exhibits in this case. My understanding is that the item "Cost of holding funds" as used in all of the Heiss exhibits had reference to the loans and not to the stock.

I am familiar with the item "Cost of holding funds" set up by Mr. Heiss. You will have to ask Mr. Heiss
6072 whether those funds being held by the American Telephone and Telegraph Company were to make advances, or were to make advances plus buy stock. I do not know then the purpose for which those funds were being held. Without that knowledge I can criticize Exhibit X-129 because X-129 is wrong.

If the item "Cost of holding funds" developed to be
6073 the cost of holding funds for stock purposes as well as making loans, that item of cost would not be wrong for the same reason that I have said that Exhibit X-129 would be wrong. We are talking about different things.

"Mr. Goldstein: If those funds were being held by the American Telephone and Telegraph Company, and there was a direct subscription without any loan advances, would the cost of holding those funds be a proper charge in the license contract?

"A. From the time that they decided that the company would finance through stock, until the time the money was paid for the stock, it would not have anything to do with the license contract. It would be an investor relationship.

"Q. And if the Illinois Bell in November of one year,
6074 not having any loans at all from the American Telephone and Telegraph Company, should notify the American Telephone and Telegraph Company that in the year 1924

for instance the American Telephone and Telegraph—the Illinois Bell would issue some stock to the American Telephone and Telegraph Company, and the American Telephone and Telegraph Company were holding funds from January 1 of that year until the date of the subscription, you would say that the losses on holding those funds were not a part of the license contract cost?

"A. I would not be able to express an opinion on that without going thoroughly into Mr. Heiss' exhibits."

I would have to see the exhibits, and know the circumstances before I gave my opinion as to whether it would be a proper charge.

6075 "Q. I am just putting this transaction to you, that in November, 1923, the Illinois Bell Telephone Company, in its provisional estimate notified the American Telephone and Telegraph Company that in the year 1924 it would not borrow any money, but it would issue $20,000,000 of stock, and in November—in October or November, 1924, it did issue that stock and the American Telephone and Telegraph Company purchased that stock.

"Now, the American Telephone and Telegraph Company held the funds from January to October, the date of subscription. Would the losses on those funds be a proper charge under the license contract?"

If the American Company in order to have that money available ten months later for the convenience of the Illinois Bell Company, were required to carry it for that time, I should say it would be. Or if there was not a firm arrangement, and it was possible for the Illinois Bell Company to change its mind and say, "We have decided we will not issue that stock; we would rather take some more advances", 6076 then, I can see that there is a connection. Even though there were no advances and even though they told them that they would take no advances during the year, they can change their minds on five minutes notice. There is no certainty that because some president ten months in advance says he thinks he will issue stock, therefore, he is going to absolutely issue the stock.

I can conceive that there might be circumstances under which even holding funds to buy stock to enter into an investor relationship, is a proper charge. But I would like to study the circumstances, because there might or might 6077 not be stock purchased.

In connection with Exhibit X-134: the American Telephone and Telegraph Company has in its possession all of the figures of actual interest paid by the licensees. It has no figures of average loans, because we do not need that in our business. Anyone by having the amount of interest, 6078 could obtain the average loans on a true daily basis by dividing by 5.88. The American Company, of course, knew what the interest was and that could have been obtained, if defendants wished it, from the books of the American Company.

6079 Exhibit X-143 is not carried into all of the other exhibits. Of course, it does not carry into all of the other exhibits.

6080 In connection with Exhibit X-148: Under the license contract all of the licensee companies do not get the right to make loans from the American Telephone and Telegraph Company. It does not set that up in the license contract. It says that the American Company will give them such aid and assistance as is within its power, in 6081 financing, or words to that effect. Actually, making these advances has been the form that much of the assistance has taken.

The American Telephone and Telegraph Company, in performing that function, has had certain losses, which Mr. Heiss shows under license contract costs for the company as a whole. The Illinois Bell, in some years, got advances from the American Telephone and Telegraph Company.

6082 "Q. Now, you say because Mr. Heiss in his exhibits in this case did not include as a charge against the payment of the Illinois Bell, these losses on loans actually made to the Illinois Bell, therefore the defendants have no right to make a comparison of the fairness of the license contract by showing that the other companies have a substantial—get a substantial benefit, and the American Telephone and Telegraph Company incurs a substantial loss, in making these loans, is that it?

"A. I have made no statement tending to circumscribe the rights of the defendants."

I did not say I was criticizing the exhibit on that basis. I said that with respect to the Illinois Bell there was nothing included for losses on loans. That all of the losses on loans were thrown down into the total, so that you are comparing two things that are not the same. Mr. Heiss, in the first column of his exhibit had a statement, of course, from the standpoint of the American Company. In the second column he had certain costs, which various witnesses had assigned to the Chicago area. In the second statement there was nothing for losses on loans. Now, this statement compares those two columns blandly, as if they were comparable, and you have got to study the exhibit to find out if that is the case. I am simply drawing attention to it. 6083

My criticism is not because Mr. Heiss did not include in his exhibit any losses on loans, and that defendants included it as to the rest, but my criticism is that this exhibit compares two things that are not the same.

Now, the two columns of Mr. Heiss' exhibit are not the same, as everybody can see by looking at it. Now, here is a lot of exhibits which are as much alike as Chinamen, and I am simply taking one of these complicated exhibits, and finding out a certain fact, which I take it you and I both are in agreement on, that in this section relating to the Illinois Bell, there is no item, for losses on loans, financing, but in the total there is an item and that item is the total of all those losses. 6084

6085 *Re-direct Examination by Mr. Blackman.*

With regard to that example which was given to me by Mr. Goldstein, of the $1,000, of which $250 was represented by stock, $250 by stock premiums, and $500 by loans or mortgage investments: If the corporation had $10 available for return on the stock, and had $250 stock outstanding, you would divide the $250 into $10, and that would give you 4 per cent. That would be 4 per cent on the stock. The return to the investor on his investment in the stock would be one-half that. The way Mr. Rainwater has figured it, it would go just the other way, and be twice that.

6087 W. F. SLOAN, a witness on behalf of the plaintiff, resumed the stand, and testified further, in rebuttal, as follows:

Cross-Examination by Mr. Goldstein.

July 1, 1932

In making up Exhibit A-243, I used the data that Mr. Cummings had put into the record. I used some other data on pole lines, of course; I found from the vouchers the number of tank-treated poles, I used that data. For cable footage, I took Mr. Cummings'. For the prices that were used as of June 30th I took Western Electric prices. I don't know how much time it took us to make up the study. We were
6088 doing so much work, after we got Mr. Cummings' exhibits; I suppose we have had them two months, or more. I have been working continuously on this and other exhibits, but not with all of our force. We had three or four men, and then we made use of some of the Company's employees in addition. The number of Company employees varied. I don't know. Some days we would have two or three and sometimes four or five. I could look up that data. Well, I would say we had, most of the time we had about three of our own people, besides Mr. Cook and myself and two or three of the Company's people, three or four.

6089 Exhibit A-249 is practically the same as the other, except that it has the additional correction for the productive hourly rate, so the same general data was used, and there we did make use of some additional data that was not contained in Mr. Cummings' exhibits. The productive hourly rate for the last six months of 1923 we had to get from the same source that Mr. Cummings got the data for the first six months. That is practically the only difference.

Much the same general type of answer would apply to Exhibit A-251 as to the other concerning sources. That also includes specific estimate performance. I used the same general sources as I used before.

6090 Exhibit A-251 was finished day before yesterday. Exhibits A-249 and A-243 were finished some days prior to that.

6091 On the second to last page of the copy of Exhibit A-252, delivered to defendants, the last sentence, "J. G. Wray also lists the same estimate twice in two different instances on this page", appears. That should have been stricken out. The tabulations on those two pages where these words have been stricken out are based on the supposition that the duplications existed. That would not be affected very greatly, however, because one of those estimates only involved $300, and I have forgotten how much was involved in the other, but it would not change the general result of that very much. Perhaps it would change it slightly.

6092 In my testimony I stated: I have ascertained whether the poles included in this two and a half year period of Mr. Cummings' exhibit, were in part tank-treated poles. I obtained this information from the Western Electric Company invoices. All of those vouchers pertain to Chicago area only. They don't show which were placed in the Toll Pole Line Account, and which in the Exchange Pole Line Account, but the facts are there were not many poles in the Chicago area. They do not show what poles were placed at all, but they were bought for Chicago, and evidently used in

6093 Chicago. I assumed they were used in the Chicago area. There might be a variation of three or four or a dozen poles that did not go in, but if you take the two and a half year period for the purchases, it is perfectly obvious those poles were used in Chicago.

The A. N. A. cable replaced the earlier N. A. and T. A. cable about June 1, 1923; that is when it first appeared in the catalogue. The difference between the A. N. A. and the N. A.

and the T. A. cable was a detail of manufacturing. In general, they serve about the same purpose.

6094 In Exhibit X-6 Mr. Cummings did not use the productive hourly rate as of June 30, 1923. That is the point of our objection. He used it for the first six months of 1923. He used the average for the first six months of 1923. He may have thought he was using the hourly rate for the six months ending June 30, 1923, to develop the hourly rate level as of June 30, 1923, but he didn't. He took the average productive hourly rate for the first six months. He used the hourly rate for the first six months of 1923 to convert all of the gross expenditures for the years 1921, 1922 and the first six months of 1923 to that extremely low level. Not to the level as of June 30, 1923; that is the point, he didn't. He used it for the first six months of 1923, which is entirely different from the June 30th level. That is the point of our objection.

6095 He said he was developing a June 30th level, but he corrected it by—well, I will tell you how much he corrected it. He corrected it from 90.78 to 90.79 in the Pole Line Account, 1/100 of 1 per cent.

Approximately one-third of the total labor cost of setting the pole is digging the hole.

I criticized Mr. Cummings' application of trial units for main cable only to a composite group of cable consisting of main and subsidiary, and I stated as follows:

> "So he applied his correction factor against all of the sizes indiscriminately, and it is, of course, perfectly
> 6096 obvious that the correction factor should have been applied against the size that belonged to the subsidiary group."

You would have to approximate these sizes from the records of the Illinois Bell showing which were main and which were subsidiary cable. But the way Mr. Cummings used it was entirely improper. You can approximate it very closely.

Re-direct Examination by Mr. Thompson.

In the preparation of the exhibits which were introduced during my rebuttal testimony I used nothing whatever except the records of the Illinois Bell Telephone Company and Mr. Cummings' work sheets.

6097 Reference has been made to certain types of cable which first began to be used in 1923. In Exhibits A-2 to A-10, both inclusive, I reproduced the actual types of cable that were in the plant from year to year.

6097 L. G. WOODFORD, a witness on behalf of the plaintiff, in rebuttal, having been previously duly sworn, resumed the stand and testified further as follows:

Direct Examination (Continued) by Mr. Bracelen.

July 1, 1932.

I heard all of Mr. Turner's testimony on rebuttal. I am familiar with the basis on which Mr. Turner's studies and estimates were made to determine what the depreciation expense charges of the Company in Chicago would have been throughout the period involved in the case, if the Company had used the unit basis instead of the group basis which 6098 it did use. I discussed the general principles of the studies with him before they were made, and while they were being made. I have seen the results of the studies and discussed those with him.

My familiarity with the studies is sufficient to enable me to make a definite statement as to whether or not in my opinion the results to which Mr. Turner testified are substantially correct. I concur in the results that Mr. Turner found on his studies and estimates. As a matter of fact, I think that his statement is a conservative statement.

The unit basis which Mr. Turner applied in the study in

order to contrast it with the results under the group basis was a basis by which the depreciation rate was applied to each unit of each class of plant, so that the accruals resulting from the application of the rate would exactly amortize
6099 the cost of that unit during its life in service.

Cross-Examination by Mr. Goldstein.

I am generally familiar with conditions in New York City. I don't know it to be a fact that in New York City they installed more dial equipment than was required, and that they have been removing dial equipment from certain offices, and installing it in new offices in other locations. I don't know anything about it.

The exchange pole lines in New York are practically negligible. In Chicago they are just about holding their own,
6100 not growing fast. In both cities the investment in exchange pole lines is a small proportion of the total investment.

I also spoke of the Chesapeake and Potomac Telephone Company of Washington, D. C. I said the property of the Cincinnati and Suburban Telephone Company and the Southern California Telephone Company was substantially all located in one city, in each company, except for the years 1930 and 1931 for the Southern California Company.

I don't think the conditions are exactly comparable in any two companies. There are certain factors affecting depreciation rates which I know to be different, as between those three companies, and the city of Chicago. That would affect the depreciation rate or expense.

6101 JOHN R. TURNER, a witness on behalf of the plaintiff, in rebuttal, having been previously duly sworn, resumed the stand and testified further as follows:

Cross-Examination by Mr. Goldstein.

July 1, 1932

(The summary sheets which were handed to the defendants yesterday as embodying the results of the investigation about which the witness testified on rebuttal were identified as Defendants' Exhibit X-436.)

I stated in rebuttal yesterday that I made an investigation, the result of which shows that if the Company had determined its rate on the unit method instead of the Company method, the depreciation expense would have been lower in 1923 by $146,000, and lower in some other years, and higher in other years.

6102 As I recall it, I started that investigation about three weeks ago, or, perhaps, four weeks. It was finally finished day before yesterday. We have had a force of people working on this and other matters pretty much simultaneously. Just as a rough approximation I would say that we may have averaged throughout the period, oh, three men, and in the neighborhood of five girls, comptometer operators. Now, I cannot say that that many were working constantly because I don't know just exactly how much time they were working on that investigation. There was night work on it too.

The detail of my study is embodied in the volume which is shown me by counsel for the City plus the summary
6103 X-436. I would guess the volume contains 150 pages.

There are no other working papers besides this and besides X-436. Of course, a great deal of the information that is contained in that volume which has just been mentioned is taken from the Company's studies under the group basis method, and is transferred to that, so that it involves the studies which have already been made available to defendants. It involves a comparison of the rates developed from both studies, and the resulting depreciation expense.

This document of 150 pages I delivered to defendants yes-
terday at noon. There are no working papers in the
6104 volume on station equipment, pole lines, aerial cable, and
office furniture and fixtures. I have no working papers
on those accounts. The determination of the difference in
expense for classes of property other than buildings and
equipment is developed through an analysis of the unit
method applied to underground cable.

"Q. Now, as I understand this new investigation, it was not intended to show—does not show the difference in the depreciation expense between the book expense figures as they entered in any of the Exhibits A-49 or A-53, but the investigation was to determine the result of applying what you consider the Company method to certain specific items of plant for the years 1923 to 1930, inclusive, as compared to the unit method applied to the same items of plant, is that correct?

"A. Not precisely. What we did was to determine the difference in depreciation expense resulting from the actual studies on the Company's basis as compared to the unit basis, using, so far as possible, the exact figures under the Company method.

"Q. Did you take the Company method of determin-
6105 ing the depreciation expense as it was done in 1923, or is
it the Company's method as you now use it applied to
the book cost of plant in 1923?

"A. It would be the difference that it would be necessary to add to or subtract from the depreciation, resulting from my retrospective view of the depreciation rates in former years."

The "Company method" that I used is my own method
6106 and not the method that Mr. Hale used in 1923.

With reference to the classes of property in Exhibit
6107 X-436: under the Company's method we determine the
average life and average salvage for a group of prop-
erty; and by a group we mean all of the various increments
to a building during its entire life experience, that is, its

additions and its retirements. By the group method in outside plant, for example, we have reference to, let us say, the cable placed in one year, some of which cable will go out in the next year, some the second year, in the third year, and so on. We determine the average life of that group of cable placed, let us say, in the year 1930, and also the average salvage, from which we determine a rate which is applied so long as any part of that cable is left in service, the rate being applied, however, only to the investment that is there each year.

Now, under the unit method as used in Exhibit X-436, we deal specifically with the portion of a building that is in service at the time the rate is determined. For example, we have a new building, we determine what life that particular portion of the ultimate building will attain. In doing that, it is, of course, necessary to consider future additions, even under the unit method, for the reason that when you make an addition to an existing building, it is necessary to remove some part of the existing building.

6108 To take a specific case that we experience frequently, we make vertical additions. When you do that, it is necessary to remove the roof of the existing building; therefore, that portion of the investment in the initial building represented by the cost of the roof, the parapet, wall and any other part of it that may be removed when that vertical addition is made, has only that length of life to the time of the first addition. In the case of outside plant and other classes than buildings and central office equipment, using the cable as an example, we determine in effect a depreciation rate for each unit of cable in service at the time that the rates are determined, applying that rate, of course, to the property in service during the current year.

That, in a general way, is what I did.

We eliminated the future additions in the case of buildings and central office equipment, in so far as any allowance was made in the rate for the expenditures represented by the

future additions. I would like to make it clear that I
6109 have eliminated the future additions in the rate as far
as the future additions themselves are concerned, but
these future additions bring about retirements of the existing
property which has to be considered in the rate under the
unit basis. We would eliminate from the rate the shorter
life of future additions. But we would shorten the life of the
existing property because of the partial retirement of the
existing property that occurs when the future additions
6110 are made. We necessarily changed our salvage figures.
I also assumed that our piecemeal retirements of the
buildings were taken always from the oldest part of the buildings
at the time of the retirement.

In regard to the central office telephone equipment, I used
the actual experience for retirements for the years 1930 and
1931, instead of the estimated additions and retirements as
used in our 1929 study, because we have that study completed
on the 1932 basis, but as to the others, I believe we did not.
We didn't in buildings. The central office equipment is
6111 all. The reason for that was that we have not the information
worked up in study form for buildings yet;
that is why we didn't do it.

The dial central office introduced in this new investigation
wasn't shown in detail in Exhibit A-128 because it was covered
by my direct testimony.

The group method is uniformly followed by the Company
in all studies except this latest investigation. We used
6112 the group method for all classes of plant to which we
applied the mortality study. We use the group method
in the case of the pole lines.

"Q. Now, you continually add new poles by extending
your line, and then you may take out the entire line, is that
correct?

6113 "A. Oh, not necessarily; not so much so in Chicago.
In Chicago, I should say that it is very largely of replacing
poles and existing lines.

"Q. In the case of aerial cable, you make an initial installation
of cable and then you make extensions of that initial

installation, and then you sometimes take out the entire length of the cable, is that correct?

"A. Not so much in Chicago. It is mostly a case of replacing with cable of larger size but to some extent that is true."

The life of pole lines and aerial cable varies in accord-
6114 ance with the amount of young plant that we have at any
time. In the case of pole lines we consider the life only on the pole lines that are in existence at the time. We don't take into account any effect of any poles that may be added later.

In this new investigation, with the modifications I have pointed out heretofore (that the future additions will have their effect on the retirement of the present property), we varied from Exhibit A-128 in two respects: we eliminated
from consideration the effect of future additions on the
6115 life of the existing central office equipment and we
changed from the group method to the unit method.

I don't understand how one could compute the effect of using the group method for central office buildings and equipments, eliminating from consideration the future additions. The group method is based on the average life throughout the over-all experience of the buildings. That is what we mean by the group method. We take into consideration the future additions.

I heard Mr. Hill testify in this case to the effect that in my study in A-128, table 9, for buildings, we do not use the group average, but used the unit average. My new study used the
same identical method as that used in table 9 of A-128
6116 for buildings, and also table 6 for central office equip-
ment.

Let me cite the cable account, or rather the class of cable that I analyzed in considerable detail, as an example of the change in this new investigation of the salvage figures I used in connection with Exhibit A-128. Under the group method, we determine the average salvage that we expect from all cable. Now, that is the comparable way it is shown on the

books and records of the Company. We can ascertain
6117 from the accounting records the average salvage derived
from all cable retired in any year. That is the group basis. Now, under the unit method, we have had to estimate the salvage that we will obtain from cables that are retired at the end of one year, at the end of two years, three years, and so on. Now, I have made that estimate so that for the entire property we will get the same average salvage that we get under the group method, but I have had to increase the salvage very substantially for the cables that come out after a very short life, and I have had to decrease the salvage for the cables that come out after a very long life. In other words, I had to distribute the average salvage over all the various ages at which cable would be retired.

For the manual central office buildings, I changed from 20 per cent under the Company method to 15 per cent in the unit method. The reason for that is, the salvage we expect from our manual central office equipment will be very largely derived from the newer and more modern equipment that is
placed in the future additions, which will come out at the
6118 time the office is retired. When you eliminate the ad-
vantage that you get of new and modern types of equipment, then you, of course, find lower salvage. I was referring to central office equipment before.

Now, for the buildings, the difference is very much more severe. If we take a building right through its over-all life experience to its final disposal, we have estimated that we can sell many of our buildings, taking into consideration the lack of adaptability of the buildings, however; and when we retire portions of our buildings, we sustain a net loss. Referring back to the case I cited of the vertical addition, if when we make an addition we remove the roof, the net salvage loss then is very substantial. In fact, our experience has indi-
cated that on the average the net loss associated with
6119 the retirement of a part of a building approximates 35
per cent of the book cost of the portion removed. Now, when you go to the unit basis, you are eliminating future additions that will survive to the time when the building is

sold. When you deal with the initial construction, you have got to consider the portions of that addition or that initial construction that will be retired on the interim basis at a great loss, as well as the portion that will survive to the time of obtaining salvage through sale of the building.

Of course, as I just stated, the loss associated with an interim retirement is based on the fact that we have analyzed that from our history. The amount of salvage we will obtain when the building is ultimately sold is a matter of judgment, not alone in this unit study, but also in the studies I have testified to in this case.

For dial central office buildings, page 3, I show under "Company method", 35 year life and 20 per cent salvage, and under "Unit method", 40 year life and 7 per cent
6120 salvage. I have just finished explaining one part of the
reason for the change. That is the fact that you are going to have a lower salvage because you are dealing with the initial portion of the dial building; and in the second place, the difference in the life, of course, is rather obvious; we are going to get a longer life out of the initial construction than we get out of the average of all the future additions with their shorter life effect. Now, I worked that out very roughly; I have taken what I consider a typical example, and determined what proportion of that initial construction might be expected to survive through an entire period of 50 years, what portion would be retired when an addition is made, and what portion is represented by building equipment, elevators, steam-heating plants and so on, and how long they would live, on the average.

The Company has not used the unit method in connection with underground cable; it has not used the unit method for anything.

6121 In my computation for underground cable, the distribution by age of the average plant now in service was taken from the mortality study identified as Defendants' Exhibit X-437. These two sheets are built up in the same way as the mortality study in Exhibit A-128, and are in the same form as shown in A-128, page 12.

I have not made a distribution of age of station apparatus.

6122 In my treatment of piecemeal retirements for buildings and central office equipment in my new investigation, I applied the retirements against the oldest gross additions. The oldest gross additions are not always retired first. I have made a check of the fact that we find very little difference between the assumption that I have made, that they do come out of the first additions, and the way they actually come out.

In speaking of the 5 per cent junk salvage, I base the range of re-use of piece parts from year to year (from approximately 10 per cent to 25 per cent) on discussion with the supervisors, who are in a position to know just how extensively the piece parts are re-used, not with precise mathematical knowledge, but in general, and they have stated very
6123 positively that they are less than 25 per cent, and in their opinion they would range from 10 to 25 per cent. Now, if they range from zero to 25 per cent, the results in the station apparatus study would not differ.

In my testimony I explained that Mr. Tholin had arrived at his 21-year life by using a figure determined by the Company of 19.77 years; he used the Company's figures of 19.77 years, as a base, to which he applied the percentage increase that he had developed.

6124 "Mr. Bracelen: That is all. I am not sure whether I made a formal offer of the exhibits identified by Mr. Turner and Mr. Woodford, and to make sure, I do it now.

"Judge Wilkerson: The exhibits may be received in evidence.

6125 "Mr. Goldstein: May the record show then that the 18.22 years is the unadjusted figure, and Mr. Turner would testify that the 18.22 years is the unadjusted figure to which the factor of growth is applied, resulting in a life of 19.77 years, as just testified, being used by Mr. Tholin.

"A. That is correct."

ALLAN B. CRUNDEN, a witness on behalf of the plaintiff, having been previously duly sworn, resumed the stand and testified further in rebuttal as follows:

Cross-Examination (Continued) by Mr. Goldstein.

I have not checked all of the calculations on Exhibit X-438 because they are numerous, but I have checked enough of them to understand the exhibit for the purposes of the comparison.

"Q. Are the mathematical calculations on pages 1 6126 and 3 the same, to arrive at the result in page 1, from 7.21 to 10.44 for the entire Company investment, year 1930, to arrive from 7.67 to 11.24 in the last column on page 1, and to arrive from 32.15 to 59.52 on page 3, in the case of telephone instruments for the year 1923.

"A. As mere mathematical computation.

"Q. Yes.

"A. Regardless of captions, or anything else.

"Q. That's right.

"A. Just the comptometer operation, that is correct.

"Mr. Goldstein: Yes. I would like to make one correction, a typographical error. The item D on page 2, which reads "Capital stock investments" should read "Capital stock installments".

"A. Yes. I have not checked all these details on page 2. I will change this word to "installments".

(Defendants offered in evidence Exhibits X-436, X-437 and X-438. Received.)

6128 *Re-direct Examination by Mr. Blackman.*

The terminology on X-438 is not the same as that used on X-111. On sheet 3 of X-438, the last item reads, "Per Cent return expressed on capital stock par value 59.52". That is a correct development of the amount which he purports to develop under the assumptions contained in the previous lines of the exhibit. In connection with the same figure, 59.53, on

Exhibit X-111 the wording is "Per cent of return on investment expressed in per cent of return to A. T. & T. stockholders on the average capital stock investment". Those are by no means the same things at all.

6129 *Re-cross Examination by Mr. Goldstein.*

If he had put in per cent of investment expressed in return on capital stock par value it would have made page 1 wrong in the same way that page 3 is wrong. Then the 10.44 would have been wrong as applied to the heading that you proposed to be used.

"Q. And when the American Telephone and Telegraph Company told its stockholders that the earnings were 10.44 on capital stock, do you consider that that was an expression of return on investment expressed on capital stock par value or not?

"A. No, I don't think the word "investment" comes in there at all in that connection.

"Q. You did not consider that the 10.44 was a return on investment?

"A. No."

Re-direct Examination by Mr. Blackman.

6130 The word "investment" is a generic term. The 10.44 represents the relationship between the earnings of the company and the par value of the stock or shows the earnings per share. It takes no account of the fact that much stock was issued at a premium. Some of the stock was issued at 180. It takes no account of the fact that there is surplus invested in the business to provide part of the earning power which is reflected in this 10.44.

Re-cross Examination by Mr. Goldstein.

"Q. And by that you mean that 10.44 would cover not only the return for the money put in to form the capital stock, but also surplus and premiums.

"A. The 10.44 is the per cent return figured on the par value of the capital stock.

"Q. But that is the total return that the stockholder would get on his entire investment, capital stock, premiums and surplus?

"A. Well, you are talking about it as if you could transmogrify a percentage from one base to another, and you cannot do that. If you say there is 10.44 per hundred dollars of par value of capital stock, and that is all that the 6131 business gets, that is all right. But we have got a percentage that we are dealing with here. That percentage represents the amount of earnings available for the stockholders for whatever investment they had, including the stock premiums and surplus, as related to the par value of the stock.

6132 By the way, that exhibit is headed up "A. T. and T. Company", and then it goes on to say, "Use of a conversion factor", and so forth. I think it ought to be made clear that the American Telephone and Telegraph Company never used that conversion factor.

Re-direct Examination by Mr. Blackman.

The American Telephone and Telegraph Company does not use any such formula as appears on the sheet 1 of X-438. It is not necessary. All it does is to say, "Our net income is so much, we have so many shares of capital stock, and that amounts to so much a share". That is 10.44. And that is shown on that exhibit.

6133 A great deal of that stock was paid for at $180 a share. The investment of the man who bought that stock was not $100, but $180. What is done in X-111 is to proceed as if the investor had paid only $100 for his stock.

"Mr. Bracelen: Counsel states that that completes his cross-examination of plaintiff's witnesses on rebuttal. One of my associates suggests that I should broaden the offer I made a moment ago to cover all exhibits that have been identified by the plaintiff's witnesses on rebuttal, so that the record will leave that point in no doubt.

"Judge Wilkerson: They are admitted subject to the objections.

6135 "Mr. Goldstein: I want to offer the X exhibits, if the record appears we have made no formal offer, we offer all of the X exhibits, so there will be no question about it.

"Judge Wilkerson: They are admitted."

IN THE

District Court of the United States

FOR THE NORTHERN DISTRICT OF ILLINOIS, EASTERN DIVISION.

ILLINOIS BELL TELEPHONE COMPANY, Plaintiff,

vs.

C. GALE GILBERT, [illegible] PAUL [illegible], WALTER [illegible] WILLIAM [illegible], [illegible] W. COLLINS and PAUL [illegible], [illegible] Commerce Commission of the State of Illinois, and OSCAR E. CARLSTROM, Attorney General of the State of Illinois, Defendants,

and

CITY OF CHICAGO, a municipal corporation, Intervener.

In Equity
No. [illegible]

Heard before
[illegible]

ABSTRACT OF RECORD.

Defendant's Evidence, Second Hearing.

Volume V—(Pages [illegible] to 1760)

WILLIAM H. SEXTON,
Corporation Counsel, City of Chicago.

[illegible] and
[illegible] GOLDSTEIN, and
[illegible]
[illegible] City of Chicago.

OSCAR E. CARLSTROM,
Attorney General of Illinois,
and
WILLIAM [illegible]
[illegible]

CHARLES [illegible]
WILLIAM H. THOMPSON,
KENNETH F. BURGESS,
EDWARD L. BLACKMAN,
Solicitors for Plaintiff.

HORACE KENT TENNEY,
LESLIE N. JONES,
Of Counsel.

[illegible]

IN THE

District Court of the United States

FOR THE NORTHERN DISTRICT OF ILLINOIS,

EASTERN DIVISION.

ILLINOIS BELL TELEPHONE COMPANY,
Plaintiff,
vs.
G. GALE GILBERT, J. PAUL KUHN, WALTER H. WILSON, WILLIAM M. BRINKMAN, PHIL W. COLLINS and PAUL SAMUELL, the persons constituting the Illinois Commerce Commission of the State of Illinois, and OSCAR E. CARLSTROM, Attorney General of the State of Illinois,
Defendants,
and
CITY OF CHICAGO, a municipal corporation,
Intervenor.

In Equity
No. 3746.

Heard before
Hon. Evan A. Evans
Hon George T. Page
Circuit Judges
and
Honorable
James H Wilkerson
District Judge

ABSTRACT OF RECORD

Defendant's Evidence, Second Hearing

Volume V—(Pages 1439 to 1760)

3891 G. W. CUMMINGS, on behalf of the defendants, having been first duly sworn, testified as follows (June 1, 1932):

Direct Examination by Mr. Goldstein.

My name is G. W. Cummings, and I testified on behalf of the City at the previous hearing in this cause. Since then, I have been continuously employed by J. G. Wray & Company on telephone engineering work of the same general nature as described in my qualifications.

3892 I heard the testimony of Mr. Sloan in the present hearing in connection with Plaintiff's Exhibits A-2 to A-10, inclusive. These exhibits purport to give his estimate of the cost of reproducing the plaintiff's property in the City of Chicago as of December 31st of each year, 1923 to 1931, inclusive. Except for a few modifications which he described, such as the use of a variable weighting instead of fixed weighting in the computation of his index numbers of material costs and a somewhat different method of computing his retirement factors, Mr. Sloan used substantially the same methods in Exhibits A-2 to A-10, inclusive, as he did in Plaintiff's Exhibit No. 1 shown in Volume 4 of the Record, Page 1. The accuracy of Exhibits A-2 to A-10, inclusive, depends upon the accuracy of Exhibit 1.

3893 Starting with the results set forth in Plaintiff's Exhibit 1, in Exhibit A-2 Mr. Sloan has adjusted the appraisal from June 30, 1923, to December 31, 1923, by applying to it certain factors purporting to represent the changes in cost levels during that period. To the original appraisal thus adjusted he then adds the gross additions during that period, and from it he deducts the retirements, after adjusting both to the December 31st level, by factors similar to those used in adjusting the original appraisal. The result is, his appraisal, as of December 31, 1923, as set forth in Exhibit A-2.

Similarly in Exhibit A-3 he obtains his appraisal as of December 31, 1924, by applying to the results of Exhibit A-2, as of December 31, 1923, certain factors purporting to represent the changes in cost levels during 1924, and adding the adjusted gross additions and deducting the adjusted retirements during the year 1924. His appraisal for each subsequent year as set forth in Exhibits A-4 to A-10, inclusive, is built up in the same manner from the appraisal at the end of the year immediately preceding the year under consideration. 3894 As each of the appraisals subsequent to June 30, 1923 is developed from the one immediately preceding it, any defect in Plaintiff's Exhibit 1 is embodied in Exhibits A-2 to A-10, inclusive. In the former hearing in 1929, both Mr. Wray and I attacked Plaintiff's Exhibit 1 on the ground that it could not possibly give a true reproduction cost of property which it purports to give.

The principal grounds upon which I based my conclusions are:

3895 1. The factors which Mr. Sloan applied to the book costs of each year to adjust them to the level of June 30, 1923 could not produce the result sought, because both the material and labor indices which composed these factors were erroneously constructed.

2. Since Mr. Sloan used the book cost as the basis of his appraisal, the result reflected construction conditions which were widely different from those which would be encountered in reproducing this property.

3896 Since the former hearing, additional grounds upon which I have based my conclusions have appeared. That additional ground arises from the method of proof employed by the plaintiff in attempting to justify the Western Electric prices by showing the Western Electric profits allocable to the Bell System.

However, I am confining my testimony at this time to the first two grounds mentioned, leaving to Mr. Hagburg the discussion of the third ground.

Both Mr. Wray and I pointed out that in the matter of material and labor indices, the weightings used in the construction indices were not representative of the actual weightings in the plant as it was built each year. In

3897 City's Exhibits 94 and 95, I intended to bring out the effect of this lack of representative character in the weighting used by Mr. Sloan in the preparation of his material and labor indices.

In City's Exhibit No. 94, which is entitled "Illustration of Effect of Weighting on Index Numbers, W. F. Sloan's Appraisals of Illinois Bell Telephone Company Plant," I showed the substantial differences between the two sets of index numbers of material costs developed by Mr. Sloan for the Chicago property, for the period 1911 to 1918, inclusive, one of these sets of index numbers being developed from his testimony before the Illinois Commerce Commission, and the other, before this court; and I testified at that time that these differences were caused by differences between the weightings used by Mr. Sloan in his two appraisals of the same property.

3898 (Objection by plaintiff's counsel on the ground that the witness is recounting his previous testimony already in the record and on the ground that witness quotes from former testimony already in the record. Objections overruled.)

3899 In my former testimony, I said: "I would expect to find greater differences in comparing the weighting of the total plant with the weighting of the additions in any one year." "The admittedly wide differences in the items which were actually placed from year to year must produce a far greater difference in result." In City's Exhibit 95, I approached the same problem from a different angle. I explained the method as it was stated in Volume I of Record Pages 55, 57, 81 and 59.

"Q. Now, City's Exhibit No. 95 was offered by you for the purpose of demonstrating that by reason of his inconsistency in combining the figures, Mr. Sloan's cost indices necessarily were reduced to a mathematical absurdity. Is that correct?

MR. THOMPSON: To which question—

A. That is right."

3900 (Question objected to and objection sustained.)

3901 Mr. Sloan's testimony with reference to City's Exhibit No. 95 is shown in Volume II of Record 661, and my answer to that is shown in Volume V of Record Pages 1641 and 1642.

I have since made computations to support my answer as shown in Volume V of Record Pages 1641 and 1642.

I prepared the computation identified as Exhibit X-1 entitled "Illustration that test applied in City's Exhibit No. 95 is not affected by choice of base year having different proportions of material and labor." On Page 1 of that Exhibit, I have recomputed Table 1 of City's Exhibit No. 95, using the same data and the same method, but have turned it end-for-end by using June 30, 1923, as a base, instead of 1911 which I had used in Exhibit 95.

3902 My reason for turning it end-for-end is that in 1911, according to Plaintiff's Exhibit No. 1, material constituted 47.4 per cent of the total, and labor 52.6 per cent; while in 1923, material had dropped to 28.6 per cent and labor had risen to 71.4 per cent. The relation between labor and material which is shown in Column 4 of Defendants' Exhibit X-1 is therefore entirely different in 1923 from what it was in 1911—that would be Column 5 in City's Exhibit 95. And if Mr. Sloan's contention is correct, that our method rests upon the assumption that this relationship is the same throughout the period that it is in the base year, then by using a different base which has an entirely different relationship, I must necessarily arrive at an entirely different result. But this exhibit shows the contrary, since a comparison between the last two columns shows that I arrive at the same result as before, the slight fractional differences being due to the dropping of fractions in the computation.

3903 Sheet 1 shows that if Mr. Sloan's per cent of increase in material cost which I have set up in the usual index form on a 1923 base in Column 1, and his proportions of material and labor as shown in Columns 2 and 3, are correct, then his labor index necessarily must be as shown in Column 6. But instead of this, he actually used a labor index, which, when arranged on a comparable base, is that shown in Column 7. The significant columns are 6 and 7.

On Page 2 I have applied the same test to Mr. Wray's computations which Mr. Sloan criticized. The first table on page 2 of Defendants' Exhibit X-1 is taken from City's Exhibit No. 1, for identification, which was Mr. Wray's affidavit, and follows the same methods that I later used in City's Exhibit No. 95. As Mr. Sloan indicated, the indices

3904 used 1919 as a base, and in that year I find from Column 3 that labor was 286.1 per cent of material. This is almost the highest percentage shown during the entire period, and for the purpose of my test I therefore picked the year which showed the lowest percentage, which was 1913, when labor was 240.1 per cent of material. I then computed the lower table on the same page of this exhibit, using the same data and the same method as in the upper table, but taking 1913 as a base.

Since the relationship between labor and material was very different in 1913 from what it was in 1919, I should, if Mr. Sloan's criticisms were correct, arrive at a correspondingly different result. But this exhibit shows the contrary, since a comparison between the results of the computation shown in Column 6 of the two tables, shows that changing the base, and with it the relationship between labor and material, does not change the answer. As in the case on page 1, there are some small fractional differences which are due, as in that case, to the dropping of fractions in the computation.

3905 Column 6 is the significant column in the two tables.

The figures, except for the small fractional differences to which I refer are identical in those two, showing that I arrive at the same answer, whatever base I take, and changing the base as I have stated, changes the relationship of labor and material. I have attempted to measure the extent of the error of Mr. Sloan's computation which has resulted from his use of the figures referred to.

Exhibit X-2 entitled "Measurement of Error in percentages of Increase in Plant costs used in Plaintiff's Exhibit No. 1 on Assumption that Increases in Material and Labor costs are Correct," was prepared under my supervision. It consists of four tables designated A, B, C and D. Table A is copied directly from Pages 114 and 115 of Plaintiff's Exhibit No. 1.

"Q. Does Mr. Sloan's explanation in connection with Plaintiff's Exhibit No. 1 cover the subject? A. I think it does."

3906 (Question objected to on ground that it involved the witness passing upon and interpreting Mr. Sloan's testimony—sustained.)

3907 The line designated "Total" in Table A in Defendants' Exhibit X-2 shows the percentages of increase in Plaintiff's Exhibit 1 Mr. Sloan applied to the book cost of gross additions each year, to adjust them to the cost
level of June 30, 1923. Looking at the first column, for
3908 example, which is headed "August 1 to December 31,
1911"—as I stated this entire Table A is merely
copied from Plaintiff's Exhibit 1—in that first column
Mr. Sloan starts off with a statement that the cost level of
material on June 30, 1923, was 151.86 per cent higher than it
was during the period from August 1, to December 31, 1911.

In the second line it says that the cost of labor in 1923 was 70.06 higher than it was in 1911. The third and fourth lines are his proportions of the material and labor, purporting to show that in 1911, of the total cost of this plant constructed during that year, 47.4 per cent was material, and 52.6 per cent was labor.

In the next two lines he has multiplied his material index by his per cent of total cost-material, arriving at a figure

of 71.98, which he designates in Plaintiff's Exhibit No. 1 as a composite per cent—material. Similarly he mul-
3909 tiplies 70.06 in the second line, by 52.6 in the fourth line, and arrives at 36.85 in the sixth line, which he designates as "composite per cent—labor." Adding those last two lines he gets a total of 108.83 which purports to mean that the cost level of this plant Exchange Pole Lines on June 30, 1923, was 108.83 per cent higher than it was during the period from August 1st to December 31st, 1911. The other years shown are worked out in the same way from Mr. Sloan's per cent of increase on June 30, 1923, as compared with each of the preceding years in respect first to material, and then to labor; then his proportions of material and labor during each of those years; then his composite per cents; and the total, which is the sum of the composite per cents.

In Tables B, C and D of Exhibit X-2, I have not used any data other than that contained in Plaintiff's Exhibit No. 1. For the purpose of this computation I have made these assumptions:

3910 First, that Mr. Sloan's percentages of increase in material and labor cost on June 30, 1923, over each of the previous years as shown in the first two lines of Table A, fairly represent the actual changes in these costs from 1911 to June 30, 1923. In other words, that they are correct for the purpose for which they were used in his appraisal.

Second, that the items and quantities which he used as weighting factors in arriving at his percentages of increase of material cost and labor cost, are sufficiently representative to avoid any substantial error resulting from the use he has made of them. He used, you will recall, a fixed weighting of material, purporting to be a representative cross section of the total plant in service on June 30, 1923, and used that fixed weighting in computing his material index. He also used a fixed weighting in computing his labor index, the weighting in that case being what he referred to as a typical gang.

Third, I have made the same assumption that Mr. Sloan did, that any effect of a change or improvement in labor efficiency, labor performance, output per man hour—(all of those terms have been used in the record), was negligible on the result. That refers to his discussion of the matter in 1 Abstract 63 and 64. 3911

My fourth assumption was that Mr. Sloan's proportions of material and labor which are shown on the third and fourth lines of Table A in Defendants' Exhibit X-2, for the first six months of 1923, do in fact represent the Company's actual experience in that respect during the six-month period. In computing the Tables B, C and D, I have used one rather fundamental mathematical principle, in addition to the assumptions just referred to. It is this, that when you are combining two or more related series of index numbers by percentages which represent the relationship between them, there is a very definite mathematical relationship between the trends of the various index series which we are combining and the percentages or proportions by which we combine them. Mr. Sloan's method disregarded that principle, but I have used it here. I have discussed that 3912 assumption in Volume 2 of Record 74 and 55. Exhibit X-2 measures the extent of the error into which Mr. Sloan has fallen in his index of Pole Lines Cost, by reason of his disregard of the fundamental mathematical principle which I just stated, on the basis of the data and assumptions which I have also stated.

Beyond the assumptions which I have made, there is nothing else involved, except simple arithmetic which can be readily checked by anyone.

3913 Looking first at Table C, the first line designated Material Cost of Typical Plant, is taken directly from Plaintiff's Exhibit No. 1, pages 120 and 121, and shows the figures from which Mr. Sloan computed the percentages of increase in material cost which are used in the first line, which I have copied as Table A of this Exhibit.

I might say that on pages 120 and 121 of Plaintiff's Exhibit Number 1, Mr. Sloan computes his material index directly from the figures shown here. Plaintiff's Exhibit Number 1 does not give the corresponding labor costs of this typical plant, but does give data from which they can readily be computed, and that is the next step, for which Table B furnishes the starting point.

In Table B I have set down in the first line the average material cost of the typical plant during the first six months of 1923, as shown in Plaintiff's Exhibit Number 1. That figure is of course the same as the corresponding figure to which I have just referred in the same column of Table C.

Going back to Table A, in the third and fourth lines Mr. Sloan stated that during the period from January 1 to June 30, 1923, material comprised 28.6 per cent of the total
3914 cost and labor comprised 71.4 per cent. Now that means, suppose we are building $100 worth of plant; that means that on the average out of that $100 worth of plant, $28.60 represents material and $71.40 represents labor. Dividing the $71.40 worth of labor by the $28.60 worth of material, we find that the labor cost was 249.65 per cent of the material; and I have put down this percentage in the second line on Table B. If the material cost of the typical plant during this six months' period was $1,497.21 as computed by Mr. Sloan, and if during that six months' period the labor of placing it cost 249.65 per cent of the material, then the labor cost for the typical plant during that period was $3,737.78, as shown on the third line of Table B; and the total cost was the sum of these, or $5,234.99 as shown in the fourth line of Table B.

These figures are then carried down to Table C, where they appear in the 1923 column, and form the starting point of that table. The percentage of total cost of material, and of total cost of labor, shown for this period in Table C, which would be 28.6 and 71.4, respectively, are of course the same as those in Table A. In that portion of Plaintiff's Exhibit Number 1 which is reproduced in Table A of
3915 Plaintiff's Exhibit X-2 Mr. Sloan purports to show that the labor cost in Exchange Pole Line account was .01 per cent higher on June 30th, 1923, than during the first six months of that year. That is shown on the second line, in the last column of Table A.

I therefore added .01 per cent to the labor cost of the typical plant during the six months' period as shown on the second line of Table C, and arrived at $3,738.15 as the labor cost of the typical plant on June 30th, 1923, as shown in the last column of Table C. From this point I worked the second line of Table C back through the years by applying to the labor cost as of June 30, 1923, which I have just quoted, the percentages of increase shown in the second line of Table A. If, as shown in Table A, the labor cost on June 30th, 1923 was 1.78 per cent lower than it was in 1922, that gives us $3,805.89 in 1922, as shown on the second line of Table C for the year 1922. If it was 7.93 per cent lower on June 30th, 1923, than it was during the year 1921, then the labor cost in 1921 becomes $4,060.12 as shown in Table C for that year, and so on.

3916 Going back, for example, to 1911, the labor cost since Plaintiff's Exhibit Number 1 says that the labor cost on June 30, 1923, was 70.06 per cent higher than it was in 1911, then applying that percentage to the figure which I have developed in Table C for 1923, gives me $2,198.14 as the labor cost of this typical plant during 1911.

The labor costs shown on Line 2 of Table C were all worked out in that way from the June 30th, 1923 labor cost in that table, by applying the percentages of increase in labor cost which are shown on the second line of Table A. The material cost of the typical plant as shown in Line 1 of Table C, which, as I have stated, I copied from Plaintiff's Exhibit Number 1, and the corresponding labor cost in the second line of Table C, developed as I have just described, were then added to get the total cost in the third line of Table C, and the proportions of material and labor which enter into that total each year were computed on the fourth and fifth lines of Table C.

If for example in 1911 the material cost of the typical plant was $635.08 as shown in the first line of Table C, and the labor cost of that plant was, $2,198.14 as shown in the 3917 second line of Table C, then the total cost of the typical plant during 1911 was $2,833.22, and obviously of that amount 22.4 per cent was material and 77.6 per cent was labor.

In 1912, making the same computations, we find that 23.9 per cent of the total was for material, the total being $2,885.48, and the material factor being $690.06; and 76.1 per cent, or $2,195.42 for labor.

The proportions of material and labor on X-2 differ very substantially from those used in Plaintiff's Exhibit 1. They show a much flatter trend. I might be more specific in saying that in 1923 of course they are the same, because

that is the point we start from; but in 1921 they dif-
3918 fer slightly. In 1922 they differ slightly, but as we go
back through the years, the difference becomes substan-
tial and erratic.

Table D is merely a recomputation of Table A, made by substituting the proportions of material and labor, which were developed as I have just described in Table C, for those proportions which are used in Table A.

I might say that of course the differences between the totals shown in Table C and those in Table A are due entirely to the differences between the proportions of the material and labor which I have just described. In the last line of the Exhibit, I compare those totals by dividing the totals shown in Table A, by the totals shown in Table D, and measure the extent of the error in each year in that way.

"Q. Now, Mr. Cummings, looking at the last line of De-
fendants' Exhibit X 2, is there any evidence of the com-
3919 pensating errors to which Mr. Sloan testified, in the—
at the present hearings to the effect that while his
method might produce errors in a given year, there would be
compensating errors in the opposite ~~direction~~ direction in other years,
so that the over-all result would be substantially correct?

Mr. Thompson: I object to the question. It seems to me that it again asks this witness to argue the effect of Mr. Sloan's testimony.

Judge Wilkerson: Well, he is in a sense an expert.

Mr. Thompson: Oh, yes.

Judge Wilkerson: Why not take his answer for what it is worth, and Mr. Goldstein may make his argument from it. I cannot see that the statement of the witness even under oath, amounts to more than your argument as counsel in the case. But if it will be convenient for you to have his answer in the record, you may proceed.

Mr. Thompson: Your Honor, there would not be any
3920 trouble if this were just a question or two, but it is per-
fectly obvious that all of Mr. Cummings' testimony, or
substantially all of it, is built up on an argument as to the
correctness of Mr. Sloan's testimony. Now, of course, that
is perfectly—

Mr. Goldstein: We are trying to test his testimony by figures, and the court will never be able to get the figures without the testimony.

Judge Wilkerson: You have the exhibit here, and you may have the witness explain the computations that he made, and if the method that he used is different from the method employed by Mr. Sloan, the witness may state the contrary. But as to the conclusions, I expect you will have to argue that; you will have to draw the conclusions. It is perfectly proper for him, however, to state the method which he used, to state whether it is different from the method employed by Mr. Sloan, and to state what the difference is, that leads to the result; but when it comes to the argument, whether his method is correct, or the testimony of the preceding witness is correct, is another thing."

3921 The range of error is all positive, starting at 1911, ranging from a maximum of 35.31 per cent in 1919, to a minimum of .18 per cent in 1921; and if we go back to 1922, I find a small negative error amounting to 3.69 per cent. During the first eleven years the errors are all positive, and in the twelfth year it becomes negative to the extent of 3.69 per cent.

In Defendants' Exhibit X-2, I have assumed the correctness of Mr. Sloan's percentages of increase in material cost and labor. I assumed the correctness of his assumption that any changes in labor efficiency or output per man hour would have a negligible effect on his results. In City's Exhibit 95, I made a computation measuring the material index in terms of labor index, and the proportion of the material index. I have
3922 made a check in connection with the present hearings of the three accounts of Exchange Pole Lines, Exchange Aerial Cable and Exchange Underground Cable covering the years 1921, 1922, and the first six months of 1923.

In that check we tabulated all of the charges to those three accounts during that period, under both specific and routine estimates. On the estimate ledger sheets those charges are separated into material, supply expense, labor, overhead expense, Stable & Garage, and sundry disbursements. I am referring there to the estimate ledger sheet which is I believe S. X.—298—as I remember the form number. Other forms have been used from time to time that serve the same purpose, but differing in detail. There is a similar separation in whatever form has been used.

We totaled all of the charges under each of the headings in each account for each year, and found that by taking Material plus Supply Expense as the material factor, and the sum
of all the others as the labor factor, we arrived at prac-
3923 tically the same proportions of material and labor in
each instance as those shown in Plaintiff's Exhibit Number 1; while any other possible combination gave substantially different proportions. That told us that Mr. Sloan had developed his proportions of material and labor in that way, and that was later confirmed on cross-examining him.

The overhead column on the estimate ledger sheet includes not only the charges for plant supervision and tool expense, which Mr. Sloan has included in the computation of his labor index, but also general expense charged to construction as well as engineering; neither of which was included in his labor index.

The substantial charges included in the columns headed "Stable & Garage" and "Sundry Disbursements" do not enter at all into his computation of the labor index, although they do enter into his percentages, his proportions of material and labor.

I have computed from City's Exhibit Number 2, which was prepared by the company at the request of the City, the over-
head charges during the period from 1911 to 1923. That
3924 exhibit shows that prior to 1920 the company did not
charge any general expense to construction, and that the engineering charges were much less prior to 1920 than they were subsequently. In 1911 the charges were: General, nothing; Engineering, 1.86 per cent; total, 1.86 per cent. In 1912, General, nothing; Engineering, 1.27 per cent; total, 1.27 per cent.

In 1913: General, nothing; Engineering, 1.55 per cent; total, 1.55 per cent.

In 1914: General, nothing; Engineering, 1.74 per cent; total, 1.74 per cent.

In 1915: General, nothing; Engineering, 2.58 per cent; total, 2.58 per cent.

In 1916: General, nothing; Engineering, 2.20 per cent; total, 2.20 per cent.

In 1917: General, nothing; Engineering, 1.60 per cent; total, 1.60 per cent.

In 1918: General, nothing; Engineering, 2.89 per cent; total, 2.89 per cent.

3925 In 1919: General, nothing; Engineering, 2.56 per cent; total, 2.56 per cent.

In 1920 we have the first appearance of General, which in that year was .36 per cent; Engineering increased to 4.84 per cent, giving a total of 5.20.

In 1921: General, .54 per cent; Engineering, 3.94 per cent; total, 4.48 per cent.

In 1922: General, .56 per cent; Engineering, 4.12 per cent; total, 4.68 per cent.

From January to June, 1923: General is .63 per cent; Engineering, 4.48 per cent; total, 5.11 per cent.

The overheads which I have just quoted show a marked increase in 1918 and in 1920.

There are similar increases in Mr. Sloan's proportion of material in the total as shown in Table A of Defendants' Exhibit X-2, and also in Plaintiff's Exhibit Number 1.

The overheads which I have just quoted increased 81
3926 per cent in 1918 over 1917, and in 1920, due largely to
the inclusion for the first time of General Expense, they increased 103 per cent. Mr. Sloan's per cent that labor was of the total, did not increase just those percentages of course, but showed substantial increases in each of those two years.

I have studies bearing on labor efficiency. Exhibit X-3, entitled "Productivity of Labor," was compiled under my direction and supervision from sources with which I was personally familiar. The sources were copies of the Monthly Labor Review, which is published monthly by the United States Department of Labor. The issues from which these figures were compiled are shown in each case. I have
3927 included in this exhibit all such studies made by the
U. S. Department of Labor in recent years which were sufficiently complete to give a comprehensive picture.

In many cases these figures were copied directly from the Labor Review; in some cases it was necessary to compute the index from published data. Where they would show, for example, output per man hour in different years, without showing the index, in that case we had to compute the index. In some cases we had to change the base year to facilitate the comparison. Where there were such computations they will be evident from a comparison of this exhibit with the Labor Review. These studies cover many lines of industry — they cover a very broad field. To me they give a very representative picture.

Aside from the studies by the Department of Labor, the increased output per man has been discussed in this case by
Mr. Gherardi, in the New York depositions. It has be-
3928 come a factor in recent economic discussions.

3930 As I stated in describing Table A of Defendants' Ex-
hibit X-2, the method used by Mr. Sloan to insure im-
provement in labor output per man hour was adequately re-
flected in his result to combine his labor and mate-
3931 rial indices by means of proportions of material and
labor which purported to represent the actual propor-
tions found in the Company's construction experience of each
year.

3932 By using the proportions of material and labor which
the company found in its experience each year, his pur-
pose as I understood it was, among other things, to reflect
the labor performance of each year by means of these propor-
tions. Actually from a mathematical standpoint I do not think
it produced that result.

3933 My reasons for that conclusion are as follows:

Mr. Sloan sets up a material and a labor index, and combines them by these percentages to which I have referred, that purport to represent the respective proportions of material and labor found in the company's experience each year. What he actually does of course is to multiply the material index by the percentage that material is of the total and multiply the labor index by the percentage that labor is of the total, and then adds the results to obtain the composite indices, which he applies to the book cost.

Now, suppose, for example, to see how it works out, that in the base year, when both indices are 100, the proportions of material and labor are fifty and fifty. His composite would of course be 100, because he would take 50 per cent of 100 as the material factor, and 50 per cent of 100 as the labor factor, and adding those two together gives a composite of 100. Suppose that in the next year material costs and 3934 wage levels do not change, but that by reason of improved labor productivity, or for any other reason, the labor cost became 45 per cent of the total. Now, the percentages of course must add up to a total of 100 per cent, so if the labor cost becomes 45 per cent of the total, due to improvement in labor performance or for any other reason other than that of wage levels, the material cost would then become 55 per cent of the total.

Mr. Sloan would then take 55 per cent of 100 as representing the material factor and 45 per cent of 100 as representing the labor factor, and his composite would still be one hundred, and it would show no change in construction cost level, in spite of the fact that labor cost had actually dropped, while material costs had not changed.

In other words, whenever the proportions of material and labor reflect a decrease in actual labor costs, from any cause other than that measured by Mr. Sloan's wage level index, while his method uses a smaller porportion of his labor index, it offsets the decrease by using a larger proportion of 3935 his material index, with the obvious result that it fails to measure the actual decrease in construction cost which in fact has occurred, due to improved labor efficiency or some other cause.

In the case which I have just cited, Mr. Sloan's method would exactly nullify the actual decrease in labor cost, in that it would give the same answer that he would get if there were no such decrease. That would not necessarily be the result in every instance, because the nature and extent of the error depend on the relationship between the trends of the material and labor indices and the proportions of material and labor.

If, for example, his material index went up, and his labor or wage level index went down, while the proportions of mate-

rial and labor showed that there was a further decrease in actual labor cost, due to increased efficiency, or any other cause besides the decrease in wage levels, then his method would not only fail to reflect any of the further decrease in actual labor cost, but would even neutralize part of the decrease in wage levels, because since the proportion of material has in-
3936 creased as a result of the further decrease in actual labor
cost, he would add into his composite a correspondingly larger part of his increased material index, making his answer actually larger than it would have been if there were no decrease in labor cost other than that measured by his wage level index.

His error does not bear any definite relation to any change in labor cost other than that measured by his wage level index.

In the making of index numbers, according to the general practice, we very often combine two or more series of index numbers into a composite by means of percentages in a quite similar manner to that which Mr. Sloan used in this case. We do that where one of two conditions is met, and only where one of those conditions is met. Either the cost indices and the weighting percentages must both reflect completely the same changes in conditions, in other words, must be consistent with each other, or else there must be no causal relationship between them.

I have discussed the first condition at some length in
3937 my testimony in the previous hearings, and touched
upon it here, and have shown that it is not met in Mr. Sloan's figures.

As an illustration of the second, which is perhaps more often found, suppose that I am manufacturing telephone cables, and want to know the composite metal price index, which affects my cost. Suppose further that the demand last year was wholly for 51 pair cable in which lead is an important factor, while this year the demand is for 600 or 900 pair, in which copper is more important. The proportions of copper and lead which enter into my manufacturing cost are quite different in the two years, but these proportions, which result entirely from the nature of the demands for cable, are not affected by changes in price level of the two metals, and would properly be used to weight the price indices of copper and lead into the composite which measures the change in the metal cost.

It is only where, as in the present instance, the proportions between the two factors, such as material and labor, are directly affected by changes in the cost indices of those factors, and where such changes are not reflected with an equal 3938 degree of completeness in the cost indices on the one hand, and in the proportions between them on the other hand; that this method of compositing indices leads to error. I have made a computation from Plaintiff's Exhibit 1 which illustrates his failure to reflect an actual decrease in labor cost. Exhibit X 4, entitled "Table to Illustrate That Reduction of Labor Cost from any cause is not fully reflected in Plaintiff's Exhibit 1," is that computation.

Exhibit X 4 relates only to the years 1922 and 1923, and to the Exchange Pole Line account. All of the data used are taken from Plaintiff's Exhibit Number 1. These data 3939 include the material cost of typical plant. I am discussing now the sources of the figures, and what the figures show in X 4.

These data include the material cost of the typical plant shown on Line 1 of Defendants' Exhibit X-4, which is taken from page 121 of Plaintiff's Exhibit Number 1; the labor costs of the typical gang, on Line 2, which is taken from page 132 of Plaintiff's Exhibit Number 1; and the proportions of material and labor on Lines 5 and 6, which are taken from page 115 of Plaintiff's Exhibit Number 1.

Using 1922 as a base, and the material and labor costs shown on lines 1 and 2, I have computed the material and labor indices as shown on lines 3 and 4. It will be noted that the material and labor indices go in opposite directions; the material index going up from 100 to 105.55, while the labor index goes down from 100 to 98.21—which is one reason I selected these two years for the test, because I wanted to get an actual illustration of the principle that I have just been discussing.

Looking first at the computations under the heading 3940 "W. F. Sloan," I have composited the material and labor indices by Mr. Sloan's method, multiplying line 3 by line 5 to get line 10, which he designates as Composite Percent Material; multiplying line 4 by line 6 to get line 11, for the composite per cent of labor; and then adding lines 10 and 11 to get the total or composite index of line 12, on the last line.

This is the method used in Plaintiff's Exhibit Number 1, and results in an index which purports to show that the level of Pole Line Construction Cost was slightly higher in 1923 than in 1922, since it goes up from 100 in 1922 to 100.31 in 1923, a result which agrees with that shown in the first table on page 115 of Plaintiff's Exhibit Number 1—which I copied as Table A of Defendants' Exhibit X-2.

In that table Mr. Sloan states that the cost level on June 30, 1923, was 2.09 per cent higher than in 1922, but only 1.96 per cent higher than in 1923, indicating that the cost level was slightly higher in 1923 than in 1922.

3941 In the second computation under the heading "J. G. Wray & Company," I started with the same material cost and the same proportions of material and labor as before, but to avoid any possibility of falling into an error similar to that of Mr. Sloan, I used an entirely different method.

Looking first at the proportions of material and labor—if in 1922 the material cost is 26.6 per cent, and the labor cost is 73.4 per cent of the total as shown on lines 5 and 6, then obviously the labor cost in that year is 73.4 divided by 26.6, or 275.93 per cent of the material cost as shown on line 7.

If the material cost in that year is $1,418.43, as shown in the first line, then the cost of the labor required to place it is 275.93 per cent of $1,418.43, or is $3,913.87, as shown on line 8. Adding that labor cost to the material cost in the first line gives a total cost of the typical plant in 1922 of $5,332.30 as shown in line 9. Making the same computation for 1923 we find that in that year the labor cost is 249.65 per cent of the material cost, or $3,737.78; and the material cost shown in the first line is $1,497.21; so adding the material cost to the labor cost, we find the total cost to be $5,234.99 as shown in line 9.

3942 Dividing this by the corresponding total of $5,332.30 shown for 1922 gives the index shown on the last line; and we find that instead of being higher, as indicated by Mr.

Sloan's method, the construction cost level as measured by his data on lines 4, 5 and 6 was actually lower by about 2 per cent in 1923 than it was in 1922. Mr. Sloan's method shows an increased cost in 1923, instead of a decreased cost, as shown by my method, for the reasons outlined in my discussion of the hypothetical case a few minutes ago; the decrease in the labor cost beyond that measured by the wage level index merely results under Mr. Sloan's method in using a larger proportion of his increased material index.

In the present instance, as in my hypothetical illustration of the principles involved, the changes in the proportions of labor and material from the first year to the second, indicate that there is a decrease in labor cost over and above that shown by the wage level index which Mr. Sloan has used. That further decrease may have been due to increased efficiency,
or some other cause, but whatever it was, Mr. Sloan's
3913 method not only failed completely to measure it, but
even increased the apparent cost level above that which would have resulted if there had been no such further decrease in labor cost.

Defendants' Exhibit X-5 entitled "Comparison of gang make-ups as of June 30th, 1923, used in Plaintiff's Exhibits Numbers 1 and A-2" was prepared under my supervision. It shows the substantial differences between the typical gang make-ups used by Mr. Sloan in Plaintiff's Exhibit Number 1, covering the period prior to June 30th, 1923, and in Plaintiff's Exhibit A-2, and with one or two minor exceptions, in all of the subsequent exhibits from A-3 to A-10, inclusive, covering the period subsequent to June 30, 1923.

In Pole Lines he has used the same gang in both periods.
For Aerial Cable he has used the same placing gang,
3914 has increased the splicing gang very substantially,
more than doubled it. For Exchange Aerial Wire he has cut down the number of men in the gang from 8 to 1, changing the composition entirely.

For Exchange Underground Conduit he has changed the composition of the gang substantially, and especially by increasing the number of common laborers from 30 to 50, increasing the total size of the gang from 33 to 56.

3945 In exchange underground cable, there are similar differences. I would simply say that if the gang make-ups used in Plaintiff's Exhibit No. 1 were typical of the company's experience on June 30, 1923, then the gang make-ups used in Plaintiff's Exhibit A-2 could not very well be representative of the company's experience on July 1st.

In the last two columns of Exhibit X-5, I have reduced the gang make-ups to percentages of the total gang in order to bring out the differences in weighting. In the case of pole lines, of course, the last two columns show the same percentages. In the case of all of the others, the percentages are very different. In the case of aerial cable, for example, in Plaintiff's Exhibit No. 1, the line foreman is 9.8 per cent of the total, while in Plaintinff's Exhibit A-2 that drops to 6.35 per cent of the total. In Plaintiff's Exhibit No. 1, linemen constitute 29.42 per cent of the total. In Exhibit A-2 they constitute only 19.05 per cent of the total. And similar differences run throughout. The difference is most marked, 3946 of course, in the case of aerial wire, where all the workmen shown on Plaintiff's Exhibit No. 1 are dropped out except the line installers. When you get into Exhibit No. 1, the line installers amount to 25 per cent of the total gang, and in Exhibit A-2, amount to 100 per cent.

3947 I do not think either of these gang set-ups is representative of the company's experience in 1923. For my reasons, I really have to refer to Mr. Sloan's testimony.

3948 Mr. Sloan described in the present hearings how he arrived at his typical gang make-up. He said that in 1911 there were a certain number of foremen on the payroll, a certain number of linemen and so on through the various classes of labor, giving the figures in each case. In 1912, the number—he also gave the figures, which were different from those in 1911; he gave them in each year. Then he testified that the average of all these figures for the entire period was substantially the typical gang make-up which he used in his pole line account, for placing aerial cable and stringing aerial wire. His testimony in respect to his subsequent exhibits, A-2 to A-10, was along similar lines, as I recall it. He testified in connection with Plaintiff's Exhibit No. 1 that in giving these figures, they showed, of course, that the actual compositions varied substantially through the years, but he had used an average.

He testified further that in doing that, he had not taken any account of what accounts these foremen, linemen, ground men and other workmen were actually charged to, 3949 whether they were charged to pole construction, aerial cable or whatnot, or even whether they were charged to construction or to maintenance.

Without knowing how these men were actually charged, I would hardly venture to set up a typical gang on the basis of the total workmen of each class.

Since the former trial, I have been able to make a check of the results obtained by Mr. Sloan in Plaintiff's Exhibit No. 50, method No. 4. I made that study from the company's actual construction records. Defendants' Exhibit X-6, which is entitled, "Comparison between company experience and Plaintiff's Exhibit 1" was prepared under my direction.

3950 Page 1 of Defendants' Exhibit X-6 is comparable to method No. 4 of Plaintiff's Exhibit No. 60, except that I have shown the results separately by years instead of in total for the entire period, as Mr. Sloan did in Plaintiff's Exhibit 50.

In Plaintiff's Exhibit 50, Mr. Sloan sets up four methods, one, two, three and four, of which four appeared to me the most complete, and was the one I checked in this instance. And, with the exception of separating it by years, I have followed the set-up here that Mr. Sloan used in that instance. I have used the same plant accounts, the same period, except that I did not include the year 1920. Mr. Sloan made his study covering the period from January 1, 1920, to June 30, 1923.

3951 I might qualify that last statement: I believe he used some annual figures for 1923 as a matter of convenience. I did not include 1920 in this study, because the company did not use the estimate ledger sheet, on which the expenditures are all drawn together, until 1921, and while we exam[illegible]ed the 1920 data, we found it scattered through detailed re[illegible]rds in a way which made any summarization of it eleven years later difficult and uncertain. I had varying numbers of people working on this study. I would say that it took about three months' full time, of myself and assistants.

Looking at line 1 of this table, account 241, exchange pole lines, for the year 1921, the figures shown as total gross additions, June 30, 1923, levels, appraisal method, are $81,843.23.

This figure, which I have computed on page 6 of this 3952 exhibit, is the same as that shown on page 15 of Plaintiff's Exhibit No. 1, except that Mr. Sloan dropped the cents in that case. It is the result of applying Mr. Sloan's factor to the actual book cost of gross additions, in order to adjust it to the cost level of June 30, 1923. When I say actual book cost, I mean as those book costs are set up in Plaintiff's Exhibit No. 1, which I assume to represent the facts.

In the next column, headed "Company experience," I show $74,173.42, which is the result of applying to that same book figure of gross additions a factor which I have derived from my study of the company's actual experience, as disclosed by its construction records, in order to adjust the book figure to the cost level of June 30, 1923.

In the first column, and that again corresponds to the similar column in method No. 4 of Plaintiff's Exhibit 50, Mr. Sloan uses there the heading, "Appraisal method," which is the same heading I have used for the first column here, and for the second column he used the heading "Method No. 4," where I use the heading "Company experience."

3953 In the last column he shows the percentage that one is of the other, "per cent of appraisal method." I have used that same heading, and made the same kind of comparison, and by doing that I show that, taking the company's actual construction experience as a basis, the 1921 gross additions to the pole line account after adjustment to the cost level of June 30, 1923, are 90.63 per cent of the amount shown in Plaintiff's Exhibit No. 1. The amount shown in Plaintiff's Exhibit No. 1, of course, is carried forward as I previously testified into Plaintiff's Exhibits A-2 to A-10, inclusive. Similarly, the second line shows that for aerial cable additions during 1921, we can justify from the company's experience only 88.43 per cent of the figure used by Mr. Sloan. The third line shows 94.92 per cent of the figure used by Mr. Sloan 3954 for underground cable. And the fourth line shows for all three accounts as a whole, that on the basis of the company's experience, we could justify only 93.77 per cent of the figure arrived at by Mr. Sloan in Plaintiff's Exhibit No. 1.

The differences between these figures and 100 per cent—these differences ranging from 5.08 per cent to 11.57 per cent, are comparable with Mr. Sloan's figure of 2 per cent, which he testified was the maximum difference which his tests disclosed for any one year. The remainder of the table is worked out in the same way, and makes similar comparisons for the year 1922 and the first six months of 1923.

In each case, the figures shown in the column headed "Appraisal method," agree with those given in Plaintiff's Exhibit No. 1, and included in all of Mr. Sloan's appraisals for subsequent years. Those in the column headed "Company Experience" are based on the company's records of actual construction.

3955 These charts, which comprise the next four pages of Defendants' Exhibit X-6, are plotted from the percentages on page 1. Page 2 of the exhibit, the first chart, shows the pole lines; page 3, aerial cable; page 4, underground cable, and page 5, the composite of the percentages for the three accounts. The purpose of these charts is to bring out the definite trend away from the base point of June 30, 1923. It is obvious that since the first six months of 1923 terminated at the base point of June 30, 1923, there is room for but little difference during that period, while as we go farther from that base, there is room for more difference, and these charts show that the differences between Mr. Sloan's appraisal figures and those based upon the company's experience, do in fact increase rapidly, as we go farther from the base point of June 30, 1923.'

I do not know, of course, what the difference might amount to in other years, but the trend here is, I think, quite definite.

The pages which follow the charts consist of tables which are virtually working papers supporting the table on 3956 page 1. Page 6, for example, shows the derivation of the figures for pole lines on page 1, and also affords a comparison between the per cent increase, June 30, 1923, and previous periods as developed from the company's experience and as used in Plaintiff's Exhibit No. 1.

As I stated, the figures on the first line are taken from Plaintiff's Exhibit No. 1, where they appear on page 15, and there they purport to be the gross additions in account 241, exchange pole lines, during 1921, 1922 and the first six months of 1923, and the total figure. The figures for the total period, of course, do not appear in Plaintiff's Exhibit 1, but are simply the result of my adding those three figures. To these figures of gross additions are applied the percentages of increase shown immediately below to adjust them to the level of June 30, 1930, as shown at the bottom of the table and as carried forward on page 1.

For example, looking back on page 1, account 241, ex-
3957 change pole lines, shows appraisal method $81,843.23,
and that figure may be found on page 6, the third line of figures from the bottom, where it is the result of applying Mr. Sloan's percentage shown on the third line of figures, of 5.99 to the gross additions shown on the first line, of $87,058.

Similarly the figure in the second column on page 1 of $74,173.42, may be found on page 6, on the fourth line of figures from the bottom where it is the result of applying the percentage shown on the second line of figures, a decrease of 14.80 per cent to these same gross additions. And the same applies, of course, to the figures for the other years, 1922 and 1923.

A comparison between the percentages, as shown on the second and third line of figures on page 6, shows that in
3958 1921 the company's experience indicates, as I just stated,
a decrease of 14.80 per cent to the level of June 30, 1923, while Mr. Sloan used a decrease of only 5.99 per cent. Therefore, the actual decrease, as we found it from the company's experience, was 2½ times as great as that used by Mr. Sloan in his appraisal.

In 1922 the company's experience indicates a decrease of 5.69 per cent, while Mr. Sloan used an increase of 2.09 per cent. In the first half of 1923, the company's experience indicates an increase of .23 per cent, or 23/100 of one per cent, while Mr. Sloan used an increase of 1.96 per cent. For the entire two and one-half year period, as shown in the last column, the company's experience indicates a composite decrease of 5.90 per cent, while Mr. Sloan used an increase of .39 of 1 per cent.

The next computation shows the amount of increase or decrease. Where it was decrease, I have shown it in the exhibit by bracketing. I am now discussing lines 4 and 5.

3959 By the way, I just noticed that the first amount of increase shown in 1921 as company experience, the second half of the bracket was omitted, at least in my copy. I do not know whether it was in the other copies or not. That was, of course, a decrease, and should have been bracketed.

The amounts shown there are arrived at by applying the percentages shown in lines 2 and 3 to the gross additions shown in line 1. The differences between the amounts of increase or decrease resulting from the application of the two sets of percentages are, of course, substantial, as shown in the line marked "differences." In the case of line 6, in 1923, for example, the difference is shown as $2,055.48, which is about 7½ times the actual increase, as shown on line 4. The gross additions, at level of June 30, 1923, are shown on the third and fourth lines from the bottom. To obtain these figures I merely subtracted the amount of increase or decrease which I just discussed from the gross additions in the first line.

The differences shown between the two sets of figures, those based on company experience, and those used by Mr. Sloan in Plaintiff's Exhibit No. 1, I think are indicative of the error in Mr. Sloan's appraisal of this account for the years shown in this table. What his error would be in other years, of course, I do not know. But when the differences are expressed as percentages in the last line of the table, they show, of course, the same increasing trend away from the base point of June 30, 1923, as was illustrated in the four charts which preceded this table. I am now referring to the percentages of ten and thirty-four one hundredths per cent in 1921, eight
3961 and twenty-five one-hundredths per cent in 1922 and one
and seventy-three one-hundredths per cent for the period January to June, 1923.

In developing percentages of increase of June 30, 1923, over the base periods, I have, like Mr. Sloan, developed separate percentages for material and labor, and have composited them in the same manner that he did, using his proportions of material and labor. This is shown for the pole line account on page 7, which is set up in the same form as the corresponding computation on page 115 of Plaintiff's Exhibit No. 1. The results shown on the last line of this table are, of course, the percentages of increase or decrease which are used in the table on page 6 of this exhibit.

The table on page 8 is set up in the same form and an-
3962 swers the same purpose as that on page 6, except that it relates to material costs only; the actual material costs shown in the first line are totaled from our working sheets, and which we copied from the company's construction records—the actual charges for material made on all estimates, both specific and routine during the year 1921, for the year 1922 and the first six months of 1923.

As in the similar comparison on page 6, the differences between the percentages of increase or decrease, which we developed from the company's experience, and those used by Mr. Sloan, are quite substantial. Those percentages are shown on the second and third lines of page 8. For 1921, for example, we find a decrease of 6.91 per cent, which is four times the decrease found by Mr. Sloan and used in his appraisal of 1.76 per cent, as shown on the third line. For 1922, his percentage of increase of 12.77 per cent is about 2½ times as great as that indicated by the company experience, which we
3963 show on the second line as 5.24 per cent. In 1923 his percentage of increase is nine times as great as ours, 6.83 per cent as compared with the company's experience as we found it on their construction records, or developed from their construction records, of 0.77 per cent. When I said nine times as great as ours, I meant nine times as great as I found the company's experience to be.

The percentages which we have set up here as representing the company's experience, are, of course, obtained from totals of detailed work-sheets, which are too voluminous to incorporate in an exhibit of this nature. They have, however, been made available to Mr. Sloan since the preparation of this exhibit, and have been examined by him and by his people.

Since the book costs are to be adjusted by these percentages to the level of June 30, 1923, the percentages should be
3964 on a basis comparable to the book costs; that is, they should measure the difference between the actual prices

at which the various items of material went on the books and the prices at which those same items could be purchased on June 30, 1923.

In measuring that difference, the first step is, of course, to set up a list of items and quantities. In Plaintiff's Exhibit No. 1, Mr. Sloan used what he claimed to be a representative cross-section of the total plant in each account as of June 30, 1923, and priced it out at the price levels of each year. In Plaintiff's Exhibit No. 50 he used an annual summary which was prepared by the company of the items added in each account, and I have examined that summary.

We went to the construction records and tabulated every item of material placed on each estimate. We did not use, for our purpose, any summaries, but took our figures in detail from the estimate ledger sheets, both specific and routine. After pulling off all the details and summarizing it, we
3965 then compared our totals with the same summary which Mr. Sloan had used, or a summary which was handed to us by the company and stated to be the one used by Mr. Sloan. I believe we did compare the totals of many of the figures in that summary, with Mr. Sloan's working sheets and verified them and found our totals were in substantial agreement.

On page 8 of Defendant's Exhibit X-6, I show the actual material cost in 1921 of $26,547.72. I have stated that that was the total that we found on the company's records. Following Mr. Sloan's example in Plaintiff's Exhibit No. 1, we have included in this figure the supply expense. Eliminating supply expense and taking the bare material figures, we found on the company's construction records, in the pole
3966 line account for 1921, a total of $23,909.82.

Comparing that with Mr. Sloan's work sheets, we found on there a total of $17,043, or 71.28 per cent of the amount that we found on the company's construction records. That is, Mr. Sloan used in his figures, 71.28 per cent of the amount which I found on the books of the company as representing the items for the year 1921. That is in account 241, exchange pole lines.

For 1921, in account 242, we found direct material charges amounting to $49,550.87. Mr. Sloan's work sheets showed

$34,337, or 69.3 per cent of the figure, of the total we found.

3967 For 1921, in account 245, we found $437,932.60, as compared with a total on Mr. Sloan's work sheets of $362,558, Mr. Sloan's figure being 82.79 per cent of what we found on the company's construction records.

In account 241 in the year 1922 we found on the company's construction records a total of $52,466.66 in direct material charges. On Mr. Sloan's work papers we found a total of $36,272, which is 69.13 per cent of the figure which we found on the company's records.

For the same year, 1922, in account 242, we found on the company's construction records direct material charges amounting to $125,234.32, as compared with a total on Mr. Sloan's work sheets of $98,224, Mr. Sloan's figure being 78.43 per cent of that which we found on the company's records.

For account 245, for the year 1922, we found on the company's construction records direct material charges
3968 which totaled up to $826,026.83 as compared with the total on Mr. Sloan's work paper of $753,524, Mr. Sloan's total being 91.22 per cent of that which we found on the company's construction records.

We made no comparison for the period January to June, 1923. We didn't make any because Mr. Sloan used the summaries for the entire year, while we pulled off from the construction records the detail for the first six months.

Q. Thus far you have been describing merely the question of what items you found on the books compared to what Mr. Sloan used as the representative cross-section of the company's experience? A. Not exactly as a representative cross section. Mr. Sloan's working sheets to which I referred were those underlying Plaintiff's Exhibit 50, and purported to represent the entire construction for this period.

3969 Having a list of the items which Mr. Sloan took from that annual summary, and which we compiled from the construction records, the next step is to price them out at the level of each year, and at the level of June 30, 1923.

In respect to the level of June 30th, there will be no difference, because on a given date there is a definite price in effect.

And, as a matter of fact, partly for convenience, and partly because I wanted to insure that we were on a comparable basis, we took nearly all of our June 30, 1923, prices from Mr. Sloan's records, going to the company only for such prices as Mr. Sloan did not have.

We took them in some instances from his working papers; in other instances, we computed them from the exhibit, but all of the figures which we used for June 30, 1923, except, as I say, for a few minor items, on which he did not have the prices, we took from Mr. Sloan's records, and, therefore, know that we have used the same figures for that date
3970 that he did. That is true of each of the three accounts.
And I so assured Mr. Sloan when he was going over our working papers.

Over any considerable period, such as a year, prices change substantially, and the manner in which the price for the period is computed may affect the result considerably, and here comes in the basic difference between Mr. Sloan's method and the one which I have followed in respect to material. Mr. Sloan has testified that he averaged the prices from the bills of each year. But, while that may give the average price paid during the year, that price is not necessarily the price at which the items went on the books, but very often is quite different.

In saying that it is quite different, I base that answer
3971 partly on what we found in this case, but also on what
I have found to be the case in other instances over a considerable period of years where I have made similar comparisons in the case of other companies.

I might illustrate one of the factors, and only one, in this way: Suppose that today I buy a thousand feet of cable, for which I paid $1 a foot, a total of $1,000. I would charge account 122, materials and supplies, with a thousand dollars. Tomorrow the price, we will assume, drops to 90 cents a foot, making the value of that reel of cable $900, but I still carry it in materials and supplies at $1,000, because that is the price that I paid for it.

Suppose we install that cable next week. At what price will it go into plant? In order to keep my supplies account straight, I must credit supplies with the $1,000 and in order

to keep my books in balance I must charge plant with that same amount of $1,000 even though the current price may be only $900. In practice, of course, it is not as simple
3972 as that. Many other complications enter into it. And the net effect of the lag that I have described and other complications, is that we very often find substantial differences between current prices and the prices at which the material items are credited to supplies and charged to plant.

These prices are often referred to as SN2 prices, and are the prices used in pricing out the material quantities on the estimate ledger sheets, because, necessarily, as I have stated, in order to keep your books in balance, you have to charge an item to plant at the same price with which you credited it to materials and supplies. And it is these SN2 prices, the prices with which the material items are charged to plant, that go on the books, and form the basis of the book costs, which in turn have formed the basis of Mr. Sloan's appraisal.

And since, as I have pointed out, the percentage of increase or decrease should be on the same basis as the book costs to which it is to be applied, in arriving at the actual
3973 material cost of each year, from which, by comparison with the June 30, 1923 level I derived my per cent of increase or decrease, I used the dollars which we found associated with the material items on the construction records; in other words, the dollars at which the items were on the books, as contrasted with Mr. Sloan's use of billing prices.

I did not use unit prices at all in pricing out the material. That is, Mr. Sloan used the billing prices, and assumed that those were the book costs, and I went to the records and actually found the book costs. Page 9 of Exhibit X-6 follows the same form as pages 6 and 8 and serves the same purpose in respect to labor costs. As in the case of material costs, the actual labor costs shown on the first line are summarized from the company's construction records. I stated that
3974 we added to the material cost, which we summarized from the construction records, the percentage of supply expense. We did the same thing in the case of labor costs; in order to make our results comparable with those shown in Plaintiff's Exhibit 1, we used Mr. Sloan's percentages for

plant supervision and tool expense, taking those percentages from page 143 of Plaintiff's Exhibit No. 1.

I have applied those percentages to the total direct labor cost in the same way that Mr. Sloan did on page 132 of Plaintiff's Exhibit No. 1. I did not personally check those percentages, but they have been put in the record in two different places and I accepted them for the purpose. They were afterwards put in the record by Mr. Turner, and I am familiar with the usual method of computing such percentages and assumed that they had made no mistake in their method or in their computation.

Referring to lines 2 and 3 on page 9, of Exhibit X-6, a comparison between the percentages of increase or decrease
on June 30, 1923 and the previous periods, as indicated
3975 by the company's experience with the corresponding
percentages used by Mr. Sloan leads to results similar to those which we found in the case of material which we previously have discussed, and also in the case of gross additions as shown on pages 6 and 8.

In 1921, in the pole line account, I found that the level of June 30, 1923 was 18.41 per cent lower than the level of 1921. That is computed from the company's construction records and, of course, represents their experience, with a single
modification, to which I will refer in the last column.
3976 The 18.41 per cent decrease in the pole line account for
the year 1921 compares with 7.93 per cent decrease which Mr. Sloan used in Plaintiff's Exhibit No. 1.

For the year 1922, we found a decrease of 9.65 per cent, as representing the company's experience, as compared with Mr. Sloan's decrease as shown in this Exhibit No. 1 of 1.78 per cent.

Now, in the case of 1923, I could not follow the same method that I did in 1921 and 1922. In fact, for 1923 I simply used Mr. Sloan's percentage, because labor cost levels, unlike material cost levels or wage levels, cannot be computed as of an instant date. The situation in that respect is the same as in the cases of supply expense and plant supervision and tool expense. In respect to these expenses, Mr. Sloan used 1923 averages in lieu of June 30, 1923 levels, because expenditures of that nature cannot be determined as of a given

3977 date, and neither can labor costs be determined as of
an instant date, for similar reasons.

I might have computed the 1923 average level and used that as Mr. Sloan used the 1923 average level for supply expense and plant supervision, but the difference in the result would have been too slight to justify such a study. It would have been quite an undertaking, and, therefore, I accepted his percentage of increase.

As to the rest of the table, my discussion would be similar to that for pages 6 and 8 of this exhibit. The last line shows that in 1921 the differences between the results indicated by the company's experience and those developed by Mr. Sloan amount to 12.84 per cent of the company's experience, in 1921, and 8.71 per cent in 1922. And these percentages
are quite indicative, I think of the error in Mr. Sloan's
3978 result in respect to labor costs in the exchange pole
line account during 1921 and 1922. That is, the error,
in 1921, amounted to 12.84 per cent of the company's entire
experience and in 1922 to 8.71 per cent.

In the case of labor costs, as in the case of material costs, our working papers, from which I computed the percentages of increase or decrease in labor costs, are rather voluminous, and they consist of tabulations in detail of the labor hours and labor dollars of each class of labor, which were charged to pole line construction on each estimate. In working from the detailed construction records of the company, we necessarily pulled off an enormous mass of detail in the way of labor hours and labor dollars. Those are all in our working papers and have been made available to Mr. Sloan since the preparation of this exhibit.

The basic principle is the same as that previously dis-
cussed in material costs, that since those percentages
3979 are to be used for adjusting book costs, they should be
determined from the charges which actually were on the
books, rather than from wage levels or any other assump-
tions.

The fundamental difference between Mr. Sloan's method and the one I have used in the preparation of this exhibit is that while my percentages for each account are computed from the charges which went to that account on the books, his

percentages were computed from the average wages of each class of workmen, as determined by a spot check of the payrolls at the end of each quarter. When I say spot check, I mean rather payrolls for the year, and he took the payrolls at the end of each quarter, which he considered gave him a representative cross section of the number of foremen, the number of linemen and so on, and the average wages of each class, without regard to which account these workmen
3980 may in fact have been charged to, or even whether they were engaged in construction or maintenance work. I did not determine the actual gang make up in any case.

Ordinarily, since specific estimates cover larger jobs than routine estimates, I would expect the composition of the gang to be somewhat different on the two classes of estimates, and I did find, in fact, that the costs per hour are different on the two. We worked up these costs per hour separately for the specific estimates and routine estimates and then combined the result because we found there was likely to be that difference in the composition of the gang.

We summarized the actual labor costs in each account for each year from the construction records of that account and added to it, as I stated, Mr. Sloan's loading for plant
3981 supervision and tool expense. For example, the 1921 figures of $16,997.17 shown in the first line on page 9 of Defendant's Exhibit X 6 comprises the following items: Specific estimates, direct labor costs, which we totaled from the company's construction records, $1,930.79. Plant supervision and tool expense at 10.9 per cent, which we took, as I stated, from page 143, I think, of Plaintiff's Exhibit 1. It amounts to $210.46, total specific $2,141.25. That is, out of the actual labor cost of $16,997.17, we found from the company's experience that there was included therein only $2,141.25 on specific estimates.

Under routine estimates we found direct labor cost amounting to $13,395.78. To this we added Mr. Sloan's percentage of plant supervision and tool expense at 10.9 per cent,
3982 giving us for the plant supervision, $1,460.14, or a total under routine estimates of $14,855.92, or a total for both specific and routine estimates of $16,997.17, which is the figure shown on page 9.

The labor hours associated with these direct labor charges were specific estimates (still referring to the year 1921) 1856 hours; routine estimates, 12,351 hours or a total of 14,207 hours. These 14,207 labor hours are the hours which actually cost the company in 1921, the amount which we show in the first column of $16,997.17. Those labor hours are associated with the dollars on the estimate ledgers, both the routine and the specific, in the quantities stated above.

To price these out at the level of June 30, 1923, I took first the nearest period to that date at which I could deter-
3983 mine the actual level which was the six months preceding that date. During those six months we found, and charged specific estimates in this account, 735 labor hours at a direct labor cost of $621.63, or an average of $0.8458 per hour. In pricing out these labor hours, we priced out separately the labor hours applicable to specific estimates and the labor hours applicable to the routine estimates. I am now describing how we priced out the specific estimate labor hours. I followed Mr. Sloan's estimate that the June 30, 1923 level was .01 of one per cent higher than the average for six months preceding that date. So, I have increased the cost per hour accordingly, raising it from the actual of the first six months of 1923, the actual of $0.8458 per hour to $0.8459 as the level of June 30, 1923.

3984 With respect to routine estimates for the six months preceding June 30, we found 24,941 hours charged to routine estimates at a cost of $22,686.97. Dividing one by the other we find the cost per hour to be 90.96 cents. Adjusting this to the June 30th level, by Mr. Sloan's .01 of one per cent, it becomes 90.97 cents. That is, the per hour cost as of the June 30th level for the routine estimates was .9097 as compared to .8459 for the specific estimates. We used, of course, the same classes of labor, same general classes, linemen and groundmen on both.

In pricing out the 1921 labor hours to June 30, 1923, I take up first the specific estimates. As I stated, we had in 1921 1,856 hours; multiplying that by the cost per hour at
3985 the level of June 30, 1923, which I think I have just given as $0.8459, gives us a direct labor cost for 1921 at the level of June 30, 1923 of $1,569.99. Now, in 1923 the plant supervision and tool expense, as shown by Plain-

tiff's Exhibit No. 1 and used in that exhibit, was 8.3 per cent. Applying that 8.3 per cent to the direct labor cost, we find the plant supervision and tool expense to be $130.31. Adding that to the direct labor cost gives us a total labor cost on specific estimates in 1921 at the cost level of June 30, 1923 amounting to $1700.30.

To arrive at the 1921 labor cost on routine estimates at the June 30, 1923 level, we followed the same method. We found as previously stated, 12,351 labor hours, which we priced out at the June 30, 1923 cost per hour of 90.97 cents, and arrived at a direct labor cost at the level of June 30, 1923 of $11,235.70, the plant supervision and tool expense at 8.3 per cent of this amounted to $932.56, giving a total labor cost under the routine estimates of $12,168.26.

2986 Adding that to the figure previously developed for specific estimates, gives us a total labor cost on specific and routine estimates combined for the year 1921 at the cost level of June 30, 1923 of $13,868.56. The actual labor cost for 1921 was, as stated, $16,997.17, and dividing the cost at the 1923 level by the actual cost at the 1921 level, we arrive at the decrease of 18.41 per cent, which is shown on the second line of page 9. We worked up the corresponding percentages for 1922 in the same way.

Pages 10, 11, 12 and 13, are set up in the same way as pages 6, 7, 8 and 9, and they give the same information with respect to account 242, exchange aerial cable. The sources of data used in pages 10, 11, 12 and 13 were the same, and the methods followed were the same as those which I have 2987 described in discussing the pole line account with one minor exception. That exception is this: Unlike the building of pole lines, the construction of aerial cable involves two distinct operations which are done by two different gangs. These operations are placing and splicing. The proportions between them vary widely in different years; the cost per labor hour is quite different in the two different gangs. For these reasons, a correct answer cannot be obtained with any method involving a fixed weighting between them, such as Mr. Sloan used in Plaintiff's Exhibit 1, and to avoid that error I have worked up the two operations of placing and splicing separately, using for each the same method, I have described in the case of pole line labor.

The percentage of decrease in labor cost for 1921 and 1922
as shown on pages 11 and 13 of this exhibit are composites,
weighted between placing and splicing on the basis of
3988 the actual labor hours charged for these two operations
on specific and on routine estimates appearing each
year. I have stated we pulled off from the estimate ledger sheets the detailed charges in dollars and hours by classes of labor. Now, the company uses a very elaborate classification of labor and we pulled that off in detail and then summarized them into the two broad groups, covering the splicing operation and the placing operation, which gave us the labor hours for each operation, and we weighted the placing and splicing results which we got on the basis of those actual hours.

For 1923 we made the same assumption as we did in the
case of pole lines, and used Mr. Sloan's percentage of in-
crease. Pages 14, 15, 16 and 17 (Exhibit X 6) account No.
245 "Exchange underground cable" are set up in the same
form and were worked out from similar data and by the same
methods as in the case of pole lines and aerial cable.
3989 The same separation was made between placing and
splicing labor costs and between routine and specific
estimates as in the case of aerial cable.

In this account we made one further refinement. The underground cable account includes, or did include during the period covered by this study, two sub-accounts, which at that time the company designated on its books as 5-C, which covered underground cable proper, and 35-C, which covered house cable or building cable.

There is a wide difference between the labor costs in the two sub-accounts, and there is also a wide difference between the respective proportions of these two sub-accounts in the total underground cable account.

I have some representative figures here. Six hundred pair
22 gauge cable, for example, is used largely on both codes
5-C and 35-C. On 5-C, as I expect to show in a later
3990 exhibit, the company required .5077 labor hours a foot,
while to place that same cable on code 35-C it required
1,1449 labor hours per foot, or 2¼ times as much labor to
place a foot of the 600 pair 22 gauge cable.

As to the proportions between the two; in 1921 code 5-C comprises 70.1 per cent of the total of the underground cable account, while in 1922 it comprised 77.1 per cent, 35-C, house cable, comprising the remainder of 29.9 per cent of the total in 1921 and 22.9 per cent of the total in 1922. The actual differences in the weighting as shown by these illustrations I have used in my study. Mr. Sloan made no allowance for those changes in weighting. That is, he made no allowance in weighting his per cent increase or decrease in labor costs in this account as shown on pages 135 to 138, inclusive, in Plaintiff's Exhibit 1. I gave full effect to that by working
up the two sub-accounts 5-C and 35-C, just described,
3991 separately. The percentage of decrease in 1921 and 1922
labor costs shown on pages 15 and 17 of this Exhibit
(X-6) are composites of the two sub-accounts weighted according to their respective proportions during each year.

For 1923 I used Mr. Sloan's ratio as I did in the case of pole line and aerial cable.

Apart from the overheads and the 1911 appraisal,
3992 all of Mr. Sloan's appraisals in this case consist of the
company's book costs, adjusted by the percentage factors I have been discussing. The book costs used by Mr. Sloan as a basis for his estimate of reproduction cost, reflect construction conditions which were different from those which would be encountered in reproducing the property, principally in this way. While in a reproduction estimate we would treat the construction of the property as a single large job, or a group of large jobs, with perhaps a few smaller jobs in isolated sections in the territory, the actual construction work which in total has produced the book costs, consist for the most part of relatively minor additions to existing plant. That affects the cost in two ways. First, in making additions to existing plant, it is necessary to take special precautions to avoid or at least to minimize interruptions to the service which is being furnished by that plant. While such
precautions necessarily increase the cost, often quite
3993 considerably, their effect would vary widely on different
jobs, and I don't know of any way to estimate or to measure that effect.

Second, jobs consisting of additions to existing plant are naturally much smaller than would be involved in the construction of the plant as a whole. The effect of those on costs can be measured with reasonable accuracy by comparing the labor hour performance experienced by the company on its larger and smaller jobs. What I have just stated does not take into account the fact that there were improvements in both large and small jobs during these years. Broadly speaking, the larger jobs are covered by specific estimates and the smaller ones by routine.

Up to January 1, 1921 any job costing more than $1,000 was covered by specific estimate. Jobs costing less than $1,000 were lumped under routine estimates. Effective
3994 January 1, 1921, the dividing line was raised from $1,000 to $2,500. I am speaking now of the outside plant accounts which we are discussing here. From my knowledge of the practice of the Illinois Bell, a large part of the outside plant is constructed under routine estimates. It consists largely of such things as the addition of a pole or two to an existing pole line, the splicing of a new cable terminal to an old cable, things of that sort, which would not ordinarily
3994 be handled as separate jobs if the plant were to be reproduced. We would splice that terminal on with the other terminals when we put the cable up, splice it through; we would set the pole with the other poles in the layout.

"Q. And to the extent that your excess cost enters, and because of that one factor of reproduction cost which uses an index and uses the actual cost, it would include the excess cost in the reproduction, is that correct?

A. On a percentage basis, yes."

3995 Since Mr. Sloan has used a percentage increase in cost from year to year, the percentage of error or difference between wholesale construction and piecemeal construction would be magnified by that percentage of increase and would be greater in dollars in his appraisal than it would on the books.

Suppose that as a result of a large proportion of piecemeal construction, being included in the company's actual experience, we find that by eliminating or minimizing the effect of that piecemeal construction, the company could have done its work with, say, eighty per cent as many labor hours, that would mean, of course, disregarding the difference between cost per hour of specific and routine estimates, for the sake of simplicity, that their labor cost on a wholesale construction basis would be only eighty per cent of that shown by the books.

Now, suppose further that between the year in ques-
3996 tion and June 30, 1923, labor costs have risen fifty per
cent. Supposing that our labor cost on the books in that given year was $100,000 actual, on the basis of wholesale construction it would have been $80,000, eighty per cent of the actual. Suppose that the cost level has risen from then to June 30, 1923, say, fifty per cent. The $80,000 would then become $120,000 and the actual cost would become $150,000. The spread between the actual cost of $150,000 and the cost on a wholesale construction basis of $120,000 is $30,000 as compared with the difference in the given year between $80,000 and $100,000, a difference of $20,000.

So that the difference on the books of $20,000 would be magnified into a difference of $30,000 by the increase in the cost levels.

"Q. Now, Mr. Cummings, I direct your attention to the statement by Mr. Sloan that—appearing in One Abstract at pages 52-53, 60-61—that the routine construction included in
the book cost which he used as the basis of reproduction
3997 estimate did not distort the result. Did you make a
study of the increase of the construction work done by the company as bearing upon this statement of Mr. Sloan?

A. His claim that it did not distort the result was based—included several different points, all of which we have purported to meet in our exhibits, based upon our study of construction costs.

Q. What did you find from the study of the record of construction work as bearing upon any one of the points that he made, and will you please describe each one you investigated and what you found?

A. It is a fact that on routine estimates as a whole the labor cost is a larger proportion of the total, or a larger proportion, or larger percentage of the material cost on routine estimates than it is on specific estimates."

3998 From the records of the construction work of the company with respect to pole lines, I found, for example, that during the period covered by this study, the years 1921 and 1922 and the first six months of the year 1923, the average length of the poles set was 33.6 feet on specific estimates and 35.6 feet on routine estimates; 2 feet longer on routine estimates than on specific estimates. During that period there were 365½ poles placed on specific estimates and 2,691 on routine.

With reference to aerial cable, there were a total of 252,514 feet of cable placed on specific estimates during this period with an average size of 77.9 pairs, while on routine estimates we found 143,788 feet placed with an average of 82.9 pairs. The average number of pairs in the cable was somewhat
3999 greater in the case of routine estimates than specific.

Referring to Plaintiff's Exhibit 52, which is a map of the cable plant in Rogers Park, and which shows a large number of short alley runs, it is perfectly true, of course, that a large part of the aerial cable plant in Chicago consists of short alley runs. It is also true as I shall show in a later exhibit, that out of a total of 103 specific estimates on which aerial cable was placed, 79 estimates, or 76.7 per cent of the entire number, showed total expenditures for aerial
4000 cable of less than $2,500 during this two and a half year period—nearly half of them ran under $350. We studied all of the company's construction records showing all aerial cable placed during the two and a half year period.

In Plaintiff's Exhibit 51, Mr. Sloan showed that in account 241, exchange pole lines 80½ per cent of the amount was placed on routine estimates. From our study of the company's experience during this two and one-half year period, we found 93.2 per cent of all of the pole line account, that is, 16 per cent more.

With reference to account 242, Plaintiff's Exhibit 51 purports to show that 64.7 per cent of the aerial cable was
4001 placed under routine estimates, while in our study of the company's experience during this two and a half year period, we found 72.2 per cent, or 12 per cent more than Mr. Sloan—than Plaintiff's Exhibit 1.

With reference to account 245, Plaintiff's Exhibit 51 shows 20.8 per cent placed under routine estimates. Our study of the company's experience during this 2½ year period showed 38.7 or 86 per cent more than Mr. Sloan's figure.

For the total of the three accounts, the company's experience was 48.5 per cent for the period 1921 to 1923, whereas Mr. Sloan used 32.2 per cent. The company's experience then is 50 per cent greater than Mr. Sloan's figures. The estimates studied covered all work done during the

4002 period. I believe that was true of Plaintiff's Exhibit 51, as I recall it, and it was true in this case. I account for that difference partly, at least, by the change in the dividing line, to which I previously referred, between specific and routine estimates, the dividing line being $1,000 prior to 1921 and $2,500 thereafter. So that because of that change, Plaintiff's Exhibit 51 gives a different result, a result which is not representative of the company's experience since 1920.

The fact that a large amount of money is shown by the company to have been spent on construction does not indicate whether such construction was piecemeal or was wholesale construction.

4003 I can illustrate it in this way: You might have a gang set a pole in South Chicago; you might move that gang to Beverly, set another pole, move them to Austin, set another pole, move them up to Rogers Park and set another pole; you would be setting a few poles in a piecemeal way at an enormous cost, much higher cost; you would be spending a great deal more money than if you set those poles in a wholesale way.

(June 2, 1932)

4005 "Mr. Goldstein: Now, if your Honor pleases, before starting the testimony, there are two matters I would like to take up. First, in order to avoid any question later, we would like to know if there is any question of the sufficiency of the identification of our D. Exhibits, which were offered here and came from the American Telephone & Telegraph Company, or the Western Electric Company, but which some of the witnesses could not identify.

Now, if there is any question about that, we would like to know it at this time, so that there will not be any question at the last minute.

Mr. Thompson: Mr. Goldstein, I have told you—

Mr. Goldstein: All right.

Mr. Thompson: (Continuing);—a number of times, that anything that we have furnished to you, we will not deny that we furnished.

Judge Wilkerson: Unless you show it came from the Western Electric Company—if you say it came from the Western Electric Company, we will assume it came from the Western Electric, unless you show to the contrary, that it did not.

4006 Mr. Goldstein: All right. Now, the other thing is, we would like the motion called up on the study which we talked about yesterday, because the other side will not produce it, and we need it in connection with our Western Electric Company testimony.

4008 Mr. Goldstein: We have made a check yesterday, and I would like the record to show the result of the tabulation of the provisional estimates, which shows that there are 7,967 pages of provisional estimates for the years 1923 to 1931, inclusive, exclusive of the Illinois Bell provisional estimates. It took us nine hours to do it, and we want the record to show it—and that is exclusive of the documents that are over here.

Q. Mr. Cummings, I direct your attention to the following testimony of Mr. Sloan: (I Abst. 52)

(I did not assume any percentage of the construction was piecemeal construction. Substantially I have assumed in taking the book values that none of the construction is piecemeal construction.

4009 I am guided in that statement by the fact that during this period from 1911 to 1923, there was substantially $86,000,000 of plant construction, and the average rate of construction was about $7,000,000 or $8,000,000 a year.

When a plant is constructed in this manner, there is no opportunity for any so-called piecemeal construction. You cannot spend seven or eight million dollars a year in a city the size of Chicago, and do it in a piecemeal manner.)

Mr. Cummings, do you agree with that conclusion, and if not, why not?

A. I do not, and I gave an illustration yesterday which showed one reason why I did not. I think the fallacy of that theory is evident from that illustration. Other things being equal, the larger the element of piecemeal construction, the larger the expenditure, and the mere fact that a large amount of money was spent gives no indication whatever as to whether it was spent in a wholesale or a piecemeal manner."

4010 "The illustration that I gave was, having a gang set a pole in South Chicago, and then going to Rogers Park to set another, and then to Austin, and then to Beverly; and so on, setting a few poles in a piecemeal manner at an enormous cost. On this piecemeal construction, it is my idea that the method which has been used by the plaintiff in this case results in a larger figure for the reproduction cost than would be arrived at if you undertook to assume a city like Chicago today, without any telephone system at all, and you undertook to install a telephone system *de novo* in such a city. I think that it would result in a larger reproduction
cost notwithstanding the added expense of putting wires
4011 into the buildings, and tearing up the streets, and everything else, which would cost so much more today.

4015 As one result of my study of the company's records for the years 1921 and 1922, and the first six months of 1923, I have ascertained the facts in respect to the average length of poles, and the average size of aerial cable which the company placed during that period on specific and routine estimates, respectively.

4016 Defendants' Exhibit X-7 includes all of the poles and aerial cable placed by the company during that period as shown by those records.

X-7 is entitled "Comparison between sizes of Plant Items Placed on Specific and Routine Estimates, 1921, 1922, 1923." From the quantities and sizes listed there, I have computed the average length of poles and the average size of aerial cable placed on specific and routine estimates.

Page 1 of Exhibit X-7 shows that on specific estimates, during the period covered by our study, the years 1921 and 1922, and the first six months of 1923, the company placed

on specific estimates 365.5 poles the half pole I assume
being joint construction, joint with the Commonwealth Edi-
son. Of those poles, the predominant size shown on
4017 the third line, was 35 feet. The next was 30 feet. Multiplying
the number of poles by the length of each,
and dividing the total of the extension by the number of
poles, I find that the average length of poles placed on specific
estimates was 33.6 feet. Similarly, on routine estimates, we
found a total of 2,691 poles placed, in which again the 35 foot
pole was very much the predominant length, and making the
same computation as in the case of the specific, we find that
the average length of poles placed on routine estimates during
that period was 35.6 feet, or 2 feet longer than the average
placed on specific estimates.

4018 On page 2 of Exhibit X 7, we found placed on specific
estimates during this same period, 252,514 feet of aerial
cable of which 51 pair was the predominant size; 169,296
feet out of the total being 51 pair.

Making the same computation as in the case of the poles, we find that the average was 77.9 pairs. Similarly, on the routine estimates, we found a total of 143,788 feet placed, of which again 51 pair is the predominant size, amounting to 97,251 feet, or well over half the total; it was well over half the total in both the specific and the routine. And making the same computation, we find that the average number of pairs in the cable placed on routine estimates was 82.9.

Exhibit X 8 entitled "Labor Hour Performance on Specific
and Routine Estimates" is the exhibit to which I referred
in a previous answer. This compares the company's
4019 actual labor performance on the specific and routine
estimates. The purpose of the table on page 1 of this
exhibit is merely to develop labor hour units at the level of
the actual performance, which enter into the book cost during
this period. This study covers the same period as the others,
for the years 1921 and 1922, and the first six months of 1923.
This period is recent enough to take into account many of
the difficulties suggested a few minutes ago. The method
which I have used here, and which is shown in this exhibit,
is the one in general use among engineers, and is the same
method as that currently used in the Bell System, in determining
the level of the retirement unit costs.

Its purpose is to answer this question:

> "Where the record shows simply a total figure, and also
> affords a list of items and quantities which result in that
> 4020 total figure, how may the total be distributed over the
> items?"

I would like to explain, because I have used it repeatedly in this and a later exhibit, the method which I have used in describing page 1 of this exhibit, and that explanation will suffice for all of the similar tables in this exhibit, since I have used the same method throughout.

First, we have a list of the items and quantities in the column headed "Quantity." That list comprises all of the items which we found in the construction records of the company, as placed in the Exchange Pole Line Account during the 2.5 year period studied, and it is summarized from the detailed tabulations we made of the materials charged to each estimate, both specific and routine. For the purpose of this table, I have thrown the specific and routine estimates together, as we actually found them on the records.

Associated with these materials on each estimate ledger
sheet we found the corresponding labor hours, the labor
hours which were charged to that estimate, and which were
used in placing these particular material items. Those
4021 labor hours are not of course separated as between the
different items, but are simply shown in total by classes
of labor; and so our problem is to distribute the labor hours
over the items. A summarization of these labor hours gives
the total figure of 89,499 shown at the bottom of the page,
the next line to the bottom. This is the total direct labor
charged to these jobs, that enters into the book cost of the
gross additions to Pole Line Account during that period.

The problem then is to distribute these total labor hours over the items placed in proportion to the amount of labor required for each. It is obvious that more labor will be required to set a pole than to place a cross arm, and that a 40-foot pole will take more labor than a 30-foot pole.

The question of the proper proportions to use has been a subject of intensive study for many years, and every cost engineer has made up many such tables. I have, personally, and I have seen a great many. We have a great many in

our files from different sources. For the present pur-
4022 pose I have used in the column headed "Trial Labor Hours," units which were developed in the Bell System under conditions comparable to those in Chicago. These units I have, since the preparation of this exhibit, furnished to Mr. Sloan.

The next step is to apply the Trial Labor Hours to the quantities shown. If, for example, looking at the first item, we assume for the purpose of this computation that to set a 25-foot Class A pole requires 11.41 labor hours, as shown in the column headed "Trial Labor Hours," then to set eight of them will require 91 hours, as shown in the column headed "Extension."

The 11.41 figure of course comes from the list of labor-hour units which I have just referred to. We made similar computations for all of the items in the quantities shown, applying to them the labor hours shown in the column headed "Trial Labor Hours." We then totaled the extensions, the column headed "Extension," and arrived at a total shown on the third line from the bottom of the page, of 92,280 hours as the number of hours that would have been required to set these items and these quantities, at the labor per-
4023 formance level represented by the trial units used.

Comparing that with the figure next below of 89,499, we find that our trial units are a trifle too high, since the actual performance total is 96.99 per cent of that computed from those trial units, and so in the last column we take 96.99 per cent of our trial units as the amount of labor actually required on the average to place each of these items as they were placed, under the specific and routine estimates together, during the period studied.

Page 2 is a similar computation applied to the items and quantities placed during this period, under specific estimates alone. In this table the trial units are designated as "labor hours at level of book costs," and are the units developed in the last column on page 1. The first figure shown, for example, in the trial unit column is 11.07 hours, as the labor required in the company's experience on both specific and routine estimates during this period, to set a 25-foot A
4024 pole, and that figure may be found at the top of the

last column on page 1, and is the result of the computation on page 1. Carrying the computation through in the same manner as we did on page 1, we find that on these larger jobs the company required only 85.9 per cent as much labor to perform a given operation as it did in its construction operations as a whole during this period.

The way we arrive at that percentage is by going through the same computation that I have described in reference to page 1, which gives us a total computed number of labor hours of 10,830, as compared with the actual performance shown in the next to the last line of 9,305.5. Comparing those two figures gives us the ratio of 85.9 per cent. What I found was that on the larger jobs, the company required 85.9 per cent as much labor to perform a given operation as it did in its construction operations as a whole during this
4025 period. That was in the Exchange Pole-Line Account.

We then applied that figure of 85.9 per cent to the Trial Labor Hours, which are here designated as Labor Hours at the level of book costs, and obtained in the last column the number of labor hours required on an average under the level of specific estimate labor performance, to place each of the items listed. For example, on the company's performance as a whole, we found that to set a 25-foot A pole required 11.07 hours, in the third from the last column; while looking at the last column, we find that to set that same pole at the labor performance level which the company experienced on its specific estimates, required only 9.51 hours.

It follows from this, of course, that if all poles had been set at the same labor performance level as on specific estimates the company would have to charge on its books
4026 only 85.9 per cent as many labor hours as it actually did during this period on all estimates.

I made a study to determine the size of the jobs included in the specific estimates. It is shown on page 4 of this Exhibit.

On page 4 I have tabulated all of the specific estimates under which Pole Line Construction was done during this period from January 1, 1921, to June 30, 1923, and which were included in the study of labor performance under specific estimates on page 2. There are 47 of them, as shown at the bottom of the page, of which 44, or 94 per cent, show a total expenditure in Pole Line Account during this 2.5 year period, of less than $2,500 each.

Looking at the fourth column in the lower half of the table,
which is headed "Cumulative Per Cent," we find that 8.51
per cent of these estimates ran less than $25, and 21.28
4027 per cent ran less than $50. Now, these dollars that I
am reading are total expenditures, material, labor supply expense, overheads, incidentals, and all the rest of them. 31.92 per cent, or nearly one-third, ran less than $100; 53.2 per cent, or more than half, ran less than $200; 72.35 per cent, or nearly three-quarters, ran less than $400.

On page 5 I found a similar result, where these same specific estimates are tabulated according to man hours. This tabulation shows that 19.1 per cent, or nearly 1/5th of the estimates, ran less than 20 man hours each; 44.7 per cent ran less than 50 hours; 59.6 per cent ran less than 100 hours; 74.5 per cent, or ¾ths of the total number, ran less than 200 hours.

Now, there is a possible criticism which may be leveled
4028 at this tabulation, and which from a question he asked
me yesterday I think possibly Mr. Thompson had in mind. While this study covered a 2.5 year period, which is probably longer than the period covered by such studies ordinarily, it covered estimates which were completed over a considerable period of time, and there is a possibility that on some of the earlier estimates—some on this list were approved in 1919—a large part of the work on such estimates was done prior to the period covered by our study. It is possible even that what we picked up here was merely the tag end, the finishing up of some such estimates. It is also possible that there were estimates on this list that were approved during 1923, as shown by the estimate numbers.

It is possible that in this list we may have included some estimates which were merely started in 1923, in the six months of 1923 covered by our study, and on which the major por-
tion of the work was done subsequent to June 30, 1923.
4029 I had that in mind, and while in this exhibit I have listed
all of the estimates, because I wanted to show all of the estimates that we had used in our study of labor performance,

regardless of what work may have been done on any of them prior to or subsequent to the period covered by our study, the fact remains that work was done on those estimates during this period.

However, to meet the possible criticism, I have sorted out those estimates within the last few days and thrown out all of those estimates on which any such possibility existed.

We have thrown out all estimates in this rearrangement on which we found any work done prior to January 1, 1921. That is, I went further than the possibility of a major portion of the work, and eliminated all estimates on which any possible work could have been done, either prior to January 1, 1921, or subsequent to June 30, 1923. We also took care
4030 of the other end in this way: we did not have time available, and it would have been quite a job, to find what estimates on which we found work done during the first six months of 1923, also had work done subsequent to June 30, 1923, and so in this rearrangement for the purpose of finding out what effect that did have, I threw out all of the estimates on which we found any work done during the first six months of 1923.

In doing that of course I resolved all doubts in favor of the plaintiff, and against my computation. The result of throwing out those estimates, those on which any work was done prior to January 1, 1921, and on which any work was done during the first six months of 1923, reduced the percentage slightly. I testified that using the complete list, 94 per cent showed a total expenditure in Pole Line Account of less than $2,500. By throwing out those doubtful estimates to which I have referred, and resolving all doubts against myself, that percentage became 88.89.

4032 In referring to my last testimony, in reference to the size of the jobs covered by these estimates, the conclusion from that is this: In reproducing this property, the proportion of small jobs such as those which were illustrated by Plaintiff's Exhibit 52, would be very much less than those which were included in these specific estimates, and the labor performance should in my opinion be very much better.

Therefore, if we took as the measure of labor performance to be used in the reproduction cost estimate, the level indicated by the specific estimates, which is 85.9 per cent of the actual labor hours, reflected in book cost which Mr. Sloan has used, such an estimate would be in my opinion very conservative. The remaining pages of Defendants' Exhibit No. X-8 cover a similar analysis of the company's labor performance during this period in the other two accounts studied by Mr. Sloan in Plaintiff's Exhibit No. 50.

4033 Pages 6, 7, 8, 9, 10, 11 and 12 analyze the labor performance in Aerial Cable construction in the same manner with the added refinement that in order to bring out more clearly the relationship between the size of the job and the labor performance in addition to comparing the performance on specific estimates, routine estimates and total, as I did in the case of Pole Lines, we have further subdivided the specific estimates into two groups, those involving more than 1,000 labor hours, and those involving less.

The purpose of doing that of course was to bring out the fact that the larger the job, the better the labor performance. Page 6 is similar to page 1, in that it serves the same purpose in developing the labor hour units at the level of the Company's actual performance during this 2.5 year period. It is similar in all respects to page 1, covering the same ground for Aerial Cable that page 1 does for Pole Lines. It develops the level at which the labor cost during the period went on the books, and served as the basis for Sloan's appraisal. The labor hours which resulted in the book cost are shown in the last column.

4034 All of the data which I used in this table on page 6 came from the same source that I already referred to in discussing page 1. The method of computation was the same. And as in the case of the pole line tables, the labor units developed in the last column on page 6 were used as trial units in all similar tables which follow for this account. Page 7 corresponds to page 2 in the Pole Line Account, and shows that on specific estimates, as a group, the company required 91.2 per cent as many labor hours to perform a given operation as it did in Aerial Cable Construction work as a whole. Taking the first item as an illustration, 51 pair, 19 gauge cable; page 6 shows that for all of this cable placed during this period on specific and routine estimates combined, the company required an average of .1202 labor 4035 hours per foot; while page 7 shows that on specific estimates alone, it required only .1096 hours per foot to place that same cable. Page 8 makes a similar computation for specific estimates involving over 1,000 hours each, and shows that on the larger jobs the company required only 88.5 per cent as many labor hours to perform a given operation as it did in its Aerial Cable Construction work as a whole. I used the word "placed." I should have said perhaps "installed" —it is to include the splicing as well as the placing proper.

Page 9 makes a similar computation for specific estimates under 1,000 hours, and shows that on the small jobs the company required 95.04 per cent as many labor hours for a given operation on all estimates, specific and routine combined.

Page 10 makes a similar computation for routine esti-
4036 mates, and shows that on these small jobs the company
required 102.93 per cent as many labor hours for a given operation as in its Aerial Cable Construction work as a whole. Taking as a basis the level which resulted in the labor cost which actually went on the books, and consequently entered into Mr. Sloan's results, if all of this work had been done at the level of each of the groups studied, the resultant required labor hours would have been as follows: at the level of all specific estimates, 91.2 per cent of the actual; at the level of the larger specific estimates, those covering over 1,000 hours, 88.5 per cent of the actual. At the level of the specific estimates under 1,000 hours, the smaller specific jobs, 95 per cent
of the actual. If it had all been done at the level of the
4037 routine estimates, small jobs, 102.9 per cent of the
actual.

On page 11 of this Exhibit X-8, I have listed as I did in the case of the Pole Lines, all of the specific estimates on which we found Aerial Cable Construction work had been done during this 2.5 year period. That tabulation is precisely similar in all respect to the corresponding one in respect to Pole Lines. We found 103 such estimates, of which 79, or 76.7 per cent of the total number ran under the minimum figure in the record of $2,500 as shown at the bottom of the page.

Looking at the fourth column in the lower part of the table which is headed "Cumulative Per Cent," we find that 14.56 per cent of the estimates ran under $25 in the total expenditures for Aerial Cable during this period; 18.44 per cent ran under $50; 22.32 per cent, or nearly one-quarter of the total number, ran under $100; 36.88 per cent ran under $200; 45.62 per cent, under $350; 53.39 per cent, or more than half, ran under $600.

I have also made a computation of the results after eliminating those jobs in which there was a possibility of work
prior to January 1, 1921, or a possibility of work sub-
4038 sequent to June 30, 1923. I found that 67.86 per cent of
the remaining estimates, all of which I knew had been
both begun and completed within the period, ran under $2,500 each in this account. These expenditures include everything which enters into the cost of cable, messenger, terminals, and so forth—complete, in place, ready for service.

Page 12 groups these same estimates by labor hours, and shows that more than one-quarter of them involved less than 50 man hours each, more than one-third of them less than 100 hours, and more than one-half of them less than 200 hours. That table of course is put in for the purpose of illustrating the same conclusion as the one on the preceding page, in that
it shows that the majority of these estimates cover
4039 small jobs, such as those illustrated in Plaintiff's Ex-
hibit 52.

Account 245, Exchange Underground Cable, is a much more difficult subject for study because it includes at least four distinct groups, each of which has its distinctive peculiarities of working conditions. Those four groups are: Main Subscribers' Cable—which in the present classification is designated as 15-C; Trunk Cable, 45-C; Subsidiary Cable, which is 25-C, and House Cable, or Building Cable, which is 35-C.

The Company now separates these groups on its records, but at the time covered by this study, from 1921 to 1923, it made only a broad separation, to which I referred yesterday, between underground cable proper, Code 5-C, and house cable, Code 35-C, and since these two groups are wholly dissimilar in the conditions under which the cable is installed, I have treated them separately in this exhibit.

Pages 13, 14 and 15 are similar in form and purpose to pages 1 to 6. They develop the labor hour units at the level of the company's actual experience as embodied in its

4040 book cost on all cable installed under Code 5-C during that period. As in the preceding cases, these units were used by me as a basis of comparison with the labor hour performance on specific and on routine estimates.

Pages 16 and 17 make a similar study of specific estimates under Code 5-C, and show that on specific estimates the company required only 81.06 per cent as many labor hours to perform a given operation as it did on specific and routine estimates combined, in the proportions in which they were combined of course during this period in the company's experience.

Pages 18 and 19 show that on the smaller jobs covered
4041 by the routine estimates, it required 175.99 per cent, or more than double the number of labor hours required for the specific estimates.

606 pair, 22-gauge cable we found placed in large quantities on both specific and routine estimates. On specific estimates we found that it required on an average .4115 labor hours per foot, which is shown about the middle of the last column on page 16, on specific estimates.

When it was installed on routine estimates, the same cable, we find on page 18 that it required .8935 hours, or as I said before, more than twice as much labor to install that same cable on routine estimates as on specific. That is, the same cable when installed on the routine estimates, required a little more than twice as many labor hours as on the specific estimates.

Page 20 lists the specific estimates on which underground cable was installed under Code 5-C, and the total ex-
4042 penditures in this account under each estimate during this period. There is this particular point to which I would refer in connection with this table: It must be borne in mind that in this account we are dealing with much larger units of plant installed under more costly conditions than in the case of aerial cable, and the expenditures under each estimate are correspondingly higher. Even so, we find that nearly half, or 49.40 per cent, of these estimates as shown in the column at the bottom of the table, the column headed "Cumulative Per Cent," in the lower table, showed total charges in this account during this 2.5 year period of less

than the $2,500 minimum which has been previously referred to in the record; more than one-fifth of them, or 21.28 per cent, ran less than $350; more than one-third of them, or 34.14 per cent, ran less than $1,000.

Now, those small amounts will not cover any considerable underground cable job, and if we bear in mind the more expensive character of this type of plant, we see that
4043 even here the specific estimates include a large proportion of small jobs, a conclusion which is supported by the corresponding tabulation of labor hours on page 21.

I have made a tabulation with respect to this account, eliminating all of the estimates on which a portion of the work might possibly have been done before January 1, 1921, or subsequent to June 30, 1923. I found as to the balance that of the remaining estimates, all of which I knew were both started and completed within this period, of those estimates 46.75 per cent ran under $2,500 in this account.

The remaining tables in this Exhibit X-8 cover a similar analysis of house cable, Code 35-C. The peculiarity with reference to that account is that each job is in a class by itself, and differs from every other job. It is all what you
4044 might call custom work, all special; and while there are minor additions and rearrangements from time to time, for practical purposes we are bound to assume that in reproducing this plant, the cabling of each building would be done very much as it has been done, at about the same level of labor performance. We will probably save a little, but not much. Splicing is a larger factor than in either Aerial Cable or Underground Cable proper, and the larger jobs usually involve more elaborate splicing layouts than the smaller. Probably, I think for that reason, the larger jobs covered by specific estimates require slightly more labor hours per foot of cable installed than do the smaller jobs under routine estimates. While some economies could be anticipated in reproducing the plant as a whole, due to keeping the gangs more uniformly busy during the construction period, as well as for the reasons I just stated, there is no basis on which this saving could definitely be evaluated, and for the purpose of this case we have disregarded it.

4045 I have prepared a further exhibit showing the combined effect on the results shown in Defendants' Exhibits X-6 and X-8. Defendants' Exhibit X-9 which is entitled "Comparison between company experience on its larger construction projects and Plaintiff's Exhibit Number 1," was prepared under my direction.

Page 1 of Exhibit X-9 is the same in form, arrangement and method as page 1 of Defendants' Exhibit X-6, the only difference between them being that this table in Defendants' Exhibit X-9 includes the added factor of adjusting the labor performance to the level experienced by the company in its specific estimates, the labor performance which I have just been discussing in connection with the preceding exhibit, while Exhibit X-6 takes the labor performance without adjustment as it was actually experienced on specific and routine estimates combined in the proportions found during the years studied.

4046 This exhibit therefore is intended to show the results Mr. Sloan would have gotten in these accounts for these years if he had used the company's actual experience in respect to material and labor costs, and if he had eliminated the piecemeal construction represented by the routine estimates, and which in the opinion of Mr. Wray and myself, would not be experienced in reproducing this plant.

As shown in the last column of the table, these results range from 80 to 96 per cent of the results that he did arrive at in Plaintiff's Exhibit 1. And the difference is due to the factor of the actual experience under the specific estimates rather than specific and routine combined.

"Judge Wilkerson: Do you wish to take up at this time, Mr. Goldstein, your motion in connection with the study you referred to?

4047 Mr. Goldstein: Yes.

Judge Wilkerson: Just what is the motion?

Mr. Goldstein: Mr. Gregory on cross-examination—on direct examination testified that the item of $3,000,000 appearing on the books of the Electrical Research Products as a deferred receivable—

Mr. Bracelen: This is in reference to—the memorandum—previously referred to? Your Honor, I had been under a misapprehension. I thought that at the hearing on May 3rd before your Honor and Judge Evans, when Judge Evans announced the ruling of the court at the close of the hearing, this part of the motion had been denied. I find I was in error. I find that what actually was done was for the court to reserve ruling. That indicates that the court had some doubt at least about the merits of the objection, and that being so—

Judge Wilkerson: Well, we took that up a little later
4048 —and I made an announcement—was it not on that?

Mr. Bracelen: No, not on that. It was on another matter, in connection with another matter. Now that being so, we will produce the study.

Judge Wilkerson: Very well.

Mr. Goldstein: May I ask when?

Mr. Bracelen: Pardon me.

Mr. Goldstein: When? We would like to have it before we introduce our Western Electric testimony, so that we can at least look at it.

4048 Mr. Bracelen: You may have it at any time; do you want it now.

Mr. Goldstein: Oh, no; just so that we can have it at any time."

This study of course covered only the two and a half
4049 year period. What the results would be in other years, I have no means of knowing. The exhibit shows in the last column—comparing the percentages in the last column on page 1—shows the same trend away from the base
4050 point of June 30, 1923, that we found in Defendants' Exhibit X-6. That is, the difference between what it would have been under the company's experience on the specific, and Plaintiff's Exhibit 1 becomes greater as you go back further from June 30, 1923. The difference in 1921 is greater than in 1922, and 1922 is greater than 1923. All of the other tables in this exhibit are supporting tables which underlie page 1.

4051 Pages 2, 3 and 4 show the derivation of the pole line figures which are shown in the column headed "Company experience" on page 1, which was taken from the lower part of the table on page 2. The table on page 2 is in the same form as the corresponding table on page 6 of the Defendants' Exhibit Number 6 except for the changes in the percentage and amounts of increase or decrease, June 30, 1923, over the previous period, which are indicated by the company's experience. These changes are due wholly to the inclusion in Defendants' Exhibit X-9 of the adjustment in the level of labor performance which is indicated in Defendants' Exhibit X-8.

Page 2 shows that comparing the percentages shown in the second and third lines of figures, in 1921, we find that including this additional factor of labor performance which was brought out in Defendants' Exhibit X-8, the level 4052 on June 30, 1923, was 24.71 per cent lower than the level which went on the books, that resulted in book figures, in 1921 as compared with Mr. Sloan's corresponding percentage of 5.99. In 1922, the June 30, 1923, level was 17.52 per cent lower than the figures which resulted in book cost during 1922, while Mr. Sloan used an increase of 2.09. In other words, we would show a decrease of 17.52 compared with Mr. Sloan's increase of 2.09.

The difference between our figures here, and in Defendants' Exhibit 6, are due to the added factor of using the specific estimates instead of the routines. Part of the difference shown between our percentages and those of Mr. Sloan of course is due to the results worked out in Defendants' Exhibit Number 6.

In the six months' period from January to June, 1923, 4053 we show a decrease developed from the company's experience on its specific estimates of 13.37 per cent as compared with Mr. Sloan's increase of 1.96 per cent. In the last column I have brought the figures together to get an over-all picture covering the entire period, and the composite there shows on the basis of the company's experience on its specific estimate labor performance, the June 30, 1923, level on the books used by Mr. Sloan was 17.83 per cent—or the percentage we arrive at is a decrease of 17.83 as compared with Mr. Sloan's increase of .39 per cent. Page 3 of this exhibit is similar to page 7 of Defendants' Exhibit Number 6, and it shows the development from the material and labor indices of the composite percentage of increase or decrease which on page 2 is applied to gross additions to reduce them

to the cost level of June 30, 1923. On page 3, the percentages
of increase or decrease in material costs are the same as
those on page 7 of Defendants' Exhibit Number 6. That
4054 is because material costs are practically unaffected by
piecemeal construction, while the corresponding per-
centage for labor is changed by the adjustment in labor per-
formance. The effect of that is to show a much larger de-
crease in the labor cost than is shown in Defendants' Exhibit
6 and consequently a larger decrease in the composite.

Page 4 shows this adjustment in labor hours and labor costs, and the percentages on the last line are those used in the second line of the table on page 3. The labor hours as shown are totaled from all of the specific and routine estimates on which we found work done in the Exchange Pole Line account during the period studied.

In 1921 for example we found 1,856 labor hours charged
to specific estimates in this account, and 12,351 labor hours
charged to routine estimates, or a total of 14,207 hours. As
in the cases previously discussed, this represents all of
4055 the estimates which we found covering work done dur-
ing this period. Since Defendants' Exhibit X-8 shows
that specific estimates required only 85.9 per cent as many
labor hours to perform a given operation in this account as
did specific and routine estimates combined, and since as I
have stated the data in that exhibit lead to the conclusion that
in reproducing this plant we could reasonably expect at least
as good labor performance as the company experienced under
its specific estimates, I have taken 85.9 per cent of the actual
labor hours as the amount which would be required at the
labor performance level of specific estimates.

That resulted in reducing the number of labor hours, as
shown on the next line, to 12,203.81. I then priced out these
labor hours at the rate of $.8459, which as I testified yester-
day was the average direct labor cost per hour on the specific
estimates in this account as of June 30, 1923. That gave me
a direct labor cost at the level of June 30, 1923, amount-
ing to $10,323.20. To this direct labor cost at the level
4056 of June 30, 1923, I then added Plant Supervision and
Tool expense at the percentages found in Mr. Sloan's
exhibit, Plaintiff's Exhibit 1, and a comparison of the total
labor costs thus computed, which amounted to $11,180.03 at

the labor performance level of the specific estimates, with the actual labor cost, which was shown in Defendants' Exhibit X-6, which amounted to $16,997.17—a comparison of those two figures gives the percentage of decrease on June 30, 1923, under the previous periods, which is shown in the last line, and amounts to 34.22 per cent. The other two columns of course are computed for the other two years in the same way.

Pages 5, 6 and 7 of this exhibit cover the Exchange Aerial Cable, and the treatment is the same as on pages 2, 3 and 4, with the single exception that, for the same reason as in the treatment of this account in Defendants' Exhibit X-6, I
4057 have treated the two operations of placing and splicing
separately, and then combined the results. That computation is shown on page 7. Page 5 shows that by reason of the adjustment in labor performance, the decrease in cost indicated by the company's experience was 23.24 per cent in 1921 as compared with Mr. Sloan's decrease of 9.67, those figures appearing on the second and third lines of figures on page 5. In 1922 the company's experience indicates a decrease of 6.62 per cent as compared with Mr. Sloan's increase of 2.5 per cent. In 1923 the company's experience indicates a decrease of 4.78 per cent as compared with Mr. Sloan's increase of 1.96 per cent; while for the entire period as shown in the last column, the company's experience indicates a decrease of 9.24 per cent as compared with Mr. Sloan's decrease of .04 per cent.

Pages 8, 9, 10 and 11 cover Exchange Underground Cable in a similar manner, with an additional refinement, that for the reasons I have discussed in connection with the
4058 treatment of this account in both Defendants' Exhibits
X-6 and X-8, it was necessary to treat Code 5-C and Code 35-C separately. Pages 8 and 9 are the same in form and treatment as pages 2, 3, 5 and 6, and give for this account the same information that those pages do for the Pole Lines and Aerial Cable. On page 9, where the composite decreases in material and labor costs are developed, the percentages of increase or decrease in material costs are the same as in the corresponding table on page 15 of Defendants' Exhibit X-6, while the development of the other percentages

used in arriving at the composite result on page 9, is shown on pages 10 and 11.

4059 Page 9 shows in the first line the percentage decreases in material which, as I have stated, is the same as in X-6. The second line shows the decreases in the labor cost, and the next two show the proportions of material and labor. In this case, and I think in the preceding corresponding tables, the footnote shows that there was a slight adjustment made in the proportions of material and labor.

Page 8 shows the difference between gross additions developed from the company's experience after eliminating the small jobs, and Plaintiff's Exhibit 1. It is set up in the same form as the corresponding tables which I have discussed, and shows in the second and third lines that by reason of the adjustment in the labor performance, the decrease in cost indicated by the company's experience, was 14.04 per cent in 1921 as compared with Mr. Sloan's decrease of 6.33 per cent. In 1922 the company's experience indicates a decrease of 3.44 per cent as compared with Mr. Sloan's increase of 4.73 per cent.

4060 In 1923 the company's experience indicates a decrease of 1.94 per cent as compared with Mr. Sloan's increase of 2.22 per cent; while for the entire period the company's experience indicates a decrease of 5.42 per cent as compared with Mr. Sloan's increase 1.43 per cent. The figures that I have been reading are the figures appearing in the second and third lines on page 8 of this exhibit. Where I have the brackets, that indicates a decrease.

Page 10 shows three tables designated as "Distribution of Labor Costs," "Composite Percentages—Labor" and "Composite Percentages—Total." The first three lines in the first table entitled "Direct Labor Charges, Code
4061 5-C, Code 35-C and Total," are taken directly from the company's construction records. They show the total labor hour charges which I found to this account during the years 1921, 1922 and the first six months of 1923. In the fourth line and fifth line, charges to Codes 5-C and 35-C are reduced to percentages of the total. These percentages are used as weighting factors in the second table on this page. In the second table entitled "Composite percentages—Labor," the first line shows the per cent decrease in labor

cost levels June 30th, 1923, under previous periods for Code 5-C, which percentages are taken from page 11. The second line shows the corresponding percentages for Code 35-C which are taken from our working papers underlying 4062 Defendants' Exhibit X 6. For the reasons discussed in connection with my discussion of Defendants' Exhibit X-8, the percentages for Code 5-C include an adjustment to the labor performance level of specific estimates, while the percentages for Code 35-C do not. The third and fourth lines show the weighting factors which are the percentages of labor cost under Codes 5-C and 35-C, respectively, as developed in the first table on this page. The fifth line is the first line multiplied by the third; the sixth line is the second line multiplied by the fourth; and the last line is the sum of the fifth and sixth; and therefore is the composite percentage of Codes 5-C and 35-C, weighted according to the actual labor charges to these two codes respectively. It also reflects the improved labor performance on specific estimates, on 5-C. Then this composite percentage is used in the second line of the Table on page 9.

The third table entitled "Composite Percentages—Total" is for the purpose of developing the "percentages of total cost--material" and the "percent of total cost—labor" which are used on the third and fourth lines on the table on page 9.

4063 In respect to this last table, it was necessary to develop our own proportions of material and labor. In the case of Pole Lines and Aerial Cable, I used Mr. Sloan's proportions, with minor adjustments, to reflect the decrease in labor hours resulting from improved labor performance on specific estimates. In this account I could not do that because while Codes 5-C and 35-C differ substantially, both in their labor performance and in their respective proportions in this account from year to year, Mr. Sloan developed his percentages for the account as a whole.

It was therefore necessary for me to develop corresponding percentages for Codes 5-C and 35-C, separately, which I did from the company's construction records, grouping the material and labor charges in the same way that Mr. Sloan did in computing his percentages. These percentages are shown in the first four lines of figures in this table.

4064 For the reasons I have stated, I would expect in reproducing this property, a labor performance in Code 5-C at least as good as that experienced in the specific estimates, while in Code 35-C I would expect a labor performance more nearly comparable to that experienced in specific and routine estimates combined. For that reason in developing these percentages I used specific estimates only in the case of Code 5-C but specific and routine combined in the case of Code 35-C. For the year 1921, I found that 69.9 per cent of the expenditures in Code 5-C under specific estimates were for material, and 30.1 per cent for labor, while in Code 35-C, 38.6 per cent of the total expenditures under specific and routine estimates combined were found by me for material, and 61.4 per cent were for labor.

My next step was to weight those two sets of percentages in proportion to the total expenditures for Code
4065 5-C and Code 35-C, respectively. Then from the construction records I found that the expenditures under Code 5-C amounted to 70.1 per cent of the total in the underground cable account, and the expenditures under Code 35-C, only 29.9 per cent. The computation of 70.1 per cent of 69.9, gave me 49, and 29.9 per cent of 38.6 is 11.5, and I added those two together, to give the result of 60.5 per cent as the composite per cent of material in this account which I used. Similarly 70.1 per cent of 30.1 is 21.1, and 29.9 per cent of 61.4 is 18.4 and I summed those up to give 39.5 as the composite per cent of labor, which I used. These percentages are used on page 9 to weight the material and labor indices into the composite, which on page 8 I apply to the gross
4066 additions to reduce them to the cost level of June 30th, 1923.

On page 11 I have developed the percentage of decrease in labor costs in Code 5-C on June 30th, 1923 under previous periods, which in the second table on page 10 I have combined with the corresponding percentages for Code 35-C to obtain the "Per cent of Increase—Labor" for the underground cable account as a whole, which I have used on page 9.

The form and method which I have used on page 11 are the same as those used on page 7 for Aerial Cable, and differ from those used on page 4 for Pole Lines only in that, for the same reason as in the case of the Aerial Cable, I worked up placing and splicing costs separately, and then combined the results on the basis of the respective expenditures for these two operations. The explanation I have made with respect to the two preceding accounts will explain the computation here as well.

4067 In Exhibits X-6, X-8, and X-9, I have limited my adjustments to these three factors of material cost, labor cost as affecting the percentage of increase, and labor performance on specific and routine estimates as affecting the book costs in order that the results might be strictly comparable with Plaintiff's Exhibit Number 50. In all other respects I have followed the same methods and used the same data that Mr. Sloan did in Plaintiff's Exhibit 50, without conceding the soundness of his method of course.

Defendants' Exhibit X-10, entitled "Material and Labor Ratios used in Plaintiff's Exhibit Number 1, and A-2 to A-10, inclusive" represents a tabulation for comparative purposes of all the proportions of material and labor as used by Mr. Sloan in the Exchange Outside Plant Accounts, for the entire period from 1911 to 1931.

4068 I will explain what Defendants' Exhibit X-10 shows. From 1911 to June 30th, 1923, the figures in the first two columns in each account which are headed respectively "% Material" and "% Labor" are copied directly from Plaintiff's Exhibit Number 1. From July, 1923, to the end of 1931 all of the figures in those same columns are copied from Plaintiff's Exhibits A-2 to A-10, inclusive, except in the case of the Pole Line account, where Mr. Sloan changed his method in the later exhibits as I have stated in the footnote on this page, that change being this, that in Plaintiff's Exhibit 1 he showed two groups of expenditures, material and labor. In Plaintiff's Exhibits A-2 to A-10, inclusive, he shows three groups, material and labor on the company's work, and a third item representing joint with Commonwealth Edison.

For that reason in order to make the figures subsequent to June 30, 1923, comparable with those prior to that date, I had to take the first two groups, "Per cent Material," and "Per cent Labor," on the work performed by the company, and develop the ratios between those two groups, and those are the ratios shown in the column headed "% Material" and "% Labor" in the Exchange Pole Line account, subsequent to June 30, 1923.

The third column in each account, which is headed "Per cent Labor of Material" we have computed by dividing the second column by the first in order to simplify the comparison between the two. Comparing the first half of 1923 with the second half of 1923, this exhibit shows that the per cent that labor was of material in the Pole Line account, dropped from 249.6 to 99.2; whereas in Aerial Cable, it increased from 73 to 104.5 and in Aerial Wire it dropped from 135.8 to 95.3. In Underground Conduit it rose from 203.8 to 262.3 and "Underground Cable" is the only account where the ratio is at all similar.

4070 Of course, in the second half of 1923 as compared with the first half of that year, there were some changes in both material and labor costs as indicated by a comparison between Plaintiff's Exhibit 1 and Plaintiff's Exhibit A-2, but I do not think that they alone would account for the striking differences shown in this tabulation. I have only partially investigated the records of the company to find the reason for these differences. It would be quite an undertaking to make a complete investigation, for which time has been lacking since this exhibit was prepared. I just received from a man working under my supervision, a partial answer to the question this morning, prior to coming to court.

4071 I sent over to the company the man who had pulled off the dollar totals from the estimate ledgers and asked him to get certain breakdowns, which he handed to me this morning. This relates only to Account 241, Exchange Pole Lines. The summaries which were prepared from our working papers, which in turn were pulled from the construction records of the company, show in 1921 the following charges to Exchange Pole Lines account: On specific estimates, for material, $3,601.53; for supply expense $397.14; for direct labor, $1,930.79; for overheads $704.76; and for incidentals, including Stable and Garage and Sundry Disbursements, $373.24; or a total of $7,007.46.

The point to which I would call your attention there is that the charge for incidentals amounts to about 1/6th of the direct labor charge on specific estimates, which is a pro-

portion comparable to that which we often find. Now, in the routine estimates we found an entirely different situation. The charge for material on routine estimates in this
4072 account during 1921 amounted to $20,308.29; for supply expense $2,240.76; for direct labor, $18,395.78; for overheads, $4,746.60; and for incidentals $38,147.34.

Comparing the figure for incidentals with that for direct labor, we find that the incidentals amounted to a good deal more than twice, nearly three times the charges for direct labor as compared with one-sixth in the case of specific estimates.

Now, under the working conditions in Chicago, it is of course impossible that incidentals should amount to three times the direct labor cost, and so what I asked Mr. Bradish to get was a breakdown of those incidental figures. We found the same sort of result, by the way, in the other two years. In 1921 the figure for incidentals which I have just read amounted to $38,147.34, and of that amount $33,058.17 represents Commonwealth Edison bills on joint con-
4073 struction, in other words, the factor that in Exhibits A-2 to A-10 Mr. Sloan has set up separately, he did not in Plaintiff's Exhibit 1. That is, in Plaintiff's Exhibit 1 he included, in his labor factor incidentals amounting to $38,000, and of that $38,000 I found $33,000 did not represent labor, but represented Commonwealth Edison bills for joint construction. By including that amount as direct labor it would throw all of his labor factors out of gear. In 1922 the result was very similar. On specific estimates we found material charges amounting to $6,167.75; supply expense $561.91; direct labor, $6,586.93; overheads, $1,863.09, and incidentals, $1,271.65. Again the incidentals on specific
4074 estimates run approximately one-sixth of the direct labor. On routine estimates we found: Material, $46,298.91; supply expense, $4,216.92; direct labor, $42,444.42; overheads, $11,343.02; and incidentals, $86,527.53. Again the incidentals are more than twice the charges for the direct labor.

Now, of those incidentals amounting to $86,527.53 we found $76,718.20 representing Commonwealth Edison joint construction bills. That is $76,000 out of the $86,000, of incidentals which Mr. Sloan has considered as in his labor factor, and the $86,000 twice as much as the direct labor—I found that $76,000 was not for labor, but represented bills of the Commonwealth Edison Company for joint construction.

Now, if you take that $76,000 out, it leaves about $10,000 for incidentals, which is about one-quarter of the direct labor, instead of twice as much as the direct labor.

4075 In 1923 we found the same situation. On specific estimates we found: Material amounting to $3,592.27; supply expense, $58.60; direct labor, $621.63; overheads, $149.04; incidentals, $115.82. Incidentals again were approximately one-sixth of the direct labor on specific estimates.

Under routine estimates we found: Material, $28,638.43; supply expense, $2,336.11; direct labor, $22,686.97; overheads, $5,438.56; and incidentals, $56,112.16. Again the incidentals are well over twice the direct labor.

Now, for that six months' period of the $56,112.16 incidentals we found $49,254.53 in Commonwealth Edison construction bills—joint construction bills. That is again, $49,000 of bills included in $56,000 of incidentals which Mr. Sloan used in compiling his labor factor as labor, I found were not labor, but represented Commonwealth Edison bills for joint construction.

4078 Thus far my exhibits have covered the period up to June 30, 1923.

4079 Defendants' Exhibit X-11, which is entitled "Labor Hour Performance on Specific Estimates, 1929," is the study of the specific estimates of the company's construction experience in 1929.

I selected 1929 for the study because that was the latest year during which construction was carried on under fairly normal conditions. During 1930 and 1931 the abnormal business conditions, both here and elsewhere, affected construction costs to such an extent that the results obtained during those years could not be taken as indicative of what might be expected in more normal times.

Defendants' Exhibit X-11 was prepared by me, and under
my direction. It sets forth the result of my study of
4080 labor performance during 1929. All the data, except

the trial labor units which resulted from the earlier studies set forth in Defendants' Exhibit X-8, were taken from the company's construction records. It covers the same accounts as Defendants' Exhibit X-8, except exchange pole lines. That was omitted because there was practically no work done under specific estimates in that account during 1929.

I believe there were eleven specific estimates, involving a total expenditure of $159.72, and including 47½ hours. I set up Defendants' Exhibit X-11 in the same form and used the same method of computation as in the case of Defendants' Exhibit X-8. The explanation as to the form and method which I gave in connection with Defendants' Exhibit X-8 would cover Defendants' Exhibit X-11 as well.

4081 The first column on page 1, for example, lists the items, and the second column the quantities of those items which the company placed in the aerial cable account during 1929 as shown by its specific estimate ledger sheets. The figure of 9,242 shown at the bottom of the page is the total number of labor hours actually used in placing those items and quantities of material, as shown by those same specific estimate ledger sheets. The third column is headed "Labor hours at level of specific estimate 1921-22-23."

These units, which I have used in this study as trial units, resulted from the earlier study set forth in Defendants' 4082 Exhibit X-8. For all items of material which were placed both during 1929 and during the period 1921-2-3—and that includes nearly all the list—the labor hour units shown in the third column on page 1 of Defendants' Exhibit X-11 were taken from the last column on page 7 of Defendants' Exhibit X-8, where they were developed to show the average number of labor hours which, during that period, the company required to place a unit quantity, such as a foot of cable, of each of the items there listed.

I believe that in 1929 we found a few items which were not placed during the earlier period, and which consequently do not appear in Defendants' Exhibit X-8. As I recall it, we found a few special terminals, and things of that sort, and a few sizes of cable, I am not sure of the latter. For such items we referred to the original list of trial units which we had used in the preparation of Defendants' Ex-

hibit X-8, adjusted the units to the same level and used
4083 them in Defendants' Exhibit X-11. For the last two columns on page 1 of Defendants' Exhibit X-11, my explanation would be the same as I have previously given for the corresponding columns in Defendants' Exhibit X-8.

Totaling up the column headed "Extension," we find that at the labor performance level of the company on its specific estimates during the 1921-2-3 period it would have required 14,595 labor hours to place the aerial cable which it did place on specific estimates during 1929.

On the next line, however, we find that it actually required, during 1929, only 9,242 labor hours to place that cable, or 63.32 per cent as many as would have been required at the labor performance level of the period 1921-3. That is, as to the specific estimates, in using the 1929 experience, it would have taken 63.32 per cent of the amount of labor hours to perform the same job as it took in 1921-1922 and '23.

In the last column I have reduced the labor hour
4084 units to 63.32 per cent of their value during the earlier period and find, for example, that while during the 1921 to '23 period the company required .2114 labor hour per foot of 300 pair 19 gauge cable, during 1929 it required only .1339 labor hour per foot to place that same size of cable.

I stated before that during the 1921-22-23 period the company divided its underground cable, account 245, between two sub-accounts, 5-C and 35-C, 35-C being house cable and 5-C all the rest of the account, and that it has since subdivided 5-C between 3 sub-accounts. These three sub-accounts are the ones listed as 15-C, 25-C and 45-C in the heading of page 2 in Defendants' Exhibit X-11. I have added them together here in order that this exhibit may be on the same basis as Defendants' Exhibit X-8. I believe Mr. Sloan did the same thing in Plaintiff's Exhibit A-2 to A-10, inclusive. So that pages 2 to 5, inclusive, of Defend-
4085 ants' Exhibit X-11 relate to the construction of the same class of plant as pages 16 and 17 of Defendants' Exhibit X-8.

The data on these pages, which relate to underground cable, are taken from the same records and the computations are made in the same manner as in the case of aerial cable. The comparison is made at the bottom of page 5, and shows

that during 1929 the company required only 94.59 per cent as many labor hours in its underground cable construction as it would have required if its labor performance had been the same as it was during the 1921 to 1923 period. In the last column I have, therefore, adjusted the labor hour units to the 1929 level by taking 94.59 per cent of the 1921, '22, '23 units. The purpose of the remaining pages of this exhibit is the same as that of pages 4, 5, 11, 12, 20 and 21 of Defendants' Exhibit X-8, in showing that during 1929,
4086 as during the earlier period, the majority of the specific estimates cover small jobs such as those referred to by Mr. Sloan in connection with Plaintiff's Exhibit No. 52.

Page 6 shows that in the case of aerial cable 83.87 per cent of the total number of estimates involved during 1929 a total expenditure in this account of less than the $2500 minimum which has been referred to. These figures are specific estimates, as before. Page 8, treating of underground cable, shows that in the case of main underground cable, which includes much the largest construction projects of any of the cable accounts, 54 per cent of the estimates ran under $2500 each during that year. While page 10 shows that in the case of subsidiary cable—page 9, of course, is similar to page 8, and sets up the labor hours instead of the dollars—page 10 shows that in the case of subsidiary cable 96.15 per cent of the estimates ran less than $2500, and nearly three-fourths of them ran less than $250, that is, 71.15 per cent.

4087 Pages 7, 9 and 11 make the same sort of comparison, on the basis of labor hours, and lead to the same conclusion. I do not show a similar analysis of 45-C, trunk cables, because while I had to include that sub-account with the other two in fixing the level of labor performance during 1929 in order to get an answer comparable with that for the 1921 to '23 period, when the company included it in 5-C, it was not referred to in Plaintiff's Exhibit No. 52, or in Mr. Sloan's testimony relating thereto; and, like house cable, it would probably be reproduced in much the same way that it was actually placed. The exhibit shows that changes in labor efficiency, labor productivity, or output per man hour are substantial. That such changes are not offset, as has been testified by Mr. Sloan, by increased construction diffi-

culties, because during this period the figures shown
4088 here are net, they are not the net result of such increased labor productivity and the increased construction difficulties which may have partially offset them.

That is, whatever construction difficulties there were, were taken into account in arriving at this result.

Defendants' Exhibit X-12, entitled, "June 30, 1923 Portion of December 31, 1929 Appraisal, Priced on Basis of Wholesale Construction and 1929 Material and Labor Cost Levels," was prepared under my direction.

I have applied, in this exhibit, to the aerial and underground cable accounts,—the same account that I have just discussed in connection with Exhibit X-11,—the percentages of increase from year to year, as those percentages are given in Plaintiff's Exhibit A-2 to A-8, inclusive, in order to reduce to the cost level of December 31, 1929, that portion of Mr. Sloan's appraisal as of that date in Plaintiff's Exhibit
4089 A-8, which represents his appraisal of those accounts as of June 30, 1923 in Plaintiff's Exhibit 1.

In this exhibit I have also applied to those same appraisal figures from Plaintiff's Exhibit No. 1, two further adjustments in respect to labor performance which resulted from my studies of that subject as set forth in Defendants' Exhibits X-8 and X-11; the former reflecting the adjustment due to specific and routine estimates of the 1921 to '23 period, the latter reflecting the improved labor performance during 1929. Those two computations are brought together for comparison on page 1 of Defendants' Exhibit X-12.

On page 1 the figures in the column headed "Appraisal method" are Mr. Sloan's June 30, 1923 appraisal of these accounts as shown on page 2 of Plaintiff's Exhibit No. 1—after adjustment to the cost level of December 31, 1929
4090 by means of the percentages of increase and the proportions of material and labor which are shown in Plaintiff's Exhibits A-2 to A-8, inclusive.

In making this adjustment, I have used only data from Plaintiff's Exhibits Nos. 1 and A-2 to A-8, inclusive, and have also used Mr. Sloan's method of compositing material and labor indices, because in this column I wanted to arrive at the same figures that Mr. Sloan would if he made the computation from his data and by his method.

In the column headed, "Company experience," I have made two further adjustments. The first was to eliminate, or at least minimize, the effect of piecemeal construction by using the level of labor performance which was experienced by the company in its specific estimate construction during the 1921 to '23 period as shown by Defendants' Exhibit X-8. To the result of that adjustment I then applied the ratio between the labor hours actually required in the specific estimate performance during 1929 and those which
4091 would have been required at the level experienced during the earlier period, which ratio is developed in Defendants' Exhibit X-11.

The figures shown in that column represent what that plant would have cost if built in a manner more nearly comparable to a reproduction project, at the cost level prevailing on December 31, 1929 and under the conditions of labor performance which prevailed during that year. When I say, "What it would have cost," I mean, on the assumption that Plaintiff's Exhibit Nos. 1 and A-2 to A-8, inclusive, are correct in what they purport to show, and that the company's construction records, and Defendants' Exhibits X-8 and X-11 compiled and computed therefrom are correct in respect to labor performance.

This exhibit purports to show what the 1923 portion of the 1929 appraisal would have been at the level of the
4092 1929 specific estimate labor performance. That takes into account, of course, the dollar changes in material, as well as in labor.

The first column on page 1 shows the amounts at which the June 30, 1923 appraisal of these accounts is, under Mr. Sloan's procedure, included in his December 31, 1929 appraisal. The second column shows the amounts at which they would have been included, if he had used the labor performance level which actually prevailed during 1929, and if he had eliminated such piecemeal construction as would not be experienced in reproducing this property. The difference between the two columns is, for these two accounts alone, practically three million dollars. That is, Mr. Sloan was three million dollars higher than what it would have been by my method. In the third column I show the per-
4093 centage that the company experience was of Mr. Sloan's

appraisal method. This is the same arrangement, of course, that was used in Plaintiff's Exhibit No. 50, and in Defendants' Exhibits X-6 and X-9.

I have followed that arrangement to facilitate comparison. If expressed the other way, that is showing the percentage by which Mr. Sloan's appraisal method is in excess of the company's experience, that would show, for aerial cable, that Mr. Sloan's appraisal method as set up in the first column here was 35.05 per cent higher than would be justified by the company's experience; for underground cable, 8.98 per cent higher, and for the two combined, 12.37 per cent higher.

Page 2 shows the derivation of the aerial cable figures
which appear on page 1. On page 2, the figure on the first
line of $3,885,604 is copied from Plaintiff's Exhibit No. 1,
page 2, and there represents Mr. Sloan's appraisal of
4094 that account as of that date. On the second line, I show
the ratio of the December 1, 1929 cost level to the cost
level used by Mr. Sloan as of June 30, 1923; first, as com-
puted from the percentages of increase shown in Plaintiff's
Exhibit A-2 to A-8, inclusive; and, second, in the second col-
umn, as that ratio appears after making the further adjust-
ments for piecemeal construction and for labor performance,
which I have described. In the third line I have applied
those ratios to the figures shown in the first line in order
to compute the figures which are used on page 1. The last
two lines are merely a comparison between the results of that
computation.

Pages 3 and 4 show the derivation of the ratios used on
page 2. That is, in the column headed, "Sloan," on page
3, the first two figures in that column are the ratios of the
1929 to the 1923 cost of material and labor, which result
from the percentages of increase as shown in Plaintiff's
4095 Exhibit A-2 to A-8, inclusive. There are several blanks,
and the next two figures are the proportion of material
and labor which are used in Plaintiff's Exhibit A-8 for the
total plant. The last line is the composite computed from
the figures above by Mr. Sloan's method, which both he
and I described.

In the column headed "Wray," I use in the first two lines the same ratios of material costs and of labor costs as before. I used the material ratio without change because it would

not be affected by either piecemeal construction or labor per-
formance, but the labor ratio I subject to the two adjust-
ments which I described. I adjusted it first for piecemeal
construction by multiplying it by .912, which appears on
page 7 of Defendants' Exhibit X-8 as the ratio of specific
estimate labor performance to specific and routine com-
4096 bined at the time of the 1923 appraisal. Then multiply
that result by .6332, which appears on page 1 of De-
fendants' Exhibit X-11, as the ratio of the number of labor
hours required in 1929 to those required at the level of the
labor performance during the earlier period. That gives
74.15 as the ratio of the 1929 labor cost at the level of specific
estimate performance to the labor cost used by Mr. Sloan
in his appraisal of June 30, 1923. I then combined that labor
ratio with the material ratio shown in the first line by means
of the proportions of the material and labor shown below,
arriving in the last line at a composite ratio of 79.74 per
cent. Those two ratios shown in the last line are those used
on page 2 of this exhibit. I made a minor adjustment
4097 in the proportions of material and labor used in the
Wray computation, which is explained in the footnote.

On page 4, the figures in the two columns headed "Chain index (a)," are copied directly from Plaintiff's Exhibits A-2 to A-10, inclusive. The figures in the other two columns are merely the chain indices in (a) converted to indices on the June 30, 1923 base, by a simple computation which is familiar to every user of index numbers. The 1929 figures in column (b) of 85.26 for material and 128.41 for labor are those used in the first and second lines, respectively, on page 3 of my exhibit. The remaining tables of this exhibit cover underground cable substantially in the same way that pages 2, 3 and 4 cover aerial cable. They cover the same ground, and the data are taken from the same sources, and the methods used are the same with one minor exception.

4098 Page 5 is similar to page 2 and shows the derivation of the underground cable figures, which are used on page 1.

Page 6 shows the derivation of the ratios which are used on page 5, and is similar to page 3 except that it does not show the derivation of the labor ratio which is used on the second line of the column headed "Wray."

For reasons which I previously stated in connection with Defendants' Exhibits X-6, X-8 and X-9, it was necessary to treat the labor of the underground cable gang and the building cable gang separately and this separate treatment is shown in page 7, the last figure on that page being carried forward to page 6.

I start on page 7 with the cost of reproduction of the en-
tire account amounting to $20,244,068 as shown in Plain-
4099 tiff's Exhibit No. 1, page 3. The first step I took was
to find the labor portion of this total, and that is done on the third line by applying the "per cent of total cost labor," which is shown in the second line, and is copied from Plaintiff's Exhibit No. 1, page 54. This gives $5,222,970 as the total labor cost in this entire account at the June 30, 1923 level. In order to apply the separate treatment referred to, it is then necessary to separate this total labor cost between underground cable labor and building cable labor.

Page 58 of Plaintiff's Exhibit A-2 shows that of this labor 71.5 per cent was underground cable and 28.5 per cent building cable. Applying these percentages, we get $3,734,424 as the cost of the underground cable labor and $1,488,546 as the cost of the building cable labor, still at the level of the June 30, 1923 appraisal.

Turning for a moment to page 9, where I have set up the chain indices shown in Plaintiff's Exhibits A-2 to A-10, in-
clusive, and from them have computed the indices on a
4100 June 30, 1923 base for the underground cable gang and
the building cable gang separately, we find that the 1929 index of the underground cable gang was 136.22 per cent, and of the building cable gang was 130.81 per cent. Applying these indices on page 7, we find that, according to Mr. Sloan's figures, the underground cable labor in his June 30, 1923 appraisal would have cost $5,087,032 at the 1929 wage levels, and the building cable labor would have cost $1,947,167.

For the reasons already stated, I have applied no further adjustment to the building cable labor. I have used this figure as it stood, but I have adjusted the underground cable labor for piecemeal construction and for improved labor performance in the same way that I adjusted aerial cable labor on page 3 of this exhibit.

In Defendants' Exhibit X-8, page 17, I found that the ratio of the number of hours required at the labor performance level of specific estimates was 81.06 per cent of that required at the level of the total construction under both specific

4101 and routine estimates. As a means of eliminating, or at least minimizing, the effect of such piecemeal construction as would not be encountered in reproducing the plant, I therefore, took 81.06 per cent of Mr. Sloan's factor of 1.3622, reducing it to 1.1042. This represents the ratio which specific estimate labor performance in 1923 priced out at 1929 wage levels, bears to the cost level used in Plaintiff's Exhibit No. 1. The next step was to adjust for the improved labor performance experienced during 1929, and since Defendants' Exhibit X-11, page 9, shows this factor to be 94.59 per cent, I took 94.59 per cent of 1.1042 and found 1.0445 as the labor ratio of 1929. Applying this ratio to Mr. Sloan's 1923 labor cost of $3,734,424 gave $3,900,606 as the 1929 cost of that labor at the level of specific estimate performance. Adding this to the figure of $1,947,167, computed above as the 1929 cost of the building cable labor, gave a total labor cost at the 1929 level of $5,847,773. Dividing this by Mr. Sloan's 1923 cost of $5,222,970, gives the ratio of 1.1196 shown in the last line, and this ratio is the one used in the column headed "Wray" on page 6.

4102 The material ratio of 97.86 used in both columns on page 6 is the 1929 material index shown on page 8, where that index is set up in the same form and is developed in the same way as the corresponding index for aerial cable material on page 4.

In this exhibit, I have not made any allowance for retirements which may have been made from the 1923 plant prior to December 31, 1929, because I doubt whether it would be possible to identify such retirements with any reasonable degree of accuracy. Some of them could probably be identified by a study of estimate records and a study of mortality records, but not all of them.

Such retirements would affect the summary on page 1 of this exhibit by reducing the dollars somewhat, but would not change the percentage for aerial cable. For underground cable it would not change the percentage unless the retirements were so predominantly from one of the sub-accounts

(underground or building cable) as to change sub-
4103 stantially the proportions of those two sub-accounts in the surviving plant. In that event, it would affect the computation on page 7 to some extent by changing the respective weights of the sub-accounts.

This exhibit shows that, assuming the correctness of Mr. Sloan's appraisal in Plaintiff's Exhibit No. 1, his percentages of increase in material and labor cost in Plaintiff's Exhibits A-2 to A-8, inclusive, and of the other data in respect to which I have testified, that I used them from these exhibits, his appraisal of such portion of the 1923 plant as survived to December 31, 1929, was for aerial cable about 35 per cent higher than would be indicated on the basis of the company's experience on its larger construction projects; for underground cable, about 9 per cent higher, and for the two accounts, something over 12 per cent higher.

A substantial part of the plant covered by the 1929 appraisal was the surviving part of the 1923 plant.

4104 In connection with my study of the 1929 construction records, I did not make any check of Plaintiff's Exhibit A-8 similar to the spot check that in Defendants' Exhibit X-6 I have made of Plaintiff's Exhibit No. 1. I did not because while it would have been a comparatively simple matter to check the percentages of the increase in material costs, that could not be done with any reasonable degree of accuracy in respect to labor costs. In order to develop the percentage of increase in labor costs, it would be necessary to determine, first, the labor cost level on December 31st; second, the labor cost level on January 1st; and third, the average labor cost level throughout the year, weighted on the basis of the gross additions throughout the year.

The average level can be measured as I measured it in Defendants' Exhibit X-6 for each of the years 1921
4105 and 1922 and for the first six months of 1923. It cannot be measured accurately as of either December 31st or January 1st, because labor cost levels, unlike material costs, but like such expenditures as supply expense and plant supervision expense, cannot be determined as of an instant date, but only over a period of time.

That is due to the fact that labor cost levels, as I testified at the previous hearings, reflect at least four variables—

namely, wage levels, gang makeup, the differing proportion of material and labor involved in placing large and small units, and the consequent effect on the labor cost level of changes in the average size of the units, and efficiency, or output per man hour. Mr. Sloan's labor index purports to measure only the first of these, and would seem to take no account of the other three. Of these four variables, the wage level is the only one which can be determined as of any given date, while the effect of the other three can be measured only over a period of time long enough and covering a volume of work large enough to balance out any temporary or 4106 accidental variations, and give a stable, representative average.

I have already discussed in previous testimony the effect that changes in labor efficiencies have on labor costs. I have made no study of the other two variables in this case. The two variables that I am referring to are the gang makeup and the differing proportions of material and labor involved in placing large and small units, and the consequent effect on the labor cost level of changes in the average size of the 4107 units. I did not make a separate study as to those variables other than the study made which resulted in Defendants' Exhibit X-10.

I am drawing from the figures in Defendants' Exhibit X-10. They indicate that these two variables have affected the labor cost in Chicago, especially in the case of underground cable in 1931.

4108 The fundamental difference between my labor index used in Defendants' Exhibit X-6, and Mr. Sloan's labor indices used in Plaintiff's Exhibits 1 and A-2 to A-10, inclusive, is, that while his indices reflect only the changes in wage levels, mine reflect all four of the variables which I have described, because I developed them from the company's actual construction experience as shown by its estimate ledger sheets. It is only by limiting his index to the one variable which can be determined as of a given date and disregarding the effect of all the others that Mr. Sloan is enabled to set up the percentages of increase in labor costs which he used in Plaintiff's Exhibits A-2 to A-10, inclusive. Since the effect of the other three variables is substantial, and since that effect cannot be determined as of a given date, it is impossi-

ble for me to determine with any reasonable precision
4109 the percentage relationship between labor cost levels on December 31st of any year and the average levels during the year.

I did set up and use such a percentage relationship in Defendants' Exhibit X-6, by adopting for that purpose Mr. Sloan's estimate of the relationship between labor cost levels on June 30, 1923, and the average levels during the six months immediately preceding that date. I determined the average levels during the six months and during the years 1921 and 1922 as I have testified, from the company's construction records.

4113 Defendants' Exhibit X-12, page 4, shows two labor indices, one being a chain index and the other being an index on a fixed base, in that instance, June 30, 1923. I testified a few minutes ago that the chain index is taken directly from Plaintiff's Exhibits A-2 to A-10, inclusive, and that the index on the fixed base is merely the chain index converted to a fixed base index.

4114 In those exhibits, Plaintiff's Exhibits A-2 to A-10, inclusive, the figures in that chain index represent Mr. Sloan's percentages of increase in labor costs from year to year. I computed the index on a June 30, 1923, base, as follows:

On June 30, 1923, that being the base, of course the figure shown is 100 per cent. Since the level on December 31, 1923, was 101.61 per cent of that on June 30th as shown in column (a), the index for that date on a June 30th base was also 101.61 as shown in column (b). Since the level on December 31, 1924, was 104.21 per cent of the level at the end of 1923, the 1924 index on a June 30, 1923, base is 104.21 per cent of 101.61, or is 105.89 as shown in column (b). Similarly, since the level of December 31, 1925, was 99.19 per cent of the level at the end of 1924, the 1925 index is 99.19 per cent of 105.89, or is 105.03. Column (b) was computed throughout in that manner, from column (a), one step at a time. That is the method to which I referred earlier this morning as the method in common use.

4115 Then it follows, that if we accept the percentages of increase which Mr. Sloan has used in Plaintiff's Exhibits A 2 to A 10, inclusive, and which I have tabulated in column (a) on page 4 of Defendants' Exhibit X 12—that his labor cost on December 31, 1931, was 133.17 per cent of his labor cost on June 30, 1923, or an increase of 33.17 per cent.

Referring to Defendants' Exhibit X 12A, "The Effect of Assumed Errors in Percentages of Increase in Labor Costs in Plaintiff's Exhibits A 2 to A 10, inclusive, account 242 - Exchange aerial cable," I have assumed various errors in the chain index as used by Mr. Sloan and have traced out the effect of these assumed errors. Suppose we take the cable in the upper right hand portion of Defendants' Exhibit X 12A, in which I have assumed that Mr. Sloan's disregard of three items, three out of the four variables which affect a labor index, has resulted in each of the ratios in column (a)
being 2 per cent too high. The 1931 index in column
4116 (b) which is comparable to the 1931 index on page 4 of
Defendants' Exhibit X 12, and is there 133.17, by assuming this 2 per cent error throughout the chain index, the 1931 index is reduced to 111.03, or, to state it in another way, so that the 2 per cent error in each year, by reason of the accumulation from year to year through the chain index, results in an error of 22 per cent of the base in 1931, the 22 per cent being the difference between 133 and 111.

That is, it would make his percentage of apparent increase as of 1931 over 1923 three times as great as it would have been without that accumulated error.

There is another peculiarity of the chain index which does not involve this cumulative effect. If we assume that Mr. Sloan's estimate of 101.61 as the ratio between the labor cost level of December 31, 1923, and that of June 30, 1923, is three points too high and should be 98.61, but that all of the
other ratios in column (a) are correct, then that three-
4117 point error would be carried forward into each of the
subsequent years, subsequent to 1923, and would gradually increase by reason of the upward trend of the index until in 1931 it would become four points, being the difference between the 133.17, shown on page 4 of Defendants' Exhibit X-12, and the 129.24 shown in the lower right-hand tabulation of Defendants' Exhibit X-12A.

Another way of putting it would be that, since Mr. Sloan's chain indices indicate a 33 per cent rise from 1923 to 1931, necessarily a 3 point error in 1923 would rise one-third, or become 4 points in 1931.

If the appraisal as of June 30, 1923, which is set forth in Plaintiff's Exhibit No. 1, which forms the starting point of both columns (a) and (b) of the labor indices we have been discussing, and which consequently is taken as 100 per cent in both columns, is itself in error, that error would be carried forward into each of the subsequent years and be multiplied by the rising trend of the index in the same way.

Index numbers in general are not subject to the er-
4118 rors, accumulative and otherwise, that we have just been
discussing. A commodity price index, for example, is computed by comparing the weighted price level of each given year with a similar weighted price level of the base year. In that way the index of each given year stands on its own feet, and is not affected by an error in any other given year. It is only when the level of each year is built up from the level of the preceding year, as it is in Plaintiff's Exhibits A-2 to A-10, inclusive, that the resultant index is subject to the errors we have been discussing. That is, the cumulative effects of the error result from the manner in which the chain index was compiled.

Defendants' Exhibit X-13, entitled "Comparison between Costs used in Sloan Appraisals and Costs of Western Electric Company; Apparatus, Installation, Equipment Specifications" was prepared under my direction and supervision. I have compiled and computed from Plaintiff's Exhibit A-2 to
A-10, inclusive, index numbers purporting to represent
4119 the changes in the levels of apparatus prices and of cen-
tral-office installation and equipment specification costs used by Mr. Sloan in those appraisals. I have also compiled and computed from the records of the Western Electric Company similar index numbers purporting to represent the experience of that company in respect to those same items, in dealings with the Bell System as a whole. The result of that comparison is shown in Exhibit X-13.

It consists of two pages on which I have tabulated the index numbers just referred to, page 1 showing the indices of apparatus prices and page 2 the indices of central office installation and equipment specification costs. On the first 4120 page, columns (a), (b), (c) and (d) are the indices of apparatus prices which I have stated were compiled and computed from Plaintiff's Exhibits A-2 to A-10, inclusive.

Column (a) deals with Account 221, Central Office Telephone Equipment. In Plaintiff's Exhibits A-2 to A-10, inclusive, Mr. Sloan has separated this account into manual exchange, local tandem, toll switchboards, toll telephone terminals, toll telegraph equipment and dial, and has appraised each of these groups separately. To determine his percentages of increase in cost, he sets up a "typical plant" for each group. From the material figures in his typical plant as of the first and last of each year we developed a chain index for each of the groups I have mentioned. These chain indices were then weighted into a composite chain index on the basis of the material portions of the gross additions in each group.

To determine the material portions we took the "Gross Additions as per Books, exclusive of Capitalized Overheads," as shown on page 4 of each exhibit and applied to it the 4121 percentage that material was of the total in the typical plant. The composite chain index thus developed was then converted by the method I have previously described into the index on a December 31, 1923, base, which is shown in column (a) on page 1 of Defendants' Exhibit X-13.

Column (b) for station apparatus was worked up in the same manner except that, since Mr. Sloan appraised the account as a whole, no weighting between groups was necessary.

In column (c) for P. B. X. equipment, I worked that up in the same manner as column (a), multiple and non-multiple being worked up separately, and then combined into the composite shown there.

And column (d) was a composite of columns (a), (b) and (c), weighted on the basis of the material portions of the gross additions each year.

The index in column (e) was prepared as follows:

On January 15, 1932, Mr. Gregory furnished to us 4122 in New York, certain working papers underlying a statement which was designated as "Statement A," and which has since been offered as Plaintiff's Exhibit A-83, and entitled "Approximate effect of price changes on apparatus and equipment sold to Bell companies, 1921 to 1930." Among these supporting papers, we found a table designed "Statement B." "Statement B" that I am referring to now is the statement that was reproduced as Defendants' Exhibit X-13A and entitled "Estimated Effect of Price Changes on Apparatus and Equipment sold to Bell Companies 1921-1930."

I think Defendants' Exhibit X-13A speaks for itself. In that is developed a chain index on a 1920 base. The index shown in column (e) on page 1 of Exhibit X-13 was
4123 worked up directly from "Statement B" as indicated by the column heading. "Statement B" has been made available to Mr. Sloan since he was furnished a copy of Defendants' Exhibit X-13. Comparing columns (d) and (e), the index of Mr. Sloan's prices runs higher in every year than that in the one furnished by Mr. Gregory, that is, X-13A.

On page 2 of Exhibit X-13, I show similar indices of installation costs and equipment specification costs. The indices headed "Western Electric average" were prepared as follows: On February 16, 1932, I went to the Hawthorne Works of the Western Electric Company of Chicago and asked for a binder of cost indices, which I understood are known as the Burgess index numbers, and which Mr. Goldstein had arranged to make available for our inspection.
4124 That was at the office of the Western Electric at Hawthorne. In that binder I found two tables, one entitled, "Price Trend on Installation Work Performed for Bell Telephone Companies," and the other, "Price Trend on Equipment Specification Performed for Bell Telephone Companies."

The first sheet that I found there is the sheet which is reproduced as Defendants' Exhibit X-13B. I copied that from the table I found in that binder. It is entitled, "Price Trend on Installation Work Performed for Bell Telephone Companies, 1923-1925 = 100." The second sheet I found there was copied by me, and is reproduced in Defendants' Exhibit X-13C, entitled, "Price Trend on Equipment Specifications Performed for Bell Telephone Companies, 1923-1925 — 100."

4125 These tables purported to show installation and equipment costs for manual, panel and step by step equipment from 1920 to 1930, inclusive, arranged in the form of indices on a 1923 to 1925 average basis. I copied those tables at that time, and by rearranging the manual and panel indices to a 1923 base, I obtained the indices shown on page 2 of Defendants' Exhibit X-13.

I spoke of central office equipment being separated by Mr. Sloan into several groups for appraisal purposes. The groups that I used in developing the indices which are headed "Sloan Appraisal" on this page were manual exchange and dial only, so that it was not necessary to weight different groups into a composite in this case as I did on page 1.

With that exception, I developed these indices of installation and equipment specification costs in the same way as the apparatus indices on page 1, taking the installation and equipment specification costs shown for the beginning
4126 and end of each year in Plaintiff's Exhibits A-2 to A-9, inclusive, developing the chain index from those costs, and then converting the chain index into an index on a 1923 base. I did this separately, of course, for each of the four Sloan indices shown on page 2 of Defendants' Exhibit X-13.

Installation and equipment specification costs are similar to labor costs in general, in that their level cannot be measured as of a given date, but only over a period.

Mr. Sloan's appraisals in Plaintiff's Exhibits A-2 to A-9, inclusive, are as of December 31st of each year.

The question as to the data used by him in developing his installation and equipment specification costs was raised on Mr. Sloan's cross-examination, and in response the company has furnished a photostatic copy of a contract. That
4127 photostatic copy of the contract is reproduced as Defendants' Exhibit X-13D entitled, "Western Electric Company's proposal for Western Electric manual central office equipment, proposal T. S. 799110, dated January 6, 1923."

The letter of transmittal accompanying this exhibit from the company stated that it is—I quote from the letter—"a sample of the records from which Mr. Sloan obtained the installation costs of central office equipment." This con-

tract describes in somewhat general terms the equipment to be furnished and the installation work to be done, and specifies the price for each. It does not specify a price for the equipment specifications, the cost of which was included in the equipment price. It is the general practice in the Bell System to cover the installation of new offices and any substantial additions to existing offices by such contracts, which of course are entered into at various times throughout the year. If these contracts are the source of Mr. Sloan's information as to the installation costs, then it seems evident that his costs are not instant figures as of December 31st
4128 of each year, but represent experience throughout the year, and in that respect they are comparable with the indices of Western Electric costs shown on page 2 of Defendants' Exhibit X 13, which represent averages throughout the year.

In respect to manual installation costs, the indices show an increasing divergence throughout the years. In 1923, of course, that being the base year, the indices are the same. From there on, they increase in each year. In 1924, the Sloan index is 1.6 per cent higher than the Western Electric index. In 1925, it is 9.2 per cent higher. It rises each year until in 1930 it becomes 38 per cent higher than the Western Electric index. That is, it is 38 per cent higher than that represented by the experience of the Western Electric in its dealings with the Bell System as a whole.

And in the case of dial installations, Mr. Sloan's index for 1930 is about 60 per cent higher than that of the Western experience in the Bell System as there shown.

4129 The dial central office equipment in Chicago is panel. Under the general practice prevailing in the Bell System, the controlling factor in deciding whether panel or step-by-step equipment shall be used is the size of the exchange. In large multi-office exchanges, such as Chicago, New York, Buffalo or Seattle, to mention a few with which I have had some familiarity, panel is considered preferable; while in single office exchanges and small multi-office exchanges—Syracuse, for example, which had two offices at the time I knew it—step-by-step equipment is used. So that the Western Electric index of the dial installation costs shown here relates only to the larger cities.

4130 Looking now at the cost indices of equipment specifications, Mr. Sloan's index for manual offices is substantially higher than that of the Western every year except 1924, and in 1930 is about 55 per cent higher, as shown on page 2 of Defendants' Exhibit X 13. In the case of dial offices he is lower than the Western during the first three years and higher during the last four.

There was much more dial equipment in Chicago during the years 1927 to 1930, inclusive, than there was prior to 1927. That fact is shown in Plaintiff's Exhibits A 2 to A 9, inclusive.

Defendants' Exhibit X 14, entitled, "Price Indices, All Commodities, Copper and Lead," was compiled under my direction.

4131 Page 1 of Exhibit X 14 shows the yearly average levels of wholesale commodity prices from 1801 to 1931, inclusive, as compared with the average level during 1926, that is, using 1926 as a base. Since 1900 the United States Department of Labor has published in various forms, statistics of wholesale prices which have been widely used as authoritative summaries of price levels. These statistics have included indices which have been revised and refined from time to time, the last revision having been made as of the first of 1932. The revisions are by the United States Department of Labor.

The index series current during 1924 comprised 404 items and extended back to 1890, using 1913 as a base. I at that time extended that series back to 1840 by means of data which I found in Senate Report No. 1394. That was a report made on March 3, 1893, by the Finance Committee of which Senator Aldrich was then chairman. It consisted of four large volumes of data compiled under the direction of Professor Faulkner of—I recall—the University of Pennsylvania.

4132 In January, 1925, the United States Department of Labor published in its Bulletin No. 367 an index on a 1925 base, and covering the period from 1801 to 1840, which had been compiled by Professor A. H. Hansen of the University of Minnesota, and I used that to extend the series back to 1801, still on the 1913 base.

The Department of Labor afterwards made a similar computation from the same data and published the entire series on a 1913 base in the Monthly Labor Review of February, 1927.

In the October, 1927, issue of the Review, the Department issued a revision of its index, the revision consisting mainly of an increase in the number of commodities from 404 to 550 and a change of the base from 1913 to 1926. This issue carried the revised index back to January, 1923. In the July, 1928, issue of the Review the revised index was carried back to January, 1913, and in the November, 1928, issue it was carried back to the original date of 1890. With additions down to date, that index series was in effect till the end of 1931, and the 1890-1931 portion of the curve shown on page 1 of Defendants' Exhibit X-14 is plotted from that series,
4133 while the portion of the curve from 1890 back to 1801 is simply the earlier index to which I have referred, converted to a 1926 base.

That exhibit shows the tremendous but temporary effect which a great war has on price levels, and the transitory nature of the price levels during the ten or twelve years following a war.

During this period we have had three great wars, the War of 1812, the Civil War, and the World War.

It is a matter of common knowledge that, as shown by this chart, each of these wars caused a sharp though temporary rise in price levels. What is not so generally understood is their subsequent history in each case. As shown here, in each case there was a sharp recession, a temporary stabilization, and a second sharp recession. The temporary stabilization was more marked following the Civil War than it was after the War of 1812, and was still more marked after the World War; so much so that the impression became rather general that the 1926 level was a normal level.

4134 In each instance, however, the secondary recession eventually asserted itself to practically the same extent. Prediction has become an extra-hazardous occupation, and I would not venture upon it now, because each recession comprises factors which are not common to the others, and the net result of such factors is unpredictable. Up to the present, however, those factors which are peculiar to the existing recession would appear to have pretty well balanced out without affecting the net result.

On page 2 I have plotted by months for the period 1923 to 1931, inclusive, the same all-commodities index as on page 1, and have also plotted the indices of the two commodity groups which are most closely related to telephone construction costs, those two groups being building materials and metals and metal products. The purpose in plotting them by months is, of course, to show the trend in greater detail. All of the data shown here are taken from the current publication of the United States Department of Labor as stated in
4135 the heading.

The level of the all-commodities index in December, 1931, as plotted on page 2 was 66.3. The 1931 average as plotted on page 1 was 71.1. The 1926 average, of course, was 100, since that average is the base of this index. In 1923 it was 100.6; in 1920, 154.4; in 1911, 64.9; in 1896, 46.5, which is the lowest point shown on page 1.

The trend thus far during 1932 has been downward. Effective in January, 1932, the Department of Labor revised its index by increasing the number of items from 550 to 784
and also changed the weighting, so that the present
4136 series is not quite comparable with the one used in Defendants' Exhibit X-14.

So far the Department has published monthly figures only as far back as January, 1931, so that we cannot as yet substitute the new series for the old one. We can, however, compare them during the latest month in which they overlap, which was December, 1931. In that month the new series was 3 per cent above the old, and if we adjust it by that percentage we have 65.3 in January, 64.4 in February, 64.1 in March and 63.6 in April. The general trend thus far in 1932 is, therefore, not very different from what it was during 1931, although March and April show some tendency to decrease in the rate of decline. The Fisher Index, which reaches us somewhat earlier than that of the Department of Labor, leads to similar conclusions.

Page 3 of Defendants' Exhibit X-14, unlike pages 1 and 2, deals with the metal prices themselves instead of with price

indices, because there we are considering the price changes in two individual items, copper and lead. The upper
4137 group of curves represents copper prices, and the lower group, lead.

The jagged curves represent the average prices of copper and lead during each month of the period from December, 1922, to February, 1932, as those prices are compiled and published by the United States Department of Labor. The copper prices are f. o. b. refinery, and the lead prices, f. o. b. New York. The other curves are plotted from Exhibit D81 for identification, and purport to show the prices used by the Western Electric Company in its cost studies. As shown by the legend, the dash-dot curves purport to represent the average cost each year as stated by the Western Electric in D-81, while the dash-circle curves purport to represent the metal prices which are used in computing their standard costs.

This chart does not indicate any definite relationship between the actual metal price levels and those used in the standard costs from year to year and from month to
4138 month. In the case of copper, the level used in the standard costs is unchanged from the end of 1924 to date and consequently does not reflect any of the substantial fluctuations which occurred during that period, and it is above the level of either the monthly or annual averages throughout the entire period except from October, 1928, to March, 1930. In the case of lead the trend is opposite to that of the actual prices, being below them during the earlier years and above them since 1926.

The defendant, City of Chicago, offered in evidence the following exhibits:

X-1, entitled, "Illustration that test applied in City's Exhibit No. 95 is not affected by choice of base year having different proportions of material and labor."

X-2, "Illinois Bell Telephone Company Chicago Exchange, measurement of error in percentages of increase in plant costs used in Plaintiff's Exhibit No. 1 on assumption
4139 that increases in material and labor costs are correct. Account 241—Exchange Pole lines."

X-3, entitled, "Productivity of Labor."

X-4, entitled, "Illinois Bell Telephone Company Chicago Exchange. Table to illustrate that reduction in labor cost from any cause is not fully reflected in Plaintiff's Exhibit No. 1. Account 241—Exchange Pole Lines, 1922-3."

X-5, entitled, "Illinois Bell Telephone Company Chicago Exchange. Comparison of gang make-ups as of June 30, 1923, used in Plaintiff's Exhibits Nos. 1 and A-2—Exchange outside plant."

X-6, entitled, "Valuation, Illinois Bell Telephone Company, Chicago Exchange. Comparison between company experience and Plaintiff's Exhibit No. 1."

X-7, entitled, "Illinois Bell Telephone Company, Chicago Exchange. Comparison between sizes of plant items placed on specific and routine estimates, 1921-2-3."

X-8, entitled, "Valuation, Illinois Bell Telephone Company, Chicago Exchange. Labor hour performance on specific and routine estimates."

4140 X-9, entitled, "Valuation, Illinois Bell Telephone Company, Chicago Exchange. Comparison between company experience on its larger construction projects and Plaintiff's Exhibit No. 1."

X-10, entitled, "Illinois Bell Telephone Company, Chicago Exchange. Material and labor ratios used in Plaintiff's Exhibits Nos. 1 and A-2 to A10, inclusive."

X-11, entitled, "Valuation, Illinois Bell Telephone Company, Chicago Exchange. Labor hour performance on specific estimates, 1929."

X-12, entitled, "Valuation, Illinois Bell Telephone Company, Chicago Exchange. June 30, 1923, portion of December 21, 1929, appraisal priced on basis of wholesale construction and 1929 material and labor cost levels."

X-12A, entitled, "Effect of assumed errors in percentages of increase in labor costs in Plaintiff's Exhibits A-2 to A-10, inclusive. Account 242—Exchange Aerial Cable."

X-13, entitled, "Comparison between costs used in Sloan appraisals and costs of Western Electric Company. Apparatus, installation, equipment specifications."

4141 X-13A, entitled, "Estimated effect of price changes on apparatus and equipment sold to Bell Company, 1921-1930."

X-13B, entitled, "Price trend on installation work performed for Bell Telephone Companies, 1923-1925 = 100."

X-13C, entitled, "Price trend on equipment specifications performed for Bell Telephone Companies, 1923-1925 = 100."

X-13D, entitled, "Proposal for Western Electric Manual central office equipment. Proposal TS 799110."

X-14, entitled, "Price indices. All commodities, copper, lead."

(Right to object to said exhibits reserved until after cross-examination.)

4142 *Cross-Examination by Mr. Thompson.*

As far as labor is concerned, I used the term "company experience" in my Exhibits 6, 9 and 12, in a different sense entirely, in that in Exhibit 6 I have included all of the labor, both on specific and routine estimates, and in Exhibit 9 I have calculated the labor based upon performance upon specific estimates, and in Exhibit 12 I have used Sloan's typical gang for the purpose of the labor performance with the qualification that in X-12 I also included the adjustments.

The phrase "company experience" so far as it relates 4143 itself to labor in these Exhibits 6, 9 and 12 is used in an entirely different sense in each instance, but I have defined it in each instance.

There was an increase in telephone labor cost from 1911 to 1923. Broadly speaking there was an increase in the price of telephone materials during that time. I would hesitate to answer which increased more, relatively, telephone labor or telephone materials without making a detailed study, because so much depends on the weighting.

Taking Mr. Sloan's indices as a guide, in the case of pole lines his material index increased much more than his 4144 labor index. In the case of the other accounts, the difference was not so marked, as I recall it.

"Q. I wasn't asking you at all about what Mr. Sloan did. I was asking you, from your own experience, not confining your answer to any isolated account, but taking the problem as a broad, general one, whether it is not perfectly true that labor increased less proportionately during that period and by that I mean telephone labor than telephone materials?

A. I would say that I have never made that actual comparison.

Q. And you are, therefore, unable to say whether labor went up at a comparatively lower rate than material, or whether material went up at a lower rate than labor?

A. In the case of telephone labor, so much depends on the conditions in each case that I would have to make a study of the conditions prevailing at that time.

Q. I am not talking about the conditions prevailing at the time. You are unable, then, as I understand it, to answer the question?

A. I have such comparisons in other cases. I keep
4145 currently, for example, a building cost index, which I developed from the Department of Labor indices of building materials and building labor. Now, on a 1926 base—

Q. You will pardon me for interrupting you, Mr. Cummings, but you are giving me information that I am not requesting at all. I am confining my question to telephone construction labor and materials, and information along other lines I am not interested in.

Will you turn to your Exhibit X-8? In this exhibit you have made an effort to compare the labor hour performance of the Illinois Bell Telephone Company as between specific and routine estimates in three accounts?

A. Right.

4145 Q. Exchange pole lines, exchange aerial cable and exchange underground cable.

A. Right."

Since 1921, a specific estimate is where the labor and material as a whole in such accounts as may be handled under the one estimate exceeds $2,500.

4146 Prior to that time it had been $1,000.

Having obtained the labor hour performance on specific estimates, which are, in the main, typical of reproductive conditions, I then applied the performance on these specific estimates to all construction work in these three accounts, except building cable, which is 35 C.

The data which is contained in my various sheets of Exhibit 8 was then made the basis of the comparison appearing in Exhibit 9, so that if we discuss Exhibit 8, whatever is said about the sheets of Exhibit 8 will immediately relate itself to the comparison set forth in Exhibit 9.

4447 Sheets 1, 2 and 3 of Exhibit X 8, show that for this two and a half year period, that is, 1921, 1922, and the first six months of 1923, there were 3,056½ poles added to the Chicago plant, 365½ poles on specific estimates, and 2,691 poles on routine estimates, and the two combined give the total of 3,056½ poles.

When I determined the labor hour performance on these 365½ poles, or 12 per cent of the total poles set during that period, I then applied the labor hour performance to the entire 3,056½ poles.

"Q. I wish you would turn to your working papers, and tell me whether there is included in the number of poles shown on sheet 2 of Exhibit 8 any poles in Estimate
4448 22150 for the year 1923, and if so, how many?

A. Unfortunately I misunderstood your plan. I understood the cross-examination would not be until the following day, and I did not bring with me all of my working papers. They are on the way now.

Judge Wilkerson: Well, it is only seven or eight minutes. You haven't that here now?

Mr. Thompson: Have you got that here?

A. I should find that in my list of estimates in Defendants' Exhibit X-8.

Q. Is that a list of labor hours?

A. Labor dollars and labor hours.

Q. You don't find it there, do you? That is on sheet 5?

A. Sheets 4 and 5—22150?

Q. Yes. You don't find that at all in your number of labor hours, estimates, do you?

A. I don't see it on glancing hurriedly through this list.

Q. I will ask you if it is not a fact, Mr. Cummings, that

you included in Sheet 2 of Exhibit 8 in Estimate 22150 for
the year 1923 66½ poles which had been purchased by the
Illinois Bell Telephone Company in this two and a half
4149 year period from the Commonwealth Edison Company
in the number of poles on which you were going to base
your labor hour performance, and you have no labor hours
for them at all in your exhibit?

A. We took whatever the estimate ledger sheet showed.

Q. I understand.

A. I don't recall, of course, now.

Q. But the point is that you are taking the number of poles that are set out here on the one side, and then you are getting the labor hours on the other, and then you are relating those labor hours to the poles, in order to show that Mr. Sloan's estimate of performance is too high, and, of course, if you got poles in on one side, and you haven't got the labor hours in on the other, your calculation is clearly in error, isn't it? I want to know first about this, and I will give you some more that you can look up between now and tomorrow. I want to know whether there are eight poles on estimate 20218 for the year 1921, and one pole on estimate 23104 for the
year 1923, which you have in your number of poles, and
4150 you have got no labor hours for them.

A. Of course, I shall have to look up all these.

Q. And, of course, the result would be that if that checks, you have computed labor hour performance on 365½ poles, and there were only 290 for which you have the labor hours, with the result that your labor hour performance is twenty-five per cent lower than the company's own experience on specific estimates?

A. Of course, I can't answer that question now.

Mr. Thompson: All right, you be prepared to answer it in the morning."

(June 3, 1932.)

"Mr. Goldstein: If your Honor please, I would just
4151 like to make an additional statement of record. We are
handing to the plaintiff's counsel a complete statement
showing that the number of sheets in the C. R. and M. R. reports were left with the clerk, include—or are 1,703; and that the total documents—total sheets now aggregate 9,670, our

estimate being 10,000, which Mr. Bracelen said was grossly exaggerated. And we also want to state in the record that on the present state of the offer, if perchance one of our experts should desire to check a figure on page 2, and a figure on page 7,679, to determine whether the rate of growth of any of the
companies of the Bell System—as to what it is, we
4152 would have to get the consent of the general counsel
of the American Telephone and Telegraph Company.

Judge Wilkerson: Proceed with the trial—did you have anything to say too, Mr. Bracelen?

Mr. Bracelen: I do not think so.

Judge Wilkerson: Did you have anything to say in that connection?

Mr. Bracelen: I do not think so, your Honor. I think that the record is entirely clear, that counsel has designated definitely within the last few days what it is he wants from these reports, and we have told him he could have what he wanted.

Mr. Goldstein: And we have stated in the record—we state in the record that what we have designated are those things that we can use, whereas the offer is that if we should desire anything else, at any time, we must get their consent for any figure that we desire. That applies to the depreciation, and it applies to everything else. I want the record to show that.

Mr. Bracelen: Of course, that is not the situation at all.

Mr. Goldstein: The offer is shown in D-118, and has not been changed since.

Judge Wilkerson: Of course, the record shows here
4153 —the motion, precisely, as made for the inspection of
the documents.

Mr. Goldstein: Yes.

Judge Wilkerson: And the record shows the ruling of the court on that precise motion.

Mr. Goldstein: Yes.

Judge Wilkerson: Now that motion was ruled upon, as it was made. The record also shows the subsequent motion that has been made, and whether or not it is in harmony with the motion as it was made originally.

Mr. Bracelen: Of course, there has never been a time when counsel on the other side had to have our consent. It has been made perfectly clear that these documents are available at any time, and they may present them to the court, and have a ruling. The only suggestion we have made was that if they would indicate to us what they wanted, we might agree, so that the court would not have to rule.

Judge Wilkerson: I do not understand that the situation that is presented here is in any way different from that which is presented a hundred times to courts on motions for
4154 the inspection of books and papers. A party on a certain showing, under the rule is entitled to the inspection of documents which are material, in support of his case. But he must in making such application—he is not entitled to a general inspection of books or papers merely because the portions which are material, happen to be included among those books or papers.

When he makes his application for inspection, he must limit himself to those things which he claims are material, within the equity rule, and within the decisions of the courts.

Now I say, I cannot recall at this moment the precise motion which was made. I know that there was a motion made; Judge Evans and I considered very carefully the language, and we considered very carefully the rule, and we passed upon the motion as it was made. Now if we were in error in what we did, we were in error.

As to the motion which has been made after that, and the offer of counsel which has been made, the record shows it all. I have understood the position of the plaintiff here to be that it was perfectly willing that there should be an inspection of those portions of the documents which are
4155 material; but counsel for the plaintiff have insisted that the burden rested upon the defendants to indicate the portions which it was claimed were material, not by precise designation, but by general description; and that they had the right to the protection which the courts always give against the inspection of matters which are wholly irrevelant to the case.

As I understand it; that is the situation here.

Mr. Goldstein: No.

Judge Wilkerson: It would be most unfortunate in a case of this magnitude and importance, if it should go off on any such trivial technicality as a controversy between counsel with reference to the inspection of documents, because the attitude of the court has been to give the widest latitude in the examination of everything which has anything to do with this lawsuit, but to protect both parties against the inspection of things which have no right to be inspected.

Mr. Goldstein: The understanding that we have of the
offer and we are stating it now deliberately—
4156 is that we have a right to look at these documents that
are material, but we have not ~~a~~ right to use a pencil, to
put a figure down, to make a check, or to do anything with
them, without the consent of counsel for the plaintiff.

Now that is our understanding. And we have proceeded on that basis to the last since D-118 was offered.

Mr. Bracelen: Of course, that cannot be counsel's understanding, if your Honor please, in the face of what has been stated here.

4157 I say, if your Honor please, that counsel's under-
standing as he has stated it, is directly in the face of
what the record plainly and definitely shows, and if that is
his understanding, I am at a loss to conceive how it is pos-
sible that he ever got such an understanding. The record
contradicts him.

Now as to the thousands of pages, for example: I do not know how many thousands of pages there are of letters of transmittal of the provisional estimates, of the twenty odd Associate Companies, transmitting the provisional estimates to the president of the American Telephone and Telegraph Company during the period of twelve years, for which they demand those. I do not know, however, that there are stacks of large volumes; I should suppose that there are 5,000 pages of those letters. Counsel has gone through them, and has indicated the excerpts that he wants from those volumes; and in less than two hours the day before yesterday, in the afternoon, I checked through those volumes and examined the excerpts which counsel had designated in writing were the only parts of those letters of transmittal that he wanted.

4158 Counsel has made an examination of all of those vol-
umes, and had designated in writing to Mr. Jones what
he wanted from them. It took me less than two hours to
examine all that he had examined. I think it is correct to
say that two typists in less than an ordinary day's work,
can copy all of those excerpts. I would undertake to do this
—although I do not think we are called upon to do it; we

will have typists copy those excerpts which counsel has designated, and deliver them, and they can check them if they wish to check them. I have no doubt we can have those in counsel's hands by some time tomorrow, and that will dispose of 5,000 of the 10,000 pages, as I estimate it.

Would you not say, Mr. Goldstein, that about 5,000 of the pages you are talking about, are pages of letters of transmittal, which you have examined?

Mr. Goldstein: Mr. Bracelen, I handed to you yesterday a statement which showed the letters of transmittal for each year, for each of the companies, and if you will look on that statement, you will see that there are about 50 4159 pages of letters of transmittal, for each year.

Judge Wilkerson: Let me see one of those.

Mr. Goldstein: Now, the fact as Mr. Bracelen has stated it, if your Honor please—

Judge Wilkerson: I am not sure I know just what it is you are wrangling about here.

Mr. Goldstein: The fact that Mr. Bracelen has stated it, I am sorry to say, is contrary to what actually transpired, and I would like to make the statement as I know it, because I was there and Mr. Bracelen was not there.

Mr. Bracelen: I think we will put Mr. Jones on the stand—Perhaps that is the best way to do.

Judge Wilkerson: Oh, well, I do not like to put a lawyer on the stand.

Mr. Bracelen: I do not like to put him on, either.

Mr. Haight: I do not think it is necessary at all to put Mr. Jones on the stand.

4160 Judge Wilkerson: We will stay here all summer, if necessary, to get this record made in a way so that there will be no technicalities creep into it, about the production of documents. Our attitude is that everything that is material, in this case should come in, but our attitude also is that counsel and the parties in this litigation are entitled to the protection which is accorded to the ordinary merchant, whose books have been brought into court in a case between A and B, not to have his books examined in a controversy between C and D, and E, F, G, H, I, J, and one hundred other people.

Mr. Goldstein: On Saturday, Sunday and Monday I personally appeared at the Illinois Bell Telephone office. I was handed about 10,000 pages of documents, and I was told that I could look through all of them, but that if I took down a figure, or took down a fact from them, I would have to submit that to counsel for the plaintiff, and leave a record of it, or get their consent to take it off.

Under those circumstances I proceeded, and I made a duplicate of every document—or every item of entry, of every fact that I stated, and handed the same to Mr. 4161 Jones before we left—or rather my man did.

Now under those circumstances, we made the inspection, and we now take the position as we took then, that if we are expected to check depreciation expenses, and their figures from the other states, which involve mathematical calculations from those sheets—

Judge Wilkerson: Now, without regard to what you say you are entitled to—let us see just what the situation is here. You insist on doing something that you have not been heretofore permitted to do.

Now, here is a great mass of documents, concededly.

Mr. Goldstein: Yes.

Judge Wilkerson: I say, concededly; I assume it must be conceded—there are a number of those documents which do not have the remotest bearing on this case. Because if the entire documents have to do with this lawsuit, then they should all go into evidence.

Mr. Goldstein: That is just our position.

4162 Judge Wilkerson: Then we are in the position now of having to make an impossible record in a lawsuit. In other words, a party is to be denied redress, because although conducting its business in a manner which has been recognized as perfectly lawful, its magnitude is such that it will not be possible, within the compass of the walls of the court room, to get its case before the court. Now with that in view, we have said that you may have such portions of these documents as bear upon your case. I understood your first objection was, to looking at the documents, with anybody around. But I thought we crossed that bridge, and you are permitted to look at the documents.

Mr. Goldstein: Right.

Judge Wilkerson: (Continuing) In solitude.

Mr. Goldstein: That is right—upon our promise that we would not write anything.

Judge Wilkerson: Well, I do not know what your promise was, but you were allowed to inspect them without surveillance.

Mr. Goldstein: Right.

Judge Wilkerson: Now, having been accorded the right to look at everything, or handle everything, just suppose 4163 we had a ledger here, suppose we had a ledger of the company here in court, in a lawsuit between Mr. Haight and Mr. Adcock, and there were items on that ledger of accounts which related to that lawsuit. Suppose the court said that one of the parties might make inspection of this ledger. Well, then, the other one says, "yes, sir, but there is somebody standing around here watching us, we want to inspect it without surveillance."

Mr. Goldstein: Yes.

Judge Wilkerson: And we agree that it be done that way. But the other side says, "now that you are allowed to roam at large through this book, if you find anything in here outside of this account which you are going to use, we want to know what it is. We are entitled to know what you are taking out of our books; we are entitled to know, if for no other reason than that we may know that you have the information."

Mr. Goldstein: Right.

Judge Wilkerson: "So that if at any other time and place it should bob up in an improper way, we will know where it came from, or at least we will be on notice—we will have a pretty strong idea where it came from; so we want to know what information you are taking from these books."

Now, why is that not a fair request?

4164 Mr. Goldstein: Excepting for this, that they have used figures from there, and for us to check those figures, we would have to do one of two things; either we would have to ask them to give us all of the figures, so that we can make a check—in which case we say it will take a year—

Judge Wilkerson: Well, I never could see an objection myself to following the rule which as far as I know has been universally followed, that where books and papers of that kind are ordered for inspection, both parties are entitled to have a representative present at the inspection. Apparently, your adversaries have yielded to the observance of a rule which is elementary and universal, and permitted you to do it alone.

Mr. Goldstein: Excepting on our promise, that we would not use a pencil without their consent; that was the reason, and—

Judge Wilkerson: Well, it is not just that way; it is
that, having called for the books for a certain purpose,
4165 and on the statement that you desired to get informa-
tion of a particular kind—if you took information of
another kind, they were entitled to know that you know it.

Mr. Goldstein: No.

Judge Wilkerson: That was all.

Mr. Goldstein: No, your Honor. What they have done—

Judge Wilkerson: They are not so much interested in whether you took it down or not. All they want to know is what knowledge you, as counsel in this case, get out of these books.

Mr. Goldstein: No—

Judge Wilkerson: So that hereafter the fact may be established beyond the peradventure of question, "Here is a particular fact; did counsel in this case get that information in this proceeding?" And the answer will be yes or no; there will be no debate or equivocation about it hereafter.

Mr. Goldstein: To illustrate what that means: If we took
those documents there—Mr. Bracelen says it will take
4166 a few minutes. We have asked for those documents,
and they have offered those. If we should want to use
these figures to test their depreciation, of these other companies which they have introduced here, we either must have them give us every figure on some of those documents, or it will take us a year to visualize those, to figure out the mathematics in our mind, without using a pencil.

So what they have done is this, through their method in which they have restricted the offer—our position is—they have made it a practical impossibility, at this late date, for us to make use of those documents.

Now, that is our position, and we stand on it.

Judge Wilkerson: Yes, and it looks to me like trying to get into this record something on which you can argue for a reversal, on that ground, even if you lose on the merits.

Mr. Bracelen: Of course.

Mr. Goldstein: They have offered the evidence, and they have refused us for a year—

Judge Wilkerson: As far as this court is concerned, and I know I speak for all three judges, we do not propose 4167 to have that kind of record made up here if we have to stay here all summer in this case, and sit down with the documents ourselves—if you impose that burden upon us.

Mr. Bracelen: Of course, that is the purpose.

Mr. Goldstein: For one solid year they have refused us these documents; at the last minute they use the figures. They use the figures and we contend—

Judge Wilkerson: They refused to comply with the request as you made it, and we denied your request, as you made it. I am not saying what the court would have done with your request if it had been different, but we were obliged, we thought, to deny the request in the form in which it was put to us for a ruling; and we could not order a general wholesale inspection of these documents upon the showing which was made. And speaking for myself, I am inclined to think that the ruling of the court is correct, even in the light of what has transpired in the trial."

(June 3 1932.)

4168 I included in my Exhibit X-8, under the number of poles to which I relate the labor hours, there are 66.5 poles set under estimate 22150 for the year 1923. There are no labor hours related to those in my account. I have also ascertained that included in my figures on specific estimate 20218 for the year 1921 and 23104 for the year 1923, 4169 there are 9 poles. There are no labor hours on those two estimates. It is not the fact that the net result of that is that I have included in the calculations which I have made to ascertain the hours of labor performance, 365.5 poles and have related labor hour performance for 290 poles.

"Q. All right. Now, as a matter of fact, you had 70 hours of labor in this calculation for which there were no poles at all, did you not?

A. That is right—I am not sure of the number, but I know that was so."

I would like to state just what happened. Since the hearing yesterday I have examined the working papers and have also had a check made of the original construction records of the office of the Illinois Bell Telephone Company and have also questioned the two men in our organization who worked with me in compiling the figures from the Illinois Bell Telephone Company records, and I find the following facts
4170 relating to your question as to the Commonwealth Edison poles included in three specific estimates, namely Nos. 20218, 22150 and 23104:

When we originally went to the Illinois Bell Telephone Company office in connection with this investigation, Mr. Lawbaugh, of the Plant Accounting Department of the Illinois Bell Telephone Company, advised both Mr. Bradish and Mr. Morris of our organization.

"Mr. Thompson: Well now, wait just a moment. I am perfectly willing for the witness to make any explanation, but he is apparently now repeating a conversation at which he was not present. Is that correct?

The Witness: That is correct. I have those two men here.

4172 Judge Wilkerson: Oh, I think I will let him state it. I have the idea that if they are here, and will back it up—go ahead. We will take a short cut."

4173 Mr. Lawbaugh advised Mr. Bradish and Mr. Morris of our organization that no Commonwealth Edison poles were included in these specific estimates. Upon that representation, we were on the lookout for Commonwealth Edison poles under routine estimates and not under specific estimates. We did include in the incidentals on routine, the dollars represented by Commonwealth Edison poles, and properly so, these being the figures which I read into the record yesterday morning on direct examination.

As to the specific estimates, we found on examination of the record of the Illinois Bell Telephone Company yesterday afternoon that in the case of estimate No. 22150, there is in the pouch a notation to the effect—and I might state that each estimate is filed in a large envelope, which is known as a pouch, and all of the papers relating to that estimate are presumed to be in that pouch—there is in the pouch a notation to the effect that the poles in question were set by the Commonwealth Edison Company. That is estimate 22150 for 66.5 poles.

4174 In respect to estimates Nos. 20218 and 23104, we made a careful search yesterday afternoon of these estimate pouches and neither we nor Mr. Lawbaugh were able to find any reference to the alleged fact that these were joint poles with the Commonwealth Edison. I therefore have no information other than Mr. Thompson's statement that these are Commonwealth Edison poles or joint poles.

In the figures on specific estimates, I did include these poles as part of the company's poles and they are therefore reflected in the figures. Mr. Lawbaugh stated to Mr. Morris, of our organization yesterday afternoon that this was the first instance that had come to his knowledge of the inclusion of such joint poles in lists of material placed on specific estimates. His understanding had always been that such poles were covered by routine estimates.

I have also since the hearing made a test. Taking
Mr. Thompson's word to the effect that the poles in
4175 estimates 20218 and 23104 are Commonwealth Edison
poles, I have made a computation of the portions of Defendants' Exhibits X-8 and X-9 which would be affected thereby and I find that on page 1 of Defendants' Exhibit X-8, the correction factor becomes 98.43 instead of 96.99 and on page 2 in the case of specific estimates, the correction factor becomes 98.4 instead of 85.9.

In Defendants' Exhibit X-9 on page 4, I have substituted the correction factor of 98.4 for the correction factor I formerly used of 85.9 and on carrying the computations through on that page, I find the per cent decrease in 1921 to be 24.65 instead of 34.22; in 1922, it becomes 16.50 instead of 27.14, and in 1923, it becomes 8.30 instead of 19.96. I have carried these corrected percentages forward to page 3 of Defendants' Exhibit X-9 and have made the corresponding adjustments in the proportions of material and labor.

In the year 1921, the corrected proportions of material and labor are: Per cent of total cost material 31.7 instead of 34.8, and for labor, 68.3 instead of 65.2.

4176 Using the corrected per cent increase for labor and these corrected proportions of material and labor, the composite per cent for material becomes 2.19 instead of 2.40; for labor, 16.84 instead of 22.31; and total 19.03 instead of 24.71.

In 1922, the material and labor proportions become, respectively, 26.9 instead of 29.7; and 73.1 instead of 70.3. The composite per cent material then becomes 1.41 instead of 1.58; the composite per cent of labor 12.06 instead of 19.08; and the total 10.65 instead of 17.52.

In 1923 the proportions of material and labor become, respectively, 28.9 per cent instead of 31.8; and 71.1 instead of 68.2. The composite per cent material then becomes .22 instead of .24, and the composite per cent labor becomes 5.90 instead of 13.61; and the total 5.68 instead of 13.37.

4177 I then carried these percentages forward to page 2 of Defendants' Exhibit X-9, substituting them there for the figures I used in my direct examination, and carrying the computations through in that table as before, I find in 1921 the gross additions at the level of June 30, 1923, as based on the company's experience, to be $70,490.86 instead of $65,545.97.

In 1922 I find the gross additions at the level of June 30, 1923, as based on the company's experience, to be $193,418.63 instead of $178,546.93.

For the period January to June, 1923, I find the gross additions, based upon the company's experience, at the June 30, 1923 level, to be $112,065.36 instead of $102,928.57.

In the total column the gross additions for the entire period at the level of June 30, 1923, as based upon the company's experience, became $375,974.85 instead of $347,021.47.

Carrying these figures forward to page 1 and substituting them for the figures previously used there, I find that the per cent of Sloan's appraisal method in this account in 1921 becomes 86.13 instead of 80.09; and for the three accounts the per cent of Sloan's appraisal method becomes 90.46 instead of 89.90, an increase of .56 of 1 per cent.

In 1922 the per cent of Sloan's appraisal method in the case of this account becomes 87.32 instead of 80.79, and for the three accounts it becomes 91.56 instead of 90.85—an increase of .61 of 1 per cent.

In 1923, the per cent of Sloan's appraisal method becomes in this account 92.51 instead of 84.96, and for the three accounts it becomes 95.24 instead of 94.55, an increase of .69 of 1 per cent.

4178 Referring back to page 2, under the figures as corrected, the company's experience for the year 1921 would show a decrease of 19.03 per cent at the cost level of June 30, 1923, as compared to Mr. Sloan's decrease of 5.99 per cent.

For the year 1922 the company's experience would be 10.65 per cent decrease at the cost level of June 30, 1923, as compared to an increase on Sloan's method of 2.09 per cent.

The company's experience January to June, 1923, would show a decrease of 5.68 per cent at the cost level of June 30, 1923, as compared to Mr. Sloan's 1.96 per cent increase, and for the full period of two and one-half years the company's experience, even under the corrected figures, would show a decrease of 10.98 per cent as compared to an increase of 39/100 of one per cent, as shown by Mr. Sloan.

4179 It is necessary to bear in mind that the difference due to the poles to which Mr. Thompson had called my attention has no effect whatsoever on Defendants' Exhibit X-6, or on any other of the exhibits, with the exception of Exhibits X-8 and X-9, and in the case of X-9, only to the negligible extent to which I have just referred. Laying aside any question as to where the responsibility rests for the failure to discover these hours associated with the poles, the fact remains so far as labor hour performance is concerned on the Exchange Pole Lines, I had in my old exhibit an error of substantially more than 20 per cent in respect to the number of poles, but not in respect to the number of labor hours. I have not computed the amount of error in relating the poles to the labor hours.

4180 On page 1 of my Exhibit X-9, I have given the figures about how little difference this error makes in the total result here.

Assuming that none of these poles should have been included, with which assumption I do not agree, I find, as the net result, that the per cent of the appraisal method in Exchange Pole Lines, that I should have used, was approximately 7 per cent higher on account of this error in 1921.

By these figures that I read in I am not changing my former result; they are simply put in for the purpose of evaluating what that would be if counsel's assumptions are correct. And it would also make a trifle less than 7 per
4181 cent difference in my per cent of appraisal method in Exchange Pole Lines for the six months' period, January to June, 1923.

"Q. Yes. Now, you did not limit in your testimony the effect of these per cent of appraisal methods, merely to this two and a half year period, did you?—In other words, what you were saying to the court was this: "I am going to show you now that Sloan's method inevitably leads to an incorrect result, and that he is in error by these percentages in those two and a half years, and that means that in all the other years he is in error, but I do not know by how much"—and that is what you have testified to?

A. I do not think that I did; that was not what I intended to testify to, Mr. Thompson."

Except for such conclusions as may be drawn from the trend, I limit the effect of Exhibits X-8 and X-9 to the two
and a half year period. I testified that I did not know
4182 what the result would be in other years, because I had
made no examination.

It makes a difference in the hours of labor performance whether you set a pole in dirt, or through pavement. To find out how much, I would have to look that up in our files; I do not carry in mind the details. Depending on the pavement it might easily amount to 15 or 20 per cent difference in labor performance. Without binding myself absolutely I think that it is within reason. I would like to check that a little bit. As
I said, I do not have the details here. If you refer to
4183 the total labor of setting the pole rather than the dig-
ging labor, then I would imagine that 15 or 20 per cent might be a bit high for the total labor.

"Q. All right. Now you stated certain assumptions that you proceeded upon in these exhibits. You necessarily also proceeded on the assumption, for this two and a half year period that the physical conditions under which the poles were set—and I am referring now as to whether there had to be pavement cut or not—that were experienced by the company in its specific estimates, were fairly representative of the labor—of the physical conditions under which all of the poles were set, both routine and specific.

A. I made no allowance for any possible difference.

Q. No, and therefore you had to make that assumption, did you not?

A. I think it is implied.

Q. Well, now, did you make any investigation to find out what the fact was?

A. I did not."

Assuming that out of the 290 poles that went in under 4184 specific estimates, 4 of them went in through paving, or a less than one and one-half per cent, and assuming that out of the routine poles between 12 and 13 per cent of them went in through paving, I haven't the faintest idea of course offhand as to what effect that might have, or whether my exhibit is in error. It would have an effect. Whether it would be appreciable or not, I cannot say. I am saying in these exhibits that there is a difference between the labor performance on specific estimates, and on the routine.

4185 The purpose of this exhibit as far as it existed in my own mind, was to meet Mr. Sloan's testimony that there was no difference between the specific and routine estimates. When I am doing that, it is rather necessary that my work proceed upon assumptions that fairly represent the conditions under which these poles go in. The difference in my figures caused by the difference between setting poles in pavement or in dirt would be very much more than offset by the smallness of those jobs. In other words I am talking now about something that might compensate for it.

The first thing on page 3 of Exhibit X-8, you will find that the total actual hours of labor performance on routine 4186 estimates, is 80,193.5. The total computed hours is arrived at from routine estimates. I compute that it should have taken 78,000 hours on the basis of the units developed on page 1 for both specific and routine. Of course those units I have changed as the result of throwing out those poles. I have not recomputed page 3. It would change that somewhat. The trial units are increased a little. The conclusion that I have drawn from this is that the labor 4187 hour performance on routine estimates is higher than the labor hour performance on routine and specific combined.

I do not recall offhand what Class G labor is. I imagine that Class G laborers do two jobs that do not relate themselves to pole lines; that is they install drop wire and stations; and they do two jobs that relate themselves to pole lines; they put on guard arms and brackets. I have had

very much practical experience in the telephone busi-
4188 ness, and the above statement as to what Class G laborers do sounds right. I do not know how much of the time of these Class G laborers would be split between putting on the brackets and the guard arms; it is all in the pole line account. I made no assumptions on that. Purely as a blind guess, it is somewhere in the neighborhood of about half and half. I have these 20,000 labor hours in there, but I have no brackets in my material account at all because they did not show on the estimate ledger sheets. They are in there as miscellaneous materials of course, and are miscellaneous material, non-major material, allowed for in the la-
4189 bor hour units. I have not included brackets in my computation on page 3 of this exhibit for the same reason that I have not included cross-arm bolts, or any other miscellaneous material or minor material. In the entire two and a half years' period, we have 20,939 hours of Class G labor out of the total of 80,000 hours that I have here. That is a little more than one-fourth of the labor hours on page 3, are Class G labor. About half of that they do on brackets. The quantities for brackets are allowed for in the labor hour units. They are automatically weighted in there because that is the way those units were made up.

4190 They were weighted in by the New Jersey Division of the New York Telephone Company which made up these units which we used. So that I say they are automatically weighted in there. This exhibit does not show it, but I am familiar with the practice of the company—and I know that they are there.

Referring to sheets 13, 14 and 15 of Exhibit X-8, there is subsidiary cable in the plant of the Illinois Bell Telephone Company. I do not know what proportion subsidiary cable bears to the total cable account. It is in the neighbor-
4191 hood of 15 per cent I imagine. Included in the cable that appears in Exhibit X-8, there is subsidiary cable. I do not know how much because it was not at that time split on the company's records. It is on the present records. There is bound to be a subsidiary cable there. I know that, first because the company constantly installs subsidiary cable. During the 1921-1923 period the company lumped all subsidiary cable under code 5-C and the records show no
4192 separation. We have such separation figures in our

1929 study. Notwithstanding the company's treatment, there is no doubt about the fact that a part of this was subsidiary cable. I got my trial units from Exhibit B-23 of the New York Telephone Company, in this New Jersey case. There is a difference between the trial labor units on the installation of main and subsidiary cable. It is a very big difference. The units on subsidiary cable are in the neighborhood of twice as high for labor hour performance generally speaking as on the equivalent cable installed in
4193 the main cable. I applied to all of this cable, including the subsidiary portion of it, the trial labor units for the main cable developed in the New Jersey case. I had no option, from the fact that the records were not split up, and I could not sort it out. I made an allowance for it. The correction factor allows for that.

On page 15 for example, the correction factor for specific and routine combined is 118.50, showing that by using the main only, as I have stated, the subsidiary units are larger substantially larger, than by using the main only; and naturally I was using figures which I knew were smaller than represented the Chicago performance. I applied the 118.50 to the trial units, arriving at the units which I have used in the tables in the last column on pages 13, 14 and 15.
4194 I know that the hours of performance that I applied to the total account were less than the actual hours that would be involved, to the extent of this figure. I used the factor to correct the trial units and raise them to the level of the company's experience, including the subsidiary, and not to make a comparison against Sloan. The effect of it was not that when I got the corrected units, they were based upon the assumption that all of this cable had been installed in the main account, and none in the subsidiary account. This correction factor of 118.50 is the correction for that. That correction factor does not indicate that the performance on the combined specific and routine estimates is either
4195 too high or too low. The purpose of pages 13, 14 and 15 is simply to arrive at labor hour units which reflect the company's actual performance as it was done.

"Q. Yes, but after you did that, then you determined that only 81 per cent of the labor on total combined specific and routines in this account should be taken as the labor hour performance for the entire account, didn't you?

A. I wouldn't state it in just that way. I don't think that, that is the effect of what I did. On page 17 I show that the performance on specific estimates involved 81.06 per cent as many hours to do a given job as on the specific and routine combined. That figure 81.06 necessarily has involved in it, as a part of it, the full effect of this correction factor of 118½ because I used as the trial units on pages 16 and 17, the original trial units, multiplied by that correction factor."

4196 Sheets 22 to 29, inclusive, of this exhibit, deal with specific and routine estimates on house, or building cable only, in account 245, exchange underground cable. As a result of the calculations appearing on this sheet, I found that the labor hour performance on specific estimates was 7 per cent higher than the labor hour performance on combined routine and specific estimates. Except this one account, in every instance, when I got the labor hour performance on specific estimates, I used it. Then I went back to the combined labor hour performance on specific and routine and I stated my reasons therefor. And in this particular case the hours of performance on the specific job are higher than the routine and specific combined.

4197 I have read all of Mr. Sloan's testimony in this case. Exhibit X-6 purports to be a comparison of Mr. Sloan's conversion of gross additions for a two and a half year period with what I call the company's experience. In connection with this exhibit, I have undertaken to obtain the actual prices for the gross additions for this two and a half year period, as of June 30, 1923. I am comparing actual material prices as of June 30, 1925, with Sloan's material prices. Possibly that is not quite clear. What Mr. Sloan and I have both done is to develop a ratio of the material cost
4198 level of each of these years to June 30, 1923. We both used the same unit prices for June 30, 1923. For the preceding years our method differs. I used the same prices that Sloan did for June 30, 1923, applied to the units which I found on the record on the estimate ledgers as they were placed out of these gross additions so that my material prices represent, so far as these estimates reflect conditions, the actual poles, and the kind of poles that went into that plant. Now, after I did that, then I used what may be called the productive hour labor rate and used that for the first
4199 six months of 1923. The hours of labor performance

were taken from both the specific and routine estimates of the company during this period.

There is a difference in price between a treated pole and an untreated pole. The treated pole is higher priced. The treatment costs money. I assumed that treated poles went into this property in the two and a half year period. We didn't check that. I don't know whether it is a fact that in 1921, 23 per cent of these poles were treated; in 1922, 85 per cent; and in the first six months of 1923, 80 per cent.

We didn't inquire into the fact whether the figures in 1921, 1922 and the first half of 1923, under the third column "Cost at the level of June 30, 1923," were figures for an eastern cedar untreated pole. It is whatever figure we got from 4200 Mr. Sloan. I think Mr. Sloan testified that some treated poles were set, but that he had not taken them into account. Neither did I.

(Counsel reads from Mr. Sloan's testimony as follows): "Of course, many of the poles purchased in any year might be butt-treated poles, or they might be western red poles, or they might be most any type, but we have based our trend which we have used in this report on eastern cedar poles."

4201 We took the dollars that we found in the estimate ledgers, of course, without inquiring—my recollection is that the estimate ledgers did not even show whether those were treated poles or not, we did not inquire into that. I wanted to be absolutely certain that we were on a comparable basis with Mr. Sloan, and, therefore, used the same prices that he did, getting them either from his exhibits, or from his working sheets.

"Q. I won't waste any further time on this, Mr. Cummings, but I will just ask you to do this: I will ask you to look over your work sheets, and to tell me tomorrow if it is not a fact that as a result of the method, which you followed, you have in this Exhibit X-6 the material costs of the exchange pole lines of the Illinois Bell Telephone Company during this two and a half year period, based upon the eastern cedar untreated poles, and that the result is that the dollars in this exhibit are greatly less than they should be on that account?

A. As of June 30, 1923?

Q. Yes.

A. Well, I can answer that question now as well as after examining the working sheets.

Q. All right. It is true, isn't it?

4202 A. Because the dollars that we used as of June 30, which we obtained from Mr. Sloan, are whatever his figures showed, if those were eastern cedar, or northern cedar, or what not.

Q. All right. You say, then, that your dollar figures and Sloan's dollar figures, as of June 30, 1923, are identical?

A. Yes."

We got our material for exchange underground cable in the same way, copied it from Mr. Sloan.

I don't recall making any allowance for wastage.

"Q. And Mr. Sloan does?

A. And yet the check that I made was this: After we had pulled off all of the quantities from these estimate ledger sheets, we compared our totals, as I think I testified, with the summary sheets which Mr. Sloan stated he had used, and also with Mr. Sloan's 4203 working papers. Naturally, we found some differences; I will guarantee that neither I nor anybody else could go through that tremendous mass of detail and arrive at exactly the same answer as before."

Some of the sheets are not wholly legible, and with that tremendous mass of detail, there would be found to be minor differences, but those differences were minor. In many instances we arrived at precisely the same number of feet of cable; and I am speaking now of our comparison between our totals on both the summary sheets, which Mr. Sloan used, and his working sheets. The differences in this account, exchange underground cable, as shown on Exhibit X-6, between my method and Mr. Sloan's method, are small differences.

4204 The percentages that I get on page 1 of Exhibit X-6 are composite of material and labor, and that sort of thing. The comparison of material prices is on page 12.

The common allowance for wastage in cable amounts to about 2 per cent of the total material. I have made that allowance myself and regard it as fairly accurate. It 4205 seems to me our figures do contain an item for wastage. It is not a question of checking it. It is a question of

fact as to what the estimate ledgers show. Now, assuming the 2 per cent figure to be correct, as I say, I have used a similar figure, that figure is reflected in the quantities which we found on the estimate ledger sheets, because those quantities necessarily include wastage. If you have a hundred foot section, you will not order exactly a hundred feet of cable, because you know you have got to have some leeway. You will order 102 feet or something of that kind, and those are the figures we have gotten. That wastage is in our figures. Our figures do not contain an allowance made by us for wastage; but the figures taken from the estimate ledger
4206 sheets do include such wastage as the company allowed for. I assumed the records showed it. What I am trying to do now is to get this material on a reproductive basis. My answer is this: that our figures include such wastage as is entered on the company's books and they do not include anything but that.

In using my conversion factor, I took the cable as it was set up on the records. Whether I used the prices for
4207 ANA 22 gauge cable, and ANB 19 gauge cable in my factor depends on the prices that Mr. Sloan used. If his prices were for those classes of cable, then that is the figure I used. I factored on that basis, and then applied that to cable on the assumption that was all the cable there was in the plant of that 19 and 22 gauge type making the same assumption in that respect, I think, that Mr. Sloan did.

He applied the trend to the same types of cable that I have used here, because he applied it to the gross additions of these years.

Sloan based his trend on the types of cable referred
4208 to, ANA 22 gauge, and ANB 19 gauge, and then applied these trends to the cable that was placed each year in this period.

"Q. On the contrary, what you did was not only to get your trend on that cable, but to assume that those were the exclusive 22 and 19 gauge types that were in the plant, the results being that this was a newer type, and a less expensive one, and that, therefore, you got a less price for your cable than you would if you had applied your trend to the elements as they existed?

A. It would work out just the other way, as I see it. If, I, by taking the figures as they were actually set up on the estimate ledger, was using the price of a cheaper cable than that used by Mr. Sloan and by me on June 30, then the reduction of—the decrease on June 30, 1923, as compared with the actual in each year, would have been less than the fact. If that is the case, I erred against myself.

Q. Let's see if you did. You get a trend that you use and that Sloan uses as being fairly typical of the trend for all cable.

4209 A. We didn't both use the same trend. We both used the same instant prices.

Q. Exactly. You get a trend based on certain types of cable. Now, that is a less expensive type of cable than some of the cable in the plant. Now, if you apply that trend in your case to the less expensive type of cable only, why, of course, you are bound to get a less result than Sloan would get.

A. I understood you to say a minute ago that the present type of cable was a cheaper type than the types used by Mr. Sloan for his prices.

Q. Exactly.

A. And my answer was based on that. If that be true, then the decrease from the price of the cable that actually was used, if that was at a lower level than is ANB, or ANA to his ANA cable, on June 30th, the decrease would have been less than the fact.

Q. I hate to waste any more time on it, but I am just going to use a simple illustration.

A. That is a question of simple mathematics.

Q. If the ANA cable was 50 cents a foot, and the 4210 other types that I am talking about were a dollar a foot, and you got that price trend on the change in the 50 cents a foot cable, then if you applied that price trend to all of the cable in the plant at 50 cents a foot, you get a lower result that you would if you applied that trend to the cable actually added during this time which contained 50 cents a foot cable and the dollar a foot cable?

A. As I heard your question, you reversed your previous statement.

Q. Well, all right. That has happened. How do you answer it now?

A. As I understood you before, the ANA was a more expensive cable than the cable actually used.

Q. No, I say, or intended to say, all along, that ANA was the cheaper type of cable; that is the whole point to it.

A. And the cable which replaced it was a more expensive type.

Q. No, there wasn't any question of replacing it. It is a question of a trend being based on a less expensive type of cable, than Sloan applying that trend which he gets to all
the cable in the plant, that you are going on the as-
4211 sumption that the cable in the plant is the cheaper type,
on which you have based your trend?

A. You say that the ANA was cheaper than the B. S. A., for example.

Q. Well, I didn't say B. S. A.; but take that assumption.

A. Well, that is the present 22 gauge type.

Q. All right.

A. I don't know the fact in that respect.

Q. All right.

A. I understood you to state it the other way, and based all of my answers on that."

Exhibit 11 is where I get a correction factor for 1929 in labor hour performance on specific estimates of 63 per cent on aerial cable. On the next pages in this exhibit, I get a correction factor in exchange underground cable, as between the two periods of time, of 94.59, that is code 5-C,
or the present equivalent of the old code 5-C. That is
4212 a difference of 30 per cent in the correction factors. In
exchange aerial cable, the correction factor was arrived at in this way: there was only 9,242 hours of labor in that year in that account done on specific estimates. I don't know whether there were 189,000 hours of labor in the same year done on routine estimates in that account. We made no study of it. In the 1929 records we did not find any estimate ledger sheets for routine estimates; we found the data scattered through so many minor records that we did not have time to summarize them. It didn't immediately challenge my attention, that when I had examined 259,000 hours in another account, and the correction factor was just a little less than 95, and I had only examined 9,242 hours in another account,
and got such a result as 63 per cent, that there might be
4213 something wrong with it. I don't see that that follows
at all.

Assuming that the labor hours on the routine estimates

in this account are 189,000 for 1929; I know that the specific estimates are 9,242 hours. That makes a total of 198,000 hours. I have based a correction factor for the entire account on less than 5 per cent of the hours devoted by the Company on specific and written estimates to work in this account in 1929, and have disregarded whatever results there were in the other 95 per cent because I do not consider them representative of reproduction conditions. We did examine them with the result I have stated. We haven't our
4214 examination because, as I stated, while in the 1921 and 1923 period we found both specific and routine estimates summarized, and the expenditures brought together on the estimate ledger sheets, in 1929 we found that only in the case of specific estimates, while in the routine estimates the data was scattered over so many minor records that it was impracticable, within the time available, to bring them together, and we would have had a doubt as to whether we had it all, if we had undertaken it. For the reasons I have stated we did not believe it practicable to make a comparison to see how the level of labor hour performance on routine estimates between 1923 and 1929 in this account would work out. I did not do that. I did not take the total in 1923 and the total in 1929 and make any comparisons for the same reasons. In this exhibit I take the labor hours at the level of the specific estimates for 1921, 1922 and 1923. This
4215 exhibit deals only with labor hours. It has nothing to do with labor rate.

Exhibit X-6 contains the company's experience from both specific and routine estimates. The dollars for labor hours in Exhibit X-6 were taken from the company's records,
4216 subject only to one calculation.

As I testified, it is impossible to determine a labor cost level as of an instant date, and, therefore, in order to bring it to the June 30th level, I assumed that Mr. Sloan's ratio of June 30, 1923, to the six preceding months was correct, and used it for the purpose of the computation.

What I did, as I testified yesterday, I believe, was to take the actual labor hour rate that we got by dividing the direct labor charges by the direct labor hours, and adjusted that by Mr. Sloan's percentages to the June 30th level.

In Exhibit X-11, I have not included in sheets 2 to 5 any work done in 35-C "Building Cable" on specific estimates in

1929. These pages are comparable to those referring to code
5-C in the prior exhibit. This purports to show that there
was an increase of labor efficiency as between 1923 and 1929,
the difference between 94.59 per cent and 100 per cent.
4217 The figure "912" in the third line under the heading
"Wray" on page 3 of Exhibit X-12, is taken from Ex-
hibit X-8, page 7. So far as exchange aerial cable is con-
cerned, my calculations in this exhibit depend upon the cor-
rectness of that figure. The figure on page 7 of Exhibit
X-12, opposite "Ratio of specific estimate of labor perform-
ance to specific and routine combined," .8106 is taken from
Exhibit X-8, page 17, and in so far as my calculations on
exchange underground cable in this exhibit are con-
4218 cerned, they depend on the validity of that figure. In
getting the figures that appear on this exhibit, I did
not use the productive hourly labor rate that was in effect in
the Illinois Bell Telephone Company in 1929. I used Mr.
Sloan's index. The effect of that is to use his gang, because
I wanted to measure here merely the effect of certain fac-
tors, leaving the rest as he had them. I don't know whether
the company's labor experience in 1929 on a productive
hourly labor rate was much higher than the labor costs used
by Sloan. I don't know anything about it at all because I
used his figures. I did not develop any figures of my own.
In 1923 I used the hourly productive labor rate in my cal-
culations.

4219 "Q. Now I want you to turn to your work papers relating to that and tell me whether in any one of these three accounts, exchange underground cable, exchange aerial cable and toll pole lines, the productive hourly labor rate in the first half of 1923, wasn't the lowest productive hourly labor rate that the company had experienced in that two and a half year period?"

I have the detailed figures for account 245, underground cable, and adding all of the hours and all dollars together, dividing one by the other, I find that the average hourly labor rate in 1921 was .972, in 1922, was .856, and in 1923 was .831. In 1923, it was the lowest. I have aerial cable here, 1921, under all estimates, shows an hourly labor cost derived in the same way of .964; 1922, .830; 1923, .773. A very marked decline there in the productive hourly labor rate from 1921 to 1923.

4220 There is the same trend in the case of pole lines, 1921 being 1.079 and 1922 .988 and January to June, 1923, being .908.

In getting the company's experience in all of these accounts so far as labor was concerned for this two and a half year period, I finally got it converted down on the basis of the productive hourly labor rate for the first half of 1923. I didn't work it exactly that way but it amounts to the same 4221 thing.

"Q. Now the net result of that is that you have got the labor element of these three outside plant accounts on the basis of a productive hourly labor rate which was the lowest, substantially the lowest, of the company in that two and a half year period.

A. What I actually did, of course, was to take the nearest period to the instant date of June 30, 1923, and adjust that to that instant date level by Mr. Sloan's percentage, then I compared that rate with the rates during the preceding years."

In effect, I used the dollars of labor in each of these accounts, divided by the number of hours that were worked. We try to get as near as we can to a productive hourly labor rate in making an appraisal ourselves. In making an appraisal we do not use a typical gang if we can avoid it. We have used a typical gang repeatedly, because in the case of a small company it is the only possible method, very often. By "a small company" I mean a company which has not maintained estimate ledger records from which the facts of its experience can be determined.

4222 I don't recall that I ever used a typical gang in a large Bell Company. I don't recall whether I used it in the Indiana State Wide Rate Case, a property involving forty-five million dollars. I don't think that I did the work there myself. I set up all the index figures which were merely a mathematical computation from the cost figures furnished by the Company.

"Q. And used some representative cross sections, weighted to plant in the Indiana State Wide Rate Case?

A. I used merely those which Mr. Halsted had set up.

Q. Yes, but you approved them?

A. I don't think I either approved or disapproved them.

I merely used them for what they were worth."

4223 In order to get a reproductive cost condition as to labor, I would try to get as near a representative rate as I could. If you want my opinion on it, my opinion would be that we would get better performance in reproduction than I have shown here, but I would have to go into the records further.

4224 I think it is true that toward the end of 1923, and the beginning of 1924, and 1925, the Illinois Bell Telephone Company was about to enter upon a larger construction program than it theretofore had. Naturally, expansion means the building up of your force, and you do it by hiring what is termed apprentice labor, or labor where the hourly rate of pay is lower than the older or more experienced labor. Of course, what the facts were in this case, I do not know. What I have done then is, to take that peculiar condition that existed in the experience of the Illinois Bell in the first six months of 1923, and have applied the productive hourly labor rate, without making any allowance for that condition, to all the labor for this two and a half year period because I think you do precisely the same thing in a reproduction project.

4225 I would start it with a large percentage of green men, and the hourly productive labor rate would be very low, but naturally, in a reproduction project, you would have to have a larger force than you would have in your current construction work, and you would build up the force in much the same way as has been stated. That is the theory upon which I say my use of this hourly productive labor rate is justified. When we come to convert this plant as it existed at June 30, 1923 to the 1929 level, I haven't the slightest idea how much of that plant as it existed in 1923 is in the company's plant in 1929. I do know that there have been large gross additions in the meantime. That plant is older than what has been added since. We often assume that the

4226 retirements are from the older plant. Mr. Sloan has covered that, I think, possibly better than I could. I will take his statement on that: It is not wholly true, as he stated. I have no way of telling as to how much of the '23 plant was in existence December 31, '29.

In reference to this hourly rate, I testified in the previous

hearings—and I have had a rather considerable experience with index numbers—that I did not know of any way in which a labor index could be developed that would do what
4227 Mr. Sloan has attempted to make it do in this case.

I have given a good deal of thought to it since then, and I still don't know; and I don't claim that the index which I developed here is a correct index, because I don't know how a correct index would be developed. I merely say it represents what the company's records show, that is the only claim I make for it. What I have really done is to build up an index, although I believed it could not be accurately done, for the purpose of comparing that inaccurate index with what I claim is Sloan's inaccuracy, on the theory that, being based on the company's records, it is somewhat closer than his and the company experience being as we have defined it, being whatever it may have been.

In Exhibit X-13, I attempt to make a comparison of the total apparatus appearing in the Sloan appraisal for the period '23 to '31 with statement B, of Mr. Gregory.
4228 I have included just the materials found in these three
accounts. Central office equipment, 221, station apparatus, account 231, and P. B. X. account 234. That is on the Sloan side of it.

"Q. Now, do you know what was included in Mr. Gregory's statement?

A. I assume that he has used the term 'apparatus' in the ordinary sense of the term, and that is substantially the apparatus—the three accounts I have listed here in A, B and C, are often referred to as the three equipment accounts."

In other words I understand Mr. Gregory to have included in his prices from which I have built up these index figures, all telephone apparatus manufactured by the Western and not to include lead-covered cable and not to include supplies. I referred yesterday to that binder of Burgess index numbers which I examined at Hawthorne. In that I found that distinction drawn between apparatus, lead-covered cable
4229 and supplies, so I assumed this followed the same line.

As a matter of fact, I know, of course, that the Illinois Bell Telephone Company, prior to January 1, 1928, did not own any receivers, transmitters or induction coils. So that in my Sloan trend for 1923, 1924, 1925, 1926 and 1927, I as-

sume that there are no receivers, transmitters or induction
coils; that is, I assume that his figures represented what we
know to be the fact. In the Gregory statement, inasmuch
as the Western manufactured receivers, transmitters and
induction coils in large quantities in every year, I think
4230 very likely there would be, not only after 1928, but be-
fore that, millions and millions of dollars of these
receivers, transmitters and induction coils. Of course, as I
say, I don't know of my own knowledge just what he has
included. I am drawing a comparison here.

"Q. And I am trying to find out whether your comparison that you have made contains comparable elements, or doesn't it?

A. I would imagine that transmitters, receivers and induction coils would be included in Mr. Gregory's figures. I don't know the fact.

Q. Yes. So that, on the one side, you have them in all the time in large quantities, and on the other side, you haven't them in at all for 1923 to 1927?

A. I know that they are not—or I am quite sure they are not in the other side.

Q. All right.

A. I think it quite likely they are on the one side."

There are loading coils and cable terminals in the plant
of the Illinois Bell Telephone Company, in large quan-
4231 tities. They are not included in these three accounts
under the Sloan appraisal. Not having seen his list
of items, I cannot very well testify from my own knowledge
whether they are in Gregory's account over here on the other
side in large quantities.

"Q. Did you make any attempt to find out whether the two things you were attempting to compare were, in fact, comparable?

A. As to meticulous detail, I would not expect them to be.

Whether I would call it "meticulous detail" that on one
side of this there are millions of dollars of an item that on
the other side are not included in any of the five years de-
pends on the proportion, of course, on the effect that this
would have in the answer, and that, in turn, depends
4232 largely on the proportion. I took Mr. Gregory's state-

ment simply for what it might indicate as to a trend. In other words, I took Mr. Gregory's statement and compared it with Sloan without knowing as to detail of items what was in Gregory's statement. I don't say that the detail of items is immaterial, but I would not expect it to affect the comparison substantially. I could know whether it would affect it because the items that I have used here from Mr. Sloan's appraisal are the bulk of the apparatus items. I have heard of A. H. material, that is manufactured by the Western. A. H. is material that has been used and turned
in and rehabilitated—remanufactured by them and re-
4233 sold. It has a lower price level than their new
material.

I cannot testify as to whether all of that is in Gregory's trend; if I were to make such a trend, I probably would get it in. I would imagine that a good deal of that was in the Chicago plant. What allowance Mr. Sloan may have made for that I don't know. There is also a class C material that is reissued directly to the companies by the Western. There are substantial quantities of that class C material in the
central office equipment account 221, station apparatus
4234 account 231 and P. B. X. account 234. My guess would
be that there is none of that in the Western Electric
trend.

Referring to the second page of Exhibit X-13 my entire knowledge of the factors which were used by Mr. Burgess in plotting his index numbers on installation costs and equipment specification costs is limited to the exhibits X-13 B and C, I believe, which I offered yesterday, and which are simply copies which I made of 13-B and C, which I made from that binder. It seems to me that the trends made by Burgess, which I copied, should represent the same thing as Mr. Sloan's method with respect to installation costs and equipment specification costs. An installation cost is an installation cost, whether it is in Mr. Burgess' index or in Mr.
Sloan's.

4235 "Q. Well, that depends on whether Mr. Burgess was
figuring one way or figuring another doesn't it? What
I mean is, if his trend was built up on a certain basis that is different from the Sloan basis, why, then, of course this comparison meant nothing.

A. That depends on your definition of the word 'basis,' Mr. Thompson.

Q. All right, I will go a little further into that. What do you know, first, about whether these bases are comparable?

A. As I say, installation costs, to me, means installation costs, and I cannot see any difference."

It has been the practice of the Western Electric Company, beginning many years back, I can't state the date, to transfer from the field to the factory a substantial portion of its installation labor. In other words you are beginning to
4236 get a more complete assembly. Originally a large part of the assembly of a switchboard was done on the job, on the ground. As the years have gone by—and this applies both to manual and to dial—more and more of that has been done in the factory.

Referring to Exhibit X-13, on the second page, under installation costs of manual equipment, beginning with the Western average, between 1924 and 1925, there was an
4237 11 per cent drop. Then it goes down nearly 7 per cent in the next year, and again it goes down nearly 7 per cent in the following year. As to the dial equipment, there is a similar drop all the way along the line there. The 1930 drop is not as marked as the ones preceding it. There is a 9 point drop from 1924 to 1925, a 7 point drop from 1925 to 1926, a 7 point drop from 1926 to 1927. Between 1924 to 1925 is the largest single drop.

"Q. Now, you know, don't you, Mr. Cummings, that in Mr. Burgess's trend he plots the installation cost just as it is, and that Sloan, on the contrary, has taken either a manual or a dial office, with the material as it was then, and then has arrived at his installation cost, so that the two are on a wholly incomparable basis?

A. There has not been any change, that I know of in the design of the material that would affect that substantially.

4238 Q. No, no; but what I am talking about is this:—

A. (Continuing) A No. 1 board is a No. 1 board. A panel board is a panel board."

Referring to panel type equipment, that went in, in 1923, here in Chicago. What Mr. Sloan has done in his appraisal is to take the material cost of that installation in that year, and then get the labor cost, and factor both materials and labor right down through this appraisal each year. So he has got the material cost as it was billed by the Western in 1923 and went on the books.

"Q. Exactly. Then his installation has been added from that time on. On the contrary, what Burgess shows in this price trend is, is it not, the decrease in installation costs, and as work was being transferred from the field to the factory, why, of course, that element alone makes a large difference in the installation costs in the field?

A. But you would not reproduce this property by that method.

4239 Q. But suppose Mr. Sloan, in his figuring, has figured the relation between material and labor on that basis, whereas, Burgess' trend is on a different basis?

A. Well, if Mr. Sloan has done that, then I would say he has done an unsound thing in his appraisal.

Q. I see. Your answer would be that the comparison is invalid, but Sloan is again wrong?

A. Well, the comparison is put in for what it may indicate as to the accuracy of Mr. Sloan's results.

Q. Well, does it indicate anything?

A. And if he has followed an unsound method, that is simply an explanation of why—

Q. I am talking about the exhibit now. I will deal with that method later. Does this comparison on the basis you have stated to me, from your own knowledge, mean anything?

A. I should think it did."

In Burgess' index, I presume that he included all 4240 types of manual central office equipment. Of course, I have no personal knowledge of what he did. I probably would include the new No. 11 board and repeater installation as well as the old No. 1 board, if I were making such an index. I have not gone back of this index. My whole knowledge of what Burgess did or did not include in his trends is confined to Defendants' Exhibits X-13-B and C. Practically all of the manual installations in Chicago are No. 1 boards. I have not checked up whether there has been a major installation in Chicago since 1923 of manual

type equipment, with one exception. I have been away from Chicago during a large part of that time. Sloan's installation costs are practically all with respect to No. 1 boards on the manual. That is what I am talking about now.
4241 That is an old board. Twenty years before the beginning of this period it had become standard. The major portion of any substantial increase in efficiency in installing, or ~~in~~ the equipment specification cost, with respect to that equipment, of course, could not have been realized in this period; it would have been realized in an earlier period. They had a new number 11 board that is largely manufactured by the Western during this period which was a new board practically at the beginning of this period.

As to whether you would expect increased efficiency in a new board, both in the installation in the field and in the equipment specification cost, there are factors that work both ways. What the net result would be, I don't know.
4242 There would be a greater increase in efficiency in the No. 11 board which would be offset more or less completely by a less degree of familiarity with it, that is to say, the No. 1 board had been standard so long that everybody is more or less familiar with it, they can go ahead blindly and put it in. The No. 11 board we are not all so familiar with. I would think that as they become familiar with it, the efficiency in installing it would increase, of course.

X-3 is confined wholly to the statistics put out by the United States Department of Labor, and their term is "Productivity of Labor." I think we have, all of us, in this case, used the term "Labor Productivity," "Efficiency," "Output per Man Hour" and "Labor Performance" more or less
4243 synonymously. Whether it is my statement that this exhibit shows labor efficiency, of course, depends on the definition of "efficiency." What it actually measures is the output per man hour and I have used the term "efficiency" in that sense. I took the first table in this exhibit (X-3) from the Monthly Labor Review for January, 1927. The author of this table, in saying that you cannot use this table to measure the efficiency of labor is using the term "efficiency" in a different sense from what I have used it.

Counsel reads from the Monthly Labor Review for January, 1927 as follows:

"It has been suggested in a previous article that the notion of 'productivity of labor' be distinguished carefully from 'efficiency of labor' by using the former as a broad term
4244 covering the whole relation of output to labor time, and
restricting the meaning of 'efficiency of labor' to express the willingness and capability of the workers themselves. According to this definition an increase in the efficiency of labor means that the employees, with the same machinery and processes, are working harder or more skillfully, so that the output per man is greater. The increased productivity of labor in an industry might be due to (1) the increased efficiency of labor, (2) the introduction of new machines or processes, or (3) better management."

"The mere construction of a productivity index contains no implication as to which of these it might be."

That is true. I do not testify in connection with this exhibit that these index figures here show anything with respect to efficiency of labor, nor, with that restricted definition of "efficiency" neither do any other figures to which I have referred anywhere in this case because what I have been
4245 talking about has been entirely labor productivity.

My guess is that the term "all industries" found in these figures in this exhibit does not include the telephone industry. I would have to refresh my memory by reference to the article to answer that; I don't know. If I find that it does I will so state in the record. My reason for that answer is that ordinarily we think of the telephone business as a utility rather than an industry. My guess would be that it does not include the result of the productivity of labor in the telephone business. I think that the author of this article also draws a clear distinction on productivity of labor as between old established businesses and new businesses.

What he says in that connection is that if you take an
4246 old established business, you do not expect to find in-
creased productivity of labor, that you expect to find it in a new business, like the automobile business, and businesses of that type. It was partly to meet that, that I referred to Mr. Gherardi's testimony, of course. I think that is what the author said about this very table. As a matter of fact, I have taken 1919 as the base year for constructing this index. In this particular index 1919 equals 100. My

recollection is that the reason I did that was because that is the way it was set up in the article. I would have to look it up to make sure.

Counsel reads from Monthly Labor Review for January, 1927, as follows:

"Comparisons with 1914 and 1921 are affected by the industrial depressions which prevailed in those years, as in times of depression curtailment in production generally exceeds reduction in employment, and therefore output
4247 per person is small. Because of the postwar adjustments under way in 1919, the efficiency of industry in that year, likewise, was lowered, with a consequent reduction in output per person. For this and other reasons the increase noted since 1919 is abnormal."

I think we all agree that there have been factors that have made the increase in more recent years abnormal, I think that applies to the telephone business as well as others. I had figures for other years than 1919. I have them plotted in the same table for 1899, 1904, 1909. 1919 is the base in this table shown in this copy of the Monthly Labor Review and I simply copied that, without adjustment.

"Q. You did not notice that the use of it, even on their own statement, was to show an increase that as to that base year, was abnormal?"

4248 Possibly you attach more importance to the choice of a base year than I do. An index is merely a comparison, and the base that is selected is rather minor. It is the trend we are interested in. The third table in this exhibit all relates to the steel industry. Here are five branches of the steel industry. The first one, the productivity—relating all of these figures to 1925 as the base—is 116 in 1929. In the second branch of that same industry it is 149; in the third branch it is 128; in the fourth branch it is 95;
4249 and in the fifth branch it is 122.

Exhibit X-5 is a comparison of Sloan's typical gang, both before and after June 30, 1923. The gang, so far as exchange pole lines is concerned, is the same. In the aerial cable, the gang is the same, except the splicing gang, and the proportions between the two. So far as the placing gang is concerned, there is no change in it. I don't know whether there was any change in the number of cable terminals per 1000 feet that was operative about in 1923.

"Q. Oh, I don't mean exactly as of June 30th, but approximately?

A. As I stated, I was not in Chicago during the larger part of that time, around there, and I don't know just what change you have in mind.

Q. Assuming that such a change did take place, it 4250 would be perfectly apparent that you would require more splicing foremen and more splicers and helpers, if that change took place, than you did before?

A. My picture of it is that the use of aerial cable distribution with terminals at every pole, or frequent poles, came into general use very much before that, I would say starting about 1911.

Q. And would it also be your recollection that there has been no change in the company's practice along in 1922 and 1923?

A. They may have gone still further in that direction at that time, I don't know.

Q. Now, take your exchange pole wire gang, there was merely a reclassification of the company's records, wasn't there, Mr. Cummings, so that the people who had before been called linemen and groundmen and drivers were all called line installers, and you show here a wide variance in that gang. I will ask you if it is not a fact that all that means is there was a difference in classification, and that Sloan factored his gang forward by using his own man, and he could have just as well used eight or ten or twelve, if they were all in the same classification?

A. There is quite a distinction in my mind between 4251 a line foreman and a groundman or driver; and to say that each of those became the same man, namely, a line installer, subsequent to June 30, 1923,—again I cannot testify as to the facts, but it hardly sound—

Q. It doesn't sound reasonable to you?

A. (Continuing)—reasonable to me, no, sir."

As to account 245, "exchange underground cable." That placing gang remains the same, 467, we have cablemen there, where we had linemen, groundmen and drivers before. To some extent it was undoubtedly merely a reclassification of linemen, groundmen and drivers on the company's books, and terming them all cablemen although there is again, quite a

distinction in my mind between a lineman or a groundman or a driver. I know there was, when I was a lineman. I would have to study the records of the actual gang set-ups in order to answer whether that makes a difference in the gang set-up. I don't know whether there has been more cable
4252 splicing since 1923 required in the plant of the Illinois
Bell than before that time. As I stated, the larger part of the increased use of terminals for distributing purposes came many years prior to that. There may or may not have been a further increase in their use involving an increased amount of splicing about that date. I don't know.

Counsel reads Mr. Cummings' testimony in this case from page 53 of volume 5 of the record of this case in the Supreme Court, as follows:

"In other cases, however, we have made similar studies, notably in the New York Telephone case, Nos. 7720 and 377. My working papers in the New York case cover a pile of 24 column sheets, I would say 6 or 8 inches high. I have made similar studies, developing index numbers and that sort of thing, in the Indiana Statewide case and in the case of the Home Telephone & Telegraph Company of Fort Wayne, Indiana.

I have developed similar indexes from the records of the Northwestern Bell Telephone Company, and other smaller ones.

Those are the large ones. In the Indiana case in the
4253 Federal Court we put in exhibits based on my studies
of these index numbers, as I recall it."

That is my recollection of my testimony.

Two of my principal criticisms of Mr. Sloan are these: First, that he has used a constant cross section of plant in the appraisal as of June 30, 1923, for his material index. Second, that he has used a typical gang, instead of getting, let us say, the productive hourly labor rate, with whatever adjustments ought to be made in it.

"Q. Now, what you say in effect is this: That you cannot convert gross additions in one year by a typical cross section of plant, because that won't represent the way in which the plant goes in, the distribution of the plant?

A. If it were really a representative cross section, I don't think I have urged any objection to converting gross additions

in one year by a typical cross section of plant. In the case of Plaintiff's Exhibit No. 1, it was a representative cross section of the plant in service at the end of the period.
4254 One could not take a representative cross section of the Chicago plant, and apply it to the plant at Aurora, Illinois. I think it would be absolutely bad. That was why I minimized any comparison of that sort in the prior hearing.

Q. Now, what you did in Indiana—and Mr. Halsted prepared these figures, and you checked every one of them, you built your appraisal up, and there were three periods involved in the Statewide case down there, one of them representing the average unit costs, 1916 to 1920, the other representing a ten year average unit cost, 1913 to 1922, and the third was a spot appraisal as of November 1, 1922, is that right?

A. Substantially as I recall it.

Q. Yes, now what you did in order to get your average unit cost for the 1916 to 1920 period, you followed this formula; you took in each account the prices in each month of the year for a given article, and averaged that and got a year's average. Then you took the five years which had
4255 been gotten together in that way, and averaged them, to get your material prices. Then you arrived at your labor performance as a percentage for each year, and averaged that per cent, and in that way you got your index numbers for 1916 to 1920, is that right?

A. As to the material, that was years ago, of course, and I am not certain even as to whether I did that or Mr. Halsted.

Q. If he did it, you approved it, didn't you?

A. At least I did not criticize it.

In respect to labor, my recollection is that he had developed labor as a percentage of material throughout, and I merely used the results of his computations. Obviously it would be necessary to get a conversion factor for the unit cost for 1916 to 1920 or 1913 to 1922, but not recalling even whether I did the job or not. I cannot very well say that I had to do that. In Exhibit A-212, handed me by counsel, none of the figures which are penciled in are in my handwriting, and the conversion factors are in Mr. Halsted's handwriting."

4256 (Plaintiff's Exhibit A-212 identified.)

(June 4, 1932.)

4258 Statement by Mr. Thompson:

"Yesterday I asked a question of Mr. Cummings, which contained an implication that Mr. Halsted, in the Indiana Bell Telephone case had used, and Mr. Cummings had approved the use of a typical labor unit. I checked the record last night and I find that that was incorrect; while a typical labor gang was used for the last two years of the appraisal only, because the information on the other method was not available."

4259 Mr. Bradish and Mr. Morris were the two men who acted for J. G. Wray & Company in taking off the specific estimate of the Illinois Bell Telephone Company, the poles in the exchange pole line account, and the hours of performance associated with those poles. They are both capable and experienced men. They have both been in our organization for several years and accustomed to doing that class of work, particularly Mr. Bradish. Mr. Bradish personally did part of it, and Mr. Morris did part of it; they were together. They are both in the courtroom this morning. When they went over there, I think they understood perfectly what the object of their search was. When we send men over to do that sort of work, they have got to have full and definite

4260 instructions, and I was there myself, quite a bit. They understood that they were to get the poles that had been set by the Illinois Bell under specific estimates for the 2½ year period, and the labor hours associated with those poles. They knew at least that we intended to do as we had done before, and Mr. Bradish had assisted on it before, comparing performance on specific and routine estimates.

Just what form that would take, of course, would depend upon what they found. They helped me in the preparation of Exhibit X-8. We not only had the benefit of their experience in taking those quantities and labor hours off, but they saw the exhibit after it was completed, and before it

4261 had been introduced in evidence here. They participated in its preparation. It was absolutely essential, in order for them to do their work, that they should see some papers in connection with every specific estimate.

"Q. I have brought into this courtroom this morning, Mr. Cummings, what purports to be the pouch that you referred to, containing the complete files of specific estimate 22150. I am going to go through this with you first, and then we will have the opportunity of asking—you will have the opportunity of asking your associates what they saw and what they didn't see.

Now, here is the first envelope, containing these papers, and they say on their face that this is a purchase of one-half interest in 133 poles, clearly.

A. I so testified yesterday."

The second folder here shows on its face that it is an authorization for purchasing one-half interest in 133 poles 4262 to be set by the Commonwealth Edison Company. Had these men seen either of these two envelopes, there should have been no question about it. The next folder consists of four or five papers. There is a final completion report, which also shows the purchase of a one-half interest in poles. The remaining papers in this envelope show the purchase of a one-half interest in 133 poles.

There are no quantities in the next paper so that would not be significant. The last paper in this file is identified as 4263 Exhibit A-213. It lists the number of poles of each size placed, and this (indicating) is what Mr. Morris in particular pulled off, and it is what I testified yesterday, it was our understanding, derived partly from our own experience—I did not state that yesterday—partly from information from the company. It did not appear on any specific estimate where it related to joint Commonwealth Edison poles.

"Q. Will you hand Exhibit A-213 to Mr. Morris and ask him if that is the paper that he saw, and whether it is the only paper he saw?

A. He tells me that is the paper he saw, but not the only one.

Q. All right. That is entirely sufficient for my purpose. Now, is there anything that indicates to you, as an experienced telephone man, on the face of that paper, that there was joint construction involved?

A. It does not so state in any place.

Q. I will ask you whether there is that indicated to an experienced telephone man, that there was joint construction involved?

A. Looking at the list of the items, there is not. The only thing that might indicate that, would be the entry under sundry disbursements.

4264 Q. Well, there are other things there, aren't there? Do you notice that 7½ poles there?

A. That is right.

Q. Do you also notice one-half of an anchor?

A. Right.

Q. Now, that was a red flag to any man with any experience who examined that estimate, wasn't it?

A. It was in no way conclusive, as I see it.

Q. All right. Now, Mr. Cummings—

A. Because—may I finish that?

Q. Certainly.

A. Because the poles might have been set by the telephone company and billed to the Commonwealth Edison Company instead of the reverse.

Q. All right. Exactly. However, you also knew, and carried forward on page 2 of your Exhibit X-8 this one-half of an anchor and one-half of a pole?

A. I did.

Q. The least that can be said about this feature of Exhibit 213 was that that was a warning?

A. I would say that it indicated, and I think I testified—I am not sure—that the half indicated that there was joint construction there.

Q. All right.

4265 A. But it does not indicate, of course, who did it."

Assuming that there was no one-half of a pole and one-half of an anchor there, a mere casual examination of Exhibit A-213 reveals on the other side, under the appropriation, an entry of $299.25 for labor. There are not any details, any labor hours on that. I have seen a great many labor sheets where there were not, so that proves nothing.

"Q. I will ask you if it is not a fact that any man taking off this ledger sheet was bound to know that he had used 66½ poles in the count against which you were going to apply labor hours, and there was not one labor hour shown in your estimate?

A. There are no labor hours shown on that sheet.

Q. I will ask you, in view of that fact, whether you desire to say that the error which was made was the fault of someone else?

A. Certainly it is not ordinary, of course, to examine every
detail, if the thing that they are after appears clear, as
4266 the list of poles—the list of material placed here on
this sheet was, and I assume that it was interpreted by
Mr. Morris in the light of what he had been informed to be
the facts."

I am guessing that if I had seen that sheet having perhaps wider experience in this line, purely as a guess in the light of what I know now—hindsight is always better than foresight—I think I probably would have noticed something peculiar about that sheet.

We were associating labor hours with poles in order to find
performance. In this instance we were putting in poles in a
substantial quantity, without the associated labor hours,
4267 and that was not the right thing to do. I did not know
this situation when I testified yesterday, only so far as
I testified to it. I had taken the word of our men for it. I
had not personally gone to the telephone building and checked.
I have no desire to dodge responsibility for anything that we
are responsible for, but what I stated yesterday was
4268 none the less, so far as I know, the absolute truth. I
had experienced men over there.

Exhibit A-214 is a duplicate of Exhibit 50 in the first hear-
ing. I saw the work sheets that went back of 50, and back of
Exhibit 1, particularly back of 50. I made some inves-
4269 tigation of the work sheets back of 1. The pole prices in
both of these exhibits were identical, to the best of my
recollection, and I say that because I think I would recall if
they were not. I do not recall it, so I assume they were.
In my judgment, they were identical.

Counsel reads from transcript of Mr. Sloan's testimony on cross-examination, as follows:

"Question: Look at the first line of Plaintiff's Exhibit 1, page 114, percentage increase—per cent increase material.

Answer: Yes.

Question: Now, what does that represent?

Answer: That, I take it, refers to pole lines that you are talking of there.

Question: Yes.

4270 Answer: That means for August, to find what a pole
that was bought in 1911 would have cost in 1923, June

30th, you would have had to multiply it by 151.86 per cent (later corrected to read 251.86 per cent).

Question: And what did the 151.86 per cent represent?

Answer: That means the increase in the price of a pole between those two dates.

Question: Now, in developing your material percentage, you did that by taking items and quantities that you considered representative of the total plant in service in each account on June 30, 1923, did you not?

Answer: In developing that percentage, we took a cross-section of the pole account, divided into the various sizes of poles in accordance with the actual number of each kind that existed, and we priced that same cross section out each year, clear back to 1911, with the price of Eastern White Cedar untreated poles.''

4271 It is perfectly definite what Mr. Sloan did. I understand that. To the best of my recollection it is perfectly definite that that is what he did, both in Exhibit 50 and in Exhibit 1.

Document marked Exhibit A-215 looks like a work sheet that I delivered to Mr. Sloan and Mr. Cook, and in our typing, and is just as we delivered it, except that certain check marks in blue pencil and certain figures in blue pencil have been made in the exhibit.

4272 From the testimony that was read, of what Mr. Sloan did, he got the quantities that went in in this 2½ year period, found the prices at which the company had bought these items in each period, and then factored them forward by a conversion factor based on the method that he described in his testimony, which was just read. What I did as shown actually on this exhibit, I got 326 poles for that year, of 35-B size. Some of them may have been treated and some of them were untreated. We got the actual dollars paid for those poles from the construction records for the year
4273 1921. That was $6,189.70.

4275 I did not say that our Mr. Sloan's method and my method were alike, because they were not. I took the dollars on the books of the company and he took his trend.

"Q. Your methods were not even the same. The result of what you have done is this, that in this pole account, when you are making out the comparison between Sloan's principle and the company's experience, you have converted then the treated poles that went to the plant, added to the plant in 1921, '22 and '23, down to the level of the untreated poles?

A. It is my impression that some of the prices that we found on Mr. Sloan's work papers did include treatments. I have assumed thus far that the prices we have used here were prices of untreated Eastern Cedar or Northern Cedar poles, as you have stated.

Q. Yes.

A. I could not, of course, testify to that of my own knowledge, without checking back."

On the record as it now stands, assuming that the premises stated are correct, I have converted those higher priced, more expensive poles by this method down to the level of Eastern
Cedar poles, untreated, so to that extent my calculations
4276 appearing in this exhibit are incorrect. That error enters
into X-6. It enters into X-9 too. And the corrected
figures which I gave here yesterday, make no attempt to evaluate that error which I have made, assuming it to be an error. As to whether it is an error, as an engineer, I prefer not to do any guessing. I would rather check it up.

The first page of Exhibit X-14 is a price index from 1801 to 1931.

The price index includes grain and other farm prod-
4277 ucts, and dairy products. It includes metals, and metal
products, but I do not think it includes relays, or line lamps, and it would include copper and lead, too.

As to whether it includes telephone apparatus as such, I would have to check over the list of 550 items, of course, and verify that. I think it is probably the fact that it does not. I think we may assume that telephone apparatus as such is not included in this curve.

As to whether the labor portion of the material cost of the commodities shown on this curve is much lower than the labor cost, generally speaking, of telephone apparatus, for the reason that telephone apparatus requires not only highly
skilled labor, but a large proportion of labor to materi-
4278 als, I would not venture an opinion. I have made no
study of that. From my past knowledge of the Hawthorne plant, for example, there is a great deal of very cheap labor there, and many of the items that enter into this curve involved high priced labor. What the net result of the whole thing would be, I have not the faintest idea.

In Exhibit X-10, "Exchange Pole Lines," account 241, opposite the years 1918 to 1923, under the column "Per cent of labor of material" beginning with 1917, the per cent of labor of material was 84½. Then it jumped to 180. The next year 146, the next year 171, the next year 218, the next year 275, and the next six months 249; then it dropped to 99.

4279 I thought it probable when I prepared this exhibit that Mr. Sloan had included in his labor costs, in his appraisal prior to June 30, 1923, the Commonwealth Edison poles, including both labor and material. I actually discovered the fact the morning that I testified. That is, I verified what I thought probable. Those figures there were significant to me. It was that very fact that led me to make that investigation.

I testified that Mr. Sloan's indices showed that in the exchange pole lines account, the increase during this period in labor costs was less than the increase in material

4280 costs. As to what I say about that, I have made no personal study of it in this case. I have in other cases in previous years. I have not this data with me. I hesitate to hazard an opinion without making a study of the facts.

As to what effect his inclusion of these Commonwealth Edison poles in the labor account had upon his appraisal, I merely pointed out what seemed to me to be an obvious error, without check. I did not take into account whether that error was against the company or in its favor. I was interested merely in bringing out the facts.

Exhibit X-1 is merely an extension or illustration,

4281 or amplification of old City Exhibit 95. Exhibit X-4 develops a new idea which was not in my mind before. X-2 is along somewhat similar lines to City's Exhibit 95. They are a different angle, and taking different factors. X-1 depends for its principles upon the same general principle which was set forth in Original Exhibit 95. X-2 is simply doing for another of the three factors that enter into the answer, a similar thing to what I did in City's Exhibit 95. The method is entirely different, of course.

4282 The figure $1,497.21 in the column at the right of the page in Exhibit X-2 which reads "January 1st to June 30, 1923" is the cost of the material in the exchange pole line account in the typical plant as shown in Sloan's exhibit. Then I ascertain from the figures appearing in the same column,

but higher up, that the material per cent of the total cost
was 28.6, and the labor expense, 71.4 per cent of the total.
That means that the labor cost 249.65 per cent of the material.
By multiplying the dollar figure for material, we arrive at the
labor figure $3,737.78. My recollection is that it did not
4283 include any Commonwealth Edison poles. My recollection is that Mr. Sloan's typical plant did not include any
Commonwealth Edison poles. Line 2 of this exhibit, under
Section (A) reads "per cent increase of labor" during this
period and is taken from Plaintiff's Exhibit No. 1.

I did not factor back, by means of that percentage, the
labor cost which I arrived at for the first six months of 1923
throughout all the years. It was not precisely that because
the percentage of increase in each instance is the increase of
the June 30, 1923, level over the previous period. Con-
4284 sequently, I had to adjust the six months level to the
June 30th level. I have factored these dollars of labor
back on Sloan's per cent increase of labor. In 1915, I got by
this factoring process $2,539.33 for labor, whereas Sloan got
$863 in his typical gang, which is an entirely different thing.
In other words, I got substantially three times as much labor
cost as Sloan did by the method that he actually used in determining labor costs for that year. I got a larger proportion
of labor in the earlier years than he did. I got a larger dollar
cost, too, necessarily.

4285 "Q. I am talking now about the relation, 28.6 to 71.4,
the material per cent of total labor cost—or the per cent,
material per cent of total cost, and the labor per cent, and I
will ask you if that does not include a substantial quantity of
Commonwealth Edison poles for 1923?

A. Answering your prior question—

Q. I will withdraw that question; I think I was mistaken about that, and I am asking you this question, now,—I am asking you this question, in view of the fact that that factor determines the dollar amount of your labor, that you start with in this calculation.

4286 A. I accepted for this purpose Mr. Sloan's proportions of material and labor, with whatever they include.

Q. Exactly. Now, I will ask you if what you have done is—and I am not asking you for the purpose of arguing the question, but the result of what you have done is that you have factored back into each of these years whatever the relation of labor was, whatever there was in the labor cost in the six months period ending June 30th, 1923 that was of an unusual condition, such as Commonwealth Edison poles, or anything else.

A. Commonwealth Edison poles did not enter into that 1923 labor level.

Q. No, I understand, Mr. Cummings, but we cannot get away from it that way, because the factor that you used to determine the amount, the dollar amount of labor there, was a factor developed from Sloan's work, where there was a large amount of Commonwealth Edison poles; and I am asking you if that is not a fact.

A. Well, but I think I testified that I accepted his figures—

Q. I am asking you—

A. I testified to what I had assumed for the purpose of this computation.

Q. Yes.

A. And that was one of the things I assumed.

Q. But what I am trying to get at is that having accepted his figures, and having used them in a way he did not use them in, but that you used them in, your result—I am asking you if you do not fall into a situation where
4287 you have reflected back through every one of those
years this Commonwealth Edison pole situation in the labor account? You have got a perfectly absurd result, have you not?

A. No, I do not think so.

Q. All right. That is all on that. Now, it is on that principle, and that same principle, that Exhibit Number 95 was built in the old case?

A. To the extent that I have used his proportions of labor and material.

Q. Yes.

A. (Continuing.) And if they were in error, and it did not reflect the fact, why, naturally, that computation is equally—

Q. No, not the question of whether they are in error or not, but the question of how you used the figure that Mr. Sloan used, in a different way, is an entirely different proposition, is it not, Mr. Cummings?

A. Mr. Sloan used it in the same way.

Q. No, he did not factor back that way, and you know he did not do that.

A. He did not factor the labor cost of a typical plant, back in that way, no.

Q. No.

A. But he did combine his material and labor indices—

Q. All right.

4288 A. —In that way, and from those same figures.

Q. Now, may we just turn—

A. (Continuing). Which you say reflect Commonwealth Edison poles.

Q. The result of your calculation is that by means of this factor, you have factored back whatever conditions existed in that year 1923, throughout the period?

A. I testified that I had adopted his assumption that there was no change in labor efficiency or output per man hour, whatever it was."

Referring to Exhibit No. 4 and the factors 26.6 and ~~73.4~~ under 1922 and the 1923 percentages, 28.6 and 71.4, what Mr. Sloan did was when he got the ratio of labor and material to the total cost of a particular account in a given year, and got his factor of conversion, he applied the weighting as between labor and material in the years, whose gross additions he was converting. I did not do that in this par- 4289
ticular exhibit. I did in others. I did in the exhibit that you showed me.

I testified that Sloan took the average of Western Electric prices by billings, and on the contrary, I, in my work, had taken the prices at the time that the addition was made on the books. I illustrate the effect of that by saying that if prices were going down, and there were one thousand feet of lead cable that cost $1,000, one dollar a foot and then when it went into the plant it cost $900, my method was to take the price at which it had gone into the supplies account and was later credited to supplies and charged to plant. Mr. Sloan's method was more nearly analagous, I would say, to taking the prices—the current prices at the time it was
4290 used. Whether by reason of that fact he got higher prices for Western Electric material than I did would depend so far as that one factor is concerned upon the lag between

current prices and supply prices, S N 2 prices. It would depend entirely, of course, upon the trend at the time. The trend was upward from 1911 to about 1921, generally speaking. I do not mean all the things, but generally speaking the price trend was upward. In the latter years of the period it was down.

I don't know whether or not it is a fact that prior to 1930 and 1931, the supply account of the Illinois Bell Telephone Company on the average turned over about once in
4291 either three or four weeks.

"Q. Well, if that is true, then this point does not mean anything, does it?

A. The illustration itself, of course, does not cover the entire difference between current prices and SN 2 prices. I have made no analysis of that because I was not interested in that. What I was interested in was the figure at which these things went on the books, and my past experience always had told me that there is very often a substantial difference there."

I know that there are such differences in this case. I don't know how it affects it, because, of course, Sloan's method would result in a loss to the company as long as prices were rising, so far as that factor of lag is concerned. But my method of course really implies other factors to which I did not refer, and which may work out in all sorts of ways.
4292 SN 2 prices are not current prices in all cases, and very often, as I have testified, differ widely. That has been my experience always and everywhere, in this case and other cases.

My method in these other accounts was not identical, in the respect that I have been discussing with my method in exchange pole lines, in that I took the dollars at which the material went on the books.

"Q. Yes, and thus took prices from Sloan's figures that represent amounts not based on the actual condition, the actual classification of plant, but based upon a particular item of material.

A. Those being prices, I take it, at which such materials, 600 pair 22-gauge cable for example, could be bought on June 30th, 1923.

Q. Of course, but my point in this is, again, just the

same, Mr. Cummings, that what you did was to get the dollars of material for the time the gross additions were made, and you took your quantities, and then in order to get the price at the June 30th, 1923, level, you did not get the
4293 actual prices of the material that was in, but you took prices based on the trend of one class of material.

A. Not based on a trend, Mr. Thompson.

Q. Well—

A. (Continuing): They were instant prices, as I understand it.

Q. Yes, but in the cable account—they were prices for cable that was of a cheaper type.

A. Well,—

Q. (Continuing): Than some of the cable actually in the plant.

A. I do not know."

I made a comparison of the ratio of work done under routine estimates and that done under specific estimates respectively to the total construction work of the Illinois Bell Company, and then compared the ratios with the figures appearing on Sloan's Exhibit 51.

Mr. Sloan's Exhibit 51 includes construction work equalling in dollars all of the plant of the Illinois Bell Telephone Company as of June 30, 1923, whereas the gross additions which I use as the basis for that comparison are for the two and a half year period, 1921 down to June 30, 1923.

4294 In my direct examination, I stated in one instance that the testimony I was giving was my opinion and that of Mr. Wray as we had both expressed it in the previous hearing.

Many of the exhibits that I have introduced in this case bear the legend "J. G. Wray & Company." On a number of the exhibits, in one column I have "Sloan" and the other column I have "Wray." I think I have used the designa-
4295 tion "Wray" there for the obvious reason that I am in the employ of J. G. Wray & Company. And then, it is our practice to designate our computations in that manner. I have conferred naturally with Mr. Wray as my chief on all of this, and I know of no difference of opinion between us on it. All of the exhibits which I have introduced were submitted to him before they were introduced, except that quot-

ing from memory, of course—X-12-A, X-13-A, B, C and D, were prepared day before yesterday during Mr. Wray's absence from the city and he did not see them prior to the introduction. With that exception my statement will stand so far as I recall.

I have investigated to see what I could find about the
4296 Indiana Bell case and what I found was in line with Mr.
Thompson's statement this morning (concerning the use of a typical labor unit).

Exhibit A-212 is a representative weighted plant which purports to show the material cost in the central office, telephone equipment account 221, for each of the years 1913 to 1922—for the period ending November, 1922. We have copies
of these. I have not compared them in detail, but they
4297 appear the same. This representative weighted plant
was used by Mr. Halsted, and Mr. Wray testified to that in the Federal Court in Indianapolis, in converting the 1916 to 1920 five year average unit cost to 1913 to 1922, ten year average unit cost, and to November, 1922, spot level but as I testified yesterday, personally I neither approved or disapproved. I was not asked to approve or disapprove. I did develop an index from these figures. I could develop the index without approving it. I had no hand in the preparation of this. I was not consulted and I never gave it a check. I would not assume the responsibility for its accuracy or inaccuracy.

4302 "Q. I will ask you if it is not a fact, Mr. Cummings,
that you approved for use by Mr. J. G. Wray, the senior member of your firm, in the Indiana Bell Telephone case, in the Federal Court in 1923, the conversion factors based on a constant cross section of typical weighted plant and then applied, and approved the application of that typical cross section of plant to seventy different exchanges in the State of Indiana?

A. That question involves several parts, and to nearly all, the answer is no.

Q. Tell me what the answer is yes to and what no."

I developed the index curve which I believe Mr. Wray testified to although I was not present at the time. I understood he put it in. I developed it from these figures furnished me by Mr. Halsted without inquiry as to the accuracy of

4303 those figures. I knew the general method of how they were made. The tables speak for themselves, I think. What use was subsequently made of them I do not know of my own knowledge.

4304 *Redirect Examination by Mr. Goldstein.*

I still stand by the statement made yesterday that I was on the lookout for Commonwealth Edison poles under routine estimates and not under specific estimates, because of the statement of Mr. Lawbaugh of the Plant Accounting Department of the Illinois Bell, who stated that there were no Commonwealth Edison poles included in these estimates.

(Objected to by Plaintiff. Objection; overruled.)

4305 I still stand by my statement that the day before yesterday Mr. Lawbaugh stated that, to his knowledge, this was the first instance that there was included some joint poles in the lists of material placed on specific estimates. There was nothing unique in the fact that some of these estimates had labor, and some had material. There were other instances of the same kind. So far as I know that did not involve any joint poles in which the Commonwealth Edison was involved.

4307 On cross-examination, in connection with Exhibit X-8,
I was asked about Class "G" labor and whether such
labor was used in placing guard arms and brackets, etc., and
I said that I did not show brackets separately because they
are not classed as major items of materials. In tele-
4308 phone practice it is customary, in order to avoid an in-
terminable list of items, to divide the items into classes
which are designed as major and non-major, or minor, or
miscellaneous items. In unit costs it is customary to set up
specifically the major items only, and to weight into these
major items a proper proportion of non-major items. That
is the practice, so far as I know, of all Bell Companies. I
know it to be the practice, for example, of the New York Tele-
phone Company and the Illinois Bell Telephone Company.

I stated in my answer that I knew that the placing of these non-major items was included in the labor units which we used as trial units, because I was familiar with the practice of the New York Telephone Company, who made up these trial units, in that respect. That labor is, in fact, included with the guard arm labor, and, therefore, in using units developed by the New York Company I have made full allowance for the placing of the brackets referred to.

I have testified about the estimate ledger. I have be-
4309 fore me the Standard Estimate Routine Bell Telephone System. On page 18, starting on page 18, paragraph 3, headed "Estimate Ledger, Exhibits 35 to 42" I find the following description:

> "Estimate Ledger sheets should be maintained by the Plant Accounting office for each specific and routine estimate. The estimate ledger should furnish a detailed and cumulative accounting record of the performance under each estimate, and should be used as (a) an aid to the supervisory forces during the progress of the work, (b) a basis for the compilation of the final completion report by the plant accounting office, (c) a basis for the development of unit cost data whenever such data may be required."

Item (c), of course, is the purpose for which I have used it in the present case, and in many instances in prior years.

Paragraph 4 lists various forms and their uses.

Paragraph 5 reads:

> "As an aid to the departments responsible for the supervision of work performed under estimates, and to insure that the estimate ledgers correctly reflect actual performances, representatives of such departments should inspect the estimate ledgers monthly as soon as the record for the prior month is completed. If the
> 4310 engineers who prepare the specific estimates are so located that they do not have convenient access to the estimate ledger sheets, the plant accounting office should forward blue prints of the estimate ledger sheets of estimates on which sufficient charges have been reported to warrant the furnishing of data thereon."

Paragraph 6 reads in part:

> "Postings to the estimate ledgers should be made monthly as follows: (a) post the charges and credits from the summaries of material used, supply expense, labor, overhead expense, stable and garage expense, sundry disbursements, Western Electric bills and credits, and other charges and credits. (b) where the plant accounting system is such that information as to productive

labor hours is obtainable, post in the space 'Detail of Labor,' the total number of productive labor hours, and the cost thereof, separately for each class of labor."

That is, linemen, groundmen—I should say, for example, linemen, groundmen, conduit men, cable placers, cable testers, cable splicers.

"The total number of productive labor hours, and the total cost thereof, without regard to the class of labor. Note: The labor cost should include lost time and local plant administration, but not overhead expense."

4311 Those are the charges that I have used as the direct labor charges throughout all of my studies.

"(c) Post in the space 'Detail of Material Added (Construction)' from the material quantities all important items of material used. These items should include at least plant units as established for retirement unit costs, and may include such other items as manhole castings, cement, sand, gravel, strand and so forth, as may be found desirable. Where that information is readily obtainable, the material costs only, excluding supply expense for each plant unit, should be recorded."

And those are the material costs that we have used.

"(d) The costs of miscellaneous material, that is, other items not recorded separately and exempt material should be posted in the columns provided."

The rest of that paragraph relates to retirements. Those provisions were in effect during this period.

4312 That routine was approved October 1, 1920, and was put into effect by the Illinois Bell Telephone Company at the beginning of 1921, and I believe I testified that that is the reason why we did not go back of 1921 in our study.

"Q. Mr. Cummings, on record page 4206, with reference to the question of the extent to which wastage is included in the ledger sheets, you were asked the following questions, and you made the following answers:

'Q. Does it, on its record, allow for all of the wastage that exists?' And you answered:

'A. I assumed it did, I assumed the records showed it.'

And you were asked;

'Q. What are you trying to do now is, to get this material on a reproductive basis, aren't you?' And you answered:

'A. Yes.'

Q. Then, your answer is this, isn't it; that your figures include such wastage as is entered on the company's books?

And you answered:

'A. Yes.'

Q. And they do not include anything but that?

And you answered:

'A. Right.' "

4313 When I made the answer "yes," and the answer "right" to the last two questions, I had in mind not the fixed capital account on the company's books of account, but the estimate ledgers from which I drew my figures, because that is what we had been discussing.

The quantities on the estimate ledgers include a full allowance for wastage.

When I testified that I assumed that the record showed all the wastage that existed, I meant that my calculation assumed that fact, because I knew the record included it.

4314 Referring to the question, on cross-examination, in which I was asked whether it was not a fact that in 1921, 23 per cent of the poles were treated, in 1922, 85 per cent, and in the first six months of 1923, 80 per cent. I have since investigated the facts.

I examined our working papers yesterday afternoon, and find that we have in the 35-B poles no record of any treated poles for this period. 35-B poles comprise 55 per cent of the total poles placed during this two and a half year period. The 30-B poles for this period, which comprise 13 per cent of the total poles set, we found 9 per cent out of the 13 per cent of the total, or a little over 1 per cent of the total for 1921 were treated. In 1923, none; in 1922, only 40 per cent of the 13 per cent were treated. That is, 40 per cent of that portion of the 13 per cent for the year 1922.

4315 Now, that is as far as I got with those two sizes of poles which, between them, account for two-thirds of the total poles, and I will make a further search before the end of the case to get exactly the percentage for each year and for the other sizes which I did not look up yesterday, but which are a minor portion of the total poles placed. Mr. Thompson's figures, therefore, do not appear to conform to what we found on the record.

Referring to my cross-examination as to the difference between Mr. Sloan's method and my method of treating the cost of cable placed—my method was simply to take from the estimate ledgers the quantities of each size of cable
4316 placed during that year, and the price at which that same cable was charged to plant, and then to price out that same size of cable at Mr. Sloan's June 30, 1923, price and determine, by comparison between the two results the percentage of increase or decrease in price. Mr. Sloan used unit prices for each year which he ascertained from the purchase record so that the difference between us is as to whether purchase prices as used by Mr. Sloan, or the prices at which the material was charged into plant is the proper basis for comparison between the book cost and the June 30, 1923, level. For the reasons I have already stated, the book cost is the proper figure to use and not the purchase price. My method would take into account the actual prices charged on the books for each different kind of cable and for the same kind of cable if priced differently during this period, because I took the actual dollars.

4317 When I stated on cross-examination that I did not claim that the index that I developed was the correct index, but merely that it represented what the company's records show, and that was the only claim I made for it, I meant that I took Mr. Sloan's method and applied it to the facts in the company's experience, instead of applying his method to the assumptions which he used, without claiming anything for the method. With respect to the Indiana case, I neither testified there, nor offered an exhibit in that case.

Re-cross Examination by Mr. Thompson.

"Q. Of course, with respect to the treated poles, you cannot get all of the poles that were treated from the estimate ledger, can you? Isn't it a fact you have to go back to the invoices?

4318 A. The invoices don't show what jobs the poles were used on. It might be possible to buy a pole and store it in the pole yard, until it rotted, and if it didn't get into plant, we would not be interested in that pole."

I assume the company does not deliberately waste poles, but what I meant to illustrate by that was that what we were interested in were the poles that were charged to plant, and ~~we took~~ the record as it stood in that respect.

"Q. I have just asked you if it is not a fact that in order to get this information you have to go back to the invoices to get it?

A. We found, as I stated, several notations on the estimate ledgers that the poles were treated. Whether those notations were omitted in other cases, of course, I don't know."

As to whether the number of poles that I have given were the only treated poles for those gross additions in 1921, 1922, and the first half of 1923, I am stating simply that is what the records that we asked for and were furnished us, showed.

"Q. Now about wastage, one question there. You got in your gross additions for a given year, when you took the figures off of the books for 1921, just like that pole line account there you got the actual dollars for your cable in your materials?

A. Not from the books; from the estimate ledgers.

Q. All right. I don't mean a particular book, but from the records of the company. So that was actual dollars?

A. Yes."

When we came to price that cable out at the June 30, 1923, level, we took a unit price from Sloan's appraisal that was a unit price per foot and applied it to the quantities in
4320 plant, because those quantities on the estimate ledger included wastage. When we got our unit price on cable, we applied it to the quantities that were on the estimate ledger sheets. Our work sheets will show that. You may examine them. Mr. Sloan has them, I believe.

I don't think I said that the difference between me and Sloan on these prices is a difference in the method of determining the time at which the materials entered on the books.
Referring to the question of our having used unit
4321 prices in pricing out the material at the June 30, 1923, level, that represented merely the type of material upon which Sloan had plotted his trend. I used those prices, so did Mr. Sloan for fixing the end point of the trend. I took the dollar quantities of material in these various accounts as of the time they went into the plant, as shown by the estimate ledger. Then I found the units on the estimate ledger sheets, which are not necessarily the units in plant, and then took the prices appearing in Sloan's Exhibits Number 1 and Number 50, and applied it to all those units.

4322 "Q. Now, what you did—and here is your error, I am asking you if this isn't correct, that you took the prices that Mr. Sloan had used for trend purposes, that were limited to one kind of material, and then you priced out all the units, so far as the June 30, 1923, figure that you got is concerned, on the price of that one unit used by Sloan as a conversion factor.

A. I am not clear as to what you mean by "kind." I applied, for example, to all 600 pair 22 gauge cable which we found on the estimate ledger sheets, in pricing that out at the June 30, 1923, level, I used the price of 600 pair gauge cable which Mr. Sloan had used."

The 326 35-B poles I priced out at $18.95 per pole, as of
June 30, 1923. That was the eastern price of the cedar, un-
treated pole. If any of those poles that had been added in
1921 were treated poles, I have an error in it. I have
4323 not measured the error, of course. I have stated I would
go into our records further before the end of the case.
But if there are treated poles in that account, then there is
an error in my figures.

(June 4, 1932.)

JOHN S. HAGBERG, on behalf of defendants, testified as follows:

Direct Examination by Mr. Goldstein.

4330 My name is John S. Hagberg. I reside at Highland
Park, Illinois. I am employed as a senior accountant
4331 by Touche, Niven & Company, public accountants, who
have been established in business for more than thirty
years, and who have offices in Chicago, New York and the principal cities in the United States; in Paris, France, and, by association with George A. Touche & Company, London; offices in the principal cities in Canada, British Isles and South America. I have been associated with that company close to fifteen years. Before that, I was employed by different commercial concerns. I went to school in Sweden and then was employed in Germany and came to this country about 1902.

I am a member of the American Institute of Accountants.

4332 My duties in connection with my employment with Touche, Niven & Company have been auditing and examination of accounts and cost accounting methods of principally larger manufacturing concerns. I have been engaged in installing and revising cost accounting systems of several manufacturing concerns.

I was employed by the City of Chicago on or about January 1, 1932, in connection with the present case. My employment was particularly in connection with the plaintiff's showing of the Western Electric profits and the costs allocated to the Bell and non-Bell business. I was present in the courtroom most of the time when Mr. Gregory testified in this case and I was present when he testified on the matter of Western Electric costs and profits shown in Plain-
4333 tiff's Exhibits A-77 and A-79. I was present when those exhibits were offered. I have read his testimony.

In connection with my examination of the data underlying these exhibits, I examined the binders referred to by him in his testimony, and the records, and made investigations at Hawthorne and in the New York headquarters of the Western Electric.

Exhibit X-15 entitled "Western Electric Company Profit and Loss, year 1929," was prepared by me and under my supervision with the assistance of the employes of the
4334 Western Electric. They are practically all the Company's figures so far as the first two lines are concerned, including the total sales. That is, I was in agreement with the Company on those figures. Under the line "Gross profit" the figures "Basic gross profit adjusted" are also the Company figures shown in the binders or obtained through the assistance of the Western Electric employes. That answer also stands for the allocation between the Bell and the non-Bell and between the telephone apparatus, lead-covered cable and supplies. Concerning the two lines shown under "gross profit" as "Manufacturing surplus and current underrun" it is necessary to bear in mind that the Western Electric Company, by reason of using standard costs as defined by Mr. Gregory, is required to make adjustments thereto, in order to arrive at the gross profit figure, and these ad-
4335 justments depend upon standard shop cost of sales as a basis of allocation between Bell and non-Bell busi-

ness, and depend upon sales as the basis of allocations between Illinois Bell and the Bell System, as between the Chicago Division and the Illinois Bell as a whole, on Mr. Gregory's basis of allocation in arriving at the net profit in Exhibits A-77 and 79 and A-93 to A-98.

The first line, "Manufacturing surplus and current underrun" shows $17,720,000 in the black. This means that a group of adjustments resulted in additions to the basic gross profits and resulted because the actual expense in regard to labor cost, material cost and overhead combined on the manufactured articles to which they applied was less than the standard or estimated cost for the aggregate of these three cost factors included in the standard costs for the year for such manufactured article.

The second line, "Manufacturing surplus and current underrun, $15,247,000," in the red means that another 4336 group of adjustments resulted in deductions from the basic gross profit and resulted because the actual expense in regard to labor cost, material cost and overhead combined on the manufactured articles to which they applied, was more than the standard or estimated cost for the aggregate of these three cost factors included in the standard costs for the year for such manufactured articles.

The next two lines, "Inventory revaluation and reserves," show on one line in the black $122,000, and in red, $6,747,000. That means that to the standard inventory valuations which the Western Electric uses as the first step in valuing the inventory at the beginning and end of each year, the Western Electric Company made a group of additions and a group of deductions to arrive at the inventory value of cost and market, whichever is lower.

The detail showing manufacturing surplus and current underrun and the inventory revaluation and reserves will appear in statements which will be offered by me as Defendants' Exhibits X-16, X-17 and X-18.

4337 The figures under "Total" from the four lines following "Basic gross profit," represent an aggregate of the adjustments and were taken from the binders, and in agreement with the Company's employees. So, also, the figures shown in the columns under "Total" for the telephone apparatus, lead-covered cable and supplies were taken from the binders, and were in agreement with the employees of the

company. The binders did not show, in each case, where the allocations of adjustments were made to Bell and non-Bell. They did not show in each case the gross additions that were allocable to Bell and non Bell, and the gross deductions
4338 that were allocable to Bell and non Bell. In many cases
the allocation was made of the net result of the certain additions and certain deductions.

To arrive at the gross additions allocable to Bell and non-Bell and the gross deductions allocable to Bell and non-Bell in those cases, I was compelled to make my own allocation.

The figures in the line, "Total gross profit" and the allocation to telephone apparatus, lead-covered cable and supplies, and the division of each class between Bell and non-Bell, are in agreement with the Company's own figures, as furnished to me. All the other figures on that statement, both for total figures and the distribution between the classes of product and between Bell and non Bell, are all taken from the Company's binders, that were furnished by the Company.

The Company's records and the binders as I found
4339 them, treat telephone appliances and special products
as one class of products, known as telephone apparatus. That is, they treat them as one class in considering the costs and adjustments in their allocation between the classes of products, and not as to sales. In their records, under the main heading of "Telephone apparatus" are included telephone appliances and special commercial products.

Exhibit X-15 shows, that for telephone apparatus alone the total adjustments that were spread over all items of that class were $30,798,000, covering the manufacturing surplus and current underrun, and being the totals of the additions and the deductions. It foots to that amount.

The cost of sales of telephone apparatus in 1929, as shown on Exhibit X-15, by deductions, was $164,350,000. The gross adjustments represented 18.7 per cent of such total cost of
sales. The sum total of the adjustments applicable to
4340 telephone apparatus and allocable to Bell customers, to
be spread among the customers in the Bell System, was $28,414,000, in the year 1929. That represents 19.84 per cent of the cost of sales of telephone apparatus to all Bell customers.

The binders did not show, and the Company employees advised us that it had not been made, and that they had no data available from which we or they could determine the adjustments applicable to the separate hundred thousand or more items making up the class "telephone apparatus."

The same answer was made to me with respect to the determination of the adjustments which were applicable 4341 to the items which were sold to the individual Bell customers, including the Illinois Bell or the Chicago Division of the Illinois Bell.

With reference to records available to determine the sales of the separate items of telephone apparatus between Bell customers, they advised us that there was no such record of individual items. We went to the Chicago distributing house of the Western Electric Company in order to check the sales figures for the Illinois Bell, and we found that the records showed only the gross billing, and not by individual items.

Exhibit X-15-A, entitled "Summary of Sales," and Exhibit X-15-B, entitled "M-201, Sales and Gross Reve- 4342 nue," were given me during my investigation at the Chicago distributing house to show the sales were broken down, and what classes. That is on form X-15-A. On the form marked X-15-B, these findings are just summarized, but individual items of manufacture are not segregated on these forms, nor are the sub-classes making up these main classes divided up.

We only have the main headings of apparatus and equipment, lead-covered cable, supplies materials, transportation service, and what is called general sales. They are somewhat broken down, but not as to items or sub-classes of items.

What I said with reference to the manufacturing surplus and current underrun was equally applicable to the figures for inventory revaluation and reserves, and their distribution between the Bell and the non-Bell customers and 4343 between the various Bell customers in the Chicago division and the Illinois Bell.

Exhibit X-15, shows the gross adjustments of thirty millions. The exhibit also shows that for manufacturing surplus and current underrun for telephone apparatus, the net adjustments, were only $2,736,000 additions to profit, or 1.66 per cent of cost of sales of telephone apparatus. That is the difference between the two lines, the black figures and the red figures. And this exhibit also shows that there were $946,000 net adjustments by way of additions to profits from

Bell apparatus, or 66/100ths per cent of the cost of sales of telephone apparatus to Bell customers. The net adjustments which depended on the standard shop costs as a basis of allocation, if they represented the total adjustments, would have a negligible effect on the profits on sales to any or all customers, but it would be as erroneous to consider the
4344 net figures in this instance as it would be to say that because the control account of a ledger of account receivable was out of balance with the detailed accounts by one cent, the errors resulting therein would not be harmful even though the one cent error was the net result of overstatements and understatements in each customer's account aggregating for some customers thousands of dollars one way or for other customers thousands of dollars the other way. I found that the adjustments were apportioned between Bell and non-Bell business, partially by direct allocations and partially on the basis of standard cost of sales. I found, in cooperation with the Western Electric employees, that the adjustments applicable to special commercial products were allocated, in part, by direct allocation and in part by standard costs of sales.

The allocation of special commercial products was on the basis of studies, but a large percentage of adjustments
4345 were allocated on the basis of standard cost of sales.

Exhibit X-16 is entitled "Analysis of Basic Gross Profit, Year 1929." That is merely detail making up the basic gross profits, and was compiled from the binders, with the assistance of the Company, and is self-explanatory, and gives in complete form the figures which Mr. Gregory testified to. In Mr. Gregory's testimony, some of the items were not mentioned. What I have done is to complete them, and get in agreement with the Company on it.

Exhibit X-17 is entitled, "Manufacturing Department—Surplus and Current Underrun, Year 1929." That also represents the detail making up the additions and deductions from the gross profit for the manufacturing departments surplus and current underrun, and was made from the binders, with the assistance of the Company, and was prepared, as I have previously explained. In X-17 I show in the mar-
4346 gin "D-80." That indicates, in each case, the particular adjustments which Mr. Gregory included in compiling the exhibits which we have identified as D-80, and to

which he made reference as bearing upon the .2 of 1 per cent calculation. We earmarked those items by putting "D-80" in front of them, in the margin.

Exhibit X-17 shows that there are adjustments in the several factories, in the distributing houses, and in the merchandising department, and that the adjustments which in one department of the business and at one location result in additions to gross profit, in another location and department of the business result in deductions from the gross profit. It also shows that the adjustments which add or subtract from the gross profit for telephone apparatus and lead-covered cable are different in the same department of the business and in one location from other locations and departments of
the business. Take, for instance, at Hawthorne, the tele-
4347 phone apparatus showed an addition adjustment for
shop surplus in production of $4,575,000 and the lead-covered cable showed an addition of $804,000, but at Kearney it showed a deduction of $6,636,000 for telephone apparatus but an addition of $458,000 for lead-covered cable.

Exhibit X-18 is entitled "Inventory Revaluation and Reserves, year 1929." That represents the detail of the items, inventory and revaluation reserves, shown in X-15, and these items were explained by Mr. Gregory; but X-18 is the complete statement compiled from the binders, and with the assistance of the Company, whereas, Mr. Gregory just testified to certain of the items.

This again shows the variations in amount and character of adjustment at the different locations and different de-
partments.
4348 Exhibits X-19 to X-25, inclusive, represent, for the
years 1924 to 1931, profit and loss statements corresponding to profit and loss statement X-15 for the year 1929. The details for each of these exhibits for the years 1924 to 1931, other than 1929, corresponding to Defendants' Exhibits X-16, X-17 and X-18 for the year 1929, were prepared, and a typewritten copy for each of the details, for each of the years 1924 to 1931, inclusive, were furnished to the plaintiff's attorneys.

Exhibits X-19 to X-25, X19 being the profit and loss statement in the year 1924, X-20 being the profit and loss statement for 1925, X-21 being the profit and loss statement for 1926, X-22 the profit and loss statement for 1927, X-23 the profit and loss statement for 1928, X-24 the profit and loss statement for 1930, and X-25, profit and loss statement for 1931, were all prepared in the same manner, and with the same assistance of the Company's employees as described in connection with Defendants' Exhibit X-15.

4349 Exhibit X-26, entitled "Profit and loss statement for 1916," X-27, profit and loss statement for 1917; X-28, profit and loss statement for 1918; X-29, profit and loss statement for 1919; X-30, profit and loss statement for 1920; X-31, profit and loss statement for 1921; X-32, profit and loss statement of 1922; X-33, profit and loss statement for 1923,—were prepared from the binders and with the assistance of the Company and under my supervision.

4350 In my examination of the binders, I did not find any distribution or any data from which a distribution could be made of the gross adjustments between Bell and non-Bell business for the period 1916 to 1923. The only distribution we could find was the distribution of the net adjustments as between Bell and non-Bell, that is, the net figures, which are the net figures of gross profit, they are divided between Bell and non-Bell, but the details making up the basic gross profit and adjustment, were not available. I have requested the Company to give me the data from which could be determined the allocation or adjustment between Bell and non-Bell. That request has been with the Company for quite a while. I will add to that, that we were told that there

4351 was no data available in that respect, except that we could perhaps, if they were still in existence, obtain them at the locations at the Hawthorne plant and also the distributing houses.

Wherever they were applicable to, and where the Company was doing business or operating at that time, the data on which a split could be made might be available, but they were not sure whether it was or not, or whether it was even in existence.

* * *

(June 7, 1932.)

4354 I did not make any allocation for these years in Exhibits X-26 to X-33 between the non-Bell and Bell business. Defendants' Exhibit X-34 is entitled "Gross Profit." That consolidates, on two sheets, the additions to Gross

Profit and the deductions from Gross Profit, total adjustments to Gross Profit, and not adjustments to Gross Profit; and all of the figures on X-34 are taken from Exhibits X-15 and X-19 to X-33, both inclusive.

Exhibit X-34, entitled "Summary Sheets Showing Gross Profits and Adjustments by Years 1916-1931; both inclusive," is intended to show in summary form the additions, deductions and total adjustments, and the result on the net. Exhibit X-35, entitled "Gross Profit and Analysis Summarized 1916-1931," groups the additions and deductions to Gross Profit, the total adjustments, and the net adjustments shown in X-34 according to the period of years. X-35 shows 4355 the extent to which adjustments for telephone apparatus separately, also lead-covered cable and supplies separately, each increased the profit and decreased the profit, how they offset each other over a period of years, as indicated.

The third group of figures on the page entitled "1916 to 1923, Inclusive" shows that for the eight years of that period 1916 to 1923, there was a total of $23,724,000 of adjustments. That shows adjustments which added $23,724,000 to profits found in the column "Total." It shows $84,169,000 deductions from profits. It shows total gross adjustments of $107,893,000, and with those adjustments, the additions and subtractions, did not offset each other by $16,445,000, 4356 the deductions from gross profit being in excess of the additions, by that amount. These totals were broken down on the sheet to show, separately, for telephone apparatus, lead covered cable and supplies, and also each of those total adjustments for each of the separate classes of product, are broken up into those adjustments which come under the category of manufacturing surplus and current under-run, and those that come under the category of revaluation and reserves.

I have purposely made this break-down so as to compare the figures shown on this Exhibit X-35 with the figures shown on Mr. Gregory's exhibit, which has been identified as D-80.

The figures corresponding to these which I have just given for the years 1916 to 1923, are shown in each separate grouping for the period from 1916 to 1925, 1916 to 1926, 1916 to 1927, 1916 to 1928, 1916 to 1929, 1916 to 1930 and 1916 to 1931. These dates just given, mean that I started off

4357 with 1916, and showed the adjustments from 1916 to 1923, and then added another year, and showed the effect of that on the total. Then I showed the effect of the adjustments for 1925, ~~and similarly for each~~ year thereafter, until I reached the total, from 1916 to 1931, inclusive. It covers not only the adjustments, but the total factors in the main groups, making up the gross profit. The years 1923 to 1930, and 1921 to 1930 (shown on page 1) are the same years which were covered by the exhibit prepared by Mr. Gregory in connection with the discussion of the .2 per cent variation in costs, and identified as Defendants' Exhibit D-80.

Exhibit X-35 shows that for the period 1916 to 1931, inclusive, there were adjustments which resulted in additions to profit in the factory of $109,415,000 and adjustments
4358 which resulted in deductions of $163,873,000, or total adjustments of $273,288,000. This figure of $273,288,000 is merely the factory adjustments. It is the manufacturing surplus and current underrun, but not including inventory, revaluation and reserves, excepting as they enter into the factory. The standard shop cost of sales is the basis upon which this $273,288,000 of adjustments are allocated between the Bell and the non-Bell business. They are also allocated on the basis of sales between Illinois Bell and the Bell System as a whole, and between the Chicago Division and the Illinois Bell as a whole.

4359 For the period from 1916 to 1931, Exhibit X-35 shows, that the additions and deductions did not balance out to the extent of $54,458,000, the deductions being in excess of the additions by that amount.

We found that the net differences, in the period from 1916 to 1925, between the adjustments which increased and the adjustments which decreased the gross profits became greater, and reached the peak in 1925. From 1925 to 1931 the adjustments which lead to additions in gross profit exceeded the deductions, so that by the end of 1931 the net difference between the additions and the deductions declined from $73,884,000 in 1925 to $54,458,000 in 1931, in so far as the
4360 factory profits are concerned. By that I mean, the manufacturing surplus, and current underrun.

For the period 1921 to 1930, which was the identical period covered by Mr. Gregory in his exhibit identified as D-80, we found that in the manufacturing surplus, adjustments to standard costs which added to the profits $86,515,000, and there were adjustments which resulted in deductions from profit of $80,664,000, or total adjustments which had to be separated between Bell and non-Bell customers, and between the Illinois Bell and the Bell System, and the Chicago division and the Illinois Bell, of $167,179,000.

4361 Those additions and deductions resulted in a net difference in favor of additions, to the extent of $5,851,000, but this figure of $5,851,000 has no significance whatsoever because the $167,179,000 of adjustments was applicable to different kinds of merchandise purchased by different classes of customers, and some of the customers would be affected by the adjustments which resulted in increase of the net profits of the Western Electric to the extent of $86,515,000, and others by the adjustments which resulted in decrease of $80,664,000.

As the Western Electric prices are based upon the standard costs, and as the standard costs would result in the gross profit before these adjustments, the customers who purchased articles to whose standard costs adjustments were applicable, which resulted in addition to the profits, would have purchased articles from whose sale price the Western Electric would receive $86,515,000 more profits than the Western Electric had estimated at the time when the standard costs were established upon the basis of which the prices

4362 were made. Similarly, those customers who purchased articles during the period 1921 to 1930, upon the basis of standard cost to which the $80,664,000 of adjustments resulting in deductions were applicable, would have purchased articles whose prices were based upon standard cost figures, which resulted in profit to the Western Electric in an amount which was $80,664,000 less than the Western Electric had estimated at the time of the establishment of these standard costs upon which these prices were based.

4363 I have made no investigation of how the Western Electric Co. prices are based, except that I have taken the testimony of Mr. Gregory as being correct, that in setting the prices the standard shop costs were taken into consideration.

I have Mr. Gregory's testimony to the effect that in setting their prices, they took into consideration their standard shop costs.

4365 (Counsel for plaintiff states that standard cost is one of the factors, but not the sole factor that is taken into consideration in fixing prices of Western Electric Company. Counsel for city stated that if counsel would permit statement to stand he would not further pursue the subject.

Counsel for plaintiff agreed to let statement stand.)

4366 I made an examination of the Gregory exhibit entitled "Statement showing the relation of manufacturing department surplus to shop output, 1921, to 1930" D-80.

4367 That statement purports to show that the aggregate of the adjustments which depend upon standard shop cost as a basis of allocation, 1921 to 1930, and which shows adjustments which increase and adjustments which decrease to the profits for the period from 1921 to 1930, balance each other except as to the extent of $1,833,000 or .2 per cent, the additions being in excess of the deductions by that amount; and for the period 1923 to 1930, the adjustments which added to and which resulted in the subtraction from profits in the factory balance each other excepting to the amount of $6,327,000, the deductions exceeding the additions by that amount; and that the net variation between the additions and deductions for the period 1921 to 1930 represent .2 per cent, and for the period 1923 to 1930, .7 per cent of the output.

I examined the figures shown in Exhibit D-80. I found that Mr. Gregory in that statement used the net figures, and

4368 not the gross adjustment figures. Defendants' Exhibit X-36, entitled "Summary of Details of Manufacturing Department, Surplus Items resulting in Net Figures, shown in Exhibit D-80" was prepared by me or under my direction. Defendants' Exhibit X-37, entitled "Summary of Details of Manufacturing Department, Surplus Items resulting in the Net Figures shown in Exhibit D-80 combined in Groups by Series of Years" was prepared by me or under my direction. Exhibit X-36 shows the total additions and the total deductions from gross profit, the total adjustments to gross profit, and the net adjustments to gross profit for each of the years included in D-80, and only of the items which are contained in D-80; in other words, we have not included in X-36 any additional items of adjustment than those shown in D-80, and the purpose of Exhibit X-36 is solely to show the gross adjustments of addition and subtraction from which the net figures are derived which are shown in D-80. X-36 separates the gross adjustment making up the net figures in D-80 and the net figures in D-80 between Telephone 4369 Apparatus, Lead Covered Cable and Supplies. The figures shown in X-36 were taken from the defendants' Exhibits, X-15 to X-35, inclusive. I will compare X-36 with D-80, for the year 1929.

There is a net deduction in D-80 which shows $1,250,000 as a deduction. Now if you will look at X-36, it appears that that $1,250,000 shown in D-80 (which is the same as the $1,249,000 appearing in the column "Total," under the year 1929, net adjustments to gross profit), is the net figure which is the result of a series of adjustments, which resulted in an increase in profit of $9,607,000, and other adjustments which decreased profits to the extent of $10,856,000, or a total of $20,463,000 of adjustments which were spread over the various items sold to the various customers of the Western Electric in unknown proportions.

The figure in D-80, $1,250,000 deductions, appears as shown from X-36 to have been the final result of adjustments 4370 which resulted in additions and adjustments, which resulted in subtractions from gross profit in the class of Telephone Apparatus, Lead-Covered Cable and even Supplies in varying amounts, and spread between customers in quantities that were unknown.

The result in D-80 for these years is revealed by X-36 to have been arrived at by the combination of the two large adjustments in the years 1924 and 1925 in Lead-Covered Cable, aggregating deductions of $13,179,000, whereas, in the other years, lead covered cable adjustments were minor, compared with the Telephone Apparatus adjustments.

X-36 shows with reference to the net adjustments in 1921, 1924 and 1925 that those adjustments which represented practically all of the gross adjustments in those years, whereas in the other years they were net adjustments, which represented a small part of the gross adjustments for those respective years.

X-37 groups the additions, deductions, total adjustments to gross profit, and net adjustments to gross profit in periods in a manner corresponding to that used by Mr. Gregory in

D 80. X-37 is the first group in the period shown in D 80.
The extent of the difference between the adjustments
4371 that add, and the adjustments that subtract from profit
will be dependent upon the particular group of years which are used in the test. We have set up in X-37 for the years 1921 to 1930, inclusive, as used by Mr. Gregory, additional groupings of two nine year periods; groupings of three eight year periods; groupings of four seven year periods; and groupings of five six year periods.

Each of these groupings are of consecutive years. From Exhibit X-37 it appears that entirely different results will be shown in each of these groupings, even though the same number of years were used, provided only different consecutive years are taken into account.

It shows that the gross adjustments vary, and the net adjustments will vary, and that the variation between the gross adjustments and the net adjustments may result in one case in additions to profit and in another case to deductions to profit. It also shows that whether you consider one or the other periods, and whether you consider the gross additions or the net additions, the significance is not in the percentage to gross output, but in the number of dollars of adjust-
4372 ments which must be spread among the various items
and among the various customers purchasing those items to which the different kinds of adjustments become applicable.

The first group shows gross adjustments of $120,412,000 with a net variation in favor of the additions to the extent of $1,834,000.

That is the first ten year period. On the other hand, if instead of taking the ten year period 1921 to 1930, we take the six-year period from 1922 to 1927, we find additions to gross profit of $20,925,000, deductions from gross profit of $30,658,000, or total adjustments to gross profits of $51,583,000, as compared to the $120,412,000 for the ten-year period of Mr. Gregory.

But we find that during the six-year period from 1922 to 1927, the $51,583,000 of gross adjustments resulted in a variation of $9,733,000 in favor of the deductions from gross profit as compared with $1,834,000 shown by Mr. Gregory in favor of the addition out of a total of gross adjustments of

$120,412,000.

4373 For the ten year period the net adjustment to gross profit is about 15 per cent of the total adjustments, whereas, for the six year period, 1922 to 1927, it is 18 per cent of the gross adjustments.

If instead of taking the ten year period of Mr. Gregory, which resulted in $1,834,000 of variation in favor of the additions, he had taken the nine year period, 1922 to 1930, the result would have been that with less than $8,000,000 difference in the gross adjustments between the nine year period and the ten year priod, the net adjustments for the nine year period were $5,779,000 in favor of the deductions as against $1,834,000 in favor of the additions in the ten year period, or a difference of more than $6,600,000 in the net figures from a difference of $7,500,000 in the gross figures.

Defendants' Exhibit X-38 "Comparison of Total Amount of Manufacturing, Inventory and Reserve Adjustments, with amounts thereof included in Exhibit D-80," was prepared by me or under my direction.

4374 It shows the comparison of the total amounts of manufacturing inventory and reserve adjustments with the amounts thereof included in D-80. This shows for each year the total amount of the adjustments divided between the additions and the deductions from gross profits, the total adjustment to gross profit which the Western Electric actually had and the portions thereof of which Mr. Gregory included in his Exhibit D-80.

Defendants' Exhibit X-39, entitled "Division of Operating Surplus, Total Apparatus and Equipment, and Lead-Covered Cable, 1921 to 1930, inclusive" is the sheet which Mr. Gregory furnished as the study which he testified he prepared at the time he prepared D-80 and which was to show that the labor adjustments, taken separately, balanced out during the period, and the material adjustments balanced out during the period and the overhead adjustments balanced out during the period, each separately as well as collectively.

I have checked the figures shown on Exhibit X-39 4375 with the binders and the figures of adjustment furnished by the Western Electric, and shown in Defendants' Exhibit X-36.

I found that the figures shown in the last three columns of X 39 are in each case net figures and are the result of combinations, of adjustments which increase and of adjustments which decrease profits. Similarly, the column "Total" is the sum of sub totals of net adjustments.

For the reasons I have already given, the important figures are the gross adjustments and not the net adjustments, where more than one kind of item is manufactured, and where more than one customer purchases the various items in varying quantity.

The column "Process Merchandise" does not mean "material." It means the account wherein the Western Electric each month carries the labor and material on merchandise is course of completion. Therefore, the figures in the column are the net result of a combination of labor, material and overhead adjustments.

4376 The effect of spreading the combined results of the adjustments to labor, adjustments to material, and adjustments to overhead, between the Bell and non Bell customers, according to the cost of sales is, that it must be assumed that the cost of the sale of the merchandise sold to Bell customers bears the same ratio to the cost of the sales of the merchandise sold to non Bell customers, as the adjustments to bring such cost of Bell sales from standard to actual costs bear to the adjustments which bring the non Bell merchandise to actual cost. Such a condition would only exist if Bell and non Bell customers bought, during each period, proportionate quantities of each and every kind of merchandise, or in combinations which would bring about the same result.

The effect with reference to the purchases of the Illinois
4377 Bell Telephone Company would be that in order that the purchases by the Illinois Bell should bear their proper proportion of the adjustments which are applicable to the Bell System as a whole, as a result of a distribution based upon the ratio of sales of telephone apparatus, lead-covered cable and supplies by the Western Electric to the Illinois Bell compared with the sales to the Bell System as a whole, it would be necessary that the amount of sales of merchandise sold to the entire Bell System bear the same ratio to the amount of sales to the Illinois Bell as the adjustments to bring the standard cost of the merchandise sold

to the Bell System to actual cost, bear to the adjustments which bring the Illinois Bell standard cost of merchandise to actual cost. Such would only be the case if Illinois Bell and the entire Bell System during each period bought proportionate quantities of each and every kind of merchandise or in combinations which would bring about the same result.

4378 If the amount purchased by the Illinois Bell, or by
the Bell System, were changed in any one year to be other than the amounts which the Western Electric actually sold, either by increasing or decreasing the purchases of particular items in reproducing the property on the basis of the prices of any year, the ratios between the Illinois Bell and the Bell System of sales and of adjustments would be entirely different than the ones which would exist under the conditions which prevailed in respect to the purchases actually made in building up the existing property.

Defendants' Exhibit X 40 was prepared by me or under my direction.

It is entitled, "Graph showing variation between standard cost and actual cost of purchases of lead by the Western Electric Company for the Hawthorne Works," and I think the exhibit is self explanatory.

Defendants' Exhibit X 41 is a graph entitled "Graph show-
ing the variations between standard cost and actual cost
4379 of purchases of copper bars by the Western Electric
Company for the Hawthorne Works," was prepared by
me or under my direction. I have no comment to make on
that. I think it is self-explanatory.

Defendants' Exhibit X-42 entitled "Graph showing variation expressed in percentages between standard cost and actual cost of purchases of lead by Western Electric Company for Hawthorne Works"; data taken from Hawthorne M. C. 2.014 reports, was prepared by me or under my direction. That explains itself.

Defendants' Exhibit X-43 entitled "Graph showing com-
parison between standard cost and actual cost of purchases
of copper bars by Western Electric Company for Haw-
4380 thorne Works" was prepared by me or under my direc-
tion. That explains itself.

Defendants' Exhibit X-44 entitled "Graph showing comparison between standard cost and actual cost of purchases of lead by Western Electric Company, Inc. for Hawthorne Works," was prepared by me ~~or~~ under my direction. It is self explanatory.

Defendants' Exhibit X-45, "Graph showing comparison between standard cost and actual cost of lead purchases by Western Electric Company for Hawthorne Works per hundred pounds" was prepared by me or under my direction. I think it is self explanatory.

Defendants' Exhibit X-46 entitled "Graph showing variation expressed in percentages between standard cost and actual cost of purchases of copper bars by Western Electric Company for Hawthorne Works" was prepared by me or under my direction. I think it is self-explanatory.

4381 Defendants' Exhibit X-47 entitled "Graph showing comparison between standard cost and actual cost of copper bars purchased by Western Electric Company, Inc., for Hawthorne Works, per hundred pounds" prepared by me or under my direction. It is self-explanatory.

Defendants' Exhibit X-47A entitled "Standard Cost per hundred of selected items;" etc., "of indicated years for Hawthorne Plant" was prepared by me or under my direction, and taken from the records of the Hawthorne Plant.

That shows merely the dates when these standard costs for the particular items were changed. It is an extraction of selected items from the bulletins of the different years with the dates when they were adopted.

The cost of sales after the year 1925, as they were used in Mr. Gregory's exhibits, and as I used them, included 4382 only the cost of sales by the Western Electric, as they left the Western Electric, and not the cost of sales as it left any of the subsidiaries of the Western Electric.

And similarly the cost of sales before 1925 for export or otherwise represented the cost of sales by the Western Electric and not by the subsidiaries, such as the International Western Electric.

(Exhibits identified by Mr. Hagberg offered in evidence. Objections reserved until after cross-examination.)

Whether I am making an apportionment or adjustment with respect to shop variation or other adjustments on gross or net variations and adjustments, I have to have some yardstick to do it by.

In other words, if we have a net shop variation of $1,000,000 and I am going to apportion it, I have to use a yardstick. If we have a gross variation plus of $10,000,000 and a gross variation minus of $9,000,000, we still have to have some yardstick on which to make that apportionment for both of those adjustments.

4384 I do not mean to say, that any effort was made by Mr. Gregory, or has been made by the Company, to apportion the shop variations or other adjustments between these various Bell Associated Companies, or to the Illinois Bell or to the Chicago area.

What they have done is to find out after these adjustments have been made, what the net profit of the Western Electric Company was on its Bell and non-Bell business, and then made the effort to ascertain what the net profit was on the business done with the Illinois Bell and with the Chicago area respectively.

The Western Electric has conducted a very large manufacturing business during all of the years involved in my exhibits.

Subject to check, the following figures are correct:

The sales of the Western Electric Company to its Bell customers for the period 1916 to 1931 were $2,135,000,000, and to its non-Bell customers, $233,000,000 during the
4385 same period, or a total, 1916 to 1931 of $2,368,000,000
worth of manufactures. Out of that total volume of sales of nearly $2,500,000,000, $80,000,000 were special commercial products, leaving $2,288,000,000 worth of sales, 1916 to 1931 by the Western Electric, referring all the time to the Western Electric manufactured articles of telephone apparatus, exclusive of special commercial products and lead-covered cable.

"Q. Now, broadly speaking, this telephone apparatus that I have been talking about consists of Central Office equipment and sub station apparatus, including transmitter, receivers and induction coils, does it not?

4386 A. I am not familiar with their products.

Q. Well, you have examined these apportionments, and you know the telephone apparatus where the shop variations occur consist of Central Office equipment and sub station apparatus largely?

A. I know it includes

Q. You know that from the records, do you not?

A. I know it includes telephone appliances.

Q. Exactly. And that the same general class of apparatus is sold alike to Bell and non Bell customers' telephone apparatus?

A. I have not examined the sales at all.

Q. All right.

A. As to the

Q. Well, then, you do not express any opinion on that question at all?

A. I express no opinion as to how much or what classes of sales were made to one customer, or another customer.

Q. I see. You know nothing at all about that?

A. No."

"Subject to check, the total sales of the Western Electric
manufactures to Bell, $1,660,000,000, and to non Bell
4387 $154,000,000 or total sales of $1,814,000,000, of which
only $77,000,000 were special commercial products,
leaving a balance of Western Electric manufactures sold
during that period to its Bell and non Bell customers, consisting of telephone apparatus, and lead covered cable, of $1,737,000,000.

I inquired of the accountants of the Western Electric Company whether they had an accounting system by means of which they could apportion these various shop variations and adjustments to each of the hundred thousand or more than one hundred thousand articles manufactured by the Western Electric Company.

I made that inquiry for the purpose of finding out whether there was any actual cost used in addition to the standard cost.

4388 "Q. You knew before I inquired that the maintenance of such a system would be so absurd and expensive that no manufacturing company would consider maintaining it, did you not?

A. I did not take that into consideration at all."

I have had wide experience as an accountant, and have knowledge of the cost of accounting work in places where I have investigated, but not the cost of accounting in places which I have not made any investigation of.

I have gone over these records of the Western Electric Company in great detail.

I could not give an estimate, as an accountant, as to what additional cost in millions of dollars per year would have been incurred by the Western had it maintained the kind of an accounting system, that I asked the Western Electric whether it maintained, without making a survey of the plant, and the present cost methods, and the operations in de-
4389 tail. I would not venture a guess on it; it would be simply a guess, if I did.

I haven't the slightest idea whether it would be millions of dollars per year because I do not know what it has, what the detail records are. We might be able to use some of the detail records, and we might not.

4390 In referring to the basic gross profit and adjustment figures back in 1924, I did not want to convey the idea that I was denied access to them, because what I meant to say was that repeatedly requests were made for that division between the Bell and the non Bell, and the matter was delayed from time to time, so far as I was concerned, until I finally got the information that those figures had not been prepared by the Western Electric Company, but the data on which they could be made would perhaps be—or "maybe" was the word used—maybe prepared if they were still in existence at the Hawthorne Plant, or any of the other locations, but I had no assurance whether they were in existence or were not in existence.

4391 Counsel reads part of telegram sent to Mr. Goldstein April 5, 1932 as follows:

"All details to the extent that they are now in existence, which were back of the reports made to the comptroller for the years prior to 1924 in which basic gross profits and adjustments appear, are located at the Hawthorne Works and at our various distributing locations. We will make such details available for inspection at places where they are located when you advise us that you desire to proceed."

I saw the telegram.

"Mr. Goldstein: You know there is a telegram there which states that you did not even know if they were in existence.

Mr. Thompson: Certainly, I have no objection to the introduction of other telegrams or letters pertinent to this."

4392 I made no application; I did not go to Hawthorne to find out whether they were in existence.

The reason we did not go out there at that time was that this was toward the end of the investigation, and they were ready to go on trial with it, and we did not have the time to go out, especially in view of the fact that it was doubtful whether those records were in existence or not.

I have no reason to presume that they would have been denied if they could have given us what we asked for if they could have produced them.

4393 I think there is some more information than was read to me.

I have not checked into the profit figures to ascertain the total profits of the Western Electric Company for any of these years or for any group of years.

The figures that I have presented here in the exhibits, the aggregate profit for the entire Western Electric, as well as the sub-classes of telephone apparatus, lead-covered cable and supplies, and the additions between Bell and non-Bell, have been taken from the statements in the binders without verification as to the books, but I have no reason to
4394 doubt the correctness of them; neither will I certify to the correctness of them.

The only problem that I have here is the apportionment of allocation of profits as between the Bell and the non-Bell business. I qualify that statement to the extent I was not so much concerned in the aggregate profits of the Bell or
4395 non-Bell as I was in the possibility—or the method used in the dividing of the gross profits into the several kinds of apparatus, or appliances, made and sold by the Western Electric Company.

In other words, I was more concerned with the gross profits than anything else.

The term basic gross profit is not so used in the subdivisions as shown in our profit and loss account there, because I have taken the understanding that the Western men had, of what should be designated gross profit, what should be manufacturing surplus and current underrun, and what should be inventory revaluation and reserves. I followed absolutely their division of profits to the extent of including under basic gross profit an item of unexplained difference of $1,800,000.

What is termed basic gross profit as used in these exhibits
which I have identified is supposed to be the difference be-
tween shop cost and sales prices,—the aggregate of stan-
4396 dard shop cost and sales price. For 1929 there is a com-
plete analysis, an analysis as made by the Western
Electric, showing what is included in the Western gross
profit.

That is included in Exhibit X-16.

That explains fully the use of the term "Basic gross profit" as taken bodily from the company's analysis of gross profit, and has been classified as basic gross profit after cooperation and work with the representative of the Western Electric Company.

All that one needs to do, where it is desired to know the definition of basic gross profit as used in all these exhibits, is to turn to Exhibit X-16.

4397 But it should not be understood that that is the
segregation that I would perhaps have made after a
lengthy investigation. For expediency sake, we simply got
together and worked it out.

From examination of the records of the Western Elec-
4398 tric Co. it appears that these shop variations and these
adjustments gross and net which I have in my exhibits
were ones which were currently made by the Western Electric
Company from year to year in its business as it proceeded.

Redirect Examination by Mr. Goldstein.

I found that the analysis of gross profit seemed to be a little bit more complete, and a little bit more in detail in the later years than in the earlier years.

The $1,800,000, with the unexplained difference that I testified about, was in 1929. The difference between the adjustments that they explained in detail, and the total left an unexplained difference of that amount.

4399 When I started to work out at Hawthorne, I asked for, and received and examined the Q2.02 I reports which showed the sales and standard cost of sales, and which is identified as Defendants' Exhibit D 44.

When I went to New York within the last few weeks, I also examined the similar reports for the other plants.

That analysis in Exhibit D 44 showed the various subdivisions and sub classes of the main classes that make up the total of their sales, and the cost of sales.

"Mr. Thompson: In connection with Mr. Cummings' testimony, an offer was made by the defendant of Exhibit X 13, among others. The plaintiff objects to the introduction in evidence of Exhibit X 13 which consists of two sheets,
one of them purports to be a comparison between Mr.
4400 Gregory's statement D, and apparatus prices as used in
the Sloan appraisal for central office equipment, station apparatus, and P. B. X. The second page purports to be a comparison between the Western Electric experience taken from certain costs indices of Mr. Burgess, and the Sloan appraisal.

I think two things are perfectly clear from the testimony of Mr. Cummings. The first is that these are not in fact comparable, neither one of these comparisons attempted to be made. I think his admissions are broad enough to show non comparability. The second proposition, I think there can be no doubt about, he has never shown comparability, and it seems to me very clear that this exhibit ought not to be permitted to go into evidence.

Judge Wilkerson: What do you think about it?

Mr. Goldstein: I will say this, that it is rather odd that, after they have presented their entire Western Electric presentation on the basis that the Illinois Bell is a fair cross section, that the prices of the Bell System as a whole, are to be taken into account, and the costs, and it is then a ques-
tion of taking a percentage, and now, after they have
4401 furnished us the evidence, and we make use of it, that
they should object to it. Now, we will ask that the Burgess index numbers be offered here, we have asked for that, and it has been produced, and it is with an agreement that it be made available when we want it; and we want it.

If we use the very basis they have used in the Western Electric presentation, particularly since Mr. Sloan used Western Electric prices, I cannot see any possible reason for objecting to it, unless they object to their own method of proof. Mr. Sloan has used installation costs, the Western Electric installation costs, and he has used, he says he has used those prices and he has used those installation costs.

4402 Mr. Thompson: Of course the trouble with Mr. Goldstein's argument is, it is predicated upon the proposition he has taken two things that comprehend like articles. In the Gregory trend are receivers, transmitters and induction coils of the years. In the Sloan trend, on the other side, there are no receivers, transmitters or induction coils prior to 1928, because they were not owned by the Illinois Bell. In the Gregory trend there are loading coils, and there are repeater installations, and of course, they are wholly omitted from the three accounts selected for the classification from Sloan. In Sloan's trend there is all the reissued Class C stock, there is none of it in Gregory's trend. In Gregory's trend there is the A. H. material, remanufactured by the Western, and there is a qualified admission by Mr. Cummings that it may not all be in the Sloan trend.

So the trouble is, we have a theory, and I think we have proved it to be true, that the Illinois Bell is a fair cross section, but they don't take and make the comparison on that basis. They select out three accounts that are wholly non-comparable with Sloan's trend."

(Objection; overruled.)

4403 "Mr. Thompson: Your Honor, we offer in connection with Mr. Cummings' testimony the exhibits which were identified on cross-examination, which are numbers 212, 213, 214 and 215. Do you want to know what they are, Mr. Goldstein?"

Mr. Goldstein: Yes.

Mr. Thompson: 212 is the Representative Weighted Plant of the Indiana Bell Telephone Company. 213 is the specific estimates that was discussed during Mr. Sloan's testimony, number 22150. 214 is a duplicate of Exhibit 50 introduced by Mr. Sloan on the first trial of this case. And 215 is the work sheet of Mr. Cummings, which he used in connection with the material costs of exchange pole lines.

Mr. Goldstein: To the first one, I certainly object, because the witness has testified he had not prepared it, and he did not offer it, and he did not testify about it, and he doesn't know anything about it. That was in the Indiana Bell Telephone case, it was an Indiana Bell Telephone case Ex- 4404 hibit, it wasn't his. It has nothing to do with the case.

4407 (Plaintiff's Exhibits A-212, A-213, A-214 and A-215, and Defendants' Exhibits Nos. X-15, X-15A, X-15B, and X-16 to X-47A, inclusive, identified by Mr. Hagberg, offered and received in evidence.")

(Objection to Plaintiff's Exhibit A-212; overruled.)

GEORGE R. McCANN, a witness on behalf of the defendants, having been first duly sworn, testified as follows:

Direct Examination by Mr. Goldstein.

(June 7, 1932.)

My name is George R. McCann. I reside at Bloom- 4421 field, New Jersey. I am employed by Touche, Niven & Company, public accountants, New York City, as a supervising senior accountant. I have been associated with that company for the past six and a half years. Prior to that I was associated with Klein, Hinds & Finke, certified public accountants, also of New York, for a period of four years. Before entering the public accounting field, I was employed in private accounting work by various commercial concerns. I am a graduate of New York University. 4422 I am a certified public accountant of the State of New York. My duties consist principally of the conduct of audits and investigations of large mercantile and manufacturing organizations. I am employed by the City of Chicago in connection with the presentation of the portion of its case relating particularly to the Western Electric exhibits.

The exhibits which are to be offered, beginning with X-48, were prepared by me or under my supervision, in so far as they contain computations.

X-48 is entitled "Average investment, net profits and percentage of return" (Per Exhibits A-77 and A-79)—Bell and non-Bell business for the years 1916 to 1930." Exhibit X-48 shows the return on the investment in Bell and non-Bell business combined, using the figures appearing in Plaintiff's Exhibits A 77 and A 79.

4423 I have made no change in those figures. I have just added the corresponding figures together. Exhibit X 49 consists of three pages. Page 1 is entitled "Western Electric Company, Inc. Average investment per Exhibits A 77 and A 79 adjusted to exclude excessive cash, current liabilities, reserve for Pension Fund and reserve for depreciation—Bell and non Bell business"; page 2 is entitled "Average investment per Exhibit A 77 adjusted to exclude excessive cash, current liabilities, reserve for Pension Fund, and reserve for depreciation—Bell Business"; and page 3 is entitled "Average investment per Exhibit A 79 adjusted to exclude excessive cash, current liabilities, reserve for Pension Fund and reserve for depreciation—non Bell business." There were prepared under my supervision.

Page 1 relates to the Bell and non Bell business combined. Page 2 relates to the Bell business only, and page 3 relates to the non Bell business.

4424 The column headed "Average Investment" is similar to the column shown in Exhibit X 48, that is a combination of the investment appearing in Plaintiff's Exhibits A 77 and A 79. The column "Excessive Cash" represents the amount by which the average cash balances used in the compilation of Exhibits A 77 and A 79 exceeded the normal cash working balances for the Western Electric Company as shown by the report CR 714 of that company, which I examined.

The column "Notes payable, Others" represents the average indebtedness to banks and others on notes payable. These liabilities are listed in the annual reports of the Western Electric Company as current liabilities and they correspond to the class of liabilities which are included under current liabilities in Poor's and Moody's and in the annual reports of the industrial companies, including the eighty eight companies shown in Plaintiff's Exhibit A 85.

4425 Exhibit X-49½ is a sheet taken from Poor's 1930 Manual, entitled "Public utilities (Western Electric Co., Inc.)" That sheet, at the bottom, under "Statement of working capital, December 31," under "Current Liabilities," includes the class of liabilities which I have included in my "Payables—Others."

There were notes payable that I have shown in the third column, "Others," in X-49 which were not excluded from the investments as calculated by Mr. Gregory in Exhibits A-77 and A-79. The column "Notes payable—Trustees of Pension Fund" represents the average indebtedness to the trustees of the Pension Fund under "Notes payable." In the year 1928, these notes were included under "Notes payable—Others"; we make no distinction between these notes and the notes payable that are listed under "Others." They fall in the same category, and, therefore, are excluded from the
4426 average investment.

The column "Reserve for Pension Fund" (fifth column, page 1 of Exhibit X-49) represents the amount that is set aside out of profits to take care of future pensions of employes.

The additions to this reserve are charged against profits in each year, and the fund is so built up that it does not participate any further in the profits of the company. The reserve is excluded from the average investment used to determine the percentage of return. That is, it is excluded in our computation, as otherwise the stockholders would be profiting to the extent that the pension fund was included in the average investment.

4427 Subsequent to 1927, the Pension Fund accruals were built up to participate in additional earnings only to the extent of the interest which is paid to the trustee of the Pension Fund. In those years, where the notes to Trustees are deducted, the interest is likewise excluded from our computation of operating earnings.

That is, I took out from the operating earnings as shown by Mr. Gregory, an additional deduction of interest to the Trustee under the Pension Fund, charged it to the operating earnings, and then I excluded from the rate base the amount of the principal in the obligation to the trustee of the Pension Fund. The column, "Working reserves (part interest and taxes part accounts payable)" represents principally accrued expenses which are properly classified as current liabilities.

The distinction between this class of liability and ac-
4428 counts payable is a purely technical one, as there is no real distinction between a recorded account payable and an accrued expense to take care of some incurred liability for

which no recorded invoice has been entered. The entire amount of the liability has been charged against earnings. I examined Mr. Gregory's working papers for the years 1916 to 1925. I found that in the years 1916 to 1925, that those
4429 working reserves were not shown as such, but were included under the caption "Accounts payable" and were, therefore, deducted, in arriving at the average investment shown in Exhibits A-77 and A-79. That is, he deducted them from the rate base from 1916 to 1925, but not from 1925 to 1932.

The next column "Total adjustments" represents a total of the adjustments which have previously been described, beginning with Excess Cash and ending with Working Reserves. That is just a total of the preceding column of figures.

The column "Average investment before depreciation per Exhibits A-77 and A-79 adjusted," represents the average investment shown in those two exhibits after the deduction of the column "Total adjustments." That is, it just gives effect to the adjustments.

4430 The column "Reserve for depreciation" represents the average reserve for the depreciation of plant, giving effect to the exclusion of extraordinary and excessive depreciation, the details of which are given in a later exhibit, X-50, entitled "Reconciliation of Net Profits per Exhibits A-77, A-79, and Exhibits A-77 and A-79 combined, with Profits as Adjusted—Bell and Non-Bell business." That is, I will show later that the expenses of the Western Electric as shown by Mr. Gregory were adjusted, and I give effect here to the rate base resulting from that adjustment.

The column headed "Average investment after depreciation" is the average investment per Exhibits A-77 and A-79, after deduction of the column "Total adjustments" and the column "Reserve for depreciation."

4431 The differences between Mr. Gregory's method used in deducting depreciation reserve in A-194 and in X-49-A, entitled "Earnings of Western Electric Company on Non-Bell business expressed in percentages of Sales and in percentage of (a) Average Investment and (b) Average Investment less amount of Depreciation Reserve Account 1916-1932, Inclusive," and the method used in Exhibit X-49 are, first, Mr. Gregory deducted the depreciation reserve shown by the books, which included the extraordinary depreciation set up in the years 1924, 1925, 1926, 1927 and 1928.

Exhibit X-49 has a smaller depreciation reserve because of the exclusion of this so-called extraordinary depreciation.

4432 The second difference is that in compiling his average reserve for depreciation, Mr. Gregory used the opening and closing figures for each year, that is, December 31st figures, divided by two.

In Exhibit X-49, in the earlier years, the opening and closing figures were used because there were no other figures available; but in the later years, where monthly averages were available, we used the monthly figures to arrive at a more accurate figure.

I do not believe that the variance between the two figures, that is, Mr. Gregory's, and those shown in X-49, would be very significant.

The third difference is a method of allocation between Bell and non-Bell. Mr. Gregory used a detail method, involving a knowledge of the amount of depreciation reserve which was allocable to a particular class of plant used in Bell and non-Bell business.

At the time that we made our examination of the records, we did not find, nor was any data made available to us, whereby we could distribute the depreciation reserve as between various classes of equipment, or as between Bell and non-Bell.

For that reason, we distributed the depreciation reserve on the basis of allocation of plant which has been 4433 used by Mr. Gregory in preparing the investment figures building up Exhibits A-77 and A-79.

Exhibits A-194 and X-49-A, were delivered to me after my computations were all made up that entered into X-49, and the explanations were given by the Western Electric as to the method in A-194 and X-49-A, at or about the time when they delivered those documents. I don't think the difference caused by the allocation method used by Mr. Gregory relating to this factor of allocating the plant would materially affect the result. I think the only real difference between Mr. Gregory's figures and the figures in Exhibit X-49 would result from the exclusion of the extraordinary depreciation reserve.

Page 2 of Exhibit X-49 is similar to page 1, except that it

relates to Bell business only, as shown in Exhibit A-77.
4434 That is, page 2 allocates to the Bell business the portion of the adjustments, the total of which is contained on page 17.

Page 3 allocates to the non-Bell business the portion of the adjustments, the combination of which, Bell and non-Bell, is shown on page 17, and shows on pages 2 and 3 the effect of the rate base in each case for Bell business and non-Bell business.

The allocation between Bell and non-Bell on pages 2 and 3 of X-49, we made in this manner: The cash and payables were apportioned between Bell and non-Bell on the same basis as the cash and payables were apportioned by Mr. Gregory in arriving at the investments shown in Plaintiff's Exhibits A-77 and A-79.

When I said that the cash and payables were apportioned, I meant the excess cash.

4435 The reserve for depreciation was apportioned on the basis of the plant which was allocated to Bell and non-Bell by Mr. Gregory in connection with Exhibits A-77 and A-79. For this purpose I adopted his apportionment of the assets, as a basis for apportioning the reserve.

Exhibit X-50, entitled "Reconciliation of net profits per Exhibits A-77 and A-79 with profits as adjusted—Bell
4436 and non-Bell business," on page 1, and page 2, "Net profits per Exhibit A-77 as adjusted—Bell business," page 3, "Reconciliation of net profits per Exhibit A-79—non-Bell business with profits as adjusted," shows a reconciliation. This exhibit of three pages was compiled by me, under my supervision.

Page 1 applies to the Bell and non-Bell companies combined.

Page 2 applies to the Bell business only, and page 3 to the non-Bell business.

4437 On page 1, column 1, "Net profits per Exhibits A-77 and A-79" corresponds to the similar column in X-48. The next column, headed "Pension Fund Accruals" represents the adjustment of profits by reason of substituting for the pension appropriations charged on the books of the company, the pension requirements as shown by an actuarial computation furnished us by the Western Electric Company, and now identified as Exhibit D-26.

Mr. Gregory's Exhibits A 77 and A-79 included in the years 1925 to 1929, charged as operating expenses, not only the current requirements for the pension fund as shown by the actuarial study, but also amounts to make up deficiencies of prior years.

In Exhibit X-50, the charges for pension fund have been reapportioned to charge the operations of each year with the amount of pension fund shown to be required by the actuarial studies. In making this adjustment, the full amount of the actuarial requirements for the fifteen-year period was
4438 used, which is in excess of the amounts charged on the books, and in excess of the amounts used in the compilation of profits shown in Exhibits A-77 and A-79. The amount which is charged as an operating expense during the fifteen-year period exceeds the amount which Mr. Gregory charged for the same period in Exhibits A-77 and A-79, in the amount of $359,000.

What I did there was to take the figures as I found them in the actuarial computation, and merely distribute them in the years in which they were supposed to have the deficiency. With reference to the similar item in the case of the eighty-eight companies shown in Exhibit A-85, I found that it was customary to charge to surplus similar adjustments which made up deficiencies of prior years.

In an exhibit to be offered later, X-94, such a provision appears as a surplus charge in the Dupont Company, such surplus adjustments aggregating $8,600,000 made in the year 1926 and in the year 1929. No effect is given in my cal-
4439 culations to the possibility that the pension fund reserve at December 31, 1930, is excessive in the light of the depression, and that excess could have been used to make up deficiencies which I have charged against the operating earnings of the years prior to 1924.

(Counsel for defendants admits witness does not testify as an actuary. Motion of plaintiff to strike out the statement of the witness just made, on the ground that he has not qualified as an actuary, and therefore cannot express any opinion about it.

Court rules that it may stand as a matter of accounting only.)

4440 The next column headed "Extraordinary Depreciation" represents the depreciation taken by the company in the years 1924, 1925, 1926, 1927 and 1928, as a reserve against probable shrinkage in reproduction value of the plant, predicated on the estimated price level for the ten-year period 1931 to 1940.

4442 In my examination of Exhibits A-77 and A-79, and
the working papers underlying Exhibits A-77 and A-79,
I did not find any figure, or any calculation, or any fact
therein which showed that there was any shrinkage in
4443 book value used by Mr. Gregory as a rate-base below
the book cost during the period subsequent to 1924, 1925
and 1926.

4445 (Defendants' Exhibit D-27 furnished to defendant by plaintiff offered and received in evidence.)

4446 In my examination of A-77 and my examination of A-79, or in the examination of any of the records, or in the examination of the working papers underlying A-77 or A-79 I did not find in A-79 any computation, or any figure which showed that Mr. Gregory used as his rate base a figure for the plant or the equipment, any figure below book cost, in computing his rate of return. Among the eighty-eight companies which are shown in A-85, Mr. Gregory's exhibit, I found that charges similar to this reserve were made as adjustments against surplus rather than against current operation. That will be shown in Exhibit X-94 later.

4447 I did not distribute the two million dollar deduction,
for the period over the years 1924 to 1927. I did not
4448 distribute it for the reason that in the years 1924 to 1927
the company used a rate of seven and one-half per cent
as depreciation on its machinery, in conformity with the general practice of manufacturing companies, as shown in the
case of the eighty-eight companies, as will be shown on an
exhibit to be offered later, X-93.

"Q. As a basis of comparison with those companies, will you state whether the Western Electric made a claim to the Internal Revenue Department for deduction of this two million dollars, as an operating expense, either in the year '27, or in the year '28?"

(Objection by plaintiff on the ground that the question of what claim may or may not have been made by the

Western Electric to the Department of Internal Revenue in connection with depreciation can have no bearing upon the actual facts of depreciation existing in the plant.

4449 Counsel for defendants stated that the question was limited to the sole purpose of comparing this company's practice with those of the eighty-eight companies, which show that they do follow the rules of the Internal Revenue Department. Objection overruled.)

The company did not make such a claim. The next column "Excessive Depreciation" represents the adjustment resulting from spreading the charges for small tools, and furniture and fixtures over a four and six-year life, instead of charging off the entire purchase in the years in which made, as is the practice of the Western Electric Company. The adjustment which has been made in Exhibit X-50 conforms to the amounts of depreciation allowed by the Internal Revenue Department.

(Counsel for defendants states that the above statement will stand for the sole purpose of the comparison, and nothing else.)

4452 The column "Federal Income Taxes" represents the adjustments to profits by reason of allocating the Federal Taxes paid to the years to which they apply, rather than to the years to which the charges were made.

The next column "Total Adjustment" represents the total of adjustments as they have been previously described. The next column "Profits as adjusted before interest deductions" represents profits per Exhibits A-77 and A-79 adjusted by the amount appearing in the column "Total adjustments."

The next column, "Interest to current obligations" 4453 represents the amount of interest paid which is applicable to current liabilities. This was deducted from profits, for the reason that the current liabilities were deducted in arriving at the average investment. By so doing, I reduced the profit shown by Mr. Gregory to the extent of this interest.

The next column "Interest on excessive cash balances" represents an adjustment to exclude from profits the estimated amount earned on the excessive cash balances which were excluded from the average investment in Exhibit X-49. To that extent, I reduced net profits available for return, as shown by Mr. Gregory.

The next column, "Profits as adjusted," represents the final adjusted profits after deduction of interest on current obligations and excessive cash balances. Page 2 is similar to page 1, except that it applies to A-77, Bell business.
4454 The same explanations apply to the deductions on this sheet as to page 1.

Page 3 is similar to X-50, page 1, except it applies to Exhibit A-79, non-Bell business. The explanations given for page 1 are equally applicable to page 3. In allocating the adjustments between Bell and non-Bell business, I followed as closely as possible the basis of allocation used by the company in preparing Exhibits A-77 and A-79, so as to give effect to the factors of adjustment alone, without taking into account the propriety of the method of allocation used. That is, I am just making the allocation to give effect to the
4455 particular adjustments shown in X-50. Exhibit X-51, page 1, is entitled "Return on average investment per Exhibits A-77 and A-79 adjusted to exclude excessive cash, current liabilities and reserve for pension fund—Bell and non-Bell business." Page 2 covers the same thing, entitled "Return on Average Investment per Exhibit A-77 Adjusted (before Depreciation) Bell Business (Dollars in Thousands)," only limited to Bell business; and page 3, entitled "Average Investment, Net Profits and Percentage of Return on Investment—non-Bell Business," limited to the non-Bell business. Exhibit X-51 makes the adjustment in the investment only and not in the net profits.

Page 1 shows for the Bell and non-Bell business combined, the rate of return on the average investment as adjusted before depreciation. Page 2 is the same thing for the Bell business and page 3 for the non-Bell business. The column entitled "Average investment adjusted before depreciation" conforms to the third to last column headed similarly shown in Exhibit X-49.

The column "Net profits" in X-51 conforms to the figures given in A-77 and A-79, and the combination of the two
4456 shown in X-48. The last column, headed, "Percent return on average investment," page 1, shows combined Bell and non-Bell, page 2, Bell, and page 3, non-Bell.

Exhibit X-52, consisting of three pages, entitled "Return on Average Investment per Exhibits A-77, A-79, and Exhibits

A-77 and A-79 combined, as Adjusted (after Deducting Depreciation) Bell and non-Bell Business," is identical to X-51, with the single exception that it makes a further adjustment by the deduction of depreciation reserve. For the purpose of X-52 I again only show adjustments on the rate base, but not in the adjustments in the net profits, as shown in Exhibits A-77 and A-79, and pages 1, 2 and 3 which represent the result of the combined business, and the non-Bell business and the Bell business, respectively.

Exhibit X-53 consists of three pages, entitled "Average Investment per Exhibits A-77, A-79, and Exhibits A-77 and A-79 combined, Profits as Adjusted and Percentage of Return—Bell and non-Bell Business," and in column 2 on each of the sheets it is intended to reflect the effect of the adjustment to profits shown in X-50, but not to show any effect on the adjustments of assets.

Page 1 shows the return on investment in Bell and non-Bell business combined, and page 2, the return on in-
4457 vestment in Bell business, and page 3 the return on investment in non-Bell business. The column "Average investment" is in conformity with the figures given in Plaintiff's Exhibits A-77 and A-79 for the Bell business and the non-Bell business separately and combined in X-48, as there shown.

In X-53 I adopt the average investment compiled by Mr. Gregory so as to reflect the effect only of adjustment to profit shown in X-50. The column "Profits as adjusted" corresponds to the column headed "Profits as adjusted before interest deductions" shown in Exhibit X-50. The last
4458 column, then, shows "Percentage of return on Investment," giving effect to the adjustments of profits only.

Exhibit X-54, entitled "Average Investment per Exhibits A-77, A-79, and Exhibits A-77 and A-79 combined, Adjusted (before Depreciation), Profits as Adjusted and Percentage of Return—Bell and non-Bell Business," consisting of three pages, shows the effect of the two adjustments, one, in the investment, as shown in X-49, and two, the adjustment in profits as shown on X-50, only using the rate base before depreciation deduction.

Page 1 shows the return on investment in Bell business and non-Bell business combined; page 2, the return on investment, Bell business; and page 3, the return on investment in non-Bell business.

The column "Average investment adjusted before depreciation" conforms to the column similarly headed in Exhibit X-49, and the column "Profits adjusted" corresponds
4459 to the similar column shown on Exhibit X-50, and the final column shows the percentage of return, on the basis of the two classes of adjustments, one to profit, and one to the rate base before depreciation.

Exhibit X-55, entitled "Average Investment per Exhibits A-77, A-79, and Exhibits A-77 and A-79 combined, Adjusted (after Depreciation), Profits as Adjusted and Percentage of Return—Bell and non-Bell business," is identical with X-54, excepting that it gives effect to the deduction of the depreciation reserve from the adjusted rate base. It shows, from the Bell business, the return on investment from 1923 to 1930 to be as follows:

1923, 4.4 per cent; 1924, 10.3 per cent; 1925, 17 per cent; 1926, 15.6 per cent; 1927, 19.6 per cent; 1928, 20.3 per cent; 1929, 17.2 per cent; 1930, 6.2 per cent.

For the non-Bell business for corresponding years, it shows for 1923, 25.1 per cent; 1924, 18.6 per cent; 1925, 5.8 per
4460 cent; 1926, 28.3 per cent; 1927, 22.1 per cent; 1928, 32.7 per cent; 1929, 44.3 per cent; 1930, 10.4 per cent.

For the combined Bell and non-Bell business for the same years, it shows for 1923, 6.3 per cent; 1924, 11.1 per cent; 1925, 15.7 per cent; 1926, 16.4 per cent; 1927, 19.7 per cent; 1928, 21.3 per cent; 1929, 20.4 per cent; 1930, 6.5 per cent.

Exhibit X-56, entitled "Average Investment per Exhibits A-77, A-79, and Exhibits A-77 and A-79 combined, Net Profit (Adjusted in Respect of Pension Accruals) and Percentage of Return—Bell and non-Bell business," consists of three pages and shows the effect on the combined Bell and non-Bell return, and on the Bell and non-Bell return separately of the one adjustment to net profits for pension fund accruals.

Page 1 shows the return on investment of Bell and non-Bell business combined with that adjustment; page 2, the return on average Bell business; page 3, the return on the average investment in the non-Bell business, on the basis of that one adjustment to Mr. Gregory's figures.

4461 Exhibit X-57, entitled "Average Investment per Exhibits A-77, A-79, and Exhibits A-77 and A-79 combined, Adjusted (before Depreciation), Profits (Adjusted in Respect of Pension Accruals), and Percentage of Return—Bell and non-Bell Business," is identical with X-56, excepting that it shows the effect of the adjustment for pension fund accruals applied to the adjusted rate base, per X-49, before depreciation.

Exhibit X-58, entitled "Average Investment per Exhibits A-77, A-79, and Exhibits A-77 and A-79 combined, Adjusted (after Depreciation), Profits (Adjusted in Respect of Pension Accruals) and Percentage of Return—Bell and non-Bell business," is identical with X-57, excepting only that it contains the additional depreciation reserve deduction. In other words, in X-58, I show the effect of making the one adjustment of pension fund accruals on the basis of the adjusted rate base, as I have heretofore computed it, after deducting the depreciation reserve, page 1, for the combined business; and then, pages 2 and 3, for the Bell and non-Bell business separately.

Exhibit X-59, consisting of three pages, entitled "Average Investment per Exhibits A-77, A-79, and Exhibits A-77 and A-79 combined, Profits (Adjusted in Respect of Extraordinary and Excessive Depreciation) and Percentage of Return—Bell and non-Bell Business," shows the effect on the combined Bell and non-Bell investment, and on the Bell and non-Bell investment separately, of the adjustment to profits for extraordinary and excessive depreciation, as shown in X-50.

Exhibit X-60, consisting of three pages, entitled
4462 "Average Investment per Exhibits A-77, A-79, and Exhibits A-77 and A-79 combined, Adjusted (before Depreciation), Profits (Adjusted in Respect of Extraordinary and Excessive Depreciation) and Percentage of Return—Bell and non-Bell Business," is identical with X-59, excepting only that it gives effect to the adjusted average investment before depreciation, as shown in Exhibit X-49.

Exhibit X-61, entitled "Average Investment per Exhibits A-77, A-79, and Exhibits A-77 and A-79 combined, Adjusted (after Depreciation), Profits (Adjusted in Respect of Extraordinary and Excessive Depreciation) and Percentage of Return—Bell and non-Bell business," is identical with X-60, excepting that it gives effect to the adjusted average investment after deducting the depreciation in Exhibit X-49.

Exhibit X-62, entitled "Average Investment per Exhibits A-77, A-79, and Exhibits A-77 and A-79 combined, Profits (Adjusted in Respect of Federal Income Taxes) and Percentage of Return—Bell and non-Bell Business," shows the effect on the combined Bell and non-Bell investment, and also on the separate Bell and non-Bell investment, of the adjustments to profits for Federal income taxes, as shown in X-50.

Exhibit X-63, entitled "Average Investment per Exhibits A-77, A-79, and Exhibits A-77 and A-79 combined, Adjusted (before Depreciation), Profits (Adjusted in Respect of Federal Income Taxes) and Percentage of Return—Bell and non-Bell business," is identical with X-62, except it gives effect to the adjusted average investment before depreciation as shown in Exhibit X-49.

In Exhibit X-64, entitled "Average Investment per Exhibits A-77, A-79; and Exhibits A-77 and A-79 combined, Adjusted (after Depreciation), Profits (Adjusted in Respect of Federal Income Taxes) and Percentage of Return—Bell and non-Bell business," I have the identical computations as in X-63, excepting that it gives effect to the adjusted average investment after depreciation, as shown by Exhibit X-49.

Exhibit X-65, entitled "Western Electric Company, Inc.—Return on Average Investment Per Exhibits A-77 and
4463 A-79, and Exhibits A-77 and A-79 combined, After Deducting Reserve for Depreciation—Bell and non-Bell Business," is identical with X-48, excepting that it gives effect to the single factor of the deduction of depreciation reserve, without giving effect to any other adjustments. It gives no effect to any profit adjustment, but merely to the deduction of the depreciation reserve from the investment, as shown by A-77 and A-79.

Exhibit X-66, entitled "Reconciliation of Net Profits per Books with Taxable Income Shown in Federal Income Tax Returns, for the Years 1916 to 1930," was reproduced from the company records, and is a reconciliation of the profits shown by the books with the profits as reported for Federal income tax purposes.

Exhibit X-67, entitled "Western Electric—Return on Investment in International Western Electric Company, years 1918 to 1925" was prepared by me and under my supervision. Exhibit X-67 shows that from the organization of the International Western Electric Company to the date of the sale
4464 of that company to the International Telephone & Telegraph Company, that the Western Electric earned an average on its investment of 37.2 per cent per year. That in-

cludes the profit on the sale to the International Telephone & Telegraph Company. I included all of that profit, and allocated it to the period, 1918 to 1925.

I allocated it to the period 1918 to 1925 for the reason that the annual reports of the Western Electric Company 4465 for the years prior to 1920, show that the foreign business of the Western Electric practically ceased during the War, and that the business was operated in the years immediately preceding 1918 at a loss, and that there were large losses in the investment itself, due to wartime conditions.

This exhibit does not take into account the question as to whether any portion of the purchase price was given as consideration for any sales contract.

(June 8, 1932.)

4467 Exhibits X-48 to X-66 concern the profits of the Western Electric Company on its sales to the Electrical Research Products, to Graybar, to the Northern Electric, and to the International Western Electric Company 4468 where sales were made to them, and they do not include any profits of the Electrical Research Products, or Graybar, or the Northern Electric, or the International Western Electric Company, to their customers.

(Defendants' Exhibit X-68, entitled "Agreement between the Western Electric Company, Inc., and the International Telephone & Telegraph Corporation, and the International Western Electric Company, Inc., dated August 14, 1925," and Exhibit X-68-A, entitled "Agreement between Western Electric Company, and International Western Electric Company, dated October 1, 1925," offered and received in evidence.)

4469 Defendants' Exhibit X-69, entitled "Western Electric—Investment in International Western Electric, Years 1918-1925," is taken from the books of the company, and shows the ratio of earnings of the International Western Electric Company to the Western Electric Company investment in the business. The per cent return for the period 1918 to 1925 is 18.6 per cent.

The difference between this exhibit and Exhibit X-67 is that X-69 includes all of the earnings of the International Western Electric, whereas X-67 includes only that portion of the earnings declared as dividends to the parent company, plus the profit made by the parent company on the sale of the International Western Electric Company to the International Telephone & Telegraph Company.

Exhibit X-70, entitled "Western Electric—Investment in International Western Electric Company, Inc., giving effect to accumulated earnings, years 1918-1925," shows the 4470 return on investment of the Western Electric Company in the International Western Electric Company, giving effect to the earnings not declared as dividends. It shows that for the period 1918 to 1925, the return on the average capital stock and surplus combined was 13.2 per cent. This exhibit does not include the profit on the sale to the International Telephone & Telegraph Company.

Exhibit X-71, entitled "Western Electric—Supply Department, 1916 to 1925," was taken from reports and data furnished to us by the Western Electric Company. It shows the return on the Supply Department, treated as a separate department. The investment shown in the first column is built up according to reports on the same basis as the average investment as shown in Plaintiff's Exhibits A-77 and A-79. That is before deducting depreciation reserve and after deducting that portion of current liabilities that was used in determining the average investment as shown in A-77 and A-79.

Exhibit X-72, entitled "Western Electric—Return on 4471 Investment in Graybar Electric Company, Inc., Years 1926 to 1928, Inclusive," was taken from the company's records and represents the return on investment, computed on two bases. The first computation shows the return on investment based on the original investment as carried on the books of the Western Electric Company, and shows a return of 27.53 per cent for the three-year period 1926 to 1928, inclusive.

The second computation shows that giving effect to the surplus earnings of the Graybar Electric Company, the return is an average of 23.58 per cent for the same three-year period.

Exhibit X-73, entitled "Graybar Electric Company, Comparative Statement of Sales and Profits on Western Electric Manufactures and on Other Products," is a comparative statement of sales and profits on Western Electric manufactures and on other products. The sales and profits on Western Electric manufactures are taken from Exhibit D-49.

The sales and profits on other products represent the difference between the sales and profits shown on Exhibit
4472 D-49, and the total sales and profits as shown by annual reports of the Graybar Electric Company.

This exhibit shows that the sales of Western Electric manufactured articles constituted approximately 15 per cent of the sales for the years 1926, 1927 and 1928 combined; and that the profits derived from Western Electric manufactures contributed approximately 60 per cent of the net profits for the same period.

Taking the two years 1926 and 1927, combined, the sales of the Western Electric manufactures constituted approximately 16 per cent of the total, while the net profits derived from Western Electric sales constituted 75 per cent of the total profits for the two years, 1926 and 1927. For the year 1926, the sales of Western Electric manufactures constituted approximately 16 per cent of sales, while the Western Electric manufactures contributed 98 per cent of the net profits.

Exhibit X-74 is a copy of the stock certificate of the Graybar Electric Company, and was furnished by the plaintiff.

There were 60,000 shares of stock of the character de-
4473 scribed in Exhibit X-74 received by the Western Electric Company at the time of its sales to the Graybar Management Corporation.

(Defendants' Exhibit X-74-A, entitled "Agreement between Electric Research Products, Inc., and the Graybar Management Corporation and Graybar Electric Company, Inc., dated November 5, 1928," covering changes in capital structure and sale of common stock, offered and received in evidence.)

4474 On the back of this stock certificate identified as Exhibit X-74, appears an agreement by which the Western Electric Company is entitled to participate in the earnings of the Graybar Electric Company, beginning with 1929, in the proportion of 1 per cent of the net earnings as defined in the agreement for each 1,000 shares of stock held by the Western Electric Company.

In other words, in 1929, the Western Electric Company would get in addition to its 7 per cent preferred stock dividend, 60 per cent of the net earnings of the Graybar Company, over and above that, provided there were no retirements during the year.

Exhibit X-75, entitled "Graybar Electric Company, Inc.—Additional Dividends on Preferred Stock received by Subsidiaries of the Western Electric Company for the years 1929 through 1931," shows that in the year 1929, the West-
4475 ern Electric Company received from the earnings of the Graybar Company, $1,105,000; in the year 1930, $318,895. And subject to correction, in the year 1931, $11,367, a total for the three-year period of $1,412,528. These earnings are in addition to these $7 per share on the preferred stock.

Exhibit X-75-A, entitled "Western Electric—Sales to Graybar Electric Company," was furnished by the Western Electric Company through Mr. Bracelen to us, and shows sales by the Western Electric to the Graybar Company during the years 1929, 1930 and 1931.

"Mr. Goldstein: At this point I would like to read into the record the correspondence that has transpired between Mr. Bracelen and myself with reference to the sales of the Graybar Company, the refusal to divulge certain information.

Mr. Thompson: Just what is the purpose of this?

Mr. Goldstein: The purpose of this is to show that the Western Electric Company has refused to furnish us a statement showing the sales of Western Electric manufactures by the Graybar Company, 1929, 1930 and 1931. We want the record to show the refusal—

4476 Mr. Thompson: Of course—

Mr. Goldstein: —by Mr. Bracelen.

Mr. Thompson: —the Western Electric Company does not own Graybar.

Mr. Goldstein: No, but under this agreement—

Mr. Thompson: And he is just—

Mr. Goldstein (Continuing): —but under this agreement, the Graybar Company employes have the option to turn back the stock and get their money back, even in case of bankruptcy, and the Western Electric Company has the right to take back the stock; and it is just, in our opinion, a sham.

Judge Wilkerson: What is the evidence? You say you called upon some one, you called upon Mr. Bracelen to furnish—

Mr. Goldstein: Yes, and I just wanted to show that we called on Mr. Braeelen—on the plaintiff, to make available for inspection the total sales of the Graybar Company, grouped by, the following classes: Sales by the Western Electric to Graybar in 1929, 1930 and 1931, divided into special commercial products; Western Electric manufactures, telephone appliances, lead-covered cable and supplies; and also to make available for inspection the profit and 4477 loss statement of Graybar, and the statement showing how the additional dividend shown in Exhibit X-75, the refund, was arrived at in each year; to which we have a reply from Mr. Braeelen:

'In view of the fact that the Western Electric Company has not owned the Graybar Electric Company during the period inquired about, I decline to furnish the information requested under sub-division D and E'—those being our requests,

'—in your letter; except that you have already been supplied with full information as to how the additional dividend from the Graybar Electric Company to the Western Electric Company was arrived at during this period.'

I want to introduce that letter in evidence.

Judge Wilkerson: You may put in the correspondence, but I think the observation should be made that the process of this court is open to you, if you want any evidence produced, under subpoena.

Mr. Goldstein: Yes.

Mr. Thompson: Well, now—

4478 Judge Wilkerson: I do not know that we will get very far in this, by putting in correspondence of that kind.

Mr. Goldstein: All right.

Judge Wilkerson (Continuing): Because if you are going to make any point on the decision of the court here about it, it is your duty to subpoena your witness.

Mr. Goldstein: No, we are just going to make the point that they have not made a full disclosure.

Judge Wilkerson: But that does not make any progress with the court.

Mr. Goldstein: All right.

Judge Wilkerson: If you want any evidence produced, you may apply to the court for a subpoena, and the court will give you a subpoena, and will bring the witness in here, and if it is material, we will get the evidence in the record.

Mr. Goldstein: All right.

Judge Wilkerson: And we will not have this case go off on some correspondence between lawyers about making certain documents available for inspection. Now, this case is not going off on that.

Mr. Goldstein: Well, then, we will ask—

4479 Judge Wilkerson: Well, make your application—

Mr. Goldstein: —that they produce it.

Judge Wilkerson: —in the proper way.

Mr. Goldstein: All right.

Judge Wilkerson: And you will get your subpoena.

Mr. Goldstein: All right.

Mr. Thompson: Your Honor, I do not want to interrupt, except to say that Mr. Goldstein has read one paragraph of this letter. He failed to read a paragraph in which he said that we would furnish to him—

Mr. Goldstein: And you did furnish it.

Mr. Thompson: Yes, and we did furnish to him—

Mr. Goldstein: Yes

Mr. Thompson: Note!—'The sales of Western Electric to Graybar in 1929, 1930 and 1931 divided into the following, classifications: Telephone apparatus including special commercial products, lead-covered cable and supplies.'

And I would like to explain—if these letters are to go in, I want to explain that Graybar does not keep its sales in the classifications that Mr. Goldstein has asked for, and he has also asked us to furnish a profit and loss statement for three years of the company which we do not own or control.

4480 Mr. Goldstein: But which you—

Judge Wilkerson: The point I am making is this—

Mr. Goldstein: Pardon me.

Judge Wilkerson (Continuing): —that when this record is closed, the trial has lasted too long, and there has been too much time taken up here, to have this case go off on a question of the refusal to make available certain things for inspection. That is not the way to get at it.

Now, I am giving you timely notice of that fact.

Mr. Goldstein: All right.

Mr. Thompson: And I make the suggestion—

Judge Wilkerson (Continuing): And if you expect to invite the decision of the court on any matter of that kind, I say if you expect to ask for a dismissal of this bill on any such ground as that—

Mr. Goldstein: No—

Judge Wilkerson: —you will have to go at it in a different way.

Mr. Goldstein: Certainly.

Mr. Thompson: I say that the statement made on the record is not a fair statement of the facts as they
4481 really exist.

Judge Wilkerson: Well—

Mr. Goldstein: We will put in the correspondence, which will show the facts.

Judge Wilkerson: I do not know what use the defendants intend to make of it, but if it is intended—if this use is intended to be made of it, namely, that the court will not proceed to a decree here because of the refusal of counsel for complainant to furnish or make available for inspection certain documents, I am inclined to think that the view of the court will be that timely notice having been given to counsel to fortify their record in an appropriate way, namely, by subpoena addressed to the witness, and during the attendance of the witness in open court, an offer to prove under the Equity Rule, in accordance with the Equity Rule; and the ruling of the court then, after those matters are before the court, will be made. But you cannot just simply have correspondence in here, and then when we get to the end of the record, say, 'Oh, well, you cannot decide this case because they did not make certain things available to us for inspection,' or if the decree might be
4482 for the plaintiff, say, 'It might be reversed because
they did not make certain things available to us for inspection.'

Now, ~~I am giving~~ you timely notice of the Equity Rule in this respect, and of the correct procedure.

Mr. Goldstein: We understood—

Mr. Haight: May I suggest, however, that the suggestion of the court of course will not bar the defendants from taking the position that the things that we may have asked for, that point out the existence of materials helpful in making a determination here, may be called to the attention of the court as constituting deficiencies in the plaintiff's case; certainly, that is always open to us in any case where we ask for things and do not get them.

Judge Wilkerson: Oh, if they have omitted to prove something—

Mr. Goldstein: Yes.

Judge Wilkerson: —that is essential in this case—

Mr. Goldstein: That is our position.

Judge Wilkerson: —of course, they have failed, that is all.

4483 Mr. Thompson: We do not need any letters, to make that point.

Judge Wilkerson: I think we understand each other.

Mr. Bracelen: I wish to make on observation on the record. We do not attach much importance to the accusations by Mr. Goldstein that things are sham. He said a moment ago that his position is that this arrangement by which the Graybar was sold, is sham. If he thinks he can show anything of that kind to the court, let him proceed. His gratuitous accusation of that kind does not go very far.

Mr. Goldstein: No, but if you will read—

Mr. Bracelen (Continuing): Towards establishing anything.

Mr. Goldstein: But if you will read Mr. Gregory's testimony, and then view that in the light of a million dollars additional profit, where he said they made no profit on the sale, and if you will look at the testimony as to whether or not this was an absolute sale, in view of this agreement which we were only handed the day before yesterday, which discloses that even in the case of bankruptcy the Western Electric has the return of the money, and that all of the
4484 employes could get would be their money plus 6 per cent interest, it throws an entirely different light on the relationship between the Western Electric Company and the Graybar.

Judge Wilkerson: Well, now—

Mr. Thompson: That whole statement is so inaccurate—

Judge Wilkerson: —just where does that lead ultimately—

Mr. Thompson: Yes.

Judge Wilkerson: —in a rate case?

Mr. Goldstein: It just leads to this, that when they made a franchise agreement to the Graybar Company on Novem-

ber 1, 1928, which was four days before the sale, and as that agreement calls for the franchise to the Graybar Company, to sell the merchandise of the Western Electric Company, as a distributor upon the basis of the prices which were established between the Western Electric Company and the Graybar, under this sort of an arrangement, it is our contention that this special agreement which is contained on the back of the stock certificate is an agreement for stock participation in earnings and profits, because of the fran-
4485 chise for the use of these patented articles, these commercial agreements, not part of the sale, and that when you look at the profits of the Western Electric Company on the sale of its merchandise, you should not stop at the transfer to the Graybar Company, but you should look at the profits of the Graybar Company on those sales as really being the full profits of the Western Electric Company to the extent that it participates.

Now, that is our position. They have set up barriers, and they have said in this court, 'When you look at the profits of the Western Electric Company, you must stop at the International Western Electric line; you must stop at the Graybar line.'

Why? These are separate things, in theory of law. We say irrespective of that legal barrier, in truth you have made a sale to yourselves, and when you consider profit, and when you consider the propriety of these adjustments, and the allocations, you cannot adjust them on the basis of the Western Electric Company as a separate entity. And, therefore, you should do with the Western Electric Company and
4486 its subsidiaries just what you are doing with the Illinois Bell and the Bell System; you have got to use it as one unit, consider it as one unit.

Judge Wilkerson: Now, you say you want something produced from the Graybar.

Mr. Goldstein: We want produced from the Graybar—

Judge Wilkerson: Now, let us see. Who owns the Graybar now?

Mr. Thompson: Its employes.

Mr. Goldstein: But let me—

Judge Wilkerson: We are speaking now of the power to produce.

Mr. Goldstein: The Western Electric—

Judge Wilkerson: Who has the power now? I am assuming now that the books of the Graybar are in the custody of Graybar.

Mr. Goldstein: Yes.

Mr. Thompson: Right.

Judge Wilkerson: Who has the—

Mr. Goldstein: And may I say—

Judge Wilkerson: Who has the power to produce the books?

Mr. Goldstein: May I say this: under the agreement between the Electrical Research Products and the Gray-4487 bar Management Corporation, Electrical Research Products, and through it, the Western Electric can make audits of the Graybar Company, and the profit-sharing which we have shown in X-75, 60 per cent of profit in 1929 and the 55 per cent in 1930, are based upon profit and loss statements, and all that we ask is to see those statements upon which they arrived at those dollars.

That is what we ask for.

Judge Wilkerson: Now, assuming that you want the court to make an order on somebody to produce the books of the Graybar Company, upon whom would the court make the order?

Mr. Goldstein: We would ask for an order to have the Western Electric or its subsidiaries produce the statements upon which they received—which they received, and upon which they have the profit calculations.

Mr. Thompson: Your Honor, may I just make this one observation? When this case went to the United States Supreme Court there was a showing as to the Western Electric profits on its total business, and the court said that that was not a sufficient showing because the inquiry that was to be made was, what profit it had made on its Bell business.

4488 Now, the Graybar Electric Company has never done one dollar of business with the Bell Associated Companies. It is non-Bell.

Now, what Mr. Goldstein stands here and tells your Honor is that notwithstanding the decision of the Supreme Court, he wants to put all of the Bell and non-Bell into the pot.

Mr. Goldstein: No.

Mr. Thompson: Now—

Mr. Goldstein: That is not it.

Mr. Thompson (Continuing): He cannot claim for a minute that the Graybar Electric Company has ever done one dollar of business with the Bell Associated Companies during the term of its existence.

Mr. Goldstein: But we do claim—

Mr. Thompson: Now, he claims that they should all be joined together.

Mr. Goldstein: Oh, no, but we do claim that the Graybar Company purchased from the Western Electric the same kind of merchandise that was purchased from the Bell System by the Bell System, and that the method of proof of the profit of the Western Electric on the Bell business involves an allocation between the Bell and non-Bell; and 4489 second, that the Graybar Company is purchasing the products which are the result of the inventions which this record now discloses under the license contract, the Bell Companies have paid for in full, and we have a right to trace the profits in all directions, from the use of inventions for which the licensee companies have paid in full—the expense. Now, that is the theory upon which we want those profits. They cannot say, 'We are going to make use of those inventions which the Bell System has paid for, and been charged for all of the expenses of,' and then say, 'You have no right to look at the profits.'

That is our position.

Mr. Thompson: Understand, your Honor, that during the entire time that the Western Electric owned the Graybar, Mr. Goldstein has been furnished with those profit and loss statements. He will not deny that.

Mr. Goldstein: No, but we claim that we are just as much entitled to the profits for the years 1928, 1929, 1930 and 1931, when there was this technical sale, because of the fact that the rest of the—

4490 Mr. Thompson: Oh, you have 1928, Mr. Goldstein.

Mr. Goldstein: 1929, 1930 and 1931.

Mr. Thompson: Yes.

Mr. Goldstein (Continuing): Because of the fact that under the agreement of sale—

Judge Wilkerson: Of course, when you say "technical sale"—why do you say "technical"?

Mr. Goldstein: Well, for this reason—

Judge Wilkerson: It was either a sale, or it was not a sale.

Mr. Goldstein: For this reason, that when you have a sale—

Judge Wilkerson: I do not know of any such thing as a technical sale.

Mr. Goldstein: Yes, but when—

Mr. Thompson: It was an absolute sale.

Mr. Goldstein: Yes, but—

Mr. Thompson: The Western has no right to take it back.

Mr. Goldstein: We have introduced the agreement—

Judge Wilkerson: You mean, a colorable sale.

Mr. Goldstein: Well, yes, that is much the better word.

4491 Judge Wilkerson: That is to say, you mean there was a pretense of sale, when in fact, there was no sale, is that what you are attempting to convey?

Mr. Goldstein: Yes. May I explain it—

Mr. Thompson: We will be very glad to meet that issue.

Mr. Goldstein: Yes.

Judge Wilkerson: That there was a pretense of sale—

Mr. Goldstein: No, not a pretense of sale, but it was a sale under a peculiar arrangement whereby the—

Judge Wilkerson: I may be a little dense on it—

Mr. Goldstein: All right. Here are the facts.

Judge Wilkerson: —but I do not follow you.

Mr. Goldstein: Here is the picture: In 1928, on November 1st, the Western Electric Company through the Electrical Research Products owns all of the stock of the Graybar Company.

Judge Wilkerson: Let us suspend for just a moment.

Mr. Goldstein: Yes, sir.

Judge Wilkerson: We will resume this discussion after the clerk calls the motions.

Mr. Goldstein: Yes, your Honor.

(Following a short intermission, the proceedings were resumed as follows:)

Judge Wilkerson: You may proceed.

4492 Mr. Thompson: Your Honor, I would like to make a short statement about this Graybar situation; there has been so much said about it that I am—

Judge Wilkerson: You want to say some more?

Mr. Thompson: I want to say some more about it, and say something that I think will be helpful, and say something that will be I think accurate and to the point.

The Western Electric Company had a supply department which dealt in goods of its own manufacture sold to non-Bell customers, and in electrical appliances generally. It desired to segregate that business from the business which it was doing with its Bell customers, so that at the end of 1925 it organized the Graybar Electric Company, and turned over all of the business done by the Supply Department of the Western Electric Company, except something in the foreign field.

That company was operated as a wholly-owned subsidiary of the Western Electric Company for the years 1926, 1927 and 1928. During that period of time it is interesting to note from the exhibit that these gentlemen have put into evidence, the sales of the Western Electric manufactures were a
4493 very small portion of the total sales of Graybar, although the profits on those manufactures were relatively larger than the profits made by Graybar on the general supply business in which it was engaged.

For instance, in 1928, which was the last year in which the Company was run as a Western Electric controlled subsidiary, it sold $62,000,000 worth of general electric supplies, and less than $10,000,000 of Western Electric manufactures.

Now, that was the situation when the Graybar Management Corporation was organized. It was organized, your Honor, because the management of the Western Electric Company wanted to dispose of this business, absolutely. It preferred if it could to dispose of it to employees of the Graybar Electric Company, who had been employees of the Bell System before the Graybar was organized. It was an absolute sale; there were certain conditions attached to it, and there ought to be no difficulty in ascertaining what those conditions are, and there has never been the slightest concealment about the conditions.

4494 Mr. Gregory said here when he testified before that there was participation by the Western Electric Company in Graybar's profits.

Now, here is just an instance, and here is what it makes out of it, your Honor, and this is all it makes. First, its profits out of its sales of Western Electric manufactures to

Graybar; then it has a participating preferred stock. Originally, it owned $6,000,000 of that stock, and now it owns $4,000,000.

This witness has said that it gets 60 per cent of net earnings. That is true, but he failed to define what net earnings are, and they are defined in the contract. Net earnings are after all taxes, payments for Pension Fund and cumulative dividends upon preferred stock, in the sum of $450,000 a year.

Now, here is just one further fact in connection with that, and then I think your Honor will have this entire picture. Up to the end of 1933, until the end of 1933, the employees of Graybar had the right to require the Western Electric to take their stock back. After that they had no right to
4495 require the Western to take it back, and the Western has no option ever to get it back on its own motion.

Now, that is the exact situation. Now, in view of that situation, what is counsel entitled to? He is entitled to know, as I see it, exactly what he has already gotten, your Honor. He has gotten the sales by the Western to Graybar since the Western Electric ceased to own or control Graybar. He has gotten the exact participation in dollars, and his witnesses testified to it, on account of this preferred stock.

Prior to the sale by Graybar, he has had all of the information.

Now, what more can there be in the picture that he is entitled to?

Mr. Goldstein: If the court please, Mr. Thompson forgot to state two facts. One was that when the Western owned all of the stock of the Graybar, there was a commercial agreement, which we will offer as X-76, dated December 31, 1925; which gave Graybar a very limited franchise to sell the products of the Western Electric Company; that as a part of the same transaction by which the Graybar Management Corporation bought the stock, the Western Electric Company
4496 made a new franchise agreement with Graybar which we will offer in evidence as X-77.

Mr. Thompson: Both of which we furnished to you.

Mr. Goldstein: At my request.

Mr. Thompson: Yes.

Mr. Goldstein: Within a very—within the last few days, as to 76—which shows a very broad license contract for all of the products, all of these commercial products about which this lawsuit has a very, very important issue; the tracing of the profits, the credit to the licensees, from the inventions, from the Development & Research, the expenses of which were charged to ~~the licensees~~; and that is the first thing that Mr. Thompson forgot to state to the court.

The second thing is, that Mr. Thompson stated that the Western Electric never had the right, the option, to purchase back the stocks. If by his statement he means the Western Electric, technically, it is correct; but the agreement X-74-A shows the Products, the Electrical Research Products, in Section 5, as—I read, I quote:

"Products is hereby granted an option, to continue in force
as long as any of the preferred stock of Graybar is out-
4497 standing, to repurchase from Management'—that is
the management corporation—'all of the outstanding
stock of Graybar at a price determined in the same manner as provided in Section 4.'"

So that if Mr. Thompson is trying to shield himself on the ground that the Western Electric does not have the option, but the Electrical Research Products, which is wholly-owned, I say that is not a protection; and as to the fact, as to whether the Electrical Research Products had the option, it is contained in the agreement, which we will leave with the court.

Now, we want to bring this picture to the court, that when you have an unusual transaction, such as in this case, where the Western claims that they made a sale of $9,000,000 of assets for $9,000,000 without profit, and where it appears that as a part of the same transaction they are given the assets—they give the purchaser of the assets a franchise to purchase its products as a distributor, upon preferential treatment as to the costs which are involved in these alloca-
tions of the Western Electric between Bell and non-
4498 Bell,—and where as a part of a sale you have the pur-
chaser paying not only that $9,000000, not only the 7 per cent on the unpaid balance of the purchase price, but giving the seller the right to participate to the extent of 60 per cent of the profits, after the taxes and after the dividends, and 55 per cent—

Mr. Thompson: And after the $450,000.

Mr. Goldstein: And after the $450,000; but in 1925,—or in 1929, giving them an additional profit of $1,000,000, and in 1930 an additional profit of $318,000. It is an unusual transaction, as a part of the sale. They have said that it was not, that the sale did not give them that profit.

The only other reason then for that profit is this franchise, which was given as a part of the sale, about which they have said nothing; and it is that franchise which is involved in this litigation, because it involves the sale of these commercial products.

Judge Wilkerson: All this started, I think, from your offer to read certain correspondence.

Mr. Goldstein: Yes.

4499 Judge Wilkerson: It is in the record.

Mr. Goldstein: Right.

Judge Wilkerson: I have suggested—

Mr. Goldstein: We are satisfied.

Judge Wilkerson: I ~~have~~ suggested to you that where a company is involved, where documents are in the custody of its officers, and that company is before the court, if you want anything produced from the records of that company, then you should get out a subpoena.

Mr. Goldstein: But I have a perfect right—we have a right to have the record show it, as bearing upon their proof, that is all.

Judge Wilkerson: If it is a part of their proof—

Mr. Goldstein: We say it is, and we just want to show the absence of it—

Judge Wilkerson: If it is an essential part of their proof—

Mr. Goldstein: Right.

Judge Wilkerson: And it is something that they are bound to show—

Mr. Goldstein: That is right, and we claim it is.

Judge Wilkerson (continuing): If it is something that, under the 'Peculiar Knowledge' rule—

Mr. Goldstein: Right.

4500 Judge Wilkerson: —it is their duty to show, and they fail to show it, then you are entitled to all of the instances—

Mr. Goldstein: Yes.

Judge Wilkerson: —which flow from that failure to show.

Mr. Goldstein: We want to show we made an attempt to get it, and it was refused us, and that is all.

Judge Wilkerson: You have asked for it.

Mr. Goldstein: Yes.

Judge Wilkerson: You have told them you want it.

Mr. Goldstein: Yes.

Judge Wilkerson: And you think that they should give it to you.

And further than that, you say, 'Well, we will argue the inferences from that, when we come to argue the case.'

Mr. Goldstein: That is correct.

Mr. Haight: And further, we are telling them, we think it is a part of their case, and to that extent we are trying to aid them.

Judge Wilkerson: You are warning them.

Mr. Thompson: It is very kind, I am sure.

4501 Mr. Haight: And if they will not accept the warning—

Judge Wilkerson: You are warning the plaintiff—

Mr. Haight: Yes.

Judge Wilkerson: —that you will insist, in your argument—

Mr. Haight: Absolutely.

Judge Wilkerson: —that that is an essential part of their case.

Mr. Haight: Yes.

Mr. Goldstein: Right.

Mr. Haight: And if they think that our suggestion of aid is worthless, why, they are taking the chance, if we happen to be right.

Judge Wilkerson: All right. You may go ahead."

(Statement by Mr. Goldstein.

"Exhibit X-76 is entitled 'Commercial Agreement between Western Electric Company, Inc., and Graybar Electric Company, Inc., dated December 31, 1925.'

Exhibit X-77 is entitled 'Distributor Contract between Western Electric Company, Inc., and Graybar Electric Company, Inc., dated October 11, 1928, effective November 21, 1928.'

4502 Exhibit X-74-A is Electrical Research Products, Inc., and Graybar Management Corporation, and Graybar Electric Company, Inc., agreement covering changes in capital structure and sale of common stock of Graybar Electric Company, Inc., dated November 5, 1928.

Exhibit X-78, entitled 'Correspondence between Graybar Electric and Western Electric Company' consists of a letter dated January 21, 1926, from the Comptroller of the Western Electric Company to F. A. Ketcham, Executive Vice-President, Graybar Electric Company, Inc.; letter dated February 10, 1926, from Mr. L. M. Dunn, Executive Vice-President Graybar Electric Company, to R. H. Gregory, Comptroller, Western Electric Company, Inc.; letter dated January 18, 1927, from R. H. Gregory to F. A. Ketcham, Executive Vice-President, Graybar Electric Company; and letter dated March 4, 1927, from F. A. Ketcham, Executive Vice-President, Graybar Electric Company, to R. H. Gregory, Comptroller.

The above letters, Exhibit X-78, were furnished by the plaintiff, and state the arrangements between the Western Electric Company and the Graybar, regarding compensation to the Western Electric for services rendered during the years covered by these letters.'')

The Witness (continuing): Exhibit X-79, entitled "Western Electric—Profits from operations of Electrical Research Products, Inc., and percentage of Return on Western 4503 Electric Company, Inc., investment" shows the profit from operations of Electrical Research Products, Inc., and the percentage of return to the Western Electric on its investment. The figures were taken from the reports furnished, which have been previously identified as D-74 and D-75. X-79 shows the total net profits of the Electrical Research Products as shown by the reports, line 1 of Exhibit X-79.

The line "Profits from Operations" shows net profits after deducting earnings on outside investments and marketable securities, and adding undistributed earnings of foreign subsidiaries.

This exhibit shows that on the average investment of Western Electric in Electrical Research Products, Inc., and excluding the investment in marketable securities, the return was in the year 1927, 93.3 per cent; in 1928, 121.8 per cent; in 1929, 309.4 per cent; and in 1930, 119.4 per cent.

Giving effect to the earnings not declared as dividends, and considering the undistributed earnings, such undistributed earnings as part of the Western Electric in-4504 vestment, the return on that basis was in the year 1927, 63.6 per cent; in 1928, 51 per cent; in 1929, 68.1 per cent; and in the year 1930, 18.2 per cent.

In Exhibit X-79 the difference between the two sets of returns, that is the return on the one which is shown on the line which shows 93.3 per cent in 1927, and 121.8 per cent in 1928, and 309.4 per cent in 1929, and 119.4 per cent—that is Western Electric Company investment in Electrical Research Products, not taking into account the undistributed earnings as part of the investment. Then by giving effect to the undistributed earnings as a part of the investment, I show in the last column, in the last line, 63.6 per cent return, 51 per cent, 68.1 per cent, and 18.2 per cent.

Exhibit X 80, entitled "ERPI Copy of Journal Entry No. 150, dated June 30, 1927," consists of two sheets, and
was compiled from data furnished to us by the Western
4505 Electric Company, and explains the entries in connection
with the transaction referred to in Exhibit D 82.

This exhibit shows that on June 30, 1927, a reserve of $1,000,000 was set up, and that on October 31, 1930, the reserve was credited to "Sundry Income," but reversed on the same date. The exhibit shows the journal entries and cash book entries relating to the $4,000,000 transaction referred to in Exhibit D 82. Of this $4,000,000 the reserve of $1,000000 is still on the books of Electrical Research Products, and to that extent the profits of Electrical Research Products, as shown in X 79, are understated.

Exhibit X 81 is entitled "Western Electric Co., Inc.—Return on Investment in Northern Electric Company, Limited" shows the return on investment of the Western Electric in the Northern Electric Company, which are applicable to the Western Electric investment.

4506 Exhibit X-82, entitled "Western Electric Company, Inc.—Percentage of Return on Average Capital Stock and Surplus Allocated to Bell and non-Bell average investment based on a 10 per cent return on the average investment in Bell and non-Bell assets" is described as follows:

The first column headed "Average Investment per Plaintiff's Exhibits A-77 and A-79," is taken from those exhibits and shows the combined figure.

Column 2 shows the amount of earnings available for return on the basis of 10 per cent on the return on investment previously described.

Column 3 shows the total amount of capital stock allocated to the Bell and non-Bell business.

Column 4 shows the per cent return on average capital stock allocated to Bell and non Bell business.

Column 5 shows the average capital stock and surplus allocated to Bell and non Bell business. This column differs from the column "Average Capital Stock allocated to Bell and non Bell business," by the inclusion of surplus, which is omitted from the former column.

4507 The last column shows the percentage of return.

Exhibit X 83, entitled "Western Electric, Inc., and Subsidiaries, Consolidated Average Investment, Profits and Percentage of Return," shows the return on investment to the Western Electric Company from its operating earnings and from its non operating earnings on a consolidated basis, using the Company's figures for net profits and for investment.

Exhibit X 83 A, entitled "Western Electric and Subsidiaries Computation of Average Investment, per Touche, Niven & Company," shows the basis of arriving at the average consolidated investment before and after depreciation.

Exhibit X 83-B, entitled "Western Electric and Subsidiaries—Reconciliation of Consolidated Net Profits per company with Consolidated Profits as Adjusted," shows the adjustments that I made to consolidated net profits. Those adjustments of rate base and net profits are as shown in X-84. 4508

Exhibit X-84, entitled "Western Electric and Subsidiaries—Consolidated Average Investment, Profits and Percentage of Return," gives effect to the adjustments which I have made. The adjustments in X-83-A and X-83-B are of similar character to those I have described in X-49 and X-50, except as indicated, and except so far as they may involve similar adjustment on subsidiary companies, and therefore need no further description.

Exhibit X-84 is before depreciation, and X-85 is entitled "Western Electric and Subsidiaries—Consolidated Average Investment, Profits and Percentage of Return." X-85 is identical with X-84, except that there is a depreciation reserve deducted.

4509 Exhibit X-86, entitled "Western Electric and Subsidiaries—Consolidated Average Investment, Profits and Percentage of Return," gives effect to profits as adjusted on the Company's rate base.

The profit on the sale of the International Western Electric Company was included to a certain extent in the consolidated profits computed by Mr. Gregory. I have, in Exhibit X-86, added back the portion of International Profits which he allocated, which he did not take up in his consolidated net profit. I am not certain whether that is the portion which was allocated by him to the period prior to 1918. It represents $1,989,000. Then I took up the profit on the 4510 sale of the property to the Bell Telephone laboratories, of $2,115,000. This is the only exhibit in which I reflect that profit. Then I took up the net profit of $157,000 on the sale of the Graybar stock. It represents the difference between the profit of $2,300,000 made on the sale, minus the amount of profit which Mr. Gregory already had included in the consolidated net profits of the Company.

4511 Exhibit X-87, entitled "Western Electric and Subsidiaries Consolidated Average Investment, Profits and Percentage of Return" gives effect to the average investment as adjusted before depreciation, shown in Exhibit X-83. The column "Profits as Adjusted," is in conformity with Exhibit X-83-B. The last column shows the percentage of return.

Exhibit X-88, entitled "Western Electric and Subsidiaries Consolidated Average Investment, Profits and Percentage of Return," is similar to Exhibit X-87 except that it gives effect to the added factor of reserve for depreciation which is deducted in Exhibit X-88. That is, it shows the effect of the net profits as I adjust them in the manner I stated 4512 before on the rate base as I adjusted it, after deducting depreciation reserve.

Exhibit X-88, for the period from 1923 to 1930, shows the following return on investment: 1923, 6 per cent; 1924, 11.3 per cent; 1925, 20.9 per cent; 1926, 14.7 per cent; 1927, 18.5 per cent; 1928, 21.3 per cent; 1929, 19.1 per cent, and 1930, 8.2 per cent.

Exhibit X-89, entitled "Western Electric—Basis of Published Figures of Companies included in Plaintiff's Exhibit A-85 (taken from Poor's Manual)" shows that of the 88 companies included by Mr. Gregory in his Exhibit A-85, practically all of them show, in Poor's, the earnings and assets on a consolidated basis, which includes the parent company as well as the entire operations of the subsidiary companies.

Exhibits A-77 and A-79 include only that portion of total investment and total earnings of the Western Electric Company itself, that Mr. Gregory allocated to operations, 1513 and do not include either the non operating assets, or the non operating earnings of the Western Electric Company, nor any of the earnings from investments or from profits in the subsidiary companies of the Western Electric Company.

Column 2, Exhibit X-89, shows the companies whose earnings are on a company basis of operating and non operating income, and operating and non operating assets, but not including subsidiary companies.

Exhibit X-90, entitled, "Western Electric. Comparison of Earnings and Rate of Return Computed on Basis Shown in Exhibit A-85, with that shown in Exhibits A-77 and A-79," shows a comparison between the return on investment on the basis of earnings and investment figures as taken from Poor's Manual, for the Western Electric Company.

1514 Exhibit X-91, entitled, "Western Electric Company—Percentage of Return on 'Average net investment' (exclusive of bonded indebtedness) to 'Earnings Available for Dividends'," taken from Poor's Manual, shows return on capital. It shows the return on capital and surplus based on non operating assets and non operating earnings of the Western Electric Company alone without taking into account any of the subsidiary companies for each of the years from 1915 to 1930, as taken from Poor's Manual without any adjustments of income.

Exhibit X-92, entitled, "Depreciation Policy of Companies, from Poor's 1931 Manual," is taken verbatim from Poor's the depreciation policy, for the 88 companies. It is merely a compilation. It speaks for itself.

Exhibit X-93, entitled, "Western Electric—Plaintiff's Exhibit A-85—Depreciation Rates," is a grouping of the depreciation rates used by the various companies on ma- 1515 chinery, furniture, buildings and small tools, indicating those companies, whose rates are in conformity with those approved by the Internal Revenue Department, taken from Poor's.

Exhibit X-94, entitled, "Western Electric—Adjustment to Surplus Accounts Omitted in Computation of Average Annual Earnings of Various Companies, included in Plaintiff's Exhibit A-85 (Debit Adjustments are shown in black; credit adjustments in red) surplus adjustments of 88 companies, 1931" is a compilation showing the kinds of adjustments to surplus made by 88 companies, of the same character that Mr. Gregory used in connection with his Exhibits A-77 and A-79 as charges to operating earnings. I have found from my examination of each of the 88 companies, in Poor's, additional facts which should be taken into account in any comparison between the Western Electric Company and the 88 companies.

4516 From an examination of some of the companies included among the 88 companies included in Exhibit A-85, I find that seven of the companies carried their inventories at cost. Those companies are: DuPont, Mathiesan Alkali Works; for the years 1926 and subsequent, the Consolidated Cigar Corporation and the Continental Baking Corporation; for the years 1927 to 1930, Liggett & Meyers Tobacco Company, and the Lorillard Company; prior to 1930, the Goodrich Tire & Rubber Company carried its finished and semi-finished products at cost.

I also found that three of the companies had employes' profit-sharing plans. The Dennison Manufacturing Company has management and employes stock, as extra compensation, but does not have a pension fund.

The Endicott-Johnson Corporation has a profit-sharing plan for employes. The National Cash Register Company employes receive the profit-sharing at varying percentages of the earnings after taxes, which was discontinued in 1926, at which time the employes received 37.5 per cent of the common B stock in lieu of the profit-sharing arrangement.

4517 From my examination of the working papers underlying Mr. Gregory's Exhibit A-85, I did not find that any effect was given to this profit-sharing as deductions from operating earnings. I also found that several of the companies were engaged in businesses that are rather far removed from the business of the Western Electric Company. The Columbia Carbon Company owns gas wells, oil wells and pipe lines. There were six companies that owned mines, the Allied Chemical & Dye Corporation, the Glidden Company, the Goodyear Tire & Rubber Company, The International Cement Company, The International Harvester Company and the National Lead Company.

Three companies owned phosphate, sodium and/or limestone deposits, the American Agricultural & Chemical Company, the American Cyanamid Company, and Mathieson Alkali Works.

Three companies own timber lands, the Deere Company, the Diamond Match Company, and the International Harvester Company. Two companies have rubber plantations, the Goodyear Tire & Rubber Company and the B. F. Goodrich Tire & Rubber Company.

4518 This list is not intended to be all inclusive, but is simply a sampling of some of the companies included among the 88. The effect of engaging in mining, in oil, and also in timber operations, would involve the question of depletion of return and reduction of investment in those particular assets.

Exhibit X-95, entitled, "Western Electric—Comparison of per cent of return on investment and per cent of net profit to sales of companies shown in Plaintiff's Exhibits A-85, A-86 and A-87," shows a comparison of percentage of average earnings to average investment, with percentage of net profits to sales on representative companies of the 88 companies. It shows that there is no relation between the two percentages.

Exhibit X-96, entitled, "Western Electric Company,
4519 Inc.—Ratio of sales to average investment for year 1927 (compiled from Poor's Manual)," compares the ratio of sales to average investments of the Western Electric Company for Bell and non-Bell business, and also for Bell and non-Bell combined, showing the ratio of sales to the average investment—with ratio of sales to average investment of those of the 88 companies included in Exhibit A-85, which showed a large percentage, net profits to sales. This exhibit shows that the percentage of net profits to sales has a relation to the rate of turnover, and that the larger the turnover, the less percentage of profit to sales, appears.

Exhibit X-97, entitled, "Western Electric Company, Inc.—Results obtained by apportioning combined plant of two companies (selected from Plaintiff's Exhibit A-85) on basis of the combined sales for the year 1930," shows the effect of apportioning plant on the basis of cost of sales where fast and slow moving items are combined. It shows that an ap-

portionment made of plant on basis of cost of sales will not be in accordance with the use, which is the basis used
4520 in Mr. Gregory's exhibits. Cost of sales will not give you the use of a plant, for the simple reason it involves the question of inventories. In other words, it brings in the question of goods manufactured in the prior year, for sale in subsequent year.

As an illustration you might take an extreme case, goods manufactured in the year 1927 and sold in the year 1928, and we will assume that the goods manufactured in 1927 were of a type that was discontinued at the close of the year 1927, but that the merchandise itself was sold in the year 1928. If you use the apportionment in the manner in which Mr. Gregory has used it, you would be apportioning to those sales in 1928, part of the 1928 plant, which would in no way be related to the plant used in the year 1927; that is, the year in which the goods were manufactured.

4521 Exhibit X-98, entitled, "Western Electric—Collections from Bell Companies—(WE Schedule Reference CM-714)," shows the collections by the Western Electric Company from the Bell Companies, in Column 1, and Column 2 shows the cash taken by the licensee companies from the American Telephone & Telegraph Company, as shown in reports CR-13. The last column shows the ratio of one to the other.

Exhibit X-99, entitled, "A. T. & T. Co.—Investment in Western Electric Co. Common Stock (New York Corporation)," shows the investment by American Telephone & Telegraph Company in the common stock of the Western Electric, and was prepared from data furnished by American Telephone & Telegraph Company.

Exhibit X-100, entitled, "A. T. & T. Co.—Monthly High, Low and Average price of the common stock (per
4522 New York Stock Exchange quotations), 1920-31."

Exhibit X-101, entitled, "Illinois Bell Telephone Company—Sales of Illinois Bell Telephone Company's First and Refunding 5% Bonds—Series A—1956 (New York Stock Exchange) (Taken from 'The Analyst')," shows the year's sales, or resales of the Illinois Bell Telephone Company 1st and Refunding 5 per cent Bonds, Series A, 1956, on the New York Stock Exchange, as taken from the Analyst.

4524 I requested of the Western Electric Company and was furnished Defendants' Exhibit X-102, entitled, "Analysis of profits on business other than the Bell Telephone Companies from 1881 to 1927, inclusive." I requested from the Western Electric Company the underlying data supporting Exhibit X-102.

4525 In answer to that request, I was advised by the Western Electric Company that the underlying papers—the working papers underlying the Exhibit D-61 of which this shows the detail by years, would be furinshed in Chicago, and then subject to the approval of counsel.

Cross-Examination by Mr. Thompson.

4527 I said in my direct examination that there were three companies included in the list of 88 companies that had profit sharing arrangements with their employes. I am familiar with the practice of only one of the companies, as to whether the profits which were shared with the employes were deducted from the profits as shown in their reports, included in Poor's and Moody's Manuals. In that company, the profits paid to employes were deducted as an operating expense, with the result that its profits were understated to that extent, in Poor's and Moody's Manuals. I do not think that the comparison shows the earnings of these three companies as lower than they actually were.

4528 In the case of the Endicott-Johnson Company, I am under the impression that Mr. Gregory excluded that profit-sharing arrangement. This profit-sharing affects the comparison between the Western Electric Company and these 88 companies, in that in most cases the profit-sharing arrangement is in lieu of a pension fund. In the case of the Western Electric Company, the pension fund is deducted as an operating expense, and in other cases of profit-sharing arrangements, it is a form of profit-sharing which does not enter into normal operations. It affects the statement of earnings of one of the companies, Endicott-Johnson, as shown in
4529 the exhibit including the 88 companies. That means that if they have taken part of their earnings out before they reported them to Poor or Moody, their earnings are lower than they would have been if they had left it in, but I wish to point out that in Exhibit A-85, effect has been given to that factor. I think there is a point to it.

Whether in Exhibit X-79 an attempt is made to show the earnings made by the Western Electric Company on its investment in Electrical Research Products depends upon what you mean by "earnings on its investment." By the statement "Profits from operations of Electrical Research Prod-
4530 ucts and percentage of return on Western Electric Company investment," I mean that it shows the percentage of return, using as the basis, the profit from the operations of the Electrical Research Products, as compared with the original dollar investment of the Western Electric Company. In 1927, the line which says "Average investment of Western Electric Company," $2,299,000, is not the dollar investment of the Western Electric Company in Electrical Research Products capital stock for 1927. It excludes the investments and marketable securities; it represents the cash and accounts receivable that were turned over by the Western Elec-
4531 tric Company to the Electrical Research Products, in lieu of capital stock. It is excluding investments and marketable securities which were turned over at the same date. I say, as a result of this exhibit, that the Western Electric Company earned in the year 1929, 309.4 per cent on the average investment of the Western Electric Company in Electrical Research Products, excluding investments and marketable securities of Electrical Research Products. In arriving at that figure, I have included undistributed earnings of foreign subsidiaries for that year in the sum of $2,130,000. The investment of Electrical Research Products in those foreign subsidiaries does not enter into the calculation.

"Q. No, it does not enter into the calculation at all. Of course, if the Electrical Research Products had large
4532 investments in its foreign subsidiaries, and you bring in the profit, and you do not bring in the investment, it is not hard to get a figure of 309, is it?

A. But I am calculating the return to the Western Electric Company. The Western Electric Company had an investment of $2,250,000 in Electrical Research Products.

Q. Well, does not this 309.4 per cent attempt to show that there was that large earning by the Western Electric Company on the basis that you think is the fair and proper basis to set up in an exhibit, or is this just a calculation?

A. This is an attempt to show what the earnings actually were."

I stand back of this figure of 309 per cent as the earnings of the Western Electric Company on its investment in Electrical Research Products. I showed $2,130,000 of earnings made by Electrical Research Products from its foreign 4533 subsidiaries, without reflecting or giving any effect whatever to the investment of Electrical Research Products in its foreign subsidiaries because the subsidiaries are owned wholly by Electrical Research Products. Electrical Research Products has money invested in them. As an accountant I do this because I am calculating the return of Electrical Research Products and subsidiaries, the return of the Western Electric Company, and all of the money that the Western Electric Company has invested in the entire Electrical Research Products organization, was $2,250,000.

4534 In my opinion as an accountant, that is a proper basis upon which to make a calculation on which to determine earnings. There may have been an internal profit on Electrical Research Products sales to its subsidiaries, on inventories which were not disposed of during this period of time. That was not excluded from their profits because I had no basis of arriving at it.

"Q. Well, you are setting this up to show what the profits were: Did you make any inquiry to ascertain whether that was a fact, and if it was a fact, how it would affect this calculation?

A. I used the best available information that I could get.

Q. Well, this is an affirmative piece of work that you have done, which results in showing perfectly tremendous profits made by the Western Electric Company here. Did you 4535 not want to know whether this was a correct calculation or not?

A. Well, I am restricted in any calculation that I may make, by the data which is made available to me.

Q. Did you inquire about that?

A. I did not inquire about the profits which may have been —which might have been in unsold merchandise,—but I feel that such an effect would not be very material, because if it is taken out of one year, it would be reflected in another year.

Q. Well, how do you know how it can affect one of the years, if you do not know what it is? If you have no idea as to the amount, how can you say it is not material?

A. Well, the question of inventories only affects one specific year. Eventually profit is to be picked up, whether it is to be picked up in one year, or picked up in another year.

Q. No, but this is consolidated—you are trying here to find out, not the difference between an inventory of one company, and the same company in another year, but where there are subsidiaries, where there is an inter-company profit?

4536 A. Well, the only inter-company profit would exist between Electrical Research Products and its subsidiaries."

I do not know whether it is a fact that Electrical Research Products was largely financed by means of loans made by the Western Electric Company, to Electrical Research Products, rather than by stock issued by Electrical Research Products itself, or by a bond issue. I never studied that phase of the situation. I do not think that it was important, when I was trying to find out what the return to the Western Electric Company was, to ascertain the method of financing of Electrical Research Products. If I had found out that there were large loans made continuously by the Western Electric to Electrical Research Products, so that it was really financed through loans, I do not know that I would have changed the exhibit so as to include those loans as a real part of the Western Electric's investment, nor found out the return not only on these small figures that I have put in here, but on the larger figures including the loans.

4537 I do not know what I would have done if I had found that out. I cannot answer a question like that without giving it some thought.

"Judge Wilkerson: Suppose we take an extreme case; suppose the company actually had, as its investment, $1,000, as far as its investment was concerned, but as a matter of fact, the entire investment in the business is more than $5,000,000. Would you in estimating your profit, take the per cent on the $1,000, or the $5,000,000?

The Witness: It depends on who contributed the $5,000,000. If the $5,000,000 was borrowed, if it was borrowed from the banks—

Judge Wilkerson: I am assuming that the Western Electric Company contributed it.

The Witness: You can calculate the basis—the return on two bases. You can calculate it on the original investment—
4538

Judge Wilkerson: Well, is there any system of accounting by which it could only be figured on the $1,000?

The Witness: I think there is.

Mr. Thompson: Q. No, but that is what you have done here, is it not? That is what you have done here deliberately.

A. I have not done it deliberately."

In getting up Exhibit X-79, I had in mind showing the profits from operations of Electrical Research Products, on an operating basis only, excluding the non-operating income.
4539

4543 "Q. Mr. McCann, I notice that on some of the exhibits that were introduced this morning, the legend "Per Touche, Niven & Company." As I understand it, you have done this work, flowing into all of these exhibits, on behalf of the firm of Touche, Niven & Company, is that correct?

A. That is correct.

Q. Now, I want to hand you this Exhibit X-79, and I want you to assume that Electrical Research Products wants to put out a bond issue, and it wants to go to the public with that bond issue, and I represent the bankers, and I come to you with that statement. Will Touche, Niven certify that, as a correct statement of the return on investment, on which bonds are to be sold to the public?
4544

A. Well, to begin with we could not certify it, because I have accepted all of the figures from the company; I have not verified any of these figures.

Q. Oh, no—

Judge Wilkerson: Assuming the accuracy of the figures.

Mr. Thompson: Yes, assuming the accuracy of the figures. Will you certify them to be—

Judge Wilkerson: Assuming the accuracy of the figures, would you certify this method of estimating the per cent of return?

Mr. Thompson: Yes, to the public that is going to put its money into bonds on this property.

The Witness: You cannot answer a question yes or no—

on a question like that. It involves too many outside elements."

Exhibit X-67 is an attempt to show the return on investment of the Western Electric in the International Western
Electric for the years 1918 to 1925. That is just
4545 the dollars actually invested; it is not the money left
in the business from earnings at all. The second thing is that I have included in here as one of the large factors affecting it in the earnings shown, $15,955,095 of profit on the sale of the International Western Electric Company.

I believe that that company, its affiliates, and its predecessors, conducted a business abroad from about 1882 until 1925. The profit on the sale of that business does not necessarily represent the undistributed earnings in the business from 1881 down to 1925. It represented the profits they made in 1925 when they sold the business.

I say it was all applicable to the period, 1918 to
4546 1925. I offered as a reason for including it all in that
period, that there were certain statements in the stockholders' reports of the Western Electric Company that showed first that it had sustained capital losses during the war period abroad, and second, that it had not made any money in this business abroad during the war. I cannot give
you the page numbers, but the statements appear in the
4547 annual reports for the years prior to 1920. (Counsel
handed witness annual reports for years 1918 and 1919.) The report for the year ending December 31, 1919, and the report for the year ending December 31, 1918, are the reports
I say and referred to in my testimony yesterday. They
4548 are the reports I rely on. I do not know whether you
have correctly marked the extracts that I rely on. I do not know, because I went through the entire report. I could not state the pages.

Those particular reports are one of the factors that I relied on. I also relied on the contention that the profit is made
when the sale is made; that the profit on a sale of a busi-
4549 ness is not to be allocated over any period of years. I
relied on the two taken together.

If the Western Electric Company had an investment in the International Western Electric Company and its predecessor corporations covering the period 1881 down to 1925, and those companies had made substantial earnings from 1881 continuously down to December 31, 1917, which had been left in the business and then in 1925, the Western Electric Company sold its stock ownership in the International Western Electric Company, if I were going to figure the return on Western's investment for the period 1918 to 1925, I would include the profit in the year in which the sale was made, no matter what year they were made in:

"Q. Without respect to when the earnings of the Com-
4550 pany had been made, whose stock was sold, and resulted in the realization of a profit?

A. You are drawing the inference that the profit—

Q. No, I am drawing no inference. I am asking for your opinion.

A. Well, you have made the statement that the profit on the sale is related to earnings. That may or may not be related to earnings for proper years.

Q. Do you know what the fact is in this case?

A. I know that the Western Electric Company made a profit of $15,000,000, but I do not know why."

4553 In a number of my exhibits, I have apportioned the unexpended balance to the reserve for depreciation be-
4554 tween the Bell and non-Bell investment. I did not follow the method which Mr. Gregory used in making this apportionment because to my knowledge there were no working papers available at the time I made my apportionment. I mean that I made my apportionment before Mr. Gregory introduced Exhibit A-194, which showed an apportionment.

I couldn't have followed his method. I used the
4555 method which is the only basis which I could see could be used, in the light of the facts I had. I wouldn't say that my method correctly reflects the apportionment of the unexpended balance in the reserve between Bell and non-Bell. All of these methods of allocation are subject to argument. There is no such thing as correct or incorrect. It is a matter of opinion. I wouldn't say that my method was right. It was the only one that I could use, in view of the data which was furnished me by the Western Electric Company.

4556 I would not say that any allocation I made between Bell and non-Bell is the proper method. I merely tried to use some method that would give a result as between Bell

and non-Bell, without attempting to pass on the propriety of any method that was used by Mr. Gregory, or any method which I might adopt. I prepared this exhibit where I allocated an unexpended balance in the reserve for accrued depreciation between Bell and non-Bell business long before I saw Mr. Gregory's exhibits. I could not have followed any method that he used because he had no apportionment at that time. I was confronted with the necessity of making an apportionment between Bell and non-Bell, and I chose a method of apportioning that on the basis of average plant
4557 investment. It is the same thing as the average plant invested as reflected in Mr. Gregory's exhibits.

"Q. Now, you did that because you believed that apportionment made by that method would be substantially and approximately correct? Or didn't you believe that it would be correct?

A. I am not passing on the correctness of the apportionment.

Q. I know; but you introduced an exhibit here, not based on any method used by Gregory, where you chose your own method of apportionment, and I want to know now, whether you say it is right, or whether you repudiate the method you used?

A. I do not repudiate the method, because I used the apportionment of the reserve for depreciation—I used the same apportionment of that reserve as Mr. Gregory used of his plant account. I had no means of telling how much of the amounts of reserve applied to one class of plant, or another class of plant.

4558 Q. And you put up an exhibit in which that is an important part of your work, in making your apportionment of this reserve for accrued depreciation between Bell and non-Bell. I want to know whether you say to the court that the method used in the exhibit will give an approximately accurate result, or whether it gives no result.

A. I can answer it in this way: That in view of the facts that there were at my disposal, it was the only apportionment which I could think of that I could make.

Q. Do you say it gives an approximately accurate and fair result, so that when the court looks at these exhibits where you have attempted to apportion this unextended balance in the reserve between the Bell and the non-Bell business, he will get a substantially accurate picture of the amount that you say ought to go against the Bell business? Now, either he can or he cannot. I want to know which.

A. Well, if you attack my apportionment of the reserve, you attack your own apportionment of the plant account.

Q. I am just asking you the question. You have used it now. We didn't use it at all in that connection. I want 4559 to know whether you say that by using it, you get an approximately correct answer.

A. I say that it is the best apportionment that I could make, in view of the facts which were at my disposal."

I have presented exhibits prepared by me, in which I am proceeding upon the theory that the average investment of the Western Electric in its Bell and its non-Bell business, should be reduced by the unexpended balance in the reserve for accrued depreciation. In order to do that I have to apportion that unexpended balance between Bell and non-Bell business. I did not have the Western Electric Company exhibit and could not use their apportionment, so 4560 I had to make an apportionment of my own. I would say that the basis I had to choose from was rather limited. I had very little information. I had to make it on some basis.

"Q. Do you represent to this court that you have made it on a basis that will give an approximately fair and correct answer, or is it to be disregarded? I want to know, one or the other, without equivocation.

Mr. Goldstein: Mr. Thompson, will you explain whether you mean now as a result of the allocation of depreciation reserve, or the result of the rate of return? Which are you talking about, you are confusing this witness by the two things. One has nothing to do with the other.

Mr. Thompson: No.

Mr. Goldstein: Let's get the question straight, so 4561 there will not be any ambiguity.

Mr. Thompson: There is no confusion, no ambiguity.

Q. You understand, don't you?

A. I don't think I do follow you; I have answered you about four times, and each time you go back to the same question.

Q. All right. Now, what do you think I am trying to get at? Don't you know?

A. You have asked me why I used that particular apportionment.

Q. Yes.

A. What I have tried to explain is, it was the only one available, the only available basis that I could use.

Q. Now, let's follow through, and I am only trying to get your view of this, Mr. McCann. You set up certain exhibits that you ask the court to take, which are based on the theory that there should be deducted from the average investment in the Bell business, and the average investment in the non-Bell business the unexpended balance in the reserve, is that right? You understand that step now thoroughly?

4563 Mr. Thompson: Q. Do you understand my question, Mr. McCann? After Mr. Goldstein's statement, you don't understand it now, is that right? You told me a minute ago you did.

Mr. Goldstein: We would like to know what apportionment you are talking about, because that is the vital part of this case, and you are trying to bring two thoughts into one question, and we have a right to know which thought you are talking about.

Mr. Thompson: Q. Can you understand the question, or can't you?

A. I am afraid I can't, at the present time.

4564 Q. All right. We will pass it. The amount of two million dollars is included—

Judge Wilkerson: Q. In your opinion, is the basis as stated there, the correct basis?

A. Well, that all depends on the circumstances. I have made a very limited examination of these records, and if I had made the apportionment of plant as well as the apportionment of reserve, I might have adopted an entirely different basis; but Mr. Gregory made the apportionment of plant.

Judge Wilkerson. Q. The whole point is, what do you expect us to do with the exhibit, what are we to do with it? What do you think it shows to us?

A. I think it represents as good an apportionment as I could make, under the facts which were presented to me.

Q. But you are not prepared to say that in your opinion it is correct?

A. That is right."

4566 I did not follow Mr. Gregory's method in apportioning this unexpended balance in the reserves. As I stated before, his apportionment was not made at the time I made mine, but his apportionment was examined by us subsequently, and in my opinion the difference between his apportionment of the reserve and my apportionment is not material to the case, except in so far as it affects the extraordinary depreciation reserve. In other words, I do say that there are differences, but they are not material.

I said I did not follow Mr. Gregory's method, but
4567 I believe, in my opinion, that the differences between
the two methods are immaterial. I think they are both substantially in agreement, except as far as the extraordinary depreciation reserve is concerned. I would not pass upon the correctness of the method used.

The amount of two million dollars which was included in Mr. Gregory's exhibit as an operating expense on account of depreciation on machinery in the year 1928 first appeared on
the books in 1928. A portion of that could have been
4568 claimed in an amended income tax return of the West-
ern Electric Company, for the years 1924, 1925, 1926, 1927.

I was furnished with a reconciliation of the books with the income as finally determined with the Income Tax Department, and as shown by amended returns for the later years, and that item appears as one of the items of reconciliation, showing it was not taken up in the Federal Income Tax Return.

I don't know whether the Western Electric has made a claim to the Government on account of this $2,000,000, but I do know that the reconciliation which they furnished me, which purports to be a reconciliation between their Federal
Income Tax returns and the books, shows this as an item
4569 of reconciliation. I have not examined their tax file
correspondence, so I cannot pass upon whether they have asserted a claim with reference to this. I am familiar

with the general method in which these things come up with
the income tax authorities in the larger corporations. A
4570 field examiner comes around to examine the reports
many years after they are made.

4571 I know this. I was furnished a reconciliation of the
Federal Income Tax returns as filed with the profits on
the books, and in that reconciliation the item of two million
dollars referred to by Mr. Thompson appeared as an item
which was not claimed as a deduction. Now, whether they
made a claim subsequent to the return, I don't know. But
I do know that in the return as filed, as amended, it was not
claimed. What has happened afterwards, I don't know. I
don't assert anything in respect to it one way or the other,
except so far as it affects the Exhibit 66.

4572 During the course of my employment on behalf of the
defendants in this case, I was requested to make some
examination of the 1931 records, at a time quite subsequent
to my first employment. I made an examination of 1931, but
not to the extent that I made of the prior years, because of
the lack of sufficient time. I furnished the work sheets on
1931 to Western Electric employes for checking, but they
were not furnished as such. It merely happened that the 1931
figures were inserted on the working papers where they happened to fit in.

The following exhibits fail to include any figures as to
earnings on investment, or any other figures with respect
to the Western Electric Company for the year 1931;
4573 X-48 to X-65, inclusive; except X-49-A, which is a Western Electric statement, X-81 to 88, inclusive, X-99, and
X-79. I don't believe any of the exhibits introduced through
me cover the year 1931. The exhibits were prepared long before we had any access to the 1931 figures. When we began
our work, the only figures available were for the years 1916
to 1930. Mr. Gregory's statement, with which we are drawing comparisons, cover the same period, so there was no reason for including the year 1931. I did not have access to the
books and records of the Western Electric Company for 1931
long before I went on the witness stand. We requested
4574 the right to examine for 1931 all the same books and
records as we examined for the other years.

"Q. You made whatever examination you pleased of them?
A. I was restricted as far as time was concerned."

I don't mean that I didn't have the time to devote all my time to this examination. I had access to the 1930 figures back in January. As a matter of fact, I made no examination of the 1931 figures until away into April.

"Q. Do you know from Mr. Gregory's figures on his exhibits that the earnings of the Western Electric Company in its Bell business are the lowest for the year 1931 that they had been for any year in the period 1923 to date, except for the first part of 1932?

A. I am not familiar with the 1931 figures.

Q. Weren't you interested in the 1931 results?

A. Not particularly.

4575 Q. Did you, yourself, determine that 1931 would not be put in here?

A. Well, I was instructed to prepare exhibits that would be comparable to A-77 and A-79, and, as I explained before, the exhibits were prepared long before I had any access to 1931 figures.

Q. Now, since you have had access to them, you know that the year 1931 is included in this controversy, don't you? You did know that, didn't you?

A. I don't know that I did. Mr. Gregory's exhibits A-77 and A-79 do not include 1931.

Q. But 78 and 80 do?

A: On an estimated basis.

Q. Yes, exactly, and then figures were brought in later. You knew that, didn't you, when the figures for 1931 were brought in. What I want to know—I am not going to pursue this further—I want to know whether you, as an accountant, determined that the year 1931 was not to go in this case, or whether some one else determined that.

A. Why, I did not determine anything relative to the year 1931.

Judge Wilkerson: I understand you to say you followed instructions?

A. When I first made up my exhibits, the year 1931 4576 was not in the case, the figures were not available, the books were not available, and I made the exhibits."

In our Exhibits X-50, X-53 to 58, inclusive, 84, 86, and X-88, I have made certain adjustments on account of pension fund accruals, assuming that the exhibit numbers are correct. I will accept your figures subject to check that in these exhibits for the years 1916 to 1930, I have made the following adjustments to profits on account of this pension fund situation: I have increased the Bell profits by $1,558,000, I have reduced the non-Bell profits by $517,000, and I have increased the profits on the total business by $1,041,000.

I will accept your figures, subject to check that for the period 1923 to 1931, I increased the Bell profits by $5,912,000, the non-Bell profits by $1,350,000, and the total profits by $7,262,000.

4577 The adjustments covering pension fund accruals all
proceed upon the theory that the Western Electric Company had accrued larger amounts for Pension Fund purposes applicable to both its Bell and non-Bell business in the
two periods than correct actuarial computations jus-
4578 tify. In determining what the proper actuarial com-
putations were, I used a statement identified as Exhibit D-26, the title of which reads as follows: "Actuarial computations of required pension fund accruals, 1916 to 1930, and minimum fund requirement." This sheet was furnished to counsel for the City of Chicago by the Western Electric Company. I don't know the date. I did not know by whom it was prepared. I did not know that after a controversy had arisen here in court, the company employed Dr. Arthur Hunter, chief actuary of the New York Life Insurance Company, to determine what the facts were in this connection.
I did not see Dr. Hunter's exhibits before I put these
4579 exhibits in, that contained the adjustments on the pen-
sion fund accruals. I did not know that he had testified. I do not, by my exhibits or my testimony, undertake to express any opinion about the facts from an actuarial standpoint.

Fundamentally there was no difference in the method of my apportionment of these pension fund accruals between Bell and non-Bell business for the period prior to 1925 and for the year 1925, and subsequent thereto. By use of the word "fundamentally" I mean that I attempted, in so far as possible to make the apportionment between the Bell and non-Bell on the same basis throughout.

It may be substantially different here due to the item of
$1,400,000, which is the Graybar pension fund. Prior
4580 to 1925, the apportionment which I made was based on
the cost of sales—I presume supplies were included.

I don't know as a fact. I will have to examine my working papers before I can say whether, after 1925, my apportionment was based upon the Western Electric Company's method, which means that adjustments were apportioned on the basis of salaries, where, for instance, the installation and distribution houses were all Bell, and, in the case of the manufacturing department, the apportionment was on the basis of cost of sales.

"Q. I wish you would. You don't need to do it now. Then I want you to answer this question: If it is not a fact that, even upon your own theory, your method of apportion-4581 ment prior to the year 1925 results in penalizing the Bell business, that is in increasing the profits on account of its pension fund accrual by approximately a million and a half more than you would have increased them if you followed the same method of this apportionment as you did follow for the years 1925 and subsequent thereto?

A. I can't answer that question, for I don't know.

Q. Will you look into it? I would like to have it answered.

A. I am afraid that it would involve considerable work on my part, and I don't think I should be called upon to do it.

Mr. Thompson: Well, your Honor, it is a curious situation; he brings in exhibits that make certain apportionments.

Mr. Goldstein: He accepted your figures.

Judge Wilkerson: Well, he will be governed by instructions of counsel, I suppose, as to what he will do, and they have called on you for a good many things.

Mr. Thompson: Q. Do you decline to do this job?

A. It is not a matter of declining, Mr. Thompson. It is just a matter of, I don't know what the result would show if I used any other basis. I have used the basis, I defined the basis.

4582 Q. I ask you specifically whether there was a difference in the methods between these two periods; you say you don't know, you are going to answer that question?

A. I am going to answer that question by reference to my working papers.

Q. Will you also let me know tomorrow whether you decline to undertake or will undertake this other—

A. Yes.

Q. —this other investigation?

A. Yes, I will answer."

4584 (Documents marked for Identification Exhibits A-216
and A-217, respectively.)

Exhibit A-216, being a statement furnished by the Western Electric, marked D-25, was before me when I did my work on Exhibits X-50 and X-53 to X-58, inclusive.

Exhibit A-217 is one of my work sheets. In Exhibit A-217,
in the total additions to the fund opposite the year
4585 1925, I have $4,977,000. I have a note to that which
says that it includes $1,400,000 for pension fund, under
agreement with the Graybar Electric Company. I come over
to sheet D-25, furnished by the Western Electric Company,
and I say that they have not included credits for pension
fund accruals on the exhibits $1,400,000, because they use the
figure there $3,576,305. What I did was to compare the total
pension fund accruals for 1925, including the $1,400,000 for
the supply department, against the pension fund accruals per
actuarial computations, and I get a difference of $1,373,000,
by which sum I adjusted profits. I do not see how it is
$1,400,000 too much. The $1,400,000 that is in here is
4586 not in this figure. But the $1,400,000 is on the books
in that particular year as a charge against non-Bell
earnings. I was trying to adjust the figures which had been
used by the Western Electric as credit for pension fund ac-
cruals, to the actuarial computations.

Q. Now, in making that adjustment in every other year but 1925, you followed D-25. In 1925, you made the comparison as against a sum which included $1,400,000 reserve for pension fund for the supply department of the Western Electric, which had not been used by the Western Electric?

A. It is included in the Western Electric expense for that year.

Q. Exactly, but not reflected in these exhibits on account of the pension fund?

A. Not reflected in these exhibits.

Q. Nor any other exhibits?

A. But it is still reflected in the profits for the year. By
doing this, I am not only adjusting the difference between
this exhibit and the one showing actuarial calculations,
4587 but I am also excluding from profits the $1,400,000.

Q. That is the effect of it, isn't it?

A. Yes."

My understanding is that the $1,400,000 was included as an expense in Mr. Gregory's non-Bell exhibits.

I don't believe I was present; I do not recall hearing Mr. Gregory's testimony that, in making up his pension fund accruals, he had not included the $1,400,000 in the pension fund expenses of the supply department, that is, the non-Bell business. The most that I say for this is that it is not really an adjustment on account of pension fund, which it purports to be, but it is an adjustment to take the $1,400,000 out of the earnings of the Western Electric in its non-Bell business for that year.

It is included there merely because it related to pension fund, not to that specific calculation of pension fund, but it represented a pension fund set aside at that time for 4588 the Graybar employes. It is a proper adjustment in the exhibits. It is on account of pension fund that it is earmarked especially; I would not have to star it otherwise.

"Q. But when you came to make the comparison, while you earmarked it, when you came to make the comparison, you compared it, did you not, with the figure used by the Western, which did not include that sum, with the result that you got an adjustment of $1,400,000 larger than it would have been if you had used all the figures which have been used by Western in setting this up?

A. If I had adopted the method you describe, I would have shown the $1,400,000 in one separate column, I still would have made the adjustment of $1,400,000.

4589 Exhibit 51 consists of three sheets, and purports to show average investment of the Western per Exhibits A-77 and A-79 adjusted before depreciation, net profits per Exhibits A-77 and A-79, and average return on investment.

Q. Now, you carried out these figures here, average return on investment. Are we to understand that this exhibit purports to show, as to the Bell business on the second sheet, what you believe to be the return on investment on a proper basis, or is this merely a calculation?

A. It is a calculation for the purpose of showing the effect of the adjustments that were made to the average investment as compared with Mr. Gregory's profits.

Q. But you do assert that the whole exhibit is on a basis so that the return on investment appearing in the third column means something?

A. I think that is self-evident from the exhibit it-
4590 self. I have excluded from the average investment in
column 1 of this exhibit (sheet 2, which is the Bell business), the notes payable to the trustee of pension fund and the American Telephone & Telegraph Company and to others, in a cumulative amount, for this entire period, of many millions.

Q. As a matter of fact, you have not decreased the profits at all by deducting from the profits $15,753,000 of interest applicable to the notes which you excluded?

A. Well, the purpose of this exhibit was not to show the investment and the profits on a comparable basis. It was merely to show the effects on the investment of these deductions.

Q. Mr. Witness, you not only show the average investment as adjusted to the net profits, but you carried out a return on investment?
4591 Now, I want to know whether you say that doesn't
mean anything, or, is the court to take that return as indicating anything?

Mr. Goldstein: Now, which exhibit are you now speaking about?

Mr. Thompson: Fifty-one, the second sheet.

A. Why, I think the exhibit speaks for itself.

Mr. Thompson: What I understand you did was this—

A. I admit that as far as the interest on the notes that are deducted here—as far as that interest is concerned, it is not taken out of this figure.

Judge Wilkerson: Pardon me just a moment. I suppose, having put this in, that we are to understand you testify that the return on average investment before depreciation, is represented by these percentages which you put down in these columns, is that right?

A. Yes, but that is only one of the exhibits leading up to what might be called a final exhibit, where the adjustments are shown both on the assets and on the profits. It does show the effect of the asset base alone.

4592 Judge Wilkerson: What I mean is, we don't want
to be confused by this column headed "Percentage."

Mr. Thompson: Exactly.

Judge Wilkerson: We have a large number of exhibits here. Now, we take these exhibits and look at them. Are we to understand that you testify to something here about those percentages? What is your testimony about the percentages?

The Witness: I don't think I have testified to anything about percentages on this exhibit.

Judge Wilkerson: Well, what functions then do they serve?

Mr. Thompson: Exactly.

Judge Wilkerson: I say, what is their purpose in the exhibit? Are they evidence in the case, and if so, of what? Just what conclusion are we to draw from those percentages? That is what I am trying to get it. That applies not only to this, but to a large number of the exhibits. You have all kinds of percentages set out. Now, just what are we to do with those?

The Witness: Well, you understand, of course, that where you have two factors, that is, you have a factor of investment and a factor of profits, and you want to give effect to 4593 just one of the factors, naturally any comparison drawn between an adjustment on one factor without a corresponding adjustment on the other factor, does give an incorrect picture, but—

Judge Wilkerson: Well, in this case we have to make findings, and one of the findings which we will have to make will be the per cent profit of the Western Electric on its business, on the business with the Bell Company. Now, when we come to set down in our findings that percentage that we are required to find in this case, what use can we make of your column here? That is what I am trying to get at?

The Witness: Well, there is a later exhibit that adjusts both the profits and the rate base.

Judge Wilkerson: Is there an exhibit to which all these refer—

The Witness: Yes.

Judge Wilkerson (continuing): —which gives your idea as to what the profit is?

The Witness: Yes, and that is stated in the testimony.

Judge Wilkerson: All right.''

4594 I have a later exhibit in which I make adjustments to profits, and not to average investment. We have still another exhibit, our final exhibit, in which we adjust

both profits and investment. This Exhibit 51, in all
4595 three of the sheets, I have adjusted by reducing the
average investment, by taking out millions of dollars
of notes payable. I have not decreased the profits by taking
out the interest of more than fifteen and three-quarters million
dollars applicable to the very notes that I have taken
out. And the result is that my return shown in the third
column here is correspondingly higher by the effect of that
fifteen million dollars.

What has just been said with respect to Exhibit 51 applies
equally to X-52, all three sheets of it. It applies to X-53
except that the conditions are reversed, the profits are adjusted,
and not the investment. It applies to X-85. It
4596 does not apply to X-87. There are adjustments made
in X-87 to profits and adjustments made to average
investment. It applies to X-86.

4597 What was said about the Exhibits X-51, X-52, X-85
and X-86, so far as reducing the investment by excluding
notes payable to the trustee of the pension fund and
others applies equally to the exclusion by me of excess cash,
but not eliminating from profits the interest received on
such cash.

Now, about these notes payable, I did not know that
4598 from 1927 to the present time the Western Electric
Company has borrowed from the trustee of the pension
fund all of the amounts in that fund, but I assumed from the size of the notes that it was practically all of the amounts. I do not know whether any of that has been repaid or not. Before I could say whether the Western Electric has had that money borrowed continuously from the trustee of the pension fund during a period commencing in 1927 down to and including the present time, I would really have to see that it was outstanding all the time. I did know it was outstanding at the end of each year. Whether there were any repayments during the years, I don't know.

When I excluded, in my final exhibits, these loans from
the trustee of the pension fund, I took into consideration
4599 the factor, that the Western Electric Company
had had this money borrowed continuously from the
trustee of the pension fund. If the company borrows ten million dollars, not on a bond issue, but on its unsecured notes, running for two years, and it invests the money in

its business, then in figuring this average investment, I would exclude those notes, even though they were two year notes. They represent temporary working capital, not permanent capital. If they were five year notes, whether I would exclude them would depend upon the conditions under which the notes were issued, and would depend upon the purpose for which any rate of return might be shown. If the company borrowed ten million dollars for five years on notes it
was going to use in its business generally, when I ar-
4600 rive at the average investment, whether I would ex-
clude the notes depends upon specific conditions. Whether I would exclude it or not would depend upon the circumstances surrounding the individual case. I would exclude a mortgage obligation under certain conditions; under other conditions I would not. You can't generalize about such items.

I excluded the notes payable to the trustee of the pension fund in this case for two reasons. The first is, I do not see any distinction between money borrowed from the trustee of the pension fund and money borrowed from a bank. If you didn't have the trustee of the pension fund to borrow it from, you would have borrowed it from the bank. If I exclude the notes payable to the bank, I should exclude the notes payable to the trustee of the pension fund. The other reason is that the notes payable to the trustee of the pen-
sion fund are, in reality, in lieu of a reserve for pen-
4601 sion fund.

The years prior to the time the money was with the trustee, it was in the pension fund, and I excluded the pension fund, therefore I also exclude the notes; a change of form.

I believe that as a matter of fact, what the Western Electric Company does, is to borrow large amounts of money from the trustee of the pension fund, and issue its demand notes for them, and then use that money in its business. One of the reasons why I exclude that, is on the theory that it is a temporary borrowing. That is not the main reason. The main reason is that you should not include in your rate base, as a basis for an eight or ten per cent return, something that is borrowed, and upon which you are only paying 5½ or
4 per cent interest. The effect of it is to give the own-
4602 ers of the business a higher rate base. And they make

the difference between the rate of return and the rate
that they pay on the borrowed money.

4603 The fact that the loan was temporary was one reason
why I would not include it in the rate base. The sec-
ond one, it was analogous to the reserve for pension fund;
and the third, is because to include it in the rate base is to
make a profit equal to the difference between the rate of
return on the rate base and the amount paid to the trustee.
The fact that these were demand notes is one of the factors.

I understood that this pension fund money was continu-
ously in the business for a period of years. I considered all
the elements, the form of the transaction, and the substance.
I did the same with the money borrowed by the Western
Electric from the American Telephone and Telegraph
4604 Company, where there was no obligation to return it
under a year; I took that out because it was temporary.

I did not see correspondence between the presidents of the two companies, showing that in 1929 and 1930, the Western Electric had had that money for at least a year. I did not know of the correspondence, but I don't think it would have changed my calculation. That the loans are temporary is one of the factors.

"Q. I have asked you about these two, to try to show you, to try to put to you, that if the loans were in fact not temporary, but for more than a year, would you still have excluded them?

A. If they are of the type of loan that you describe, yes."

4605 Exhibits X-54 and X-55, not like the ones that we
have been discussing, are exhibits which I want to be
taken as showing what I claim to be the rate of return for
the Western. In Exhibit X-54 I excluded certain cash which
I claim to be excess cash, and excluded from the profits, in-
terest at the rate of 2.5 per cent per annum. The rate of
2.5 per cent was a composite rate which was compiled from
information shown in the report CR-714. I think it cov-
4606 ered the period from about 1916 to—up to possibly
1927. I don't recall if they went for the entire period
or not. As a matter of fact, I did not exclude the so-called
claimed excess cash in all years.

I don't know whether I could get an average of all of the years for the cash, because I would have to look at my

working sheet on that to see just how I determined the rate. I recall I only took out cash in certain specific years. The largest amount was taken out in 1925. I don't know it to be a fact that in that year the records which I say I had an opportunity to inspect showed that the Western Electric Company earned on its cash balance 5 per cent. If it is true that the Western Electric earned 5 per cent on its cash balance in 1925, then, when I applied the two and a half
4607 per cent, which was an average, to the conditions in 1925, which was one year in which I took out a large amount of claimed excess cash, I penalized the Western Electric to the extent of two and a half per cent on over twenty million dollars, amounting to over half a million dollars. I made an investigation before I determined this adjustment. My working sheets show what I did on it.

What was just said with respect to this claimed excess cash and the use of two and a half per cent is true not only with respect to Exhibit X-54, but X-55, X-57, X-58, X-61, X-63 and X-64.

4608 Exhibit X-99 is based upon an attempt to figure what the American Telephone and Telegraph Company would have earned on the dollars invested by it in the Western Electric Company without respect to the earnings of the company left in the business. Included in that exhibit, as a special item, is a special dividend paid by the Western Electric to its stockholders in the year 1927, which is treated as a receipt for the year 1927. It is set forth as a special item. I do not want to give the court the impression that the item is included with another item in the year 1927. It is set forth specially, but it is set forth in the year 1927; and shown as 88.32 per cent earning for that one thing. It includes
4609 earnings made by the International Western Electric Company and its subsidiaries and its predecessors in the foreign field from 1881 to 1927.

In Exhibit X-94 I show a number of adjustments to the 88 companies set forth in Gregory Exhibit A-85. Some of those adjustments are plus, and some are minus. I have not made any effort to find out what the effect would be upon the return shown in Exhibit A-85 for these 88 companies if I gave effect to all of these adjustments.

I think it is self-evident from the exhibit that if you
4610 make adjustments aggregating twenty-five million dol-

lars in one year, on one company, that that would have some effect on the rate of return shown for that company. And if you made the adjustment another way on another company, it would have some effect. These adjustments are not all one way. It is an easy, but a rather long job for an accountant to take these adjustments and find out how much effect it would have upon the figures appearing in Gregory Exhibit 85-A.

"Q. Yes. And as a matter of fact, it would just make a difference of three-tenths of one per cent; I put it to you whether you want to investigate that or not.

A. Well, that, of course, is subject to my counsel."

In Exhibit X-90 I make a comparison of the total operating and non-operating results of the Western Electric Company as shown in Poor's Manual, with the operating results of the Western Electric as shown on Exhibits A-77 and
A-79. In making this comparison, the investment fig-
4611 ures taken from Poor's Manual are, I believe, after re-
ductions for notes payable. It is probably correct that no corresponding reduction was made in the profits on account of interest with respect to such notes. The figures which I use here, taken from Exhibits A-77 and A-79 have not been so reduced.

"Q. Now, what you have got here is a comparison on a basis that is wholly incomparable, haven't you?

A. I have a comparison which shows that if the Western Electric Company had been set up on the same basis as the
88 companies, the result would be entirely different."

4612 When the plaintiff made its comparison in Exhibit
A-85 between the Western and 88 companies, it was made on the basis that was testified to by Mr. Gregory.

I have compared the earnings of the Western on the one hand with the notes payable out, and with no reduction on account of interest attributable to those notes; and on the other hand, I have compared it with those notes in.

The purpose of the exhibit is to show that there is not any relation between the two, not to compare them. I have no
knowledge at all as to the life in service, salvage, or
4613 any other factor affecting the depreciation rates of
the Western Electric Company on its machinery. I did not say yesterday that I had excluded from its expenses the two million dollars which the Western accrued in 1928, be-

cause I found that the average rate on machinery of
4614 these 88 companies was seven and a half per cent. I said that my understanding was that the Western Electric used a rate of 7½ per cent. And I said that my examination of the eighty-eight companies disclosed the fact that a great many of the companies—you understand, of course, all of the companies do not disclose their depreciation policy—but most of them that disclose it had rates below 7½ per cent.

I know as an accountant that each company, if it sets up its depreciation rates properly, reflects its own particular experience, except to the extent that it does use the experience of companies in similar lines of business as a guide. A particular manufacturing company can have an experience with respect to depreciation that is identical with another
4615 manufacturing company if they are in the same line of business. If the Western Electric Company makes central office equipment, and Stromberg-Carlson makes central office equipment, the depreciation rate of the two companies on machinery is not bound to be identical. Each company adopts its own basis but it is very likely the rate should be somewhat similar. All I said about the rates for the Western Electric was the fact that their rates in the main, are higher than other companies. I express no opinion as to the propriety of the Western Electric's rates.
4616 I have excluded two million dollars from the expenses of Western Electric in the period 1923 to 1930 because, in 1928, they changed their rates from 7½ to 10 per cent and made it retroactive for four years.

I have my own opinion as to whether 10% was a proper rate. The opinion is not based on nothing; it is based on rates in use by other manufacturing companies and not on the Western's experience at all. I have not been in any of the Western Electric Company's manufacturing establishments.

4617 I have used the term "Excessive depreciation." That merely connotes the difference between the dollars resulting from the rates actually used by the Western Electric, and such sums as have been allowed up to date by the Government to the Western for the expense of depreciation in its income tax returns.

The term "excessive depreciation" is merely to distinguish it from "extraordinary depreciation" and to note the difference between the Western's rates and those allowed by the Government for income tax purposes.

Exhibit X-69 is an attempt to show the earnings of 4618 the International Western on the dollars originally invested in its business by the Western Electric Company, whereas X-67 is an attempt to show the earnings of the Western on its original dollar investment in the International. I think the exhibits speak for themselves. In column 3 of this exhibit, underneath "earnings" there appears the sum of $3,458,000, with a note to it. I don't know whether or not this figure includes a special dividend from the Western Electric Company, Limited, of Canada, of $3,028,000. I do know that there was a dividend income included in that year. I am not familiar with the names of the companies from whom the dividends were received. I merely know there is dividend income in that year. I don't know whether that represents earnings of a subsidiary of the 4619 International Western Electric Company, not only during this period 1918 to 1924, in this particular case, but long prior thereto. In have included this, and I have no knowledge as to what the fact is, as to whether the earnings represented by that dividend were made in a period long prior to this. In considering the rate of return, I have treated it as of this particular year. I have included in the Western Electric Company's average investment shown on this exhibit only its stock investment. If I had added loans made by it to the International Western Electric, and then increased its net earnings, by the amount of the interest, whether the result would have been a much lower rate of return would depend upon whatever the facts show. I have not made the calculation.

4620 If the rate of return paid on these loans was less than the rate of return shown by this statement, it would reflect the result. I don't know whether it was lower or not. I did not say that they paid an average rate of interest as high as 18 per cent. I said I didn't know what effect it would have. If the rate of interest paid on these loans was less than 6 per cent, then the inclusion of these loans, if materially large, as a part of the investment, and adjusting the earnings for the interest would result in materially reducing the calculation which I have shown in this exhibit.

4621 In Exhibit X-82, I have assumed a 10 per cent return on the average investment of the Western Electric Company as shown in Mr. Gregory's exhibits and have proceeded to arrive at the per cent return on this assumed basis, first, on the average capital stock, and second, on average capital stock and surplus applicable to operation. I don't know the operating earnings of the Western Electric Company in this period or whether they were 8½ per cent instead of 10. The purpose of this statement is not to

4622 tie them up with the actual earnings at all. I don't know what the computation is as to the extent that the computed returns are higher than the actual. For the year 1930, I show a 10 per cent return of $28,935,000. The actual earnings for that year, as shown on the Gregory exhibit, were $12,934,000 or about 4½ per cent of the total business; so what I am really doing here is to assume 10 per cent return that the Western said was the proper return on its business, and set it up in this exhibit to show what the result would be if that return had been realized, although it was not in fact realized.

(June 9, 1932.)

4623 I have referred to the provisions of a preferred stock certificate of the Graybar Electric Company, which gave to the Western Electric as the holder of preferred stock of Graybar a certain participation in net earnings. Net

4624 earnings is defined in the certificate itself. (Counsel reads from said certificate as follows):

"The term 'net earnings' as used in Sub-Division 1 of Sub-Paragraph A, shall be deemed to mean, net earnings as determined under the corporation's established accounting methods, and after the deduction of the following items:

A. All taxes except United States Income Taxes.

B. Payments into the Pension Fund of the corporation, covering the current accrued liability, pursuant to the provisions of the corporation's plan for employes' pensions, disability benefits, and death benefits, but excluding payments to make up deficiencies in said Pension Fund.

4625 C. Cumulative dividends upon preferred stock.
D. The sum of $150,000 for each year."

The following exhibits which have been identified during the course of my examination are based on the stockholders' original investment, without regard to undistributed earnings left in the business; X 67 relating to the International Western Electric; X 69, International Western; X 72, the top block of that exhibit relating to Graybar; X 79 relating to Electrical Research Products in so far as
it affects the first computation, there are two computa-
4626 tions, one is on the basis of the original investment,
and the other gives effect to the accumulation of earnings; X 82, one column is Capital Stock, and the other is Capital Stock and Surplus; X 81, Northern Electric, which is based on the original investment.

In Exhibits X 86, X 87 and X 88 I have made an adjustment of $2,000,000 on account of the sale of certain property by the Western Electric to the Bell Telephone Laboratories in the year 1925.

In Exhibits X 83 to X 88 I have included in the profits of the Western Electric Company as adjusted, either in whole or in part, the profit resulting from the sale of the International Western Electric, which I have heretofore discussed.

4627 The exhibits are not all comparable as to the question of net profits. Exhibits 83, 84 and 85 are on one basis, and 86, 87 and 88 are on a different basis.

Exhibit X-84 is "Consolidated average investment, prof-
its and per cent of return of Western Electric Com-
4628 pany and its subsidiaries." In the year 1930 I bring
the Teletype into this consolidated statement. I brought in the same companies that the Western Electric Company itself brought in, in making up its consolidated statement. If the Teletype is in Mr. Gegory's figures, it is in these figures. I arrived at the average investment here, by taking the average investment at the beginning and the end of the year, and dividing it. The Western Electric Co.
purchased Teletype for approximately $30,000,000.
4629 There is an item of $23,000,000 appearing on the books
of Teletype for good will. I believe that I excluded that item in this exhibit. The net result of that was that I have reduced the investment appearing in this consolidated re-

turn by one half of $23,000,000 for the year 1930. I did that because there is an item of good will appearing on the Teletype books, although Western paid $30,000,000 in cash for Teletype. I gave the same treatment to this Teletype situation as I have described in Exhibit X 84, also in Exhibits X 85, X 87 and X-88.

4630 *Redirect Examination by Mr. Goldstein.*

Referring to a question on cross-examination relative to the $1,400,000 Graybar Pension Fund, provided for in the year 1928, as to whether or not it was included in non Bell operating expenses, I have made an investigation since yesterday to find the fact. I find that in Exhibit D-19, which has been previously introduced, the item of $1,400,000 appears, in the column "Additions to Employes' Benefit Fund," under the general caption, "Non-Bell Customers," in the year 1925, as a charge against the Non-Bell operations of that year. There is a footnote in D-19 which states specifically that the additional liability for Pension Fund which is charged as a non-Bell operating expense, has
4631 reference to this particular $1,400,000. The footnote reads, "Include $1,400,000 reserve for Graybar Electric Company, Inc., Pension Fund."

I was asked about my change in the method of making the allocation of the Pension Fund accruals prior to and subsequent to 1925. I have investigated my records and I find that when I made the allocation I had before me a copy of Exhibit D-19, entitled, "Western Electric, Inc., Analysis of Cost of Sales by Bell and non-Bell Customers." It covers the years 1916 to 1930, inclusive. That was furnished by the Western Electric.

4632 I found that in the years prior to 1925, there was no direct allocation made by Mr. Gregory of the amount added to Employes' Benefit Fund, whereas for the years 1925 to 1928, there appears in the column "Additions to Employes' Benefit Fund" amounts representing the amount allocated both to Bell and non-Bell customers in those specific years.

With reference to pension fund liability taken up as part of the shop cost in the year 1916 to 1925, D-19 shows nothing, but Exhibit D-72 indicates that the Pension Fund liability was taken up as a part of the shop cost, and was there-

fore on Mr. Gregory's basis distributed on the shop cost
of sales.

This shop cost of sales is included on this Exhibit D 19 in
one column, and that was the basis used by me in allocating
the Pension Fund adjustments in the years 1916 to 1924.
That is, I follow the shop cost of sales, because for that pe
riod it indicated that they were included in shop cost of
sales, and shop cost of sales was distributed between non
Bell and Bell on the basis of cost of sales.

4633 On cross examination I was asked what annual re
ports I had in mind when I testified on direct exam
ination as to the reason why I made the allocation of profit
in 1925, on the sale of the International Western, to the pe
riod from 1918 to 1925. I have made an investigation as to
those records and found that the annual reports which I had
in mind were the annual report for the year 1914, the sec
ond page beginning with the paragraph, "It will be impos
sible," and the annual report for the year 1917, the para
graph beginning at the bottom of page 1 and ending on page
2, and the annual report for the year 1918, the comments in
the president's letter under the heading of "Foreign," and
the annual report for the year 1919, the comments in the
president's letter under the heading of "Foreign."
4634 Also in the report for the year 1917 it states that there
was no return on foreign investments. The profits
prior to 1918 were capitalized in the $7,500,000 investment
set up in 1918, and my contention is that the profits from
1881 to 1918 were either taken out by the Western Electric
Company as dividends during that period, or capitalized in
the investment of $7,500,000 set up in 1918.

(Motion to strike what witness' contention is. No rul
ing.)

4635 The $7,500,000 had to come from some place.
4636 We do not have any different practice in our firm
as to certifying statements than the practice of other
accountants generally. In the instant case I was not
4637 given free access to all of the books, records, files and
contracts without restrictions. When we first began
our work we were informed that all of the information that
we required in connection with the exhibits, which we were
to check, was contained in certain data which was made
4638 available to us by Mr. Gregory, that is, the working

papers. In some cases there were things that I wanted, and called for, that I did not get.

I had a conversation with Mr. Gregory with reference to access to the records, and the procedure which was to be followed with reference to getting information. I do 4641 not recall the identical conversation, but the substance of it was to the effect that any records of the company that we desired, or books, we would have to ask for, and 4642 in most cases we were requested to put them in writing, and after putting them in writing, and submitting them to Mr. Gregory's office, we were frequently told that the request would have to be submitted to counsel before we could be given an answer.

In request No. 11 B, I asked for permission to examine the Journal with reference to the Journal entries pertaining to extraordinary depreciation for the years 1924, 1925, 1926 and 1927.

"Q. And were you given permission to make the ex- 4643 amination?

Mr. Thompson: Those are the Journal entries—pardon me. Those were the Journal entries that you introduced in one of your exhibits here in court?

Mr. Goldstein: He was furnished them; he was not given permission to examine anything."

4645 I made requests for documents from the Western Electric Company. My conversation was usually with Mr. Gregory.

4647 In apportioning the reserve for depreciation between Bell and non-Bell business, about which I was asked on cross-examination, I used the plant apportionment as calculated by Mr. Gregory. The apportionment of the depreciation reserve in connection with the exhibit in which I used the plant apportionment, was solely to give effect to the apportionment of the adjustment for depreciation reserve.

(Counsel agree that "Erpi" means Electrical Research Products, Inc.)

4648 "Q. You were asked yesterday about the Erpi Foreign Investment. Did that Foreign Investment come from the earnings of the Electrical Research Products, or the original investment of the Western Electric Company?

A. Yes."

4649 Since cross-examination I made an investigation as to the basis upon which the Pension Fund accruals were built up as used in Exhibits A-77 and A-79. I found that the Pension Fund accruals as used in Exhibit A-77 and A-79 were built up of a charge against operation of the total required accruals, excepting a limited rate of income represented by the interest paid to the trustee of the Pension Fund.

(Counsel for city states that they are not passing on what is or is not required nor on any actuarial question.)

4650 I am merely stating that the total additions to the Pension Fund in those particular years represent the amount which the Western Electric appropriated, plus the amount of 5.5 per cent interest, or whatever rate was paid to the trustee of the Pension Fund. If the Pension
4651 Fund should earn more interest, than the rate of interest computed as a basis for the accrual charges, the accrual charges to operating earnings would be reduced to a corresponding amount.

When I was asked on cross-examination if the $48,000,000 dividend came from non-Bell business from 1881, and I answered "Yes," I had in mind Exhibit D-61, which showed such a possible source, and did not have any other facts upon which I could base a conclusion as to the source of this dividend, as the data supporting Exhibit D-61 were refused me.

4652 Exhibits X-55 and X-88 give the final conclusion of all the adjustments on Bell and non-Bell business, and on the company as a whole, both as to the rate base and as to profit.

4655 "Judge Wilkerson: Now, about this matter of inspection; this matter of the inspection of books has come up right along here in this case. As I have said before, the court does not propose to have this case go off and come back here again on any question of the inspection or production of books. Hard as it may be in the hot weather, if necessary we will stick with this thing until every reasonable requirement has been complied with. If counsel will bring the mat-
4656 ter to our attention, and have a specific complaint about what it is that they wanted to see, and could not see; or if there are any documents in here that represent—a summary of the books, why, of course, they are entitled to see the

books. Now, there has been a large number of indefinite complaints made here, and I do not know for what purpose—whether it is to base an argument upon, that after all, this case will have to come back here again, and be heard over, because the court had made a mistake in not compelling the inspection or production of books. Now, we do not intend to have this case go off in that way.—And I will say that if it takes all summer we will stay here to make a record on that; but we expect to have our attention called to specific things about which complaint is made. * * * I think this:

4657 I think either the matter should be brought before the court in some concrete way, in which the court is invited to rule with reference to specific books, as to which access has been denied, or the leveling of these general accusations should stop in this case.

4658 Mr. Goldstein: Just as bearing upon the question of the state of the record, there are two angles to the question of the refusal. One is, if the information is part of the case of the plaintiff, we have a right to show the refusal to give us access, not for the purpose of having the case reversed, because it is not there, but as bearing upon the question as to whether they have made the proper proof in a case where they must show confiscation.

4659 But if the facts are not in the record, and the question is, shall the court take judicial notice of certain practices in their own experience, and they say because—their witnesses testify that "because of our experience over a period of years, we find that so and so," and we show that we tried to get at specific facts, and they have refused them, in our opinion that has a bearing as to whether or not they have—their testimony of the general practice should be accepted."

4661 *Recross Examination by Mr. Thompson.*

I started my work of examining the records of the Western Electric Company in this case about the last week of December, 1931. I have had three assistants at times; most of the time I have had two. Mr. Whitworth, one of the Chicago partners of Touche, Niven & Co. has also been engaged in the case. We keep a record of the day's work that we have spent.

(Counsel for Plaintiff asks for said time record and defendants' counsel agrees to furnish it.)

4662 I was here part of the time when Mr. Gregory testified; not all of the time. I have not examined pages 4,

5, 6, 7 and 8 of Exhibit A-73 introduced by the plaintiff in this case which purports to show statements submitted directly to Touche, Niven & Company, from December 29, 1931 to February 26, 1932, in New York; then submitted to
4663 Touche, Niven & Company January 18, 1932 to March 9, 1932, at the Hawthorne Works, to find out whether that is a correct statement of information which had been furnished to us up to the date these sheets bear. I will find out whether that is correct or not.

I do not know whether it is a fact that the Western Electric Company broaght into this court-room at the time Mr. Gregory was on the stand, five ledgers of the Western Electric Company, 16 journals and 29 cash books, or a total of 50 books of the Western, and all of the other books that are listed, all of the other records of its subsidiary corporations that are listed on A-74, together with 102 folders of
4664 work papers. After the first hearing in this case, the books were taken back to New York and at my request records were held in New York for three or four days before they were sent back here, because we were engaged in an examination of the underlying data that had been used in Mr. Gregory's exhibits. I do not know how many records or whether all of them were held there.

I believe plaintiff was called up in Chicago and told that it would be a great accommodation to us if those records could be held in New York. However, I did not call you. I had
4665 an office at 195 Broadway. I think we occupied it during the months of January and February, and again for about two or two and a half weeks in April. That was furnished by the Western Electric Company. We used it for the purpose of examining the Western Electric books and records there. They prepared a lot of statements in response to requests. I did not ask them to prepare statements. In some cases I asked them for certain things and they of their own volition supplied the statements.

When the question arose out here as to a reconciliation of shop variations and other adjustments, I believe that Mr. Hagberg and the accountants of the Western Electric
4666 Company worked together. He was furnished with an office at the Illinois Bell Telephone Company. I cannot say many of his assistants worked there or for what period of time, because I was not present. I went over there to the

building once or twice and spent about a half an hour. I believe that a large amount of records and work sheets and data were made available to Mr. Hagberg over there.

I cannot say offhand how many days we occupied the office in New York. Our men were there week in and week 4667 out. I don't know how many days our forces occupied quarters of the Illinois Bell Telephone Company, because I was in New York a good part of the time.

4668 "Mr. Thompson: I call your Honor's attention to the fact that Mr. Gregory, when his exhibits were offered in evidence, had in court, and the record so shows, all of the books and records of the Western Electric Company and its subsidiaries referred to in Exhibit A-74, and also 102 binders containing his working papers, and that no objection was made to the introduction in evidence of those exhibits on the ground that any information had been denied to the defendants."

R. C. RAINWATER, called as a witness on behalf of the 4737 defendants, having been first duly sworn, testified as follows:

Direct Examination by Mr. Goldstein.

(June 10, 1932.)

My name is R. C. Rainwater. I reside at Wheaton, Illinois. I am a licensed public accountant, occupying the position of Examiner of Accounts for the Illinois Commerce Com- 4738 mission. I have occupied that position about 11 years.

Three years before coming to the employment of the Illinois Commerce Commission, I was accountant for the Southern Illinois Light & Power Company, an Illinois corporation operating public utilities in this State.

As Examiner of Accounts for the Illinois Commerce Commission I examine the accounts, books and records of the various Public Utilities under the jurisdiction of the Illinois Commerce Commission, upon direction by the Commission to make such investigation whenever the Commission consider it necessary, and prepare reports based thereon. I have been actively engaged in the preparation of the present case on behalf of the Illinois Commerce Commission.

"Mr. Goldstein: I offer in evidence Defendants' Exhibit X-103, entitled 'A. T. & T. Co. (excluding long lines)—Analysis of the Estimated Costs of (1) Carrying invest-
4739 ment in physical property used in rendering license contract services, (2) Holding funds available during period to meet cash requirements of licensee companies and (3) Temporary financing of the licensee companies,' for the period 1919 to 1931.

Also, X-104, entitled 'A. T. & T. Co.—Statement of total revenues and expenses showing separately (1) Long Lines Department Operations, (2) License Contract Operations, and (3) Holding Company Operations, Schedule 3001 of Report to the Interstate Commerce Commission,' for the period 1920 to 1931. These sheets were sent by the American Telephone & Telegraph Company to the defendants. The sheets 1923 to 1930 are at the offices of the Illinois Bell Telephone Company, and I would ask that they be produced, that they produce them and attach them as a part of this exhibit.

Also, Exhibit X-105, entitled 'A. T. & T. Co.—Statement of average assets, showing separately, (1) Long Lines Department Operations, (2) License Contract Operations, and (3) Holding Company Operations, Schedule 200-A of Report to the Interstate Commerce Commission,' for the years
4740 1920 to 1931. The sheets for the years 1923 to 1930, inclusive, are at the offices of the Illinois Bell Telephone Company, and we will have them produced, and attached as a part of this Exhibit.

Also, Exhibit X106, a document prepared by the American Telephone & Telegraph Company, entitled 'A. T. & T. Co. —Allocation of Taxes, 1923-1930,—Heiss Exhibit No. 10. Analysis of Taxes 1920-1930,' consisting of three sheets, and being an analysis of taxes for each year 1920 to 1930, inclusive.

Also, Exhibit X-107, a statement furnished by the American Telephone & Telegraph Company, entitled 'A. T. & T. Co.—Instrument Maintenance, Years 1923-1927—Heiss Exhibit No. 10,' the corresponding sheets for the period 1920 to 1922 being at the offices of the Illinois Bell Telephone Company, to be attached as a part of this Exhibit."

The Witness (continues): Exhibit X-108, entitled "A. T.

& T. Co.—Average Cost of Funds used in Business" for each of the years 1920 to 1930, inclusive, was prepared by me or under my direction.

4741 All of the figures shown in X-108 were furnished by the Company excepting those in the column marked "Per Cent" and the figures in the line marked "Total" immediately preceding the line marked "Grand Total."

The figures in the "Per Cent" column were computed by me and represent the per cent of the various items of sources of funds to the "Grand Total" of funds used in the particular year in the business.

The second "Per Cent" column contains the per cents of the various items of dividends, interest and amortization charges to the "Grand Total" of such charges during each of the years.

The line "Total" immediately preceding "Grand Total" represents the sum of the items designated as "Funded Debt," "Loans from Associated Companies, Loans from Bankers and Notes Payable to Pension Fund Trustees," during each of the years 1920 to 1930, inclusive, and the per cent that the total of these items bears to the "Grand Total."

Exhibit X-109, entitled "A. T. & T. Co.—Computation of Annual Cost of Furnishing Telephone Instruments to Chicago Division of Illinois Bell Telephone Company, Year Ended December 31, 1923,"—was prepared by me or under my 4742 direction.

The figure under "Totals all Licensees"—10,030,484—was computed from a sheet entitled "Average Number of Stations in service for each company receiving the license contract services, years 1923 to 1930, inclusive."

The figure [illegible]60,927 was also taken from the same sheet furnished by plaintiff.

The third line, "Per Cent Chicago Division"—6.589 per cent—is a mathematical calculation of the relation of 660,927 to 10,030,484.

The figure $31,329,013, representing the American Telephone & Telegraph Company's average investment in telephone instruments, was taken from X-103; and the amount of $2,064,269 represents the Chicago proportion, using the percentage shown above.

The average depreciation reserve, $14,971,542, was computed from D 100 and computed on the basis of the average of the balances for the beginning and ending of each 4743 year. The portion of depreciation reserve shown in the last column under Illinois Bell—Chicago Division—is the result of applying the percentage 6.589.

The average investment in telephone instruments, less average depreciation reserve, $16,357,471, for all licensees, and $1,077,794 for Illinois Bell Telephone Company—Chicago Division—represents the average investment computed in the manner already described, less the average depreciation reserve also computed in the manner described. This is the same basis of determining the investment in telephone instruments as used by Mr. Heiss in Exhibit A-166.

The figure $74,044 represents the return on the average investment in telephone instruments less depreciation reserve at the same rate which Mr. Heiss calculated to be the annual cost of the funds for the year 1923, shown in X-108, and which is also used by him in A-166.

Repairs $1,086,422 was taken from X-107, and $71,584 is the portion thereof allocable to Chicago division.

Depreciation Expense $2,133,172 was taken from X-107 and the portion allocable to the Chicago Division is shown in the last column.

4744 Taxes, $54,720, was taken from the books of the Illinois Bell Telephone Company.

Insurance and Contingencies, $21,556, is an amount which has been added to correspond to the estimate which the company used in its set-up of estimated annual charges for the year 1923 at the former hearing, as shown in Rec., Vol. 3, p. 1038.

This Exhibit X-109 shows in the last line that the annual cost of furnishing instruments for the year 1923 was $362,459, which includes all the expenses, such as depreciation, maintenance, taxes, insurance and contingencies, and provides a return on investment equal to the annual cost of funds to the American Telephone & Telegraph Company during the year 1923—such cost of funds being the amount which the American Telephone & Telegraph Company has represented to be the annual amount paid by it currently on funds used in its business which were derived from its funded and other indebtedness and from its capital and surplus; and includes dividends paid by the American Telephone & Telegraph Company at the rate of 9 per cent.

Exhibit X 110, entitled "Illinois Bell Telephone Co.—Chicago Division Comparison of Company's Tabulation, Records Vol. III, 1038, of Annual Cost of Furnishing Telephone
4745 Instruments with Commission Accountants' Computation, as per sheet attached, of Annual Cost of Furnishing Telephone Instruments for the year ended December 31, 1923," was prepared by me, or under my direction.

The figures shown in the first column entitled "Company's
4746 Tabulation (Rec., Vol. III, p. 1038)," amounting to $709,007, were taken from the Company's tabulation offered at the former hearing in 1929, being the annual cost of telephone instruments if the Illinois Bell had owned the instruments in that year.

The first column represents the showing by the Illinois Bell at the former hearing of what the annual cost would be on the basis of the Illinois Bell purchasing the telephone instruments in the year 1923. The figures shown in the second column, entitled "Commission Accountants' Computation, as per X-109," represent a reproduction of the annual cost as shown in X-109. They are the same figures as were shown in the preceding exhibit. The figures in the third and fourth columns represent the amount and per cent of excess of Company's tabulation over Commission Accountants' Computation.

Exhibit X-110 shows that the Company's tabulation used for the average investment in telephone instruments in the Chicago area was $3,494,271; that the American Telephone & Telegraph Company's actual investment, as shown
4748 in the Commission Accountants' computation per X-109
for these same telephone instruments was $2,064,269; and that the Company's tabulation of what the investment would have been if the Illinois Bell were the owner of the instruments purchased in that year of them exceeded the American Telephone & Telegraph Company's actual investment in such instruments by $1,430,002 or 69.27 per cent excess.

The figures in the first line are on the basis of comparison of undepreciated investment on the books of the American Telephone & Telegraph Company, in the second column, with the Illinois Bell's presentation of the cost—what the cost would have been if purchased in the open market, that is before depreciation.

The second line shows that the Company's tabulation in 1923 did not include any depreciation for the telephone instruments at all but considered that the instruments which would be in use in that year would be new instruments purchased in the open market.

4749 The amount of $986,475 is the portion of the depreciation reserve shown on the books of the American Telephone & Telegraph Company, allocable to its investment in telephone instruments in that year in use in Chicago, making a net investment of $1,077,794, as compared with the Company's tabulation of $3,494,271. When I say "Company's tabulation," I mean the Company's tabulation of what the investment would have been on the basis of its purchase,—that is $3,494,271 as per the company's tabulations as compared to the American Telephone & Telegraph Company's investment after depreciation reserve of $1,077,794.

The Company's investment figure is $2,416,477 in excess of the American Telephone & Telegraph net investment, or an increase of 224.21 per cent, all as shown in the third line. The figure $279,542 represents the number of dollars resulting from the Company's calculation of 8 per cent return on investment.

4750 The figure $74,044 is the return on investment to the American Telephone & Telegraph Company based upon the annual cost of funds of 6.87 per cent, as shown in X-108. The amount of $205,498 represents the excess of the return on investment as computed by the Company's tabulation at the 1929 hearings over the return on investment to the American Telephone & Telegraph Company based upon its annual cost of funds, or an excess of 277.53 per cent.

The figures for repairs, depreciation, taxes, insurance and contingencies shown under heading "Exesss of Company's Tabulation over Commission Accountants' Computation" represent the subtraction of column 2 from column 1 and the per cent of excess of column 1 over column 2.

4751 The line "Total Annual Cost of Furnishing Telephone Instruments," shows that on the Company's Tabulation at the 1929 hearings the annual cost is computed at $709,007, and the computation made on the basis of the actual investment of American Telephone & Telegraph Company in telephone instruments, results in an annual cost of $362,469, including therein a return on investment at the rate of the annual cost of funds, which would produce an excess annual cost for the year of $346,548, or 95.61 per cent in excess of the cost shown in X-109. That is, the $709,007 which the Illinois Bell at the former hearing said would be the annual cost if it were the owner of the instruments, compares with $362,459 which was the actual annual cost to the American Telephone & Telegraph Company for those instruments in that year based upon a return to it of 6.87 per cent, enough to take care of its carrying charges, and the 9 per cent dividend allocable to that investment—and left an excess of $346,548.

4752 The figures designated as "Average Cost of Furnishing Instruments per Telephone Station in Service" are the annual costs expressed in dollars per station, showing $1.07 per company's tabulation in 1929, 55 cents per tabulation in X-109, and resulting in an excess, on the Company's tabulation, of 52 cents per station. That is the Company's presentation in 1929 was $1.07 per station, and the American Telephone & Telegraph Company's actual experience was 55 cents per station.

The figures opposite the line "Average Investment in Telephone Instruments per Telephone Station in Service" show that on the Company's tabulation the average investment per station was $5.29, before depreciation, and the tabulation in X-109 shows the investment to be $3.12, resulting in an excess of the Company's computation of $2.17 per station.

4753 On the basis of the American Telephone & Telegraph Company's actual investment less depreciation reserve, the figure is $1.63 per station. The Company's tabulation shows an excess investment of $3.66 per station. That is, the Company's figures in 1929 used as a basis an investment of $5.29 per station, and the American Telephone & Telegraph Company's actual investment was $1.63 per station.

4754 Exhibit X-111, is entitled "A. T. & T. Co.—Amount of Return on Investment in Telephone Instruments shown by Company's tabulation—Rec., 1038—related to amount of investment in telephone instruments shown by Commission Accountants' computation during year ended December 31, 1923."

4762 Item 1, "Average Investment in Telephone Instruments less depreciation," amount of $1,077,794 was taken from X-110. Item 2, "Return on Average Investment at Rate of Cost of Funds," 6.87 per cent, was taken from X-110.

4763 Item 3, "Additional Profit to American Telephone & Telegraph Company for corporate surplus," was taken from X-110, and represents the excess of the return on the basis of the Company's tabulation in 1929, over the cost shown in X-109.

Item 4 is the total of Items 2 and 3 and shows that the total return to the American Telephone & Telegraph Company on its net investment resulting from the Company's tabulation of annual cost of $709,007 would be $420,592, which is 39.02 per cent on what its net investment was in the year 1923.

Item 6 shows that the figure of 39.02 per cent on its investment in telephone instruments results in a return to the American Telephone & Telegraph Company's stockholders on their proportionate stock investment of 59.53 per cent after taking care of interest on funded debt, and amortization charges.

In the M. R. reports 1, 22-A, 22-B, C. R. 51-A, 53, 67, 67-B, 76 and 97, in Provisional Estimate Statement E, in Annual Report to Stockholders of the American Telephone & Telegraph Company and in Bell Telephone Securities Manuals used by the American Telephone & Telegraph Company, I found a showing of return on capital stock similar to the return that I have expressed in the percentage 59.53. 4764

In Exhibit X-112, entitled "A. T. & T. Co.—Per Cent of Return on Investment in Telephone Instruments used by the Illinois Bell Telephone Company, Chicago Division, per Exhibit A-200"—that is Plaintiff's Exhibit A-200 in this hearing—"Fair Allowance for Telephone Instruments in Chicago Division (Exhibit A-163), Less Costs already included during Years 1923 to 1927, inclusive (Costs shown in Exhibit A-170)," Item 1, under "Net Investment in Telephone Instruments, American Telephone & Telegraph Company," was taken from Plaintiff's Exhibit A-166.

Item 2, "Investment Allocated to Long Lines" was computed from A-166, using the percentages shown therein.

4765 Item 3, "Investment of Associated Companies" represents Item 1 minus Item 2.

Item 4, "Investment Allocated to Chicago Division," was computed from A-166 on the basis of percentages therein.

Item 5, "Return on Investment, Chicago Division," was taken from A-166 and is the return on investment at the rate of annual cost of funds to the American Telephone & Telegraph Company, which rate is shown on Line 6, and includes the payment of a dividend of $9 per share on the capital stock after taking care of interest and amortization charges.

Item 6—"Per cent of Return on Investment, Chicago Division," is at the annual rate of cost of funds taken from A-166.

Item 7 is the amount of dollars of additional return in excess of the return equal to the annual cost of funds which is included in the amount of fair allowance on telephone instruments in A-200, as claimed by Mr. Heiss.

Item 8 is the per cent of additional return on invest-
4766 ment represented by additional return shown in line 7.

Item 9 shows the total number of dollars return included in the computations in A-200 of fair allowance on telephone instruments.

Line 10 shows that the amount of return included as part of the fair allowance on telephone instruments by Mr. Heiss, results in a return in the year 1923 on the net investment of the American Telephone & Telegraph Company of 20.40 per cent; in the year 1924, 20.80 per cent; in the year 1925, 20.20 per cent; in the year 1926, 18.34 per cent; and in the year 1927, 17.31 per cent.

4767 I will explain what I mean by the words in Item 7; "Additional Return on Investment." Exhibit A-200, Item D, Line 2, refers to fair allowance for telephone instruments in the Chicago Area, Exhibit A-163, less costs already included in Item B above. For the year 1923 that amount is $145,625. This figure is from the exhibit offered by Mr. Heiss, designated as A-200. Now in another exhibit that Mr. Heiss offered, Exhibit A-163, he computed the cost of furnishing the telephone instruments. The "Investment" referred to in
4768 Exhibit X-112 is the allocated proportion of book investment of the American Telephone & Telegraph Company, less the average depreciation reserve shown on its books.

4769 "Judge Wilkerson: Why do you call it a return?

Mr. Goldstein: I will explain it, if your Honor please. When Mr. Heiss was on the witness stand, if your Honor will recall, I asked Mr. Heiss this question:

'If you add $145,000 in that column, Fair Allowance to the amount you already show in A-163, which itself included a return on the investment of 6.87, how much would the entire amount be, available for return on the investment in telephone instruments?'

And he said: 'I could not figure it out mathematically.'

4770 Judge Wilkerson: And so you have had it figured out.

Mr. Goldstein: We have had it figured out.

Mr. Blackman: So that your Honor may understand the whole thing, Mr. Heiss proceeded to build up his costs, which he said was the actual cost of the operations on the license contract. In that, he found that the instruments had cost so much, and that there had been so much of reserve set aside. He deducted the reserve from the original cost, and he said, the American Telephone & Telegraph Company has that much investment today in those instruments, or it did in 1923 to 1927.

Then he took a rate of the cost of money, and he applied it to that balance of investment. Now, he says that is what it cost the American Telephone & Telegraph Company, as a minimum, or any principle. But, he says, if we are determining whether that is a fair contract or not, on any basis, the American Telephone & Telegraph Company would be entitled to charge for those instruments precisely what the Illinois
4771 Bell did.

Judge Wilkerson: The term 'return' does not refer to any actual return.

Mr. Blackman: No, and it is very misleading.

Judge Wilkerson: And the term "investment" refers to no actual investment.

Mr. Blackman: That is correct.

Judge Wilkerson: You mean, then, this is an exhibit which you propose to use, when you come to discuss Mr. Heiss' testimony?

Mr. Goldstein: That is correct.

Judge Wilkerson: All right.

Mr. Goldstein: That is correct, to show what it would lead to."

(Statement by Mr. Goldstein.)

4773 "Exhibit X-113, entitled 'A. T. & T. Co.—Percent of return on investment in telephone instruments used by Illinois Bell Telephone Company, Chicago Division, if total return is reduced by amount of taxes on instruments during years 1923 to 1927 inclusive' is the same as X-112, but gives credit for taxes for which the American Telephone & Telegraph Company reimbursed the Illinois Bell, and which Mr. Heiss did not put in, in his exhibit, either by oversight or otherwise, and reduces the amount of that return by that amount."

(Witness continues.)

4774 Exhibit X-114 entitled "A. T. & T. Co.—Percent of return on investment in telephone instruments used by Associated Companies, per Exhibit A-198, 'Fair Allowance for Telephone Instruments, Exhibit A-202 less costs shown in Exhibit A-170,' years 1923-7" was prepared in exactly the same manner as X-112 excepting that it covers the return to the American Telephone & Telegraph Company on its net investment in telephone instruments held for the Associated Companies, resulting from the fair allowance which Mr. Heiss claimed in Exhibit A-198.

4779 Line 9 shows per cent of total return on telephone instruments investment in Associated Companies (Item 8 divided by Item 3), for the year 1923, 21.17 per cent; for the year 1924, 21.23 per cent; for the year 1925, 21.03 per cent; for the year 1926, 19.27 per cent; and for the year 1927, 17.82 per cent.

Item 7, Exhibit X-112, is called "Additional Return" because in Exhibit A-163, an amount of return had already been allocated at the rate of the cost of funds, amounting to $73,948; so this is an additional return on investment.

The last line merely converts those returns to a return on capital stock.

4780 In Exhibit X-115, entitled "A. T. & T. Co.—Comparison of claims of Plaintiff for return on investment in Telephone Instruments used by Ill. Bell Tel. Co.—Chicago Division—with A. T. & T. Co.'s actual experience for year ended December 31, 1923," the figures shown in column A designated as "Presentation during the year 1929, Rec., Volume III, page 1038" were taken from the record page designated at the heading of the column.

4781 "Judge Wilkerson: All you have to do is to have him say he got the figures from the sources stated in the exhibit and that the computations in his opinion are correct. These exhibits seem to be plain and explain exactly where the figures came from."

4782 I think the sources from which the figures in X-115 were taken are all shown on the face of the exhibit, and, in my opinion, the computations are correct.

In Exhibit X-116, entitled "A. T. & T. Co.—Profit of

4783 Furnishing Telephone Instruments to Chicago Division, Illinois Bell Telephone Company, on Basis of Annual Allowance of $1.13 per Station made by Public Utilities Commission in Order of December 20, 1920," the figures Average Stations in Service, for all licensee companies, and the total for the Illinois Bell Telephone Company, Chicago Division, were taken from the sheet furnished us by the company, showing the average number of stations in service.

4784 Exhibit X-116 is prepared in a similar manner to X-109, and the sources are the same.

In X-117, entitled "A. T. & T. Co. —Computation of Annual Cost of Furnishing Telephone Instruments to Chicago Division of Illinois Bell Telephone Company, Year ended December 31, 1920," the sources for the figures are the figures furnished by the Company, or the Public Utilities Commission order itself. The computations in my opinion are correct.

The sources for Exhibit X-118, entitled "A. T. & T. Co.—Percent. of Return on Investment from Furnishing Telephone Instruments to Chicago Division of Illinois Bell Telephone Company on Basis of Annual Allowance of $1.19 per Telephone Station made by Public Utilities Commission in Order of December 20, 1920, during year ended December 31, 1920," are the same as for Exhibit X-117, and in my opinion the computations are correct.

In Exhibit X-119, entitled "A. T. & T. Co.—Percent. of Excess of Average Current Cost of Telephone Instruments used by Illinois Bell Telephone Company, Chicago Division, shown by Plaintiff's Exhibit A-163, over Book Cost computed from Plaintiff's Exhibit A-166, during years 1923 to 1927, inclusive," the sources are indicated either in the body or in the heading of the exhibit. I think the computations are self-explanatory.

The working papers have been available to the plaintiff
4785 at all times.

In Exhibit X-120, entitled "A. T. & T. Co.—Percent. of excess of Average Current Cost of Telephone Instruments used by Bell System shown by Defendants' Exhibit 122 over Book Cost shown by Plaintiff's Exhibit A-166, during years 1923 to 1927, inclusive," the sources are explained either in the body of the exhibit or in the heading.

The computations are, in my opinion, correct, and the working papers have been made available to the plaintiff.

In Exhibit X-121, entitled "A. T. & T. Co.—Percent. of Relationship of Book Value of Investment in Telephone instruments to Depreciation Reserve for Telephone Instruments, Compared with Percent. of Depreciation deducted from Book Cost or Current Value New as the Basis for Sale to Long Lines and to Licensee Companies, as of Dec. 31, 1927," the figures were taken from Exhibit D-100, and the computations, in my opinion, are correct.

The last column shows the per cent of depreciation deducted from the book value, in the case of the various classes of
4786 telephone instruments, and the effect of the sale of telephone instruments, and the clearance through the depreciation reserve.

Exhibit X-122 is entitled "Investments in capital stocks of licensee companies, Dec. 31, 1919 to 1930 inclusive." It shows the par value of the American Telephone & Telegraph Company stockholdings in each of the licensee companies in the United States as of December 31st of each year, 1919 to 1930, inclusive, and shows under each company on the first line the American Telephone & Telegraph Company holdings,—par value; second line, American Telephone & Telegraph Company holdings, book value; and third line, per cent of American Telephone & Telegraph Company ownership in the stockholdings of each of the Licensee Companies, such per cent being the result of the ownership held directly in this company or through the stock of other subsidiaries which is owned by the controlling company.

4787 The figures in the first two lines in the case of each company show the direct stockholdings of the American Telephone & Telegraph Company. As shown in the note on the last page of this exhibit, unless otherwise specified, all of the American Telephone & Telegraph Company holdings refer to common stock.

The figures shown in Exhibit X-122 were all taken from the Annual Reports of the American Telephone & Telegraph Company to the Illinois Commerce Commission.

Exhibit X-123 is entitled "Dividend rates of Licensee Companies, during years 1914-1930," inclusive. All of the figures shown in this exhibit were taken from the annual reports of the American Telephone & Telegraph Company to the Illinois Commerce Commission and its predecessor, the Illinois Public Utilities Commission.

4788 Exhibit X-124, entitled "Capital Stockholdings in Licensee Companies showing dividend rates and yields thereon, years 1920-1930, inclusive," shows, during each of the years, the average American Telephone & Telegraph Company stockholdings—par value; the average American Telephone & Telegraph Company stockholdings—book value; the dividend rate on the average American Telephone & Telegraph Company stockholdings—par value; and the yield to the American Telephone & Telegraph Company on average stockholdings—book value. Item I was computed, in the
4789 case of all companies, paying dividends during the period, by dividing the total dividends paid by the dividend rate, with proper adjustment when the dividend rate was changed during the year. In the case of the companies paying no dividends during the year, the average par value was determined by an average of the balances at the beginning and end of the year.

Item 2 shows the average book investment in the stocks of the Licensee Companies, and reflects the variations from the par value to the extent that the book investment of the American Telephone & Telegraph Company in such stock differs from the par value of such stock.

The figures in Line 3 represent the dividend rate on the par value, and the figures in Line 4 represent the conversion of the dividend rate to the rate based on the American Telephone & Telegraph Company's investment in the stock shown in Item 2.

The figures in X-124 were all computed from X-122, and

X-123, and the working papers used in connection with
4790 these other two exhibits.

No computation has been made for the year 1931.

Exhibit X-125, entitled "Dividend Rates on Investments in Capital Stocks of Licensee Companies, years 1920-1930, inclusive," was taken from Exhibit X-124. The computations in lines "Average dividend to American Telephone & Telegraph Company on par value of stockholdings in Licensee Companies," and "Par Value of stockholdings in Licensee Companies, exclusive of Illinois Bell Telephone Company," are in my opinion correct.

In Exhibit X-126, entitled "Dividend Yields on Investments in Capital Stocks of Licensee Companies, years 1920-1930, inclusive," the figures for each of the companies were taken from X-124. This exhibit shows the yield on the actual investment in Illinois Bell Telephone Company, and in the balance of the System, resulting from dividend rates paid
4791 on the stock held by the American Telephone & Telegraph Company in these various companies.

Exhibit X-127, entitled "Average return to A. T. & T. from Dividends on its Investments in Capital Stocks of Licensee Companies converted into average return to Stockholders of A. T. & T. on their investments in capital stock of A. T. & T. during years 1920 to 1930, incl.," converts the yield to the American Telephone & Telegraph Company from dividends on its investment in the Associated Companies, into average return to stockholders on their investment, in a manner similar to the one I have already described.

In Exhibit X-128, entitled "Profit on investment in capital stocks of Licensee Companies during years 1920 to 1930, incl.," the figures were computed from X-126 and X-108, and the computations are all in my opinion correct, and the working papers have all been made available to the plaintiff.

In Exhibit X-129, entitled "Ratio of capital stockholdings in Ill. Bell to capital stockholdings in all Licensee companies; ratio of profit on stockholdings in Ill. Bell to profit on stockholdings in all Licensee Companies and Percentages of Profit on stockholdings during the years 1920 to 1930, incl.," the figures shown in Lines 1, 2 and 3 were taken from X-124; Lines 4, 5 and 6, from X-128; and Lines 7, 8, 9, 10 and 11 are computations made from these figures and in my
4796 opinion are correct.

The significant lines on this exhibit are Lines 7 and 8; Line 8 is the ratio of profit or amount carried to surplus of the American Telephone & Telegraph Company from its investment in the stock of the Illinois Bell Telephone Company, to its total profit on stockholdings in all licensee companies.

Lines 7 and 8 show the extent to which the per cent of investment in Illinois Bell and the balance of the System, contributed toward the corporate surplus of the American Telephone & Telegraph Company in the particular years indicated.

In Exhibit X-130, entitled "Amounts Required in Order

4797 to Receive the same percent. of return on investment in capital stock of each licensee company as received from investment in capital stock of Illinois Bell Tel. Co. during years 1920 to 1930, incl.," the sources of the figures are Exhibits X-124 and X-128. The exhibit shows the amount in dollars required in order that the American Telephone & Telegraph Company should receive the same per cent return on its investment in the capital stock of each licensee company as it received from its investment in the capital stock of the Illinois Bell during each of the years 1920 to 1930. The figures and the computations are all self-explanatory.

Exhibit X-131, entitled "Losses on Loans to Licensee Companies pro-rated between companies, years 1920-1930, incl.," apportions among the various licensee companies, the losses on loans made to the Bell System, which Mr. Heiss has included in his exhibits as losses to the American Telephone & Telegraph Company, as part of the cost of the license contract.

4798 The working papers and the method of computation in connection with this have been made available to the plaintiff.

Exhibit X-132, entitled "Profit or Loss on Investments in Licensee Companies, years 1920-1930, incl.," shows the combined return to the American Telephone & Telegraph Company from its investment in each of the Licensee companies, both from stock and from loan investments, and shows the extent to which the combined return exceeded or failed to meet the annual cost of funds to the American Telephone & Telegraph Company during the particular years.

The figures in this exhibit, as to the stockholdings, are taken from Exhibit X-128, and the figures for the loans are taken from Exhibit X-131. The computations are, in my opinion, correct.

Exhibit X-133, entitled "Average return from Dividends and Interest on investments (stocks and loans) in Licensee Companies during years 1920 to 1930, incl.," shows the average return on combined investment of the American
4799 Telephone & Telegraph Company from stocks and loans of each of the licensee companies, including the Illinois Bell, and from all of the licensee companies exclusive of the Illinois Bell. In my opinion the computations are correct.

Exhibit X-134, entitled "Average return to A. T. & T. from Dividends and Interest on its investments (stocks and loans) in licensee companies, converted into average return to stockholders of A. T. & T. on their investments in capital stock of A. T. & T. during years 1920 to 1930, incl.," converts the per cent of return on investment to per cent of return to the stockholders of the American Telephone & Telegraph Company in a manner similar to the one that I have already described, as shown in the reports of the American Telephone & Telegraph Company and as stated before.

Exhibit X-135, entitled "A. T. & T. Ratio of Capital Investment in Illinois Bell to capital investment in all licensee companies; ratio of profit on capital investment in Ill. Bell to profit on capital investment in all licensee companies and percentages of profit on investment during years 1920 to 1930, inclusive," was prepared from X-132 and shows the extent to which the return to the American Telephone & Telegraph Company from its investment in the Illinois Bell, contributed towards its surplus, compared to the return to the American Telephone & Telegraph Company from the other licensee companies, during each of the years 1920
4800 to 1930, inclusive, and shows the ratio of the amount of its holdings in stock or loans of the American Telephone & Telegraph Company in the Illinois Bell to that of the balance of the System. The computations are all computations that I have made myself, and in my opinion they are correct.

4801 (Exhibits X-136 to Exhibit X-143, inclusive, offered in evidence.)

Exhibits X-136 to X-143, inclusive, entitled, respectively, as follows: "X-136—Percentage relationships of average investments in capital stocks of licensee companies and in loans to licensee companies to total average investments (stocks and loans) in licensee companies, years ended Dec. 31, 1920 to 1930, inclusive.

X-137—Amounts required in order to receive the same per-cent. of return on investment (stock and loans) in each licensee company as received from investment in Ill. Bell during years 1920 to 1930, inclusive.

X-138—A. T. & T. Co.—Losses on Holding Funds Available to meet cash requirements of Licensee Companies Pro-rated between companies on basis of estimated annual requirements years 1920 to 1930, inclusive.

X-139—American Telephone & Tel. Co.—Cost of Furnishing Telephone Instruments to Licensee Companies Year ended December 31, 1920 to 1927, inclusive.

X-140—A. T. & T. Co.—Cost of Other Services Performed under License Contract Pro-rated to Licensee Companies on Basis of License Payments, Years 1920 to 1930, inclusive.

Departmental costs incurred in rendering Licensee Contract Services, during years 1920 to 1930, incl.

X-141—American Tel. & Tel. Co.—(1) Estimate of Costs Incurred in Rendering License Contract Services; (2) Amounts received for License Contract Services Years 1919 (5 months) to 1922.

X-142—A. T. & T. Co.—Separation of the Licensee Payments of each Licensee Company into Component parts of cost and profit, years ended December 31, 1920 to 1930, inclusive.

X-143—A. T. & T. Co.—Items shown in Exhibit Reduced to Per Cents of the License Payment and to amounts per Telephone Station, Years ended Dec. 31, 1920 to 1930, inclusive," either show on their faces or the working papers which have been submitted to the plaintiff show the sources of the figures, and the basis of the computations.

(June 13, 1932.)

4805 The Company's showing of income in Exhibit A-53 deducted Federal Income Tax for each year. I have com-
4806 puted the saving in income tax which would have resulted to the Illinois Bell for the years 1923 to 1930, on the basis of the Illinois Bell being financed in the same ratio

of loans and stock as that which prevailed in the balance of the Bell system as shown in X-136. The amounts of such savings are as follows:

Year	Entire Company	Chicago Division
1923	$77,306	$50,875
1924	107,336	71,196
1925	104,982	69,844
1926	57,413	38,185
1927	79,576	52,528
1928	62,743	41,473
1929	36,026	23,586
4807 1930	134,673	87,079

This saving would be due to the fact that as the loans to the Illinois Bell increased to equal the average of the System, there would be more interest to deduct for purposes of Federal income tax computations. I have the working papers from which these computations were made and the plaintiff may examine them.

Exhibit X-138 shows the distribution of the losses between the various licensee companies, and I took the figures from CR 13. The exhibit does not make any apportionments on the basis of the purpose for which the moneys were held 4808 in relation to stocks and bonds. I just lumped those together.

With reference to Exhibit X-142, I used a different method of allocating losses on holding funds to meet the cash requirements of the licensee companies, as indicated in Item 6 of Exhibit X-142, than Mr. Heiss did in Exhibit A-169. Mr. Heiss allocated the losses sustained in connection with holding funds available for the Chicago area on the basis of a composite ratio using the bases of estimated cash requirements, plant and gross additions.

In making my allocations of Item 6, in my Exhibit X-142, I have used as a basis the estimated cash requirements of the licensee companies only. The sources of information used by the plaintiff were the M. R. and C. R. Reports, indicated 4809 in D-118; also the C. R. 13 Reports, and the Provisional Estimates. Of these reports only the C. R. 13's were available to us prior to the trial and prior to the offering of the A-exhibits. We used the C. R. 13 reports in allocating the losses on holding funds available. I included Item 2 in

Exhibit X-142 because in all documents sent to us prior to the trial, Mr. Heiss included within the license contract costs, losses to the American Telephone & Telegraph Company on holding funds for the purchase of stock and for the making of loans, and losses to the American Telephone & Telegraph Company incurred in connection with loans to the licensee companies, but Mr. Heiss did not show the profits to the American Telephone & Telegraph Company while holding
4810 the stock, nor did he take into account any inequality as between the licensees as to the per cent of return paid to the American Telephone & Telegraph Company for moneys furnished in the form of stock and loans resulting from a difference in the dividend rates on the stock or through a difference in the proportions of stock and loan moneys furnished to the licensee companies.

In our exhibits, we have taken into account the losses on loans, losses on holding funds available for stock and loans and have also taken into account the difference in the dividend rates and ratio of loans and stock purchases as between licensees on the basis of the Illinois Bell Telephone Company's return to the American Telephone & Telegraph Company.

The differences, from an accounting standpoint, between the A-exhibits offered at the final hearings on the license contract, and the exhibits which were furnished to us prior to the trial, as bearing upon the license contract are as follows:

4811 First, in the exhibits sent to us prior to the trial there was no separation of costs or expenses incurred chargeable to the license contract payments for the long lines; instead, the costs allocable to services of the long lines and to the licensees were treated as a unit, but there was added to the revenues from the license contract an amount of revenue as coming from the Long Lines Department.

Second, in the exhibits sent us prior to the trial there was a lump sum deduction from all of the expenses represented to have been incurred in connection with the license contract to represent the amount allocable to holding company operations. In the Heiss exhibits there is a detailed separation for each of the classes of services.

Third, in the papers sent us prior to the trial, there was no allocation to the Chicago Area; nor was there any allocation made to the Illinois Bell in any of the exhibits sent us prior to the trial, nor was there any statement made prior to the trial, nor was there any indication given that the Chicago Area would not be charged with losses on loans which Mr. Heiss' exhibits sent us showed were made to the 4812 Illinois Bell; and we were advised that the allocation to the Chicago Area would be made at the trial and the method explained at that time.

Fourth, the documents which they sent us showing the allocation made to the Ohio Bell showed a basis of allocation on an entirely different basis than the one they used at the trial.

(Exhibit X-144 offered in evidence.)

Exhibit X-144, entitled "A. T. & T. Co.—Per Cents of Licensee Payments Available for Corporate Surplus (For Profit After Payment of Dividends, Interest, and Amortization Charges) during years 1920 to 1930, inclusive," was prepared from X-142. This exhibit excludes from consideration the equalizing factor of the return from stock and loans, which is Item 2 of X-142, because that factor is considered in a later exhibit. Excepting for that, it takes X-142, and shows the result.

Exhibit X-145, entitled "A. T. & T. Co.—Return on Investment from License Contract Operations with Various Licensees during Years 1920 to 1927, inclusive," was taken from X-142, X-103, D-116 (which is Heiss' Exhibit No. 10 in the Ohio case) and from the statements furnished by the company for the years 1920 to 1922, which are similar 4813 to D-116.

The investment was set up to correspond to the item of expense set forth in X-142, such items being the loans to the licensee companies, the proportion of funds held available for the licensee companies, the investment in telephone instruments and the investment in miscellaneous property. The allocations between the companies were made on the same basis as X-142.

The items of return on investment are the same as Mr. Heiss used in Exhibit X-104. In my opinion, the computations in the exhibit are correct.

Exhibit X-146, "American Tel. & Tel. Co.—Return from License Contract Operations with Ill. Bell Tel. Co. in Excess of the Average Return from License Contract Operations with *Other* Licensee Companies during years 1920 to 1927, inclusive,'' was prepared from X-145 for the years 1920 to 1927, inclusive, and from X-142 for years 1928, 1929 and 1930. The comparisons for the years 1920 to 1927 were prepared somewhat differently than for the years 1928 to 1930, inclusive.

4814 During the years prior to 1928, there were amounts available for additional return on investment to the American Telephone & Telegraph Company from the license payment after charging thereto the various amounts allocated in respect to each company. The excess of return on the investment in Illinois Bell for such additional amounts over the corresponding return on investment of the other licensees is shown in Item 6 of X-146.

During the years 1928, 1929 and 1930, there were no amounts left over from the license payments after pro rating the costs between the various companies.

In those years our Exhibit X-142 shows that the license payment was not sufficient to take care of all of the items of cost.

In comparing the showing of the Illinois Bell with the other licensee companies for these years, after charging against the license payment the losses on the loans and the losses on holding funds available, we computed the difference between the amount left over from the license payment to meet the 4815 cost of other services in the case of the Illinois Bell and that of the other licensees.

Exhibit X-147, entitled "A. T. & T. Co.—Return from License Contract Operations under Present rates and under Attacked Rates with Illinois Bell Tel. Co., Chicago Division, in Excess of the Average Return from License Contract Operations, with *Other* Licensee Companies, during years 1923 to 1930, inclusive,'' was computed from X-146, Exhibit A-52, and from an exhibit which will be offered by Mr. Cummings on interstate separation.

In Exhibit X-148, entitled "A. T. & T. Co.—Separation of the License Payments of Illinois Bell Tel. Co., Chicago Division, of other Licensee Companies (including Ill. Bell Tel. Co., exclusive of Chicago Division) and of Long Lines Department, into Component Parts of Cost and Profit Based on Plaintiff's Exhibit A-170 and Underlying Exhibits Referred to therein, during years 1923 to 1931, inclusive,'' the item of license payment was taken from A-53 and D-116, while the remaining items were taken from A-170 and the underlying exhibits referred to therein.

The figures shown in X-149, entitled "A. T. & T. Co.—Return of Investment from License Contract Operations with Illinois Bell Telephone Co., Chicago Division, with other Licensee Companies (including Illinois Bell Tel. Co., exclusive of Chicago Division); and with Long Lines Department, Computed from Plaintiff's Exhibit A-170 and underlying exhibits referred to therein, during years 1923 to 1927, inclusive," were prepared from A-170 and underlying exhibits. In Exhibit A-170, Mr. Heiss shows the losses on loans but did not show the amounts of the loans which we took from Exhibit X-103.

Exhibit X-150, entitled "A. T. & T. Co.—Return from License Contract Operations with Ill. Bell Tel. Co., Chicago Division, in excess of the Average Return from License Contract Operations with *Other* Licensee Companies (Computed from Plaintiff's Exhibit A-170 and Underlying Exhibits referred to therein), during years 1923 to 1931, inclusive," was computed from X-149.

Exhibit X-151, entitled "American Telephone and Telegraph Company—Return from License Contract Operations under Present Rates and under Attacked Rates with Illinois Bell Telephone Co., Chicago Division, in Excess of the Average Return from License Contract Operations with *Other* Licensee Companies (Computed from Plaintiff's Exhibit A-170 and Underlying Exhibits Referred to therein) during Years 1923 to 1931, inclusive," was prepared from X-150, Plaintiff's Exhibit A-52, and exhibit to be offered by Mr. Cummings and is similar to X-147.

Exhibit X-152, entitled "A. T. & T. Co.—Composite of 4816 Estimated Requirements, Plant Investment and Gross Additions—Percent. Long Lines of Associated Operating Companies and Long Lines (Basis of Plaintiff's Exhibit A-169), 1923-1931. Estimated requirements (as shown by work sheets of Plaintiff's Exhibit A-169), 1923-31," consists of the work sheets of Plaintiff's Exhibit A-169, which were furnished by the plaintiff.

The sources for the figures shown in Exhibit X-153, entitled "Ill. Bell Tel. Co.—Comparison of Cash Payments to Western Electric Company with Cash obtained in stock and loans from American Tel. & Tel. Co. Years 1923 to 1930, inclusive," are clearly set forth on the face of the exhibit.

As to all of my exhibits, in my opinion, the computations set forth, and the results which are set forth in those exhibits, are all correct. Generally as to all of my license contract exhibits thus far they have not concerned themselves with the question of whether any amounts charged in the license contract were proper, or whether the amounts as charged were proper operating charges. My exhibits merely concern themselves with the distribution of the license payments, and the license contract costs, as represented by plaintiff, between the various licensee companies.

(Exhibits identified by Mr. Rainwater, X-103 to X-153, inclusive, offered in evidence subject to cross-examination.)

(Cross examination reserved.)

4817 CYRUS G. HILL, called as a witness on behalf of the defendants, having been first duly sworn, testified as follows:

Direct Examination by Mr. Goldstein.

(June 13, 1932.)

I am the Mr. Hill who previously testified in this case. My experience and qualifications were then stated. I have made an investigation of the methods used by Mr. Turner 4818 and testified to by him in this case in connection with depreciation. In the determination of the average life of various classes of plant as set forth in Turner's Exhibit A-128, I am familiar with the method used by Mr. Turner in determining the average lives of Central office equipment and buildings.

Referring to Table 5 of Exhibit A-128, the table on which Turner shows the method of determining the average life of all the equipment in a given Central office up to the time of the final retirement of that office, that computation is made on a group basis.

Where there are a number of items in an account, or in a class of plant which is depreciating, I would define a group basis as that basis which gives a uniform depreciation rate, which, when applied to the book costs, or to the investment, each year will exactly retire or amortize that investment at the end of the life of the group. A unit basis I would 4819 say was one where a depreciation rate was applied to each unit, which would exactly amortize that unit during its life. It will differ considerably from the group basis in many cases.

I am dealing now with the question of group basis, whatever the investment is. You can take any group, you can take the property now in service as a group; you can take the property now in service plus additions as a group; you can take the property now in service plus the property that was in service in the past, and has been retired, as a group. But the group basis would be one in which a single uniform depreciation rate is applied to whatever investment of that group is in service each year, and you exactly amortize the group at the end of its group life.

4820 Referring to Table 6 of Exhibit A-128, the table showing Turner's method of obtaining the composite average life for the group of the Chicago Central offices from the average lives of the individual offices, I could say that the composite average life is figured on a unit basis.

On Table 6 the Central office is set forth in Column A. Its average life is given, and then the annual requirements are obtained by dividing the investment by the average life for each office, thereby giving the depreciation which will amortize that particular office during its particular life. That is my definition of the unit basis, as opposed to the group basis used in Table 5.

The same thing is true of Table 9 of A-128, relating to the determination of the composite average life of buildings. If the average life of Central office equipment in Table 6, 4821 and of buildings on Table 9, were computed on a group basis as I have defined it, instead of on an individual unit basis, the average life would be longer. In the case of buildings, the difference amounts to about 40 per cent: that is, the life would be about 40 per cent longer if it were figured on a group basis instead of a unit basis. It would lower the depreciation rate approximately 40 per cent. In connection with this question of group and unit lives, or group and unit bases of depreciation, I might make the matter more simple and more understandable by a little illustration. Suppose you had two items of any kind, say two bicycles, one of 4822 which you know is going to last you two years, and the other one is going to last you four years.

Now, what would you say was the average life of those two bicycles? Well, almost anyone would say it was three years; one is two and the other is four, and the average would be three. But the method that the company uses in computing the average life of buildings and Central Office Equipment, the average life is not three years; it is two and two-thirds years. That is arrived at in this way: Suppose each bicycle is worth $100. The company would say that the bicycle having the average life of two years had an annual requirement of $50 and the bicycle having a life of four years would have a depreciation requirement, annual depreciation requirement of $25. The sum would be $75. The two bicycles cost $200, so the company divides 200 by 75 and gets two and two-thirds years for the average life.

4823 Now, let us just see how that checks up. First, take the average life of three years; you have two bicycles for a period of two years, and we say, the correct average life is three years, which would make a depreciation rate of one-third each year. One-third of $200 each year for two years would be $133. For two years of the four-year period we have an investment of $100, and one-third of $100 for two years will be $67, which added to $133 gives $200, and comes out exactly even.

In other words, you just exactly get back your investment, which is what you want to do. Now, take the average life of two and two-thirds years; you have a depreciation rate for the two years then of three-eighths on $200, which is $150. Then you have the depreciation rate of three-eighths for two years on $100, which is $75, and the sum of the two is $225.

In other words, you get back your $200 investment, and a bonus of $25. The only way that you can make the average life of two and two-thirds years come out right is to say that the depreciation rate on the investment of $200 during the two years that you have it, is three-eighths or $150 as 4824 before; and then say that the depreciation rate on the $100 during the two years you have it, is one-quarter, or $50, which will give you $200. But you have had to change your depreciation rate from three-eighths to one quarter.

I have examined Mr. Turner's method of determining average life of the class of plant described by him as Group 2, of which mortality studies are made.

The first step in Mr. Turner's method is illustrated on Table 12 of Exhibit A-128, which is a summary of the historical data for the mortality study. Here Turner has a certain amount of plant placed in each year, and a certain amount removed from service in each year. He knows from his study the date at which particular units were placed, and those same units retired, so he is able to spread that through this triangular table, and show in the square opposite each year both the year placed and the year of age, the plant in service at the beginning of the year, and
4825 the amount retired during the year.

He uses a three-year band representing the plant retired during,—in this case, the three years, 1926, 1927 and 1928. At the bottom of the sheet he gets the total of the plant in service and the plant retired during that three-year period, for plant of each age. He then obtains the retirement rate, or the ratio of plant retired to plant in service for each of those years, and smooths that out by means of a formula, to get a smooth curve, of the form shown on Table 15, which shows the curves for Aerial Cable.

The average life can be obtained from these life curves. And he goes a step further than that, and attempts to make a check of the life curve which he had developed against the result there shown by the company's books.

This is indicated in the case of Aerial Cable on Table 21. In making this check he uses a method as follows: turning again to Table 12 he adds up all of the requirements in
4826 the three-year band which lie between the heavy zig-zag lines at the bottom of the table; he adds all of the plant in service; divides the plant retired by the plant in service, and gets a retirement rate obtained from the mortality table. He then takes the retirements for three years from the books—they are the three years 1926 to 1928—takes the book cost, the sum of the book cost at the beginning of those years, divides one by the other and obtains a retirement rate from the books.

By the use of a formula he adjusts the book retirement—rather, adjusts the life curve to the book mortality rate. In Table 21 at the bottom of the page he shows the average ratio of plant displaced to plant in service January 1st, a ratio from the mortality table, a corresponding ratio, from book cost.

He then shows at the right, at the bottom of that page, a correction of the mortality study to agree with the book cost in which he finds a somewhat shorter life than the mortality study shows.

4827 Although I would change the table, I consider that so far as the form shown on Table 12 and the results of the form shown on Tables 14 and 15 are concerned, the method is correct.

Having determined the average life from the life tables, Mr. Turner then attempts to check the average life against the figures shown on the company's books.

In Exhibit A-128, this check is indicated on Table 21 for Exchange Aerial Cable, at the bottom of the table, and 4828 on Table 24, for Exchange Underground Cable~~, and on Table 17~~ for Private Branch Exchanges. I think Mr. Turner's method of making this check of the mortality table, and adjustment of the mortality table, results to the books, is very inaccurate and incorrect in principle. The reason for my believing that is this: If you will turn again to Table 12 on Exhibit A-128, in preparing a table of this kind it is necessary for the company to trace the date at which certain units of property were placed; they have to trace these clear back to practically the beginning of the company.

Now, as is well known, the older records of the company are in less detail and less complete than the later records. The result is that the data of the form shown on Table 12, is incomplete for the earlier years, that is for the years toward the right-hand end of the table. Only those items of property are included, of which the date of placing could be traced, so that the figures as shown on the table do 4829 not pretend to be the entire cost of plant in service, or the entire cost of plant removed.

Now, for the later period, the figures toward the left-hand end of the table, the data is practically complete; that is, the records are so much better that the company has been able to include practically all of the plant in service and practically all of the plant retired, in the table. That is, in the period beginning with 1, 2 and 3.

I have not determined it exactly, but for perhaps the first half of the table the data might be fairly complete, and the second half, it might be only partially complete.

Now, the data at the right-hand end of the table being the plant of greater age, represents plant with the highest retirement rate at the present time. By adding up all of the retirements, and all of the plant in service, in the three-year band on a table of this form, this older plant with the higher retirement rate is not weighted as heavily as it is in book cost, whereas the plant placed later, with a lower retirement 4830 rate, is weighted the same as it is in book cost. The result is that the retirement rate derived from a table of this form, where the conditions which I have just described exist, will always show a lower retirement rate than is the fact. But in determining the life curve, or obtaining the life curve from this same table, the company uses a ratio of retirement to book cost for each year, so that that error does not enter. It is only when they add the entire table together without any weighting that the error is introduced.

There may be a further error that I might mention. The average life is determined from the smoothed or graduated life curve, of the form shown on Table 15. This curve does not follow the original data exactly, and it may be too long or it may be too short. Where the check is made against the original mortality table, any deviations in the graduation of that table to get the life curve are not reflected in the result.

4831 Exhibit X-154, entitled "Illinois Bell Telephone Company, Chicago Exchange; Mortality Study of Exchange Aerial Cable," was prepared by me or under my direction. This exhibit is intended to illustrate a principle or a method by which the objections which I have just raised to Mr. Turner's method of checking—or adjusting the life table to the book results, can be avoided. In principle my idea is that the original mortality table, the ungraduated mortality table, is not what we want to check against the books. What we want to check is the life curve from which the average life was determined.

This exhibit, X-154, shows a method in principle for checking the life curve itself, and adjusting that life curve to conform with the result as shown by the books. To describe this table in detail, we have in the first column the age from initial installation; in the second column we have the percentage survivors unadjusted.

4832 Now, this is the company's graduated life table for Aerial Cable, which I took from their work sheets. The next column, headed B, represents in the form of relative numbers, or perhaps one might say index numbers, the amount of plant placed each year. This is purely an approximation for illustrative purposes. What I did was to take the book cost of plant at the end of 1930 and book cost of plant in 1915, adjust them to a uniform price level, and determine the rate of growth, which I found to be, over the period, an average of about 4.75 per cent. I then wrote down figures representing a rate of growth of 4.75, starting with 100.

These represent relative gross additions made each year if the rate of growth were uniform at 4.75 per cent. The next column, C, is the percentage of plant retired each year, and represents the differences between successive figures in Column A, starting with the difference between 100 per cent and the 98.742 per cent surviving the first year.

Now, the expected retirements, or the retirements which would be made during the current year, if the life experience of plant were that shown in Table A, and if the gross additions were relatively the same as those shown in
4833 Table B, is the product of the percentage retired each year of the age shown in C times the gross additions shown in B. These are the expected retirements shown in Column D.

Now the expected survivors of each age shown in Column E are Column A, the percentage survivors at each age, times the gross additions of Column B.

Now, totaling those two columns, that is Columns D and E, and dividing the expected retirements by the expected survivors, we obtain a retirement ratio. That is shown in Line 3 at the bottom of the page as .0564.

Now, in Lines 4, 5 and 6 at the bottom of the page I have divided the sum of the retirements for the years 1929, 1930 and 1931, from the books by the sum of the book cost at the beginning of the years 1929, 1930 and 1931, as shown
4833 by the books, to obtain the book retirement ratio. This I found to be .0544.

Now, using the company's method of adjusting the life table for differences in retirement ratio, I arrive at Column F, showing the percentage survivors, adjusted to the book results, which indicates in this case a life of 15.5 years.

I want to point out that by this method I have used
4834 the life curve as a basis for comparison with the books,
and not the unadjusted original mortality data which includes both the fact that the weighting is incorrect, and the fact that any irregularities or any errors in extending and graduating this mortality data to form the life table are not taken into account. This table X-154, does not pretend to give an accurate result as regards average life. It merely illustrates the principle.

In order to get an accurate result, one should take in Column B, instead of a uniform rate of growth, the actual gross additions made each year, and of course this would not run back for 68 years. They would run back perhaps 40 years, and at the 40-year point the gross additions would start, and
then they would be heavy for a period, and then light
4835 for a period, and then heavy for a period. The result
of fluctuations in the rate of growth, or fluctuations in gross additions between periods of years, would not of course affect the average life.

The effect of using my method, as compared with Mr. Turner's, on the figures shown in Table 21, A-128, for exchange aerial cable, and in Table 24, A-128, for Main Subscribers' Underground Cable might be on the order of 9 to 15 per cent in the direction of a longer average life as nearly as I can tell from the approximate figures which I have made in the form of Table X-154.

That would make a lower depreciation rate.

(Exhibit X-154 offered in evidence subject to cross-examination. Cross-examination reserved.)

4836 K. E. THOLIN, called as a witness on behalf of the defendants, having been first duly sworn, testified as follows:

Direct Examination by Mr. Goldstein.

(June 13, 1932.)

I am the same Mr. Tholin who testified in the former hearings. I still hold the position of Supervising Examiner of Accounts of the Illinois Commerce Commission with the same duties as stated in the former hearings.

Exhibit X-155, entitled "Illinois Bell Tel. Co.—Chicago Division—Summary of Account 102 Reserve for Accrued Depreciation, Twenty-one years, 1910-1930, incl.," is a summary of the depreciation reserve of the Chicago Division as shown by the Company's books. The last column shows the balance of reserve at the end of the year.

4837 Exhibit X-156, entitled "Illinois Bell Tel. Co.—Chicago Division—Summary of Depreciation Reserve 1909 to 1931, incl.," is a summary of X-155 related to the average plant except in the last column where it shows the bal-
4838 ance in the reserve which has been related to total plant at the end of the year.

Exhibit X-157, entitled "Illinois Bell Tel. Co.—Chicago Division—Maintenance and Depreciation Expenses Expressed as a percentage of Average Plant in Service. 1911 to 1931, inclusive," shows the maintenance charges and the net charges to depreciation reserve and all of the figures on this sheet were taken from the books of the company. Exhibit X-158, entitled "Illinois Bell Tel. Co.—Chicago Division—Comparison of Commission's Allowance for Maintenance and Depreciation with actual charges for maintenance and depreciation accruals per Company's Books and Actual Charges for Retirements per Company's books—1923-1931," differs from Plaintiff's Exhibit A-59 in the following respects: The Illinois Commerce Commission order of August 16, 1923, fixed a combined allowance for both maintenance and depreciation. In this exhibit I have made a division of the Commission's combined allowance by deducting from this combined allowance the company's actual maintenance expenses, the balance being applicable to depreciation.

In the comparison which I have made on Line 13, showing the excess of the company's depreciation accruals over the Commission's allowance, I have not included the 4839 amounts shown in Plaintiff's Exhibit A-59 representing depreciation charged to certain clearing accounts.

The amounts of depreciation which are temporarily charged to these clearing accounts are later cleared from these accounts by transfers to other accounts. The accounts which are finally charged with this amount of depreciation are the Fixed Capital accounts, Maintenance Expense accounts and the Depreciation Reserve itself.

The depreciation included in these clearing accounts represents depreciation of stable and garage equipment, general tools and general store equipment.

This equipment, for example, automobile trucks, is used in part for construction of new plant, in part for maintenance of existing plant and in part for the removal of plant being retired.

At the end of each month not only the depreciation of these trucks, but also the maintenance and operation of these trucks is prorated to either the Fixed Capital accounts, Maintenance accounts or the Depreciation reserve (representing cost of removal) according to the proportion of the various types of work performed.

4840 For example, whatever is included in the $109,080, representing depreciation charged to clearing accounts in the year 1923, which was ultimately charged to maintenance expense is also included in the total maintenance expense of that year of $5,901,733. The company, in its Exhibit A-59 thus duplicates that expense. The amount of this kind of depreciation which was ultimately charged to Fixed Capital accounts represents an item of cost of new property.

The amount which is chargeable to depreciation reserve in connection with removal of plant is also being provided for by the Commission's allowance and by the company's accrual, and therefore, that portion has no place in this comparison.

For these reasons I have excluded in the comparisons shown in my lines 9 to 14, all consideration of depreciation charged to clearing accounts. There is another difference

between the company's computations and mine. I am now referring to the lower part of both my exhibit and the
4841 company's exhibit. The company has included all of the net charges to the depreciation reserve in making its computations, but it has excluded certain other credits to the depreciation reserve.

In this case the charges include the loss due to retirement of the general equipment such as automobile trucks, tools and store equipment but the company has omitted the credits which come into the depreciation reserve currently to provide for such losses. The charges to the reserve also include miscellaneous adjustment and charges of various natures, but the company has omitted the miscellaneous credits.

In order to make a full comparison I have included as lines 16 and 17 of my statement these credits to the depreciation reserve, representing depreciation accrued on general equipment and also the other miscellaneous credits.

In Exhibit X-159, entitled "Illinois Bell Tel. Co.—Chicago Division Summary of Account 102—Reserve for Accrued Depreciation after giving effect to the Illinois Commerce Commission's order beginning Oct. 1, 1923, 22 years, 1910-1931, inclusive," all of the figures were taken from the books of the company, with the exception of the figures in column I and the resultant changes in the balance in column 11,
4842 beginning with October 1, 1923. This exhibit merely gives effect to the Illinois Commerce Commission's order that is here under attack.

Exhibit X-160, entitled "Illinois Bell Tel. Co.—Chicago Division—Comparison of Commission's Allowance for Depreciation (Based on Public Utilities Commission Order #9291, Effective Jan. 1, 1921) with Depreciation Accruals as per the Company's Books, and actual Charges for Retirements as per Company's Books, 1923-1931" is a computation similar to the computation shown in X-158, excepting only that it is based upon the assumption that the Public Utilities Commission order of 1920 was in effect throughout the period instead of the Illinois Commerce Commission's order of 1923.

All of the computations made in the exhibits which have been offered in connection with my testimony, and which will be offered, are, in my opinion, correct. The facts stated in the exhibits are a mere statement of the facts as taken from the source which I state.

Exhibit X-161, entitled "Illinois Bell Tel. Co.—Comparative Study of Balance in Account 102 Reserve for Accrued Depreciation by Divisions—1913 to 1931, incl.," is taken from the books of the company and shows the balance
4843 of reserve for the various divisions of the Illinois Bell.

The suburban division is the portion of the Chicago Telephone Company area outside of the City of Chicago as covered by the P. U. C. order of 1920. By the P. U. C. Order of 1920, I mean the Public Utilities Commission's order of 1920. The Illinois Division represents the property purchased from the Central Union in 1920. At that time there was accrued against the property $3,487,831.

When the property was taken over by the Chicago Telephone Company, it was placed on its books at the purchase price and no portion of the depreciation reserve was taken over. It started to accumulate the depreciation reserve in 1920, as shown in column 3. Column 5 shows the effect of adding to the book figures of the Illinois Division the depreciation reserve as it existed prior to November 30, 1920.

The "Total" shown in the fourth column represents the sum of the book depreciation reserve figures. The last column "total" adds to the book figures the additional depreciation reserve which was not taken over by the Illinois
4844 Bell Telephone Company.

Exhibit X-162, entitled "Illinois Bell Tel. Co.—Comparative Study of Balance in Account 103 Reserve for Amortization of Intangible Capital by Divisions, 1913 to 1931, incl.," shows the Reserve for Amortization of Intangible Capital, and all of the figures were taken from the books. The third and fifth columns, Illinois Division, are subject to the same comment as was made with reference to X-161.

Exhibit X-163, entitled "Illinois Bell Tel. Co.—Comparative Study of Combined Balances of Accounts 102, Reserve for Accrued Depreciation and 103—Reserve for Amortization of Intangible Capital by Divisions, 1913 to 1931, incl.," is a total of X-161 and X-162. Exhibit X-164, entitled "Illinois Bell Tel. Co.—Balance of Account 102 Reserve for Accrued Depreciation Expressed as a Ratio of the Investment in Fixed Capital, 1913 to 1931, incl.," is X-161 converted into a percentage basis. That is, the ratio of depreciation reserve balances to plant balances.

Exhibit X-165, entitled "Illinois Bell Tel. Co.—Balance of

Account 103 Reserve for Amortization of Intangible Capital Expressed as a Ratio of the Investment in Fixed Capital, 1913 to 1931, incl.," is X-162 on a percentage basis:

Exhibit X-166, entitled "Illinois Bell Tel. Co.—Combined Balances of Account 102, Reserve for Accrued Depreciation and Account 103, Reserve for Amortization of Intangible Capital Expressed as a Ratio of the Investment in Fixed Capital 1913 to 1931, incl.," is X-163 on a percentage basis.

In Exhibit X-167, entitled "Illinois Bell Tel. Co.—Chicago Division Statement showing composite Life, Salvage and Depreciation Rate for Total Plant as determined from the Company's Detailed Depreciation Table Effective Jan. 1, 1930," consisting of three pages, the figures are taken from the company's books. This shows the detail for the 1845 year 1930, illustrating how the composite depreciation rates were estimated by the company, and the total of column 5 represents the company's figure for total accrual for depreciation, except for general equipment.

I have probably carried some of these figures out in greater detail than the company does, but otherwise it indicates the company's method.

Exhibits X-168, X-169, X-170, X-171 and X-172, entitled as follows: "X-168, 'Illinois Bell Tel. Co.—Chicago Division—Investment in Fixed Capital (Balance in Plant and Equipment Accounts)—Nine Years—Dec. 31, 1913, to Dec. 31, 1930'; X-169, 'Illinois Bell Tel. Co.—Chicago Division—Gross Additions to Fixed Capital—Eighteen Years—Jan. 1, 1913, to Dec. 31, 1930'; X-170, 'Illinois Bell Tel. Co.—Chicago Division—Retirements of Fixed Capital—18 years, Jan. 1, 1913, to Dec. 31, 1930'; X-171, 'Illinois Bell Tel. Co.—Chicago Division—Investment in Fixed Capital—1931'; X-172, 'Investment in Fixed Capital by Operating Divisions, 1882-1930, Total Investment, 1931,' " were taken from the books of the company, and are self-explanatory. This covers generally the gross additions, retirements and balances in plant account for the Chicago Division.

Exhibit X-173, entitled "Illinois Bell Tel. Co.—Chicago Division—Summary of Net Realized Depreciation, including Extraordinary Repairs, Charged to Account 102, 19 years, 1913 to 1931, incl.," has been taken from the company's books. It covers the charges to depreciation reserve by the plant accounts.

Exhibit X-174, entitled "Illinois Bell Tel. Co.—Telephone Stations in Service by Divisions and Methods of Operation as of Dec. 31, of each year 1923-1931, incl.," shows the Telephone Station distribution of the Illinois Bell and the various divisions, 1923 to 1931, divided between Manual 4846 Switching and Panel Switching, Step-by-Step Switching, and is taken from the company's statistical records.

Exhibit X-175, entitled "Illinois Bell Tel. Co.—Chicago Division—Summary of account 102—Reserve for accrued depreciation after giving effect to the Public Utilities Commission's order during the entire period from Jan. 1, 1921, to Dec. 31, 1931, 22 years, 1909 to 1931, incl.," is the same as X-159 except that it gives effect to the Public Utilities Commission order of 1920 instead of the Illinois Commerce Commission's order of 1923.

Exhibit X-176, entitled "Illinois Bell Tel. Co.—City of Chicago—Details of Amounts reserved for Depreciation and charged to operating expense account #608 'Depreciation of Plant and Equipment,' Eleven years, 1921 to 1931, incl.," shows the details of the amounts reserved for Depreciation and charged to Operating Expense, Account 608, and the figures are all taken from the company's books.

Exhibit X-177, entitled "Illinois Bell Tel. Co.—Chicago Division—Statement of Investment in Manual Central Office Buildings and Manual Central Office Equipment as shown by the Company's Books as of Dec. 31, 1929, and Company's Estimated Additions to Retirement at dates indicated in Plaintiff's Exhibit A-128," is a statement of investment in Manual Central Office Building, and Manual Central Office Equipment as shown by the Company's books, and the estimated additions and retirements, as per Mr. Turner's study underlying his Exhibit A-128. Exhibit X-177 shows that the total amount of future additions which Mr. Turner took into account in his determination of the depreciation rates 4847 for Manual Central Office Buildings was $5,995,000 and the total future additions which he took into account in connection with Manual Central Office Equipment, were $11,563,000.

The data in Exhibit X-178, entitled "Illinois Bell Tel. Co.—Chicago Division—Actual per cent of Salvage realized by the Company in the years 1924 to 1931, incl., as compared with the per cent which the company, in fixing its depreciation rates in prior years, had estimated that it would receive upon the retirement of the property (the span of years used herein is equal to the company's estimate of life)," were compiled from the company's salvage statistics and are self-explanatory. The first page shows the comparison in percentages and the second, in number of dollars.

Exhibit X-179, entitled "Illinois Bell Tel. Co.—Changes to Depreciation Reserve Expressed as a Ratio of the Amount Reserved for Depreciation in the Corresponding years 1921-31, incl.," was taken from the Company's books and is self-explanatory.

Exhibit X-180, entitled "Illinois Bell Tel. Co.—Chicago Division—Company's Estimate of Gross Amount of Refunds to be made to its subscribers if Commission's order of 1923 is not found to be confiscatory with simple interest at 5% to Dec. 31, 1931," is a computation that was made by me and under my supervision. The gross amount of refunds shown in the first column, was obtained from the company's records, and the calculation of simple interest at the rate of 5 per cent. shown in the last column, was done by me.

4848 Exhibit X-180 includes the estimated gross refunds from October 1, 1923, to December 31, 1931, with interest computed thereon to December 31, 1931. The principal amount of the gross refunds is $17,204,000, and the simple interest at 5 per cent is $3,611,433 as shown in my total.

Exhibit X-181, entitled "Ill. Bell Tel. Co.—Chicago Division—Company's Estimate of Gross Amount of Revenue collected which must be refunded to subscribers if Commission's order of 1923 is not found to be confiscatory, with interest compounded semi-annually at the rate of 6% to Dec. 31, 1931," shows the amount of refunds to December 31, 1931, with interest at the rate of 6 per cent compounded semi-annually on the same basis as the computation made by Mr. Sloan in computing his interest during construction. The difference in the result is shown in the difference in interest, which is increased from $3,611,433 in X-180 to $5,085,264.

The figures in Exhibit X-182, entitled "Illinois Bell
4849 Tel. Co.—Chicago Division—Depreciation of Exchange
Aerial Wire (Account 243) 18 years—Jan. 1, 1913, to
Dec. 31, 1930," in column 2, were taken from the company's

books. Column 3 represents the average plant in service each year on the basis shown in the footnotes A and B. Column 4 is the actual depreciation rate used by the company. Column 5 is the result of applying that rate to the average investment of column 3. Column 6 is the net realized depreciation. Column 7 shows the increase and decrease in the reserve. Column 8 shows the depreciation reserve at the end of each year. Generally speaking, prior to 1929, the company accrued depreciation for a portion of its aerial wire. Since that date no accrual is being made for any portion of the aerial wire and the entire account is handled through maintenance.

I would like to add one remark about the eight column, the last column on this exhibit. The company had a depreciation reserve prior to 1913, but I have not made any
4850 division of that reserve, to allocate any portion of it
to this particular account.

In Exhibit X-183, entitled "Illinois Bell Tel. Co.—Chicago Division—Study of Company's Accrual of Depreciation on Station Apparatus (Account 231) 12 years—Jan. 1, 1920, to Dec. 31, 1931," the figures in column 2 were taken from the company's books. Column 3 represents the estimated salvage based upon the per cent of salvage used by the company in the current year in determining its depreciation for this account.

Column 4 is the difference between column 2 and column 3, indicating the investment loss to be provided through charges to depreciation.

Column 5 represents the balance of depreciation reserve account pertaining to this particular class of property existing on the books of the company at the end of the year.

Column 6 is self-explanatory. Column 7 shows the amount carried to the reserve in years subsequent to the year indicated to apply on the investment for that year. For example, the figure $1,288,487 means that in the years subsequent to 12/31/22 the Company through the depreciation charges, carried that amount to reserve to apply on the investment
4851 of $7,825,805 shown in Column 2.

The last column shows the total accumulated reserve during this period applicable to investment of each year in this item. Taking the same example, the total accumulated reserve was $4,761,070 against the investment of $7,825,805, not taking into account the estimated salvage of $7,086,773.

After deducting the salvage the net investment loss to be recovered would be $2,739,032 and the depreciation charges of $4,761,070 represent 173.82 per cent of that loss. This exhibit does not include any charges to be made subsequent to December 31, 1931, for investment loss recovery on investment prior to that date.

X 184, entitled, "Ill. Bell Tel. Co. Chicago Division—Depreciation of Station Apparatus (Account 231) 19 years Jan. 1, 1913, to Dec. 31, 1931" shows the detail of how the reserve was built up on the Station Apparatus Account which was the subject matter of X 183. This exhibit does not include any portion of the early reserve of the company such as I have discussed before.

4852 Exhibit X-185, entitled, "Illinois Bell Tel. Co.—City of Chicago—Comparative Study of per cent condition or per cent value as of Dec. 31, 1930, expressed as a percentage of value when new as determined by average life method and as determined by the company." shows the per cent condition based upon ratio of expired service life to total service life as computed by the Company in Exhibit A-128. Excepting for 1930 we have used the actual additions and retirements instead of the estimated amounts used by Mr. Turner. As to this exhibit and all other exhibits offered and to be offered by me, the computations are, in my opinion, correct.

Exhibit X-186, entitled, "Illinois Bell Tel. Co.—City of Chicago—Comparative study of per cent condition or present value as of Dec. 31, 1930, expressed as a percentage of value when new as determined by age-life method and as determined by the company," is similar to X-185, but refers to buildings.

Exhibit X-187, entitled, "Ratio of Balance in Reserve for Accrued Depreciation to Total Investment in Plant and Equipment at Dec. 31st of each year, 1913 to 1930, incl.," shows the ratio of balances in reserve for accrued depreciation to the total investment in plant and equipment December 31st of each year 1913 to 1930, inclusive, for the American Telephone & Telegraph Company, and for the various licensee companies of the Bell system.

4853 The information on Lines 1 to 28, inclusive, was supplied by the Interstate Commerce Commission from its official records.

Line 29 was computed from data furnished by the American Telephone & Telegraph Company and in this particular case represents the average for the years instead of the actual at the end of the year.

The data on Lines 30 to 33, inclusive, are computations made from the basic amounts appearing on the books and records of the Illinois Bell Telephone Company.

The figures appearing on Lines 34 to 36, inclusive, are also based upon the investment and the depreciation reserves as appearing upon the books of the Illinois Bell Telephone Company, modified, however, to reflect the orders of the Illinois Commerce Commission.

This exhibit is self-explanatory and the working papers have been made available to the plaintiff.

Exhibit X-188, entitled, "Illinois Bell Tel. Co.—Chicago Division—Investment in Central Office Telephone Equipment at Dec. 31, 1923 to 1931, incl. and April 30, 1932," is information which is taken from the books of the Illinois Bell Telephone Company, and is self-explanatory.

4854 Exhibit X-189, entitled, "Ill. Bell Tel. Co.—Chicago Division—Comparison of gross additions and retirement of manual Central Office Telephone Equipment 1930 and 1931 with the Company's estimates shown on 1929 study," is a statement of the actual gross additions and retirements of Manual Central Office Telephone Equipment for the years 1930 and 1931 as taken from the books of the Company, compared with the estimates used by Mr. Turner in compiling Exhibit A-128. The amounts shown in this statement were taken from the Company's records, and show the information separately for each of the Manual Central Offices. I have compared Mr. Turner's estimated Gross Additions for the Merrimac Building for the year 1931 with the Actual Gross Additions. I found that Mr. Turner estimated the gross additions for that building in 1931 at $152,000. The actual additions were $27.00.

I would like to ask to make a correction on this Exhibit X-189. I notice in the heading of the last double column the years 1931 and 1932; that should read 1930 and 1931.

I have examined Mr. Turner's working papers which 4855 underly page 6 of Exhibit A-128 which are similar to page 5 of the said exhibit, to ascertain therefrom for which central offices, if any, Mr Turner made no estimates of future additions.

I find that there are six manual central offices included in the group shown on page 6 of Exhibit A-128 for which Mr. Turner estimated no future additions for the period beginning with the year 1930 to the date of retirement and one office where no additions were estimated beyond 1931. I have the names of those offices, and the dates beyond which there are no retirements, and the date of the retirement.

For the Douglas Office, no additions were estimated beyond 1929 to the year 1937, which is the date of retirement. For the Oakland Office, no additions were estimated beyond 1929 to 1937, the date of retirement.

For the Wentworth Office, no additions were estimated beyond 1929 to 1934, the date of retirement.

For the West Office, no additions were estimated 4856 beyond 1929 to 1932, the date of retirement.

For the Yards Office, no additions were estimated beyond 1929 to 1934, the date of retirement.

For the Hyde Park Office, no additions were estimated beyond 1931 to 1934, the date of retirement.

I examined the papers relating to the Edgewater Manual Central Office among the working papers underlying A-128. This Edgewater Office is in addition to the six to which I have referred above. I found that in the case of the Edgewater Manual Central Office, Mr. Turner, in the working papers underlying Exhibit A-128, estimated no additions beyond 1929 to 1940, the date of retirement. The Edgewater Central Office is located at 1470 Carmen avenue.

Specific Estimate Number C-26255, dated November 15, 1926, provides for the installation of panel machine switching central office equipment in the new Longbeach Central Office located in the new Longbeach Building at 1512 Carmen avenue, which is the northwest corner of Carmen ave-4857 nue and Clark street within one block of the Edgewater Manual Central Office Building.

The Specific Estimate Number C-27120, dated May 18, 1927, covering the erection of the new Longbeach Building, which was completed about October 25, 1927, contains the following information:

"The location of the office is in accordance with the fundamental plan for the area. The building is necessary to provide relief for the present Edgewater Office, the capacity of which will be reached September 30, 1928. Studies have been made which indicate that it will be more economical to provide relief with a unit of dial equipment than to extend the present manual office."

The recommendation sheet contains the following:

4858 "The basis for recommending a panel machine unit for the Edgewater district relief is a cost study which indicates that machine switching equipment should be installed in this case. The study has been reviewed by the American Telephone & Telegraph Company and they concur in the conclusions reached in a letter to the Chief Engineer, dated August 20, 1926."

In the authorization sheet of estimate Number C-26255, dated November 15, 1926, I found the following:

"This new unit will relieve the present Edgewater manual units until February 28, 1933. The capacity of the present units will be reached during September, 1928, at which time this equipment must be ready for service."

I examined the authorization sheet of Estimate Number C-27171 that bears the date of July 25, 1927, and the work was completed November 6, 1928. This covers

4859 the Longbeach Dial Office cutover, and contains the following information:

"This work is necessary in order to transfer to the new Longbeach Office all of the message rate lines in the present Edgewater Manual Office, which are to be operated from the Longbeach Dial System Unit. The cutover is scheduled tentatively for July 21, 1928."

I examined the authorization sheet of Estimate Number C-27252 covering the cutover of the Longbeach dial office. This is dated November 22, 1927, and indicates that the work was completed April 1, 1929. I found the following:

"The initial cutover of approximately 4,800 single

4860 measured service lines (11,000 stations) will be made without number changes and will include all of the lines then working in the Ardmore multiple under the Longbeach prefix. The cutover is to be made on a wholesale basis and is tentatively scheduled for September 8, 1928.

Subsequent cutovers will consist of transferring approximately 3,800 lines (8,500 stations) from the other manual units in Edgewater at the rate of about 100 lines per day starting as soon after the initial cutover as traffic conditions will permit and completing about December 31, 1928."

I have made a similar investigation regarding the Merrimac Central Office Equipment. The Merrimac Central Office Building, which was constructed in 1926, is located at 5604 West Belden avenue. The Merrimac Exchange area, as indicated in Plaintiff's Exhibit A 20, is bounded on the north by Kildare and on the east by Belmont and on the south in part by Austin Exchange areas.

The traffic recommendation attached to the authoriza-
4861 tion Number C 25227, is dated June 30, 1926, and indi-
cates completion August 6, 1927, covering new Central Office equipment at the new Merrimac Office and contains the following information:

"This new Central Office is recommended as a result of a Fundamental Plan study made by the Chief Engineer. It is to be located in the vicinity of the intersection of Grand and North Central Avenues, and will serve portions of the present Austin and Belmont areas, including the so-called Mont Clare Portion of the Austin area."

"The ultimate area to be served by this new office will also include a part of the present Kildare District. Telephone development in the initial area is predicted by the Commercial Department as follows:"

and then follows a table indicating the number of stations
which the Merrimac Office would serve from the original
4862 Austin and Belmont areas, indicating that by December
31, 1926, 6,400 stations would be served by this particular exchange, from the former Austin area; by December 31, 1927, this would amount to 7,305 stations; and by the end of 1928, 8,210; and from the Belmont area, 1,688 by the end of 1926; 1,970 by the end of 1927; and 2,225 by the end of 1928.

4863 The total number of stations shown on that specific
estimate as being in the territories which would now be served by the new exchange are as of December 31, 1926, 8,088; December 31, 1927, 9,275; and December 31, 1928, 10,465. Specific Estimate C-26027, dated January 28, 1926, and covering the construction of the Merrimac Building, contained the following:

"It is necessary to establish the office at this time to provide for growth which cannot be economically cared for from the existing offices serving the area."

Specific Estimate C-26199 dated August 1, 1926, covering additional central office equipment in the Merrimac
4864 office contains the following information:

"The capacity of the pending central office equipment in the new office is 9,600 stations. The new office will initially serve portions of Austin, Belmont and Kildare office areas; the cut-over to be made coincident with the November, 1926, directory. Due to outside plant congestion in the Belmont district, it was found necessary to further relieve the latter office, and for that purpose plans were developed for transferring two areas into the new Merrimac office in connection with the November, 1927, and 1928 directories."

I have made some examination of the plaintiff's working papers underlying the per cent condition as of December 31, 1930, assigned to these classes of station apparatus which the company had authorized to be junked when taken from the subscribers' premises and returned to the warehouse.

I made a check of the station equipment which Mr. Hyatt testified were inspected in three exchanges, namely,
4865 Canal, Monroe and West, which inspection covered fifty-nine stations. I found five No. 115-G sub-sets in service which were included in the company's list of apparatus which was authorized to be junked upon recovery from subscribers' premises during the years 1929 to 1931, inclusive. Of these 5 No. 115-G sub-sets, one was rated by Mr. Hyatt as being "Good as new" and rated in 96 per cent condition; three were rater by him as "fair," or 88 per cent condition, and one as "poor," or 80 per cent condition. The company's studies purport to show that the junk value of sub-sets is approximately 1.5 per cent.

The stations which I examined also included one sub-set, Type C-294, which has been in the junking list during the years 1929 to 1931. This set was rated by Mr. Hyatt as being "Good-as-new" and assigned a per cent condition of 96 per cent. This list also includes seven sub-sets, Type 295-B-E, all of which were rated by him as "Good-as-new" and given a 96 per cent condition; this type also appears on plaintiff's list of equipment authorized to be junked in 1931.

These fifty-nine stations include seven sub-sets, Type 295-R, of which five were rated by Mr. Hyatt "good-as-new," 4866 and given a 96 per cent condition and two rated "fair" at 88 per cent condition, although this type is also on the 1931 junking list.

The fifty-nine stations also include one sub-set Type 295-A and one Type 295-R-X, both rated by Mr. Hyatt as "Good as new," although this type is on the 1931 junking list.

These fifty-nine stations also include two desk stands, Type 40 C-M, rated by Mr. Hyatt as "Good-as-new" and given a per cent condition of 90 per cent; this type was on the junking list from May, 1930, to the end of 1931.

Mr. Hyatt's records indicate he examined 1,174 stations on the subscriber's premises. The average per cent condition assigned to these 1,174 stations was 92.61 per cent.

Mr. Hyatt also inspected 3,538 sets of station apparatus which had been removed from subscribers' premises in the regular course of business and returned to the store-4867 room during a three day period. He assigned them a 92.77 per cent condition. I have determined from Mr. Hyatt's working papers the minimum per cent which represents his estimate of salvage used by him in determining per cent conditions.

I have taken the minimum per cent which Mr. Hyatt fixed for each of the component parts of station apparatus exclusive of teletypewriters and based upon the ratio which each of these component parts are of the total as shown in Mr. Hyatt's working papers, I have computed the minimum value or per cent condition which Mr. Hyatt used for station apparatus to be 65.63 per cent.

I have examined the records of the company to determine the basis of the company's estimate of five per cent for salvage of station apparatus which is junked.

The company has not made a separation of the actual salvage recovered in any year so as to show what part 4868 thereof represents the apparatus junked and what part pertains to apparatus reused.

The company's estimate of five per cent junk salvage is based on estimated quantities of various kinds of materials included in the different kinds of apparatus to which quantities the current price has been applied. The calculations which were furnished me did not show a result of five per cent for junk salvage. Data was given me covering three types of stations. Two of these indicated two per cent salvage and one of them 1.6 per cent junk salvage.

Exhibit X-191, entitled "Ill. Bell Tel. Co.—Chicago Area—Station Apparatus Calculation of Junk Value (Based on prices as of 5-1-32)," shows the two per cent salvage
4869 on two items, and 1.6 per cent salvage on one item. The sheet that the company gave me was dated 5-1-31, but it should be 5-1-32. Both of these statements, X-190, entitled, "Ill. Bell Tel. Co.—Chicago Area—Statement maximum Salvage of Dismantled Statement Apparatus assuming reuse of all dismantled parts," and X-191 were furnished me by Mr. Cox of Mr. Turner's office. Mr. Cox explained that five per cent had been used instead of two per cent in order to make some allowance for station apparatus that was dismantled wherein certain component parts could be reused which would naturally result in a higher percentage of salvage.

The same general method of calculation of the salvage was used where parts are reusable, as with the ultimate junk salvage.

4870 Mr. Cox advised that the company had no data showing the proportion of equipment which is completely junked as compared with the equipment wherein some parts are reusable. The estimated over-all life of eighteen years for station apparatus is entirely dependent upon the five per cent junk salvage which the company had used. The process is to determine the number of stations junked each year, using the five per cent salvage as one of the factors, and after determining the number of stations junked in each year, in this manner the turnover cycle method is used to determine the over-all life. If two per cent were used in the formula instead of five per cent, the effect would be to increase the over-all life, and this would also involve more reuses of the equipment.

4871 There is no record to show when the company reinstalls station apparatus which has previously been in service, whether that unit has served one or more periods of usefulness. The number of stations indicated by Mr. Turner's formula as being junked in the years 1923 to 1931, are as follows: 1923, 12,565; 1924, 21,350; 1925, 16,729; 1926, 25,844; 1927, 26,861; 1928, 32,952; 1929, 26,452; 1930, 61,978; 1931, 46,462. Mr. Turner's estimate of the number of stations removed from service in these years is as follows: 1923, 92,963; 1924, 106,973; 1925, 139,684; 1926, 156,633; 1927, 188,878; 1928, 246,502; 1929, 251,267; 1930, 291,570; 1931, 306,334.

4872 Mr. Redmond testified in connection with Exhibit A-22 that he found four items of equipment which were considered obsolete and that three of these he rated at zero per cent condition. These three items which Mr. Redmond stated had been given a per cent condition of zero represent .36 of one per cent of the total depreciable property.

The paper conduit which Mr. Redmond considered obsolete, but to which he gave a five per cent condition, represent .34 of one per cent of the total depreciable property.

Referring to Mr. Hyatt's testimony that in determining the per cent condition he used a process of measuring the cords, plugs and a portion of the jacks which are contained in the various central office telephone equipment and in private branch exchanges, I have determined what portion of the entire depreciable plant is represented by these items. These items represent .99 of one per cent of the total depreciable plant.

Referring to Mr. Riley's testimony that a percentage of the poles were tested by a method of penetration to

4873 determine the amount of rot, I have determined that 11.81 per cent of all of the poles inspected were examined by the penetration method. Applying that same percentage to all of the poles in service would result in an amount of plant equal to .18 of one per cent of the total depreciable property.

Referring to Mr. Redmond's testimony that he determined the per cent condition of the automobile equipment by the process of relating the number of miles which the equipment had run up to December 31, 1930, to the total number of miles which might be expected from the said equipment until it was ultimately worn out, I determined that this equipment represents .27 of one per cent of the total depreciable property. I have examined the company's method of assigning per cent condition to the automobile equipment owned by the company.

There were three passenger cars included in the company's list of automobiles, of which one was a Lincoln model 1927 limousine. The book cost of that car was on December 31, 1930, $5,862.60. The company used the number of miles which the equipment had run to December 31, 1930, as compared with the total number of miles which might be expected from such equipment in determining its per cent condition. This car had run 23,836 miles of an estimated mileage expectancy of 150,000, when the car was expected to be retired, because it would be worn out. The company assigned a per cent condition of 82 per cent of cost as of December 31, 1930.

4875 The depreciation rate used by the company for this type of equipment in the years 1928 and 1929 was approximately 24 per cent, and in the year 1930, approximately 21 per cent.

The records show that the following panel machine switching central offices were placed in service during the period 1923 to 1931, inclusive; Central, June, 1923, State, August, 1923; Superior, November, 1925; Whitehall, May, 1927; Long Beach, September, 1928; Randolph, December, 1928; Franklin, December, 1928 Wabash, November 30, 1929; Harrison, November 30, 1929; Webster, November 30, 1929; Delaware, March 14, 1931; Andover, June 15, 1931; Dearborn, January 1, 1931.

The manual central offices that went into service between 1923 and 1931, were Newcastle in 1923 and Merrimac in 1926. The manual central offices that went out of service during the period 1923 to 1931, inclusive, were Randolph-Central, 1923; Randolph, 1928; Main, 1928; Tandem, 1931; Wabash-Harrison, 1929; Chesterfield, 1930; Dearborn, 1931, and Delaware, 1931.

4876 (Defendants' Exhibits X-155 to X191, inclusive, offered in evidence. Ruling reserved until after cross-examination.)

4880 "Judge Wilkerson: Where an exhibit has been identified and presented to the court, unless there is some objection made to it, and a rule excluding it, it will be in the record. That works for both sides, if by inadvertence an exhibit is not formally offered."

4882 *Cross Examination by Mr. Bracken.*

In connection with my exhibit identified this morning as X 187, which I said was based, either in whole or in part, upon certain figures that were furnished me by the Interstate Commerce Commission, we did not receive copies of the Annual Reports of the operating of the Bell System from the Commission and take the figures from those records. I might state this: That the earlier years were taken from the table in the rear of the Interstate Commerce Commission's report in case No. 14700, the Depreciation Case. It was the
4883 original report, I think, November 2, 1926, if I recall the
date correctly, and the years following the data shown in that report were obtained from the Interstate Commerce Commission by correspondence.

(The following described exhibits furnished by plaintiff were offered in evidence by defendants; to all of which plaintiff reserves objection.)

The balance of Exhibit X 104, that is the statements from 1923 to 1930, inclusive, corresponding to the other years shown in X-104, sent by the A. T. & T.

The balance of X 105 are sheets corresponding to those which have been identified and cover the years 1923 to 1930, and are those sent by the A. T. & T. also to be identified as X 105.

X 192 is CR 51 A, "Associated operating companies excluding American Telephone & Telegraph Company Long Lines Department," two pages for the year ending December 31, 1931.

4884 X-193—C. R. 53.

X-194—195 Broadway Corporation, Balance Sheets and Income Statements, R. E. 1, for 1923, 1925, 1928, 1929, 1930.

X-195—195 Broadway Corporation, Pay roll and occupancy reports, R. E. 2, 1923 to 1926.

X-196—205 Broadway Corporation, Balance Sheets and Income Statements, R. E. 11, for 1923, 1925, 1926, 1927 and 1928.

X-197—205 Broadway Corporation, Pay roll and Occupancy Report, R. E. 12, for 1924, 1925 and 1926.

X-198—195-205 Broadway-Corporation, Occupancy Reports, R. E. 12-A, 1927, 1928, 1929, 1930.

X-199—Western Electric Co., Inc., Sales to Classes of Customers. C. R.-C. A. 1.00 per years 1916-23-25-30.

X-200—Western Electric Company, Inc., Estimated Cash Receipts from Licensee Companies—C. R. 7.14 for years 1921, 1924, 1925, 1926, 1927, 1929, 1930.

4885 X-201—Western Electric Co., Inc., Current Interest Bearing Indebtedness C. R. No. 7.15

Year 1921 Page 1 of report for Jan. 31
Page 1 of report for Apr. 30
Page 1 of report for July 31
Page 1 of report for Oct. 31
Same for Year 1923
Year 1924
Year 1929 (except sheet 1 for Jan. 31).
Year 1930.

X-202—Bell Tel. Laboratories, Inc., Analysis of Expense by Classes of Work, M-3.41, for December, 1925-1930, incl.

X-203—Bell Tel. Securities Co., Inc., Cash Statement for 1923-1924, and 1929-1930.

X-204—Bell Telephone Securities Co., Inc., Expense Report for December, 1923-1930, C. R. 42, and since 1928, C. R. 44.

X-205—A. T. & T. Co. Long Lines—M. R. 14—December of years 1927, 1928, 1929 and 1930. Cash report front and back of sheets.

X-206—A. T. & T. Co—C. R. 14—Cash Statements, 1923-1930.

4886 X-207—A. T. & T.—Operating Revenues shown separately for Long Lines, License and Holding Company, 1920-1931 (Schedule 310 of Report to I. C. C.).

X-208—A. T. & T.—Operating Expenses shown separately for Long Lines, License and Holding Company, 1920-1931 (Schedule 320 of Report to I. C. C.).

X-209—Cost of Principal Activities, Charges to Development Account, 1923.

X-210—Western Electric Non-Bell and Direct Engineering Department Expense, 1923.

X-211—Bell Telephone Laboratories—M-8.00 Reports—Balance sheets for Dec. 31, 1924, Jan. 1, 1925, and sheet explaining entries; Dec. 31, 1929; Dec. 31, 1930.

X-212, X-213, X-214, X-215, X-216—Bell Telephone Securities Circulars—dated June 16, 1924 (212); June 14, 1926

(213); June 11, 1928 (214); May 20, 1929 (215); June 9, 1930 (216).

4887 X-217—A. T. & T. Miscellaneous Non-Operating Revenue Account 316, 1923-1930.

X-218—Bell Telephone Laboratories, Inc., Receipts and Disbursements, 1925-1930.

X-219—A. T. & T. Co., Average Number of Stations in Service of Each Company Receiving License Contract Service and City of Chicago, 1923-1930.

X-220—Trust Agreement—Pension Fund—A. T. & T. and Bankers Trust Company—Dec. 31, 1927.

X-221—Trust Agreement—Pension Fund—Any other Company and Bankers Trust Co.—Dec. 31, 1927.

X-222—A. T. & T. Co., Memorandum relative to Actuarial determination of accrual Charges for Service Pensions on the full service basis.

X-223—Copy of Resolutions of Board of Directors of A. T. & T. authorizing establishment of Pension Fund.

X-224—Ill. Bell, Copy of Resolutions.

X-225—A. T. & T. Co., Funds of Associated Companies temporarily placed with A. T. & T. Co. until required by them (average), years 1923-1930.

X-226—Western Electric Company, Inc., Analyses of Cost of Sales—1925 and 1930.

4891 **W. M. HAMMOND**, called as a witness on behalf of the defendants, having been first duly sworn, testified as follows:

Direct Examination by Mr. Goldstein.

(June 14, 1932.)

My name is W. M. Hammond. I reside at Springfield, Illinois. My present position is chief accountant of the Illinois Commerce Commission. I have had that position about fourteen years and four months. Prior to that, I was assistant chief accountant of the Commission, for approximately two years, and examiner of accounts, for the remainder of the time. I was engaged prior to that in accounting, statistical and financial analysis work. In the employ of various railroads—three different companies.

4892 I had charge of the preparation of financial, statistical and operating reports, and spent considerable time in preparing matter for presentation to the State Commissions and to the Interstate Commerce Commission, on rate matters; and some other proceedings.

In connection with my duties as chief accountant for the Illinois Commerce Commission, one branch of the work has been in the handling of investigations in connection with securities issues. Since 1949 I have personally heard for the Commission practically all applications for authority to issue stocks, bonds and other securities.

In connection with those hearings it has been my duty to examine witnesses, to make such investigations as seemed necessary and desirable, to make recommendations to the Commission on the case, and to suggest what I deemed an appropriate form of order.

4893 Under the existing law, applications made to the Interstate Commerce Commission involving railroads operating in Illinois are referred to the Illinois Commerce Commission for the purpose of affording opportunity of making recommendations. Those are handled by me, investigated, and a report made to the Commission, with recommendations to any representations, and if so, what, I deem appropriate to have made before the Interstate Commerce Commission. That involves a study, more or less, of the cost of funds, and the general level of security prices and rates.

I also hear all applications for, and make recommendations to the Illinois Commerce Commission in connection with all plans for the reorganization of utilities under the jurisdiction of the Illinois Commerce Commission.

For the last several years, four or five years, I have
4894 heard practically all applications for authority to sell or lease public utility property.

We have a department subdivision covering the preparation and classification of accounts and accounting rules which the Commission prescribes for the use of public utilities, in keeping their accounts.

I also handle accounting matters that may be of joint interest between the Illinois Commerce Commission and the Interstate Commerce Commission, particularly matters relating to the interpretation of existing accounting rules, and revisions and changes therein from time to time.

I prepared, with the assistance of my staff, the Uniform System of Accounts for electric utilities, for gas utilities, for water and heating utilities, which was prescribed for use by the Public Utilities Commission of Illinois in 1918.

My department prepares, under my supervision, the 4895 forms of reports to be rendered and required by law to the Illinois Commerce Commission, by all utilities under its jurisdiction.

These reports when received are analyzed, and the data prepared for the use of the Commission and others.

In 1931, there were 753 utility companies under the jurisdiction of the Illinois Commerce Commission, representing an investment in Illinois of approximately $1,850,000,000, exclusive of railroad, express and telegraph companies, and the American Telephone and Telegraph Company.

The number of applications for authority to issue securities for the last twelve years under my supervision, has been approximately 1,687 involving issues aggregating more than $2,000,000,000.

I also have supervision over the audit and investigation of accounts and records of public utilities under the juris-
4896 diction of the Commission, the greater part of such investigation having relation to the authorization of securities, reorganization and rate matters.

In connection with the work of the Interstate Commerce Commission, my work has been particularly in the matter of depreciation of telephone property. The Interstate Commerce Commission entered an order on November 1926, which is in the record in this proceeding, Record Volume 1, in which it was provided that the Interstate Commerce Commission would receive recommendations from the State Commissions as to the rates for depreciation of various classes of telephone property.

The Association of State Commissioners has created a committee for the purpose of collaborating with the Interstate Commerce Commission and with other State Commissions with respect to the determination of proper rates for depreciation to be recommended to the Interstate Commerce Commission.

Now, the further or final order in this case was en-
4897 tered July 28, 1931, in which the Commission confirmed
the previous order of 1926 with respect to the recommendations of the State Commissions.

During the year 1930, I served as chairman of the Committee of the National Association dealing with this matter. In 1931, I served as a member, and since the early part of 1932, have been serving as chairman of the committee.

I have served on the committee on Statistics and Accounts during the last twelve years, for approximately one-half the time, and have been chairman of the committee a portion of the time.

I was one of three accountants of the National Association who drafted systems of accounts for electric and gas utilities, which have since been approved and are now in use by some twenty-seven commissions, approximately.

In connection with the instant case, I have made certain studies with reference to bonds and stocks.

4898 There were four main studies made on bond issues under my supervision, the work covering a period of twelve months, entailing the work of from three to ten persons. A check of the studies has been going on almost continuously to the present time, both in Chicago and by sending persons to Washington to check the figures against the official records of the Interstate Commerce Commission.

A study was made of 330 long-term bond issues of $5,000,000 or more, issued during the years 1921 to 1931, inclusive, aggregating $6,138,000,000 covering railroads, Bell System telephone companies, and public utilities other than the Bell System companies, in respect to the annual cost to the company and the yield on offering price of the issue, where the authorization of such issue was approved by the Interstate Commerce Commission or by one or more of ten State Commissions from whose official records information was obtained.

4899 The State Commissions from which the information was obtained were as follows:

California, Maryland, New York, Illinois, Massachusetts, Ohio, Wisconsin, Maine, New Jersey, and Vermont.

Of these issues we have made a further study of 271 of the 330 issues which were issued during the year 1923 to 1931, aggregating $5,184,000,000 to show the spread between the annual cost to the company and the yield on the offering price of the issues, grouped according to Moody's investment rating in the year of offer.

4900 The second study was a study of 878 long-term bond issues of $5,000,000 or more, issued during the years 1923 to 1931, aggregating $14,345,000,000 of railroads, the Bell System Telephone Companies, public utilities other than the Bell System, and industrial and other companies in respect to the amount offered and the proportion of the total offering in each case grouped according to Moody's investment rating at the time of offering.

The third was a study of the yield on offering price of the 829 bond issues of $5,000,000 or over and issued during 1923 to 1931, aggregating $13,809,000,000, issued by railroads, Bell System Telephone Companies, public utilities other than the Bell System companies, and industrial and other companies in respect to the yield on public offering price of the bonds classified according to their investment rating when issued.

4901 After excluding from the 829 issues all convertible bond issues and bond issues carrying stock purchase warrants, a further (the fourth) study was made of the remaining 720 issues aggregating $11,347,000,000 in respect to the resale price of such issues for each of the years from the date of issue to 1931, inclusive, grouped according to the investment rating at the date of issue and also grouped according to the investment rating in the year of resale.

The result of these studies has been reduced by me to summaries shown in exhibit form and in charts.

These summaries and charts have been reproduced in detail in connection with each of these studies, grouped according to subject matter.

They have also been reduced to exhibit form, and copies of them have been furnished to the plaintiff.

In my opinion, through the use of these sheets, the accuracy of the charts and the summaries, and the method of 4902 their computation, can be determined.

Exhibit X-227 is a chart entitled "Cost to companies, yield to public and spread between cost and yield on offering price of bonds," is a graphic reproduction of Exhibit X-229. I think it is fully self-explanatory.

Exhibit X-228 is a chart entitled "Spread between annual cost to company and yield on public offering price, 330 bond issues, 1921-1931, aggregating $6,138,000,000,” is likewise a reproduction from Exhibit X-229. It is based on figures in the last three columns of X-229.

4903 Exhibit X-229 is entitled “Comparative statement showing cost to companies and yield to public on bonds issued by Bell System, Railroads and Public Utilities, other than Bell System, average for each year 1921 to 1931, inclusive.”

The heading states the subject matter. The figures underlying the computations relating to the cost of the company were taken from the official records of the Interstate Commerce Commission.

4904 The figures for the railroads were likewise taken from the Interstate Commerce Commission, and, for the public utilities, were taken from the official records of the Illinois Commerce Commission and from the records of the State Commissions above stated.

The figures underlying computations under “yield to the public,” were taken from the Commercial and Financial Chronicle and Moody's Investment Manual, and Poor's.

The spread between the average cost to the company and the average yield to the public is the difference between the first and second groups of figures.

Exhibit 230 is a chart entitled “Bonds grouped by ratings (Moody's) showing amount in each group and its proportion to total offering, 878 issues, 1923-1931, aggregating $14,345,000,000.”

This exhibit shows for the Bell System, railroads, public utilities and industrials, the percentage of total amount
4905 of bonds issued in each year represented by each classification of bonds based on Moody's ratings.

Exhibit X-231 is a chart entitled “Bonds grouped by ratings (Moody's) showing amount in each group and its proportion to total offering, 878 issues 1923-1931, aggregating $14,345,000,000.”

It shows the same facts as X-230 in different form, together with some additional amounts representing issues on which Moody's ratings were not available.

Exhibit X-232 consists of three pages and is entitled “Comparative summary showing amount offered and proportion of total offerings of Bell System, railroad, public utility (other than Bell System) and industrial and other bond issues of $5,000,000 and over, issued during years 1923 to 1931, inclusive, grouped according to investment rating at time of public offering."

This exhibit shows the figures on which Exhibits X-230 and X-231 are based.

4906 Exhibit X-233 is a chart entitled "Spread between annual cost to company and yield on public offering price, 271 bond issues 1923-1931, aggregating $5,184,000,000, grouped by ratings (Moody's)."

This exhibit is I believe self-explanatory. It shows in graphic form the data given in the last three columns of Exhibit X-235.

Exhibit X-234 is a chart entitled "Trend of spread between annual cost to company and yield on public offering price, 271 bond issues, 1923-1931, aggregating $5,184,000,000, grouped by ratings (Moody's)."

This exhibit also shows in graphic form the data shown in the last three columns of X-235 and is I believe self-explanatory. It is noted here again that the ratings are of the year offered.

Exhibit X-235 is entitled "Cost of money to Bell System, railroad and public utility companies and yield to public on bonds issued in years 1923 to 1931, inclusive, classified according to investment rating when issued."

4907 The heading states the subject matter. The exhibit contains the detail for Exhibit X-233 and Exhibit X-234.

Exhibit X-236 is a chart entitled "Trend of weighted averages of bond yields on public offering price grouped by ratings (Moody's), 829 issues, 1923-1931, aggregating $13,809,000,000."

This exhibit is apparently well described on the face of it. I might say, it shows in the upper portion all of the bond issues, including the convertible issues and issues with stock purchase warrants, and in the lower portion of the exhibit, the issues excluding the convertibles and those with stock purchase warrants.

Exhibit X-237, is entitled "Average yield on bonds sold during years 1923 to 1931, inclusive, classified according to investment rating when issued, Bell System, railroads, public utilities, industrials and others—includes issues of $5,000,000 or over—yield based on offering price."

This exhibit contains the details graphically presented in X-236.

4908 Exhibit X-238 is a chart entitled "Trend of averages of bond yields on re-sale, from date of issue to 1931, grouped by ratings (Moody's) on public offering."

This exhibit I believe is self-explanatory. It is a graphic presentation of the details shown on Exhibit X-239.

Exhibit X-239, consisting of three pages, is entitled "Average bond yields based on re-sale prices during each year, 1923 to 1931, inclusive, Bell System, railroads, public utilities, industrials—based on high and low market prices of issues of $5,000,000 and over."

It contains the data on which X-238 is based.

Exhibit X-240 is a chart entitled "Trend of averages of bond yields on re-sale from date of issue to 1931 grouped by ratings (Moody's) in year of re-sale."

This is a graphic presentation of the details shown in Exhibit X-241.

4909 Exhibit X-241, consisting of three pages, is entitled "Average bond yields based on resale prices during each year 1923 to 1931, inclusive, Bell System, railroads, public utilities, industrials—based on high and low market prices of issues of $5,000,000 and over."

This is a tabulation which contains the figures on which X-240 is based.

Exhibit X-242 is entitled "Trend of averages of bond yields on resale from date of issue to 1931, grouped by ratings (Moody's) in year of resale."

It is a graphic presentation of the data shown in Exhibit X-243.

Exhibit X-243, consisting of seven pages, is entitled "Average yield on resale of bonds 1923 to 1931, inclusive; yields on cumulative classification (according to investment rating) showing average yield in each year on all bonds of the same class issued in 1923 and in subsequent years to and including the indicated year of resale."

The heading states the subject matter. The exhibit contains the figures on which Exhibit X-242 is based.

4910 Exhibit X-244 is a chart entitled "Trend of averages of yields of bonds issued in years 1923 to 1931, resold in each year grouped by ratings (Moody's) in year of resale."

This exhibit is a graphic presentation of the data shown in Exhibit X-245. It gives in final form the picture of the securities, and the market, for the period including 1931:

Exhibit X-245, is entitled "Weighted average yield on resale of bonds, 1923 to 1931, inclusive, showing weighted average yield on each class, including resales of all bonds issued from 1923 to year of resale—year of Resale and Yield."

This exhibit contains the figures on which the preceding chart, Exhibit X-244 is based.

Exhibit X-246 is a chart entitled "Range of averages of bond yields on public offering price; grouped by ratings (Moody's), 829 issues, 1923 to 1931, aggregating $13,809,-000,000."

4911 The heading states the subject material. It is the graphic presentation of the data shown in Exhibit X-247.

Exhibit X-247 is entitled "Range of averages of yields on public offering price of bonds grouped by investment ratings (Moody's) 1923-1931, inclusive, showing the highest average yield on any issue within its class, and the lowest average yield on any issue within its class, based on offering price. (Includes convertible issues and issues with stock purchase warrants.)"

This includes the figures in detail which are presented in graphic form in Exhibit X-246.

Exhibit X-248 is a chart entitled "Range of averages of high and low bond yields on resale from date of issue to 1931 grouped by ratings (Moody's) in year of resale."

It is a graphic presentation of the data presented in Exhibit X-249.

4912 Exhibit X-249 consisting of four pages, is entitled "Range of averages of high and low bond yields on resale prices grouped by investment rating (Moody's) in year of resale 1923 to 1931, inclusive, showing an average of the highest yields established during the year on all issues in each class, compared with an average of the lowest yields established on all issues in the class."

This exhibit contains the figures that are presented in graphic form in Exhibit X-248.

Exhibits X-227 to X-249 are concerned with bonds.

I have also made a study of the average yield on common stocks grouped according to Moody's investment rating of the companies' bonds, and that study is reflected in Exhibit X-250.

X-250 is a chart entitled "Public Utilities—average yield
on common stocks compared with average yield on
4913 bonds. grouped according to Moody's rating of the
companies' bonds."

A study was made of the average yield on common stocks grouped according to Moody's Investment rating of the company's bonds. The average yield on stocks is based on the average of the high and the low market price for each year and the cash dividends paid thereon. The result is shown in graphic form in Exhibit X-250. The data on which this chart is based are contained in Exhibit X-251. The source of this data is from Moody's Investment Manual.

Exhibit X-251 consisting of two pages is entitled "Public
utilities.—Average yield on common stocks compared with
average yield on bonds." This comparison includes only
those companies issuing bonds from 1923 to 1931, inclusive
(in amounts of $5,000,000 or over), whose stocks have
4914 been traded in open market. The stocks of these com-
panies have been grouped according to the investment
rating of the companies' bonds.

This exhibit contains the figures on which Exhibit X-250 is based.

I have also made a study of the sources of funds invested in fixed capital of public utilities operating in the City of Chicago, particularly the Illinois Bell, the Commonwealth Edison Company and the Peoples Gas Light and Coke Company, and such study is reflected in Exhibit X-252, which is a chart entitled "Source of funds invested in fixed capital—public utilities operating in City of Chicago."

I made a study of the sources of funds from various
sources used by these companies. The result of the study is
embodied in two exhibits, X-252, being a graphic presenta-
tion of the data shown in X-253. The sources of the data
shown in these two exhibits are the records of the Illi-
4915 nois Commerce Commission, and Moody's Manuals.
The exhibits I believe are self-explanatory.

I have furnished a copy of this exhibit to the plaintiff, and my working papers showing the details are available to the plaintiff.

Exhibit X-253 consisting of three pages is entitled "Source of funds invested in fixed capital in Illinois Bell Telephone Company." That is the exhibit which shows the detail for Exhibit X-252.

In connection with the Illinois Bell Telephone Company, I have made a further study of the source of funds invested in fixed capital, which was more extensive than the study shown in Exhibit X-252, in that it covers the period from 1913 to 1931, whereas Exhibit X-252 covers only the
4916 period from 1927 to 1931.

I obtained the figures in connection with the Commonwealth Edison Company, from Moody's Manuals, checked with the reports filed with the Illinois Commerce Commission. These are the Moody's Manual figures furnished by the company. So far as I know, there has
4917 been no charge-off of surplus as yet.

Exhibit X-254 is a chart entitled "Illinois Bell Telephone Company—source of funds invested in fixed capital."

This includes the years 1913 to 1931, inclusive. The result of the more extensive study of the Illinois Bell history is shown in Exhibit X-255, entitled "Illinois Bell Telephone Company—entire company—investment in Fixed Capital compared with total capital obligations and surplus, years 1913 to 1931, inclusive." The data shown in both Exhibit X-254 and Exhibit X-255 were taken from the books of the Telephone Company.

Exhibit X-255 has already been described sufficiently.

I also made a study of the average funds used in the business of the Illinois Bell, the Commonwealth Edison Company and the Peoples Gas Light and Coke Company.
4918 This study is reflected in Exhibit X-256 and Exhibit X-257. Exhibit X-256 is entitled "Average cost of funds used in business of Illinois Bell."

The data concerning the Illinois Bell Telephone Company are data taken from exhibits already presented in this case. The information concerning the Commonwealth Edison Company and Peoples Gas Light and Coke Company was taken from Moody's Manual, and checked with the reports to the Illinois Commerce Commission.

Exhibit X-257 is entitled "Average yield on bonds of Illinois Bell Telephone Company and on bonds of other public utilities operating in Chicago (exclusive of transportation companies) years 1923 to 1931."

The heading states the subject matter. I might say that all of the figures thereon that relate to the yield on the
4919 Illinois Bell bonds, and of the Commonwealth Edison and Peoples Gas Light and Coke Company, were taken from Moody's Manuals. The three lines on the lower part of the sheet are a reproduction of figures appearing in Exhibit X-256, merely used here for comparative purposes.

I have also made a study, for the years 1921 to 1931 of securities issued under the authority of the Illinois Commerce Commission and its predecessor, in comparison with all public utility issues in the United States.

That study is reflected in Exhibit X-258 entitled "Securities issued under the authority of the Illinois Commerce Commission and its predecessor in comparison with all public utility issues in the United States."

4920 This is a study which shows for the years 1921 to 1931, both inclusive, the securities issued under the authority of the Illinois Commerce Commission and its predecessor, in comparison with all public utility issues in the United States, as shown in the exhibits developed in these studies.

The issues authorized by the Illinois Commerce Commission, which are the subject matter of this study, aggregate $464,000,000. The total for the entire country including Illinois utility issues is $7,504,087,000.

My working papers showing the detail for this exhibit, are available to the plaintiff.

4921 I also made a study of the yields on the common stock of the Bell System Companies, 1921 to 1931, as shown on the exchanges, and for the American Telephone and Telegraph Company, for the period 1901 to 1931, based on data in Moody's Investment Manual, and the results of this study are shown in Exhibit X-259, and Exhibit X-260.

Exhibit X-259 is entitled "American Telephone and Telegraph Company—Common stock—High and low selling prices and yields, 1901-1919"—page 1; and on page 2, "American Telephone and Telegraph Company—Common stock—High and low selling prices and yields, 1920-1931." I believe it is self-explanatory.

Exhibit X-260, is entitled "Yields and average yields on high and low market prices of common stocks of Bell System Companies sold on exchanges during years 1921-1931, inclusive."

I think it is self-explanatory. The descriptive matter on the exhibit I think fully explains the contents.

4922 Exhibit X-261, entitled "Amount of and high, low and average annual yields on all bonds of Bell Telephone system, Railroads, Public Utilities and Industrial corporations, issued in amounts of five million dollars and over, maturing in five years or more from date of issue, years 1921-1931, inclusive, issues from 1923-1931, incl., being classified according to Moody's ratings," and X-262, entitled "Statement showing all bonds of Bell Telephone System, Railroads, Public Utilities and Industrial corporations issued during years 1921-1931, incl., in amounts of five million dollars and over, maturing in five years or more from date of issue, name of issuing company, amount of issue, interest rate, offering price, high and low resale price and average annual yield," are books which contain all of the detail underlying the Exhibits X-227 to X-260, which are being offered in connection with my testimony.

All of these Exhibits X-227 to X-226 have been very carefully checked, and I believe that they are correct.

(Exhibits X-227 to X-262, both inclusive, offered in evidence. Ruling reserved until the cross-examination.)

R. C. RAINWATER, recalled as a witness on behalf of the defendants, having been previously duly sworn, testified further as follows:

4937 *Direct Examination by Mr. Goldstein.*

(June 14, 1932.)

4938 In my opinion, the computations made in each of the exhibits about to be offered in evidence, X-272 to X-304, are correct, and the facts contained therein are correctly taken from the sources indicated.

Exhibit X-272, entitled "Rate of interest on capital stock installments paid by Ill. Bell to A. T. & T. converted into average return to stockholders of A. T. & T. on their investments in capital stock of A. T. & T. during years 1920 to 1930, inc.," was taken from the books of the Illinois Bell, and from Exhibit X-108 and is self-explanatory.

Exhibit X-273, entitled "Return on Investment (capital stock issued, capital stock installments and loans) from dividends on capital stock issued, interest on capital stock installments and interest on loans of Ill. Bell during years 1920 to 1930, incl.," investment in capital stock issued was taken from X-124; capital stock installments from the books of the Illinois Bell; loans from X-131; dividends on capital stock from the reports of the American Telephone & Telegraph Company to the Illinois Commerce Commission; interest on capital stock installments from the books of the Illinois Bell; interest on the loans was computed from X-131.

Exhibit X-274, entitled "A. T. & T. Co.—Return on Investment (Capital stock issued, Capital Stock Installments, and Loans) from Dividends on Capital Stock Issued, Interest on Capital Stock installments, interest on loans, and Undivided Profits of Illinois Bell Tel. Co., during Years 1920 to 1930, inc.," is computed from X-273, with the addition of the undivided profits which were computed from the annual reports of the Illinois Bell to the Illinois Commerce Commission, 4989 and allocated to the American Telephone & Telegraph Company on the basis of stock ownership.

Exhibit X-275, entitled "A. T. & T. Co.—Percentage of Undivided Profits, Allocable to A. T. & T. Co. Stock Ownership, to investments by A. T. & T. Co. in Common Stocks of Licensee Companies, during years 1920 to 1930, incl.," was taken from pages 300 and 301 of the annual reports of the licensee companies to the Interstate Commerce Commission and allocated to the investments of the American Telephone & Telegraph Company in the stocks of the various companies on the basis of the stock ownership, computed from X-124.

Exhibit X-276, entitled "A. T. & T. Co.—Percentage of Undivided Profits of Licensee Companies to investments by A. T. & T. Co. in common stocks of Licensee Companies, converted into Average Return to Stockholders of A. T. & T. Co. on their investment in Capital Stock of A. T. & T. Co. during years 1920 to 1930, incl.," was computed from X-275 and X-108.

The source of X-277, entitled "A. T. & T. Co.—Percentage of Dividends and Undivided Profits of Licensee Companies to investments by A. T. & T. Co. in common stocks of Licensee Companies, during years 1920 to 1930 inclusive," was X-275, and the dividends were taken from the annual reports of the American Telephone & Telegraph Company to the Illinois Commerce Commission.

Exhibit X-278, entitled "A. T. & T. Co.—Percentage of Dividends and Undivided Profits of Licensee Companies to Investments by A. T. & T. Co. in Common Stocks of Licensee Companies, Converted into Average Return to Stockholders of A. T. & T. Co. on their investments in capital stock of A. T. & T. Co. during years 1920 to 1930, incl.," was computed from X-277 and X-108.

Exhibit X-279, entitled "A. T. & T. Co.—Percentage of Undivided Profits Allocable to A. T. & T. Co. stock ownership to Investments (Stock and Loans) by A. T. & T. Co. in Licensee Companies during years 1920 to 1930, inclusive," was computed from X-275 and X-131.

Exhibit X-280, entitled "A. T. & T. Co.—Percentage of Undivided Profits of Licensee Companies to Investments (Stocks and Loans) by A. T. & T. Co. in Licensee Companies, converted into Average Return to Stockholders of A. T. & T. Co. on their investments in capital stock of A. T. & T. Co., during years 1920 to 1930," was computed from X-279 and X-108.

Exhibit X-281, entitled "A. T. & T. Co.—Percentage of
4940 Dividends, Interest, and Undivided Profits of Licensee
Companies to Investments (Stock and Loans) by A. T. & T. Co. in Licensee Companies, during years 1920 to 1930," was computed from X-278, X-280 and X-131.

Exhibit X-282, entitled "A. T. & T. Co.—Percentage of Dividends, Interest, and Undivided Profits of Licensee Companies to investments (Stock and Loans) by A. T. & T. Co. in Licensee Companies, Converted into Average Return to Stockholders of A. T. & T. Co. on their investments in Capital Stock of A. T. & T. Co., during years 1920 to 1930, inclusive," was computed from X-281 and X-108.

In X-283, entitled "A. T. & T. Co.—Dividends on Capital Stock and Undivided Profits Allocable to A. T. & T. Co. Ownership Related to Investment in Capital Stock and Surplus allocable to A. T. & T. Co. ownership of Ill. Bell Tel. Co., of all Licensee Companies, and of all Licensee Companies Exclusive of the Ill. Bell Tel. Co., during years 1920 to 1930, incl.," the dividends were taken from the annual reports of the American Telephone & Telegraph Company to the Illinois Commerce Commission; the undivided profits were taken from X-275; the investment in capital stock was taken from X-124; the corporate surplus was taken from page 300 of the annual reports of the licensee companies to the Interstate Commerce Commission and was allocated to the American Telephone & Telegraph Company on a basis of stock ownership indicated in X-124.

Exhibit X-284, entitled "A. T. & T. Co.—Return on Investment (including Surplus) in Ill. Bell Tel. Co., in All Licensee Companies, and in All Licensee Companies exclusive of Ill. Bell Tel. Co. during years 1920 to 1930, incl.," was taken from X-283 and X-131, and the information as to the capital stock installments was taken from the books of the Illinois Bell.

4941 Exhibit X-285, 28 pages, is entitled "American Telephone & Telegraph Company—Excess of Return to A. T. & T. from Investment in Illinois Bell Telephone Company over Average Return from Investment in Other Licensees, showing Excess of Dividends, of Interest on Loans, of Interest on Capital Stock Installments, and of Undivided Profits."

Exhibit X-286, entitled "American Tel. & Tel. Co.—Percent of Undivided Profits and Dividend Payments to Capital Stock during years 1920 to 1930, incl.," shows the earnings on the average capital stock of the American Telephone & Telegraph Company as shown in the annual reports of the American Telephone & Telegraph Company, to its stockholders and the Bell Telephone Securities Manual, broken down into the per cent of earnings paid out in dividends and the undivided profits applicable to such stock, excepting that in X-286

4942 there is also taken into consideration the amortization charges which the American Telephone & Telegraph Company has charged to surplus, but which Mr. Heiss in his statements of the cost of funds included as an expense. The figures in column 1 were taken from X-105. Capital stock and dividend rates were taken from X-108. The computations are self-explanatory.

Exhibit X-287, entitled "A. T. & T. Co.—Return on Funds used in Business, years 1920-1930, incl.," consisting of two sheets, is a combination of A-164 which shows the annual cost of funds, that is, the annual amount of earnings paid out by the American Telephone & Telegraph Company, plus the undivided profits, related to the funds used in the business.

It was taken from X-108 and X-286.

Exhibit X-288, entitled "A. T. & T. Co.—Summary of Capital Stock outstanding, during years 1920-1931, incl.," was taken from the Annual Reports of the American Telephone & Telegraph Company to the Illinois Commerce Commission.

Exhibits X-289, entitled "A. T. & T. Co.—Changes in Capital Stock Outstanding since 1922," shows the changes in
4943 the capital stock outstanding since 1922, and shows the
character of the transactions resulting in the sales.

The sources of this were Standard Statistics (Bulletin A-37 Revised of American Telephone & Telegraph Company), Annual Reports of the American Telephone & Telegraph Company to the Illinois Commerce Commission and data furnished by the American Telephone & Telegraph Company.

Exhibit X-290 entitled "Percent of Undivided profits and Dividend Payments to Capital Stock Long Lines Division during the years 1920 to 1930, inclusive" shows the per cent of the undivided profits and dividend payments, related to capital stock allocated to Long Lines Division, on the basis of X-104, furnished by the American Telephone & Telegraph Company with the addition of the amortization charges to surplus which were added to conform to the total charges shown in X-108.

The Annual Reports of the American Telephone & Telegraph Company to the Interstate Commerce Commission and to the Illinois Commerce Commission do not show the revenues and expenses of the Long Lines Department apart
4944 from the other operations of the American Telephone &
Telegraph Company.

The income and expense statement of the American Telephone & Telegraph Company, as a whole are shown in the Annual Reports to the Interstate Commerce Commission, and a footnote appears in connection with these statements in the language as follows:

"This company, in addition to conducting long distance telephone operations, maintains a general financial and administratiive organization for the benefit of the Associated Bell Companies. The foregoing revenue schedule, therefore, includes, in addition to telephone operating revenues, revenues received under license contracts, under which instruments, and financial, engineering, commercial, legal, accounting, and other services are furnished to such associated companies. The expense schedule includes all the expenses, classable under those accounts, incurred in connection with such activities. For this reason any operating ratio shown in this schedule would be without significance and would not be 4945 comparable with that of a company whose activities are confined strictly to telephone operations."

I have another exhibit to be offered as X-301, which shows the return on fixed capital investment in the Long Lines.

"Q. X-291, entitled 'A. T. & T. Co.—Percent of Undivided Profits and Dividend Payments to Capital Stock—Holding Company during years 1920 to 1930, incl.,' consists of two sheets, and is the return to the American Telephone & Telegraph Company stockholders resulting from the Holding Company operations which Mr. Heiss has shown in X-104. The data which does not appear in X-104 came from X-108, is that corerct?

A. That is true."

Exhibit X-292, entitled "A. T. & T. Co.—Percent of Undivided Profits and dividend payments to Capital Stock—License Contract Division during years 1920 to 1930, incl.," consisting of two sheets, shows return to the American Telephone & Telegraph Company stockholders resulting from license contract operations, as shown in X-104. The data which does not appear in X-104 came from X-108.

Exhibit X-293, entitled "A. T. & T. Co.—Investments in Capital Stock of Western Electric from Nov. 17, 1915, to Dec. 31, 1930," shows X-99 translated into return to the American Telephone & Telegraph Company's stockholders, and also includes the return on the American Telephone & Telegraph Company's holdings in preferred stock. It shows 4946 the return to the American Telephone & Telegraph Company on its investment in stock in the Western Electric Company. The data from which this exhibit was computed is shown in X-294, except as indicated in the footnote.

Exhibit X-294, entitled "A. T. & T. Co.—Return on Investments in Capital Stock of Western Electric, during years 1916-1930, incl.," was taken from the records of the American Telephone & Telegraph Company.

Exhibit X-295, entitled "Western Electric Company—Return to Stockholders on Capital Investment," consisting of twenty pages, shows the return from dividends on stock of the Western Electric to the Western Electric investors, including the American Telephone & Telegraph Company, on the basis of cash put into the Western Electric. The data shown in X-295 was taken from City's Exhibit 59, appearing in record volume VI, pages 2064 to 2067, and also from the Annual Reports to the stockholders of the Western Electric Company, Inc., from 1916 to 1930, and also from the Annual Reports to the stockholders of the Western Electric, an Illinois corporation, from 1909 to 1915, inclusive, from D-77 and from a certified copy of the articles of incorporation of 4947 the Western Electric, Inc., and the amendments thereto.

In connection with these sources, it is important to note the amendment to the Articles of Incorporation of September 29, 1925, which contains the following:

"The capital of the corporation shall be at least equal to the sum of the aggregate par value of all issued shares having par value, plus $5 in respect of every issued share without par value, plus such amounts as from time to time, by resolution of the Board of Directors, may be transferred thereto, and such capital shall be not less than $52,500,000.00."

Column 3, entitled "Shares of Bonus Stock Outstanding," represents the two thousand shares stated in record, Volume VI, page 2067, to have been acquired by the American Telephone & Telegraph Company as a result of the transaction by which the Western Electric received the manufacturing contract of 1882, and the stock dividends thereafter declared applicable to such stock. The other columns are self-explanatory. For the period 1916 to 1930, Average Annual Re-4948 turn to the company's investors on all capital stock issued is treated on two bases.

Basis 1 is shown on page 3, and basis 2 on page 14. The necessity for using two bases arises from the fact that in November, 1915, the American Telephone & Telegraph Company and the minority stockholders exchanged 150,000 shares of par value common stock for 150,000 shares of preferred stock redeemable at $120 per share plus 150,000 shares of no par value common stock.

In 1917, 150,000 additional shares of preferred stock were issued which was redeemable at $120 per share.

In 1920 the 300,000 shares of preferred stock were retired at $120 per share, and at the same time 200,000 shares of new common stock was issued to the same stockholders at $180 per share.

Basis 1 treats the retirement of the preferred stock as a distribution of cash, and the subscription to the common stock as a separate transaction.

Basis 2 treats the retirement of the preferred stock at $120 a share and the subscription to the common stock at $180 a share as an exchange of one share of preferred stock for
4949 two-thirds of a share of common stock. Page 19 shows the earnings available for the common stock as shown in the annual reports of the Western Electric Company related to capital and surplus.

The other sheets of this exhibit show the return from the dividends on the investment of the stock investors in the various issues from 1916 to 1930. They also show the extent to which the dividends paid out by the Western Electric for the period 1916 to 1930 came from current earnings, or earnings accumulated prior to the organization of the company in 1915.

Exhibit X-296, entitled "A. T. & T. Co.—Percents of return on investment from all operations — classified during years 1920 to 1930, incl.," was computed from X-286, X-290, X-291, X-292, X-294, X-284 and X-145.

It shows the per cent return on investment from all operations, classified, and compares the return of the Illinois Bell with that of other licensees. It shows the break-down of the return on entire company transactions, as shown in X-287, into the return from various classes of operations of the American Telephone & Telegraph Company. Items 1, 4
4950 and 5 are the main divisions making up item 6. Items 2 and 3 are subdivisions of item 1.

Exhibit X-297, two sheets, entitled "A. T. & T. Co.—Percents of return on Capital and Surplus from all operations—classified during years 1920 to 1930, incl.," shows the conversion of X-296 into a return on capital and surplus.

Exhibit X-298, entitled "A. T. & T. Co.—Percent of return on capital stock from all operations—classified during years 1920 to 1930, incl.," shows the conversion of X-296 into a return on capital stock.

Exhibit X-299, entitled "A. T. & T. Co.—Percentages of Return of Licensee Companies on Average Fixed Capital and Materials and Supplies, years 1920 to 1930, incl., and year ended Dec. 31, 1931," is self-explanatory, and was prepared from the sheets of each of the annual reports of each of the licensee companies to the Interstate Commerce Commission, entitled "Comparative General Balance Sheet, Income Account, Telephone Operating Revenues, and Telephone Operating Expenses."

Exhibit X-300, entitled "A. T. & T. Co.—Percentages of Return of Licensee Companies on Average Fixed Capital and Materials and Supplies, less Average Accrued Depreciation years 1920 to 1930, incl., and year ended Dec. 31, 1931," is two sheets prepared from the same source as X-299, and is self-explanatory.

4951 Exhibit X-301, entitled "Comparison of Revenues, expenses and return on investment in Long Lines years ended Dec. 31, 1920 to 1930, incl.," was taken from X-207, X-208, X-104, X-105, and from the records of the American Telephone & Telegraph Company.

This exhibit shows the return on the fixed capital, material and supplies for Long Lines Department, and is the exhibit to which I referred in connection with my earlier exhibit of the Long Lines, investment represented by capital stock and surplus.

Exhibit X-302, entitled "A. T. & T. Co.—Return on Fixed Capital, including General Equipment for Ill. Bell Tel. Co., for all Licensee Companies, and for all Licensee Companies Exclusive of Illinois Bell Tel. Co. years 1920 to 1931," was prepared from X-299 and X-300, and is self-explanatory.

I made a comparison of the per cent of return on the fixed capital of the licensee companies, as shown in Exhibit X-302 and as shown in the American Telephone & Telegraph monthly statistical report CR-51-A, for the years 1920 to 1931.

Exhibit X-303, entitled "A. T. & T. Co.—Comparison of percent of return on fixed capital of all Licensee Companies, as shown in Exhibit X-302 and as shown in A. T. & T. Co. monthly statistical report of C. R. 51-A, years 1920 to 1930, inclusive, and year 1931," shows the comparison and shows the difference between the two.

4952 The CR-51-A reports were not made available to me until after the taking of the depositions in New York in

December, 1931, and the MR reports underlying CR-51-A were not made available until May, 1932.

(Counsel for defendants states that on September 8, 1931, Mr. Goldstein made the request of Mr. Heiss to make available M. R. reports Nos. 1, 2 and 3 for each of the Associated Companies, for each year, 1923 to 1930, inclusive, and that refusal was made by letter of Mr. Bracelen, dated September 22, 1931.

4957 Counsel for plaintiff states that counsel for defendants thereafter made application to the court for leave to see those reports; that was argued before a full bench, and the motion was denied. That later the plaintiff used certain information from these reports, and that defendants insisted upon their right to see them, and that after long argu-
4958 ment plaintiff finally, in order to avoid having any technical question arise on which there might be a reversal after this prolonged trial, allowed them to see everything they wanted to see and to copy everything they wanted to copy.)

4972 With the use of CR-51-A reports, M. R. reports and CR-64-A, from which the data in CR-51-A reports was compiled, or could be checked, or was a basis of check, I would have been able to make the comparison shown in Exhibits X-299, X-300 and X-302 without the necessity of making the computations from the Interstate Commerce Commission reports.

4974 The information was taken from certain pages of the annual reports to the Interstate Commerce Commission, of the licensee companies, and it took two men approximately six weeks to work out the entire statement.

I checked the figures shown in X-302 with the figures
4975 shown in C. R. 64-A, which was made available to me on May 23, 1932.

4976 I checked the total plant in service as of June 30, for the years 1923 to 1931, inclusive, with the average fixed capital shown in X-302 and found the following per cent of differences:

1923, 4.31 per cent; 1924, 4.44 per cent; 1925, 4.40 per cent; 1926, 3.94 per cent; 1927, 1.83 per cent; 1928, 2.90 per cent; 1929, 3.13 per cent; 1930, 1.85 per cent; 1931, 2.20 per cent. This per cent of difference was the excess of the figures shown in X-302 over the average plant in service shown in C. R.

64-A; the differences being due partly to the fact that 4977 our figures included general equipment, while the figures shown in C. R. 64-A did not.

The computations which I made from the Interstate Commerce Commission reports were from the four sheets which I have mentioned, and involved the use of seventeen hundred odd sheets, which are exhibited in the court.

I did not have all of the annual reports, I just had those four sheets which were sent to me by the Interstate Commerce Commission.

I made a comparison of the per cent of return on fixed capital of the Illinois Bell, as shown in X-302, and as shown in the Illinois Bell monthly report for the years 1922 to 1931, inclusive.

The result of the comparison, the differences, and the explanation of the differences is shown in Exhibit X-304, entitled "A. T. & T. Co.—Comparison of Per Cent of Return on Fixed Capital of Ill. Bell Tel. Co. as shown in Exhibit No. X-302 and as shown in Ill. Bell Tel. Co. Monthly Report No. 1, years 1922 to 1930, inclusive, and year 1931."

4978 (Exhibits X-272 to X-304 offered in evidence. Ruling reserved until after cross-examination.)

IN THE

District Court of the United States

FOR THE NORTHERN DISTRICT OF ILLINOIS,
EASTERN DIVISION.

ILLINOIS BELL TELEPHONE COMPANY,
Plaintiff,
vs.
G. GALE GILBERT, J. PAUL KUHN, WALTER H. WILSON, WILLIAM M. BRINKMAN, PHIL W. COLLINS and PAUL SAMUELL, the persons constituting the Illinois Commerce Commission of the State of Illinois, and OSCAR E. CARLSTROM, Attorney General of the State of Illinois,
Defendants,
and
CITY OF CHICAGO, a municipal corporation,
Intervenor.

In Equity
No. 3746.

Heard before
Hon. Evan A. Evans
Hon. George T. Page
Circuit Judges
and
Honorable
James H. Wilkerson
District Judge.

ABSTRACT OF RECORD.

Defendant's Evidence, Second Hearing

Volume VI—(Pages 1761 to 2103)

WILLIAM H. SEXTON,
Corporation Counsel, City of Chicago.

GEORGE I. HAIGHT, and
BENJAMIN F. GOLDSTEIN, and
EDMUND D. ADCOCK,
On behalf of City of Chicago,
Intervenor.

OSCAR E. CARLSTROM,
Attorney General of Illinois,
and
WILLIAM C. CLAUSEN,
Assistant Attorney General,
On behalf of Illinois Commerce
Commission.

CHARLES M. BRACELEN,
WILLIAM H. THOMPSON,
KENNETH F. BURGESS,
EDWARD L. BLACKMAN,
On behalf of Plaintiff,

HORACE KENT TENNEY
LESLIE N. JONES,
Of Counsel.

CHAMPLIN-SHEALY COMPANY, CHICAGO [illegible]

IN THE

District Court of the United States

FOR THE NORTHERN DISTRICT OF ILLINOIS,

EASTERN DIVISION.

ILLINOIS BELL TELEPHONE COMPANY, Plaintiff, vs. G. GALE GILBERT, J. PAUL KUHN, WALTER H. WILSON, WILLIAM M. BRINKMAN, PHIL W. COLLINS and PAUL SAMUELL, the persons constituting the Illinois Commerce Commission of the State of Illinois, and OSCAR E. CARLSTROM, Attorney General of the State of Illinois, Defendants, and CITY OF CHICAGO, a municipal corporation, Intervenor.	In Equity No. 3746. Heard before Hon. Evan A. Evans Hon. George T. Page Circuit Judges and Honorable James H. Wilkerson District Judge.

ABSTRACT OF RECORD

Defendant's Evidence, Second Hearing

Volume VI—(Pages 1761 to 2103)

4982 CYRUS G. HILL, recalled as a witness on behalf of the defendants, having been previously duly sworn, testified further as follows:

Cross-Examination by Mr. Bracelen.

(June 15, 1932.)

4983 On direct examination, I took the case of two bicycles, and used that as a simple illustration of what is done in Exhibit A-128. I would not say it was to illustrate the accounting for buildings and central office equipment. It is to illustrate the method on page 9 of Exhibit A-128 of determining the composite average life of buildings in this case. I use the simple illustration as helpful to one not versed in the subject, simply to show the difference between a group average and a unit average, as I have defined them. I think it was correct for the purpose for which I used it.

4984 I had two bicycles in service, each costing $100, one of them to last two years and the other to last four years. I assumed that there would be no salvage, so that the life determination would determine the depreciation rate. By the company's method, the average life determined was 2⅔ years. By the other method, the average life was 3 years. I do not think that I committed myself about either method. But the obvious average would be 3 years.

(Counsel reads from witnesses previous testimony as follows):

> "Now, let us just see how that checks up. First take the average life of 3 years. You have two bicycles for 4985 a period of two years, and we say, the correct average life is 3 years, which would make a depreciation rate of one-third each year, and one-third of $200 each year for 2 years will be $133."

I do not prefer to refer to it simply as an alternative to the company's method. I would say, it is the correct method of getting the group average life, or it is the correct group average life. The average life of 3 years by the other method, gives a rate of 33⅓ per cent.

4986 It is not proper to call one the company's method, and the other, the other method, or the alternative

method, because the company has used both methods; the
company used the group average method on Table 5, and the
unit average method on Table 9 in Exhibit A-128.—They are
both the company's methods, but they are not consist-
ent.

4987 In my direct examination I referred to both Table
6 and Table 9 of Exhibit A-128. Both of those tables
exemplify the method of the bicycle example by which I get
2⅔ years' life. As far as Tables 6 and 9 and the use of the
bicycle illustration are concerned, we may say that the com-
pany's method gives a 2⅔ years' life. On Table 5 the com-
pany uses a method which corresponds to my three-year
life.

4988 In discussing it now we will call it the company's
method by which in my example I get 2⅔ years, as the
company does on Tables 6 and 9.

The other method which gives a life of 3 years upon the
two bicycles, I said in my direct examination will produce
exactly the $200 of investment. I said: "In other words,
you just exactly get back your investment, which is what
4989 you want to do. Now, take the average life of 2⅔ years;
you have a depreciation rate for the 2 years then of ⅜
on $200, which is $150. Then you have a depreciation rate of ⅜
for 2 years on $100, which is $75, and the sum of the two is
$225. In other words you get back your $200 investment, and
a bonus of $25."

By the method that the company uses on Table 6 and Table
9 in Exhibit A-128, it certainly would, in the bicycle illustra-
tion, get back $225 if it continued to apply the depreciation
rate obtained from that computation. I intended the court
to understand from my testimony that the company, by its
method of depreciation accounting as used on Table 6
4990 and Table 9, does get back more than the actual invest-
ment in the property. Of course, if they changed their
depreciation rate next year, or the year after next, maybe
they will get back something different, but as they apply the
rate that they compute here to this group of property, they
will get back more than the investment.

I know what the Company's method of depreciation ac-
counting for Central office equipment and Central office build-
ings is. I am familiar with it. Of course, it varies as to the
time when they revise their depreciation rate. Sometimes

they leave the same rate in effect for four or five years; sometimes for a shorter and sometimes for a longer time. I intended to have my testimony convey to the court the idea that the Company, in its accounting for these two classes
4991 of property, applies a method which corresponds to my bicycle illustration and gets back $225 for $200 of investment.

I think I heard most of Mr. Turners' testimony.

I understand that the list of offices in Table 6 of Exhibit A-128 is a complete list of the Manual Central Offices in service in the City of Chicago at the time that that list was made up. I think there were no offices included in the list that had gone out of service at the time. I assume that the Company has retired several Manual Offices in Chicago during the period of years involved in this case, that is, since 1923
4992 down to the date of Table 6. I could not name any particular offices, but I think there have been some retired.

I was not in court a day or two ago when Mr. Goldstein introduced in evidence the entire list of Manual Offices that have been retired during this period. I think that none of the buildings—speaking of Central Office Equipment—retired between 1923 and 1929, are included in this list. As soon as a building is retired, it goes out of the average as shown on Table 6.

"Q. It is dropped from the list on Table 6; it no longer enters into Mr. Turner's computation of the depreciation, of the life that he is claiming by means of that table.

A. Well, of course now, you are talking about something he will do in the future. If he made up a table like Table 6 every year, from now on, an office that was dropped
4993 would not appear in the table, if he did it in the same way that he did Table 6."

I doubt whether that is the Company's practice. The Company's practice in the past has been to make a study about every four or five years, and in the meantime to let the
4994 same depreciation rate remain. I have seen their exhibits showing the depreciation rates, and when they were changed. I do not think that I heard Mr. Turner's testimony on that. Exhibit A-125 shows the dates at which the various rates have been changed. If Mr. Turner, in making up Table 6 had been doing what is done in the bicycle

illustration, where a 3-year average life is determined, he would not necessarily have in Table 6, the offices that have been retired during the past years. I wish to stand on that answer.

In the bicycle case, whether the 2 year bicycle goes out
of service at the end of the second year, depends on
4995 when it started its service. It goes out of service at
the end of the second year from the time it started. I
continue to apply, by the alternative method of my bicycle
illustration, the rate based on the 3 year life to the 4 year
bicycle during the third and fourth years, during the years in
which the other bicycle is not there. After I have dropped
out one of the bicycles, I continue to apply the rate which I
got while I had both bicycles there. That is what you always do in a group average where you start with a certain
group, and follow it through. That is what I would have
4996 to do on Table 6 of Exhibit A-128. You would have to
continue to apply the depreciation rate corresponding to
the one-third rate for the bicycle as long as any of the list
of offices were in service. You continue to apply it to the
offices represented in that list. I intended my bicycle illustration to be illustrative in just that way.

If, instead of bicycle, we assume two Central office buildings, one of them to have a life of twenty years, and the
other to have a life of 40 years, both going into service at
the same time, each of them costing $1,000,000, and neither
of them to have any additions made to them through their
life, that will correspond exactly with the bicycle illustration.
The average life of those two Central office buildings
4997 by the Company's method is 26.67 years. The average
life by the other method of my bicycle illustration,
would be 30 years.

Assuming here as in the case of the bicycle illustration that
there will be no salvage on these two buildings, the de-
4998 preciation rate by the Company's method is 3.75 and
3⅓ in the other. The 3⅓, or 3.33⅓ per cent would apply
to the investment in the two buildings, as it stood on the
books over the 40 year period, under the method, by which in
the bicycle illustration, I got a three year life.

That is, it would be accruing at the rate of 3⅓ per cent on two buildings, each costing $1,000,000 during the first 20 year period, then one of the buildings is retired having only 4999 a 20 year life, and I continue to accrue a $3\frac{1}{3}$ per cent on the remaining building, for the additional 20 years. That is on the assumption that the two buildings go in at the same time, and come out separately. I did not make any assumption in my bicycle illustration as to when they started. The one with the 4 year life might have been in service two years, and then the other one bought, and then both in service the last two years.

During the first 20 years (in the case of buildings) 5000 we will have accrued $1,333,000 of the $2,000,000 investment. And I have left, to accrue during the remaining 20 years on the remaining building, $666,000.

That is, on the building having a forty year life, I accrue through my depreciation charges during the last half of its life, $166,000 more than half of its cost. I have to do that because on the building which went out at the end of 20 years, I was short $166,000. That is true of every class of plant on which depreciation is on a group basis, cable, poles and everything else, according to the Company's method.

By the method which we have just been discussing, I 5001 am charging for depreciation, during the life of the building, which has a life of 20 years only, $166,000 less than the cost of that building, and in order to make up that deficiency I have to charge $166,000 more on the remaining building.

By the Company's method, instead of applying the $3\frac{1}{3}$ per cent rate at the start I apply 3.75 per cent as the rate, and continue that for the first 20 years, during which the two buildings are in service, and then one building dropping out of the computation, the rate automatically drops to 2.5 per cent, providing that you recompute it at that point. If the Company recomputed its depreciation rate on this basis every year, and used a different rate every year, of course, it would come out right. I believe I so testified.

In the case of the bicycle illustration which I put 5002 forward for simplicity of mathematics, what was just stated is correct. I stated in that illustration that if you dropped the rate at the end of the second year, or when the shortest lived bicycle went out of service, if you dropped the rate to one-quarter, you would then come out with the exact amount of the investment, but you have to change your rate.

I do not see that the fact that the offices and buildings shown on Table 6 and Table 9 contain no buildings that have gone out of service proves that the company drops the building when they are retired from service. Exhibit A-125 shows that the same depreciation rate was applied, over periods of three or four years, without change, during which time certain buildings were dropped and certain other buildings were added, without any change in the depreciation rate. Now, where that occurs, the discrepancy to which I have referred, will creep in.

5003 Mr. Turner, in the exhibit to which I related my bicycle illustration, on Table 6, is setting up a depreciation rate there as of conditions at the time shown in the table, as at present cross-section, or a cross-section as of that date. Now, if that cross-section changes, your rate would have to change, by that method. If Mr. Turner had put forward a table on the other method of my bicycle illustration, he would not necessarily have in such table the offices that have been retired during the past several years.

(Counsel reads from the witnesses testimony on direct examination as follows):

"Question: Now, if the average life of Central Office Equipment in Table 6, and of Buildings on Table 9, were computed on a group basis as you have defined it, instead of on an individual unit basis, would the average life be longer or shorter than that shown on the tables indicated?

5004 Answer: If the average life were computed on a group basis it would be longer than if computed on a unit basis.

Question: How much does this difference amount to in the case of buildings, in per cent of total life figured?

Answer: In the case of buildings, the difference amounts to about 40 per cent; that if the life would be about 40 per cent longer if it were figured on a group basis, instead of a unit basis."

In the above question I was not asked as to the actual difference in the case of Central Office Equipment.

5005 The fact is that the average life is longer in the case of Central Office Equipment, but it does not make nearly as much difference. I can work that out roughly. It makes a difference of about 3 per cent in the case of Central Office Equipment, I believe. It makes a life of approximately 12 years, instead of 11.67. I worked it out roughly. That is all the difference it makes in the case of Central Office Equipment.

On direct examination after having stated that in the case of buildings the life would be about 40 per cent longer, I testified that the effect of this on the depreciation rate for build-
ings determined from the computation of average life
5006 would be to lower the depreciation rate approximately
40 per cent. I think that is correct. The average life, to get at the arithmetic of it, the average life is in the denominator of the fraction, which determines the depreciation rate. Now, if I multiply my denominator by 1.4, I am changing my fraction 40 per cent, am I not? I may be wrong, but it seems to me, if you multiply the denominator by 1.4, you are making a difference of 40 per cent instead of 28 per cent. Of course, it depends on which side up you take it, that is, whether you relate your 40 per cent to the large or the small
quantity. Anyway, it is a substantial difference, we
5007 agreed on that. The difference between 40 and 28 is
considerable. If you multiply the denominator of a fraction by 1.4, it makes 40 per cent difference.

Let me put it this way: If you divide the high rate by the low rate, the higher rate by the lower rate, you get a ratio of 1.4—or 40 per cent difference.

What I testified to, was that the difference between the two methods in the case of Buildings, amounts to about 40 per cent; that is, the life would be about 40 per cent higher, if figured on a group basis, instead of a unit basis, and then I said, the effect of that upon the depreciation rate would be to lower the depreciation rate approximately 40 per cent.

Here is what I mean—if I may make it clear. If
5008 you recompute this rate on a group basis, the Com-
pany's present rate is equal to the group basis rate times 1.4. Now, you can call that a 40 per cent difference, or something else, but that is the arithmetic of it. If you start with a 10 year life, no salvage, you get a rate of 10 per cent. You increase the life 40 per cent, and you have 14 years instead of 10 years, and I guess you get a rate corresponding of 7.1 per cent.

A 40 per cent reduction in the rate of 10 per cent, would have given 6 per cent, and not 7.1 per cent, but you are taking it the other way around. What I would say is that the Company's rate of 10 per cent is 40 per cent higher than the group rate of 7.1 per cent.

5009 When I testified on direct that the effect this would have on the depreciation rate for buildings determined from the computation of average life would be to lower the depreciation rate approximately 40 per cent, the statement is not quite correct. What I mean is that the Company's rate would be 40 per cent too high. The statement should have been made the other way. The company's rate is 40 per cent too high.

It was from Table 9 of Exhibit A-128, which is Mr. Turner's table for Manual Central Office Buildings, that I got the 40 per cent increase in the life that we have just been refer-
5010 ring to in my testimony. In Column I, "Rated Average Realized Life at Retirement," the figure at the foot of the column, 21.5, is the year's average life found by Mr. Turner. By my computation, I got approximately 30 years. I did not work it out to the last decimal place. The thirty years is 40 per cent more than the 21.5 years.

I understand the basis of the grouping of these buildings on this table into a larger group at the top and a smaller group at the bottom of the table. I understand that the smaller group at the bottom represents buildings which will be later used for automatic. That is, Manual Build-
5011 ings that will be continued as automatic buildings, when the Manual is cutover to the dial equipment.

The larger list of buildings in the upper group are manual buildings not convertible into dial so that when the cutover is made, those buildings will have to be retired. That is my understanding of it.

The upper group, Manual Buildings that cannot be converted to dial, assuming it to conform to the company's program, shows in the column headed "C," "Estimated Year of Retirement," that the last one of these buildings will be retired in the year 1942. It seems to be right that in the lower group, buildings convertible to dial, the first one of that group will not be retired until 1974, and the last one is scheduled to remain in service until 1984.

Mr. Turner, in this study, made a separate compu-
5012 tation of the average life of each group, so that in Col-
umn I, at the sub-total point, the average life is shown
to be 18.1 years. Similarly, at the foot of the second group
of buildings in that same column, the average life for those
is shown to be 36.6 years. The final footing of 21.5 years is
the result of those two separate sub-totals, on a unit average
basis.

I did not heretofore apply the same method by which I got
30 years for the entire group, or a 40 per cent increase over
Mr. Turner's life, to each of these groups separately. I have
done it now with the slide rule for the first group, antici-
pating that you were going to ask me that. For the first
5013 group I get 19, with the slide rule as compared with
Mr. Turner's 18.1 years of life. That is as close as I
can read it.

As to the second group of buildings which will be con-
5014 vertible to Dial, Mr. Turner has 36.6 and by this other
method, as nearly as I can read it, it is about 36.55.

To deal with these actual offices shown on Table 9 by the
method which in the bicycle illustration gave a three year
average life for the two bicycles, and a rate of 33⅓ per cent;
taking that corresponding rate for this group of buildings,
my rate, based on the 30 year life which I found for the en-
tire two groups of buildings shown on Table 9, assuming no
salvage, would be 3⅓ per cent. Applying the rate of
5015 33⅓, I would apply it to the buildings shown here as
long as any building remains in service, just as, in the
case of the bicycles, I apply the same rate to the remaining
bicycle, to the end of its life.

If you refer to the computation, as made by the company, I do not think it is correct to say that from 1942 on until 1984, the first date being the date when the last one of the upper group of buildings will have disappeared from the plant, and the latter date being the date of retirement of the last one of the second group, from 1942 on, I will be charging a rate of depreciation to accrue on that entire upper group of buildings, just as in the case of the two Central offices I had to collect $166,000 during the latter half of the life of the 40 year office in order to make up for a deficit of $166,000 which I had failed to accrue on the first office.

The reason is that up to 1942, the time the first group 5016 is still in service, you are making accruals in anticipation of additions to that second group of buildings before they are made, so that the two in a sense balance off. That is, under the company's method, accruals are being made during the period from 1929 to 1942 in anticipation of under-accruals against additions which will be made from 1942, to, say, 1984, additions that have not been made yet, but will be made. That is on a group basis. Now, to offset that, you have also under-accruals on the first group of buildings, the part that is now in place, which will be made up on the longer lived buildings from 1942 on. In other words, the two are consistent with each other.

I find here a life of 30 years, and I find a rate of 3⅓ 5017 per cent, and I apply that rate of 3⅓ per cent to this group of buildings throughout the life of the group from now until 1984, notwithstanding the entire group of Manual Buildings in the upper half of the table will have all disappeared from the service in 1942.

I stated that in making the adjustment as I did make it, in the case of Exchange Aerial Cable and Exchange Underground Cable, I applied the method as shown in Exhibit X-154 which presents a different basis of adjustment from that used by Mr. Turner at the bottom of page 17, Exhibit A-128; that is, I used a uniform rate of growth in Column B, and did not use the gross additions. I stated that 5018 it would be more accurate to use the gross additions. On the face of the exhibit, I did use a uniform rate of growth, and did not use the gross additions.

I testified that I actually made the adjustment in the case of Exchange Aerial Cable and Exchange Underground Cable by the method that I set forth in Exhibit X-154. I applied the method precisely as it is set forth in the exhibit, using uniform rate of growth in Column B, and not using gross additions, but what I wanted to make clear was that in using the rate of growth, I am using the rate of growth as a substitute for gross additions. That is, the rate of growth 5019 is what the gross additions would be if the rate of growth were uniform throughout that period, and if the plant had reached a stable condition.

Redirect Examination by Mr. Goldstein.

It is the company's practice to accrue depreciation in years subsequent to the actual retirement of the plant from the account, to make up deficiencies, which were not collected during the life of that item of plant.

That is true as to aerial cable, and all of the plant accounts, with the exception of the method the company applies in the Central Office Equipment and Building tables, that is the Central Office Equipment and Building tables to which I called attention.

5020 Except for Central Office Equipment, the company does the very thing about which I was cross-examined, namely, to accrue in years after the item of plant had been taken out of plant account, depreciation to make up for depreciation which was not taken into account during its life. I used that method.

Referring to Table 5 of Exhibit A-128, which is the table relating to the Kedzie office, I will draw a parallel between that table and the bicycle case.

In the bicycle case, I took one bicycle with a life of two years, and the other bicycle with a life of 4 years, and from an inspection said the average life of the group was 3 years. Now, if the problem were so difficult that you could not tell by inspection, the computation would be as follows:

You would multiply the life of two years by the one 5021 hundred dollars investment, and get two hundred dollar years; you would multiply the life of four years by one hundred dollars, and get four hundred dollar years; you would add the two numbers of dollars together, getting six hundred dollar years; and you would then divide by the total investment of two hundred dollars, getting a life of three years.

Now, that is exactly what is done in the case of the Kedzie Office on Table 5. You will notice that in column 5 of that table we have the accumulated dollar years, to the end of the year. Now, the average realized life of the equipmnt at the end of the year, for the final year 1936, is Column 5 divided by Column 6, or the accumulated dollar years divided by the total cost of the equipment installed, which in the bicycle case is six hundred dollar years divided by two hundred dollars. Now, that is a group average, and means that it gives you a depreciation rate which, when applied to the investment each year of property in that group, will amortize the group during its group life.

In using this bicycle illustration, I am trying to
5022 arrive at an allowance which is to be made for the expense of depreciation. The part accruing each year is something which the owner of property, devoted to public use, is entitled to receive now, as an expense of operation. Assume to follow out the illustration, that the two bicycles were bought at the same time. Now, put yourself in the third year—the year in which the bicycle that is first bought, is out. Now, you have in service only one bicycle whose life is four years, and the depreciation rate is one-quarter, or
5025 25 per cent. If you do that to the present Illinois Bell Telephone Company plant in Chicago, you would determine the depreciation rate of the plant now in service, without any reference to the plant which was placed 10 years ago, and went out of service 5 years ago. You limit your depreciation rate to the average rate of the plant now in service and you get a different depreciation rate from what the company does, by its computation; you get a lower rate.

5027 The fact is that the group of property now in service has a longer average life than the group of property originally placed, on which the company bases its computations of average life. That is necessarily so be-
5028 cause of what we might call the infant mortality; that is, we might take a group of poles, placed in a given year, and some of those are going out at an age less than the average life. What are left in the plant will therefore have a life longer than the life of the poles that were placed initially. Consequently if you limit your investigation to the group of plants now in service, you will have a longer life and a lower depreciation rate than you have for all of the plant initially placed. On the other hand of course if you had a rate case every year and redetermined the depreciation rate every year on the plant in service, you would never get back your initial investment. You would always be short on the infant mortality.

The company uses both methods, the bicycle method, as to a part of its account, and the other method as to other parts of the account, and not only that, but it uses the two methods

in the same account. In the case of Central Office Equipment and buildings, they used the group method, that is the method leading to the life of three years, in the case
5029 of the bicycles, on the individual offices, as concerns the retirements and future additions; and then they use a unit method which corresponds to the life of two and two-thirds years, in the case of the bicycles, for the group of offices as a whole, for the combined individual offices, and the two are in my opinion absolutely inconsistent, both in the one and in the other. The application of the two methods to the particular account, is in such a way as to give the highest depreciation rate in each case.

5031 R. C. RAINWATER, recalled as a witness on behalf of the defendants, having been previously duly sworn, further testified as follows:

Cross-Examination by Mr. Blackman.

(June 15, 1932.)

I stated on direct examination that I had spent six weeks, or some substantial period of time, in examining the reports of the Bell System Companies and the American Telephone & Telegraph Company to the Interstate Commerce Commission. That is I examined only part of those reports; I stated that I had certain pages of those reports I believe in my testimony yesterday; I did not have all of them. I think we started on that examination about the first or second week of October, 1931. It took about six weeks to make it.

5032 We examined certain schedules, called the comparative general balance sheet, income account, telephone operating revenues, and telephone operating expenses, of the companies that were listed I believe in X-299. I do not recall that we examined the report of the American Company in connection with that examination. I would not have to go to Washington for that. It is made to our Commission annually. A copy of what is filed with the Interstate Commerce Commission is filed with our Commission annually; that is the Interstate Commerce Commission's printed form is submitted to us with a little paster on the outside with the Illinois Commission's name on it.

I don't know how many pages of exhibits have been submitted by me in the last two or three days. I have not 5033 counted them. There would not be as many as one thousand; about 200 I would say. There are about eighty exhibits and some of them are on one page, and I believe the largest was 28 pages, according to my recollection.

5034 As to the source of these exhibits: I think my testimony will show that I used the annual reports to the stockholders of the Western Electric Company; these pages that I have referred to of the Interstate Commerce Commission's reports; the report of the American Telephone & Telegraph Company to the Illinois Commerce Commission; the various documents which were offered in the previous hearings as City's Exhibits, and which were furnished by the Company; the exhibits of Mr. Heiss in the Ohio case, and the underlying papers connected with that case; sheets that were furnished to me, which were prepared in a similar manner for other years, to those sheets offered in the Ohio case; and in some few instances figures taken from the books of the Illinois Bell Telephone Company. There might have been others. I do not think I can make any general statement 5035 that will cover every item. I do not think that I had all of these sources of information in October, 1931. I cannot answer definitely which sources of information we had in October, 1931.

"Q. Can you name a single document, or a single piece of information which you obtained subsequent to Jan. 1 of this year, which you have used in any way in any of these papers which have been offered in evidence on your testimony in the last two or three days?

5036 A. I obtained some of the information from the Illinois Bell Telephone Company since January first."

I presume that all of the books of the Illinois Bell Telephone Company have been open to us at all times. I have never asked for any of their records that I have not received.

5037 I remember that there were some other documents that I obtained since January 1 in connection with these exhibits. I obtained the copies of the Interstate Commerce Commission reports, for the year 1931, only recently, in connection with some of the other documents that I used that were furnished by Mr. Heiss.

I cannot remember whether I obtained the documents furnished by Mr. Heiss before January 1st, or since. With the volume of work I have done, it would be impossible for me, without giving some study to it, to determine just the exact
date the documents were received. Our work papers may
5038 show that. I don't remember. There were some other
documents received after January 1st. Some of them are the C. R. 51-A report for the year, 1931. I just received that within the last week or so, and the Exhibits X-299 and X-300 were checked in this respect; that my average plant figures were checked against your M. R. reports, that I inspected here in the court the latter part of May. Those are the M. R. and C. R. reports about which there was so much discussion. I checked them the latter part of May.

I used Exhibit 51-A to check my figures against it, but
5039 I made up these figures before I saw 51-A. Most of
these figures in these exhibits were not made up by me last year. We have been working on them since the first part of October, up to the date that they were turned over to the plaintiff for inspection. Some of them I completed. I would not say that most of these sheets that I have offered here were completed last year. I haven't kept any record as to when these sheets were completed, and I would not attempt to answer the question.

"Q. Well, now, you say that you used the M. R. and C. R. reports to check. Your examination of these Interstate Commerce Commission records showed you that all of the information necessary to check any of Mr. Heiss' exhibits, or ratios, and any of the ratios put in by Mr. Crunden were all contained in those Interstate Commerce Commission records, did it not?

5040 A. I don't believe the information as to the average
employees was in the Interstate Commerce Commission reports. I don't believe the information as to the estimated requirements was in the Interstate Commerce Commission reports. I don't believe the information as to the provisional estimates was in the Interstate Commerce Commission reports.

Q. Well, now, neither Mr. Heiss nor Mr. Crunden used the provisional estimates in developing any of these ratio figures, did they?

A. They used C. R. 13, and the provisional estimates are the underlying documents for C. R. 13."

Mr. Heiss used the C. R. 13's in connection with his 5041 Exhibit A-169. The ratios he used had to be developed from the figures he used. He developed his ratios on holding funds available, the ratios he had to use to prorate the losses to Chicago, to the Associated Companies, to Long Lines. I don't know of any other ratio that he developed from C. R. 13. I had the C. R. 13's prior to the time that I put in these exhibits.

I could not answer whether I had the C. R. 13's prior 5042 to January 1st of this year. I don't know. I don't remember any particular delay or difficulty in connection with getting the C. R. 13's. I know I had them at the time I prepared one of my exhibits, but the exact date I received the form I cannot remember now. They were furnished to us by the American Telephone & Telegraph people. I think counsel made the request for them. I don't recall any particular difficulty that I had in connection with getting it.

5043 The figures showing 7.42 per cent for the Illinois Bell Telephone Company for the year 1929, on Exhibit X-133, were obtained from X-132, and show a profit over and above the cost of funds of eighty-nine hundredths of one per cent; by adding the eighty-nine hundredths of one per cent of profit to the cost of funds of 6.53, the total of the two items is 7.42, shown on X-133.

The figure of interest on loans paid by the Illinois Bell Telephone Company to the A. T. & T. Company, shown 5044 on X-132, goes back to my Exhibit X-131. Somewhere along the line, in order to get this figure shown in Exhibit X-133, I had to develop the interest on loans, not only in connection with the Illinois Bell Telephone Company, but the other companies. They are all worked out on the same basis.

5045 I haven't the figures here showing what the Illinois Bell Telephone Company paid to the A. T. & T. Company for funds during the year 1929. As near as I can compute it, it would work out on the basis I have used, about 5.54 per cent.

Exhibit X-284 shows how much money the Illinois Bell Tele-
phone Company paid to the American Company in the
5046 year 1929 as interest on advances. That is the figure I
used on that exhibit to represent the payments by the
Illinois Bell to the American Company for advances by the
American Company to the Illinois Bell in that year. Those
figures for each of the years 1923 to 1930, inclusive, are as follows:

1923	$11,280	1924	
1925	134,388	1926	$394,605
1927	221,625	1928	271,801
1929	686,659	1930	32,037

The figures shown in X-133, came from X-132, X-131
5047 and X-128. Exhibit X-131 shows the losses on the loans
made to all the licensee companies, including the Illinois
Bell. The Illinois Bell losses that I show for each of the
years 1923 to 1930 were prorated on the basis of the average
loan shown on City Exhibit 142. The loss to the A. T. & T.
Company for furnishing "temporary advance" for the
5048 year 1929 to the Illinois Bell Telephone Company, I put
down as $123,876.75. That loss represents the difference
between what the money cost the A. T. & T. and what the
A. T. & T. got. $686,659 is the figure that is shown on X-284
as the amount paid to the A. T. & T.

Referring to the report of the Interstate Commerce Commission, which I say is one of the documents that I used, the interest payments in the year 1929 show a figure in respect to the Illinois Bell of $455,545.33.

I don't think that figure represents the same thing that I was using the six hundred and some odd thousand dollars for. The difference is probably due to the average loans that I used which were furnished to me by the company in connection with Exhibit X-142.

5049 Some of the amounts which I have used in these exhibits as coming from the reports are not direct figures but are derived figures. The six hundred and some odd thousand dollars that I used for 1929 is a derived figure using the figures the company furnished me. The company furnished me with the average loans to the Illinois Bell, which I have used. They furnished me with the loss on the loans which I have used. They furnished me the rate of cost of funds which

I have used; all were computed from figures they furnished
me. I don't think they furnished any rate for the use
5050 of funds, but it may be readily computed from the fig-
ures they furnished me to be 5.54.

I did not know that the rate which was used over that en-
tire period with respect to the advances of the American
Company to every company of the Bell System was the same,
5.88, without change. That rate of 5.54 is a simple computa-
tion from the figures they furnished me. I am referring to
the average loans, the losses on the loans in dollars which
were furnished; and they furnished the rate as to the cost
of funds, and I used those combined, the three factors to get
the interest received.

"Q. Did they furnish you with the information you asked
for with respect to these particular matters?

A. We asked for the average loans, and they furnished
those figures to us. Now, what method they used of aver-
5051 aging them, I did not go into that. I accepted them as
they furnished them."

For the average loans for the year 1929 to all licensees, I
have $245,788,267. For the Illinois Bell it was $12,412,500. It
is shown on City Exhibit 142. These average loans came to
me through counsel, and I assumed that they were fur-
5052 nished by the company. The heading in City Exhibit
142 shows average loans to each licensee company. Then
in parentheses here are the words:

"Dividing the sum of the loans outstanding on the first day
of January, April, July and October, by four."

I think that that information was furnished as a result of
a request to the company to bring down Exhibit 142, to date.
The use of those figures in the manner in which I have used
them would require, for their accuracy and the reasonable-
ness of such use, that the loans which were in existence at
any date taken were the average for the entire quarter. I
have some figures here before me that my working papers
show that the City Exhibit 142 figure was what I just
5053 said. I have it in total for all the companies. I have
it for the Illinois Bell. And the monthly average for all
loans was $254,234,480, while the quarterly average was
$245,788,267.

(Document marked Plaintiff's Exhibit A-218 for identifica-
tion.)

If the loans were actually as indicated on Exhibit A-218 for
identification, I cannot tell whether the use of the quarterly
averages in the manner in which I have used them would give
a figure far in excess of the average outstanding loans be-
cause I cannot tell anything about this exhibit as to what
the average might be. I did not have the figure shown on
Exhibit A-218 for the July 1st quarter. That had to be used
to work out City Exhibit 142, which the Company fur-
5054 nished. I haven't the details back of City Exhibit 142,
and that is what I would have to have to tell the amount
of the loans as of July 1st.

This Exhibit A-218 shows the daily balance of advances
and I would not undertake to give what the average was of
those figures for the year 1929. Taking the amounts quar-
terly and dividing by four, would take in the July quarter at
a figure of $20,000,000 as it appears to me, from the way the
chart is made up. I don't know whether or not that was
5055 paid off the next day. Assuming the correctness of the
chart that appears to be true. The way in which I have
used the figures would presuppose that the $20,000,000 re-
mained outstanding for the rest of the quarter, as to the
amount of the principal, but as to the rate, it is a little differ-
ent when we consider the way I have worked it out. I gave
you a figure that worked out to 5.54. You say the rate was
5.88 in that year. That is the extent of the variation, using
this method of averaging as compared to an actual daily aver-
age. I think the figure of 5.88 is correct.

5055 "Q. Now, assuming that 5.88 was the rate, and as-
suming the correctness of those figures, those figures
that are set forth in the Interstate Commerce Commission
report of four hundred and fifty-five thousand some hundred
dollars, you could get the average from those two fig-
5056 ures, couldn't you, the average loans?

A. If the interest figures that you showed me on the annual report represent all interest received in loans during the years—

Q. Yes.

A. From the Illinois Bell by dividing by the rate of 5.88 for the average loans could be worked out, but I don't know of my own knowledge that the other companies had all paid exactly 5.88 rate. I did not assume that at all.

Q. So, then, you undertook to compare the profits of the A. T. & T. and the financial standing and record of the Illinois Bell with other companies, using these loan payments without knowing whether they were all paying the same rates, is that a fact?

A. I assumed that they paid the same rate, but I do know—

Q. You just said you did not know whether they were paying the same rate, and that is the reason you did not use that.

A. I had no knowledge of my own they were paying a rate of 5.88, because I did not have access to the books of the other companies.

Q. Answer this question directly:

Would you, as an accountant, undertake to do what you
5057 have done in these papers, and would there be any justification for it whatever if the companies were not paying exactly the same rate on their loans?

A. That assumes that they were paying the same rate—

Q. No, answer my question, please.

A. Read the question.

Mr. Blackman: Read the question to the witness.

(The pending question was thereupon read.)

The Witness: In prorating these losses on an average—

Q. No. Please answer the question.

A. I don't know any other way to answer it.

Q. My question asks for an answer yes or no. Please give it. Read the question again, please, Mr. Stenographer.

The Witness: Read it again.

(The pending question was thereupon re-read.)

The Witness: No, it would not be justified unless they were paying the same rate, and I assumed that in these calculations."

5058 I cannot say of my own knowledge I knew it. I knew the rate was 5.88 in respect to the Illinois Bell, and I assumed that the others paid the same rate. I made up the figure of 5.54 per cent based on my computation of the average of the Bell System loans for the year 1929. There is a slight error in this figure due to the method I used of averaging the loans.

5059 "Q. Yet, you have compared those figures, which show slight increases and slight decreases with what you call the cost to the American Company of money, and worked out figures which show that the Illinois Bell is doing two thousand per cent better than other companies, in some cases, based on these very figures and differences of fractions, isn't that a fact?

A. These companies were all on the same basis of 5.54. They are all on the same basis."

It would amount to my putting them all on the 5.54 basis, so there is no variation in it there as between companies.

I don't see how it could work any variation. They are on
the same basis, all on the same basis of 5.54. That is
5060 the effect of my computations. I am comparing what
they paid with the amounts it cost the American Company.

"Q. And then you take that amount and you combine it with the dividends, and you compare it with other amounts, and you are using these figures which are theoretical figures and incorrect in connection with figures that are actual and real, aren't you? And in which the same error does not occur?

A. Why, I have combined these figures with other figures of return.

Q. Figures that are definite?

A. If that is what you mean—

Q. Figures that are definite and accurate, and you have worked out percentage relationships. Now, don't you know that would be bound to get a wrong result?

A. Well, of course, to whatever extent the average loans, as I have used them, were in error, why, it would affect the final result to some extent; I don't know just how much."

I don't know whether it is a fact that is an error of
5061 $5,000,000 or forty or fifty or sixty per cent in the figure
of average loans which I used for the year 1929 would
make any difference in the result.

If that were shown to be the fact, I cannot say what effect it would have on the calculations, of combining various items of investments and various items of return—there are large amounts involved here, and I would not undertake to say what the effect would be in a matter of that kind.

"Q. Won't you work out for me, briefly—I don't think it will take more than a half a minute—the correct figures

for the year 1929? We have from the Interstate Commerce
Commission report this figure that I have shown you
5062 here, as 5.5—$455,543.33. Now, you know the rate was
5.88. Now, as an accountant, I should think you could
figure that in about thirty seconds, and tell me what the average loans were?

A. I don't think I ought to be asked to make computations on the witness stand.

Mr. Blackman: I ask the Court to instruct and direct the witness to make the simple computation.

Judge Wilkerson: You make it.

Mr. Blackman: I would like to have him figure it. If he cannot do a simple sum like that, it certainly bears on his competency."

This calculation results in a figure of $7,747,364 as the
5063 average loans. The average loans for the year 1929,
which we used, is $12,412,500, as shown on City Exhibit
142. The average loans for each of the years 1923 to 1930
can be obtained by dividing the interest payments during
each year by 5.88, assuming that the facts as shown in the
reports are correct.

5064 (Counsel asks the witness to take down the following figures and check them and report later whether the figures stated by counsel to be correct are correct.)

	Year	Witnesses Figures From City Exhibit 142.	Stated By Counsel To Be Correct.
	1923	$ 200,000.00	$ 411,394.00
5065	1925	2,317,041.00	1,983,044.00
	1926	6,874,656.00	7,511,837.00
	1927	3,750,000.00	811,803.00
	1928	4,575,776.00	5,321,803.00
	1930	550,000.00	12,228.00

5069 "Judge Wilkerson: You mentioned those two figures, 5.88—you spoke of it as something that is generally and thoroughly understood?

Mr. Blackman: Yes, it is thoroughly known throughout the Bell System that that is the rate that has always been charged and is always charged to this company, and to every other company in the Bell System.

5073 Mr. Blackman: If we assume that some of these companies are not paying any rates of interest, that some of them are not taking advantage of the discount and are paying the full six per cent, and that the rates which are not paid by some are loaded on others, what effect would that have as to the validity of the comparison? You are seeking to make an Exhibit X-131 and subsequent pages—

The Witness: I don't know just what you mean as to the validity of them.

Mr. Blackman: Please, repeat the question to the wit-
5074 ness. I think I am using very simple English language.

(The pending question was thereupon read.)

A. It would affect the exhibits to whatever extent there was a variation from that rate.

Q. As an accountant, you could just throw them out of the window, couldn't you, if that were the fact, is that right?

A. I would not say that."

5075 I certainly would not back exhibits that were not correct.

I don't think that the variation in the interest rate paid by these companies that I purport to compare, destroys all the validity of the comparison. It would impair the validity of it to whatever extent the error enters into it and the result is affected.

5076 "Mr. Blackman: Well, the slight impairment of the validity of a figure or two, where you are comparing it with a figure of 2.2 in order to develop a percentage, may result in very varying amounts, may it not?

A. What is the question?

Mr. Blackman: Read it.

(The pending question was read.)

Mr. Blackman: In widely varying amounts?

5077 A. I don't recognize 2.2 that you are talking about.

Q. I am just taking it for an illustration.

A. It would depend on the amounts, and on the factors involved. I cannot answer your question."

5078 The figure 59.53 per cent in the last line of Exhibit X-111, which is "Per cent of return on investment expressed in per cent of return to A. T. & T. Company stockholders on their average capital stock investment," is a mathematical computation using Exhibit X-108, and using a mathematical formula to convert the figure over to return to stockholders on their portion of the investment.

This is what I did: Taking the figure 39.02, shown on X 111, and referring to X 108, there is shown that
5079 the average cost of funds for the year 1923 was 6.87 per cent. That is the average cost of money to the A. T. & T. on the funds that it procured from the various sources shown in X 108. I subtracted 6.87 from 39.02, which leaves a per cent of 32.15. The next step, I divided 100 per cent by 63.39, also shown on X 108 and I get a figure of 1.5775358.

The figures I divided by are shown on sheet X 108.

I divided 100 per cent by 63.39. They are both shown. I got 1.5775358. Now, multiplying 32.15 by 1.5775358, I should get 50.74. I haven't the details here before me, but that is what it should work out to. Then I add to that the dividend rate which is included in the average cost of funds, and I get 59.53 per cent. That is the mathematics of it, the way it is worked out.

5080 In line 5, I developed a percentage figure which I call per cent of return on investment, and that is 39.02 per cent. Then, I stepped that up to 59 per cent plus, which I say is the per cent return on investment to the stockholders of the A. T. & T., by deducting the 9 per cent dividend which the stockholders received, plus the combined interest and other things which average out about 6.87, from 39.02, then by applying other figures and adding back the dividend, I get a yield to the stockholders of the A. T. & T. of 59.53 per cent.

5087 "Mr. Thompson: Before the record is closed, I have something I should like to appear of record. Your Honor will remember that a day or two ago there was quite an extended discussion in court about the balance sheet of the Graybar Electric Company for the years 1929, 1930 and 1931. I have no doubt your Honor remembers it. I have no doubt your Honor remembers that from the end of 1928 the employees of the Graybar, the Graybar management, have owned that corporation.

Judge Wilkerson: Yes, I remember it.

Mr. Thompson: And that the Western has a participating preferred stock. Now, since the adjournment of court, although it has been our thought all the time that we were under no obligation to furnish these figures, and that they have no relation to this controversy, I obtained and I now offer in open court a balance sheet of the Graybar Electric

Company for the year 1929, one for the year [illegible]930 and (a) one for the year 1931, together with a certificate under the seal of the assistant secretary to the method in which the accounting records of Graybar are kept, so far as relating to property of telephone apparatus, lead-covered cable and supplies is concerned.

Mr. Goldstein: Does that include all of the information that we asked for?

Mr. Thompson: I offer it to you, this is what we have obtained from Graybar, a corporation we do not own, and in which we have an interest as a participating preferred stockholder.

Now, here it is. If you want it, it is available. If you don't, you may use your own pleasure about it.

Mr. Goldstein: Excepting, Mr. Thompson, as my eye glances over this document, it contains more information than the assets and liabilities, it contains profits and losses.

Mr. Thompson: Well, it is a balance sheet.

Mr. Goldstein: Yes, but it shows profits and losses, which is entirely different than a balance sheet.

Mr. Thompson: Is your objection that we have furnished too much?

Mr. Goldstein: No, it is not. I am asking you whether (b) you are offering the profits and losses, or only the balance sheet? You stated you had a balance sheet. I am asking you whether you are offering the whole sheet, with all of the figures, or only that portion of it which has to do with assets and liabilities.

Mr. Thompson: I am not offering it. I have produced it in court for your information.

Judge Wilkerson: He produces it so you may offer it if you wish.

Mr. Goldstein: He referred to assets and liabilities, and I wondered whether, in view of the previous limitations, we are limited to looking at the lines marked assets and liabilities, or whether we can look at the whole thing.

Judge Wilkerson: Yes, Court and counsel are free to examine it all.

Mr. Haight: We acknowledge receipt of the document, and will later suggest what further we may desire in witnesses, or further facts.

(June 16, 1932.)

5088 Mr. Blackman: We have in court this morning, if your Honor please, the Minute Books of the Executive Committee of the American Telephone & Telegraph Company. Your Honor will recollect that during the testimony of Mr. Heiss, the defendants demanded that those books be produced. We are producing them subject to that demand, for such use and inspection as you may think proper. Now, of course, we do not think that there is any proper use. Mr. Heiss 5089 did not testify to the contents of the resolutions; he testified that he had been directed to set up these amounts for contingent reserve on the books of the Company, and had done it subject to the direction of the officers of the Company, that he had consulted with the officers; but that question was raised, and the books are here."

5090 *(Cross-Examination of R. C. Rainwater Continued.)*

5091 I explained in my direct testimony that all that I put in in Exhibit X-108 were the per cents, that were shown in the second column, and shown in the fourth column, and that I put in certain total figures immediately preceding the grand total. I knew what the statement purported to show. I knew what the figures purported to mean.

"Capital Stock Premium" on the second line of Exhibit X-108 purports to mean an amount of money paid by the stockholders in excess of par, on their capital. I explained at the close of the last hearing how we had worked out these figures on page 4 of X-108, to develop the percentage of 59.53 per cent, the last figures on X-111.

5092 On page 4 of Exhibit X-108 there is a showing of capital stock premiums of $52,296,147.

If the capital stock premiums, instead of being $52,000,000, had been $252,000,000, I cannot attempt to speculate now on what effect it would have had upon the figure of 59.53 per cent on X-111.

I would not attempt to work it out without having all of the details before me. This is a complex mathematical formula, on which this was worked out, and I would not at-5093 tempt to rework that formula, using other figures, without having the opportunity to prepare all of the figures, and work out the proper figure.

As to what effect that change would have on the percentage
59.53 in Exhibit X-111, whether it would be higher or lower,
the way the figure is worked out on X-111, it would not make
any difference what figure you had in your capital stock pre-
miums, because it is worked out on the basis of the capital
stock. It would not make any difference. I said yesterday
that I got the figure of 59.53 by using this figure of 63.39.
5094 The 63.39 is the percentage relationship of the amount
of $719,964,600, to the amount of $1,135,740,062.88. If
5095 every one of the figures opposite the lines excepting the
totals, and the grand totals remained as they are, and
the words "Capital Stock Premiums" had opposite, $252,-
000,000 instead of $52,000,000 the figure 63.39 would be less.
I do not know how substantially less it would be. It would
be less. I do not know whether as the capital stock premiums
increased, the figure of 63.39 would continue to decrease.
5096 If all of the other figures on this particular page of
X-108 were to remain constant except the totals, but you
were to increase the amount of the premiums, the figure 63.39
would change. As the figure 63.39 decreases, the last figure
on X-111, 59.53, would continue to increase. It would continue
to increase as long as the capital stock premiums continued
to increase, assuming all of the other figures except the totals
were to remain stationary.
5097 The percentage 59.53 is the figure of 39.02 shown in
X-111, expressed in per cent of return on investment to
the American Telephone & Telegraph Company stockholders
on their average stock after all of the interest and other carry-
ing charges have been taken out.

That is, it purports to show the return to the stockholder of the American Telephone & Telegraph Company upon his investment in the stock of that company.

If the American Company were earning an 8 per cent re-
turn, and all of its stockholders had paid to the company par
for their stock, I do not know what return on investment I
would get expressed in per cent of return to the stockholders
of the American Telephone & Telegraph Company on
5098 their average capital stock investment. If you want
me to make a computation of that kind, I will be very

glad to make all of the assumptions that you have made, and report to you what the answer is.

5099 Assuming that we have a little company with a capital
of $1,000, 10 shares of $100 par, no bonds, no indebtedness of any kind, just $1,000, and the stockholders have paid in $1,000 for that capital, and assuming that the company is earning $80 a year, then the return on the investment of the company is 8 per cent.

5100 Using the same assumption, the stockholders would be
getting an 8 per cent return.

Assuming that instead of paying par for stock in this little company, the stockholders paid $200 for their stock, and the company's capital structure was, capital stock $1,000, and
5101 capital stock premiums $1,000, then if the earnings were
$80 per year, the company would be earning 4 per cent on $2,000 capital investment.

The company would be earning 8 per cent on its capital stock of $1,000.

Q. Will you please tell me then how you would figure, what difference that would make in what the company was earning, and what the stockholders in the company were earning, in the way in which you have figured it.

A. Still using the $80 figure?

Q. Still using the $80 figure, yes, sir.

A. Well, if the capital stock was $2,000, and the company was earning $80, why, they would be earning 4 per cent.

Q. They would be earning 4 per cent?

A. Yes.

Q. How much on their capital?

A. How much would the stockholders be earning on the—

Q. Now, how much would the Company be earning on its capital?

Judge Wilkerson: A capital of $1,000.

Mr. Blackman: Yes, sir, the same $1,000.

Q. It would be earning 8 per cent still on its capital, would it not?

A. Yes, sir.

Q. Now, in the way in which you have figured it here,
5102 how much would the stockholders be earning on what
you have said, per cent of return on investment expressed in per cent of return to stockholders on their average capital stock investment?

A. The way I have expressed it—that is, through the method I have followed here, the stockholders would also be earning 8 per cent.

Q. Would they? Would they not be earning 16 per cent, the way you have figured it? On page 4 of Exhibit X-108 you say that the capital stock of the American Company is 63.39 per cent of its total funds. Now, would not that figure be 50 per cent for the little company that we have been discussing, if it had only two items, one its capital stock, and the other its stock premiums?

A. Now, as I understood your last explanation, the total funds of the company were $2,000?

Q. $2,000.

A. Yes,—

Q. And the capital stock represents what part of those total funds?

A. 50 per cent.

Q. What?

A. 50 per cent.

Q. So then that 50 per cent would appear, if we were
5103 using the set-up on your Exhibit X-108, page 4,—that
50 per cent would appear in place of the 63.39 which you have used there, would it not?

A. 50 per cent would appear—

Q. Yes.

A. —yes, sir.

Q. Now, then, following the same method that you have followed in these exhibits, you would work out on Exhibit X-111 for this little company that the return to the stockholders is 16 per cent.

A. That is right.

Q. Yes, that is correct. Now, as a matter of fact, you and I know that instead of earning 16 per cent, they are only earning 4 per cent, are they not?

A. I do not know that to be a fact."

If they pay $200 for a share of stock, and got an 8 per cent
dividend, they would be getting 4 per cent, but I do not
5104 understand that you meant that on the capital stock
investment. I was going back to the capital stock only, that is what I had in mind; that is what I was going to take. If the people have paid $2,000 for their stock and received $1,000 par value of stock, and get $80 per year from the com-

pany, the actual return on the amount of dollars that they have put out is 4 per cent.

It is not correct to say that by the method which I have followed here, in figuring out the per cent return to the stockholders of the American Telephone & Telegraph Company, I would figure that 16 per cent.

5105 It would depend on which figure you are referring to.

I previously said that following the method which I have used here, assuming the facts with regard to this little company, the return to the stockholders, using the language which I use here, per cent of return on investment expressed in per cent of return to stockholders on their average capital stock investment, I would get 16 per cent.

I stated before, I did not work out the per cent of return on the investment of the A. T. & T. stockholders.

5109 The figure $346,548 in Exhibit X-111 came from X-110.

As I stated before, the method which I have followed 5110 applied to the little company with $2,000—$1,000 in capital stock, and $1,000 in capital stock premiums, would result in my figuring out, if I followed the method I have followed here, that the stockholders of that company were getting what I call per cent return on investment expressed in per cent of return to stockholders on their average capital stock investment of 16 per cent, although I concede that they are actually earning 4 per cent on their investments.

5115 Assuming the Company has been in business a few years and has accumulated a surplus of $1,000 so that there is $1,000 represented by 10 shares of stock at $100 each; there is $1,000 represented by stock premiums, the purchasers having paid $200 per share for their stock in- 5116 stead of $100; and there is $1,000 of surplus, and it is still making only $80 as a total per year, that means that the stockholder is getting $4 for every $100 that he paid in.

5119 To figure out the return to the stockholders on the same basis as shown in Exhibit X-111, I want to set up all of these factors in the same way as shown in Exhibit X-108.

5120 "Judge Wilkerson: What is it you are trying to do in this exhibit; what are you trying to express; are you trying to express those figures in terms of something else? Now, what are you trying to do?

A. All I was trying to do in the exhibits was, when I showed the per cent of return on investment, to state, after the interest charges and other items payable to outsiders had been taken out of that figure, how much would be available on the stock of the American Telephone & Telegraph Company; that is all I was trying to work out, based on the exhibit that they furnished me, which is A-164 in this case.

5125 Judge Wilkerson: Now, just multiply where you multiplied, and divide where you divided in this exhibit. What per cent do you get—and whether there is any analogy or not, the court will have to decide.''

Assuming as in the previous illustration that the little company had $1,000 capital stock, $1,000 premium on stock paid in by the stockholders, and $1,000 surplus, and earned $80 per year, the stockholders would receive 8 per cent on their stock figuring on the basis that I have used in Exhibit X-111. The return to the company would be 2.66 per cent on all of its capital, and 8 per cent on its stock. That is 8 per cent on the capital stock and 2.66 per cent on the total investment.

5126 **''Q. I did not ask you that. I said this company had a capital of $1,000, represented by 10 shares of stock of $100 each, and that it had stock premiums of $1,000, and a surplus of $1,000, and that it was earning $80—**

A. Earning $80?

Q. —$80. Now, how much return is the company earning?

A. 2.66 per cent.

Q. On all of its capital?

A. That is right.

Q. How much on its stock?

A. 8 per cent.

Q. So that is 8 per cent on the company's investment.

5127 **A. It is 8 per cent on the capital stock, and 2.66 per cent on the total investment of the company.**

Q. All right. Now, we start with your 8 per cent on the capital stock. Now, assuming 8 per cent on the capital stock, how much would the per cent of return on investment expressed in per cent of return to stockholders on their average capital stock investment, be?

A. 8 per cent.

Q. 8 per cent?

A. Yes.

Q. You are sure of that? Would it not be three times 8 per cent?

A. No, it would not.

Q. Now,—

A. It would be 8 per cent on the—as I use it here, it would be 8 per cent.

Q. Now, refer, please, to your Exhibit X-108, page 4.

A. Yes.

Q. The first figure you develop there is the one that we have been discussing, 63.39, is that right?

A. That is right.

Q. Now, what figure would take the place of that 63.39 on the assumptions that we are making here?

A. 33.33 per cent.

5128 Q. 33⅓ per cent?

A. Yes.

Q. So that, then, according to the procedure you have used, you would use 33⅓ per cent to get from the per cent of return on investment of the company to the per cent of return on investment expressed in per cent of return to the stockholders on their average capital stock investment, would you not?

A. Will you read that question, please. I do not think I understand it.

(Question read by the reporter.)

A. In this particular instance you have cited to me, I would not need to work out any 33⅓ per cent; it would not have any bearing on the calculation that I had to make.

Q. It would not have any bearing?

A. Absolutely not.

Q. Well, now, in telling me how you got there this 59.53 per cent on X-111, did you not use the figure 63.39?

A. Yes, I did—

Q. Did you not have—

A. (Continuing) —for very obvious reasons.

Q. Did you not have to use that figure?

A. Yes, I did.

5129 Q. Yes. And that figure represented the per cent you have said which the capital stock bore to all the other items shown on that page?

A. That is right.

Q. Now, then, if in the little company I am talking about, the capital stock was $1,000, capital stock premiums were $1,000, and the surplus was $1,000, the figure of 33⅓ per cent would take the place of the 63.39 per cent, is that right?

A. It would be—if you set up a statement similar to X-108—

Q. Yes.

A. —yes, sir.

Q. Now, then, if you had 33.33 per cent in this first line, then in proceeding as you have done, you would use 33.33 per cent instead of 63.39 per cent, would you not?

A. No, I would not need to use it at all.

Q. Well, why not?

A. Well, because the return on investment, as you have stated it, is 2.66 per cent, the average rate paid for funds is 2.66 per cent, and there is nothing to convert over at all. It is up in the figure on the page of Exhibit X-108, of 8.79 per cent, that you get, on a comparable basis, 8 per cent,
5130 and that would still be the return to the stockholders in the American Telephone & Telegraph Company, using the method that I have used. There is no conversion to be made at all; it is the same per cent return on investment and the same per cent of cost of funds shown in X-108. They are the same thing.

Q. Did you not tell me just a moment ago, Mr. Rainwater, before we introduced the figure of $1,000 for surplus, that if the stockholders of this little company paid $200 per share into the company for the stock which they purchased, the method that you have followed here would result in figuring the return, per cent of return on investment, expressed in per cent of return to stockholders on their average capital stock investment, of 16 per cent? Did you not just say that within the last few minutes?

A. I did say that, but I am not sure that I understood all of the factors that you had in the calculation.

Q. You want to withdraw that now, do you?

A. I would like to have you state it again, and I will work it out again, and see if the figure is correct.

5131 Q. All right. We have a company with a capital of $1,000 represented by 10 shares of stock of $100 each. Now, the stockholders have paid $200 for that stock. The company is earning 8 per cent on $1,000, or $80. Now, will you please tell me first of all what return in your opinion the company is making on its stock? Can you not answer that question? It has stock, a thousand dollars, and it is making $80. What per cent return is that on the stock? Mr. Rainwater, can you not answer that question?

A. I am trying to figure it out for you.

Q. Trying to figure it out?

A. Yes.

Q. If a company has $1,000 of stock, and is making $80, what per cent return is it?

A. I think my answer should have been, instead of 16 per cent—it should have been 8 per cent.

Q. I am not asking you that question now; I am asking you what per cent return the company that is earning $80 makes on its stock, if it has a thousand dollars of stock?

A. 8 per cent.

Q. 8 per cent?

A. That is right.

5132 Q. Now, you are sure of that?

A. Yes, that is right.

Q. Well, now, suppose it is making that same $80, and it has not only $1,000 of stock, but $1,000 of stock premiums, as well. Now, tell me what per cent on investment expressed in per cent of return to the stockholders on their average capital stock investment, you would work out?

A. If I considered the premiums, too, together with the stock?

Q. Work it out the way you have worked it here.

A. I have already answered your question.

Q. Well, answer it again.

A. I said, 8 per cent.

Q. 8 per cent?

A. Yes.

Q. Now, how do you get that; just tell me.

A. If you compare your Exhibit 108—

Q. Yes.

A. —the same setup, the total funds—

Q. Well, just—

A. —would be—

Q. Just please—

A. I am trying to explain how I got it.

Q. All right, go ahead.

A. That is what you asked me for. The total funds

5133 would be $2,000. They would have paid $80 out to the stockholders. That would be at an average cost of funds, for all funds, of 4 per cent, which is the same as their return on the investment. Now, there is no conversion to make here; it is 8 per cent for the stock. If you consider the premiums, it is 4 per cent for the premiums. That is all—on capital and premiums, it is 4 per cent; that is all that I see that there is to it.

Q. Well, now, will you just make a little sum for me, the same way you have made it here, please, and put in your first line, capital stock—that is $1,000; put in your second, stock premiums, $1,000, or a total of $2,000. Now, then, what figure do you get in your per cent column that corresponds to the first figure on page 4 of Exhibit X-108?

A. Your figure is 63.39, you are referring to now?

Q. Yes, your figure there is 63.39.

A. You would get 50 per cent.

Q. 50 per cent?

A. Yes.

Q. Now, then, will you please take your figure of 39.02 per cent on X-111, and proceed with that figure exactly as you proceeded with the figure as stated in your testimony yesterday?

5134 A. If 63.39 were 50 per cent—

Q. Yes.

A. —and all the other factors were the same—

Q. No, no.

A. —except the total?

Q. No. I am saying, you have this little company; we have your figures, and we have developed a substitute figure of 50 instead of 63.

A. You were talking just now about 39 per cent, and then you say "a little company".

Q. I say, we have—

A. (Continuing) And I do not know which one you are talking about.

Q. We have developed a figure of 50, instead of 63. Now, I want you to start in here on Exhibit 111—

A. All right.

Q. —and use 50 instead of 63, in the same manner in which you proceeded yesterday.

A. And convert the 39.02 over to the other?

Q. And convert the 39.02 to per cent of return on investment.

5135 A. All right. The figure would be 73.09.

Q. 73.09; it would be just twice, wouldn't it?

A. No, it would not be. It would be 73.09.

Q. Just give me the calculation on this.

A. The figure 39.02 is the one I am going to start with.

Q. Yes.

A. I am going to substitute 50 per cent in place of 63 per cent.

Q. Yes.

A. I am going to divide 100 per cent by 50 per cent; that is two; that is two times. I am going to subtract 6.87 from 39.02.

Q. What is the 6.87?

A. That is the cost of funds shown on this sheet.

Q. To this company? It has no cost of funds, or its cost of funds is 8 per cent, if you figure it that way.

A. What company are you talking about? Aren't you talking about the American Telephone & Telegraph, now?

Q. No.

A. With all the set of facts you have given me, and then try to apply it to 39 per cent, they have no connections at all. I could not work it out.

Q. You can apply any per cent, can't you?

5136 A. I have tried to give you, using my method, and starting with 39 per cent, to give you what you asked me for, using my X-108, and the answer is 73.09.

Q. 73.09. All right.

A. Yes.

Q. So that the amount that the company gets—the amount that the stockholders get as a return in the way you figure it is almost exactly twice the amount that the company gets?

A. It is whatever the figure is that I have stated to you, related to it. That is what it is.

Q. And, therefore, if you work that same thing back to the little company that we are talking about, and you did not have this cost of money that you have used here, the return to the stockholders on the basis that you have proceeded would be just 16 per cent, and not 8 per cent?

A. No, that is not true. It would have been 8 per cent, because you could not have even in the case of the small company a situation that it would not cost them something for their money, and the cost to that company, the cost to them for their money from all sources was 4 per cent, which happens to be identical with their return on the investment, 5137 and in arriving at that, the various items, similar to X-108, you have your 8 per cent on the stock, and that is what it still remains.

Q. Well, now, returning to your X-108, suppose the American Company had a surplus of a billion dollars instead of $110,000,000 that appears there on that sheet; can you tell me about how much that would affect the figure 59.53, as you have worked it out?

A. I will be glad to work it out for you and give you the answer. Do you mean, do it now?

Q. Can you tell by looking at it?

A. No, I cannot tell by looking at it, and I would not undertake to.

Q. Will you work it out for me, please, then, and assume these two facts: that instead of fifty-two millions of capital stock premiums, the American Company had five hundred and fifty-two millions of capital stock premiums, and that instead of $110,000,000 of unappropriated and appropriated surplus, it had just a billion dollars more than that; then tell me just how that would affect the figure that you have developed on X-111, the last figure, 59.53.

A. I cannot tell you what the answer would be without 5138 working it all out. It involves very large figures here. I would have to arrive at new per cents. I would have to carry the thing all the way through. It would take me—

Q. Take you at least ten minutes, wouldn't it?

A. Probably would, yes.

Q. Then, I will ask that it be done; not now, but at some later time.

Judge Wilkerson: Well, if he doesn't do it, your accountants can do it.

Judge Wilkerson: I understand that this exhibit purports to show what return—the annual return.

A. On the basis of this computation.

Judge Wilkerson: No, I say, you are speaking now of annual return on investment?

5139 A. That is right.

Judge Wilkerson: The purpose of this exhibit is to show what annual return the American Telephone & Telegraph Company is receiving on its investment in telephone instruments. Now, you have got a figure of $1,077,794 as their investment in telephone instruments less the depreciation. You take that as the figure which they furnished?

A. That is right.

Judge Wilkerson: The American Telephone & Telegraph Company has that amount of investment in telephone instruments. You take its figure of 6.87, which is the average return shown by this Exhibit A-164, and you get $74,144. Now, you add to that the additional profit to the American Telephone & Telegraph Company, the corporate surplus, and you get that by taking $110,000,000 surplus shown on Exhibit 164, and taking such part of that surplus as is represented by the ratio which the $1,077,000 represents to the entire. Where do you get that figure $346,548?

A. In my Exhibit X-110.

Q. Well, no, what is it?

A. It is the difference between the cost of instruments
5140 as I have worked it out, taking into consideration all the expense, taking into consideration an element of return on the money invested, and comparing it with the company's tabulation of what they said was a reasonable allowance.

Judge Wilkerson: Do you mean to say you get an addition to surplus for a single year of that amount?

A. That is right.

5142 Judge Wilkerson: Can you make that computation? You understand what he wants. Have you got it now?

A. I have a computation here on my sheet which I think is what he wants.

Judge Wilkerson: All right.

A. I have shown what per cent it would mean to the American Telephone & Telegraph Company stockholders, if you would consider the capital stock installments, and premiums and the surplus, what this 39 per cent would be, and I have the figure here, which is 47.67 per cent.

Mr. Blackman: I am not asking for that at all. I am asking you to assume the capital stock premiums were $500,000,000 more than they were, and the surplus a billion dollars more than it was, and make the computation and carry it through for me.

5143 A. Well, I told you before that those were large figures and would require a number of computations. You told me I could do it later.

Judge Wilkerson: Well, we will take a short recess. See if you can do that.

Mr. Blackman: Have you worked out the figures, Mr. Rainwater?

5144 A. I have worked out the figure that I understood you wanted.

Q. That is the last figure on Exhibit 111. Now, the 59.53 becomes what?

A. Based on the assumptions that you have made, it would become 140.77 per cent.

Q. And that is, as the amount that the people pay for their stock, pay to the company for their stock increases, the return to them in per cent increases in the manner in which you have proceeded?

A. Well, I believe in your computation, you also added a large amount in for surplus.

Q. Yes.

A. A billion dollars for surplus, which is not according to the facts shown here.

Q. Of course not; just using it as an illustration. And the surplus works in the same direction, doesn't it?

A. Yes, if all the other factors are equal, because it reduces the cost of funds."

I will explain how it represents the cost of funds with the illustration that you gave me.

5145 I was asked to add $500,000,000 into the capital stock premiums, for instance. I was asked to add a billion into the surplus.

That increases the total money of the A. T. & T. obtained from all sources 1½ billion dollars. Now, if they did not pay any additional amounts out for dividends or interest, and those figures remain stationary, the cost for funds for that year would be reduced to 2.96 per cent, and using my illustration of 63.39, that figure would become 27.32, and dividing 100 per cent by 27.32 per cent, I would get 3.66. Then, if I subtract this cost of funds from the 39.02 shown on X-111, I get 36.06, which, multiplied by 3.66, becomes 131.98. Then when I add back the dividend of 8.79, which remains stationary, I get 140.77. I think that is what you asked me for.

The difference is due to a difference in the cost of money, and the proportions of the stock to the total of all money, those two factors.

5146 The difference in the proportion of the stock to the total funds makes the greater part of this big difference that I have shown here.

In the method that I have worked out here, the more the A. T. & T. stockholders paid into the company for their stock, the bigger the figure I would develop as the per cent of return on investment expressed in per cent of return to the A. T. & T. Company stockholders on their average capital stock investment, but I do not know that you have yourself looked at the sheets that I furnished you. In connection with a number of the sheets that I have furnished you, I worked it out also on the premiums and surplus. I considered those factors of premium and surplus in some of the sheets that I sent you, but I did not work that calculation out on every possible basis.

I do not know whether any of the other bases have 5147 been put in evidence or not. I gave you a figure, though, awhile ago, compared with my 59.53.

I do not think that in these telephone instrument statements that I worked it on the other basis, but I have in some of the exhibits that I prepared,

I have not disregarded the stock premiums and the surplus. I showed right on the face of it what I took. I took the stock only. I did not take anything else.

5148 I have stated that in the computation which I have made with regard to these exhibits which is a complicated one, I find that as the surplus increases, this figure of 59.63 increases, if all the other factors remain stationary.

5149 If one paid $200 or $300 for his stock, there would be a stock premium.

If he paid $100 for the stock, there would be no stock premium.

5150 Assuming that we have $100 paid for stock at par, then there is no stock premium at all.

If you paid $110 for stock, then there would be $10 per share of premium.

If you paid $180 for stock, then there would be $80 premium per share.

As the amount of stock premiums that I deal with in my exhibit here, increases in proportion to the stock, my figure of 59.33 would increase.

5151 I don't see how the result would differ whether it was the American Company or what company it was. There would not be any difference in the method because of the difference in the company.

"Q. No difference in the method. Now, won't you get back to that question, after you have worked this out and have seen that the increase in the surplus and the increase in the stock premiums does increase the per cent of return on investment to stockholders, as you have used it here in line 6 of Exhibit 111, and tell me whether it is not a fact that in the way you have proceeded, you would get in the little illustration that I have used an 8 per cent return to the stockholders —an 8 per cent return to the company and a 16 per cent return to the stockholder, neglecting surplus now, taking it step by step?

A. Neglecting the surplus, what do you mean by that?

5152 Q. $2,000, $1,000 for stock and $1,000 for premium.

A. There is no surplus enters into the calculation at all?

Q. No surplus at all, just the simplest possible case.

A. And the return on the investment is $80?

Q. $80, $80 on a thousand, 8 per cent on the stock.

A. And the $80 is the return on the total investment?

Q. Yes, $2,000 the company has had all told, $1,000 of which represents the stock, $1,000 of it stock premiums, and it pays a dividend to its stockholders of 8 per cent.

A. The return is 8 per cent on the stock?

Q. The return is 8 per cent, and it makes no difference in that particular case whether the stock premiums were $1,000 or $10,000?

A. Well—

Q. Is that right?

A. —I do not understand just what you mean—

Q. No, I don't think you do.

A. With your $80, if you are referring to the $80 as being the return on the $2,000.

Q. I am talking of 8 per cent as being the return to the company on its capital stock; just fix that in your mind,

5153 8 per cent is the return to the company on its capital stock. Now, the company's funds consist one-half of capital stock and one-half of stock premium. Now, I will ask you whether with those conditions, you do not inevitably work out that the return to the stockholders on the basis you used here is 16 per cent? I thought you saw it when we started the discussion.

A. The company had $1,000—just let me—I would like to have you let me explain how I get at my result.

Q. No, I do not want to know that. Just answer the question, please. We have wasted so much time on this. Tell me now whether the method I have used in developing your exhibits, applied to the simple figures I gave you, don't result in a 16 per cent return to the stockholders.

A. No, it seems to me that it results in 8 per cent.

Q. Well, then, do you think in the case of the simple illustration where we can follow the figures easily, the increasing of the stock premiums makes any difference?

A. You have not increased the stock premiums yet.
5154 If you will give me another illustration, starting to increase the stock premium—

Q. All right, I will give you another one. Now, suppose instead of the illustration I gave you, the stockholders paid $1,000 a share for stock worth $100 par, therefore the par of the company is $1,000, but the actual money paid in was $10,000, and there was $9,000 of stock premiums. The stockholders would be making about 72 per cent, wouldn't they?

A. I think I am still not quite clear on one factor that you are assuming.

Q. Yes.

A. Do you assume an 8 per cent on the $10,000 in this illustration, on the $10,000 do you assume an 8 per cent, in other words, $800?

Q. 8 per cent on its stock, Mr. Rainwater.

A. What do you assume on its entire investment?

Q. Eight per cent on its stock. That is the only figure I am giving you.

A. Well, you have to assume some return for me to compare that with.

Q. The earnings and the stock are the two figures which you use to make the comparison, and the comparison works out an 8 per cent, $80 on a thousand.

5155 A. If I understand your computation, that would work out 80 per cent to the stockholders.

Q. Eighty per cent to the stockholders. That is, you use my computation?

A. I mean the assumption which was made.

Q. And that is applying to the figures that I gave you the method that you have used in working out Exhibit X-111?

A. Yes."

Based on the assumptions of $8 a thousand or $80, these stockholders would have been earning less than 1 per cent on the amount of money that they actually put up.

The more the stockholders of the A. T. & T. Company paid for their stock, the higher would be the return to them on their investment (assuming the same dollar dividend)
5156 based on just the stock figures only which I have used here without taking the premiums and the surplus.

"Q. That is the way you have proceeded, without taking the premiums and the surplus, except to reduce the percentage of the stock to the total, is that it?

A. I have not reduced the per cent of the stock to the total at all. I have just used figures that you furnished me. I have not made any changes in them."

You furnished me the figures on which I computed the figure of 63 per cent which appears on page 4 of Exhibit 108.

You did not furnish me with that figure of 63 per cent.
5157 I do not think they are unrelated figures.

I use constant figures here. I did not increase the premiums or the surplus. I used the figures that were shown in Exhibit X-108.

"Q. Well, now, you know, Mr. Rainwater, that these figures—this figure of stock premiums is the result of moneys that have been paid for stock in excess of par, you know that, don't you?"

I don't know anything about any of these figures except what the exhibit purports on its face to show.

5158 Referring to the figures on page 4 of my Exhibit X-108, termed capital stock premiums, in the general accepted meaning of what premiums are, it means the amount over and above the par value of the stock.

I know there were premiums paid for the stock of the A. T. & T. Co. I have not the figures that you are quoting, to-wit, that some of the stock sold for $110 and some as high as $180.

The higher the premiums and the more the stockholder invested, the higher the rate of return would be worked out by the method I have followed, from the same earnings of the American Company, if all the other factors remained equal.

As a bookkeeper, I would say ordinarily that the more a man paid for his stock, the less the per cent return to him from the same amount of earnings, on a total investment would be.

5163 The figures given me yesterday by Mr. Blackman, as the correct average loans of the A. T. & T. to the Illinois Bell, are correct.

5165 *Redirect Examination by Mr. Goldstein.*

Since yesterday's hearing I have checked the figures of interest and loans shown in Schedule 213 in the Annual

5166 Reports of the American Telephone & Telegraph Company to the Illinois Commerce Commission which were shown to me, together with the following exhibits which Mr. Heiss furnished us, bearing on this subject matter, to-wit: Exhibit X-103, which Mr. Heiss sent us and which I have here in the court room before me, entitled, "Analysis of Estimated Cost of Item 1-D, Carrying Investment in Physical Property used in Rendering License Contract Service; Item 1-E, Holding Funds Available during Period to meet Cash Requirements of Licensee Companies; Item 1-F, Temporary Financing of Licensee Companies."

Also the figures with which the Illinois Bell furnished us, entitled, "Advances from American Telephone & Telegraph Company during the years 1923 to 1925," and which is City's Exhibit 76 in Record Volume VI, page 2097; the exhibit which the Illinois Bell offered in 1929, Plaintiff's Exhibit 78, a continuation of City Exhibit 76 running up to 1929, and which is in Record Volume IV, page 1573. And, also "Supplement to City's Exhibit 76," which continues the advances from the American Telephone & Telegraph Company for the years 1927 to 1931, inclusive, which I have before me.

5167 I have also checked the loans and interest as shown on the books of the Illinois Bell Telephone Company itself and from these I find as follows:

The Annual Reports of the American Telephone & Telegraph Company to the Illinois Commerce Commission, on their face show that the form of the Annual Report was changed in 1926. Prior to 1926 the annual report on its face shows only that amount of interest which is accrued and unpaid on particular loans of the licensees which are outstanding on December 31st of the year of the report.

That is, the annual reports prior to 1926 only show that amount of interest unpaid on December 31, of the loans that are unpaid on December 31. They do not show either the amount of loans that were made during the year that have been paid off the day before the year, and they do not show the interest that was paid on all of the loans during the year that were paid off the day before the year, and they don't show any interest or any loans that were carried over from one year to another year, that were paid off before December 31st.

5168 Subsequent to 1926, the annual reports show on their face two columns, first, the interest accrued on the particular loans of the licensee companies which are outstanding at the end of the year, just as appeared in the annual reports prior thereto. That is, if there was a million dollars outstanding on December 31, it would show the interest on that million dollars, but if the million dollars was the balance of a fifty million dollar loan which was outstanding for all but the last day of the year, it would not show the loan of the balance of the fifty million dollars, and it would not show the interest on the fifty million, excepting for this one million dollars.

In the second column, the annual reports after 1926 show on their face the total amount of interest paid during the year by those licensee companies which had loans outstanding on December 31st of that year.

That is, if the Illinois Bell had twenty-five million dol-
5169 lars of loans from the American Telephone & Telegraph
Company, and those were paid off on December 28, 1923,
the report for the year ending December 31, 1923, would show
no loans and no interest.

If the Illinois Bell carried over from 1922 fifty million dollars of loans, and it was paid off on December 28, 1923, and there were no other loans outstanding on December 31st, the annual reports would show no loans, and no interest.

The information, therefore, in the annual reports did not cover the same ground as the ground covered by my exhibits.

My exhibits attempted to take the interest actually paid, as Mr. Heiss showed it in Exhibit X-103, and I distributed the actual amount of the loss among the licensee companies as he computed it.

5170 I checked Section 213 of the Annual Reports about which Mr. Blackman spoke yesterday, to see the amount of interest on loans paid by the Illinois Bell and the amount of loans shown in those Annual Reports compared to the actual loans made by the American Telephone & Telegraph Company to the Illinois Bell and the actual interest paid during those years.

I found that in the year 1927, according to Plaintiff's Exhibit 78 in record Volume 4, page 1573, which facts are also shown in supplement to City's Exhibit No. 76, which has been furnished to us in connection with the present hearing, it appears that there were advances made from the American Telephone & Telegraph Company to the Illinois Bell in the year 1927, as follows: $1,000,000 on March 31, 1927, $200,000 on March 31, 1927, $500,000 on May 2, 1927, $1,000,000 on June 1, 1927, $750,000 on June 13, 1927.

These loans were paid off on or before June 30, 1927. In the annual reports of the A. T. & T. Co. to the Illinois Commerce Commission, Section 213, for the year 1927, the name of the Illinois Bell does not appear; no loans appear for
5171 the Illinois Bell; and no interest appears as having been paid by the Illinois Bell during the year 1927.

That is, the plaintiff's own exhibit shows loans were made to the Illinois Bell during the year, and paid off during the year, and interest paid during the year, but the annual reports show neither interest nor loans, because they were not outstanding on December 31st.

Furthermore, as shown in Plaintiff's Exhibit 78, page 1573, of the Record Volume 4, and as shown in supplement to City's Exhibit 76, which plaintiff has just furnished, on December 31, 1926, there were outstanding loans from the American Telephone & Telegraph Company to the Illinois Bell of $13,800,000. Of this $500,000 was paid off on January 7, 1927, and $13,300,000 was paid off on January 15th, 1927. But nowhere in Section 213 of the annual report does there appear the interest paid by the Illinois Bell to the American Telephone & Telegraph Company for the period of time from January 1, 1927, to the date of payment of this $13,800,000.

That is, the Illinois Bell actually paid interest on

5172 $13,000,000 for fifteen days, but the annual reports could not show them because the $13,000,000 was paid off prior to December 31, 1927.

In the year 1921, according to City Exhibit 76, prepared by the Illinois Bell, there was outstanding on December 31, 1920, advances from the American Telephone and Telegraph Company to the Illinois Bell of $4,000,000. On February 1, 1921, additional advances of $400,000 were made, and on August 24, 1921, an additional $2,450,000. On August 24, 1921, $6,850,000 was paid off. There was, therefore, on an annual basis average advances of $1,823,333 and neither the loans nor the interest appear in the annual reports for the year 1921.

That is, in the year 1921, there was an average yearly advance from the American Telephone & Telegraph Company to the Illinois Bell of $1,823,333, on which the Illinois Bell paid interest, and the American Telephone and Telegraph Company received the interest, but the annual report was
5173 silent both as to the loan and the amount received by the American Telephone and Telegraph Company.

In the year 1922 the American Telephone and Telegraph Company advanced to the Illinois Bell, as shown by City Exhibit 76, prepared and furnished by the Illinois Bell, shows the following loans as having been made to the Illinois Bell:

February 2, 1922, $1,500,000; March 1, 1922, $300,000; March 6, 1922, $1,000,000; May 31, 1922, $1,000,000; June 2, 1922, $300,000; June 30, 1922, $1,000,000; August 3, 1922, $500,000; August 28, 1922, $100,000.

These loans were paid off between June 30, 1922, and September 30, 1922. The average advances for the year were therefore $1,158,077, but nothing appears in the annual report.

When I say the average advances for the year, I mean the advances, which I have just stated, when reduced to an annual basis, would equal a loan of $1,158,077 for twelve months on which the American Telephone and Telegraph Company received the interest, but nothing appears in the annual reports either as to the loan or as to the interest.

5179 For the year 1930, from the supplement to City Exhibit 76, I found the advances from the American Telephone and Telegraph Company to the Illinois Bell outstanding December 31, 1929, of $2,200,000, which amount was paid on January 2, 1930, which, on a yearly basis of average loans was $12,228, of which nothing appears in the annual reports of the American Telephone & Telegraph Company.

The books for the year 1920 showed average loans of $2,365,521.

On the basis of taking the interest from the annual reports and dividing by 5.88, one would get $442,755.

For the year 1925, the Illinois Bell Company's books show average loans of $1,983,944, and if you had applied the 5.88
to the interest as shown in the annual report, you would
5180 have had $250,000.

On the basis of applying the 5.88 to the interest shown in the annual reports for the year 1920, you would have shown outstanding loans of $12,939,983.

Exhibit X-103 furnished by Mr. Heiss showed for that year $191,500,522.

In 1921, the 5.88 per cent computation divided into the interest shown in the annual report would have shown $16,093,146.

There are some differences that would have resulted from applying 5.88 per cent to the annual reports.

The total differences for the period 1923 to 1930 between
the Exhibit X-103 furnished by Mr. Heiss and the com-
5181 putations which would have resulted from applying
5.88 per cent to the annual reports would have been as follows: according to X-103, the loans were $1,626,831,491, and by applying 5.88 per cent to the interest in the annual reports, you would have gotten $1,073,809,794, or $600,000,000 difference.

In X-103, Mr. Heiss showed the actual interest received by the American Telephone and Telegraph Company.

That is $11,511,000 for the year 1920. The interest shown in the annual reports is $760,871.

For the year 1921, the annual reports show $946,000, and Mr. Heiss shows in X-103, $10,595,000.

Similarly, there are differences, for each of the years, between Mr. Heiss' figures in X-103 and the annual report interest.

5182 Those differences in 1922 were: $634,288 in the annual
report; $7,813,000 in Mr. Heiss' exhibit; in 1923, in the annual report, $857,671, and $7,605,000 in Mr. Heiss' exhibit; in 1924, $1,020,737 in the annual report, and in Mr. Heiss'

exhibit, $10,303,397; in 1925, $1,169,546, in the annual report and $13,932,839 in Mr. Heiss' exhibit, and so on.

I also checked the interest which Mr. Heiss showed in X-103, with the average advances for licensee companies shown in X-103, which showed that the American Telephone and Telegraph Company, received interest on those loans, of 5.60 per cent for the year 1929.

5183 On the basis of 5.88 per cent the loans shown in Mr. Heiss' exhibit would have resulted in interest of $14,948,987. Mr. Heiss showed interest in X-103 of $14,554,437, from advances made to the licensees of $254,234,480, and loans of $6,209,209 made to the 205 Broadway Corporation and the Bell Telephone laboratories.

(June 17, 1932.)

5191 Assuming that a company has total funds of $1,000, of which $500 came from a loan paying 5 per cent interest, $250 from capital stock and $250 from premiums and surplus, and the net earnings are $100, there are several methods that may be used to express the return on investment.

One way of expressing the return on investment would be to say that the company earned 10 per cent on its investment in the business, of $1,000. That would be Method 1. Another way of expressing the return would be to say that as the company had to pay $25 interest on that loan its earnings were sufficient to pay the interest and have available $75 for return on its capital, premiums, and surplus. $75 is equal to 15 per cent on the $500 of capital, surplus and premiums. That would be Method 2, which I understand follows Mr. Blackman's cross-examination of me.

5193 The third method, and the method which was used by the American Telephone & Telegraph Company, would be to say that the company earned sufficient to pay its expenses and its interest, and had $75 return on its capital, surplus and premiums, which return is expressed as 30 per cent on its capital stock of $250. I used these three methods in my Exhibits X-296, X-297 and X-298.

5194 The third method of expression is used by the American Telephone & Telegraph Company in its Annual Reports, and in the Bell Telephone Securities Manual. The earnings are expressed as a certain per cent of return on the outstanding capital stock.

Referring to the Bell Telephone Securities Manual, which is Defendants' Deposition Exhibit for identification No. 110, entitled "Bell Telephone Securities, Reference Tables and Descriptions for use of Investors, Investment Houses and Bankers, with a brief introductory statement of the organization and financing of the American Telephone & Telegraph Company and Associated Companies, 1931," which was issued April 15, 1931. On page 10 it shows with reference to the year 1930, net earnings per share of $10.44, and dividends paid per share of $9.

5195. Referring to the Annual Report for the year 1931, which is offered as Exhibit X-307, on page 15 it shows for the year 1930, $10.44 per share. The connection between the last mentioned two documents and Exhibits X-286 and X-287 for the year 1930, is as follows:

Exhibit X-287 shows that on all of its funds in the business, the American Telephone & Telegraph Company earned in the year 1930, 7.21 per cent, that is, earnings available for interest, dividends and amortization charges.

In X-286, this 7.21 per cent is expressed to show how much of the earnings after paying the interest and amortization charges, was available for return on capital stock, capital stock premiums and surplus; but is expressed as a per cent on capital stock outstanding.

X-286 shows that for 1930 the undivided profits and dividends amounted to 10.44 per cent on its capital stock out-
5196 standing. This figure is the figure shown in the Annual Report of the American Telephone & Telegraph Company for 1930, and in the Bell Telephone Securities Manual.

The figure for each of the years 1923 to 1930 shown in X-286 ties up with the Annual Reports of the American Telephone & Telegraph Company, and with the Bell Telephone Securities Manual, excepting for a small amount of additional amortization of discount, which the Annual Reports have not considered.

The relation of Exhibits X-286 and X-287 to A-164, of Mr. Heiss, and my Exhibit X-108 is as follows: X-286 shows $10.44 per share is figured on the capital stock of $1,585,669,600, which is the figure which Mr. Heiss showed in A-164 under Average Capital Stock, and which is also shown in X-108 on the first line for the year 1930.

I will tie up A-164, X-108 and X-287, for 1930. From X-287 the American Telephone & Telegraph Company is shown to have earned 7.21 per cent on $2,746,624,797 of funds used in the business, which amount of funds Mr. Heiss showed in A-164, and which is shown in X-108. This 7.21 per cent 5197 represents earnings available to pay out interest dividends and amortization charges which Mr. Heiss shows in A-164 in the last column, the last line as 6.25 per cent. 10.44, which is the result after deducting the interest and amortization charges, is the return on capital stock, and which was available to pay out the dividend of 8.78 per cent which Mr. Heiss shows in the first column of A-164, and which is shown in X-108. I will tie up the method used in X-111 to convert the 39.02 per cent to the 59.53 per cent with X-286 and X-287. The formula that I have used in X-111 to convert the 39.02 per cent of return on total funds invested in telephone instruments, to arrive at the 59.53 per cent return available for capital stock premiums and surplus, expressed as a percentage of capital stock only, is the formula which I would use if I were to convert the 7.21 per cent in X-287 to the 10.44 in X-286.

In X-108, I inserted percentage figures which Mr. Heiss did not show in A-164. These percentages are merely to show what portion of the total funds came from capital 5198 stock, what portion came from surplus, and what portion came from the funded debt, and what portion came from loans.

They also show what portion of the total dividends, interest and amortization charges would be required to take care of interest and amortization charges and to take care of the dividends on the capital stock. These percentages are inserted as a matter of convenience so as to enable computations to be made from my exhibits to express return from any or all of the operations of the American Telephone & Telegraph Company, by one of the three methods mentioned, namely: 1, a return on total funds; 2, a return available for capital stock, surplus and premiums, expressed as a percentage of such combined surplus capital stock and premiums; or, 3, a return on surplus, capital stock, and premiums expressed as a percentage of the capital stock outstanding. For the year 1923, X-287 shows the American Telephone &

Telegraph Company earned 8.40 per cent on all its funds available for interest, dividends and amortization.

Exhibit X-111 shows 39.02 per cent to be the return to the American Telephone & Telegraph Company from an 5199 allowance of $709,000 for rental of instruments, on the American Telephone & Telegraph Company's investment in telephone instruments.

Exhibit X-286 shows 11.20 per cent as the return to the American Telephone & Telegraph Company from all of its operations in the year 1923, after taking care of all of its expenses and after taking care of the interest and amortization, which was available as the return for capital stock premiums and surplus, expressed as a percentage on capital stock. As compared to 11.20 per cent on its capital stock available from all of its operations, 59.53 per cent would become available on that portion invested in telephone instruments shown in X-111. My return of 39.02 per cent in X-111 compares with 8.40 per cent in X-287 for the entire company, and my return on telephone instruments ~~of~~ 59.23 per cent in X-111 compares with 11.20 per cent for the entire operations in X-286.

5200 (Defendants offer in evidence Exhibit X-307 entitled "A. T. & T. Co.—Annual Report to Stockholders 1931" and Exhibit X-308, photostatic copies of Section 213 of the Annual Reports of the American Telephone & Telegraph Company to the Interstate Commerce Commission and the Illinois Commerce Commission for each of the years 1920 to 1930, inclusive.)

Re-cross Examination by Mr. Blackman.

I think counsel can answer the question as to the purpose of my testimony relating to the sources from which I could not find the correct figures for the average loans which we had been talking about the day before, better than I can. It is not correct that so far as I am concerned, it had no purpose.

5201 You showed me an Annual Report, and you said I could have gotten the figures for the companies from it. Now, I quoted the figures in the Annual Reports to show that I could not get the figures from the sources that you stated I could get them from. I got the figures shown in City's Exhibit 142. I told you that I had verified your figures, and

they were correct. The method of making the verification so far as the Illinois Bell is concerned is to go to the books of the Illinois Bell. Of course, we had access to the
5202 books of the Illinois Bell, but we did not have access to the books of the other companies. We always had access to the books of the Illinois Bell, and could have gotten those Illinois Bell figures at any time.

The purpose in my testimony concerning the place where I looked for information was merely to show that I was depending upon the figures that you furnished me, which I used, which were based on the quarterly balances. The figures furnished were certain groups of figures showing the average loans of the licensee companies, that were shown in City's Exhibit 142, I believe is the number, and I think also the later years were furnished as a supplement to City's Exhibit 142.

5203 They were furnished to me through counsel and I used them. I do not know the circumstances under which the original City's exhibit was made up.

That City's exhibit bears across its top in very plain, bold letters, the amounts on January 1st, March 1st, July 1st, September 1st, whatever the quarterly dates are, averaged by dividing by four, but it also shows that these are the average loans during the year, and what was just stated was in parentheses—explaining how the average loans were made up—and how it was worked out.

5205 I had City's Exhibit 76.

5208 I do not know just how to answer your question as to whether there is anything in the testimony that I gave in answer to Mr. Goldstein, which in my opinion shows that the figures opposite the line "Illinois Bell" on X-131, for the years 1923 to 1930, both inclusive, were correct.

5209 I told you the figures you gave me were correct, and those are different figures than are shown here. Now those figures shown here are based on the quarterly averages, and the figures you stated, were based on the daily balances. There is that variation.

5210 For the year 1929, on this line I am talking about, on Exhibit 131, I used a figure of $12,412,500.

5211 I stated in answer to your question yesterday that the figure you gave me, $7,747,364, was correct.

5213 I did not have the correct figures for all of the companies, and I had the loans on one basis for all of the companies, and I used them for the Illinois Bell because that was the same basis there, as for the other companies, and in my opinion it would not have been proper in a set-up of this kind, to show one figure for the Illinois Bell on one basis, and the figure for the other companies on another basis. When I was using these figures for the Illinois Bell, I did not know, as a matter of fact, that they were not correct.

I have seen City's Exhibit 76, but I did not
5214 use it in connection with this. I think it would be possible using the dates, to work out the correct figures for this line in question here, from City's Exhibit 76.

"Q. Well it gives you the date of each loan, and when the loan was paid off, and any accountant could very speedily and very easily get the average, could he not?

A. It would be possible to get the average."

When I answered that the figures that you gave me were right, the information was taken from the books of the Illinois Bell. I did not personally go to the books and take it off. I had the information which I had a man take off for me.

5216 I do not believe I had it in my work papers here in court with me, but I obtained it from the papers in our office, after I went back to the office. I do not think I had it here in my possession, by any means.

5217 I have with me here in court the papers from which I obtained it for two of the years, but I have not found the others yet. I have the figures taken off the books here for 1929 and 1930, here before me. I have the analysis of Account 336, analysis of other interest deductions, showing the interest paid, with a notation at the head of the column, "Six per cent minus two—5.88" from which the average loans for the year were computed, for 1929 and 1930. I computed from these figures the average loans for the years 1929 and 1930. I have a paper here which shows the average loans, per the books, for the year 1929, as $7,747,364, and for 1930, $12,228.

5218 That is based on dividing this interest by 5.88. I took some of my work papers and worked this out, and I think these were the sheets that I had for 1929 and 1930. I do not know whether I can find the others. The papers now shown to me by counsel (A-219) are not the ones that I got the correct figures from. I have seen them; I think I may have looked at them yesterday. I went through a computation although the figures are stated here correctly, for every year on my papers furnished to plaintiff, because I wanted to check this rate of 5.88 that you told me would 5219 work out the correct figures.

These (A-219) are some of the sheets that were prepared under my direction. I did not work them out myself. I prepared the sheets under the direction of counsel and 5220 delivered them to counsel for the defendants and they delivered them to the plaintiff. They are not among the papers that I have offered in evidence.

5232 (Plaintiff's Exhibit A-219 offered and received in evidence.)

5233 It is not a fact that when I wanted to find out whether the figures which you gave me were right or wrong, I went to these papers to find out, and checked them. I went to my work papers, because I wanted to see just what information I had in my work papers.

"Q. And you went to your work papers and figured it all out knowing that you had these where you had already figured it out?

A. You told a figure to me, on the stand, of so many dollars of interest, and I wanted to check that figure."

Exhibit X-115 is a comparison of what was put in 5234 the record on page 1038, showing by items the investment, and in Column A the allowance for the telephone instruments; and I have assembled similar items from the exhibits put in by Mr. Heiss in this case, and then I have compared those two presentations with the actual experience, showing the computation of the investment and the cost of furnishing the instruments by items, and then taking out of the total amount for the instruments, the return on investment included in that amount, and working it down to a return on the investment as shown by the books of the American Telephone & Telegraph Company, and allocated to the Chicago Division. That is in general what I tried to do.

In line 7, where I used the legend "Actual return on investment obtained," and the first figure is $454,990, I don't know whether anybody actually received the money or not.

5235 In connection with that item, I think it is very clear what
I meant. I mean this;—that that is the return that would
be included in the amount of $709,007; that is what I meant
by it; that is the amount that would be obtained if you used
the figure of $709,007 as an allowance for the instru-
5236 ments. It would be computed to the Illinois Bell, based
on the American Telephone & Telegraph Company's
experience. It would be a return of $454,990 to the Illinois
Bell if the allowance of $709,007 were given, and the Illinois
Bell owned the instruments on the same basis as the American
Telephone & Telegraph Company. That is for the year 1923.
Exhibit X-115 refers only to the year 1923, on the heading.
I think that is all it is intended to refer to.

I have made other computations for others years not
5237 based on the figures in Column A—if you are referring
to that. I do not think I used that for other years. In
1923 the Illinois Bell Company owned no instruments and got
no return on any instruments.

5238 When I say "Actual return on investment obtained,"
for the Illinois Bell, $454,990, that is not an actual figure
at all. It was not intended to show that it would be an actual
figure. By the use of the words "Actual return" I meant,
based on these figures that are shown above there on the
various assumptions entering into the computation of $709,-
007, the "actual return" is really what it would be on that
basis. At the head of the first column I have "Presentation
during the year 1929" and at the head of the second column
I have "Presentation during the year 1932." What I meant
there was that the presentation during the year 1932 that Mr.
Heiss made, as I understood it, was to arrive at a fair al-
lowance for the instruments, and that is in a manner
5239 similar to the $709,007. By the use of precisely the same
language as the headings of those two columns, I in-
tended to show what this would amount to based on the com-
pany's actual experience. There was no intention to imply
that they actually received such an amount as that. I know
that these computations were made by different people and
at different times. I do not know the purposes of the presenta-
tion in each case. I understood them both to refer to an
allowance for the instruments, and that is the only rea-
5240 son that I have compared them. I looked at the methods
and I set up what the methods showed.

I think the computation purported to show that one method which I have used here in parallel to the other, was a method that was set up by an officer of the Illinois Bell in 1929 to show what it would cost the Illinois Bell Company to buy these instruments new, and to maintain them in service, and to get a fair return on the capital so invested.

5241 In column 4 "Total Cost of Furnishing Telephone Instruments," I have figured what the return would amount to if the Illinois Bell Telephone Company had gotten an amount of $709,000.

5242 By the use of the figure 64.63, what I tried to do was to work down to a return on investment, assuming that
5243 Illinois Bell got $709,000 as an allowance. I understood that there was a claim for an allowance of that amount. The computation of total cost to the Illinois Bell of $709,000, and working out an actual return to the Illinois Bell of $454,990 and a per cent of actual return on net investment to the stockholders of the American Telephone & Telegraph Company of 64.63 per cent is all based on the American Telephone & Telegraph experience. The amount $454,990 was related to the investment shown in column C of $1,076,383, which is the allocated proportion of the American Telephone & Telegraph Company's investment set up on their books in respect to the Illinois Bell, Chicago Division.

5245 In submitting that percentage of 64.63, all I was trying to show was what an enormous return this amount would be on the basis of the American Telephone & Telegraph Company's actual experience. That is all I was trying to show. The actual experience that I mentioned was that I took their investment as shown on their books and allocated it to Chicago, on the average stations.

If all the company is entitled to in this case is the cost of maintaining these instruments as shown by its experience, then the figure which should be used is $327,965 instead of $709,070, and that's all there is to it. As a matter of fact,
5246 in the last column here I purport to show what the actual experience of the American Telephone & Telegraph Company was as I understood Mr. Heiss' exhibits to mean.

"Q. And that is based on instruments that were purchased over a number of years at lower prices than obtained in the years in question, is based upon the deduction of a depreciation reserve of 50 per cent which was built up by 10 per cent charges over a number of years prior to 1923, and takes the actual expense that the American Telephone & Telegraph Company incurred in connection with those instruments, that's right, isn't it?

A. They are all actual items so far as I understood."

I do not understand that this figure of $189,351 in
5247 Column B, Exhibit X-115, represents actual depreciation. My recollection of the exhibit was that it meant a deduction of 8 per cent from value new for depreciation. I presume it was for actual depreciation instead of the
5248 book reserve for depreciation. There is a difference between columns B and C as to the investment, because they are set up on a different basis. That is due largely to the amount of depreciation which is taken off.

Part of the difference in the two columns is that in one column Mr. Heiss is estimating the figures on the basis of an 8 per cent return, and on the other he is basing it on the actual cost of money to the American Telephone & Tele-
5249 graph Company. That is not all of the difference between the two columns. There are differences in the expense items that he included in his allowance.

5250 These two columns B and C down through line 7 in so far as figures are concerned are all shown on Mr. Heiss' exhibit except that in the amount $473,000 I have added back taxes which he omitted. I put the two on the same basis. I think that he understated, a little, the amount that the American Company would have been entitled to on his theory by omitting the taxes.

5251 I have taken the figures, with the exception of the one change we have mentioned, from a comparison which Mr. Heiss himself made.

"Q. And then you have added lines 8 and 9, which he did not use, and then you have added the whole of column A, and you have used your own legend here for lines 1 to 9, inclusive?

A. Well, line 8, I don't recall that his exhibit exactly showed a line that he called the same as I have called it, but he used that figure of 6.87, that shows in his exhibit."

It appears in line 6. I don't consider "Investment or value new" in line 1 to mean the same thing. I have not shown which was which. The terms "Net investment or fair value"

I do not consider equivalent the way they are shown 5252 here. I have not indicated which of these figures was "fair value" and which was "net investment."

"Q. Anyone looking at the exhibit would understand that the figures were comparative, and were stated on the same basis, would they?

A. I did not intend to convey the idea that each one of these items represented the same thing as the other at all, that they meant the same thing."

In line 8, I figure out what is not the fair return on the value of the property, but the return to the American Company on its investment in the property. In line 9, I step that figure up by finding the per cent actual return on net investment converted to average return to American Telephone & Telegraph Company stockholders in the same manner in which I stepped up the similar figure in Exhibit X-111.

5253 What I did in Exhibit X-117 was to work out the annual allowance of the Public Utility Commission in the order of December, 1920, to show on the basis of the figures for the year 1920, that is the average stations in service, what the allowance would be at $1.13 per station, and I worked that out, or I compared that figure with what the cost of furnishing the telephone instruments would be, based on the American Telephone & Telegraph Company's actual experience, and including a return on investment at the annual cost of funds. As a final result here, I get a per cent of profit to the American Telephone & Telegraph Company on its average investment of 45.17 per cent, from the order of the Commission. To get "Profit to American Telephone & Telegraph Company, $343,122" in line 4, I took the allowance of the Public Utilities Commission at $1.13 per station and applied that to the average number of stations for the year 1920, then I worked out what the cost of furnishing the telephone instru- 5254 ments would be, which is shown in my Exhibit X-116, based on the experience of the American Telephone & Telegraph Company, including a return on investment. I followed that method throughout all of my calculations, and in all of my exhibits, consistently deducting the entire reserve which the American Company has set up, and I am purporting to figure out a return on the net cost to the American Company, taking what is paid for the property in the first instance, and what it had set up on its books as a reserve, deducting the reserve, and getting a balance; that is the figure I use in every case, and that is the figure on which I compute what I call per cent return. I used the same method as Mr. Heiss in Exhibit A-166.

5255 I have presented about eighty or ninety exhibits to this court in the last few days. The calculations are based on what the books show; that is, based on the original cost as I took it from the books, less the depreciation reserve shown on the books. That is the consistent principle I have followed throughout.

On Exhibit X-117, I say "Profit to American Telephone & Telegraph Company." That is the difference between the amount which the Commission said it would be fair for the American Telephone & Telegraph Company to get, and the amount which I figure out it would have cost the American Telephone & Telegraph Company.

5257 In a number of my exhibits, I make a comparison of what I call the return to the American Company from other associate companies. Whether I use, as the figure of the return, the dividends and interest, depends on what exhibit you are referring to. All of them do not show dividends and interest, but a number of them show dividends and interest. In a great many of them I have lumped together the dividends and interest received by the American Company from the Illinois Bell, and compared those figures with the divi-
5258 dends and interest received by the American Company from other associate companies. My Exhibit X-284 shows both dividends and interest separately. I don't know whether any other exhibit shows both separately. There is at least one that shows both separately. Most of them lump them. In those cases where I have made the comparison of the mixture, as an accountant, I think that that comparison means something.

In my opinion, as an accountant, if I wanted to find out the relative values to the American Telephone & Telegraph Company, and the relative profits to the American Telephone
5259 & Telegraph Company from two companies, it would make no difference to me that the moneys received by the American Telephone & Telegraph Company in one case were 99 per cent bond interest, and 1 per cent from stock dividends, and in the other case were 99 per cent from dividends,

and 1 per cent from bonds. I put the two items together. I think that is clear that I put the stock and the loans together, and I worked out the dividends and the interest on those loans in respect to the Illinois Bell, and I compared the same thing with the other companies.

5260 If the dividend rate were 8 per cent and the interest were 5.88 per cent, under my method, the average return would vary, based on the proportions of the stock and loans. The proportions of stock and loans and the dividend rates are factors that enter into it.

"Q. And in some forty or fifty sheets you have worked out the comparison between what you call the yield to the American Company from the Illinois Bell, and the yield to the American Company from other associate companies on this basis of comparing a mixture of interest and dividends in one company with a mixture of interest and dividends of another company, is that right?

A. The comparisons are the same for the Illinois Bell as compared with the other companies.

Q. And because the Illinois Bell, for special reasons that have been stated here, are paying small amounts in interest, the comparison shows that the return, as you call it, from the Illinois Bell was a little better than it was from some of the other companies, is that right?

A. The return—in the comparison of the Illinois Bell, the returns from the other companies are all based on these factors that I have mentioned a while ago."

5261 What I tried to show in connection with those items is the comparison of the return on the stock and the loans together; in other words, in some companies the American Telephone & Telegraph Company made a large number of loans, made large amounts of loans, in other companies it made small amounts. It got interest on the money which it loaned, and it got from the same company dividends on stock.

As to what relation those two things have to each 5262 other in this case, I wanted to show what the total return was on both of these items of investment that the American Telephone & Telegraph Company was getting. Interest on money is what the American Telephone & Telegraph Company received for the money. I did figure dividends 5263 on stock. I figured first, the dividends, then, in some other sheets I put the loans together with the stock and showed the return on the two items combined. They show on their face that they are made that way.

5265 When I developed these percentage figures that I used
by comparing this so-called return with the investment of the American Company, I go away back to the original cost to the American Company of what it paid for the stocks in these various associate companies.

In the case of the Pacific Company, I show the return on the stock for the year 1923 was nothing; the year 1924 was nothing; the year 1925, 6.54; the year 1926, 7.63; the year 1927, 7.39; the year 1928, 7.33; the year 1929, 7.33; the year 1930, 7.19.

5266 This is the return to the American Telephone & Telegraph Company on its investment in the stock of the Pacific Company.

I don't recall any such figure as 100 per cent return from the Pacific Company. If there is any such figure, it strikes me it must be a typographical error. I don't recall any such figure as that. In my comparisons here, I am dealing with
5267 what the books showed to be the American Company's
investment in the stock of the associate companies.

In Exhibit X-278, the figures that I develop as the percentage of dividends and undivided profits of licensee companies to investments by American Telephone & Telegraph Companies in common stocks of licensee companies converted into average return to stockholders of American Telephone & Telegraph Company on their investments in capital stock of American Telephone & Telegraph Company for the years 1920 to 1922, inclusive, are as follows for the Pacific Company:

For the year 1920, 118.14 per cent; for the year 1921, 144.59 per cent; for the year 1922, 159.20 per cent; and the year 1923, 118.47 per cent. The next year it goes down to 44 per cent, and after that diminishes. By the method I have followed here, I worked out a return with respect to the Pacific Company as high as 159.20 to the American Telephone & Telegraph Company stockholders, on their proportion of the investment, after considering the dividends and the undivided profits.

In Exhibit X-124, it shows that the Indiana Bell Com-
5269 pany paid no dividends at all during 1923, 1924, 1925
and only 4 per cent in 1926; 6½ per cent in 1927; thereafter, 8 per cent.

In Exhibit X-130 I show what I call the amount required to equal the average Illinois Bell Telephone Company return on capital stock.

I show those figures for 1923 as $863,796; for 1924, $861,376;
1925, $1,333,986; 1926, $946,185; and 1927, $322,751. This
exhibit merely is to show how much it would be in terms of
dollars that the Indiana Bell would have to pay to the Ameri-
can Telephone & Telegraph Company on its investment in
the stock of the Indiana Bell, if it were on the same basis as
the Illinois Bell. I use that information in X-137, and
5270 there the above amounts are raised to include loans,
and the total equalizing figure for stocks and loans is
for 1923, $1,111,829; for 1924, $1,134,571; for 1925, $1,555,573;
and for 1926, $1,010,741; and for 1927, $409,027. They pur-
port to show the amount that would be required to equal the
average return of the Illinois Bell to the American Telephone
& Telegraph Company on the American Telephone & Tele-
graph Company's investment in stock and loans of the Illinois
Bell.

The exhibit shows that the Illinois Bell was doing so much better than the Indiana Bell that the Indiana Bell would have had to pay to the American Company these amounts that were read off last in order to equalize its payments to those of the Illinois Company.

In Exhibit X-142, I show the license revenue from the In-
diana Bell Company to the American Company. That starts
out at $363,065 in 1923, and increases to $464,987 in 1927.
5271 I then deduct from these amounts the stock and loan
deficiency which was just read and I do that to place
the company on an investment basis comparable to the Illi-
nois Bell Company.

What I meant by that was this: in connection with the
license contract there were certain losses on the loans, and
there were certain losses on holding funds available for stocks
and loans. Now, what I did here was to put this item in to
show if all the companies were on the same basis as to return
as well as to losses, that that is what it would result in. That
is a comparative figure only. I put it in there to show
what it would be if they were all on the same basis. I
5272 thought it would illustrate the inequality of the financ-
ing between the companies. They were all gone over by

attorneys.

5273 All of these figures that I have used here, and all of this approach that has been spoken of, leads up to the fact that because the Indiana Company and some of the other companies were not doing very well in these early years, that the amount of license contract payment from the Illinois Bell to the American Company should be reduced or that the license payments of the other companies should be increased.

"Mr. Blackman: Yes, that is working it out on your last, according to the argument which underlies this long list of papers, we should have charged the Indiana Bell Company 18 per cent as its license contract payment in these years in question."

(Objected to by defendants.)

5275 It figures out about 18 or 19 per cent.

5276 Referring to my testimony on re-direct examination in which I said that the company that had a thousand dollars of capital and nine thousand of stock premiums would earn 80 per cent, based on what I said was the American Company's method, the figure 80 per cent was based on what I understood your assumption to be and that was on a thousand dollar stock, nine thousand in premiums, and a total of ten thousand dollars, and an 8 per cent return. That is what I considered it, an 8 per cent return on the full amount of the investment, that is how I figured out the 80 per cent.

"Q. Do you mean to say that after going over that for a day yesterday, you considered that the return was eight hundred dollars, and not eighty dollars?

A. I understood when you first questioned me about it that you were talking about an 8 per cent return, so I was confused as to what per cent return you were referring to.
If you figure 8 per cent return on ten thousand dollars,
5277 you get $800, which is 80 per cent on the capital stock
of a thousand dollars, and that is what my computation was.

Q. Do I have to go over this again?

A. That is what I meant.

Q. Do you mean now to say that in answering the questions that I put to you yesterday, that you were considering that the return was eight hundred dollars, and not eighty?

A. I was confused—

Q. No, answer that, please?

A. That is what I had in mind, 8 per cent return."

If we have a company with ten thousand dollars, which it has invested, one thousand of that is the par value of its stock, and nine thousand of that is stock premiums, and it is earning eighty dollars a year, if I worked it out in the same way that I worked out the figures on X-111, the per cent of rate of return to the stockholder of that company on his stock investment would be 8 per cent.

5278 Tying this illustration up with X-108, what you have given me would amount to an .8 per cent return on an investment, and the cost of funds would also be .8 per cent, and using the exact method that I followed, the figure that would compare with the dividend rate in the last column of X-108 on the thousand would be 8 per cent and that would be what my method would work out, it would work out to 8 per cent on a .8 per cent return, but on an 8 per cent return, it would be 80 per cent.

"Q. Well, now, I am asking you to assume an 8 per cent return to the company on its stock, and tell me how much return to its stockholders, that would mean, figured in the way you figured X-111, to get the figure of 59 plus per cent?

A. An 8 per cent return on a company with a stock of a thousand dollars, premiums of nine thousand, total funds in the business, ten thousand, 8 per cent return on that, $800, would figure 80 per cent return to the stock."

That would be on the par value of the stock, without con-
sidering the premiums. But if you consider the pre-
5279 miums, then, on the illustration you have given me it
would be 8 per cent, which is the same figure as the
return on investment.

There would not be any change in the percentage if there were no change in the earnings, but if you combine your stock and your premiums together, when you put in more premiums of course you are going to reduce your return, but if you do not change your earnings, and you will take the same stock, your are not going to change your per cent on the stock itself, on the par value of the stock.

5280 As to whether my method inevitably results in figuring out a larger profit to the stockholder from the same identical return, the greater the amount he has paid for his stock, if he pays it to the Company, I don't know

what you mean by "return." That is where I get confused,
because you don't tell me what return you are relating it to.
I will admit that I was confused in the way you put some
of the questions to me yesterday, but I know that my method
is right, and that it gives me the right answer.
5281 I understand that the American Company uses a
method by which I could figure out an 80 per cent return
in the case that was given. As to what the American
Company does to justify my method, I worked out a per cent
of return on the par value of the stock, and that is what the
American Company does in its annual reports to the stockholders,
and in the Bell Securities Manual it shows the return
on the stock, and that is what I have tried to work out on
their figures, the return on the par value of the stock, without
considering premiums and the surplus. I told you
5282 this morning that in some of my other exhibits I have
showed it on both bases, on the par and also on the par,
premiums, and surplus.

The things I refer to as justification for this are:

The Bell Telephone Securities Manual for the year 1931,
page 10, shows $10.44 net earnings per share on the stock.
That is $10.44 per share on the par value of the common
stock, and that is what I have used in all my figures.
5283 They are identical. As to whether there is anything
else justifying my procedure, there may be other places
where the American Company referred to the par value of
the stock; I don't know. But I know that when they speak
of the earnings, they refer to the earnings on the par value
of the stock, and what I have worked out is in relation to the
par value of the stock. That is what I had in mind when I
answered Mr. Goldstein that the third method that I mentioned
was the American Company method.

Yesterday you asked me to add five million dollars to the
capital stock premium figure, which appears on page 4 of
X-108. You asked me to add a billion dollars to the surplus
that appeared on page 4 of X-108. I don't recall that
5384 you were trying to work out a new conversion figure
on X-111. I certainly didn't understand that. I remember
working out a calculation, but I don't remember all
the details of that calculation. The record will show. I remember
I worked out a figure—I think it was 140 per cent. I
don't recall the exact figure. If it was based on X-111, why,

that it what the calculation was. I don't recall all the details of it. I do recall that I made a calculation, but I had not
5285 recalled what particular exhibit was referred to yesterday. It was the return as expressed on the par value of the stock. I can't recall all the details of the calculation now.

5286 There are a lot of calculations will have to be made to add $500,000,000 to the capital stock premiums shown on page 4 of X-108. I have not the paper that I made the calculations on yesterday. I must have destroyed it. I haven't it now. I just may have misplaced the paper.
5287 I haven't it now. The record shows that I said "Based on the assumptions you have made, it becomes 140.77 per cent."

5288 I computed it hurriedly, and I am not absolutely sure that making the assumptions Mr. Blackman asked me to make, by adding the amounts in the exhibit, making the computations according to my method, that it is the correct percentage.

I now seem to get the same figure of 140.7 per cent, but I would like to have the opportunity to study the figure and study the method; if I have worked it out wrong, I am perfectly willing to rectify it. (It was agreed that the figure would stand unless corrected later.)

5289 As to why that figure went up, I would like to study the method and study the figure, and see if it is right, and if I am not right on it, I would like the opportunity to correct it. It may be that this method would cause the figure to go up if you increased either the capital stock premiums or the surplus. It seems to be true that if you increase either the capital stock premiums or the surplus on my Ex-
5290 hibit X-108, and followed through the method that I have adopted with regard to X-111, that the percentage figure on X-111 would have to go up.

All I would like to do on this would be to study my method and see if I have computed it correctly, and if it is not computed correctly, why, I am perfectly willing to correct whatever error there is in it. That figure would have to go up, following the method that I followed, if you increase either the stock premiums or the surplus.

5291 It seems to me there is one fallacy in the statement of counsel that under my method, as shown on X-111, the larger the amount the stockholder pays directly to the corporation for his stock, the larger will be his return, on the same dollar dividend. This fallacy is that, this figure of investment is related to a figure that I have shown on my X 111. Now, what you are doing when you put in these capital stock premiums is changing the relationship of the investment figures. It seems to me that is what you are doing. It produces a different answer, according to the calculations that I have made here.

5293 I am to be understood as saying that if I apply my method on the assumption that counsel has made, it will produce the result of increasing the percentage.
5294 As an accountant, I can think of circumstances that would prevent this result from following, that is, if you change the other factors; if you change earnings and those other factors that enter into return on invest-
5295 ment. Everything remaining constant except the variables, surplus and premiums, I cannot think of any conditions which will not produce the result of increasing the percentage, if you increased those variables.

Re-redirect Examination by Mr. Goldstein:

"Mr. Goldstein: I direct your attention to the following statement in the Bell Telephone Securities Manual for 1930, for the use of investors, investment houses and bankers, with a brief introductory statement of the organization and financing of the American Telephone & Telegraph Company
5296 and Associated Companies, which reads: 'Financial Policy. The policy of the American Telephone & Telegraph Company set forth in a recent Annual Report follows:

'The American Telephone & Telegraph Company accepts its responsibility for a nation-wide telephone service as a public trust.'

'Earnings must, of course, be sufficient to permit the best possible telephone service at all times and to provide a reasonable payment to stockholders with an adequate margin to insure financial safety. Earnings in excess of these requirements will either be spent for the enlargement and improvement of the service furnished, or the rates charged for the service reduced. This is fundamental in the policy of the management.' "

The Witness (continues): I thought that my method would get the exact measurement of the amount of the dividends and the amount of earnings over and above that, so that I could compute the margin to insure the financial safety, but I want to check up on the method and if it is wrong, I will be perfectly willing to rectify it.

The net earnings per share of the American Tele-5297 phone & Telegraph Company stock, available for dividends, which is shown on sheet 10 is the same identical document which shows the $10.44 which I used in my exhibits.

5298 MATHILDA GALSTER, a witness on behalf of the defendants, having been first duly sworn, testified as follows:

Direct Examination by Mr. Haight.

(June 17, 1932.)

My name is Mathilda Galster. I reside in Springfield, Illinois. I am with the Illinois Commerce Commission as utility rate clerk. I have been with the Commission for seventeen years. At present I have charge of the utility rate schedules. I have been in charge of the utility rate schedules about twelve years. The certificates that are embodied in Plaintiff's Exhibit A-68 were executed after I compared the 5299 date with the records in the office. I made the comparison myself.

I have examined the records of my department to determine whether any other class A or class B companies other than the Illinois Bell and the American Telephone & Telegraph that are specifically included in this exhibit, Plaintiff's Exhibit A-68, have the identical definition of local exchange service, and I found no other Class A or B companies which have the identical definition of exchange service or the service which the exchange rates cover in relation to the use of the exchange plant and the local toll service.

"Q. Did you find any exchange schedules other than those that are included in Plaintiff's Exhibit A-68 that contain any definitions of exchange service or what service to which the exchange rates are applicable, except the Southwestern Bell

Telephone Company and the Southeast Missouri Telephone Company?"

(Objection by plaintiff; objection overruled.)

I did not find any definition of exchange schedules, 5301 with the exception of the two companies mentioned, the Southwestern Bell and the Southeast Missouri Telephone Company, with the exception of those that were contained in the certificates.

Defendant's Exhibit X-305 for identification entitled "Definitions of Local Exchange Service—Southwestern Bell Telephone Company," are the definitions taken from our rate schedules on file by the Southwestern Bell Telephone Company.

5302 I have gone back into the records to determine when the rules certified to were first placed into effect, and what rule was in effect previous to that time, covering exchange and toll service for all the companies whose definitions of exchange and toll service were certified to in various certificates under A-68. I don't recall any other companies besides the Illinois Bell, and the American Telephone & Telegraph Company that have toll schedules, where the toll schedules are separate from the exchange schedules, in respect to any A and B Company. I examined our records to determine whether the exchange rate schedules prevailing in the Illinois Bell territory outside of Chicago contain definitions identical with those contained in the certificates shown in Plaintiff's Exhibit A-68. I did not find any definitions of exchange service in the Illinois Bell schedules outside of Chicago.

I made an investigation to determine when the defini-5303 tions in each of these certificates, Plaintiff's Exhibit A-68, for each of the companies, was first adopted, and also investigated to find the definition which was superseded by the rule stated in these certified ones, whether the company that is covered by the certificate in A-68 in each case had the same sort of definition for other communities, and also whether the certificates in Plaintiff's Exhibit A-68 in each case was included as part of the exchange and toll schedules, and whether the rates of the particular community covered by the certificates was a flat rate for exchange service.

I put the result of this inquiry in writing.

(Witness produces the writing which is marked for
5304 identification Defendants' Exhibit X-306 entitled "Definitions of Local Exchange Service—Illinois Valley Telephone Company.")

In that exhibit I accurately transcribed the results of the examination I made. Outside of Chicago there is no measured exchange service with the exception of public and semipublic pay station and hotel private branch exchange service; with the exception that the Illinois Bell has measured service rates on file for Springfield, Quincy and Decatur. There is no definition of exchange service on file in the schedules of rates applying to those cities.

Cross-Examination by Mr. Thompson.

5305 Practically every town in the state has a telephone rate, so I don't know how many exchanges there are in the State of Illinois which file schedules with the Illinois Commerce Commission. I referred there to class A and B companies only, as having examined them. There are just about two dozen A and B companies. I can't make a guess as to how many exchanges they serve. I know the Illinois Commercial have got a number of exchanges, but their rules are standard, and I had to examine only the one set of rules. The Illinois Bell is the same, they have standard rules for all their towns.

5306 There are practically no toll rates on file with the exception of the American Telephone & Telegraph and the Illinois Bell. Aside from the things which I have illustrated in Exhibit X-305 and Exhibit X-306, I found nothing which defined exchange service definitely on file with the rate section of the Illinois Commerce Commission, other than the exhibit I have certified to.

5307 When schedules are filed with the Illinois Commerce Commission, with the rate section of the Commission, sometimes there are letters of transmittal and sometimes there are not. I do not know whether with the filing made by the Illinois Bell in 1926 there was a letter of transmittal. This exhibit does not cover the Illinois Bell. It covers the other companies.

(June 18, 1932.)

5316 In Exhibit X-305, I have set up certain excerpts from the General Exchange Tariff of the Southwestern Bell Telephone Company. They have only the one tariff on file, and that is an Exchange Tariff. The Southwestern Bell Telephone Company from time to time, by letter, sent to the Rate Section of the Illinois Commerce Commission, has adopted the standard toll rate schedule of the Illinois Bell Telephone Company and the American Telephone & Telegraph Company then effective in the State of Illinois.

5317 (Plaintiff's Exhibits A-220 and A-221, respectively marked for identification.)

Plaintiff's Exhibit A-220 is a letter of transmittal

5318 from the Illinois Bell Telephone Company to the Illinois Commerce Commission; and Exhibit A-221 is the first sheet of the schedule of toll rates which was sent with that letter.

Exhibit X-306 contains certain extracts in connection with the exchange filings of various Class A and Class B telephone companies in Illinois, with the Rate Section of the Illinois Commerce Commission.

5319 The Independent Telephone Association has a blank form that they use, and give to the small companies, and when they file, they usually file that blank form which shows the rates up to 120 miles, and then at the bottom of the sheet it states that above 120 miles the rate schedules are the same as the Illinois Bell Telephone Company, and the American Telephone & Telegraph Company. I think usually they are the effective schedules at that time.

5320 CHARLES R. WHITWORTH, called as a witness on behalf of the defendants, having been first duly sworn, testified as follows:

Direct Examination by Mr. Haight.

(June 18, 1932.)

My name is Charles R. Whitworth. I reside at Highland Park, Illinois. My occupation is certified public account-
5321 ant with Touche, Niven & Company. I have been with that company 19 years. Before that I was with Price, Waterhouse & Company for seven years, and prior to that I was six years in London, England, in the same line of work. I am resident partner of the Chicago office. I have personally been in charge of general audits and examination of books, records and accounts of manufacturing, mercantile and banking concerns. I am engaged in work of that sort at the present time.

In connection with my work, I have on behalf of my firm issued auditors' certificates covering the findings of my company as a result of our examinations of the books of such companies, with respect to their profits and their assets. I was here when Mr. Hagberg testified as to the opera-
5322 tions of Touche, Niven & Company; I heard his testimony. He stated correctly the nature of those operations,—the extent of the operations, and the character of the work done by Touche, Niven & Company.

I am a member of the American Institute of Accountants, New York Society of C. P. A.'s, Illinois Society of C. P. A.'s and the Institute of Chartered Accountants of England and Wales.

In order to make an auditor's certificate covering the subject matter of their examination relative to profit and return on investment, it is generally customary for an au-
5323 ditor to be given free access to all books and records, including the corporate minute books and all correspondence with the Internal Revenue Department, so that he may make an unrestricted examination of the affairs in order to determine that the books and accounts are correctly

kept, and that all of the transactions of the company are recorded therein; and also to enable him to get the characterization of the transactions whose figures are recorded in the books of account.

5325 There is a practice among accountants, in regard to
the breadth of opportunity that is given an accountant
in making an examination of the character that we have
5327 been describing. If we go into a bank or a business
place, for example, we are allowed to examine whatever we ask to see. We tell them we want all of the books of account and we expect them to bring them to us. We do
not go looking for them around the premises, but we
5328 probably would look to see if there was a complete set
of books furnished to us. We would ask them whether that was all.

After we go in and ask them if they have a private ledger, that is as far as we go. We would not necessarily start a physical search of the premises to see whether there was a private ledger or not.

5330 In order to certify to the correctness of accounts, it
is necessary to examine all of the books and all of the documents that may be necessary, in order that we may satisfy ourselves that we have all of the information necessary for us to have.

I have met Mr. Gregory, comptroller of the Western Electric Company. My first meeting with him was on December
28, 1931, in his office at 195 Broadway, New York. There
5331 was present Mr. J. G. Wray I think, and probably Mr.
McCann. Mr. J. G. Wray is one of the engineers employed by the City of Chicago in the present case. I had a conversation with Mr. Gregory at that time with regard to the examination to be made of the Western Electric Company's books and accounts.

5332 I told Mr. Gregory that Touche, Niven & Company
had been employed on behalf of the City of Chicago to make a general investigation of the records of the Western Electric Company to determine its profits and return on investment for the years 1916 to 1930.

Mr. Gregory stated that he would be very glad to cooperate with us, provided we stated in writing the specific books and records we desired to see, and the nature of the information that we wished the Western Electric Company to supply, and that such request would be taken 5333 under advisement by the Western Electric Company and its counsel, and that we would be informed of the decision. The personnel of our organization was also advised of this information.

These inquiries into the affairs of the Western Electric Company and the American Telephone & Telegraph Company, in so far as Touche, Niven & Company are concerned, were in charge of Mr. McCann under my supervision, in New York, and Mr. Hagberg, in Chicago.

The work was under my general direction. I prepared a statement regarding the men who were employed and the time put in up to and including May 31st. I have it here.

(Said document was marked Defendant's Exhibit X-309, entitled, "Summary of Time by Hours, Touche, Niven & Co.")

5334 Some of the men were working in both New York and Chicago; there were some Chicago men working in New York, and Mr. McCann from our New York office was working here in Chicago. This listing then simply indicates the exact number of hours of Touche, Niven & Company with whom they are associated.

5335 This conversation with Mr. Gregory was on December 28, 1931.

Cross-Examination by Mr. Thompson.

5339 I have produced in court an instrument which is identified as Exhibit X-309, which shows the total number of hours spent by Touche, Niven in doing work in this case, of 7,465 hours. Practically all of it was spent examining the books of the Western Electric Company and its subsidiaries, or making the figures taken from those books. I should think that more than half of it was spent in 5340 examining the books themselves. More than one year's time of one man was spent in a direct examination of the books of the Western Electric Company and its subsidiaries, that were turned over to us for inspection.

I cannot say exactly when Exhibit X-79 was first prepared.

I cannot answer when I first saw it. I would say some
time in the early part of the year probably January,
5341 1932. I do not know that it was submitted to me so that
I could pass upon the question of whether Mr. McCann
would testify to that sheet. I saw the exhibit, but it was
not submitted to me for any particular purpose, except that
they were all going to be used for this examination. I approved a great many exhibits; I do not know whether I approved this one or not.

"Q. Well, look at it now and see whether you approve of it.

A. What do you mean by that?

Q. Whether you think that is a fair statement of the facts.

A. In what respect?

Q. Just look at the exhibit; in any respect appearing on the exhibit.

5342 Judge Wilkerson: May I see it?

The Witness: The exhibit speaks for itself.

Mr. Thompson: I see. You do not care to look at it further, or to say whether this exhibit which has been put in by one of your employes fairly represents, in your opinion, the facts in this case?

A. I repeat that the exhibit speaks for itself.

Mr. Thompson: Will you read the question to the witness, please, Mr. Reporter?

Q. (Read by the reporter.)

The Witness: I am ready to answer any questions that they want to ask about it.

Mr. Thompson: Your Honor, I think I am entitled to an answer to that question. It is a very simple and plain question.

Judge Wilkerson: Well, he has answered it, has he not?

Mr. Thompson: Sir?

Judge Wilkerson: He has answered it, has he not? What was the question you asked him?

Mr. Thompson: Read the question again.

Q. (Again read by the reporter.)

A. I have already answered, that the exhibit speaks for
itself, but I am further willing to give any further
5343 information that I may have in that connection."

(Plaintiff's Exhibits A-222 and A-223 were marked for identification.)

(It was agreed that Plaintiff's Exhibit A-222, which purports to show documents submitted to Touche, Niven & Company for examination in New York, from March 29, 1932, to May 9, 1932, and Exhibit A-223, which purports to show documents submitted to Touche, Niven & Company at Chicago from February 29, 1932, to June 13, 1932, both supplemental to the list contained in Plaintiff's Exhibit A-73, are correct.)

5344 My conversation with Mr. Gregory was on December 28, 1931. Mr. Gregory, did not, to my knowledge, say that there were cases pending in a number of other jurisdictions, where the Western Electric Company was being required to furnish a large amount of information for courts and commissions. I knew that was a fact. I knew that there was then pending a case before a master in the Federal Court in Michigan, involving the reasonableness of the Western Electric prices. I knew that there was then pending a case before a master in the Federal Court at San Antonio, involving the same question.

5345 I knew that there was then pending an investigation before the Public Service Commission in Ohio involving the same question. I knew that this case was then pending, also an investigation before the Public Service Commission of Wisconsin.

Mr. Gregory said that the practice was to make the request in writing. I made no protest or objection to that at all. I think I said to him, "That is satisfactory to me." I am not making any protest about it now.

Exhibit X-79 relates itself wholly to its consider-
5346 ation of the Electric Research Products, Inc., and the investment of the Western Electric Company in that corporation.

There is no information which appears on that sheet other than information or data relating to Electrical Research Products, Inc., and the Western Electric Company's investment in that corporation. For the preparation of that exhibit, or for a knowledge of the facts in connection with it, all that I needed was the books of Electrical Research Products, and the books of the Western so far as the investment in Electrical Research Products by the Western Electric was concerned.

It is not entirely correct to say that when we started out, it was merely to ask the Western Electric Company to allow us to inspect its books and records, but to prepare statements for us.

5347 It is true, that time and time and time again in this correspondence, what we did was to request the Western Electric Company to prepare a statement which we wanted, that required work to be done by the Western Electric Company. We also asked them to see the books in several instances, in connection with our studies.

I recognize a letter that I wrote to the Western Electric Company, on January 12, 1932.

(Letter marked Plaintiff's Exhibit A-224 for identification.)

I dictated the letter and signed it personally.

5348 (Carbon copy of letter marked Plaintiff's Exhibit A-225, for identification.)

I received the original, of which Exhibit A-225 is a carbon copy, which letter contains the following:

"It is understood that the books of Electrical Research Products, Inc., are open for your examination," and I do not know and I cannot answer whether, pursuant to that letter, all of the books of Electrical Research Products, Inc., were offered to us for our inspection and examination by the 5349 Western Electric Company and the Electrical Research Products Company. I have nothing personal with it,—beyond supervising,—I have not seen the books of Electrical Research Products myself at all. I had charge of this investigation.

Mr. McCann will have to state to the court, with respect to Exhibit X-79, what information we applied to the Western Electric Company for, in connection with that exhibit that was denied to us. He applied for the books, and he was 5350 instructed to see them. We have a list of the things that were denied. I do not have it with me; it is in the correspondence which Mr. Haight has.

To name the things denied us, I will have to get the correspondence, and show you the list that Mr. McCann has prepared. There are several of them. I cannot name 5351 one of them; Mr. McCann will present that.

Exhibit X-79 purports to show per cent return in one year, 1929, of 309.4 per cent. It states what the investment was based on. I do not know what it was based on beyond what it says on the exhibit. I would have to refer to the working papers again.

5352 Statements are sometimes prepared showing the per cent of return which the Company was making on the original dollars invested in the business, excluding the earnings and surplus. I could not say whether I ever did it. I would have to get that information. Whether Exhibit X-79 takes into consideration the loans made by Electrical Research Products from the Western Electric Company, and used in the business I can find that out from the working papers. I cannot say without referring to those papers. I have seen the papers, but I would not answer that question directly, offhand.

5353 The capital invested in the foreign business is included in the statement of profits made by Electrical Research Products, Inc., on its foreign business. I would have to get the papers to tell whether in arriving at the figure of 309.4 per cent in Exhibit X-79 the capital invested in the foreign business is included. I do not know without looking at the papers. I knew that this exhibit was to be offered in evidence in court. I did not know the purpose; the only purpose I knew, was to show the return. I did not know what figures would be produced. I have seen the exhibit several times.

5354 "Q. Now, I want to ask you whether in your opinion it requires more information to enable you to certify to the statement—or the balance sheet of an industrial or manufacturing corporation, so that that sheet may go out and be used in the sale of the stock and bonds of the company, than it does to support sworn testimony on the witness stand, as to the facts?

Mr. Haight: I think that is an objectionable question.

Mr. Thompson: I think it is perfectly proper.

Judge Wilkerson: What is that question? I did not get it.

Mr. Thompson: Read the question, please.

Q. (Read by the reporter.)

Judge Wilkerson: I think that is a fair question, for the representative of an accounting firm. I will put it this way, if I may—

Mr. Thompson: Certainly.

Judge Wilkerson: If I may change your question.

Mr. Thompson: Certainly, your Honor.

Judge Wilkerson: Although perhaps I will not do as good a job as you; but I think this is what you would
5355 like to know about in connection with this exhibit. Now,
we are getting at the practice, not the general practice among accountants, but the practice of your firm. Here is a statement, which you knew was to be offered in court, and was to come before the court, and three judges were to be asked to make a finding of the return based upon the percentages which you had estimated. You knew that; that is, you knew that that use was to be made of it.

The Witness: Yes.

Judge Wilkerson: You knew we were to be asked to adopt those percentages as indicating the return of the Electrical Research Products Company.

Now, just what is your practice, your general practice, where you are confronted with a situation of that kind, and you are denied access to some essential document, or some essential book? Is it your practice to make up papers from those books to which you have access, and send them in, or is it your practice to advise the court that you have not the necessary papers upon which to make an estimate?

The Witness: It is generally necessary to advise the court that we have not the necessary facts.

5356 Judge Wilkerson: So you had everything which in your opinion you thought was necessary to the ascertainment of these percentages, or you would have told the court that you did not have the documents, or the books from which to make them, would you not?

The Witness: Yes, sir.

Judge Wilkerson: All right; go on.''

During the course of the examination which you were making of the Western Electric Company's books and records, we were giving some information to Mr. Goldstein ourselves. I suppose it was also coming directly from the Western Electric Company to Mr. Goldstein, as I was getting it. I knew we were not the only source through which information and examination of the Western Electric Company's books and records was being made by the City of Chicago.

5357 First there was our firm, and we were operating both in New [illegible]rk and Chicago. And then there was Mr. Goldstein, who was to our knowledge writing many letters all the time about this question. The firm of James G. Wray also got information from the Western Electric Company during this period; also the Illinois Commerce Commission. There were four sources through which information was being obtained from the Western Electric Company.

Redirect Examination by Mr. Haight.

5358 When I said that men were employed in working upon these books for more than a year's time, I meant one man, more than one year, but actually we have had many men who have been engaged on and off since last December. On a seven-hour day that would amount to 5359 about three years for one man.

K. E. THOLIN, recalled as a witness on behalf of the defendants, having been previously duly sworn, further testified as follows:

Direct Examination by Mr. Haight.

(June 18, 1932.)

My name is K. E. Tholin. I am connected with the 5360 Illinois Commerce Commission and I have testified here previously. I have had something to do with obtaining information from the American Telephone & Telegraph Company in this case. I have memos relating thereto. I have a carbon copy of a memorandum Number 1, dated September 29, 1931, addressed to the American Telephone & Telegraph Company.

5361 (Counsel for plaintiff agreed that copies could be used, subject to check.)

The original of that was turned over to the American Telephone & Telegraph Company.

(The document was thereupon marked Defendants' Exhibit X-310, for identification, entitled "Memorandum re Requests, including Defendant's Request of July 13, 1931.")

Item 1 in Exhibit X-310 was refused for legal reasons by
Mr. Heiss. I went to New York in connection with this
5362 matter. I arrived at the offices of the American Telephone & Telegraph Company on September 28, 1931.
The memorandum is dated September 29th, and to my best recollection I conferred with Mr. Heiss the next day, the 30th of September.

The conference was arranged in response to this memorandum, in order to obtain Mr. Heiss' reply, and the gist of the conversation regarding this particular item was that it would be refused us for legal reasons. Items 2 and 3 were refused at the same time as Item 1.

(Counsel for defendant states that notwithstanding
5363 those refusals as to those three items later, not the
books, but the information, said to be the information here called for, was furnished.)

The fourth item relating to letters from the Inter-
5364 nal Revenue Department covering income tax returns,
with reference to the adjustment of income tax, or rebate of the tax, to the American Telephone & Telegraph Company, or any of its subsidiaries prior to 1930, was refused. It has not been complied with as far as the matter comes within my knowledge.

5365 (Counsel for defendants states that the income tax
returns themselves were furnished and that the failure relates only to the correspondence with the department.)

On October 5th I sent another memorandum to the American Telephone & Telegraph Company numbered 8.

5385 My memorandum of October 5, 1931, called for the
following information relating to the Federal income tax returns for the years 1921 and 1930:

"In connection with the above-named schedules, kindly furnish details of the proportionate taxes paid by each company for which the consolidated returns have been made. These details should include not only the computations of the tax payments, but also the entries, billing the various companies. The same data for other years of the period 1918 to 1930 may be requested at a later date."

5386 I must explain that Mr. Rainwater and I, who were
down in New York, were told to bring our requests to Mr. Olander, who would take care of them, and forward them to the proper parties; and this request was turned over

to Mr. Olander, and later he advised me that this request would be refused for the year 1921, and also for the year 1930, with the exception that I would be furnished the billing pertaining to the Illinois Bell Telephone Company for the year 1930.

The information with respect to the associated companies was refused.

Mr. Olander is a gentleman employed by the American Telephone & Telegraph Company.

The next memorandum is dated October 5, 1931, and is addressed to the Western Electric Company. Item 2
5387 of this memorandum was refused. The questions 16, 17, 18, 19, 31, 34, 35, 39, 41, 42 and 50 referred to in Item 2 are found in defendants' request made July 13, 1931, regarding Western Electric relationship to the Bell System in *Illinois Bell Telephone Company* v. *Frank L. Smith, et al.*, and covers a list of fifty-seven questions, of which these particular items are some. I have a copy of that communication.

5388 (Said document was marked for identification, as part of Defendants' Exhibit X-310.)

I understand that this request of July 13, 1931, was made in this form; that it was made direct by counsel, and the Western Electric had a copy of it, and I simply referred to the questions by number as indicated in Item 2 of my memorandum of October 5th.

(Witness withdrawn.)

(Statement by Mr. Haight): "Items 16, 17, 18, 19 and
5389 31 refer to patents. In so far as some of those memos refer to patent applications pending, it is admitted that it is likely defendants were not entitled to them.

In respect to Item 34, which is a request in regard to cost of development by Western Electric by year, of permalloy and permalloy loaded cable, and other items related to permalloy, that information was at least to some extent given on the witness stand by Mr. Gregory. In regard to Item 35, which asks for copy of the telephone department budget for each year 1911 to 1930, both inclusive, together with copy of each of the subsidiary budgets on which it is based, including budgets on sales, gross income, expense, net profit, investments, and to furnish copy of Western Electric budget for each department other than the telephone department budget, together with correspondence, subsidiary budgets, certain figures in respect to some of that were obtained after January 1st this year, through binders, of which we have had some discussion on this record.

In regard to Item 39, which relates to purchases of American Telephone & Telegraph stock by Western Electric 5390 employes, and the other items therein referred to, cannot complain as to all of that, because some of it has been furnished during the course of the hearing.

Item 41, "Furnish list by years 1882 to 1890, both inclusive of the Western Electric and American Telep Telegraph Company patents for which foreign patents were held by, or for foreign subsidiaries." As to that, we will argue whether we are entitled to it or not. That is an arguable matter, and I don't want to stop for that.

Item 42, to furnish list of Western Electric personnel who became Bell licensees 1900 to 1924, both inclusive, and mad inventions embodied in apparatus manufactured by Western Electric or by its foreign subsidiaries. With respect to that, it is admitted that we were told that the books were available for any such investigations as we wanted to make.

5392 Number 50 was "Furnish the statements showin patents applied for and/or granted to Western Electric employes and/or Bell Telephone Laboratory employes for each year 1914 to 1930, both inclusive, and apparatus to which they have application."

With respect to this, we were told that the entire patent file of the Western Electric was open for our inspection."

5395 GEORGE B. McCANN, a witness on behalf of the defendants, having been previously duly sworn, resumed the stand, and testified further as follows:

Direct Examination by Mr. Haight.

(June 18, 1932.)

I have made several requests in writing of the Western Electric Company for information. I have certain of the copies of these written requests. The first one is a letter of January 12, 1932, addressed to Mr. Gregory. I received an answer to item 4, on the letter of Jan. 12, 1932, but it was not the information that we requested at the time.

5396 Item 4 is entitled "Basis of Profits on Deferred Payments on Installment Sales, *i. e.*, a description of deferred receivables." Under date of January 13, Mr. Gregory replied stating that he would furnish us with the information. Under date of January 19, 1932, we received a further reply from Mr. Gregory, who furnished us at that time, in answer to item 4, a statement showing by years analysis of deferred receivables on monthly report number 1. This was not the information that we requested under date of January 12th. We asked for a description of deferred receivables. We desired to know the basis upon which the Electrical Research Products, Inc. took up its profit on deferred payments on installment sales. Instead, the company furnished us with an analysis of receivables at the end of each year, which was simply a statement of the name of the particular customer, and the amount outstanding at the end of the year.

The next request is dated February 3, 1932. It is a 5397 written request in this file of documents that has been marked for identification Defendants' Exhibit X-311, entitled "Correspondence re requests (McCann) including letters of Jan. 12, Jan. 13, Jan. 19, Feb. 3, Feb. 8, Feb. 9, Feb. 11, Feb. 26, Feb. 26, Mar. 8, April 21, May 5, May 6, May 6, Feb. 4, Feb. 8, Feb. 8, Feb. 27, Feb. 15, 1932. (Touche, Niven & Co.)." There are two items here that were not answered, or were not answered in the manner in which asked. The first item appears as item 3 of that letter, asking for plant appropriation, years 1924 to 1930, inclusive. The second item was item 8, amount receivable by years on unexpired license contracts of Electrical Research Products, Inc., as of December 31, 1930, together with probable cost of servicing such contracts.

Item 3, plant appropriation, years 1924 to 1930 could have been used to ascertain the following information: first, they serve as a check against plant additions as shown by the books, to determine whether all expenditures for plant have been properly capitalized, or any portion thereof charged to expense.

Second: They disclose the purpose for which the new plant is being built, and thereby reveal the character of

5398 plant as between one class of business or another, and as between Bell or non-Bell business.

Third: They disclose whether the new plant is being constructed to replace existing plant, and thereby serve as a check against the plant retirements, as shown by the books.

Fourth: They disclose whether the new plant is for future development, or for presently used and useful property.

5399 I received two replies in writing to that request. Under date of February 9th, the company advised me with respect to this item, "We will advise you later with respect to this request." Under date of February 11th, the company stated, "We decline to furnish for examination data with respect to plant appropriations, years 1924 to 1930, inclusive." I am reading from letters that I received and that are in this exhibit.

5400 The last quotation was from letter of February 11th, from the Western Electric Company, signed by Mr. Gregory, comptroller. I have not had any of that information.

5401 In respect to item 8 of that request, a letter received from Western Electric Company under date of February 26th shows the complete interchange of correspondence relating to this particular item. The final answer of the Western Electric Company is contained in the last paragraph of that letter, which states, "We have no information, and we do not propose to make any estimates, of either (1) the revenue which will be derived in subsequent years from the contracts in force on December 31, '30, or, (2) the probable cost to Electrical Research Products, Inc. of furnishing the service required under the contracts referred to."

The next item is a letter dated March 8, addressed to Mr. R. H. Gregory. That letter asks for six items. I did not receive item 1 and item 5. Item 1 was a copy of the op-
5402 tion agreement. Item 5 is correspondence with and statements showing findings of the Internal Revenue Department relative to federal income taxes of the Western Electric Company and its subsidiaries for the years 1924 to '30, inclusive.

If the information had been made available to me, I would have used it for the following purposes:

1: To determine whether there was any additional
5403 liability on the part of the company for federal income
taxes for prior years.

2: To determine whether there was any refund due to the corporation on account of taxes paid in prior years.

3: The findings of the Internal Revenue Department may disclose transactions of a special character which are not otherwise brought to the attention of the auditor.

4: The findings frequently disclose the manner in which profit is taken up by the corporation on installment or deferred payment sales, and gives the auditor a base from which to form his own opinion.

5: The findings also frequently disclose the manner in which a corporation treats items of a capital nature, such as plant additions and patents.

6: The findings also disclose any items of expense disallowed by the Internal Revenue Department. The importance of this disclosure is that it brings the items to the attention of the auditor, and thus gives him the opportunity to pass his own judgment upon them.

5404. The next document in this exhibit is a letter to the Western Electric of April 21, 1932 as follows:

"Will you kindly make available for our examination the working papers showing detail by years underlying Defendants' Exhibit D-61, entitled, 'Analysis of profits on business other than with Bell Telephone Company from 1881 to 1927, inclusive.'"

I received a reply to that under date of May 5, 1932. I was furnished with a statement showing analysis by years of the profits shown by Exhibit D-61. This was not the information that we requested. We requested the working papers underlying the exhibit, not an analysis by years. The working papers of Exhibit D-61 might have been used for two pur-
5405 poses—to determine (1) the extent to which the non-Bell profits remained in the business to the opening date of Mr. Gregory's Exhibit A-79, referring to non-Bell assets and (2), the extent to which the non-Bell profits of the Western Electric Company contributed toward the amount received by the A. T. & T. in 1920, from the retirement of 146,050 shares of preferred stock which the A. T. & T. received in 1915.

The shares referred to represent the preferred stock which was received in 1915, together with an equal number of common shares in exchange for the common stock of the Western Electric which the A. T. & T. then held.

There was no reply by me in writing to the letter of May 5th, 1932. I called Mr. Gregory on the telephone in the afternoon of May 6th, and he informed me at that time that the working papers underlying Exhibit D-61 would be furnished in Chicago if counsel approved.

5406 The next item in this exhibit is a letter dated February 4, 1932, addressed to American Telephone & Telegraph Company as follows:

"We have been requested by Mr. Goldstein to obtain from you a statement showing details of all rate increases and revenues received therefrom in towns of over 25,000 by companies for the years 1923 to 1930, inclusive."

5407 We received a reply from the American Telephone & Telegraph Company under date of February 8, 1932, signed by Mr. C. A. Heiss, comptroller, in which he states, in part: "I have referred this request to our legal department, who advise that this request should be declined."

I do not know anything further about that. The next item in my exhibit is a letter dated February 8, 1932, addressed to the American Telephone & Telegraph Company.

Item 2 and item 8, in that letter I did not receive. Item 2 is Executive committee authorizations for allotments, stock, loans and so forth, years 1920 to 1930, inclusive, and Item 8 is investment in stock of Western Electric Company, showing acquisition by number of shares, and cost, from January 1, 1906 to December 31, 1915.

5408 Under date of February 27, we received a reply from the American Telephone & Telegraph Company, signed by Mr. C. A. Heiss, as comptroller, the next document in this exhibit. The answer to question 2 is "The Attorneys for the City of Chicago are familiar with this company's position regarding the furnishing of proceedings of our Executive Committee."

The answer to item 8 reads in part, "We are not furnishing data for predecessor company covering period 1906 to 1915." Without the information as to the cost of the Western Electric stock acquired by the American Telephone & Telegraph

Company prior to 1915, we are unable to substantiate the cost to the American Telephone & Telegraph Company of its stock investment in the Western Electric Company as of December 31, 1915."

5409 (Defendants' Exhibit X-311 and Defendants' Exhibits X-305 and X-306 identified by Miss Galster, offered and received in evidence.)

5410 (Plaintiff's Exhibits A-220 to A-221 identified by Miss Galster on cross-examination, offered and received in evidence.)

5411 *Cross-Examination by Mr. Thompson.*

I have now stated all the information that has been in any way denied and of which I now complain. This is the complete story.

With respect to the letter of January 12, 1932, the fourth specification "Basis of profit on deferred payments on installment sales, that is, a description of deferred receivables" I was not seeking by that request the amount of profits on deferred receivables. I was simply seeking the basis upon

5412 which they were handled by the Electrical Research Products. I should say that the request was made by myself and by counsel jointly. That is, we did want the information on Electrical Research Products.

"Q. When you made the request, did you know that Mr. John E. Otterson, the president of the Electrical Research Products, had testified in a deposition for and on behalf of the defendants, in either late December or early January, as to the exact basis of profit of Electrical Research Products on deferred payments?

A. I knew he had testified but I was not familiar with what he had testified to."

5413 I saw an abstract of Mr. Otterson's testimony. Whether I saw it before or after the date of this request I don't know. I received so many things that I couldn't say whether it was before or after.

5414 I have received so many things that it is difficult to pin down to one particular item. As to whether I have been in any way hampered in my work by failing to know the basis of profit on deferred payments on the installment sales, of the Electrical Research Products, I think it is obvious, if I ask a question, I have a certain purpose. I wanted to know the facts, I wanted to get it in writing from the company. I did not have it directly as such under oath from the president of the Electrical Research Products. I mean, I don't know whether I had that testimony, or abstract, at the time I wrote this letter; or not.

5415 I am not familiar with the questions that Mr. Goldstein put to Mr. Otterson. It might be said with respect to this particular item that I was seeking to get the information without respect to whether it had been obtained through other sources. I can't say whether I requested a great many things that were duplications. I tried, in so far as possible, to get answers from the accounting executives.

"Q. I see. Your proposition was that, although the information had been furnished thru the legal department of the plaintiff, that what you wanted also was to get the same information from the accounting department, is that correct?

A. I was making an independent investigation."

I was not familiar with everything that had been furnished through the legal department.

5416 I wouldn't say I was doing the whole thing over. I may have overlapped on certain items.

Our request letter of February 4, 1930, in X-311 reads as follows:

"We have been requested by Mr. Goldstein to obtain from you a statement showing details of all rate increases and the revenue received therefrom in towns of over 25,000, by companies, for the years '23 to '30, inclusive."

That request was denied.

5418 This has no relation to X-79 whatever. I did not ask the American Telephone & Telegraph Company to give me access to the records which show this. I wanted them to get up a statement showing the details of all rate increases "And the revenue received therefrom in every town over 25,000, throughout the United States, by companies, for the years 1923 to 1930." I didn't know when I made this inquiry whether it would be given to me.

5419 I am not familiar with rate schedules.

(Rate schedule, for the town of Peoria, Illinois, taken from the file of the Illinois Bell Telephone Company, marked as Plaintiff's Exhibit A-226.)

There appears to be forty-five different rates for exchange service only on that rate schedule. I don't know whether the inquiry was or was not limited to exchange rates. I made it at the request of counsel. I think the letter speaks for itself.

5420 I had no idea what would be furnished or whether there would be furnished; if this request was complied with, not only the exchange schedule of every city of over 25,000 people throughout the United States for this eight or nine-year period, but also the toll schedules.

I don't know how many towns in the United States there are with over 25,000 population served by the American Telephone & Telegraph Company and its subsidiaries. I don't know whether it is over three hundred.

I have already stated that I made the request at the request of counsel.

5421 I didn't know whether the request would be refused. I made it because I was asked to make it. Mr. Goldstein did not say to me what his purpose was in making this request. I didn't know whether to get the revenue received therefrom, would require a regrade study. I am not familiar with it. I do not know now. I do not know it to be a fact that when you attempt to get the revenue received from increased rates, that there is regrading, that is, that subscribers go from one service, where the rate is increased, to a lower grade of service, and that it would have required a study of weeks in each of those exchanges to have furnished the information.

5422 I do not know about rate schedules or increased rates, or what they have to do to find out how much revenue comes from increased rates. I am not familiar with any of that at all. I am not familiar with telephone accounting at all. Mr. Goldstein did not tell me why he wanted this information.

The request did not appear so ridiculous to me that I did not want to make it in this letter, and sign Touche, Niven's name to the letter, with the statement that I had been requested by Mr. Goldstein. The reason I wrote that letter in that particular fashion was because I personally did not want the information. I did not know what it was to be used for. I had no knowledge of how much was to be furnished or whether it would be furnished.

5423

As to No. 8 of the letter of February 3d, "Amount received by years on unexpired license contracts of Electrical Research Products, Inc. as of December 31, 1930, together with the probable cost of servicing such contracts" I don't recall whether I had some conversation with Mr. Gregory about this request. I believe that these are the servicing contracts on moving picture reproduction machines that are in theaters scattered throughout the United States. It is not a deferred receivable item at all.

5424 The conversation with Mr. Gregory was substantially as follows: I went to Mr. Gregory and said, "I have a request here," and Mr. Gregory looked at the request and said, "There are three things about that that make it impossible for us to do it. The first is, these contracts run for ten years in the future, some of them, and we don't know the payments that will be made under them by these moving picture theaters. Second, we, of course, don't know the probable cost of servicing in the future, because the expense incident to it may change. Third, we don't know how many of these theaters will be in existence during the unexpired life of these contracts," and that under the circumstances, it was impossible to make such an estimate; that if it were made, it would be a mere guess, and worthless. I don't know that I made any statement as to whether I agreed or disagreed with him.

5425 There was no reason to protest. He stated his position, and the matter was dropped. I said to him I could not see any relevancy that this request had to anything in this case, so far as my figures were concerned. What counsel wanted to make of it, I didn't know. I don't know whether I agreed with him, either by direct statement or by implication, that when the statement was prepared, it would not mean anything. I don't deny that the conversation took place. I don't think that it is, strictly speaking, an accounting matter. I wouldn't say that from the standpoint of dealing with the facts and the figures, a statement of that kind, if it were

5426 prepared, would mean nothing. It would give some estimate of what the future earnings on those contracts would be. I could not make that guess, just as well as anyone else. What I expected was an accounting officer of the Western Electric who was familiar with the conditions, to make that guess for me. The number of these theaters to be in existence during this ten-year period, would be involved in

it. He has past experience to go by, as to what the cost of servicing would be, eight and nine and ten years from the time he was making the estimate. The cost of servicing
5427 was involved in it. I don't know whether the prices the Western would charge in the future would be involved in it or not. I have testified about the refusal of the Western Electric Company to furnish plant appropriations. I don't know that they were estimates made by the Board of Directors of what will be required during the current year for plant requirements. I never saw them. I said what plant appropriations in general could be used for. I didn't say what the plant appropriations of the Western Electric would
5428 show. I do not know what they show. I never saw them.

The information on Exhibit A-227 was furnished to
5429 the defendants in this case by the Western Electric Company. I don't know when. I don't know whether it was furnished at the time I made the request for these plant appropriations. It was not furnished directly to me. I received it sometime subsequently. I saw it long before I prepared the exhibits which I put in in this case. That statement shows by each of the years 1916 to 1930, the net increase in plant divided between land, buildings, service, equipment, machinery and small tools, and furniture and fixtures, and the total. I believe that it gives the opening entry as of December 31, 1915, and the closing entry as of December 31, 1930.

We made no request of the Western Electric Company to examine their books as to what actually had been done
5430 about additions to plant in any way. The only request is the one referring to appropriations. In other words, I had a statement made up by the Western Electric Company that showed, by accounts, for each of the years involved in this inquiry, the additions that had been made to plant, but I wouldn't say that I had free access to the books of the Western Electric Company to find out whether that statement was true or not. I don't think we understand each other on the term "free access." Free access to me, means that I have the right to look at any book, without making a formal written request, and having it passed upon by counsel.

5431 I don't say that I expected that I could go down to the office of the Western Electric Company in New York, and see anything that they had and determine myself whether it related to this controversy or not. I am simply defining my interpretation of "free access."

5432 As an accountant the ordinary and normal course when I am examining records is, that every book, record, paper, correspondence file, whatever it may be, is to be absolutely at my free disposal, if I think it relates to the subject matter I am examining. I am to determine what relates to the subject matter that I am examining. The company, whose records I am examining, doesn't get an unqualified certificate if they object. I don't know what requests I have made would relate to X-79. This plant appropriation might, and it might not. The plant appropriations of Western

5433 does not relate to the earnings of the Electrical Research Products but they might relate to the assets of Electrical Research Products. Heretofore when asked about whether I would certify or not, I said so many elements entered into it that I could not answer the question.

I don't believe it is a fact that I was taken off the witness stand, and came back the next day and said that I could not certify to that statement, because I had been denied information.

5434 If you want to know definitely why I wouldn't certify X-79, it is simply because I did not have free access to all of the books, documents, papers, correspondence, and everything that related to the company. I think that my testimony this morning covers everything that I was denied, or refused access to, that had any relation whatever to the work I did on X-79. I think they are all here.

5435 Item 4, "Basis of profit on deferred payments on installment sales" in the letter of January 12th, related itself to X-79. I seriously advance that. What I was doing in Exhibit X-79 was to show the profit from operations of the Electrical Research Products, Inc., and the percentage of return for the years 1927 to 1930. What I wanted to know in this request was the basis of profit on deferred receivables. The books were open to me, the letter so states. The letter dated February 9, 1932, states that I was given full access to Erpi's books, but when I asked for the books I had to mention specific instances and specific books. I don't call that free access. The journal entries, the cash books and the ledgers,

were all turned over to me for my examination, as re-
5436 quested by me for specific ones. I don't know whether
I got them all or not. My complaint is that you said I had free access, and I said I didn't.

Besides item 4, wherein I was denied access to information that underlies Exhibit X-79, there was the correspondence with and filings of the Internal Revenue Department, in so far as they relate to Electrical Research Products. Also there is Item 1 of the same letter, which asks for copy of an option agreement sold by Western Electric Research Products, Inc., in 1927. I am not familiar with what took place in court and
do not know that when Mr. Gregory was on the witness
5437 stand on the 24th day of March, that Mr. Goldstein re-
quested a copy of that option agreement, and was advised that it was on the train here, and that it was furnished to him the next day.

I don't know whether everything contained in that Number 1 request was testified to by Mr. Gregory on the witness stand under oath. I don't know what he testified to. At the time I made this request, I don't think anything had been testified to in respect to that.

"Q. I see. What you are doing, then, you are not giving what has finally been denied, or the information that they
haven't got, but you are just giving what was denied to
5438 you?

A. I can only testify to those facts of which I have personal knowledge.

Q. Didn't you go over this carefully? Is it not the purpose of this to show what had ultimately been refused?

A. The purpose was to show what had been refused me.

Q. All right. And that is as far as you go?

A. Yes."

As to whether the foregoing are all the things that could possibly relate to X-79, Item 8 of this letter of Feb. 3rd might or might not. I don't know, I was not furnished the information. I cannot pass upon it. The denials of informa-
tion underlying D-61 may or may not be involved. I do
5439 not know that they are not involved. Those were the
details that had to do with the non-Bell profits of the Western, prior to 1925, and I excluded in my Exhibit X-79 any consideration in anything excepting Erpi's operating

profit. D-69 couldn't have had anything to do with it, except so far as allocation between Bell and non-Bell is concerned. I do not make any allocation in D-61 between Bell and non-Bell, but D-61 is tied up with the dividend paid by the Western and the Electrical Research in 1923. I made the statement that D-61 might or might not have some bearing on it, I don't know. I never saw the working papers underlying D-61 when I made my study.

5440 In Exhibit X-311, a letter dated February 15th, is as follows:

"Verbal request made about 12:00 midday. Informed at 3:15 to put through written request. Request put through at 3:55. Asked about three times between 4:15 and 5:30. Informed at 5:40 the men had gone home who handled the folder. Received the folder at 10:00 a. m., 2-16-32."

If all that I say there is entirely accurate, I had a delay in the matter from noon of the day until ten the next morning. That is the only delay I have listed in this exhibit X-311.

5441 There are several delays, but they are not all reduced to writing. I am not claiming anything with respect to those delays.

(June 20, 1932.)

5442 I said previously that the failure to give the plant appropriations of the Western from 1924 to 1930 might have affected the work that I did in connection with X-79. Since I have not seen the plant appropriations, and I do not know whether they cover the Western and subsidiaries, or only the Western, it is pretty hard for me to give a definite answer as to how the failure to get the information would affect X-79. The plant appropriations were asked for

5443 as to the Western only; but still, I do not know whether the plant appropriations would cover subsidiaries or not.

"Q. How could it possibly have affected the situation with respect to Exhibit X-79? There you were only including the average investment of the Western in the Electrical Research Products, which did not include any plant investment at all, and you were only ascertaining the earnings of the Western Electric Company on the original dollars invested by it in Electrical Research Products.

A. The Electrical Research Products has a certain amount of plant."

I did not ask for the plant appropriations of Electrical Research Products, Inc.

If these plant appropriations of the Western Electric Company only covered the Western Electric Company, it would not affect Exhibit X-79. That is all I asked for.

5444 I testified about a refusal of a request to give us the basis of profits on deferred payments, on installment sales, that is, a description of deferred receivables. That request was made on January 12, 1932, I think. I have not the letter in front of me. To what extent Mr. John E. Otterson had testified in connection with that particular matter in January 1932, I didn't know, because I never made a very thorough examination of his testimony. I said I had seen an abstract of Mr. Otterson's testimony before I was on the witness stand. I was here saying that not only had there been a refusal to furnish this information, basis of profits, on deferred payments, but possibly it might have interfered with my work in the preparation of Exhibit X-79.

5445 (Counsel reads from the deposition of John E. Otterson, on redirect examination by Mr. Goldstein taken January 13, 1932):

"Question: Mr. Otterson, you stated at the previous hearing that there were four classes of transactions: So that we may have it correct, I will ask you if you stated that one is the outright sale of equipment; the second is sales of equipment on the installment plan; the third, the licensing or renting of equipment where title to the equipment is retained by the Electrical Research Products, and fourth, royalties received for the use of processes. Are those four classes of transactions correctly stated?

Answer: I think so.

Question: Are there any other classes of trans-
5446 actions by the Electrical Research Products other than those four mentioned or does that include the entire system of activity of the Electrical Research Products Company?

Answer: May I have that other question read?

Answer: I think those cover all the activities. I do not think, however, that is a complete statement.

Question: But in a general way, that covers it?

Answer: Yes.

Question: With reference to the sales of equipment on the installment plan—"

(Testimony of witness):

That is the thing we are talking about.

(Deposition continues):

"—the purchase price of the equipment, as I understand it, is entered as in the year in which the sale is made, is that correct?

Answer: Yes.

Question: Is the entire amount of the purchase price of the sale of equipment which is sold on the installment
5447 plan, considered as income in the year in which it is sold?

Answer: Yes.

Question: In other words, if a piece of equipment for $100,000 is sold, payable over a period of years, you enter the $100,000 for accounting purposes as income in the first year?

Answer: That is right.

Question: And the entire expense including the cost of the equipment is deducted in the first year against that income?

Answer: Yes.

Question: Now, with reference to the third class of equipment, that is the equipment where the title is retained by Electrical Research Products, and a license given for the use of that equipment over a period of years, are the license payments—the entire amount of license payments called for by the contract, entered as income in the first year?

Answer: Yes, except where the payments relate to service and not to apparatus. That is where the services are to be performed later.

Question: To get that picture clearer, will you
5448 give a concrete instance of one transaction of that sort, a typical case?

Answer: Well, if we sold equipment to a theater, that will be sold generally on a ten-year lease. The payments on account of the apparatus itself would be spread over a three-year period. The payments on account of the service is spread over the ten-year period. The entire payments which are due over the three-year period on account of the apparatus, are taken up on the books as income in the year of sale or installation and the expenses in connection with the cost of that apparatus are also taken up on the books at the same time, and the profit that will be indicated during that year as related to that transaction, will be the difference between those two. The amount of payment which has not been made at the time, are carried as receivables. The service charges are taken up as they are received during the year in which the service is rendered."

(Witness continues):

From what has been read, it is apparent that the basis
5449 of profits on deferred payments are clearly and perfectly stated in this record by the sworn testimony of the president of the Electrical Research Products, Inc., on the 13th day of January, 1932. I knew that that testimony had been given. I did not know when it had been given.
5450 I knew it had been given. I did not know exactly what the testimony covered.

In answer to the question as to whether my work was interfered with I say that I did not get an answer to
5451 my letter, and I assumed from the failure of an answer to my letter that they were not furnishing me with that information. I had no knowledge of what any of their officers had testified to. I was in New York and the lawyers in the case were here in Chicago. I didn't even know that the deposition was taken in New York. These requests for information were not all approved by counsel. I think they knew I was making this request for the information about the deferred payments; but I would not be sure. I think they knew I was making it.

5452 My letter in connection with the basis of profits on deferred payments was January 12, 1932. In the accounting of the Western Electric Company I believe that deferred receivables and deferred accounts receivables are two different classifications. On January 19th, as shown on the third page of this letter, Mr. Gregory sent me a statement showing, by years, an analysis of deferred receivables
5453 on monthly report No. 1. In his letter he said:

"In addition to the item known as the deferred receivables, there are deferred accounts receivable covering deferred payments on sound picture installations, not due.

Those are included in monthly report No. 1, accounts receivable, as follows.''

And then he sets them out. They run from six to eight million dollars for 1928, 1929 and 1930. After that I did not request further information from Mr. Gregory in connection with this subject matter.

"Q. In other words, the situation about which you complain is this: He sent you a list of what were the deferred receivables, the exact thing that you had inquired about, and then he told you that there were deferred accounts receivables, and gave the amount of them, and you made no further inquiry about it?

A. I think I made a verbal inquiry, but I do not recall just now what I did say.

5454 Q. It is further a fact that you know there was a misunderstanding about this, and that on January 9th—no, on February 11th, Mr. Gregory wrote you on a letter that is contained in your Exhibit X-311, referring to another item that you were inquiring about as shown by your letter of Februay 9, 1932, an analysis by years of accounts receivable and so forth, that 'With respect to that item, we understand that you are changing these requests. You may therefore consider the answers given, namely, on February 9th, as withdrawn, pending the receipts of further information from you.'

Did you ever give him any further information about it?

A. I do not think the two things are exactly related.

Q. No, I know they are not, Mr. McCann, but there were three things here: There were deferred receivables, deferred accounts receivable and these future payments due on account of services, and I am asking you if it is not a fact that there was a clear misunderstanding between you and Mr. Gregory about it, and that after that misunderstanding developed, you made no further request for any information?

A. I do not think that is a statement of facts, because there is a letter of February 26th, in which—

5455 Q. All right. Is it here?

A. It is. Our letter of February 26th, to the Western Electric Company, and Mr. Gregory's letter of February 26th, addressed to us.

Q. Is this letter of February 26th a repetition, in your opinion, of the request No. 4 in the letter of January 12th? A. No, it is not."

I have stated that I made a request under date of February 8, 1932, which reads as follows:

"Executive Committee authorizations for allotments, stock purchases, loans and so forth, for the years 1920 to 1930, inclusive."

Referring to the language, "and so forth"; it was my position that I should be allowed to examine, pursuant to this request, all of the executive committee authorizations of the American Telephone & Telegraph Company. Apparently the substance of this request was that the entire minute book of the executive committee of the American Telephone & Telegraph Company should be turned over to me for
5456 my uncontrolled inspection. By "uncontrolled," is
meant not that I should take it away, of course, but that I should have the perfect right to examine anything contained in the minutes of the executive committee. That was denied. I am not familiar with the situation as to whether the minute book for that period of time was here in Chicago, when I testified on Saturday and that the court was to determine which of the minutes of the executive committee were properly admissible in evidence here. I knew there was some discussion about the minute books.

In regard to my statement that there was a refusal to furnish copy of an option agreement sold by the Electrical Research Products, Inc. in 1927, that request was made
5457 under date of March 8th. I do not know that I under-
stood that I was advised orally by Mr. Gregory, that he was soon to be on the witness stand, and that counsel for plaintiff had advised Mr. Goldstein that these requests would be answered from the witness stand by Mr. Gregory.

Mr. Gregory talked to me about this request and my impression was that the whole thing was to be referred to counsel. He may have mentioned the witness stand and he may not. I am not certain of that. I understand that Mr. Gregory went on the witness stand and did on March 25, 1932 produce this document that I have indicated a refusal to produce here. I knew that before I went on the witness stand. I knew also that he had testified in open court in the latter part of March. I did not know the exact nature of his

5458 testimony. I was told by counsel that he had testified about the option agreement.

(An instrument which has been identified as D-61 was marked Exhibit A-227.)

This exhibit is an analysis of profits on business other than with the Bell Company from 1881 to 1927, inclusive. I have seen that instrument before. I did not know when it was furnished. I assumed it was not an exhibit that the plaintiff had introduced or offered in evidence in this cause, because it was not so identified. After that paper (Exhibit 5459 A-227) had been furnished to Mr. Goldstein, there was prepared by the Western Electric Company and delivered to me at my request an instrument which was originally marked Exhibit X-102, and which is now identified as Exhibit A-228.

(Document marked Exhibit A-228).

That instrument shows an analysis of the profits of business other than the Bell Telephone companies from 1881 to 1927, inclusive, by years, and groups of years. I do not believe it is a fact that after that had been furnished to me, I requested the right to inspect the underlying data that had been used by Mr. Gregory in the preparation of A-228. I asked for the underlying work papers before I was supplied with the exhibit that you just showed me.

(Document of two sheets was marked Exhibit A-229.)

5460 I have not seen the two sheets identified as Exhibit A-229, entitled "Statement showing analysis of profits on business other than with Bell customers," expressed in dollars of thousands. I could not say whether my men saw them because I do not know. If my men copied these two sheets, it must have been done here in Chicago. I had no knowledge. I never saw those sheets. I could not say whether these were copied or not. I am not familiar with it. If they were turned over to employes of Touche, Niven & Com-5461 pany, and were actually copied, that is not in compliance with my request. I don't know whether that was done or not.

"Q. I will ask you whether you were not furnished in New York for your inspection all of the books and records of all of the subsidiaries of the Electrical Research Products—I mean of the Western Electric Company, for the years 1916 to 1931?

A. I was only given those particular books that I asked for.''

There never was a refusal to furnish me, at my request, the books or records of any of the subsidiaries of the Western Electric Company for the period 1916 to 1931. I do not think I am complaining of anything. I merely made certain statements in connection with these letters. I do not think that I claim that I was not allowed to examine the books.
5462 I think I asked for work papers which were denied me. The entire request was the work papers underlying D-61.

Mr. Hagberg was working on this case for Touche, Niven & Company. I do not know whether or not Mr. Hagberg made copies of these papers, Exhibit A-229.

I did not examine the contract between the Electrical
5463 Research Products and the Gary interests in connection with the granting of an option after that contract had been furnished by Mr. Gregory.

I wanted to see all the correspondence with the Commissioner of Internal Revenue or his representatives, and the Western Electric Company, in conection with the income tax returns of the Western Electric Company, and any differences between the company and the Government with respect to income tax. I was not furnished photostatic copies of all the Western Electric Company's income tax returns for the years 1916 to 1930. I do not know that they were furnished to the City of Chicago. Before this correspondence
5464 would have been of any use to me, I would have had to have seen their consolidated income tax returns. I saw the consolidated tax return of the A. T. & T. I do not believe that I saw the income tax returns for the Western from 1916 to 1917. I do not recall seeing them. I have prepared exhibits in this case which show the difference between the Western's income taxes as included in Exhibits A-77, A-78, A-79 and A-80 and the amounts allowed by the government for the years 1916-1930. From 1918 to 1930 the figures were taken from the consolidated tax returns. The figures from 1916 to 1917 I got on statements supplied by the Western Electric Company. I had the information any-

way as to the amount of taxes. I was also furnished
5465 with the complete reconciliation statement of income taxes. It appears to consist of twenty-two sheets.

From the use of the consolidated income tax returns of the American Telegraph & Telephone Company and the Western for the years 1918 to 1930, and by the use of the separate returns, or statements in connection with that company, for the Western, for 1916 and 1917, and this reconciliation statement, it was possible for me to tell the difference between the amounts claimed by the Western as in Exhibits A-77, A-78 and A-79, and A-80, and the amounts allowed by the Government for income tax purposes, in
5466 so far as those claims had been settled. For the years 1924 to 1930, the fact that there was a reconciliation did not necessarily mean that the thing was settled one way or the other. So far as they had been adjusted between the company and the Government, I had the complete information as far as the figures were concerned.

My Exhibit X-79 was prepared probably the latter part of February. It was one of the last exhibits. That exhibit was based exclusively on certain information that had
5467 been furnished me by the Western, consisting of monthly report No. 1, and an analysis of principal items appearing on the Products Company No. 1 report for the years 1927 and 1931, which had been furnished by the Western to the defendants in this case, and which have been identified in this case as Exhibits D-74 and D-75.

(The document was marked Exhibit A-230.)

I believe that the information contained in Plaintiff's Exhibit A-230 is the sole information used by me in the preparation of Defendants' Exhibit X-79, except so far as it affects the earnings of subsidiary companies, which I obtained from another source.

5468 (Counsel reads from previous cross-examination of witness, as follows:)

"Question: Now, it is a fact, Mr. McCann, isn't it, that you know an examination of these records that the Electrical Research Products was largely financed by means of loans made by the Western Electric Company to Electrical Research Products rather than stock issued by the Electrical Research Products itself or by a bond issue?

Answer: I do not know that that is a fact. I never studied that phase of the situation."

I remember my testimony in that connection.

(A document was marked Exhibit A-231.)

Exhibit A-231, which is a statement of loans by the Western
Electric Company, Inc., to the Electrical Research
5469 Products, Inc., was furnished to me in response to a
direct request by me in my letter of January 12, 1932.
I did not study the information that was given me. I never used this particular statement. I was requested by counsel to obtain the information. I never used this.

In Exhibit X-79, I gave no effect to the fact that Electrical Research Products was financed by loans made by Western Electric Company. I had before me long prior to the time that I prepared X-79, information furnished by the Western Electric Company concerning that matter. If I had wanted it, I had it.

I had no desire to ascertain, in the preparation of
5470 X-79, whether the Electrical Research Products was in
fact largely financed through loans made to it by the
Western.

(Documents were marked Exhibits A-232 and 233.)

I made some statement about the American Telephone & Telegraph Company having denied me information with respect to the amount of stock and the cost of that stock held by it in the Western Electric Company for 1915 and prior years. I would not be absolutely certain whether or not the
information in Exhibit A-232 and Exhibit A-233, the
5471 first bearing the legend, D-76, and the second D-77, was
furnished by the Western Electric Company to the City
of Chicago. It was not furnished to me. I believe I saw this one marked A-233 before, but I am not certain about this one marked A-232.

Mr. Whitworth has been in charge of this investigation for Touche, Niven & Company. He is a member of the firm of Touche, Niven & Co. I report to him.

(Counsel reads from Mr. Whitworth's testimony regarding Exhibit X-79 as follows:)

5472 Question by Judge Wilkerson: "You knew you were
to be asked to adopt these percentages as indicating the
return of the Eletcrical Research Products. Now, just what

is your practice, your general practice, where you are confronted with a situation of that kind, and you were denied access to some essential document or some essential book? Is it your practice to make up the papers from those to which you have access and send them in, or is it your practice to advise the court that you have not the necessary papers upon which to make an estimate?

The Witness: It is generally necessary to advise the court that we have not the necessary facts.

Judge Wilkerson: So you had everything which in your opinion you thought was necessary to the ascertainment of those percentages, or you would have told the court you did not have the documents or the books from which to make that estimate?

5473 The Witness: Yes, sir.

I agree with the answers of Mr. Whitworth.

Redirect Examination by Mr. Haight.

During my cross-examination, my attention was called to the copy of letter addressed to Touche, Niven & Company by Mr. Heiss, comptroller of the American Telephone & Telegraph Company, under date of February 8, 1932. I 5474 believe I received written instructions from Mr. Goldstein, asking me to obtain that information. I believe they were written instructions. I was in New York when I received the request from Mr. Goldstein. Mr. Goldstein was in Chicago. I had no knowledge of what it was all about. All I did was to carry out the suggestions and made the request.

Referring to a letter of February 15, 1932, the last one in the series produced by me, I was asked on cross-examination if the only complaints I had regarding the delays 5475 were those listed in the footnote upon that letter. There were other delays.

(Objection on ground that on cross-examination witness said he was not complaining of other delays. Objection overruled.)

5476 I have made a list of other delays. I listed them 5477 upon this document, Defendant's Exhibit X-312, entitled "Statement on Delays."

(Same objection as above.)

5478 All of these alleged delays are with reference to something I finally got.

5479 (Defendants' Exhibit X-312, marked for identification.)

The delays that I have listed in this document, Defendants' Exhibit X-312 for identification correctly sets forth the details respecting them. When I say I did not get the data, or the information listed, I mean it was not given to me promptly.

5482 I was asked on cross-examination something about the photostatic copies of the income tax return. I also had showings of the final statements from 1918 to 1923.

5483 From the *correspondence with the* Internal Revenue Department, that we were discussing the other day, I would expect to learn the following:

The first thing that I find out from the correspondence and finding is the basis of the final statement that would give me a clue as to the manner in which the items had been treated by the corporation and the manner in which they had been finally disposed of by the Internal Revenue Department. This information would have been useful in determining whether the tax returns for the years 1924 to 1930 gave effect to these final adjustments made by the Internal Revenue Department, or whether the tax returns had been left as they were originally prepared. The final settlement was up to and including 1923. With regard to making a certificate

5484 respecting any of the things that I investigated, we have not, in respect to any of them, made what I, as an accountant, would call an audit. We do not give certificates short of audits.

(Counsel reads from the deposition of John E. Otterson on cross-examination as follows:)

"Question: Have the books and records of the Electrical Research Products been audited?

Answer: Yes.

Question: By whom?

Answer: Arthur Young & Company.

Question: Are there copies of that audit in the possession of the Electrical Research Products?

Answer: Yes.

Question: And have those audits been made for 5485 each year, 1927, 1928, 1929, 1930 and 1931?

Answer: For all but 1931. Their auditors are currently and constantly in touch with our accounting department."

And then by Mr. Goldstein:

"Question: Mr. Otterson, to avoid asking you to produce detailed statements covering those various transactions, both as to income and expenses, we would like to have you produce the audits of Arthur Young & Company covering the years 1927 to 1930, inclusive."

By Mr. Thompson:

"We will take that request under advisement.. I do not presently see any objection to your having them, but we will let you know definitely a little later."

"Mr. Haight: That was upon the 16th of January, 1932. Anyhow, afterwards, after we had left New York and had gone home, we were advised, as I understand by Mr. Bracelen, counsel for the A. T. & T., that there were no such audits, but there were statements verifying the investment; merely a verification of the Western Electric Company 5486 investment, as I understand it.

Mr. Thompson: There was a certificate to the balance sheet. Are you talking about the Products Company?

Mr. Goldstein: Yes, we are talking about Mr. Otterson's statement under oath that there was a complete audit—there was an audit for that year, for each year; and on the basis of that we asked no further questions about the deferred receivables: He said an audit for each year, and his statement is under oath, and it is the same oath under which he made the other statement.

Mr. Thompson: We will debate that.

Mr. Goldstein: Yes. And would you also read that statement of Mr. Adcock where we called their attention to it in open court, at the deposition. Mr. Adcock made a statement that ought to be in the record.

Mr. Haight: And also on page 791 of the deposition, by Mr. Adcock:

'At the end of Mr. Otterson's redirect examination, we requested the audits of Arthur Young & Company of ERPI which Mr. Otterson testified had been made by Arthur Young & Company and I think the letter of Mr. Bracelen of

5487 January 19th, states, as a matter of fact, that there were no audits made and that request—

Mr. Bracelen: Did I say that?

Mr. Adcock: There were no reports made, yes, no reports made, and we wanted the audits made at that time, as stated by the record, in order to save time, and for that reason we probably want to recall Mr. Otterson to ask some questions about that situation, not particularly about the audits, but with reference to the subject matter that will be covered by the audits.'

And then there is a considerable wrangle that I will not stop to read. It will be all in the depositions.''

5488 *Re-cross Examination by Mr. Thompson.*

After I had left the witness stand on Saturday, I had a conversation with Mr. Gregory here in the courtroom. I didn't tell him that Touche, Niven & Co. felt that they had wonderful cooperation from the Western in their work. I do not recall what I said. I didn't say that we had fine cooperation.

As to this first alleged delay, I stated "under date of December 29, 1931, we requested the analysis of 1925 cost of sales and supporting details." This information was furnished us under date of January 8, 1932. What I did in this request on December 29, 1931, was to ask for the 1930

5489 and the 1925 analyses of cost of sales. On the same date, that I requested the two, the 1925 and the 1930 cost of sales, the Western Electric Company delivered to me the 1930 costs of sales. They were parts of the same request but were separated by your representative of the Western Electric. The fact is on the day when I asked for the 1925 and the 1930 analyses of cost of sales, the 1930 analysis of cost of sales was delivered to me, and I was advised by the Western Electric Company that their men were engaged in working on the 1925 cost of sales analysis. I believe it is correct that they said that as soon as that work was

5490 finished, the other would be delivered to me. They told me they were working on it, or finishing it. As to whether I objected to it or protested against it, why should I protest. I merely asked for it. The first thing that I list here on this, were statements that had been prepared by Mr. Gregory, contained in folders perhaps an inch or an inch and a half thick. I don't know whether the 1930 analysis

of cost of sales which I had, showed the exact manner
5491 and method that Mr. Gregory had followed in both studies.

"Q. Now, Mr. McCann, tell me one place in any exhibit in this case where you have used one thing that was taken from either one of these analyses of cost of sales, 1925 and 1930.

A. Well, I think the cost of sales of 1925 and 1930 enters into every exhibit where these particular years are involved.

Q. All right.

A. Whether I used the figures or not.

Q. Tell me what part of that analysis of cost of sales entered into it, or whether you used that in the preparation of these exhibits.

A. Whether I used it or not, I do not think enters into the question. It enters into the profits, and I did use your profits as a beginning point.

Q. I understand. I am asking you the direct question, whether you used anything—whether you used in any of the work that you did in this case the information contained in these folders, as there contained.

A. I believe I did.

Q. In what exhibit and how?

5492 A. In practically every exhibit as to the Western.

Q. I want your working papers this afternoon, and I want you to point out on those working papers any place where you used any information that was contained in the 1925 and 1930 analyses of cost of sales that was not available to you in the binders that you inspected. I would like to have a written statement on that.

Mr. Haight: All right."

When I made a joint request for two folders containing the analysis of cost of sales for 1925 and 1930 on December 29th, and I come into this court with the statement which showed that I was denied one, I do not see that it is necessary to make a statement about the other having been furnished to us on the date the request was made.

5493 W. M. HAMMOND, a witness on behalf of defendants, having been previously duly sworn, resumed the stand and further testified as follows:

Cross-Examination by Mr. Blackman.

(June 20, 1932.)

Throughout my exhibits I used the bond rating, such as triple A, double A, single A, BA and BAA, and so on.
5494 These ratings and the data that I testified about were taken from Moody's, principally. I do not know what considerations underlie any particular rating which Moody gave to any of the bonds that I use in my tabulation. If I understand your question rightly, I do not know all of the considerations, and I am not conversant with the weight given by Moody to different elements or all of the elements that are considered. As to whether it is necessary to know that in order to make the proper comparison, I say I have not drawn comparisons as to any particular companies.
5495 I followed the thoughts somewhat that Mr. Hoyt has expressed in this record, that they are generally recognized in the financial world and by many investors and by banking institutions as indicative of the investment value or quality of bonds. I have compared triple A bonds of the Bell System, as you designate them, with triple A bonds of railroads, and triple A bonds of industries and triple A bonds of other utilities. I have set them up in parallel columns
5496 according to the ratings which are found in the manuals and have not attempted to draw any conclusions of my own as to the elements of comparability between the different classes. I would say that there are probably other elements than that of safety that are involved in Moody's ratings. I do not know what those elements are. You would have to examine the history and status of each company in order to make a statement in that regard.

As to my understanding of the requirements necessary for a bond to be rated as triple A by Poor or Moody,
5497 I have made no specific study as to the bases on which the ratings are assigned. I know that in the financial market they are rated as the highest-grade bonds. If the

assets of a company were two or three or four times the amount of the principal of the bonds in question, and of bonds ahead of them, if there were any ahead of them, I would say those were high-grade bonds, but I would
5498 not attempt to draw a distinct line between the said statistical factors; there are other factors than those, that can be expressed statistically that may enter into the salability and consequently the rating on the bonds. Moody does rate many bonds as triple A.

5499 I have expressed nothing in my report indicative of a conclusion as to whether triple A bonds are all equally well secured or equally well thought of, or a conclusion of that kind. If you took a bond that is earning its interest charges four or five times over; the company is a prosperous one; well managed, growing; its assets are three or four times the amount of the bonds; and the bond is a first mortgage bond—in that case I would expect to find
5500 that bond given a high rating. I would not draw a conclusion based on the data which you have given me as to whether it might be a triple A or a double A. Assuming that it is a triple A, other factors being equal, another bond that was paying its interest rate eight times over, and secured by property that was eight times the amount of the face of the bond, would have somewhat better quality. There is no exact statistical data that can be used, to my knowledge, to define clearly the distinction between triple A and the next grade below. If a bond were earning its interest charges six or seven times over, and the company was
5501 a good company, and a growing company, if you ignore all other elements, I could give no opinion then,—without considering something more than one element. Ordinarily the asset position, or equity, has a bearing upon the values. If it has one added factor—that is it has assets, of five times the face of the bonds, the bond is a first-mortgage bond, that is, the assets are four or five times and the interest charges are five or six—I would expect to find
5502 that bond rated among the highest grades. It probably would be triple A, but there are other factors which might have a bearing on it. It might fall into the next grade, which comes very close to the triple A, in general quality.

5503 I would say that cases where I have passed upon the issue of bonds the records of the company showed that the bond interest was being earned, or would be earned six or seven times over, are not particularly frequent. I don't recall any at this time. The Commerce Commission records may disclose many, but I don't recall any particular case at this moment.

Regarding the security issues that I have passed on, the general average of the bond interest earned would fall between one and three-quarters times, and three times, or thereabouts, some higher and some lower. Those are
5504 not merely the upper and lower limits, necessarily.

I wouldn't want to say without further study that a great many bonds do rate as triple-A that are not earning their interest charges more than three times over. A bond earning its interest four times, with other factors strong, probably would fall in the higher grade of ratings, Triple-A, or a grade nearer, Double A. I summarize on my Exhibits X-227, X-228 and X-229, a good many hundred of pages of sheets which I submitted to you, showing the bond averages and prices and yields, and things of that kind.

5505 On these three sheets, I set up in a form in which they could be compared, and make comparison between the yields, as I have termed them, of the Bell System bonds, and bonds of railroads and public utilities. The purpose of putting them there was for comparison and for the purpose of showing the levels as between the different groups.

On Exhibit 229, Bell System bonds, railroad bonds, and public utility bonds are set up in parallel columns.

I would not care to make a general statement as to which bonds show the better yields without adhering pretty closely to the figures.

5506 The way I set up these parallel columns here shows that the yield on the Bell System bonds was better
5507 than on the public utility bonds in each of the years 1921-1931 in which I make comparison, except the two years of 1929 and 1930. In the comparison which I make with the railroads, the railroads got better yields in 1923, '24, '25, '29 and '30. In the other years where that comparison is made, I show that the Bell System got better yields as compared with the railroads. The comparison that we have been talking about is the comparison based on the

cost to the company, referring to the three columns headed
"Cost to the Company."
5508 The next comparison I make is made in three par-
allel columns immediately to the right of those we have
been discussing and are under the heading "Yield to the
Public." In that comparison, I show that the Bell System
bonds were on a lower yield basis, and, therefore, had a
better sale than the utility bonds in every year except '21
and '30. If by "better yield" it is meant that the com-
panies were able to sell the bonds at better prices than rail-
road bonds, so that the charges were less, then that is an-
other question. Then, the answer is, in 1921 the Bell System
yield was under the yield of the railroads; in 1922 it was
under; it was higher in 1923; it was higher in 1924; it was
lower in 1925; it was lower in 1926; in 1927 and '28
5509 there were no Bell issues; in 1929, the Bell was under
the railroad yield; in 1930 it was higher than the rail-
road yield; and in 1931 there were no Bell issues.

In my last comparison, the three figures to the extreme
right of the sheet, I compare the spread between cost to
the company and average yield to the public. That is taken
up principally by the Banker's Commission. In that com-
parison, it is not correct that the Bell System bonds were
less than the Public Utility bonds in every year. In the year
1929, the Bell System is higher than the Public Utilities
spread—that is, 33 against 25. In every other year, the
Bell System spread is less than the Utilities. With re-
5510 gard to the railroads, the Bell System spread is less in
some years, and higher in others.

The same identical figures that appear on Exhibit X-229
also appear on Exhibit X-235; the figures are drawn from
the same sources. They appear opposite the line "Aver-
age." Taking the year 1929 as an example, in that year
the Bell System issued only triple A bonds, and the yield
that I have set down for those triple A bonds is 5.33. The
yield that I set down for triple A railroad bonds is 4.82, and
the yield that I set down for public utility bonds of triple A
grade is 4.93. On my summary sheet here, where I
5511 make the comparison, I show that for that year, the
average comparison is 5.33 for the Bell System, 5.27
for the railroads, and 5.29 for the Utilities. The figures
that I use on X-229, for 1929, in the first column oppo-

5512 site the year 1929, and under the heading "Bell System" is 5.33; and in the same line, under "Railroads" is 5.27; and in the same line, under "Utilities" is 5.29.

In Exhibit X-229 for the Bell System for 1929, the yield is 5.33, and in Exhibit X-235, it is the same; for railroads, on Exhibit X-229, 5.27 for 1929; and the same figure on Exhibit X-235; and in X-229, for utilities, for 1929, 5.29, and the same figure on X-235.

5513 I have used the yields, in order to determine the comparison between the railroad bonds and the public utility bonds on the one hand, and the Bell System bonds on the other. I have used only triple A bonds of the Bell System, and I have used as low as BAA grade of railroad bonds. Every grade that was reported is included. In the year 1930, I have used five grades of railroad bonds, and four grades of public utilities, to compare with the one triple A grade of Bell System bonds. They represent the entire financing of each class of business for those years.

5514 I would not follow and I think I have not used the following system:

To compare the goods of Marshall Field with the goods of Carson, Pirie, find that the highest grade stuff in Marshall Field's was rated at $5, and the highest grade stuff at Carson-Pirie's was rated at $5, and lower grades at Carson-Pirie's at $3, and $2, and even $1, and then add up the Carson-Pirie stuff and find that the average was $2, and say that Marshall Field's prices were two and a half times those of Carson-Pirie.

The difference between that example and what I have done is as follows: This is the weighted average of all of the issues based on the volume of the respective classes, and represents the entire cost for each class of industry for the years that it purports to. It does not necessarily imply that because they are set down side by side, that I mean to infer that each has identical values. They may be
5515 compared, I believe, without attributing identical values. My purpose in X-229 was not to draw conclusions as to whether or not the Bell System bonds were getting a better yield or were selling on a better yield basis or had a better market than the railroads or public utilities; but to present the facts that might be helpful in reach-

ing a conclusion. I cannot answer yes or no whether in
the summary sheet X-229, I intended the court to under-
stand, and make a finding that the Bell System bonds com-
manded a better yield, or at least commanded a better price,
were sold on a lower yield basis than the utility bonds. The
word "intent" there is confusing to me. There was
5516 not a purpose or intent, except to present all of the
facts, classify these bonds, on the only basis I was
aware of, and that is, that which is generally recognized
in the investment world as of some value. Beyond that, I
have not attempted to express, or attempted to draw a com-
parison between any particular issues or class of issues.

The triple A bonds of the Bell System are compared with
the triple A bonds of the railroads, and the triple A bonds
of the utilities in this Exhibit X-235. The exhibits are set
up so that if you wish to compare triple A bonds with triple
A bonds, you have the figures. I have reached the conclu-
sion that triple A bonds may be compared with triple A
bonds. I am not undertaking to say which method shall be
adopted. That is for counsel to argue. I cannot say
5517 whether, if I had compared the triple A bonds of the
Bell System with the triple A bonds of the two other
classes, and had used that comparison on X-229, I would
have shown just the opposite of what I show here, and
would have shown that the Bell System bonds did not com-
mand as good a market price in relation to the interest, and
that the yield in order to sell the bond, had to be
5518 higher. I would not try to answer that yes or no with-
out reading the figures. I will make up a table and add
up the yields of the various years of the triple A Bell bonds,
the triple A railroad bonds, and the triple A utility bonds,
and tell what the comparison is.

5520 Graphic chart X-227 is X-229 reduced to chart form.
That is plainly shown on the face of the exhibit, I be-
lieve, or in the testimony. Exhibit X-228 is likewise produced
from X-229, based on the figures. The charts are in-
5521 tended to be a faithful reproduction of the figures on
the same basis that 229 is built up. The comparison
shown graphically on the chart is a comparison of triple A
Bell bonds with bonds of other companies, including B's,
BA's and BAA's.

As I recall, an issue of $219,000,000 of Bell System bonds issued in 1929, I believe, was the only convertible issue
5522 of the Bell System included in these exhibits. I don't recall including any convertible bonds of the underlying companies of the Bell System. The conversion privilege of the American Telephone & Telegraph issue was a conversion into common stock of the company. I cannot state from memory the exact terms of the conversion.

The convertible privilege has a bearing on the selling cost of the convertible bond. Convertible bonds were excluded from Exhibit X-229, both Bell System and railroads, but they were included in some exhibits set up in parallel columns showing those that are convertible, and those that are not.

5523 I would have to read to you the issues to give you a full answer as to what extent the railroad bonds were convertible. I have a list of them. I haven't the exact figure as to approximately how many were convertible without looking at my papers. I have not reproduced in these exhibits the terms of the convertible features. I examined them, but I did not reproduce them in this exhibit: I don't recall,—there was a long list of them, and I naturally did not attempt to memorize them.

5524 I have produced figures here on the subject of the yields on bonds as compared with the yields on stock, and the yields on one stock as compared to the yield on another stock. I am referring to Exhibit X-250 and subsequent exhibits. In all of those cases I used merely the dividends that the companies were paying. I have so stated on direct examination. In no case did I take into account, or give any weight to the earnings of the company. We would not know from my figures, and my figures would not be changed, if two companies were each paying 8 per cent, whether one of those companies was earning 6 per cent, and paying the additional 2 per cent out of accumulated reserve, or whether it was making 28 per cent and setting aside $20 to surplus, and paying $8 in dividends. I took into account only cash dividends. I am not saying that the com-
5525 panies are comparable.

I have shown a comparison of the yields on the common stocks at the market prices prevailing in each year, based on the cash dividends, and for that purpose have grouped together the common stocks of all the utilities that had issued bonds of the different grades; I have also shown the average on the same chart, Exhibit X-250, of all of them combined, and then they are broken down into the Moody's ratings groups.

The only factors that I considered in making the comparisons that I speak of were market prices of the securities and the dividends paid by the companies. I paid no attention to what the companies were earning, and that factor did not enter into my calculations at all. I made my selections 5526 of these stocks for comparative purposes by taking the base on which their bonds were selling, where they have been divided into investment groups. The market price of the bonds had nothing to do with the calculation.

A study was made of the common stocks that had an open market, in other words, that were traded in on the public markets; the prices were recorded; the average yield based on dividends being paid were computed. They were grouped where they are grouped in this statement, by taking the companies that had triple A bonds and setting up in a group corresponding, so to speak, the stocks of those same 5527 companies, in so far as there was a public market for the stocks. I used the bond basis as the test for determining the comparison of stocks.

Redirect Examination by Mr. Goldstein.

Referring to Mr. Crunden's testimony in 1929, in connection with which he offered plaintiff's Exhibit 16, appearing in record volume 4, pages 1276-1277, entitled "List of Bonds and Notes of Public Utility Companies Sold in the Open Market during the year 1923. List Includes Only Issues of $5,000,000 and Over," that list contains the identical bonds that I have, only without groupings, and includes bonds whose yields on offering price were in some cases as low as 5½ per cent, and in other cases as high as 7 per 5528 cent.

What I did was to take the same bonds and reclassify those bonds according to the classification which Mr. Hoyt gave in connection with his testimony that "in connection with the various classes of securities, investors have come to think of bonds in a certain classification, bonds legal for savings bank, and bonds not legal, they have also come to think of the classifications in the terms of which some of the established services have rated them, that is, A-1 bonds or triple A bonds; many investors have in mind those ratings in connection with the type of securities purchased." I applied Mr. Hoyt's tests, to subdivide all of the bonds that Mr. Crunden used in his exhibit, Plaintiff's Exhibit 16.

5531 My exhibits show the yields according to the classifications as stated by Mr. Hoyt (Abst. 188) as follows: "Many investors have in mind those ratings in connection with the type of securities purchased." My exhibits show the cost to the company on the basis of those classifications, and show all of the information, wherever I have used

5532 classifications here, on the basis of the classifications as stated by Mr. Hoyt in his testimony.

Re-cross Examination by Mr. Blackman.

As to where my graphs show the information on the basis just stated, I refer to Exhibit X-236 where you find

5533 the yields shown according to each rating classification. X-227 does not attempt to classify the bonds according to ratings. That is the average for the industry. My other summary X-228, as I have already stated, deals only with the totals, and does not deal with the ratings. My other summary, sheet X-229 included only the general average of all of them. I did not understand the question of Mr. Goldstein to refer to every exhibit as showing a classification on the basis of Mr. Hoyt's classification, but I understood it to be directed to the point as to whether the exhibits submitted by me were grouped according to that principle.

5534 The fact is, the comparison that Mr. Goldstein referred to as having been stated by Mr. Hoyt is nowhere brought out in any of my summary exhibits. It is only on the underlying exhibit where it can be found.

In stating that I had merely followed the table that Mr. Crunden had put in in this case, I refer to the table that appears at pages 1276 and 1277 of the record of the previous trial. In that table there is no comparison of Bell Bonds

with railroad bonds or any other bonds. They are all thrown together into one group there. That is, they are just
5535 a list here of a number of issues of bonds.

I didn't state that I had followed his group to the extent of a classification. I knew well that he did not classify them, and I attempted to carry it one step further. While I was familiar with what Mr. Crunden did in this case, I can't say that it determined the manner in which I proceeded to prepare the data.

K. E. THOLIN, having been previously duly sworn, resumed the stand for cross-examination by Mr. Bracelen and testified as follows:

Cross-Examination by Mr. Bracelen.

(June 20, 1932.)

5537 "Q. Mr. Tholin, the first part of your testimony that I wish to inquire about relates to Mr. Turner's method of finding the over-all average service life of station apparatus, and in that connection, to the use of junk salvage in making the computation, you will recall this question and answer on your direct examination. Your counsel asked you this question:

'If 2 per cent were used in the formula instead of 5 per cent, would the effect be to increase or decrease the over-all life?'

To which you answered:

'A. The effect would be to increase the over-all life, and this would also involve more re-uses of the equipment.'

Do you recall that testimony?

A. I do, yes, sir."

I recall some other testimony that I gave in con-
5538 nection with that subject. I was referring to the over-
all life of the class of property known as station equipment, station apparatus. The 2 per cent and the 5 per cent referred to in the question and answer related to junk salvage. A little earlier than that, in my testimony, I had stated that a certain tabulation had been given to me by Mr. Cox of Mr. Turner's office. The calculations are those shown in Exhibits X-190 and X-191. Exhibit X-191 is the one pur-

porting to deal with junk salvage of 2 per cent or thereabouts.

I said that data was given me covering three types 5539 of stations and those are shown on Exhibit X-191, first, manual non-coin-box desk set, shows a junk salvage value of 2 per cent, and second, coin box, which shows a junk salvage of 1.6 per cent, and third, dial non-coin-box desk set, which shows a junk salvage of 2 per cent.

Exhibit X-190 related to salvage recoverable upon dismantlement of the sets. By "station apparatus," which we are talking about now, is meant in general the equipment that is on the subscriber's premises, part of the equipment on the subscriber's premises. It is what the subscriber is likely to think of as his telephone and attendant apparatus.

By "over-all life," which is the subject we are talking about, is meant the life from the time the telephone goes into service until it is finally retired from service, and junked.

5540 By "junk salvage" is meant that which the company recovers at the time of the final retirement of that equipment. If you have a telephone that cost the company ten dollars, when it goes into service, and from which a salvage of 5 per cent is recovered when it is finally retired from service, the company gets 50 cents back out of the $10; and if it is 2 per cent, junk salvage, the company gets back 20 cents out of the $10.

Referring to my statement that if Mr. Turner had used 2 per cent in the formula instead of 5 per cent, you would have gotten a longer over-all life and more re-uses of the equipment, I have made a brief study to determine how much longer life.

5541 I made one calculation to determine how much of an increase in the over-all life would have resulted if 2 per cent had been used instead of 5 per cent. I am not sure that I have that calculation with me.

Mr. Turner's over-all study applying the formula 5542 using 5 per cent showed an over-all life of 17.8 years.

The substitution of 2 per cent in place of the 5 per cent junk salvage in the formula will not give 18 years, a difference of .2 year.

I arrived at an approximation in the neighborhood 5543 of 21 years. I have my working papers here. The

work sheet is identified as Plaintiff's Exhibit A-234.
In Exhibit X-190 the salvage percentages upon dismantlement
are the percentage figures shown in the right-hand
column of the sheet for each of the three classes of station
apparatus designated there. I tried to ascertain whether
salvage recoverable upon dismantlement did or did not enter
into the company's determination of 5 per cent junk
5544 salvage, and I was not able to. The company was not
able to produce any proof that it considered it. It
may enter into it in their minds, I don't know. When I got
these two sheets, X-190 and X-191, from Mr. Cox I did not
ask him about whether he included consideration of the dismantled
equipment, but when I inquired about proof for the
5 per cent used as junk, Mr. Cox did explain that the 5 per
cent junk salvage used by the company, instead of the 2 per
cent had been arrived at by taking into account an allowance
for the station apparatus that was dismantled and the salvage
recovered from dismantling it.

After I stated that in substance on direct examination, I
was asked this question by Mr. Goldstein: "Q. Was
5545 the company's calculation of the salvage where parts
are re-usable based on the same basis as in connection
with the ultimate junk salvage?" I answered, "The same
general method was used; yes." That is true, as to the determination
of that per cent.

Exhibit X-190, showing the maximum salvage of dismantled
station apparatus is probably designed to show, and
does show, what the maximum possible salvage recovery
upon dismantlement would be, if every component part of
a) the particular piece of apparatus were found to be reusable.

5546 "Q. Now, the point I am getting to, of course, is this:
That is the dismantlement process, or as the result of
the dismantlement of station apparatus, the salvage is never
of a complete piece of apparatus and all its component parts,
but there will be a particular component part in this set
that is dismantled, maybe one or more; in another set there
will be some other component part that is found to be reusable
and is salvaged, and this Exhibit 190 merely reassembles
all the salvaged component parts so as to make up as
many complete instruments as those component parts would
make up, that is, the whole idea of the exhibit?

A. That sounds rather complicated to me. I thought it
was as you stated first, that it is the maximum salvage that
can be obtained from a station if all of the component parts
were salvaged."

5547 Whether I would expect to find instruments being
dismantled if all of the parts were recoverable depends
on the meaning of the word "dismantled." I have not made
any particular use of the word "dismantled" because I felt
that we were now trying to arrive at the ultimate junk salvage,
and not some in-between salvage, because we have a
variation from pretty near a brand-new instrument coming
through the storeroom, and being polished up a little, possibly
the finish might be said to be junk, and it might be
called a dismantled instrument.

But somewhere in between there are lots of different variations.
I thought we were concerned with the ultimate junk,
and, therefore, I paid very little—practically no at-
5548 tention to this statement of the in-between dismantled
situation. When I answered Mr. Goldstein that if 2
per cent were used in the formula instead of 5 per cent to
arrive at the over-all life, I was not suggesting and did not
mean to have the court infer that I thought 2 per cent should
be used, and that that really is as much junk salvage as the
company recovered. The company has no proof of wha
junk salvage they received.

5549 In Exhibit X-183, dealing with accruals of depreciation
on station apparatus, column 4, headed "Estimated
investment loss to be provided for through charges
to depreciation," is about 30 or 35 per cent of column 2,
which is headed "Investment at the end of the year." It is
the difference between the company's salvage per cent in
that particular year and 100 per cent.

I can easily give you the particular figure. For 1920 it
is 40 per cent, the company in that year used 60 per cen
salvage. So that column 4 for 1920 represents 40 per cen
of the investment at the end of the year 1920. For the years
1921, '22 and '23, column 4 is 35 per cent of the investment
for each of those years, and for the years 1924 and all succeeding
years, including 1931, the column 4 is 30 per cent
of the company's investment shown in column 2.

5550 The last figure in the final column, column 10, for
the year 1931, is 118.04 per cent. That means that the

amount shown in column 9 is 118 per cent of the last figure in column 4, $4,976,734. That figure in column 4 is 30 per cent of the company's investment in station apparatus in that year shown in column 2 of $16,589,115, so that the 118.04 per cent in relation to the company's investment in station apparatus in 1931 shown in the first column is 118 per cent of 30 per cent. So that the company has, at the end of the year 1931, in its depreciation reserve, according to my exhibit, 118 per cent of 30 per cent, or 35.4 per cent of
5551 its investment in station apparatus.

My exhibit is based upon the proposition that the company is to provide, through its depreciation charges on account of this investment of sixteen and a half millions since 1931, only $4,976,000 odd. When this investment of sixteen odd million dollars that the company has in 1931, the station apparatus represented by that amount of money which is the cost to the company as shown on its books, is finally retired from service, the company will get back,
5552 according to its calculations, 5 per cent salvage and 95 per cent loss, and if 2 per cent junk salvage is used it will get back 2 per cent salvage and 98 per cent investment loss.

5553 They say everything is headed for the junk pile, and I presume the station apparatus some day will be junked, and not much value recovered. When this type of equipment, station apparatus, is finally retired from service at the end of its over-all life, and not re-used, the salvage which the company recovers is what is known as junk salvage. This investment of sixteen million five hundred odd thousand dollars which the company has, representing the cost, on its books, of the instruments in station apparatus, in 1931, will finally go out of service and be junked, and such salvage as there is there will be recovered.

5554 Just for illustration, if the sixteen million dollars of investment in the station apparatus represents a million stations at an average cost to the company of $16, then as a physical fact those one million of physical instruments some day will go to the junk pile.

If you refer only to salvage when they do go to the junk pile, the company will have left, or restored to it out of that sixteen million dollars, whatever it has been able to recover as junk salvage.

Referring to the amount that the company is going to get back as salvage, leaving the rest of it as loss to the company, when those instruments are finally retired, if the salvage is 5 per cent, the company will lose 95 per cent of sixteen
5555 million dollars.

I am a public official. This exhibit has been worked out together between myself and counsel. It is the joint idea of myself and counsel. If there is anything wrong with
5556 the exhibit I would like to straighten it out.

"Q. I have no doubt of that. Well, now, Mr. Tholin, don't you see that the company has to get back, through its depreciation charges, an investment loss which is the difference between the sixteen million five hundred thousand dollars and the junk salvage that it recovers, and that the investment loss, instead of being only 30 per cent of the investment in 1931, is 95 per cent if the 5 per cent junk salvage of the company's computation is correct?

A. I will agree with you that the company should be reimbursed for the difference between the original cost and that junk salvage that you speak of. But in preparing this exhibit, we had no evidence of what your junk salvage was. The only evidence we had was the depreciation rate charged by the company, which is based on that 70 per cent salvage."

5557 The estimated investment loss should be the difference between the investment shown in column 2, the company's investment, and whatever junk salvage it recovers.

The company has recovered to date, through its depreciation charges on account of this investment of $16,500,000 in 1931, only $5,874,000, the last figure at the bottom of column 9. I explained, however, that I had not included any balance of the 1913 balance in the reserve.

According to my exhibit, the company would recover, through its charges for depreciation down to the end of the year 1931, the sum of $5,874,679 on account of the investment of $16,500,000 shown in the investment column, column 2 of my exhibit.

(June 21, 1932.)

5562 Exhibit X-185 is a comparative study of per cent condition of Manual Central Office Equipment.

5563 As to my connection with this exhibit, the answer is that all of my exhibits have been worked out under advice of counsel, and I have discussed them with counsel, and it is counsel's idea that these exhibits should be introduced. Counsel contributed the law, and I contributed the accounting. I did the computing. That is all I did.

5564 I think counsel can better answer the purpose of Exhibit X-185 than I can. For the purpose of cross-examination I number the columns in Exhibit X-185, No. 1 to No. 9.

Column 1 of Exhibit X-185 is identical with column A of Table 6 of Mr. Turner's Exhibit A-128.

5565 Column 3 of Exhibit X-185 is column B of Table 6 in Exhibit A-128. Column 4 of Exhibit X-185 "Estimated Year of Retirement" is identical with column C of Table 6 in A-128. Column 5 of X-185, headed "Age at December 31, 1930," corresponds to column E of Table 6 of A-128, which Mr. Turner calls "Average Realized Life at December 31, 1929," and the only difference between the two columns is that my study brings the computation down one year later, based on the actual book figures rather than the 1930 estimated figures of Mr. Turner.

Column 6 of X-185, headed "Estimated Total Life," corresponds to column 1 of Table 6 of A-128, which Mr. Turner calls "Estimated Average Realized Life at Retirement."

5566 The difference in the two columns last mentioned would not be in the fact that there is an additional year in there, but the difference would be because the figures I have used for that year are the actual figures as compared with the estimated figures of Mr. Turner, because in Mr. Turner's figures shown in Column I, he, of course takes in all of the property, not only to the end of 1929, but to the retirement dates as shown in Column C, and I have done likewise, except that I have used the actual figures for 1930. That is the explanation for the fact that, for example, the first figure in Column 6, for the Austin office, 10.45 years, is different from Mr. Turner's figure of 10.52.

Column 9, the last column on my exhibit, X-185, "Per Cent Condition Determined by the Company," I obtained from Mr. Redmund's detail papers, as to per cent condition
5567 at each of the offices, and I think they agree with what
Mr. Redmund testified to in the record.

The method by which I get the figures in Column 6, which I call "Estimated Total Life," is the same as the method used by Mr. Turner in getting the figures in Column I of Table 6. To illustrate that by a simple example, the method is this: An office is initially installed with, say an investment of $10,000 at the start, and let us assume that the office is to retire in any period of years you please, but, for example, we will say 10 years. You multiply 10 years by $10,000, and get one hundred thousand dollars years. Then say after the office has been in service five years there is an addition to it of $10,000, which addition therefore will be in service five years, giving 50,000 dollar-years, or a total of 150,000 dollar years, which divided by the $20,000 of investment gives an average estimated total life of 7.5 years. That is the process which both I and Mr. Turner have employed in
5568 getting Column 6 of X-185 and Mr. Turner's Column I
in A-128.

In order to get the figures in my Column 5, which corresponds to Mr. Turner's Column E, which I call "Age at December 31, 1930," I employ the same mathematical process, exactly; that is to say, I get the dollar-years of the investment that has already been made, and multiply each item of that investment by the actual number of years which that investment has been in service, down to the time of my computation, and then divide that number of dollar-years by the total number of dollars of investment.

The figures in Column 7 of my table, "Per Cent of Total Life Remaining at December 31, 1930," are obtained by dividing the difference between Column 6 and Column 5, by Column 6. That is to say, taking the case of the Austin Office, I have 10.45 years which I call "Estimated Total Life."
5569 From that I subtract the 6.97 years of Column 5, which
is the age at December 31, 1930, and that difference is then stated in Column 7 as a percentage of estimated total life, of 10.45 years. Column 8 is Column 7 after the salvage adjustment is made. I would not say that I have in this ex-

hibit the application of a mathematical procedure or formula by which one may sit in his office and with the figures determine what I call the per cent condition of the physical property of the Telephone Company here in Chicago, to be compared with the per cent condition of the same property as found by experienced telephone engineers and maintenance men upon a careful inspection of the actual physical things. It purports to be a ratio of the life that has gone, to the total life, much along the same method that the Company itself has used in connection with its per cent condition of automobile equipment, which was really on a like basis, ex-
5570 pressed in number of miles; and in its per cent condition of storage batteries, it instructed its men to determine the facts dealing with remaining service life of storage batteries, and it did so in connection with its cords and plugs and jacks; it made a measurement process, it is true, out in the field, but it was to determine the remaining service life expressed in terms of dimensions—length of cords; but, nevertheless, it was a ratio much similar to this.

Per cent condition has been used in so many different ways that I would prefer not to define it myself.

"Judge Wilkerson: Well, now, tell me what you think the Commission meant by it when it said that this property was in 90 per cent condition."

5571 As to what the Illinois Commerce Commission meant by per cent condition, I think that there is plenty of evidence in the Commission's order, and in data furnished by the Company to the Commission, which associated with the data that the Company furnished to the former Commission,—and is specifically referred to in the former Commission's order—to the effect that it only included the visible deterioration, and gave no consideration to obsolescence and inadequacy that was not visible on the surface. I believe there is no doubt at all that the Commission, the Illinois Commerce Commission's order of 1923, when it refers to 90 per cent condition, refers to simply the operating condition of the plant, which of course, everybody will admit is in fine condition. But here I would like to point out in answer to your question, the Dearborn Central Office Equipment, which is shown by the Company to be in 94 per cent condition; within

30 days after they made this assignment of per cent
5572 condition, the office was removed from service.

As a matter of fact, the record here shows that some of the inspections made by the men were after the office had actually gone out of service. It might well be that some of the apparatus had never been used at all. This computation shows the life that the Company uses in its depreciation rate, and it is a calculation based on that; that is to say, the
5573 life is used in determining what is to be set up as the annual expense of depreciation. We run right into the legal theory as to what is the correct rule for estimating depreciation to be deducted from the value of property for rate-making purposes, and the rule to be followed in determining what is to be set up as the expense of depreciation, and whether the one necessarily controls the other or not. In case the court should want to give consideration to age in this problem, this will give the relation of the expired age to the total life.

5574 If the court does not agree with defendants' theory my exhibit probably does not mean anything to the court.

If we were to assume that salvage is zero, then the figures in Column 7 in X-185 would represent the same thing as is represented by Column 8. If there were no salvage,
5575 there would be no Column 8 in there, and we might say Column 7 would take the place of Column 8. So that then I would have a per cent condition in my column, and would have placed alongside of it, in parallel, the per cent condition as found by Mr. Redmund upon inspection of the property. I have determined the per cent condition by means of a mathematical procedure or formula. There is no question but what mathematics was applied to produce these
5576 results. I will discuss your illustrations. The first one is the case of a Central Office consisting of an initial installation and one addition. The initial installation is made January 1, 1926. This hypothetical office will be retired January 1, 1940. The life-years of the initial installation then will be 14 years. The cost of the initial installation is $10,000; there are 140,000 dollar years. An addition is made January 1, 1931, which is just five years after the original installation; the date of retirement of the addition will be the same as that of the original installation because the office goes out

January 1, 1940; the life-years for the addition are nine years; the cost of installation of this addition is $40,000; the
5577 dollar-years for the addition are 360,000; the total dollar-years are now 500,000; total cost of installation is $50,000. I get the average life of that office by dividing the total dollar-years by the total of the gross additions, and in this case I get 10 years.

In this illustration the age at December 31, 1930, which is similar to my Column 5, in X-185, is five years, and the estimated total life, Column 6, is 10 years. The per cent of total life remaining at December 31, 1930, Column 7, on that
5578 basis, would be 50 per cent. And, therefore, disregarding salvage the per cent condition similar to Column 8 of X-185 would be 50 per cent.

Another illustration you present is as follows: This office will consist of an initial installation and one addition, and the date of the installation of the original office will be January 1, 1926, as in the other case, and we will assume in this case that the office is to be retired Jan-
5579 uary 1. 1934, this office will be one which turns out to have a five-year life instead of ten years, as in the first example; the life-years of the original installation then will be eight; the initial installation cost $10,000, so that you get 80,000 dollar-years for the entire period; the addition to the office is made January 1, 1931, so that the addition will have a life of three years; this addition cost $15,000; you get therefore 45,000 dollar-years; and you have then the total cost of installation of the original office and the addition, of $25,000 and you have 125,000 dollar-years, which gives a five-year average life of this office. To make the computation on
5580 this office as it is made in Exhibit X-185, the age at December 31, 1930, is five years; and I have already determined that the estimated total life, which is Column 6 of X-185, is five years. The per cent of life remaining then is zero on the foregoing calculation. The per cent condition of that office is zero by my formula.

In this illustration we have an office with $10,000 of property, on the basis of the original investment, which at December 31, 1930, the date when I figured out its per cent condition by my formula has three years of life in service before it will be retired, and yet it is in zero condition by my formula.

5581 You probably could go on with any number of illustrations that you can think of,—I cannot imagine how many.

"Q. Yes. Now, of course in the last example that you
5582 have worked out, the office that has five years of remaining service life, and that will not go out of service until 1934, cannot be in zero condition; and the thing is simply absurd, is it not, and shows your formula to be ridiculous, is that not so?

I ask you in fairness, if that is not so?

A. Well, this office does not have five years remaining service, according to your illustration.

Q. It has three years?

A. I think it has three years,

Q. Three years, yes.

A. Three years of remaining service life.

Q. Yes.

A. I do not consider the method ridiculous, no.

Q. All right. Let me ask you this: You have testified that you come in here with a formula, a mathematical procedure, which you have explained fully, for determining the per cent condition of offices. You are an accountant. Do you wish now in the face of the testimony you have given here, to still stand back of this formula or not?

A. Yes, sir, I do.

Q. All right.

A. I think it is perfectly reasonable."

5583 Exhibit X-186 is the same kind of an exhibit, and made up on the same basis as X-185, except that it applies to buildings instead of Central Office Equipment.

As to whether Exhibit X-178 (Page 2, for instance)
5584 was my idea, my previous answer stands for all these exhibits. They were worked out with counsel. If counsel had not desired them in, I should have been unable to put them in. He decided what was to go in. As to the theory or idea upon which it is made up, whether it is mine or counsel's or both, I do not know what theory you refer to. As I see it, it is practically a statement of facts, of the actual salvage that the company realized, compared with what that

figure would have been based on its estimate in prior years,
based on the span of life that the company used. The figure
of $933,181 for the year 1929 opposite the account Cen-
5585 tral Office Equipment is a calculation based on the figure
that follows it, in the next column of $1,438,988. I mean
exactly what I just said. I was not confused about it. Let
me explain it in more detail. The figure of $1,438,988 shown
in the next succeeding column represents the actual salvage
realized in 1929. That, as shown on page 1 of this exhibit
(X-178) represented 30.84 per cent of the retirements. Now,
then, if that is 30.84 per cent, I determined what 20 per cent
would be, the 20 per cent figure being shown at the head of
this statement, to the left, and the 20 per cent would be then
$933,181.

5586 Exhibit X-170 on page 2 for the year 1929 shows re-
tirements of Central Office Equipment of $4,665,908. The
$933,181, on Exhibit X-178, page 2, is 20 per cent of that
amount. The figure "Actual" alongside of the $933,181 is
the actual salvage recovered from the retirement of $4,665,000
in that year. I believe there purports to be some comparison
between the actual salvage which the company realized from
the retirement of Central Office Equipment in 1929, and 20 per
cent of the retirement in 1929. Counsel, of course, will
5587 argue the correctness of the comparison and the pro-
priety of it. Counsel and I discussed it. The compari-
son is as follows. In 1919 the company estimated the life of
this class of equipment to be 10 years. It then estimated that
it would recover 20 per cent salvage. Ten years later in
1929 they did retire equipment of this type, and they did re-
cover 30.84 per cent salvage. This is simply a comparison of
those two facts.

I do not know how many Central Offices were in serv-
5588 ice in 1919. I presume 34 is correct. The company in
making up its depreciation rates for the annual expense
of depreciation at that time was figuring out the average life
expected for those offices and the salvage on the average that
it expected to recover upon the retirement of those offices.
That is, the company was getting its depreciation rate by
means of service life and salvage on a straight line basis.
The company was determining its depreciation rates on the
straight line basis, in the manner just stated, on the Central

Offices there were then in service. It applied those rates on the book investment as of those years.

5589 The 20 per cent estimated salvage had application to all of the offices, as an average. Several of those offices which entered into the 20 per cent salvage calculation of the company back in 1919, have gone out of service prior to the date, 1929, that is used for my first entry on Exhibit X-178. I testified here two or three days ago on direct examination to the list of offices, giving the dates of retirement. I did not set down the estimated salvage and the actual salvage from those offices that have gone out between 1919 and 1929, because I did not attempt to make any complete study of
5590 this situation, and because the exhibit involves a span of years equal to the life, and prior to 1919 I did not have a very detailed or complete depreciation table, because prior to 1921 the company did not use individual rates for the various types of plant, and the earliest complete—or more or less complete—depreciation table I found, was dated 1919.

I have no figures in my papers here, showing the salvage that the company has realized from the retirement of Central Offices that were in service during the year 1919, that have been retired since that date.

5591 I saw some figures in Mr. Turner's records purporting to deal with two or three offices retired in that intervening period, but I have made no check of these salvage figures which you ask me to assume to be correct.

One of the offices in 1919 to which the 20 per cent estimate of salvage applied, was called Central. That was retired in 1923; the Company realized a net salvage of 28 per cent on that office; the next office was retired in 1928, being still one of those that was in service in 1919, and upon that the Company realized salvage of 5 per cent; the Main office—that being the office designation of one of the group in service in 1919—was also retired in 1928, and the company realized 12 per cent salvage.

5592 The Tandem Office, which was one of the offices in existence in 1919, was retired in 1931, but I do not know that the Company realized 1 per cent salvage in that retirement.

5593 I haven't the figures by individual offices. Of course, this Exhibit X-178, page 4, indicates that the actual salvage received is less than that estimate of 20 per cent; it shows that on its face, the composite figure.

If you were to make a comparison between the 20 per cent salvage which the Company was estimating for the whole group of offices in 1919, with what it realized in salvage from the Delaware Office last year, 5 per cent, you would get a startling discrepancy. The 20 per cent that the Company was using in 1919 was not necessarily a forecast by the Company that it would retire the Wabash and Toll Offices in 1929, and in that year would recover as salvage from those two offices $933,000. That ten years is the average life of the property.

5594 I took ten years because it was the average life of the property. The Company retired in 1929 two offices, Wabash and Toll, the cost of those offices being as shown on my Exhibit X-170, page 2, making up the great bulk of the $4,665,908. The figures shown in this exhibit probably include other incidental retirements at all the other offices in the city. I have not got the detail figures for the two particular offices, but it would be included in there, whatever retirements were made in that year.

5595 "Q. Yes. Now, take the case that I supposed, that instead of actually retiring the Wabash and Toll Offices in 1929, it had not retired them until the next year. Then taking the ten year span of life as you did here, you would set down what estimated salvage? There would not be any estimate at all, then, for retirement, would there?

A. In the year 1929?

Q. In 1929.

A. Based on the figures that I have?

Q. Yes.

A. Why, if there were no retirements, there would be no figures.

Q. Yes, neither estimated nor actual.

A. No.

Q. Take the year 1928 and assume that the Company did retire the Randolph and Main Offices, as I suggested a 5596 while ago, and as I will prove later by Mr. Turner, and that it did receive 5 per cent and 4 per cent salvage. Can you tell me any reason why, since the Company's estimate of 20 per cent applied to a group of 34 offices in 1919 in which those two were included, you should not make your comparison on this exhibit for those two offices between the estimated and the actual? If the question is involved, Mr. Tholin, and you are not clear about it, I will have the reporter read it.

A. I think I probably grasp the question. I have tried to make clear that this exhibit is simply what it purports to be. It is the mathematics applied on the span of life.

Q. But if you had compared in a similar manner, in a manner similar to the comparison you have made here, for the year 1929, the company's estimate of 20 per cent which is applied in 1919 to the whole group of 34 offices, with the actual salvage recovered by the Company from the retirement of the Randolph and Main Offices in 1928, you would get a showing widely the other way, would you not, namely, that the Company had overestimated its salvage; it actually recovered less than the estimate?

5597 A. If I performed the mathematical computation you suggest, of course, it would be—

Q. Yes, certainly.

A. —in the reverse."

5598 In Exhibit 158, page 1, I make a comparison of the allowance which the Commission made in its order for maintenance and depreciation, with the amounts that the Company has actually charged for maintenance and the amounts it has actually accrued for depreciation.

At the bottom of the sheet in footnote "a" I have set out from the findings of the Commission, finding No. 11 on that point. The Commission found as follows, as shown on my exhibit, "That a fair allowance to take care of maintenance and retirement charges for said property in use as of December 31, 1922, is $7,869,400, and that this sum, plus $8\frac{3}{4}$ per cent of all additions and betterments will be sufficient and adequate to permit the Illinois Bell Telephone Company to properly maintain its Chicago property."

5599 The Company has offered in evidence in this case an exhibit to show what it considers the proper comparison between the Commission's allowance and its actual charges and accruals, and on the company's exhibit it appears that the Company takes as the basis of its computation the sum of $7,869,400, and adds to that sum 8¾ per cent of all net additions as shown in Exhibit A-59.

"Q. Now, in your exhibit, you do not allow the Com-
5600 pany, in your computations, the sum of $7,869,400 plus
8¾ per cent of additions and betterments, do you?

A. My statement explains exactly what I did allow.

Q. Well, all right, but the answer first is no, isn't it; you don't allow $7,869,400, and that sum plus 8¾ per cent of additions and betterments?

A. If you will change the last few words to net additions instead of additions and betterments—

The Court: Well, the exhibit does not say net additions, does it?

A. No, it does not say net additions.

A. I will answer your question no, generally. I do not think your question fairly states what I did, but I will answer it no.

Mr. Bracelen: Well, if my question was unfair in any respect, I want to correct it. Will you read my question for me, please?

(Question read.)

Mr. Bracelen: I don't think my question is unfair."

My point is that additions and betterments in the Com-
mission's order does not mean net additions and bet-
5601 terments, but does mean gross additions and better-
ments. By net additions is meant, gross additions less retirements, so that if a company were not growing at all, it would have retirements, of course, and would have gross additions, so that if in this case the Company, having plant and equipment in service on December 31, 1922, had not grown since that date, and continued to have eighty-five million dollars worth of property on its books, and continued to retire property and add property to take its place, I would
do just what I have done here, nevertheless, reduce the
5602 amount constantly upon which I would allow the Com-
pany 9.18 per cent that I figure out. The amount left at the end of 1930, of the original $85,000,000 upon which the Commission allowed the $7,869,000 for maintenance and depreciation is $25,000,000.

The difference between what I have done in this exhibit and what the Company did in its exhibit is this: That I re-

duce the Company's allowance made by the Commission upon
$60,000,000 worth of the original $85,000,000 worth of
5603 property from 9.18 per cent for maintenance and de-
preciation to 8¾ per cent. In other words, that is a
difference of 43/100 of 1 per cent on $60,000,000 against the
Company, as compared with the Company's own basis.

Redirect Examination by Mr. Goldstein.

According to this method which I followed here last, the calculation is intended to be on the basis that the Company would be allowed an expense of depreciation, the full amount put into the property.

5605 Referring to the situation covered by Exhibit X-185, Mr. Bracelen's illustrations are, in my opinion, very one-sided. There may be, no doubt, individual items in here that may work out something along the lines of Mr. Bracelen's computation, but there are others in the group that would probably work out opposite, and the average between the two, I could not predict what it would be, but I do not think, if it were worked out, that the average of all of it would be far from the real facts in the situation.

X-185 takes into account a growing plant, and takes into account the fact that there is included in the depreciation rate applied to the existing property a rate which is accumulating money to take care of the additions not yet placed in the property.

5606 With reference to the question of future additions to property, and the effect upon X-185, future additions, considered by Mr. Turner in determining his life, are included and have their effect upon these figures. If we excluded the future additions used by Mr. Turner and dealt with the property in existence at the end of 1930, the date of the valuation, the 36.44 average appearing at the bottom of Column 8 would be a little bit higher. It would be 43.95 per cent.

When I was asked by Mr. Bracelen to produce my work
papers, upon the basis of which I stated that in my opinion the
effect of using 2 per cent instead of 5 per cent salvage
5607 would be approximately 21 years (A-234), I wanted to ex-
plain that I noticed that all the facts were not on that
particular sheet, and that I had to locate additional papers.

When I was asked whether in my opinion, the purpose of the depreciation rate was to recover for the Company its investment in station apparatus less the junk salvage, and I answered that it was, I wanted to explain that in my opinion there was not anything wrong with my Exhibit X 183; that it purports to show the depreciation accounting as applied by the Company in determining its expense and as a comparison of the reserve, with the remainder of the investment after allowing for the various salvage figures that the Company makes allowance for in its depreciation rate.

5608 The salvage figures that the Company used in computing its depreciation expense for station apparatus, were 60 per cent in 1920; 65 per cent in 1921 to 1923, inclusive, and 70 per cent thereafter. In Mr. Turner's Exhibit A-128, page 33, on the lower part of the page is shown a chart indicating that the salvage on this type of equipment has averaged in the neighborhood of 75 per cent, during the period 1914 to 1929, inclusive, which is a higher per cent than the salvage rates that the Company uses in its depreciation expense. Mr. Turner made an explanation on this record that the figure used by the Company gave consideration to the lower salvage that the Company obtained on certain sets that were junked.

I think there is one principal difference which is quite material between the treatment by the Company of the station apparatus account with respect to retirements and with respect to the credits to the depreciation reserve, and its treatment of other items of plant. These instruments are 5609 removed from the subscribers' premises quite frequently, according to the evidence here, approximately once every four and one-half years on the average, and they go back to the Western Electric Company and are gone over, and anything that is wrong with them is repaired. If any parts are bad, they are removed and new parts put in, the old parts junked, and all of that expense involving the junking of certain portions is charged to maintenance expense; so that the station is kept up by that process and the Company considers that station, if and when it comes back, on about the same footing as a new station.

When station apparatus is taken out of service for the first time, the accounting procedure with reference to the depreciation reserve, and the plant account is as follows:

The station is removed from plant account at the average unit cost, and this amount is charged against the depreciation reserve. The reserve receives a credit for estimated salvage, which is based upon the then market price of the new station, less the supply expense and possibly some little parts that may not be recovered, which are lost. The station is then turned over to the Western Electric Company. That credit to the depreciation reserve for salvage in the case
5610 of the first reusal is about 92 per cent, according to Mr. Turner's testimony. *In the Company's depreciation* expense calculations, they figure for station apparatus 70 per cent salvage.

Re-cross Examination by Mr. Bracken.

The depreciation rate which the Company applies to station apparatus in accruing depreciation annually is a rate which is to provide for the loss to the Company for depreciation of the instruments, the difference between
5611 the original cost and whatever the salvage is that it gets.

It is not correct that Mr. Turner employs a salvage of 5 per cent in arriving at the depreciation rate which the Company applies. In determining his rate, he used 70 per cent salvage.

Three reuses, or four uses, are assumed by the Company. That is the basis upon which Mr. Turner has arrived at the depreciation rate that the Company has been applying recently. The rate for depreciation expense purposes is determined upon the basis of the life of the station in one location.

I do not agree that I know that on the average there
5612 are four cycles of life for each station, but that is what Mr. Turner said.

Assuming 70 per cent salvage at each location, except the last one, when the junk salvage of 5 per cent comes into the calculation, and assuming an average life in each location of 4½ years; you have the depreciation rate then determined by life and salvage in one location of 30 per cent divided by 4½ or 6.7 per cent as the annual rate.

During the life of the instrument in the first location, which is the original installation new, of the instrument, you will accrue on the average 6.7 per cent of the cost of the instrument over a period of 4½ years, and assuming that the cost of the instrument is $10 the credit will be approximately $3 for four and one-half years.

The cost of the plant removed at the end of the 4½ year period is the $10 instrument. That is the debit in the depreciation reserve account.

5613 The salvage recoverable at the end of that first four and one-half year period of use is 92 per cent of the $10, which is a credit entry of $9.20; so that at the end of the four and one-half years in the first location on the average you have credits, $3 and $9.20; debits, $10, or a net credit in your net depreciation reserve account of $2.20.

Now take the instrument new in its second location, you have $3 credit, as in the first case, $10 debit; when the instrument comes out at the end of that four and one-half years, salvage of $9.20, and a net credit for this second cycle of its life of $2.20, which carried over into the balance credit column gives us now $4.40 accrued in the reserve.

Now, at the third location you have exactly the same computation. You get a net reserve credit of $2.20,
5614 which has accumulated now at the end of the third life,
a total of $6.20 in the reserve.

Now, we come to the final service life of the instrument, the last period of four and one-half years, at the end of which time, according to Mr. Turner's calculation, the instrument will be finally retired and the junk salvage will be removed, and as already appears, the junk salvage has been estimated at 5 per cent, and the entries this time are accruals as before, $3, that is 6.7 per cent of $10 in the credit column. The instrument now finally goes out and is junked. You have a debit entry of $10. This item of salvage recovered is the 5 per cent junk salvage or 50 cents, the Company gets 50 cents back of this final junk salvage; so that the difference between the credit and the debit entries in the last location that we have just been talking about is $6.50. That is the net reserve charge, and, according to the computations we
5615 have made, that is $6.50 charged as against $6.60 credit,
or 10 cents discrepancy, which will be due to our failure to carry this out to the proper decimal point to make it come out even.

GEORGE B. McCANN, a witness on behalf of defendants, having been previously duly sworn, resumed the stand for further cross-examination by Mr. Thompson, and testified as follows:

Cross-Examination by Mr. Thompson.

(June 21, 1932.)

On Exhibit X-312 there are listed nine delays in furnishing information requested. They are all that are intro-
5616 duced.

In the sense that I have used it here, it is a delay if there is a lapse of time between the request and the granting of it.

I think it is quite obvious that our work was interfered with by these delays listed in X-312. If I am asked to do a certain thing and I have to wait ten or twelve days before I can start out, I am naturally that much behind. I do not know to what extent that might have been construed as "substantially" interfering with the work which we were doing with the Western Electric, but I do think they constitute some interference.

Mr. Hagberg, who was associated with me in doing this work, is now on his vacation.

5617 I am familiar in a general way with the work involved in the preparation of Exhibit X-35, which shows the shop variations to basic gross profits, plus and minus, and the other adjustments of the Western Electric Company.

I do not know it to be a fact that all of the underlying data from which that exhibit could have been prepared had been delivered to Touche, Niven by the Western Electric Company, because I personally did not work on it.

"Q. Now, if there is any dispute about that, I want Mr. Hagberg back, and I will put this other question. I will ask you if it is not a fact that at the request of Touche, Niven, and Mr. Goldstein, five men, employes of the Western Electric Company, who were here for the purpose of assisting the plaintiff in the presentation of its case, spent an
5618 aggregate of thirty days' time in assisting Mr. Hagberg in the preparation of his Exhibit X-35. Now, if he says he does not know, if there is any dispute about it, I want Mr. Hagberg back.

Mr. Goldstein: When Mr. Hagberg started to work on these questions of the shop variations, we got all the assistance that we asked for from the employes of the Western Electric Company, whether there were five men or two men or ten men or fifteen men, I do not know. But he stated from the witness stand that we got all the co-operation.

Mr. Thompson: We took five men, who were out here, to help do the work, and they spent an aggregate of thirty days' time helping you.

Mr. Goldstein: The record will show that those five men were sitting in the courtroom, and I asked Mr. Gregory
5619 whether they were all in the courtroom to assist in this case and he said yes, and those are the five men that Mr. Thompson turned over to us, I suppose. And if you want all the facts, it was from July until January 1st, that we kept on requesting until we got it.

Mr. Thompson: All right."

I was engaged in work in New York in the office of the Western Electric Company, in an office furnished for us, continuously between February 12th and February 25, 1932.

At the time I commenced this work, the Western Electric Company was on a five-day week, so that its employes were not working on Saturday. What happened was, that these records that we wanted were brought down to the room that we were given the use of, and there was a custodian, and we were permited to use the records in that room.

I believe it is correct that between February 12th and
5620 February 25th at our request, the Western Electric Company kept its office open on two Saturdays, one holiday and six nights in order to facilitate our work in the examination of these records. When I first went to the Western Electric Company in connection with these records, I knew that others were requesting and obtaining that information for the City of Chicago and the Illinois Commerce Commission, the defendants in this case. I did not know there were four sources altogether. I knew that there was pending in other jurisdictions, either confiscation or rate cases, in which the same question as to the Western Electric prices and their reasonableness was involved.

5621 It is possible that I knew that when requests were being made by four different people of the Western Electric Company, that there was always a chance that there would be a duplication of requests. I do not know what the fact is. I know that there were certain duplications that came to my attention. I do not know it to be a fact that the Western furnished information in this case, and the receipt of it was forgotten, and then weeks afterwards another request was made to furnish the identical information. I do not think it involves anything that I asked for. I cannot answer for the other parties, I do not know. I knew, in addition to that, that the Western had its own rather large business to attend to.

5622 In Exhibit X-312, referring to No. 9, which was the information I said was requested at noon one day and furnished at 10:15 the next morning, I wrote the following:

"The letter of February 12, 1932 requested certain information stated in that letter, and the notations at the bottom of the letter show the routine to get an answer to a simple request."

I do think there was a lot of endless red tape in getting this.

5623 The request of February 15th, analysis of average investment in operation, Bell and non-Bell business, seems to be the same request. A receipt from the Western Electric Company, which counsel for defendants has furnished shows that my request was received not at noon, but at 4:12 p. m. of the 15th day of February, and was supplied
5624 to us at 10:12 a. m. on the next morning. Those dates
refer to the time that Mr. Coles received the request. He did not receive the request directly from me.

I think that the notations on that particular request outline the procedure that was followed. The request was not in writing at the time we originally made it.

Referring to item 1 as it appears on Exhibit X-312, under date of December 29, 1931, we requested analysis of 1925 cost of sales and supporting details. In a letter that was written by Touche, Niven & Co. signed by Mr. Whitworth, this paragraph appears:

"In regard to the analysis of cost of sales for the years 1925 and 1930, all of which we have already been provided with a photostatic copy by Mr. Benjamin Goldstein, we
5625 should like to have the opportunity of examining the
breakdown or makeup of this statement when it is convenient for your officials to give it to our men."

On the same day that this letter was delivered, Mr. Gregory's men delivered to us the 1930 analysis of cost of sales.

"Q. On the same day Mr. Gregory called Mr. Whitworth personally on the telephone and told him that the worksheets and underlying data for the constructive analysis of the cost of sales of 1925 were available for your inspection at any time, called him on the telephone and told him that, didn't he?

A. I am not familiar with what conversation he may have held with him.

Q. And also told him that he, Mr. Gregory, wanted to use the underlying data of 1925 for two or three days,
5626 and that he assumed that Mr. Whitworth could go ahead
with the underlying data for 1930, and that when he finished with the underlying data for 1930, Mr. Gregory would gladly supply him the other.

Now, I am going to show you a letter dated December 30, 1931, from Mr. Gregory to Mr. Whitworth. You read the first paragraph of that letter and tell me if what I said is not true.

A. Yes.

Q. Yes, sir. That is the No. 1, that you are complaining of.

Now, let us see, first we gave you on the date you asked for it the 1930 analysis; secondly, on the same day Mr. Gregory telephoned to Mr. Whitworth, saying that all of this was available at any time, but that he, Mr. Gregory, wanted to use the 1925 analysis for two or three days, that is right, isn't it.

A. That is the statement in the letter.

Q. And the following day he confirmed it by letter. Now, that is not all that happened, is it? You know that on the 30th day of December, the day following this request, at your
application, Mr. Gregory sent Mr. Meason, one of the
5627 employes of the accounting department of the Western
Electric Company, he sent Mr. Meason to your room, where he worked with you a substantial portion of that day, a substantial portion on December 31st, and a substantial portion on January 4th, explaining to you the method by which this analysis of cost of sales had been put up?

A. He worked with me.

Q. Yes, sir.

A. I am not certain of the amount of time he spent with me."

In addition to that, January 1st was a holiday. That came on Friday. Saturday, January 2nd was a non-working day with the Western. Sunday was the 3d of January. I got
this folder, this second folder of which we are com-
5628 plaining, on the 8th of January. We had this second
folder available for our inspection for twenty-six days
after it was delivered to us, and the other folder for twenty-six days, plus the interval elapsing between December 29th, and January 8th.

"Q. Now, I have got these two folders in the court room. What was your purpose in wanting to inspect these folders?

A. Mr. Goldstein was supplied with two photostatic copies of analysis of cost of sales for the year 1925 and the year 1930, and we made an examination of this underlying data to see what data the company had underlying the preparation of these two photostats."

Our purpose was to find out the method that the company had used, a general scrutiny of the records to see what was there. Particularly we wanted to know the method. We had instructions to that effect.

These had been specially prepared by Mr. Gregory. In other words he had been requested in Michigan to build up a constructive analysis of cost of sales for the year 1930, and he had been requested, in Ohio to build up a constructive analysis of cost of rates for 1925.

5629 I believe it is correct that those were not papers that Mr. Gregory had prepared his exhibits from, that had been introduced in Ohio.

The most of what we were after in this case was to ascertain the method, and to take whatever fact we could get from the papers.

"Q. I want to know whether you took a single fact off those records in those two constructive analyses of cost of sales?

A. I may or may not. Many—

Q. You may or may not. You are complaining of it. I want to know whether you did or did not. Not what the possibility is. What is the fact.

A. I cannot answer that; I do not know.

5630 Q. Isn't it a fact that after all these statements, you still want to stand you still want to maintain before this court that you were inconvenienced in the slightest by any delay that you now claim with respect to item No. 1?

A. "If you had furnished the 1925 cost of sales, we would have used it generally with the 1930 cost of sales."

There was no particular reason for not bringing in Mr. Gregory's letter of December 30th, which had that explanation in it. It was not purposely left out.

I do not see that that makes the slightest bit of difference on the question of delays, that Mr. Gregory had telephoned to Mr. Whitworth and told him that the company wanted to use this for a few days and then it would be furnished to him.

5631 If you put it that way, my position is, when I want anything, I want it, and without respect to the convenience of the company that it is used in other matters, my position is that it was to be delivered to us immediately.

"Q. All right. I am glad to get your viewpoint.

Mr. Haight: Of course, our view is, in view of the long delays that we participated in, that immediately was not soon enough.

Mr. Goldstein: Particularly in view of our promise to start on February 15th in this case.

Mr. Thompson: We will discuss that when we meet it.

Q. Now, I want to take it up No. 7 on this list.

The Court: In other words, they should have furnished it sooner than immediately?

Mr. Goldstein: From July to December we could not get anything, and we were after something.

I do not know when Mr. Goldstein got these photostatic copies.

5632 Mr. Thompson: I will ask you if it is not a fact that the photostatic copies which you are talking about that you had were in the possession of Mr. Goldstein from October 6, 1931 until the date when you made this request, and they were forwarded to you October 6th, and they were forwarded to you: October 6th, November, December, two and one-half months?

A. I do not know when Mr. Goldstein received them."

It may or may not be true that item No. 7, under date of April 8, 1932, a request for adjustments made to net profits to obtain net income in federal income tax returns, was not a request for inspection but one that the Western Electric Company compile the information for us.

5633 (Counsel reads from letter of request dated April 8, 1931 as follows:)

"In connection with our examination relative to the Chicago rate case, will you kindly furnish us with the following information:

"'1. Total federal income taxes paid by the Western Electric Company, Inc., and subsidiaries, applicable to each year of the period 1916 to 1931, and showing also by years how the total tax has been apportioned among the separate companies;

"2. Federal income tax charged to profits, by years, by the subsidiary companies of the Western Electric Company, Inc."

That is the request we made. As to whether it calls for any work on their part, I do not know. There are a lot 5634 of things that a corporation prepares itself that it could just turn over to me. I understood it did require work. At least, I was told it required work.

"Q. Yes. That request was delivered to the Western Electric Company on Friday, and on Monday morning, April 11th, you were advised definitely that the preparation of the material which you had requested involved considerable work?

A. I was advised that it required work. I do not know how much work."

I do not recall what I was told at the time. As a matter of fact, the thing that we requested involved not only the Western Electric Company, but when it was furnished to us, it also involved the Manufacturers Junction Rail-5635 way, the Hudson Street Corporation, the Electrical Research Products and its foreign subsidiaries, the Electrical Discount Corporation and the Graybar.

In so far as those corporations had been in existence, the information was furnished us for the entire period 1916 to 1930 or 1931. When we got that, we weren't done then, there were a couple of questions. I believe it is correct that this statement was delivered on the 19th, and on April 22nd, the Western Electric Company furnished us additional information on this subject matter in response to our oral request.

An additional statement was furnished to us in answer
5636 to further oral questions which had been raised by us.

Finally, on April 28th, Mr. John Burgess explained certain data on this subject to our Mr. Loutit, a man who was working under my supervision and direction, and assisting us on this job. Under those circumstances I still claim that there was a delay with respect to that. We have a claimed delay with respect to the Consolidated balance sheet. That request was made by us on January 27, 1931, and the data was furnished to me on February 11th. I do not know if it was furnished to Mr. Goldstein also. I do not recall whether Mr. Goldstein was there when it was furnished.

5637 I assume that by letter of December 19, 1931, Mr. Bracelen wrote to Mr. Goldstein in part as follows:

"I am enclosing you herewith the following exhibits, which we propose to offer in connection with the testimony of Mr. R. H. Gregory, comptroller of the Western Electric Company:

"Consolidated earnings of the Western and its subsidiaries for the years 1916 to 1931, inclusive. This is a new exhibit."

It was the date back of this exhibit about which I am now claiming a delay. The next to the last paragraph in this letter is as follows:

"We are having the figures for 1931 appearing on Exhibits 1, 2 and 5, and all the figures appearing on 3 and 6 carefully audited and checked."

The letter also says:

"I do not believe there will be any major changes, but as soon as this work of auditing and checking is completed, I will advise you definitely as to the result."

5638 I did not know of that letter when I made this request.

A letter of February 11th from Mr. Bracelen to Mr. Goldstein, the same date that I made my request is as follows:

"Dear Sir: On December 19, 1931, I sent you six exhibits which we propose to offer in evidence in connection with the testimony of R. H. Gregory, comptroller of the Western Electric Company. I advised you at that time that we were having the figures for 1931, appearing on numbers 1, 2 and 5, and all the figures appearing on No. 3 and 6 carefully audited and checked, and that as soon as the work was completed I would advise you definitely as to the results. This

work has just been completed, and no changes are indi-
5639 cated as a result of such work, except with respect to No. 3, which is the consolidated earnings statement of the Western Electric Company and its subsidiaries for the years 1916 to 1931, inclusive. I am enclosing a new exhibit for such consolidated earnings, which gives effect to the revision."

I did not know about that letter. The result was, that I made a request of the Western Electric Company on the 27th of January.

It seems to be correct that counsel for the City of Chicago knew if the Western told the truth about this matter, that the underlying data which I was applying for at this time was being examined and checked and audited, and that as soon as that was finished, plaintiff's counsel would advise whether the figures appearing on a statement that had been submitted in December were correct or otherwise. It also appears to be correct that he also knew that if the Western told the truth, the work in doing that had been finished on the 11th day of February, the same day that I got this underlying data.

5640 "Q. If that is true, do you withdraw your claim of delay?

A. I do not see how that affects me. I think that is up to counsel to decide whether to withdraw it or not.

Q. I see. I want to get this definite because I think it is important.. If you made a request which you put in your exhibit and claim that delay resulted from it, and that you were impeded in your work, and you found out before your request was made, that a statement affecting the subject matter was delivered to counsel for the City of Chicago pursuant to whose directions you were working, and counsel was advised that auditors were engaged in checking the accuracy of those statements and using the underlying data, and if that was perfectly true, and if the minute that that was finished, these books were turned over to you for your inspection, you would still claim delay.

A. Well I think that is an argument for counsel."

5643 If I knew that the Western Electric Company, because of this litigation, had employed a firm of outside accountants to audit this consolidated balance sheet, and that they were engaged in working on it, and that our counsel

had been advised of that fact before I made this request, I think my statement stands as it is. I still insist I think it is a matter of argument between counsel. I do not
5644 want to become a party to the controversy. My viewpoint about it is that I would have liked to have received the information sooner than I did. I could have made use of it. I still say that, under those circumstances, I claim a delay for which in my opinion the Western is responsible.

Referring to numbers 4 and 6 on my statement, relating to two requests in which we desired the Western to make an analysis for us of principal items appearing on the Products Company No. 1 report for the year 1930, net operations; and in a later request, for the years 1927, 1928 and 1929. I don't know whether they had to get it up or not.

"Q. Well, they told you that they had to get it up, didn't they?

A. I think that is beside the point."

The company has a lot of statements—I am not in a
5645 position to know whether they have those statements prepared in the normal course of their business or not. They eventually gave the information to me.

What we asked for was "Analysis of principal items appearing on Products Company No. 1 reports." We had the report, but it meant very little to me. I wanted a breakdown on it.

Before the time I made this request, I had been advised that I could have the right to inspect all the books of the Electrical Research Products.

There were many reasons why I could not have done this job myself. To do the work myself would involve an
5646 audit of the Electrical Research Products. I was not making any audit of the Electrical Research Products.

"Q. What you wanted—and it is true time after time, isn't it, Mr. McCann—what you wanted was that the Western should do your work.

A. Not necessarily."

5649 Exhibit A-235 is the information which was furnished
5650 to us in response to requests 4 and 6. I knew, or was advised by the Western Electric Company, before these papers were prepared, that the information was not available in the form in which I requested it, without work, and that it would take a substantial time to prepare this statement.

In connection with the request No. 31, the request for the basis for the price paid for Teletype Corporation, was made by me February 3rd. When I made that request I did not know that Mr. Gregory had testified in Ohio, in the Ohio record, as to the basis of the price paid for Teletype
5651 Corporation. I knew Mr. Goldstein had the Ohio testimony, but I did not know what it covered, and I did not know when it was furnished. There was a misunderstanding between Mr. Gregory and my firm about the letter of April 3rd, with respect to Item No. 8. There was a conversation between Mr. Gregory and myself in which I said that I would rephrase the questions that were stated in my letter of February 3rd. I do not know that I told him he could disregard the letter. I repeated almost verbatim every request contained in the letter of February 3rd, in the letter of February 8th, and then added three additional requests.

5652 I do not recall when I had the conversation with Mr. Gregory and I cannot say whether he could have easily understood from that conversation that these requests were not to have been answered until he got my additional letter. My impression is I did not receive any response to the letter of the 3rd, and that was the reason for the letter of the 8th.

There was some further misunderstanding about item
5653 8, I think I had tried to explain it to him. There seems to have been a misunderstanding about it.

As to No. 5, pertaining to a request for plant depreciation rates, Exhibit X-312, states "Number of the employes of the Western Electric." My letter of February 11th, making this request, is as follows:

"Data relative to the number of employes of the Western Electric Company, years 1916 to 1930, in so far as available; the number of new employes and releases or retirements in each year and the number in service at the end of each year."

I believe I was told it would take time to prepare this information about the separation of the Western Electric employes and the number of employes in service at the end of the year.

5654 (Exhibit A-236 was marked for identification.)

Exhibit A-236 is the sheet that was prepared and delivered to me.

I believe the Western Electric Co. furnished it to me when they finished it.

5655 R. C. RAINWATER, a witness on behalf of defendants, having been previously duly sworn, resumed the stand for further cross-examination by Mr. Thompson, and testified as follows:

Cross-Examination by Mr. Thompson.

(June 23, 1932.)

The only exhibits which have been identified during
my direct examination that relate to the Western Electric
Company are Exhibits X-293, X-294 and X-295 and Exhibits
X-296 and X-297 and X-298 carry some percentages show-
ing the return on investment from the capital stock
5656 of the Western Electric Company. They are based
particularly on X-294. X-294 is more than a list of the
investments of the American Telephone & Telegraph Com-
pany in the capital stock of the Western Electric Company
from November 17, 1915, to December 15, 1930. It shows
figures in X-293 computed on an average yearly investment
and the dividends received are related to this yearly aver-
age investment.

5658 I do not know whether X-294, the column showing
yearly investment, represents the original dollars of
investment of the A. T. & T. in Western Electric Company. I
know only that I have taken the figures which were furnished
to me designated as X-293 and made a computation of the
average investment yearly and related that to the dividends.
I have no knowledge as to whether these amounts actually rep-
resent the original investment. The figures in the column
headed "Average Yearly Investment" are the ones
5659 shown on X-293. In X-294 I am figuring a return on
the dollars originally invested in the Western Electric
5660 Company by the American Telephone & Telegraph
Company as shown in Exhibit X-293.

5661 If I started in 1916 with $100 invested in the West-
ern Electric Company, and that was represented by
one share of common stock; from 1916 until 1930 the com-
pany earned money which it did not distribute, and $900 of
that money was applicable to my one share of stock, and, in

1930 the company earned $100 applicable to my share of stock, my exhibit X-294 would show the rate of return on my share of stock at 100 per cent.

On Exhibit X-294 I have included, in the year 1927, under the column, "Dividends received," a dividend in excess of $45,000,000 paid by the Western Electric Company to its stockholders. These exhibits (X-294 and X-295) attempt to show the earnings of the Western Electric Company in its total business, not in its Bell business alone.

5662 After I have arrived at the yearly dividend to the company on X-294, I then convert that, by the method which I explained to Mr. Blackman in the last column, so as to show a larger return to the stockholders than to the company. So that, for instance, in the year 1927, when the $45,000,000 dividend is included, the return to the company, as I figure, is 101.91 per cent, and to the stockholders 161.16 per cent.

5663 The Western Electric Company of Illinois sold its total assets to a reorganized corporation, the Western Electric Company of New York, at the end of 1915. Before that sale, the Western Electric Company of Illinois had a capitalization of $15,000,000 of common stock of the par value of $100 per share. When the New York corporation was organized, it issued $15,000,000, 6 per cent preferred stock, callable at $120. It also issued 150,000 shares of no par common stock.

5664 Assuming that the book value of a share of stock of the Illinois Corporation was $300, what the shareholder had on the date that this transfer was made, was one share of stock that was worth around $300.

When the preferred stock was redeemed I have treated the $15,000,000 of redemption as a cash dividend.

5665 I do not know the details of the organization of the New York corporation. I was asked by counsel to prepare this Exhibit X-295 on two bases. One, to treat the $21,000,000 as an amount of dollars received, included with the dividends, and the other basis, to treat it as an exchange of stock. That is all I have done with it.

The only facts on which I included "Basis I" were these: I was directed by counsel to show it in this way. I knew that in November, 1915, that there was one share of common in

the old company exchanged for one share of common
5666 and one share of preferred in the new. Some of the preferred stock is referred to in my exhibits as bonus stock. It is not all bonus stock.

When the Illinois corporation sold its assets in November or December, 1915, to the New York corporation, it had $15,000,000 worth of common stock of par value of $100 per share; when the New York corporation was organized, it was organized with a preferred stock issue of $15,000,000, 6 per cent stock, callable at $120, if called before its due date, and 150,000 shares of no par common stock.

If I owned a share in the Illinois corporation, we will
5667 say, that had a book value of approximately $300 a share, I got one share of preferred and one share of no par common in the new corporation. Of course, my new common stock was worth less than my old common stock, because it had a preference stock ahead of it. When they redeemed that preferred stock, on one of these bases, I have treated that as a cash dividend. My explanation as to what I was trying to show is that I was asked to show the return on the original capital of Western Electric Company. I am experienced in rate matters.

5668 As to what I expected the court to do with it when I got it up, I really did not give very much thought to the purpose of what it would show. I was merely asked to prepare the computations, and I did it, and that is all. I felt my responsibility in that ended there. If I subjected the Western Electric Company to the same rule that I apply to public utilities, the test would be, what is the reasonable return on the value of its property in a given year.

Referring to page 4 of Exhibit X-295, by following
5669 my method (Basis I) on the redemption of this preferred stock, I get a return of 296 per cent in the year 1920. Without converting it for the yield per share outstanding, I get 328 per cent. That is all on account of this redemption. Likewise on page 3, in the year 1920, the per cent of dividends paid becomes 67 per cent on account of this transaction. On page 15 of Exhibit X-295 in the year 1927, the year when the special dividend was paid by the Western Electric Company I get 469.15 per cent, as shown in column 13.

5670 Page 10 of Exhibit X-295 refers to common stock issued December 2, 1929, which stock was issued for cash. It was issued on December 2d, and there was a dividend declared of $2 a share, $1 being a quarterly dividend and the other was a special dividend, and because the stock was issued in December, I have figured the annual dividend at 60 per cent, based on a period held, of one month. The same is true of page 11 of this exhibit, except that the figures are different, being based on period held.

5671 I do several things on pages 12, 13, 17 and 18 of Exhibit X-295. First, I classify the issues of stock by years or by periods of time, when it was issued. The classification is shown in the preceding pages, the same items. I find returns on an original issue of 70 per cent; on the common stock of 1920 of 17 per cent; on the common stock issue of 1922 of 47 per cent; on an issue of 1928 of 2/10 of 1 per cent; and then I get down on the next page as low as minus 19 per cent. What I tried to show here is to make a computation as regards the individual issues, to show that the book values of the separate issues, that is, the net assets applied per share to each issue at December 31, 1930, are more or less than the capital at the beginning of the period, and then in connection with that I have taken the dividends received during the period. In other words, I tried to show here as to whether the dividends during this period came from earnings during the period or whether they came from sur-
5672 plus of the prior period. That is what I tried to show here.

In Class 1, "Original issue of stock prior to 1916," page 12 of Exhibit X-295, the average investment that I have there, of $5,995,000, is the original investment in the stock of the old Western Electric Company of Illinois, most of it put in, back in 1881, 1882 and 1883 and the other early years.

5673 The book value of this stock on January 1, 1916, was $40,000,000. The process that I followed is briefly this: These people put their money into this corporation back in 1881 and 1882 and 1883 and 1884, and the other early years, a total of a little less than $6,000,000. By leaving the earnings in the business, when the New York corporation was formed; this stock had a book value of $40,000,000. From 1916 on down to date, substantial portions of the earnings have been left in the business, so that the book cost is now

$180,000,000. These earnings that I have got here are for the period 1916 to 1930.

It is not exactly correct to say that I have related earnings made in 1930 on a book investment of $180,000,000, to an original investment made in 1881 and 1882 of $6,000,000.
5674 The fact is that the $180,000,000 refers to all of the stock, and this is just the original issue of the stock; that is, the stock issued prior to 1916. Whatever earnings or whatever portion of the earnings is applicable to that stock, I figured it on the basis of its original cost, and not on the basis of any participation whatever in the undistributed earnings as left in the business. And then I take up each issue, and I find that the earnings range from 70 per cent, down to 49 per cent minus.

5675 I have sheets that are identical, so far as the set up by classes are concerned, but on page 12 I have a return of 70.96 on this original issue, and on page 17 I have 107.65 per cent. The difference is due entirely to the difference in the treatment of the basis 1 and basis 2. In basis 1 I have included the $24,000,000 as a cash dividend, and in basis 2 I have treated it as an exchange of stock, and in basis 2 I have a much larger number of shares of common stock at the end of the period, because of various split-ups. On one
5676 theory, I get 70 per cent and another theory 100 per cent, because in one of the exhibits I am treating this redemption of preferred stock as a cash dividend.

On basis 2 I treat the redemption of this preferred stock in reality as an exchange of three shares of preferred for two of common. I know in a general way what happened.

On the 19th day of February, 1920, the Western Electric Company had outstanding $30,000,000 par value preferred stock, 6 per cent, callable at 120, which would mean $36,000,000 for the purpose of calling that stock. Practically all of that preferred stock was owned by the American Telephone & Telegraph Company.

5677 It had a small minority interest in this common stock, so that on that day it offered for sale 200,000 shares of its common stock at $180 a share, under the law it was offered to every stockholder, that is the minority interest had the same right to participate in that as the American Telephone & Telegraph Company.

The A. T. & T. acquired its entire proportionate interest in the common stock that was offered to it on the same day. The net result of that was that when it was all through, the Western Electric Company in substance had exchanged its outstanding preferred stock for new common stock. It was a reissue, and a rearrangement of its capital structure.

5678 In connection with that transaction, on one basis I treated this as a cash dividend to the amount of $21,000,000 in these exhibits. I was asked to prepare it on both bases.

5679 *Redirect Examination by Mr. Goldstein.*

On page 19 of Exhibit X-295, entitled "Earnings available for Common Stock related to Capital Stock and Surplus, based on Averages per Year," I show the earnings of the Western Electric Company related to the capital stock and surplus. That is all the earnings of the Western Electric Company as shown in the annual report. The other sheets on Exhibit X-295 deal only with the portion of the earnings which represents cash taken out from the Western Electric Company related to the cash put in.

Exhibit X-293, which is entitled "Investment in Capital Stock of Western Electric Company, Inc., from November 17, 1915, to December 31, 1930," is a copy of what counsel for defendants furnished me.

5680 Except for what was given me, I have no knowledge of the correctness of the figures shown on the first line, November 17, 1915, number of shares, 146,050 common, price per share $46.08, cost $6,729,710, and so forth, and also on the second line which appears on that sheet.

5681 "Mr. Thompson: That is all. The plaintiff objects to the introduction in evidence of Exhibits X-51 and X-52 for each of the following reasons.

The Court: Well, what is that?

Mr. Thompson: My objection will give your Honor what is shown in this exhibit.

It is admitted by Mr. McCann, who testified with respect to these exhibits, that he has deducted from average investment of the Western Electric Company, notes payable by the Western Electric Company to the trustee of its pension fund to the American Telephone & Telegraph Company and others, aggregating many millions of dollars. It is likewise admitted that he has deducted from average investment in these two exhibits, claimed excess cash as testified to by him.

It is also admitted by Mr. McCann that he has not decreased the profits on account of interest paid by the Western Electric Company with respect to its notes payable, so
5682 excluded by him in average investment, or with respect
to such claimed excess cash items.

Notwithstanding these facts, there appear on these exhibits for each of the years 1916 to 1930, the column headed, "Per cent return on Average Investment as adjusted (before depreciation)."

The exhibits are, therefore, not only of no aid to the court in the solution of any issue involved in this case, but do not represent the facts and are misleading.

To make the same objection to Exhibits X-84 and X-85, except that the excess cash item referred to in the preceding objection does not apply.

The plaintiff also objects to the introduction in evidence of Exhibit X-79; that is the exhibit that relates to the 309.4 per cent earnings of the Electrical Research Products, because it has been demonstrated to proceed on a fundamentally unsound and incorrect theory, and the results shown are contrary to facts.

Mr. Goldstein: Now, counsel evidently misunderstands X-51 and X-52. X-51 and X-52 are merely the exhibits which
are a series of exhibits which we have used to lead up to
5683 the final conclusion, and these exhibits were prepared
in view of the suggestion of his Honor as to what is the effect of a different kind of adjustment. And X-51 shows the adjustment—shows the effect on Mr. Gregory's exhibit, on the rate base adjustments. And then we have the exhibits which show the effect of the profits, and then we tie the two together and we give his Honor the final exhibits which we said should be the exhibits to use. And these exhibits are merely to contain the effect of the particular adjustments, and as stated in X-51, very clearly, they take the net profits per Mr. Gregory's exhibits and adjust the rate base, and show the effect of the adjustments on the rate base related to those profits. We have the other set of exhibits which relate—which take the rate base as Mr. Gregory used it, and show the effect of the profits.

Now, that is what these exhibits are intended for, and we so stated at the time.

Now, the same comment will cover X-84 and X-85.

As to X-79, we take issue with counsel that X-79 was prepared on the wrong basis. Just so that counsel will 5684 understand something that he has not stated, that the necessary consequences of counsel's conclusion that you must include the loans of the Western Electric Company as part of the rate base, would necessarily involve the conclusion that the Western Electric Company earnings would not show the earnings merely on the basis of loans, but would show the full earnings on the basis of investment.

Now, that is a matter of legal argument. This exhibit was prepared on our theory of the case. It is there. If counsel has any other legal theory, he has his facts. We claim his exhibits are just as unsound on his theory as he claims that ours are on our theory. We both claim they are sound.

Now, your Honor, that is the contention of each of us.

Mr. Thompson: I have one more thing to say about Exhibits 51 and 52. I will not say anything about X-79.

Here is this extraordinary situation, your Honor: It is admitted by Mr. McCann that in these exhibits he has failed to reduce the earnings by about $16,000,000. Now, the result is, we have an exhibit in this case where he takes out 5685 from one side the investment, and fails to make a corresponding reduction in the earnings. He does not stop there. If he had stopped there, that would be another thing. And then he comes over here and attempts to put up, on a theory that no one can justify—

Mr. Goldstein: He can. We can.

Mr. Thompson: —a percentage return—a percentage average return as adjusted.

Mr. Goldstein: We can justify it.

The Court: I think I will do this about these exhibits. I will receive them in evidence; but the court will require that as to each of the exhibits to which objections have been made here today, that when the exhibit is printed into the record, the objection of counsel should be printed on the exhibit in some way so that the court will have before it the criticism which is revealed at the exhibit.

Mr. Thompson: That is fine.

The Court: I think they should go in, because from the standpoint of the plaintiff itself, if half of what is said about this is true, and the court should agree with you in the end, it has a very serious bearing upon the weight which is to be given to all of the testimony of the witness who would 5886 do such a thing.

Mr. Goldstein: Yes.

The Court: So that I think the exhibits should go in with the objection revealed, the objection leveled at it in conspicuous form, so that the court will have just what this accountant has done and he will have the objection which is made to his work, so that they may have the benefit of the so that the defendants may have the benefit of it in the end on the argument in the case, that he has proceeded on an entirely fair and rational basis, the defendants will have the benefit of that when it comes to consider his testimony. If it appears that he has brought an exhibit in here on an utterly foolish theory, that has a bearing upon the weight that is to be given to all of his testimony.

Mr. Haight: May not the defendants also have their theory accompany the exhibit as well as the objection?

The Court: I would say I am not making it as to all of the exhibits.

Mr. Haight: No.

The Court: Just as to the one exhibit.

Mr. Haight: I said only as to these specific exhibits.

5687 The Court: Yes, I think that is fair. In connection with the exhibit, there should be printed what counsel has said in objecting to it, and what Mr. Goldstein said in defending it here this morning. I have no doubt that the attorneys who have charge of this work can agree upon the legend which is to be made on the exhibit.

Mr. Bracelen: Your Honor, I take it that the same instructions of the court will apply to all exhibits, as well as particular exhibits.

Mr. Thompson: Where objection is made.

The Court: Where specific objection is made. I have no quarrel with that way of handling it. It would be very convenient for the court to know if there is some particular point which is made against an exhibit, that it omits an essential element or something of that kind, to have it on the exhibit, or in the abstract immediately adjacent to the exhibit in such a way that the court will not have to go all through the record to find it; for instance, a criticism which is made upon a heading here, average adjustment.

Mr. Thompson: I think that is a good suggestion.

The Court: Now, the criticism is made that it is 5688 unwarranted by any evidence in the record. Now, those exhibits should be so printed and the abstract should be so prepared that it will be brought to the court in such a way that its attention will be challenged, and they will not treat the objection on any other basis than that which is claimed for it, and when we come to consider the exhibit, we will have the point that is made against it in mind, and the justification for it. You can work that out."

5690 J. G. WRAY, called as a witness herein, in behalf of the defendants, being first duly sworn, was examined in chief by Mr. Haight, and testified as follows:

Direct Examination by Mr. Haight.

(June 22, 1932.)

My name is J. G. Wray of J. G. Wray & Company, and I am the same J. G. Wray who testified on the hearing in this case in 1929. I then stated my qualifications and my experience. I am still engaged in the same profession and occupation as that in which I was engaged when I then testified.

I have investigated the sales of the Western Electric Company to the Bell System customers in connection with the question of whether each Bell associated company purchases a representative or fair cross section of the equipment, apparatus and materials manufactured by the Western Electric Company for the Bell System companies. I based my study of this cross section of Western Electric sales in part, on certain data furnished by the company in the form of 5691 statements purporting to show sales of important telephone plant items of Western Electric Company manufacture, quantities sold to Illinois Bell and to total Bell System for the period 1924 to 1930, inclusive. These were the data and studies which Mr. Gregory testified showed that the Illinois Bell purchased a fair and representative cross section of the Western Electric Company sales to Bell System companies. This data was furnished by the company in the form of two tabulated statements; one being for the entire period, and this was furnished to Mr. Goldstein several weeks ago. The other was for each year of the period 1924 to 1930, inclusive, and was furnished to me by Mr. F. B. Wright of the Western Electric Company, in the latter part of May. I have prepared an exhibit to show the data.

Defendants' Exhibit X-313, entitled "Illinois Bell Tel. Co. —Chicago Rate Case—Analysis of Sales 1924-1930 to Illinois Bell Tel. Co. and to Bell System of Important Plant Items of Western Electric Manufacture," consisting of three pages shows the following: The first page is the table of
data purporting to represent sales of important tele-
5692 phone plant items of Western Electric manufacture to
the Illinois Bell, and to the total Bell System in the
period 1924 to 1930, inclusive. It is a copy of the table furnished to Mr. Goldstein.

The second table or sheet in the exhibit is the one furnished to me by Mr. Wright of the Western Electric Company and purports to show the sales to the Illinois Bell and to the total Bell System for each of the years 1924 to 1930, inclusive, these sales being itemized, as in the first sheet of the exhibit, excepting for the fact that for several years of the period, cable terminals are shown as two different items, the items representing separate codes. Loading coils are shown for most of the years as three separate items, and lead-covered cable as two separate items, these three classes—cable terminals, loading coils and lead-covered cable—being grouped on sheet 1 in totals only. There are seventeen plant items listed in the first table. There are twenty-one items
listed on the second table.

5693 What I said a few minutes ago explains the difference
in the number of items in the two tables. Mr. Gregory
has testified that the Western Electric Company manufactures over 100,000 items. From my experience, I know that it runs into many thousands. These tables, 1 and 2 of Defendants' Exhibit X-313 do not represent all of the items of Western Electric Company manufacture. They do, however, represent some of the most important items being currently manufactured,

Referring to the first page of this exhibit, we
5694 find the item, "Large multiple sections." The data on
the table shows that 1,082 of these sections were sold to

the Illinois Bell Telephone Company during the period, and that 10,221 were sold to the Bell System during the same period.

Now, a large multiple section of central office switchboard, and this is what it means, includes many different kinds of items, going to make up the 100,000 or more that Mr. Gregory testified to. There is section framework; there are jacks, lamps, lamp sockets, relays, cables and so forth, in great variety; and so, with each of the other items in the first group, labeled switchboards. In each of the other groups there are at least a number of items going to make up, what is characterized as an item, in the exhibit. For example, subsets in the second group of items, sub-sets 534-A, 584-A, 534-C, 584-C, 534-AC, 554-AR, 554-C, 534-AR represent a corresponding number of types of subsets. There are, however, many more than those listed.

Referring to each of these items that appear on these
5695 tables, generally speaking, they consist of a great plurality of items, and then each item in itself will consist of a plurality of parts. For example, the switchboard jack has a number of parts. The switchboard section has a number of separate parts, pieces of iron, screws, bolts, pieces of wood of different sizes and shape, all go to make a switchboard section when assembled.

Now, the term "Large multiple sections," is here made to include more than the switchboard iron and woodwork constituting the switchboard frame. It is made to include the apparatus that goes with the switchboard section.

In table 1, Defendants' Exhibit X-313, we are to look in the last column of page 1, where there is a list of percentage figures to get the final facts on which to pass upon the question of whether or not a representative cross section is shown.

The percentage in each line represents the per cent of manufacture of the important items listed, the manufacturers of Illinois Bell, the sales to Illinois Bell of the total
5696 sales to Bell System during the period, and we find, referring to the last column on page 1, that during the period, the Illinois Bell took, or purchased 10.6 per cent of the total sales to Bell System of the large multiple sections; 5.1 per cent of the small multiple switchboards; 11.6 per cent of the 550 and 551 types, and going down the page further to

dials used in the automatic system, either the step-by-step or the panel type, we find that during the period the Illinois Bell purchased 5.5 per cent of the total sales to the Bell System.

Based upon the showing in this table 1 of Defendants' Exhibit X-313, I have an opinion as to whether or not the sales to the Illinois Bell are a representative cross section of the sales of the Western Electric Company to the Bell System for the period 1924 to 1930, inclusive.

In my opinion, these data show that the sales
5697 to the Illinois Bell are not a representative cross section
of the sales to Bell System during the period, 1924 to 1930.

Step-by-step lines comprise a very considerable proportion of the Western Electric sales to the associated companies of the Bell System. The Western sold no step-by-step equipment for the Chicago area during the period 1924 to 1930, for the reason that that area is served by panel type and manual equipment, and the step-by-step equipment is not used in the Chicago area, nor in other large population centers like Chicago.

The data on table 2 of this exhibit shows for each year from 1924 to 1930, inclusive, the total sales to the Illinois Bell, the total sales to the Bell System, and the per cent representing the ratio of sales to Illinois Bell to sales to Bell System for each year, for each item.

5698 Taking the year 1924 as an example, and the first
item, large multiple sections, we find that the Illinois Bell purchased 157, and that the total sales to Bell System were 2,402, and that the Illinois Bell purchased 6.5 per cent of the total sales to Bell System.

Now, going across the line to the right, we find that in 1925 the Illinois Bell purchased 13.3 per cent of the total sales to Bell System of this item; in 1926, 4.2 per cent; in 1927, 12.5 per cent; in 1928, 45.3 per cent; in 1929, 3.5 per cent, and so on.

Again referring to 1924 and reading the percentages from the top item down, we find that whereas the Illinois Bell purchased 6.5 per cent of the large multiple sections, it purchased 7.1 per cent of the small multiple sections, none of the 550 and 551 type, none of the 505 and 506 type, 6.6 per cent of the panel lines, 2/10 of 1 per cent of the step-by-step lines, 12.7 per cent of the 700 and 701 P. B. X.'s, none of the 740 P. B. X.'s, none of the 750 P. B. X.'s.

Now, in passing, I want to say that the 2/10 of 1 per
5699 cent of the step-by-step lines were for the state area
and none for the Chicago area.

For the year 1924, out of total sales to Bell System of the side and phantom loading coils, amounting to 105,959, the sales to Illinois Bell were 3,831, or 3.6 per cent.

Now, reading down the column, the sales of the non-phantom coils to the Illinois Bell amounted to 7.6 per cent. There were no sales of the carrier loading coils. And then the total of all loading coils sold to the Illinois Bell in this year was 5.5 per cent of the total sales to the Bell System.

The step-by-step lines are the sixth line on both the first sheet and the second sheet of this exhibit.

Sheet 1, for the period 1924 to 1930, shows the sales to
5700 the Illinois Bell were 2.4 per cent of the sales to Bell
System.

Referring to the second sheet of the exhibit, the sixth item, step-by-step lines, we find that sales to Illinois Bell in 1924 were 2/10 of 1 per cent; in 1925, 3.1 per cent; in 1926, none; in 1927, 4.2 per cent; in 1928, 3.2 per cent; in 1929, 2.9 per cent; in 1930, 2.2 per cent, and I will add that during the period there were no sales of this type of equipment for the Chicago area.

These percentages on table 2 represent the per cent of sales to the Illinois Bell to the sales to the total Bell System for each year, and those on table 1 for the entire period 1924 to 1930, inclusive.

Having just testified about the step-by-step lines, I would like to refer to the panel lines which represent a more unportant item of sales than the step-by-step lines. The panel
lines is the fifth item on sheet 2 of this exhibit. The
5701 sales to Illinois Bell in 1924 were 6.6 per cent; in 1925,
5.1 per cent; in 1926, none; in 1927, 18.3 per cent; in
1928, 1.3 per cent; in 1929, 6.8 per cent, and in 1930, 10.5 per
cent.

Table 3 of Exhibit X-313 is a set of computations under which the percentages for varying groups of years have been computed. The items on this page are the 21 items shown on sheet 2, the same 21 items. The percentages shown represent the ratio of sales to Illinois Bell to sales to the total Bell System for each period, these periods being respectively 2, 3, 4, 5, 6 and 7 years each. They are in two groups on this sheet. The first group of periods begins with 1924, the first period being the two years, 1924 and 1925. The second period, the three years, 1924 to 1926, and so on.

5702 The second group of periods begins with 1930, the first one being the two years 1930 and 1929 together, the second period being the three years 1930, 1929 and 1928 together. A reference to these percentages for each and every one of the periods shows wide variations for the different items. For example, the first period shown on the sheet 3 is the two years, 1924 and 1925, and for those two years the data furnished to us by the company shows that the sales to Illinois Bell as a percentage of sales to total Bell System for the period were for the large multiple sections, 9.2 per cent; small multiple sections, 7.9 per cent; item 3,550 and 551 types, 11.7 per cent, and then reading on down the page, without reference to the items, the next is 6 per cent, and that is panel lines; next is 1.8 per cent, this being the step-by-step lines; the next one is 17.6 per cent; the next no per cent; the next nothing, the next 9.6 per cent; the next 0; the next 3 per cent; the next, which is item 13, 3 per cent; item 14, 8.3 per cent; item 15, 0; item 16, 0, this being due to the fact that the company had not separated the cable terminals into the types for these years.

5703 There are a number of facts that I can state respecting the conditions prevailing in the Chicago area that necessarily will make the sales to Illinois Bell for the Chicago area different from sales to the Illinois Bell System as a whole.

The data in this exhibit, X-313, relating to Illinois Bell, includes the entire company, they are not limited to the Chicago area.

As I testified a few minutes ago, the Chicago area uses and purchases no step-by-step automatic equipment. It purchases practically no magneto equipment. It purchases an unusually large percentage of coin boxes, because the coin box development in Chicago is very much higher than in any other city in the country. There are several types of

5704 common battery switchboard that are not used in the

Chicago area, and are not purchased for that area.

I have prepared a table to show the percentage of sales of each of a number of important telephone plant items of the Western Electric Company's manufacture, relating to quantities sold to the Illinois Bell Telephone Company and to the Bell System separately for the years 1924 to 1930, both inclusive, and adjusted to a total of 100 per cent for each year, for the purpose of making a direct comparison of the cross-section of quantities sold to the Bell System, and the quantities sold to the Illinois Bell Telephone Company during each of the years. It is this exhibit marked Defendants' Exhibit X-314, entitled "Illinois Bell Tel. Co.—Chicago Rate Case—Percentages Charts—Representing Cross Section of Purchases from Western Electric Company—Illinois Bell—Bell System—Period 1924-1930." This exhibit consists of a sheet showing a list of percentages for each year 1924 to 1930, and for the entire period for each of the items shown on sheet 1 of Exhibit X-313. The percentages are an
5705 adjustment of the percentages shown for the same items on sheet 2 of Exhibit X-313. The adjustment made was one to bring the total of the percentages for each year to 100 per cent, it being easier by that method to make comparisons of one year with another.

Comparisons can be made by an examination of the percentages shown on sheet 2 of Exhibit X-313, but they are better made if the percentages are all reduced to the same base, and this is done on the sheet of Exhibit X-314. I will describe exactly how this was done.

Referring to sheet 2 of Exhibit X-313, I found the total of the percentages for each year, and then I divided the percentage for each item in each year by the total percentages for the year, thus reducing the entire list of percentages to a base in which the total for each year is 100 per cent. The total of the list of percentages for each year on Exhibit X-314 is 100 per cent. The totals of the percentages on sheet 2 of Exhibit X-313, will vary from year to year, depending upon the proportionate amount of purchases by the Illinois Bell as compared with sales to the entire Bell System.

5706 To better visualize the percentages shown on the table in Exhibit X-314, I have plotted them in the form of a graph shown on the blue print in this exhibit. I did this so as to get a better representation of the cross-section of the sales to Illinois Bell in each year as compared with the cross section of total sales for the period, and of all of those as compared with the total sales to the Bell System. On this graph, the vertical line at the left is the per cents, going to 100 per cent for each vertical line. The next line designated at the bottom as "1924 to 1930, Bell System" is a group of per cents, one for each of the seventeen items, each item having the same per cent.

In the next vertical line designated "1924" at the bottom of the chart are shown the percentages taken directly from 1924 in the table of this exhibit, and those percentages represent the relation of sales to Illinois Bell to sales to Bell System during the year, reduced to 100 per cent, for the sake of comparability.

5707 The sales to Illinois Bell for each of the years 1924 to 1930, and for the period 1924 to 1930, are represented by the spaces between the lines. The figure 50 at the left is a percentage figure going to a total of 100 at the top, and that per cent represents all of the sales to Bell System, if you are looking at the first line, the first column, or first vertical line. That 100 per cent represents all of the sales to Illinois Bell in 1924 if you look at the next line, next vertical line, and all of the sales in 1925, if you look at the next vertical line.

5708 The space between the line below the figure 15 and above the figure 15, the third one from the top in the first column at the left hand side of the sheet—the figure representing item 15 in the succeeding table of figures—represents the percentage of total sales to Bell System of that item during the period. I am speaking now of the first vertical line.

5709 That per cent is the per cent that we get by dividing 100 by seventeen. There are seventeen items. We are taking the total sales of each item for the period as being 100 per cent of that item.

I think, perhaps, item 1 will be a little bit easier to follow. Item 1, at the bottom of the page, that is the space from the bottom or 0 line to the place where the curve intersects the vertical line, designated as 1924 to 1930, Bell System, the base is 1/17 of 100 per cent, about 7 per cent. Now, going to the year 1924, we find that the line rises, and is about 8½ per cent. Now, if you refer to the succeeding table, item 1, "Large multiple sections," you will find it is 5710 8.3 per cent.

Now, going to the next year, 1925, for the same item, 1, we find it is about 9½ per cent from the chart or graph. We refer to the table, and we find it is exactly 9.8 per cent. Of course, it is not possible to plot these percentages as close as they have been computed in the table. Then going to 1926, it falls to a little over 4 per cent, and a reference to the table shows that it is 4.2 per cent. The graph is made to show relatively for each of the years the proportionate amount of sales to the Illinois Bell of each of these seventeen items, all reduced to 100 per cent for the sake of easy and proper comparability.

If we take the percentages from which these come, those shown on sheet 2 of Exhibit X-313, we would get a graph that would be very difficult to interpret, because the purchases of the Illinois Bell in one year will be considerably more than in another year, and you would have for 5711 1924, let us say, totals that would go to 125, for 1925 that would go to 155, and not readily be compared. Now, reducing them all to a 100 per cent basis, it is possible then to make ready and proper comparisons, and that is what we have done in the chart.

Take line 2, "Small multiple sections," for the year 1924—on the table of percentages we find that the Illinois Bell purchased 9.1 per cent, which is a figure to be found on sheet 2 of Exhibit X-313, reduced with all of the other figures of that year to a 100 per cent base. Now, 9.1 per cent being the percentage in 1924 for item 2, the small multiple sections, is the difference in level between the lower curve and the curve above it, that is, the lines on both sides of item 2 are 9.1 per cent apart.

5712 If we take the percentages as shown on sheet 2 of Exhibit X-313, and plot them in a graph, we will find considerable variations in the totals, due to the fact that the purchases in one year, as compared with another, vary considerably. Now, what we have done in the graph in Exhibit X-314 has been to stretch out or shorten those lists of percentages, those columns of percentages, so that they in each case aggregate 100 per cent. It is merely to show the relative proportions of each item purchased in each year, not the actual proportions. The actual proportions would be obtained by the percentages in sheet 2 of Exhibit X-313.

5713 Item 17 is put between 90 and 100 just because we started with number 1 at the bottom, and went up serially to the top. The figure 100 means 100 per cent of the sales to the Illinois Bell in any one of these years, it is all of the sales. I could have made the exhibit just as well if I had put 17 at the bottom, and 1 at the top, or had mixed them up any way, they would show the variation in cross-section of one year against another equally well; it doesn't make a particle of difference.

We set out to make a graph in which we represent, in respect to each of these seventeen items, the percentage sold to the Illinois Bell in relation to the sales of the same item to the associate companies of the system. If we take
5714 these previous tables, and from them take for illustration the year 1924, and mark step by step, on a vertical line, the percentage, we will find that in 1924, we have a certain per cent, then for 1925 we add all of those items, and we come out with another per cent, and so on. Now, what I have done is to reduce each of those years to a 100 per cent basis, so that each of these columns begins at the same line at the bottom, and ends at the same line at the top. These figures at the left, 10, 20, and so forth, in multiples of 10 up to 100 represent that percentage after the reduction has been made to the common 100 per cent throughout the years.

5716 In 1924, because the lines above and below item 3 come together, we know that there were no sales during that year. The same observation applies to item 4, there were no sales of that item in 1924. Now, in 1925 there were considerable sales of each item, you trace them through, represented by those percentages.

5717 In the vertical line farthest to the right, which represents the Illinois Bell Telephone Company sales of item 1 for the period 1924 to 1930, it rises to about 8 per cent. The total Bell System for the same period, over at the left, is about 6 or 7 per cent, as a percentage of all Bell System sales in that year. These do not represent Bell System sales in dollars or items. They represent them in per cents. That is only a comparison for the sake of uniformity. The only thing is to illustrate the relative uni-

formity, or lack of uniformity of sales to Bell System of one year against the other, or of total sales to Illinois
5718 Bell in the period against total Bell System sales. It simply is to show uniformity or lack of uniformity, and is not intended to show in total amount either of items or dollars.

The per cents shown represent per cents of items, that is true in sheet 2 of Exhibit X-313, and it is equally true in the sheet in Exhibit X-314, and in the chart—they are per cents of items. In Exhibit X-313 they are the actual per cent of total sales for each item. In Exhibit X-314 they have all been reduced to a comparable 100 per cent basis, simply to show readily the variations from year to year.

I have prepared an exhibit to show for each year during a period of years the per cent of Western Electric Company manufactures sold to its Bell customers, that the Western Electric sold to the Illinois Bell Telephone Company. It is Exhibit X-315, entitled "Illinois Bell Telephone Company—Chicago Telephone Rate Case—Western Electric Co. Manufactures—Sales to All Bell Companies and to Illinois Bell Telephone Company, 1916-1930."

The last column on this Exhibit X-315 shows percentages representing the per cent which the sales of Western Electric Co. manufactures to Illinois Bell in each year, are of the sales to the Bell System. These data were taken from a table furnished to us by the company. Here I have presented this matter in dollars.

5720 Exhibit X-315-A is entitled "Illinois Bell Telephone Company—Chicago Telephone Rate Case—Western Electric Co. Manufactures—Sales to Bell Customers and to Ohio Bell Telephone Company, 1922-1930."

5721 The figures in the columns on Exhibit X-315-A, in the column entitled "Bell Customers" and the one entitled "Ohio Bell" were obtained from the company. They represent the total sales in each of the years 1924 to 1930 inclusive of Western Electric Company manufactures to Bell System or Bell customers, and to the Ohio Bell. In the last column on this exhibit I show percentages, which are the per cents which the sales to the Ohio Bell are to the total Bell customers sales, in each of the years. These, for example, range from 2.13 per cent in 1922 to a maximum during the period of 5.32 per cent in 1926. These are per cents of dollar sales as found in the data furnished to us by each company. The table of figures furnished to us includes the note A at the bottom of this exhibit.

5722 Exhibit X-316 is entitled "Illinois Bell Telephone Co. —Chicago Telephone Rate Case—Western Electric Company Manufactures, 1922-1930, Sales to Ill. Bell and to Ohio Bell as Per Cent of Total Sales to Bell Customers."

The percentage shown in the columns "% Illinois Bell," and "% Ohio Bell" of Exhibit X-316 are taken directly from the Exhibits X-315, and X-315-A. Referring to these percentages on Exhibit X316, we see, for example, that for the year 1925 the Illinois Bell Sales were 8.87 per cent of total Bell customer sales, whereas, the Ohio Bell sales were 4.08. And then referring to 1927, the Illinois Bell sales were 9.93, the Ohio Bell sales, 3.51, and so on. Now, for the purpose of making more ready comparisons, I have, in the last two columns on this table, computed percentages for the Illinois Bell and for the Ohio Bell, which are stated in terms of the average per cent for the period. To illustrate, referring now to the first column of percentages, "% Illinois Bell" we find that at the bottom of the column the average per cent for the period was 7.53, which means that during this period 1922 to 1930, inclusive, the sales to Illinois Bell were 5723 7.53 per cent of total sales to Bell customers.

Now, taking that per cent as 100 per cent, I have in the next to the last column of figures computed each of the per cents in the column entitled "% Illinois Bell," for example, 7.19, which is the per cent of sales in the year 1922 to Illinois Bell of total sales to Bell customers, was, referring to the next to the last column, 95 per cent of the average of the sales to the Illinois Bell during the entire period. The next year, 1923, the 5.66 per cent found in the first column of percentages is 75 per cent of the average, as shown in the next to the last column of percentages. Now, by a reference to the last two columns of percentages, one entitled "Illinois" and the other "Ohio," we find that on a comparative basis in 1922, Illinois was 95, Ohio, 56.

In 1925, Illinois was 118, Ohio, 108, and so on. The per cents themselves in the first and second columns of percentages could be directly compared; or the computations shown in the last two columns will serve the same purpose, which

is to show the lack of uniformity of sales from year
5724 to year to the Illinois and to the Ohio Bell.

In 1925, the sales to Illinois Bell were relatively higher than the sales to the Ohio Bell, whereas in 1926, the reverse was true. In 1927, there was a turn in the other direction, the Illinois Bell running higher. If each company had purchased the same representative cross-section of Western Electric sales to Bell customers, there would have been a consistency in the percentages. They would increase and decrease in a consistent and comparable manner.

In Defendants' Exhibit X-317, entitled "Illinois Bell Tel. Co.—Chicago Rate Case—Analysis of Estimated Quantities of Materials of Various Classes for each Associated Company to be delivered by Western Electric Co.—From Provisional Estimates, Period 1922-1932," I show a number of tables of percentages representing the estimated sales to each of the associated Bell Companies during certain periods from 1922 to 1932, and for the entire period. The data from which the percentages in the Exhibit X-317 were computed were all obtained from the provisional estimates of the company, which Mr. Thompson offered in court as being documents furnished to the Western Electric Company as
5725 representing the quantities of materials and equipment
required by the associated companies. I found, in the provisional estimates recently furnished for my inspection, data to show the estimated quantities of new material required to be delivered to each of the asociated companies of the Bell System. I found it in statement G in the provisional estimate for each company. This statement shows the estimated quantities of new materials required to be delivered during the following year. Statement G generally consists of two sheets, the items being designated on twenty-eight lines, this being the case in the provisional estimate of 1923. Taking statement G for the year 1923 as an example, the provisional estimate includes 11 switchboard items, these being, on line 1, the number 1 relay switchboard; on line 2 the number 9 relay switchboard; on line 3 the number 10 relay switchboard; on line 4, the number 1-D relay switchboard; on line 5, other central office boards, the type
5726 to be specified; on line 6, number 4—640 multiple PBX
and the 600-C type; line 7, the 604 multiple PBX; line 8, other multiple PBX's, the type to be specified; line 9,

the number 4 toll test boards; line 10, the number 4 Morse test boards; line 11, 700 type semi mechanical PBX's, by number of lines.

It also lists nine items for private branch exchange switch boards and subscriber's station sets, these being as follows:

On line 12 is the 30 line number 550 boards; line 13, the 80 line 550 boards; line 14, sizes over 80 lines; line 15, cordless boards; line 16, sub sets and bell boxes, machine switching; line 17, sub sets and bell boxes, manual; line 18, desk stands, machine switching; line 19, desk stands, manual; line 20, number 50 coin collectors;

It also lists three types of lead covered cable, these being as follows: Line 21, number 16 and heavier; line 22, number 19; line 23, number 22; line 24, number 24.

It also lists four items of miscellaneous equipment, these being indicated as follows in the provisional estimate; line 25, cable terminals, type B and then on the same line 5727 they show vacuum tubes. Line 26, cable terminal type 8, and on the same line they show telephone repeater sets. Line 27, cable terminals, number 14, and on the same line they show loading coils. Line 28, distributing frame wire in conductor feet. Then, on sheet 2 of this part of the provisional estimates are listed poles and line material as 16 separate items, these being as follows: Line 1 twenty-two feet long, or less; line 2, twenty-five feet long; line 3, thirty feet long; line 4, thirty-five feet long; line 5, forty feet long; line 6, forty-five feet long; line 7, fifty feet long; line 8, fifty-five feet long; line 9, bare copper wire in pounds; line 10, galvanized iron wire in pounds; line 11, strand in feet; and line 12, insulated wire, insulated wire included numbers 14, 17, 18 and 19 in conductor feet. Line 13, conduit clay in duct feet; line 14, conduit wood, in duct feet; line 15, cross arms, fir; line 16, cross-arms, pine.

The foregoing data in regard to poles are furnished for the Class A, Class B, Class C and Class D poles separately, and these, again, are divided between chestnut, cedar and creosoted pine.

5728 This study of the provisional estimates, X-317, covers the period from 1922 to 1932, inclusive. I have summarized the data in this exhibit which consists of eleven sheets.

The first sheet is a summary of the estimated requirements for the entire period of eleven years, that is, 1922 to 1932, inclusive. The second and third sheets are a summary of the years 1922 to 1924, inclusive.

The fourth and fifth sheets are for the year 1925. The sixth and seventh sheets are for the period 1926 to 1928, inclusive. The eighth and ninth sheets are for the year 1929, and the tenth and eleventh sheets are for the years 1930 to 1932, inclusive.

The reason for summarizing these particular periods has been that the American Telephone & Telegraph Company requirements have differed from time to time, as respects the grouping of equipment and material items in the different periods.

5729 For the period 1922 to 1924, the provisional estimates show 62 different items upon which percentages could be computed. In 1925, there were forty-six items. In the period 1926 to 1928, there were fifty-three items. In 1929 there were forty-two items, and in the period, 1930 to 1933, there were forty-four items. In combining the data on the first sheet for the entire eleven year period from 1922 to 1932, inclusive, it was necessary to re-group the items and reduce the total number to thirty-two.

In my opinion, based upon these exhibits, there are very wide differences in the requirements as set out in these provisional estimates, showing that the requirements of one company will differ greatly from those of another company in different periods, and the requirements of the same company in different periods will also vary greatly.

5730 For the estimated requirements of a particular company to be a representative cross-section of the total Bell System estimated requirements, the percentages of estimated requirements of the company should be the same or practically the same for all items.

To illustrate: A company whose estimated requirements are 10 per cent of the total Bell System estimated requirements should have estimated requirements of 10 per cent for each item if its requirements are to be a representative cross-section of the total Bell System requirements.

The per cents of estimated requirements of the Illinois Bell Telephone Company for the period 1922 to 1932, both inclusive (of the different items), vary all the way from .2

for submarine taped and buried cable to 21.7 for coin 5731 collectors. I call attention to the fact that the percentage of step-by-step lines, which is 2.9 for the Illinois Bell Company as a whole, would be zero, or practically zero, for the Chicago area.

There are practically as wide variations for the other companies, as, for example, the estimated requirements of the New England Telephone & Telegraph Company for the period varied from .9 for carrier telegraph systems to 28.3 per cent for the numbers 700, 701, 740 and 750 types of PBX's, which were by the Company grouped.

I have adjusted the percentages of estimated requirements for each company for the period 1922 to 1932, both inclusive, those shown on the first page of this exhibit, for the purpose of making a better comparison of the cross-section of estimated requirements of each company, with every other company. I did that by assuming that the total of the percentages of estimated requirements for each company equals 100 per cent, and then by computing the percentage figure of each item as a per cent of the total percentages. It is the same sort of a computation as has been made in the 5732 chart in Exhibit X-314, representing actual sales to the Illinois Bell Telephone Company.

I have prepared a table to show these percentages. It is Defendants' Exhibit X-318, entitled "Illinois Bell Tel. Co.—Chicago Rate Case—Percentages Charts—Representing Cross Section Estimated Quantities of Materials to be Delivered by Western Electric Company to each Associated Company—From Provisional Estimates Period 1922-1932," consisting of a table of percentages, and a chart. The table of percentages is one showing thirty-two different items of Western Electric Company manufacture. Each of the columns in this table represents an Associated Bell Company. The percentages in these columns for each of the Associated Bell Companies have been adjusted to total 100 per cent for each column. The percentages are taken, or are computed from percentages for like items shown in the first sheet of Exhibit X-317.

5733 I would like now to compare the percentages on the first sheet on Exhibit X-317, with the percentages shown in the table in X-318. The total of percentages in each column in the first sheet of Exhibit X-317 will vary in one company as compared with another, because of the relative volume of sales. The second and third columns will illustrate the point. The second column is the Southern New England Telephone & Telegraph Company, one of the smallest of the Bell Associated Companies. The third column is the New York Telephone Company, which is the largest Bell Associated Company. The percentages for each of the various items will generally be substantially higher for the New York Telephone Company, because of its size, than for the Southern New England Telephone & Telegraph Company.

To illustrate, the first item, line 1, "Manual, Large Multiple Sections," we find that the Southern New England Telephone & Telegraph Company estimated requirements for the period 1922 to 1932, inclusive, were 1.8 per cent of the total requirements of the Bell System for the period, 5734 whereas, the New York Telephone Company, as shown in the third column, estimated requirements were 19.9 per cent.

Now, it is clear that if we added the percentages of the second and third columns, we would find a much larger to for the New York Telephone Company than for the Sout ern New England Telephone & Telegraph Company. W could plot those percentages in a graph, following the same system that I have followed in Exhibit X-314, but we would have curves that would be very widely distorted, so that comparisons of the cross-section of requirements of one company with another could not readily be made by inspection, and so, in order to make such comparisons, I reduced the percentages—or, adjusted the percentages of the Southern New England Telephone & Telegraph Company and of the New York Telephone Company so that in each case they would total to 100 per cent, but in each case would be relatively the same as shown on this first page of Exhibit X-317.

Now, in making that adjustment to a total of 100 per 5735 cent for comparative purposes, the 1.8 per cent of item 1 for the Southern New England Telephone & Telegraph Company in Exhibit X-317 is adjusted to 3.4 per cent in Exhibit X-318.

You read through the same way on that horizontal column, switchboard No. 1 manual, large multiple sections, in respect to the other companies indicated at the tops of the various columns.

5736 For another illustration take item 5, the panel machine switching, number of lines, and referring to Exhibit X-317, I find that the Southern New England Telephone & Telegraph Company per cent of total sales is zero.

Referring to item 5 on Exhibit X-318, it is still blank, because in the adjustment there is no change in the zero, but if we take the same item for the New York Telephone Company in Exhibit X-317, which is 39 per cent, we adjust it to 7.3 per cent in Exhibit X-318.

The percentages for any company in Exhibit X-318 have relatively the same differences from one item to another, as they do for the same company in Exhibit X-317, and it is the relative amount of sales of the different items that we are interested in.

So the two tables of percentages show exactly the same picture, so far as the relative amount of sales of one item as compared with another, only the percentages are different, one is a better picture than the other, that is the only difference.

5737 Referring to Exhibit X-317, item 7, the step-by-step number of lines, reading across the page, I find the New England Telephone & Telegraph Company, during the period, had estimated requirements that were 5.3 per cent of the total estimated requirements of the Bell System.

The Southern New England Telephone & Telegraph Company had 7.8 per cent, notwithstanding the fact that it w a very small company.

The New York Telephone Company, the largest one in the Bell System, had 9.6 per cent. The Bell of Pennsylvania 7.4. The Chesapeake & Potomac Company, 4.4 per cent. The Southern Bell Telephone & Telegraph Company, 11.1 per cent. The Ohio Bell Telephone Company, 8.6 per cent. The Cincinnati & Suburban Telephone & Telegraph Company, none. The Michigan Bell Telephone Company, 5.3 per cent. The Indiana Bell Telephone Company, 1.5 per cent. The Illinois Bell Telephone Company, 2.9 per cent, and none in Chicago.

The Wisconsin Telephone Company, .6 per cent; the Northwestern Bell Telephone Company, 5 per cent; the
Southwestern Bell Telephone Company, 11.1 per cent;
5738 the Mountain States Telephone & Telegraph Company,
3.6 per cent; the Pacific Telephone & Telegraph Com-

pany, 15.8 per cent.

And the American Telephone & Telegraph Company Long Lines, which we have set up as though it were an Associated Company, none.

As I testified, the percentages in the table in Exhibit X-318 are the percentages on the first sheet of Exhibit X-317 adjusted to totals of 100 per cent for each Associated Company, the percentages being relatively alike for each company in each exhibit.

On the chart, in Exhibit X-318, I have plotted the percentages shown in the table of that exhibit. Each percentage for an item in the table of percentages is a space between the lines in the chart.

Each vertical line in the chart represents a company. The vertical line at the left designated as "Bell System" represents the total requirements of all Associated Com-
5739 panies of the Bell System for this entire period of
eleven years, and for each item is 100 per cent divide
by the thirty-two items, just a little over 3 per cent. They are equal divisions. At the extreme right is shown the American Telephone & Telegraph Company long lines

Where the lines converge to a common point and join for the Long Lines and for any of the other companies, it means that there are no requirements for the particular items involved. Where they converge and nearly join, it means that the percentage of requirements has become ver small.

The table at the right of the graph shows the code of the chart. Lest one would not know the meaning of the letters
to designate companies, the code will show it.
5740 For example, under "Company Code" at the right
we have Bell System, which is all Associated Companies and the Long Lines. "Ill. B. T." is Illinois Bell Telephone Company and so on.

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Then, below that list of companies is the list of thirty-two items. They are numbered on the chart and in the code, each number shows what the item is. For example, the first item is "Manual, Large Multiple Sections, Item 1."

I am familiar with the practice, among the Associated Bell Companies, of making estimates of their probable purchases from Western Electric Company. They are prepared in the fall of every year.

5741 They are called the provisional estimates. They are usually made up to show the estimated requirements for the following year, and for from two to four succeeding years. The particular estimates that we used were prepared for the Western Electric Company, that that company might schedule its manufacturing program and purchases for the Associated Bell Companies.

I have prepared an Exhibit, X-319, "Illinois Bell Tel. Co.—Chicago Rate Case. Analysis of Estimated Quantities of Materials—Panel Central Office Equipment Step-By-Step Lines Private Branch Exchanges. To be delivered by Western Electric Co. to each Associated Co. from Provisional Estimates Period 1932-1934," showing estimated quantities of new materials required to be delivered to each of the Associated Bell Companies for the years 1932 to 1934, inclusive.

The estimates were obtained from a summary of state-
5742 ment E of the 1932 provisional estimates furnished to me by the Company. This exhibit, X-319, is made to show the amount of estimated requirements for each one of the Associated Companies as found in the data furnished to us by the Company. This particular summary, from Statement E, related to panel central office equipment, step-by-step central office equipment, and certain private branch exchanges.

The percentages shown in Defendants' Exhibit, X-319, are for each Associated Telephone Company, the per cent of its requirements for each of the years of the type of equipment indicated by the table.

For example, on sheet 1 of this exhibit, you find, panel central office equipment divided into two groups of three for the years 1932, 1933 and 1934. The first of the two groups is lines, the second is frames. In the first column of figures labeled "Amount" are shown the number of
5743 panel central office equipment lines estimated for the year 1932 for each one of the Associated Bell Companies, the requirements of the New England Telephone & Telegraph Company being 31,320 lines.

Those of the Southern New England Telephone Company being none. Those of the New York Telephone Company being 185,890 lines.

Now, the per cent in the second column for the year 1932 for the New England Telephone & Telegraph Company, 7.3 is the per cent which its estimated requirements of 31.3 lines is of the total Bell System requirements of 425.77 lines, which is the total of the first column of figures as shown at the bottom of the column.

In a similar way the percentages were computed to show the estimated requirements of each one of the Associated Companies in the terms of the total requirements of the Bell System. I would just like to point out that the estimated requirements of Panel Central Office Equipment 3744 were, for 1932, zero for the Southern New England Telephone & Telegraph Company, the Diamond State Telephone Company, for the Chesapeake & Potomac Telephone Company of Baltimore City, for the Chesapeake & Potomac Telephone Company of Virginia, for the Chesapeake & Potomac Company of West Virginia, for the Southern Bell Telephone & Telegraph Company, for the Indiana Bell Telephone Company, for the Northwestern Bell Telephone Company, and for the Mountain States Telephone & Telegraph Company.

There is a wide variation in the estimated requirements of this type of equipment, as between the different companies and as between different years. There are also similar variations for the step by step lines, as shown on the second sheet of this exhibit, and for the private branch exchange lines as shown on the third page of the exhibit.

Among the more important factors affecting depreciation of telephone property are the factor of growth in the number of subscribers and lines, the amount of telephone plant of each class, and in the use of telephone service. These growth factors lead to inadequacy, and affect the service life of most of the classes of telephone property, but principally the central office buildings, central office switchboards and outside plant.

Company policy is also an important factor resulting in the early retirement of property by one company, and its extended use by another company. Obsolescense, public requirements, climatic conditions, are also factors affecting service life, and depreciation rates.

To determine the comparability of conditions in one company as compared with another company, respecting depreciation, I would wish to know about the relative rate of growth and change in the stations and lines and plant of various classes. I would want to know about any dial program, the extension of the automatic, or the program for converting other systems to automatic.

5746 I would want to know of any programs for the conversion of magneto systems to common battery or automatic. I would want to know about the company's maintenance standards, and its policies and practices as to the retirement of plant.

I would want to know something about the company's policies and practice in regard to the purchase of going plants, and something about the amount of purchased going plant that the company was maintaining. I would want to know something about the public requirements as to the removal of wires from the streets and alleys, or from aerial to underground in one company as compared with another.

I would want to investigate the climatic conditions, such as sleet, windstorms, lightning, soil conditions, humidity, temperature, salt air, and so forth. I would want to investigate any tendencies in the calling rates, or the subscribers using the telephone more or less. I would want to know of changes and prospective changes in rate structures involving changes in party lines, and so forth.

5747 I would want to know something of improvements or changes in operating methods, as, for example, the adoption of straight-forward trunking, forcing the earlier retirement of some plant, and postponing the retirement of other plant; of changes from ticketing to registering measured service calls; of the use of ancillary jacks; I would want to know something of the type of plant, the outside plant, whether the poles were chestnut, or lodge poles, or cedar, or whether they were treated or untreated, or butt treated; whether they were full creosoted Southern Pine, whether the Company's aerial wire was bare copper or bare iron or covered wire.

The practice is different in different companies. I would want to know something about the probable change in growth, whether the rate of growth is going to be increased, or is going to slow down. If it slows down, it usually would result in postponing retirements and in extending the service life of such classes of plant as central offices, buildings, cable.

I would want to know something of the actual distribution
of growth in the area served by an exchange as com-
5748 pared with the expected distribution of growth for which
the plant facilities had been provided, the moving about and shifting of population, renters versus home-owners, the proportionate amount of rural plant, some companies have very little if any rural lines, and other companies have a considerable amount of that kind of plant.

I would want to know something of the growth of the depreciation reserve under the rates that have been used. I would want to know about changes in service, as for example, from coin box to measured service, that is something that has been going on in Chicago in recent years; changes from wall and desk sets to hand sets. I would want to know something of the company's policy in regard to piecemeal retirements or wholesale retirements as affecting the cost of removal and the salvage.

I would want to know something of the company's policy in respect to re-using old plant.

Then I would want to know about the business conditions affecting growth and change and prices.

(June 23, 1932)

5750 The material analyzed in both Exhibits X-318 and
X-317 was obtained from the sections of the provisional
estimates furnished to Mr. Goldstein several weeks ago
5751 as representing the estimated quantities of telephone
apparatus, lead covered cable and supplies of each of the Bell Companies, as incorporated in the provisional estimate that is sent to the Western Electric Company for its manufacturing purposes, or program.

(Counsel for defendants states that they are the provisional estimates furnished by the Western Electric Company, and brought in by Mr. Thompson, counsel for the plaintiff, May 13, 1932).

The data summarized in Exhibit X-313 on the first sheet, were furnished to Mr. Goldstein by the Company. This first sheet is an exact copy of the table furnished to Mr. Goldstein.

The data on the second sheet of this exhibit showing the quantities sold to the Illinois Bell Telephone Company and to the total Bell System by years, were furnished to me by Mr. Wright, of the Western Electric Company, and the sheet is an exact copy of the table furnished by Mr. Wright.

5752 (Counsel for defendants states that, subject to check, the first two sheets of that exhibit are the figures to which Mr. Gregory referred on his cross-examination on March 16, 1932.)

I have examined provisional estimates of the Associated Bell Companies that were made available to the defendants a few days ago to the extent that has been possible in the time.

They cover the period from 1923 to 1931, both inclusive, the 1931 provisional estimates, including also figures for the years 1932, 1933 and 1934.

These first became available to me on Saturday, June 4th, of this year. (Testifying June 23, 1932).

5753 There are 16 large volumes of tables, of statistics, reports and letters, comprising somewhere between 8,000 and 10,000 pages. I did not count the pages, but there are something like that number.

From the examination, such as I have made, these provisional estimates in my opinion contain a great deal of material that bears on the question of comparability or lack of comparability of conditions in one company as compared with another company, respecting depreciation.

In the provisional estimates, is to be found a considerable amount of data relating to the actual experience of the company, and other data representing the Companies' forecast for a period of years in the future. Specifically the data which are necessary in determining the matter of comparability or lack of comparability as between com-
5754 panies, respecting depreciation, are of this character:
to illustrate, Statement A, in the 1923 Provisional Estimate furnishes the following information. The information represents the Companies' actual exeprience for the years 1918 to 1922, inclusive, and the Companies' estimate for the years 1923 to 1927, inclusive.

The data are furnished for each of the companies, in the Bell System.

These data found on Statement A, relate to the following items: Line 1, Gross Connects. Line 2, Gross disconnects. Line 3, Per cent Disconnects to Total in Service January 1. Line 4, Net Station Gain. Line 5, Per Cent Gain to Total Stations January 1. Line 6, Net Station Gain by Purchases, Sales or Transfers. Line 7, Total Stations at End of Year. Line 9, Per Cent Increase over Previous Year. Line 10, Average Number of Stations Operated from Machine 5755 Switching Central Offices. Line 11, Gross Additions to Plant. Line 12, Net Additions to Plant. Line 13, Net Additions to Plant Per Station Gain. Line 14, Net Additions to Plant by Purchases, Sales or Transfers. Line 15, Total Plant at End of Year. Line 16, Per Cent Increase over End of Previous Year. Line 17, Total Plant Per Station. Line 32, Depreciation, Per Cent to Average Plant in Service Line 34, Per Cent Reserve for Depreciation to Total Plant in Service and General Equipment.

The data referred to are necessary to show the rate of growth in stations and plant, and the relation of plant growth to station growth. The data also show the amount of going properties purchased or sold, or expected to be purchased or sold.

It also shows the composite depreciation rates actually used, and those that the company planned to be used in future years, and also the growth and the estimated growth of depreciation reserve at these rates.

I also found on Statement C in the Provisional Estimate, the following data in respect to the estimated plant expenditures for each class of plant, the data including the 5766 following types of information for each of the classes of plant that are later mentioned; the gross additions; the original cost of plant displaced, including gross wiring loss, per cent plant displaced to average total plant, the net additions to property accounts, salvage on plant displaced, including gross wiring gain, the cost of removing plant displaced, the net charges to reserve for accrued depreciation, including ~~net~~ wiring loss.

Now, the foregoing data are given in Statement C, for each of the following classes of plant; on Line 1, Right-of-Way Account 207. On Line 2, Land & Buildings Accounts 211 and 212. Line 3, Central Office Equipment, Manual, Accounts

221 and 222. Line 4, Central Office Equipment, Machine Switching, Account 221; includes all Central Office Equipment, Telephone Equipment, in Office Primarily Machine Switching. Line 5, Total Central Office Equipment, Account 220. Line 6, Station Equipment, Manual Accounts 231 to 235. Line 7, Station Equipment Machine Switching, Accounts 231, 232 and 234. Line 8, Total Station Equipment, Account 230. Line 9, Exchange Pole Lines, Account 241. Line
5757 10, Exchange Aerial Cable, Account 242. Line 11, Ex-
change Aerial Wire, Account 243. Line 12, Exchange Underground Conduit, Account 244. Line 13, Exchange Underground and Submarine Cable, Accounts 245 and 246. Line 14, Total Exchange Lines. Line 15, Toll Pole Lines, Account 251. Line 16, Toll Aerial Cable, Account 252. Line 17, Toll Aerial Wire, Account 253. Line 18, Toll Underground Conduit Account 254. Line 19, Toll Underground and Submarine Cable, Accounts 255 and 256. Line 20, Total Toll Lines. Line 21, Total. Line 22, Interest During Construction, Account 268. Line 23, Total Plant. Line 24, General Equipment, Account 260.

Now, in addition to the foregoing, all of which data are necessary to show the anticipated growth and change in each class, and the rate at which plant is to be retired and the amount of charges against the depreciation reserve, the following data are to be found in Statement C, and are necessary for the study of depreciation. There are estimates of the extraordinary repairs, gross, the gross less salvage, the total
net extraordinary repairs, deduction for net wiring loss
5758 charged to Account 607, total net charges to reserve for
accrued depreciation, Accounts 102 and 103, gross wiring gain included in Column D and H.

All of the foregoing data on Statement C for the year 1923, this being the 1923 Provisional Estimate, are also estimated in this Provisional Estimate for the years 1924, 1925, 1926, and 1927, separately.

There is a statement for each of the Associated Companies with respect to these items.

They are estimates for 1923, 1924, 1925, 1926 and 1927.

I encountered other data in these Provisional Estimates which in my opinion are necessary or useful in determining the comparability or lack of comparability of operating conditions of the various companies of the Bell System in respect to depreciation.

There is a very large amount of additional data, other data, necessary for such determination. These are included in the letters of transmittal of the Provisional Estimates of each of the various Associated Bell Telephone Companies.

5759 There are to be found in the reports, studies on the Company's condition, on business and economic conditions of the past and anticipated for the future; in the schedules and charts submitted with the Provisional Estimates. They also include reports on studies of depreciation made by some of the Companies.

There are outlines of construction program, designating the character and extent of the various classes of plant actually added or retired, or to be added or retired, and the reasons therefor; there are programs for the extension of either the panel-type automatic or the step-by-step automatic, these being designated generally Dial System Panel-Type, or Dial System Step-by-Step; reports and programs of anticipated conversion of common battery systems to dial systems, of magneto systems to common battery systems, or to dial systems; statements and data reflecting the Companies' policy and practice in respect to the degree of maintenance, and the probable effect of the maintenance on depreciation, and other similar reports, studies and data.

5760 I have selected for presentation in my testimony a number of illustrations of the type of data and reports to be found in the Provisional Estimates that in my opinion are necessary in arriving at a determination of comparability or lack of comparability of conditions in the Companies respecting depreciation. I find that there is a reference in the Provisional Estimate of the Bell Telephone Company of Pennsylvania for the year 1925. I read an excerpt from the letter of transmittal, dated November 14, 1924, from Mr. L. H. Kinnard, President, Bell Telephone Company of Pennsylvania, to Mr. W. S. Gifford, Executive Vice President
5761 of the American Telephone & Telegraph Company.

I quote a portion of the letter as follows:

"In the construction program and in the estimates of maintenance costs, no changes in material prices have been assumed, except a reduction of about 25 per cent of the 1924 prices on panel-type machine switching equipment.''

Then there is a paragraph entitled ''Depreciation.''

''The rate of depreciation will be about 4.7 per cent of the average plant in service for the entire 5 year period. This assumes the adoption by the Board of Directors of modified rates for certain items in plant as described in my letter of November 5, 1924, to Vice-President Gherardi, in which he and Mr. Heiss have concurred. It is our opinion that certain other changes should be made beginning with January 1, 1925, which have not yet been taken into account, however, in making up the provisional estimate, for the reason that we have not as yet submitted them for the concurrence of your organization, and have believed they would require careful consideration.

''The principal change which we shall propose is a
5762 reduction in the rate of depreciation from 6 per cent
to 5 per cent on machine switching equipment. This proposed rate is equivalent to that which would obtain if the equipment had a 20 year life and no salvage. We believe this would be a very conservative assumption, and if so, we think it makes it very desirable to adopt the lower rate as a maximum. If we adopted such a rate, it would substantially improve the net results of operation throughout the entire 5 year period, particularly in the latter part of the period.''

5763 As bearing directly on the comparability of depre-
ciation rates, I found in a letter from Mr. Kinnard, President of the Bell Telephone Company of Pennsylvania, to Mr. Thayer, President of the American Telephone & Telegraph Company, dated November 27, 1922, relating to the Provisional Estimate of the Bell of Pennsplvania for 1923, the following:

''The rate of depreciation has been assumed to be the present rate, 5.2 per cent. In our letter to Mr. Gherardi, dated May 27th, we recommended certain revisions in the depreciation rates, which would result in a reduction of approximately $300,000 for the year 1923. In his letter of October 2nd Mr. Gherardi concurred in these revised rates as reasonable and proper, and suggests that we take the matter up with Mr. Heiss before any actual changes were

made. On October 17th Mr. Heiss expressed his approval of the changes in rates, but suggested that we do not adopt the new schedule pending the determination by the Interstate Commerce Commission of its policies. Under these circumstances, therefore, the 1923 provisional estimate provides for depreciation at the present filed rates. We can, however, be ready at any moment to adopt the new
5764 schedule upon receipt of advice from Mr. Heiss."

I will give several examples of *reports, data* and charts relating to business conditions, and the estimated growth of the Company's business. The first one I will refer to is the 1925 Provisional Estimate of the Northwestern Bell Telephone Company. There is first a letter of transmittal from Mr. Belt, President of the Northwestern Bell, to Mr. Gifford, Vice-President of the American Telephone & Telegraph Company, dated November 5, 1924. Following the short letter of transmittal is a report on the Company's 5 year program, its estimates for 1925 to 1929, inclusive, consisting of 28 pages of typewritten text, incorporating a lot of data on station growth, plant growth and construction program and 16 charts illustrating the trend of business conditions, and the estimate of future business conditions; that data is found on the first chart.

On the second chart are graphs relating to connects and disconnects. On the third chart they relate to gross connects per station gain. The next chart is gross and net additions to plant.

The next chart is net additions to plant per station gain and average plant in service per average station.

5765 The next chart shows total plant per station of each of a number of classes.

The next chart shows total depreciable physical property and the depreciation reserve. The next one shows the toll investment and revenue per circuit mile. The next one, conductor feet of cable in plant per station.

The next chart is the telephone revenues of each of the several classes per average station, these data being for recent past years, that is from 1919 to 1923, inclusive, and estimated for 1924 in part, and for all of 1925, 1926, 1927, 1928 and 1929.

The next chart shows per cent of telephone revenue to average plant in service. The next, total telephone revenues and total telephone expenses for the years 1919 to 1929, inclusive.

The next chart shows the 5 year construction program, toll investment and annual toll revenues.

The next shows average toll calling rate, years 1919 to 1923, and estimated rates for the years in the future up to 1929.

The next chart shows telephone expenses per station for each of the different classes of expenses. The next is per cent net telephone earnings to average plant in service.

5766 As another illustration of the sort of data incorporated in the Provisional Estimates I refer to Provisional Estimate A for the year 1929 for the Northwestern Bell Telephone Company. A report on the business conditions and the construction program together with a number of charts, is transmitted with the letter from Mr. Belt, president of the Northwestern Bell Telephone Company, to Mr. Gifford, president of the American Telephone & Telegraph Company, dated November 6, 1928.

The report submitted with the letter consists of 19 pages of data and recommendations, and there are 16 charts with graphs setting out pretty much the same sort of information that I have testified to in respect to the 1925 and 1929 Provisional Estimates of this company, and this is true of all of the Provisional Estimates, there are incorporated a considerable number of tables of financial and statistical information in regard to the company's operations and predicted operations.

5767 As another illustration of the sort of data to be found in the Provisional Estimate of the various Associated Companies, I refer to the 1929 Provisional Estimate of the Pacific Telephone & Telegraph Company, sent to Mr. Gifford, president of the American Telephone & Telepgrah Company, by Mr. Pillsbury, president of the Pacific Telephone & Telegraph Company, with letter of transmittal, dated November 5, 1928. This Provisional Estimate—or this report accompanying Mr. Pillsbury's letter contains 10 pages of typewritten matter, and a number of charts. The first chart shows the gross and net gain in company's stations for the year 1924 to 1933; those for the years 1924 to 1928 being actual, and from 1929 to 1933 being estimated. The chart shows both the outward and the inward movement of stations.

The next chart shows the per cent gain and per cent outward movement to total movement. The next chart shows the relation between Manual, Dial System and Total Stations, the next chart, the gross and net additions to plant; the next chart, the net additions to plant per station gain and the total plant at the end of the year per station; the next chart, the total plant per company's station; the next chart, the toll outside plant investment, the toll revenues and the toll messages per circuit mile.

5768 The next chart shows conductor feet of Cable per line and per Station; the next chart, total telephone revenues, total telephone expenses, and net telephone earnings to average plant in service; the next one, telephone revenues, per station, toll revenues, per cent increase over previous year; the next chart, telephone expenses per average company's station; the next chart, total telephone revenues, total telephone expenses and net telephone earnings per average company station.

The next chart, the total depreciable property and the depreciation reserve—these charts covering the years from 1923 to 1933 separately, the earlier years being according to the facts, and the later years according to estimate.

I find two or three more charts and references of this character that I would like to make mention of. One, and it is simply an illustration, is in the 1929 provisional estimate of the Bell Telephone Company of Pennsylvania. There is a chart marked Exhibit C in this Provisional Estimate, which shows the actual number of company stations of the Manual Common Battery Type, of the Manual Magneto Type, of
5769 the Dial Panel Type, and of the Dial Step-by-Step Type in each year from 1921 to 1928 inclusive, and estimated for each year from 1929 to 1933 inclusive.

I find in the provisional estimate of the Northwestern Bell for the year 1923, provisional estimate, a chart entitled "Result, telephone revenue, expenses and earnings per station, and earnings and depreciation, also in per cent average plant in service; figures for per cent of plant are followed by %; other figures are dollars per station; the revenue is the total telephone revenue, the expense is the total telephone expense except depreciation, the earnings are the net telephone earnings. 'Before' means before depreciation; 'After,' after depreciation."

This chart is for the years 1917 to 1927, inclusive.

I find in the Provisional Estimate of the New England Telephone & Telegraph Company for the year 1928, a chart which is a showing of the general business condition in New England and the entire country, compared with normal, including forecast of conditions in New England. There is such a chart in many of the Provisional Estimates.

I find in the 1931 Provisional Estimate of the Indiana
5770 Bell Telephone Company, a series of charts relating to
plant, revenues, expenses and net earnings for the years 1923 to 1933.

I find one showing the growth of plant by classes, including construction work in progress, for the years 1920 to 1930, actual, and for the years 1931, 1932 and 1933, estimated. As the final illustration of this class of information I refer to the 1928 Provisional Estimate of the Northwestern Bell Telephone Company and will read a list of charts taken from that Provisional Estimate's table of contents.

Number 1, Summary. Number 2, General Business Conditions. Number 3, Purchasing Value of Principal Crops in Northwestern Bell Territory. Number 4, Purchasing Value of Principal Crops by States. Number 5, Net Station Gain and Gross Connections and Disconnections. Number 6, Gross Additions to Plant by Classes. Number 7, Gross and Net Additions to Plant, and Plant Displaced, and per cent of Average Plant in Service. Number 8, total Depreciable Physical Property and Depreciation Reserves. Chart 9, Net Additions to Plant Per Station Gain, Average Plant in Service per Average Station.

Chart 10, Total Plant by Classes of Plant at the end
5771 of the Year. Chart 11, Total Plant per Station, by
Classes of Plant, end of year. Chart 12, Per cent Increase in Toll Messages, Toll Revenues, and Toll Outside Plant. Chart 13, Toll Circuit Mileage by Types of Facilities. Chart 14, Conductor Feet of Exchange Cable per Station. Chart 15, Station Statistics, Growth of Dial Service.

Chart 16, Operating Percentages. Chart 17, Total Telephone Revenues and Telephone Revenues per average station. Chart 18, Total Telephone Expenses and Total Telephone Expenses per Average Station. Chart 19, Expenses per Average Station by Classes. Chart 20, Local Calls per Station per day.

I find this reference in the 1923 Provisional Estimate of the Mountain States Telephone & Telegraph Company; I will read a paragraph.

"A.—General Business Conditions, Prices and Industrial Wages.

"In considering these primary elements as to their relation to our forecast for the period, we have taken as a general guide the statement and charts accompanying Mr. Thayer's letter of September 7th.

"In studying the projection of general business conditions, however, some allowance has been made based upon past 3772 experience for the fact that changes in business conditions throughout the country as a whole usually affects the Rocky Mountain Region approximately eight months after they have become apparent throughout the east. No regional changes in conditions with respect to industrial wages or commodity prices are foreseen for this company's territory, indicating any marked departure from the trend shown on the charts, and these trends have therefore been our general guide in estimating expenses and construction costs."

Then I have a reference from the 1923 Provisional Estimate of the Pacific Telephone & Telegraph Company, which is typical of much of the information available in the Provisional Estimates. Reading from Paragraph A of the letter from Mr. McFarland, president, Pacific Telephone & Telegraph Company, to Mr. Thayer, president of the American Telephone & Telegraph Company, I quote as follows:

"A. General Business Conditions, Prices and Industrial Wages.

"Crops throughout the Pacific Coast generally have been more than satisfactory, and the feeling among the [illegible] farmers that 1923 promises better times, is perhaps more lively ~~than~~ in any other form of industry, for the reason that they are now in a better cash position than at any time during the past two years. Receipts from livestock are now greater than during the past year; building activities and real estate operation especially in San Francisco and Los Angeles have already exceeded expectations for the latter part of 1922; and there is no reason for expecting a slow-down in the coming year. On the contrary our own estimates of the increase of population during 1923, and observations made by various Chambers of Commerce in Washington, Oregon and California cities point to a continuation of real estate activities for the near future, and increased activities in some sections of our territory.

"Mining, which remained quiescent during 1922, has now begun to show real improvement. Larger outputs in copper, silver and zinc are reported, with increased prices, and it would appear that only a shortage of skilled labor in this industry will retard great activity in 1923."

I will not read more of the letter, but it goes on in six or eight more paragraphs covering various phases of
5774 business conditions in the territory of that company.

(Counsel for the City stated that he did not consider that the letter proved any fact.)

I have quite a number of illustrations respecting other
5775 phases, other classes of data to be found in Provisional Estimates.

In the Provisional Estimates of the New England Telephone & Telegraph Company for 1928 and 1929, I find reports on a very considerable program. The 1929 Provisional Estimate refers to projects for the extension of Dial in many of the Central Offices, and for eleven new Exchange Buildings. The 1929 report gives a considerable program in regard to the conversion of the larger Magneto Offices to Common Battery, and lists the major construction projects.

The 1929 Provisional Estimate of the Chesapeake & Potomac Telephone Company gives a construction program covering 26 pages for the period 1929 to 1933, and includes land, buildings, Central Office equipment, repeaters, carrier, studies of Dial program, studies of Manual projects, station estimates, outside cable program, pole replacements and so forth.

5776 The Mountain States Provisional Estimate for 1929 refers to 380 smaller exchanges of 1000 stations or less which need improving to bring the service into line with the large ones; and plans to replace iron grounded toll circuits with copper circuits; with a discussion of plant projects in great detail.

The 1928 Provisional Estimate of the New England Telephone & Telegraph Company has a paragraph that is interesting. It is in the report showing the growth of units of plant to be maintained, and says that consideration was given not only to the improved condition of plant, but to the increased productivity of forces.

I find in the Provisional Estimate for the Pennsylvania Company a reference to the proposed purchase of the Lehigh Company, and a reference to the fact that purchases recently made, and those contemplated, pretty nearly cleared up
5777 the competitive situation in Pennsylvania. That is the provisional estimate of 1923 for the Bell Telephone Company of Pennsylvania and associated companies, and the reference is in a letter of Mr. Kinnard, president of the company, to Mr. Thayer, president of the American Telephone & Telegraph Company, letter dated June 30, 1923. I find another reference that is more or less typical, the Ohio Bell Company provisional estimate for 1925 makes reference to the fact that during the period 1920 to 1929, the increase in the depreciation reserve was expected to be from 8.08 per cent to 18.24 per cent, a large increase during the period, the rates applied being part of the time 5.32 per cent and part of the time 3.28 per cent.

I find references in the 1929 provisional estimate of the New York Telephone Company and the 1930 provisional estimate of the Southern Bell Telephone & Telegraph Company to the fact that the company's dial program of extension and conversion has been adapted to the manufacturing requirements of the Western Electric Company.

Specific references to depreciation that I would refer to as illustrations. I find in the 1925 provisional estimate
5778 of the Southwestern Bell Telephone Company in a letter dated November 13, 1924 of President E. D. Nimms to Mr. Gifford, executive vice president of the A. T. & T. paragraph 9 on depreciation.

"For the Southwestern Company, the effect of the new administration building in St. Louis, as well as the other comparatively large central office buildings is shown in the increase in the depreciation per station. The depreciation reserve for the Kansas City Company is now lower than it should be. Accordingly, our reserve is being gradually built up to a proper amount, and the effect of this program is shown in the per station costs."

The Kansas City Company was a competing company that the Southwestern Bell Telephone Company had purchased.

5779 I find in the 1924 provisional estimate of the Indiana Bell Telephone Company this reference to depreciation in paragraph I, of letter to Mr. Gifford, vice president of the American Telephone & Telegraph Company from Mr. Rottger, president of the Indiana Bell Company; the paragraph is entitled, "Depreciation," and I quote:

"The annual rate of depreciation used the last four months of 1923 and for 1924 to 1928, inclusive, is 6.09 per cent, applied to the average book value of depreciable property. Prior to September 1, 1923, we used 5 per cent, applied to a tentative value set by the Public Service Commission of Indiana, plus actual net additions to plant, which was the equivalent of 4.3 per cent applied to book costs."

I find in the Chesapeake & Potomac 1923 provisional estimate, in a letter from Mr. Berry, its president, to Mr. Thayer, president of the American Telephone & Telegraph Company, letter dated November 28, 1922, depreciation rates quoted as follows:

"Rates filed with the I. C. C. in 1922 and used in provisional
estimate, the C. & P. Telephone Company, 4.85; the
5780 C. & P. Telephone Company of Baltimore City, 5.77;
the C. & P. Telephone Company of Virginia, 5.77; the
C. & P. Telephone Company of West Virginia, 6.05; the
C. & P. group, 5.60."

Then in another column:

"Rates determined by new study made in 1922, the C. & P. Telephone Company, 4.34; the C. & P. Telephone Company of Baltimore City, 5.65; the C. & P. Telephone Company of Virginia, 5.68; the C. & P. Telephone Company of West Virginia 5.95 and the C. & P. Group, 5.40."

I find in the Michigan State Telephone Company provisional estimate for 1924, the following reference to depreciation rates of purchased property, and I quote from the letter from Mr. Kuhn, president of the Michigan State Telephone

Company to Mr. Gifford, vice president of the American Telephone & Telegraph Company of November 13, 1923:

"The depreciation expense shown is somewhat higher for 1923 than might be indicated by a study of the figures for nine months as shown on the monthly reports. The expense is also relatively high for 1924, and in a lesser degree for the other years. The figures shown have been obtained by
5781 using the present composite rate of 5.1 per cent for the plant built or acquired by the Michigan Company prior to August, 1923 and for all plant to be built after that time. A rate of 10.2 per cent, however, has been applied to the plant purchased from the Citizens Telephone Company, as it is estimated that that plant has on the average lived about one-half of its useful life, and a reserve should be accumulated during its period of service to provide for its retirement. The effect of this higher rate is not of great moment beyond 1926, however, as some of the purchased plant will have been displaced by that time and the remaining plant becomes a decreasingly smaller factor, owing to the increased size of the total plant."

And then again, in the 1929 provisional estimate of the Michigan Bell Telephone Company I find a reference to depreciation rates of both the Bell and the Citizens Telephone Company property, that property having been purchased by the Michigan Bell. It says of the Citizens Company property that the rates average nearly twice as high as those for
5782 the former, the Bell Company, on account of the shorter life of the purchased plant.

I find one more reference that is of interest. It is in the 1930 provisional estimate of the Bell Telephone Company of Pennsylvania, and refers to a postponement of maintenance, that the company might not overrun its provisional estimate.

The rate of retirement of plant by one company as compared with another company gives some indication as to whether the conditions of one company as compared with another company are comparable or not comparable as respects depreciation.

I have prepared an exhibit to show the per cent of retirements to plant in service of each of the different classes of plant for each of the associated companies of the Bell

System:

It is defendants' Exhibit X-320, consisting of four
5783 sheets and entitled, "Illinois Bell Telephone Company,
Chicago Rate Case, Depreciation Data from Provisional
Estimates, Per Cent retirements, Depreciation Rates." The
year is 1923. There is one sheet for 1923 and one for 1924.
I obtained the percentages shown on each of these two
sheets of this exhibit from statement "C" of the provisional
estimate. The percentages are shown in column "F" of
statement "C" and it is entitled "Per Cent of Plant Displaced to Average Total Plant."

These are estimates in the provisional estimate.

5784 If the percentages of plant retired to plant in service
were alike for the companies, the different companies
for each year throughout a period of years, I would say that
it was a strong factor in establishing the fact that the conditions were comparable. It is not the only factor.

(Objected to and motion to strike by plaintiff, overruled.)

5785 In my opinion, if there were wide differences in the
per cent of plant retired to plant in service of the different companies throughout a period of years, it would
5786 indicate to me a lack of comparability between the companies as respects depreciation.

(Objected to and motion to strike by plaintiff overruled.)

5787 Composite depreciation percentages are to be found
on the third and fourth sheets of Exhibit X-320. The
data show both the depreciation rates actually applied and
those estimated in the forecast of the provisional estimates.
They are obtained from line 32 of statement A in the provisional estimates.

These figures on pages 3 and 4 of Defendants' Exhibit X-320 show, among other things, a considerable variation in the composite depreciation per cents actually applied by the different companies, these ranging for the year 1923 from 4.81 per cent for the New England Telephone Company to 5.3 per cent for the Pacific Tel. & Tel. Company.

5789 "Mr. Haight: Q. Then I will put this question to you.
Mr. Wray: From the depreciation percentages shown
in this last exhibit, Defendants' Exhibit X-320, and from

the percentages of retirement shows in the preceding exhibit.

A. The same exhibit.

Q. Oh, in the preceding two sheets of the same exhibit, and from such consideration as you are able to give of the letters, reports and other data in the provisional estimates, have you any opinion as to whether the conditions obtaining in the different associated companies of the Bell System are comparable as respecting matters of depreciation?

5790 Mr. Bracelen: That is objected to, if the court please, as incompetent and calling for a conclusion of the witness upon a matter which is not the subject of expert testimony; on the further ground that no foundation has been laid for asking the opinion of this witness; also upon the ground that the question relates to a matter of argument purely.

The Court: My own opinion is that the objection is good, but having in mind the way in which this case is tried, I will take his answer, so that if the remainder of the court do not agree with me, they may consider the answer.

Mr. Bracelen: Also the further objection that it is based upon hearsay.

The Court: Well, it seems to me there is one point in which the question—there is an element in the question, it seems to me, which makes it impossible for the witness to give an answer which would mean anything to the court, that is, with such examination as you have been able to make of these provisional estimates. There is no way in which the court can tell what examination he has made of them. The question really does not mean anything with that in. And, of course, if he has not made—he has either made an 5791 examination of these documents or he has not. If he has made an examination of them, passing the question whether it is a matter for experts to testify to, or whether it is something anybody can arrive at a conclusion from the facts, he can give his opinion.

On the other hand, if he has not made the examination, his opinion is not worth anything.

Mr. Haight: Well, I think our situation is this: The plaintiff in this case offered figures showing depreciation with respect to each company. Here is a mass of some eight or ten thousand pieces of paper used regularly in the operations of this company, that have material, with important bearing, upon the questions of depreciation respecting these associated companies. Now, it is true, that there has not been any opportunity to make an examination or study such as required to use that material, or to use material to which that material leads to make a real examination, and yet it may be that what short opportunity has been given is sufficient to show in the opinion of this man, experienced in this business, that they are comparable.

Now, I think your Honor's suggestion that there is
5792 no showing definitely of what that examination is, may have some real point to it, but if we would limit our questions simply to the material that he has identified on this record, it may be the witness would have an opinion from that alone, indicating lack of comparability. Of course, after all, it is a question for the court to pass on.

The Court: Well, I will take his answer. I do not think it is a matter for expert testimony in any respect. I do not know that we need an expert to testify about that. He can give his view. It would be an argument which he is making in place of the lawyer, I should think.

Mr. Haight: Will you give your answer, Mr. Wray, without any guinea stamp upon it at this time.

A. I would say that the conditions prevailing in one associated company as compared with another are not comparable as respects depreciation."

5793 I was able to begin my examination of the provisional estimates on Saturday, June 4th.

In my opinion, it would take from three to six months
5794 for our organization to make a complete and thorough study of the data available in the provisional estimates that would completely determine the matter of comparability or lack of comparability of conditions in the associated Bell companies as respects depreciation.

I obtained the data on sheet 2 of Exhibit X-313, from Mr. F. B. Wright of the general telephone sales department of the Western Electric Company, 195 Broadway, New York. He is the gentleman who brought the supporting data for the table which is sheet 1 of Exhibit X-313, and who gave me the table which is sheet 2 of Exhibit X-313, this being a breakdown of the data on sheet 1 according to years.

5795 I got that table, which is sheet 2 of Exhibit X-313, from Mr. Wright on May 21st. He delivered it to me in the company's temporary office in the Palmer House here in Chicago.

Some of the classes of long-lived telephone plant that have low depreciation rates are underground conduit, fireproof buildings, underground cable. Some of the shorter-lived classes of plant requiring high depreciation rates are aerial wire, poles, central office switchboards, interior block wire, and aerial cable. Dial equipment has a longer life and lower depreciation rate than manual central office equipment. The proportions of different classes of plant vary widely as 5796 between different companies.

I believe that it is the practice of some of the companies to apply specific depreciation rates to each of the principal classes of plant; others apply composite rates, and the practices have varied through the years.

A comparison of the individual rates for each class of property for each company certainly would be helpful in showing whether conditions were comparable or not comparable between the different companies respecting depreciation.

(This was received subject to objection.)

5797 "The Court: It may be understood that the objection includes all the grounds heretofore urged to that line of testimony."

The graphs relating to the fair cross section appear in Exhibits X-314 and X-318.

I do not present those as giving in my opinion fair cross sections.

The graphs in Exhibits X-314 and X-318 are simply 5798 to illustrate the lack of fair cross section as brought out in the tables in Exhibits X-313 and X-317. They are not intended to show a cross section, varying considerably in one item as against another. In each of these exhibits, it demonstrates that the cross section is not a fair cross section. If the cross section were fair and representative, the percentages would be uniform for one item as compared with the others.

Referring to the second table in X-313, for illustration, and referring to the total figures at the right hand of this table, and the percentages in the last column, which are the percentages of sales to Illinois Bell, to total sales to Bell System, if the Illinois Bell had in fact purchased a representative cross section of the Western Electric Company's sales to the Bell System, the percentages in the last column would all have been alike or substantially alike instead of varying as they do. That same observation applies to the figures in Exhibit X-317 and the comparable chart in X-318.

5799 I prepared Defendants' Exhibit X-321, entitled "Illinois Bell Tel. Co.—Chicago Rate Case—Relative Size of Bell System and Independent Tel. Co. Groups."

Broadly, it is a summarization of certain data to show the relative size and importance of the Bell System group of telephone companies with the largest independent telephone companies, those of the Class A, B and C companies.

The first sheet of Exhibit X-321 shows in the first column items such as number of central offices, number of stations, and so forth. In the first column of figures is given the number for the Class A, B and C independent groups together. Then follows the per cent which the independents is of the total Bell and independents. Then follows figures under the caption "Bell System," for the Bell System. This is followed by per cent of Bell System, and at the right hand of the table are found the total figures of Bell and independents combined.

To illustrate further, referring to the first line, the
5800 independent Class A, B and C telephone companies
have 3,747 exchanges or central offices. The Bell has 6,585, and there are a total of 10,332, of which the independents have 36.3 per cent and the Bell 63.7 per cent.

Now, in the next line, we find that the independents have 11.8 per cent of the telephone stations and the Bell 88.2 per cent, and so on.

The rest of it can easily be read.

On the first sheet, which bears at the top the legend, "Illinois Bell Telephone, Chicago Exchange," the facts respecting Bell System came from the report of the A. T. & T. for the year 1930. The facts respecting Class A, B and C independent telephone companies came from reports of those com-

panies prepared by the United States Independent Telephone
Association. The Class A, B and C independent tele-
5801 phone companies have 11.8 per cent of the total stations
of that group and the Bell group.

The Bell group, as I have given it here, includes all of the companies in the Bell System.

On the second sheet of this exhibit I have taken certain
data from the pamphlet of the American Telephone &
Telegraph Company, showing the comparison of Bell and
independent companies, or rather showing the telephone
development in the United States. This pamphlet is entitled,
"Telephone and Telegraph Statistics of the World, January
1, 1931." From that pamphlet I obtained the data respect-
ing the Bell and independent telephone exchanges combined,
shown at the left hand of the sheet. I find that New York
has a population of 7,014,900, and that it has 1,786,270 tele-
phones.

5802 The independent telephones constitute less than 3 per
cent of the total number of telephones in this group
of 52 cities.

In Defendants' Exhibit X-322, the source of the information is the company's books.

(These sheets of Exhibit X-322 are identified as follows:
The first page is entitled, "Analysis of account 510, message
tolls, eight years, January 1, 1923 to December 31, 1930"
the second sheet, "Analysis of account 512, leased toll
5803 lines," the same period, and the third sheet, with two
groups of information, entitled, respectively, "Analysis
of account 514, telegraph service on toll lines," and "Analysis
of account 516, through toll line revenues.")

With regard to separation and apportionment of revenue and expense and net income, in its station-to-station separation and apportionment of revenues, expenses and net income, shown on Plaintiff's Exhibit A-49, the plaintiff has credited to intrastate toll and to interstate toll certain revenues which on its books are designated as exchange revenues.

A part of the revenue which, on the company's books, is classed as exchange revenue is billed for service other than exchange service.

5804 An instance of this is a toll terminal which cannot
be used for exchange services because it terminates

directly on the toll board. The rental of it, however, is credited to account 500, subscribers' station revenues, which is an exchange revenue account.

In its separation, the company has allocated the rental from toll terminals to toll, and apportioned it between intrastate and interstate.

There is exchange revenue which may cover either exchange or toll service.

An instance of this is as follows:

Suppose we have a private line from an office downtown to a factory on the West Side; the calls which go over that line would necessarily, if we did not have it, be exchange calls, and the use of that private line is therefore an exchange use. If, on the other hand, that private line goes to a factory
at Maywood, the calls which now go over it would, if we
5805 did not have it, necessarily go over the toll lines, and its
use is therefore a toll use. In other words, the revenue which is credited to account 504, private exchange lines, may cover either exchange or toll service, according to the circumstances in each case.

The company has so apportioned it in Plaintiff's Exhibit A-49.

In City's Exhibit No. 93, introduced in evidence at the previous hearing, which included the present schedule of exchange rates, the single business base rate was $4 per month.

That covers eighty calls per month.

"Q. And so far as this schedule shows, does the charge of $4 cover any other calls besides the eighty exchange calls?

Mr. Thompson: I object to that. If it is the interpretation of a written instrument, I do not believe that he can vary the writing itself. He is asked, as I understand it, to interpret this schedule, not the meaning of any language in it.

Mr. Haight: Well, I think Mr. Thompson is right.
5806 Our position in respect to it is, so far as the schedule
shows, the charge of $4 does not cover any other calls than exchange calls. That would be our interpretation of the document, and it may be a matter entirely of argument."

In its separation of revenues in Plaintiff's Exhibit A-49 the company apportions between exchange intrastate toll and interstate toll the revenue resulting from these rates. The revenues are in account 500, subscribers' station revenues. The company apportioned them on the time use of the subscribers' line for exchange intrastate toll and interstate toll service.

The revenues from pay stations resulting from local exchange calls are credited to account 501, public pay station revenues. If a pay station, from which no toll calls have been made since the last collection, has $5 in the box, 100 local exchange calls would have been given for the $5.00. If there had been any toll calls, none of the revenue from them would have been credited to this account. It would have been credited to account 510, message tolls.

In its separation of revenues in Plaintiff's Exhibit A 49, the company has apportioned account 501 between exchange, intrastate toll and interstate toll, on the basis of the time use of subscribers' lines for exchange, intrastate and interstate toll service.

I have an exhibit, Defendants' Exhibit X 263, entitled "Illinois Bell Telephone Company—Chicago Exchange—Redistribution of Exchange Revenues included in Intrastate and Interstate Toll," showing for each year the amounts of revenue resulting from the exchange rates such as those I have described, which in Plaintiff's Exhibit A 49 the company has apportioned to intrastate toll and to interstate toll. The figures to be found in Defendants' Exhibit X 263 were taken from the working papers of Mr. Kruse in the preparation of Plaintiff's Exhibit A 49.

Looking at the first line of Defendants' Exhibit X 263 which is designated "P. B. X. Terminals," out of the total revenues resulting from the exchange rates for this class of service during 1923, the company has apportioned $16,236.92 to intrastate toll as shown in the second column of figures and $8,776.71 to interstate toll as shown in the last column.

The second line shows that out of the total revenues resulting from the exchange rates for P. B. X. switchboards during 1923 the company has apportioned $9,582.94 to intrastate toll and $5,179.97 to interstate toll. Practically all of the balance in account 500, (after excluding the toll terminals which I have stated are used only for toll), is the revenue resulting from the exchange rates shown in City's Exhibit 93, and of this revenue for 1923 the company has apportioned $574,701.85 to intrastate toll and $310, 649.65 to interstate toll as shown on the third line. Of account 501, pay station revenues, which, as I have stated, consists wholly of money paid for exchange calls, the company has apportioned $58,154.72 to intrastate toll, and $31,154.98 to interstate toll, as shown on the fourth line. The lines designated "total" is, of course, arrived at by totaling the figures above, and shows that of these four revenue items the company has apportioned $658,676.43 to intrastate toll and $356,041.31 to interstate toll.

In the first column of figures I have added these amounts and find that out of these four items of exchange revenue the company has apportioned $1,014,717.74 to toll.

The rest of the exhibit shows the corresponding amounts for each of the other years from 1924 to 1931, both inclusive.

5810 In Exhibits X 264 to X 270-B, inclusive, all entitled "Illinois Bell Telephone Company—Chicago Exchange Station to Station Separation and Apportionment of Revenues, Expenses and Net Income, 1923 to 1931," inclusive, we have treated the totals arrived at in Defendants' Exhibit X 263 as "additions" and "deductions."

Referring to Exhibit X 264, this exhibit is made up in the same form as Plaintiff's Exhibit A 49, and the data in it are taken directly from A 49, except that in the first line, which is designated "Exchange revenue", I have added or subtracted additions and deductions shown in Defendants' Exhibit X 263 to the exchange revenue figures shown in Plaintiff's Exhibit A 49 in order to show what the distribution of exchange revenue between exchange, intrastate toll and interstate toll would be if we included in the exchange column all of the revenues resulting from rates for exchange service.

The "total Chicago" amounts shown in the last column are, of course, the same throughout, as in Plaintiff's Exhibit A 49, since the only change I am making is in the distribution of those totals.

Going down the various columns, the toll revenue figures
5811 shown in the second line and the miscellaneous operating revenues in the third line are the same as in Plaintiff's Exhibit A 49. We have made no change in them because they do not result from rates fixed for exchange service. There is a minor adjustment of account 312.01

interest earned, amounting to some $200 in the non-operating revenues. The gross revenues, licensee revenue, debtor, and the total revenues are all changed in distribution by the changes in the figures above them, the totals in the last column remaining the same.

Traffic expenses are distributed in Plaintiff's Exhibit A 49 according to the labor and other costs involved in handling exchange and toll calls and are not affected by our redistribution of revenues. The distribution of commercial expense depends in part on the distribution of the revenues, and the transfer of over one million dollars of revenue to the exchange column involves the transfer of about $80,000 of commercial expense to that column. For the same reason general and miscellaneous expenses are also increased slightly in that column. Maintenance and depreciation are functions of the plant and are therefore not changed.

5812 Taxes in the exchange column are increased to cover such taxes as, like the federal income tax, are based on earnings, and also the three per cent taxes to the City of Chicago.

Other expenses and deductions are increased in that column to care for the portion of account 304, uncollectible operating revenues, which are associated with the exchange revenues transferred on the first line. I have already stated that none of the totals in the last column were changed, and, therefore, in each case, where we have increased the expense figures in the exchange column, we have made corresponding decreases in one or both of the toll columns.

These changes in the revenue and expense figures result in a balance in the exchange column of $5,479,156, as compared with the balance of $4,736,311 shown in Plaintiff's Exhibit A 49.

The next item of net compensation for use of Chicago and downstate property is not affected. Adding this to the last figure quoted, gives a balance available for return on the present rates amounting to $5,739,097 as compared with the company's figure of $4,996,252, which is shown in Plaintiff's Exhibit A 49.

5813 The next item is reduction under rates in suit. The company has apportioned this reduction between exchange, intrastate toll and interstate toll on the same basis as the exchange revenues to which the reduction applies.

Since the reduction affects only certain rates for exchange service, and I have credited all of the revenue resulting from these rates to exchange, I have of necessity charged all of the reduction to exchange. This gives a balance available for return under rates in suit amounting to $4,181,857 as compared with the company's figure of $3,483,393.

The other sheets relate to the different years as indicated at their heads.

Defendants' Exhibits X 265 to X 270-B, both inclusive, are the same in form as Defendants' Exhibit X 264.

They give the same information for the years 1924 to 1931, both inclusive, that Exhibit X 264 gives for the year 1923.

5814 Defendants' Exhibit X 271, entitled "Ill. Bell Tel. Co. Chicago, Exchange—Balance available for Return," is simply a comparison for each year between the balance available for return as shown in Plaintiff's Exhibit A 49 and those shown in Defendants' Exhibits X 264 to X 270-B, inclusive. It shows the balance both under present rates and under rates in suit as apportioned between exchange, intrastate and interstate toll.

For example, in the first column of Defendants' Exhibit X 271, for the year 1923, we find the figures which I gave a moment ago as the balance available for return under the present rates as shown in Plaintiff's Exhibit A 49 and in Defendants' Exhibit 264.

The difference between the balance as shown on these two exhibits is shown in the third line of Defendants' Exhibit X 271, which is $742,845.

This difference is the net result of the transfer from 5815 toll to exchange of the exchange revenues amounting to $1,914,717.74, shown on the fifth line of Defendants' Exhibit X 263, together with the various adjustments in the other revenue accounts and in certain expense accounts which result from that transfer in Defendants' Exhibit X 264 as I described those adjustments. My answer will be the same with respect to the differences shown in the first column for all the years subsequent to 1923. The difference increases each year up to 1930 when it becomes $1,618,918. In 1931, it goes off about $178,000, presumably because of the drop in revenues during that year.

In the exchange column the differences all represent in

creases, while in the intrastate and interstate toll column
they are all decreases, and in the column headed, "Total
Chicago" there are no differences. This is due to the fact
that I have not changed the company's totals in any
5816 of the revenue or expense accounts but merely their
apportionment as between exchange, intrastate toll and
interstate toll.

Referring to the last five columns, which show the balance available for return under rates in suit, I would give the same explanation of these figures that I did in the case of the first five columns, the figures varying, of course. The balances shown here are taken from the last line of Plaintiff's Exhibit A 49 and of Defendants' Exhibits X 264 to X 270B, inclusive, and the differences shown are computed in the same way as they were in the first five columns.

We find, as before, that in the exchange column the difference increases each year up to 1930, when it becomes $1,551,597 and drops off somewhat in 1931.

For the year 1923, both Plaintiff's Exhibit A 49 and Defendants' Exhibit X 264 show a reduction under rates in suit amounting to a total of $1,557,240.

If the Commission's order had been complied with,
5817 the reduction in the year 1923 would not have amounted
to $1,557,240, because the rates prescribed by the Commission's order, would have been effective only during the last three months of that year, so that the actual reduction during 1923 under the rates in suit would have been only about one quarter of that shown in both of these exhibits.

In Exhibit X 271A, entitled "Illinois Bell Tel. Co.—Chicago Division Additional Income under Attacked Rates due to Defendants' Interstate Separation (Giving Consideration to Effective Date (Oct. 1, 1923) of Ill. Commerce Commission's order of August 16, 1923) during year 1923," I have a computation showing the effect on both Plaintiff's Exhibit A 49 and Defendants' Exhibit X 264 and X 271, of the fact that the reduction would have affected the income only during the last quarter of 1923.

On Exhibit X 271, the differences between the com-
5818 pany's method and my method on separation are contained in columns 1, 2, 3 and 4 and in columns 6, 7, 8, and 9.

The first line in Exhibit X 271A shows the income avail able for return under present rates, and is taken directly from Plaintiff's Exhibit A 49. Item 2 on Exhibit X 271 shows the reduction during the last quarter of 1923 under the rates in suit, the estimated reduction, and is computed simply taking one-quarter of the amount shown in the next to the last line of Plaintiff's Exhibit A 49.

Item 3 is item 1 minus item 2 and shows what the last line of Plaintiff's Exhibit A 49 would have shown, had the reduction been applied only to that portion of the year 1923 during which it would have been effective under the Commission's order.

Items 4, 5 and 6 are worked out from Defendants' Exhibit X 264 in the same way that items 1, 2 and 3 were 5819 worked out from Plaintiff's Exhibit A 49, item 6 showing what the last line of Defendants' Exhibit X 264 would have shown had the reduction been applied only to the last quarter of the year.

Item 7 is computed in the same way as the differences shown in the last five columns of Defendants' Exhibit X 271. Defendants' Exhibit X 271 shows, for example, that the exchange balance available for return under the rates in suit is $698,464 greater during 1923 on the basis used in Defendants' Exhibit X 264 than it is on the basis shown in Plaintiff's Exhibit A 49, while Defendants' Exhibit X 271 A shows that if the reduction be applied only to that portion of the year during which the attacked rates would have been in effect, the difference is increased to $731,730.

I have compared Mr. Sloan's computations of taxes during construction in Plaintiff's Exhibit No. 1 and A 11. I find differences in method. The first difference is in 5820 the first column of figures, which shows the cumulative cost of plant each year. In this column, Plaintiff's Exhibit No. 1, excluded all overheads, while Plaintiff's Exhibit A 11 includes all overheads except interest and taxes. These overheads increase from the first year to the tenth year of the construction period. In the tenth year they amount to $13,929,762, which is the difference between the cumulative figure shown in the computation of taxes on page 8 of Plaintiff's Exhibit A 11 and the total direct charges in the last column of page 2.

The taxes in the 1930 study amount to $5,768,920, and in the 1923 study to $2,163,856, an increase of about 170 per

cent. The total of the 1930 appraisal amounts to $229,325,348 and of the 1923 appraisal to $145,248,344, or an increase of about 58 per cent. The taxes as Mr. Sloan
5821 has computed them in these two studies increased nearly three times as much as the total appraisal. This difference is due, in part, to the fact that in his 1930 study he has included overheads which he had excluded from his 1923 study.

As to other differences in method which I have found between Mr. Sloan's 1923 and his 1930 studies, in the last column, the amount of taxes chargeable to construction each year is computed differently in the two studies. In both studies, the taxes are computed by applying the annual rate to the cost of plant shown in the next to the last column. In the 1923 study to compute the taxes chargeable each year, the rate is applied to the cumulative cost of plant during that year, while in the 1930 study it is applied to the cost of plant two years previously.

The effect of that change in method is to omit the taxes on the plant assessed for taxes during construction during the last two years of the construction period.

5822 The cost of plant assessed for taxes during the ninth and tenth years is less than in any other year, except the first year, when it consists wholly of overheads.

Mr. Sloan did not include the first year in computing the taxes

The omission of the last two years make a difference in the answer of $471,037.

In both Mr. Sloan's 1923 study and his 1930 study, the figures in the first column, "cumulative cost of plant" are taken directly from his construction program and I understand include construction work in progress.

I base that understanding partly because of the basis used for his computation of interest during construction, but chiefly because I so understand his testimony in regard to central office equipment at the previous hearing, volume 2, page of the transcript, 666.

5823 I stated that the figures in the first column on page 8 of Plaintiff's Exhibit A-11 are taken directly from the cumulative cost of construction as shown on page 2. On page 2 it is shown, for example, four million dollars for buildings in the second year, $12,500,000 in the third year,

$15,000,000 in the fourth year, $16,500,000 in the fifth year and the full amount of $17,831,770 in the sixth and each subsequent year. Previous to the sixth year, I understand that these amounts include some buildings in process of construction.

5824 The Illinois Bell Telephone Company for the Chi-
5825 cago area pays six distinct taxes:

Real Estate Taxes; Personal Property Taxes; South Town Capital Stock Tax; Illinois Franchise Tax; Federal Income Tax and 3 per cent Gross Earnings tax to the City of Chicago.

Mr. Sloan included in his computation all of them except the Federal Income Tax and the 3 per cent Gross Earnings Tax to the city. Those two are based on revenue rather than property and are therefore not chargeable against construction project.

In fixing the rate which Mr. Sloan applied to his estimate cost of reproduction as shown on Plaintiff's Exhibit A.11, Mr. Sloan used the amount of capital stock taxes actually paid by the company.

5826 I would not expect the capital stock on the structure during each year of the period to be the same as in 1923.

I have an exhibit showing the capitalized overheads during the entire period from 1911 to 1931.

It is Defendants' Exhibit X-270C, entitled "Ill. Bell Tel. Co.—Chicago Exchange—Capitalized Overheads."

I believe that the figures on this exhibit for the years 1911 to 1922, inclusive, are the same as those that Mr. Cummings read into the record, with the addition of interest during construction, which came from the same source, City's Exhibit No. 2, record volume 6, page 1873.

(June 27, 1932.)

5830 The sources of the overheads and interest from 1923 to 1931, both inclusive, in Exhibit X-270C are as follows:

For the first half of 1923, I took the engineering and general from City's Exhibit No. 2, record volume 6, page 1873, and added them together to get the capitalized overheads for that period.

For the second half of the year, I took as the capitalized overheads, the difference between the gross additions per books, during the half year, and the gross additions less capitalized overheads as both figures are shown on page 4 of Plaintiff's Exhibit A-2. I then divided the overheads for the entire year as thus computed by the gross additions less overheads for the entire year to obtain the 1923 percentages shown here. The interest during construction I took from Plaintiff's Exhibit A-57, and reduced it to the percentage shown here in the same way.

For each subsequent year, I computed the overhead percentage in the same way that I have described for the
5831 second half of 1923, using the data on page 4 of Plaintiff's Exhibit A-3 to A-10, inclusive. The interest during construction I took from Plaintiff's Exhibit A-57, as I did for 1923. The last column of this exhibit shows all of the overheads, including interest during construction which have been charged to fixed capital during each year from August, 1911, to December 31, 1931.

I have a copy of Exhibit A-51. I have examined the bases used in computing the amounts of compensation shown in that exhibit. For example, in 1931, item A, credits Chicago with $88,402 as compensation for the use of Chicago land and buildings for state-area purposes. The properties involved in this line are five buildings in the downtown group, which are known as the Bell, Main, Toll, Franklin and Telephone Square buildings, and two warehouses. The amount of $88,402 includes five items, which are, first, rate of return, amounting to $46,974; second, maintenance, amounting to $10,755; third, depreciation, amounting to
5832 $13,512; fourth, insurance, amounting to $282; fifth, taxes, amounting to $16,876, all going to make a total of $88,402, which is the total amount of item A in Exhibit 51. I found, with respect to these items that the first step was to apportion these buildings on the basis of the amounts of space occupied for Chicago and for state-area purposes. The land on which each building stands was apportioned by the percentage resulting from the apportionment of the building on it. The return of $46,974 was computed by applying 8 per cent to the book cost of the state-area portion of the land and buildings.

The effect of this procedure with respect to Plaintiff's Exhibit A-49 and to item (g) and in part to item (f) of Exhibit 51 is as follows:

The net compensation at the bottom of this Exhibit 51 is used in computing the balance available for return in Plaintiff's Exhibit A-49, and that balance is used in computing the rate of return in Plaintiff's Exhibit A-53.

In Plaintiff's Exhibit A-53, the balance available for return is applied to two rate bases, one of which is based on book cost and the other on reproduction cost. In such
5833 a computation as this, the balance available for return and the rate base to which it is applied should be on a comparable basis, and to the extent that the balance includes compensation on book costs, it is not properly applicable to a rate base which is computed on a reproduction cost basis. In other words, the company, in claiming its return on its property is claiming 8 per cent on reproduction cost, while at the same time it is charging another area for the use of Chicago buildings on the basis of 8 per cent on book cost; which is less. If the compensation were computed on reproduction cost, the amount shown in Plaintiff's Exhibit A-51, which is used in computing the balance in Exhibit A-49, and the rate of return in Exhibit A-53, would be substantially larger, about $35,000.

With reference to maintenance, I found that it is computed by applying to the number of square feet used for state-area purposes the actual average maintenance cost per square foot in all of the company's Chicago buildings. That is the company's method. Maintenance per square foot is substantially higher in large office buildings such as the most of these than it is in buildings such as those used for
5834 central offices throughout the city. Central office buildings, for example, have no elevators to maintain.

I found that depreciation expense is computed by applying the depreciation rates which the company considers applicable to these buildings. To the extent that these rates are not proper, to that extent the company's computations will be incorrect.

Insurance is computed by applying the insurance rate to the state area portion of the book cost of each building. It is our understanding that the rate used in each case was computed by dividing an estimated premium by book cost of the building, instead of the actual premiums paid.

Taxes were computed by applying to the book cost a rate which is obtained by dividing the amount paid by the taxable value, which in every instance is higher than the book cost. This would necessarily result in too low a rate, and consequently in too small an amount of compensation.

Another question arises with respect to taxes in that
5835 the only tax used in this computation is that on real
estate. In 1931, the South Town Capital Stock Tax was nearly twice as much as the real estate tax, and since on the balance sheet the assets are balanced by liabilities which include capital stock, the question as to whether the Capital Stock Tax should also be included in this computation, is debatable.

Another point is that if this computation is considered as revenue to the Chicago area, the state area should stand its share of the 3 per cent city tax on gross earnings. It would also seem that the state area should stand its share of the part of the state franchise tax which is apportioned to Chicago.

Items B, C, D and E of Exhibit 51, all relate to the general equipment accounts. The compensation includes the same factors as in the case of real estate, except for maintenance, and in the case of items C, D and E, depreciation, which are distributed over the primary expense accounts. Return is computed at 8 per cent of the book cost, and since general equipment is included in Mr. Sloan's reproduction
estimate at book cost, the criticism made in respect to
5836 the method used in computing return on real estate
does not apply to general equipment.

Depreciation on item B and insurance, are computed in the same way as in the case of buildings, and the same comments would apply.

Taxes are computed by applying a tax rate obtained by dividing the total Chicago area personal property taxes by the book cost of the personal property. The same questions arise here in respect to the capital stock tax, and 3 per cent gross earnings tax, and the state franchise tax, as in the case of real estate.

The amount of $58,641 for item F, official private branch exchange is computed as follows:

Charges for state area purposes have been made at monthly commercial base rates for all telephones of state area employes and for a proportion of the switchboards and trunks, a proportion of operators' salaries, rentals for P.

B. X. switchboards, rent of floor space used [illegible]
switchboard and a proportionate share of house [illegible]
penses. This is done on a per line basis, no [illegible]
actual usage being available. The charges [illegible]
lowing items:

5837 Item 1: Charges for telephones of [illegible]
ployes at regular commercial rates. These [illegible]
cluding a proportionate share of the charges for the P. [illegible]
and for trunk lines.

Item 2: The charges include a proportion [illegible]
department expenses of operating the P. B. X. [illegible]
These charges include only operators' wages [illegible]
sion, and do not include any share of the cost [illegible]
tors' school and of training operators.

Item 3: They include a proportion of annual [illegible]
floor space occupied by the P. B. X. switchboard [illegible]
nual charges are as follows:

a. Rate of return is computed at 8 per cent [illegible]
The same criticism in respect to reproduction [illegible]
apply as in the case of land and buildings.

b. Maintenance is computed on a square [illegible]
the average maintenance cost of all buildings [illegible]
area. It should be noted that the maintenance [illegible]
Franklin Building are higher per square foot [illegible]
age for the City of Chicago, and the same [illegible]
apply as in item (a) of Exhibit A-51.

c. Insurance premiums are included [illegible]
5838 basis as in the case of item (a) A-51 [illegible]
Land, and the same comments apply.

d. Taxes are computed on the same [illegible]
ings and land, item (a) Exhibit A-51, and [illegible]
cisms apply. The basis for the charge of [illegible]
(g) plant and equipment used to operate [illegible]
suburban exchanges is the same as used for [illegible]
ings in item (a) Exhibit A-51, and the same [illegible]
ply. It should further be noted that these [illegible]
1923, $140,529; for 1924, $151,501; for 1925 [illegible]
these three years the differences between [illegible]
book cost basis and on a reproduction cost [illegible]
large.

With reference to item J, Chicago [illegible]
service furnished on concession basis [illegible]

[illegible] which amount is $30,757, the figures are computed [illegible] on concession rates applied to base or minimum guarantee rates. Although the concessions in fact apply to total bills for local service, including all messages over the minimum or guarantee rate, no allowances for concessions [illegible] on excess messages have been made in this computation. The charges with reference to item (k), amounting to $22,476, entitled, Toll Calls on Company Business, are determined to include toll service for state area employes. It should be noted, however, that only 26 per cent of the charges for toll calls of general officers and general employes on company business are charged against the state area in the above figure.

5840 The item (n), land and buildings, which amounts to $11,517, being part of compensation to state area for [illegible] use in part for Chicago area purposes, includes the Margaret Mackin Hall and Recreational Center for Employes. It consists of the following items:

1. Rate of return at 8 per cent on book cost;
2. Maintenance expenses;
3. Depreciation expenses;
4. Insurance;
5. Taxes.

(Exhibits identified by Mr. Wray on direct examination and numbered X 313, 314, 315, 315A, 316, 317, 318, 319, 320, [illegible] 263, 264, 265, 266, 267, 268, 269, 270, 270A, 270B, 270C, 271, 271A, offered in evidence subject to cross-examination.)

Cross Examination by Mr. Thompson.

I have just been talking about Plaintiff's Exhibit X 51. (This shows detail of net compensation to Chicago for use of Chicago property for state area purposes, and use of state area property for Chicago purposes which includes the years 1923 to 1931.)

5841 One of the items that I mentioned and criticized was the amount credited to Chicago for Chicago residence telephone service furnished on concession basis to state area employes, and the basis of my criticism was that it was on a straight commercial rate, without keeping track of messages.

There is also compensation due to the state area for suburban residence telephone services furnished on concession basis to Chicago area employes. That is kept on the basis of the state, which is a flat rate. The Chicago area is on the base rate but that does not include the excess messages, if any.

The state area does not include excess messages. There are none, because the rates are flat rates. The difference between those two sums in the year 1923 is about $400. In 1930 it came to almost $6,000.

5842 It is my understanding that the company does not keep any account of the excess messages used by its employes for state area uses in their phone concessions in Chicago. I criticize this exhibit on the ground that they do not, and not doing it, they fail to charge to the state area for all of the messages incurred. So far as the property is concerned, it is figured upon an 8 per cent return on the book cost of the property devoted to the state. I criticize it, not because it is too low, but because it is not consistent with the charges that the company is claiming for 5843 the use of its property.

In figuring compensation to Chicago for the use of Chicago property for state area purposes and compensation to the state area for Chicago use of state area property on the basis of rate of return, I think that they should be on a comparable basis. I don't know that there has never been an inventory or an appraisal of property in the state area. In order to make this exhibit comparable I think the return would have to be figured upon the book cost of the property, or there would have to be an appraisal of all the property in the state area.

5844 On direct examination I think I was asked the following question:

"Do you happen to know whether the Western Electric Company sold any step-by-step equipment in the Chicago area during the period 1924 to 1930, both inclusive," and that I answered it as follows:

"No. The Western Company sold no step-by-step equipment for the Chicago area for the reason that that area is served by the panel type and manual equipment, and the step-by-step equipment is not used in the Chicago area, nor in other large population centers like Chicago."

I say that now, too.

The Illinois Bell Company uses no step-by-step equip-
ment in its central offices in the Chicago area. I do not know
that it is not a fact that the Western Electric Company has
sold no step-by-step equipment for the Chicago area
5845 during the years 1924 to 1930, for use in the Chicago
area. I am quite familiar with the equipment used
in Chicago for telephone purposes. I do not know it to be
a fact that there has been sold by the Western Electric Com-
pany to the Illinois Bell Telephone Company for use in its
Chicago area approximately $2,000,000 of step-by-step equip-
ment during the period 1923 to 1931, for use in official P. B.
X., large dial P. B. X. and small dial P. B. X.

I know that the Illinois Bell has no step-by-step central
office equipment in the Chicago area. I was trying to show
in my testimony that the sales by the Western Electric
5846 Company to the Illinois Bell for use in its Chicago area
was not a fair cross section of the sales generally by
the Western and I think I have done that. I made the point
that our reason for it was that there was no step-by-step
equipment sold by Western to Illinois Bell for use in the
Chicago area. I think my statement about no step-by-step
equipment being sold by the Western to the Illinois Bell for
use in the Chicago area would have been a little more accu-
rate if I had said for central office exchanges. That is what
I had in mind. My statement on the record is cor-
5847 rect as respects central office equipment. Accepting
your statement in regard to the $2,000,000, I presume
my statement would be incorrect as respects equipment used
in the official and large and the small P. B. X.'s.

I have Exhibits X 317, X 318 and X 319 before me. Exhibit X 317 merely contains a detailed list of the items which I used in preparing the table and chart shown on Exhibit X 318.

In Exhibit X 318 I have taken from the provisional esti-
mate for the years 1922 to 1932 the number of items in 32
different classes of telephone apparatus and cable for each
of the Bell associated companies, and for the Bell System
in its entirety, and prepared a table and graph which I say
shows that the estimated quantities of materials to be de-
livered to the Illinois Bell Telephone Company are not
5848 a fair cross section of the estimated quantities of ma

terial to be delivered to all the Bell associated companies by the Western Electric Company.

This exhibit deals exclusively with the number of items and does not deal with dollars at all. I understand that these provisional estimates represent the best forecast which the individual Bell associated companies can make with respect to their future purchases from the Western. They do not represent firm orders. They do not represent purchases. Most of the provisional estimates that I have examined have been delivered in November of each year for the next
5849 year's estimate. In them, the particular Bell associated company is estimating for a period of fourteen months in the future its gross purchases, and its purchases in each of the thirty-two separate classifications that are set forth in my Exhibit X-318, and also set forth in these provisional estimates.

When these provisional estimates are delivered, we will say in November, they are based upon estimates that were made some time prior to the delivery of the provisional estimates. They necessarily have to be made up and probably are prepared from July to November. The companies are taking a look ahead, not for substantially eighteen months, but for periods of from two to eighteen months. Two to fourteen months would be nearer correct.

5850 From my experience in the telephone business I know that it is highly improbable that these Bell associated companies would take from the Western, as purchases in any year, either the total aggregate amount that is set out in these provisional estimates or the amount listed in the thirty-two separate classifications. I know that they sometimes will take less and sometimes more.

A project that is contemplated by the Northwestern Bell Telephone Company in July of one year may be abandoned by January 1st of the following year, or new project undertaken; conditions may vary so that the amounts of these various classifications or sub-classifications are materially changed. They sometimes are.

A fair cross section of plant would mean that there must be substantial identity in the relative amount of
5851 purchases of the Illinois Bell Telephone Company in each one of these classifications.

In order to show that there was no fair cross section, I

have, in this exhibit, taken estimated quantities, not representing either firm orders or actual purchases, and in cases where I know the deliveries vary from the estimate; but I also know that these are the data upon which the Western Electric Company shapes its construction program, its manufacturing program and its purchases and its prices. I was not attempting, in these exhibits, to build up anything about the Western program. I was intending to show whether this represented or did not represent a fair cross section. I think that the other question that I have now brought in has a very definite bearing upon these exhibits. I knew
5852 from my experience that these are estimates, that the Western Electric does not use unmodified for the purpose of developing its own manufacturing program; that there are modifications in these estimates; that after these estimates come in, the Western is in constant touch with the Bell associated companies, in order to develop its own manufacturing program, and that it does not rely exclusively upon these provisional estimates; it gives such weight to them, as its experience has taught, they are entitled to, but it starts with these estimates. What I have done in the exhibits, X 317, X 318 and X 319 is to attempt to determine the question of a fair cross section first on items, not on dollars, and second on estimated future, and not actual present requirements or purchases. But a cross section on dollars would be no cross section at all. The only fair
5853 cross section would be on items, the types of i manufactured by the Western Electric Manufacturing Company.

Q. Exactly. So that the dollar purchases would not enter into the cross section factor at all; the question of the amount of profit made would not enter into it, and by profit I mean either return on investment or profit on sales, is that correct?

A. I do not know how much further I might go in determining the cross section. I am conceding that

Q. No, Mr. Wray;

A. —wide variations in these items.

Q. If you will be kind enough to answer my question—

A. —there is not a fair cross section.

Q. If you will be kind enough to answer my question and then you may explain when your counsel will re-exam ing you. I am asking you whether you have paid any attention in these exhibits, either to dollar sales or to earnings on investment, or to profit on sales in determining what was or was not a fair cross section."

In Exhibits X-317, X-318 and X-319, no attempt was made to pay any attention to the dollar sales. The effort was to get at the fact as to whether there was a comparable fair
cross section of estimated quantities for one company
5854 as against another as shown by the provisional esti-
mates. We attempted an analysis of dollar sales in
the preceding exhibits, X-313 and X-314.

In Exhibits X-317, X-318 and X-319 there not only was not any dollar weight, but, of course, there was no attempt to arrive at relative profit on sales or earnings on investment. Exhibit X-314 also gives only the number of items sold to the Bell System and to the Illinois Bell Telephone Company in seventeen accounts for the period 1924 to 1930. Exhibits X-314 and X-313 are analyses of the most important plant items sold to the Illinois Bell during the period 1924 to 1930 and for each year of that period. They are
weighted as items only.

5855 Each item, no matter what the dollar quantity, is
given the identical weighting for the purpose of these
two exhibits. I do not know what per cent of the total plant in service for the period involved in this controversy the Illinois Bell has as related to the total Bell system. (Counsel stated that for the periods 1916 to 1930, 7.3 per cent of the total plant of the Bell associated companies is a weighted
average figure.)

5856 In order to get a representative cross section for the
Illinois Bell, I do not say that the percentage of large
multiple sections shall be 7.3; it might be about 10 or 10.6. If the Illinois Bell property is to be a fair cross section of Western sales, then small multiple sections must likewise be 10.6; 550 and 551 types must be 10.6; 505 and 506 types must
be 10.6, and so we go through the list, and if there is
5857 any substantial variation from 10.6, the identity is de-
stroyed, and, therefore, a fair cross section is de-
stroyed. I would permit a small variation of within ten per cent, that is 5 per cent either way. That, as related to the figure we have been discussing, is a 1 per cent variation

On that theory, if it was over 11 or under 10, the cross section would be gone.

5858 The item of Western Electric Company manufacture appearing on Exhibit X-317 summary sheet, which was sold in the smallest quantities for the entire period is 740 type P. B. X.'s. It might follow that that was one of the smallest dollar amounts on the list, but I have no way of measuring the dollars.

5859 If we start with the figure 10.6, for large multiple sections then every figure up and down the summary sheet must be 10.6 with a variation of not over .5 of 1 per cent either up or down. If every figure on this summary sheet was 10.6 except 740 P. B. X.'s, and that was 4 per cent, the cross section would be destroyed as an absolute fair cross section, but there are degrees of unfairness. If there were sold to the Illinois Bell, every item included in the summary list on Exhibit X-313 at 10.6 per cent of the
5860 total to the Bell System, except a single item of 740
P. B. X.'s, and there were only 4 per cent of them sold to the Illinois Bell, it would not be a fair cross section. I would not want to be bound down by absolute limits as to whether it is fair. Whether the weighting of these items makes a difference or whether a fair cross section is destroyed if all of these are not substantially the same, can be answered only by making this sort of a statement: The company furnished us with this statement of the most important items sold to the Illinois Bell and to the Bell System during the period 1924 to 1930, inclusive. I as-
5861 sumed that they were important items. I assumed that
they were representative, and my analysis is of items, without taking into account the dollar effect, because I didn't have the dollars.

Assuming that every one of these items on the summary sheet of Exhibit X-313 was sold in the same identical quantities to the Illinois Bell Telephone Company, 10.6 per cent, save and except only the item of 740 P. B. X.'s, of those there were only 4 per cent sold, that will destroy the fair cross section of the items. All of these items that appear on X-313, with the exception of a portion of the step-by-step equipment are manufactured in the three plants of the
5862 Western Electric Company.

All of these items which are under the title, “Switchboards,'' are manufactured for performing the same function, that is, they are to switch calls, they are switching apparatus.

If the large multiple section were 10.6 and the small
5863 multiple section were 5.1, then the cross section is gone,
on this showing by the company, and on the substance of my testimony,—on this showing of items which are important items of Western Electric Company manufacture. I wouldn't say that a large multiple section and small multiple section are different assemblies of the same identical
articles of manufacture. A good many of the items are
5864 common to both types. The switchboard frame will be
different in a small multiple section than in the large multiple section. I would not attempt to go into details of the difference, but there are different dimensions and different sizes.

5865 (A document was marked Exhibit A-237.)

Whether Plaintiff's Exhibit A-237 contains a correct list of the items of manufacture found in large multiple sections, small multiple sections panel lines and step-by-step lines, and as to whether where the X's appear, that kind of an article appears in all these assemblies, can be answered fairly only by this sort of comment:

There are cords for large multiples, small multiples, panel lines and step-by-step lines, but there are different kinds of cords, different code numbers, and they are in different pro-
portions in the different types of switchboard The
5866 same applies to plugs and lamps and keys and jacks
and designation strips and practically every other item in the list.

These four things asked about, the large multiple switchboards, the small multiple switchboards, the panel lines and the step-by-step lines contain many things that are identical, and some things of the same type, and there are things of varying type. As to selectors, line finders, connectors, senders and jacks that are herein shown, a good many of the parts are stamped out.

5867 A great many of the items in the large multiple and
small multiple sections are stamped out and assembled. They are made in the same factories, but with different machines and different people. A jack for a large multiple section and a jack for a small multiple section may be

made on the same machine. I doubt it, although I do not know. A jack for a panel line could be made on the same machine, if it is the same kind of jack. These various things perform the same general function, the switching function, but in a vitally different manner.

5868 What I am talking about is an assembly of different kinds of parts in a different way, and an assembly of some items that are alike for the different types of switchboard. How many kinds of parts are found in a large multiple section that are not found in a small multiple section I would not undertake to say offhand. I say that the fair cross section would be destroyed by a variation of five-tenths of 1 per cent as between a large multiple section and a small multiple section, without knowing how the parts would vary, or what the effect would be either on profit on sales, or earning on investment, with respect to them.

5869 I don't remember whether in the Indiana Bell case, I approved the use of a representative weighted [illegible] for each of the years 1913 to 1922, based on a constant cross section of plant.

I presume that the following was my testimony in 5870 the state wide case at Indianapolis, before Judge Page:

"Question: Have you checked the material and labor costs for the Indiana Bell Telephone Company, and for the construction of its plant for the years 1913 to 1923, both inclusive?

Answer: Yes, sir. These costs were checked by members of my staff under my direction.

Question: Did you check the Company's appraisal, as testified to by Mr. Halstead, on the basis of five-year average unit costs?

Answer: Yes, sir, we did.

Question: As well as on the ten-year average unit costs?

Answer: We did, and the current costs, November, 1922.

Question: What did you find as a result of making those checks as to whether the unit costs used by the Company were reasonably representative of actual costs of telephone construction during the several years?

5871 Answer: They do reasonably represent the actual costs during those periods."

5875 I don't recall Plaintiff's Exhibit A-212 identified during the testimony of Mr. Cummings, and copies of which he said he found in the files of J. G. Wray & Company. I am very sure that they were not made up in our office. They may have been made up by the company.

5876 I was not in court when Mr. Cummings was asked some questions about this. I heard about it rather vaguely. I didn't hear much about it. It is quite possible, that Mr. Cummings did find them in the files, but that doesn't prove they are our exhibits. I don't know that I approved their use.

Plaintiff's Exhibit A-212 shows the same identical cross section of representative weighted plant for each of 5877 the years; account 221, Central Office Equipment shows the same number of items, of each of the same list of plant items for each of the years.

"Mr. Thompson: Now, in order not to take too much of the court's time, I am going to give you certain exhibits, and then I am going to give you the record of your testimony, and I am going to give you the original papers, and then tomorrow you can come back and answer these questions so that there will be no doubt about what I am after.

I have before me here Exhibit A-238, it says, "Muncie, Indiana." Now, here is the basis of the appraisal to which you testified on the '16 to '20 unit costs. Then that was converted to the 1913 to 1922 level by the use of certain conversion factors which, applied to account 221, Central 5878 Office Equipment, was 94.46. The same costs for '16 to '20 were converted to the November, '22 level by the use of a conversion factor applied to Central Office Equipment, of 134.57 per cent. And then here is the sheet marked Exhibit A-239 for the Muncie, Indiana, Exchange, we will go down to Central Office Equipment, which is Account 221.

A. It is.

Q. There is that conversion factor, 94.46. Do you see that?

A. I do. You claim that these are my exhibits?

Q. No, I claim they are exhibits prepared by Mr. Halstead which you approved by your sworn testimony. Now, we will take next the Indianapolis Exchange. Under Account 221, Central Office Equipment, do you note that 94.46 per cent conversion factor?

A. I do.

Q. It is identical with Muncie, isn't it?

A. It is.

Q. All right. Now, that is to convert that five-year average appraisal to the ten-year average. Now, let's take 5879 Exhibits 240 and 241, for Muncie and Indianapolis, also under account 221. I call your attention now to Exhibit A-240, Account 221, conversion factor 134.57. Do you see that?

A. I do.

Q. I now call your attention to Indianapolis Account 221, the same identical conversion factor, isn't it?

A. It seems to be, but I am simply—

Q. All right. On the papers.

A. (Continuing.) —saying that those are the figures you mention.

Q. Yes.

A. I don't know just what they mean.

Q. You know from your experience with Indiana property that Muncie was a manual central office?

A. That is my recollection.

Q. Yes.

A. It is a long time ago.

Q. You also know that Indianapolis had a number of step-by-step offices at the time this testimony by you was given?

A. I don't remember that.

Q. Well, I will ask you if it didn't have more than 14,000 step-by-step lines in the Lincoln, Stewart, West Park, 5880 Irvington, Clifton, Parkside and Kenwood offices?

A. I don't remember. I would have to refresh my recollection.

Q. All right. I am going to furnish you with the record, so we will not take any more time on this exhibit, and then I want you to come back tomorrow morning and tell me whether you didn't use a representative weighted quantity of plant—approve the use of it, in arriving at factors to convert the five-year average, '16 to '20, to the ten-year average, '13 to '22, and the spot prices as of November, '22, and whether you did not apply the conversion factors so obtained to every central office in the State of Indiana, irrespective of the varying amounts of central office equipment, or varying types that it had, irrespective of whether it contained only manual equipment, or step-by-step equipment?

I will turn this over to you.

A. With a copy of the record?

Q. Yes, with a copy of the record.

5881 The three Exhibits X-315, X-315-A and X-[illegible] only ones in which dollar computations [illegible] with the Western Electric Company appear [illegible] or based on percentage calculations made [illegible] amounts.

On Exhibit X-315, I find that the per cent [illegible] Illinois Bell by the Western Electric Company [illegible] tire period '16 to '31 is 7.27 per cent of the [illegible] by the Western to all Bell associated companies [illegible]

With respect to Exhibit X-315-A, where [illegible] the percentage of sales to the Ohio Bell [illegible] year 1923, and 3.4 per cent for the next [illegible] whether the Ohio Bell acquired the [illegible] sometime late in 1922, or early in 192[illegible]

5882 whether it acquired other properties [illegible] of this exhibit. My Exhibit X-[illegible] age calculation, based upon 315 and [illegible]

5883 (Counsel for Defendants states that [illegible] Defendants' Exhibit X-322 is [illegible] nue effect of the Department of [illegible] developments during this period [illegible] Lines and the Illinois Bell that [illegible] that have been developed during [illegible]

5884 exhibit is limited to license [illegible] has no effect on the question of [illegible] be claimed to have any effect [illegible] contract.)

In the plaintiff's Separation Exhibits [illegible] and 55, and A-183 to A-192, both inclusive [illegible] the revenues and expenses, the plaintiff [illegible] between its interstate and its intrastate [illegible] penses. It then divided its intrastate [illegible] change and intrastate toll. While the [illegible] ample, in Exhibit A-53 was shown [illegible] intrastate toll business, there was also [illegible] on the total intrastate business and [illegible] ness.

What I have done in my Exhibit [illegible] ference between the company and myself on the separation of revenues and expenses as both intra and interstate business, so far as it affects exchange service revenues and related expenses.

I do not understand that the amounts in dispute on this question are not the differences shown in column 1 of my Exhibit X 263, but the difference shown in column 3.

For the year 1930, I show in Exhibit X 263 that I have added back into exchange revenues the sum of $2,130,405.80. Of that total sum of $2,190,180 plus, nearly a million and a half is intrastate toll. In determining the amount of the property revenues and expenses, while exchange and intrastate toll have been shown separately, it is my opinion that the question here involved is not the return of the company's total intrastate property, because the rates involved are local exchange rates.

On the separation of exchange service revenues, we differ from the company in respect to both of the amounts of $2,190,180 and the smaller figure, $618,612.65 shown in column 3 of Exhibit X 263 under the year 1930.

I am not attempting to say that the controlling figure representing the difference between me and the company, is $2,130,000. I am attempting to show the amounts that the company had transferred from exchange revenues to toll, both intrastate and interstate, that in my judgment belong in exchange.

In the company's separation exhibits, what it did was to take out of the subscribers' lines and the subscribers' stations and so forth, a certain amount of property on account of the interstate use of that property. It did not also take out revenue proportionate to the property taken out. It did take out certain revenues, which it claimed were applicable to that property. It also took out certain expenses also claimed by it to be applicable to that portion of the exchange property used for interstate service. The net effect of my separation is that I leave over in interstate property the property which the company took out.

I bring back into exchange revenues all of the revenue it took out, and I bring back a part of the expenses, leaving a part of the expenses in the interstate expenses. It is not the purpose of my Exhibit X 271 A to show the effect of the loss in revenue due to the reduced rates on a quarterly basis; whereas the company in its exhibits, has shown what the effect of this reduction would have been had the reduced rates been in effect in the year 1923, in order to show the full annual effect of the rates. The purpose of the exhibit is to show what the effect would have been if the computations had been made to apply during the period in which the new rates would have been in effect in 1923.

I hadn't any thought of putting it on a quarterly basis in contrast to the company's having determined what the effect would have been had the rates been in effect during the entire year 1923.

5889 I apportioned them on the basis of the period that the rates would have been in effect had they been applied. It happened to be a quarter of a year, but that doesn't mean that this was set up on a quarterly basis. It was, in fact, set up on one fourth of a year, because that was the period in which the rates would have been in effect. I attempted to get what the actual effect would have been during the period in which the rates would have been in effect, had they gone into effect on the date fixed by the Illinois Commerce Commission, whereas, the company has prepared and presented an exhibit which shows what the effect would have been if they had been in effect during the entire year, on an annual basis.

5890 I am somewhat familiar with the Uniform System of Accounts. I do not pretend to be an accountant. The company is supposed to keep its accounts in accordance with the classification there prescribed. In the Uniform System of Accounts, page 60 "Operating revenue Accounts" is as follows:

"Exchange service revenues. 500, subscribers station revenues, page 61. 501, public station revenues, page 61. 502, miscellaneous exchange service revenues, page 61. 503, service stations, page 61. 504, private exchange lines, page 61. 505, minor rents of exchange plant, page 61. 506, other exchange revenues, page 61."

Those pages refer to subsequent, more extended definitions of these accounts, appearing in the uniform system of accounts.

5891 If a subscriber has a telephone in his home in Chicago, not connected with the Central Office, with a private line running directly to his factory in Maywood, the revenue is treated in the company's accounts as follows:

That portion of the private line within the Chicago Exchange area, that is, the revenue from that portion of the private line within the Chicago Exchange area goes to the Chicago Exchange revenues. Maywood is outside the city limits of Chicago. I do not understand that in the Company's accounting practice the revenue for the instrument itself is the only portion of the revenue which is credited to Exchange Service, and that the leased line is credited to the Toll Line Account. I understand that the revenues are credited to Exchange Revenues. My testimony with respect to the leased lines is based upon the understanding which I have just stated.

5892 In my direct examination I testified that the taxes used by Mr. Sloan in his 1930 study were about 170 per cent of those used in his 1923 study. I am willing to admit that it is 167 per cent. It is a small difference, and I would have to compute it. I stated that in the meantime, that is, from 1922 to 1930, the Sloan appraisal had increased 58 per cent, and that the difference in this large tax increase was due, in part, to the fact that Mr. Sloan had included in his 1930 study, overheads which he had excluded in his 1923 study.

I think probably that taxes had increased in the City of Chicago very largely in proportion to the value of property during the period 1923 to '30. I assume the correctness of your statement that the taxes accrued by the Company in 1923 for its Chicago area amounted to $1,802,765, and those accrued for 1930 by the Company, $4,811,781, or a ratio of 167
5893 per cent.

If the assumption is correct, Mr. Sloan's increase as between his 1923 study and his 1930 study for taxes is approximately 167 per cent, and the Company's experience in Chicago is approximately 167 per cent, and if so, then Sloan in 1923 used $2,163,856 when the Company paid only $1,802,000. These '23 and '30 studies that I am talking about were Sloan's valuations; they were studies of the overheads, that would be met under reproductive conditions, over a period of years.

5894 Mr. Sloan, in making this study of his structural overheads did not include something more than the work-that was in progress, theoretically, the reconstruction work, that is, what you would ordinarily find on the Company's books, construction work in progress.

The testimony was that it does include the overheads on construction work in progress. By "construction work" I mean the work that is actually going on under these as-
5895 sumed reproductive conditions, if you will. The whole point to a study of structural overheads on reproductive conditions is to find out what the overheads would be on the work that is in process of construction. The point that I make about this construction work in progress would be that in the actual operations the overheads are stated in terms of the plant in service, and in Mr. Sloan's set-up they are stated in terms of the total plant. It may be true that Mr. Sloan has figured it the same way that I figured it, every time I testified to structural overhead, in either a confiscation or a rate case; that is in determining the amount of interest during construction, or taxes during construction, Mr. Sloan has figured those with respect to the property which was being constructed during his hypothetical reconstruction period.

5896 There was offered in evidence during my testimony Exhibit X 270-C, which shows the capitalized overheads of the Chicago Exchange area. It seems to be correct that the Company does not include, and never has included in its capitalized overheads any taxes as shown on that exhibit.

Insurance and taxes have been treated by the Company
5897 as operating expenses. They are not included in capitalized overhead in this exhibit. Until 1920, the Company did not include any interest during construction in its capitalized overheads. I am not able to say whether subsequent to 1920 the company included only a small portion of the interest that would be met during a reconstruction period. It has probably not included all the interest in its capitalized overheads that would be met under a reconstruction program.

5899 K. E. THOLIN, a witness on behalf of the defendants, having been previously duly sworn, resumed the stand and testified further as follows:

Direct Examination Continued by Mr. Goldstein.

(June 27, 1932.)

I have made an examination of specific estimate No. C-25227, covering the new Manual Central Office Equipment of the new Merrimac office. This specific estimate contains the following reference to certain cost studies:

"Studies were made to determine the relative economies of Manual and Machine Switching Equipment, the latter of the panel type. These studies show economies amounting to $370,000 in present worth of annual charges during a period of 18 years in favor of Manual Equipment.

"The Manual Equipment is, therefore, recommended for the initial installation."

5900 Exhibit X-323, entitled "Illinois Bell Co.—Montclaire Office—Manual and Panel Switching Equipment—Comparative Cost Study" consists of photostatic copies of the summary pages of that cost study, together with one detail sheet showing the breakdown of the annual charge percentages. These pages now marked X-323 were furnished by Mr. Mapes, Chief Engineer of the Illinois Bell Telephone Company.

The first two columns of the first page marked "Sheet A," numbered 1, upon the upper right-hand corner, represent a study as of December 31, 1933, and the second sheet, marked "Sheet B" represents a study as of December 31, 1945.

The third sheet, marked "Sheet C" represents a 5901 study as of July 31, 1928. The costs shown in the study are intended to represent book costs as of the respective future dates. Page 4 is a detail of the Annual Charge Percentages which have been applied in each of these studies. These rates were applied to the estimated costs as shown in these studies. The same rates were applied to both manual and dial, with the exception of the rates on sub-station equipment wherein a slight change was made, as shown on page 4 of this exhibit. The Company used a 14 year life in computing the depreciation rate of 3.7 per cent of Central Office Equipment, as shown on page 4.

5902 Mr. Mapes advised me that there was no study to determine the 14 year life, but that the 14 years was based on judgment, and had been used for cost study purposes for some time. This depreciation rate is based upon the sinking fund method, rather than the straight line method. Interest at 7 per cent was considered in determining this depreciation rate. This resulted in a rate of 3.7 per cent applicable to Central Office Equipment. The date of the study was July 7, 1925.

In its operating expenses as shown on Exhibits A-49 and A-53, in the year 1925, on Central Office Equipment the Company used a rate of 6.7 per cent, determined by the straight line method based upon a 12-year life and 20 per cent salvage.

5903 The depreciation rates shown on page 4 of this exhibit (X-323) for the other types of property are also based upon the sinking fund method, with interest on the amounts reserved for depreciation computed at the rate of 7 per cent. The same annual charge percentages have been applied to each of the studies, namely, 1928, 1933 and 1945. The first column on page 6 of this exhibit, entitled "Factor" is the amount which, if put at interest at the rate of 7 per cent, will amount to $1 in the years shown. The amounts in the third column, headed "P. W." mean "Present Worth," and are the result of applying these factors in the first column to the amounts in the second column. At the bottom of the page the summary of the third column shows that it would be more advantageous to the Company to the extent of
5904 $370,000 to install Manual Equipment rather than Ma-
chine Switching at this particular office.

I have previously quoted from Specific Estimate C-27120, covering the installation of the new Long Beach Exchange as follows:

"The basis for recommending a panel machine unit for the Edgewater District relief is a cost study which indicates that machine switching equipment should be installed in this case. The study has been reviewed by the American Telephone & Telegraph Company and they concur in the conclusions reached in a letter to the Chief Engineer, dated August 20, 1926."

(Objection by plaintiff to reading paper into the record. Objection overruled.)

Exhibit X 324, entitled "Cost Study Central Office
5905 Equipment (Edgewater Area)—Correspondence relating thereto" is a photostatic copy of the letter referred to in the quotation, together with a photostatic copy of the summary page of the cost study, and a detail page dealing with the breakdown of the annual charge percentages used in this cost study.

Exhibit X 324 was also furnished by Mr. Mapes. This cost study is similar to the one covered by X 323, concerning which I have already testified.

The computations for depreciation are on the sinking fund basis as in X 323.

5906 Referring to the examples which Mr. Bracelen put to me on cross examination bearing upon per cent conditions. He put three examples. The first example was the investment of $10,000 on January 1, 1926, to be retired January 1, 1940, with additions to be added on January 1, 1931, of $40,000, likewise to be retired January 1, 1940. I have prepared a statement which shows how much would be accrued for depreciation and charged to operating expenses from January 1, 1926, to December 31, 1930, in respect to this example, on the basis of the method which Mr. Turner used in figuring the depreciation rates on central office equipment as exemplified by the illustration on the Kedzie office, appearing on sheet No. 5 of A-128. Exhibit X-325, page 1, entitled "Examples 1 and 2—Depreciation Studies (Turner Method)" shows that statement.

The upper part of this exhibit shows the basis data as to investment, and also shows an average life of ten years, computed according to Mr. Turner's method. The lower portion of the exhibit shows the amount of depreciation which would be charged to operating expenses during the five years
5907 1926 to 1930, in respect of the original investment of $10,000 which constitutes the entire investment during that period. This depreciation amounts to a total of $5,0[illegible] for the first five years, and is equal to 50 per cent of the original cost of the property, leaving 50 per cent of the cost not yet recovered.

In answer to Mr. Bracelen's question, I stated that the per cent condition of the assumed property as of December 31, 1930, would be 50 per cent.

Under Mr. Turner's method we would continue to apply the same 10 per cent rate to this $10,000 as a part of the total of $50,000 in each of the years 1931 to 1939, thus accumulating a total sum of $14,000 by charges to operating expenses.

In connection with my Exhibit X-185 Mr. Bracelen gave me example No. 2, which assumed a ten thousand-dollar investment on January 1, 1926, to be retired January 1, 1934, with additions of $15,000 on January 1, 1931, likewise to be retired on January 1, 1934. I have prepared a statement
which shows how much would be accrued for deprecia-
5908 tion charged to operating expenses from January 1,
1926, to December 31, 1930, in respect to this example on the basis of the method which Mr. Turner used in figuring the depreciation rates on central office equipment as exemplified by the illustration on the Kedzie office appearing on sheet 5 of A-128. Exhibit X-325, page 2, shows that statement.

This exhibit is very similar to the Exhibit X-325, page 1. The upper part shows the basic data of investment, and the computation of the average life of five years, and the lower portion shows the amount of depreciation expense that would be accrued in each year. The first block of the lower portion deals with the period 1926 to 1930, and shows that by the end
of 1930 there would have been accrued $10,000 of de-
5909 preciation which would have been charged to operating
expenses during those five years; this amount being equal to 100 per cent of the original investment. In respect to this example I stated the per cent condition would be zero condition, and in the lower part I have shown the additional accumulation of depreciation of this same unit of $10,000 which would be an additional sum of $6,000, making a total accumulation of depreciation charged to operating expenses equal to 160 per cent of the original investment.

I have prepared an exhibit which will show an example wherein the per cent condition would be minus, and which would show the depreciation charges accrued to the date when I determined the per cent condition with respect to such property as Mr. Bracelen indicated. Exhibit X-326, entitled "Example 3—Depreciation Study (Turner Method)" is such a statement.

This exhibit is prepared in similar form to Exhibit X-325, pages 1 and 2. The upper part shows the basic data
5910 and shows the computation of average life four years.

The per cent condition as determined at the end of 1930, by the method which I followed, would indicate 25 per cent below the zero point. The depreciation expense that has been accrued in the first five years, according to Mr. Turner's method, would be $12,500, in respect of the original unit of $10,000, or equal to 125 per cent of the original investment. The following three years that this unit would be in service, an additional sum of $7,500 would be accrued, making a total accumulation of depreciation charged to operating expenses of $20,000, equal to 200 per cent of the original investment.

In connection with A-68, I have compiled a statement showing the companies in Illinois whose certificates are included in that certificate. Exhibit X-327, entitled "List of Exchanges in Illinois shown in Exhibit A-68" is that statement.

This statement shows the number of stations served
5911 by the Company, the number of stations of the particular community to which the certificate in A-68 in each case applies, and the interests which control the particular company.

This information was taken from the Annual Reports of the Companies for 1931, filed with the Illinois Commerce Commission, and part of its official records. Exhibit X-341, entitled "Interstate Commerce Commission—Depreciation Charges of Railroads and Telephone Companies (Final Order) July 28, 1931" is the final order of the Interstate Commerce Commission in case number 14700 "Depreciation charges of Telephone Company," dated July 28, 1931, which is the final order of proceedings, and of which the Commission's Exhibit 27, Record Volume 1, was the preliminary order.

Exhibit X-342, entitled "Interstate Commerce Commission—Uniform System of Accounts for Telephone Companies, Jan. 1, 1913" is the uniform system of accounts for telephone companies as prescribed by the Interstate Commerce Commission effective January 1, 1913, and still in force.

I have examined the books of the Illinois Bell Telephone

Company to determine its accounting procedure in connection with the sale of the Randolph central office build-
5912 ing.

I found a credit to the Company's surplus account in the year 1927 in the amount of $61,082.73, which represents profit resulting from the sale of the Randolph central office building to the Chicago Title & Trust Company. The sale price of the building was $253,000, from which was deducted the book cost of $190,666.56, and the expense of sale of $1,250.71, leaving a net profit of $61,082.73. In addition to this profit, the Company transferred in the same year the sum of $83,259.92 from the depreciation reserve to surplus. This represented the Company's estimate of the depreciation which had been accrued and charged to operating expenses during the life of the building. This was treated as an additional item of profit, and transferred to surplus account.

I have examined the Company's records to determine its interest in the east wall of the building at 212 West Washington street. I found that one-half interest in the said east wall had been sold to the Morton Building Corporation
5913 in 1926, resulting in a profit of $35,376.43. The sale
price was $77,426, from which has been deducted the estimated book cost of $41,049.57 and expenses in connection with the sale of $1,000, leaving the net profit of $35,376.43. This amount of profit was credited to surplus account. In addition thereto the company transferred from depreciation reserve to surplus account a credit balance of $14,240.75, representing accrued depreciation hitherto charged to operating expenses, which the company treated as a profit.

I have examined the Company's records in connection with the sale of the South Division Headquarters Building. This building was sold in January, 1924, for the sum of $11,550. This amount was credited to depreciation reserve as a salvage realized from the building. At the same time the original cost of the building was removed from plant account and charged against the depreciation reserve, the amount being $44,871. The Company's records do not show whether or not the exact amount of the difference of $33,321 between the original cost and the salvage had been charged to operating expenses and accrued for this depreciation in the past years. A computation which I have made, based upon a rate of 4 per cent per annum, indicates that the company has accrued approximately $25,000 in respect of this building.

(Exhibits in connection with Mr. Tholin's testimony offered in evidence, subject to cross-examination. Statement prepared by Mr. Hammond, pursuant to request of Mr. Blackman offered as Exhibit X-343, entitled "Response to Mr. Blackman's Question to Mr. Hammond on cross-examination (Record 5518)."

Exhibit X-344, being correspondence between counsel relating to requests May 7, 1932, to June 2, 1932, consisting of five letters in connection with Exhibit D-61, offered in evidence.

Exhibit X-345, which is the letters bearing upon the investment, and the cost of the investment to the American Telephone & Telegraph Company and the Western Electric, 5915 offered in evidence.)

Cross-Examination by Mr. Blackman.

Referring to my complaints about my failure to receive certain information while in New York, if I recall the date correctly, I arrived there Monday morning. I think it was September 28, 1931. I stayed there two weeks. Mr. 5916 Rainwater was with me. While there we examined certain documents, audit reports, income tax returns, of the American Telephone & Telegraph Company. We had a room at 195 Broadway at that time, furnished us by the American Company, and in the adjoining room was Mr. Olander. We were told to make our requests to Mr. Olander, and that he would put them through. We were also told that Mr. Olander would explain any matters in connection with the books and papers that we wished to have explained or see that we got an explanation for it. He explained the things that we inquired about.

5917 I stated on direct examination that I went to New York "in connection with this matter." This matter was this case, generally. That is what I meant in my answer to the question as to whether I went to New York in connection with this matter.

I had a definite understanding with counsel as to what I was to request.

5918 I believe it is correct that my demands for information concerning the income tax returns of the Company, included a demand for details of the taxes paid by each Associate Company for the years 1921 and 1930, including not only the detailed computations of the tax payments, but also the entries and billings to each of the various companies. My memorandum No. 8 called for the information for the years 1921 and 1930.

5919 I am sure I asked for that for the year 1921, and for the year 1930. My memorandum indicated that I would probably ask for the other years also, but I asked for those years, to get some knowledge, or make a spot check, as it were, of the methods that the Company used in allocating the income tax to the various companies.

The fact is that I asked for those particular years, and stated that later I would ask for the intervening years, or for the entire period 1918 to 1930.

As to whether that would have required the Company to have made somewhere in the neighborhood of 350 different computations, showing the details of the building up of these taxes for each company, I presume the Company makes its computations before it bills the Company. I could not imagine they would bill them some kind of a figure, and then not have any detail supporting it afterwards.

5920 I asked for a detailed computation showing the manner in which the figure was arrived at, a separate bill for each company, and the increases and billings. I did not ask the Company to make any copies of anything. I asked the Company to furnish me its working papers showing how they arrived at these billings. I asked them to kindly furnish details of the proportionate taxes. These details should include not only the computations of the tax payments, but also the entries and billings of the various companies.

I intended them to understand that I wanted the complete information of the amounts of taxes charged to each company, all of the detailed working papers which the Company must have had in order to compute those amounts, and

5921 the Company's record of its billings to the companies.

I presume they would have to bring me the documents and hunt them up, and so forth; there would be some work there. They didn't do that. For the Illinois Bell, we obtained the billing for 1930.

I believe we got everything we asked for, with regard to the Illinois Bell on this point that we are talking about. As

to whether we got everything that we asked for with regard to the American Company as a whole, there were no requests made in connection with the American Company as to this point. We, of course, had the income tax return which showed the computation on the books as a whole, and
there was no request on this point that related to the
5922 entire American Company with its associated compa-
nies as one group.

In answer to these requests, income tax information was furnished in the following matters. I saw the consolidated ledgers for a period of time. The books were produced in the office, but that did not include the opportunity to examine as much as we wished. The books themselves contained symbols rather than full description, reference numbers to journal entries and voucher numbers and such data as that, and are of no value at all without the supporting papers, which we did not have.

In connection with those books, we were also fur-
5923 nished the general department control ledgers. I
think we did not have the general department subsidiary liability ledgers. My recollection is we only had two, We had the consolidated ledgers. We had the general department control ledgers. I am quite sure we did not have the general department subsidiary liability ledgers. To my
best recollection, we did not have that.

5924 We had the general department subsidiary expense
ledgers. We had some journals there, I think that they are described as "transfer journals." I don't recall whether or not we had the consolidated journals. We had a few income tax vouchers. We had all the work sheets that were contained in those income tax binders covering the income tax returns for the American Company for the years 1923 to 1930. I believe we had the authorizations for the journal entries in connection with the income tax payments and
charges for the American Company as a whole.

5925 I don't remember whether we had it for the other
companies, the subsidiary companies. I remember that I did not obtain what I have complained about; all these other little details, as to what we might have looked at I don't remember the details. I said a few minutes ago, that I did not, by my request, intend the company to do any

work, make up any tabulations of figures and hand them to me.

In response to this request, I expected them to produce working papers showing how they calculated these charges to the various companies.

5926 The binders showing computations for the income tax did not contain the information requested in this memorandum to which you refer. The information that they did not contain is exactly what you read to me a few moments ago. I did tell you in general terms what I failed to get.

We did not get the billing to the various companies for income tax in the years 1921 and 1930, which I requested; nor did I get the detail working sheets of the company showing how they computed the amount that they billed against the various companies, with the one exception that we
5927 did get this for the Illinois Bell. For the American Company, as a consolidated proposition, we had the income tax return which showed how the income tax was determined for the purpose of filing the return with the government.

What I am really complaining of, and all I am complaining of, is that I was not shown the taxes that were billed against the New England Company, the Southwestern Company and the others of the twenty-three companies of the group. This request involved also a refusal on the part of the company to furnish any information for 1921. The company gave me that definite answer, that as far as even the Illinois Bell was concerned, the information would be refused for 1921. I am quite definite about that.

5928 I did not receive the details of the billing for taxes that I asked for in regard to the Long Lines. In response to this request, as to the Long Lines I did not get anything except what I have already told you. To say what I asked for, with regard to the Long Lines and did not get, I will probably have to go through these requests and see what items might refer to the Long Lines. That is, all these letters with the Internal Revenue Department probably refer to Long Lines, as well as other departments.

5929 I will try to let you know later what we claim was not furnished in regard to the Long Lines. The purpose of my visit to New York was to get information which counsel sent me there to get.

That is, I did not intend while I was in New York to prosecute any particular lines of investigation. I went there to get certain information that counsel for the City of Chicago had asked me to get. As far as I was concerned, and my work was concerned, I was not interfered with in any way by the failure to get this material. I was there to get the information, and what I didn't get of course, I didn't get, and counsel probably suffered by it, but I didn't.

As to what use I would have, or what use I understood counsel to have, for the details of the billings of the taxes by the American Company to the New England Company and the Southwestern Company, I cannot speak for counsel, but I have my own ideas, as to what use I would make of it.

5930 The American Company, in making a consolidated return, receives considerable benefit in the case of companies that have losses in certain years.

In preparing a consolidated income tax return, the losses of certain companies, that have losses, are of course offset against the profits of other companies that have a profit, and the billing that the American Telephone & Telegraph Company makes against the Illinois Company is for its share of the tax, as if it were paying a tax independent of the Associated Companies, and therefore the Illinois Bell does not get any of the benefit by reason of a consolidated return, where the consolidation gets the benefit of deficits of a certain company.

There were companies in the list that showed deficits in some of these years, probably some in all of the years, I don't recall the details.

5931 I testified that I was given the details and the computation of the taxes of the consolidated group of companies. That computation showed every loss. The working papers necessarily showed every loss as a deduction. We did not ask for a statement of any losses that had been
5932 made, but we asked for the billings that had been made by the American Company to each of the twenty-three associate companies. If the Company had a loss, it would have no billing against that company. I don't believe I said that the only thing that would be of any importance here was to see whether a company made a loss, or not. I believe

you misinterpreted my statement. I said, in my own mind,
it would be important to know what the total billings were
to the various companies and to ascertain whether or not
the companies like the Illinois Bell should not have
5933 shared some in the benefits due to a consolidated in-
come tax return by reason of the fact that certain com-
panies had deficits, and those deficits were deducted in arriving at the total income tax. The benefits from a consolidated return are the fact, for example, that you have ten companies earning a profit and five that have lost money in that year. If the ten made separate returns, they would pay more taxes than if the fifteen companies were grouped together and the losses of the five were subtracted from the profits of the ten. So that the advantage that I speak of is the deduction of the loss.

I cannot speak for counsel whether that is the only thing that was of any importance. In my own opinion, that would be of importance. The other matter would be as to whether there was a fair allocation of tax, aside from this question of loss.

"Q. "A fair allocation of tax to the New England Company, what interest did you have in that?

5934 A. I was just speaking of the Illinois Bell."

We have all the figures to show whether there was
a fair allocation to the Illinois Bell, so far as this particular
point was concerned, but excluding the consideration of the
losses to the other companies.

5935 In regard to asking for which of the companies had
had losses, the amount of the loss and the fact that a
company had made a loss was revealed in the income tax return. The billing against that company, if any, I did ask for in this request, and it was refused. As to how I was interested in what was billed against the Company, whether it had a loss or did not have a loss, if I had the fact as to what the Company did, made a loss, or made a profit, I say I was interested in the whole proposition of the apportionment of the complete income tax as between all of the companies, to see whether the Illinois Bell had what I might con-
sider its fair share of the whole. All I was interested
5936 in, though, was whether the tax which had been allocated
to the Illinois Bell was fair.

I don't know that I had all of the information to determine that fact. As to whether I can say anything that I lacked, I asked for all of the details for each of the companies to trace the allocation through.

I would not like to express my opinion as to the fair allocation to any one company without the opportunity of studying the whole state of facts dealing with the apportionment, as between all of the companies.

As to what books, papers or things that were with-
5937 held from me, which I, as an accountant, would say was in any way necessary or important for me to have in order to determine the proper allocation of the Federal income tax of the Illinois Bell Telephone Company, I don't know the names of all the books that the American Telephone & Telegraph Company has, I cannot define them by name or number. In my opinion, what I asked for was necessary. I have mentioned one thing that I asked for, that I did not get, which was necessary. I asked for these billings. I even asked for the billings for the Illinois Bell for 1921, and that was refused.

5941 (The court asked the witness whether he had everything necessary to arrive at a conclusion as to whether it was a fair apportionment and if there was anything he hadn't had bearing on the question.)

I made this particular request for that purpose, and I did not get this information. Whether I might have used some summarized facts and summarized figures, and approached the question from a different angle, I am not prepared to say just at this moment. Whether or not I could possibly have assumed some different line of approach, and arrived at some approximation as to whether it was a reasonable allocation or not, I would not like to state at this time without referring back to the working papers,
5942 which we have quite a number of, and I might, after referring to the detailed working papers, be able to express an opinion as to whether we could.

Personally I make requests every now and then for
5944 information from the Illinois Bell. I have gotten, to my recollection, everything I asked for, except there was one item some time ago that I as well as one of my men made a request for, and it was refused us at that time.

I have not made any complaint here about it, because I possibly felt that if I had pressed the matter a little further the Company might have yielded, but I was refused the Company's minute books of the directors of the Company.

5945 The particular occasion for seeing the books at that time was in connection with new construction projects authorized by the directors, and that was why I made request first through one of my men, and secondly, I made it direct. I was told that I would be furnished certified copies of those that I desired, and I, at that time, stated that I did not accept this refusal as indicating that I did not have the right to see them. I maintained that I had the right, but that I would at that time accept this certified copy of the minutes of the directors covering the items that I told the Company I was interested in at that time.

5955 *Cross-Examination by Mr. Blackman, Continued.*

(June 28, 1932.)

Pursuant to the court's request, I have looked over my papers and memoranda to see what data I consider necessary in order to determine the fair apportionment of the income taxes to the Illinois Bell Company, which I had asked for and failed to receive.

5956 I was refused free access to the American Company's books in connection with the tax matter of apportionment as between all of the companies that are involved in this consolidated return, and, without free access to all of the details involving all of the companies, I would not want to express my opinion as to the fairness of the charge to any one company. It may not be uniform as between companies; I have no means of knowing whether the element of uniformity is present in the Company's methods. Generally speaking, the only thing that was withheld from me was the complete details of what the American Company charged to the New England Company, the Southwestern, and the other companies of this group of twenty-three associate companies, in connection with their income taxes. I started on this

5957 investigation on the second Monday of my visit in New York. I only had that one week left. I was limited to

two weeks' time. I made this request, and it was turned down on Monday; it was refused; and I made a request on Tuesday evening, for the books of the American Telephone & Telegraph Company. I did not get them on Wednesday; to my best recollection, I did not get them until 10:30 Friday morning, and my time was very limited from then on, to make any complete investigation of the multitude of records of the American Telephone & Telegraph Company even pertaining to the American Telephone & Telegraph Company proper, or to the Illinois Bell Telephone Company apportionment; but I made whatever investigation I was able to make in that time, which was two days. The memorandum requesting those books went to the Company the last thing before closing on Tuesday evening, in pencil form; it was typewritten and delivered to Mr. Olander on Wednesday morning, and to my best recollection we did not get those books until about 10:30 Friday morning. Most of the time
5958 meanwhile we managed to keep busy on other things, but there was a little lull in there when I did not have records to work on. The income tax returns, with the details of how they had been made up on consolidated returns, were furnished promptly upon my arrival, the first Monday morning. They showed the profits or losses to the associate companies, making up the total profit of the system as a whole.

"Q. So that, in so far as any advantage to the Illinois Bell is concerned, that you are claiming, or which you might claim as accruing to it through a benefit to be derived from the loss of another company, you have that information before you?

A. We had those losses of the individual companies."

5959 I called on Mr. Olander to interpret the symbols to which I referred and things of that kind. I called on him from time to time for information that I was able to obtain from him. I have not complained of anything except these particular items, that you already know about. In addition to this matter which I asked for from the American Company, I asked for certain information from the Western Electric Company.

The matters that counsel for the defendants have referred to are items 16, 17, 18, 19 and 31, of Section 2 of my demand of October 5, 1931.

Item 16 is one in the list that counsel for the defend-
5960 ants sent the Western Electric Company, as I under-
stand it, some time prior to my visit, and that request
then called for the preparation of data by the Western Elec-
tric Company. I am not acquainted with the detailed records
of the Western Electric Company, but from the looks of the
question, I presume it would involve some work. I do not
know whether it would probably involve about a month's work
of several people—possibly quite a bit of work. I have no
knowledge but that this kind of data might have been already
compiled by the Western Electric Company. I do not know.

I have no knowledge whether it could have been already
5961 compiled in the form in which I was asking for it; it
no doubt could have been. As to whether I was asking
for a tabulation of every piece of apparatus made by the
Western Electric Company to which any of the patents owned
by the Western Electric Company applied, I think Question
No. 16, which is in the record, speaks for itself. It calls for
a statement showing by years 1911 to 1930, both inclusive,
patents and applications pending owned by the Western Elec-
tric Company, and subdivided for (a) patents embodied in
telephone apparatus sold to Bell licensees only; (b) patents
embodied in telephone apparatus sold to American Telephone
& Telegraph Company only; (c) patents embodied in tele-
phone apparatus sold to Bell licensees, and to non-Bell cus-
tomers; (e) patents embodied in non-telephone apparatus.

That apparently includes most of the items manufac-
5962 tured by the Western Electric Company, I presume.
Whether there might be some others or not, I do not
know. As to whether there are more than 100,000 different
parts that the Western Electric Company manufactures, I
have no independent knowledge of the facts; I presume there
are a great multitude of parts. I do not know that the West-
ern has several thousand patents, but I presume it has.

"Q. So that in order to do what you asked them to do, they would have had to go through that list of their piece parts and find out which of their several thousand patents applied to each particular piece part, and give you that list; is that right?

A. If it was not already prepared, I presume they would have to go through somewhat along the fashion you indicate, and prepare it."

5963 Questions 17 and 18 refer to matters similar to Question 16.

Question 19 refers to certain index numbers. I asked for certain index numbers that had been referred to in an article published in the Journal of the American Statistical Association. Personally I had no use for that, that I know of. I was requested to get it, by counsel.

Item 31 is "To furnish statement showing for the period 1882 to 1930, both inclusive, (a) patent infringement suits against the Western Electric Company, indicating apparatus involved; (b) damages or expenses incurred or paid by Western Electric Company in connection with patent infringements." That required the making up of statements to be furnished to us by the Western Electric Company.

5964 The particular items that I made request for, called for the furnishing of statements except 19 which called for inspection. Whether those statements might have already been prepared by the American Telephone & Telegraph Company or the Western Electric Company, I do not know, but the request was for the furnishing of statements. I have no idea one way or the other whether the Western Electric Company may have had already prepared the material in the form in which I asked for it or not. Part of this material that I was asking for was a memorandum with relation to 5965 patent applications that were then pending where the patents had not been issued. Each of the three questions 16, 17 and 18 includes information with regard to patent applications as well as patents. I do not know whether the Company would or would not give it to me. I was instructed to ask for those; I expected to get whatever the Company would give. I did not know what the Company would give, but it did not give anything. I did not go into the question whether or not there was one chance in a hundred that they would give me that. I do not say that I thought that they would have this information with regard to patents pending already prepared, and would just hand it to me. I did not know what form the Company's records or compilations were in.

5966 It is my best recollection that I got these ledgers on Friday morning. I left New York the following Sunday morning. I left at that time with my work uncompleted because I was instructed that we would only have two weeks to spend in New York. When the two weeks were up, I left.

It is not a fact that I expected and asked the Company to
make these tabulations in regard to tax payments, and tax
computations for me, and that I did not have time sufficient to
do this work for myself. I did not ask the Company to
5967 make any calculations of taxes for me. I asked for the
data, but I did not obtain it in time to do it. I
did not obtain the books in time to make a great deal of
use of them. The other details the Company refused to furnish.

The other details that I refer to, are the separate billings to the twenty-three individual companies of the Bell System and all of the detailed computations underlying them.

(Admitted by counsel for defendants that plaintiff's coun-
sel in answer to requests Nos. 16, 17 and 18, of counsel for
the City of Chicago, stated by letter of November 24, 1931,
that "The records of the American Telephone & Telegraph
Company and the Western Electric Company, in so far as they
disclose the information in question, will be made available
for your inspection"; that with regard to Item 19, the
5968 index numbers asked for, were furnished to Touche,
Niven & Company and used by them; and that on No-
vember 19, 1931, Mr. Goldstein was advised that the data was
available for inspection; that with regard to Item 31,
5969 the books and records of the Company, showing the
information, were put at the disposal of Mr. Goldstein
on November 24, 1931.)

Redirect Examination by Mr. Goldstein.

Without the data as to the billings for income tax of the
other companies, I believe there was no way in which I could
tell from any records whether the other companies re-
5970 ceived any benefit from the consolidated income tax
return, or were treated the same as the Illinois Bell
Telephone Company. My request to look at the minute books
of the Illinois Bell Telephone Company was not made at the
instance of counsel for the defendants. That was a specific
request to look at the books for a specific purpose.

Re-cross Examination by Mr. Blackman.

I just said in answer to Mr. Goldstein that I could not tell whether the other companies had been treated in the same way as the Illinois Bell Company, unless I got these details of the billings to those companies.

5973 As to what bearing the American Company's charges to the New England Company would have on what I was doing, I say that I was in New York getting data for counsel, and counsel wanted this information.

"Q. Well, now, so far as you know, it could not make a particle of difference whether the American Company had paid the tax of the New England Company out of its own pocket, or not—is that right?"

(Objection sustained.)

5974 As to the minute books of the Illinois Bell Telephone Company, it is not the fact that I asked to see certain resolutions with regard to additions to plant. The first request was for the minute books. Mr. Jones told me that I could not have them. I was quite anxious to get the information that I was after, and when he inquired as to what
5975 it was I wanted, I told him what I wanted, and he volunteered to give me a copy, certified copy of that section of the minute book. He gave it to me. I believe I stated yesterday that I indicated that I was not satisfied. I did not feel that we should have to put a lot of pressure on the Telephone Company, to have them reveal their minute book to us. I said yesterday that I told Mr. Jones or whoever gave me the copies of certain resolutions that I was satisfied for the present, but that I would not concede that I did not have a right to see the books.

5976 J. G. WRAY, recalled as a witness on behalf of the defendants, having been previously duly sworn, further testified as follows:

Cross-Examination by Mr. Thompson, Continued.

(June 28, 1932.)

Answering a question asked yesterday, I say now that Mr. Sloan, in arriving at the amount of the various taxes included in his computations, did not proceed upon the theory that the Illinois Bell Telephone Company would have just as many shares of stock outstanding at the start of the period as it has now or at the end of the period of reproduction.

5977 I have looked into the Indiana Bell situation which you inquired about yesterday. I testified in the Indiana Bell case in the Federal Court, and there stated that through members of my staff I had checked the five year average unit costs used by the company, the ten year average unit costs used by the company, and the unit cost as of November 1922. I then testified that these unit costs reasonably represented the actual costs during the period.

I did not take a representative weighted plant for each of the years 1913 to 1922, for each account, as for instance, Central Office Equipment, Account 221; Mr. Halstead did not 5978 either. Mr. Halstead took a representative cross section of the plant as of the date of the inventory, December 31, 1920, and that was the only cross section used. That was priced out at prices for each of the years 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921 and 1922. After that was done, then he found the average unit costs, 1916 to 1930, and I approved it.

Referring to Exhibit A-238, eighth column opposite Account 221, Central Office Equipment, I did not find a conversion factor of 94.46 to convert Central Office Equipment from the five year unit cost to the ten year unit cost, 1913 to 5979 1922.

"Q. Mr. Halstead found it and you approved the use of it?

A. I did not approve the use of it."

In getting at the valuation of the property as a whole, there was no way in which I could approve the reproduction costs that were used as I did in my testimony unless I approved the method that Mr. Halstead used in getting at them.

(Counsel reads from testimony of witness in Indiana case as follows):

"Q. What did you find as a result of making these checks as to whether the unit costs used by the company were reasonably representative of the actual costs of telephone construction during these several years?

Answer: They do reasonably represent the actual cost during this period."

Just before that question was asked and I had made that answer I had stated that I had checked the unit costs for all three or these appraisal dates. The testimony was that
5980 the appraisals reasonably reflected the five years, and the ten year, and the instant prices. It did not go further than that.

Referring to page 499 of the record in the Indiana Case, I stated that these unit costs reasonably reflected the actual costs during these periods. I know the process that was used to take the five year average costs and to obtain the ten year average costs by the use of a conversion factor. This
5981 was a period of rapidly changing prices during and immediately following the war, and during that period we undertook to get approximately average prices for five years, seven years, ten years and instant prices, and trend of prices, all with the view of getting at a fair price. It covers a very small portion of the same period of time, that is covered by Mr. Sloan's work in this case. As to whether it covers ten years of Mr. Sloan's appraisal as of June 30, 1923, of course I am not very familiar with that appraisal.

I do not recall that I have criticized Mr. Sloan's use of conversion factors here in this case. I did not arrive in the Indiana case at a conversion factor or approve the use of
5982 a conversion factor of 94.46 per cent for Central Office Equipment, Account 221, and then in order to arrive at the appraisal for the Muncie property, and the Indianapolis property, and every other exchange in the state of Indiana, applied that same identical conversion factor to get the Central Office Equipment account from the one level to the other level and then to the third level. I did not approve any of

these conversion factors as such. I tested Mr. Halstead's appraisal by the unit costs which I had checked against the company's actual costs, and also against the studies which we had made of 5 year average costs, ten year average costs, trend costs and instant costs in the Muncie case, in a previous case.

I was called to testify that the unit prices used, and
5983 the reproduction testified to by the company's experts
for the three periods, 1916 to 1920, 1913 to 1922, and spot November, 1922, were representative of the actual costs. The Company did not get those reproduction costs for those periods by first getting them for 1916 to 1920, and then converting, by means of a conversion factor, to 1913 to 1922, and then converting the 1916 to 1920 costs by a conversion factor, to get it to November, 1922. They had to go to the books and records in order to get the facts from which to make the conversion factors.

In Exhibit A-238, referring to the Muncie Exchange, I note
in 1916 to 1920, cost of reproduction, Account 221, is
5984 $119,560, that is Central Office Equipment.

For the next period, 1913 to 1932, I note the conversion per cent opposite Central Office Equipment. It is 94.46 per cent. I presume that that factor, for that period, applied to reproduction cost new of the earlier period gives the exact figure that is used here to the cent.

In this other column, November 1922, "conversion per cent," opposite Central Office Equipment, Account 221, the conversion per cent is 134.57, and that applied to the 5 year
reproduction cost, I presume, gives the exact figure that
5985 is set out there, $16,089.89.

You did not ask me whether these conversion factors were used to get reproduction costs. Mr. Halstead did use such factor in his reproduction cost.

Exhibit A-239 shows that apparently Mr. Halstead took 94.46 per cent and applied it to Central Office Equipment in the Muncie Exchange area. That however is not my valuation; I made a separate valuation a short time before.

5986 In Exhibit A-242, for the Indianapolis Exchange, Account 221, Central Office Equipment, the same identical conversion factor appears. That is Mr. Halstead's figure, not mine. The company introduced evidence showing the reproduction costs for these three periods which were arrived at

by the use of conversion factors based on a single cross sec-
tion of plant, representing the inventory as of an in-
5987 stant date. Then having obtained these conversion fac-
tors, it applied them to the Muncie Exchange that con-
tained only manual central office equipment. It applied them
to the Indianapolis Exchange which had some step-by-step
equipment, I do not remember the number of central office
installations.

I knew all those facts, was thoroughly familiar with them, and I went into court and said to the court in effect: "I examined the company's methods and I say that the unit costs that have been used for those three periods fairly represent the actual reproduction costs for those periods for the company as a whole." I did not for each of the several exchanges.

5988 "Q. Well, would it vary—in other words, you could
apply the conversion factor that was based on a cross
section that had no step-by-step equipment in it to the entire
state, and it would be all right, but you could not apply it to
one exchange?

A. No, perhaps not, but I did not apply it to any exchange."

I approved the unit costs and nothing else. I did not ap-
prove any method. I not only approved the unit costs, but I
said they fairly represented the reproduction cost for the
three periods, and I checked the company's unit costs, and I
gave my own testimony with regard to the value of the prop-
erty as a whole, and not for the separate exchanges. These
conversion factors meant nothing unless they are
5989 checked against the prices and actual costs of the com-
pany, and those checks were made by us. I checked
them. I had nothing to do with the conversion factors. I
checked the unit prices. Mr. Halstead computed any conver-
sion factors that he may have used. We had nothing to do
with it.

In my testimony in the Indiana case, I think that I did not offer any affirmative criticism of the method which had been used by Mr. Halstead.

Redirect Examination by Mr. Goldstein.

5990 The essential difference between the use of the weighted cross section in the Indiana Bell case and as used by Mr. Sloan in this case, is that the weighted average cross section used in the Indiana case purported to represent the fair cross section of the plant as of a single date as found by an inventory. The cross section used by Mr. Sloan is one that is presumed to represent the necessarily varying cross sections of gross additions from year to year throughout a period. It is my understanding that Mr. Sloan figured a cross section for each of the years as being the same as the typical cross section which he found for one year; whereas, in the Indiana Bell case I had only one cross section, and dealt with that one cross section for that year, and assumed nothing for the other years.

5991 My use of the unit cost in the different years was wholly to determine average prices of a five and a ten-year period, and for instant prices, nothing else.

Mr. Thompson was counsel for the Indiana Bell for whom I was testifying in that case.

(Objection by Plaintiff.)

I was heretofore asked whether in the Indiana Bell case I approved the cost of representative weighted plant for each of the years 1913 to 1922, based on a constant cross section of plant and I answered, "I don't remember." The answer to that question is, no. The fact is that the cross section of plant referred to applied only to the inventory as of December 31, 1920. It was not applied to other plant or gross additions of any other year. In each case, where I dealt with a weighted cross section in the Indiana Bell case, my answer would be the same, that the cross section referred to was that of December 31, 1920 and not of any other year. 5992

5993 The 5/10 of 1 per cent variation for the step-by-step lines, as shown on the first page of Exhibit X-313, would have meant a 40 per cent variation.

With reference to the $2,000,000 step-by-step equipment sold to the Illinois Bell, in the Chicago area in 1924 to 1930, as Mr. Thompson stated, I understood that lines of the step-by-step type as set out in this table, referred only to the central office equipment. The $2,000,000 referred to by Mr. Thompson is included in the exhibit in the 700 type of P.B.X. lines which was given to us by the company. If they have been omitted, they were omitted by the company in furnishing the data to me.

I have prepared a chart which will simplify Exhibits X-313 and X-317.

5994 Exhibits 313-A, entitled "Ill. Bell Tel. Co.—Chicago Rate Case—Quantities sold to Ill. Bell Tel. Co. and to total Bell System, 1924-1930, graphs," and 317-A, entitled "Ill. Bell. Tel. Co.—Chicago Rate Case—Cross section of Estimated Quantities of Materials to be delivered by W. E. Co. to each Associated Co. Period 1922-1932—11 years—Quantities from Provisional Estimates," were prepared by me. I think they are entirely self-explanatory. There is no new material here. The charts show only the percentages set out in these exhibits, respectively. Referring to chart X-313-A, the percentages to be found in Exhibit X-313 are plotted in the vertical lines—a vertical line representing an item. They are plotted for each year. Each year begins at zero per cent, and by an inspection of the chart, you get the relationship of these percentages, one to another, for the different items and for the different years.

And in chart X-317-A, in a similar way we have plotted the percentages shown on the first sheet of Exhibit X-317,
5995 those being percentages computed from data obtained from the provisional estimates. The data plotted on Exhibit X-313-A were obtained from the second sheet of Exhibit X-313, which were furnished to me by Mr. Wright. Across the bottom of this chart I listed the 32 items that are shown in the table. At the left hand of the chart is indicated the company. Each separate graph across the chart from left to right is a company. The total of the percentages of all of the companies for an item is 100 per cent, because it is representative of all the items. It is the total from the bottom to the top. It simply shows graphically what the percentages themselves show.

(Corrected sheets for Exhibits X-8-A and X-9-A offered in evidence.)

Re-cross Examination by Mr. Thompson.

"Q. Of course you know, Mr. Wray, that I didn't ask you about the step-by-step equipment that was shown on any exhibit; you know that, don't you?

A. I think your question related to step-by-step equipment, and my exhibit related to step-by-step lines, and I at the 5996 time did not differentiate, but have learned to do that since I have gone into the matter.

Q. No, Mr. Wray. You have stated here on your redirect examination that if any mistake arose in this connection, it was because the company may have omitted something from an exhibit, didn't you?

A. Yes.

Q. Now, you know that I didn't ask you about an exhibit at all. I asked you about your oral testimony in which you had stated that there was no step-by-step equipment in the Chicago area of the Illinois Bell Telephone Company?

A. I cannot remember whether I said step-by-step equipment or step-by-step lines, but the exhibit—

Q. I can remember, when I read that question to you, you said step-by-step equipment; you don't know that, do you?

A. I do not remember.

Q. After you had made that mistake, then you came back and tried to make it appear that you were induced to make an error by something appearing on an exhibit.

A. There is no such thing. I can clear that up in a moment.

5997 Q. Yes.

A. At the time of my testimony yesterday, I overlooked the fact that the step-by-step equipment is included to a certain extent with the P. B. X. of the No. 700 type, and there listed as items at the—they are the last three items of the switchboard group on the first page of Exhibit X-313. Those switchboards include panel—include step-by-step equipment.

Q. Yes, I understand.

A. My testimony with regard to step-by-step lines necessarily referred to central office equipment.

Q. I am just asking you this—

A. May I just make one further statement Mr. Thompson?

Q. Certainly.

A. If any step-by-step equipment relating to P. B. X. lines in Chicago have been omitted, it has been by the company, because I have checked the data that they furnished.

Q. Who says they have been omitted?

A. I did not.

Q. No, neither do I. Just to close this issue, what I asked you was, you had testified not in connection with an exhibit. It may have been after an exhibit was handed to you, but you had made the direct statement here in court that the
5998 Chicago area had no step-by-step equipment, didn't you?

A. I think I did.

Q. Yes.

A. But I do not remember, but I had in mind the step-by-step lines of this exhibit.

Q. All there was to that was that you were mistaken about what you had stated, and the company did not induce your mistake by anything that was omitted from any exhibit?

A. No, not at all."

There is no panel type of equipment in the weighted cross section of plant in Exhibit A-212. Exhibit A-212 is entitled by the company in this table, as "Indiana Bell Telephone Company representative weighted plant, central office telephone equipment, account 221."

5999 There is no step-by-step central office equipment in that representative weighted plant. Its use was not approved by me with respect to offices containing step-by-step equipment. Its use was approved by me for the property as a whole as representing fairly the spread of prices among the various items of the central office equipment.

"Q. Notwithstanding the fact that it contains no step-by-step items, and there were many step-by-step offices in Indiana?

A. Well, an answer to that question would commit me to your statement that there are many step-by-step offices in Indiana. There are very few."

There may have been eight in Indianapolis at the time. I do not know of any in South Bend at the time. I do not remember whether there was a step-by-step office in South Bend.

Re-redirect Examination by Mr. Goldstein.

In the Indiana Bell case, I had no issue of the effect of
6000 standard costs on Western Electric prices. That issue
did not come up.

"Mr. Thompson: The plaintiff objects to the introduction in evidence of each of the following exhibits offered by the defendants for the reason separately stated in connection with each of said exhibits:

Exhibit X-99, X-294 and X-295 because they show returns based on "original dollars" invested in the Western Electric Company, and wholly ignore for the purpose of arriving at the return on investment, moneys earned and left in the business upon which the company and its stockholders are entitled to earn a return.

Objection is also made to the introduction of each of these exhibits, X-294 and X-295, because the redemption of preferred stock by the Western Electric Company in 1920 is treated as a cash dividend in total disregard of the undisputed evidence in this case.

The plaintiff also objects to these three exhibits, X-99,
X-294 and X-295, because in all of the exhibits there is
6001 included as a dividend in the year 1927, $45,000,000 de-
clared in that year, earned by the Western Electric
Company in the years 1882 to 1927.

The plaintiff objects to the introduction in evidence of Exhibits X-84, X-85, X-87 and X-88, which are entitled, "Western Electric Company, Inc. and subsidiaries, Consolidated average investment, profits and percentage of return," because for the year 1930 there has been erroneously eliminated from average investment, the sum of $12,000,000 on account of an item of good-will of the Teletype Corporation for which the Western Electric Company paid cash, which is admitted by the defendants' witnesses. The result is that each of these exhibits reflects for the year 1930 an erroneous average investment and an erroneous rate of return.

Exhibits X-86, X-87 and X-88 are also objected to on the ground that there is included in each of these exhibits for the year 1925 a profit on the sale of the International Western

Electric Company, which profit related itself to non-Bell business transacted abroad from the period 1882 to 1925, and inasmuch as these exhibits only purport to reflect the consolidated earnings for the period 1916 to 1930, such inclusion of profit on sale of the International Telephone &
6002 Telegraph Company is wholly erroneous for the period prior to 1916. So far as Exhibits X-84 and X85 are concerned, the objections just made are in addition to those made heretofore.

Exhibits X-54, X-55, X-57, X-58, X-60, X-61, X-63 and X-64 are each objected to, because there has been eliminated from average investment $34,900,000 of claimed excess cash items which is not justified under the evidence in this case, and also because two-thirds of the claimed excess cash so eliminated from average investment was for the year 1925, during which year the Western Electric Company earned 5 per cent on its cash and cash items, and in each of these exhibits the earnings for 1925 are only reduced by 2½ per cent on account of the claimed excess cash, which is eliminated from average investment. The result is that in this one particular the profits of the Western Electric Company are over stated, even on the theory of these exhibits, which is not admitted to be correct at all for the years 1925 by $514,000.

Exhibits X-50, and X-53 to X-58, both inclusive, each of these exhibits is objected to on the additional ground that the Western Electric Company's profits on its Bell business are over stated by approximately $1,500,000 because of
6003 an erroneous apportionment of adjustments for pension fund accruals.

Exhibits X-317, X317-A, X-318 and X-319 are objected to because these exhibits, and each of them, which are apparently offered for the purpose of showing that Western Electric Company sales to the Illinois Bell Telephone Company are not a fair cross section of its total sales to Bell customers, and are objectionable, and without any probative value because of each of the following facts admitted by the witness who prepared them:

First: They deal only with the number of items and not with dollar purchases by either the Illinois Bell Telephone Company or any of the Bell associated companies. In other words, there is no weighting at all of any of the items.

Second: All the figures on these exhibits are taken from provisional estimates prepared by the Bell associated companies in which they forecast their requirements for a period of two to fourteen months in advance. It is admitted that neither the total requirement nor the requirements in the several classifications contained on the exhibit and shown on the provisional estimates, are actually purchased by
6004 these companies. In other words, their purchases are something different from their estimated requirements.

Third: It is further admitted that there is nothing in any of these exhibits from which it is possible to tell either the profit on sales or the earnings on investment of the Western Electric Company in its business with the Illinois Bell Telephone Company or the Chicago area as compared with its total business.

These exhibits are, therefore, wholly meaningless. In addition, Exhibit X-319 is objected to because it has all the infirmities of the other two exhibits, and in addition it is based on a forecast for more than three years in advance.

Exhibits X-313 and X-313-A are objected to for the reason that these exhibits, while dealing with articles sold to the Illinois Bell Telephone Company and to the total Bell System by the Western Electric Company, deal with items only and not with dollar purchases. It is admitted that there is no weighting by dollar purchases and that the exhibits give no information as to the profit on sales or earnings on investment of the Western Electric Company in the business done by it with the Illinois Bell Telephone Company as com-
6005 pared with its total business.

Exhibit X-314 is objected to for the same reason as Exhibits X-313 and X-313-A.

Exhibits X-67, X-69, X-72, X-81 and X-82 are objected to because they show returns based on "original dollars" invested in the companies shown in these exhibits and wholly ignore for the purpose of arriving at the return on investment, moneys earned and left in the business upon which the company and its stockholders are entitled to earn a return.

Exhibit X-67 is also objected to because it includes for 1925 a profit of $16,000,000 on the sale of the International Western Electric Company which profit relates to the years 1882 to 1925.

And, last, Exhibits X-69 and X-70, which include dividends received from Western Electric Company, Ltd., of London, which dividends related to profits in a period prior to 1918, as well as subsequent thereto.

6006 Mr. Goldstein: I want to know if your Honor wants to hear from us as to each of these objections?

The Court: Well, now, my understanding is that in admitting compilations of tables of this kind the court does not approve the bases on which they are made, nor the argument which it is claimed they advance. The tabulations are prepared in order to show a result which follows certain assumptions. If the assumptions are incomplete or erroneous, the result which it is claimed they show would be disregarded. I think they should be admitted in evidence, like anything else, which is offered by an expert to aid counsel in arguing the case. But, as I said, in receiving them, the court does not place a stamp of approval upon the theory upon which the tabulation is made

Mr. Thompson: Of course, I am certain of that, your Honor, only that I had in mind—the only thought I had in mind was this: If there is a difference in theory between two parties, each of course is entitled to put in an exhibit based upon his theory.

The Court: Yes.

6007 Mr. Thompson: Now, with reference to most of these exhibits—and I am not attempting to argue what the facts are—it is our position that there are admitted errors in the exhibits and that therefore, whether the court should exclude them or not, presents a different question, but laying that question aside for the present, the objections ought to be specifically made, pointing out those things.

The Court: Yes.

Mr. Thompson: So that they may appear on the face of the exhibits.

6008 Mr. Goldstein: If your Honor please, Mr. Thompson just made a statement which was very serious for us, in that he states, as I understand it, that he proposes to place these objections on the face of the exhibits themselves, in conformity, I presume, with your Honor's statement the other day. If that is so, then we want to have the right to examine his objections and make our answers to them, because there is a conclusive answer to each one of them, and it would be unfair to have his objections stand without our answer, if they are to be placed on the exhibit and not in the record.

6009 The Court: Now, Mr. Goldstein says you made objections here. He says he has an answer to your objections. It is proper for him, before the record is closed, to state here what his answer to your objections is, and that answer may accompany your objections.

Mr. Goldstein: Certainly.

The Court: In the preparation of the volume of exhibits."

6010 R. C. RAINWATER, a witness on behalf of defendants, having been previously duly sworn, resumed the stand and testified further as follows:

Direct Examination by Mr. Goldstein.

(June 28, 1932.)

Defendants' Exhibit X-328, consists of three pages. Page 1 is entitled "Illinois Bell Telephone Company, Chicago Division—Comparison of revenues and expenses and return on average fixed capital and material and supplies, less accrued depreciation, years 1923 to 1931, inclusive"; page 2 has the same heading, excepting the reference is to "Chicago Division, intrastate"; page 3 has the same heading except that it has reference to the "Chicago Division intrastate exchange." This exhibit was compiled from Plaintiff's Exhibits A-49 and A-53, as to all figures except the following: The reserve for accrued depreciation, and the reserve for intangible capital were taken from the books of the company. There was excluded from the company's figures of miscellaneous revenues shown in A-49, Account 313, interest revenue, and Account 314, sinking and other reserve fund accretions. There was added to the company's figures of miscellaneous revenues the portion of Account 311, 6011 miscellaneous rent revenues, which were excluded from A-49. There was added to the company's figures of expenses shown in A-49 the amount for Account 320, rent expense, shown on the books of the company. The taxes were set up on the basis of accruals shown by the books of the company. All changes in the revenues and expenses were made to agree with the accounting classification used in connection with the income showing of the various licensee companies.

X-328 shows for the Chicago Division, Chicago Division Intrastate and for the Chicago Division Intrastate Exchange; the revenues and expenses and returns on average fixed capital and materials and supplies, less accrued depreciation, on the same basis as that shown in Exhibits X-299 and X-300 for all licensees so as to serve as a basis of comparison between them and the plaintiff.

The separation of the figures of the Chicago Division into those of the Chicago Division Intrastate and Chicago Division Intrastate Exchange were the company's figures as to all items contained in A-49 and A-53. Those taken
6012 from the books of the company were apportioned on the basis of similar items shown in A-49. The depreciation reserve was apportioned on the basis of plant, using the average fixed capital shown in A-53.

Defendants' Exhibit X-329, consisting of four sheets, is entitled, "Illinois Bell Telephone Company—Entire Company—Return on average fixed capital and materials and supplies, less average accrued depreciation, in excess of the average return of *other* licensee companies of American Telephone & Telegraph Company during the years 1923 to 1930, inclusive," on page 1; on page 2, the same thing for the year 1931, and on page 3, the same thing excepting the return is on the basis of comparison with all licensee companies, and page 4 for the year 1931 on the basis of all. It was compiled from the following sources:

Page 1, line 1 comes from X-300;
Line 2 comes from X-300;
Line 3 is a computation;
Line 4 comes from X-302;
Line 5 is self-explanatory.

6013 Line 6 shows that the net income available for return under the existing rates exceeded the average return of the other licensees by the amount in each of the years beginning with the year 1923:

Line 7 shows the effect of the reduction in rates due to the attacked order, as shown by the plaintiff in Exhibits A-52 and A-63;

Line 8 shows the amount by which the net earnings available for return under the attacked rates on the plaintiff's showing would exceed or would fall short of the average return of the other licensee companies;

Line 9 gives effect to the amount by which the Illinois Bell license payment exceeded that of the other licensee companis for each of the years beginning with the year 1923, as we computed the same in X-146 from the figures furnished us by Mr. Heiss prior to the trial;

Line 11 gives effect to the amount by which the company's depreciation expense as recorded on its books exceeded the
Illinois Commerce Commission order as we computed
6014 the same in X-158;

Sub-section (b) of line 11 is an additional adjustment which we made in order to give effect to the difference in the depreciation reserve which would have resulted from the use of the Commission's allowance.

This amount is shown in old Exhibit X-521, which was sent to the company. It should be noted that no adjustment is made in this exhibit for the intrastate separation, as naturally it takes the whole company figures into account.

Page 2 covers the year 1931 and is similar to page 1, excepting only that it does not take into account any adjustment of the year 1931 for the license contract, as we have only worked out for that year the adjustment for the Chicago Division.

Page 3 is similar to page 1, excepting that the comparison is on the basis of all companies instead of other companies. The adjustment of the license contract payments by comparison of all companies instead of others is shown in old Exhibit
X-558, which was sent to the company.
6015 The adjustment shown as 11 (b) came from old Exhibit X-516, which was sent to the company.

Page 4 is on the basis of comparison of all licensees for the year 1931. No adjustment was made for the license contract discrimination for the year 1931 for the reason already stated.

The adjustments shown in line 11B came from old Exhibit X-517.

Wherever I say "old exhibit sent to the company," I mean the sheets which were sent to the company, but have not been furnished as exhibits, but have been used as working papers.

Defendants' Exhibit X-330, consisting of two pages, is entitled, "Illinois Bell Telephone Company, Chicago Division," "Return on Average Fixed Capital and Materials and Supplies, less average accrued depreciation, in excess of the average return of other licensee companies of American Telephone & Telegraph Company, during years 1923 to 1930, inclusive," on page 1, and page 2 the same thing excepting the comparison is for all companies. It is a
6016 computation prepared on the same basis as X-329, excepting that it refers to the Chicago Division. The sources for X-330, in addition to those used in X-329, are X-328 and X-147 and old Exhibits X-562, X-521, and X-520, which were work sheets sent to the company.

Defendants' Exhibit X-331, is entitled, "Illinois Bell Telephone Company, Chicago Division Intrastate—Return on average fixed capital and materials and supplies, less average accrued depreciation in excess of the average return of other licensee companies of American Telephone & Telegraph Company during years 1923 to 1930, inclusive," on page 1, and page 2, has the same heading except the words, "All licensee companies," appears instead of "Other licensee companies." It is computed on the same basis as X-330, excepting that it gives effect to the additional factor of adjustment due to the change in the method of separating the revenues and expenses between the Chicago Division Intrastate, Chicago Division Interstate, and Chicago Division Intrastate Exchange, as made by the defendants in Exhibits X-264
6017 to X-270-B, rather than as made by the plaintiff.

Item 13-A, additional return of Chicago Division Intrastate, due to adjustment of depreciation expense was computed on the basis of the company's apportionment in A-49 of the depreciation and maintenance expenses.

Item 13-B was taken from old Exhibits X-523 and X-522.

Defendants' Exhibit X-332 is entitled, "Illinois Bell Telephone Company, Chicago Division Intrastate Exchange, Return on average fixed capital and materials and supplies, less average accrued depreciation, in excess of the average return of other licensee companies of American Telephone & Telegraph Company, during the years 1923 to 1930, inclusive," on page 1, and page 2 is the same except the comparison is with "all companies" instead of "others." It is a computation compiled on the same basis as X-331, and shows the basis of the comparison for the Chicago Division Intrastate Exchange only.

Defendants' Exhibit X-333 is entitled, "Illinois Bell Telephone Company, Chicago Division—Return on average fixed
capital and materials and supplies, less average accrued
6018 depreciation, in excess of the average return of other li-
censee companies of A. T. & T. Company, after adding return due to adjustment of license payments on the basis of Plaintiff's Exhibit A-170, during the years 1923 to 1930, inclusive," on page 1, and on page 2, the same except that the word "all" is substituted for the word "other." It shows the final figures for the Chicago Division, Chicago Division Intrastate and Chicago Division Intrastate Exchange in X-330, X-331 and X-332 for 1923 to 1930, and makes the additional adjustment for the license contract payment to give effect to the showing of the Chicago Division under the license contract which has been computed from the figures shown in Heiss' Exhibit A-170 and underlying exhibits.

Item 2 of the first page is the difference between X-147 and X-151.

Item 2 of the second page is the difference between our computations as shown in the working papers sent to the plaintiff, old No. X-562 and old No. X-568.

Defendants' Exhibit X-334, entitled, "Illinois Bell Telephone Company, Chicago Division. Return on Average Fixed Capital and Materials and Supplies, less Average Accrued Depreciation in excess of the Average Return of other Licensee Companies of American Telephone & Telegraph Company during the year 1931," on page 1, and page 2 is the same
except the word "all" is substituted for "others," for
6019 the year 1931 makes the same sort of a comparison as
shown on X-333 for the previous years, and the adjustment shown as Item 11, Additional Return of Chicago Division due to adjustment of license payment on basis of other licensees, was taken from X-151 and the working papers sent to the company designated as old X-571.

Defendants' Exhibit X-335 is entitled, "Illinois Bell-Telephone Company, Entire Company, Average Cost of Funds used in Business, eight years, 1923 to 1930." It is a computation showing, for the Illinois Bell, the average cost of funds used in business, and is prepared in similar manner to A-164.

6020 The figures were taken from the books of the company, the details of which appear in the old exhibit numbers X-252 to X-259, which Mr. Blackman identified as A-219 and which I understand are to be offered by him.

6021 Excepting in those exhibits where the comparison is made between the Illinois Bell and the other licensee companies, and excepting for the Exhibits X-273 and X-274, which were prepared to furnish the details as a basis for comparison with the other licensee companies, all of my exhibits which make use of the item of interest on loans paid by the Illinois Bell to the A. T. & T. use the figures of actual interest shown on the books of the company and as appear in Exhibit A-219, being the old Exhibits X-252 to X-259.

6022 Defendants' Exhibit X-336, entitled "Ill. Bell Tel. Co.—Statement of Chicago Division, Chicago Division Intrastate and Chicago Division Intrastate Exchange, showing net income required to cover all interest, amortization of bond discount and expense, and an 8 per cent dividend together with resultant rates of return on the plaintiff's showing of average reproduction cost and average book cost, including materials and supplies and cash working capital during the years 1923 to 1930, inclusive," is a computation showing, for each year from 1923 to 1930, net income required to cover all interest, amortization of bond discount and expense and an 8 per cent dividend, together with resultant rates of return on plaintiff's showing of average reproduction cost and average book cost, including materials and supplies and cash working capital.

Line 1 was taken from Exhibit A-219 and is self-explanatory.

Line 2 shows the per cent of return on the plaintiff's showing of rate base on book cost, line 18, and on reproduction cost, line 11 of Exhibit A-53, which would be required to produce the amount of income shown in item 1.

Exhibit X-337, entitled "Ill. Bell Tel. Co.—Chicago Division—Statement showing the net earnings per share available for the stockholders of the Ill. Bell Tel. Co. and the average

earnings available for A. T. & T. Co. stockholders on their proportionate investment in capital stock of A. T. & T. Co. which would result from varying rates of return on the plaintiff's showing of average book cost including materials and supplies and cash working capital, during years 1923-1930, incl.; same for average reproduction cost," applies varying rates of return to the plaintiff's showing of rate base in A-53 on the basis of book cost, line 18, and on the basis of
6023 reproduction cost, line 11, and shows how much the net earnings available for return resulting from such percentages would be per share of capital stock of the Illinois Bell.

In the second column, for each year it shows the average net earnings per share on the A. T. & T. stock resulting from the net earnings per share on the Illinois Bell stock, on the basis of the A. T. & T. Company paying par for the stock of the Illinois Bell, and on the basis of the A. T. & T. procuring the funds for such purchase of stock from the sources and in the proportions shown by Mr. Heiss in A-164 and in my Exhibit X-108.

I used the A. T. & T. purchase of the Illinois Bell's stock purchased at par, because the Illinois Bell's history shows that the total premiums received by the Illinois Bell for the purchase of stock throughout its entire history was only $4,000.

Exhibit X-338 is entitled "Ill. Bell Tel. Co.—Chicago Division—Plaintiff's Exhibit A-53, adjusted for rate base of book cost of plant, less depreciation, etc., years 1923 to 1930," on page 1, and on page 2 for the year 1931, adjusts the
6024 plaintiff's showing in A-53 on the basis of book cost on line 18 by the following adjustments:

1. The average going value was computed on the basis of the percentage relationship of the going value set forth in the Illinois Commerce Commission's order of August 16, 1923, to the book cost at December 31, 1922, and similar percentages applied to book cost for each of the years 1923 to 1930:

2. Depreciation reserve is deducted. Depreciation reserve is computed to give effect to the Illinois Commerce Commission's allowance for depreciation.

3. Construction work in progress was deducted from the plaintiff's showing.

Exhibit X-339, entitled "Ill. Bell Tel. Co.—Chicago Division—Plaintiff's Exhibit A-53, adjusted for rate base of reproduction cost of plant, less depreciation, 1923 to 1931," adjusts the plaintiff's showing on reproduction cost, line 11, to give effect to the following:

1. Deduction of construction work in progress.

6025 2. Adjusts going value to the amount stated in X-338.

3. Deducts the entire amount of the depreciation reserve in full, as shown on the books of the company, but raised to represent the same percentage of the reproduction new of the property as shown in A-41 as the per cent of the depreciation reserve was to the book cost of the plant.

4. Computes the depreciation reserve on the basis of giving effect to the Illinois Commerce Commission's allowance for depreciation.

Exhibit X-340, consisting of four pages, entitled "Ill. Bell Tel. Co.—Chicago Division—Plaintiff's Exhibit A-53 adjusted for net income available for return under rates in suit and for rate base during years 1923 to 1931; same for Chicago Division Intrastate and for Chicago Division Intrastate Exchange, 1923-1930, incl.," adjusts the income in Plaintiff's Exhibit A-53 to give effect to the (1) adjustment of the license contract payments as we computed the same on the basis of the information furnished us by Mr. Heiss prior to the trial, as shown in X-147;

6026 (2) The adjustment of depreciation expense due to the application of the Illinois Commerce Commission order, instead of the company's computation of the depreciation expense as shown in X-158; and

(3) To the defendants' separation of the Chicago Division Intrastate and Chicago Division Intrastate Exchange figures as shown in Exhibits X-264 to X-270B, and also gives effect to the rate base as adjusted, as shown in X-338 and X-339.

For the year 1931 full effect is given to the adjustments on account of license payments arising from the computations made on the basis of A-170, as shown in X-151.

For the previous years, 1923 to 1930, as already stated, we have only included such adjustment for license contract payment as we computed from the figures furnished us by Mr. Heiss prior to the trial, as shown in X-147; but, as shown in Exhibit X-333, we have an additional adjustment resulting from our computation made from Mr. Heiss' figures 6027 on license contract which were offered as Exhibit A-170.

That is, to clear this up for the years 1923 to 1930, my exhibits only show the adjustments based upon the documents which Mr. Heiss sent me prior to the trial, and in X-333 I have an additional adjustment, resulting from the additional documents which were furnished during the trial, in A-170. These are not reflected in Exhibit X-340, and I am now about to state what they are.

By giving effect to the additional adjustment for license payment, the percentages in line 9 of X-340, page 1, would be raised from the figures shown for each of the years 1923 to 1930, to the following:

The year 1923, 9.37;
The year 1924, 8.67;
The year 1925, 8.19;
The year 1926, 7.98;
The year 1927, 7.98;
The year 1928, 8.17;
The year 1929, 9.33;
The year 1930, 8.27.

Similarly, in line 11 in X-340, the figures would be 6028 raised from the percentages shown on that line for each of the years 1923 to 1930, to the following:

1923, 6.35;
1924, 6.18;
1925, 6.06;
1926, 6.20;
1927, 6.48;
1928, 6.81;
1929, 7.87;
1930, 6.98.

In X-340, page 2, the figures would be increased as follows:

The year 1923, line 9, 9.27;
The year 1923, line 11, 6.28;
The year 1924, line 9, 8.49;
The year 1924, line 11, 6.05;
The year 1925, line 9, 8.03;
The year 1925, line 11, 5.94;
The year 1926, line 9, 7.75;
The year 1926, line 11, 6.03;

The year 1927, line 9, 7.74;
The years 1927, line 11, 6.29;
The year 1928, line 9, 8.01;
6029 The year 1928, line 11, 6.68;
The year 1929, line 9, 9.05;
The year 1929, line 11, 7.63;
The year 1930, line 9, 7.91;
The year 1930, line 11, 6.67.

Page 3 of X-340, the figures would be increased as follows:
For 1923, line 9, 9.45; line 11, 6.40;
For 1924, line 9, 8.54; line 11, 6.08;
For 1925, line 9, 7.98; line 11, 5.91;
For 1926, line 9, 7.60; line 11, 5.91;
For 1927, line 9, 7.61; line 11, 6.19;
For 1928, line 9, 7.93; line 11, 6.61;
For 1929, line 9, 9.20; line 11, 7.75;
For 1930, line 9, 8.16; line 11, 6.88.

I have examined the following reports: MR-1, MR-22A, MR-22B, provisional estimate statement A for the year 1931, provisional estimate statement E for the years 1924 to 1930, the annual reports of directors of Illinois Bell to its stockholders, 1929 to 1931, annual reports of the A. T. & T. to its stockholders, 1920 to 1931, Bell Telephone securities 6030 manuals for the years 1923 to 1930, CR-51A for the years 1929 and 1931, CR-53, 1923 to 1930, CR-67, CR-67A, CR-76 and CR-97.

I found as follows:

MR-1, line 46, year 1929, shows "Balance net profit to average common stock."

MR-22A, year 1929, shows comparison of average of actual results with provisional estimates; line 26, "Balance net profit to average common stock";

MR-22B shows, sheet 1, the year 1929, line 26, "Balance net profit to average common stock (annual basis)."

6031 Provisional Estimate A, year 1931, line 41, shows "Balance net profits (after preferred dividend) to average common stock";

Provisional Estimate E, years 1924 to 1930, shows "Balance net profits to average common stock";

Annual reports of directors of Illinois Bell Telephone Company to stockholders, year 1929, page 1; year 1930, page 1;

year 1931, page 1, show net profits of company related to average capital stock outstanding for year.

Each of the annual reports of the A. T & T. from 1922 to 1931 to its stockholders shows "Per cent of net earnings to average capital stock outstanding";

Each of Bell Telephone Securities manuals, years 1923 to 1930, shows "Ratio of net earnings to average capital stock outstanding";

CR-51A, line 46, the year 1929 and the year 1931, line 48, shows "Ratio of net earnings to average common stock outstanding";

6032 CR-53 of years 1923 to 1930 shows "Per cent of net earnings on common stock of A. T. & T.";

CR-67 shows the same as MR-22A.

CR-67A shows the same as MR-22B.

CR-76 shows "Balance net profits to average common stock" for each of the associated companies separately.

CR-97 shows "Balance net profits to average common stock" for the entire Bell System.

I have examined MR-14, being a monthly report form entitled "Cash Report," being one of the reports of the Illinois Bell.

I found that the form shows the loans made by the A. T. & T. to the licensee companies, the amount of loans repaid by the licensee companies and the net amount of financing by A. T. & T. to the licensee companies during the month covered by the reports. It would be possible through the use of this form and the annual reports to the Interstate Commerce
6033 Commission to compute the monthly average loans to
each of the licensee companies based on the balance, at the beginning and end of each month, and annual average could be computed on the basis of the monthly averages.

"Mr. Goldstein: MR-14, I might state, was made available to us, but we have never had a copy. We would like to have a copy of one of those forms, so that we may offer it, we would like to have it produced so we can offer it as our exhibit."

(Witness continues.)

Since Mr. Blackman's cross-examination, I have made computations to show what the effect would be in those exhibits, wherein I compared the Illinois Bell with the other licensee companies, by using the actual interest and loan figures, as shown from the books of the Illinois Bell and also using the loan and interest figures for all licensees, as shown by Mr. Heiss in X-103 instead of using the quarterly averages of City Exhibit 142. This is for all of the companies taken as a whole.

(Objection by Plaintiff; objection overruled.)

6037 The figures from Exhibit X-133 for the Illinois Bell, using the actual loans and actual interest figures combined with the dividends and stock figures, would be, for the year 1923, for the Illinois Bell, 7.14 per cent instead of 7.15;

The year 1924, it would be 7.14 per cent instead of 7.13;

For the year 1925, no change;

For the year 1926, no change;

For the year 1927, using the actual interest and actual loans, the figure would be 7.51 instead of 7.47;

For the year 1928, the figure would be 7.54 instead of 7.56;

For the year 1929, the figure would be 7.51 instead of 7.42;

6038 For the year 1930, the figure would be 7.67 instead of 7.66, and if you take the average of all the figures for all the years 1923 to 1930, the new figure would be 7.41 as compared with 7.39, based on the old figures.

Now, taking all licensee companies; the year 1923, unchanged;

The year 1924, unchanged;

The year 1925, unchanged;

The year 1926, 7.11 becomes 7.13;

The year 1927, 7.19 becomes 7.20;

The year 1928, 7.31 becomes 7.32;

The year 1929, unchanged;

The year 1930, unchanged.

Taking the years 1923 to 1930, the average, based on the figures as shown in X-133, would be 7.04, and substituting the actual interest and actual loans would be 7.05.

Taking the percentages as shown in Exhibit X-284, on line 11, of the Illinois Bell, and substituting the actual loans
6039 and actual interest, the per cent for the year 1923 would be 8.72 instead of 8.73;

The year 1924, no change;

The year 1925, 8.55 becomes 8.56;

The year 1926, the figure 8.37 becomes 8.36;
The year 1927, the figure 8.62 becomes 8.69;
For the year 1928, the figure 8.96 becomes 8.94;
The year 1929, the figure 9.32 becomes 9.46;
For the year 1930, the figure 8.22 becomes 8.23;

And taking the average of the period, the old figures would be 8.70, and the new would be 8.73, and for all licensee companies, line 11, the per cents would be unchanged for the years 1923, 1924 and 1925.

For the year 1926, 7.76 becomes 7.78;
The year 1927, 7.83 becomes 7.84;
For the year 1928, it is unchanged;
1929, unchanged;
The year 1930 is unchanged.

The average for the period of the old figures would be 7.52 and the new would be 7.53, and for all the licensees, exclusive of the Illinois Bell, line 11, year 1923, the figure 6.77 becomes 6.78; 6040

The year 1924, unchanged;
1925, unchanged;
The year 1926, 7.71 becomes 7.73;
The year 1927, unchanged;
The year 1928, 8.07 becomes 8.08;
The year 1929, 7.95 becomes 7.94;
The year 1930, unchanged.

The average for the period on the basis of the figures as shown in X-284 is 7.43, and the new figure is also 7.43.

6041 I made a computation from X-284 to show in dollars what the difference would be between the actual figures and the quarterly averages, comparing the Illinois Bell with the other licensees, both using the old figures, and then substituting the new figures. I took the total investment shown in line 10 of the Illinois Bell, and I applied to that the per cent shown in line 11 of the return on investment of the other licensee companies. That would be the return on the investment of the A. T. & T. in the Illinois Bell on the basis of the average return of the other licensee companies, and I got a certain amount, and I compared that with the return shown in line 5, showing the difference in dollars of these per cents as shown on line 11 for the Illinois Bell as compared with the per cents shown on line 11 of the other licensees, and I have made that computation on the basis of the figures as shown, and then I made the computation on the basis of the new figures.

6042 My computation was made by comparing the Illinois Bell with all the rest of the companies:

In the year 1923, based on the old figures, it would
6043 be $1,448,494, and based on the new, $1,439,690, a difference of $8,804;

In the year 1924, the old figure was $1,978,756, while the new figure was $1,978,756, the same, no change;

The year 1925, the old figure, $1,407,105, and the new figure, $1,412,599, a difference of $5,494;

For the year 1926, the old figure would be $672,482, as compared with $649,795, the new figure, a difference of $22,687;

The year 1927, the old figure would be $1,020,767, as compared with the new figure of $1,075,174, a difference of $54,407;

The year 1928, the old figure would be $1,181,910, as compared with $1,149,405, the new figure, a difference of $32,505;

The year 1929, the old figure would be $2,125,024, as compared with the new of $2,279,812, a difference of $154,788;

The year 1930, the old figure would be $2,010,956, as compared with the new figure of $2,017,551, a difference of $6,595.

If you take the totals for the period, the old figure
6044 would be $11,845,494, and the new figure would be $12,002,782, a difference of $157,288. That would help the defendants to that extent.

Exhibit X-285, page 8, is headed: "Dividends and Interest on Stock and Loans paid by Illinois Bell Telephone Company to A. T. & T. in excess of the Average Interest and Dividends on Stock and Loans of other Licensee Companies."

Carrying through all of these changes that I have mentioned before, the figures on line 6 would be changed to this extent:

6045 The figure $472,314 becomes $460,719;

The year 1924 is unchanged;

The year 1925, the figure $353,475 becomes $352,367;

The year 1926, the figure $111,747 becomes $94,226;

The year 1927, the figure $287.614 becomes $306,452;

The year 1928, the figure $321,055 becomes $287.290;

In the year 1929, the figure $291,650 becomes $390,938;

And in the year 1930, the figure $864,576 becomes $873,299;

Or, taking the total for the period, the figures as shown of $3,039,390 become, under the new figures, $3,102,250, or a difference of $62,860.

Except for Exhibits X-137, X-142 and X-143, all of my license contract discrimination exhibits do not take into account the equalizing factor on return. My exhibits do not take into account any adjustments due to anything that might be revealed in the minutes of the Executive Committee.

6047 (Defendants' Exhibits X-328 to X-340, inclusive, identified by Mr. Rainwater on direct examination, offered in evidence, subject to cross-examination.)

6048 *Cross-Examination by Mr. Blackman.*

The first exhibit that I dealt with today is X-328. I prepared it. I was asked to make a comparison of the showing of the Chicago division with the other licensee companies, and I prepared this statement showing what the return would be on the Chicago division. There is no comparison here. I have worked out here what the return is on the average fixed capital and materials and supplies less the accrued depreciation, just as the exhibit shows.

"Q. Well now is it your idea that this exhibit sets up anything showing any result on the basis of the value of the property used?

A. It is on the basis of original cost. It is on the
6049 basis of cost as shown on the books of the company."

This is the exhibit where I depreciated the original cost. I have taken here the fixed capital and materials and supplies. We left out the cash working capital. One rea-
6050 son I left out cash working capital was because in my showing here, I wanted to compare with the showing of the other licensee companies, and the showing for all of them would require some study as to what the requirements for cash working capital were, and I made the comparison strictly on the basis of fixed capital and materials and supplies, and in my revenue figures I left out such items as interest on bank balances that might come about through cash working capital. I have shown here what the return is on the fixed capital and materials and supplies. There is no
6051 comparison on this sheet. The comparison that I spoke of is on X-330. It is not entirely correct to say that

what I really mean by this exhibit (X-328) is, that I am not presenting it as showing anything specific with regard to the return that the Illinois Bell is making, either on its value of the property or the cost of its property, but am setting up some figures here which I later use as a basis of comparison, of the same figures with other companies.

6052 I have tried to work out here what the return was on the fixed capital and materials and supplies. The purpose of it was to offer the basis of the comparison with the other licensee companies. As I understand the purpose of it, it is for the purpose of comparing certain operations of this company with operations of other companies. I 6053 did not have any purpose of my own. I was asked to prepare it on the basis of fixed capital and materials and supplies.

Page 1 of Exhibit X-328 includes interstate business. In determining my basis of comparison, I have deducted the reserve from the cost of the property as shown on the books. At the bottom of the sheet it says: "This showing of return on investment is prepared on the same basis as the statement for all licensee companies, using the figures shown in Plaintiff's Exhibit A-49, except as indicated by notes (a) and (b) above." Plaintiff's Exhibit A-49 did not give 6054 me any of the figures on this sheet except the revenue and expense figures. That note should have read A-49 and A-53 instead of just A-49. I did not intend that note to be misleading. I refer there to these exceptions. Take taxes, for instance, I used the accruals instead of the payments. In other words, the company's Exhibit A-49 showed payments and I used accruals, and company's average fixed capital was taken from A-53. All I did was to just prepare the average fixed capital for the year based on the balances at the beginning and at the end of the year and the materials and supplies are taken from A-53. In these exhibits of the company's that I referred to, they did not proceed on any such basis as I have used here.

6055 In the note on X-328, I say, "using the figures." I do not say it was the basis. Where I say, "This showing of return on investment is prepared on the same basis as the statements for all licensee companies, using the figures shown on Plaintiff's Exhibit A-49," the basis is not the same as the plaintiff's.

Referring to Exhibit X-329, in the year 1923 and subse-
quent years, I purport to make an adjustment which I call
"Loss in recorded return, Illinois Bell Telephone Company,
due to attacked rates." In the year 1923 I show that loss as
$389,000, and in 1924 I show it as $1,566,000. The reason
6056 for that great difference is that the figure for the year
1923 was taken from Plaintiff's Exhibit A-52 to give ef-
fect to the date of the order, that is the effective date of the
Illinois Commerce Commission order, October 1, 1923.

6058 The difference was due to the fact that the amount
shown for the year 1923 is the loss, giving effect to the
date of the Illinois Commerce Commission's order of October
1, 1923; while the figures in the year 1924 is for an entire
year. So that the deduction that I make for the year 1923,
is the loss that took place in one quarter. All of the other
figures in that column for 1923 are on an annual basis, but I
wanted to deduct here what the actual loss was for that
period. I am purporting to show on this sheet what the re-
sult to this company would be under the Commission's rates,
but giving effect to the date in the year 1923 that the order
became effective.

As an accountant, I do not commonly make deductions of
quarterly deficits from figures for the whole year, in
6059 order to get any intelligible result. But I was trying
to show here what the actual experience of the year
1923 would be, with this adjustment only for that period in
which the order was effective.

Item 11 down below was worked out on the same basis, of
just the quarterly adjustment, due to the effective date of
the order. What I was purporting to do here was to show
the effect of the Commission's order upon the earnings of
this company, based on that part of the year in which the
order was effective. That is clear, what I have done.

6060 I made it up because I was advised by counsel to
show the effect, based on the effective date of the order,
and that is what I tried to do. He instructed me to consider
the effective date of the order, and I prepared the adjust-
ments on that basis. My contribution is the mathematics
only. All of the figures are on an annual basis except Items

7 and 11 for the year 1923. The figures in Line 9 are taken from X-147.

6061 In X-147 I do not make comparison of a mixture of dividends and interest of other associate companies, with a mixture of dividends and interest paid by the Illinois Bell Telephone Company to the American Telephone & Telegraph Company, without discrimination between the amount that was interest and the amount that was dividends.

In Exhibit X-147, line 1, I say, "Return under present revenues from Illinois Bell Telephone Company, entire company, in excess of average return from other licensee companies."

The figure that I show there, which I call an excess is not the excess of the dividends and interest paid by the Illinois Bell Telephone Company to the American Telephone & 6062 Telegraph Company, as compared with dividends and interest paid by other associate companies. There are no dividends in the figure at all. The figure is worked out from X-146. The figure is carried in from X-146 into X-147.

The purpose of X-329 to me was to make a comparison between the operating results of the Illinois Bell Telephone Company and those of other licensee companies. I do not know what purpose counsel might have had in it, but that was what I did. That was my purpose.

6063 I cannot use a mass of figures without having some objective. In order to make that comparison and make it fairly, I made an adjustment in the depreciation account of the Illinois Bell Telephone Company. That adjustment amounts to as much as $4,429,000 for 1930. The net adjustment for the purpose of this statement is $3,000,000 for 1930. There is a corresponding amount of $1,500,000 I have to take off. That I have made up in the manner that was testified to by Mr. Tholin, giving effect to his interpretation of what the Commission determined in this case.

6064 I did not make any corresponding adjustment for the other companies. I had no knowledge of any adjustments to be made in the accounts of the other companies. I made this adjustment that I knew about, as far as the Illinois Bell Telephone Company was concerned, and it was made just as shown. As to whether as an accountant I would take the accounts of these companies that are set up on the same general basis, and make an adjustment of over $3,000,000 in the accounts of one of them, without making any corresponding adjustment in those with which I make the comparison, I say that I have no knowledge as to what the proper figures for depreciation are for the other companies. I made the adjustment here on what the Illinois Commerce Commission had done with regard to depreciation of this company.

6065 I did not know that the minute I had made that $3,000,000 adjustment, I absolutely destroyed the basis of comparison.

I took this large amount out for depreciation in one case, and did not even assume that there was some comparable amount to be taken out in the other, because all of 6066 this was prepared according to the request of counsel as to this particular adjustment. I was requested to take this adjustment into consideration, and I did so. It is a fact that in all of these exhibits that have been put in today, I have made them up especially, as directed by counsel. I do not know what they mean. I do not know what the 6067 court should make out of them, after the court has read them.

(Counsel for plaintiff objects to this witness' exhibits, numbered X-328 to X-340. Objection overruled.)

6072 Exhibit X-329 is also a comparison based on what I call cost, and not value. It also is based on figures built up through the deduction of the reserve. Those facts apply to each of the four sheets submitted, designated as X-329. Exhibit X-330 is built up on the same general principle as X-329.

6073 The deduction of reserve, the deduction from the Illinois Bell of this amount which I say is an adjustment of depreciation,—all of these specific things that have been touched upon, apply to X-330 as well as X-329. Exhibit X-331 differs from the previous exhibits in that there are additional adjustments in there, due to the interstate separations, which were taken from the defendants' exhibits. I think that is shown here as Item 9. Item 9 is new. Item 10 is also new. There would be a new balance figure inserted there. With that exception, just two additional lines, all the other lines are the same as in Exhibit X-330. X-332 is the same, except that it is limited to the intrastate exchange.

6074 Line 2 in Exhibit X-333 is the difference between the adjustment shown in X-147 and the adjustment in X-151, the license payments.

In Exhibit X-147, Item 4, Total Chicago Division, shows $407,960; and on Exhibit X-151 it shows $444,469. The difference between those figures is $36,509, and that is what is carried into this statement.

Exhibit X-334 is the same as X-330, X-331 and X-332, except that it covers the year 1931 solely, and sets up in parallel columns the result for the Chicago division, Chicago division interstate, and Chicago division intrastate.

In Exhibit 335, there is a typographical error. On page 2, in the first column, under amortization charges, the last
6075 figure on the page, at the bottom of the page is $94,492,231. That should be $9,449,231. It is not carried into my other computations.

Following the method which I have used in producing Exhibit X-336, the rate of return, applied as shown in Para-
6076 graph 2, would be reduced further and further as the value of the property increased, if there were no increase in capital stock or funded debt, or any other outside obligation in connection with that property. That is, the fundamental principle on which I have proceeded here is that the greater the value of the property in connection with the other figures which I have used, the smaller will be the rate of return.

In Exhibit X-337 I make certain comparisons and I showed that a 4.91 per cent return to the Illinois Bell Telephone Company results in an 8.31 per cent return to the share-
6077 holders of that Company. That is due to the fact that the securities issued by the Illinois Bell Telephone Company against its property, were less than the cost of the property.

The 4.91 return to the Illinois Bell Telephone Company would have resulted, or might well have resulted, in less than the 4.91 per cent to the stockholders, if the securities
6078 were more than the cost of the property. If you increase the stock, why, you are going to get smaller earnings per share to the stockholders. I do not know any statement here as to what it is entitled to earn. I have not made any

statement here as to what it is entitled to earn. I merely worked out what it would be if you provide interest and an 8 per cent dividend. That is all I have done. According to this method, if the stock is watered more and more, I would think it would make a poorer showing; it would make a poorer showing per share. That is, it would appear to the court that the company was needing more income, a higher percentage.

6079 On Exhibit X-339 I go a step further with the reserve, and I not only deduct the reserve but I deduct a figure which is raised to the reproduction cost level.

6080 I testified near the end of my redirect examination by Mr. Goldstein concerning certain documents, CR and MR reports. I stated MR-1 shows on line 46 "Balance net profit to average common stock," and I made similar references to the form of the various reports as showing the profit to the average common stock, net profit to average common stock. I had no purpose in stating that those reports showed that comparison.

6082 As to my purpose, I was asked to make an examination of these reports, and indicate what the reports showed, and I went through the reports and referred to this particular line on the report where it showed net profits to average common stock.

(Objection by defendants to question as to purpose of witness.)

I presume that that is something that practically every corporation shows. The basis of stating that comparison and
the comparison that I made on Exhibits X-108, X-111
6083 and X-115, which we went over here for two days is the
same, as I understand it; that is, showing the return on
the common stock. It is my understanding as an accountant
that in making its annual reports in the customary form that
companies use, showing the relationship between its earnings
and its common stock, this company was doing something
similar to what I did when I increased the rate of return
from 34 per cent to 59 per cent to the stockholders of
6084 the American Telephone & Telegraph Company on Ex-
hibit X-111, except that in my Exhibit Number 111, I
took only a portion of the stock, that portion that would be
represented by the telephone instruments, while in the re-

ports of course, the entire common stock is considered.
6085 I think the showing is similar. As an accountant I
think my procedure was similar to that followed by the
company. I was only taking it on a part of the stock, and
the company takes it on all of the stock. That is the only
difference I know of.

6086 I did not refer to any line in my testimony in connection
with the annual reports of the American Telephone
& Telegraph Company. I stated that each of the annual
reports of the American Telephone & Telegraph Company
to its stockholders, from 1922 to 1931, shows per cent of
net earnings to average capital stock outstanding. On page
19 of the Annual Report for 1930, it shows net earnings per
share available for dividend. In that column it shows the
figure for the year 1930 as $10.44. That is, it says on that
report that the net earnings per share are $10.44. That
6087 is a common expression. I cannot say that I could find
it in the annual report of practically every company. I
also referred to CR reports. I will read into the record the
comparison that I referred to.

CR-51-A shows on line 46 for the year 1929, "Balance
6088 net profit after preferred dividends to average common
stock, 10 21."

6089 The effect on that comparison that I read into the
record, if the surplus of the American Telephone &
Telegraph Company had been $1,000,000,000 more than it
actually was, and the stock premiums $500,000,000 more than
they actually were, I think would be that it would not affect
the figure at all. In the way that I figure the amounts shown
on Exhibit X-111, the bigger the surplus and the bigger the
stock premiums, the more you would find that the stockholder
was earning on his investment. That is according to the
method I used, the bigger the surplus and the bigger the
stock premiums, the greater the return that I would
6090 show that the stockholder was earning on that particular
item of investment, as I have shown it in X-111 and
X-113, which is only a part of the entire investment. The
method followed by the company, which I have called attention
to, in these CR's and in the annual reports, may be different
from the method I follow, but the expression is the
same, as I understand it. Of course, they did not go at it

in that way, they did not apply any formula to get the answer. I realize that.

I understand that for two days we went over the question of whether the formula that I did use was an incorrect formula, and gave an upside-down answer. I remember that I finally stated that it was a fact that the more the stock
6091 premiums, and the more the surplus, the higher the return that I would work out on the investment from the same actual income on a particular item of investment, as I have used it here. As to whether there is no similarity whatever between what I have referred to here today in answer to Mr. Goldstein, and what I did in Exhibit Number X-113, the method is different, but I think the expression of return on stock is the same, except in one case I am working it out on the stock that was applied to a small item of investment, of the total; and here it is the entire stock of the company.

It seems to me that the difference in method and the difference in result is due to the fact that I took a part of the stock and not all of the stock. As to whether I would have gotten the same general result, that is, made it appear that the man who paid into the company $180 per share for his stock was getting a bigger return from the same amount of dividends of the company than a man who paid $100, I do not see that the comparison is exactly the same.

6094 I do not think there would be any difference between the man who paid the $100 and the man who paid $180 in the way I have used the figures, because my calculation was worked out on the par value of the stock rather than on the surplus, and premiums, in addition to par value. I remember I performed a little computation for you, I remember that I increased the surplus of the company by $1,000,000,000 and that I increased the stock premiums by $500,000,000. I remember that as a result of that I got 140.77 per cent instead of the 59 per cent that I showed on Exhibit X-113.

(Witness excused.)

6097 W. M. HAMMOND, a witness on behalf of defendants and having been previously duly sworn, resumed the stand for further re-cross examination by Mr. Blackman and testified as follows:

Re-cross Examination by Mr. Blackman.

(June 29, 1932.)

I prepared Defendants' Exhibit X-343. That was the paper that I prepared at your request when I was on the stand before. On this sheet, I compare triple A bonds of the Bell System with triple A bonds of the railroads and other utilities. The results that I get by this method compare with the results on my summary sheets, Exhibits X-227 and X-228 and X-229 as follows:

Exhibit X-227 and X-228 reflect the same figures as appear in Exhibit X-229, the tabular statement, so that I take it that a comparison of the one will cover the entire subject.

6098 I will compare the triple A issues with the corresponding periods, and the corresponding classes of business in Exhibit X-229, which embraces all of them together, all classes of bonds.

In the year 1923, on Exhibit X-229, the Bell System, costs to company figures was 5.72. On Exhibit X-343, the yield on triple A is shown as 5.33. The same year the railroad issues on Exhibit X-229 show 5.50 and on Exhibit X-343 they show 5.24. The public utilities, the same year, 1923, on Exhibit X-229, show 6.03 and on Exhibit X-343, they appear as 5.77.

For the year 1924, on Exhibit X-229, the Bell System figures are 5.70, and on Exhibit X-343 there are none; there being no Bell issues of triple A bonds in that year.

In 1925, on Exhibit X-229, the Bell System figures are 5.44 and on X-343 they are 5.19. In the same year the railroads are 5.61 on X-229 and 5.17 on X-343, and in the same
6099 year, 1925, the public utility issues are shown as 5.62 on Exhibit X-229 and 5.24 on Exhibit X-343.

In 1926, on Exhibit X-229, the Bell System percentage is 5.02 and on Exhibit X-343 it is 5.02. The railroads for 1926 in Exhibit X-229 show 5.26, whereas in Exhibit X-343 they are 4.75. The public utilities in 1926, the percentage on Exhibit X-229 is 5.52, while it is 5.08 on Exhibit X-343.

There are no Bell issues in 1927 or 1928 of triple A class. Exhibit X-229 shows a percentage of 5.33 for the Bell System, in 1929, and in Exhibit X-343 the figure is 5.33, the same. The railroads in 1929 on X-229 show a percentage of 5.27 and on X-343, 4.82. Public utilities in 1929 on Exhibit X-229, 5.29, while on Exhibit X-343 they show 4.93.

In 1930, on Exhibit X-229, the Bell System percentage is 5.21, and in Exhibit X-343 it is the same. In the same year for railroads in Exhibit X-229 the percentage is 4.90, while in Exhibit X-343 it is 4.80. The public utilities in the same year, 1930, are shown as 5.04 in Exhibit X-229 and as 4.88 in Exhibit X-343.

I have summed up these figures at the bottom and give both the arithmetical average and the weighted average
6100 in Exhibit X-343. In each case, the yield on the securities of the Bell System is somewhat higher than the yield on either the railroads or the public utilities.

My other table shows the yield to the public based on the offering price. I get the same result there, that is, the yield on Bell securities is higher, showing that the bonds sold at a lower price compared to the yield than either the railroads or the other public utilities. There is a small
6101 difference in that direction. The years 1921 and 1922 are used on the combined issues. I left them off of this one (X-343). There was no purpose in making a distinction other than this: I started with the idea of covering the period from 1923 to date, and then decided that I had time to carry it back a little further with reference to the whole, but did not have ample facilities to extend it further in the time available.

Not having gone into the figures, I do not know whether if I made out a table that was comparable to those sheets, I would have shown a greater difference between the Bell securities and the other securities than I show on X-343. I made no classification according to Moody's ratings prior to 1923. In figuring up the table asked for I did not test out what the effect would result from the inclusion of 1921 and
6102 1922. I would not be able to do that without making a complete classification.

6102 *Re-redirect Examination by Mr. Goldstein.*

In the two years, 1929 to 1930, in which the Bell System securities cost to the company was higher than that of the public utilities, the percentage of total money received by the Bell System in those years was 100 per cent triple A money. The percentage of triple A money received by the public utilities, 1929, was only 5 per cent of the total, and in 1930, 13.3 per cent of the total. The ratio of triple A money, double A money and A money and BAA money, that constitutes the total funds, will have a very important effect upon the cost of funds to the company.

6103 *Re-re-cross Examination by Mr. Blackman.*

The experience by which I know that, is a study of statistical matters coming under my experience, public utility financing. I took my last answer on redirect to refer to the aggregate financing of a company by bonds. The cost of money is higher on the lower grade bonds.

6104 A company seeking to raise a given amount of money, or rather to do its financing by bonds, regardless of the amount, if it covers its entire requirements by about 25 per cent in bonds, the bonds being in that proportion with the usual relationship of earnings and equity, gives the bonds a very high character and consequently a low cost. A company with a much larger proportion of bonds of a miscellaneous character will usually pay a much higher average rate because of the fact that it is not only a lower grade, but a larger volume, and that is what is reflected in this statement, is a large volume, as well as the low grade.

Within reasonable limits, as the volume increases, the price that the company is able to sell the bonds at, goes down, 6105 even though the bonds may be perfectly good; that is, if you go beyond the customary limits, of probably 50 per cent bonds, or approximately that. I would not say it would make a great deal of difference in low ranges of about 25 per cent of bonds to the total, but you do reach a point which cannot be measured in a certain percentage with respect to all companies.

If a company is issuing triple A bonds that represent only 20 per cent of the value of its property and the company issues at the same time or later, lower grade bonds, it may not have a direct relationship in a given case on the selling price of those bonds although the fact that a company has junior bonds outstanding, places it in a less stable position than if it has only stock under its high-grade bonds. There is the danger of foreclosure and default which does not obtain if there are no junior bonds or lower grade bonds. I
think it would have some effect to pull down the sale
6106 price of the triple A bonds. I see no basis for putting
it up.

I could not answer intelligently whether if one company in an industry issued a lot of low-grade bonds that would have any effect upon the selling price at which another company in the same industry might issue triple A bonds. You are comparing different companies now which might occupy absolutely different positions. They are not comparable, that is, unless I knew the elements that would otherwise make
them comparable.

6107 I think without question a given company can obtain
its money lower, if it is in a position to issue only triple A bonds, than if it has to issue a lot of ~~miscel~~laneous lower grade bonds. I do not think there is any question about that.

As to whether the price at which it can sell its triple A bonds is affected by the issue of lower grade bonds, I can only say again, I believe that a company issuing only triple A bonds can obtain a better yield on the money that it might be necessary to raise than if it must issue a lot of lower grade bonds to raise the funds. I think the fact that a company is issuing high-grade bonds and low-grade bonds, we
will say triple A bonds and BA bonds, has an effect
6108 upon the price at which it can market its triple A bonds.
The triple A bonds would probably not enjoy as much favor among investors as if it had only triple A bonds.

Whether the comparison that I am making here, even on the basis of triple A bonds, is a little unfair to the Bell System, because their bonds were all of a high grade, I can answer only by saying that the bonds are all of a high grade.

If the railroads had issued only triple A bonds, and if the other industries had issued only triple A bonds, I would expect to find the yields on those bonds lower and the prices higher. If they had only triple A bonds, I think there would have been a tendency in that direction. If the railroads, for instance, had issued only triple A bonds, I would 6109 expect to find their total money, obtained by bonds, lower.

(June 29, 1932.)

It was stipulated as follows:

That the method used by Mr. Rainwater of converting the per cent return to the A. T. & T. Company, to percentage of return to stockholders of the A. T. & T. Company, 6110 upon their investment in the stock of that company, is used in each of the following exhibits: X-111, 112, 113, 114, 115, 118, 127, 134, 272, 273, 274, 276, 278, 282, 280, 294 and 337.

The average loans of the American Telephone & Telegraph Company to the Illinois Bell Company and other licensee companies based on the figures developed by Mr. Rainwater, and which he has already testified about, appear also in one form or another in the following exhibits: X-131, 132, 133, 134, 135, 136, 137, 142, 143, 144, 145, 146, 147, 273, 274, 279, 281, 282, 284 and in 285, except that they do not appear in pages 1, 2, 3, 4, 9, 10, 11, 12, 17, 18, 19, 20, 21 and 22 of that exhibit; also X-296, 297, 298 and 340, except for page 4.

6111 The method of Mr. Rainwater in making comparisons of the combination of interest and dividends which was referred to in the cross-examination occurs in each of the following exhibits: X-132, 133, 134, 135, 137, 142, 143, 273, 274, 281, 282, 284, 285, except for pages 1, 2, 3, 4, 9, 10, 11, 12, 17, 18, 19, 20, 21, 22.

6112 "Mr. Blackman: At certain places in the record the witness testified that the figures had been furnished to him by the company. Later he said that no figures had been furnished to him by the company. Of course, we contend that we never furnished the figures for the purposes for which they have been used, and if they wish to prove what they did say we furnished and the circumstances, of course, it is open to them to do it, but I shall move to strike out from this witness' testimony the various places at which he said that he had taken these figures from the company and that the company had furnished them to him, in view of his statement later that he got nothing from the company.

6115 The motion is to strike out his statements that the company furnished him these figures, on the ground that on cross-examination he testified that the company did furnish him no figures.

6116 I am not accusing the witness at that point of having made a statement that was not true or contradictory. He merely made a general statement that he got it from the company and on cross-examination I said, "Did you personally get any of these figures?" and he said "No." They all came through counsel.

6118 The Court: Strike out the testimony—the statement that he received the exhibits—he received the figures from the company and in place of it substitute that he took the figures from City Exhibit 142-A or whatever the exhibit is that was furnished by the company—was furnished to counsel at counsel's request for the information made up in that way."

(Plaintiff offered in evidence the exhibits identified during the cross-examination of Mr. Whitworth, Mr. McCann, Mr. Wray and Miss Galster.)

(July 1, 1932.).

6506 "Mr. Bracelen: Counsel states that that completes his cross-examination of plaintiff's witnesses on rebuttal. One of my associates suggests that I should broaden the offer I made a moment ago to cover all exhibits that have been identified by the plaintiff's witnesses on rebuttal, so that the record will leave that point in no doubt.

Judge Wilkerson: They are admitted, subject to the objections. Have you any more objections, Mr. Goldstein, on the exhibits, which are offered in evidence in rebuttal?

6507 Have you stated all of the objections you wish to make?

Mr. Goldstein: We have not stated them all yet.

Mr. Adcock: We have not had time to formulate them.

Mr. Goldstein: And the plaintiff has still to formulate its.

It is just a question of formulating the specific objections.

Judge Wilkerson: Well, they are admitted in evidence.

Mr. Adcock: Subject to such objections as we make as to materiality.

Judge Wilkerson: Well, I don't know. I supposed we were going to close the record in this case today.

Mr. Goldstein: Well, plaintiff has some that are open.

Mr. Bracelen: Yes, it is our understanding it is to be closed today."

(Which said documents marked Plaintiff's Exhibits A-1 to A-269, respectively, were received in evidence:)

6508 "Mr. Bracelen: I suppose, perhaps, I may make this suggestion to your Honor, that we might do well to proceed with any further oral testimony, if there is any further testimony.

Mr. Goldstein: No.

Mr. Bracelen: And then arrange for the offer of additional exhibits by defendants, and the statement of our objections to it.

Mr. Goldstein: We have no more oral testimony.

Judge Wilkerson: I understand the oral testimony is closed.

Mr. Goldstein: We have no more oral evidence.

Mr. Adcock: We have no more.

Mr. Goldstein: I want to offer the X exhibits, if the record appears we have made no formal offer, we offer all of the X exhibits, so there will be no question about it.

Judge Wilkerson: They are admitted."

(Which said documents marked Defendants' Exhibits X-1 to X-439, were received in evidence:)

6509 "Mr. Blackman: With regard to our objections, your Honor, I understand you would like them written out in such form that they would be opposite the exhibits.

Judge Wilkerson: I thought that would be convenient. I had supposed, however, that as these exhibits had been offered here from time to time, objections had been stated to them, and I found scattered along at different places in the record; my only thought about it was that in the abstract of the record, that objection should be brought down and printed in the back of the exhibits in such a way that this court would not be obliged to look through the record to find out what the objections to the exhibit were.

Mr. Goldstein: That is right.

Mr. Blackman: Yes.

Judge Wilkerson: But I had supposed the points relied upon had been stated in reference to the exhibit, at least, substantially.

Mr. Goldstein: Except for the last few days.

Judge Wilkerson: And it is my recollection that counsel has made a great number of additions to these exhibits, and it is a matter of abstracting the record, and having the objection to the exhibit appear in the appropriate place in the book of exhibits, rather than in the back of the abstract 6510 of testimony. That was the extent of my suggestion about it, that is what I intended at any rate.

Mr. Blackman: There are about 150 exhibits of Mr. Rainwater and Mr. Hammond, and of course the making of the objections to each of those is quite lengthy. We would be very glad to do that, and we approve the court's suggestion. But, of course, if you do not make them too discursive, it will take a few days in order to boil those down, and I would suggest that we send them and file them with the Clerk.

Mr. Goldstein: And we will file our answer.

Mr. Blackman: They could be supplied for the record, and the abstract show those. There will be no difficulty about that.

Judge Wilkerson: You can arrange between yourselves on that. Any arrangement you make on that subject will be agreeable to the court. It is not necessary to file them. They will be shown in the abstract of the record at the appropriate place. Whenever an abstract comes in here attested to by both parties, the court will dispose of the case on the basis of that abstract.

Mr. Adcock: Well, then, we want to object to some of their exhibits in the same way.

6511 Judge Wilkerson: Well, any arrangement you make.

Mr. Adcock: There were some matters that we were to dispose of at the time we closed, in the nature of exhibits and New York testimony and so forth. We have here a list of exhibits.

Judge Wilkerson: Will you excuse me just a moment? When I come back, we will finish this.

Mr. Adcock: We have a list of exhibits here and a description of exhibits, and the number of the exhibit, which we have furnished to counsel on the other side. We furnished it, I think, last Sunday, that we desire to offer. They relate to documents largely, which have been furnished by plaintiff to defendants, in the course of the investigation.

Judge Wilkerson: Are they entirely exhibits of that class?

Mr. Adcock: Yes, except the New York depositions we desire to offer separately. There was an order of the Illinois Public Utilities Commission along about 1919, too. Now, we have a list of these exhibits which we think we can furnish the reporter, and we offer the exhibits that are described in this list, with the numbers indicated opposite.

Mr. Goldstein: And the descriptions.

6512 Mr. Adcock: Well, I say, they are described in this list.

Mr. Bracelen: Is this the list (indicating)?

Mr. Adcock: In connection with the statements also indicated in the list which has been furnished.

I will ask these be received.

Mr. Goldstein: These exhibits run from X-346—

Mr. Adcock: To X-437, I think.

Mr. Goldstein: 435.

Mr. Thompson: They begin with what?

Mr. Adcock: 346.

Mr. Thompson: Your Honor, there are some of these that I think your Honor ought to know the nature of. I have here objections to some of them, but Exhibits 346, 347, 429, 430 and 431 are petitions filed with the predecessor of the present Illinois Commerce Commission, and orders made by it with respect to rates in effect prior to 1921. There are five of those exhibits. They can have no possible bearing on this case. Exhibit 401 is a reoffer of city Exhibits 157 to 157-J, which are certain contracts between the Central Union Telephone Company and the American Telephone and Telegraph Company relating to the acquisition of property, telephone property in Illinois, outside of the city of Chicago, Indiana and Ohio, which were excluded by unanimous ruling of the three judges of the court in the former hearing. 6513

Mr. Jones: They are official statements?

Mr. Thompson: Statements. Exhibit X-244 is memorandum of proposed agreements between American Telephone & Telegraph and Central Union Telephone company, dated February 15, 1894, and is the so-called 100 mile contract. Now, there is only one that I want to call particular attention to, Mr. Adcock, if I may have Exhibit 426. I am not meaning by my statement to do more than call attention to the specific reasons underlying the objections which I will now hand to the reporter. But 426, there is a part of it, I think, that very clearly ought not to be admitted.

Judge Wilkerson: What is it?

Mr. Thompson: What is 426?

Judge Wilkerson: Yes.

Mr. Thompsoon: Exhibit 426 is getting into the record certain filings with the Public Service Commission of Illinois, certain rate schedules, bills and so forth of the Illinois Bell Telephone Company for the period 1923 to 1931.

Now, your Honor will remember there has a controversy existed between the parties. It is our claim that when 6514 the term "Exchange Service" is used in any filing, or rate schedule, it means, in the telephone business, to include all services rendered by means of exchange facilities. We have an exhibit which shows that pursuant to the request of the defendants, the plaintiff has produced copies of the following contracts, schedules, filings and documents of the Illinois Bell Telephone Company, which contracts, schedules, filings and documents were the only ones effective in the Chicago exchange area for exchange and toll service during the period 1923 to 1931, both inclusive, other than those already in the record in this case, and then is a list of the instruments which we have furnished to them. Then, of course, it becomes a question of interpretation for the court.

Now, then, they go on, on pages 4, 5 and 6 in this exhibit, to set out a long colloquy between court and counsel about the production of these documents. Mr. Haight was insisting that we produce documents which contained a specific definition that the exchange services—well, so that I will be perfectly clear about what he said, let me read it. He said:

"Then, I would like to have furnished any schedule or document," and so forth, "under which it is claimed 6515 that the Chicago exchange revenues were collected from January 1, 1923 to the present time, which revenues were apportioned to interstate toll, in which contracts and schedules it is provided that such revenues should cover any right of the subscriber to use the Chicago local exchange facilities to connect with the toll switchboards or toll trunks.

If there be any such, I would like to have them produced.

They want all of that colloquy in, and it is perfectly improper.

Mr. Goldstein: Judge Evans issued an order that we set out in here.

Mr. Thompson: No.

Judge Wilkerson: Isn't it all in the record?

Mr. Thompson: No.

Mr. Goldstein: No, they didn't abstract it.

Mr. Adcock: It is not in the abstract. It has been abstracted up to date.

Mr. Thompson: And the abstract approved up to date.

Mr. Goldstein: Judge Evans stated, "Well, you will either tomorrow morning, or tomorrow sometime, either produce those, or tell us you have not been able to find them." Now, they won't tell us they have not been able to find them,
6516 but Mr. Thompson stated he has produced all of the documents, and let the court judge for itself, and we are following out the direction of Judge Evans.

Mr. Thompson: What this exhibit shows without the part objected to is that we have furnished to them the contracts, schedules, filings, and documents of the Illinois Bell Telephone Company, which were effective in the Chicago exchange here for the time in controversy here, and what they want to do with this exhibit is to get a characterization of those exhibits in the record.

Mr. Goldstein: No, we want to show it was pursuant to the order of Judge Evans.

Judge Wilkerson: Now, let's see. Is this something that transpired on the day I wasn't here, or when was it?

Mr. Goldstein: Yes, that is why we quoted the whole thing, that is why we put the whole thing in.

Judge Wilkerson: I wasn't here at the time. Now, I would not presume to strike from the record anything that took place while Judge Evans was here, but what I would like to do now is, to leave the record here today in such a shape that that matter may be brought up at some time and disposed of by the court.

Mr. Thompson: Exactly.

6517 Mr. Adcock: Then that is the only objection to that exhibit?

Mr. Thompson: That is an objection to a portion of that exhibit. I am not saying it is the only objection We are going to file objections later.

Mr. Goldstein: Well, I mean formal objections?

Mr. Adcock: It is merely a formal objection to the exhibit.

Mr. Thompson. The reporter may copy into the record these objections that I mentioned awhile ago."

(Said objection being as follows:)

"The plaintiff objects to the introduction in evidence of Exhibits X-429, 430, 431 and 436 and 347, and each of them, which are petitions of the Illinois Bell Telephone Company filed with the Illinois Public Utilities Commission, and orders of that Commission made with respect to such petitions which deal with the rates in effect prior to 1921. These exhibits can have no possible bearing upon the determination of any issue in this cause and are wholly irrelevant.

"The plaintiff objects to the introduction in evidence of Exhibit X-401, which is a re-offer of City Exhibits 157 6518 to 157-J, which were excluded upon the former trial of this cause by decision of the three-judge statutory court. These exhibits deal with the financial relations between the American Telephone & Telegraph Company and the Central Union Telephone Company and with the financial arrangements concerning the sales of the properties of the Central Union Telephone Company to the Indiana Bell Telephone Company, the Chicago Telephone Company and the Ohio Bell Telephone Company. They do not relate to any property of the Illinois Bell Telephone Company in its Chicago area. They can have no possible bearing upon any issue involved in this cause.

The plaintiff objects to the introduction in evidence of Exhibit X-424, which is a memorandum of proposed agreement between the American Telephone & Telegraph Company and the Central Union Telephone Company, dated February 15, 1894, and is the so-called one hundred mile contract. This exhibit does not prove or tend to prove any issue in this cause.

The plaintiff objects to the introduction in evidence of

Exhibit D-92 which is a pamphlet entitled, 'The Tele-
6519 phone Company as a Citizen of your Community,' and which is an address by Mr. F. O. Hale, made on April 2, 1931. This exhibit is wholly irrelevant and immaterial to any issue in this cause.

The plaintiff objects to that portion of Exhibit X-426 which sets out a colloquy between court and counsel with respect to the production of certain schedules, documents and contracts of the Illinois Bell Telephone Company. This colloquy has no possible place in an exhibit. It is wholly irrelevant and immaterial and the exhibit itself shows that all contracts, schedules, filings and documents relating to exchange and toll service in the Chicago area are now in the record.

The plaintiff objects to the introduction in evidence to that part of Exhibit X-425 which sets forth the order and bulletins of the Post Office Department, telephone and telegraph service revised to May 1, 1919, on the ground that such order and bulletins are wholly irrelevant and do not tend to prove or disprove any issue in this cause."

"Mr. Bracelen: I hope, your Honor, this will not mean that when I get back to New York, I will have to be hauled
6520 back here again on a motion in about ten days or two weeks.

Mr. Adcock: No.

Mr. Goldstein: You may bring it up whenever you want.

Judge Wilkerson: This record will be closed here today, and any motions which are made with reference to the exhibits or the evidence should be made before the argument begins. When the case is set for argument, they may be brought up at the beginning of the argument.

The record, of course, will show today the offer of these exhibits, I think probably the ruling should be receiving them in evidence.

Let the plaintiff, as to that portion of the exhibit to which objection is made, make a motion to strike, and then let that motion be disposed of when the case is argued.

Mr. Bracelen: That is, as to these exhibits now that are identified as—

Judge Wilkerson: I was ~~addressing~~ myself particularly to the exhibit that Mr. Thompson said contained colloquy between Judge Evans and counsel for the defendants, and his point that that colloquy was no part of an exhibit. That
would seem to be well taken, but as a matter of course,
6521 what transpired in court is not a part of the exhibit.
It is a part of the records in the case, something that transpired here in court, and either side brings it in, I suppose it is a part of the record, but it is not an exhibit.

Mr. Goldstein: We are just trying to avoid reprinting the abstract. We have done with some other matters by agreement with them.

Now, if they would prefer to have it re-abstracted, and put into the abstract, instead of putting it in here and then abstracting it, it is just a matter of spending the money to have it done, reprinted, that is all.

Judge Wilkerson: Just what is your purpose? Did Judge Evans made a ruling?

Mr. Goldstein: Yes. It is stated.

Judge Wilkerson: Of course, I should hope that all comment and observation which I may have made during the progress of this trial will not be taken as indicating the slightest view which I have in reference to how this case should be decided, or how the evidence should be construed, or how any question of law should be ultimately decided. Judges sometimes speak freely during the course of argu-
ment of counsel. The only thing which goes really into
6522 the record which would have any significance at all for
the reviewing court or for the court of three judges here is when they come to hear the case would be the ruling of the judge. If it is in evidence—if it is evidence offered, and he admits it erroneously, that is the point proper to be considered. Or if he rejected it erroneously, that is the point to be considered. But what he says about it has nothing to do with the case.

Mr. Goldstein: May I call your Honor's attention to the specific order to the witness by Judge Evans to deliver these documents?

Judge Wilkerson: If an order was made to the witness, and the witness has not complied with it, then that should be brought to the attention of the court, and a further order of the court asked, for the production of the document. I don't see how you can profit by it.

Mr. Goldstein: No, we are showing how these documents were delivered pursuant to that order, that's all.

Mr. Thompson: The difference between us is this, your Honor: We delivered the documents.

Mr. Goldstein: Pursuant to that order.

Mr. Thompson: Just a minute. What Mr. Goldstein
6523 wants is some inference from this colloquy in this record that by delivering these documents, his position had been acceded to. That is what he wants; that is the only purpose.

Mr. Goldstein: It is understood there is no inference to be drawn—

Judge Wilkerson: Of course, the position counsel takes with reference to any question in this case could not be acceded to by one side. Where by agreement of the parties one judge hears the evidence, he of course speaks for the court so far as his rulings go only, but as to anything which he says in connection with his rulings, that cannot bind the court.

Mr. Bracelen: Of course, your Honor, there ought not to be any dispute between counsel as to whether material of that kind is proper in an exhibit. Obviously, it cannot be proper in an exhibit. The record is made.

Judge Wilkerson: I have said here repeatedly what I thought of the significance of certain exhibits. I would not expect that to have the slightest effect on the other judges when they hear this case, any more than Judge Evans, what he has said there about these exhibits, would represent the view of the entire court, except in so far as he may have made a ruling.

6524 Now, if he orders the witness to produce evidence and the witness produced it, it has lost its significance.

Mr. Thompson: Exactly.

Mr. Bracelen: Now, if the court please, may I make some objections—

Judge Wilkerson: I suppose, however, that this exhibit will be identified with the portion of the argument when Judge Evans was present. I cannot see that it would have any bearing on the case at all. I would hesitate very much to say that it is not to be received, as being something that transpired here in court, when I was not present; but I cannot see it would serve any conceivable purpose in this case by being made a part of the exhibit.

Mr. Goldstein: It could be made a part of the abstract, if we reprint the abstract.

Judge Wilkerson: I hope you are not putting in this record everything the Judge said. I cannot conceive that anything which the Judge said in making these rulings, the way this case has been heard, has any significance. The ruling of the Judge is the ruling of the court, but any colloquy between court and counsel is merely the individual expression of the view of the judge who makes it.

6525 Mr. Goldstein: It is merely to show the circumstances under which the request was made, because they are complaining there are a lot of bills, and they have no pertinency or anything else, and here they are directed by an order in connection with a very material part of this case, and we are putting in the order.

Judge Wilkerson: Are they in? What difference does it make how they get in, if they are in? You cannot add to the significance of the document by showing how it was received. Stolen documents are sometimes received in evidence. I cannot see that their weight as evidence is affected in the slightest by the manner of their production.

Now, does it affect the weight to be given to them, or their meaning as evidence? They might have been stolen and gone in instead of being produced, as you say, in response to the ruling of the judge who is hearing the case. If they are here, what more do you want?

Mr. Goldstein: Except the question came up at that time whether they were to produce anything in the world or whether they were to produce a document that contained certain provisions, and pursuant to that order they were 6526 either to produce these documents or there were not any. Mr. Thompson said, "Now, I will produce everything I have got, and from that you can judge," and the refusal of Mr. Thompson to do the very thing the court wanted at that time led to the production of all of these documents, and we are trying to bring them together, so that there will not be an awful mass which is thrown in, and the records will appear as if we are just striking—

Mr. Adcock: If the abstract had shown this colloquy, there would be no occasion for it in as an exhibit.

Mr. Goldstein: That is right.

Mr. Adcock: And it is solely because the abstract did not show the colloquy that this has been put in.

Mr. Goldstein: If we can amend the abstract, all right.

Mr. Thompson: I just want to say one word further, and then I am done. These things are produced, and they have their argument from them.

Now, if they have no purpose to argue that by the way in which they were produced, there is some admission on our part, that is one thing; but I apprehend from what has been said here that they are going to say that we pro-
6527 duced these documents upon the request of counsel, and in response to whatever Judge Evans said, and that there is some admission in it.

Mr. Goldstein: No, no.

Mr. Thompson: Or some implied statement on our part that we were able to produce no documents which sustained our position with respect to exchange service revenues; and we say every one of them sustained it, when it mentions it.

Judge Wilkerson: Have you any such purpose as that, Mr. Goldstein?

Mr. Goldstein: No, sir, we state that now for the record.

Judge Wilkerson: All right. With that statement, I don't think it makes much difference whether it goes in or not. It may be received in evidence.

Mr. Bracelen: Now, if the court please, counsel have offered Exhibits X-346 to X-435, both inclusive; these exhibits are listed upon typewritten sheets which they have given to us, which are numbered from 1 to 22, inclusive, on legal cap size paper, there being a great many duplicate numbers. So that I should say there are perhaps 35 pages taken to give a list of the exhibits.

For example, on page 1-A, one exhibit, X-354, takes
6528 the entire page. Page 1-B, Exhibit X-355, covers that entire page. And on those pages—and I cite them merely in illustration—are listed a large number of separate documents, and many of them are very bulky in character.

The point I want to get before your Honor is that this list of a small number of exhibits constitutes the most colossal dumping operation that has ever come within my experience.

Much of the material here, as the list shows, is material in the form of statements and documents, which we have been furnishing to counsel for the city during the past 12 to 15 months. I have not examined the list with sufficient care to be prepared to make a statement to the court at this time as to whether there may be some of these things that we would concede to be relevant, but I have examined it far enough to satisfy myself that this offer is an offer of a tremendous mass of papers and documents, that by no possibility, would this court receive in evidence if it knew what they were, and this inoffensive list, which is not so small in itself, would give your Honor no conception of what the volume of papers would be if they were here in court.

Judge Wilkerson: Is this offered as part of the de-
6529 fendants' case?

Mr. Goldstein: Yes.

Judge Wilkerson: Or is it offered in sur-rebuttal?

Mr. Goldstein: No, it is part of our case.

Mr. Adcock: It is a part that we reserved at the time.

Judge Wilkerson: By stipulation?

Mr. Adcock: Yes.

Judge Wilkerson: Is there a stipulation that covers it?

Mr. Adcock: Yes.

Mr. Goldstein: Yes, that we were to offer in this list of exhibits before the case was over.

Mr. Bracelen: No objection on that, that it is offered out of time at all, but that, with possibly some slight exceptions, the offer in itself makes up what would be an enormous record for an important lawsuit, in volume, and it is a mass of material that is irrelevant to any issue in the case.

Judge Wilkerson: Well, of course, I suppose somebody could come along and offer all the books of the American Telephone & Telegraph Company in this case, or all the books of the Western Electric Company, in evidence.

Now, between an offer of that kind and an offer of
6530 proper tabulations, with opportunity to verify them
from the books—it makes little difference, as you say, whether you look at it on one side or the other. Manifestly, if somebody would come in and offer all the books of the Western Electric, the court would reject the offer to protect itself against an imposition of that kind.

On the other hand, if tabulations are brought in here without proper reference to the books, and proper opportunity to examine the books and compare them with the tabulation, the court would reject that. Just what these things are, the court does not know.

Mr. Adcock: If your Honor please, we stated at the beginning—

Judge Wilkerson: Now, it would seem that the exhibits which have already been brought to the attention of the court and received in evidence far transcend all the limits of reasonableness in cases of this kind.

Mr. Bracelen: Precisely.

Judge Wilkerson: The thing has gone almost now, on the basis of the exhibits already produced, to the point where it becomes a grotesque farce, in a case of this kind.

6531 Mr. Bracelen: And this makes it a colossal farce.

Judge Wilkerson: It may be that the purpose of these documents is to demonstrate that what the Supreme Court really intended to say in its opinion, in which they went to such pains to lay down the rules of law that are applicable—I say, perhaps what the Supreme Court really meant to say was that it was utterly impossible for a plaintiff, situated as the plaintiff is in this case, to make out a confiscation case. If it had been the purpose of the Supreme Court to say any such thing, it would seem to me that the Supreme Court would not have spent the amount of time in the formulation of an opinion which was spent in this case. It would have been very easy to have said in a paragraph or two that it was impossible for the plaintiff in a case of this kind to make out a confiscation case. Now, if exhibits may be multiplied and multiplied, and multiplied, and documents simply poured into the record in a case of this kind, it is equivalent to saying that it is utterly impossible for the plaintiff to have relief in a case of this kind. It may be that is what the Supreme Court intended to say, I don't know. I don't think so.

Mr. Adcock: These documents are principally documents furnished by the other side.

6532 Judge Wilkerson: In the aggregate how many pages of these documents are there, if they are copied into the record?

Mr. Goldstein: We advised the other side, when we gave them the list, that it was understood from these exhibits that as soon as we would close, we would go through and give them the list.

Judge Wilkerson: No one ever heard of making up a record in a lawsuit in that way. The court is entitled to some protection against a record made up in that helter-skelter way.

Mr. Goldstein: We were going to follow the same procedure that we followed in 1929, agreeing on an abstract of the formal portions. We did that in 1929.

Mr. Adcock: As I understand it, the court had received these in evidence subject to the objections which might be formulated by counsel for the other side.

Judge Wilkerson: Well, counsel for the plaintiff stated an objection here, which, after everything has been said, seems to indicate that perhaps the court—

Mr. Bracelen: Your Honor, Mr. Jones tells me that he has seen what he thinks is perhaps the complete pile of papers covered by this list of exhibits to which I have referred, and he thinks it would take 5,000 printed pages, these 6533 exhibits. You understand, your Honor, that those exhibits do not include this list, that they are about to offer now, as I understand it.

Mr. Jones: They have offered it.

Mr. Goldstein: You changed your case from Ohio to Chicago by just changing one or two words, and making us re-mark entire exhibits to get them together. They gave us one set of exhibits to work on, and when they get into the trial, they change the record on us.

Mr. Adcock: These are principally exhibits furnished by counsel for the other side to us.

Judge Wilkerson: Well, they are not actual exhibits, of course; they are pages.

Mr. Adcock: They are pages.

Judge Wilkerson: That doesn't make them exhibits.

Mr. Adcock: No, I understand; but they are papers furnished by them, they are made up in that way.

Judge Wilkerson: You may have called for information of a kind which is a basis for exhibits you have. If the exhibits had been received and properly checked, we would have a record. But, now, if you go through this, and you cull out a sentence here and a line here, and string it along

together, how can the court make head or tail out of it, unless it examines all the exhibits? In this kind of a case by
6534 picking out the proper portions and stringing them together in the proper way, you can almost make any kind of a showing.

Mr. Goldstein: The plaintiff was to do the same thing in 1929.

Judge Wilkerson: Almost anything within the realm of imagination.

Mr. Blackman: That is what we pointed out already in regard to a good many of these exhibits.

Mr. Goldstein: It was understood if we could agree on any portions of it, that we would then cut them down, or use every effort to do so.

Mr. Thompson: Do you mean to say we had made any agreement in this case?

Mr. Goldstein: No, I don't.

Mr. Thompson: No.

Mr. Goldstein: I told Mr. Jones we would try, and I said as we sent it to you, that if we couldn't agree, we could designate portions we wanted, and you could designate, and we would follow the same procedure as in 1929.

Judge Wilkerson: Now, this case was to be closed today.

Mr. Goldstein: We offered them all.

Judge Wilkerson: How are we going to leave this
6535 record wide open, so there is no end to the evidence?

Mr. Goldstein: We offered all of them.

Judge Wilkerson: We have been talking about this closing for weeks, and it was understood that the case was to be definitely closed. You leave a record open this way—

Mr. Goldstein: No, the record is closed.

Judge Wilkerson: —and you make it incumbent on the court to come back here and hear a lot of argument about the admissibility of testimony.

Mr. Adcock: If we are to select a portion of the exhibit that we think material, and they select portions they think material, so that it will make a proper story, why, the court cannot be misled in the matter. If we cannot agree on that, then, of course, the whole exhibit would have to go. In a case like this we have got to work out some plan of that kind where it involves so many different issues, and so many different exhibits have to go in in order to tell the story.

Now, it would be impossible to have a record which contained everything whether material or immaterial, that was in an exhibit. Now, I think the thing can work out very easily, and the record when finally made up will be intelligible, and will be within comparatively small compass.

6536 Judge Wilkerson: Of course, if the papers are received in evidence, the defendants' record has to be abstracted and has to be printed.

Mr. Adcock: That is what we are doing.

Judge Wilkerson: And I doubt if defendants are really doing anything except to perhaps assume the burden of a very large expense to themselves in printing the exhibits. I suppose if you cannot agree on the portions to go into the abstract—

Mr. Bracelen: Yes.

Judge Wilkerson: —and I think if you cannot agree very promptly about it, you will have to go ahead and print it all.

Mr. Bracelen: Yes, I think so.

Mr. Goldstein: We will have the exhibits ready.

Mr. Bracelen: I don't know when any of counsel for plaintiff are going to have time to devote to that sort of a job.

Judge Wilkerson: I don't think it is incumbent upon you to do it at all.

Mr. Bracelen: I don't either.

Judge Wilkerson: The documents are here, and they are offered and they are objected to on the ground they are irrelevant and immaterial, and the court has overruled the objection and admitted them in evidence, subject to a
6537 motion to strike out when the case is argued. If the defendants desire to do anything other than that, they will have to put them in their abstract and print it, and the court will not, with the vast quantity of evidence put in here at this time—and I think I speak for all of the other judges—I say, we will be very slow to allow the difficulty of printing it to be assigned as any reason for a continuance.

Mr. Bracelen: This procedure is without precedent so far as I know, and it is an imposition upon the court.

Mr. Goldstein: And the plaintiff's method of presenting this case, we feel, is the same sort of an imposition, and that is the reason we have to go to the extremes we have. We have gone thousands of miles, and used up a lot of time and money that was not necessary.

Mr. Adcock: I know a very important case that was brought before the Chief Justice of the United States as a special master, where substantially the same thing had to be followed. It would be impossible to have printed every exhibit, they were large, there were some things, some small
things in an exhibit, or in a paper, that had to go in,
6538 that were material. The rest would be immaterial, and
the record was made up in that way. There is never
any difficulty about it.

Judge Wilkerson: I think, however, if it is true there are over 5,000 pages, the offer should have been accompanied by some kind of a statement indicating the portion of an exhibit on which reliance is placed.

Mr. Adcock: We would have done that. The fact is, that we would have been working night and day. There are a great many of these documents that we did not have an opportunity to digest.

Mr. Goldstein: They were not furnished.

Mr. Adcock: We know there are certain portions, but we are trying to close the case.

Mr. Goldstein: Some of them were not delivered to us in time.

Mr. Adcock: And that proposition of indicating to counsel on the other side the things we want would be a very simple matter, and could be done just as well afterwards as now when we offer the exhibits.

Mr. Goldstein: We gave them the list, we gave them the opportunity to check each one of them, so there would be no question about the formal parts of them.

Mr. Blackman: On Sunday last, wasn't it?
6539 Mr. Bracelen: Yes, on Sunday last."

(Which said list of exhibits, so offered by the defendants, is in the words and figures following, to-wit:)

"X-346. Order of November 29, 1919 on petition
6540 Illinois Public Utilities Commission X-431.

X-347. Petition of May 21, 1920, in Case No. 9291.

X-348. Mr. Crunden's working papers used in connection with his Exhibit A-100.

X-349. Exhibits furnished by Mr. Heiss in connection with Heiss Ohio Exhibit No. 10, bearing legend "Classification of

Departmental Expense" for the years 1920-1930, and "Analysis of Departmental Expenses—year 1931."

X-350. Heiss Ohio Exhibits Nos. 20-27, furnished by plaintiff.

X-351. Heiss Ohio Exhibit No. 11, furnished by plaintiff.

X-352. Annual Reports of Ill. Bell, 1920[illegible]1, incl.

X-353. Annual Reports of Western Electric Company, Illinois corporation, 1909-1915, incl., and of New York Corporation, 1916-1931, incl.

X-354. Portions of Provisional Estimates of Illinois Bell and Letters of transmittal, 1920-1931, incl.

6541 X-354—Detail:

Illinois Bell Provisional Estimate.

1923 Complete, with letter of transmittal dated November 28, 1922, addressed to Mr. H. B. Thayer, President, American Telephone & Telegraph Company.

1924 Statement E.
Statement F.
Supplement to Statement F.

1925 Statement E—Sheet 1.
Supplement to E.
Statement F.
Supplement to F.

1926 Statement E-1.
Supplement to E.
Statement F.
Supplement to F.

1927 Statement E-1.
Supplement to E.
Statement F.
Supplement to F—Sheets 1 and 2.

1928 Statement E-1.
Supplement to E.
Statement F.
Supplement to F.

1929 Statement E-1—Illinois Bell.
Chicago Area.
6542 State Area.
Statement F.

1930 Statement E-1—Illinois Bell.
Chicago Area.
State Area.

Statement F.
Supplement to F.
1931 Statement A—Illinois Bell.
Chicago Area.
State Area.
Statement D.

X-355. Portions of Provisional Estimates of other Licensee Companies 1920-1930, as follows:

Portions of Provisional Estimates.

The Ohio Bell Telephone Company—letter from E. A. Reed to Mr. C. A. Heiss, dated December 22, 1922. Ohio Bell Telephone Company—Excerpt entitled: "The following five statements accompanies letter dated November 28, 1922, from E. A. Reed, President to H. B. Thayer, President, A. T. & T. Company."

6543 Indiana Bell Telephone Company—Excerpt entitled: "The following 3 statements accompanied letter dated November 20, 1922, from C. H. Rottger, President, to H. B. Thayer, President, A. T. & T. Co."

The Southern New England Telephone Company—Letter from James T. Moran to Mr. C. A. Heiss, Comptroller, dated March 8, 1923.

Letter from C. A. Heiss to Mr. James T. Moran, President Southern New England Telephone Company, dated March 12, 1923.

New York Telephone Company—Excerpt from a letter dated December 12, 1922, from Mr. Thurber, President, to H. B. Thayer, President, A. T. & T. Company: "I submit herewith Provisional Estimate for the year 1923, together with some preliminary statements as to subsequent years * * *"

Southern Bell Telephone & Telegraph Company—Letter from M. B. Hoxey to C. H. Heiss, Comptroller, A. T. & T. Co., dated 1/15/23.

Southwestern Bell Telephone Company—Excerpt entitled: "The following 3 statements accompanied letter dated 6544 November 25, 1922, from E. D. Nims, President, to H. B. Thayer, President, A. T. & T. Co."

New England Telephone & Telegraph Company—Copy of Chart taken from 1929 Provisional Estimate. It is Exhibit C, accompanying letter dated November 14, 1928, from M. B. Jones, President, to W. S. Gifford, President, A. T. & T.

Co. It shows total company stations at end of each year divided between Dial Step-by-Step, Dial Panel, Manual Magneto and Manual Common Battery.

New York Telephone Company—Excerpts from letter dated November 15, 1923, from H. F. Thurber, President, to W. S. Gifford, Executive Vice-President, A. T. & T. Co.

Indiana Bell Telephone Company—3 charts taken from the Provisional Estimate for the year 1931 which accompanied letter dated November 13, 1930, from J. F. Carroll, President, to W. S. Gifford, President, A. T. & T. Co.

X-356. Agreement dated June 19, 1919, between In-
6545 ternational Telephone Sales and Engineering Corpora-
tion and Western Electric Co., Inc. (New York corporation).

(Delivered to defendants June 16, 1932.)

X-357. Copy of agreement dated March 21, 1924, between Theodore Gary, Frank H. Woods, H. L. Gary and A. F. Adams, and Western Electric Company, Inc. (New York Corporation).

X-358. Correspondence between Western Electric and Automatic Electric, Inc., as follows:

Letter, June 25, 1929, Western Electric to Automatic Electric Inc. (2 pages).

Letter, Dec. 14, 1927, Western Electric to Automatic Electric Inc. (1 page).

Letter, November 10, 1927, International Telephone Sales and Engineering Corporation to Western Electric Company, Inc. (1 page).

Letter, November 7, 1927, International Telephone Sales and Engineering Corporation to Western Electric Company, Inc. (1 page).

Letter, Sept. 27, 1927, Western Electric to International Telephone Sales & Engineering Corporation (2 pages).

Letter, May 24, 1927, from Western Electric Com-
6546 pany, Inc. to International Telephone Sales & Engi-
neering Corporation (1 page).

Letter, May 24, 1927, Western Electric Company, Inc. to International Telephone Sales & Engineering Corporation (1 page).

Letter, May 24, 1927, from International Telephone Sales & Engineering Corporation to Western Electric Company, Inc. (1 page).

Letter, October 17, 1929, Western Electric to Automatic

Electric, Inc. (2 pages).

Letter, Nov. 6, 1929, from Automatic Electric, Inc., to Western Electric Co., Inc. (1 page).

Copy of agreement dated March 1, 1932, between Automatic Electric Company and Western Electric Company (4 pages).

(These documents—Exhibits X-357 and X-358 were sent to defendants on May 5, 1932, in compliance with the order of court with respect to Sec. 5 of the motion of May 3, 1932, made in open court at the close of the hearing upon said motion on May 3, 1932, excepting item 1-D of said motion. The request by the defendants for these documents was made on Mar. 30, 1932, by letter, copy of which was attached
6547 to the motion.)

X-359. Copy of agreement dated March 26, 1921, between International Telephone Sales & Engineering Corporation and Western Electric Company, Inc. (New York corporation).

X-360. Memorandum regarding letter of May 26, 1927, from Electrical Research Products, Inc. to H. L. Gary.

(This document was delivered to defendants pursuant to statement of Mr. Bracelen made in open court, June 2, 1932.)

X-361. Letter, dated May 26, 1927, from International Telephone Sales & Engineering Corporation to Electrical Research Products Inc.

(This document was delivered to defendants on May 25, 1932, Rec. 2047.)

X-362. Assignment, dated Oct. 13, 1927, from International Telephone Sales & Engineering Corporation to Automatic Electric Inc.

X-363. Agreement, dated March 21, 1924, between International Telephone Sales & Engineering Corporation and Western Electric Company, Inc.

X-364. Agreement between International Telephone
6548 Sales & Engineering Corporation and Western Electric Co., Inc., dated May 24, 1927.

(Forgeoing 3 documents delivered to defendants prior to the trial.)

X-365. Advertisements of A. T. & T.—the cost of which was charged by the plaintiff as part of the costs of rendering the license contract services:

"Pennies for Wings." No. 271, May, 1931.

"What is the A. T. & T.?" No. 268, Feb., 1931.

"They Use it, They Believe In It, They Own It." No. 263, Sept., 1930.

"The Bell Telephone Company * * * of Your Town." No. 258, Apr., 1930.

"A Reduction in Long Distance Telephone Rates." No. 255, Jan., 1930.

"Where Working Together Is Everything." No. 242, Dec., 1928.

"5,000 People Whose Sole Job Is Bettering Your Service." No. 240, Oct., 1928.

"Where the Bell System's Profit Goes." No. 239, Sept., 1928.

"How Many Are 421,000 Stockholders?" No. 230, Dec., 1927.

6549 "Building on the Telephone Principle." No. 216, Oct., 1926.

"What Happens on a Call to Long Distance." Juvenile Publications, Jan. and Feb., 1931.

"How Your Voice Crosses the Country." Juvenile Publications, Sept. and Oct., 1929.

X-366. Page 1—CA-4.13—Net profits Before Deducting Federal Taxes on Sales of New A. T. & T. Instruments in Excess of 20% over complete cost provided under 1882 contract and surplus resulting from billing of warehouse expense applying on new and repaired A. T. & T. Instruments, Jan. 1, 1915, to Dec. 31, 1926.

Page 2—CAT-3.04-1—Distribution Expense on new A. T. & T. Instruments (S) for the Fiscal Year 1925.

Page 3—CAT-3.04-2—Distribution Expense on Repaired A. T. & T. Instruments for the Fiscal Year 1925.

Page 4—SCAT-4.13—Net Profits before Deducting Federal Taxes on Sales of new A. T. & T. Instruments in Excess of 20% over complete cost provided under 1882 contract and surplus resulting from billing of warehouse
6550 expense applying on new and repaired A. T. & T. instruments January 1, 1915, to December 31, 1925.

Page 5—SCAT-4.14—Net Profits on Investment in New A. T. & T. Instruments 1916 to 1925.

Page 6—CAT-3.04-1—Distribution Expense on New A. T. & T. Instruments for the Fiscal Year 1924.

Page 7—SCAT-4.13—Net Profits Before Deducting Federal Taxes on Sales of New A. T. & T. Instruments in Excess of 20% over complete cost provided under 1882 contract and surplus resulting from billing of warehouse expense applying on new and repaired A. T. & T. Instruments Jan. 1, 1915, to Dec. 31, 1924.

Page 8—SCAT-4.14—Net Profits on Investment in New A. T. & T. Instruments, 1916 to 1924.

Page 9—SCAT-4.14—Net Profits on Investment in New A. T. & T. Instruments, 1916 to 1923.

Page 10—SCAT-4.13—Net Profits Before Deducting Federal Taxes on Sales of New A. T. & T. Instruments in excess of 20% over complete cost provided under 1882
6551 contract and surplus resulting from billing of warehouse expense applying on new and repaired A. T. & T. Instruments Jan. 1, 1915, to Dec. 31, 1923.

Page 11—SCAT-4.13—Results of billing of A. T. & T. Instruments, under 1882 Contract to American Telephone & Telegraph Company, Jan. 1, 1915, to Dec. 31, 1932.

Page 12—Details of CAT-4.13—Comparison between Current and Standard Warehouse Expense on repaired A. T. & T. Instruments Handled for A. T. & T. Company (S) Jan. 1, 1915, to Dec. 31, 1924.

Page 13—CAT-3.04-1—Distribution expense on new A. T. & T. Instruments (s) for the Fiscal Year 1925.

Page 14—Details of CAT-4.13-1—Difference between Estimated and Actual Net Profits on Sales of new A. T. & T. Instruments, Jan. 1, 1915, to Dec. 31, 1924.

X-367. Net profits on New A. T. & T. Instruments—1927.

(This document was delivered to the defendants on June 15, 1932, pursuant to cross-examination of Mr. Gregory on May 25, 1932 (Rec. 3414) together with statement of
6552 Mr. Bracelen by letter of June 15, 1932, as follows:

"We understand that as a result of your examination of underlying data of the 1927 profits on A. T. & T. instruments, you request the following additional information:

(a) 1927 results on new A. T. & T. Co. instruments similar in form to previous year's results which you have available in the underlying data in your possession.

Copy of statement showing these results is attached. (X-367)

(b) Whether shop variation of current cost from standard cost (operating surplus and current underrun applicable to A. T. and T. Co. instruments) was determined in 1927 as in prior years.

In 1927, as in prior years, shop variation applicable to A. T. and T. Co. instruments was determined based on the ratio of standard shop cost of A. T. and T. Company instruments to total standard shop cost of telephone apparatus, of Western Electric manufacture.

(c) Statement as to what investment figures represent and how they have been arrived at. 6553

As explained by Mr. Gregory on the witness stand, investment applicable to American Telephone and Telegraph Company instruments comprises the same items as total investment shown on Exhibits A-77 and A-80, that is, plant at gross value, merchandise at cost or market, whichever is the lower, receivables and cash, less current accounts payable.

The records for the period 1921 to 1926, inclusive, show the investment in merchandise and receivables, applicable to A. T. & T. Co. instruments, except that portion of merchandise represented by work in progress which has been apportioned in general on the basis of standard shop cost of sales. Investment in plant, cash and payables for the same period, applicable to A. T. & T. Co. instruments, has been apportioned in general upon the basis of standard shop cost of sales but with respect to plant, the expense loadings on standard shop costs were used. 6554

Records are not available which indicate the method used in determining the apportionment for the period 1916 to 1920, inclusive.

For 1927, average investment was determined on the basis of turnover as indicated for the period 1916 to 1926, inclusive.

The method used brings the same result over the twelve year period, 1916 to 1927, inclusive, as is obtained by taking the turnover on telephone apparatus exclusive of installation and equipment engineering, modified by the use of investment completed instruments.").

X-368. Statement entitled: "Western Electric Company, Inc.—Number of Shares of A. T. & T. Company stock on which payments were completed by Western Electric Company employes."

X-369. A. T. & T. Releases 7/15/19 to 11/2/31.

This document delivered to defendants on or about June 6, 1932, together with letter—sent June 15, 1932—in

6555 which appears following statement:

"The typed inscription 'Relating to Electrical Research Products Inc. field of business' which appeared on the binder of releases furnished you in accordance with your request, appearing at Tr. page 2832, 2833 and 2834, was stricken out because, while the binder included all the releases relating to Electrical Research Products, Inc. field of business, certain of the releases applied also to fields of business of other companies where Electrical Research Products Inc. did not have exclusive rights.

You inquire as to whether in the case of 19 releases * * *"

These 19 releases are as follows:

(1) Release, Aug. 23, 1921, Re: Loud Speaker Equipment—The Western Electric will pay a royalty of 5% on sales, both domestic and export on the part of the loud speaker telephone equipment manufactured by the Western Electric, whether sold as complete sets or spare parts; except that sales to the A. T. & T. and its licensee companies are excluded from royalty. Receipts from leases are

6556 to be classed as sales. (Page 8 of Exhibit X-369.)

(2) Release, Dec. 20, 1921: Re: Recording of Sound Waves as covered by Sound Recording agreement between the Western Electric and the General Electric, on one side, and the Phone Laboratories, Inc., on the other—"The Western Electric is to pay to the A. T. & T. 5% on the sales price of all apparatus of its own manufacture furnished under this agreement. The Western Electric is to pay to the A. T. & T., 5% of the gross royalty received by the Western Electric Co., Inc., under this agreement." (Page 10.)

(3) Release, July 15, 1919, Re: Vacuum Tubes and related Apparatus—"That it (The Western Electric) pay to the A. T. & T., 10% of the gross price representing the gross selling price of said vacuum tubes." (Page 1.)

(4) Release, Nov. 13, 1924, Re: Electrical Recording of Sound for the making of Phonograph Records—"That

6557 the Western Electric pay to the A. T. & T. a royalty of 5% on all parts of the equipment manufactured by the Western Electric. This royalty is to apply on the sales price of the Telephone Department to the Supply Department of the Western Electric Company. That the Western Electric pay to the A. T. & T. 5% of the gross royalty and/or other payments received by the Western Electric for use of this system and apparatus." (Page 21.)

(5) Release, Aug. 11, 1926, Re: Device Similar to 3-A Audiometer—"That the Western Electric pay to the A. T. & T. a 5% royalty on its sales price." (Page 36.)

(6) Release, Aug. 11, 1926, Re: Electro-Magnetic Reproducer and Associated Apparatus—"That the Western Electric pay to the A. T. & T. a 5% royalty on its sales price." (Page 38.)

(7) Release Nov. 6, 1926, Re: System in Apparatus for Recording and Reproducing Sound in Coordination,
6558 Synchronism or Timed Relation with the Taking and
Projecting of Pictures—"That the Western Electric, Inc., pay to the A. T. & T. a 5% royalty on its sales price." Also "That the Western Electric pay to the A. T. & T. 33⅓% of the gross royalties and/or other payments received by the Western Electric for the use of these systems and apparatus in the United States." (Pages 40-41.)

(8) Release, Jan. 5, 1927, Re: Manufacture for Export Systems and Apparatus for Recording and Reproducing Sound—"That the Western Electric Co., Inc., pay to the A. T. & T. a 5% royalty on the sales price." (Page 43.)

(9) Release, Aug. 21, 1928, Re: Electro-Magnetic Reproducer—"That the Western Electric Company pay to the A. T. & T. a 5% royalty on its sales price." (Page 57.)

(10) Release, May 29, 1929, Re: Six Vacuum Tube
6559 Amplifiers without Vacuum Tubes to the Commercial
Cable Company—"That the Western Electric, Inc., pay to the A. T. & T. 5% royalty on its sales price. That the Western Electric pay to the A. T. & T. 33⅓% of the gross royalties and other payments received by the Western Electric, Inc., or its agents, for the use of these systems and apparatus." (Pages 64-66.)

(11) Release, Aug. 27, 1929, Re: Manufacture and Sale or lease within the United States of a System and Apparatus for the making of broadcast sound records, etc.,—"That the Western Electric, Inc., pay to the A. T. & T. a 5% royalty on its sales price on all parts of such equipment manufactured by it. That the Western Electric, Inc., pay to the A. T. & T. 33⅓% of the gross royalties and/or other payments

received by the Western Electric, Inc., for the use of this system and apparatus." (Page 67.)

6560 (12) Release May 26, 1930, re: No. 1-B Stethoscope and Similar Devices, etc.,—"That the Western Electric, Inc., pay to the A. T. & T. 5% royalty on its sales price." (Page 70).

(13) Release June 18, 1930, re: Manufacture and sale of vault protection apparatus—"That the Western Electric, Inc., pay to the A. T. & T. 5% royalty on its sales price." (Page 71.)

(14) Release October 14, 1930, re: The right to manufacture, sell or lease, or sell outside the Bell System, Apparatus for the determination of the quantity and quality of Noise, etc.,—"That the Western Electric, Inc., pay to the A. T. & T. a 5% royalty on its sales." (Page 74.)

(15) Release Dec. 16, 1930, re: Radio Telephone Equipment to the Motion Picture Industry for communication between Studios and locations where pictures are being made —"That the Western Electric, Inc., pay to the A. T. & T. 5% royalty on its sales price on all parts of each equip-

6561 ment manufactured by it." (Pages 78-79.)

(16) Release Apr. 3, 1931, re: Right to manufacture and sell any two or more of the following systems, as far as this right has not been extended by previous leases:

Public Address Systems.
Sound Picture.
Radio Broadcast Reception.
Music Distribution.
Input Equipment for Radio Broadcasting—

"That the Western Electric, Inc. pay to the A. T. & T. a 5% royalty on its sale price on all parts of each equipment manufactured by it. (Pages 81-83.)"

(17) Release June 29, 1931, re: Sale or Lease of Sound Apparatus or Radio Receivers, etc.—"That the Western Electric pay to the A. T. & T. a 5% royalty on its sales price." (page 87.)

(18) Release July 23, 1931, re: Sale or Lease of String Oscillographs—That the Western Electric pay to the A. T. & T. a 5% royalty upon its sales price." (Page 88.)

6562 (19) Release Aug. 27, 1931, re: Vault Protection Apparatus—"That the Western Electric, Inc., pay to the A. T. & T. a 5% royalty on its sales price on all parts manufactured by it. That the Western Electric, Inc., should pay to the A. T. & T. a 33⅓% of all royalties or other payments received by the Western Electric, Inc., or its agent, with respect thereto." (Pages 90-91.)

"royalties are based on Western Electric Company's sales price only. Whenever these releases provide for a royalty based on sales price, the royalty paid is a per cent of the Western Electric Company's sales price and not a per cent of the sales price by a subsidiary."

X-370. Royalties Received by Western Electric Company, Electrical Research Products Inc. and Portion Paid to A. T. & T. Company in accordance with releases.

(This document sent to defendants June 15, 1932, together with the following statement from Mr. Bracelen:

6563 "I enclose herewith a statement showing by years the royalties received by the Western Electric Company and the Electrical Research Products, Inc., and the portion of such royalties paid to the American Telephone and Telegraph Company for the period 1916 to 1931. No portion of royalties received by the Electrical Research Products, Inc. is paid to the Western Electric Company. In addition to the amount shown on this statement, the Western Electric Company turned over in 1925, to the American Telephone and Telegraph Company on behalf of the International Western Electric, $5,000 representing the American Telephone and Telegraph Company's share of royalties received by the International Western Electric Company"; and also the following statement from Mr. Bracelen under date of June 22, 1932:

"With reference to * * * royalties in which American Telephone and Telegraph does not participate," these royalties are received from the following sources:

(a) Permalloy and submarine cables.

(b) Reproducing Apparatus—outside of the United 6564 States.

(c) Under contract with International Standard Electric Corporation and Northern Electric Company, Limited.

(d) From various manufacturing licensees.)

X-371. American Telephone and Telegraph Company—

Miscellaneous Non-Operating Revenues (Account 316)—Year 1931.

(This document delivered to defendants June 15, 1932, pursuant to request of May 5, 1932.)

X-372. Sound-Record Agreement, dated Dec. 15, 1921, between Western Electric Company, Inc. and General Electric Co.

(This document was delivered to defendants June 15, 1932.)

X-373. Handbook of Outside Plant Engineering Practices —General—of A. T. & T. and Associated Companies.

X-374. Memorandum of Agreement dated Feb. 16, 1922, between Western Electric Co., Inc. (New York Corporation) and Stromberg Carlson Telephone Manufacturing Co., covering manufacture of intercommunicating telephone apparatus.

X-375. Memorandum of Agreement dated June 1, 1920, between Stromberg Carlson Telephone [illegible]facturing Co.
6565 and the Western Electric Company, Inc. (New York corporation.)

X-376. Correspondence between Western Electric and Kellogg Switchboard & Supply Company, as follows:

Letter dated Sept. 18, 1922, from Kellogg Company to Western Electric.

Letter dated Nov. 11, 1922, from Western Electric to Kellogg Company.

Letter dated Nov. 15, 1922, from Kellogg Company to Western Electric.

Letter dated Dec. 4, 1922, from Western Electric to Kellogg Company.

Memorandum dated Apr. 14, 1923.

Letter dated May 8, 1923, from Western Electric to Kellogg Company.

Letter dated May 16, 1923, to Western Electric from Kellogg Company.

X-377—Correspondence between Western Electric Company and Stromberg-Carlson Telephone Mfg. Co., as follows:

Letter dated Jan. 4, 1923, from Western Electric to
6566 Stromberg-Carlson Company.

Letter dated Dec. 21, 1923, from Stromberg-Carlson to Western Electric.

Letter dated Feb. 29, 1928 from Stromberg-Carlson to Western Electric.

Letter dated March 20, 1928, from Stromberg-Carlson to Western Electric.

Minutes of Conference dated April 3, 1928.

Letter dated April 10, 1928 from Western Electric to Stromberg-Carlson.

Stromberg-Carlson Prices to the Western Electric Company on the No. 506 Cordless P. B. X. Switchboard—Board Equipped with "AH" keys.

Same—equipped with new No. 529 keys.

Stromberg-Carlson prices to the Western Electric Company on Maintenance and Replacement Apparatus and on the Repair of "AH" Apparatus for No. 506 Cordless P. B. X. Switchboards.

6567 Letter dated October 20, 1928 from Western Electric to Stromberg-Carlson.

Letter dated November 5, 1928 from Western Electric to Stromberg-Carlson.

Letter dated December 6, 1928 from Western Electric to Stromberg-Carlson.

Letter dated February 20, 1929, from Western Electric to Stromberg-Carlson.

X-378. Agreement between Western Electric Company, Inc., and International Standard Electric Corporation, dated March 30, 1928.

X-379. Memorandum of Agreement dated January 1, 1919, between International Western Electric Co., Inc., and Northern Electric Co., Limited.

X-380. Memorandum of Agreement dated Aug. 27, 1919, between International Western Electric Co., Inc. and Western Electric Co., Limited, Northern Electric Co., Limited, and the Bell Telephone Company of Canada, Limited.

X-381. Supplemental Patent Agreement—American Telephone & Telegraph Co., Western Electric Co., Inc., International Western Electric Co., Inc., Northern Electric Co., Ltd., The Bell Telephone Co. of Canada, Ltd., dated May 16, 1923. 6568

X-382. Assignment from International Western Electric Co., Inc., to Western Electric Co., Inc. (New York corporation) of its rights in connection with agreement between

Assignor and Northern Electric Co., Ltd., dated Jan. 1, 1919, which assignment is dated Sept. 30, 1925.

X-383. Agreement between Western Electric Co., Inc. and Victor Talking Machine Co., Inc. dated June 26, 1925.

X-384. Assignment from Western Electric Co., Inc. (New York corporation) to Electrical Research Products, Inc. of its right, etc., in agreement between Assignor and Victor Talking Machine Co. of June 26, 1925, which assignment is dated Jan. 3, 1927.

X-385. Agreement between Western Electric Co., Inc., and Victor Talking Machine Co., Inc., dated March 18, 1925.

X-386. Agreement between International Western Electric Co., Inc., and Victor Talking Machine Co. dated
6569 May 1, 1925.

X-387. Agreement dated July 19, 1926, between Western Electric Co., Inc., and Victor Talking Machine Co.

X-388. Memorandum of Agreement between Victor Phonograph Co. and Electrical Research Products, Inc., dated Jan. 11, 1928 (4 sheets).

X-389. Agreement dated Feb. 26, 1925, between Western Electric Co., Inc. (New York Corporation) and Columbia Phonograph Co., Inc. (19 sheets).

X-390. Agreement between International Western Electric Co., Inc. and Columbia Phonograph Co., Ltd., dated April 22, 1925.

X-391. Agreement between International Western Electric Co., Inc. and the Gramophone Co., Ltd., dated May 1, 1925.

X-392. Agreement between Western Electric Co., Inc., and the Gramophone Co., Ltd., dated Jan. 19, 1926.

X-393. Agreement between Electrical Research Products, Inc. and The Gramophone Co., Ltd., dated Aug. 10, 1927.

X-394. Agreement for Western Electric Sound System, Plan B2-N. D. P.-52W between Electrical Research
6570 Products, Inc. (subsidiary of Western Electric Company) etc. (Form 315 T. S.).

X-395. Agreement between American Telephone and Telegraph Co. and The Bell Telephone Company of Canada, Ltd., covering services, licenses, and privileges, dated May 16, 1923.

X-396. Copy of General Contract—agreement dated Nov.

1, 1880, between the Canadian Telephone Company, Ltd., and The American Bell Telephone Company, The Bell Telephone Company of Canada, the American Speaking Telephone Company, The Gold and Stock Telegraph Company and The Western Union Telegraph Company.

X-397. Certified copy of resolution adopted by Executive Committee of A. T. & T. at meeting Jan. 15, 1924; certified copy resolution adopted at meeting Jan. 7, 1925; certified copy resolution adopted at meeting Jan. 13, 1926; certified copy resolution adopted at meeting Jan. 12, 1927; and certified copy resolution adopted at meeting Jan. 18, 1928.

X-398. Electrical Research Products, Inc.—General Auditing Dept.—Condensed Summary of Results of Talking
6571 Motion Picture Business for the year 1929 compared with Budget for the Year 1930.

Same Results—for year 1928 compared with Budget of 1929.

Profits on Sales of Sound Picture Equipment as Published for the Years 1926 to 1930, inc.

Combined results of Western Electrical Co., Inc., Electrical Research Products, Inc., and its subsidiaries on Talking Motion Picture Business years 1926 to 1931.

Results on Talking Motion Picture Business 1926-1931 Foreign Subsidiaries—Gross Revenue.

Condensed Summary of Results for year 1927.

Summary of Results by Classes of Business—Twelve Months of 1930.

Same for 1931.

(These documents were furnished by plaintiff to defendants June 14, 1932, together with following statement of June 15, 1932:

"The main items of investment involved are plant at face value, merchandise, receivables and cash, less current
6572 accounts payable, in the Western Electric Company, and in the Electrical Research Products, Inc., in this country and abroad.

Western Electric Company.

The method of determining the amount of plant and merchandise investment devoted to sound picture business is in general by the use of standard shop costs. In this computation, however, there is excluded plant and merchandise investment of the Installation Department, Merchandise Department and distributing houses practically none of which is involved in the sound picture business.

The investment in receivables is determined definitely on the basis of the investment actually on the books in these receivables.

Cash and payables applicable to sound picture business are determined by the use in general of standard shop costs.

Electrical Research Products, Inc. Domestic.

The apportionment of the elements of investment to sound picture business involves the fact that in 1927, 1928 and 6573 1929, two separate sets of books were maintained as follows:

At 57th Street, Covering local operations.

At 195 Broadway, Covering general operations.

For 1930 and 1931 these books were merged and maintained at 57th Street.

The apportionment was made as follows:

Plant: Practically 100 per cent sound picture business.

Merchandise: All sound picture business at Western Shop cost less depreciation.

Receivables: As shown by the books with respect to Accounts with exhibitors and producers and with others in connection with non-theatrical sound picture business.

Cash: For 1927, 1928 and 1929, all cash on the 57th Street Books plus practically all cash on the 195 Broadway 6574 books; for 1930 and 1931 approximately 90 per cent of the total cash.

Payables: For 1927, 1928 and 1929, all payables on the 57th Street books, for 1930 and 1931 apportioned between sound picture business on the basis of volume. Payables include the reserve for royalties to be returned to the Vitaphone Corporation.

Electrical Research Products, Inc., Foreign.

All investment in the foreign companies was with respect to sound picture business and represents capital stock plus the open account as carried on the Electrical Research Products, Inc., domestic books plus surplus on the foreign subsidiary company books.")

X-399—Portions of Plaintiff's Exhibit No. 1 not contained in printed record—Plaintiff's numbers as follows:

Pages 16, 19, 54, 125, 126, 133, 134, 135, 136, 137, 138 and 143.

6575 X-400. Supplement to City's Exhibits furnished by plaintiff.

Detail of X-400.

	Supplemental to City's Exhibit		Brought Down to
	19	Illinois Bell Telephone Company—Annual Charge Percentages Applicable to Long Lines Plant in Chicago	9/30/31
	44	Illinois Bell Telephone Company—Distribution of Chicago Gross A. T. & T. Company Tolls between Illinois Bell Tel. Co. and A. T. & T.—1926-1930	1931
	46	Illinois Bell Telephone Company—Percentage of outstanding stock as of December 31 of each year owned by A. T. & T. Co. in its own name or in the name of others held for it	1931
	53	Agreement in connection with Employees' Stock Plan—dated June 10, 1921, between A. T. & T. and Illinois Bell Tel. Co.	
	54	Illinois Bell Telephone Company—Payments made to A. T. & T. covering collections under the Employees' Stock Plan	1931
6576	57	Illinois Bell Telephone Company—Purchases from Western Electric Company	1931
	69	Illinois Bell Telephone Company—Average Number of Telephone Sets	1931
	75	Illinois Bell Telephone Company—Advances from A. T. & T. during years 1926 to 1930	1931
	80	Illinois Bell Telephone Company—Balance Sheets—Years 1926 to 1930	1931
	81	Illinois Bell Telephone Company—Dividends 1926 to 1930	1931
	82	Illinois Bell Telephone Company—Entire Company, Net Earnings Available for Interest and Dividends	1931
	117	Illinois Bell Telephone Company—Chi-	

		cago Exchange—Amount of Billing to the A. T. & T. for operating the Toll Properties devoted to Long Lines Service in Chicago—1926-1930	1931
6577	142	A. T. & T.—Average Loans to Each Licensee Company (Dividing the Sum of the loans outstanding on the first day of January, April, July and October by 4)—Answer to question, p. 2044 Transcript of Record	1931
	142A	A. T. & T.—Amounts received from all Associated Bell Companies for License Payments during the years 1918-1928—answer to question p. 2044 Trans. of Record	1931
	142C	A. T. & T.—Illinois Bell Telephone Company Estimated Requirements and Cash taken—Years 1918 to 1928—Recheck of Testimony, pp. 2110-2112, Trans. of Record, p. 2135.	1931
	142D	Answer to question p. 2051 Trans. of Rec.—revariation during 1918-1930 from Charge A. T. & T. made to subsidiary (licensed) companies for moneys loaned, if such charge other than 6% with 2% discount for cash	1931
6578	148	Supplemental answer to question pp. 2047 and 2050 Trans. of Rec.—A. T T.—Cost of Capital Funds Procured by the American Company through Sale of Stock, Bonds and other Borrowings	1931
	151	Illinois Bell Telephone Co.—Total Number of Employees, Number of Employees eligible to subscribe, Number of Shares of A. T. & T. Stock issued to Employees during year, Number of shares A. T. & T. Stock under Subscription end of year and % of Total Employees subscribing	1931

X-401. Reoffer of City's Exhibits 157 to 157J re Central Union.

X-402. All correspondence between counsel and parties.

X-403. Ruskin's statement of number of pages in CR and MR Reports furnished by plaintiff at later date.

6579 X-404. Balance sheets of Graybar Electric Co. for years 1929, 1930 and 1931, with certificate of Assistant Secretary attached.

(These were delivered to defendants by Mr. Thompson in open court on June 15, 1932.)

X-405. Statement entitled: "a/c Profit on Investment in Business with Illinois Bell 1916-1931 and 1923-1931.

(This is working paper for Exhibits A-93-96 and was furnished by plaintiff.)

X-406. Burgess Index Numbers:

Index Numbers
Western Electric Company, Inc.,
General Statistical Division.

List of Pages.

1. Table of Contents (1 sheet).
2. Some Important Principles of Index Number Construction (4 sheets).
3. Uses of Index Numbers (2 sheets).
4. Trend of Raw material prices.
5. Raw material price index December, 1930 (2 sheets). 6580
6. Trends of prices to Associated Companies (1 sheet).
7. Description of method used in compiling the trend of Western Electric Prices for lead-covered cable sold to Bell Telephone companies (2 sheets).
8. General method of construction of telephone supplies price index (1 sheet).
9. Telephone supplies price index (1 sheet).
10. Derivation of 1930 supplies index (1 sheet).
11. Summary table of group weighting for telephone supplies index (1 sheet).
12. Description of method used in compiling the trend of Western Electric prices for special services performed for Bell Telephone companies (2 sheets).
13. Description of method used in compiling the trend of Western Electric prices for telephone apparatus sold to Bell Telephone companies (4 sheets).
14. Relation of bulletin cost used during each fiscal year to those in 1915 as 100 per cent base (1 sheet).

15. Letter dated February 7, 1931, from R. A. Gran-
6581 quist to P. J. Savage, Manufacturing Accountant (1 sheet).

16. Letter dated November 13, 1931, from A. L. Luessenhop to R. W. Burgess (1 sheet).

X-407. Illinois Bell Tel. Co.—State Area—Annual Gross Additions, Displacements and Net Additions to Plant in Service and General Equipment.

X-408. Illinois Bell Tel. Co.—Chicago Area—Book Cost of Central Office Telephone Equipment.

X-409. Illinois Bell Tel. Co.—Chicago Exchange—Company Stations.

X-410. Illinois Bell Tel. Co.—Chicago Exchange—Figures used in arriving at average assets for 1923.

X-411. Illinois Bell Tel. Co.—Chicago Exchange—Amount of Construction Work in progress shown on Exhibit A-53 as of the end of each year 1923 to 1931, inclusive.

X-412. Illinois Bell Tel. Co.—Chicago Exchange—Amount of 3 per cent Tax, years 1929 to 1931.

6582 X-413. Illinois Bell Tel. Co.—Chicago Exchange—1930 Taxes.

X-414. Illinois Bell Tel. Co.—*re* Account 510.

X-415. Illinois Bell Tel. Co.—Chicago Exchange—Public Pay Stations.

X-416. Advice No. 40, dated July 15, 1919, to Public Utilities Commission, Springfield, Ill., with accompanying schedules issued by Chicago Telephone Company, etc. (17 sheets). Attached petition with Exhibit A.

X-417. Correspondence between A. T. & T. and Illinois Bell Tel. Co. Letter dated Mar. 4, 1924, from A. T. & T. to Illinois Bell; and Accounting in connection with purchase of U. S. Treasury 4¼% Certificates by Illinois Bell from A. T. & T. in Dec., 1923, and sale by Illinois Bell to A. T. & T. in March, 1924.

X-418. Illinois Bell Tel. Co.—Stock purchased by A. T. & T.—Years 1929 to 1931, incl.

X-419. Illinois Bell Tel. Co.—Prices at which A. T. & T. stock offered to employes.

6583 X-420. Executive Committee Minutes and Documents called for therein:

(a) Agreement of June 13, 1913, between Morkuum Company, Western Electric Company, Inc., and American Telephone & Telegraph Company.

(b) Agreement of August 7, 1924, between Western Electric Company, Inc., and Western Union Telegraph Company.

(c) Letter of August 14, 1925, to Western Electric Company, Inc., signed by W. S. Gifford, President of American Telephone & Telegraph Company.

(d) Agreement of October 6, 1925, between Automatic Electric Company, American Telephone and Telegraph Company and Western Electric Company, Inc.

(e) Agreement of April 20, 1927, between Central Electric Company, American Telephone and Telegraph Company and Westinghouse Electric & Manufacturing Company.

(f) Agreement of April 20, 1927, between General Electric, American Telephone and Telegraph Company, Westinghouse Electric and Manufacturing Company and Atlantic Precision Company.

6584 (g) Agreement of June 30, 1926, between Automatic Electric Securities Company, Automatic Electric, Inc., American Telephone and Telegraph Company and Western Electric, Inc.

(h) License Agreement of July 17, 1928, between Stromberg-Carlson Telephone Manufacturing Company, Western Electric Company, and American Telephone and Telegraph Company.

(i) Letter of June 12, 1928, to W. S. Gifford, President of American Telephone & Telegraph Co. signed by Edgar S. Bloom, President of Western Electric.

(j) Agreement of September 11, 1930, between American Telephone & Telegraph Company and Sterling Morton.

(k) Contract of May 24, 1927, whereby American Telephone & Telegraph Company extended franchise agreement with Automatic to 1936.

6585 X-421. Western Electric Sheets furnished in connection with Gregory Exhibits 1 and 7 in Ohio Case, as follows:

Division of Western Electric Company sales for 1928, 1929 and 1930 of Telephone Apparatus, Lead-Covered Cable and Supplies to the Illinois Bell Telephone Company between Chicago and State.

Non-Bell Assets Transferred to Electrical Research Products, Inc.

Depreciation included in Cost of Sales Bell and Non-Bell Business 1916 to 1930, inclusive.

Depreciation used in Federal Income Tax Returns, Bell and non-Bell Business 1916 to 1930, inclusive.

Analysis of Returns and Reissues 1916 to 1930, inclusive.

Sales to American Bell Telephone Company and American T. & T. Co. 1916-1930, incl.

Division of Total Sales to Bell Customers, 1916-1930, incl.

6586 Division of Sales of Lead-Covered Cable 1916-1930, incl.

Division of Sales of Supplies 1916-1930, incl.

Division of Sales of Telephone Apparatus 1916-1930, incl.

Special Services Included in Total Sales to Bell Customers Analyzed by Classes of Service (A) 1916-1930, incl.

Billing of Installation Work and Equipment Specifications to Bell Customers 1920-1930, incl.

Net profits and Per Cent of Sales, Bell Customers 1916-1930, incl.

Earnings on Investment—Air Reduction Company, Inc.

Analysis of Sales of Supplies to non-Bell Customers, 1916-1930, incl.

Analysis of Total Sales—1916-1930, incl. (Schedule A).

Analysis of Sales to Bell Customers 1916-1930, incl. (Schedule B).

6587 Analysis of Sales to non-Bell Customers 1916-1930, incl. (Schedule C).

Net Profits and per cent of Sales non-Bell Customers, 1916-1930, incl.

Orders on Hand at December 31.

Western Electric Co., Inc.—CA-8-19-2.—Analysis of Reserve for Contingencies Years, ending Dec. 31st (prior to 1919, Nov. 30th).

Total merchandise Inventories 1916-1930, inclusive.

Charges made by Western Electric Co., Inc., to Subsidiaries for General Supervisory and Patent Services 1916-1930, incl. (a).

Analysis of Investment and Marketable Securities at Dec. 31, 1916-1930, incl.

Analysis of Other Income as shown on Reports to Stockholders and Average Interest Rates on Advances to Subsidiaries 1916-1930, incl.

Expenses allocated to Royalties Received and Patents Sold 1928-1930, incl.

6588 Analysis of Royalties, Patents Sold and Other Miscellaneous Income for the Years 1928, 1929 and 1930.

Royalties Received by Subsidiaries of the Western Electric Co., Inc., 1902-1930, incl.

Analysis of Other Income (net) for Years 1928, 1929 and 1930.

Bond Discount and Expenses on Sale of Bonds, 1916-1924, incl.

Western Electric Co.—Engineering Department—Expense by Apparatus Classifications for the year 1916 (2 sheets).

Same for year 1917 (2 sheets).

Same for year 1918 (2 sheets).

Western Electric Co., Inc., Engineering Department Expense for the Year 1919.

Western Electric Company, Inc.—Engineering Department —Expense by Apparatus Classification for the year 1920.

Same for year 1921.

6589 Same for year 1922.

Same for year 1923.

Same for year 1924.

Western Electric Company—Investment in Products Company (2 sheets).

Comparison of Investments in and Advances to Subsidiary Companies and Marketable Securities at Dec. 31, 1927, and Dec. 31, 1926.

Owned Factories of the Western Electric Co., Inc., at June 30, 1931.

Basis of Price to Graybar Electric Company.

Basis of Price of Teletype Equipment to Bell Companies.

Some Instances of Acquisitions and Disposals of Property for other than Cash during the period 1915 to 1930, incl.

Profits on Sale of International Western Electric Company, Incorporated, to the International Telephone and Telegraph Corporation—September 30, 1925.

6590 Earnings for 1931 and 1932 on Prospective Bell Business as Estimated June 10, 1931.

Taxes Paid (1916 through 1930).

Sales of Telephone Receivers, Transmitters and Induction Coils, 1916 to 1930, incl.

How the Western Electric Company, Inc., functions with respect to Installation of Broadcasting Stations.

Sales (Approximate) of Broadcasting Equipment to Graybar Electric Company, Inc., 1925 to 1930, incl.

Method of Determining Amount paid by Graybar Electric Co., Inc., to Western Electric Company, Inc., for its supply department business.

Sales by the Western Electric Company, Inc., of Telephone Apparatus, Lead-Covered Cable and Supplies of all Bell Telephone Companies expressed in percentages of total sales to Bell Companies and Sales to the Illinois Bell Tel. Company of the same expressed in Percentages of Total Sales to that Company—1916-1930, incl.

6591 X-422. Stock Issue Data, 1920-1931, for A. T. & T. Co.

X-423. Approximate Sales of Panel and Step-by-Step Machine Switching Switchboards 1920-1931, inclusive (A); also Approximate Number of Lines of Panel and Step-by-Step Machine Switching Switchboards 1918-1931, inclusive (a) (2 Sheets).

X-424. Memorandum of proposed agreement between American Telephone and Telegraph Co. and Central Union Telephone Company, dated New York, Feb. 15, 1894 (2 sheets).

X-425 Relating to subject-matter of Plaintiff's Exhibit A-67, 68 and 69.

X-426. Contracts, Schedules, Filings and Documents of Illinois Bell Telephone Company relating to Exchange and Toll Services in Chicago Area effective during period 1923-1931, both inclusive.

X-427. Pursuant to request of defendants, plaintiff, on June 19, 1932, furnished copies of all contracts that ever existed in the Bell System containing a provision similar 6592 to Section 10 of the contract of Dec. 23, 1881, with the Chicago Telephone Company, being City's Exhibit 23. The plaintiff has furnished two contracts as being the only ones ever made containing provisions similar to Section 10.

Agreement dated June 1, 1880, by and between the American Bell Telephone Co. and the Metropolitan Telephone Company; and, Agreement dated May 7, 1880, between the National Bell Telephone Co. and the Pacific Bell Telephone Co.

Said two agreements are as follows:

X-428. Request for and copies of contracts on forms 109C, 109D, 113C, 113D and 116D.

On May 16, 1932, defendants made the following request:

"In connection with the matter of Interstate Separation, we will ask you to please furnish us a copy of form of contract referred to as 'Lessor's Standard Form 109C,'
6593 which was referred to in paragraph (1) of the contract
of January 1, 1894, between the American Bell Telephone and the American Telephone & Telegraph Co., appearing in Record Vol. VI, page 1993; also, any other forms of exchange contracts, if any existed, which regulated the payments to the exchanges by the A. T. & T. under paragraph 8 of the same contract, as therein referred to, appearing on page 1997 of Record Vol. VI."

Pursuant to said request, plaintiff furnished the following:

Form 109C   Form 109D
Form 113C   Form 113D
Form 116D

X-429. Order of July 31, 1919, in connection with petition X-416. I. P. U. C.

X-430. I. P. U. C. No. 2—Chicago Telephone Company—Schedule of Toll Rates, filed July 16, 1919, in Case No. 9291.

X-431. Petition of November 15, 1919, in Cases 8672
6594 and 9291, I. P. U. C.

X-432. Illinois Bell Tel. Co.—Data relative to stock issues 1920-1930.

X-433. Letter dated August 26, 1927, to Telephone Company Presidents re prices on approximately 50 classes of telephone apparatus.

X-434. Letter Dated Oct. 17, 1930, to Frederick H. Read, President of Mountain States Telephone & Telegraph Co. from Edgar S. Bloom with sheet attached entitled: "Important Price Increases effective Nov. 1, 1930."

X-435. MR and CR Reports as follows:

Reports as of December, 1929.

Illinois Bell Telephone Co.

MR No. 1   No. 1 Reverse   No. 1A
MR No. 2   Annual Report No. 2A
MR No. 3

MR No. 4
MR No. 5
MR No. 6
MR No. 7 Quarterly Report No. 7A
Monthly Analysis No. 10—State of Illinois.
" " No. 10—State of Indiana
6595 MR No. 14
MR No. 21
No. 22A 22B (sheet 1) 22B (sheet 2)
No. 22C
MR No. 23 (sheets 1 and 2)
CR No. 14 (sheet 1)
CR 51B
CR 52
CR 53A
CR 54
CR 54A
CR 64A
CR 65B
CR 67
CR 67A (Sheets 1 and 2)
CR 67B
CR 76
CR 86
CR 89
CR 91 (2 sheets)
CR 97"

6596 "Mr. Adcock: If we are through with that, we would like to offer some more.

Mr. Goldstein: Some depositions.

Mr. Adcock: Pursuant to an order of December 4, 1931, and a supplemental order of December 8, 1931, certain depositions were taken at New York of various witnesses whose names appear in the first part of the depositions as they have been returned by the Commissioner to this court.

We offer in evidence those depositions, that is, the depositions of all of those witnesses except the depositions of the witnesses that have been offered by plaintiff.

Mr. Blackman: Well, I have offered only the cross.

Mr. Goldstein: We will offer everything you do not.

Mr. Adcock: Then we will offer the direct, or redirect, or re-redirect, or whatever it may be, offer everything except the cross, as to each witness.

(See Abstract of Depositions, *infra,* pages 2105 to .....)

We also offer all of the exhibits that were identified in the course of the taking of those depositions, and some of them were offered in evidence, I think practically all were offered at the time, numbered from 1—they are designated as depositions, exhibits, defendants' deposition Exhibits 1 to 197, both inclusive, and I ask that the record show that they may 6597 be so designated, so far as this record is concerned, without being renumbered.

Then, there are some D-exhibits—

Mr. Blackman: I would like to say a word on that.

Mr. Adcock: Very well.

Mr. Blackman: As to that, your Honor, I would say that that is in the way of piling Ossa on Pelion. We have had these five thousand pages of exhibits just offered. Now, here we have the testimony taken before trial of, I think, more than a score of witnesses in New York, and 190 odd exhibits which were produced on the demand of the defendants, in connection with that examination. Now, all of that is dumped indiscriminately before this court.

Mr. Adcock: We have not taken the time necessary to read each deposition and offer each exhibit.

Mr. Goldstein: You have abstracted this testimony already.

Mr. Blackman: Yes, I know we have.

Mr. Goldstein: Then, are you objecting that we have not read them?

Judge Wilkerson: Let counsel finish.

Mr. Blackman: There is a part of this testimony that plaintiff would be very glad to have the court read, but we do think that putting it in here for no real purpose at 6598 all is an imposition on the court, and is really padding of the record. There were hundreds of pages of testimony taken there that have absolutely no direct bearing on the case. They tell about the American Telephone & Telegraph Company, and of course, the American Telephone & Telegraph Company has in a way been made a party. These exhibits—many of them were demanded for the purpose of furnishing the defendants with an opportunity to demand other things. They did not know exactly what they wanted to do, where they wanted to fish, and these things were demanded to give them information.

Now, having got that information, they have gone to the records and got their figures and put them in. Now, why should the fishing poles be put in, too? I see no objection—well, there is no object, whatever, in that.

Now, with regard to one of these, I have a specific objection as to one of the exhibits. I made objections on the record, but in view of the lateness of the time in connection with the trial of this case, I shall not repeat any of those objections here. I will waive them all but one. But there was an exhibit. I haven't the number just now, attached to
6599 the direct examination of Mr. Blair Smith, which he
produced at the demand of the defendants. He had it in his hand during the trial, and took some figures from it. It is Exhibit 7 for identification, deposition Exhibit 7.

Mr. Goldstein: What was the number, Mr. Blackman?

Mr. Blackman: Deposition Exhibit 7 for identification.

Mr. Goldstein: What was the title?

Mr. Adcock: What was the title?

Mr. Blackman: The paper was not prepared by the witness, it was not vouched for by him in any way. He said it was prepared by a clerk in his department at the request of Mr. Heiss to show certain facts in a certain way. We did not produce it, we did not offer it for any purpose. The witness had it at the time of the examination as a source from which he could answer certain questions readily.

Judge Wilkerson: As a memorandum?

Mr. Blackman: Yes, as a memorandum. Now, they saw the paper and asked it be marked for identification, and they are now offering it in evidence. There is no foundation for it, sir, whatever; it is perfectly incompetent, and I object to it on that ground.

Mr. Goldstein: The record speaks for itself.

Judge Wilkerson: You may note the objection on the
6600 record.

Mr. Blackman: Yes, sir. Now, I do object on the same ground that Mr. Bracelen objected to the dumping on this court of 193 exhibits which I say, most of them were merely fishing poles, they pulled out those papers in order to get information to know where to go to get things that they really wanted.

Mr. Adcock: I don't think that is a fair statement at all.

Mr. Blackman: Many of them were.

Mr. Goldstein: I think it is the most damaging part of your case you are trying to exclude.

Mr. Adcock: We want the full story.

Judge Wilkerson: Well, it is human nature to try to do that.

Mr. Goldstein: And that is about all you can say for it.

Mr. Blackman: Have you any more to offer?

Mr. Adcock: Oh, yes, there are some D-exhibits that have been identified and not offered. We desire to offer those D-exhibits, which have been identified but not formally offered.

Mr. Goldstein: D-140 and D-141. They have been identified.

6601 Judge Wilkerson: Any other offers?

Mr. Blackman:. Yes, sir, I would like to state this—

Judge Wilkerson: Of course, in an equity case, it is about as easy, where an exhibit is offered, to receive it, as it is to exclude it, because it makes no difference in the size of the record, bcause the record has to show that offer any way, and if it is received in evidence, and it is immaterial, the court will be presumed to exclude it, and I think counsel may safely assume in this case that the court will not pay any attention to this great mass of material unless it is specifically drawn to its attention in connection with some point.

Mr. Goldstein: That's all right—fine.

Judge Wilkerson: So that the beneficiary of a large part of this printing will be the printing firm which does the work and gets paid for it.

The court will not look into it, or pay any attention to it, but if you want a nice job of proof-reading, and want to pay the printer some money, go ahead. If the court excluded it, it would make just as large a record, and probably larger, because in that case there would be the offer and the offer excluded.

Mr. Goldstein: We think it is material for every point 6602 we will bring to your Honor's attention.

Judge Wilkerson: All right, if you feel that way about it.

Mr. Goldstein: Yes, sir, we do. We have been conscientious in trying to present all of the facts, pursuant to the order of the Supreme Court.

Judge Wilkerson. Then the court will probably find it instructive in connection with the points.

It may be received in evidence, subject, of course, to any motion to strike that may be made after counsel for the plaintiff have had an opportunity to examine the exhibits.

Mr. Goldstein: Yes?

Judge Wilkerson: That may be, of course, important to the plaintiff if in this case it should be necessary for the plaintiff to assume the burden of printing the record in the Supreme Court, but if you have to assume the burden of printing it in the Supreme Court, I don't suppose they care."

(Which said depositions, and/or the parts thereof designated, so offered and received in evidence are attached hereto, and made a part of this record.)

6603 (Which said depositions exhibits was so offered and received in evidence as Deposition Exhibits Nos. 1 to 197, both inclusive.)

6604 (Which said exhibits, D-140 and D-141, were so offered and received in evidence.)

6605 "Mr. Blackman: In order to make my record exact, sir, I find that it is not quite clear from the record itself whether the following exhibits were actually marked in evidence. They were offered, and I would like to re-offer them now: A-111 to 113, A-114 to 117, A-118 and 119. Also A-198.

Now, with regard to Exhibit A-219, it appears that in the record as if that had been offered and received. That, your Honor will recollect, was an exhibit in which I called the witness' attention to one line in the exhibit from which he could have—this was the witness Rainwater—from which he could have obtained the correct figures for the lines showing that in their own exhibits they had the corect figures.

Now, we do not wish that exhibit, the entire exhibit, in evidence. We do not father it at all. In fact, there are computations in it—

Judge Wilkerson: Well, limit your offer to the particular portion.

Mr. Goldstein: And we will offer the balance.

Mr. Blackman: I limit my offer to the line.

Mr. Goldstein: And we will offer the balance.

Judge Wilkerson: And you will assume the responsibility for the rest of it. Very well.

6606 Mr. Goldstein: Correct.''

(Which said documents marked Plaintiff's Exhibits A-111 to A-113, inclusive, Plaintiff's Exhibits A-114 to A-117, inclusive, Plaintiff's Exhibits A-118 and A-119, and Plaintiff's Exhibits A-198 and A-219 were received in evidence.)

6608 "Mr. Blackman: I understand that you have offered every exhibit attached to the deposition.

Mr. Goldstein: That is right.

Mr. Blackman: There is one there that I want in.

Judge Wilkerson: Now, have you offered everything?

Mr. Goldstein: I think Mr. Blackman has one to offer.

Judge Wilkerson: I thought you had another bundle here you didn't offer.

Mr. Goldstein: No.

Mr. Adcock: We have sent those out. We didn't think the court would like them.

Judge Wilkerson: You have eliminated them?

Mr. Adcock: Yes.

Mr. Blackman: I offer in evidence this list of the material which the American Telephone & Telegraph Company furnished to the defendants at their demand; I have submitted it to Mr. Goldstein, and we understand there is no question about it.

Mr. Goldstein: I haven't had an opportunity to check each one of those, but I presume they are correct. We will get the dates.

Mr. Blackman: There are the dates.

Mr. Goldstein: Are the dates on? All right. What is the number of this exhibit?

6609 Mr. Jones: A-270.''

(Which said document so offered and received in evidence, was marked Plaintiff's Exhibit A-270.)

6610 "Mr. Goldstein: Now, Mr. Thompson, I would like to get this in the record.

Mr. Thompson: That's all right. I have no objection.

Mr. Goldstein: By agreement, the letter of June 30th, of Mr. Thompson, addressed to counsel for the defendants, covering the request made by me of Mr. Gregory on cross-examination, to state which of the items in Exhibit A-253 were prepared for the defendants, prepared for Touche, Niven & Company, and which copies of data, agreements, statements or reports were already prepared—that will stand.

Mr. Thompson: No objection.

Mr. Goldstein: Now, Mr. Blackman, we were to check the number of exhibits which were referred to by Mr. Blackman, for convenience, as grouped, and the check has now been made, and we find the following:

Mr. Blackman: Just put your letter in evidence.

Mr. Goldstein: All right.

Mr. Blackman: I will just give the stenographer these.

Mr. Goldstein: All right. Three sheets are to replace the—

Mr. Blackman: Those are our original sheets.

6611 Mr. Goldstein: Yes, but these three sheets are to replace the figures—the copies of the exhibits which you have read into the record, subject to my check.

Mr. Blackman: Yes.

Mr. Goldstein: These three sheets, indicating the correct number of exhibits covered by the—

Mr. Blackman: Those sheets indicate the additional exhibits in which the matters that we brought out on cross-examination of Mr. Rainwater appear.

Mr. Goldstein: But you are not to include in it, on the sheets, the headings?

Mr. Blackman: No.

Mr. Goldstein: Yes. If you want the letters to go with it, all right.

Mr. Blackman: Just put your letter in, and that qualifies my original offer.

Mr. Goldstein: This is Exhibit X-439. By agreement, X-439 shows the check of the number of Rainwater exhibits referred to by Mr. Blackman, and read into the record in connection with his cross-examination."

(Which said document was so offered and received in evidence, and was marked Defendants' Exhibit X-439.)

6612 "Mr. Adcock: We should like to furnish for the record, simply for clarity, the number of exhibits that have been offered and described in various ways. We would like to offer for the record, at the suitable time to be supplied, the description of our different exhibits, with the numbers set up.

Mr. Goldstein: And the headings.

Mr. Adcock: So that they can be referred to, and there will be no question about the exhibit.

Judge Wilkerson: Well, that will not be an exhibit.

Mr. Adcock: No.

Judge Wilkerson: That will be a part of the abstract.

Mr. Adcock: Yes, that will be a part of the abstract. We will do that, and plaintiff may do the same.

Judge Wilkerson: That is a matter upon which you should agree, I suppose.

Mr. Adcock: Yes.

Mr. Bracelen: Plaintiff rests."

WHEREUPON THE PLAINTIFF RESTED ITS CASE IN REBUTTAL.

"Mr. Goldstein: The defendants rest."

6613 WHEREUPON THE DEFENDANTS RESTED THEIR CASE.

WHICH WAS ALL OF THE EVIDENCE OFFERED OR RECEIVED AT THE HEARING OF THE ABOVE-ENTITLED CAUSE.

"Judge Wilkerson: Now, what about the briefs in the
6614 case? Have you any suggestions to make? At the time
of oral argument, will you be ready to argue this case
in September?

Mr. Bracelen: We can be ready if necessary. I doubt whether we ought, in fairness to ourselves or the court, to attempt to be ready to argue it at that time.

Judge Wilkerson: I spoke to Judge Evans about that the
other day, when it appeared that the record in this case
6615 would be considerably longer than we had anticipated,
and that the time of putting it in was greater than had
been thought.

This is the 1st of July. Judge Evans will necessarily be occupied in the Court of Appeals continuously after the first Tuesday in October. That call there usually takes six or seven weeks in October and November. If the case is not argued the last week in September, it will probably be necessary to postpone the argument until about the 1st of December. I don't know that that will be necessary, but it is a probability. We can fix the time for the briefs now, abstract and briefs, and let the matter of oral argument go over to a date fixed by the court after the briefs are filed. Perhaps that would be the better way; although Judge Page not being here regularly, it will probably be necessary to arrange with him sometime in advance as to the argument.

It might be well to fix by agreement now, if it can be done, the time for preparation of the abstract and the filing of the briefs, and defer the fixing of the time precisely for the oral arguments until some time in September. That could be done. I will receive your suggestions about that. I have no views
about it. I think we are disposed to comply with the
6616 wishes of counsel in the matter, if we can agree on it.
Can they?

Mr. Bracelen: If your Honor please, the suggestion of counsel of both sides is that the plaintiff have until the first of October in which to serve its brief upon counsel for the defendants, and they have until the 15th of November in which to serve their answering brief, and that we have whatever time is available thereafter in which to serve and file our reply brief.

Mr. Goldstein: We would like to have a few days on the reply brief; it ought to be given us some little time before the argument.

Judge Wilkerson: And the reply brief to be filed how
6617 many days before the oral argument?

Mr. Adcock: Five days.

Mr. Goldstein: November 15th; how long do you want for a reply brief? Make it December 5th?

Mr. Bracelen: Very good.

Mr. Goldstein: On December 5th, reply brief.

Mr. Adcock: And in the argument to the court along about the 10th.

Judge Wilkerson: Well, we will have to fix the exact date. That is a matter that I would not like to set without conferring with Judge Evans and Judge Page.

Mr. Thompson: And we will have the opportunity, your Honor, to discuss the date?"

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Vol. III

TRANSCRIPT OF RECORD

Supreme Court of the United States

OCTOBER TERM, 1933

No. 440

BENJAMIN F. LINDHEIMER AND OTHERS, CONSTITUTING THE ILLINOIS COMMERCE COMMISSION OF THE STATE OF ILLINOIS; OTTO KERNER, ATTORNEY GENERAL OF THE STATE OF ILLINOIS, AND THE CITY OF CHICAGO, APPELLANTS,

vs.

ILLINOIS BELL TELEPHONE COMPANY

No. 548

ILLINOIS BELL TELEPHONE COMPANY, APPELLANT,

vs.

BENJAMIN F. LINDHEIMER AND OTHERS, CONSTITUTING THE ILLINOIS COMMERCE COMMISSION OF THE STATE OF ILLINOIS; OTTO KERNER, ATTORNEY GENERAL OF THE STATE OF ILLINOIS, AND THE CITY OF CHICAGO

APPEALS FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF ILLINOIS

FILED SEPTEMBER 8, 1933

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SUPREME COURT OF THE U[illegible]TATES

OCTOBER TERM, [illegible]

No. 440

BENJAMIN F. LIDNHEIMER AND OTHERS, CONSTITUTING THE ILLINOIS COMMERCE COMMISSION OF THE STATE OF ILLINOIS; OTTO KERNER, ATTORNEY GENERAL OF THE STATE OF ILLINOIS, AND CITY OF CHICAGO, APPELLANTS,

vs.

ILLINOIS BELL TELEPHONE COMPANY

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES
FOR THE NORTHERN DISTRICT OF ILLINOIS

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District Court of the United States

FOR THE NORTHERN DISTRICT OF ILLINOIS,

EASTERN DIVISION.

ILLINOIS BELL TELEPHONE COMPANY,
Complainant,

vs.

[illegible]

and

CITY OF CHICAGO, a municipal corporation,
Defendants.

ABSTRACT OF RECORD.

Complainant's Evidence [illegible]

(Continued)

Volume [illegible]—(Pages [illegible])

WILLIAM H. SEXTON,
Corporation Counsel, City of Chicago.

GEORGE [illegible]
BENJAMIN [illegible]
EDMUND [illegible]
[illegible]

OSCAR [illegible]
[illegible]

WILLIAM [illegible]
[illegible]

IN THE

District Court of the United States

FOR THE NORTHERN DISTRICT OF ILLINOIS,

EASTERN DIVISION.

ILLINOIS BELL TELEPHONE COMPANY, Plaintiff, vs. G. GALE GILBERT, J. PAUL KUHN, WALTER H. WILSON, WILLIAM M. BRINKMAN, PHIL W. COLLINS and PAUL SAMUELL, the persons constituting the Illinois Commerce Commission of the State of Illinois, and OSCAR E. CARLSTROM, Attorney General of the State of Illinois, Defendants, and CITY OF CHICAGO, a municipal corporation, Intervenor.	In Equity No. 3746. Heard before Hon. Evan A. Evans Hon. George T. Page Circuit Judges and Honorable James H. Wilkerson District Judge.

ABSTRACT OF RECORD

Defendant's Evidence, Second Hearing

(Deposition)

Volume VII—(Pages 2004 to 2327)

Depositions taken on behalf of defendants pursuant to orders of court of December 4 and December 8, 1931.

Appearances:

Edward L. Blackman, Esq.,
William H. Thompson, Esq., and
C. M. Bracelen, Esq., counsel for plaintiff.
George I. Haight (Chicago, Illinois), Esq.,
Benjamin F. Goldstein (Chicago, Illinois), Esq., and
Edmund D. Adcock (Chicago, Illinois), Esq., counsel for defendants.

8 HAROLD D. ARNOLD, a witness for defendant:

Direct Examination by Mr. Haight.

I reside 174 Summit avenue, Summit, New Jersey; I am Director of Research of Bell Telephone Laboratories, Inc.; attended college at Wesleyan University, Middletown, Conn., and later at University of Chicago, specializing in physics and mathematics, and receiving degree of Doctor of Philosophy in 1911; I have been since then employed continuously in substantially present line of work; I was first employed in Engineering Department of Western Electric Co., beginning January 2, 1911, to do research work in vacuum tube devices.

9 In 1925 Bell Telephone Laboratories, Inc., was established, which continued the same class of work done by the Engineering Department of the Western Electric.

I have had contact with the Department of Development & Research of the A. T. & T. and became familiar with the
10 personnel of that department in 1911. I don't know when the name "Department of Development and Research" was given. I sometimes discuss problems with the members of the Department of Development & Research of the A. T. & T., primarily as such problems relate to my own work and not as they relate to theirs; so I have no familiarity with that department's own problems.

The Bell Telephone Laboratories, Inc., does engineering and research work in telephone communication. There are possibly four sources from which problems arise in my own work with the Bell Laboratories, and those are directly from

the A. T. & T., from Western Electric, from work in my
11 own department and from work of other departments
in the laboratory. I should add also Electrical Research
Products Corporation as a source.

I am not familiar with the organization or function of the Electrical Research Products, Inc. (called for convenience E. R. P. I.), but I know it is concerned with motion picture engineering and consulting work in acoustics.

My department in the Bell Laboratories is known as "Department of Research." The other departments are the Systems and the Apparatus Departments and a group of gen-
eral departments including Educational, Accounting and
12 Publications. The Systems Department deals with prob-
lems of associating apparatus and systems for telephone
use. The Apparatus Department designs and develops specific communication apparatus. I am not, however, familiar enough with that department to name many kinds. However, I do know that they design loading coils, relays, ringers,
transformers, repeating coils, retard coils, dials, sub-
13 scribers' equipment, which includes Bell boxes, and other
apparatus of that nature; telephone cables, phonograph
recording apparatus they design; talking motion picture equipment; I don't know whether that department does re-
search work in respect to talking motion picture equip-
14 ment because it is difficult to define the term "research
work," but as I understand it, research means the study
of substantially new things or substantially new ways of looking at old things.

I don't know whether that department has to do with both theatrical and non-theatrical apparatus, but it does have to do with recording apparatus, reproducing apparatus in connection with talking motion picture equipment.

My department does not directly or indirectly have anything to do with the recording apparatus in connection with talking motion picture equipment except answering questions of a general nature from time to time at the request of other departments and in connection with answering such questions we make inquiry, research or investigation. At one time or another I think we have done research work with reference to all that have been mentioned.

16 Work has been done in connection with the research or design by the departments of the Bell Laboratories with public address apparatus, not, however, with regard to the apparatus itself in its commercial form but as to some of the principles that underlie the operation of such apparatus.

I do not understand the term "electric phonographs for theatres" but I do not think that my department has had anything to do with those because we do not make elec-
17 tric phonographs for theatres, nor does the Bell Laboratories have anything directly to do with electric phonographs for broadcasting stations, but my department has answered questions with regard to such devices and in connection with the answering of questions has performed certain experiments.

Bell Laboratories has had something to do with amplifiers for submarine telegraph cables, having studied the principles underlying their design and having designed such amplifiers. It has studied the principles and made some designs of multiplex telegraphy on submarine cables. We have made tests on submarine cables and have used testing apparatus of our own design. We have done research work in connection with that subject. We have studied picture transmission ap-
18 paratus and designed it; also hearing aids, such as pick-up transmitters, amplifiers and receivers.

Under the term "deaf apparatus" and "audiophone," I usually think of a combination of receiver and amplifier and transmitter.

We have studied the principles of electrical stethoscopes and have designed some.

I do not recall that any of the problems in connection with any of the subjects, the apparatus of which I have mentioned, have come to the Bell Laboratories from the Develop-
19 ment and Research Department of the A. T. & T. I wish to modify that. Some of these matters did come from the Department of Development & Research of the A. T. & T., such as transmission of pictures, and phonograph
20 recording apparatus. I do not remember in exactly what
21 form that problem came to us. I do not recall that any problems in connection with talking motion picture equipment came directly from the Development & Research De-

partment of the A. T. & T. The same as to public address apparatus for theatres,—I do not know its origin.

I do not know anything about the origin of electric phonographs for theatres or for broadcasting stations, nor do I remember the origin of amplifiers for submarine telegraph cables nor terminal apparatus for mutiplex telegraphy and submarine cables or testing apparatus for cables.

Picture transmission apparatus came from the Department of Development & Research, A. T. & T.

Certain work with regard to hearing aids did come from the Department of Development & Research, A. T. & T.,
22 but I cannot recall what those problems were except that some problems relating to the use of hearing aids on subscribers' equipment for deafened telephone subscribers came to us from that department. I do not remember any other department of the A. T. & T. from which any of these came.

23 The problems coming from the Western Electric Company related to matters of materials and manufacturing procedure and the design of apparatus, including carbon for telephone transmitters, alloys for use in various processes, including magnetic materials and non-ferrous materials, insulating materials used on conductors and many problems relating to apparatus designed.

24 Some of the work originating with the Western Electric had to do with insulating material for conductors, but I don't know over what distances such conductors are used, but I have every reason to believe that they are used for all sorts of distances, long and short, and the same is true with regard to other work that I am familiar with and have mentioned; as far as I know, every piece of telephone apparatus can be connected with telephone circuits of any length.

I have mentioned all of the things that I can think of at the moment originating with Western Electric.

25 With reference to repeaters, Bell Laboratories developed and designed them. I don't know in what kind of service they are used. All I know is that they are used for repeating telephone conversations but I am not familiar with the telephone plant, only that they are used in a telephone plant. Repeaters are used in many places, in fact wherever

amplification is necessary, but I don't know enough about the operation of the telephone plant to be able to distinguish between long distance use and other uses.

I have not attempted to answer with respect to the work in the other departments of the Bell Laboratories the work originating with Western Electric.

26 The work in my department sometimes comes from the Apparatus & Systems Department as there are frequently investigations which lie somewhat outside of their own specific line of work and about which they consult my department. These problems are rather small problems and have to do with questions of mathematical, and chemical analyses and in some cases relating to the transmission of speech through certain pieces of apparatus as to whether this apparatus would affect the quality adversely.

I remember one problem which originated with the E. R. P. I. on the measurement of the absorbing power of acoustic materials, and one on the recording of speech on film, and one on the recording and reproduction of speech from phonograph records.

There was another problem I remember relating to insulating materials for submarine cables and a related problem of magnetic materials that related to submarine cables.

26-A My department's work is related to a study of the principles underlying the recording of speech on films and a survey of the possibilities and relative desirability of different methods. The earliest work on that problem that I can recall began about ten years ago. However, the work arising from E. R. P. I. came about four years ago, but work of a general nature on that problem began I think about ten years ago. The request then came from the Development & Research Department of A. T. & T. and was work in connection with the study of the nature of speech on telephone wires. That was before the present company was organized. The work at that time was done by the
27 Engineering Department of the Western Electric. I have not in answering questions and speaking of the subject matter heretofore, made any distinction between Bell Laboratories and its predecessor, the Engineering Department of Western Electric.

In connection with the study of the problem of reproduction of speech on phonograph records, we investigated the fundamental underlying principles and made some experiments and designed apparatus for that purpose, which work ran over a period of eight or nine years.

On the question of insulating materials for submarine cables, we studied various properties of such materials. On problems of submarine cables that are not lead covered, we worked on those probably ten or fifteen years.

28 Bell Laboratories or its predecessor, Engineering Department of Western Electric, has worked on radio. My own department carried out experimental work and studied the principle of radio and the design of equipment. My department has particularly studied vacuum tubes, and upon
that I have worked myself. The work began in 1912, hav-
29 ing been continuously and still is in progress. That
work has resulted in the use of vacuum tubes in the communication industry. Vacuum tubes are used in connection with telephone repeaters, radio transmission and reception. These are the principal uses.

The work that is completed in my department usually leads to the design of equipment for communication purposes and the information developed passes on to one of the other departments, Apparatus or Systems or both, for use in their
jobs. In general the work of my department precedes
30 or consists of the early stages of the consideration of
new things for the communication industry frequently, pointing to the desirability of new or different apparatus, and the development of such apparatus falls into the Apparatus Department, such apparatus ultimately taking a part in the communication system, and has to be properly associated with other apparatus. The work of association falls into the Systems Department. The work of my department, for the most part materializes through those other departments.

There are about 1,000 men employed in my department. I don't know the number for the other departments. There is associated with the Department of Research under my administration a shop for the manufacture of vacuum tubes,
and that shop has mechanical people whose numbers vary
31 from time to time. I have not included that number
in my statement. There are about 300 employed in the

vacuum tube shop now. The maximum number in that shop has been about 1,000. At its start there were very few people—about 100.

The vacuum tubes are manufactured for the Western Electric except such as are used for experimental purposes in the Bell Laboratories.

32 There are not any industries dependent for being on vacuum tubes, but such tubes are the basis of the present telephone and radio plants. There are very many purposes for the vacuum tubes, but they are used generally for the purposes of amplification and in the talking motion picture industry. I don't know whether any of these products are given a name to distinguish them from telephone 33 apparatus generally, but we frequently speak of some of these things as by-products, such as those things which have indicated usefulness for some purposes outside of the communication industry, and in that class come certain developments of the phonograph and talking motion pictures. There are undoubtedly others much smaller in number.

I don't know of any publication that would help in listing those things. Members of our company publish scientific articles. 34 It puts out a magazine called "Bell Laboratories Record" once a month. I don't know whether the Department of Development & Research, A. T. & T., has a publication of that same general nature.

I don't know who owns the stock of the Bell Telephone Laboratories. (It is conceded by counsel for the plaintiff that the stock of the Bell Telephone Laboratories is owned half each by Western Electric and A. T. & T.)

35 The laboratories charges for the work done and such charges are determined by certain processes that are set up in the Accounting Department by which the time of employees is allocated to specific projects as a basis for charges. I don't know exactly how overhead is charged or allocated. The work is charged entirely on a time basis without regard to the character or the results of the work.

Some undertakings we work upon fail. I have no way of determining the relation of failures to successes, except that the successes are enormously in the preponderance, which is due to the fact that we watch very carefully and promptly,

if any project shows evidence of not succeeding, we stop
36 it. Our aim is that the non-promising things be killed early. I don't think it would be possible for any records to determine the relation of failures to successes.

Very frequently work has already been done upon projects coming to us from the various sources mentioned, as for
37 instance the Department of Development & Research of the A. T. & T., the Western Electric Co., etc. In almost all cases some progress has been made on the problems that come to my department and that progress has led to the point where experimentation, and by that I mean work with actual apparatus, is indicated as desirable, or necessary.

Such is true of the problems coming from Development & Research, A. T. & T. With regard to work coming from the Western Electric, it has apparatus and facilities for experimentations. The problems coming from them usually require peculiar apparatus or peculiar processes of experimentation that we are equipped to carry out better than they. Now I am speaking of the work in my own department.

The problems from E. R. P. I. come in the form of a statement of requirements for apparatus to meet. Sometimes there have been experiments by E. R. P. I. as to such problems.

38 The problems that come from Development & Research, A. T. & T., have usually received careful engineering attention, which includes not merely a statement of the functions that are desired to be obtained or the apparatus that is desired to be developed, but also includes a careful study of the ways in which such results might be obtained up to the point where experimentation is called for.

With respect to E. R. P. I., there is not the same degree of engineering consideration given to their problems when they come to us.

There has been some winnowing out by the Development & Research of the A. T. & T. and by Western Electric which decreases the percentages of failure with respect to the problems coming to us from them.

Occasionally people are transferred from Development & Research, A. T. & T. to Bell Laboratories, and vice versa.

The numbers are not large; sometimes loans, sometimes
39 permanent.

Shortly after the time when we started on motion picture development certain people were transferred from my department to other departments and also to E. R. P. I. As to my department, there was no transfer from Development & Research, A. T. & T., to Bell Laboratories, and I do not know of any such transfers with respect to other departments of the laboratories.

Among the requests coming to Bell Laboratories for work from the Western Electric I recall none for work for the Graybar Co.

40 Mr. Moravec has charge of the records which show the sources of requests for work in my department. I do not know in what form they are kept, and some records were kept when the laboratories were in the Engineering Department of the Western Electric.

There was some work in connection with the Western Union Telegraph Co., but I do not recall just how the work originated. I do not know of its doing any work for the Postal Telegraph & Cable Co. My department has done certain work in connection with Northern Electric engineers, but always at the request of Western Electric. We must certainly have done work in my department for International Western Electric but I do not recall it now. I don't know as to the International Standard Electric. We have done some work for the U. S. Government. I don't recall any work done for the Automatic Electric Co.

I don't know whether the Western Electric makes any profit on work done for it. Some of the work done by Bell Laboratories extends over a great period of years, such as work on vacuum tube development. The first tubes became of practical use in 1913, and since that time there has
42 been constant work and progress, so that now the tubes are altogether different and better than those of the earlier years. The same is true in regard to the studies of the characteristics of telephone speech and the requirements for the proper transmission of such speech. Those problems have been in constant progress during twenty years, to my knowledge, and year by year there have been changes in prac-

tice and some improvement in results, and they are still in progress.

Vacuum tubes were first used between New York City and Washington in 1913 and for continental telephonic communication in 1915. The work prior to 1913 on the specific tubes that were used had gone on for about a year, and upon the general subject, to my knowledge, since I came with the company in 1911. There had been work done on tubes prior to my coming with the company.

43 There have been instances where work was begun in a certain year and did not come into practical use for seven, eight or ten years thereafter. For instance, development of magnetic materials which found their great usefulness in loading coils—the early work on those alloys certainly preceded the use of the apparatus by more than the period of seven or eight years.

Another example is the study of insulating properties of materials used on wires which were studied over a considerable period of years and during recent years there has been a considerable change in the process we used as a result of that study. That inquiry and investigation extended for seven or eight years before the results were put into practical use.

44 Frank B. Jewett is president of the Bell Telephone Laboratories and vice president of the A. T. & T. in charge of its Development and Research Department. I have been Director of Research of the laboratories for about six years. While I was in the engineering department of the Western Electric I was called research engineer.

The problem in a repeater is to add energy to a voice current that has faded away as it goes along a telephone
45 line, so that it can go on from that place with greater power, and the difficulty of the problem resided in getting something that would work fast enough to respond to the high frequency currents that constitute speech, and the occasion for solving the problem was to extend the reach of telephone communication. From New York to San Francisco there are probably 15 to 50 repeaters, depending on the type of construction. The type of repeater used in the Bell System is the vacuum tube repeater. The vacuum tube repeater enters into the problem of transmission in the man-

ner that I just broadly described.

Since 1923 the principal improvement in vacuum tube has been to get a repeater that operates with much less power supplied to the filament which results in a very large saving in the power equipment necessary in a telephone exchange. Coupled with that, is another important improvement in the length of the life of the repeater itself, which has been extended to something like 35,000 hours of continuous service. Consequently, repeater bulbs expense is lessened and the service may be given more continuously through them, since with longer life they are not subject to interruption to the same extent.

Another outstanding development since 1923 has been permalloy, which is a magnetic material of extraordinary properties used in loading coils. Another is the crystallization of the telephone hand set.

It is substantially since 1923 that the transmitter and receivers and assembly of the present telephone hand set has been perfected.

Since 1923 we have obtained better dielectrics for use in condensers and better arrangement of the materials in condensers such as improvements in the enamel insulation 47 on enamel insulated wire; improvements in the finishes for telephone apparatus; improvements of a mechanical nature resulting in longer life, and improvements in contact metals which form an important part of telephone systems and the development of special relays which will operate with the very small currents that we have in the telephone plant; improved carbon for the carbon transmitter of the telephone set; improvement in the circuits of subscribers' apparatus particularly in connection with the elimination of side tone in telephone receivers; improvements in net works and filter design to correct for the detriment that voice currents suffer in going over the telephone lines; improvement in optical methods of recording speech, which, for example, are used in our apparatus for mechanically speaking numbers called on the dial telephone.

48 Condensers are used in subscribers' telephone sets and very widely in the electrical art, but the condensers upon which I have worked have related to the communication industry, that is, transmission of intelligence by means of elec-

trical currents, including radio, signalling through the telephone system at whatever frequency is carried, television, transmission of pictures. I do not include talking movies. I would include the operation of telegraphy over a system.

49 All the work that we have done in the phonograph field has come to fruition since 1923; also aids for the hard of hearing, and talking motion pictures; and some of the work connected with public address systems, which is a system or device whereby a voice or program is made audible to a large audience by electrical means, including microphones, amplifiers and loud speakers, has fallen within that period.

My department has never done anything with reference to teletypewriters or telegraph typewriters. I don't know whether other departments of the Bell Laboratories have.

50 My department in 1923 I think had about 300 or 400 people in it. The occasion for the increase from that time to now has been the growth in the numbers of problems of the various kinds I have mentioned.

The same or substantially the same divisions or departments have existed in the Bell Laboratories since it was organized, making allowance for the changes in personnel and work. The principal difference between the Research in my department of the laboratories and the research of the Development & Research Department, A. T. & T., is that Development & Research A. T. & T. does not make use of experimental apparatus to any considerable extent but conducts its experiments with facilities that exist in the telephone company, whereas in my department, the majority of all the work is carried out with experimental equipment, laboratory apparatus facilities, power supplies, motors, balances and that sort of thing that are special to the work and frequently have to be specially designed and manufactured for the work. My company has more than one building in the sense of occupying space in more than one building. We have some small laboratory buildings in the field which we use for radio experimentation solely. We have no laboratory devoted solely to television. We have a part of a building that we devote solely to talking pictures. It is a building attached to the main building. It is on the Bank Street side of our laboratory group. It has about three stories but I

don't know the floor area.
53 There have been only one or two cases when one of my
department's men have gone into the field to observe the
operation of talking motion picture equipment. I don't know
about the sending of men from other departments.

The work in the talking picture building is in connection with the recording and reproducing of speech from films and other records, and new devices are tried out there which is a large part of the work done.

My understanding is that E. R. P. I.'s principal business
is talking motion pictures. Probably some half dozen men
went from my department at one time or another to E. R.
P. I.—one or two were scientists and the others were
54 laboratory engineers or assistants. No men were sent
from my department to Western Electric in connection
with talking pictures. I don't know as to other departments.

The period prior to 1923 saw the growth of the vacuum
tube from an apparatus that was difficult to manufacture with
uniform characteristics, into one that could be manufactured
with great uniformity. It saw the settlement of the major
features of rough design which allowed us to produce tubes
that were fairly satisfactory for our purposes. That
55 period was a period of blocking out the problem of
vacuum tube design and of obtaining some of the fundamental
information about the production of vacuum tube
filaments and some of the information about the operating
characteristics of vacuum tubes. The period from 1923 on
has been more nearly a period of perfecting these devices
and making them cheaper and more satisfactory in service;
also, from 1923 on, new principles of vacuum tube manufacture
have been found and some entirely new lines of work
have been started in connection with the arrangement of the
parts inside the tube to make them function better.

Referring to telephone hand sets, they have been used for
particular purposes as long as my memory runs in the telephone
plant, but these hand sets were not satisfactory for
use by the public on ordinary subscribers' premises. I cannot
point to any time that work on the modern hand set may
be said to have been started. It has been an evolution
56 rather than a specifically started development. There
has been work on hand sets all the time since my first

connection with the Western Electric. Satisfactory hand sets first came into commercial use within the last five years, I should say.

The research work done is budgeted during the last two or three months of each year. The budget is subject to revision at any time. On making up the budget I assemble figures for the coming year in view of the personnel and the problems that either have been authorized or appear to be in the process of arising. I believe other departments function similarly. Each project has a cost estimate as-
57 sociated with it which may be on a unit budgetary basis or in some instances may be an estimate extending over several years.

From a budgetary point of view the records are kept as to a prediction of expense on projects and as to the actual expense incurred and these records are reviewed frequently in the course of the project. There is no set custom as to the making of reports on each project at particular times.

The number of people in my department has been diminishing, which includes expense also.

58 In carrier current systems the signal which is transmitted is carried by a high frequency alternating current and by high frequency I mean a frequency high with respect to the signal. If the signal to be transmitted is itself a low frequency current, then the carrier current may not be very high. In general one thinks of an example of carrier current operation as one in which an alternating current of perhaps 7,000 or 8,000 cycles is modulated by a voice current and this modulated high frequency current is transmitted through the system and then at the end of its journey is demodulated and restored to intelligible speech.

The carrier current system allows the transmitting of a large number of telephone currents, telephone conversations, over the same physical plant, over the same wires in the telephone company's plant and thereby saves the expense of the addition of wires as the traffic increases. I don't know whether carrier current systems are used in local exchanges.

59 In the course of research and development work, inventions are made upon some of which patents are secured. I neglected to mention the patent department in listing the departments of the Bell Telephone Laboratories.

When we suspect or hope that we have made an invention the material relating to it is submitted to the Patent Department for appropriate action and there it is handled so far as the prosecution of the application for the patent is concerned. There is a Patent Department in the A. T. & T.

60 The engineering work of the Western Electric is carried on under some other name than Development & Research, but I don't know what it is.

Mr. John G. Roberts is head of our Patent Department and has been since the incorporation of the Bell Laboratories.

I don't know anything about the handling of charges in connection with that work. I have taken out several patents myself, a few on radio, I don't know how many. Our Patent Department keeps lists of the various patents secured and applications filed.

I know Mr. H. A. Appel. He is connected with Develop-
ment & Research, A. T. & T. Mr. R. M. Allen was with
61 the Western Electric Co. Mr. H. W. Nichols, who died
about six years ago, was in the Engineering Department
of the Western Electric. W. L. Betts is an employee of the
Bell Laboratories. O. B. Blackwell, Development & Re-
62 search, A. T. & T. R. Bown same; O. E. Buckley, Bell
Laboratories. G. A. Campbell, Development & Research,
A. T. & T.; J. R. Carson, same. I don't know G. Cirsson.
L. M. Clement was at one time in the Engineering Depart-
ment of Western Electric; A. W. Kishpaugh, Bell Labora-
tories; E. H. Colpitts, Development & Research, A. T. & T.;
J. B. Crandall has been dead several years, he was formerly
in Bell Laboratories; A. M. Curtis, Bell Laboratories; H. C.
Edgerton, at one time Western Electric, I don't know about
him of late years; G. W. Elman, Bell Laboratories; C. R.
Englund, same; L. S. Espenschied, Development & Research,
A. T. & T.; A. L. Fitch was at one time Engineering Depart-
ment, Western Electric; I don't know where he is at present
time. J. O. Gargon, I don't know; A. Haddock was at
63 one time Laboratories, I think not now; R. E. L. Hartley,
R. A. Heising, M. J. Kelly, B. W. Kendall, W. H. Martin,
R. C. Mathes, J. Mills, A. M. Nicolson were at one time in Bell
Telephone Laboratories; H. S. Osborne, Operation & Engi-
neering, A. T. & T.; H. W. Read was at one time Western
Electric; I don't know where he is now; W. L. Richards, who

died a couple of years ago, was with the Bell Labora-
64 tories; J. C. Shelling, E. O. Scriben, H. E. Shreeve, L. J. Sivian, E. R. Stoekle, H. N. Stoller, now or formerly with Bell Laboratories, H. J. Van der Bijl was at one time an employee of the Western Electric; K. S. Van Dyke, Development & Research, A. T. & T.; H. W. Weinhart, R. H.
65 Wilson, W. Wilson, J. P. Schaefer, Bell Laboratories; P. I. Wold was at one time in Patent Department, A. T. & T.; also at one time Laboratories.

Practically all the patents that have been issued to me relate to telephone communication, the first ones to a telephone repeater known as the mercury arc repeater, and subsequent ones related to the vacuum tube repeater; do not recall them in detail. I am quite sure that these inventions of mine have been used in repeaters or in radios or in both.

66 I will check over and ascertain whether the following named patents issued to me relate to and are usable in radio:

No. 1,114,845 of October 27, 1914, electrical relays.

No. 1,128,279 of February 16, 1915, electrical wave amplifier.

No. 1,128,280 of February 16, 1915, thermionic detector.

No. 1,129,942 of March 2, 1915, gaseous repeater and circuits of low impedance.

No. 1,129,943 of March 2, 1915, same title.

No. 1,329,283 of January 27, 1920, thermionic amplifier.

No. 1,349,252 of August 10, 1920, methods of and means for utilizing thermionic current.

No. 1,354,939 of October 5, 1920, vacuum tube devices.

No. 1,367,224, February 1, 1921, radio receiving system.

No. 1,375,481, April 19, 1921, power modulator for radio transmission.

No. 1,398,665, November 29, 1921, thermionic amplifier.

No. 1,403,475, January 17, 1922, vacuum tube circuits.

No. 1,231,984, July 3, 1917, H. W. Nichols and H. C. Arnold radio transmission.

A dollar is supposed to be given to employees for each patent taken out by them on inventions, but I have never seen the dollar.

(For deposition of George A. Campbell, see Abst., Vol. IV, pp. 1230-39.)

LYMAN F. MOREHOUSE, for defendants.

Direct Examination by Mr. Haight.

94 I reside at Montclair, New Jersey; I am Equipment
Development Engineer, A. T. & T., and have been since
1909; prior to that from 1906 to 1909 I was with Western
Electric Co.; prior to 1906 for four years I was at University
of Michigan on Physics and Electrical Engineering Faculty,
and prior to that with Washington University at St. Louis
for a year in the Department of Physics, doing instructing
work. Prior to that time I was instructor in mathematics and
physics and later acting principal of the Marquette High
School, Marquette, Mich., and instructor in mathematics and
other subjects in Detroit Central High School. At the
95 University of Michigan I was instructor and later assistant
professor of electrical engineering.

While I was with the Western Electric, for a few months,
I was in the laboratories in Chicago and then I was sent by
that company to London and was connected with the London
house for about three years as transmission engineer in
Europe.

When I first came to the A. T. & T. from the Western Electric
I was Equipment Engineer until July 1, 1919, when I
became the Equipment Development Engineer, which is my
present title. I am the head of one of the departments of
Development & Research, A. T. & T. My so-called department
96 may be called a division of Development & Research
Department, being the Equipment-Development
Division. The Engineering Department of the A. T. & T. did
the work of the Development & Research about July, 1919.
Prior to July, 1919 the Engineering Department of A. T. & T.
included work of the character done by Department of Development
& Research since 1919.

The engineers of the Equipment Development Division
carry on studies either directly or through the engineers of
Operation and Engineering as may be necessary to determine
the needs of the associated companies for new central office
and sub-station equipment—more particularly that part
97 which has to do with switching and signaling. Studies
are also made to determine what should be the require-

ments of new system equipment for apparatus in order that it can be effective and enable the Associated Companies to meet service problems in the best way. In general that relates to all switching apparatus, to the sub-stations apparatus, except transmitters, receivers and induction coils. Mr. Blackwell, the transmission development engineer, does work on the transmissions, receivers and induction coils.

The work done by my division results in equipment manufactured and sold by Western Electric. Our problem is to determine the requirements. After the requirements have been determined by my division for some new piece of apparatus or system or equipment, the next step is to determine the specific requirements which should be met. Then they are formulated and sent to the Laboratories which develop the apparatus or system required. When that work is satisfactorily done, it eventuates in equipment which the Western Electric manufactures for the Associated Companies.

The job of the Equipment Development Division is to determine upon requirements and upon the need for a new thing.

We study all the needs of the companies in the field. We
98 make investigations and studies. In some of those studies we have occasion to call upon the Laboratories for some assistance because we cannot always tell beforehand whether a system that we may visualize at the start, is a practical sort of thing. But having gone through the necessary processes, we finally determine as to the requirements which are rather specific and definite enough so that the Laboratories know pretty definitely exactly what it is that we are trying to do. With that background and the requirements, they proceed to work out the system.

99 The process of setting up requirements gives contacts between ourselves and the laboratory so that they have a pretty good idea by the time the requirements are formulated. These requirements are definite and specific enough so that the laboratories can produce what is required. They then design or develop the system, the circuits, the switchboard, the apparatus.

For example, we might take the case of a switchboard, private branch exchange board, where in looking over the field we come to the conclusion that a different type would be beneficial to the companies. A study of the company's use of private branch exchanges of the types of things that have to do

with private branch exchanges is made; in general, the features of the private branch exchanges, as to whether we want a lamp board, the size of the board, as to the capacity of the board, as to whether they should have tie lines from one private branch exchange to another private branch exchange, as to whether we should have long extension lines
100 connected to that private branch exchange. All phases
of the use of the private branch exchange are studied.

In connection with that we take into consideration the economic problems in connection with sales which is a fundamental part of our problem. From our relations with the field and the Operation and Engineering Department we have a pretty good picture of the number of private boards to be used when developed. We make an estimate and having determined what these requirements should be we then set them down as part of the requirements covering the development of the Private Branch Exchange. Those things then go to the laboratory, and in most all our problems we have con-
101 sultations with the laboratories and finally there is nearly
always a letter to the laboratory authorizing the development work, stating what we want to do, setting forth the requirments in detail, which are the formal instructions to the laboratories.

The laboratories then analyze the problem, determining what seems to be required in the way of new circuits and new apparatus and lay their plans accordingly. The laboratories then develop that to the point where from the laboratory standpoint it appears that it will work. Then there is a review of what has been done to see whether the requirements have been met, whether our ideas of the cost of the board, of the performance of the board and of the future of the board have been met. I am speaking only of my division.

102 Sometimes we review that work with the laboratories.
Sometimes we can answer the question from the results of the laboratory tests and from the work the laboratories have done—tests on apparatus and tests on circuits.

Cost estimates have been prepared to represent the manufacturing costs. Sometimes we go a little bit further and try out one in the field. If the results are satisfactory, a description of what has been developed is prepared. It is standardized and the Associated Companies through the Department of Operation & Engineering, A. T. & T., are advised. In the meantime the laboratories, when it is clear that that is the step we are going to take, proceed to prepare such information as is necessary for the Western Electric to manufacture the equipment which has been sent to them.

When I have said "standardize it," I meant standardize for the associated companies.

103 The Equipment and Development Division Engineers do not have to do with anything but Systems and Apparatus for the Associated Companies. When apparatus is standardized the Associated Companies buy it. The Equipment & Development Division does not do any work on by-products. I presume the Transmission Development Division may do work on by-products, perhaps the Outside Plant Division, although I doubt that.

Since 1923 there have been improvements in switching systems, in sub-station equipment and apparatus that we find in switching systems and in sub-station equipment. Prior to 1923 there were improvements in switching systems and
104 in sub-station equipment all along the line. In the term "switch systems," include manual switchboards, both local and toll, dial systems, panel and step by step, and private branch exchanges.

My division has studied prior to and since 1923 a little, the matter of broadcasting over wires, just as a matter of interest. A great many inventions were made in my division on which patents were obtained. They are coming through all the time; broadly, the switching and sub-station fields, which fields cover the entire scope of my division.

105 Some of the patents relate to the various features of the panel system and of the step by step system and of the manual system. Some relate to switching arrangements, some for apparatus and some to power plants. They are pretty generally scattered over the whole job.

106 The Equipment Development engineers have nothing to do with wire systems as such, but they have a great deal to do with apparatus which are used in connection with wires. The Outside Plant Development engineers have to do with wire systems. The Outside Plant Development Division is one of the divisions of the Department of Development & Research. The Outside Plant Development Division of
107 Development & Research has to do with wires, cables and certain problems in connection with loading coils. The

Transmission Development Division and the Equipment Development Division have to do with repeaters. The Transmission Development Division has to do with vacuum tubes and radio, of which Mr. O. B. Blackwell is the head. The Equipment Development Division had to do with the teletypewriter switchboard. No division had to do with talking
movies. Television comes under Transmission Develop-
108 ment Division. My own division directed the develop-
ment of the teletypewriter.

(*Note*: Stipulated that the signing by the various witnesses of their respective depositions and their swearing to them, are waived.)

110 Development work on teletypewriters began a number of years ago, twelve years or more. They are used by the Associated Companies for various classes of service and also in the long lines service. My impression is that the use of printers are used probably more by the Associated Companies at the present time than by the long lines and I feel that the use by the Associated Companies is going to grow very rapidly and they will use far more printers than the long lines.

111 In connection with my work, we study the needs of long lines for central office switching arrangements that the long lines use. The needs of long lines are discovered in the same way as we do with the Associated Companies, by studies and investigations which we make; also by problems as they present themselves, through the Department of Operation and Engineering and the Long Lines and the Associated Companies. We do not differentiate between the operating companies in our work as to long lines.

Service improvements in switching have resulted in benefit to long lines, such as switching systems and teletypewriters
and arrangements that long lines use in connection with
112 telegraph. The switching system means one or more
switchboards worked out to afford a means for connecting lines together either local lines or local and toll, and such associated equipment as is required in central offices for the operation of switchboards and to give the kind of service which they are expected to give. I mean by that terminal room equipment. In switchboards we have improved signal arrangements, apparatus, cords, plugs, jacks, terminal room apparatus, cable inside the office, facilities to the long lines

for connecting their switchboards to dial equipment
113 where that is necessary, all of which have enabled the long lines to handle calls more rapidly and more accurately with less interruptions to service.

The determination that certain equipment originating with Development & Research Department, A. T. & T., and passed on to the Bell Laboratories is satisfactory, is done in our department and in making that determination we are in consultation with the laboratories and Operation & Engineering, A. T. & T.; and we take advantage of every source or facility for making sure that we are all right. The man upon whom the responsibility of making the determination finally rests, is Dr. F. B. Jewett, head of Development & Research, A. T. & T.

The matter of making equipment standard is a pro-forma sort of thing. Systems are standardized by Development & Research Department, A. T. & T., having before it the ideas of Operation & Engineering, A. T. & T., of the Laboratories and any other department that would be helpful in reaching a conclusion.

There has been no occasion in my division to study broadcasting, except as previously stated.

Outside of the switching systems and teletypewriters I have spoken of I have worked upon repeaters and telegraph systems and telegraph operation, relating to long lines. Our problems with the central office equipment are just the
115 same there as with local companies' equipment,—the study of the needs and development of the apparatus that is required to enable the long lines to give service in the best way possible.

Men in my department have taken out patents having to do with repeaters, teletypewriter systems, carrier telegraph systems and practically connected with every general
116 class of central office apparatus.

Our particular job in my division in connection with repeaters is to get them into the telephone system; that is to provide such switching and such signalling arrangements and associated equipment arrangements as may be necessary to get the repeater transmission circuit into the system. My attention lately has been, broadly speaking, devoted to two kinds of repeaters, that is, the one that is used in the telephone plant and the one that is used in the telegraph plant.

A telephone repeater handles the voice waves with or without a carrier. In telegraph systems some of the repeaters handle the high frequency waves very much as telephone repeaters and the telephone voice waves, but there are other types of repeaters where we do not use carrier,—those are the older types. At the present time in telegraphy there is a carrier repeater and an ordinary repeater made up of relays.

117 My division does not have anything to do with cables for long lines, but we do have cable wiring inside the central office; nor does my division have anything to do with loading coils. In my division we do not charge any one for the work that we do. Time is allocated to classes of work. There may be one or more jobs in each class, such as central office panel system circuits as one class, panel
118 system apparatus another class. There are six or seven main classifications to which we charge the equipment development work and these classifications are subdivided into one or more subclassifications as may be necessary for administration purposes. The main classifications are central office equipment and circuits, substation equipment, wire transmission systems, work in connection with patents, etc. With some minor modifications, the classifications above mentioned have been used for five or six years. Prior to that we did not have classifications of that kind or of that form. We kept track of our work, of course.

119 Our patent department may ask us from time to time specific questions in connection with patents. That classification, however, is not a large one so far as expense is concerned. The work of our division relates only to those matters generally handled.

Referring to wire transmission systems, there is no division as to that for long lines or for local toll or anything of that sort, nor is there any division as to switchboards, and that is true throughout.

Development & Research, A. T. & T., does not publish any magazine or journal. From time to time, however, engi-
120 neers of the department publish articles and those are published in proper journals and there is a journal in the Bell System in which some of these articles are published, the Bell System Technical Journal. I have made inventions that have matured in patents in one or two instances. They had to do with printing telegraphs.

121 Patents are handled in this way. We prepare a description of the piece of apparatus or the equipment or the system, whatever it may be, and that is transmitted to the Patent Department, A. T. & T. Mr. Folk is head of the patent department.

Some projects took some time before they matured into
122 commercial devices manufactured by the Western Electric. Depending on the particular matter, it may take a month before a job is finally completed, or it may be several years, as, for instance, the development of the dial system. It may take all the way from a week to a couple of years from the time my division starts work on a project before it is finally turned over to the Laboratories. I don't recall any at the moment, but I presume that there are some that took more than a couple of years.

Some of the projects that are undertaken in my division fail, but they are very few. They don't get very far. An idea may disappear by the end of the day or within a week or a month. I don't recall any project turned over by my division to the Bell Laboratories that has failed.

123 I couldn't give any idea of the number of projects started in a year that fail, or the number that started during the same year and succeeded; nor could I give any idea of the number that are started in a year that fail to go to the Laboratories and of those that do go, I would have to go to our records for that. Generally we keep records of all our projects, of those that fail as well as those that succeed, but we have no system of classification as to failures and successes. All of our development projects go into those general classifications that I spoke about. A project may be
124 a very large one or it may be a very small one. Some years we may have a predominating number of relatively small projects with a few large ones. Some years all the projects might be very important, but we might have as many as 10, 20 or 30 projects during the year in my division.

The records are kept in the department's office and I think there are lists of projects classified in some way as to subject matter, but I cannot answer definitely. The records are kept by Mr. Shepard.

125 For Development & Research of the A. T. & T., the men are recruited from the associated companies, long lines, universities and the Bell Laboratories. That has been

true as far back as I can remember. I don't recall ever having transferred any men from my division to Western Electric. Some of our men go to the Bell Laboratories. I am not certain whether any go to E. R. P. I. I think we lost one man to it or Graybar several years ago.

126 I am called upon occasionally to examine devices or processes covered by patents that are purchased by units of the Bell System,—Western Electric. We have not done any of that work, however, for some time. Our Patent Department might ask our views as to patents in question
127 and we would attempt as engineers to determine what value the system described in the patent would be to the Associated Companies. I have looked into the merits of patents of the Automatic Electric Company. We would examine the patents and get as good a picture as we could of the system described in the patents. We did not make any experiments. We also looked into patents of the Kellogg Switchboard & Supply Company, and we examined the merits of patents for the Western Electric coming from Herbert N. Friendly. We made an examination of the patents to determine whether the arrangements described therein would be of value to us in our work.

I think we were asked by our Patent Department for our views about certain patents of the Stromberg-Carlson Telephone Mfg. Co., and of the North Electric Company.

The Western Electric manufactured devices embodied
129 in patents that I examined, as above mentioned. For example, apparatus of the step by step type embraced in patents of the Automatic Electric Company relating to machine switching.

I did not attend any conferences in 1919 respecting the organization of Development & Research, A. T. & T. Work such as has been done by Development & Research, A. T. & T. since its organization was prior to that done by the Engineering Department, A. T. & T. The general plan of carrying on our development work was substantially the same as it is now.

My duties as equipment engineer prior to July, 1919, were the same as now, except that since July, 1919, I have had additional duties relating to central office and sub-station equipment. We look to the Bell Laboratories to determine that
130 a device found to be workable can be manufactured from a practical standpoint.

Mr. H. A. Appel is connected with Development & Research, A. T. & T. in the Transmission Development Division. Mr. O. B. Blackwell is head of the division. Mr. R. Bown is in the Transmission Development Division. Mr. G. A. Campbell is Research Engineer, Development & Research, A. T. & T. J. R. Carson is Transmission & Development Engineer. E. H. Colpitts is in the Development & Research; don't know G. Cirsson or H. C. Edgerton. L. Espenschied is in the Transmission Development Division; don't know J. O. Gorgon or A. Haddock; I think Mr. A. H. Nicolson was with the Bell Laboratories at one time. H. S. Osborne is with Operating & Engineering, A. T. & T. I don't know H. S. Read. H. B. Shreeve is with Development & Research; I don't recall K. S. Van Dyke. P. I. Wold formerly was with the Bell Laboratories and later with the Patent Department, A. T. & T.

131

132

There are no publications of Development & Research, A. T. & T. However, there is a Bell Telephone Quarterly and the Bell System Technical Journal, wherein articles written by engineers in Development & Research, A. T. & T. are published.

OTTO BERNARD BLACKWELL, a witness for the defendants:

138 *Direct Examination by Mr. Haight.*

I reside at Plandome, Long Island; I am Transmission Development Engineer, Development & Research Department, A. T. & T. and have been since the formation of that department in 1919. I attended no conferences at that time relative to the organization of that department. For a number of years prior to the organization of that department I was Transmission Engineer of the Engineering Department, A. T. & T.—from about 1914 or 1915. Before that I was just one of the engineers in the department, entering it in 1906, immediately upon graduating from Massachusetts Institute of Technology in 1906 with degree of bachelor of science in electrical engineering.

139

From 1906 until I became Transmission Engineer I was working on various jobs having to do with transmission

When I became Transmission Development Engineer of the Development & Research Department, A. T. & T. the work of the department I headed was divided and I only kept that part that came under Development & Research Department, the engineering work going over to Operation & Engineering Department, A. T. & T. The latter department has to do with advising the field, keeping in general touch with the field and advising them on the problems which arise in their work and on which they think they want advice. I have contact with that department as through them we get part of our information as to field conditions and needs. That department contacts us when some matter may be referred to them on which they want some advice from the development standpoint before replying.

The work of my division of the department of Development and Research covers generally transmission waves—waves and impulses which transmit communication. In the telephone field we are interested in the waves which are used in transmitting speech, starting with the formation of those waves by the talker, that is, the subscriber who is talking over the telephone circuit; in the transformation of those waves into corresponding electrical forms and as they go out over the various types of circuits and finally when they reach the receiving end, transformed into sound waves again and are listened to or observed by the listener. In connection
141 with other phases of communication like telegraph we are
interested in the transmission of the waves and impulses which carry the communication.

That work in the telephone field has to do with existing telephone apparatus, and with proposed apparatus. Some of
our work has to do with the apparatus used in the long
142 lines department. The same is true of new or proposed
new telephone apparatus. The same is true of telegraph apparatus.

I should say my work also has to do with operation as there is practically nothing done that affects the telephone business that does not have something to do with operation.

My division has to do with originating of new or pro-
143 posed new apparatus. Our ideas come from other sources
than our own division, such as associated companies who may feel a need in their work; from Operating & Engineering Department, A. T. & T., who may see a need for new

propositions; from the laboratories whose work may have
opened up possibilities which have not been seen before, and
they may come from our own work. So far as I know,
143 none comes from Western Electric. However, they may
indirectly through the laboratories, but I do not have
in mind any case that arose in the Western Electric as coming to us resulting in originating any work.

The men in my division are recruited largely from schools
and universities and teaching staffs of schools and universities and some from Associated Companies and one or
144 two from the laboratories. There have been cases where
we thought men with the experience that they had in the operating companies would be helpful to us in working out the particular phases of the work with which they had had experience. We surely would not have chosen men that we did not think had pretty good ability—ability, knowledge and experience.

My division has been interested in telephotography—in the transmission of impulses which correspond to the picture, as these impulses are transmitted over the circuits and also as they are handled in the apparatus at the terminals. That work has been going on four years at least, so far as it has been active. There is a system of telephotography in operation at the present time that connects eight or more of the important cities of the United States, so that messages delivered at any of these can be delivered at any of the
145 other eight cities. The long lines department operates
it in this part of the country. On the Pacific Coast it is operated by the Pacific Telephone & Telegraph Company.

Everything we do comes under the fields of telephony and telegraphy. Telephotography can be considered a form of telegraphy in many ways. In telephone work we are interested in many matters which you may not have in mind as telephone, as, for example, sound recorders, that is, devices by which sounds either right at the source of the sound or sounds which may be received over telephone circuits, are in some way recorded either on mechanical medium or on film or otherwise, so that these sounds can be later produced.

In testing circuits in the laboratory particularly, it is
146 necessary and it has been necessary in the past, to have
groups of men, crews we call them, who talk over these
circuits and then we have listeners who listen to these circuits,

and by recording various things, such as the judgment of the listeners as to loudness or recording the mistakes made by the listeners, we may judge the circuits. This has not been entirely satisfactory, because voices vary so much from time to time, so that we have in the last couple of years gone onto a system which is now in use involving what we call an artificial voice and ear proposition. Instead of a speaker it uses a phonograph record, and records can be produced entirely satisfactorily now. Of course they are always the same, so there is no variation, as is the case when we have human beings and this voice is sent out through devices which, for the purposes of talking into our instruments approximate the effect of the human mouth and we use that method in testing our circuits.

147 We have considered in quite a little detail and we have done quite a little work on a proposition that has arisen a number of times, which has in mind the use by subscribers of devices which record conversations, which go on over the telephone circuits they are using. That has not been used in the long lines. The only uses that I know of at the present time are in connection with certain power companies who are using it on, as I understand it, what they call their load dispatching circuits. It is my understanding that the control of the different stations supplying power is centered, for example, in some point, and if anything goes wrong, they want to be able to fix responsibility for the incorrect orders that may have been issued.

I have had nothing to do officially with electric phonographs for broadcasting stations. Some of our people make a particular point of keeping in contact with all the work that is done both inside and outside of the company, to see if there is any use that we can find for them in connection with our work or the work of the associated companies.

148 There are other cases of uses coming under those two categories but, so far as I can recall, the only two types of things for which we have considered these are recording in connection with telephone service and testing methods.

I have had no work to do with respect to the Victor Orthophonic Phonograph. I have had to do with television as we are interested in the transmission of the electrical impulses which correspond to the pictures as they are transmitted over the wire. Also in connection, for example, with demonstrations such as that which was made between New York and Washington on television, it was the people in my department who were responsible for the wire arrangements that were set up between New York and Washington and for the changes that were made in the lines to fit them to transmit these rather high frequencies. We have to distinguish between when it actively began and when there were ideas which were in the department because of either originating in the department or coming to us from outside. The active work on television was in comparatively recent years. I would estimate four years.

149 We kept in touch with every form of communication. Personally I have read articles and have had some interest in both picture and television, which grows out of pictures in a way, ever since I was in the telephone company as far as I can remember.

I cannot say definitely as to whether our division, up to
four or five years ago, did anything about television except
to read articles. It is almost certain that we did do a
150 certain amount of imagining or perhaps inventing. There
may be patents that go back that far. In keeping in
contact with these outside possibilities we always consider
whether they have any application and it is not possible to
determine whether they have some application without making
some sort of a study but I think that our studies were,
so far as I remember, not particularly formal prior to that
time. I am not sure about that. It may very well be that we
have in our files activities going back quite a bit prior to that
date.

I do not remember any experimentation with television
going back more than four or five years. Television was first
used two or three years ago. Of course, the Washington
demonstration was a demonstration of a system that had
necessarily taken a considerable while to devise and construct.
I do not know how many years. That apparatus gets
151 back into the laboratory work and what they may have
had there I don't know. That came under Mr. Arnold in
the laboratories. I had contact with Mr. Arnold's work in
the laboratory ever since he has been in charge of the work
up there.

As far as my memory goes, that work on television had not reached the stage, either down here or in the laboratories, where it had resulted in our discussing it with Dr. Arnold formally until about the date that I mention it as being an active matter, four or five years ago.

152 I have no distinct memory of informal discussions with Dr. Arnold. The only work that we have done on it prior to those discussions was a general matter of keeping in contact with all communication matters. I have no remembrance of any contact with any one relating to television prior to this time four or five years ago.

As to whether there are any records, if there had been anything that resulted in any formal contact, it may have resulted in a letter. If so, that would be in our files.

153 In our division we have a work classification at the present time which we use and each of our people keeps a record of the amount of time he spends each day on each of those classifications. These records are by years. We do not classify them by projects. In times past we had work orders somewhat similar to the laboratory work orders. That was changed about five or six years ago. I don't know how long that system existed prior to five or six years ago. Such records as I have made are still in existence, so far as I know. Mr. Shepard or his department has them.

154 My division has done work upon radio, two types of work. Certain work has had to do with the stations themselves in so far as radio has led to stations; certain work has had to do with the question of starting the various radio cases, the originating of the cases, the authorizing of the cases which are similar, of course, to what we do in connection with other matters.

Undoubtedly our people have developed inventions concerning radio. I think an invention was made by one of our people on what we call the single side band system of radio transmission.

I believe there have been antenna inventions which our people have made.

Mr. H. A. Apfel is in my division. He has made a good many inventions, but I don't know of any inventions he made relating to radio.

I am a joint inventor of a system for controlling carrier or a standard frequency.

155 I know Mr. R. Bown. He is connected with my division. I don't know of any inventions that he made. He

has been working on radios many years, but I don't have in mind the invention. I don't think any research work was done on his inventions. My invention or joint invention was limited to a radio wave—a standard radio wave which was received by radio stations, used as a basis. There has been work done on stabilizing radio stations by transmitted waves. I believe, however, that that comes under other inven-
156 tions. It would be a patent matter as to whether my particular invention or some others bore on the particular systems. There has been work, however, on stabilizing radio channels by transmitted waves, transmitted standard frequency.

I don't remember who the other joint inventor of my invention was. He was in my division. I think the invention was made seven or eight years ago, I am not sure about that.

I know G. A. Campbell who made the filter invention and antennae array invention. On filters there has been a good deal of experimental work done. We did not do the experimental work on filters other than in the sense that when the development involving them gets out into the field, we take a part in the practical tryout, but I think what you have in mind is the laboratory function.

157 J. R. Carson is in my division in charge of a small group who do theoretical work largely, mostly mathematical; he has made the invention relating to radio—single side band method of transmission. I think he did some work on selective circuits, but I have no definite remembrance of any other invention of his.

There are about 125 men in my division. We have hired no men in the last year or two. I think we have lost one or two, perhaps three. I cannot definitely state whether the number has been larger than at the present time, perhaps one or two.

Mr. Colpitts is in general charge of Development & Research Department, A. T. & T. under Mr. Jewett. He has made inventions relating to radio but there was no re-
158 search work in my division respecting those inventions. His invention was a modulating circuit and the research work was done in the laboratories regarding that. That is the only invention of his I recall.

Mr. Espenschied is in my division and he has made a good many inventions. I don't recall any at the present time. I would have to refresh my memory as to what development work was done respecting his inventions.

159 When inventions are made in my division I frequently have something to do with transmitting information respecting them to the Patent Department. However, they don't always come through me, they might go directly to the Patent Department, but they usually come to me for transmission in the form of a memorandum stating what the idea is. I do not personally keep copies of those memorandums but they are kept in the files of the general department, not of my division.

We have no records at the present time which I would say was a project record. Each case that is sent to the laboratories and authorized to go forward is covered by a letter and a copy of that letter is in our general files and then we have reports which our people make from time to time of the work that they are doing in different classifications; also, 160 many of those go into the general files but we have not a case classification, a project classification such as laboratories have.

We have records of everything of any size that go to the laboratories from my division. Projects or work performed in my division that do not go to the laboratories generally leads to bulletins for the field, and we have lists of such bulletins.

Our fellows have ideas that are turned down before they reach the stage of being sent to the laboratories. Some of our patents cover matters that have not resulted in 161 practical apparatus, but there is no attempt to keep a record of dead ideas. There is no record or list of all the projects that have been worked on in my division. The only list we have is this work classification which goes down in some of the divisions to fairly small matters, but below that point we do not go into individual projects. When we had some of these work orders, I don't know whether they were listed; I assume they were. All records are kept by Mr Shepard.

Our expenses are budgeted somewhat prior to the be- 162 ginning of each year. Our work is not budgeted. The work classification is the basis for that budget. The budget includes a number of factors. The first and the chief factor, of course, covers the men's time and on that Mr. Shepard sends to us sheets on which he asks us to put down for these various classifications the expenditures we would expect under those classifications for the following year. He also asks for any estimates that we can make as to billings in connection with experimental work, but the big item is the men's time.

I don't know that I said anything about sound pictures. We have done no work on sound pictures. I am talking about my department now. Of course some use has been made of sound pictures by our publicity people, but there has nothing been done in my department on sound pictures whatsoever.

My division had to do with the development of some
163 of the principles upon which sound pictures are made.

Loud speakers are an important part of sound pictures and loud speakers have been a matter in which we have been interested. Our work on loud speakers in my division has been with respect to their application in the telephone service. In connection with loud speakers we had the same responsibilities that we had in connection with other matters in attempting to see what use they had in the Bell System and in the authorization of certain work by the laboratories on them. Our department has been interested in various demonstrations in which we have been responsible for the loud speaker phases of the demonstrations.

My contact with sound pictures has been largely in connection with hearing demonstrations of sound pictures and there have been loud speakers used in all those demonstrations, so far as I can recall, that I have ever listened to.

164 I had nothing whatever to do with the principles on which the Victor Orthophonic phonograph is based. The Orthophonic Victrola has nothing to do with telephony. I don't have in mind any work which we authorized which bore on the phonograph proposition which led into that orthophonic victrola.

165 I do not doubt that I employ the word "principles" frequently, but it is not a word that has any narrow meaning or any specific meaning. What we mean by it is generally shown by the context of the statement in which we use it.

As to whether there is any principle in any sense that I might employ the word used in telephony, I might say that electro magnetism was a principle used in telephony. It
166 is employed in telegraphy, in radio, and in certain types

of phonographs which we worked upon, that the laboratories have worked on at our request.

The phonograph itself was a mechanical phonograph
167 in which certain refinements had been made in connec-
tion with the reproducing apparatus. I do not know what you can put your finger on and say that was the principle of it.

Neither the A. T. & T. nor any of its departments supplied anything to the Victor Orthophonic Phonograph directly. The recording used electro-magnetic waves and there may have been some indirect contribution from the fact that we use transmitted speech in telephony and this recording used transmission of speech. I don't know whether the Victor Company has any arrangement with the A. T. & T. or any subsidiary of it.

There is nothing in my division that we know of as by-products. I have heard the word by-products used in con-
nection with some of the devices that are sold by the
168 Electrical Research Products Corporation. Our only
contact with them is that we make it a rule—some of our people make it a rule to keep in contact with every new device of that kind that is put out in order to determine whether there is anything there that might find a use in our work or in the Associated Companies' work. That is the only contact we have with the by-products. So far, however, as recording apparatus and loud speakers and some of these other matters you have mentioned, as I recall them, having a field of application in the Bell System, we are very much interested in them.

As to which one of the by-products I have had anything to do with in any wise, you have indicated the phonograph. I should say they are not by-products in so far as we are interested in them, but we are interested in voice recording, loud speakers or pick-up transmitters or transmitters in gen-
eral. Those are the three things I have in mind.

169 As to any other by-products with which I have had
to do, I would mention deaf sets to help subscribers who may be hard of hearing. Of course in voice recording I include voice recording and voice reproduction.

I only know what E. R. P. I. puts out by the fact that I see some of their products. Its largest production is on motion picture talking devices and sells phonograph devices of various kinds for certain purposes. I have come in contact with its deaf set apparatus. That is all I recall now. The talking moving picture apparatus was worked upon in the laboratories or at that time the Engineering Department of Western Electric. My division contributed nothing to that direct. If there has been any contribution it has been 170 through the fact that we have contributed to the general telephone art. We have contributed to the general matter of better quality service, better quality telephone service and to what extent the laboratories may have drawn on anything that we may have contributed I haven't any information. We have been responsible for inaugurating certain work and I think undoubtedly some of our people have contributed definite features on amplifying devices.

171 In the application of amplifiers to a telephone plant there are many circuit arrangements and adjustments that have to be made. Our people have contributed a good deal in connection with those matters. For example, the matter of balancing lines which is an integral part of every repeater, I guess practically every repeater we have. Our people I know have contributed a number of inventions in connection with filters, electrical filters which are playing an important part in our telephone service in connection with carrier, radio, and such matters.

I do not have in mind any single instance where any invention arising in my department was used or embodied in any of the by-products.

The contribution of amplifying devices to talking motion pictures was of considerable importance. As I understand the talking motion picture, the recording as it is taken off of the film is amplified considerably before it is used to actuate the speaking devices.

172 My division had to do with repeaters. We have had to do, first, with the originating of many of the cases, many of the developments that have been carried out and we have had to do a good deal with the application of these repeaters in the plant. We have had to do with the writing of bulletins to furnish information so that the Associated Companies could use these repeaters to the best advantage in their plants.

The particular case of developing a hearing aid for telephone users, the general case was handled by the equipment people, but we acted as consultants with them and with the laboratories on the amplifying device that is used in connection with it. The stethoscope was not one of the hearing aids nor were audiophones.

My division has had to do with testing apparatus for submarine cables. There has been work giving a great deal of attention in the last few years to a telephone cable to Europe to permit a telephone circuit all wire from the United
173 States to Europe. In connection with that work there have been tests carried out of various features, such as noise, for example, on experimental cables. There have been tests carried out in the laboratories on artificial cables. We have been, of course, interested in all of those.

My people have not had any large part to do with the particular testing apparatus used, although they may have suggested some features of it and then kept in general
174 contact with it. My people have used such testing apparatus on the cable from the United States to Cuba. Other tests I have in mind were almost completely made by laboratory men.

There are a good many things which the Bell Telephone Laboratories or the Western Electric has developed in the telephone field as a result of work in my division. By telephone field I mean the business of the Associated Companies.

175 Most of the work that I have connection with is too complicated to permit you to put your finger on one part of it and say that that is the thing that led to a certain result. In every case there are a lot of contributors to this thing, and furthermore, these various contributions are so many that they become submerged, in general, in our consideration of a thing, and we do not think of these things as being John Smith's thing or somebody else's thing. But my department has contributed undoubtedly, surely, to every big job which the department has had contact with. For example, long cable circuits, including what we call four-wire cable circuits, application of repeaters to open wire plant, carrier telephony and telegraphy, in both open wires and cables, sub-station apparatus, program transmission over telephone circuits. In each of these cases, you will understand I am not mentioning them because in all I have in mind a specific element con-

tributed by a particular man in my department, but because they are all the big matters on which they have been actively employed. I think we can go ahead with the list.

176 Radio, telegraph, echo suppressors, automatic gain control devices, telephone and telegraph testing apparatus. These include, of course, repeaters that we have mentioned as parts of them. I think that covers the thing broadly. Of course we could break such matters as long cable systems down to parts and enumerate some of these parts.

I would also include telephotography. Television, however, is not in commercial use; also I would include voice recorders, but I think our people have contributed some thoughts to that. As to whether I would include talking pictures, I would say that is much less likely as our inventions are more likely to come from the question of the application.

In the voice recorder I should imagine our suggestions or our inventions would come in the applications which have been considered rather than in the physical recording or physical reproducing itself and it seems to me unlikely that any suggestion that has come from our people has gotten through in the talking motion pictures.

177 The thing I definitely have in mind with respect to amplifiers are the application devices which fits them into the telephone system, that is, the artificial line arrangements and the filtering arrangements. Stripped of these application devices, that is, the pure amplifier, as such, is almost wholly a laboratory proposition. Now it may very well be that some of our people have made suggestions that have helped in connection with such amplifiers, but the amplifying device itself is pretty largely, almost wholly, so far as I now definitely have in mind, a laboratory development.

We have used what I assume you call public address systems in various ways, and it may be that some of our people have made suggestions in connection with that. I have not in mind at the present time anything that definitely is incorporated as a feature in public address systems.

As to the records in my department of work done, we
178 have not gone below the classification. Radio, of course, is a main classification, but under "radio" you will find sub-classifications, such, for example, as "ship-to-shore" and "trans-Atlantic" and a number of classifications of that kind.

Below that, however, we do not go with a definite routine.
The individual job, as I understand it, would be covered by
correspondence. There is always a definite organization
179 letter for that to the laboratories. There is no formal
list of cases below these divisions that I use.

Mr. Blackman: There is a sheet made up every month and
summarized every year of the expenditures of the Depart-
ment of Development and Research, which divides the work
into 19 main divisions and each of those divisions is divided
into two or three subdivisions, which will give you the work
broken down into more than a hundred different classes. For
instance, take "radio," there are probably, as I recollect it,
ten or a dozen divisions of radio, as Mr. Blackwell stated,
such as "ship-to-shore," and this, that and the other
180 thing, under radio. Now, I have some of those sheets and
I have had one or two of them enlarged, because they
are made very fine and are hard to read. If you would like
those sheets, I would be glad to let you see them.

We have given to Mr. Wray some books that contain
181 lists of projects, I think they are by number.

Mr. Blackman: You can have anything that does not disclose certain matters that we are working on at the present time. Of course, Mr. Haight, as a patent attorney, will understand that matters that we have in mind at the present time, we do not desire to announce to the world, what we are working on.

Mr. Haight: And we do not wish to pry into those matters at all.

Mr. Blackman. We will be glad to give you a list of all the projects except those, and any book that contains no project of that kind, we will give to you, and if a book contains a project of that kind we will take it out and indicate that we have taken out the project, because it was of that character.

Mr. Goldstein: Will those that you take out cover all the activities of Electrical Research Products?

Mr. Blackman: I don't know what they are working on.

(Discussion off the record.)

Mr. Blackman: Where we have a number of dollars (I heard you mention that to Mr. Haight), where we have a number of dollars spent each year, we break that down into some subdivision.

Mr. Goldstein: The number of dollars you spent in each department, have you got those covered in those projects?

Mr. Blackman: Not for Mr. Blackwell's department, but we have it for the whole D. & R. Department.

The Witness: There is no separate budget for my division, and I am surprised if Mr. Morehouse testified 182 that he had. There is no budget by divisions in my department. In making up the departmental budget, we furnish Mr. Shepard an estimate of how much money we think we shall want to spend in each of the classifications and it goes down to sub-classifications,—in each of those sub-classifications, we advise how much we shall want to spend, but we don't go below those classifications.

DR. FRANK B. JEWETT, for the defendants:

184 *Direct Examination by Mr. Haight.*

I reside at Shore Hills, New Jersey. I am vice-president of the A. T. & T. and president of Bell Telephone Laboratories, Inc.

I was graduated in 1898 from Throop Polytechnic Institute of Pasadena, now the California Institute of Technology, with the degree of Bachelor of Arts in Electrical Engineering. I received the degree of Doctor of Philosophy from the University of Chicago, in physics, in 1902, and was research assistant under Prof. A. A. Michelson; that was in 1901 and 1902.

185 I was instructor in physics and electrical engineering in the Massachusetts Institute of Technology from 1902 to 1904.

I entered the employ of the Engineering Department of the A. T. & T. in fall of 1904, but a year or so subsequent to entering that employ I became transmission and protection engineer of A. T. & T., which position I held until spring of 1912, when I became assistant chief engineer of Western Electric; I became chief engineer of Western Electric in 1916; its operating vice-president in 1922 and in 1925 I was transferred to my present position.

The Development & Research Department of the A. T. &

T. was organized about middle of 1919, but I am not very clear on that because I was not with the A. T. & T. at that time.

186 From 1907 on, all the laboratory work of development and research for the Bell System was carried on in the Western Electric in its Engineering Department and that was substantially of the same nature as those which are now carried on by Bell Telephone Laboratories, which is merely an outgrowth of the Engineering Department of Western Electric.

The Western Electric carried on in its engineering department all of the physical development on the problems which were presented to it by the Engineering Department, A. T. & T. and in addition it carried on, on its own behalf, such problems—the research and development of such problems as had to do with articles of its own manufacture, in which the American T. & T. and the associate companies were possibly only indirectly interested. By that I mean research and development to cheapen the cost of apparatus which was then standard, which kind of work could be undertaken by a manufacturing department without reference to its customers, provided it did not change the character of the apparatus to be furnished. It undertook fundamental research work at the instance, largely, of the American Company looking to the development of new, fundamental information which was applicable in the telephone business. It undertook the de-
187 velopment of new central office and substation apparatus
and equipment and the circuits which were used in the telephone and telegraph business and it investigated materials which were employed in the construction of that kind of apparatus. It investigated such things as cable structures, telephone cable structures; in fact, it undertook research and development work on the physical side in everything which pertained to the communication business.

That would include such subjects as transmission equipment in so far as it related to physical things as distinguished from the operational types of investigations which had to do with the use of things. Western Electric during those years substantially did not do any work of the character done now by the Development & Research Department, A. T. & T. From 1907 on, work of that type has always been done in either the

Department of Development & Research or in its predecessor, the Engineering Department, A. T. & T.

188 Prior to 1907 the set-up in the Bell System was somewhat different. The American Company had laboratories of its own in Boston and the Western Electric Company, the manufacturing part of the Bell System, had laboratories both in New York and in Chicago, and in those laboratories it conducted somewhat in parallel some of the work or work of a similar character to that which was done in Boston, but in 1907 at the time the Engineering Department of the American Company was removed from Boston to New York, the whole scheme of research and development work in the Bell System was reorganized and all of the physical or laboratory work was concentrated in a single laboratory in the Western Electric's Engineering Department in New York and all of that part of the work which related to contact with the associate companies on the development of new things or in the study of fundamentals from a theoretical standpoint was concentrated in the Engineering Department, A. T. & T.

It would not be exactly true to say that the Engineering Department, A. T. & T. took over in 1907 the Development & Research functions theretofore performed by Western Electric.

It retained all of the functions which it had had for many years prior to that, but did take over that part of a similar work which had been done in the earlier days in the Western Electric.

189 In the very early days the associate companies were in direct contact, with regard to new things, with the Western Electric as well as with the American Company with the result that there was a certain amount of development work on physical apparatus which was carried on by the Western Electric as a result of its direct contact with the associate companies without much reference to the American Company, but about 1907 it had become evident that the best interests of all the associate companies would be served by concentrating the consideration of new things so as best to serve all of the interests, including the Western Electric, which by that time had gotten into the position where it was manufacturing a wide variety of things, almost identical, but not quite, because of the different way in which the require-

ments had come up to it.

A large part of the problems going to the Western Electric then came to it from the Engineering Department, A. T. & T. That goes far back of the time when I first came into the business, but I should imagine from the early times a large part of it went directly to it from the A. T. & T. Prior to 1919 the A. T. & T.'s problems from long lines and from Bell subsidiaries went to Western Electric for solution through the Engineering Department, A. T. & T.

190 I might qualify that to this extent, that with regard to specific orders for equipment, if there were minor problems involving variations from standard equipment, those might appear first in the Western Electric because they were the recipients of the orders, but the solution of those problems even at the time you are mentioning involved consideration by the Engineering Department, A. T. & T.

The Bell Laboratories, Inc., was organized at the beginning of the year 1925. Broadly, it carries on all of the work which prior to January 1, 1925, was carried on by the Engineering Department of Western Electric, and it conducts the Research and Engineering work for the Bell System as a whole, including the A. T. & T. and the Western Electric.

191 The Department of Development & Research, A. T. & T. is charged with the responsibility, the primary responsibility for the Bell System for providing new and improved things or methods for the Bell System. In carrying out that work it is charged with the responsibility of studying the needs of the associate companies as those needs develop through their growth and the growth of their business. It is charged with the responsibility of keeping in touch with the progress of science and engineering generally, not only in the Bell System, but throughout the world, and where physical things are required, of formulating the requirements to be submitted to the Bell Telephone Laboratories for solution in the laboratories. The Department of Development and Research maintains no laboratories. It is charged further with the responsibility of keeping in touch with the development work as it goes on in the laboratories and at the conclusion of a development project, specifying whatever service tests may be required and finally of approving of the thing which has been developed, to meet the requirements that have been

set up, and when it has approved those things, of doing the necessary acts to make them standard in the Bell System and of furnishing to the associate companies, through the Department of Operation and Engineering, all necessary 192 information which will permit the associate companies and the Long Lines to order this equipment and to operate it when it has been installed.

The new and improved things that I mentioned include new and improved things for all parts of the Bell System. The new and improved things that are finally approved, if they involve physical things, find their way into the Western Electric either for manufacture or for supply. Some of the things involve physical things which the Western Electric does not itself manufacture, but which it does supply to the associate companies on orde~~r. An~~ example of that is power machinery. The Western Electric does not manufacture power machinery, but it does supply power machinery to the operating units of the Bell System.

Development & Research Department, A. T. & T. has nothing whatever to do with originating ideas in relation to so-called by-products. The ideas that are developed by Development & Research Department, A. T. & T. come from the 193 world of science and engineering generally. They come from common knowledge which is derived from publication of scientific work or the less common knowledge which comes through the contact which we maintain with operating communication units throughout the world or with scientific laboratories throughout the world. They come from the needs of the operating units of the Bell System as the need for new things develop and we learn of them either through our direct contacts with the operating units or more generally through the Department of Operation & Engineering, which is in very intimate contact with the associate companies. They come also from the general knowledge of the telephone business which the members of the Department of Development & Research, who are acquainted with all phases of the physical side of these things; they come also from the new knowledge which is developed through the physical research work in the Bell Telephone Laboratories itself, which new knowledge very frequently suggests new applications or new methods of applying knowledge to old things. I think those, in general, are the main sources of the problems as they develop in the Development & Research.

For the most part the men in Development & Research Department, A. T. & T. are, and probably to a larger extent than
in almost any other department of the system, college or
technical school graduates. They are trained scientists
194 or engineers. Some of them come direct from selection
from graduates, from the great universities and technical
schools, who have entered the department immediately on
graduation either with their baccalaureate degree or their
advanced degrees. Some of them have come from the other
departments of the business. The operating companies—operating units and I think in some cases a few have come
from the laboratories. In all cases, however, they are men
who are selected because of special qualifications for the kind
of work which has to be done here.

In general, except for the men who come directly out of college, they are men who have had training and experience in some particular line.

195 I doubt if there is any single place where you could say that you could get the most information of the development work of the Bell System over the past. The system is too vast, and the kind of things are too diverse to be assembled in a single repository. You must realize that you are dealing with an organization involving hundreds of thousands of people engaged in all kinds of problems. So far as the physical needs are concerned, knowledge relating to the underlying principles and to the structure of those things I presume you could find most of them in the Department of Development & Research and the Bell Laboratories. When you come to operational methods and things having to do with the daily conduct of the business, I presume that the Department of Operation & Engineering, A. T. & T. would be as good a repository as you could find. When you come
to matters of detail of constructing the physical things, it
would be the Western Electric. But there is no central
196 repository in which we attempt to concentrate the es-
sence of our knowledge of this business.

In general, E. R. P. I. handles the kind of things which you referred to as by-products, the things which are not directly a part of the operational functions of the Bell System as a communication company, such things as talking motion pictures and odds and ends of physical equipment which have a use both in and out of the communication business, and I think they handle also the relations with organizations in and out of the United States, on certain things in the communication field, such as submarine telegraph cables. That is not quite a by-product in the sense that I first defined it,—it is in the communication field, but it relates to business which is not particularly of the United States.

E. R. P. I. handles also phonograph recording apparatus
in so far as it relates to the use of that type of equipment out-
side the Bell System. I think Graybar handles public
197 address systems. That is really communication appa-
ratus, the kind which is used largely by the associated
companies, but it has a use outside of the operation com-
panies.

I don't know about the details of E. R. P. I.'s handling electrical phonographs for theaters or for broadcasting stations. E. R. P. I. also handles picture transmission apparatus at different times in so far as it is related to sound pictures. I think they handle nothing connected with straight motion pictures.

E. R. P. I. also handles cathode ray oscillographs, which is
a measuring tool, and it has some utility wherever it is de-
sirable to examine the character of alternating current cir-
cuits, college and university laboratories and other electrical
laboratories. It may be handled, however, by Graybar, but
it is a by-product type of thing which may be handled
198 by E. R. P. I.

Telephotography is used wholly within the Bell System and it is of relatively small use.

Television is not a practical thing. It is still very much in the development stage.

I do not think E. R. P. I. handles radio. I think that is done
through Graybar. Graybar handles the vending of communi-
cation apparatus in a non-Bell field. For instance, telephone
cable as used by railroads is handled through Graybar. Deaf
set apparatus is handled through Graybar. The small
199 amount of interest which we have in radio through broad-
cast transmitting sets we have handled through Graybar,
and I think the public address sales are through Graybar.

I know of no by-products, things which have come out of our general work in the broad field of communication but which are not of a communication nature, which are handled through Graybar.

The Department of Development & Research has been interested in the development of vacuum tubes and their application, in the sense that vacuum tubes are a very powerful and valuable tool in the communication business, but as I have indicated before, the Department of Development & Research, having no laboratories, its interest in the development of vacuum tubes and the things in which vacuum tubes can be used is not in a position, nor does it do physical work looking to the development of those things. But many of these by-products which we have been referring to, do involve vacuum tubes, and in the sense that the Department of Development & Research has had an interest in the proper
development of vacuum tubes, to that extent you might
200 say they are involved in the by-products.

The vacuum tube because it is inherently based on physical principles which make possible enormous amplification without distortion, is at the heart of all amplifying devices, and distortionless amplifying devices have made possible loud speaking telephones such as are used in public address systems, and more recently in talking motion pictures.

Talking motion pictures, as a matter of fact, in the sense that we now know them, were an impossibility until a satisfactory loud speaking telephone came into the picture. Most people I think have an idea that the problem was a problem of synchronization of sight and sound. Actually the problem was primarily a problem of the loud speaking telephone to get a sound which was comparable with the sight which one got through one's eyes. In the very early days of experimentation, years and years ago, on so-called talking motion pictures, you might have a life-sized picture but a miniature voice, so that it would fail to give the sense of reality which is required for successful talking motion pictures. Now, the
success, whatever success there is in the present talking
201 motion pictures, in the last analysis, goes back to the
character of the amplifying device and the loud speaking telephone and also to the character of the record which starts

the energy through the train.

The idea of the telephone repeater as a useful tool in the telephone art is almost as old as the telephone itself. It involved the idea of revivifying weakened current from a local source of energy and doing it without distorting the thing which you amplified. Until the vacuum tube appeared in the field of our scientific knowledge as a distortionless instrument, all of the attempts to make telephone repeaters were confronted with the difficulty of this distortion characteristic. All of the early attempts, and they were in some cases fairly successful, because of the extreme ingenuity of the men who worked on them, involved essentially the
202 principle of an ordinary telephone receiver actuating what was, in effect, an ordinary telephone transmitter, which was supplied by local energy, but the best of those instruments all introduced a considerable amount of distortion, so that while you could amplify the energy on the far side of the telephone repeater, the character of the current, of this amplified current, was not a mirrored image of the thing which was put in at the initiating side.

When the present thing which we call the vacuum tubes came in the pictures, as a result of scientific research the picture changed, because there was given into our hands the embryo of a device, which could produce as much energy as we wished to employ without substantially affecting the character of the currents which we put in to control it and consequently it became possible to begin real constructive work on the development of telephone repeaters, which would do one of two things. Either they would very greatly extend the range of circuits of an existing character by revivifying energy as it became too small to be usefully employed or, conversely, they provided us with the means of reaching between two more or less distant points with smaller and cheaper types of physical connecting circuits. Now, that same characteristic which was so valuable in the telephone repeater art and which has made possible such a wide extension of local and long distance telephony is identically the prin-
203 ciple which is required in much of what is known as radio transmission, both at the transmitting station and at the receiving station. At the transmitting station this ability to amplify without distortion, and another characteristic which

the vacuum tube has of permitting you to mix things together, to modulate one kind of current by another kind of current, finds its use in taking very weak currents and raising them to the enormous powers which are required at the sending station; at the receiving station, as we all know from the radio sets we have in our houses, which enables us to take infinitesimal small amounts of energy and control considerable sources of local energy whether from batteries or electric light circuits and produce through the loud speaking telephone a sound which can be heard by one or many people and which is substantially the same sound which was spoken into the transmitter at the distant transmitting station.

Telephone and long distance lines are used in broadcasting in two general ways,—they are used in what are known as pick-up circuits, namely, the circuits which connect the place of origin of the thing to be broadcast with the transmitting station,—a banquet in some hotel is to be broadcast, the sound of the speaker's voice is picked up by a special 204 high quality microphone and, if necessary, is amplified to whatever level you want at that point, and is then transmitted over telephone wires to the central studio of the broadcast station, where it is amplified—if it is a broadcast station, it is amplified to the desired degree and put out into space through the antenna. Every pick-up which is distant from the broadcasting studio itself is conducted over wires of the telephone plant.

The telephone plant is used also to connect the studio if it is remote from the transmitting antenna itself, with the transmitting plant. Then in addition to that, modern broadcasting, which we all know, involves frequently chains of stations, broadcasting stations on the same or different wave lengths scattered over the length and breadth of the land and telephone circuits are used to connect all of the transmitting stations into a common distributing point.

The Western Electric manufactures equipment used in connection with radio which is used in the Bell System for transmitting or receiving telephonic speech by radio. It also manufactures and sells the transmitting equipment for broadcasting stations. One other thing, it manufactures and 205 sells to the United States Government and to the other departments of political government, radio equipment.

It does not manufacture radio broadcast receiving sets for the home.

So far as the Bell System is concerned, the Western Electris sells direct just as it does any other kind of equipment. Broadcasting transmitting equipment is sold through Graybar.

The sale of this type of equipment—communication equipment through Graybar, is the natural outgrowth inherent in the history of the Graybar Company itself, the Graybar Company having been originally the non-associate part of the Western Electric. Originally these things, before Graybar was formed, were sold by the non-associate part of the Western Electric Company.

Western Electric sells none abroad and I do not think it
manufactures for sale abroad. It is barely possible that the
International Standards Company may occasionally or-
206 der something from the Western Electric, but the West-
ern does not sell abroad in the sense of dealing with
the ultimate consumer. Certain of the equipment which has been used at the distant terminals of telephone circuits, which radiate from the Bell System in the United States, has been manufactured by the Western Electric.

New apparatus or improvements in apparatus or inventions or processes contributed by Development & Research
since the beginning of 1923 include many of the things that
have gone into the more recent developments of new
207 central office equipment or the bettering of the older art.

The same applies to sub-station equipment, for example, such things as the hand set which has come into quite common use in that period. The development of all forms of repeaters for both voice frequency circuits and carrier current telephone and telegraph circuits. Equipment in the field of telegraphy, particularly in connection with the machines, the printing machines which are used on telegraph circuits; the switchboards which are involved in the newer forms of the switching telegraph circuits. Types of telephone cable, either to provide larger numbers of circuits within a given sheath diameter or circuits of a special character; devices to ameliorate the objectionable effects of interference of one sort or another; radio equipment in so far as it is designed to improve the possibilities of utilizing radio, such things as electrical filter devices which were needed to give improved transmission through apparatus or other circuits. There are probably a lot of other things that I do not happen to remember.

208 The two groups, the Department of Development & Research, A. T. & T. report to me as the vice-president of the A. T. & T. The Bell Telephone Laboratories report to me as its president. They are essentially part and parcel of a single organization in which there are no overlapping functions but co-ordinated functions. Primarily, the work of Development & Research is to formulate the problem which has to be solved physically in so far as it relates to the business of the Bell System. In doing that it studies every condition that it can find which has a bearing on the formulation of those requirements. If the problem is one that arises out of the developing needs of the associated companies, it seeks its basic information very largely in the requirements which give rise to that need. It may be that the problem,—it may be a specific case arises from a stated need in some one associate company. Two things are done either directly by the Department of Development & Research or indirectly through the Department of Operation and Engineering, first the specific need at the point of origin is studied, and second, 209 the whole field of the Bell System is surveyed to determine whether similar needs, possibly not identical, exist throughout the system, all with a view to having whatever is done as generally applicable as possible. In addition to determining through its own knowledge, the knowledge of its people and through contact with other departments of A. T. & T., its preliminary consultation with the laboratory people and, if need be, with the Western Electric, to the extent that contact is through the laboratories, attempts to find out by their studying the requirements whether there are physical limitations to the probable accomplishment of its desires. Having formulated finally the problem to be solved and having satisfied itself that the problem is one which can be solved and which should be solved, it then states the requirements for physical things to the laboratories in what you might call a form of a specification. The laboratories then takes it —it becomes the sailing directions for the laboratories' organization which has the physical plant, to carry on the ex-

periments, and they proceed from that point to develop the
physical things which meet the requirements of the user and
in carrying out their part of the [illegible] the laboratories make
use of all the machinery w[illegible]heir disposal in-
210 cluding their ability to con[illegible] Department of
Development & Research an[illegible] to contact with
the Western Electric which, if it [illegible] thing, will ulti-
mately have to be manufactured by [illegible] the end that
when they get through with their part of [illegible] job, the answer
will meet two conditions, first it will meet the condition of
service as outlined through the Department of Development
& Research and, second, that it will meet the condition of
being susceptible of manufacture.

The expenses of operating in the Bell Telephone Laboratories, Inc., are charged in general to cases which are taken out to cover specific things which are undertaken. The expenses of operating the laboratories are paid by its three customers; they are the A. T. & T., Western Electric or E. R. P. I.

By specific authorization generally in advance of the un-
dertaking of the work from the party to whom the ultimate
bill is to be rendered, it is determined which of the three
211 should pay. The laboratory is run at no profit and at
no loss. The expense which is incurred by the labora-
tories is made up of these parts: The actual salaries or wages
of the employes, the cost of material which is used or equip-
ment which is purchased and which is specifically allocable to
definite cases is charged to those cases. The general ex-
penses of administration and the corporate expenses are
covered by loadings which are applied to the direct expenses
which are allocable to the work which is done, so that at the
end of the year the total out of pocket expense of the labora-
tories from every cause is covered through the billings to
one or the other of those three people.

There are really three kinds of loadings which appear in
the making of the cost. One is a departmental loading which
takes care of the salaries and expenses of administra-
212 tion within the division of the laboratory itself which
cannot be very well allocated specifically to jobs. Then
there is the commercial loading which is the cost of general
administration within the laboratories, the charge for the

cost of the plant which is employed, stenographic services, heat, light, water and what not that are common facilities that are provided to everybody and finally there are the corporate,—what you might call the corporate loadings, taxes, etc., those general expenses which are a part of the whole thing. Those things are apportioned to the different departments and through the departmental loadings become loadings on the individual kinds of work as far as possible, in proportion to the values or to the benefits of each kind of work in participation in the whole.

What I had in mind when I made that statement was this: In the Bell Telephone Laboratories we have a group which is essentially a manufacturing group. All the vacuum tubes which are used in any part of the Bell System organiza-
213 tion are manufactured in the laboratories. That is because
being very new and as yet a somewhat unknown kind of thing, that type of manufacture has to be carried on very closely in contact with the research people, but in figuring the cost of jobs in what we call our tube shop, the loadings there are not the loadings of the group which is working as research people on vacuum tubes. It is a lower—when the plant is running at full capacity it is a lower loading in so far as general administration is concerned. In times like this, when that particular manufacturing operation is at a relatively low ebb, this departmental loading, which results from a large amount of equipment which is devoted wholly and solely to that, may be somewhat high, higher than it was a couple of years ago, but that function is performed as nearly as we can in an organization like ours as though it were a manufacturing rather than a research and development organization.

Any vacuum tubes that are used in connection with the business of E. R. P. I. are manufactured in this same tube shop. All of the tubes which are employed by any part or portion of our business are manufactured in that place
214 and that place only. The vacuum tubes which may be
used by E. R. P. I. are manufactured on order from Western Electric.

The loadings are apportioned, as best we can, over the activities of the laboratories for the character of the work which they do. In so far as there is variation,—as there may be variations in the loadings of this department as compared with that department, then that portion will be reflected in the billings to the customer. Take an extreme and absurd example of two departments where for some reason the loadings are somewhat different, and assuming that all of the work of one department is for one customer and all the work of the other department is for another customer, then the loadings would be different as between the customers, but if the work is distributed roughly over the entire group, then each customer gets its share of the loadings in proportion to the amount of work which it has done.

215 Bell Telephone Laboratories, Inc., have a Patent Department which procures patents for Bell Telephone Laboratories and for other organizations in so far as by matter of request of the Patent Department, A. T. & T. or Western Electric, by patent searches or preparation for interference cases or things of that kind. In general, however, it is maintained wholly and solely as an integral part of Bell Telephone Laboratories organization to do these things: To secure patent protection for the new things which arise out of our research and development work; to make the necessary searches to enable us to advise the A. T. & T. and Western or E. R. P. I. that the thing which has been specified for use is free of probable patent infringement. It is operated just as any other department of the Bell Laboratories is operated as an integral part of the machinery of research and development.

216 If in the inception of the idea there is invention of a patentable character, the patent goes to the man in the Development & Research Department who conceived the idea. If, however, the inception of this thing, which is ultimately going to result in a patent, is a broad inception of a kind such as I may make, but the invention occurs through the process of carrying out that idea, then the patent goes to whoever it was that made that patentable invention. In other words, we do what the law requires us to do, we try to find who was the inventor of the thing which is patentable.

When the inventor is one in the Department of Development & Research, A. T. & T. in general it is handled in the Patent Department, A. T. & T. It may be handled on request of Mr. Folk's department by the Patent Department of the Laboratories if they are in a better position to go through the machinery, for example.

217 The Patent Department of the Laboratories is by far the largest patent group which we have in the Bell System and in some branches of our activities notably in the central office, the switching type of thing, they are far better equipped to handle the matter of preparing specifications and carrying the patents through the Patent Office than is the Department, we will say, in the A. T. & T. It may be that in some cases of an invention made in the Department of Development & Research relating to that field, to actual mechanical work, the legal work which is required to carry that through the Patent Office is turned over to the Patent Department of the Laboratories. Conversely, if an invention is made by some one in the laboratories in a field where Mr. Folk's department is better equipped to handle it, the matter is turned over to Mr. Folk's people.

In the case of work that is done in the A. T. & T. Patent Department no billing is made to anybody. In the case of Laboratories Patent Department, since all of our expenses have to be billed somewhere, the actual cost of taking out patents as distinguished from the work which the Patent Department does in consultation with people during the progress of work, the actual cost of patents, taking out patents follows the patent. Ultimately the patents are assigned

218 out of the Bell Laboratories. The Laboratories is not a patent holding or a patent operating organization. A patent taken out on work which is done in the Laboratories is merely a part of the work of development and research and ultimately assigned to either the A. T. & T. or Western Electric and as I remember it, the cost of the actual patent taken out follows the patent. It is paid for by Western Electric if the patent goes to Western Electric. It is paid for by the A. T. & T. if the patent goes to the A. T. & T.

Conceivably a problem may come to the Bell Laboratories from Western Electric which developed material of patentable novelty during the course of its solution, but the patent may be in the field of patents which are owned by the A. T. & T. because, by long existing contract, certain kinds of

219 things are Western Electric and certain kinds of things are A. T. & T. In that particular kind of thing the patent would ultimately reside in the American Company and the

American Company would pay the cost of taking out the patent.

All of our requests are made by Western Electric, by A. T. & T. and by E. R. P. I. We may know and probably do know in specific cases what the genesis of that thing was but they are not put to us in that form, but rather as a problem for the Graybar Company, this is a problem for Western Electric. We have no relations with the Graybar Company in the same sense that we have relations with the other three.

220 Some of the materials used in the Bell Laboratories are purchased from Western Electric.

In the case of apparatus of Western Electric manufacture, we pay the associate price, the same price that any other part of the Bell System would pay for that material. In the case of raw materials which we buy through the Western Electric Company, we pay the same price that any other part of the Bell System would, under whatever contracts the Western Electric Company has for purchasing that sort of thing. In other words, we may make use, just as any other part of the Bell System does, of the Western Electric Company's general purchasing contracts wherever we can. Of course, there is a considerable amount of stuff, incidental stuff, which we buy directly from outsiders.

Frequently we have work that runs over a great many years before it results in anything commercial or any-
221 thing that is used. Take a very simple, specific example.

A good many years ago, telephone cables, the ordinary lead-covered cable which is so familiar to all of us, had the wires in it insulated with wrappings of paper, made out of old rope. The purpose of that insulating material was to keep the wires apart and a fundamental requirement for the best cable was to have as little mechanical material as possible between the wires and to have it of a character which would produce less energy losses in the cable. The best material that we knew of for that purpose was essentially cellulose, wood or vegetable fibre, and such as used in making paper, and the way in which we applied it, because we had to apply large quantities of it at a very low cost, was to have these fibres made into paper and cut into ribbon and the ribbon wound on the wires in a crumpled form. Because of the mechanical stresses applied to the ribbon in the process of winding it on the wires, the paper had to be extremely strong.

This resulted in limiting the source of paper to paper made out of long fibre material and so inherently expensive. At various times suggestions were made and trials undertaken to use shorter fibred material such as wood pulp, which was as good from an electrical standpoint. All of these failed, however, because of the lack of mechanical strength. A con-
222 siderable number of years ago someone suggested that since all that was required in the final product was a proper amount of properly distributed fibre around the wires, there was no necessity for going through all of the elaborate operations of paper making, that the paper might be formed directly on the wires, thus eliminating all of the actual processes in paper making, slitting and winding, and producing an end result identical with that theretofore obtained. This idea was so promising that work was undertaken for its practical development. Because of the many difficulties which we found to reside in forming a uniform layer of paper directly from pulp on the wires, this work extended over a large number of years and has only recently come into the realm of practical application. It extended, I should say, not less than 10; in that order of magnitude. That is not an unusual example.

We have at the present time a considerable number of problems on which we have been working for many years and on which the work is not yet completed. Probably the most striking example of what you have in mind is found in the hand set which has come to be used commonly in the last two
223 or three years. That problem, to my own knowledge, has been worked on assiduously for more than 20 years and has only recently come to a satisfactory solution, and the reason for it, for this long period of time, is found in the fundamentals on which the Bell System has built up its nation-wide plant because hand sets have been in common use in foreign countries for many years. Our difficulty in that particular case resided in the basic idea, which has been the fundamental of Bell System transmission development since long before my time, namely, that the transmitter and the receiver which are attached at the sub-station shall be each of the highest possible efficiency and of the highest degree of uniformity. Now, when you have a very highly efficient transmitter and a very highly efficient receiver and supply energy to the combination of the two as you do through a central or local bat-

tery, you have an arrangement which has a very great tendency to vibrate in its own natural period. If the transmitter and the receiver are brought into juxtaposition anyone who has tried the experiment with the ordinary desk set on a station which is not far distant from the central office, of putting the receiver in front of the transmitter knows what happens, the combination starts to howl and the higher the efficiency of the transmitter and the receiver the greater is the tendency to howl. In European systems where hand sets have been used for a long period of time, the difficulty, this howling
224 difficulty, is obviated by making the transmitters and the
receivers inefficient, but in our case, because we have built up a vast system on the desk set basis with the highest possible transmitter efficiency and the highest possible receiver efficiency we were estopped from using that solution. We had to have a solution which gave us a transmitter and a receiver, at least as efficient each as the transmitter and receiver of the desk stand, otherwise the introduction of the hand set would produce an immediate degradation of the service of everybody who uses the telephones, but when we came to try to put a transmitter and receiver together, with a rigid connection through the handle, which could transmit vibrations from one to the other and maintain them to at least the same efficiency of the desk stand instrument, we produced an instrument which had a very great tendency to howl. Further, since the hand set can be used in more positions than the desk set was usually used microphone transmitters of the type which were entirely satisfactory in the desk stand were found to have positional effects, so that if one were lying in bed, for instance, and attempted to use the hand set, he might have a very different efficiency out of his instrument, and it took us many years to solve that physical problem satisfactorily and produce an instrument in the
225 convenient form of the hand set, which would have the
efficiency of the instrument, of which there were millions in use, without introducing this deleterious effect of howling or the equally deleterious effect of position which affected both transmission and affected the signalling over the circuits. As far as I know, that is the most striking one of the cases.

The failures are relatively few because of the way in which the work is conducted. What seem to be good ideas when they

are initiated but which have only the inherent elements of failure, in general are caught long before they reach
226 anything like a final stage. Either they result then in an abandoned experiment in its initial stages, or what is more usually the case, if the original idea was good but the reasoning at the start, because of lack of information, was faulty, the course of the development which was originally thought to be along this line is modified to another line and the end result is maybe a little different from what was preconceived, so that our failures in the ordinary sense are very, very few and I have no figures of percentage.

Quite a good many years ago when we were attempting to extend the length of open wire circuits, particularly in large gage wires through the mechanism of loading, the application of the Pupin loading coils to lines, the question of the insulators supporting line wires became a very important factor because the standard glass insulators as we then had them, through leakage and electrical loss in the insulator itself, produced a very deleterious effect on the transmission, and we sought to find a new and better type of insulator.

227 In this country glass was the standard which had been used for decades for insulating electrical wires but abroad we knew that they were,—particularly in Europe, that they were using porcelain and we made quite a large number of studies on porcelain insulators and came to the conclusion that porcelain insulators would give us much better results than glass insulators.

We ran into one difficulty at the start due to the relatively high labor costs in this country, which precluded the machining of porcelain parts, insulator by insulator, as they did in Europe, consequently the insulators had to be made, if they were to be used, within a reasonable cost by machinery processes, but that seemed to be a thing which we could get over because the porcelain manufacturers were already manufacturing high quality porcelain insulators for high tension lines and we finally through our elaborate laboratory tests arrived at the conclusion that we could make a very material benefit through the use of porcelain and that we could get a porcelain insulator of the character we wanted at a price which we could afford to pay and we embarked on the process of equipping some lines, quite long lines, with those porcelain insulators. At the start they were extremely good, but we neglected, through lack of knowledge, to take account of the 228 bugs, insects, and we found after the first summer that because porcelain insulators were opaque and not transparent or translucent they were particularly sought for nesting places for bugs and that there were more bugs nested under the petticoats of porcelain insulators than under the petticoats of the transparent glass insulators, with the result that at the end of the summer all of the advantages of porcelain insulaors had disappeared in thin air and we were worse off than when we started, so we abandoned the use of porcelain insulators and started looking for something else.

The directors of the Laboratories are Mr. Bloom, the president of the Western Electric, Mr. Stoll, the operating vice-president of the Western Electric, and Mr. Hosford, the vice-president of the Western Electric, in charge of manufacture. Mr. Bancroft Gherardi, the vice-president in charge of operation and engineering of the A. T. & T., Mr. E. H. Colpitts, the assistant vice-president of the Research and Development Department, Mr. H. P. Charlesworth, the vice-president of the Bell Laboratories, Inc., and myself, seven of us.

229 The reasons for the organization of the Bell Telephone Laboratories, Inc., in 1925 were two essentially. First, that the laboratory function, as it was then carried on in the Engineering Department of the Western Electric had grown to such proportions in size and in character of work that it had outgrown the confines of a department of a subsidiary of the American Company and had attained to the stature of an associate company. That was one reason; and the other reason was, that as long as that very important function in the development and conduct of the Bell System remained a part of the Western Electric, a manufacturing organization, which was supplying material to operating companies, which were public utilities, the active direction within the organization of that function could not be vested in an officer of the American Company. I don't know what the law is, but under the general law, which was promulgated years ago with regard to railroads, it seemed very desirable that because it was primarily responsible for the conduct of research and development work, that an officer of the American Company should be the active director of the Laboratories.

Prior to that time, my predecessor, General Carty, as the head of the department Development and Research, while

the titular head of the department, was not in actual con-
230 trol of the laboratory functions. So that reason, and the
other reason brought about the formation on January 1, 1925, of the Laboratories as a direct subsidiary of the American Company in a form which permitted the vice-president of the A. T. & T., in charge of development and research to be, in his own proper person, the active executive of the Laboratories.

Without any change the personnel of the Bell Laboratories was on January 1, 1925, the same personnel that had been the Engineering Department of the Western Electric on December 31, 1924.

The Laboratories' researches in the physics of sound resulted in developments that produced the orthophonic phonograph.

It did result in the development of measuring devices, which were thought to have some possible application in the prospecting for oil, and I am not sure but what certain small pieces of apparatus may have been turned over to organiations in the petroleum industry for their use.

At one time, it was proposed that we should undertake to do that sort of work by one of the large oil companies, because
of the knowledge which we had in the field, which they
231 thought would be of advantage in this prospecting busi-
ness. But on a scrutiny by us, it appeared that that field was one so far removed from the normal field of our activities that it was not a proper field for us to embark on, and we never did embark on it.

Out of the work of any group—a large, organized group, such as is this laboratory, many applications outside of the specific field in which they are primarily interested, would be conceived.

Vacuum tubes as manufactured by the tube shop, operated by the Laboratories and for the account of the Western Electric, are used outside of the Bell System in such things as the services of the Army and Navy of the Government, where they involve communication,—radio or wire communication; they are used in the amplifying parts of Public Address sys-
tems, which may be sold to hotels or auditoria, playing
232 fields or what not, wherever Public Address systems are
used and they are used in the electrical parts, particu-

larly the amplifiers of talking motion picture equipment, as it is manufactured by the Western Electric and transferred to the E. R. P. I.

The work on vacuum tubes began in the latter part of 1912 and has continued uninterruptedly since, in ever increasing amount, as is usually the case with any new and very useful tool, and the end is not yet anywhere nearly in sight.

The Development and Research Department of the A. T. & T. themselves did no physical development work, but they did a vast amount of study leading to the requirements for new and improved vacuum tubes, and in the testing of the final product and in the development of the applications of their use; but having no laboratories, they had never carried on work in vacuum tubes, in anything like the sense that people in laboratories do.

(Recess.)

(For deposition of George E. Folk, see Abst., Vol. IV, pp. 1211-1230.)

251 JOHN G. ROBERTS, for defendants:

Direct Examination by Mr. Haight.

I reside at Dobbs Ferry, New York; I am patent attorney, Bell Telephone Laboratories, Inc., and have been since January 1, 1925, the date of its organization. Prior to that I was assistant general patent attorney of Western Electric, from 1909 to end of 1924.

My department handles the patent matters for the Laboratories. After the patents are secured some are transferred to Western Electric and some to the A. T. & T. and others have not yet been assigned where the studies have not yet been completed as to which company it should be assigned to.

None go to E. R. P. I. Patents whose inventions are
252 embodied in products sold by E. R. P. I. are assigned to
Western Electric in some cases and in others they go to the A. T. & T.

As to those not assigned at all, we have not examined any of the patents issued during the current year for the purpose

of determining their disposition. As to those issued prior to ~~this~~ year, we classify some of them as telephones and some as telephonic appliances and in accordance with the definition in the 1882 agreement between Western Electric and the A. T. & T. Those classifiable as telephones have been
253 assigned to the A. T. & T. and the others to Western Electric. The remainder group have not yet been analyzed sufficiently to determine their classification, but they are assigned under the principles I have stated, regardless of who may be the inventors.

Occasionally I handle patent matters relating to inventions made in Development & Research Department, A. T. & T., and later worked upon by the Laboratories, and that comes about by specific request of the A. T. & T.

When an improvement invention has been made in the Laboratories, that is handled by my department. Then the question of to whom the patent is to be assigned is disposed of, as I have stated.

Patents on vacuum tubes generally go to the A. T. & T. I do not know of any subject matters upon which employes of the A. T. & T. have made inventions where the patents have been assigned to Western Electric. It is my understanding, for instance, that if an invention related to switchboard is made, the title to the patent would remain in the A. T. & T.

If the inventions are made by employes of the Bell
255 Laboratories they are taken out and assigned to the Bell Laboratories at the time the applications are filed. Later on they would be disposed of in the manner that I have before stated.

We make recommendations with respect to foreign filings in most instances and our recommendations are generally followed by E. R. P. I. which files, in some cases, in foreign countries. There are certain other foreign patents taken out by the International Telephone & Telegraph Company pursuant to certain agreements made with that company and there are certain patents taken out by Northern Electric Company in Canada. Certain foreign patents are taken out in the name of Western Electric on our recommendations. I am thinking of some in South America and some in Canada and Newfoundland.

256 Assuming, for example, that an invention is made by

an employe of the A. T. & T. and then in the Bell Laboratories improvements are made upon that, as in the field of the movietone, and patents are secured through my department, those improvements patents are disposed of in accordance with 1882 agreement or remain in the Laboratories for future consideration. They may go, as I have above mentioned, to Western Electric or the A. T. & T.

FRANK W. JEWETT, recalled:

Direct Examination by Mr. Haight.

Dr. Craft, in the Bell Laboratories Record, Vol. 1, at
257 page 96, says:

"In the conduct of this work it has always been the aim to study broadly the problems of communication, paying attention not only to the electrical problems of telephony but particularly to the physical problems of what speech is and the mechanism by which we hear speech or music. In the last 12 to 15 years the results of our investigations have pyramided and now we have a fund of scientific knowledge and a technique which is largely responsible for our present day telephony over wires and much that is fundamental to the present radio broadcasting art."

258 This publication appears to be in November, 1925.

259 I have no quarrel with the statement in that paragraph. I see that the paragraph is one of an article of some three or four pages, five pages, headed "Sound Recording and Reproducing." I have not read the remainder of the article so that I am simply taking the statement as it appears in that paragraph out of its context. But so far as that paragraph is concerned, I have no quarrel with the statement that is made.

In that same Volume I of the Bell Laboratories Record, page 195, I notice the analysis of each dollar expended in what appears to be the 1928 program. I have examined the chart. This indicates that 71 per cent of every dollar which appears in the Bell Laboratories accounts goes to salaries. I should say that that was a reasonably fair thing. Actually

in my own thinking I have carried in mind a higher fig-
260 ure for salaries,—roughly, of the order of 75 per cent of
our entire expense, in the salary classification.

In Volume 2, which is bound in the same cover, page 67, there is an article that appears to be by Amos F. Dixon. I have read that which is part of the paragraph of an article entitled "Development of Communication Systems" and as a statement for that article I have no question on that, that is, systems of communication, and I think that is correct. That is to say, the requirements for systems originate in the Department of Development and Research or come to the Laboratories through the Department of Development and Research. That is only a part of the paragraph and I have not read the rest of the article. The part to which I have referred reads as follows:

> "The requirements which each development must meet
> 261 are obtained by the laboratories from the Development
> and Research Department of the American Telephone & Telegraph Company, and in final analysis arise from the field and operating requirements, both present and future of the Long Lines Department and the associated companies. To these requirements, the Systems Development Department adds its views and past experience."

Volume 2, page 200, is an article by Joseph P. Maxfield. The first paragraph of that article refers to a contract. I know that a contract was entered into between the Western Electric and Vitaphone but I am not familiar with the terms of that contract.

The interest of the laboratories in this work—that is, the making and reproducing of moving pictures with accompany-
ing synchronous sound records that is referred to—is an
262 outgrowth of the development theretofore made of elec-
trical processes of recording, the fundamental novelties of which were logical applications of the theories and the technique incidental to Bell System problems of transmission of speech and music.

In referring to phonograph records, there have been, as I recollect it at the moment, without having refreshed my mind in detail, three principal values to the telephone art of this work: One in the accumulation of knowledge with regard to what can be done in the way of making permanent records of telephone speech over regular telephone circuits looking to the possibility of sub-station recording devices which the subscriber might use in keeping a record of his own and his correspondent's conversations.

263 In the second place, we have had a very great interest in the development of very accurate and very fine phonographic records as a tool in the study of telephone equipment, telephone apparatus and telephone circuits.

To explain that particular interest it is necessary to realize that what we are dealing with in the telephone business in the last analysis is the production of electrical impulses which are mirrored images of the spoken word, evidence of those electrical impulses or re-transmission into sound impulses and finally their transmission into the ear of the distant party, and the one thing that we are dealing with is the fidelity with which the spoken word at one end of a telephone line is conveyed to the recipient at the distant end of the line.

Every instrumentality that is involved, from the first instrument opposite the speaker's lips to the last instrument before the orifice of his ear has an effect in affecting to some degree the characteristics of the vibrations as they issue from the speaker's mouth, and it is of the utmost importance to us to be able to determine how far each and every part and all of the parts act to modify the spoken word, because beyond a certain point, no matter how much energy you may supply to the receiver, if it was not in the form of intelligible
264 speech the telephone conversation would be useless.

Now, for many years, since we are dealing in the last analysis with speech and hearing as they are evidences of human characteristics, the ability to transmit and reproduce has had to be measured against a human standard. For many years the only means that we had of measuring the goodness or badness, the ultimate goodness or badness of a particular piece of apparatus, a particular system, a particular combination was from the process of making actual speech and hearing tests, but human beings differ among themselves with regard to the goodness or badness of their speech and hearing, and each individual varies from time to time, depending upon his condition, so that those tests were difficult to make to the desired degree of uniformity which is essential for a final development, and the only way in which we could pro-

gress by that process was by the,—what you might call the statistical method, by the making of enormous numbers of tests, involving the same individual in many repeated tests and many individuals in many repeated tests and from a statistical analysis, getting an impression. To whatever extent we can insure that the impulses given to the initial apparatus, the transmitter, are accurate and duplicable we have improved the value of our tools, and as a phonograph
265 record, in so far as it is indestructible, is a permanent record, which can be used over and over again with a knowledge that the initial impulses are identically the same. It is of value.

To that extent it is of very great importance to us as a tool in the development of the telephone art, so that we have had a very great interest in phonograph records from that standpoint.

There is a third use which has developed and which is of extreme importance in the telephone art of the present day and in which all of our work on phonographic reproduction whether by means of the ordinary disc type of record or the film type of record has been of very great value in the telephone business, and that is this: It has to do with the operation of the dial system of telephones, the common dial system in the day-by-day giving of service to the public.

When we injected first the dial system into the telephone business we injected a mechanical means of passing orders into a system which had been developed to very large proportions around the passing of orders by word of mouth from the subscriber to a human being, the operator, who carried out those orders. We introduced in the dial system a means by which the subscriber's orders were passed by an operation of his finger instead of his lips and since we could not change the system, the entire system of the United States over
266 night, from a manual system to a dial system, but had to make the introduction in gradual steps, we had to have a scheme of operation which was usable in connections from dial telephone to dial telephone, from dial telephone to manual telephone, from manual telephone to manual telephone and from manual telephone to dial telephone.

In so far as it is possible to do it the operation of a subscriber at a given station, in getting the desired number, must be the same, irrespective of what kind of station that distant station is. The subscriber has no knowlege other than the number which he finds in the telephone directory. He cannot be supposed to know the intricacies of the mechanisms by which his orders are carried forward. In other words, his operation must be the same irrespective of what kind of telephone his correspondent may have or what kind of a central office he may be connected to.

In the case of the manual telephone, which he had been accustomed to using, he passes his orders by word of mouth, he knew nothing further than that he gave those orders to some human being, and in a great majority of cases, except where errors, either of his own making or somebody else's making interposed, he got the distant desired number or he received a busy signal or a don't answer signal and that had to be the case after the dial was introduced. If he was 267 one of those who had a dial telephone he dialed the number, he said nothing until he got the distant party after he dialed the number and in due course he got the distant party. If his call was over a dial telephone connected to his own exchange or to another dial exchange in the same city the whole thing went through as a mechanical operation. If, however, the party that he desired to reach had a manual telephone, then at some stage of the game a human being, a human switch had to appear in the picture and this mechanically dialed order had to be given to that human being.

In the early systems, the very earliest introductions of the dial system that ordering was done by what was known as a carriage call. The dialing of the number by the originating subscriber set up in front of an operator at the distant station the number of the desired party. The operator received, through a lamp signal, an indication that a call was coming in on a particular trunk and then in front of her appeared a series of numbers, for example, 1, 2, 3, 4, which indicated that the call on that particular trunk was destined for station 1, 2, 3, 4. She got that number through her eyes and she plugged the end of the trunk into the desired subscriber's line.

In large offices, very large offices, it may be possible 268 to segregate the operators into two groups, one group to handle incoming calls from manual offices in which they received the numbers in the ordinary way from the

distant operator by word of mouth, through their ears, and another group who receive orders only from dial originating stations, and all of their orders came in the form of these call indicating affairs, but it is not always possible to segregate operators in that way, particularly in the smaller or outlying offices where only a small fraction of the calls originate at dial offices and in consequence the operators at those places have to perform their functions of making this last connection under the guidance of orders which came in in two different ways; one set of orders came in through their ears and another set of orders came in through their eyes. That is, the first are those which originate at manual stations and the others came in through orders which originated at dial stations. In other words, it put a double burden on the operators and an obstacle in the carrying on of efficient and rapid telephone switching, so it became apparent at a very early stage that if we had some way of translating those finger dial impulses into the spoken word at the distant station, then the operator at the distant station need know no more about the origin of the call than the subscriber himself knew about
269 the character of his correspondent's telephone, and in the modern machine switching central office areas there has been developed and is being used with increasing amount of phonographic type of apparatus by which, at the distant station, the dialed impulses which are designed to connect the line to a manual subscriber are translated, through a phonographic apparatus into the spoken word; the number arrives in the form of a set of impulses which, in the older system, would have set up the number 1, 2, 3, 4, but actually what happens is that they are passed to the operator in the form of the spoken word, 1, 2, 3, 4. Except as she may be able to distinguish between phonograph 1, 2, 3, 4 and a spoken 1, 2, 3, 4, she has no different kind of orders whether the call originated at a manual office or whether it originated at a dial office, and she consequently performs her functions with one simple guiding rule to tell her what to do. She does not have to use her eyes in the completion of any of the calls except in so far as she has to see which jack to plug the plug into, but she gets her orders through her ears in all cases. In some cases they come to her through a word spoken into a microphone which goes directly into a telephone receiver. In oth-

ers, they come to her through the impulses which start by the subscriber's finger but end up in her ears in spoken words.

Now, the extent to which, and the ability which we 270 have of making that final spoken word as nearly as possible like the human spoken word, the more efficient is the system, so that we have had a very great interest in phonographic reproduction in any form for that purpose. Those are three very important ways in which we have been interested in phonographic reproduction and very accurate phonographic reproduction.

The knowledge required in that development has been useful in the phonographic art disassociated from telephony, and, conversely, the information which we have gained in our work on the phonographic art has been of inestimable value to us in the carrying out of our development of those lines, as I have described. Our Research and Development in respect to phonographic records has been practically applied to phonographic instruments, outside of telephony.

Our initial work in the phonographic art *per se* came as a direct result of our work in the telephone field. Our sub- 271 sequent work in the telephone field has been largely influenced by the work which we have done in the phonograph art.

In the present stage of scientific and engineering knowledge, the only known way of producing what is known as a television image is to make use of the property of the 272 human eye, the retentive property of the human eye which makes motion pictures a possibility. This property, which results in the impression of continuity of motion being sensed by the brain, if the succeeding images are sufficiently close together but of moderate duration which is that 1/16 of a second that we hear so much talk about.

Making use of that property, all developments of television in the present state of our knowledge are in fact technical modifications of a single process, which is to view the object to be transmitted a very large number of times in successive small increments which viewing is in an orderly fashion across the whole image and to view the image with this multiplicity of scannings, at least 16 times a second, and transmit the electrical impulses which result from that process to the distant points and there reassemble them. It is, in effect, to

take a plane surface and string it out into a line, making use of the fact that you have a 16th of a second to do this kind of a thing in, and then at the distant end of the line re-transpose one-dimensional space into two-dimensional spaces. That process, by whatever means of scanning or by whatever means you reproduce, in so far as the electrical impulses are concerned, result in what are in effect currents of very high frequency, and whenever you have currents of very high
273 frequency you thereby have a wide band of frequencies that you have to deal with in your transmission system, whether it be by wires or whether it be by radio, so that there is a limitation in the transmission of television images which inheres in conjunction with the band.

The bands are very, very much wider over a circuit, whether it be wire or whether it be radio, over a channel which is capable of transmitting high frequency current and which is capable of transmitting a television image, over that same circuit you could transmit many telephone messages and very much larger numbers of telegraph messages and as the goodness of the television image goes up toward perfection, the width of the band increases, consequently the number of possible telephone messages or telegraph messages increases. Of course, it is not possible in the present state of the art to produce or to reproduce,—leaving out the transmission part of it,—television images of the goodness of motion pictures, that is, quite irrespective of the transmitting channel; but if it were possible to produce at the sending end the electrical currents corresponding to the perfect scanning,
274 and at the transmitting end to reproduce those in a perfect image, the width of the band would be a wide band.

Television is a transmission of intelligence of a kind, just as telephony is a transmission of intelligence of a kind or telegraphy is a transmission of intelligence of a kind. They are not the same kind of transmission, nor is the intelligence which they transmit identically the same in the two cases. In that sense, they are different arts.

In the sense that they involve the same kinds of apparatus, the same kinds of the circuits, the same laws governing the transmission of currents, they are part and parcel of the same art and there is no sharp line of demarcation between the things and from the standpoint of the development of the telephone art, viewed narrowly as the transmission of speech between human beings, knowledge gained in the development of the circuit requirements for television plays a very important part, for the reason that anything that we learn with regard to the characteristics of circuits which will transmit this wide band of frequencies is immediately applicable in 275 the art of telephony because it automatically gives us the possibility of obtaining over a single channel a multiplicity of telephone channels of the narrower art.

They are certainly different, but how different is a pure speculation which resides in one's judgment of how far the television art may go toward the production of perfection and how widely that can be distributed to people who may want to use it, but I will say this, that in so far as the economics are involved in the cost of the transmission channels, then you must say that the television art is a much more expensive art than the telephone art.

On account of their work in that field, the most outstanding one, who has devoted a considerable part of his time to the development of television and what is closely allied to it, the thing that we talked of yesterday, telephotography, is Dr. Ives. I suppose he is the most outstanding man in the world in that particular field. He is essentially a man,—even before he came to us,—who was skilled in the photographic art and he has devoted in recent years a very considerable part of 276 his time to the development of telephotography and television.

His work on television goes back certainly five years and possibly six or seven, at the outside. The fundamentals on which systems of television are based are very old,—40 years old. It is only within recent times that those ideas have had any possibility of practical application, through the advance of general science.

277 Improvements of things that are old and new both—the most outstanding one that occurs to me at the moment in which a very great advance has been made in the last ten years, that is, an advance which has influenced all of the longer distance telephony,—I would say all telephony over a very few miles in length,—has had to do with improvements of the loading coils which are an integral part of every circuit of more than the very shortest lengths, and that improvement has grown primarily out of our fundamental work to develop new magnetic material.

Originally loading coils were made which were magnetic affairs, coils of wire wound around a magnetic core—were made on magnetic cores which were composed of the fine iron wire. They were large and they were expensive and they took up a large amount of space in the manholes or on the poles on which they were installed and they had certain disadvantages. In our endeavor to find a magnetic material which was better than iron wire, we were led first to the making of these cores out of powdered electrolytic iron, each 278 particle of the powder being properly annealed and properly insulated and then pressed into a form under enormous hydraulic pressure. That resulted in improvement in quality, reduction in size, and reduction in cost. Then in our further, endeavor to get improved magnetic materials, we developed what were known as permalloys. They were alloys of magnetic materials which in the condition of magnetic fields as they are in the telephone and telegraph art, have very remarkable magnetic properties,—very many times more magnetic than the best iron and steels of the older art, and the iron dust loading coils which had been a great improvement over the iron wire coils have been superseded by cases in which the magnetic coils are permalloy or alloys of the permalloy type and they are very small coils, much less expensive than the older coils, occupy very much less space and in consequence are used in very great numbers. That work has progressed enormously in the last ten years. In fact, I think that the whole supersession of the earlier coils in new installation by permalloy has taken place in that period of time. There have been very great improvements, of course, in the efficiency ~~and economy of repeaters. There have been very~~ great improvements in the development of electrical filtering devices, those devices which enable us to confine the frequencies that we are interested in, within defined limits and 279 thus make possible not only better quality but make possible the putting of more circuits over single channels.

There have been very great improvements in the development through the use of vacuum tubes of electrical filters and our general knowledge of the way to combine these things in what is known as carrier systems of telephony and telegraphy by which you multiplex a number of channels of telephone or telegraph over a single channel.

There have been substantial improvements in cable during that time in two directions, one in the direction of making possible the use of smaller wires and so more circuits in a given area; and second in the arrangement of those wires in the cables. I spoke yesterday of the improvements with regard to insulating material.

There have been decided improvements in toll boards. That art, as I understand it, is, however, one in which the improvements were in the nature more of refinements on existing things and the provision of added facilities to enable more rapid and more economical operation.

Improvements in the local switchboards helped in the
280 long distance service very little, I think, except in so far
as the same apparatus is used in all kinds of switchboards;
improvements in plugs, jacks, cords and relays is common
to the entire switching business, so that whatever is done to
improve individual pieces of apparatus primarily for one
service, if it is a real improvement, finds its use in all other
similar kinds of switching.

The carrier system means—all forms of telephony, even
the common or garden variety of telephony is a carrier system
in a way, that is, in the telephone transmitter you superimpose
alternating pulsating current on a direct current, a
current of zero frequency if you will. To that extent it is a
carrier system. In the things which are commonly referred
to as carrier systems the current on which you impose the
fluctuations of the spoken word is itself an alternating current
of a constant frequency and what you do by the process
of imposing those things is what we call modulating; we
281 modulate the frequency and in the process of modulating,
which is what you always do when you mix two frequencies
together, when you make one frequency affect another
frequency, you initially end up with three things in the output
side the residual of the carrier on which you have loaded this
thing, and two things which we call side bands which are
groups of frequencies above and below the carrier frequency,
which have a width equal to the width of the frequency of
the spoken word and which are merely the frequencies of
the spoken word added to or subtracted from the carrier.
What you do by the process of modulating these high frequency
currents is, in effect, to raise the frequency,—you can
use either of these side bands or both, but in general one,
because there is no object in using both. In many cases it

simply means a duplication of energy. What you do when you take one of these side bands, we will say the lower side band of a particular modulation is, in effect, to raise the frequency of the human voice from one level to another—the higher level, roughly the level of the carrier current. The frequency band which you get there, while it is as wide as the frequency band of the voice would be, is in most cases, unintelligible to the human ear and in many cases undistinguishable by the human ear, despite the fact that it has all
the characteristics of the frequencies in the lower band
282 and at the distant end of the line you do the reverse
process, you take the carrier and reduce it to the lower level. Within the limits which are imposed by the width of the band of the human voice and the necessity to avoid interference, you cannot have those bands overlap in frequency without producing cross talk. You can theoretically put as many telephone channels over a given telephone circuit, over a given pair of wires as you can conduct high frequency currents over it. That is, if you took the entire theoretical,—if you took the entire range from zero frequency to x-million frequencies and if you can transmit those things non-interfering, you can have as many telephone channels as there are multiples of the width of band of ordinary speech on there. Theoretically, then, you can do an infinite amount of things over a given number of wires or any other kind of channel, radio or anything else over which you can conduct this frequency but practically you are limited by the elements of cost principally and complexity of apparatus and reliability of service of large magnitude because, in effect you are putting all of your eggs in one basket when you use one pair of wires to take the place of many pairs of wires between two corresponding points. But even leaving aside the question of reliability, the question of economics begins to run very shortly after you reach a reasonable number, not too large,
4 or 5 or 6, maybe a few more, superimposed channels
283 of telephony and maybe two or three times that number,
of telegraph channels because telegraph channels are a little bit narrower. That element comes into effect because at the transmitting end, if you are going to have many channels, and at the receiving end, if you are going to separate those channels, you must have a very complex apparatus, particularly complex in the form of these electrical filters, which

allow only a particular group of frequencies to go through that filter and the question of complexity soon reaches the point where it is more economical to provide an additional channel than it is to provide the complex apparatus at the terminal ends, but theoretically you can transmit an enormous number of telephone and telegraph conversations over a given channel without interference.

"Given channel" means a pair of wires or grounded circuit,—if you are using a grounded circuit, as you do in the case of a submarine telegraph cable or a radio channel. Radio is not different from telephony or telegraphy, in the sense that telephony or telegraphy are different from each other. Radio is merely one of the many ways of conducting electrical impulses and those impulses may be used for a variety of purposes on radio as they are used for a variety of pur-
284 poses by wire, such as the transmission of power, telegraphic communication and telephonic communication.

The switchboards, in so far as they facilitate the operations of setting up connections, have had to do with an increase in speed of service, because of the development of new methods of handling what are commonly known as toll service and the elimination of operators permitting one operator to do what formerly took two or three in the built-up connection.

The carrier method was made possible by the vacuum tube because of the properties—the remarkable properties which we were able to develop in vacuum tubes, once the principle of those vacuum tubes was disclosed; the principle of distortionless amplification and the property of utilizing that device as a generator of high frequency currents and the modu-
285 lator of high frequency currents.

An article appearing in "Bell System Technical Journal" of January 30, 1930, entitled "Telephone Communication System of the United States," by Mr. Gherardi and myself, is a general article which represented the communication system of the United States at the time it was written, in so far as it had been developed to give local and long distance service within the United States. The main body of it
286 has to do with the regular national telephone service and at the end there are a few notes with regard to adjunct services where telephony is employed, such as telephony to mobile stations, ship-to-shore telephony, transmission of pictures, program transmission, and a few slight references to

by-product things which have grown out of our development work covered in two or three paragraphs.

It was presented to the World Engineering Congress at Tokyo, Japan, in October, 1929. I have not read the article since it was presented, and whether my views have changed in two years since it was presented, in any detailed point, I would have to read over the article carefully to see. So far as the general things are concerned, as stated there, my
287 views then expressed are substantially what they are now.

Mr. Haight: I would like to offer the whole article as an exhibit, subject to the right of the other side to examine the same in any way they may see fit.

Mr. Blackman: I object to it at this time, but as I say, in order to save time and avoid a multiplicity of questions, I would be glad to have Dr. Jewett read it and if he says now that he agrees with every line of it, then, of course, I will enter into a stipulation.

Mr. Haight: That is entirely satisfactory. If there are any limitations, Dr. Jewett can state what they are.

Mr. Blackman: That is just the point I want to develop, if there are any.

Mr. Haight: In the meantime we will refer to that as Defendant's Deposition Exhibit No. 1, merely as a matter of identification.

The Witness (continuing): Referring to a pamphlet purporting to be published by the Western Electric relating to No. 12—A Loud Speaking Telephone Outfit—I agree with
288 the following as of the time it was written:

"Recent developments in vacuum tubes and vacuum tube amplifiers have made it possible for the engineers of the American Telephone & Telegraph Company and the Western Electric Company to design what is now known as the No. 12—A Loud Speaking Telephone Outfit, a practical device that will successfully meet the severe conditions of railroad service."

I think from looking at this device, that this thing must have been written some years ago. It says 1/11/24. That statement undoubtedly referred to the fact that by the
289 development of the vacuum tube amplifier, we had placed at our disposal a tool for so amplifying ordinary speech current as to make it possible to reproduce it in a loud speaking telephone such as railroad requirements necessitated for

the guidance of tower operators and other people who could not use ordinary telephones and had to depend upon, if they used telephone at all, had to depend on loud spoken telephonic communication.

Referring to another Western Electric pamphlet—I agree with that statement except possibly in the implication there may be in it that that was a perfect final device. That was written seven or eight years ago. If I agree that that was a perfect final device, I would be agreeing with something that I do not believe now.

I will read it into the record.

"With the permanent place that radio has attained within a comparatively brief period in the daily lives of thousands, new standards have been established not only by those engaged in the design and manufacture of apparatus but by the public as well. Those who were once satisfied to get 'something' by wireless—no matter how weak or how imperfect the reproduction—soon demanded volume enough to fill a room; then that quality and naturalness of reproduction that make music and speech a real pleasure; and now there is demanded an efficient cabinet type of loud speaking telephone that will please the eye.

"This last requirement is met by the No. 14—A Loud Speaking Telephone Outfit which makes use of the latest developments in the electrical communication art and is mounted in an attractive and unobtrusive cabinet. It is a combined audio frequency amplifier and loud speaking telephone. When used as an adjunct to vacuum tube radio receivers, it provides amplification sufficient to make received radio programs audible practically without distortion throughout a large room."

291 Referring to a pamphlet marked "Speech Input Equipments for Use With Wire Lines as an Adjunct to Radio Telephone Broadcasting, Western Electric Co. published in U. S. A. 1925"—I agree with the statements marked on pages 1 and 3. I assume that the Western Electric at the time this pamphlet was issued did have these things available. The portions referred to are as follows:

"To provide means whereby events that take place in points remote from radio telephone broadcasting stations may be transmitted to the radio audience. Western Electric Speech Input Equipment, in a number of types, have been made available to meet practically any condition that may arise."

That was on page 1. On page 3 the following:

"One of the important requirements imposed by the companies of the Bell System, in order to avoid interference with other lines, is an upper limit to the power level delivered to
the lines by the speech input equipment. The volume
292 indicator which is described below is an instrument which
may be used to indicate the level put upon the lines."

The only qualification that I would make to that paragraph is that this word "events" in here must refer to speech events; it does not refer to visual events; it is a speech event.

The next pamphlet is one entitled "Amplifier No. 6034-A," bearing upon its upper cover also the legend "A Western Electric Product." The matters are the two appearing on the first page and I agree with them.

The first part is as follows:

"Western Electric Amplifier No. 6034-A. A development of Bell Telephone Laboratories, Incorporated, the Research laboratories of the American Telephone and Telegraph Company and the Western Electric Company."

Below that:

"To provide a means of making entertainment from phonograph records available in rooms of average size or in widely separated areas, some method of amplifying the entertainment electrically and transmitting it by the same means is required."

The next is a pamphlet, Western Electric Company No.
293 10-A, Loud Speaking Telephone Outfit, and I agree with
the statements within the poetic license of the man who
wrote this first paragraph as to what constitutes pleasure.

The portions referred to are as follows:

"Western Electric, No. 10-A Loud Speaking Telephone Outfit. The widespread interest displayed in the receiving of broadcasted news, music and entertainment by means of private radio telephone installations has brought with it a demand for certain auxiliary types of equipment. Foremost among these is the loud speaking telephone outfit which is capable of amplifying the output of a radio receiving set so as to satisfactorily fill a fair sized room with speech or music. In providing facilities for all members of a family group, for other gatherings, to enjoy the entertainment, the greatest satisfaction can usually be obtained by providing a good loud

speaking telephone outfit. The proper design of an efficient radio speaking telephone and its associate amplifier represents one of the highest achievements of the electrical and acoustical arts as they exist today. For several years past the engineers of the Bell System, that is, of the Amer-
294 ican Telephone & Telegraph Company and of the Western Electric Company, have carried on extensive investigations upon the loud speaking telephone with the object of developing a wide variety of public address systems. On the basis of those investigations the Western Electric Company is manufacturing a loud speaking telephone outfit suitable for use as an accessory to a radio receiving set.''

The next one purports to be a pamphlet issued by the Western Electric Company and bears upon its outer face the legend ''The No. 2-A Audiometer, a Western Electric product.'' I agree with the statements marked except in so far as those statements imply that the audiometer was developed for purposes outside of the telephone business. The statements are:

''Western Electric No. 2-A Audiometer. A Development of Bell Telephone Laboratories, Incorporated, the research laboratories of the American Telephone and Telegraph Company and the Western Electric Company.

''The importance of accurately determining the acuity and quality of hearing in delicate functional and diagnostic examinations has long been recognized. Taking advantage of
294 the possibilities of the use of electricity in sound measurements and drawing upon its experience in designing apparatus providing electrical means for amplifying and transmitting sound, the Bell Telephone Laboratories has developed for the Western Electric Company several different types of Audiometers capable of meeting a wide range of requirements.''

The audiometer was developed in its fundamentals primarily as a tool to assist in the proper development of telephone transmitters and receivers. It is essentially a device which permits of the accurate quantitative measurement of response of the human ear to frequencies over the entire range and in values within the range of the human sense of hearing. A knowledge of these fundamental characteristics of the human ear, both in persons of normal and persons of abnormal hearing, is absolutely essential to a proper develop-

ment of telephonic apparatus, particularly transmitters and receivers, and the audiometer was devised as a tool in the solution of a purely telephonic problem. The fact that it did give a means of measuring acuity and quality of hearing for other than telephonic purposes was purely incidental although of very great importance in the medical world and the instruments to which this paragraph refer were the reductions
295 to practical form for use by aurists of the apparatus previously designed purely as a tool in telephonic research.

The next pamphlet is one bearing upon its face the legend, "Western Electric Public Address Systems." I agree with the statements, marked on pages 3 and 5, with the same reservation as in the preceding question to any modifications that these instruments were designed primarily for the Western Electric.

My explanation is that the loud speaking telephone was designed primarily as an adjunct to the service of the Bell System to make possible the transmission at a distance the spoken word of orators or speakers in a distant place. The statement at the bottom of page 3 in reference to the Madison Square Garden exercises at the time of the burial of the Unknown Soldier is a very good illustration of the objective which we have in designing loud speakers for use in connection with the telephone plant and as in the case of the
296 audiometer, having designed loud speakers and employed them in the telephone plant, the usefulness of those same things for more local purposes led to the development of the things which are described, I presume, in this bulletin.

The parts referred to are as follows:

"Western Electric Public Address Systems. A development of Bell Telephone Laboratories, Incorporated, the research laboratories of the American Telephone and Telegraph Company and the Western Electric Company.

"Introduction. Ten years ago the Western Electric Company made available the first Public Address Systems to provide means whereby speech could be delivered clearly and faithfully to large assemblies of listeners, numbered in thousands instead of the mere hundreds, who formerly constituted the audiences within the range of full audibility.

"During this decade four Western Electric Public Address Systems were developed and introduced covering every commercial need that has arisen. Each of these systems was pre-eminent in its class and generally selected where insistence was placed upon dependable, flexible and simple operating equipment with ample volume and clarity."

The next part of page 3 to which attention was called reads as follows:

"From the first large installation in old Madison Square Garden, where the audible services in honor of the Unknown Soldier were reproduced in 1921 down to the present long roster, careful analyses have been studied, practical tests made and on the basis of the findings, improvements effected." 297

The part referred to on page 5 of this pamphlet reads as follows:

"Systems Nos. 5, 6, 7 and 8 still further enhance the value of Western Electric equipment because of the much larger areas it is possible to cover, the extreme simplicity and dependability of operation at all times, the perfect tonal quality of voice or musical instrument as transmitted alone or in combination, by the great advantage of A. C. operation by greatly improved loud speaker units and projectors and finally because of the important fact that design, workmanship and performance of each part which make up each system are based upon the Western Electric Company's and Bell Telephone Laboratories' knowledge, experience and reputation as pioneers and leaders in the field of sound transmission apparatus, as evidenced by the telephone and telephone apparatus that are the standard for the world."

With reference to the words "Is it available," in that first sentence, the Western Electric Company made available, and the observation is that available there refers to the Western Electric Company as a manufacturer of equipment and not as an originator of the idea of the development of a loud speaker, which was a problem that arose in the American Telephone & Telegraph Company. 298

The next pamphlet is one which, upon its outer cover, bears the words "The No. 1-A Stethoscope. A Multiple Electrical Stethoscope," parts upon page 1 and on page 3 are further parts ending at the top of page 4. I find myself in a position not to make a categorical acceptance or denial of the statements, although in general as a piece of advertising literature I think the statements are substantially correct. On page 1 the title is: "The Western Electric No. 1-A Stethoscope, a Multiple Electrical Stethoscope."

299 "Since its discovery by Laennec over one hundred years ago the stethoscope has proved indispensable in the study and diagnosis by auscultation of pathological conditions of the heart and lungs. It has long been recognized, however, that the stethoscope in its various forms has certain natural limitations and improvement has had to wait upon electrical research, development and adaptation."

As regards that paragraph 1, not being a physician, have no knowledge of the gentleman who is supposed to have invented the stethoscope, nor the time at which the stethoscope was invented, so I am not in a position to comment on that.

The next quotation is:

"The development of the vacuum tube amplifier gave rise to hopes that the stethoscope, purely a mechanical device, might be improved. Early experiments indicated that heart and chest sounds could be magnified and reproduced faithfully by electrical means but certain difficulties experienced with early forms of vacuum tube amplifiers had to be overcome before reproduction by this means could be made satisfactory."

I have no comment on that paragraph. So far as I know it is entirely correct. The next quotation is at the top of page 3:

"These difficulties resulted from the fact that the am-
300 plifiers were efficient at low frequencies and over-emphasized the higher frequencies. In addition, the combination of the ordinary telephone mechanism and an amplifier was shown to be impracticable inasmuch as the telephone employed a carbon transmitter producing noise which, when amplified with the body sounds, is annoying and tends to obscure the latter."

I have no comment with regard to that paragraph. It is a statement of fact, as I understand it. The next paragraph is:

"The elimination of these obstacles to the development of an efficient electrical stethoscope has been accomplished by research work carried on for a long period in the laboratories of the American Telephone and Telegraph Company and the Western Electric Company. Of primary importance has been the development of a special vacuum tube amplified. This amplifier combines enormous amplification capacity with practically distortionless reproduction over the entire range of frequencies, of interest in auscultation. The development of a special electromagnetic detector or transmitter eliminated the difficulties inherent in reproduction by carbon microphones. The development of the electrical filter by the same research organization also made possible the suppression of sounds outside of the band of frequencies to which it is desired to listen."

My comments on that paragraph are that they first make
clear that the research laboratories referred to at the
301 time this pamphlet was written, published in January,
1925, refer to the laboratories' predecessor to the formation of the Bell Telephone Laboratories, Inc., but more particularly they refer to the fact that the special vacuum tube amplifier referred to here is merely an outgrowth of the development of amplifiers for the same general purposes for use in the telephone business quite aside from any use in the medical field as stethoscopes. Our own problems required us to have, if we could have them, amplifiers which would do identically what is here described and they were developed for that purpose, and the fact that these same amplifiers, or slight modifications, were found to serve the purpose in the medical field is an incident rather than an objective in the development of amplifiers, and the same applies to filters.

This is the next quotation:

"These three basic developments, supplemented by study and research devoted to the producing of undistorted sound transmission and several years of work in collaboration with specialists in auscultatory diagnosis resulted in the solution of these important problems in the form of a multiple electrical stethoscope known as the Western Electric No. 1-A Stethoscope."

I have no comment on that last paragraph, which is a
statement of fact. The application of the things devel-
302 oped in the telephone field to practical, useful forms in
the medical field require the co-operation of the research, physical research people with the specialists in the medical field who knew what it was that they wanted to obtain, so that statement, as far as I know, is correct.

The last of this series is a pamphlet bearing upon its outer cover the words "Public Address Systems Nos. 1-A and 2-A

Western Electric Company." Parts on page 3 two instances and on page 5, one instance. I agree with those observations and statements except for a comment on the first paragraph of which I have no understanding, as to how long the need for this thing has existed. The author says 20 centuries. I don't know whether it is 20 or 40 or 100.

Except for that comment, I agree with those statements with the same reservation which I made,—same explanatory reservation which I made with regard to the preceding similar one on public address systems as to the origin of the need for those things, and this is purely a reduction to practice in more detailed form of uses outside of the purely telephone field.

The material to which attention has been called reads 303 as follows:

"Western Electric Public Address Systems Nos. 1-A and 2-A. The well known and widely used Western Electric Public Address Systems Nos. 1-A and 2-A have been designed to meet a need that has existed for twenty centuries but could not be satisfied until their advent."

The second occurrence referred to on this first page is as follows:

"The necessity for artificial amplification and direction of sound was obvious, so the research engineers of the Bell Telephone Laboratories, Inc., the research laboratories of the American Telephone & Telegraph Company and of the Western Electric Company addressed themselves to the task of developing a system of loud speaking telephones that would meet the need."

The parts on page 3 are as follows:

"The efficiency of this system was demonstrated during [illegible] inauguration ceremonies of the late President Harding ~~on~~ March 24, 1921, when by its use an audience of more than 125,000 * * *

March 24th? Well, that is written that way, but it is obviously a misprint.

"* * * by its use an audience of more than 125,000 people gathered before the National Capitol at Washington was enabled to hear distinctly the President's Inaugural Address."

The next occurrence on the page is as follows:

"Where the number 1-A public address system can be 304 used to amplify and project sound: In large auditoriums, stadiums, baseball and football fields, outdoor mass meetings or political meetings and announcements of election returns, armories, mines, steel mills and other large industrial enterprises, vehicular tunnels, steamship piers, to handle large crowds by police and fire departments, production of motion pictures, drill grounds and training camps, railroad and trolley terminals, large building and construction enterprises.''

And the item on page 5 is as follows:

''Where the Western Electric No. 2-A public address system can be used: Hotels, for use in banquet halls, for reproducing music of an orchestra in as many locations as desired and for paging guests or making announcements in cases of emergency. Theaters and other auditoriums, stock market and trade exchanges, colleges and schools, for use in large lecture rooms, for emergency announcements, for directing class drills, dance halls, steamships, steamship piers, department stores, prisons, hospitals, county fairs, private Pullman car or automobiles so audiences assembled around them may be addressed.''

I have here a bulletin of the National Research Council
which is a subsidiary, if I can use that word, of the
305 National Academy of Sciences, which latter is the only
nationally chartered scientific organization in the United
States. It was organized just prior to the United States
entry into the World War as a piece of machinery to be
operated for the national good under the aegis of the the National Academy of Sciences and designed to provide for the mobilization of the scientific knowledge of the United States in all its fields, for matters concerned with the national defense, national welfare and the stimulation of pure and applied science.

It functioned during the war largely under specific Presidential proclamation as the scientific-central scientific agency of the Government, and subsequent to the war it has functioned as a part of the National Academy of Sciences for the development of fundamental and applied scientific research.

In carrying out those functions in this present or peacetime capacity it operates through a number of divisions, representing roughly the divisions, the general divisions in the fields of pure and applied science, which divisions are constituted of representatives designated by the national societies in the respective fields and appointed by the National Academy of Science under the powers of its national charter.

306 Each division of the National Academy of Sciences has a chairman, not a permanent chairman, but one appointed for a number or a period of years, and always a very prominent man in his particular field who devotes his time during his appointment to the affairs of the Academy and he receives a salary for his services.

The chairman of the several divisions and certain members of it constitute the council of the National Academy of Science.

It occupies and is the joint owner of a very large and monumental building in Washington not far from the Lincoln Memorial, which was made available to it and to the National Academy of Science, its parent organization, through the munificence of one of the national foundations.

I was instrumental in the formation of the National Research Council partly because of my membership in the National Academy of Science and partly because of my activity in the general field of science. For a number of years I was the chairman of its engineering division but at the present time have no official connection with the National Research Council, although I am still actively interested in its work.

In connection with my chairmanship of the Engineering Division I would make this qualification with regard to

307 the statement above, the statement preceding, as to emolument, by saying that the Engineering Division of the National Research Council is different from any of the other divisions in that its chairman does not devote all of its time to his work nor does he receive any emolument, the emolument in the case of the Engineering Division being paid to a permanent officer who is known as the director of the Engineering Division and he receives the same salary as the chairman of the other divisions.

This peculiarity in the case of the Engineering Division arises out of the vast field to be covered by the division and from the fact that men of prominence in the engineering field, in general, are not available for permanent service even of a temporary duration, as chairman.

I find in the list of industrial research laboratories of the

United States appearing in this bulletin, the Bell Telephone Laboratories, Inc., and many other concerns.

308 Without having looked over this long list of industrial research laboratories, I would say that I think they are in three categories; they are the research and development laboratories of industrial concerns, manufacturing business, operating business for private corporations; they are the research laboratories maintained by associations of industries who do not maintain their own complete research laboratories but who have a sufficient interest in common fundamental problems and associate themselves together in the maintenance of a research and development laboratory, which does for the industry all fundamental problems with which our laboratory, for instance, does for us, such examples as the laboratory of the Tanners Industry and of the Canning Industry, who I think are probably in here, and also I think in this list probably are industrial research laboratories which are maintained in the research field in much the same way that consulting engineering groups operate in the engineering field. They are research laboratories fully equipped either in the general field of science or in specialized
309 fields which undertake to do for clients and for a fee, problems which are submitted to them and in addition, although I think that there are probably listed in this grouping institutions like the Mellon Institute in Pittsburgh, which is a privately endowed research laboratory, which will undertake to provide facilities in which the public in general, industries or individuals can maintain research men at their own expense to conduct specialized investigations.

I presume also that we would find in this list such national and state organizations as the Bureau of Standards.

On one of the pages, 27, ending on page 28, is given what I take it, to be a general summary of the work of the Bell Telephone Laboratories, Inc.

310 So far as I recollect, I had nothing personally to do with the thing. I was not at the time that this list was gotten out, officially connected with it. I will have to go back and qualify that statement back there. When I said I was not officially connected with it, I said somewhere that I was not officially connected with the National Research Council at the present time; as a matter of fact, that is not so; I am one of the members of the Engineering Division. So far

as I know, I had nothing whatever to do with this statement. It does describe the activities of the Bell Telephone Laboratories, Inc., as accurately as one can describe in a brief summary form, merely by listing a large number of things in which a laboratory such as ours would be engaged.

The book to which we have been referring is the bulletin
of the National Research Council, No. 81, Industrial Research
Laboratories of the United States, including consulting re-
search laboratories, 4th edition, compiled by Clarence J. West
and Callie Hull. Published by the National Research Council
of the National Academy of Sciences, Washington, D. C.,
311 1931. This is a reliable official publication of that organ-
ization. There has been given here many manufacturing
corporations that have laboratories and I am assuming that their activities are described in a general way at least properly. The activities of the Bell Laboratories, Inc., and the activities of organizations doing laboratory and research work for these various manufacturing concerns as to methods differ not at all from the larger and more efficient research laboratories. In so far as that list may contain small organizations which are sailing under the name of research and development laboratories they probably differ very much with regard to method and the care which they exercise and the extent to which they go in the study of problems.

As to field, of course, our laboratory differs from prob-
ably every other one that is listed in that pamphlet in that
our work is confined generally to the field of alternating phe-
nomena whether on materials or sounds and to those adjunct
fields which are,—where it is necessary for us to have
312 first-hand and fundamental information as it may apply
to the scope of our business.

Q. 182. But generally speaking, doctor, wouldn't you say that these manufacturing concerns that have laboratories such as listed in this official publication of the National Research Council, are engaged in the work in connection with those concerns, of improving their product or their service in reducing costs of production, in developing new fields of application, in developing and availing themselves of by-products and materials, and in developing new products and doing those general things. Would you say that?

Mr. Blackman: I am going to object to that as irrelevant and immaterial, and no foundation for the witness' knowledge of what the other manufacturers do. I don't want to interfere with anything within reason, but I think that is getting a little beyond.

Mr. Haight: Do you want the doctor to answer the question?

Mr. Blackman: If you want him to.

Generally speaking, these manufacturing concerns that have laboratories, such as listed in this official publication of the National Research Council, are engaged in the work in connection with those concerns, of improving their product or their service, in reducing costs of production, in developing new fields of application, in developing and availing themselves of by-products and materials, and in developing new products and doing those general things, as far as the organizations enumerated in this list relate to the larger organizations or the more substantial associations of organizations.

I would make the qualification, without having examined
313 the list in intimate detail, but from my general knowledge
of research organizations or things alleged to be research organizations in this country, that as regards the smaller of the organizations, there will probably be found a considerable number which operate under the title of research laboratories which are not, in fact, as I understand them, research laboratories. As a matter of fact, there may be listed in that large number in that book things which are designated as research organizations which are not conducting research in the field of physical or chemical science, or, we will call it the field of physical and chemical science, but really are organizations which are operating in the field of business exploitation. I may be wrong as to that last, but certainly there have been in recent years organizations in this country which were known, and organizations connected with some of the larger groupings which were known as research laboratories which had nothing whatever to do with the things which were involved in your question except in so far as they tended to amplify the business of the company.

I am familiar in a broad way with the research and development laboratory work done by such concerns as Du Pont, General Electric and Westinghouse Electric.

Q. 185. With respect to those manufacturing concerns, what is the difference,—of course it is in a different field, but broadly as to character, what is the difference between work done by the Bell Telephone Laboratories or the Department of Development and Research of the A. T. & T. Company from the work done by and for those manufacturing concerns, by their own laboratory?

Mr. Blackman: I object to that as irrelevant, immaterial and incompetent, and no foundation laid for the witness' knowledge as to the details of the operations of other research organizations.

In one very important particular I would say that the
314 work of our research organizations, and I use the words "research organization" because, as I testified yesterday, the Department of Development and Research, A. T. & T., and Bell Telephone Laboratories in their operations are essentially one thing. I will say that in one important particular this research organization of ours is unique and without any corresponding parallel in any other industry that I know of in that our primary function and the thing which is the guiding and impelling motive for our work is the development of the art and operation for the electrical communication business, is not primarily the development of physical things except in so far as those physical things are a factor in the
315 giving of a better, cheaper and more extensive telephone and telegraph, generally, communication service in the electrical field to the people of the United States, and every act which we do in our broadest and most general function is viewed against the necessity of the operating units of our business and not against the operations of a manufacturing organization. We are not primarily seeking to develop things to sell to an ultimate consumer. What we are attempting to do is to develop a service to be sold to an ultimate consumer and the manufacturing side of the business and the work of the research organization which touches on that side is an incident to the main objective and not the primary, impelling force back of that organization. In practically all other research organizations with which I am at all acquainted, the primary object is the development of things, in the case of manufacturing organizations such as those you have mentioned, or the development of uses of things which others have developed in the conduct of one business, but in no other organization either in this country or elsewhere in the world do I know of an organization like the research organization of the Bell System, where the impelling motive for the vast

majority of our work is the development of a service to be sold, with nothing else incident to it. It is a very vast and very fundamental difference, as I see it.

316 Mr. Haight: In order that what we have been talking about may be identified, I will offer on the record the bulletin of the National Research Council as Defendants' Deposition Exhibit No. 2, of this date.

Mr. Blackman: I object to that as irrelevant and immaterial.

(Bulletin marked Defendants' Deposition Exhibit No. 2.)

317 Attention was called to an article by myself appearing in the Bell System Technical Journal of January, 1930. I notice at the end an author's note which says:

"The authors wish to acknowledge their indebtedness to a large number of members of the organization for their assistance in the preparation of this paper. It is impracticable to mention all who have been of assistance, but they wish to express their appreciation particularly to Messrs. O. B. Blackwell, W. E. Farnham, W. H. Harden, H. S. Osborne and W. A. Stevens."

O. B. Blackwell therein referred to is one of my assistants as head of the Transmission Development Department—Engineer of Transmission.

In general, the acknowledgment was made for assistance in the getting together of material for us and in the general scrutiny of the thing. Blackwell's stuff is easy enough to pick out. As I remember it, I surmise that Blackwell

318 had part in connection with cable plant, his work relating to transmission over cables, probably in connection with toll service,—both long and short toll service in so far as they relate to transmission matters. The same with regard to long distance service, so far as it relates to transmission. The same there with regard to open wire and carrier circuits, parts which may have to do with equipment details or with methods of operation, probably not.

Toll cables, certainly, in so far as they relate to transmission.

I surmise that probably Blackwell may have given us assistance with regard to maintenance of toll service in so far as the article may have related to the fundamental requirements which underlie maintenance, being the transmission engineer; in regard to international connections, certainly—all of this foreign stuff, connections to Europe, connections to South America.

He gave us assistance presumably in connection with telephone circuits provided for private use in so far as they relate to transmission or to the multiplexing of telephone lines for telegraph use; the transmission side of telephone networks for program transmission in radio broadcast; telephony in connection with air craft operation, ship-to-
319 shore telephony, the transmission side of electrical transmission of pictures, the fixing up of the lines, telephony to other mobile stations, telephone public address systems, and the line side transmission side of anything having to do with experiments on television.

R. W. King is the assistant technical representative in my department, resident in London.

There is an article appearing in Bell Telephone Quarterly for October, 1928, entitled "By-Products of Telephone Research," by R. W. King, which begins on page 304 of that publication and ends on page 312. At the time this article was written, Mr. King was not in my department. He was in the Information Department at that time, although some years previous to that he had been in my department, and he came back to my department for this service abroad. I would have to read this article. Will do that and put answer
320 on the record later.

Referring to the article which appears in the Bell Telephone Quarterly of April, 1924, beginning on page 65 and ending on page 75, by R. W. King and G. W. Southworth, I agree with the following:

"Research helps to give not only better service at a reduced cost to those who use the telephone but also increases the variety of services offered. It is important, therefore, not only to the executives of the System but to the telephone user because it assures him the best service our knowledge of natural laws makes possible. It furthermore safeguards the investor and assures him that those spending his money have the broadest view of what science holds in store and that, as new discoveries are made, they will be woven into the plant, which his money has built, with the maximum of efficiency and economy and in such a way as to yield the best returns.

There are several methods of depicting a corporation's

business and financial standing. One of these, and perhaps the one most usually appealed to, is the balance sheet. But the balance sheet tells of the past while research fore-
321 casts the future; and the Bell System, while proud of its balance sheet, faces the problems and opportunities of the future with the largest research development staff in the world, with a successful record of achievement behind it."

The next article appears in the Bell Telephone Quarterly issue of July, 1928, an article by myself. I agree with the first two paragraphs, as follows:

"The Telephone Switchboard—50 Years of History."

"Reduced to its fundamentals the physical plant of that vast thing we designate as the 'telephone system' centers about three elements, namely, the subscriber's substation apparatus with its transmitter and receiver for projecting and receiving sound and its bell or other signaling apparatus for attracting his attention; the wires or other transmission channels which serve to carry the electrical impulses to and from the subscriber's equipment, and the switchboard which serves to interconnect the subcribers' equipments in any desired manner at any desired time and at the behest of users.

322 The innumerable multitude of intricate physical things involved in the make-up of the modern telephone plant are merely adjuncts required to insure the proper functioning of one or other of these elements. The widespread and far-reaching activities of manufacture and supply incident to the telephone business are merely the means by which we provide these fundamental elements in the quantities at the times and in the places required by the demands of the great telephone using public."

And turning to the next page (150) it continues:

"The hundreds of thousands of men and women who spend their lives in the telephone service are in the last analysis the providers, maintainers and operators of these three essential elements."

With respect to the next article which is one appearing in the Bell Telephone Quarterly issue of January, 1929, which begins on page 9 and concludes on page 24 and is entitled "Standardization in the Bell System," signed by H. S. Osborne, one of the engineers in the Department of Operation and Engineering, I will be very glad to read it.

323 I will also read the next article, one appearing in the Bell System Technical Journal of October, 1925, beginning with page 545, entitled "Engineering Planning for Manufacture," by G. A. Pennock. The part within the pencil lines on page 545 and the part on page 552 and ending on page 554.

324 Appearing in the Western Electric News of November, 1929, is an excerpt from an article which is entitled "Europe to America by Cable," and is supposed to be excerpts from an interview with the chief of the Bell Telephone Laboratories by Frank Parker Stockbridge in Popular Science Monthly and it purports to be a quotation from me, and I will read it as it appears in this article:

"Out of our laboratory," said Dr. Jewett, "have come such inventions as the Orthophonic Victrola, electrical recording of phonograph records, talking motion pictures, television, aids to the deaf, measuring apparatus for the medical profession, the artificial larynx and a host of others, all of which have resulted from our efforts to improve telephone service. Many of our research men have achieved international reputation as the result of some of these by-product applications. All over the world, the names of Dr. Harvey Fletcher, Dr. Herbert E. Ives, Dr. O. E. Buckley, Dr. H. D. Arnold and others of our staff are known to scientists."

I don't remember that interview. It is true that all of those things have come out of our laboratories and it is true that some of these men like Dr. Fletcher and Dr. Ives

325 have derived their reputation primarily because of the publicity that has been given to these so-called by-products.

Of the four it is certainly not true with regard to Dr. Arnold and Dr. Buckley, and I presume in the case of Dr. Fletcher. Dr. Fletcher outside of the communication field is known primarily because of his work in connection with the aids to the hard of hearing. He is so well known, in fact, that he has been president of the National Association of—I don't know what the exact title is,—which consists of those engaged in aids to the hard of hearing including the medical profession, and he arrived at that distinction because of the outgrowth of his work in the development of the telephone transmitters and receivers and in the methods of making measure-

ments on which they are based. He is our leading expert on such types of equipment, that is, telephone transmitters
326 and receivers.

By Mr. Haight: From the same article I will endeavor to read this:

"I asked him for specific examples of how problems have been tackled and solved under his direction.

" 'A good example is the research which resulted in substituting electrolytic iron dust for bundles of soft iron wire as a core for telephone loading coils,' he said. For years we had to maintain an enormous wire drawing plant, using diamond dies to draw the iron wire. The cores were expensive and difficult to make. A young man named Buckner Speed came to me with the suggestion that cores could be made of electrolytic iron dust, highly compressed, if some way were found to insulate each dust particle so as to get the same effect as a bundle of wires. I authorized work to be done on this problem with the result that an iron dust type of core electrically much better than the iron wire core, was evolved in the laboratory. That was one of the first improvements on the loading coils invented by Professor Michael Pupin and developed commercially in our laboratory. And the Pupin coil, in turn, was the beginning of long distance telephony. By 'loading' the telephone circuit with inductance coils spaced at proper distances apart, the distortion and losses of the impulses in the wire are corrected. Professor Pupin worked out an engineering method for doing this and patented it. We bought his patent and turned over to Dr. G. A. Campbell and Dr. E. H. Colpitts the task of finding out how to make coils of high inductance, low energy loss and low cost and how to install and maintain them on telephone lines in accordance
327 with Pupin's rule. They did a really brilliant piece of research involving the need of devising new types of measuring instruments. That work has been going on for many years with increasing results."

Answer: "That is substantially part of the thing I testified to this morning."

327 There is one thing that I was quoted as having said there that I certainly would not say now and that is the reference to the beginning of long distance telephony. That depends entirely on what your definition is of long distance telephony, because at the time of the loading coil, they were

already talking many miles over circuits. It depends entirely on what you mean by long distance telephony. Its meaning has lengthened as the years have gone on.

I. Referring to an article entitled, "The Day's New Marvel," "Talking Movies Talk and Move Most Naturally in Western Electric's Latest Development," in the issue of June, 1926, of the Western Electric News, page 19, which reads
328 as follows:

"The system represents successful combination and conversion to motion picture use of three major research developments.

"The first of these is the electrical system of recording. This method employs a high quality microphone of an improved type, electrical amplifying apparatus, and a record cutting mechanism. Recording may be carried on at considerable distance from the source of sound so that the actors may be grouped naturally in any scene and need not be crowded before a microphone.

"The second essential feature is a remarkable electrical reproducer which converts the movements of a needle in the grooves of a sound record into electrical vibrations. The electrical currents from this device pass into an amplifier and then operate a high quality loud speaker of an improved type, capable of filling practically any motion picture auditorium.

"The third development is the link between the reproducer and the audience in a theatre. An adaptation of the public address system makes it possible to pick up electrical vibrations from the reproducer, amplify them, and by means of properly located loud speaking telephones, transform them into sound. The loudness is so regulated as to give the delusion that the source is the actors whose pictures appear on the screen. In the case of musical programs a specially constructed loud speaking telephone insures the correct volume and naturalness."

I have no quarrel with it as a general statement. I think I have testified to all the elements before.

329 By Mr. Haight: Dr. Jewett, there is a rather long article appearing in the Western Electric News, issue of January, 1919, entitled, "Enter Multiplex Telephony and Telegraphy," by you which purports to be as chief engineer. I would like to put that in the same category as the others that have been marked and place it on the record later. The volume

is Volume 7, No. 11, for January, 1919. The next one I would like to put in the record on the same understanding. It appears in the Western Electric News, Vol. 3, No. 4, issue of June, 1914, and headed "Engineering Department of the Western Electric Company," by F. B. Jewett, assistant chief engineer, and the question will be if that is correct.

In the Bell Telephone Quarterly of the issue of October, 1922, I find an article purporting to be by O. B. Blackwell, beginning on page 12, "Notes on Radio" is its heading, and it ends on page 25. In view of its length, I would like to ask the same question as before and have the answer put on the record later, as counsel has kindly agreed in the other instances.

Mr. Blackman: Do not misunderstand me. I have not agreed that they be put on the record. I have agreed that Dr. Jewett will answer your question and that you can offer them in evidence if you desire at a later period. Really I feel that this is padding the record to such an extent that although I like most of these articles, I may feel that I will have to object, but we will not make any technical objection to your mode of procedure. We will facilitate you all we can in getting your offer on the record of the paper, if you want it.

Mr. Haight: That will be sufficient.

330 I subscribe to the general statement in the marked paragraph in the Bell Telephone Quarterly issue of July, 1931, an article entitled, "The Development of the Microphone," by H. A. Frederick, presented at the Fifth Meeting of the Acoustical Society of America, Camden, N. J., May 5, 1931, as part of a symposium on microphones, page 183 thereof. I am not in position to testify as to the specific details of the work referred to as that of Wente and

331 Crandall, as I do not identify that work, but as a general statement and under the conditions and limitations which he sets forth there I think it is a fair statement.

The material referred to is as follows:

"About 1915, the vacuum tube amplifier became a potent influence on the development of microphones for certain applications, particularly where cost was not important. It did two things, it made it feasible to use, in these applications, a microphone of low sensitivity or efficiency and it created fields of usefulness for instruments of this type. It shifted the emphasis, at least in places where low cost was not a controlling element, from a magnitude of output basis to quality or faithfulness of reproduction, uniformity and reliability. In addition, it offered possibilities of exact measurements of acoustic effects if used with a suitable microphone. This influence was almost immediately reflected in the development of a very high quality condenser microphone by Wente (Fig. 21). This instrument was developed for use in such acoustic researches and its commercial applications were developed later. The faithfulness with which it reproduced sounds over a very broad range both of frequency and intensity represented a vast improvement over the previous microphones. It was later improved by Crandall (Fig. 22), ~~has received~~ much commercial application and is used as the transmitter of the International Reference Standard with which the volume efficiencies of all commercial telephone transmitters are compared."

334 In Department of Development and Research of the A. T. & T. Co., leaving out all questions of personnel, there may have been slight changes in designation, but certainly as regards its main divisions, it is the same form of organization as I found it when I came to be its head,—and largely of the same personnel at the heads of those departments. Its general field has been the same, except as that field has been added to by new developments.

Mr. Haight: We offer in evidence an organization 334 chart as above identified, as Defendants' Deposition Exhibit No. 3 of this date.

(For deposition of John Edward Otterson, see Abst. Vol. IV, pp. 1239-1256. For deposition of Hugh Blair-Smith, see Abst. Vol. III, pp. 849-880.)

DEPOSITIONS RESUMED

January 11, 1932, at 195 Broadway, New York.

F

THEODORE G. MILLER, for defendants.

Direct Examination by Mr. Haight.

390 I reside 520 East 86th St., New York; I am vice-president A. T. & T. and have been for about two years; I have been with company since September, 1904; I have charge of Long Lines Department; I was first general manager and then vice-president; I became general manager of Long Lines some time after 1923; I have been vice-president for about two years; became general plant manager of Long Lines about 1919; prior to 1919 and from about 1913, I was 391 division plant superintendent of Long Lines, Chicago.

Long Lines services consist of toll message and special 392 contract, both telegraph and telephone. Special contract services are further classified as full time telegraph service, short period telegraph service, and the same thing with reference to special contract telephone service; also telephotographic service, which is in effect a message service and not a special contract service.

I now remember an additional program service for broadcasting; also, we rent wires to the Government and to aircraft operating companies in connection with aircraft operations.

We rent public utilities, power lines and oil pipe con- 393 cerns a service under special contract service—loading coils and repeaters. There is not very much of it and it is rather special.

The service of telephone circuits provided for private use in long distance service is classified as special contract. That is either full time or short period telephone service.

With respect to full time telegraph service, we rent circuits to anybody, such as press associations, brokers, banks, manufacturing concerns, government departments and aircraft operators.

As to short time telegraph service, we grant a telegraph circuit for a minimum of one hour and then in multiples of hours, covering printer and teletypewriter service. The customer may have a wire and operate it by operators or rent a machine from us.

394 Teletypewriter service is used both in long time and short time service, and so far as the equipment is concerned, there is no distinction between the two services. Full time is the period of eight hours per day. Full time telephone service covers a period of 24 hours a day. They are private wires. General Motors had one, but we haven't many as compared with telegraph.

Short period telephone service is where a private telephone circuit may be rented for 15 minutes every day or more at a certain period outside of the busy hours. There is,
395 however, little of it. Brokers, manufacturers and newspapers have that sort of service.

We have telephoto-transmitting and receiving stations in several places and transmit telephotos on a message basis. There are not many such customers. The biggest single use is for newspapers. They send pictures, etc.

Program service is broadcasting chains and consists of permanent net works, temporary facilities for special occasions and pick-ups. Our two biggest customers are the National Broadcasting Company and the Columbia. The National has two chains, one of which extends to the Pacific Coast and the other as far west as Minneapolis, St. Louis and so on, and the Columbia has a big chain also which extends to the Pacific Coast.

There are other customers such as the American Broadcasting Company on the Pacific Coast. There are several broadcasting stations that are not on chains but they broadcast to other stations. One in Boston has a little network of its own running through New England. There are several similar ones but not big chain customers.

A railroad can rent a circuit just as any other cus-
396 tomer. / I am not sure whether any circuits leased from us are used in train despatching. I think most of the telephone circuits that are used for train despatching are owned by the railroad companies. Public utilities, electric power companies and pipe line companies use the service for communication with the intermediate stations regulating

their service in emergencies.

397 Telephoto services comprise stations in Boston, New York, Atlanta, Cleveland, Chicago, St. Louis, and we connect also with the Pacific Company at Los Angeles and San Francisco. A map would show lines connecting them.

We have separate maps showing the National Broad-398 casting System and Columbia networks.

Defendant's Exhibit 13 for identification is a map at page 71 of the April, 1931, issue of Bell Telephone Quarterly, which map is contained in the article in said issue 399 entitled "Program Transmission Networks Provided by the Bell System as of March 15, 1931." This map fairly illustrates program networks.

400 I know that we have reports showing what the revenues of the Long Lines Department are on the toll message business and from the special contract services. I have no reports available showing how much it is for, * * * I know what it is from the broadcasting services. I do not remember ever seeing any reports showing just what it is for the short period as distinguished from the full-time services. We have reports showing revenue on telephotographic services.

We have the toll message revenues segregated from the special contract service revenues. The revenues for telephotography, which is not a special contract service, are segregated from the special contract service revenues. 401 The revenues from broadcasting are also segregated. There are no others. The revenues from the telegraph service are not segregated in any reports that I saw. I do not know whether it is segregated, but when we want to know we estimate what percentage it is of the special contract revenue.

In our department we are not able to separately identify the investments in Long Lines plant with respect to each class of service. We can make estimates of the proportions used in each and we have made such estimates from time 402 to time. In making those estimates we have not segregated. We have estimated the plant,—it would be reasonable to assume that so much was used for each one, but the plant itself has not been segregated for the accounts. There has been no segregation as to the investment of Long Lines as between toll message uses and special contract services.

Mr. C. Morsack is the auditor and has charge of the books. Arrangements between Long Lines and customer with reference to special contract services are shown by written contracts. I can produce a form of contract for each service.
403 The contract specifies the periods of the service to be furnished in the case of both telephone and telegraph special contract service. Telephotographic service is message service and is sent just like a telephone message.
404 There is a contract different from the special service contract covering program broadcasting. There is a form for permanent facilities and one covering temporary or recurring service. I will produce the forms of contract with respect to the different special services, including railroad forms.

The Illinois Bell gets a commission on all calls originating in its territory and they get payment for the use of trunks for all classes originating in its territory and they get a pro rate of the revenues for the plant within the City of Chicago. For special contract service they get a pro
405 rate and also a commission. They also get a pro rate out of full time and short period telegraph service. They get paid for the plant they furnish. They furnish all the plant in the City of Chicago.

The compensation of the Illinois Bell in relation to full time and short time telegraph service is different from other cities because Illinois Bell owns the plant. There isn't any special pro rate, however. The pro rate is simply upon the value of the plant in Chicago used generally in the long distance service. It has no relation to the revenue received by the Long Lines for full time or short period telegraph service. The same applies to full and short time telephone
406 service and as to telephotographic program and other special services.

Q. 102. Now, are any of these special services rendered direct to the user from the Long Distance tollboard or are any parts of it rendered through the exchange offices in Chicago?

Mr. Blackman: I shall have to object to this line of examination. You are getting into a subject that is not before the court, as I understand it.

Mr. Haight: Then I do not read the opinion right. We think it has relation to the property that is used in these various

9.7

offices, and it has pertinency to the matter of segregation.

Mr. Blackman: You have a right to press your question if you want, but I make my objection on the ground that it is incompetent, irrelevant and immaterial.

The special services are rendered by lines from the long
distance toll board to the offices of the customer. Whether
the plant which the Illinois Bell furnished for those services
between our central office to the customer's offices happens
to go through some of their exchanges, I don't know, but
407 the customers do not come to our central office to get
their special service, it is taken at their premises. Special
wires, for instance, go through a loop furnished by the Illinois
Bell to the long distance tollboard, from the customer's premises.
Telegraph service both full time and short period are
handled in the same way. These loops may go through the
exchange boards first. The full time telephone and short
period telephone are handled in the same way as telegraph
services. They carry direct to the customer. They terminate
in the customer's premises. The cables from the customer's
premises in many cases are operated through the ex-
408 change offices but the loops are routed direct from the
tollboard to the customer's premises. The same is true
with reference to program service.

The billing for these special contract services is direct from Long Lines to the customer.

409 As to teletypewriters used by the customer in these
different services, they are leased to the customer and
in many cases the associated company owns, furnishes and
maintains them. In Chicago the Illinois Bell owns the teletypewriters.
That is true with reference to the equipment
used in other special services.

The broadcasting companies own their own stations.
410 I think some of the broadcasting equipment is bought
from the Western Electric. Some of the press associations
own their teletypewriting machines, but not all of them.
Long Lines or associated companies own them and they are
furnished under a contract.

Teletypewriters used by broadcasting companies on their telegraph wires would be furnished by Illinois Bell in Chicago. Long Lines makes the leases but Illinois Bell furnishes the apparatus in the City of Chicago; that is, we sign the

contract with the National Broadcasting Company for a net-
work all over the country and where teletypewriters are
411 used in connection with their program wire, they would
be furnished by the associated companies under the same
arrangements as exist with respect to any kind of special service contract. In Chicago we take broker's wire or bank wires, we make a lease with the customer, but we arrange with the associated companies to provide the teletypewriters where they are required. In such cases the customer pays us and we pay the associated companies.

On special contract services the associated companies get a commission on a regular schedule basis on the revenues from the contract. That is true with reference to Chicago. The situation in Chicago is special with respect to commissions
for message services. There is a regular basis for the
412 commission which is the same on all messages while there
is another schedule for the business that originates else-
where.

Assuming that the Chicago Tribune at Chicago has special press service, the Illinois Bell would furnish the teletypewriters and there is a separate rent for the teletypewriter as distinguished from the rent for the use of the lines. The rent for the teletypewriter is paid to the Long Lines if it is
in connection with a Long Lines contract. Long Lines
413 keeps it. I could not answer whether Long Lines pays
anything to Illinois Bell for the use of that instrument.
I don't know whether there is any written contract with the Illinois Bell as to compensation on special contract services, but there is a schedule. Mr. Morsack may be familiar with that.

I do not think the schedules are printed but are in the form of letters. Mr. Carter ought to be familiar with those.

I know of no property in Chicago belonging to the A. T. & T. or that is used in the special contract services. There
is a contract between the Western Union and the A. T.
414 & T. under which Western Union can obtain wires to use
to transmit messages, which has been in force two or
three years. There is a similar contract with the Postal Telegraph & Cable Corporation for about the same time. The General Department of A. T. & T. have the custody of those contracts. Long Lines has been furnished with copies.

Long Lines publishes a magazine called Long Lines and

has done so for about ten years; published each month; Herman Hocker is the editor who reports to Mr. Rood, the
415 publicity manager. I imagine there is a complete file. I don't know whether there is any objection to defendants looking at those.

(Counsel for plaintiff stated they would advise as to whether it will be furnished.)

416 There was an increase in Long Lines plant between 1920 and 1930 to provide many more facilities for the increase of business. There has been a considerable increase in the various special services. The program service is all new in that period and we have had to increase the plant to provide for that service. There has been a big increase in all special services except telephotographic service, which is the smallest special service. Telegraph business is the largest one and broadcasting is the second. Special contract telephone service is third, but it does not amount to very much compared with the total business.

418 Our records are kept so that I could furnish the form of special services by classes for the years 1920, 1925 and 1930. I think Mr. Carter knows more about that.

Q. 187. Now, in regard to the toll message service, has there been any general trend of change in that from 1920 up to date?

Mr. Blackman: I object to that; it is irrelevant, immaterial; it is not intrastate service. I think we have gone about as far as we should.

Mr. Haight: It is interstate service in which the record already shows interstate property is used.

Mr. Blackman: Yes, that is true, but here you are going into a question purely relating to interstate business. All the Long Lines services, being interstate, of course.

Mr. Haight: Yes.

There has been an increase in the toll message service between 1920 and 1930. However, the trend lately was different from what it was in 1928 and 1929, but it increased very rapidly up until about two years ago. Since then it has been decreasing. I can furnish the amount of toll message revenue for 1920, 1925 and 1930.

420 There have been several decreases in the long distance message rates in the last five or six years for everything in excess of 40 miles. Improvements in equipment or facili-

ties have had bearing upon such reductions because of ability to handle business more economically thereby, such as development of repeaters, loading coils, cables, switchboards, operating methods.

Q. 201. Have there been any developments of equipments or improvements in equipment in exchange plants that have helped to increase the volume of long distance messages?

Mr. Blackman: You mean exchange plants of the local companies?

Mr. Haight: Yes.

Mr. Blackman: I object to that on the ground that I do not know that this witness is familiar with the details of that; he has not been shown to be.

Mr. Haight: I do not want him to tell us anything he does not know.

I am not competent to answer the question as to whether improvements in equipment in the exchange or local plants have had anything to do with the increase of long distance business. There has been no reductions, however, in the rates
for special contract telephone and telegraph services.
421 There have been some adjustments in the rates for printers and in connection with some broadcasting rates,—
minor reductions, which reductions apply really to some of
the accessories rather than the main service.

422 The auditor of Long Lines makes reports on the financial situation to the comptroller of the A. T. & T.—income accounts. The assistant treasurer makes what we call a cash report to the treasurer. No reports are sent to the comptroller, except those specified by the Interstate Commerce Commission. However, there are other reports of cash requirements and provisional estimates made from time to time. I have to do with the provisional estimates and estimated cash requirements reports sent to the comptroller, Mr. Morsack, also. I had to do also with the determination of Long Lines long distance message service rates. Our aim in fixing the
rates from time to time was to get a fair return and stim-
423 ulate as much business as we could by reduction in rates,
and to fix a reasonable rate for long distance service. I think we have accomplished that from time to time with these various changes in rates.

The Eastern Telephone & Telegraph Company was bought by the A. T. & T. and operates in Nova Scotia and New Brunswick under a franchise from the Canadian Parliament to construct lines through Canada, and it was purchased to get rights to build a line through Nova Scotia and New Brunswick and for the purpose of connecting it with the transatlantic cable from Newfoundland to England, and it will be by that means that Long Lines will furnish transatlantic cable service.

The Transpacific Company operates the Pacific Coast radio station which now gives a service to Honolulu.

424 There are a lot of different companies that hold title to Long Lines property, there being one in the majority of the states, one in Illinois. There are probably about thirty of these different companies.

Our engineer, Mr. Pilliod, can give a better idea of what provisions have been made for future developments and increase in Long Lines. He has fundamental plans for providing facilities over different routes and for providing new routes. We have a pretty general picture of the future for about five years. We have had computed for each year the return on investment in Long Lines. Mr. Morsack probably has those records. 425

Long Lines has a separate headquarters from the A. T. & T. at 15 Dey street, but since ~~1920~~ Long Lines has occupied space in the A. T. & T. Building at 195 Broadway, and still occupies space, but it is very little.

The organization chart of Long Lines has been practically the same with slight changes only since 1919. I will produce an organization chart.

I will check up the map appearing on page 69 of Bell System Technical Journal for January, 1930, which map is in connection with the article by Gherardi and Dr. Jewett and is entitled "Special Contract Telegraph Service Furnished to the Press Association Circuits Totaling 24,000 Kilometers are Used Exclusively by the Press Association for Distributing News to Its Customers"; also the map appearing on page 70 of the same publication, being Fig. 55, "Special Contract Telephone Circuits Furnished to a Brokerage Company, 30 Circuits Totaling 38,000 Kilometers with 95 Stations." Also map or illustration on page 73, same publication, above the legend "56" and the words "Routes of Bell System Telephoto Service in the United States."

(The said pages of said publications were marked for identification as Exhibits 14, 15 and 16, respectively.)

I will check up the article appearing on page 83 in Bell Telephone Quarterly, April, 1930, entitled "Transoceanic Telegraph Service, General Aspects of," written by me.

428 CAJETAN MORSACK, for defendants:

Direct Examination by Mr. Haight:

I reside at West Orange, New Jersey; I am auditor of Long Lines Department, A. T. & T. and have been since spring of 1922.

The business of Long Lines is classified in the accounts into message tolls, special contract service, and telephoto and broadcasting. In general the telegraph service is kept distinct from the telephone service.

429 I can give information as to the revenues relating to the business as to long and short period telegraph service, full and short period telephone service, telephotographic and program service. We distinguish between telephone and telegraph service. Telephoto is separate. We have certain subdivisions of telegraph service, also. There is a segregation of private wire telephone service. Probably the teletypewriter service can be distinguished. The teletypewriter account covers the revenues derived from special contract services conducted by teletypewriter. I can produce an accurate listing of all those things, and will do so.

Reports of revenues are made by Long Lines to the Comptroller and by the Comptroller I mean the General Department of the A. T. & T. monthly and cover financial results of Long Lines. I could furnish those reports. The forms include balance sheet, income statement, revenues, expenses and
432 analyses of those major statements which appear on other reports. It would take a few minutes to get a set of forms of reports, which I will obtain.

I will produce an organization chart that will illustrate the organization of Long Lines back as early as 1923.

The general treasurer of the A. T. & T. is compensated through the apportionment of charges against Long Lines for general services, which charges amount to 1½ per cent Long

Lines revenue. There is nothing in addition to that for general services.

436 There is an assistant treasurer of A. T. & T. who is part of the Long Lines organization. I don't think there is any employe on Long Lines payroll that is also on the payroll of General Department. The publicity manager in the General Department is not also the publicity manager of Long Lines.

437 The Long Lines attorney, Mr. Elsasser, is counsel for Long Lines. He has an organization reporting to him. The general counsel of the A. T. & T. does not appear as part of the organization of Long Lines, nor does the tax attorney. However, I don't believe I am competent to answer the relation between Long Lines and the tax attorney and general counsel.
438 The only way I have of knowing whether any one is in our organization is by the payroll. I determine whether any one is in the Long Lines organization by whether that man is paid by the Long Lines.

Our reports include the revenues from special contract service that originate in Chicago, but that revenue is not segregated and it would be very difficult to say where it originates, because there are a number of points involved, any one of which might be considered as the originating point. Obviously we could segregate special contract revenues originating in Chicago, because it is the amount billed on those particular contracts. Only in the sense that the amounts of compensation which the Illinois Bell receives for services and facilities that they furnish in the City of Chicago are apportioned among the accounts, certain amount to special contract service revenue, certain amount to message toll business, to broadcasting, can the revenues attributable to Chicago be
440 segregated. For instance, with reference to the National Broadcasting Company, there are several localities involved in the hookups, one being Chicago. To segregate and attribute to Chicago any portion of such revenues could be done only on an arbitrary basis, and there is no segregation except as I have explained, namely, that the total compensation to Illinois Bell is apportioned to various revenue accounts as pro rate reduction. I can think of no billing made by Long Lines to the Illinois Bell on account of special services.

441 With respect to special services rendered by Long Lines in Chicago, we make a settlement for the plant and serv-

ices furnished by Illinois Bell there, and also we make a settlement with Illinois Bell for the amount of commissions on special contract services. I think Illinois Bell gets payment for the loop in connection with private wire service, and the amount of the payment is what the Illinois Bell would receive from a similar loop furnished to an outsider. I don't know how much that is. I think I can find out, but I am not sure; what is running through my mind is whether it is the same in all cases. In addition to the payment for the loop, it also gets a commission. I don't mean that the commission represents compensation for the use of the toll plant but what I do mean is that Illinois Bell gets a percentage or share of the revenue which is paid to the associated companies on two-way special contract services, which commission is calculated on the regular commission table depending upon
442 the amount of revenue and contract. There is a schedule covering it. I am speaking of all two-way special contract services. I don't know whether there is a contract but there is at least an exchange of letters. I will get the exact basis and (subject to consent of counsel for the plaintiffs) produce same, so far as it relates to the Illinois Bell in the Chicago business.

443 The system of paying commissions on special contract service started in July, 1930. Prior to that time no commission was paid at Chicago or at any other point. Prior to that, the Associated Companies were paid for special loops that were used and also a pro rata share for the line haul furnished, which is true at the present time.

In regard to the article in the Bell Telephone Quarterly for April, 1924, written by me, at page 500, describing the accounting system in the Long Lines, I will read the article and advise you whether it correctly described the accounting system at that time and whether such description holds true at the present time.

Mr. Haight: I think at this time the various forms of reports that were asked for have been brought into the room at the direction of the witness and then placed in the possession of counsel for plaintiff. What is your position?

Mr. Blackman: As to allowing you to see these forms, why, we will do that. We have already furnished you with these complete forms and every one of them; you have had all of them in your possession and have had them for many weeks.

As to permitting these forms to be marked for in evidence in this case, why, we may have objections to the offer, but so far as seeing them, why, you can see them.

It was agreed by counsel for plaintiff that defendant's counsel would be advised without delay whether pursuant to defendant's demand:

(1) Monthly reports, Long Lines, Nos. 1, 2 and 14, covering the month of December for each of the years 1919 to 1930, both inclusive, will be produced.

(2) Monthly reports, Long Lines, Nos. 1-A, 3, 4, 7, 11, 18, 22-A, 22-B, and 22-C for each of the years 1919 to 1930, both inclusive, will be produced. December monthly reports may be sufficient if that report covers pending months of each year.

(3) Provisional estimates, Long Lines, reviewed by report 22-B from 1919-30, both inclusive, will be produced.

Article entitled "Accounting in the Long Lines Department"—Bell Telephone Quarterly, April 1924, being Defendants' Exhibit 17 offered and received in evidence. That article was written by me, is correct as of the time it was written and as of today, except there have been certain minor changes
448 and one major item change effective January 1, 1932. As
to the latter, all the field accounting forces formerly part of the Plant Department have become part of the Accounting Department. The minor changes are of no particular importance.

Up to the end of 1927, the license payments by Long Lines were computed only upon the toll message business. Since that time the computation has been made by taking a percentage of the total revenue of Long Lines less uncollectibles, including telegraph business, all special contract services—total operating revenues.

We compute the return on the investment of the Long Lines Department, as a whole, for all years in the regular course of business for the officials of the company, that is, all the administrative people of the Long Lines Department and for transmittal to the comptroller. Those computations have been preserved and are on these monthly reports. I think Nos. 1 and 22 are the only ones which show that. I do not think any of these reports actually show the computations in the form in which they were computed. This 22-B, for example, shows total telephone earning to average plant in service. If we look at 22-A and B we may get an answer to the question as to each year, the question being what were the telephone earnings on average plant in service.

451 By "average plant in service," we do not include construction work in progress.

Cross-Examination by Mr. Blackman.

So far as I can remember, the tax attorney and the general counsel of A. T. & T. were not on the Long Lines payroll, but each of the officers had a force engaged on Long Line work and they were on the Long Line payroll. Mr. Elsasser reports to Mr. Miller not to Mr. Bracelen but at that time this organization chart shows a report to the general counsel. When that was in effect, while the general counsel was not on the Long Lines payroll, a certain force under him was on the Long Lines payroll and paid by the Long Lines and 452 charged to the Long Lines account.

The assistant treasurer A. T. & T. is on the Long Lines payroll and reports to the vice president, his entire salary being paid by Long Lines. Long Lines has a complete organization of its own and pays its own people.

453 JAMES J. PILLIOD, for defendants.

Direct Examination by Mr. Haight.

Reside New York City; engineer of Long Lines Department since January, 1920; graduated in electrical engineering, Ohio Northern University, in 1908; have been with A. T. & T. practically ever since; with them somewhat before that date.

I will read the article, Bell Telephone Quarterly, January 1923, entitled "Engineering on Long Lines," p. 18, written by me, but my recollection now is that it sets forth the situation at that time, and since the changes have been principally in personnel. Different problems have been presented on account of activities in radio field, for instance. Fundamentally, the engineering problems are not changed. It is merely new 454 additional things brought in, but it is a new branch of our activities. A great deal of it is merely an extension of the older art, gradually merging from the old art into the new. Some changes, however, have been required to be made on account of radio broadcasting.

455 Our general telephone circuits are all designed for 2-way operations, that is, communication between two telephone instruments one in one location and one in another. The radio broadcast is fundamentally a 1-way transmission service. However, there are occasions when they do 2-way service.

In broadcasting circuits we have a great many stations connected to the same circuit, which is quite different than in the case of telephone circuits where generally you have only two instruments. To that extent it is a slightly different art. However, the same kind of copper wires with necessary modifications are used. Special circuits have been required as any change you might make in a fundamental business requires special attention or special apparatus.

456 The use of teletypewriter has been developed over a number of years and is one added feature to our activities. They do not in themselves require any fundamental changes, however. Teletypewriter is an instrument to connect on to the end of the telegraph circuit, and the change is really from the telegraph instrument to the teletypewriter instrument. The tendency has been to work at considerably higher speeds with the teletypewriter than was possible by hand operation, which has required an improvement to some extent in the telegraph circuits themselves, to the apparatus connected to those circuits, which has required the replacing of some of the older type of apparatus that might have been suitable for hand speed.

The teletypewriter Private Branch Exchange systems is a board which can be used for terminating a number of circuits to which are connected teletypewriter machines and also telegraph lines to other points either in another city or in the same city. This board is so arranged that the different teletypewriter stations can be connected either to each other or to the line extending out from the switchboard. In Long Lines in the last few years there have been a number of different developments to make the service more efficient and economical to operate; carrier telegraph systems, improvements in methods of operating telegraph service in cables, there have been new telegraph circuits devised; all such have 457 been directed to better and cheaper service. The carrier telegraph system enables us to operate possibly ten telegraph circuits over one pair of wires and to operate telegraph circuits in cables more efficiently.

(It was agreed by counsel for plaintiff that the follow-
458 ing described documents, papers, etc., marked as exhibits for identification, as indicated below, may be received in evidence, subject only to objections as to materiality and relevancy:

That portion beginning p. 565 under the caption "Carrrier Telephone Growth in Bell System," ending p. 566, just preceding the title "New System Replacing Older Type," and chart on p. 566, of that portion of article entitled "Carrier Systems on Long-Distance Telephone Lines" by H. A. Affel, C. S. Demarest and C. W. Green—Bell System Technical Journal July 1928, Defendants' Deposition Exhibit 18 for identification.

An article entitled "Milestones, Guideposts and Footprints" by R. T. Barrett,—Telephone Quarterly April 1931, beginning pp. 80-91—Exhibit 19 for identification.

Same issue, same publication, an article entitled "Tele-
459 typewriter Service and its Present-Day Uses," by W. L. Dusenberry, pp. 92-102—Exhibit 20 for identification.

An article, Bell. Tel. Quarterly, April 1925, by J. O. Perrine, entitled "The Development of the Transmission Circuit in Communication," pp. 114-131—Exhibit 21 for identification.

Bell System Tech. Journal—January 1930—article by A. B. Clark entitled "Wire Line Systems for National Broadcasting," pp. 141-149, including map opposite p. 142, Exhibit 22 for identification.

Bell System Tech. Journal—July 1930—article by H. S. Osborne, entitled "General Switching Plans for Telephone Toll Service—pp. 429-447, Exhibit 23 for identification.

Bell Telephone Quarterly—July 1929, article by R. B. Parker, entitled "Telephone Typewriters and Auxiliary Arrangements," pp. 181-194, Exhibit 24 for identification.

461 Bell Telephone Quarterly—October 1924, article by C. W. Foss—article entitled "World's Telephone Statistics, 1923"—pp. 270-282, Exhibit 25 for identification.

Bell Telephone Quarterly—January 1925, Article by D. F.

Houston, article entitled "The Work of the Bell Telephone Securities Company," pp. 37-41—Exhibit 26 for identification.

Bell Telephone Quarterly—January 1928, Article by F. E. Richter, entitled "An Economic Review and Outlook," pp. 27-41—Exhibit 27 for identification.

Bell Telephone Quarterly—January 1923, Article by C. A. Heiss, entitled "The Budget Plan of the Bell System," pp. 32-42—Exhibit 28 for identification.

Bell Telephone Quarterly—July 1931, Article, no author's name appearing, entitled "World's Telephone Statistics, January 1, 1930," pp. 138-149—Exhibit 29 for identification.

Same issue—Article by R. S. Coe, entitled "Some Auxiliary Services and Facilities of the Bell System," pp. 150-163—Exhibit 30 for identification.

463 Bell Tel. Quarterly—April 1922, Article entitled "The Radio Telephone Situation," pp. 2-12, by A. H. Griswold—Exhibit 31 for identification.

Same Issue—Article by D. F. Houston, entitled "The Work of the Bell Telephone Securities Company," pp. 13-22—Exhibit 32 for identification.

Bell Tel. Quarterly—July 1931, Article entitled "The Measurement of Noise, a New Service of Electrical Research Products," by S. K. Wolf, pp. 189-192—Exhibit 33 for identification.

464 Bell Tel. Quarterly—Article October 1926, entitled "Some Problems of Statistics and Economic Research in the Bell System," by C. A. Heiss, pp. 238-252—Exhibit 34 for identification.

Bell Tel. Quarterly—Article January 1926, entitled "An Economic Review and Outlook," by F. E. Richter—pp. 23-33—Exhibit 35 for identification.

Bell Tel. Quarterly—January, 1927, Article entitled "1926-1927—An Economic Review and Outlook," by F. E. Richter, pp. 9-20—Exhibit 36 for identification.

465 Bell System Tech. Journal—October 1925, Article entitled "General Engineering Problems of Bell System," by H. T. Charlesworth, pp. 520-521, 522, using the part entitled "Engineering Cost Studies"—Exhibit 37 for identification.

Same issue—Article entitled "Engineering Planning for

Manufacture," by G. A. Pennock, pp. 542-560—Exhibit 38 for identification.

Bell System Tech. Journal—January 1925, Article entitled "Engineering Cost Studies," by F. L. Rhodes, pp. 1-14—Exhibit 39 for identification.

466 Defendants' Depositions Exhibits 40 to 50, for identification, both inclusive—Annual Reports of Directors of A. T. & T. to the stockholders thereof for each of the years 1920 to 1930, both inclusive.

Defendants' Depositions Exhibits 51 and 52, for identification, similar annual reports for the years 1918 and 1919, are to be substituted and marked.

469 Defendants requested the production of various docu-
471 ments and agreements relating to Western Electric and its subsidiaries, which requests were complied with. See Abst. pp. 2286-2289, *infra*, this volume.

Defendants requested the production of the following documents with respect to matters relating particularly to A. T. & T.:

472 1. The agreement between Columbia Phonograph Company and A. T. & T. or its subsidiary, covering record producing which was referred to in connection with the testimony of Dr. Jewett.

2. An agreement of the same general nature between A. T. & T. or its subsidiary, and the Victor Talking Machine Company (may be Victor Phonograph Company).

3. The minutes of the Board of Directors A. T. & T. for years 1919 to 1930, both inclusive.

4. The minutes of the meetings of the executive committee A. T. & T. for years 1919 to 1931, both inclusive.

5. License contracts between A. T. & T. and associated licensee companies as of January 1, 1918, and following.

473 6. The contract between A. T. & T. and Western Union or contracts, if such be the case, relating to subject matter of use of Bell Tel. Laboratories facilities or services.

7. Contract or contracts between A. T. & T. and Postal Telegraph & Cable Corporation, covering the same or similar subject matter.

8. The letter dated November 2, 1923, from H. B. Thayer to J. P. Morgan & Company, relating to and in connection with the sale of one million dollars A. T. & T. 20-year sink-

ing fund 5½% debenture bonds dated November 1, 1923, due November 1, 1943, and also in connection with that the A. T. & T.'s balance sheet of September 30, 1923, and the Bell
474 System's balance sheet of September 30, 1923, which accompanied the letter hereinabove in this request identified.

9. The letter of H. B. Thayer to J. P. Morgan & Company written in connection with the sale of $125,000,000 A. T. & T. 35-year sinking fund 5% gold debentures, which debentures are dated January 1, 1925, and due June 1, 1960. In this request and the one preceding it, the H. B. Thayer referred to is the president A. T. & T. and the letters referred to written by him in his official capacity as president.

10. Letter of Walter S. Gifford, president A. T. & T., written to J. P. Morgan & Company in connection with sale of $150,000,000 of 35-year 5% gold debentures, said debentures being dated February 1, 1930, to February 1, 1965, and were sold by A. T. & T. on or about February 1, 1930.

11. Also three letters, one being a summary of letters requested under item eight above, another summary of letter requested in item 9 above, and the other a summary of letter requested under item 10 above, written to J. P. Morgan & Company at about the dates of the letters referred to
475 in the preceding requests or notices, items 8, 9 and 10, and part of the transactions therein referred to.

Defendants requested information as to whether coun-
476 sel for plaintiff would make any objection at the final hearing except as to materiality and relevancy to the offer in evidence by defendants of the following documents, records and data furnished or made available to defendants for inspection at the offices of Ill. Bell. Tel. Co. at Chicago:

1. Those mentioned in letter of Mr. Bracelen to Mr. Goldstein dated September 22, 1931.

2. Statements showing revenues, expenses and average assets of A. T. & T. allocated to Long Lines license contracts and holding company operations from 1923 to 1930, both inclusive.

3. Statement showing revenues and expenses A. T. & T. allocated to Long Lines license contract and holding company operations for last five months of the year 1919 and to and including the year 1922.

4. All documents, data and records furnished or made available to defendants for inspection by plaintiff, not mentioned in the foregoing paragraphs 1, 2 and 3.

478 HARRY H. CARTER, for defendants:

Direct Examination by Mr. Haight.

I reside at Pelham, New York; I am general commercial manager of Long Lines and have been connected with Long Lines for about four and one-half years.

So far as I can see, the organization chart handed me as of July 1, 1927, is the organization chart for that year. Except for personnel, it has been the same since, except we have added some field officers at Washington and Detroit, and there has been added also since, a general sales manager. I will produce a later organization chart.

479 The general commercial representative is not in existence any more. The general sales manager has taken over part of the function that was performed by the general commercial representative and the other parts go to the general commercial supervisor. The general sales manager directs the selling force of the department, makes studies in his section as to market conditions, where the service can be sold, and does the general line of work that a general sales head would do, etc. He has 12 or 14 people on his staff and those engaged in selling are at the present time around 90,
480 which covers the eight or nine field offices, as well as New York.

There is a commercial engineer in the Long Lines who has about 125 under him. He makes estimates of business, makes studies about charges, rates, tariffs and so on. He has to do with the toll rates. They keep data as to the volume of traffic by length of hauls. He has also to do with special service contracts, with developments and rates in connection with those services. I don't think he has anything to do with any commission cases.

The work of the General Toll Development Supervisor
481 would come now under sales manager. Part of the work originally handled by manager of auxiliary services is

done now by Program Supply Manager and part now by the Commercial Supervisor. The Program Supply Manager handles contacts with broadcasting companies. He has four or five people under him.

482 In the Commercial Supervisor's section there is the pricing branch for the facilities that the broadcasters desire.

I heard the classification of special contract services given by Mr. Miller, which is true except that the short period telegraph service is confined to teletypewriter service but not to Morse.

I have under me as General Commercial Manager about 350 to 360 people.

The Illinois Bell does some sales work with respect to special contract services, being able to close a sale for any of those services, that is, they handle the applicant for service, negotiate for the sale of the service, and the Illinois Bell
483 does that work. If the Illinois Bell is in touch with the customer who desires service from Chicago to New York as an example, it is in a position to take that contract for that service. In Chicago our own department and Illinois Bell sells special contract services. Likewise the Western Electric, when it was in touch with anybody that wanted our service, would be able to make the sale, because we are engaged in an employees sales campaign, Illinois Bell selling for us and we are selling for them. The Western Electric has entered the campaign.

484 Long Lines has an office in Chicago handling the selling of toll and special contract services. It is known as the Chicago division of Long Lines. It is a branch of the Long Lines Department like our New York, Washington or Cleveland offices.

I will look up and let you know on whose payroll the employes of the Long Lines are in Chicago. There are possibly 30 or 35 persons in Chicago in the Long Lines Department selling special contract services and long distance toll service for the Long Lines. I have no way of telling how much of the work is long distance toll service and how much is special contract service. Illinois Bell has in its organization what is known as toll and special contract force. I don't know the size of it. There are no regular reports of the efforts of

those persons in the Illinois Bell doing that work. However, the division office of Long Lines at Chicago has a record of the sales. There is a report to the Long Lines Department at New York City of the total sales, but that report does not divide the sales made by the Chicago division of Long Lines and those made by Illinois Bell. I have no way of distinguishing what was sold by one or the other. I could go back to the division offices in Chicago and get a division of the
487 sales between Long Lines and Illinois Bell. I have never done it, though.

I made some mention of the Western Electric in connection with the selling of services of Long Lines in Chicago. With respect to that, all the Bell System forces are engaged in an employes sales campaign, so-called. In Chicago I assume the Western Electric people, Illinois Bell people and all their forces like Long Lines, are engaged in this and are trying to sell any of the Bell System services, including Long Lines, in Illinois, that can be sold. I know, however, of
488 no specific organization in the Western Electric so engaged.

The Chicago office of Long Lines Department does work outside of Chicago of various kinds; it covers northwestern territory and the mountain states. The headquarters are out of Omaha, Minneapolis, Fargo, North Dakota, and Denver, and runs right up to the Canadian line, and all the group of states made up of the Mountain States Telephone Company territory.

489 Generally speaking, I assume that Chicago covers the center part of the City of Chicago, and they are in position like every other employe to sell services whether it is there or in the state or any part of the country. When the employers of the Illinois Bell are in a position to take an order for the furnishing of services and facilities that are available, including program service, they quote the rate for the facilities. There is a continuing program supply furnished after the sale is made in the case of program service. I think both Illinois Bell and Long Lines furnish that service. The Long Lines have some continuing services in Chicago.

490 The National Broadcasting Company network and the Columbia network both have stations in Chicago broad-

casting programs daily. I could get the information as to amount of the service rendered by the Illinois Bell in Chicago and as to that service rendered by the Long Lines; that is, how many stations are on the air daily that are hooked up with Long Lines and how many are on the air daily connected with Illinois Bell networks. I will get that information.

I should say that the same amount of that sort of service would be given by the Illinois Bell on a 16-hour continuing service that would be given by the Long Lines on a camparable service. Illinois Bell sales forces sell telephotographic service as another form of service that we offer. There is very little sold by either. Newspapers and picture companies employ that service. But there are no contracts for that service as it is on the basis of a toll message service. A high percentage of the full time telegraph service would have been sold by the Long Lines force.

491 Morse service is not used to any great extent by the
492 Associated Companies. If it is a Morse service, it requires a rather expert man on Morse. We have them in our department but I doubt if Illinois Bell has, or a teletypewriter man in their department.

Illinois Bell, as to short period telegraph service, using the teletypewriter, would have the same to do with the sale of that service as they would have in selling the full time service. I don't think they have men who devote their time to that exclusively. It is one of the several services their salesmen have to offer. The same activities with reference to sales apply to the sale of special contract telephone services, both long time and short time.

Prior to 1930, the Illinois Bell received for making sales of Long Lines special services, their regular charges for the facilities involved, without any commission. But for about a year and a half or two years it has received a commission. I will supply that date when the commissions started. It was figurd out on the same basis as the commission paid on
494 toll. I think there was an interchange of letters covering the amount of the commission, which I will produce. No compensation was paid by Long Lines Department to the employes of the Illinois Bell for selling special contract services of Long Lines. As far as I know, these employes got

their salaries from Illinois Bell.

With respect to the special sales campaign, the employes in the system have been asked to do all they could to promote the various services of the system—exchange, toll, special service and what not, so that any employe in any department at any place in the United States is informed as to 495 the several services we sell and they are in a position to intelligently discuss those services and close sales if the opportunity presents itself.

As far as I know, there are no special rewards for results in selling. The campaign has been running for probably two years. I think the campaign was originally suggested by several of the associated companies. I don't know to whom the suggestion was made, they just started it around and got some results. Several of the associated companies involved have been directing the campaign. I suppose the O. & E. department, A. T. & T. is used for advice and consulting purposes in connection with that activity, like they would be in connection with all other sales activities. By O. & E. I mean the operation and engineering department of the A. T. & T.

The Long Lines in connection with that campaign furnished certain information as to special and toll services; that is, generally how the services were being used, who had purchased them and how they were being made use of by the customers. The A. T. & T. division of Long Lines in Chicago participated in the campaign and were asked by the Illinois Bell people to help them sell their services like they were helping us sell our services. The campaign is a part only of the general selling work. It merely brings in more employes than we would nominally have selling the services and our force in Chicago continued selling special services as they 496 had in the past. There was no special advertising in connection with the campaign, but amounted to merely a further number of people put on the job of selling service.

497 I am the one to give instructions in respect to selling of Long Lines service, message or special, but I gave no instructions in regard to this selling campaign.

When the Illinois Bell makes a sale of special contract services of the Long Lines, the Long Lines bills the customer and that is done continuously by Long Lines.

The Illinois Bell with respect to broadcasting operates 498 the facilities in Chicago to see that they are working properly each day that the program is on the air. That is, the Illinois Bell maintains the instrumentalities; lines in the City of Chicago in connection with special contract services.

Mr. Charles Barnett is head of the Long Lines Division in Chicago and has been such I think about 12 or 15 years.

I don't know what the arrangement for compensation to the Illinois Bell was in respect to use of loops prior to 499 1930. There would be no special contract services of Long Lines in Chicago that does not use the plant of the Illinois Bell in Chicago to connect them up. Take a private wire between New York and Chicago. The customer 500 would be sold by the Long Lines Department in New York. The service between New York and his office in Chicago and the private wire would be exclusively for the use of that customer, and a so-called loop would be used at both ends; that is, a loop in Chicago and one in New York. These loops are connected with the toll line or telegraph service betwen New York and Chicago. The same relates to all the different services—telegraph, telephone, full time and short time, also for the program. The telephoto is not on the special service; it is an individual message service.

501 Since I have been connected with the Long Lines, we have put in the short period teletypewriter service. Prior to my occupying the position of manager of commercial department, Long Lines, Mr. A. W. Drake had that position. For how long, I don't know.

I will look up and give you the information as to how many radio stations there are in Chicago area using circuits regularly. I will also give you an idea of the temporary radio service or one night stand. I know there are a great number of radio stations in Chicago and that at times some of them are put on for one night and some are on the air every night. I think there are some airports in Chicago that have special service but I would have to look that up. That is regular toll, also teletype on special contract circuits for dispatching planes and giving weather advice to pilots. I don't 503 know the extent of any special service given to railroads at Chicago or of private wires leased to any electric

power company or pipe lines or concerns of that sort. There are form contracts for the special services which I will
504 furnish. There is one form covering permanent facilities and another form covering temporary facilities.

Defendants requested witness to furnish the revenues for the different services, including toll message for the years 1920, 1923, 1925, 1928, 1929 and 1930.

506 CLYDE UHRIG, for defendants.

Direct Examination by Mr. Haight.

I reside on Manhattan Island at 45 East 55th street. I am assistant comptroller A. T. & T. and have been for about 6 or 8 years; prior to that, I had similar duties with other titles for some years. That would take us back to 1920 or 1921.

I have before me an organization chart of the comptroller's department. (Marked Defendants' Deposition Exhibit 51, for identification.) According to that chart, I am assistant comptroller. The duties of the various divisions are broadly correctly described on that chart. My division, entitled
507 "A. T. & T. Company, General Department of Accounts and Reports" comprises the work on the general books of the A. T. & T. general department, and also to the extent that we combine long lines balances at the end of each month and year, the books of A. T. & T. as a whole; both balance sheet accounts and revenue and expense accounts—all accounts.

The words "Special Studies in Respect of A. T. & T. Company's Accounting and Financial Matters" means largely a projection of our earnings and cash positions over 6
508 months to a year, in order to be in a position to advise the comptroller and others among other things of the needs for raising capital funds.

The title "Allotments to Associated Companies and Matters Relating to Acquisition of Associated Companies Securities," covers loans to associated companies usually for construction purposes and is evidenced by demand notes which we carry along and commonly exchange for common stock. Sometimes those notes and open account advances are repaid from the proceeds of bond issues of the Associated Companies.

The title "A. T. & T. Company, General Department Methods," relates to the best procedures in running an organization of 80 people which this comprises, accounting classifications, treatments and procedures, including financial, since we are very considerably involved in financial matters, loans, etc.

The "Supervisor of Methods" works with respect to methods above mentioned. The auditor is in direct charge of the general conduct of the activities of the office.

"Supervisor of General Bookkeeping" has immediate
509 charge of the books from which balance sheets and the
income accounts are produced.

The title "General Books and Records, Real Estate," relates to property in this block, 195 Broadway. However, to the extent that the work is done directly for the 195 Broadway Corporation, such costs are borne by that corporation.

The title "Tax and Commission Reports" covers the compilation of tax and commission reports, reports to the Interstate Commerce Commission, the New York Public Service Commission and various State Tax Commissions.

The "Supervisor of Disbursements" covers 100% of
510 the disbursements of the general department, such as
payrolls and disbursements under voucher authorizations.

The title "Special Assignments" covers rate case exhibits such as we have had recently at Columbus, Detroit, Chicago and so on and any other rush work which requires an exceptionally competent person. There is just one employe in that particular.

In the section "Supervisor of General Bookkeeping," there
are about 30 people. They run not only the general
511 ledgers but they draw off from those ledgers a great
many reports and other data required from the books.
For example, all these exhibits that Mr. Heiss has put in, come almost wholly from those books.

Under "Methods and Special Assignments" are routine bookkeeping and reporting.

"Special ~~reports,~~ assignments, internal audits and allotments" refers to cash estimates, earnings estimates, allotment forecasts.

"General books and records" covers the actual posting to the general books and the subsidiaries.

"Employes' Stock Plans for Purchase of Stock of A.
512 T. & T. Records and Reports," is the American Company's control of the stock plan in the various units of the Bell System as it converges up to the American Company.

"Files" refers to the filing, etc.

"Control Records and Reports" covers employes' stock plan, employes' savings plan by deductions from salary and the employes' life insurance plan; also by deductions from salary for A. T. & T.'s own employes as distinguished from System employes away from 195 Broadway.

"Payrolls and Deductions" relates to payrolls of the General Department covering 2500 odd employes.

"Vouchers" relates to payments other than payrolls to various creditors, all creditors other than employe payroll people.

"A. T. & T. Company General Department Accounts
513 and Reports" relate to A. T. & T. Company only as distinguished from Bell System.

"Special Studies in Respect of A. T. & T. Company Accounting and Financial Matters" relates to business of A. T. & T. and very particularly its business in relation to its associated and affiliated companies. At the present time that would consist of the earnings estimate for the year 1932, what our forecasts for earnings for the coming year are,—forecast of our cash position at the end of each month through 1932. All income of whatever nature enters into such an estimate. It relates to income to be derived from Western Electric and indirectly from E. R. P. I. but we have no financial contacts with E. R. P. I. Any money represented by earnings coming to us from any source, which earnings we were entitled to, would enter into such an estimate.

Referring again to "Assistant Comptroller" and "Al-
515 lotments to Associated Companies in Matters Relating to Acquisition of Associated Companies Securities," I would say that purchase of stock of an associated company by A. T. & T. technically would not be classed by us as an

allotment in that we get a special vote to acquire this new stock and allotments which consist of the lending being covered by a special vote, the two will overlap, if you class the last which you mentioned as an allotment. That will probably be regarded as a straight purchase of stock under a special vote of the Executive Committee or Board of Directors, and would not technically be called an allotment, although the proceeds of each of those capital operations go for construction.

My division issues a great many of what we call C. R. reports which are the general run of financial statements, balance sheet of the company, earnings report, expense reports, broken down by departments.

The allotment of funds for particular purposes is de-
516 termined by the associated companies. They send in at the beginning of each year, or rather at the last of each year, their forecast of their need of cash requirements for the subsequent year. Whether those forecasts come to
517 the comptroller or the head of the O. & E. department, or both I cannot say. They never come to me. The vote from the executive committee of the board of directors authorizing loans during the year up to a certain maximum for each company, comes to me. Until I get that vote, nothing is known in my department where any of the funds on hand are to be allocated. When the report of action by the executive committee of the board of directors or by the board of directors itself, comes to me to allot or to send to one of the associated companies certain funds, I don't know at that time how much is to be used to wash demand notes or how much is to be used towards the purchase of stock where no demand notes exist in the associated companies. However, in
518 practice it is very rare to buy stock outright where no debt exists because that would place the associated companies in possession of surplus funds which they could not use.

When it is determined that the American Company will acquire common stock of an associated company and such associated company owes the American Company money on demand notes or open account, the American Company will originate a voucher under which a check is drawn, to buy common stock of the associated company, and the associated company, in turn, originates a voucher to use the proceeds of the sale of the common stock to pay off the notes.

We would not advance money unless we received either such a form of evidence of indebtedness or other authorized security that warranted us in our opinion to make the advance. If we purchased stock, the advance would not be classed as an allotment. Anything coming under the allotment vote of the executive committee is a loan, or an ad-
vance by way of indebtedness of the associated company
519 to us. That would be handled through the comptroller's
department, but it would not be put under the classification by allotment. My division would originate a voucher supported by a specific vote of the executive committee, if it tied into an allotment authorizing the purchase of the stock, which purchase would be approved in its legal aspects by our general counsel.

Money employed to purchase the capital stock of the associated company would come from corporate funds, but not separately kept.

The allotment vote specifies that the money would go
520 out as loans either evidenced by demand notes or pos-
sibly carried along as an open account indebtedness. The capital stock purchases where no debt exists are not classed as coming under the allotment vote. Any other class of security that we roughly refer to as open account loan is distinguished from demand notes.

I have here a set of blanks. I recognize the first one, p. 2, of CR-1, CR-1a; CR-2 has been dropped. I recognize CR-3—balance sheet, and CR-3a. Several of these CR reports are not made up in my office but the CR series that include eight are made up in our office. CR-9 is made up in the office of the treasurer. These blanks are all comptroller's reports. These reports have various distributions among the executives. The first report CR-1 goes to the executive committee. About 90% of these reports are made up under my direction. The reports are as follows, the numbers and titles being given:

521 CR-1; title "Cash, Temporary Investments, Capital Stock and Convertible Bonds."

CR-1A; "Average Bank Balances for 30 days preceding ....," the date to be typed in there, "With Per Cent of Total

Average."

522 CR-3; "Balance Sheet, General Department."

CR-3A; "Bonds and Notes of, and Advances to, Associated and Other Companies."

CR-3B; "Loans Payable and Endorsed Notes."

3C; "Balance Sheet, General and Long Lines Departments Combined."

CR-4; "Earnings and Expenses for" to be followed by the period, the date.

CR-5; there is no title printed in it——

Q. 81. What is the general subject-matter, just a broad description of it will do.

A. It is stocks owned, principally.

Q. 82. Stocks owned by A. T. & T.?

A. Yes, there is a title "Investment in Associated and Other Bell System Companies."

CR-6; "Summary of Service Rolls as of" and then the date "With Changes Therein From" and then the date.

CR-7; "Estimate of Earnings and Expenses for........ Ending" and then in brackets below that "Quarterly Estimate for Dividends."

CR-8; "Estimate of Earnings and Expenses for........ months ending........."

CR-9 and CR-10 were not prepared by my division.

523 CR-12; "Dividend Revenues for the Year Ending ...."

CR-13; "Total Advances Authorized for........and Payments thereunder for Year Ending........."

CR-14; "Cash Statement for Month Ending"—2 sheets, and a 3rd, with the same CR number but another subject-matter: "Bank Balances."

CR-14A; "Average Return on Bank Balances and Temporary Investments."

CR-15; "Preliminary Cash Estimate."

CR-15A; "Outline of Estimated Cash Allotments, Preliminary Cash Estimate."

CR-16; "Final Cash Estimate."

CR-16A; "Outline of Estimated Cash Allotments, Final Cash Estimate."

CR-17; "Comparison of Estimated with Actual Cash Transactions." One of those is by companies and the other by classes; there are two forms of 17.

524 CR-18; "Ways and Means Statement, Year........"

CR-22; "Securities Pledged with Old Colony Trust Company."

CR-23; "General Department Expense Report for Month of........"

CR-24; "Summary of Departmental and Other Expenses."

CR-25; "Department of General Administration—Administration."

CR-27; "General Administration—Vice-President Wilson." "General Administration—General Service Bureau."

CR-29; "Department of Development and Research."

CR-30; "Department of Operation—Operation and Engineering."

CR-31; "Department of Operation—Personnel Relations."

CR-32; "Department of Operation—Benefit and Medical."

CR-33; "Department of Operation—Vice-President Cooper."

CR-34; "Comptroller's Department."

CR-35; "Treasury Department."

525 CR-36; "Secretary's Department."

CR-37; "Legal Department."

CR-38; "Information Department."

CR-40; "Bell Telephone Securities Company, Balance Sheet."

CR-41; "Bell Telephone Securities Income Statement."

CR-42; "Bell Telephone Securities—Analysis of Revenues and Expenses."

CR-43; "Bell Telephone Securities—Securities Owned."

CR-44; "Bell Telephone Securities—Expense Report."

CR-45; "Bell Telephone Securities—Cash Statement."

CR-46; "Bell Telephone Securities—Income Statement for ....Months ending........."

CR-48; "Report of Cash Purchase Agreements for
526 Shares of A. T. & T. Company Stock to Bell Securities Company."

CR-49; "Report on Installment Purchase Agreements for Shares of A. T. & T. Company stock to Bell Securities Company," and this CR-49 continues to deal with the foregoing report.

CR-49A; "Report on Installment Purchase Agreements for Shares of A. T. & T. Company stock to Bell Telephone Securities Company." That is a continuation. CR-49A continued "Summary of Cancellations of A. T. & T. stock under Bell Securities Purchase Plan."

CR-9 and CR-10 are not made out in my division. The treasurer makes out CR-9 and I think Mr. Saxton, another assistant comptroller, or the treasurer, probably Mr. Saxton, makes out CR-10. There are some forms which have been in existence once and become obsolete. There are other reports in the comptroller's department, but these given concern my own division.

The sources upon which the different CR reports are made, which I have mentioned, are the general ledgers or the subsidiary ledgers in the comptroller's department, except, of course, the cash book, and we take the treasurer's cash
528 book and post it into our ledger.

We do not receive monthly reports from the various licensees, the associated companies, with possibly only one exception. Mr. Saxton, assistant comptroller, receives those.

CR-14, 1st and 2nd sheets, are forms for monthly report with respect to the subject-matter stated at the tops. They would give the total statement for the year to the extent that they purport to give it by these various classifications of receipts and disbursements.

The December statement for the year would show facts as to each of those particular items for the entire year. (The reports on the 1st and 2nd sheets of CR-14 for the years 1919, 1920 and 1921 requested by defendants; also, reports on form CR-16 and CR-18 for years 1919 to 1930, both inclusive, requested by defendants.)

We do not use the word "budget" in the general department in connection with our expenses, but we estimate
530 our expenses for the forthcoming year, and they are submitted to the president.

My division at the present is running an annual expenditure of approximately $275,000, with 80 people. As compared with 1923, the curve is up but I could not plot it for you.

I don't know of any forms of reports that used to be used and that are no longer used. I am quite sure my records would show that, if there have been any in existence corresponding to the missing numbers. I will check that and inform you.

531 I am not directly concerned in the make-up of the allotment. I simply act on the amounts as voted by the committee as the maximum to loan. If, for instance, the Illinois Bell owe the American Company $10,000,000 at the beginning of the year, that would not enter into the amount of the allotment vote. The new allotment voted would be over and above the indebtedness at the beginning of the year.

(Cross-examination of Mr. Uhrig reserved by Mr. Blackman until later.)

PIERRE W. SAXTON, for defendants.

533 *Direct Examination by Mr. Haight.*

I reside at 87 Summit Avenue, Bronxville, New York; I am an assistant comptroller of A. T. & T., and have been such since 1922. Prior to that I was in the Long Lines Department for a time as auditor of the Long Lines, from 1910 on.

I am familiar with the organization chart which has been identified here as Defendants' Deposition Exhibit 51. I am the P. W. Saxton appearing thereon. My division receives the current reports of the associated companies, Long Lines, and the General Department, and combines them into Bell System reports. They also receive the provisional estimates and make a similar consolidated estimate for the Bell System.

534 The current reports received from the associated companies cover data from the books of the company. The same is true with respect to Long Lines. The provisional estimates are prepared annually by the associated companies and the Long Lines as to their requirements for the ensuing year,—the construction which they will undertake and revenues and expenses which they expect. As a part of the provisional estimates, we receive information as to the probable cash requirements of the various companies and Long Lines during the ensuing year. At the present time they cover a period of three years. Not all detail is given for the

535 later years. That practice has existed for about three years. Prior to that time the period was five years, and

that practice went back as far as my service with the company.

"Bell System Reports" bring together the figures reported by the various associated companies, Long Lines and general department into Bell System figures, and they are distributed to the various heads of departments and the various members of the staff organization; very few to Western Electric,
536 perhaps two or three. There is a report as to station gain or loss which is furnished to, I believe, the president of the Western Electric, who also receives one or two of the over-all general Bell System Reports. The reason for furnishing them to Western Electric is that they ask for them. I believe the Western Electric people do get with the provisional estimate an estimate of material requirements that is summarized. The Western Electric is therefore furnished the statements which advises them as to the equipment requirements of the associated companies and of Long Lines. I don't think any of these reports go to the Long Lines.

I don't think I prepared any reports as assistant comptroller that go to the comptroller except in relation to the matters that I have already identified.

537 I am familiar in a general way with the reports made by the comptroller's department. I think the numbers run into the 90's. I have to do with making reports on those different forms. I have something to do with the report CR-10 in that it is prepared under my direction. I don't have anything to do with CR-9. I have a number of forms of reports which, generally speaking, are either consolidated reports of the Bell System Companies or reports showing comparative figures as between the various companies.

538 I have to do with the making up of reports in the following forms:

CR-51; Condensed Summary of Reports for ....

CR-51a; Condensed Summary of Reports for .... excludes A. T. & T. Company Long Lines Department.

CR-51b; Associated Operating Companies Percent Balance Net Profits after preferred dividend to average common stock.

CR-51c; Bell Telephone System in United States, Earnings and Expenses.

CR-52; Associated Operating Companies, excluding A. T.

& T. Company, Long Lines, Distribution of Total Net Earnings for Month of ....

CR-53; A. T. & T. Company Earnings on Capital Stock.

CR-53a; Bell Telephone System in U. S.

539 That refers to the interest of A. T. & T. Company in the assets of the Bell System and the value per share of A. T. & T. Company stock.

CR-54; Bell Operating Companies Comparison of Results for .... Months of this year with same period last year.

CR-54a; Comparison of Results for .... Months This Year for Same Period Last Year.

CR-55; Bell Operating Companies Present View for...... Months as of .... Compared with Actual Results.

CR-55a; Bell Operating Company's Present View for .... Months as of .... Compared with Actual Results for ....

CR-60; Bell Telephone System in United States, Balance Sheet .... Date.

CR-61; Income Statement for Month of...............

CR-62; Telephone Operating Revenues Report for Month of ....

CR-63; Telephone Operating Expense Report for Month of ....

CR-64; Plant General Equipment and Intangible Capital Report for .... Months ending ....

CR-65; Report of Station Circuits and Central Offices for Month of ....

540 CR-65a; Net Gain in Company Stations.

CR-65b; Report of Plant Mileage and Other Data for .... Months Ending ....

CR-66; Plant and General Equipment Added, Removed or Abandoned for .... Months Ending ....

CR-67; Comparison of Actual Results with .... View for Months of .... to ....

This report shows a comparison of the actual results of operation with the latest previous view.

CR-67a; Review of Provisional Estimate as of .... Date (there are 3 sheets under that title).

CR-67b; Present View of Next Year ....

CR-71; Report on Reserves for Accrued Depreciation and for Amortization of Intangible Capital for Period Ending ....

CR-72; Report of Certain Clearing Accounts for Month of .... 2 sheets).

CR-76; Statistical Units for .... Months Ending ....

CR-86; Unit Expenses for .... Months Ending ....

CR-87; Employes and Benefit Payments for Month of .... (3 sheets).

CR-89; Report of Payroll Changes for Month of ....

541 CR-90; Funded Debt .... Date Bond Maturities by Years.

Those refer to A. T. & T. Company bond maturities. The entire system.

CR-91; Results of Operations by States, Annual Basis. Revenues and Expenses for Average Company Stations and Percentages (2 sheets).

CR-92; Commercial Department Expense Report for Month of ....

CR-94; Current Maintenance Expense Report for Month of ....

CR-95; Supply Turn-over and Gross Supply Investment per Average Company Station for Quarter Ending ....

CR-96; Analysis of Charges and Credits to Account 264, General Stable and Garage Equipment and Account 702 Stable and Garage Expense Year of ....

CR-97; Statement Showing General Statistical Data for the Bell System Including Construction Items, Revenues and Expenses, etc.

Those were prepared by me or in my division under my direction.

CR-88, entitled "A. T. & T. Company Employes Stock Plan Participation by Employes of the Bell System" is prepared by Mr. Uhrig.

542 I will check over and see what forms, if any, were used previously that are not here and are not now used—as far back as 1923.

CR-52, entitled "Associated Operating Companies, excludes A. T. & T. Company, Long-Lines, Distribution of

543 Total Net Earnings for Month of .... 1931." relates to the various operating companies of the Bell System, excluding Long Lines, and it is made up from reports of the various companies concerned, which reports are still in

existence covering many years.

I cannot say to whom CR-52 goes, but my division has a distribution list which shows where all the reports go. I think there is one also for the Comptroller's Department generally and one for each of the divisions.

Chart entitled "Distribution of July 1931, Bell Telephone System Comptroller's Report," is the distribution chart for my division, except as to CR-88, which is not prepared in my division. (Chart marked Defendants' Deposition Exhibit 52 for identification.) According to the distribution chart, various persons are to get different reports
546
as indicated, such as directors of A. T. & T., executive committee of A. T. & T., C. P. Cooper, Vice President A. T. & T. W. S. Gifford, President A. T. & T. Mr. Cooper has charge of the accounting and finance. C. A. Heiss, Comptroller A. T. & T.; B. Hamilton, Accountant in my division; J.
547
F. Behan, Assistant to Comptroller A. T. & T.; H. Blair Smith, Treasurer A. T. & T.; T. H. Brown, Jr., in Treasurer's Office A. T. & T.; E. J. Clark, Assistant Treasurer A. T. & T.; C. Uhrig, Assistant Comptroller A. T. & T.; J. W. Green, Auditor A. T. & T.; J. A. Nixon, Assistant Comptroller Uhrig's division; E. V. Cox, Vice President in Cooper's organization; S. L. Andrew, Chief Statistician, A. T. & T.; D. R. Belcher, Assistant Chief Statistician, A. T. & T.; P. W. Saxton, Assistant Comptroller A. T. & T.; H. J. Brandt, Benefit and Medical Department A. T. & T.; Bancroft Gherardi, Vice President A. T. & T., O. & E. Department; R. H. Burcher, O. & E. Department A. T. & T.; E. S. Wilson, Vice President A. T. & T.; K. S. McHugh, O. & E., A. T. & T.; W. H. Harrison, O. & E., A. T. & T.; E. S. Bloom, President Western Electric; E. F. Carter, Vice President A. T. & T.; W. J. O'Connor, Assistant to President, A. T. & T.; H. L. Wlodeck, in assistant comptroller Behan's department; R. B. Shaver, Assistant Comptroller, A. T. & T.; G. B. Proud, Western Electric; R. E. Cowley, Western Electric; M. B. French, O. & E. of A. T. & T.; H. A. Trax, general auditor New Jersey Bell Telephone Company; H. C. Gretz, General Auditor Ches. & Pot. group of Telephone Companies; G. J. Brett, General Auditor, Michigan Bell Tel. Co.; R. P. Baird, General Auditor Northwestern Telephone Company; N. R. Powley, Vice President Pac. Tel. & Tel. Co.; F. N. Rush, Vice President
549

Pac. Tel. & Tel.; all presidents of the Associated Companies; W. J. Stout, Assistant Treasurer A. T. & T.; A. H. Richardson, in Chief Statistician's Division A. T. & T.; W. A. Mason, R. F. Wolff—I don't remember their titles; J. A. Griffin, in Assistant Comptroller Behan's division; Z. Z. Hugus, O. & E.; I don't know E. S. Wilson's department nor E. F. 550 Carter's, but I will look that up and let you know.

The distribution chart I have been examining is the current chart and I think that running over the years there was a similar distribution chart.

G. B. Proud is assistant comptroller Western Electric; 551 I don't know Mr. Cowley's position in the Western Electric.

With respect to CR-52, there is certain information under the titles "Net Telephone Earnings" and "This Month, Increased over last Month, Months this Year, Increase over same Period Last Year," given, which information is furnished by the various associated companies. The same source exists as to "Total Net Earnings," in that all the data contained in CR-52 is obtained from Associated Companies Reports. Net telephone earnings to average plant in service during 1931 and same period last year comes from the same source.

In compiling the figures under the title "Average Plant in Service during 1931" and the same period previous years, there is not included construction work in progress. The 552 purpose of the report is to show a comparative statement by companies of the various items and they are all on a comparable basis.

553 Respecting report CR-53 the source of the information given under the head "Dividends from Associated Operating Companies" are reports of the general department as to earnings, Mr. Uhrig's division. The source of the information on the undivided profits is the report of the operating companies. "Interest from Associated Operating Companies" is obtained from our own reports; "Licensee Revenue" is obtained from Mr. Uhrig's report; "Long Lines Net" from reports of Long Lines; "Dividends of the Bell Telephone Company of Canada and Western Electric Company, Inc."—reports made up by Mr. Uhrig. "Other Revenue"—Mr. Uhrig's report. "Other Revenue" means miscellaneous items

other than those mentioned.

554 There is another statement "Assuming that the expenses of the American Company, General Department, are paid from licensee revenue, the 9% dividend is derived from the following source," which latter statement refers to the 9% dividend of the A. T. & T. upon its stock.

The item "From Other Revenue" is a small item and is the same sort that appears above.

At the bottom there is another legend "Associated Operating Companies (excludes A. T. & T. Co. Long Lines Department)" and under that there is a further legend "Comparison Net Telephone Earnings to Average Plant in Service" and underneath that there is another legend "Balance, Net Profits after Preferred Dividends to Average Common Stock." I cannot say whether those items have been kept during the full time I have been in my division. I don't know how far back they go.

557 BANCROFT GHERARDI, for defendants:

Direct Examination by Mr. Haight.

I reside at Short Hills, New Jersey; I am Vice President and Chief Engineer of the A. T. & T. and have been connected with A. T. & T. since 1907; prior to that I went to the Polytechnic Institute at Brooklyn and graduated scientific course 1891, degree of B.S.; I then went to Cornell and took an electrical engineering course, graduating in 1893. I went back there for postgraduate work and received Master's degree in 1894; I then went to work with the New York Telephone Company, then Metropolitan T. & T. Co. in February 1895 and continued with that company until 1900 or 1901, when I 558 went to Brooklyn as chief engineer of the New York & New Jersey Tel. Co., now part of the N. Y. Tel. Co.; it operated all of Long Island and all of New Jersey; I was there until March 1906; at that time the operating organization of the New York Tel. Co. and of the New York and New Jersey Tel. Co. were consolidated, and I became chief engineer of both companies, which position I held until 1907, when I went with the A. T. & T.

I have been Chief Engineer, my present position, from 1919 and became Vice President in 1920 or first part of 1921; from 1907 until 1919 I had no definite title until April 1909, after which time my title became Engineer of Plant.

Defendants' Deposition Exhibit 53 for identification, consisting of 7 sheets, is the organization diagram chart, Engineering Department of Department of Operation and Engineering of the A. T. & T. The Engineering Department of the A. T. & T. does not itself operate anything. It advises and suggests to the Associated Companies and the Long Lines in the operation and engineering work which they do. The department has nothing to do with the purchase of operating properties. It advises as to the types of equipment, of apparatus and arrangements which can be most effectively used to meet various conditions in connection with operation.

There is uniformity in telephone equipment maintained throughout the Bell System. That is brought about 560 through the fact that there is a common agency through which such equipment is designed and developed and through the fact that there are recommendations made as to the methods in which the equipment shall be used. The agencies concerned are the O. & E. Department, Dev. and Research Bell Tel. Lab. and the Western Electric. The O. & E. Department through its constant touch and advice which it gives to the Associated Companies, obtains familiarity with conditions existing in the Associated Companies and the Long Lines, and is in a position to and does advise the Department of Dev. & Research as to the needs of the operating system or as to the troubles which may exist with regard to the existing methods and devices.

561 The O. & E. Department does practically no invention work. Occasionally, but very rarely, in its efforts to improve or to standardize or to solve problems or meet new conditions, it evolves inventions. The O. & E. Department generally works out what might be called the operating methods. It is then the duty of Dev. & Research or Bell Lab., or the two working together, to develop the necessary instrumentalities. If the methods need new instrumentalities, then it is their object to develop those. The Western Electric 562 of course manufactures the equipment and has a part in dealing with the laboratory to discuss with the laboratory

the practicability of anything which the laboratory may propose for use. Very seldom, however, does the O. & E. Department in connection with its general work in the system, advice Western Electric. The O. & E. Department's principal direct connection with Western Electric is when the Associated Companies need anything which, for any reason, may be difficult to get at the time the Associated Companies want it, or the Long Lines want it, to help the Associated Companies get it.

There is no place where the final authority on questions of standardizations reside. There are places where the responsibility for recommending standards arises, but that au-
563 thority does not carry with it the power to enforce the
use of those standards. The O. & E. Department determines standardization for the apparatus, circuits and systems and also operating methods which applies to both the Long Lines and Associated Companies. The O. & E. Department advises the Associated Companies as to the best and most effective methods of making fundamental plans. It discusses with them the matter of difficult questions that come up in the making of those plans and consults with them as to the results of the plans if the Associated Companies desire such consultation.

Naturally all fundamental plans must assume some switching methods, some types of equipment to be used, because all a fundamental plan is, is a method to estimate from 15 to 20 years ahead what your arrangements will be to take care of the business. Some basis of taking care of the business as to operating methods and as to type of equipment must underlie a fundamental plan. And naturally the only practical basis upon which a fundamental plan can be made is to use the then best known methods and equipments as the basis of the plan.

564 The needs of long distance service of immediate character and future needs practically have no effect in the development of a local fundamental plan. There is no especial necessity for conforming the equipment in a local fundamental plan to serve in long distance service. A local plan as such can be developed in utter disregard of any long distance service requirements. However, the long distance service requirements are necessarily considered in what is known as

the toll fundamental plan. The toll fundamental plan does not concern itself with local equipment.

565 There is no definite relationship or necessity for relating toll fundamental plans with local fundamental plans, except for one thing,—they naturally ought to be consistent as to magnitudes; and at the moment I do not think of any necessity for any relationship between local fundamental plan and the toll fundamental plan in respect to equipment. The relationship on account of magnitude comes about in this way. If you are making a plan for any given place for 20 years from now, you have to allow for the estimated growth in that place in that period. While they are not the same there is some relationship between the growth of the local business and the growth of the toll business to be expected in 20 years. If the plans are made for the same period there should be that general consistency in their magnitude.

When I speak of toll business, I am referring to both that of the Long Lines and that of the local company. The
566 O. & E. Department has assisted and cooperated with Illinois Bell, in the making of fundamental plans. That assistance and cooperation has been, of course, of the same general character as assistance and cooperation with reference to fundamental plans of other companies, but every fundamental plan differs as to local conditions. In many cases the O. & E. Department reviews the fundamental plan after it is completed by the Associated Company and makes suggestions, recommendations or criticisms that might occur, if it is thought that the plan is not the most effective one that could be devised.

567 Of course, the benefit of our experience on all preceding fundamental plans is brought to bear on the Illinois Bell plans if we assist on them and others and that experience which we got there is added to our previous experience in regard to all subsequent plans.

There is a relationship between the fundamental plans of the different companies one with the other, in that they are all handling telephone business. Telephone business has certain similarities even in different places. There are different conditions in every place. There are some general conditions of similarity so there is that relationship to be found between the plans. These plans are dealing with, generally speaking, similar problems in different places and where conditions vary. On the other hand, the result of a fundamental plan in one place does not affect the fundamental plans in another place unless the places are adjacent to each other, so that they are in effect parts of the same local community.

568 I don't know of anything that can be characterized as a program or fundamental plan in existence that relates to the entire country, as far as the Bell System is concerned. Perhaps a very large number of plans taken together might be so considered. The objective of the number of plans taken together would be to take care of the telephone business of the country today and tomorrow.

As to whether as an engineering proposition there is any necessity for coordinating these associated companies or the fundamental plans, I would say that if engineering is to
569 be considered as doing things in the best way from the physical standpoint, I would say there was, the general reason being that engineering wants to do things in the best way and to the extent that the conditions and the general problems that they are dealing with is the same. There is a general similarity between what constitutes the best and that constitutes a tie between them.

In the event that a Chicago fundamental plan called for a grounded circuit with iron wires, I would say that if such a thing were called for by the dictates of good engineering, the thing to do would be to provide the necessary arrangements in order that they could be used. I could not, however, conceive of conditions under which I would approve of such a plan in the City of Chicago under the present state of the art, the reason being that there are very serious objections to grounded circuits, particularly where they have to be operated in cables, and pretty nearly all the Chicago telephone plant is in cables. Condensed, the reason is that one could not give good telephone service over grounded circuit in Chicago. I would not, however, take into consideration any requirements of long distance service in that connection. I would say, broadly speaking, that if the local plant is built so that it will take care of the local conditions, the requirements of the local plant have been satisfied, from an engineering standpoint.

The assumption that "if the local plant is developed
570 to any extent to care for long distance connections from the standpoint of local service, that would be an unnecessary development" is contrary to the fact. I think it is a correct assumption that there is no relation to the development of local plants and long distance plants, except as it relates to magnitude, although of course there is a relationship arising from this fact that it is an advantage to the local plant in its own development that it shall be able to give the most extensive service possible.

If at each local plant you succeed in giving satisfactory local service, then as far as the local plant is concerned the conditions are satisfied to enable a nation-wide service to be given so that a person in any part of the country can talk to any other person in the country without limitations of distance or property ownership. No coordination is necessary, except in the sense that coordination may mean having adequate standards of local service. In that latter sense coordination is necessary.

571 During the time that I have been doing telephone engineering there have been improvements in construction methods that have had an effect upon the construction of telephone plants in a city like Chicago. Such improvements are underground cables, switchboards, design and the arrangement of buildings, conduits, substation equipment.
572 There have been improvements in tools and improvements in the methods of doing the work and improvements in the organization by which the work is directed, which relate to actual construction work. Improvement in tools are tools used for adjusting the various types of apparatus; tools which installation and construction people use in the doing of the work. There have been improvements in the instrumentalities such as motor vehicles and things like that, used in transporting people and materials to the job. Tools for adjustment are very numerous. I would have to refresh my recollection before answering that in detail. As an illustration, I will refer to the tools which we use for properly adjusting the subscriber's bell at subscriber's station in
573 order that the instrument may always be in the very best condition for use.

Another outstanding one is the tools for the adjustment of spring jacks in switchboards. In the construction of pole lines there have been improvements in motor vehicle equipment, including the providing of trench digging machinery and pole-placing machinery which is used in the construction work under telephonic conditions. This has resulted in making the construction of pole lines more economical. These economies are substantial. I would have to refresh my recollection, however, as to figures. The amount of the decrease in cost would vary to some extent in different parts of the country.

574 The method of construction of manholes, the arrangement devised for the construction of manholes, have diminished the cost of manhole construction. We do not develop switchboard installing methods, but I do know that improvements have been made, but I could not state just when.

About 1920, but I could not place the exact date, I think there were improvements in regard to avoiding the assembling of all the parts of the switchboard in the place where it was to be erected, saving cost of installation. The older method of assembling switchboards used to be to ship switchboards in the various parts and to do a very large amount of the 575 assembling on the job. About 1920 I think it was, plans were modified so that a great deal could be done in the way of assembly work and adjusting work in the factory and parts were shipped in larger units, thus requiring less work in putting them together at the local exchange where they were being installed. I don't know how that has affected savings, but I could refresh my recollection on that.

When I speak of automobiles in connection with the installation of pole lines, I referred to that as well as other construction. I had in mind, for one thing, that automobiles in the local exchanges, equipped with all the necessary materials that are needed for the installation of stations and the installation of Private Branch Exchanges, require special designs of one kind or another and so material can be stored away in such ways that it can be immediately accessible and those designs have been prepared and arrangements like that have been made available to the associated companies. For the pole line construction there is, of course, the problem of transporting the pole, transporting the cable and digging the hole

for the pole. For placing a cable especial automotive
576 machinery has been designed for that kind of work and is used by both the associated companies and the Long Lines.

Sometimes these improvements in tools for construction have cheapened construction costs and sometimes they have resulted in better construction and sometimes both. These improvements in construction would affect a good many of the different constituencies of telephone plant. Generally speaking, improvements in methods of work extend throughout the entire plant.

Taking the improvement movement in construction as
577 a whole, that has been going on right along. It has been a continuous evolution for a good many years. At one time a particular thing may come to fruition, at another time another thing. Generally speaking, it has been a concerted movement and resulted in the development of better and cheaper tools with which to apply those methods. I should say since the war there has been relatively more accomplished.

With reference to organization, I perhaps can give you an illustration. There used to be a time when stations would be installed by having a couple of men go around there with the station equipment, the bell box and everything else that was necessary and put it in then and there. Methods have been developed and this is primarily an organization matter by which all of the various tools and equipment have been brought to the station and one man goes around there
578 and installs it. Generally speaking, if you can do a lot of construction work in one operation, it is cheaper than if a little piece is done here and then another little piece and then another little piece, done at different times, assembling the material, arranging the organization and making the plans each in little bits.

Generally speaking, I am familiar with work done under the terms "specific estimates" and under "routine estimates." When a large job is done, it is done under a specific estimate. For example, if a new building is to be built, a new conduit is to be built, a new cable is to be laid, of reasonable magnitude, a specific estimate is prepared for that work. There are considerable quantities of such work such as the small work of

installing and moving stations and installing and moving
579 private branch exchanges and bits of other things which are going on all the time and where the individual jobs really have no special,—when no specific estimates can be prepared. It would cost more to prepare the specific estimate for installing a single station than it would to build the station, so a routine estimate is an estimate prepared to cover a lot of small items of the same general character. You might prepare a routine estimate to install 10,000 new stations or you might prepare a routine estimate covering all the new stations to be installed during the next three months. The usual practice is to prepare routine estimates covering the estimated requirements for a given period of time rather than to cover a given amount of work.

There have been improvements made with reference to the construction of conduits since 1914, such as trench dig-
580 ging machinery, machinery for breaking up pavements, for tamping back over the trench after it is filled, things of that type. There has been a good deal done along that line since the war. So far as that single factor is concerned, it has reduced the cost of construction. Yet the trend of the other things that go into those costs may be such that the final costs are larger than they were before. But so far as improvements in methods of installation and improved equipment employed to install are concerned, they have cheapened the costs of construction or have done a better job. My department makes studies of provisional estimates of Associated Companies.

581 The provisional estimates reflect the expected operating results of the companies during the succeeding year in considerable detail and then for a year or two after that in somewhat more bulk. We review the provisional estimates in order to advise the operating companies and the Long Lines and to comment to them on the basis of the operations which they are proposing.

The Illinois Bell prepares the provisional estimates for Chicago. It is an organization work. The organization as a whole of the Illinois Bell is pretty much involved in the preparation of provisional estimates. There is no one in our organization that has particular charge of Chicago.

There is a little work in our organization done in con-
582 nection with the expected plant operating results which will come in the Plant Department from the provisional estimate as submitted. We make use of the provisional estimates sent to the A. T. & T. in that we study them and advise the Associated Companies with respect to the basis upon which they are planning their operations for the succeeding year. The advice is for the purpose of arriving at the best and most economical basis to operate the companies and to give good service. There are variations in gang efficiencies. Where gangs use the same methods, sometimes the variations are due to extraordinary conditions. Some gangs may be working under more difficult conditions than other
583 gangs and they may be working under worse weather conditions and there may be other conditions which are different. As gangs are made up of human beings, there are necessarily variations in the gangs themselves. Since the war, generally speaking, there has been improvement in gang efficiency. A number of things have brought that about, such as better organization for carrying on the work, more effective planning in the ordering of the work so that the gangs have less lost time, better methods and better tools; sometimes better apparatus and equipment that require less work.

In a general way it has been often possible to change the number of gangs to get more effective results when gangs are provided with new and different types of machinery. The general effect of that is to change the size of the gang. For instance, it takes a large gang to build a conduit if the trench is to be dug by hand. A smaller gang will suffice to build that same conduit if the trench is dug by machinery. The methods and sizes of gangs are often quite closely related. By improving gang efficiency, we have been able not only to do better work but we have been able to reduce construction costs, considering that factor isolated. Of course, many other factors go into construction costs but as far as that single factor is concerned, it is so.

(Right to cross-examine reserved until later.)

585 **PIERRE W. SAXTON, recalled:**

Further Direct Examination by Mr. Haight.

The official files referred to in the distribution chart are kept in my division, Room 2409 of this building.

Mr. Haight: I would like to have produced by the witness for each of the years 1919 to 1930, both inclusive, C. R. Reports 51, 51a, 51b, 52, 53, 53a, 54, 54a, 55, 55a, 65, 65a, 65b, 66, 67, 67a, 67b, 76, 86, 91, 92, 94, 97.

Mr. Blackman: Some of those reports mentioned the court sustained objections to recently. I can state definitely now that as to anything the Illinois Court ruled upon in accordance with our contention that you did not have the right to examine that, we will not have the witness produce now.

After 15 minutes' recess Mr. Blackman further stated:

588 I have examined our records and find that as to C. R. 51 and 51a, we have agreed to let you have them and we have sent for them and they will be here in a moment. As to the others I can find no record of any request for the other reports. Mr. Bracelen is ill today, and he may have a record of those requests.

589 Mr. Haight: Mr. Blackman has now produced what I understand to be the condensed summary reports C. R. 51 and 51a for the years 1919 to 1930, both inclusive.

Defendants offered C. R. Reports 51 and 51a in evidence, to which plaintiff objected on the ground that they were irrelevant, the exhibit number and the C. R. Report for the year corresponding, being indicated as follows:

C. R. Report 51 —1919—Defendants' Deposition Exhibit 54
C. R. Report 51 —1920—Defendants' Deposition Exhibit 55
C. R. Report 51 —1921—Defendants' Deposition Exhibit 56
C. R. Report 51 —1922—Defendants' Deposition Exhibit 57
C. R. Report 51 —1923—Defendants' Deposition Exhibit 58
C. R. Report 51 —1924—Defendants' Deposition Exhibit 59
C. R. Report 51 —1925—Defendants' Deposition Exhibit 60
C. R. Report 51 —1926—Defendants' Deposition Exhibit 61
C. R. Report 51 —1927—Defendants' Deposition Exhibit 62
C. R. Report 51 —1928—Defendants' Deposition Exhibit 63
C. R. Report 51 —1929—Defendants' Deposition Exhibit 64
C. R. Report 51 —1930—Defendants' Deposition Exhibit 65

C. R. Report 51A—1919—Defendants' Deposition Exhibit 66
C. R. Report 51A—1920—Defendants' Deposition Exhibit 67
C. R. Report 51A—1921—Defendants' Deposition Exhibit 68
C. R. Report 51A—1922—Defendants' Deposition Exhibit 69
C. R. Report 51A—1923—Defendants' Deposition Exhibit 70
C. R. Report 51A—1924—Defendants' Deposition Exhibit 71
C. R. Report 51A—1925—Defendants' Deposition Exhibit 72
C. R. Report 51A—1926—Defendants' Deposition Exhibit 73
C. R. Report 51A—1927—Defendants' Deposition Exhibit 74
C. R. Report 51A—1928—Defendants' Deposition Exhibit 75
C. R. Report 51A—1929—Defendants' Deposition Exhibit 76
C. R. Report 51A—1930—Defendants' Deposition Exhibit 77

On the back of C. R. 51 for the year 1922, there is a note to the item of undivided profits for the year shown on line 29 on the face of the report which states that the item "in-
594 cludes revenues held in reserve pending rate decision as follows":

595 Then is given the names of certain companies and the amounts opposite each. That information came from the report of the various companies. Below that there are two notes, the first one indicating that the figure of average capital obligations shown on line 33 on the face of the report, includes the capital stock installments; the second note indicating that the item of average capital stock shown on line 34 on the face of the report excludes capital stock installments.

C. R.-52, C. R.-51 and C. R.-51A are made up from the same sources. Information contained on C. R.-52 is not used in making up reports C. R.-51 and C. R.-51A

Referring to C. R.-52 there is the title "Distribution of Total Net Earnings for Month of ...." I cannot say as to whether we have for the entire period that I have been in charge of my division, C. R.-52 Reports. How long I have been regularly engaged in making up this report,—I would have to refresh my recollection. Those reports are regularly distributed as indicated in Distribution Chart Defendants' Exhibit 52 for identification. The list of companies whose names appear in the left-hand column of C. R.-52 are the associated companies of the Bell System. These reports show the net telephone earnings for each of those companies and also the total net earnings with the exclusion of duplications. With the same qualification that duplications are excluded, the reports show the average plant in service during the time indicated upon each of the reports.

The information contained in C. R.-53 Reports is not used in making the C. R.-51 or C. R.-51A Reports. I think these reports C. R.-53 were used when I first took up my present position. The reports made up in my division are placed in an official file and are preserved. I will find out how long C. R.-52 and C. A.-53 have been used. C. R.-53 is not used in making up the other C. R. Reports. C. R.-53A has information called for by the form and for the various years indicated. I don't remember when we commenced using 53A but I will refresh my recollection.

C. R.-54 is not used in the compiling of Reports 51 or 51A. I will refresh my recollection as to how long C. R.-54 has been used. The same answer as to C. R.-54A as for C. R.-54.

601 The same answer as to C. R.-67. The same as to 67A; 67B; C. R.-76; C. R.-86; C. R.-91; C. R.-97. The information in those reports is not used in company reports C. R.-51 and 51A.

I will check up and ascertain as to how the different reports have been changed, if any.

604 The same answer as to C. R.-94 and C. R.-97.

The general subject matter of the different reports has remained the same. I will check up on all that.

606 C. R.-52, C. R.-53 and C. R.-53A were first prepared in 1920; C. R.-54 was prepared since a date prior to 1919. Prior to 1931 the title to this report was "Comparison of Provisional Estimate and Actual Results (Excluding Purchases, Sales and Transfers) for .... Months Ending ...."

C. R.-54A first prepared in 1925; prior to 1931 the title to this report was "Comparison of Provisional Estimate and Actual Results (Excluding Purchases, Sales and Transfers) for .... Months Ending ...."

C. R.-67 was first prepared in 1927 in its present form. Prior to 1927 the report known as C. R.-67 was a consolidated Bell System payables report. Such a report is no longer in existence.

C. R.-67A was first prepared in 1928; C. R.-67B in 1931; C. R.-76 and C. R.-86 were prepared since dates prior to 1919. C. R.-91 was first prepared in 1920. C. R.-97 was first prepared in 1931.

The difference between C. R.-51 and C. R.-51A is that 51 is a consolidated report for the Bell Telephone System in the United States, including Associated Companies, Long Lines and A. T. & T. General Department. C. R.-51A is a report for the Associated Operating Companies excluding Long Lines and General Department. Only the United States is covered in those two reports, except that as to C. R.-51 it includes revenues in the form of dividends received from the Bell Telephone Company of Canada.

608 The source of the information contained in C. R.-51A are the reports received from Associated Companies, which reports come on standard forms. I believe that the information appearing upon 51A comes from the same form from each of the Associated Operating Companies and the information appears on a monthly report form. The report is prepared from more than one of the reports of the Associated Company. It is a summary of the reports from all the companies as indicated. Reports of the different companies are of the same character upon these forms.

Speaking for the moment of one of those companies, the information on C. R.-51A comes from a plurality of reports on forms.

C. R.-51A is the same as monthly report No. 1 for the individual company.

609 It is fair to say that C. R.-51A is a summary of monthly reports No. 1 from each of the several Associated Companies, with the qualification that duplications are excluded.

Referring to Blank Form C. R.-51A used in the year 1932, and line 42 thereof, there appears in parentheses the words "except Adv. and Dir.," which means "except Advertising and Directory."

610 Referring to line 37 of C. R.-51A for the year 1923 and the same line of C. R.-51 for the same year, it is my understanding that total telephone revenues to average plant in service there indicated, does not exclude the items in the parenthetical clause referred to in the form now in use.

The item on line 31 "Average Plant in Service" of C. R. Reports 51 and 51A for the year 1923, has had no deduction for depreciation reserve, but excludes construction work in progress.

The items in lines 1 to 5, inclusive, of C. R.-51 and 51A are taken from the books and are ledger values of the Associated Companies.

611 We do not use the monthly report No. 1 in summarization to get these figures appearing on C. R.-51 and C. R.-51A as these are condensed summaries. The various lines on this report consolidate several accounts in each case and in preparing our consolidated summary, we go back to what may be termed the original sources,—the other reports of the company, which reports are of revenue and of plant in general reports which give more detail than monthly report No. 1. The reports used in preparing C. R.-51 and C. R.-51A are monthly reports No. 2, balance sheet, monthly report No. 3, income statement for month of ....; monthly report No. 4, telephone operating revenues report for month of ....; monthly report No. 5, telephone operating expense for month of ....; monthly report No. 7, on station circuits and central offices for month of .....; monthly report No. 21, plant and general equipment added, removed or abandoned for .... months in ....; monthly report No. 23, report of operating changes for month.

In addition, certain items are obtained from monthly report No. 1, condensed summary of reports for .... month. There are no additional reports used to compile C. R.-52.

As to C. R.-53, I am not quite sure whether additional reports are used.

As to C. R.-53A, I think we would need certain other information for that report which is obtained, I believe, from a report by Mr. Uhrig's division, and we would obtain 613 from that report the per cent of interest of the American Company in the various Bell System Companies.

C. R.-54 and 54A can be compiled from those reports I have mentioned. The information on C. R.-67 is obtained from monthly reports No. 22A of the Associated Companies, entitled "Comparison of Actual Results with .... View for .... Months of .... to ....," and that report is in the same form as C. R.-67.

The information contained on C. R.-67A is obtained from the monthly reports No. 22B of the Associated Companies, entitled "Review of Provisional Estimates as of .... date" and 22B is in the same form as 67A.

The data for C. R.-67B is obtained by summarizing Reports No. 22C of the Associated Companies, which is the same as 67B.

C. R.-76 and C. R.-86 are made up from the same monthly reports as used in the preparation of C. R.-51 and 51A. C. R.-91 deals with the results of operation by states. Therefore, for those companies operating only in one state, the infor-
mation can be obtained from the same sources as are used
614 in the preparation of C. R.-51 and 51A. When companies
operate in more than one state the information is obtained from a report from the Associated Company, the number of which report I do not recall. C. R.-97 is a report for the Bell Telephone System in the United States and the figures are obtained from other C. R. Reports referred to.

The various reports identified as to sources have all been kept on file in the offices of A. T. & T.

Mr. Haight: I ask that the witness produce the various reports from the various Associated Companies for the years 1919-30, both inclusive, stated by the witness to have been used as the sources of information in preparing C. R.-51 and 51A for each of the years in question; also Reports 22A, 22B and 22C and special report for C. R.-91 covering the same period of years.

Mr. Blackman: I would like to consult Mr. Bracelen about that before answering. Of course it is the policy of this company as far as possible to furnish all necessary papers, but I might say here, if those documents are the ones from which you could get the information that we have already denied you, I would be disposed to deny them also, but we will advise you.

The Witness (continuing): Other divisions of the Comptroller's Department than my division, receive copies of some of the reports. Monthly Reports No. 1, 2, 3, 4, 5, 6, 7, 22a, 22b and 22c and special report for C. R.-91 are all received by my division, and in some cases more than one copy is received.

I cannot say at the moment to whom the additional copies
617 go. I think Mr. Morello in my division handles the dis-
tribution of them. I assume they come by mail, but I
618 never checked that. It might be that the reports come to
Mr. Heiss first, rather than to me. However, my division gets all the copies if there is a plurality of copies, and I think whatever distribution there is is made by my division. I am quite sure there is a record kept of the distribution of

these monthly reports of the Associated Companies that come to my division. The record of that is kept in my department and under my direction.

Mr. Haight: I would like to know what that record shows and what the fact is. I am going to ask the witness either to do it or I am going to ask Mr. Blackman to let us call Mr. Morello. I just want to show the facts.

Mr. Blackman: Yes, well—

Mr. Haight: Either way is all right.

Mr. Blackman: So far as I am concerned, I will facilitate your raising the point—

Mr. Haight: Yes.

Mr. Blackman: In so far as that bears on those matters that we are not inclined to give you information about, why, I am inclined to stand on what I think are my rights.

Mr. Haight: All right, then I will ask—

Mr. Blackman: But in so far as raising the question is concerned I will assist you in any reasonable way and we will not—

Mr. Haight: Then I will ask Mr. Saxton to acquire the information as to the distribution of these reports coming from the associated companies to his division, not only their distribution within his department to other divisions, but distribution outside of that and then I will rest with Mr. Saxton.

My division does not keep any record of any securities sold to other than stockholders of A. T. & T. If there is anything of that sort, I should expect it to be in Mr. Uhrig's division.

621 I think we keep a file of the bond circulars but my division does not have anything to do with the keeping of records. Very likely there is a copy of the circular issued by J. P. Morgan & Co. concerning the bond issue of $100,000,000 20-year Sinking Fund 5½% Gold Bonds of November 1, 1923; the same answer as to 35-year Sinking Fund 5% Gold Debentures, $125,000,000 issue of January 1, 1925; and also as to $150,000,000 5% Gold Debentures of February 1, 1930.

My department does not keep any records of the de-
622 velopment and research work classified according to kind of work and the cost thereof. I may receive personally a copy of the expense report of Development & Research as prepared by Mr. Uhrig; nor does my division keep a record of the loans made to Western Electric by A. T. & T. That is

kept by Mr. Uhrig; nor do I have anything to do with the income tax records. I cannot state what division handles that.

As to monthly report No. 2, we receive seven copies, with one additional for December. One goes to Mr. Heiss, one to Mr. Hamilton, Supervisor in my Division; one to Assistant Comptroller Behan; one to Chief Statistician Andrew; one to Vice-President Gherardi; one to Mr. Blair-Smith, Treasurer; one to the official file. The extra copy for December goes to Mr. Brown in the Treasurer's Office.

As to monthly report No. 3, the same number with an additional copy in December are received and the distribution list is the same.

As to monthly report No. 4, we receive eight copies with an additional for December. One to each of the following: Mr. Heiss, Hamilton, Behan, Andrew, Gherardi, McHugh in Mr. Gherardi's department; Mr. French of Mr. Gherardi's department and the additional copy for December to Mr. Brown.

I have a chart which I have prepared before me—Defendants' Exhibit 78, which is offered in evidence; shows the distribution of these various monthly reports coming to my division and is made by my division.

Mr. Cooper, whose name appears on the chart, is operating vice president; Mr. Wlodeck is in Mr. Behan's division; Mr. Uhrig, assistant comptroller; Messrs. Burcher and Harrison both of Mr. Gherardi's department; also the Benefit and Medical Department appears on the chart. Vice-President E. F. Carter among other duties is in charge of personnel work. They are all connected with the A. T. & T. Co. and its departments.

Forms of monthly reports were marked as exhibits as indicated below and offered in evidence, to which plaintiff objected on ground of relevancy, and as unduly encumbering the record:

Monthly Reports.

1—Defendants' Deposition, Exhibit 79.

1A—Defendants' Deposition, Exhibit 80.

2—Balance sheet—Exhibit 81.

3—Income statement for month of ....—Exhibit 82.

4—Telephone operating revenue report for month of ....—Exhibit 83.

5—Telephone operating expense report for month of ....—Exhibit 84.

7—Report of Stations, circuits and central offices for month of ....—Exhibit 85.

21—Plant and general equipment added, removed or abandoned for ..... months ending ....—Exhibit 86.

23—Sheets Nos. 1 and 2—Report of Payroll changes for month of ....—Exhibit 87.

22A—Comparison of actual results for ....Exhibit 88.

22B—Sheet 1—Review of provisional estimate as of ....—Exhibit 89.

Sheet 2—Monthly distribution of present view for period .... to ....—Exhibit 89.

22C—Present view of next year—Exhibit 90.

Analysis No. 10, entitled "Statistics showing the Results of Operations of Telephone Property for .... ending ...."—Exhibit 91.

Mr. Blackman stated his objection heretofore made was intended to apply to each of the above exhibits separately and to all of them.

Mr. Haight: Yesterday on the record, we made request 628 of Mr. Saxton that he produce the monthly reports of the various associated companies for each of the years 1919 to 1930, both inclusive. I repeat that request and make the request in addition that there be furnished us for the years 1919 to 1922, both inclusive, and from 1923 to 1930, both inclusive, and I also make the request specifically for each of the years 1919 to 1930, both inclusive, and yesterday Mr. Blackman was to say what instructions would be given to the witness in that regard and I would like to know the answer now.

629 Mr. Blackman: The answer is that we will not furnish those reports of the companies other than the Illinois Bell.

Mr. Haight: Then may we have those for the Illinois Bell?

Mr. Blackman: Oh, I do not know; I suppose we could get those in a few minutes but you have had those already, I think.

Mr. Goldstein: What they did was, they said we could find all the Illinois Bell's in the offices of the Illinois Bell but they have not been identified so that we could look specifically over them.

Mr. Blackman: Well, if you want the Illinois Bell reports here for the purpose of convenience, why, we will get them. Do you want the witness to get them right now?

Mr. Haight: No. Then it may be understood that at some convenient time today, or if we are here tomorrow, those will be produced and we will identify them then.

Mr. Blackman: Surely.

Mr. Haight: As to the rest of the request that we have put in three different forms so as to cover the periods, as you have observed, with respect to those, as I understand it, the witness is instructed not to produce them.

630 Mr. Blackman: Yes, the witness will produce those under proper subpoena issued by the court and we will, of course, do all we can to attack and vacate the subpoena because we feel you have no right to those documents.

Mr. Haight: Now, off the record.

(Discussion.)

Mr. Haight: Now, Mr. Saxton, I wish you would tell me, and I have before me to refresh my recollection the form of CR-52. I would like to know, if you can tell me, the net earnings to average plant in service during the year 1923 of the New England Telephone & Telegraph Company as called for in the form first in this question identified.

Mr. Blackman: I object to that as irrelevant and immaterial as the New England Company not being in issue in this case and not bearing on any issue in this case.

Q. 307. Are you able to answer that question, Mr. Saxton? In order to proceed properly, I am first asking you, are you able to answer that question?

A. Not at the moment.

Q. 308. Would you be able, by refreshing your recollection by any documents or paper in your possession or under your control?

A. Yes.

631 Q. 309. And what would such documents or papers be that would so enable you to answer that question?

A. The monthly reports of the New England Company.

Q. 310. Now, I ask for an answer to that question; you may use those documents to refresh your recollection.

Mr. Blackman: The documents are not here and counsel instructs the witness not to refresh his recollection as to them.

Mr. Haight: Do I understand that, as counsel representing the A. T. & T. Company in this instance and the Illinois Bell Telephone Company, that the witness is instructed not to refresh his recollection to enable him to answer that question?

Mr. Blackman: You understand correctly.

Mr. Haight: Now, may it be understood, Mr. Blackman, that if I repeated the same question and went through the same procedure in regard to all the other information which would appear upon a report for the year 1923, CR-52, in respect to the New England Telephone & Telegraph Company called for in these various columns and if I should follow the same line of questioning in regard to each of the other companies here listed and if we questioned in a similar way in regard to each of the facts set forth on the filled out forms CR-52, CR-53, CR-54, 54A, 67, 67A, 67B, 76, 86, 91, 97 and 53A for each of the years 1919 to 1930, inclusive, that you 632 would in each of those very many, several instances, give the same instructions and produce the same result, that is, that the witness would not be permitted to answer it or use that material?

Mr. Blackman: That is correct, with the single exception of the Illinois Bell. Any information concerning the Illinois Bell is at your disposal, and I might say that in instructing the witness to that effect, I am proceeding on the theory that your question is merely an indirect effort to get the facts in evidence that appear on a written document, the proper procedure being subpoena and the fact that the witness has stated that they would refresh his recollection or knowledge, I think it is obvious is not quite correct. The witness has no information or knowledge of the facts; all he has are the documents; he never knew the facts except as shown by those documents.

I want to make this plain, also, that we are not declining any information concerning the operations of the Long Lines Division, A. T. & T.; so far as that is concerned, if your question was broad enough to cover that, why, we are willing to disclose that.

Mr. Haight: I have put those questions in that way in order to save what obviously would be several days' time and it is in order that we may get the co-operation to save time that we have taken this wholesale method instead of repeating the specific question in each instance and as to each year and as to each—

633 Mr. Blackman: Yes.

Mr. Haight: And as to each fact?

Mr. Blackman: Yes.

The Witness (continuing): The data appearing in CR-52 line entitled "Total Associated Operating Companies" is prepared in our office. As to CR-53, some of the data doubtless appears on Associated Companies reports, some of it on the reports of Mr. Uhrig's division and how that is brought together, I cannot say. As to CR-53A, I cannot say.

As to CR-54, I believe that is all transcribed from the reports of the Associated Operating Companies and the Long Lines; the same answer as to CR-54A.

CR-67 is a summary of the reports of the Associated Companies and is prepared in my division. The same answer as
to CR-67A and 67B. As to CR-76, a great deal of the data
appearing is transcribed from the reports of the Associ-
635 ated Companies. I am not sure that it is all. The data
appearing on CR-86 I think is substantially all prescribed
from the Associated Company Reports except for the column
headed "Total Associated Companies." CR-91 is all transcribed from the reports of the Associated Companies. CR-97 is data transcribed from other CR Reports.

Mr. Haight: Now, Mr. Saxton, I will ask you to produce in respect to each of these exhibits just identified again, all of the information that was computed in your division of the department.

Mr. Blackman: The same portion.

The Witness: Referring to Defendants' Exhibit 52, which
was distribution chart for certain CR reports prepared in my
division, there are certain persons named as distributees of
certain reports who were not identified by departments—C. P.
Cooper, Vice President, A. T. & T., is in the Operating
636 Department, Operation C. Mr. E. V. Cox is under Mr.
Cooper as Assistant Vice President. Mr. Gherardi is in
the O. & E. Department. E. F. Carter is in the Operation
Department, Operation H. G. B. Proud is Assistant Comptroller of Western Electric. W. A. Mason, O. & E., A. T. & T.; Mr. R. F. Wolff is of the same department as Mr. E. S. Wilson, who is Vice President, A. T. & T.

The following CR Report Forms were offered in evidence by defendants and objected to by plaintiff on the ground of irrelevancy, immateriality and incompetency, the exhibit number corresponding being indicated:

CR-52—"Associated Operating Companies Excluding 637 A. T. & T. Long Lines. Distribution of Total Net Earnings for the Month of ...." Defendants' Deposition, Exhibit 92.

CR-53—American Telephone & Telegraph Company Earnings on Capital Stock—Defendants' Deposition, Exhibit 93.

CR-53A—Bell Telephone System United States—Defendants' Deposition Exhibit 94.

CR-54—Bell Operating Companies—Comparison of Results for .... months this year with same period last year—Defendants' Deposition, Exhibit 95.

CR-54A—Bell Operating Companies—Comparison of Results for .... Months this Year with Same Period Last Year —Defendants' Deposition, Exhibit 96.

CR-67—Associated Operating Companies Comparison of Actual Results with .... View—Defendants' Deposition, Exhibit 97.

CR-67B—Associated Operating Companies (excludes A. T. & T. Co. Long Lines Department) Present View of Next Year (in this instance 1932)—Defendants' Deposition, Exhibit 98.

CR-67A—Associated Operating Companies (excludes A. T. & T. Co. Long Lines Department)—Defendants' Deposition, Exhibit 99.

639 CR-76—Associated Operating Companies Statistical Units for .... Months Ending ....—Defendants' Deposition, Exhibit 100.

CR-86—Associated Operating Companies (excluding A. T. & T. Company's Long Lines Department) Unit Expenses for .... Months ending ....—Defendants' Deposition, Exhibit 101.

CR-91—Results of Operations by States (Annual Basis) Revenues and Expenses per average company stations and percentages—2 sheets—Defendants' Deposition, Exhibit 102.

CR-97—Bell Telephone System in United States, Months Ended................—Defendants' Deposition, Exhibit 103.

Mr. Blackman: I object to each of the foregoing offers on the ground that each of the papers is incompetent, irrelevant and immaterial on any issue in this case and on the further ground that it is merely an effort to gain information and to obtain comparisons for the purpose of attempting to work up something.

Provisional Estimates from the various Associated Companies, which would include the Illinois Bell, come to my division, but I would have to check to find out to whom else they go in the Comptroller's Department. Outside of the Comptroller's Department, I believe copies go to the O. & E. Department. I am not sure of any further distribution. Data from provisional estimates are used in the preparation of several of the CR Reports. No reports can be said to be compiled from the provisional estimates.

640 CR-67A and 67B I believe are all the CR Reports employing data derived from provisional estimates. Provisional estimates are not used in the compiling of CR-51 and 51A. Provisional estimates are made on forms. My division prepares a consolidated Bell System estimate for the entire system from the provisional estimates and copies of the consolidated estimate are sent to the O. & E. Department and doubtless to other divisions of the Comptroller's organization. I will check up and ascertain to whom these provisional estimates go.

Defendants then requested that plaintiff produce a set of forms and instructions in connection with such forms, in use from 1919 to 1930, both inclusive, with respect to provisional estimates; also the provisional estimates relating to the Illinois Bell Telephone Company for each of those years.

The Witness (continuing): I don't think there are any special letters or instruction or memoranda that go to any of the departments or individuals with CR Reports as indicated on Defendants' Exhibit 52, being the distribution chart for CR Reports in my division.

Defendants request that plaintiff produce for each of
642 the years 1919 to 1930, both inclusive, CR Reports 51B, 55, 55A, 65, 65A, 66, 92 and 94.

By the Witness: I don't know of any reports from Associated Companies showing estimated annual revenue effect of contemplated or pending rate changes, going to any one
643 in the Comptroller's Department. The same answer as to estimated annual revenue value of rate changes.

I located the circulars covering the bond issues I testified about. The circular bearing at the top the legend "$125,000,000 Total Issue A. T. & T. Co. 25 Year Sinking Fund 5% Gold Debentures dated Jan. 1, 1925, due Jan. 1, 1960" marked for identification Defendants' Deposition, Exhibit 104.

The circular bearing the legend "$100,000,000 AT&T Co. 25 Year Sinking Fund 5½% Gold Debenture Bonds, dated Nov. 1, 1923, and due Nov. 1, 1943"—marked for identification Defendants' Deposition, Exhibit 105.

The circular bearing legend at the top "$150,000,000 AT&T Co. 35 Year 5% Gold Debentures dated Feb. 1, 1930, and due Feb. 1, 1965"—marked for identification Defendants' Deposition, Exhibit 106.

I think my division obtained them from J. P. Morgan & Company. I think such of the information as is contained in these documents relative to the Bell System was furnished by my division. Data as to the A. T. & T. Company was probably obtained from Mr. Uhrig's Division.

645 I know that there was distribution of the documents and that a large edition was prepared. The bond issues were to be sold and we were asked to prepare certain information, and I assume that J. P. Morgan & Company used them for that purpose.

Information necessary in the preparation of similar documents for Associated Companies would be obtained from the Associated Companies. We might assist, however, in that instance.

I will see if there is any similar information or documents in the files of my division with reference to the bond issue of the Illinois Bell of 1923—$50,000,000.

Defendants' Deposition, Exhibits 104, 105 and 106, offered and received in evidence.

646 I don't think the Comptroller's Department gets reports from the Associated Companies showing the discounts on bonds sold to bankers, and I don't know that any division receives such reports. The total amount of bond
647 discount and expense is, of course, shown on the Company's regular report. That includes the total to date, not only discount on the issues but the expense in connection therewith. The amount of bond discount and expense appears on the regular reports of the company which are kept in my division. I will check to ascertain whether there is in my division a record of the bond discounts of the various bond issues sold by the Associated Companies of the Bell System from 1919 to 1930, both inclusive. I think Mr. Uhrig's divi-

sion would have the records as to discounts on these three bond issues mentioned in Exhibits 104, 105 and 106.

648 CLYDE UHRIG, recalled:

Further Direct Examination by Mr. Haight.

I have a distribution chart showing the CR Reports prepared in my division and to whom such reports are distributed, which distribution chart is marked Defendants' Deposition, Exhibit 107 for identification. The names appearing upon the chart to whom different reports are distributed are as follows:

649 Directors and Executive Committee, A. T. & T—self explanatory.
E. F. Carter, Vice President in charge of Personnel Department.
C. P. Cooper, Vice President.
W. S. Gifford, President.
Official File—Self explanatory.
C. A. Heiss, Comptroller.
B. Hamilton in Mr. Saxton's division.
J. F. Behan, Assistant Comptroller.
H. Blair-Smith, Treasurer.
T. H. Brown, Jr., Treasurer's Office.
C. Uhrig, Assistant Comptroller.
J. W. Green, Auditor.
J. A. Nixon, Assistant Comptroller, Uhrig's Department.
E. V. Cox, Assistant Vice President.
S. L. Andrew, Chief Statistician.
P. W. Saxton, Assistant Comptroller.
650 H. J. Brandt, Benefit & Medical Department.
B. Gherardi, Vice President.
E. S. Wilson, Vice President.
A. A. Marsters, Secretary.
A. H. Ware, Assistant Comptroller, Uhrig's division.
J. L. R. Van Meter, Assistant Vice President.
F. B. Jewett, Vice President.
A. G. Swede, in office of Vice President Gherardi.
J. W. Van Sant, in office of Assistant Comptroller Behan.
W. A. Beckert, same office.

E. J. Clarke, Assistant Treasurer.
C. S. Van Cise, Assistant Treasurer.
A. W. Page, Vice President.
H. J. Foster, in Vice President Cooper's office.
C. M. Bracelen, Vice President and General Counsel.
L. Moll, in office of Treasurer.
R. B. Shaver, Assistant Comptroller.
W. J. Stout, Assistant Treasurer.
C. O. Bickelhaupt, in office of Vice President Cooper.

The executive committee consists of James S. Alexander, George F. Baker, Walter S. Gifford, Philip Stockton, David F. Houston and Daniel Willard. There may be one more. Mr. Alexander was the former president of the National Bank of Commerce in New York. Mr. Baker is Chairman of the First National Bank of New York; Mr. Gifford is President of this company; Mr. Philip Stockton is President of the First National Old Colony Bank of Boston. Mr. Houston is President of Mutual Life Insurance Company of New York. Mr. Willard is President of the B. & O. Railroad.

651 None of the CR Reports prepared in my division are based upon the monthly reports from the Associated Companies identified as follows: MR 1, 2, 3, 4, 5, 6, 7, and CR 22a, 22b, 22c, 23 and the special report that is used for CR Report 91. None of the reports prepared in Mr. Saxton's division form the basis for reports prepared in my division.

652 In my division there is a record kept of the discounts in respect to the different bond issues referred to by Defendants' Exhibits 104, 105 and 106.

I have here a tabulation which refers to the three bond issues, respectively, which shows total discounts and expenses. Practically 100 per cent are expenses of A. T. & T. The large factor there is the cost of engraving the bonds.

653 If I can segregate the expenses incurred by Morgan & Company and those incurred by the A. T. & T., I will do so.

The tabulation mentioned is marked Defendants' Deposition, Exhibit 108 for identification.

My division does not receive from Associated Companies a report of estimated annual revenue affected by contemplated or pending rate changes. I don't know whether any such reports are received by my division in my department. My division does not receive anything having to do with estimated annual revenue values on rate changes from any of the Associated Companies, and I don't know that any other division in my department does receive such reports.

655 JAMES F. BEHAN, for defendants:

Direct Examination by Mr. Haight.

I reside Montclair, New Jersey; I am Assistant Comptroller, A. T. & T., and have been connected with that company since 1912 in the Comptroller's Department. I occupied my present position since middle of 1920. Immediately prior to 1920 I was Chief Accountant; prior to that I was Assistant Chief Accountant; prior to that Senior Accountant; prior to that, Accountant.

I have before me Defendants' Deposition, Exhibit 51, which is an organization chart of the Comptroller's Department, and my division is indicated thereon.

656 The word "Revenue" in my division must be read in connection with the title above and refers to division of methods, revenue accounting methods, and should read "Revenue accounting methods and results." We develop the forms used and methods covering all phases of the revenue accounting work, developing forms, methods of compiling the various kinds of revenue services, such as exchange and toll; forms for controlling the billing against subscribers and for classifying revenues and for furnishing the information necessary for the journal entry ~~to the~~ final accounts on the general books.

The purpose of preparing the forms is to give advice and assistance to the Associated Companies. They are not 657 used to report the results to the A. T. & T. Central Organization. They are used only in the Associated Companies and to some extent in the Long Lines Department. We do not have anything to do with the development of forms for reporting to the central organization.

In connection with our studies of accounting routines, we very often have to make cost studies of present practices in order to compare them with the costs of a new practice under study. That part of the work is done from time to time. We have, of course, some detailed procedure under study all the time. In some of these studies it is necessary for us to consider the element of cost; in others it is not. We make a cost study on some phase of the accounting work at least once each year.

658 We do not allocate the expense of doing this work to particular Associated Companies in any way. I cannot from looking at our records tell how much the cost of the work done for the Illinois Bell Company was for any of those services. For the Associated Companies we actually make comprehensive audits of the accounts and records of each company and the Long Lines Department annually. The purpose is as a service to the Associated Companies in order to determine that their accounts are correctly kept and that their underlying records substantiate the entries on the general books; that financial position is that stated on their balance sheet and that their income for that year is that stated in their income accounts. That knowledge as to financial condition is not necessarily used by A. T. & T. Company because we receive their monthly reports directly from them and unless in the audit we find a situation different from that reported in the monthly reports, there would be no use for

659 the information we bring in as the result of our audits.

Not to my knowledge are the audits used in determining what advances shall be made to the Associated Companies. They are not relied upon in connection with such dealings except to the extent that the officers are interested in knowing that the accounts of the Associated Companies are correct, as shown by their reports to us.

The item "Field Studies and Accounting Methods and Results," relates to studies we make in the offices of the Associated Companies with respect to the best means of accounting routines, and such studies are made to the end of developing the most efficient and economical way of performing the accounting work, there being a necessity for constantly doing that. The necessity arises through the rapid growth of the business and the great volume of detailed work underlying our accounts. Systems are devised and continuously studied and kept up to date, taking into account the growths to which I have referred.

660 Every increase of the business does not necessarily require some change in our system of accounting or audit. However, we advise as regards changing when condi-

tions justify such advice. I cannot answer as to whether that advice is advice that one would expect the Accounting Department of any institution doing business to need from the outside, but that advice is necessary for accounting in the Bell System, either locally or through a central organization to constantly study the routines underlying the handling of the great volume of business which we have to handle. That would be necessary regardless of reports made to A. T. & T., and the fact that reports are made to the A. T. & T. does not directly have anything to do with it, that I can think of.

661 When new devices come on the market, we consider them, consider their application to accounting work and make studies to see whether it is advisable to install such mechanical devices. If we determine that it is advisable, we make recommendations to the Associated Companies, if our conclusions justify them. We make general recommendations to all. Such recommendations are not necessarily followed. They may or may not be. To a great extent they are. However, I know of no instance where all the Associated Companies have refused to follow recommendations as to the use of mechanical devices in accounting work. We develop the procedure and forms for the companies necessary to be included in the Federal income tax returns. We consolidate the data furnished by the companies to be included in the consolidated returns. All of the clerical processes involved in the

662 preparation of the consolidated returns are done in my division.

We develop the underlying routines of all thrift plans, which includes the employees stock plan. The legend "Employees Stock" embraces employes of the Bell System, and the stock referred to is the stock of the A. T. & T. It includes employes of the Western Electric, E. R. P. I., all of the subsidiaries of the Western Electric, and the Long Lines Department, Fidelity Bonding & Apportionment Methods refers

663 to the handling of all matters relating to a blanket fidelity bond covering all of the employes of the Bell System. We handle all the dealings with the bonding company other than the filing of the claim. There is one blanket fidelity bond to cover all the employes. Every employe from office boy to president of every company in the Bell System is covered. The insured is the American Company and each of the Associated Companies and the Western Electric and certain of its

subsidiaries. Each company pays its pro rata of the premium. It is charged separately to the Associated Companies and the Western Electric and such other companies as may be included. The premium is apportioned on the basis of the 664 number of employes in each company falling within the three classes of employes provided for in the bonding rates; the blanket bond specifies rates for Class A, B and C employes.

In 1918 we commenced preparing consolidated income tax returns for A. T. & T. and Associated Companies in the Bell System. Some of the licensees or Associated Companies during this period have shown a taxable loss. That shows in the returns themselves. The Associated Companies are billed for their share of the income tax payment on the basis as they would pay if they filed their returns individually, except that if any companies controlled by an associate company and included in the consolidated return had a deficit, this deficit would be deducted from the taxable income of the controlling company.

I have computed how much the saving was to A. T. & T. Company by paying on the basis of consolidated income tax and charging on the basis of a separate income tax return to each of the Associated Companies. I have not the computation right here but it can be made available. I have either a pen and ink copy or a typewritten statement in my office.

(Defendants' Deposition Exhibit 78, omitted at this point.)

666 EDGAR S. BLOOM, for defendants:

Direct Examination by Mr. Haight.

I reside at New York City; I am president of Western Electric and have been since August 1, 1926; I am a director in practically all the Western Electric subsidiary companies and am President of the Weco Corporation; I am a director of E. R. P. I., Teletype Corporation, Manufacturers Junction Railway and eight or ten small foreign subsidiaries of Western Electric Company.

667 The Weco Corporation is engaged in holding securities that were formerly owned by Western Electric.

I am a graduate of Engineering Department, University of

Pennsylvania, 1895, and had one year post graduate work. In July of 1896 after I completed my post graduate work, I became connected with Metropolitan T. & T. Co., which was the predecessor of the present New York Telephone Company; was then in the Traffic Engineering Department for about a year; then I was transferred to the Construction Department and became foreman of construction gangs; after about a year I became construction engineer of the company and remained in that position until 1906; then I became Superintendent of Plant of the New York & New Jersey Telephone Company in Brooklyn for about a year and then Superintendent of Plant of the New York & New Jersey Telephone Company in New Jersey. Thereafter, I was General Superintendent of Plant of Pacific T. & T. Co., operating throughout the Pacific Coast; in 1909 I came back east with the A. T. & T. in charge of 668 general supervision of Plant Operation of the Bell System, from the standpoint that the American Company supervised plant operations. Then I was Superintendent of Plant of the New York Telephone Company for the upstate property that they acquired throughout New York State, except the old Metropolitan area here in New York.

I went then to St. Louis in the spring of 1912 as Vice President of the four companies operating throughout the Southwest, that were combined into the Southwestern Bell System, and was there two years; I went to Chicago as Receiver of the Central Union Telephone Company for four years; became President of the Ohio Bell and Indiana Bell; Vice President of Illinois Bell; then I came back to New York in 1922 as Vice President, A. T. & T., and on August 1, 1926, became President of Western Electric.

Also, I am a director of the Bell Laboratories.

669 The Western Electric owns the entire capital stock of the Teletype Company and acquired it I think about October 1, 1930. The Teletype Company manufactures teletypewriters for use in connection with signalling over wires. At the time the Teletypewriter Company was acquired by Western, it had a Development & Research Department of its own and still has it. I don't personally recall how large it is, but it was an organization satisfactory to the size of that corporation and carries on all the development work of the Teletype Corporation.

I had to do with the organization of E. R. P. I., in that I

organized it. At the time it was organized the talking movies
were not what they are today but the corporation was
670 organized primarily in the first instance to take out of the
Western Electric functions that were not related directly
to the Western Electric as a manufacturing company, so that we transferred to E. R. P. I. all outside securities and also transferred to E. R. P. I. the rights under the talking movie patents, but as that business developed and the talking picture business became a large business, we again took the securities out of E. R. P. I. and put them into the Weco Corporation, but at first it was merely for the securities and for the original development of the talking movies.

We had a department in Western Electric at that time and we transferred that organization right over to E. R. P. I.

I am referred to an article which appears in the March, 1930, issue of the Western Electric News entitled "Foresight and Farsight in Purchasing," which quoted words are pre-
ceded by the words "Here, Mr. Secretary of Commerce,
671 is the answer of one industry," and immediately beneath
are the words "No. 5 of a series inspired by the report
of Secretary Hoover's committee on elimination of waste" and beneath that appears the following:

"Foresight and Farsight in Purchasing. At Western Electric a highly trained purchasing staff is the 'lookout' that guides the purchasing for practically the entire telephone industry.

"The basis for all this is the unique relationship between Western Electric—which purchases, manufactures and distributes,—and the Bell System, which utilizes the nation's telephone equipment. This great telephone system computes and transmits to Western Electric a general view of its requirements five years ahead, detailed schedules one year ahead.

"To meet such long time planning this company must make sure in advance of its source of supply. Before any source dries up it must seek another, perhaps at some remote corner of the earth. When a shortage of one material threatens it must find another material every bit as reliable. It also must buy at prices which are fair to the seller, in order that he
may remain a reliable source of supply.

672 "This purchasing control correlates material with ma-
chinery of production, it avoids excessive inventories, it

is an important factor of economy."

Beneath the above, appear the words "Western Electric, purchasers, manufacturers, distributors, since 1882 for the Bell System," and beneath that the words "This Western Electric advertisement was included in 'The Advertising Parade' published to make a permanent exhibit of the exceptionally good work in the field of 1928."

I think that is a fair statement as of that time.

R. W. Burgess is the chief statistician of Western Electric. I am referred to an article by Mr. Burgess which appears in the May, 1930, issue of Western Electric News, beginning on page 3 and running to page 6 and continued to and concluding on page 56. I am referred to certain extracts from that article as follows:

673 "Many of the outstanding peculiarities of Western Electric methods of operation are natural consequences of its close affiliation with A. T. & T. Company and its associated operating telephone companies. Such affiliations between organizations engaged in different stages of the industrial process is what the economist calls vertical integration. Examples of vertical integration in others fields are:

674 "a. Steel companies which own coal mines, ore lands, boats to carry ore on the lakes, and coke ovens as well as steel mills of various types.

b. Oil producing, refining and marketing combinations.

c. Chain stores which purchase direct from factories or even themselves own factories, in the first case combining the functions of retailer and wholesaler and in the second case, the functions of retailer, wholesaler and manufacturer.

d. Copper mining and refining companies which also own wire drawing plants, brass works and other fabricating units.

"The question as to whether such integration is or is not desirable from the general economic standpoint is illuminated by the experience of the Western Electric Company. As we know from our daily contacts, the identity of the interests of the Western Electric Company with those of our chief customers makes unnecessary much risk-taking and much expenditure of money and energy that inevitably occur when each successive step from raw material to service rendered yields a profit for a different set of stockholders. As a natural result of these savings, Western Electric prices to Bell Telephone Companies are distinctly lower than the prices of other telephone manufacturers to non-Bell telephone companies. Or, putting it another way, the margin between cost of raw material and essential labor and the selling price of the product is relatively small.

"Specific ways in which integration results in real savings are as follows:

"1. Sales effort in the ordinary sense is dispensed with. In a sense, Western Electric products are sold before they are manufactured. Representatives of the telephone companies know that the designs have been worked out by the Bell Laboratories and approved by the general departments of the A. T. & T. Company as the best for the purpose. When material of several designs is produced, the Western Electric representative has no object in urging one over the other and is free to pool his technical knowledge with that of the telephone company's representative.

"2. Continuity in engineering and production schedules is secured by co-operation with the telephone companies. If the preliminary line-up calls for peaks and valleys during the next year or two, arrangements are made with the telephone companies to rearrange the dates of enough projects to smooth out the schedule. As a result, the plant investment required by the Western Electric Company is low in relation to sales volume.

"3. Profit above a fair rate of return on investment is eliminated.

"4. Losses due to production of items which later prove unacceptable to the ultimate consumer are minimized.

676 "5. Opportunities within the system are provided for all types of employes. A man who starts in one company may be transferred to another company or to another department which requires a distinctly different type of personal qualifications.

"In addition to integrating public utility operation and equipment manufacturing the Western Electric Company also exemplifies integration of manufacturing and acting as purchasing agent. An important advantage of this sort of integration as exemplified by the Western Electric Company is that, as purchasing agent, the company can obtain better prices and terms than if it were not known that we may, as an alternative, manufacture ourselves. Our own familiarity, moreover, with manufacturing processes enables us to discuss more effectively with outside producers what is really a fair price.

"Space does not permit full discussion of the third way in which the Western Electric Company can serve the economist as a specimen, namely, the advantages of research work.

"It is an accepted operating principle of the Bell System and other progressive organizations that every item of equipment and every method is subject to improvement. Research of the engineering type is fairly common in these days. 677 In the Bell System and several other leading concerns, however, this work has been extended to underlying physical, chemical and mathematical problems with a definite realization that it is worth while to conquer the unknown in connection with the broad field in which particular investigations have been made, even though the particular study may not have an immediate dollars and cents value. In the Western Electric Company the spirit of research has also been carried into methods of manufacture, sources and proper prices of raw materials and supplies and all methods of operation."

As to whether I agree with the extracts from the article which I have read, I would not want to answer as to the first part yes or no, unless I first studied steel corporations. I have not studied chain stores nor copper mining companies. 678 I don't know the detail of the integrations of those other companies.

Referring to the portion of the article which reads as follows: "As we know from our daily contacts, the identity of the interests of the Western Electric Company with those of our chief customers makes unnecessary much risk-taking and much expenditure of money and energy that inevitably occur when each successive step from raw material to service rendered yields a profit for a different set of stockholders. As a natural result of these savings, Western Electric prices to Bell Telephone Companies are distinctly lower than the prices of other telephone manufacturers to non-Bell telephone companies," I would answer yes, because that affects certain things that are useless where we have such a close connection and close co-operation, but that doesn't mean, how- 679 ever, that we do not have other risks. We do.

The following statement is correct:

"As a natural result of these savings Western Electric prices to Bell Telephone Companies are distinctly lower than the prices of other telephone manufacturers to non-Bell telephone companies."

Specific ways are then mentioned in the article in which that occurs and with that statement I agree in the ordinary course, because those savings are passed on to the Bell Companies.

As to the portion of the article which reads as follows:

"Sales effort in the ordinary sense is dispensed with. In a sense, Western Electric products are sold before they are manufactured. Representatives of the telephone companies know that the designs have been worked out by the Bell Laboratories and approved by the general departments of the A. T. & T. Company as the best for the purpose. When material of several designs is produced, the Western Electric representative has no object in urging one over the other and is free to pool his technical knowledge with that of the telephone company's representative," I don't know what 680 sense he is referring to, but because of our close relationship, we have a very good idea of what they probably will require, but it is not a firm order until we get their order. That is, we have provisional estimates, but they are not firm orders. We know fairly definitely as to what they estimate the requirements to be for a year ahead and in a very broad way for five years ahead, and then in addition to that, each month each of our distributing houses keeps in close touch with the local telephone company and reports to us any change in plans.

681 The Western Electric in its relation with the Bell System has no selfish interest in promoting the sale of any particular apparatus. We are entirely out of ordinary competition and we do not design something that may have a particular sales appeal. It is developed through the Bell Laboratories and when it is approved and made standard, it is on such a basis that we manufacture it and we do not even design anything to give it a sales appeal.

The following statement in that article is correct:

"Continuity in engineering and production schedules is secured by cooperation with the telephone companies. If the preliminary line-up calls for peaks and valleys during the next year or two, arrangements are made with the telephone companies to rearrange the dates of enough projects to smooth out the schedule. As a result, if the preliminary line-up calls for peaks and valleys during the next year 682 or two arrangements are made with the telephone companies to rearrange the dates of enough projects to smooth out the schedule. As a result, the plant investment required by the Western Electric Company is low in relation to sales volume."

With reference to the last mentioned quotation, it is correct with this qualification, it might be that in Denver there are two central offices equipments ordered and they schedule them both at the same time. That would mean that we would be at a peak for those six or seven months and we would ask to put one back a little and one forward a little so that we could keep an average force going continuously for more than six months. That is the theory. If you cut out the peaks and valleys, you have a fair return of investment and a complete working schedule.

The statement is correct that "losses due to production of items which later prove unacceptable to the ultimate consumer are minimized," because everything is approved and standardized before it is put into production.

683 The following statement answers itself:

"Opportunities within the system are provided for all types of employes. A man who starts in one company may be transferred to another company or to another department which requires a distinctly different type of personal qualifications."

With reference to that, I would say that the broader the scope of the work, the more you can transfer people around.

Assuming that the Western Electric manufactures and acts as purchasing agent, the following statement is correct:

"In addition to integrating public utility operation and equipment manufacturing, the Western Electric Company also exemplifies integration of manufacturing and acting as purchasing agent."

I do not agree exactly with the following statement in said article:

"An important advantage of this sort of integration as exemplified by the Western Electric Company is that, as purchasing agent, the company can obtain better prices and terms than if it were not known that we may, as an alternative, manufacture ourselves."

There are two features there, first and last; in this case, in order to get the lower prices, and second, failing to get those prices we can manufacture ourselves.

684 The statement is correct that:

"Our own familiarity, moreover, with manufacturing processes enables us to discuss more effectively with outside producers what is really a fair price."

I am referred to an article by me in the January, 1929, issue of the Western Electric News entitled "The Bell System and Ourselves." "Our president traces the development of the telephone art and indicates a growth for the future." I will read that article and let you know later whether I agree with it as of that date and whether it expresses my views as of the present time.

I am referred to an advertisement in the Western Electric News, September, 1928, as follows:

"Here, Gentlemen, of the Committee, is the Answer 685 of One Industry. A One-Way Street Production Policy.

In telephone making, production schedules move in one direction—forward. The machinery seldom needs to be thrown into reverse.

686 "Cancellations in this industry are rare.

"There is consequently little lost effort involving men, material and machines.

"There is a minimum of waste in scrapping or storing partially fabricated parts.

"How is this possible?

"Because of the close relation between Western Electric as purchasers, manufacturers and distributors and the operating telephone companies of the Bell System served by it.

"Here is another striking economy which contributes to the low cost of your telephone service.

"Western Electric, Purchasers—Manufacturers—Distributors." And the letter "f" in the word "manufacturers" has a line which includes this legend: "Since 1882 for the Bell System."

Allowing for the poetic license of the man that writes an advertisement, that is generally a correct statement.

I am referred to an advertisement in the Western Elec-687 tric News, May, 1928, as follows:

"Here, Mr. Secretary, is the answer of one industry."

And then the heading, "Planning moves five years ahead."

"Seasonal production with all its economic disturbance persists as an evil in many American industries. But in telephone making it has well-nigh disappeared.

"Western Electric knows substantially what it must produce five years hence because of its close relation to the Bell System. Telephone engineers, skilled in gauging population trends in the growth of telephone service establish the requirements to which Western Electric directs existing production facilities and provides for additional facilities when and where needed.

"What follows is a production curve relatively free of peaks and valleys. Inventories are kept at a minimum, machinery is busy, employemnt is stabilized, plant investment is accurately related to production needs, wages have progressively risen relative to the cost of living while prices have been substantially reduced.

"Thus does Western Electric by balancing production with demand, eliminate waste in the great industry of telephone making.

688 "'Western Electric.

"Purchasers—Manufacturers—Distributors."

And relating to the "Manufacturers," the words "since 1882 for the Bell System."

The statement in the above was correct as of that time and it was based upon 30 years' past experience, but we are in the world's greatest depression and it does not certainly apply to the situation today. It could not.

I cannot say, but Mr. Stoll is familiar with the details as to whether the D. & R. Department of Teletype Corporation is larger or smaller than it was when the concern was taken over by Western Electric. None of the D. & R. work of Teletype, however, has been done by A. T. & T. I am familiar with the work done in the Department of D. & R., A. T. & T. and the work done in the D. & R. Department of the Teletype Corporation is of the same general nature. It has to do with the fundamental development of Teletype, but it has entirely different activities.

ARTHUR W. PAGE, for defendants:

690 *Direct Examination by Mr. Haight.*

I reside at Long Island; I am vice-president, A. T. & T. and have been since January 1, 1927. I was not connected with the company before that. Prior to that time I was a partner in the publishing firm of Doubleday, Page & Company, ever since I left college. My department in A. T. & T. is the Information Department. That department does the advertising and publicity for the Bell System, which is of a common nature for all of its parts. We consult with the operating companies about their public relations.

691 Defendants' Deposition Exhibit 109 is a photostat of the organization chart of my department. I am a director in the Southern Bell Telephone Company and am president of the Bell Securities Company and am on the committee of the Long Lines.

The Bell System Technical Journal is a publication issued regularly by A. T. & T. Likewise the Telephone Almanac and General Information. The Headquarters Bulletin is 692 an official publication of the company. So, also, is the Bell Telephone Quarterly. All the publications listed on this chart were gotten out by our department, but they are not necessarily all regular official publications in the sense that that term is used in the publishing business. They are not all issued at stated times and they are not all necessarily entered as second class mail.

We advertise in order to promote the good will and sales of telephones and the Bell System. We place advertising in national magazines for the Bell System and those maga- 694 zines circulate in the territory of each of the companies. It is advertising which applies to each particular company in its own particular area. The advertising, however, does not state the name of any particular associated company.

We make no allocation of expenses as between the various associated companies. We have, however, two allocations. Long Lines pays for its own advertising and Bell Telephone Securities Company pays for all of its advertising. Otherwise we pay for the rest of our operations.

Long Lines advertising relates to long distance telephone

service, whether it be carried on the lines of the Long Lines or associated companies. I place that advertising. I place the advertising for the Bell Telephone Securities Com-
695 pany, which relates generally to the securities of the A. T. & T. and some securities of the associated companies such as bonds.

I have been consulted during the last year in respect to allocation as between the associated companies and A. T. & T. of expenses of Information Department. I talked to Mr. Heiss about it two or three months or more than that ago. I made an allocation on the estimate of the time that I spent on the things that could be possibly attached to the A. T. & T. I have not an estimate here. I made an oral estimate to Mr. Heiss. I made some memo about it. I haven't it. You will have
696 to ask Mr. Heiss about it. I gave it to him. I haven't any copy of it. Mr. Banning and Mr. Cook helped me prepare it. I think was signed by me. I put down on that memo the advertising that we did for Long Lines and the Securities Company. I allocated other expenses of the Information Department in addition to advertising to the Associated Companies, the A. T. & T. or the Bell Telephone Securities Company. I allocated the two pieces of advertisement I told
697 you, outside of their particular purpose.

There were some minor costs. I think I allocated something for a half dozen or more publicity statements of finances of the American Company that we get out—quarterly statements for the company. I allocated that all to A. T. & T. I allocated to the Associated Companies expenses relating to finances, only such financial pamphlets as the Associated Companies asked for. That was to the Associated Companies as a whole.

The Headquarters Bulletin is charged in proportion as the people to whom it goes serve the Associated Companies or the A. T. & T. A separate charge was not made against
698 each of the Associated Companies on that, a lump charge against all and allocated as between them on the one hand and the A. T. & T. on the other.

The Bell Telephone Quarterly was allocated to the Associated Companies. Bell Technical Journal the same. Telephone Press Service the same way. It only goes to the Associated Companies, Telephone Almanac the same way as that, only goes to the Associated Companies.

Except for the Headquarters Bulletin, none of these publications were in any wise charged to any entity in the Bell System other than the Associated Companies. None of these publications go to investors or to financial houses or to brokers. The Almanac goes to the Associated Companies who 699 distribute it as they see fit. Some of these publications may go to people of the Western Electric who get the Technical Journal—their engineers. Associated Companies supply us with a list and we send them to the individuals in their company. The Technical Journal has about 2,000 paid subscribers and it is also sent to the telephone engineers and scientists abroad, who obtain scientific knowledge from it and from whom we hope to get corresponding knowledge in return.

The Bell Quarterly goes to people in the Bell Telephone Laboratory and the Western Electric designated by said organizations.

In each of the Associated Companies there is a Public Relations Department, not always under that title but of that general character, and it is usually headed by a vice-president and it is his function to endeavor to see that the operations of the company are not only technically well carried on but in a manner pleasing to the public which it serves. Our relationship to those departments is as counsel to help do that and in doing so we have the usual annual conferences and also people from our department travel about from time to time and keep in touch with them constantly by telephone, etc. The expense of doing that work is allocated generally to the Associated Companies. But it is not allocated in the regular course of business. The allocation I refer to was in the memo to the operating companies as a whole.

No charge is made for the Bell Telephone Quarterly to any particular company on account of the list furnished by that company. The Bell Telephone Securities Company issues 701 publications. I have in mind the Bell Telephone Securities. That goes to bankers, brokers and stockholders who ask for them,—to whoever asks for them, such as prospective investors. It is not done, however, very extensively.

Defendants' Deposition Exhibit 110 for identification is from Bell Telephone Securities, dated April 15, 1931, the title page and prefatory note of which appears on page 3, and the article entitled "Organization and Financing of the Bell Sys-

tem,'' beginning upon page 6, terminating on page 26 and the titles, charts, maps, graphs appearing opposite several of the pages; also including the map opposite page 7,
702 entitled ''Toll Lines of the Bell System, Inc., in One Comprehensive System of Communication.''

Defendants' Deposition Exhibit 111 for identification is from a Bell Telephone Securities Company issue dated April 15, 1930, and includes the chart appearing on page 14, table of statistics upon pages 19 and 20 and the subject matter and table of statistics and all matter appearing upon pages 25 to 28, both inclusive.

Defendants' Deposition Exhibit 112 for identification is from the Bell Telephone Securities Issue dated April 15, 1929, and includes two charts appearing upon page 10 and the subject matter appearing upon pages 25, 27, 28 and 29.

Defendants' Deposition Exhibit 113 for identification is from Bell Telephone Securities Issue dated April 15, 1928, and includes pages 17 to 23, both inclusive, and pages 25 to 29, both inclusive.

Defendants' Deposition Exhibit 114 for identification is from Bell Telephone Securities Issue dated April 15, 1927, and includes subject matter appearing on pages 5 to 27, both inclusive.

704 Defendants' Deposition Exhibit 115 for identification is from Bell Telephone Securities Issue dated May 1, 1926, and includes two charts upon page 8, one upon page 10, another upon page 11 and subject matter beginning on page 13 with the heading ''Finances of the System,'' to and including page 16, and the charts and graphs therein appearing, and also pages 20 to 27, both inclusive, and pages 29 to 31, both inclusive.

Defendants' Deposition Exhibit 116 for identification is from the Bell Telephone Securities, issue dated April 1, 1925, and includes page 5, pages 20 to 27, both inclusive, and pages 29 to 31, both inclusive.

Defendants' Deposition Exhibit 117 is from Bell Telephone Securities, issue dated May 1, 1924, and includes the chart being on page 20 and all the material appearing upon pages 29 to 31, both inclusive.

705 Defendants' Deposition Exhibit 118 for identification is from Bell Telephone Securities, issue dated May 1, 1923, and includes all material appearing upon pages 5 to 22,

both inclusive, and upon pages 24, 26 and 27.

Defendants' Deposition 119 for identification is from Bell Telephone Securities, issue dated May 1, 1922, and includes pages 16 to 21, both inclusive, and also matter on page 23.

(In connection with each of the foregoing exhibits for identification, 110 to 119, both inclusive, the title page of each is included as part of the exhibit.)

Defendants' Deposition 120 for identification is a pamphlet entitled "Some Financial Facts About Bell System comprising American Tel. & Tel. and Associated Companies," etc.

706 Defendants' Deposition Exhibit 121 for identification is pamphlet entitled "Others' Opinions Concerning the Investment Merits of the American Tel. & Tel. Stock," etc.

The Witness (continuing): Defendants' Exhibit 120 for identification was issued in March, 1931, by the Bell Telephone Securities Company. I have seen Defendants' Exhibit 121 for identification, but that was published before I came with the company. I think it has been distributed since I came with the company, but not very much. The other one, Exhibit 120, has been distributed continuously.

707 I had nothing to do with any of the exhibits except to read them as they come in. They come to me after they are prepared for my approval of their issuance, but I do not myself prepare the work on the figures.

Referring to Exhibits 120 and 121, I would say that they would be prepared by the proper people of the Bell Securities Company who are also part of the treasurer's organization A. T. & T. I do not prepare the material contained in the Bell Securities publications.

708 Mr. Thompson: Counsel for the defendants have submitted 11 requests with respect to the production of contracts, agreements and other written instruments from the files of the Western Electric Company.

With respect to No. 1, an agreement between the International Western Electric or International Standard Electric and the Western Electric Company, December 30, 1926, we have been unable to find any such agreement.

There is an agreement as of that date between E. R. P. I. and the Western Electric Company, a copy of which was produced by Mr. Otterson and offered in evidence by the defendants during the course of his testimony.

Request No. 2: We now produce an agreement between Western Electric and the International Telephone & Telegraph Corporation and the International Western Electric Company, Inc., dated August 14, 1925;

Also, an agreement between the Western Electric Company, Inc., and the International Western Electric Company, Inc., dated October 1, 1925.

709 Also an agreement between Western Electric and the International Standard Electric Corporation dated March 30, 1928;

With respect to Request No. 3: We produce an agreement between the International Telephone Sales and Engineering Corporation and the Western Electric Company, Inc., dated May 24, 1927. It is my understanding that this contract was assigned by the International Sales and Engineering Corporation on October 13, 1927, to the Automatic Electric Company. I did not understand that your request was broad enough to require the production of the assignment. However, if it is desired, I will produce it.

With respect to Request No. 4: We produce an agreement between the International Western Electric Company, Inc., and the Northern Electric Company, Ltd., dated January 1, 1919;

Also an agreement dated August 27, 1919, between the International Western Electric Company and the Western Electric Company, Ltd.;

Also an agreement dated May 16, 1923, between the American Telephone & Telegraph Company, the Western Electric Company, Inc., the International Western Electric Company, Inc., the Northern Electric Company, Ltd., and the Bell Telephone Company of Canada, Ltd. It is my understanding that this has been assigned to the Western Electric 710 Company as of September 30, 1925, the date when the Western disposed of its holdings in the International Western Electric Company.

Mr. Goldstein: May we have that assignment?

Mr. Thompson: I see no reason why we won't produce the assignment, although I do not understand that it was covered by the scope of your request.

With respect to Request No. 5: We produce agreement dated October 11, 1928, between the Western Electric Company, Inc., and Graybar Electric Company, Inc.

With respect to Request No. 6: We produce an agreement between the Western Electric Company, Inc., and Stromberg Carlson Telephone Manufacturing Company dated August 13, 1923.

With respect to Request No. 7: We produce an agreement between the Western Electric Company, Inc., and the International Telephone Sales & Engineering Corporation dated March 21, 1924.

With respect to Request No. 8: We produce first, an agreement between the Western Electric Company and the International Telephone Sales & Engineering Corporation, dated March 26, 1931, but inasmuch as this agreement refers to an earlier agreement and perhaps incorporates a part of its terms, we have also produced the earlier agreement be-
711 tween the two companies dated June 19, 1919.

With respect to Requests Nos. 9 and 11, referring to agreements between the Western Electric Company and Kellogg Switchboard & Supply Company and Stromberg Carlson Telephone Manufacturing Company, covering basis of prices, we will have that information within a day or two and we will give it to you.

With respect to Request No. 10: We produce the following agreements between the Western Electric Company and the Kellogg Switchboard & Supply Company covering licenses and patent grants between the two companies covering the period between 1914 and 1930, both inclusive.

With respect to these agreements, I want to state for the record that so far as we have been able to discover, these are all the agreements we have, but the period inquired about is rather an extensive one, and I am not going to state on the record that there may not be other agreements which we may not have. These agreements are as follows:

One dated June 2, 1914;
One dated August 3, 1923;
One dated September 22, 1923;
One dated November 16, 1923;
One dated January 26, 1927,
And one dated February 9, 1927.

712 At the time Mr. J. E. Otterson was on the stand three requests were made of him to produce contracts and

form of organization chart. I now produce in respect of Request No. 2, made of Mr. Otterson, an organization chart of E. R. P. I. which has been prepared in accordance with the agreement made with counsel for the defendants, so as to bring it down to date. It is in typewritten but not in printed form.

I also produce a form of contract between E. R. P. I. and Exhibitors of Motion Pictures;

Also a blank form of contract between E. R. P. I. and Recording Licensees;

Mr. Blackman: I have looked through this memorandum and there is only one thing on it that I think I will not furnish and that is the minutes of the meetings of the Board of Directors, A. T. & T. and the minutes of meetings of Executive Committee, A. T. & T. Those are Nos. 3 and 4 on page 7 of your memorandum, Mr. Adcock.

All the other things, I do not think there is any doubt about our furnishing. As you know, Mr. Bracelen has been ill for the past two days and I want to speak to him, because he has general control of the matter, but so far as I am concerned, I think we will agree that all the others will be furnished.

713 Mr. Blackman: I may say as to objections to materiality and relevancy, if there is any objection, they will be properly made, but no objection will be taken on the ground that they are not copies of reports put out by the company which purported to put them out. In other words, you will not have to prove that they were published in any particular journal or that that journal was published by the A. T. & T. or the Western Electric, as the case might be. There is one other thing I see here that I shall advise be not submitted. You are asking for all the publications of the Long Lines Division. I shall advise that that be not furnished.

716 EDGAR S. BLOOM, recalled:

I have read an article appearing in the Western Electric News, issue of January 1929, at page 326, about which article I was asked when I was on the stand before. This article correctly presents my views.

737 **PIERRE W. SAXTON, recalled:**

Direct Examination by Mr. Haight.

CR. 56, 58, 59, 73, 74, 75, 77, 78, 79, 80, 81, 82, 83, 84 and 85 have not been used. In 1923 there was a CR 68 which was entitled "Cash Estimate." In 1923 to 1926, inclusive, there was a CR-69 entitled "Advances, Bills Payable and Coupon Notes." In 1923 and 1924 there was a CR-70 entitled "Plant Purchased or Sold." In 1926 to 1930 there was a CR-93 entitled "Revenue Accounting Expense Report."

Provisional estimates of the Associated Companies are distributed, one copy to the official file, one to President Gifford, one to Mr. Heiss, one to Mr. Saxton, one to Mr. Behan,
Uhrig, Andrew, Hamilton, Gherardi, Waterson, Wlo-
738 deck; five to Mr. Wilkinson, O. & E. Department, who is
under Mr. Gherardi. Mr. Waterson is in Gherardi's organization.

I have forms of provisional estimates used by Illinois Bell for years 1919 to 1930, both inclusive. The instructions are
contained in the forms themselves and appear as gen-
739 eral notes on the back of the first page, and there are
certain sheets in the estimate entitled "Explanation of Statements." I am referring to the form for 1919. I have not looked through all the forms.

I believe there is a letter of transmittal sent by the President of the company. The forms are transmitted to the presidents of the Associated Companies. I never heard of that letter referred to as the letter of instructions. Those letters are not sent out by our department. I think they are sent by the president, Mr. Gifford, and that letter is referred to as the letter of transmittal. There may be letters of instruction that come from various departments, or various staffs, referring to the manner in which these provisional estimates are to be made out, but I don't know. If there have been such letters, they have probably been sent by the department of O. & E.

740 The forms of provisional estimates produced were offered in evidence and marked Defendants' Deposition Exhibits as indicated below:

For the year 1919—Defendants' Deposition Exhibit 122.
For the year 1920—Defendants' Deposition Exhibit 123.
For the year 1921—Defendants' Deposition Exhibit 124.
For the year 1922—Defendants' Deposition Exhibit 125.
For the year 1923—Defendants' Deposition Exhibit 126.
For the year 1924—Defendants' Deposition Exhibit 127.
For the year 1925—Defendants' Deposition Exhibit 128.
For the year 1926—Defendants' Deposition Exhibit 129.
For the year 1927—Defendants' Deposition Exhibit 130.
For the year 1928—Defendants' Deposition Exhibit 131.
For the year 1929—Defendants' Deposition Exhibit 132.
For the year 1930—Defendants' Deposition Exhibit 133.

The Witness (continuing): In connection with my previous testimony I said that we prepared a combined provisional estimate for the Bell System including Associated Companies and Long Lines in general. As a matter of fact, the combined provisional estimate is for the Associated Companies only. The distribution of the combined provisional estimate is as follows: 741

742 One copy to the official ~~file~~, one copy to Mr. Gifford, Cooper, Heiss, Saxton, Behan, Uhrig, Andrew, Hamilton, Cogan (he is in my organization), Gherardi, Waterson and Harrison (he may not have been identified—is in O. & E. Department); one to Mr. Anthony (also in O. & E. Department), Burcher (O. & E. Department); one to French (O. & E. Department); one to Crunden, assistant comptroller American Company; one to Wlodeck, Wilkinson and one to Mr. McHugh of O. & E. Department.

There is a form of combined estimate for the Associated Companies, which is a summary, which I have just referred to as distributed. That form has no number but it is simply a combination on the same form as are used by the companies.

Defendants request plaintiff to produce the combined provisional estimates for all the Associated Companies for each of the years 1919 to 1930, both inclusive, which request was taken under advisement.

743 *Cross-Examination by Mr. Blackman.*

I know practically nothing personally of the operations of the New England Telephone Company. The reports of the company are kept in my department and aside from the reports that are sent periodically by that company to my division, I don't know anything about its income and invested capital and matters of that kind.

744 *Redirect Examination by Mr. Haight.*

Those reports referred to, come to my division in the regular course of business and upon regular forms provided for that purpose. They are used by us for preparation of our own reports, such reports as I have already testified are made.

Mr. Blackman: Mr. Haight, in order to make this clear and to avoid any unnecessary further examination, I am not casting any reflection on the authenticity of the reports at all. My point is simply directed to this and I will make it plain on the record so that you will understand. In answer to a question by you the witness said he could refresh his recollection or refresh his knowledge of the income of the New England Company by examining the reports. I am making the point that he cannot refresh his recollection or knowledge because he never had any, that all he can do is to tell you figures that show on paper that is in his department.

Mr. Haight: All right.

745 JAMES F. BEHAN, recalled:

Direct Examination by Mr. Haight (Continued).

Defendants' Exhibit 134 for identification is a tabulation showing the benefits to A. T. & T. resulting from consolidated income tax returns. At the bottom of the sheet is a statement "Notes, 1. Companies having deficits failing to pay dividends to the American Company." In 1918 there were companies who had deficits and did not pay dividends. The

fact that no dividend was paid to the American Company is not taken into account in arriving at the figure of $196,-
746 286.17, which purports to represent the net amount of benefit to the American Company for the year 1918. The amounts shown on the sheet represent the savings to A. T. & T. without taking into account any loss to it as a result of the failure to receive interest or dividends from those companies. A distinction is drawn between the years 1918-23 and between the period 1923-30 inclusive because our returns for the period 1918-23 are closed with the Department at Washington, final settlement having been made. All of the other years are still open and still subject to discussion, so we don't know the final amount of taxes for those years.

In connection with the settlement for the years 1918 to 1923, we made additional payments over what had been paid originally, based on the return as filed.

747 Plaintiff's counsel refuses the request of defendants that witness produce the figures showing the additional payments for each of the years 1918 to 1923).

The additional payments were based upon the additional assessment for the consolidated group and the additional assessment, of course, could be allocated to the companies. We have made such an allocation to the various companies.

(Witness states that he will furnish subject to direction of counsel, statements showing such allocations.)

Each company that was involved in the additional as-
748 sessment was billed for these additional payments. Some of them may not have been involved. As to whether the additional payments made by each of the companies in connection with their respective returns is reflected in the statement contained in Exhibit 134 for identification, I will say that the statement does not purport to reflect payments to the extent of the additional payments. It affects the final return.

The figure $196,286.17 for the year 1918, appearing upon the said exhibit, was determined by taking the final figure after audit by the Internal revenue department. To compute said figure, we took the final amount of tax which the A. T. & T. would have paid on an individual basis and deducted from that the amount of tax which it actually paid on a consolidated basis, and the difference is the benefit to A. T. & T.

from the consolidattion. We do not figure in such computation on any or all of the companies whose income we use in the consolidated income tax return, what each of the companies would have paid on an individual basis and what each of the companies was billed and paid on a consolidated basis. All we figure was the difference between what the American Company would have paid and what it did pay.

Defendants' Deposition Exhibit 134 for identification was offered and received in evidence as Defendants' Deposition Exhibit 134.

750 CLYDE UHRIG, recalled:.

Direct Examination by Mr. Haight.

With reference to bond discount and expense on the three issues I have mentioned in my original testimony, I was asked to make certain segregations, which I have done, and they appear upon Defendants' Exhibit for identification 135, entitled "American Telephone & Telegraph Company," etc.

751 I have here, in connection with CR-14, a document consisting of two sheets entitled "Cash Statement for years 1918 and 1919" which is marked Defendants' Deposition Exhibit 136.

I have the same CR-14 Report for the years 1920 and 1921 (2 sheets) which is marked Defendants' Exhibit 137.

I have also produced CR-18, consisting of a plurality of sheets, covering the years 1919 to 1930, both inclusive, which is marked Defendants' Exhibit 138; also CR-10 for the years 1919 to 1930, both inclusive, which is marked Defendants' Deposition Exhibit 139.

(Said Exhibits 136-139, inclusive, were offered in evidence by defendants.)

The figures shown on CR-16 which I have produced, entitled "Final Cash Estimate December, 1919"—"Balance Nov. 30, 1919—$70,039,000" were estimated receipts for the month of December, 1919. I have no compilation or statement showing the estimated receipts by the classes shown on CR-16 for the entire year 1919. I probably have no compilation, corresponding to these classifications.

753 I think we have a statement which shows the estimated receipts and the estimated disbursements for each of the years 1919 to 1930, but the subdivisions would not necessarily conform to those on CR-16. I would not say, however, we have estimated receipts and estimated disbursements by some classification for those years. An estimate undoubtedly was made, but whether it was preserved or not, I don't know. Doubtless we have sheets corresponding to CR-16 for each of the months for the years 1919 to 1930.

(Defendants' request that witness produce for each of the years mentioned, in the alternative, either a statement showing the estimated receipts and estimated disbursements by subdivisions, or produce the monthly reports CR-16 for each of the months of each of said years, was taken under advisement by plaintiff.)

CR-13 is a report compiled in my department, which report is the Allotment Report.

(Request to produce Report CR-13 for each of the years 1919 to 1930, inclusive, taken under advisement.)

Mr. Blackman asked whether that was a report already furnished to defendants. Mr. Goldstein stated it had been furnished for inspection only and no copies could be made every time he got part of the information in Chicago.

The Witness (continuing): Defendants' Deposition Exhibit 140 received in evidence is a chart showing certain CR Reports that had once been in use and were no longer in use.

755 SEYMOUR L. ANDREW, for defendants:

Direct Examination by Mr. Haight.

I reside at South Orange, New Jersey; I am chief statistician, A. T. & T. and I was thoroughly educated at Harvard College. I have been in charge of my division since 1921. My division furnishes advice and assistance in the development and prosecution of the statistical work of the accounting departments of the associated companies and of work related to that statistical work.

The words "Methods of Statistical Analysis and Presenta-

tion" appearing upon the organization chart of my de-
756 partment—Defendants' Deposition Exhibit 51, refers to
methods and we endeavor to assist the associated companies in the development of methods whereby the data in the underlying records may be most clearly, quickly and concisely made usable for administrative purposes of the Associated Companies. That work has nothing to do with the administrative purposes of the Bell System as a whole or the work of A. T. & T. except in so far as the methods may also be allocable to the work of the other departments of the general staff and are used by them.

The words "Statistical Methods of administrative control" relate to the administrative control exercised by all supervisors of the associated companies. It is not designed for the purpose of the organization of A. T. & T., and does not relate at all to the administrative control exercised by A. T. & T.

As an instance of statistical methods of administrative control we have developed "Development of a job control book." That is, we suggest to the associated companies the form whereby statistical data may most readily be kept for day-to-day use by a supervisor in those companies. The development of the job control book is a continuing piece of work. I have forgotten when the start was made on that, but of course the need for statistical control methods and devices has become greater as the size of the system has become greater.

Job control means the control of the functions under
757 the immediate direction of the supervisor, the object
being, of course, so that every supervisor can have the statistical information relating to his job in the easiest and best form.

758 On the control charts, Defendants' Deposition Exhibit
51, there appear the words "Mathematical Statistics," which relates to assistance rendered to the associated companies involving problems regarding the use of so-called higher mathematics. Such problems are not to any appreciable extent before me in connection with work of A. T. & T. as such, but we are asked occasionally by other members of the general staff for advice on problems involving higher mathematics. The work is not of a character where results can be sent. If there are problems that come up the general procedure would be to have the associated companies send some

one in to discuss them. No reports are made as a result of such discussion. The general staff ask for information of the same sort on which we consult and give advice only as I have already said.

I am not, however, immensely familiar with other departments requiring mathematics. A number of them, of course, have their own mathematicians.

759 I cannot state how many representatives of Illinois Bell have come to my division for advice in relation to mathematical statistics since I have been in charge. We do not keep a record of that. I have no recollection offhand, but I might say that mathematical statistics is a very small fraction of our division.

In regard to which one of the topics appearing under my name, "Chief Statistician," on Defendants' Exhibit 51 represents the largest part of my division work, I would say that the real classification of the functions of the division does not closely tie up with the particular language used in this chart. For example, the main function of the division is with reference to the development of statistical methods. Work of that character is carried on by each of the sections shown in these charts. Those methods do not relate to the making out of reports that go to the Associated Companies, but they relate to methods of summarizing, analyzing and presenting the underlying data of the associated companies for their own use. It does not include anything that relates to the making out of reports of those results to A. T. & T. I presume, however, that underlying data used in the making

760 out of reports by associated companies to A. T. & T. is in some wise used. It, however, has nothing to do with the provision of the original data. It relates to methods of analyses and presentation of the data after it has been originally compiled. So far as I know, portions of it are presented in monthly reports to the A. T. & T.

Under the heading "Pension and Depreciation Studies" on Exhibit 51, we compute each year for each of the associated companies the proper accrual expense which they should charge to meet the undertaking to provide pensions in accordance with the terms of the pension plan of the Associated Companies. It relates to Long Lines but not to Western Electric or E. R. P. I. My division has nothing to do by

way of cooperating or giving advice relating to pension
761 funds to Western Electric. Nothing of a formal character. They provide their own accruals and compute them. I should not be surprised, however, if the people engaged in that work talked with our people from time to time.

Mr. R. W. Burgess, chief statistician of that company, worked out the Western Electric method. Our method was worked out in my division. I think both methods were worked out simultaneously. There was presumably cooperation of the character I have stated.

"Depreciation Studies" relates to the study of of those aspects of proper depreciation procedure which involves the use of mathematics. In the determination of service life
762 of various classes of property the use of mathematical formulae and mathematical procedures are involved.

We have advised Associated Companies in respect to their use and appropriateness. In so far as the form conceived by my division is applicable, they all use it. The form is applicable to those classes of telephone property for which experience as to service life is available. I don't know when that was started, but it was before 1929. I cannot tell when I recommended the use of formulas based upon experience. I cannot say as to whether it was after my original connection with my division. Of course our work in connection with recommending formulas upon the service life for the various associated companies is in the nature of research work. The recommendations go out by other people than ourselves.
763 As to the persons to whom recommendatinos go, we work with the proper people in the department of O. & E. as well as with the comptroller. We give them advice with respect to the mathematical processes involved. For example, studies were made in our division as to the type or types of mathematical formulae which might best fit the mortality experience of certain types of plant. Our conclusions as a result of those experiments and research along that line were forwarded to Department O. & E. and to the comptroller. That happened some years ago, I do not recall the exact date, but I will find out the date and let you know. That advice and the studies were based upon the experience of more than one of the associated companies, but I cannot say with exactitude as to the number.

764 At first hand I cannot say whether the formula based on service life that I have referred to, is now used by the Illinois Bell. As to the particular name by which the formula is designated, it seems to me that I have heard the name Gompertz-Makeham in connection with it. My impression is my division had nothing to do with the formulation of that law or formula, but in connection with that formula we undertook studies to determine whether or not it was applicable in the case of the mortality experience of classes of telephone property.

As to whether my division did work in computing the mortality of this property in the service on the basis of this formula, I will say that we were not after results. We were after methods of obtaining results.

As to whether we did anything else in connection with service life from the time I entered the division except what I have stated, I will say that I believe that members of the
765 division have advised in respect of methods for determining service life where a formula of this character would not apply. That is in those classes of property where this formula would not apply. I presume advice was given with respect to such classes of property. I do not remember what it was.

I cannot answer the question as to whether we made any studies or gave any advice in regard to the element of salvage relative to the subject of depreciation.

I do not think we used monthly reports of the associated companies in connection with any of these studies or recommendations that I made, but we did receive data as to the associated companies' past experience with respect to certain classes of property upon which those studies were based. The reports used were in terms of physical units. I don't think we used any monthly reports of the associated companies that have been referred to as numbers 1 to 7, both inclusive, and number 28 or 22a, 22b, 22c, but I will check that and be certain. We do use in some of our work some of the C. R.
766 reports in general relating to the associated companies and not reports relating to A. T. & T. We make use of the monthly reports of the associated companies for things other than depreciation.

In connection with our methods of work, we use monthly reports MR-1 to 7, both inclusive, MR-23, 22b, 22c and the spe-

cial report on which CR-91 is based, but I do not think that
advice and recommendations to the Illinois Bell and to O. &
E. Department and to the other associated companies is based
upon the above mentioned reports or upon studies based upon
said reports. The reports enter into our work by keeping us
advised as to the size and condition of each of the asso-
768 ciated companies, which has a bearing upon the method
which we may suggest to them as to the bearing. I will
say that the methods which we might suggest for considera-
tion in a small company would probably be somewhat differ-
ent in detail from the methods suggested for use in a large
company. In the way in which I have said, when we make
determinations and give advice based upon studies, where
that advice relates to the large companies we use the in-
formation from these various reports relating to such large
companies. That is, the use that we make of them is not re-
lated to the advice that we give in respect to methods; in
other words, to make that clear, we do prepare for certain
officials and other members of the general staff of this de-
partment, some graphical presentations in which the data
from those reports is used. In the way that I have already
stated, we do use in giving the advice the facts stated in the
report from the associated companies relating to their affairs
and the advice has some relation to the facts stated in the
reports.

770 We use them in preparation and maintenance of certain graphic reports sent to other members of the general staff, the graphic reports going to Mr. Gifford, Cooper, Gherardi, Heiss and one or two of the members of Gherardi's organization. I presume my division gives advice or recommendations that are divisions of methods of what has gone before. In the same way and to the same extent as I have explained, those recommendations based on the same reports have the same relationship to the reports as I have already stated.

I don't know whether we use CR-52 entitled "Associated Operating Companies, including A. T. & T., Long Lines Distribution of Total Net Earnings for Month of ...." I don't think we use CR-53A nor CR-54. As to CR-54A, I cannot be absolutely sure nor as to 67A. The only use, however, which we would make of any or all of such reports would be in connection with the making or posting of a few charts

maintained for the other members of the staff, but I
771 cannot say what if any use is made for that purpose.

My division has 115 employes. It does not have anything to do with the study of fundamental plans. We receive, however, copies of provisional estimates. We do not have anything to do with their preparation.

I think the heading on chart, Defendants' Deposition Exhibit 51, relating to the Comptroller's Department, relating to five-year budgets, is largely a misnomer. It was put there primarily for the purpose of having something over the name of the fellow that appears under each. We are in a little difficulty once in a while in showing coordinate members of the organization and then devising some title to apply
772 to them. Of course in the field of general statistical methods is involved methods of estimating, and it is in connection with that, that that term is used.

Also on Defendants' Deposition Exhibit 51, there appears the heading "Economic Statistics" and under Mr. Belcher is "Financial Studies," which title appears above the name of Mr. Hodgkinson, Jr. That entire group is concerned with the study of current business conditions in the economic world outside of the telephone company. There again we have a case of two coördinate individuals in that group and we call one of them "General Economic Studies" and the other "Financial Studies."

773 In connection with those we take certain periodicals and so-called economic service, but we do not use any manuals such as Moody's, Poor's and Standard Statistics in connection with them. It is quite possible occasionally that we do consult those manuals in connection with our work. Our library subscribed for them and they are available in the library for any one in the company who wants to refer to them, and I think they are referred to by people in my division, but I have never seen them in actual use, and I would not be apt to because if they are used they are used in a different office. We have a general library in the Comptroller's Department which is available for all of those who wish to consult any book in it, and books are consulted for the purpose of obtaining information. The use of the material by others in the company would indicate that the library serves a useful purpose and is worth what it costs. As to the useful purpose, I cannot say in detail. I can state the general phil-

osophical conclusion but in my judgment it is desirable for persons connected with a large organization to have reasonably ready means of acquainting themselves or continuing to be acquainted with a fair amount of what goes on in
775 the world outside of their immediate day-to-day job.

Referring to Defendants' Deposition Exhibit 51, under the heading "Chief Statistician" the first of the subdivisions is entitled "Industrial Surveys and Population Studies." That group advises the associated companies when called upon in relation to questions involving the present or prospective population in their territory and in respect of any studies which they may undertake looking toward an industrial survey, so-called, in any part of their territory or in the territory as a whole, those surveys being undertaken for the purpose of aiding the judgment as to what the probable future industrial development of those areas will be.

The subdivision headed "General Economics Statistics" concerns itself with the study of current and prospective business conditions outside of the telephone business and to furnish studies to the Associated Companies based on the results of these studies and with advice and assistance to the associated companies in their own study of business conditions in their respective territories.

The subdivision under the heading "Financial Studies" is engaged in the same character of work as the preceding subdivision except that it pays somewhat more attention to the study of banking conditions and security markets. In our studies of finances and conditions of the bond market and conditions of the stock market, etc., we use the services of Moody's, Poor's, Standard Statistics, but not the manuals. There are other services of that kind. We use those services and have the manuals in the library in my division.

777 Stipulated that the notary need not observe the order of December 4, 1931, requiring the depositions to be returned to the clerk of the court on or before February 1, 1932, but that it could be done later, on or before February 16, 1932.

779 Stipulated that original exhibits identified or offered on the taking of depositions, may not be returned by the Commissioner, but the exhibits may be used as identified when the depositions are offered, subject to defendants giving to plaintiff, on request, copies of any of the exhibits that

they may desire, or giving them the originals.

785 Defendants' Deposition Exhibit 141, being a list of certain patents appearing in report of the Federal Trade Commission to Congress, entitled "The Radio Industry," received in evidence, subject to plaintiff's right to correct if errors are discovered.

Mr. Adcock: At the end of Mr. Otterson's redirect examination we requested the audits of Arthur Young & Company of E. R. P. I. which Mr. Otterson testified had been made by Arthur Young & Company and I think the letter of Mr. Bracelin of January 19th states, as a matter of fact, that there were no audits made and that request—

Mr. Bracelin: Did I say that?

Mr. Adcock: There were no reports made, yes, no reports made, and we wanted the audits made at that time, as stated by the record, in order to save time and for that reason we will probably want to recall Mr. Otterson to ask some questions about that situation, not particularly about the audits, but with reference to the subject-matter that would be covered by the audits.

Form of provisional estimate for year 1931 received in evidence as Defendants' Exhibit 133½, subject to plaintiff's objection as to materiality and relevancy.

795 With respect to Defendants' Exhibits 110 to 119, both inclusive, offered in evidence, defendants offer the following with reference to each one of those exhibits:

Exhibit 111—Prefatory note on page 3, chart appearing opposite page 7 and pages 7 to 28, both inclusive, not heretofore offered.

Defendants' Exhibit 112—Prefatory note on page 3, chart appearing opposite page 7, and all material appearing on pages 7 to 29, both inclusive, not heretofore offered.

Defendants' Exhibit 113—Prefatory note and chart appearing opposite page 8, and all the matter and material appearing on pages 9 to 29, both inclusive, not heretofore offered.

Defendants' Exhibit 114—Front and back of sheet 3, which is the sheet immediately preceding the table of contents and chart opposite page 5.

Defendants' Deposition Exhibit 115—Matter and material appearing on inside of cover page; material appearing on page following the cover page and all material appearing on pages 5 to 31, both inclusive, not heretofore offered.

797 Defendants' Exhibit 116—Material appearing on inside of cover page and material on sheet following the cover page and of pages 5 to 31, both inclusive, not heretofore offered.

Defendants' Exhibit 117—Material appearing on the inside of cover page and material appearing on page following the cover page and all matter appearing on pages 5 to 31, both inclusive, not heretofore offered.

Defendants' Exhibit 118—Material appearing on inside of cover page and material appearing on the page following the cover page, and all material appearing on pages 5 to 31, both inclusive, not heretofore offered.

Defendants' Exhibit 119—Material appearing on page following the cover page and all material appearing on pages 5 to 23, both inclusive, not heretofore offered.

The defendants offer with respect to each Defendants' Deposition, Exhibit 111 to 119, both inclusive, plaintiff objected on the ground of immateriality, irrelevancy and incompetency, but not to the authenticity of the documents.

HARRY H. CARTER, recalled:

812 *Cross-Examination by Mr. Blackman.*

The Illinois Bell has done sales work in connection with Long Lines special service contracts for approximately a year, and sold during 1931 approximately $5,000 to $5,100 worth. The Long Lines' own sales force in that year did a million twenty to a million thirty-five thousand dollars worth.

About a year ago, Illinois Bell organized a group to sell their toll and special contract services and asked Long Lines to train that group, which was done under my supervision, sending a man to Chicago to train the group and work with them for a matter of a month or six weeks on one occa-
813 sion; later, at Illinois Bell's request, man was sent there for 2 or 2½ months to carry on further work with the group.

Long Lines' sales organization that has been in Chicago for a number of years did all the selling of special services. However, if an Illinois Bell employe got in touch with some one who desired Long Lines special services, that fact would be reported to our sales organization and further negotiations would be carried on by it. Prior to a year ago, Illinois Bell had three people who were exclusively working on its special contract service sales. During the years Long Lines has had a sales force in Chicago, it has sold services for Illinois Bell which was done as a part of Long Lines own selling work. If we found people who were interested in Illinois Bell special services in addition to our own, Long Lines people would make the sales as the opportunity presented itself.

To sell special contract services requires a study of 814 the customer's communication needs, and our studies sometimes would show that Illinois Bell special services were the only ones required. Sometimes a combination of Long Lines special service and Illinois Bell's were needed. In other instances Long Line's alone; that is, each of the two companies gave the same kind of service.

When I said at page 482:

"They can handle the applicant for service and can go to them and they can negotiate for sale of the service that he desires." I meant Illinois Bell Company's special contract services. The only services that Long Lines covers by contract are special services shown on special forms. The forces of the Western Electric Company are included in the special sales campaign that I refer to.

The employes of the Illinois Bell are not really in a position to sell for us any services because to sell special contract services it requires a considerable amount of tactical knowledge, and the employe body of the Illinois Bell does not have that knowledge. Our sales are generally to very large concerns, such as banks, large manufacturing establishments, and the employe body as such would not have contact with the type of concern; so that the opportunities to sell special services are rather remote on the part of the employes generally.

815 The Illinois Bell would profit from the general sales campaign which I mentioned to a very considerable extent, because Long Lines employes and Western Electric are familiar with the various forms of exchange service offered by Illinois Bell and have contacts daily with their neighbors and friends who are likely prospects for additional services or new services entirely of Illinois Bell. It is comparatively

easy for employes in Long Lines and in Western Electric because of such familiarity. Long Lines employes in Chicago are not really engaged in selling toll service because there
816 is no contract taken for toll. Contracts are only in connection with special services. Toll service is promoted by advertising. The commercial employes of Long Lines at Chicago are on the Long Lines payroll. As to other employes in Chicago, I have not any direct actual knowledge as to whose payroll they are on.

The Long Lines Department has two continuing program special services furnished to the National Broadcasting
817 Company and one to the Columbia Broadcasting Company. The National furnishes service to five stations in the Chicago area and Columbia to two stations in that area; so there are three program special services into Chicago over which broadcasts are sent to seven broadcasting stations in the Chicago area who are over Long Lines to the boundary line.

At the boundary line, the Long Lines plant and the
818 plant of the Illinois Bell are connected, which extends to the studios of the broadcasting companies and from the studios the Illinois Bell's plant is used out to broadcasting stations. The Illinois Bell furnishes all the facilities required within the City. The Illinois Bell furnishes continuing program special services to 14 stations in the Chicago area and no part of the Long Lines plant is used in that service, the Illinois Bell getting all the revenue and maintaining the
819 service.

A continuing program special service is one furnished for any 16 hours continuously daily. Along the route of the facilities there are terminal rooms and repeater stations in which men stand by and observe the quality of the service, seeing to it that the lines and transmission levels are maintained and making all necessary adjustments and supervising to keep the program facility in condition to satisfactorily deliver the program to the radio stations.

There is also a temporary recurring service which is furnished so many hours a day or so many days a week or so many days a month, and in addition to that there is a service furnished for one time only,—a half hour or an hour or a 2-hour basis, which is not a recurring service.

820 Long Lines has at the present time two recurring serv-

ices going into Chicago and it has had on various occasions one time jobs where our plant is used to the city boundary and then connected to the Illinois Bell plant for the recurring service or for the one time service. The facilities and instrumentalities for the recurring service and for the 16-hour are the same and generally the same also for the one night. The Illinois Bell furnishes the facilities exclu-
821 sively on service within the City of Chicago. Special services in Chicago with relation to aircraft operation, toll service and teletype service is furnished in co-operation with Illinois Bell, and Illinois Bell furnishes similar services without our co-operation.

824 *Redirect Examination by Mr. Adcock.*

I have certain information that was requested by defendants with reference to revenue of Long Lines.

Defendants' Deposition Exhibit 142, is a statement covering period from July 1, 1919, to December 31, 1930, showing gross revenue from Long Lines business, together with the Long Lines' share in each case, subdivided first between revenue from message toll services and special contract services, and the latter services subdivided according to the various kinds of those services in effect in the respective years. The term "gross revenue" as used on this statement indicates the amount charged the users of the service. However,
825 the difference between this amount and the amount shown as the Long Lines' share does not represent the entire compensation to other companies for services and facilities furnished by them in connection with this business. To a very large extent compensation to them for facilities furnished is on a rental basis rather than on a pro rata basis. In such cases the rental payment is included in the Long Lines' expenses as a rent deduction. Similarly, compensation to other companies for operating services furnished by them are, to a large extent, reflected in the Long Lines' operating expense account rather than as charged against gross revenues.

Defendants' Exhibit 142 is a correct statement of the matters therein shown as taken from the books of A. T. & T.

826 Defendants' Deposition Exhibit 143, dated January 1, 1931, is an organization chart of the Long Lines Depart-

ment. During the 4½ years that I have been in Long Lines Department, there have been certain changes not only in personnel but additional offices. I refer to a commission going to the Illinois Bell in connection with Long Lines' special contract services. The Commission was accepted by Illinois Bell on June 30, 1930, and became effective July 1st of that year. There was correspondence between Illinois Bell and Long Lines on that subject, copies of which have been furnished us.

828 With reference to article in Bell System Technical Journal of January, 1930, entitled "Telephone Systems of the United States," to which Dr Jewett's attention was called in his testimony, Dr. Jewett states as follows:

"I have reread the article prepared by Mr. Gherardi and me for the World Engineering Congress in Tokyo in October 1929 entitled 'Telephone Communication System of the United States' and reprinted in the January 1930 issue of the Bell System Technical Journal. I think that the article correctly portrays as of 1929 the material covered by it.

I think likewise that it correctly portrays the facts, statistics and forecasts as of the present day except only in so far as these have been modified by progress and developments that have occurred during the past two years or by the altered forward picture which has resulted from the changed economic situation.

Of course there are certain parts of the paper, particularly those relating to commercial and operational matters, in which Mr. Gherardi's opinion is better than my own since 829 they relate to matters with which he is more conversant than I.

While the paper undertook to give an accurate picture, as of 1929, of the telephone communication system of the United States, in a limited space, it must be read with an understanding of the occasion on which it was presented and the audience to whom it was presented.

The occasion was a World Engineering Congress called together for the purpose primarily of reporting on new and outstanding engineering advances in the period since the last preceding international congress. The audience to whom the paper was presented was composed of leading communication engineers from all the principal countries of the world.

Because of the nature and stated purpose of the Congress and the character of the audience, the paper which Mr. Gherardi and I prepared was not and was not intended to be, as regards the amount of space devoted to the various topics mentioned, an accurately balanced presentation of the research, development and engineering effort that had been or was being expended in the United States.

Since the development of purely local telephone service
830 is involved with many purely local considerations, detailed description of one country's practice is frequently of little interest to the communication engineers of another country—for example, the vast problems of research, development and engineering involved in the introduction of panel type machine switching in the United States are only of general interest to communication engineers elsewhere in the world.

On the other hand, all communication engineers are interested in the problems of longer distance telephony and telegraphy, in international services and in the development of adjunct services.

For these reasons, and also because longer distance services have developed most rapidly, relatively, in the past few years and have involved more radically new things than strictly local telephone service, the portions of the paper dealing with these features of the communication system of the United States are more elaborate in detail than are the other portions of the paper."

830 Mr. Blackman: With regard to matter about which he was interrogated, Q. 191 and Q. 192, p. 319 of the record, Dr. Jewett states:

"I have read over Dr. King's article and I have no comment to offer, as I think it sets forth quite accurately the situation as it existed at the time it was written."

831 With regard to the matter about which Dr. Jewett was interrogated by Q. 196, record p. 322, Dr. Jewett states:

"I have read Dr. Osborne's article and have no comment to make. It sets forth correctly the general principles on which standardization in the Bell System is applied. The limited number of illustrations given are, I think, correct, as of the time the article was written and would today be modified only in detail, as a result of subsequent progress."

With regard to the matter about which Dr. Jewett was interrogated by Q. 197, record p. 323, Dr. Jewett states:

"I have read the marked parts on pages 545, 552, 553 and 554 of Mr. Pennock's article in the October 1925 number of the Bell System Technical Journal. The statements are in accordance with my general understanding, although I am not sufficiently conversant with the details of shop planning or shop operation to make specific comment on the accuracy of the figures used in Mr. Pennock's illustrations."

832 With regard to the matter about which Dr. Jewett was interrogated by Q. 205, record p. 329, Dr. Jewett states:

"I have reread the article which I prepared for the Western Electric News, the house organ of the Western Electric Company and which appeared in the issue of January 1919. I have also reread Mr. Vail's letter of December 11, 1918, to the Postmaster General and his letter of December 16th to Mr. Gherardi and me, which form part of the article. As a popular presentation of a new and highly technical development I think that the article is an accurate statement of the art as it existed at the time the article was written. A similar article and similar letters on the same subject, written at the present time, would undoubtedly employ different illustrations regarding the number of telephone and telegraph channels which it is economical to employ in multiplex operation and different and much shorter lengths of line over which it is economical to employ them. This is because in the 13 years which have elapsed since the article was written very considerable advances have been made as a result of continued research and developmnt work."

With regard to the matter about which Dr Jewett was interrogated by Q. 205, record p. 329, Dr. Jewett states:

833 "I have reread the article 'The Engineering Department of the Western Electric Company' which I wrote for the June 1914 issue of that company's house organ, the Western Electric News. I think that this article, which was designed to acquaint the employees of the Western Electric Company with the general work of the Engineering Department, correctly represents the organization and work of the Engineering Department as it existed in 1914. There is, however, one sentence in the article which taken in connection with the preceding sentence is not strictly accurate. This sentence at the top of the second column on page 3 reads as follows: 'This service trial is under the direct supervision of of the American Telephone and Telegraph and Western Elec-

tric engineers and is designed, not only to make sure that no service conditions have been overlooked, but also to develop any points of mechanical weakness which may not have been discovered in the preliminary laboratory tests.

The statement is accurate so far as concerns the trial installation of developments undertaken in the interest of the Associated Companies. In the case of developments which were then undertaken in the interest of the non-associate 834 business of the Western Electric, the American Telephone & Telegraph Company did not participate in the conduct of trial installations. In writing the sentence I presume I had in mind the fact that while a large percentage of the developments undertaken for Bell System use led to trial installations, only an occasional development for the non-associate business involved what were strictly trial installations.''

With regard to the matter about which Dr. Jewett was interrogated by Q. 205, record p. 329, Dr. Jewett states:

''I have read Mr. Blackwell's article and have no criticism of any part of it as of the time at which it was written In his outline of the fundamental possibilities and limitations of radio, and in the problems involved in the development of it as a transmission means for electrical communication, the picture as I understand it today is essentially the same as that outlined by Mr. Blackwell in 1922.

In the ten years which have elapsed since the article was written there has, however, been a vast amount of development work done by large numbers of people in all parts of the world, with the result that the field of practical use for radio is today quite different from what it was in 1922. In particular, there have been improvements and refinements in the transmitting and receiving structures which have 835 tended to increase not only the reliability of service under any given condition but likewise the range of distances over which such service can be given and the number of non-interfering channels which can be provided in any given part of the radio spectrum. More particularly, the developments of the past ten years have tended to widen very greatly the total usable width of the radio frequency spectrum, especially in the region of the shorter wave lengths. As Mr. Blackwell points out in his explanation of fundamental characteristics, this very considerable extension of usable frequencies at the higher end of the frequency spectrum serves not only very greatly to increase the non-interfering channel possibilities but also it tends likewise to a considerable reduction in the size and cost of the terminal structures.

With the very short wave lengths which are now being experimented with there appears also to be a possibility of employing radio economically over distances which a few years ago were thought to be entirely outside the range of economic utilization.

To the extent that the radio art has progressed very substantially in the last ten year period along the lines indicated, the situation for use as it existed at the time Mr. Blackwell's article was written has been materially altered."

Stipulated that Dr. Jewett if he was recalled would testify in accordance with statements read.

836 Defendants' Deposition Exhibit 144, being an allocation of additional income tax payments covering periods May, 1918, to 1923, both inclusive, and produced by plaintiff at defendants' request, offered and received in evidence.

837 Bond circular of Illinois Bell Company produced by plaintiff at defendants' request, offered and received in evidence as Defendants' Deposition Exhibit 145.

Objection by plaintiff to Defendants' Exhibit 145 on the ground of incompetency, irrelevancy and immateriality but concedes that the paper is a true copy of the bond circular issued and distributed in connection with the sale of bonds shown thereon.

CAJETAN MORSACK, recalled:

838 *Cross-Examination by Mr Blackman.*

At page 435 of the record I was questioned regarding the payments that the Long Lines made to A. T. & T. and I stated at the bottom of the page and at the top of the next page that there was certain work done by the General Department, A. T. & T., for the Long Lines for which the General Treasury was compensated, and I stated that that compensation was in the shape or form of 1½% of the Long Lines' revenue. In addition to those payments, for services performed by the General Department to the Long Lines as distinct from the

services which apply generally to the various companies, the General Department bills the Long Lines for such services such as blue printing, photostatic, general duplicating work and drafting. Also proportionate part of the cost of auditing by Leibrandt, Ross Brothers and Montgomery, who perform the Company audit from the standpoint of the stock-
839 holders. They audit the Long Lines' books each year.

Long Lines also pays the General Department for proportionate part of the cost of conducting the General Medical Department. Pays rental to 195 Broadway Corporation, which is a subsidiary of the General Department. If the General Department furnishes any facilities, special apparatus, it would be charged to Long Lines. I have not any particular case in mind at the present time.

As to the instances that I have just mentioned, I thought of them in this way, that when I was asked the question originally, I had in mind services which are performed by the General Department not only for the Long Lines but for the various Associated Companies and not services performed specifically for the Long Lines. When I was previously asked "Is there anything in addition to that?" meaning the 1½ per cent, and I answered "Not for general services so far as I know," that answer is still correct. These are special services.

The change in the basis for computing the license revenue charged against Long Lines was made in November, 1927,
840 involving payment made in January, 1928. The compensation to the Illinois Bell for terminal loops paid by Long Lines is the same as Illinois Bell would charge an outsider for similar facilities, for example, for telegraph and teletypewriter contract loops, that is, $3.00 per month for the first mile or fraction and 75c per month for each additional quarter mile or fraction, $3.00 a month being the minimum charge.

The charge against the customer for the special contract service in which the loop is involved is a rate per mile per year, depending on the class of service and varying with the hours of service furnished.

841 As to whether there is a separate charge for loops by A. T. & T., as I understand it there is a charge for the drop. It is not specifically for the loop, but the fact that there is an additional drop connected to the service—I would say our commercial man would be better qualified to talk about this particular phase than I. I cannot quote the rates.

Monthly reports, Long Lines, Nos. 1, 2 and 14, covering the month of December for each of the years 1919 to 1930, both inclusive, produced, offered and received in evidence as Defendants' Deposition Exhibits 146 to 181, to which objection is made on the ground of incompetency, irrelevancy and immateriality.

Monthly reports, Long Lines, Nos. 3, 4, 7, 11 and 18 for month of December each year—1919 to 1930, both inclusive, produced. Monthly report No. 3, Long Lines, for month of December each year 1919 to 1930, both inclusive, consisting of 12 sheets, received in evidence as Defendants' Deposition Exhibit 182.

Monthly report No. 4, Long Lines, for month of December each year 1919 to 1930, both inclusive, consisting of 12 sheets, received in evidence as Defendants' Deposition Exhibit 183.

Monthly report No. 7, Long Lines, for month of December each year 1919 to 1930, both inclusive, consisting of 12 sheets, received in evidence as Defendants' Deposition Exhibit 184.

Monthly report No. 11, Long Lines, for month of December each year 1919 to 1930, both inclusive, consisting of 12 sheets, received in evidence as Defendants' Deposition Exhibit 185.

Monthly report No. 18, Long Lines, for month of December each year 1919 to 1930, both inclusive, consisting of 13 sheets, received in evidence as Defendants' Deposition Exhibit 186.

844 And to the offer of said exhibits, plaintiff objected on ground of immateriality, irrelevancy and incompetency.

Monthly Reports, Long Lines, 22A, 22B and 22C and provisional estimates relating to Long Lines, reviewed by Report 22B covering the same period, asked by defendants to be produced, refused by plaintiff.

851 ROBERT W. BURGESS, for defendants:

Direct Examination by Mr. Adcock.

I reside at 440 Pelham Manor Road, Pelham Manor, New York; I am chief statistician for the Western Electric and have been since October 1, 1928; prior to that I was in similar work with that company as senior statistician which extended back to July, 1924, and that was when I became connected with the Bell System. Prior to that I was teaching in college; am a graduate of Brown University, 1908, degree 852 A.B.; student at Oxford University specializing in mathematics and physics for three years; B.A. there; Doctor of Philosophy degree at Cornell University in applied mathematics in 1914.

I have before me a copy of the Western Electric News for May, 1930, in which appears from pages 3 to 6 and on page 56, an article written by me entitled "An Economist Looks at Our Company." I am familiar with the material that appears in that article. The statements made were true as of the date made without any qualification. If I were to issue a similar article now, I would review some of the facts in the light of recent developments, the depression, and possibly reconsider the phraseology. In general, however, I would say that it was still true.

Said article was received in evidence as Defendants' Deposition Exhibit 188.

882 DANIEL C. COLLINS, for defendants:

He was comptroller for E. R. P. I. and was called to tes- 884 tify with reference to Defendants' Exhibit 187, entitled "Condensed Summary of Results for the years 1927 to 1930, inclusive, monthly report No. 1," and after having stated that the statements on the report were correct, he also stated that the information contained on Defendants' Exhibit 189 was compiled from reports of E. R. P. I. sent to Western Electric, Defendants' Exhibit 189 being a condensed summary of summaries from said reports to Western Electric.

Inasmuch as plaintiff agreed to furnish the break-down of certain items on said exhibit satisfactory to defendants, and as such break-down has been furnished, it is unnecessary to abstract the testimony of Mr. Collins further.

892 CAJETAN MORSACK, recalled:

Redirect Examination by Mr. Goldstein.

All I know about the occasion for the enlargement of the base for license payments by Long Lines' Department to the General Department, effective January, 1928, is that it came about in connection with the decrease in the rate used for licensee contract payments coincident with the transfer to the Associated Companies of the instruments. It increased the number of accounts to which the 2 per cent became applicable.

In connection with Defendants' Deposition Exhibit 142, it was stated that the difference between the gross revenue (for Long Lines) and the Long Lines' share does not represent the total payment made to the Licensee Companies by the Long Lines Department for their respective facilities used in connection with the services from which these gross revenues were derived. It was also stated that payments were made by the Long Lines Department in two ways, one by reimbursement of labor performed for the Long Lines Department
893 by the licensee companies, and, two, by rental payments for the use of plant of the licensee companies.

There is a contract between the licensee companies and the Long Lines for the distribution of Long Lines toll message revenues. The license contract provides that the revenues will be divided pro rata according to mileage haul furnished by each company. That arrangement has been in effect since the license contract has been in effect. It has not been in effect, however, with reference to Chicago. The arrangement with respect to Chicago is more favorable to Illinois Bell with respect to the City of Chicago. The arrangement with the
894 Illinois Bell is on the basis of reimbursing it for cost to it of furnishing all plant and facilities in the City of Chicago used in connection with Long Lines' business, plus a return of 10 per cent on the investment in the plant which the Illinois Bell furnishes, which is without deducting deprecia-

tion reserve; that is, 10 per cent of the book investment.
895 That arrangement has been in effect since 1911. I think the City of Chicago is the only city in the United States where this special arrangement prevails. That arrangement still prevails at Chicago.

The arrangement with respect to special contract services varies for different companies. With most of the companies' compensation for the facilities furnished by the Associated Companies in connection with special contract services is on rental basis. That does not apply in the City of Chicago, however. In Chicago, the compensation which I have described applies regardless of the use made of the facilities.

R. D. Q. 170. So that the distinction between the City of Chicago and the rest of the country is this: That in the City of Chicago the Illinois Bell is compensated by a reimbursement of the expenses of operating the Long Lines plant—

Mr. Blackman: No, not operating the Long Lines plant.

The Witness: I have not talked of operating. I have talked of facilities.

R. D. Q. 171. All right; is reimbursed for depreciation and maintenance of the Long Lines plant?

Mr. Blackman: Wait a minute. He didn't say anything about Long Lines plant. He is talking about the Illinois Bell plant.

Mr. Goldstein: You see, the Illinois Bell owns the title to all the plant in Chicago.

Mr. Blackman: Certainly.

Mr. Goldstein: And it is designated as the Long Lines plant, that is, because that portion of the Illinois plant is used exclusively in the Long Lines business.

Mr. Adcock: You mean the Illinois Bell Long Lines plant?

Mr. Goldstein: Yes.

R. D. Q. 172. That is correct, isn't it?

A. That is correct, except that some of it is not used exclusively in so far as the toll message is concerned.

R. D. Q. 173. Where it is not used exclusively, you apportion it?

A. That is right.

So that as to that portion of the plant of the Illinois Bell Telephone Company in the City of Chicago, which is used exclusively for the long distance business of the American

Telephone & Telegraph Company, or that portion of jointly used toll plant which you apportion to the Long Distance business of the American Telephone and Telegraph Company, the Illinois Bell is reimbursed, or is paid, an amount which covers the depreciation and maintenance of the plant plus a return of 10 per cent on its book cost without deducting the depreciation reserve, plus administration, taxes and all of its charges in connection with that plant. The situation today is the same as it was before.

With regard to special contract service revenues there are no additional payments out of those revenues to the Illinois Bell. They get their costs plus 10 per cent. We are speaking entirely of facilities. The old arrangement still prevails as to reimbursements for the employees' labor and commissions, just as it existed before. There has been no change in principle in the City of Chicago since 1925, as far as the long distance service is concerned. There has been a change in respect to paying commissions on special contract services.

The commission arrangement which I stated went into effect on July 1, 1930, applies to the City of Chicago as well as other cities, so far as special contract services are concerned.

Our special contracts are usually designated as serv-
899 ices, that is, a subscriber may have a given service num-
ber, a contract calling for a wire between New York and Milwaukee, let us say, with patrons connected at Philadelphia, Pittsburgh and Chicago, so there may be two or three in Chicago on that same wire. If it is a two-way service, that is, providing for communication in both directions rather than in only one direction, then on a contract the monthly charge against the customer is between $2,000 and $4,000 per month; on a full talking or short period talking contract the Illinois Bell would receive as commission for each station in the City
of Chicago or at any other point in its territory connected
900 with that wire, $16.00 commission from Long Lines. That
would come out of the $2,000. I don't know how the $16.00 commission was arrived at. $16.00 is in addition to $3.00 a month mentioned. I don't know how long the $3.00 minimum charge for loops has been in existence. I should say at least ten years.

901 The rental basis is arrived at I think as follows: For
a particular associated company's territory, we take all the contracts in effect at a given time and make a study of

the revenue of the total mileage involved, thus deriving an average revenue per mile. From that we deduct the costs of operation, including commissions, which are paid to the Associated Companies for work which they do in connection with these contracts, and it is then brought down, that is, deducted from the gross revenue, so that it might be called a sort of net, although it is not a final net, and that figure is used.

902 Referring to Defendants' Exhibit 142, portion allocated to Chicago is not on the basis of revenue but is on the basis of the facilities and service. I do not see how it is possible to determine what portion of Long Lines' gross revenue comes from the City of Chicago so far as special contract service is concerned. It is not possible to show how much 905 toll revenue originated from stations located in Chicago because there is no originating or terminating point there. We do know that in the large cities we have more subscribers for special contract services than in the smaller cities, but we never have made any special study for comparison. I don't think it can be done.

HARRY H. CARTER, resumed:

970 *Redirect Examination by Mr. Goldstein.*

Long Lines Department makes sales of service for the Illinois Bell and the Long Lines does not participate in any of the revenue of the sales. Prior to last year there were no records kept as to the magnitude of such sales; from 1931, because of new interest in sales generally, there are certain reports that have been made in Chicago which have attempted to allocate the selling between the two organizations, that is, Long Lines and Illinois Bell. In the last year such reports show $5,100 worth sold for us by Illinois Bell and we 971 sold for them about the same amount.

There are other records of miscellaneous items of exchange services sold by Long Lines, and the Illinois Bell is going to summarize those results, but either way it would be a comparatively small amount. For example, A. T. & T. makes a contract for special contract services going outside of Chicago and in connection with that service loops are used, which loops are furnished by Illinois Bell. We include in the charge to the customer the amount of money that we paid to the

Associated Companies for loop facilities. The amount of money which the Illinois Bell charges us for the loop is included with the charge for the rest of the service that we bill the customer. It is not shown as a separate item.

(For deposition of Edwin F. Carter, see Abst. Vol. III, pp. 821-833.)

PIERRE W. SAXTON, recalled:

Redirect Examination by Mr. Adcock.

Provisional estimates that come from the Associated Companies are sent to the president of A. T. & T. They are photostated by Mr. Behan's division. I don't know to whom they are distributed. Mr. Behan distributes the provisional estimates.

1019 CR-13 for December of each year, requested by defendants, refused by plaintiff. Plaintiff also refused defendants' request for Quarterly Report 7-A as to the Bell System, Long Lines and Illinois Bell.

CAJETAN MORSACK, recalled:

1020 *Re-cross Examination by Mr. Blackman.*

With reference to redirect questions 196 and 197, I understood the questions to apply to facilities used in connection with Long Lines service other than those in the City of Chicago. With respect to the City of Chicago, the Illinois Bell receives for the facilities and services furnished by it in connection with Long Lines business, a share of the revenue from that business equal to amounts as follows:

First, on message business for each message and report charge originating in the City of Chicago, Illinois Bell receives a commission of 12c; also for each paid message and report charge, it receives an additional amount of 5c for
1021 use of trunks and recording services and facilities; for the use of central office and outside facilities, it receives the cost to it of furnishing such facilities, plus a return of

10 per cent on the book investment; for operating services furnished in connection with this business, it receives the cost to it plus 10 per cent; on 2-way special contact services, it receives commissions in accordance with schedules heretofore mentioned, this commission having been effective July 1, 1930.

Any amount which Illinois Bell must pay to the American Company as licensee revenue with respect to the share of revenue it receives for these various services and facilities, is considered as a cost to the Illinois Bell and is allowed to 1022 Illinois Bell by the Long Lines.

Redirect Examination by Mr. Goldstein.

I cannot say that I have been in Chicago and observed the physical condition as to the plant located in the City of Chicago. I have seen sections of it. I only know in a general way what the 12c charge was intended to cover in the City of Chicago. It covers such things as collecting, account- 1023 ing, reporting and promotional services and matters of that kind. I cannot say definitely as to whether that charge is intended to cover the use of property but my opinion is it is not. I cannot say that I know positively what facilities the 5c charge is intended to cover.

When I referred to central office facilities, I meant those used in connection with the operation of the long distance business, switchboards, terminal rooms, test boards, Morse boards and all such equipment as that.

1027 Defendants' Exhibit 194 entitled "Distribution of Provisional Estimates, 1932" produced by plaintiff, offered and received in evidence.

1034 (Mr. Arnold states that the patents which have issued in his name are by number as follows:

1,114,845
1,118,172
1,118,173
1,118,174
1,118,175
1,118,176
1,128,279
1,128,280
1,129,942
1,129,943
1,168,270
1,200,796
1,231,984
1,297,309
1,329,283
1,349,252
1,354,939
1,356,686
1,356,687
1,367,224
1,375,481
1,383,690
1,388,450
1,398,665
1,403,475
1,426,807
1,456,528
1,448,550
1,449,372
1,465,332
1,485,156
1,504,537
1,520,994
1,521,852
1,565,302
1,573,367
1,647,765
1,809,099
1,811,839
Re 14,585
Re 14,752

Of these 41, three only relate by title to radio, namely,

1,231,984
1,367,224
1,375,481.

He also states that the inventions involved are by no means limited to the radio field but are applicable in high frequency transmission circuits in which no radio link is included; that there is, to the best of his knowledge, no patent in the entire list whose usefulness is limited to radio in contradistinction to telephone communication by wire.)

Plaintiff admits that the following is a description of the patents listed above, issued to H. D. Arnold:

Patent 1,114,845, issued October 27, 1914, Electric Relay.

Patent 1,118,172, issued November 24, 1914, Method of Producing Electrical Variations.

Patent 1,118,173, issued November 24, 1914, Electrical Relay.

Patent 1,118,174, issued November 24, 1914, Alternating Current Generator.

Patent 1,118,175, issued November 24, 1914, Electric Relay Apparatus.

Patent 1,118,176, issued November 24, 1914, Negative Resistance Repeater.

Patent 1,128,279, issued February 16, 1915, Electric Wave Amplifier.

Patent 1,128,280, issued February 16, 1915, Thermionic Detector.

Patent 1,129,942, issued March 2, 1915, Gaseous Repeater in Circuits of Low Impedance.

Patent 1,129,943, issued March 2, 1915, Gaseous Repeater in Circuits of Low Impedance.

Patent 1,168,270, issued January 18, 1916, Protection Device for Electric Circuits.

Patent 1,200,796, issued October 10, 1916, Power Limiting Device.

1036 Patent 1,231,984, issued July 3, 1917, Radio Transmission.

Patent 1,297,309, issued March 18, 1919, Manufacture of Vacuum Tube Devices.

Patent 1,329,283, issued January 27, 1920, Thermionic Amplifier.

Patent 1,349,252, issued August 10, 1920, Method of and Means for Utilizing Thermionic Currents.

Patent 1,354,939, issued October 5, 1920, Vacuum Tube Device.

Patent 1,356,686, issued October 26, 1920, Vacuum Tube Device.

Patent 1,356,686, issued October 26, 1920, Means and Methods for Secret Signalling.

Patent 1,356,687, issued October 26, 1920, Methods and Apparatus for Measuring Gas Pressures.

Patent 1,367,224, issued February 1, 1921, Radio Receiving System.

Patent 1,375,481, issued April 19, 1921, Power Modulator for Radio Transmission.

Patent 1,383,690, issued July 5, 1921, Method of Detecting Underwater Vibrations.

Patent 1,388,450, issued August 23, 1921, Transmission of Intelligence.

Patent 1,398,665, issued November 29, 1921, Thermionic Amplifier.

Patent 1,403,475, issued January 17, 1922, Vacuum Tube Circuits.

Patent 1,426,807, issued August 22, 1922, Method of and System for Testing Transmitters or Receivers.

Patent 1,456,528, issued May 29, 1923, Electric Discharge Device.

Patent 1,448,550, issued 3/13/23, Thermionic Amplifier Circuits.

Patent 1,449,372, issued March 27, 1923, System of Telephony.

Patent 1,465,332, issued August 21, 1923, Vacuum Tube Amplifier.

Patent 1,485,156, issued February 26, 1924, System of Distribution.

Patent 1,504,537, Power Limiting Amplifying Device.

Patent 1,520,994, issued December 30, 1924, Electron Discharge Amplifier.

Patent 1,521,852, issued January 6, 1925, Amplifier Circuits.

Patents 1,565,302, issued December 15, 1925, 2-Way Repeater Circuits.

Patent 1,573,367, issued February 16, 1926, Method of Generating A. C. of Variable Frequency.

Patent 1,647,765, issued November 1, 1927, Transmission of Pictures by Electricity.

Patent 1,809,099, issued June 9, 1931, Vacuum Tube.

Patent 1,811,839, issued June 30, 1931, Sound Transmission.

Re-issue Patent 14,585 (1,200,796) of January 14, 1919, Power Limiting Device.

Re-issue 14,752 (1,168,270), November 18, 1919, Protection Device for Electric Circuits.

1037 Defendants' Exhibit 196, being list of patents entitled "American Telephone & Telegraph Company, Patent Purchases ($1,000 or more) other than from Western Electric Company, 1909 to 1930, inclusive," received in evidence.

Defendants' Exhibit 197, entitled "American Telephone & Telegraph Company, Patents Purchased from and Licenses sold to Western Electric Company, Inc., by American Tel. & Tel. Co. and accounting disposition, years 1909 to 1930," offered and received in evidence.

Plaintiff offers in evidence Defendants' Deposition Exhibit 193, to which defendant objected on the ground not proper and further on the ground of incompetency, irrelevancy and immateriality.

1038 Mr. Blackman: Whereas a number of articles appearing in different publications of the Bell System have been marked for identification and offered in evidence, and no witness has been interrogated concerning the same, the offer having been made upon the statement of Mr. Haight that he hoped the objections would be limited to relevancy and materiality, or some such phraseology, with the understanding that counsel on both sides would try to eliminate unnecessary examination of witnesses.

Now, in order to carry out that purpose, it is stipulated as follows:

Each of the articles referred to is stipulated to be actually an article appearing in the publication indicated, and written by the individual whose name is signed thereto.

That said individual was in the employ of A. T. & T. or Western Electric or Bell Telephone Laboratories, or E. R. P. I.

That each of the witnesses, if called, would testify:

1. That he wrote the article.
2. That the article stated his best opinion and understanding of the facts therein referred to, subject to any qualifications that may be set forth by letter from Mr. Blackman to Mr. Haight, to be mailed to Mr. Haight on or before Monday, February 15, 1932.

It is also agreed that counsel for defendants may interrogate any author of any such articles concerning any qualification made, and that such interrogation may be either orally in New York or in writing, and if in writing, will be submitted by plaintiff's counsel to such author for answer. 1039

In view of the foregoing, it is stipulated that the offer of these articles and the objections, if any, thereto, be reserved for the trial.

It is agreed that as to any exhibits which have been only marked for identification, that the offer of such exhibits may be reserved for the trial and the objections, if any, may be made at that time.

Mr. Adcock: Defendants state with reference to the requests made of Mr. Collins of E. R. P. I. in connection with his testimony, that arrangements have been made with plaintiff whereby plaintiff is to furnish certain statements and make available for examination by defendants all the documents and books requested, and that the requests for information from Mr. Collins are therefore withdrawn.

Letter referred to in the foregoing stipulation to be written by Mr. Blackman to Mr. Haight, dated February 15, 1932, with respect to the various articles appearing in the various publications mentioned, is as follows:

1040 Following is letter referred to at pages 1038 and 1039 provided to be written by Mr. Blackman:

American Telephone and Telegraph Company
195 Broadway, New York
Exchange 3—9800

February 15, 1932.

Mr. George I. Haight,
Haight, Adcock, Banning & Fairchild,
209 South LaSalle Street,
Chicago, Illinois.

Dear Mr. Haight:—

I am writing you pursuant to provision on pages 1038 and 1039 of the record.

With respect to the article in Bell System Technical Journal of July, 1930, by H. S. Osborne, the following qualification is made:

"The co-ordination referred to in paragraph (b) on page 439 relates to the co-ordination of the toll circuits with the local plant. In this the toll [illegible] trunks are considered as a part of the toll plant. The co-ordination referred to did not imply that the local plant was in any way engineered with respect to the toll or long distance circuits."

Of course, in many or most cases changes have taken place since the articles were written. I have found it quite impossible to review the hundreds of pages covered by these articles within the time stipulated so will not attempt to make any further qualifications at this time, giving you the benefit of the stipulation. In most cases there will be no qualification of any kind except such as may be due to changed conditions but it may happen that with an opportunity to go into the articles I may find something that is incorrect or misleading, in which case I will call the witness and have him explain if the article is received in evidence.

Very truly yours,

ELB:LCS (Sgd.) EDWARD L. BLACKMAN.

Pursuant to agreement of counsel, the following exhibits, marked as Defendants' Deposition Exhibits 198-205, inclusive, were offered in evidence by defendants and received in evidence subject to plaintiff's objections thereto other than to the timeliness of said offer:

Deposition Exhibit 198, entitled "Article in Western Electric News, Issue of January, 1929, pages 3 to 6, inclusive, entitled 'The Bell System and Ourselves' by Edgar S. Bloom."

Deposition Exhibit 199, entitled "Article in Western Electric News, Issue of January, 1919, pages 1 to 7, inclusive, entitled 'Enter Multiplex Telephony and Telegraphy' by Frank J. Jewett."

Deposition Exhibit 200, entitled "Article in Western Electric News, Issue of June, 1914, pages 1 to 4, inclusive, entitled 'The Engineering Department of the Western Electric Co.' by F. B. Jewett."

Deposition Exhibit 201, entitled "Article in the Bell Telephone Quarterly, Issue of January, 1929, pages 9 to 24, inclusive, entitled 'Standardization in the Bell System' by H. S. Osborne."

Deposition Exhibit 202, entitled "Article in the Bell Telephone Quarterly, Issue of October, 1922, pages 12 to 25, inclusive, entitled 'Notes on Radio' by O. B. Blackwell."

Deposition Exhibit 203, entitled "Article in Bell Telephone Quarterly, Issue of April, 1930, pages 83 to 91, inclusive; entitled 'Trans-Oceanic Telephone Service—General Aspects' by T. G. Miller."

Deposition Exhibit 204, entitled "Article in Bell Telephone Quarterly, Issue of January, 1923, pages 18 to 31, inclusive, entitled 'Engineering the Long Lines' by J. J. Pilliod."

Deposition Exhibit 205, entitled "Article in Bell Telephone Quarterly, Issue of October, 1928, pages 304 to 312, inclusive, entitled 'By-Products of Telephone Research' by R. W. King."

[fol. 2329] [Title omitted]

[fol. 2330] IN UNITED STATES DISTRICT COU[illegible]

ADDITIONAL OBJECTIONS TO EXHIBITS OFFER[illegible]D-ANTS DURING THE HEARINGS BEFORE JUDGE [illegible]

Each of the following Exhibits is irrelevant, [illegible] without foundation and the comparison therein is [illegible]ing and without support:

Exhibits X-108 to X-151, X-227 to X-262, X-272 to X-304, and X-328 to X-340.

Ex. X-108. This is merely a copy of plaintiff's Ex. A-164 with two columns added showing percentages, which percentages have been improperly used to compute incorrect data with respect to "return on investment to A. T. & T. Co. stockholders" on numerous defendant exhibits.

With respect to Ex. X-328 to X-340, inclusive, the witness presenting the papers, and the only witness who gave testimony concerning the same, testified "I do not know what they mean." (S. M. 2690.)

Plaintiff objects to Ex. X-109 to X-118, both inclusive, as irrelevant, immaterial and incompetent and more particularly for the following reasons:

(1) They are misleading. They use repeatedly the words "return" and "actual return", where there was no money whatever received.

(2) They make comparisons which are misleading.

(3) All of the exhibits show the "percentage of return" so-called, on a basis not of the value of the property devoted to the public use nor the cost of the property to the Illinois Bell Company, but upon the cost of the investment of the American Telephone and Telegraph Company, and not content with that, the return to the stockholders of the American Telephone and Telegraph Company.

(4) The "percentage of return" is developed by the use of two factors which the courts have uniformly rejected as a basis for fair return. Namely, they proceed, first, upon the basis of original investment and not present value, and, second, they deduct the amount shown in the depreciation reserve rather than actual depreciation.

[fol. 2331] (5) The arithmetical procedure followed in developing the return to the stockholders of the American Telephone and Telegraph Company was erroneous and led to absurd results.

Ex. X-119 and X-120 are objected to as irrelevant, immaterial and incompetent, and for the further reasons that an improper comparison of unrelated data is attempted; namely, it compares actual investment in telephone instruments with what investment would have been if the calculations were based on investment at current costs.

Ex. X-121 is objected to as irrelevant, immaterial and incompetent and for the further reason that it is misleading in several respects:

(1) It purports to show a sale of the telephone instruments to the Long Lines, whereas as a matter of fact there was and could be no sale in the circumstances, the instruments merely being transferred from one department of the company to another department of the same company at book value less depreciation reserve.

(2) The exhibit purports to compare a merely bookkeeping treatment of instruments owned by the American Company (against which there was a depreciation reserve of about 49%) transferred to its Long Lines Department and the treatment of instruments actually sold to the licensee companies December 31, 1927 at current value new less 20%. It purports to find as a conclusion that a profit was made on the instruments sold to its licensees, while in reality there was no profit, the statement showing on its face that instruments which cost $46,583,314 were sold to the licensee companies for $38,183,727.

Ex. X-122 is objected to as irrelevant, immaterial and incompetent and for the further reason that par value and percentage holdings of the American Telephone and Telegraph Company are already in evidence.

The only other fact shown by this exhibit, which is a bulky exhibit consisting of six large sheets, which sheets contain many hundreds of figures, is the comparison between the par value of the holdings of the American Company in each of the Bell Associate Companies with the cost of these holdings to the American Company.

It is wholly irrelevant what the A. T. & T. Co. paid for its stock holdings in any of the Associate Companies. These purchases, of course, go back in some instances to 1879. [fol. 2332] Ex. X-123 is objected to as irrelevant, immaterial and incompetent and more particularly as follows:

This exhibit shows dividend payments by years from 1914 to 1930 of each of the Associate Companies. The dividends which any or all of the companies may have paid in any year in the past has no bearing upon any issue in this case. The earnings, even, would not be relevant, but dividends are purely an arbitrary matter and the amount of the distributions which the directors of the several companies saw fit to declare is wholly irrelevant and immaterial.

Ex. X-124 and X-125 are objected to as irrelevant, immaterial and incompetent and are further objected to on the grounds already stated with regard to X-122 and X-123. These exhibits consist of ten long sheets containing thousands of figures.

Ex. X-126 is objected to as irrelevant, immaterial and incompetent and is further objected to because it is a comparison absolutely without significance as it is a comparison of stock investment return to the American Company from all licensees separately and in total on the basis of dividend yields on capital stock holding of A. T. & T. Co.

Ex. X-127, X-134, X-272, X-273, X-274, X-276, X-278, X-280, X-282, X-294 and X-337 are objected to as irrelevant, immaterial and incompetent and more particularly because they do not show yields or return on fair value but yields on investment in stock. They are further improper because they make comparisons of so-called return to the stockholders of the American Company on the basis of an assumed investment at par in that stock.

Ex. X-128 is objected to as irrelevant, immaterial and incompetent and more particularly because it purports to show profits of the A. T. & T. Co., where the actual thing shown is the difference between yield on stockholdings based on book value and cost of funds to A. T. & T. Co. Such comparison is meaningless.

Ex. X-129. The same objection as to X-128 except the comparison is made between profit on investment in stockholdings in the Illinois Bell and the rest of the System. Comparisons of yields on stockholdings mean nothing in a rate case where it is return on fair value that is relevant.

Ex. X-130 is objected to as irrelevant, immaterial and incompetent and further because its comparison of the earn- [fol. 2333] ings on investment of the A. T. & T. Co. in each licensee company with that in the Illinois Bell does not prove anything, because it disregards the peculiar situations that may and do exist in the cases of some of the other companies, such as periods of confiscatory rates and insufficient earnings for various reasons.

Ex. X-131 to X-137, incl., X-142 to X-147, incl., X-273, X-274, X-279 to X-282, incl., X-284, X-285, X-296, X-297 and X-298 are objected to as irrelevant, immaterial and incompetent and for the further reason that they are all erroneous because at least a part of the figures upon which the results are based are computed on the basis of incorrect figures for average loans, these loans having been computed on the basis of quarterly averages which are not sufficiently accurate averages for the purpose used.

Ex. X-132 has further the error and fallacy pointed out for X-128 and X-129 relating to so-called profit on stockholdings.

Ex. X-132 to X-135, incl., X-137, X-142, X-143, X-273, X-274, X-281, X-282, X-284 and X-285 are objected to as irrelevant, immaterial and incompetent and further because they involve commingling of interest and dividends and improper comparisons of things that are not comparable. Furthermore, a comparison the basis of which is investment and not return on fair value is of no value.

Ex. X-130, X-137, X-142 and X-143 are objected to as irrelevant, immaterial and incompetent and further because they are based on the incorrect assumption that the A. T. & T. Co.'s investment in stocks of and loans to each licensee is in the same relative proportion as the American Company's investment in stocks of and loans to the Illinois Bell and that each licensee pays the same dividend rate and rate of interest. These exhibits are furthermore vitiated by reason of the fact that they purport to tie up or relate the license payments of the Illinois Bell and other licensee companies with yields on stocks and loans, the two matters having no connection,

Ex. X-138 and X-139 are objected to as irrelevant, immaterial and incompetent and for the further reason that no apportionment to the Chicago area is shown. X-138 gives no consideration for costs related to funds held available for Long Lines—this is inconsistent with X-145.

[fol. 2334] Ex. X-140 is objected to as irrelevant, immaterial and incompetent and for the further reasons:

(1) That in computing the total costs defendants have deducted one million dollars for 1923 up to two and one-half million dollars in 1930, which are termed "Estimated amount of corporate expenses attributable to ownership of System securities and related expenses," which figures are incorrect and without support in the case.

(2) Furthermore, Mr. Heiss' deductions were intended to cover any non-license expenses which might exist in all classes of costs, whereas this exhibit concentrates that to a certain limited number of expenses.

(3) Furthermore, the deductions for costs chargeable to Long Lines and Canada are computed arbitrarily on the basis of license payments and are applied only on a portion of the total costs. The Long Lines license payments are at the same rate but cover a different scope of services.

Ex. X-141 is objected to as irrelevant, immaterial and incompetent and for the further reason that the exhibit is redundant as similar information is included in plaintiff's exhibit A-170 and supporting exhibits.

Ex. X-145 and X-149 are objected to as irrelevant, immaterial and incompetent for the further reasons:

(1) That in passing on the propriety of the return from License Contract services the use of the investment of the American Telephone and Telegraph Company as the sole basis is improper for the reason that many of the services partake of the nature of personal services involving much experience and a high degree of training but little or no physical investment.

(2) That where the amount of the physical property is used as a basis it should be the value and not the book figures for the investment as used by the defendants.

(3) Either X-149 or X-145 is incorrect, even accepting the defendants' figures, for we find a per cent of return computed for the Long Lines Department of 8.82 in X-145 and 19.03 in X-149 for the same year, to wit, 1923; and similar or even greater discrepancies in other years. The reason for these discrepancies is principally due to the method of obtaining the apportionment of the investment.

[fol. 2335] Temporary financing, instruments and funds held available are not applicable to Bell of Canada—temporary financing and instruments (except to a minor extent) are not applicable to Long Lines.

(4) For the above reasons the use of the term "Per cent of Return", as found in these two exhibits, is misleading and without any meaning whatsoever.

Ex. X-146, X-147, X-150 and X-151 are objected to as irrelevant, immaterial and incompetent and for the further reason that they are based on percentages figured in and derived from X-149 in the case of X-150 and X-151 and from X-145 in the case of X-146 and X-147 and are, therefore, subject to all the infirmities of X-145 and X-149.

Ex. X-148 is objected to as irrelevant, immaterial and incompetent and for the further reason that while the figures used in this exhibit are correct and correspond to figures of the plaintiff, however, the title of Line 9 in each one of the groups of figures, to wit, "Balance Available for Additional Return to American Telephone and Telegraph Company" and likewise the legend at the foot of the exhibit under note (b) are misleading and incorrect as the amounts set forth in Line 9 are not balances available for additional return, but against them must be set off other items of cost as, among others, those set out in plaintiff's Exhibits A-198 to A-201, inclusive.

Ex. X-153 being a comparison of cash payments (Illinois Bell to Western Electric with cash obtained by Illinois Bell from A. T. & T. Co.) is irrelevant, immaterial and incompetent. It is an improper comparison of unrelated things.

Ex. X-192, which is CR 51a, entitled "Associated Operating Companies excluding American Telephone and Telegraph Company Long Lines Department, Condensed Summary of Reports for December" (Monthly Report 1a), is objected to for the reason that while it does contain a figure or two of underlying data used by Mr. Crunden in one or two of his exhibits, there has been no quarrel with the figures and no dispute as to its meaning. For that reason including it in evidence unnecessarily pads the record.

Ex. X-193, which is CR 53, an Internal Administrative Report of the A. T. & T. Co. prepared to show on the basis of certain assumptions indicated therein the derivation of the earnings on the capital stock of the company, is objected to as irrelevant, immaterial and incompetent. It shows among other things the various sources on a percentage basis of the A. T. & T. Co.'s dividend. The arbi- [fol. 2336] trary classifications shown do not permit a segregation of license contract earnings and costs and, therefore, the exhibit has no value, even to show whether there was a gain or a loss on License Contract services.

Ex. X-194 to X-198, incl., which are balance sheets, earnings reports and occupancy reports of the 195 and 205 Broadway Corporations for various years, are objected to on the ground that while they may contain some information which might have some indirect bearing on the reasonableness of the rent expenses in connection with License Contract services, the connection, however, is so remote as to destroy the value of this material even in determining the reasonableness of the License Contract services or any portion thereof.

Ex. X-202, which is an analysis of expense by classes of work done by the Bell Telephone Laboratories for the years 1925-1931, inclusive, is objected to because, while it contains certain figures which were used or taken by Dr. Jewett in his exhibits, it also contains a great mass of other material and there being no dispute about the correctness of any of these figures or any charge that they were used by Dr. Jewett in a manner inconsistent with their sources, it would be an imposition on the court and on the plaintiff to include these reports.

Ex. X-203 and X-204, being cash statements expense report and analysis of expense reports of the Bell Telephone Securities Company for various years, are objected to as irrelevant, immaterial and incompetent. These exhibits show that certain items of expense of the Bell Telephone Securities Company consisted of payments made to the Associate Companies on their billings for work done in connection with the sale of A. T. & T. Co. securities but these figures are not divided between Associate Companies and the connection is too remote.

Ex. X-205 and X-206, are objected to as irrelevant, immaterial and incompetent. They are cash reports; one for the Long Lines and the other for the General Departments of the A. T. & T. Co. and they show merely cash transactions which are no guide to actual earnings or to the costs of License Contract services rendered.

Ex. X-207 and X-208, being statements of A. T. & T. Co. revenues and expenses shown separately for (1) Long

Lines Department, (2) License Contract Operations and (3) Holding Company operations, are objected to because while they do contain some figures which are indirectly relevant to the issues of the License Contract service costs, there is a great mass of figures in these two exhibits which have no relevancy whatsoever and the exhibits are state- [fol. 2337] ments which have been prepared on the basis of the exhibits in the Ohio case and not along the lines of exhibits submitted by plaintiff in this case. There are no inconsistencies between the two but the method is different and the exhibits should be excluded.

Ex. X-209, being Western Electric "Costs of Principal Activities, Charges to Development Account," is objected to for the reason that it is merely a detailed analysis of figures in Dr. Jewett's Ex. A-114 and throws no new light on the subject of the amounts billed by the Western Electric to the A. T. & T. for development work. It is useless and encumbers the record.

Ex. X-210, is objected to as irrelevant, immaterial and incompetent and for the further reason that it merely shows Western Electric, non-Bell and direct Engineering Department expenses, no part of which have been included in plaintiff's exhibits as cost of rendering License Contract services.

Ex. X-211, consisting of balance sheets for various years of the Bell Telephone Laboratories, is objected to as irrelevant, immaterial and incompetent.

Ex. X-212—X-216, incl., consisting of letters from D. F. Houston, President, Bell Telephone Securities Co., to the stockholders of the American Telephone and Telegraph Company concerning various issues of stock and containing questions and answers with respect to the stock warrants and other information, are objected to as irrelevant, immaterial and incompetent. These letters and questions and answers simply advise the stockholders how to take the best advantage of their rights in connection with the new issues of stock. There are statements here and there in these exhibits to the effect that the local telephone office will assist any stockholder as far as possible to take advantage of its rights. A very slight connection between such statements or any other statements in these exhibits to the issue of License Contract costs to the Illinois Bell is so small and remote as to render it of no value as evidence. These exhibits are quite bulky, containing 25 large printed pages.

Ex. X-218, consisting of 13 pages of statements of receipts and disbursements of cash of the Bell Telephone Laboratories for various years, 1925-1930, is objected to as irrelevant, immaterial and incompetent. The figures given in this exhibit include amounts billed to the A. T. & T. Co. which Dr. Jewett included in his exhibits but they also include without any breakdown amounts billed to the Western [fol. 2338] Electric, E. R. P. I. and others. It would be impossible to tie these figures in with any figures on the cost of rendering License Contract services.

Ex. X-225, consisting of a table showing funds of Associate Companies temporarily placed with the American Company until required by the Associate Companies for the years 1923-1930, comparing all companies with the Illinois Bell and seeming to show that the Illinois Bell furnished more money to the A. T. & T. Co. on the average than the other companies. This exhibit is objected to as irrelevant, immaterial and incompetent because there is no evidence that the Illinois Bell was not obtaining a higher rate of interest from these funds deposited with the A. T. & T. Co. than it could have obtained anywhere else in the market in which event, of course, the more money the Illinois Bell was lending to the American Company, the more benefit it was deriving from the License Contract services. Furthermore, this type of evidence is valueless unless the specific circumstances surrounding each deposit of funds with the A. T. & T. Co. are shown.

Ex. X-227-262, incl., (except X-252, X-253, X-254, X-255 and X-256) are objected to as irrelevant, immaterial and incompetent and particularly because all of them deal with the yields on bonds or stocks of various public utility corporations; including the Bell System and railroad companies, and comparisons of such yields and comparisons of the yields on such securities classified according to the ratings given by Moody's Manuals, and some of the exhibits also make comparisons of the yields on other bases. Some of the exhibits show the comparisons in the form of figures and others in the form of charts. None of these exhibits are of any value to the court in determining the issue of confiscation as not one of them takes into consideration the value of the property or the entire earnings of the company. The comparisons are made without reference furthermore to the particular capital structure; that is, the relationship between capital stock and funded debt and the relationship between the total capital stock and funded debt and the amount of property behind the bonds and stock.

Furthermore, some of these exhibits contain comparisons of ordinary bonds with bonds which have convertible features and whose prices will necessarily be affected whenever the convertible feature becomes attractive to the bondholder.

The following exhibits are improper for the further reason that they compare things which are not comparable, namely, they compare the yields on bonds of the highest ratings issued by the Bell System with bonds of much lower ratings issued by railroads and other public utilities: X-227, X-228, X-229, X-235, X-236, X-237, X-246, and X-247. [fol. 2339] Ex. X-250 and X-251 which purport to show an average yield on common stocks as compared with an average yield on bonds, are objected to as irrelevant, immaterial and incompetent and further because they are wholly without foundation. The comparisons are meaningless and without validity for the following reasons, among others:

(1) The comparison between the retail prices obtained on the stock exchange for small amounts of stock or bonds is no indication of the price or prices at which such stock or bonds could be sold wholesale or in amounts sufficient to refinance or provide in substantial part the requirements of the corporation in question.

(2) The comparison is between interest paid and dividends paid; not between interest paid on bonds and earnings on the stock. This is an improper basis and comparison.

(3) There is no proper proof of any basis for the selection of the stocks and bonds compared.

Ex. X-252 and X-253 are objected to as irrelevant, immaterial and incompetent and for the further reason that the so-called source of funds invested in fixed capital of the Illinois Bell Telephone Company, the Commonwealth Edison Company, the Peoples' Gaslight and Coke Company, either separately or compared, are entirely irrelevant to any issue in this case. The Illinois Bell owns certain property which it devotes to the public service. It is entitled to a fair return on that property regardless of the source of the funds invested therein. The fact that it may have raised 15.7 per cent of these funds through funded debt, 51.5 per cent through capital stock sales, 8.2 per cent from surplus, 23.8 per cent by investment of its reserves and .08 per cent in other ways is of absolutely no assistance to the court in making the findings of fact required by the issues, and the further fact that the investment in fixed capital of the Commonwealth Edison and Peoples' Gas was made from different sources or from the same sources in different proportions is of no value.

Furthermore, the very fact that the ratio of funded debt, capital stock, etc. of the Commonwealth Edison and Peoples' Gas is different from the same ratios in the case of the Illinois Bell vitiates any conclusions that can be drawn from the comparison with them and makes them irrelevant. X-253 is merely the tabulation showing detail of the data shown on chart form on X-252.

Ex. X-254 which purports to show the source of funds invested in fixed capital by the Illinois Bell from 1913 to [fol. 2340] 1931, inclusive, as divided between fixed capital reserves, funded debt, advances, capital stock, surplus and excess of net fixed capital, together with X-255, which shows the same information in tabulation form, are objected to for the same reasons as X-252 and X-253.

Ex. X-256 is objected to as irrelevant, immaterial and incompetent and for the further reason that the comparison offered by it is wholly irrelevant and misleading. The exhibit fails to take into account the values of the properties of the various enterprises, the value being a most important factor in determining the rate at which funds could be obtained. Furthermore, the comparison takes no account of the difference in capital structure and the difference in the proportion of the total capital invested represented by funded debt and by stock.

The cost of funds shown in the exhibit is a weighted average of the dividends from the capital stock and the interest on funded debt and on interest bearing loans. It is obviously improper to compare mixtures consisting of two or more ingredients in varying proportions. Furthermore, using the dividends paid instead of the per cent of profit earned makes the whole comparison worthless.

Ex. X-261 and X-262 are objected to as irrelevant, immaterial and incompetent and for the further reasons that they will encumber the record with hundreds of pages of tabulations in every conceivable form of data concerning bond issues of the Bell System and other public utility, railroad and industrial concerns without any mention anywhere of the value of the properties involved or the net earnings of the corporations.

Ex. X-285 is objected to as irrelevant, immaterial and incompetent and for the further reasons that:

(1) It sets forth certain dividend yields to the American Telephone and Telegraph Company from the dividends paid by the Illinois Bell Company which are in no way relevant as the issue is "What is the return on value" and not "dividend yield on stock".

(2) Furthermore, a comparison is made between dividend yields on the American Telephone and Telegraph Company's investment in the Illinois Bell and that on its investment in all Licensee Companies combined in the attempt to show that the yield is greater in the Illinois Bell investment. This comparison is irrelevant as it can produce no conclusions with respect either as to dividend yield [fol. 2341] or to the return on the property of the Illinois Company, without taking into consideration all the individual peculiarities of the capital structure in each company, and of other pertinent circumstances.

(3) Furthermore, certain of the sheets involve commingling of interest and dividends and improper comparisons of things not comparable.

(4) Furthermore, these comparisons are irrelevant and immaterial because they are comparisons between dividends and undivided profits and surplus of the Illinois Bell with all Licensee Companies taken together when as a matter of fact some of the companies were engaged in legal contests in the attempt to obtain fair rates of return.

Ex. X-286 is objected to as irrelevant, immaterial and incompetent and because it purports to show merely the percentages of undivided profits and dividends of the American Telephone and Telegraph Company which are in no way in issue either directly or collaterally in this case.

Ex. X-287 is objected to as irrelevant, immaterial and incompetent and for the further reasons that:

(1) Comparison of Line 3, representing Undivided Profits, Interest and Amortization Charges with Line 4 is

not a proper comparison to obtain per cent of return for funds used in business for the reason that the fourth line, while it is the same figure used by plaintiff in computing its cost of funds in Ex. A-164, does not contain the total of assets in which the plaintiff has its funds tied up, but leaves out such items as Depreciation Reserves, Excess of Receivables over Liabilities, and other items.

(2) Furthermore, it is immaterial in this case what per cent of return the American Company earned on the funds used in its business, whether the figure which is the basis of the percentage includes all the various assets into which its funds found their way or not.

Ex. X-290 is objected to as irrelevant, immaterial and incompetent and for the further reason that the per cent of undivided profits and dividend payments with respect to the proportion of the total stock representing the Long Lines Division is not material, and for the further reason that in figuring such per cent the defendants have taken [fol. 2342] the par value of the capital stock as the basis of the rate instead of the value of the property devoted to the Long Lines service.

Ex. X-291 is objected to as irrelevant, immaterial and incompetent and for the further reason that even a properly computed rate of return upon so-called holding company activities would be immaterial. No valid comparison of per cent of undivided profits and dividends on capital stock can be made without a consideration of the amount of funded debt and the interest paid thereon.

Ex. X-292 is objected to as irrelevant, immaterial and incompetent and for the further reason that the per cent of undivided profits found in the eighth column is based on the capital stock of the American Telephone and Telegraph Company at par and not on the value of the assets devoted to the rendition of License Contract services. The exhibit furthermore is meaningless because a large part of the License Contract services are personal in character and cannot be measured in terms of return on investment.

Ex. X-293, X-294 and X-295 are each objected to more particularly because a comparison is made between earnings and investment on the basis of amount of money originally invested by the American Company going back to 1882, and the great surplus which has been built up over the fifty years of operations is completely ignored.

Ex. X-296, X-297 and X-298 are objected to as irrelevant, immaterial and incompetent and for the further reason that the percentages shown therein mean nothing because they are based on investment in the case of X-296 rather than the value of the property, and in the case of X-297 they are based on the capital and surplus rather than the value of the property, and in the case of X-298 they are based on capital stock at par rather than on the value of the property.

Ex. X-298 is objected to for the further reason that it sets forth a return to the stockholders of the American Company on the basis of their assumed investment in that stock at par. They are objected to for the further reason that all three of these exhibits contain percentages which are based on allocations and earnings subject to the same infirmities as pointed out in objections to X-145.

Ex. X-299 and X-300 are objected to as irrelevant, immaterial and incompetent. There is furthermore no value in the comparisons of percentages made in the exhibits as they are all based on book figures instead of value and they purport to show that the percentages of earnings to investment [fol. 2343] of the Illinois Bell Company is a little greater than the average of the whole Bell System without indicating in any way why some of the other companies show poorer results.

Ex. X-301 is objected to as irrelevant, immaterial and incompetent. The rate of return earned by the Long Lines Department is irrelevant in this case, particularly when it is based on book figures less depreciation reserve rather than fair value.

Ex. X-302 is objected to as irrelevant, immaterial and incompetent and for the further reason that it purports to compare return earned by the Illinois Bell with that of all Licensee Companies, and all licensees excluding the Illinois Company, which comparison is of no value in the case. Were the comparison a material one it would be vitiated by the fact that "Average Accrued Depreciation", meaning, of course, the reserve for depreciation, had been deducted in each case, and because the bases of figuring the returns are all book figures and not fair value.

Ex. X-303 and X-304 are objected to as irrelevant, immaterial and incompetent and for all the reasons set out in the objections to X-302. These exhibits purport to compare the results of X-302 with percentages of return as shown in certain MR and CR reports. Such a comparison is meaningless in a rate case as the MR and CR reports are merely administrative reports of the company and are themselves based on book figures and not on fair value. The fact that the company in its internal administration for convenience uses its book figures is no justification for the defendants in a rate case putting forth exhibits and showing rates of return based on the books.

Ex. X-308, being Schedule from American Telephone & Telegraph Company's reports to I. C. C. and Illinois Commerce Commission showing details of American Company's "Long Term Advances to these Companies" 1920-1930, is objected to as irrelevant, immaterial and incompetent.

Ex. X-328 is irrelevant, immaterial and incompetent. It purports to show return but uses a base that is book cost less reserve for depreciation and also excludes cash working capital. The notes in the exhibit are misleading and it makes improper comparison.

Ex. X-329 to X-332, incl., and X-334 are objectionable for the same reasons as Ex. X-328, and an additional reason because in the year 1923 the adjustment for rates attacked [fol. 2344] is for three months instead of being treated on an annual basis. They do not show the various considerations affecting the individual companies and therefore any comparison between them is meaningless. Furthermore, these Exhibits merely develop a comparison between certain operating results of the Illinois Bell with other companies without bringing them to a common basis.

Also Ex. X-329 assumes the correctness of straight line depreciation for accounting for the Associate Companies but rejects it for the Illinois Bell. Also, the comparison is on the basis of cost less reserve for depreciation and not value.

Ex. X-333 is objected to for the same reasons as Ex. X-328 to X-332, as it contains figures carried forward from Ex. X-330, X-331 and X-332. Furthermore, it continues the erroneous comparison of return of Illinois Bell (Chicago) with other licenses.

Ex. X-334 is objected to as irrelevant, immaterial and incompetent and for the further reason that the return figures shown in the exhibit are based on book figures and not upon value and that they deduct "average accrued depreciation" and that a comparison between the return earned by the

Illinois Bell, even though properly computed, with the return earned by other Licensee Companies without showing the individual considerations affecting the various companies is meaningless. This exhibit is further objected to for the same reasons as objections to X-328.

Ex. X-335 is objected to as irrelevant, immaterial and incompetent.

The "cost of funds" to the Illinois Bell developed in this exhibit is made up principally by the price which the American Company pays for the stock which it purchases. The fact that the American Company pays par for stock paying 8 per cent is no indication of what it would cost the Illinois Company to obtain money in the open market.

Ex. X-336 and X-337 are irrelevant, immaterial and incompetent. These exhibits purport to show the return required on reproduction cost necessary to enable the company to pay interest and an 8 per cent dividend. The exhibits can have no meaning as the rate of return would decrease as the ratio of capital investment to value of property decreased, and in the case of a grossly overcapitalized utility, the rate according to these exhibits would be very high. X-337 is further objectionable because it purports to show rates of return to Illinois Bell and to the A. T. & T. Co. stockholders by converting certain stated rates of re- [fol. 2345] turn assuming stockholders' investments at par. In other words, the more water that was poured into the stock the higher return it would be entitled to.

Ex. X-338 is irrelevant, immaterial and incompetent, this exhibit being based on book cost of plant investment and deducted depreciation reserve instead of fair value.

Ex. X-339. The same objections as to Ex. X-338 except that in X-339 an amount even greater (about 50 per cent greater) than the book reserve for depreciation is deducted. In other words, the reserve is stepped up to an inflated reproduction cost level on some theory and is then deducted.

Ex. X-340 is irrelevant, immaterial and incompetent. The rate of return found by this exhibit is based on a figure for reproduction cost from which the reserve for depreciation has been deducted and on income figures to which have been added erroneous so-called adjustments for what is called income due to license payments and an adjustment for what defendant claims is a too high depreciation expense.

Ex. X-346. This paper is an order of the Public Utilities Commission of Illinois with voluminous recitals. It is irrelevant to any issue presented in this case and relates to conditions in 1919 and prior thereto. Furthermore, said paper is incompetent as the order of the Commission is not evidence of any facts therein recited or determined.

Ex. X-355. This exhibit consists of 37 sheets made up of excerpts from numerous provisional estimates of companies of the Bell System other than the Illinois Bell Company, together with the letters of transmittal of said documents. The huge mass of figures contained in these papers is not contradictory of any evidence submitted by the plaintiff and is not in support of any claims asserted by the defendants and the papers are irrelevant. Furthermore, the papers and statements are estimates and prophecies by officers of companies not a party to this litigation and not witnesses. It is apparent no statement contained in the papers could be considered as an admission against or receivable in evidence without calling the author of the statement, calling his attention to it and giving an opportunity for explanation. Therefore, the statements as offered are incompetent.

Ex. X-373. This exhibit is objected to on the following grounds:

It is a handbook of outside engineering practices of the American Telephone and Telegraph Company and Associate Companies and consists of 104 large printed pages [fol. 2346] with mathematical formulas, tables of figures, etc. So far as plaintiff can see there is nothing contained therein that is in any way contradictory of any claim made by the plaintiff or in support of any claim by the defendant and the entire document is irrelevant. Objection is further made that plaintiff cannot be contradicted or defendants supported by some isolated statement in this large document by offering the whole mass of sheets in evidence without explanation, without pointing to the relevant portion thereof and without affording an opportunity to explain. For these reasons the paper is both irrelevant and incompetent.

Ex. X-396. This is an agreement entered into November 1, 1880. This contract was not in force during any of the years covered by the present litigation. It is too remote and is irrelevant and immaterial.

Ex. X-401. These papers are a re-offer of papers offered in the previous trial and excluded. They contain a mass of figures concerning the Central Union Telephone Company, one of the companies which operated properties in Illinois which were acquired by the plaintiff in 1920. These papers are objected to upon all the grounds stated when they were originally offered and upon the further ground that no explanation is made of their purpose, and no item or items which tend to contradict plaintiff or support defendant are pointed out and that the offer of the papers in the manner made is improper and the papers are irrelevant and incompetent.

The exhibit is objected to on the further ground that none of the property in question was in the Chicago area and is in no way the subject of the present litigation.

Ex. X-402. This is an offer of "all correspondence between counsel and parties in this case" and consists of 487 pages. Any admissions or concessions contained in the correspondence have been availed of by the defendants and except for a few specific admissions and concessions the papers bear upon no issue in the case. The offer in evidence of this numerous mass of papers without explanation or indication of any object connected therewith is improper and the papers are objected to as irrelevant, incompetent and as a padding of the record.

Ex. X-403 is a written statement purporting to show the number of pages contained in several hundred MR and CR Reports of the American Company. There was no proof of the figures on the papers and they are wholly incompe- [fol. 2347] tent. Furthermore, these papers were doubtless offered to show the bulk of the material which defendants claimed the right to inspect and which right was not accorded them at the time when demanded. The papers were afterwards furnished, were in the court room for weeks and under the ruling of the court, defendants were afforded such time as they requested within which to make examination thereof.

Ex. X-420 consists of 293 pages of various minutes of the Executive Committee of the American Company and of agreements executed pursuant thereto. No part or portion of any of these papers has been pointed out by defendants as bearing upon any issue in this case but they have merely been offered en masse. Such procedure is objected to and the receipt of the papers in evidence is objected to on the ground that they are irrelevant, immaterial and incompetent and if admitted would unreasonably pad the record.

Ex. X-424 was an agreement entered into between the Central Union Telephone Company and the American Company dated February 15, 1894 and has to do with traffic arrangements between the two companies and a division of territory. The Illinois Bell Company purchased the Illinois property of the Central Union Company in 1920. None of the property, the subject of the contract in question was situated in the City of Chicago. For the above reason the agreement is irrelevant, immaterial and incompetent—too remote.

Ex. X-435 consists of some 45 pages of figures and tabulations, some of which relate to the Illinois Bell Company and some to other companies of the Bell System. None of the figures so far as plaintiff knows, contradicts any claim of the plaintiff or sustains any claim of the defendants. Nothing has been pointed to therein as having this effect, but this great mass of figures is just shoveled in en masse. Plaintiff objects to this procedure and objects to the papers as irrelevant, immaterial and incompetent.

[fol. 2348] Additional Objections to Defendants' Exhibits in Connection with Depositions Taken by Defendants

Defendants have offered in evidence one hundred ninety-seven (197) exhibits consisting of printed matter. One individual exhibit consists of as much as 200 pages; many of them are long and consist of a score or more pages. The total bulk of the material offered amounts to several thousand pages. A general objection that the exhibit is too remote and is immaterial is made to each of the following of said exhibits:

1 and 2.
8-36, incl.
40-48, incl.
50-50B, incl.

79-103, incl.
110-133½, incl.
136-139, incl.
141.
146-181, incl.
183-188, incl.
192.

Ex. 1. This is an article of 100 pages which deals generally with the Bell System and telephony in America. It is too remote and will uselessly encumber the record.

Ex. 2. This is a printed book of over 200 pages giving an alphabetical list of 1620 research laboratories in the United States with a brief statement of the staff and scope of the work of each. It is irrelevant, immaterial and too remote.

Ex. 7. This paper as shown by the testimony was prepared by one, Van Cise, for the purpose of making an allocation of certain expenses of the Treasury Department in a particular manner. Van Cise was not called as a witness, no testimony was offered in support of the paper and, on the contrary, it appeared that it was not intended as a proper allocation of the expenses in the Treasurer's Department. The paper is wholly incompetent and without foundation.

Ex. 8. This exhibit, together with Ex. 9, 10, 11, 12, 26 and 32, are articles dealing with the work of the Treasurer's Department of the A. T. & T. Co. The statements are general and the matter contained is immaterial and too remote.

[fol. 2349]

Ex. 13. Too remote.

Ex. 14. This is included in Ex. 1. It is a map showing certain special contract telegraph services. It is irrelevant, immaterial and incompetent and too remote and unnecessarily pads the record.

Ex. 15. This is included in Ex. 1. It is a map showing certain special contract telegraph services. Iit is irrelevant, immaterial and incompetent and too remote and unnecessarily pads the record.

Ex. 16. This is included in Ex. 1. It is a map showing certain special contract telegraph services. It is irrele-immaterial and incompetent and too remote and unnecessarily pads the record.

Ex. 17. This exhibit is an article relating to the accounting methods in the Long Lines Department. Its statements are too general to bear upon any issue in the case and it is immaterial and too remote.

Ex. 18. This is an article describing in general terms the carrier systems on long distance telephone lines. Matter contained in the Exhibit is too general to bear directly on any issue in the case. The Exhibit is immaterial and too remote.

Ex. 21, 22, 23, 37, 38 and 39 (See Ex. 18) are all likewise articles relating to technical phases of the work of the Telephone Company engineers. They are all general in their terms, contain no contradiction of any evidence introduced by plaintiff, do not bear directly on any issue in the case, and are so general in their terms that they are each of them immaterial and too remote.

Ex. 19. This is an article which contains a number of general statements and comparisons concerning the development of telephony in the Bell System. The article is general in its terms, is not contradictory of any evidence offered by the plaintiff, does not bear directly on any issue in the case and is immaterial and too remote.

Ex. 20, 25, 27, 29, 35, 36 and 188 are of the same general character (see Ex. 19) and are immaterial and too remote. [fol. 2350] Ex. 24. This is a description of the telephone typewriter and auxiliary services rendered by the Long Lines and Associate Companies. The article bears on no issue in the case and is immaterial and too remote.

Ex. 28. This is an article dealing with the Budget Plan of the Bell System. It is already in evidence that the Budget Plan is employed by the A. T. & T. Co. and other System Companies and the general manner in which they operate those plans. The article in question bears on no matter in dispute, is general in its terms and is immaterial, too remote and pads the record.

Ex. 30. This is an article which deals with a great number of so-called auxiliary services rendered by the Bell System, including portable telephones, head receivers, deaf sets, private branch exchanges, electrical stethoscopes, etc. There was no issue in the case concerning the fact that these services were rendered, the article is general in its terms, is immaterial and too remote.

Ex. 31. This is an article which consists of a number of generalities concerning what the author calls "Radio Telephone Situation''. It is irrelevant, immaterial, incompetent and too remote.

Ex. 33. This is an article dealing with an activity of the Electric Research Products Inc.—''The Measurement of Noise''. There was no dispute that E. R. P. I. was engaged in this business, the article adds nothing to the conceded facts and is immaterial and too remote.

Ex. 34. (See Ex. 28.) Is if the same general character and the same objection is made to it.

Ex. 40 is the Annual Report of the American Company for the year 1920.

Ex. 41-48, incl. (see Ex. 40), Ex. 50, 50A and 50B are also Annual Reports but for other years. These reports aggregate 300 pages of printed matter. They bear generally on the telephone situation and give statistics. No one of these reports bears directly on any controverted matter and each one of them separately and the whole mass collectively are immaterial and too remote.

Ex. 79. This is a form of report used in the Comptroller's Department of the American Company. It gives no figures but merely shows the form in which the information is reported.

[fol. 2351] The same is true of Ex. 80-103 and 122-133½ (see Ex. 79). These are all irrelevant, immaterial and incompetent. In practically all cases the reports themselves have either been put in evidence or used by defendants. It would be outrageous to pad the record with several hundred pages of these blank forms where there is no dispute as to the fact that the company had the information and where in all or practically all instances it has been furnished to defendants.

Ex. 110 is a substantial portion of the issue of the Bell Telephone Securities Manual dated 1931.

Ex. 111-119, incl. (see Ex. 110), are portions of other issues of the same manual. The pages of these publications offered in evidence contain a great many financial facts. None of the statements in any of the exhibits in question contradicts any evidence offered by plaintiff. In many cases the facts set forth in each of the exhibits is the same and there is great and unnecessary repetition through the offer of all of the exhibits. Ex. 110 and each of the other exhibits are objected to as irrelevant, immaterial and too remote.

Ex. 120. This is a publication of financial facts concerning the Bell System. It in no way contradicts any evidence offered by the plaintiff, has no direct bearing on any issue in the case and is immaterial and too remote.

Ex. 121 consists of a collection of quotations from newspaper articles generally commendatory of the Bell System and of its securities. It is objected to as irrelevant, immaterial and incompetent, without foundation and too remote.

Ex. 146. This is a monthly report of the Long Lines Department of the A. T. & T. Co.

Ex. 147-181, incl., are also monthly reports of the Long Lines Dept. These constitute a mass of papers which are not contradictory of any evidence introduced by plaintiff. They are immaterial, irrelevant and too remote. It is true that plaintiff has used some of the exhibits above mentioned as a source of some isolated figures used by it in developing ratios. However, there has been no attack or criticism upon any of the figures used by plaintiff and with the exception of a few figures the reports are masses of facts and figures which have no bearing whatever upon the issues involved.

[fol. 2352] Ex. 191. This exhibit consists of the first 50 pages of a document entitled "Radio Industry", published by the Federal Trade Commission in 1924. It contains much of general interest concerning the radio industry and the part played therein by the American Company. However, the facts stated are very general; they are not in contradiction of any of Plaintiff's evidence and the exhibit is irrelevant, immaterial, incompetent and too remote.

Ex. 192. This is an extract from the appendix to Appellant's Brief in the previous trial showing certain license contracts and correspondence connected therewith between the American Company and the Southwestern Bell Company. It was conceded that the papers were authentic. It is objected to that they are irrelevant, immaterial and incompetent and have no bearing on any issue in this case.

[fols. 2353 & 2354] IN UNITED STATES DISTRICT COURT

[Title omitted]

Part I

DEFENDANTS' ANSWERS TO PLAINTIFF'S OBJECTIONS TO EXHIBITS OFFERED BY DEFENDANTS IN THE HEARINGS BEFORE JUDGE WILKERSON—Filed December 10, 1932

Ex. X-108

Plaintiff's objection is: The percentages shown in Exhibit X-108 "have been improperly used * * * on numerous defendants' exhibits."

Defendants' answer is: (1) Plaintiff admitted the mathematical correctness of the percentages in Exhibit X-108 and their use as computations in the other exhibits (N. R. IV, 1434); (2) plaintiff's attack on their use in other exhibits [fol. 2355] is answered in Defendants' Brief, pages 86-89, wherein it is shown that the attack was based on a misunderstanding of Bell System practice and its application to plaintiff's operations. The use of the percentages appears in Defendants' Brief, pages 58, 60, 62, 69, 81, 83, 84, 86, 247, 344, 1033, 1034.

Ex. X-109-118.

Plaintiff's objection is: (1) These exhibits "use repeatedly the words 'return' and 'actual' return, where there was no money whatever received."

Defendants' answer is: Plaintiff's objection is based on the theory, as stated by its counsel (Record pp. 5255-9), that because it paid for the rental of the telephone instruments plus other services a per cent of its revenues and did not pay the rental as a separate payment, the American Company received no money whatever for rental of telephone instruments. And this would be true even though the Commission's allowance was based upon a separate allowance for rental and for other services. The objection falls with the theory.

Plaintiff's objection is: (2) The exhibits make comparisons which are misleading.

Defendants' answer is: Plaintiff does not state wherein they are misleading. Defendants' Brief, pages 7 to 92, uses these comparisons which clearly indicate just what they purport to show.

Plaintiff's objection is: (3, 4 and 5) The return is based on book cost instead of reproduction value and is expressed as a return to the American Company in its entire investment and on its equity investment.

Defendants' answer is: The basis is in conformity with defendants' position and in conformity with the law ap- [fol. 2356] plicable under the special circumstances involved therein, as shown in Defendants' Brief, pages 65 to 80. Plaintiff's attack is based on a misunderstanding of Bell System practice and its application to plaintiff's operations as shown in Defendants' Brief, page 86.

Ex. X-119–X-120

Plaintiff's objection is: The comparison is between actual cost and current cost, which are "unrelated."

Defendants' answer is: These exhibits merely show the per cent by which Mr. Heiss has inflated the book cost to arrive at what he claimed was current cost as a basis on which a fair return should be computed. The impropriety of such inflation under the special circumstances in the record is discussed in Defendants' Brief, pages 71-75.

Ex. X-121

Plaintiff's objection is: The telephone instruments were not technically sold to the Long Lines.

Defendants' answer is stated fully in their Brief, page 39, from which it clearly appears that the discrimination between the American Company's treatment for rate making purposes of the telephone instruments in 1927 in respect to the Long Lines and the licensees does not depend on the question as to whether a technical sale occurred in the one case or in the other case.

Plaintiff's objection also is: The American Company did not profit on the sale of the instruments to the licensees to the extent of $14,395,799 because the selling price was less than the original undepreciated cost, even though the selling price was $14,395,799 more than the depreciated cost. [fol. 2357] Defendants' answer is: Plaintiff's theory is absurd. Assume an article originally costs $1,000,000 and, the entire amount had already been recovered through rates by plaintiff. If such article were sold at the date of retirement for $250,000, plaintiff's theory is that the salvage would not be profit because it was less than the original cost.

Ex. X-122

Plaintiff's objection is: (1) The exhibit compares the par value and book value of the American Company's stockholdings, which are irrelevant.

Defendants' answer is: There is no comparison. The exhibit states the facts as of the end of each year as a basis for the determination of the average holdings as shown in X-124, which latter exhibit is a very important exhibit, as appears below. X-122 was offered to give plaintiff an opportunity to check the figures from which X-124 in part was computed.

Ex. X-123

Plaintiff's objection is: The dividend rates are irrelevant because dividend payments "are purely an arbitrary matter and the amount of the distribution which the directors of the several companies saw fit to declare is wholly irrelevant and immaterial."

Defendants' answer is: Plaintiff suffered loss from the American Company's method of financing the licensee companies under the license contract through the discrimination which it created in favor of the others whose temporary and permanent financing was done by it on a cheaper basis, although plaintiff was entitled to equal treatment in these respects. This loss is fully discussed in Defendants' [fol. 2358] Brief, pages 346-7 and 425-429, under License Contract Services and Payments. The fact that plaintiff paid and earned 8% dividends under the existing rates was used by the Supreme Court's Opinion as one element in its conclusion as to the adequacy of the revenue derived therefrom. It is material as showing the actual results from income which on plaintiff's contention is confiscatory. This is fully discussed in Defendants' Brief, pages 996-7.

Ex. X-124 and X-125

Plaintiff's objection is: These exhibits are subject to the same objection as Exhibits X-122 and X-123.

Defendants' answer is: They are important for the reasons stated in respect to X-123, and as used in Defendants' Brief, pages 344-5.

Ex. X-126

Plaintiff's objection is: This exhibit is a "comparison absolutely without significance."

Defendants' answer is: The significance is the same as that stated in respect to Exhibit X-123 and as used in Defendants' Brief, page 345.

Ex. X-127, X-134, X-272, X-273, X-274, X-276, X-278, X-280, X-282, X-294 and X-337

Plaintiff's objection is: (1) These exhibits do not show yields or return on fair value but yields on investment in stock.

Defendants' answer is: The purpose of these exhibits is the same as that of Exhibit X-123, as above stated, and as [fol. 2359] used in Defendants' Brief, pages 428, 997, 1008 and 1009.

Plaintiff's objection is: (2) The returns are expressed on the basis of return to stockholders on outstanding stock.

Defendants' answer is: The expression is in conformity with Bell System practice to express the return from the operations as a whole, and permits a direct comparison between the results from particular operations and from all operations of the American Company in the same year, as discussed in Defendants' Brief, pages 60-62 and 86-90.

Ex. X-128

Plaintiff's objection is: The term "profit" is used in the exhibit to denote the amount carried to surplus from the American Company's investments in licensees, and the comparison is meaningless.

Defendants' answer is: Plaintiff's witness admitted that "In Exhibit X-128 and the other exhibits where I talked about 'profits,' it is perfectly clear as to what was meant by the term 'net profits'." In reading the exhibit you would know from reading it that it means "transferred to surplus" (N. R. IV, 1416).

The purpose of the exhibit is discussed in Defendants' Brief, pages 344-5, which shows how the American Company's investment in licensees became more profitable as a result of its failure to give them the benefit of the lower cost of money during the period 1922 to 1930.

[fol. 2360] Ex. X-129

Plaintiff's objection is the same as in respect to Exhibit X-128.

Defendants' answer thereto in respect to Exhibit X-128 applies equally to plaintiff's objection in respect to X-129.

Ex. X-130

Plaintiff's objection is: The comparison between plaintiff's actual experience and that of the other licensees disregards peculiar conditions in respect to the others such as their insufficient earnings.

Defendants' answer is: The American Company financed itself and all of the licensees on the basis of the average showing, irrespective of the conditions in respect to any particular licensee, in conformity with the cooperative arrangement for pooling the experience of all. The comparison is on the same basis of average experience as discussed in Defendants' Brief, pages 346, 428, 997, 1053, etc.

Ex. X-131 to X-137; X-142 to X-147; X-273, X-274, X-279 to X-282; X-284, X-285, X-296, X-297 and X-298

Plaintiff's objection is: The exhibits use quarterly averages for loans "which are not sufficiently accurate averages for the purpose used."

Defendants' answer is: Plaintiff had the facts but made no showing that quarterly averages were not accurate. Defendants showed that such use in respect to plaintiff's experience gave the same result in several years and varied the result in the period 1923-1930 by less than 3/100 of 1% (N. R. VI, 2032), and for all licensees 1/100 of 1% (N. R. VI, 2035). Plaintiff itself did not use actual interest figures in its computations on the same subject-matter—[fol. 2361] all as shown in Defendants' Brief, page 367.

Ex. X-132

Plaintiff's objection, based on its objection to X-128 and X-129, is answered by Defendants' answer to the objections to those exhibits.

X-132 to X-135; X-137, X-142, X-143, X-273, X-274, X-281, X-282, X-284 and X-285

Plaintiff's objection is: "These exhibits involve commingling of interest and dividends and improper comparison of things that are not comparable; a comparison the basis of which is investment and not return on fair value is of no value."

Defendants' answer is: These exhibits are used in connection with the discrimination against plaintiff by the American Company in its financing of the licensees, as discussed in Defendants' Brief, pages 425-429.

These exhibits are also used to show the contradiction between plaintiff's prognosticated minimum return and its earning record as shown in Defendants' Brief, pages 996-997.

These exhibits are also used to show the contradiction between plaintiff's prognosticated minimum return and the experience of the other licensees, as shown in Defendants' Brief, pages 1008-1009.

Ex. X-130, X-137, X-142 and X-143

Plaintiff's objection is: These exhibits show the license payment of each of the licensees on the basis of placing each of them in the same relative investment position to [fol. 2362] the American Company as that of plaintiff. "They purport to tie up or relate the license payments of the Illinois Bell and other licensee companies with yields on stocks and loans, the two matters having no connection."

Defendants' answer is: As a necessary implication of the license contract relationship, plaintiff is entitled to have its financing done by the American Company on the basis of not being required to pay therefor to the American Company any more than is currently paid by the other licensees. To charge all licensees for the privilege of participating in a pooling arrangement for financing their entire needs and then to distribute between them the proceeds thereof on terms resulting in discriminatory annual charges is in fact to create unfair preferences between them and to rebate in whole or in part the charge made for the financing service itself, as shown in Defendants' Brief, pages 425-429.

In the license contract exhibits furnished by plaintiff to the defendant and offered at the final hearings, Mr. Heiss included within the license contract costs, losses to the American Company in holding funds for the purchase of stock and for the making of loans and losses to the American Company incurred in connection with loans to the licensee companies. But Mr. Heiss did not show the profit to the American Company while holding the stock, nor did he take into account any inequality as between the licensees as to the per cent of return paid to the American Company for moneys furnished in the form of stock and loans, resulting from the difference in the dividend rate on the stock, or through the difference of the proportion of stock and loan moneys furnished to the licensees companies (N. R. V, 1706, 1707). What Mr. Heiss failed to do the defendants supplied.

[fol. 2363] Ex. X-138 and X-139

Plaintiff's objection is: (1) No apportionment to the Chicago area is shown.

Defendants' answer is: Before arriving at the apportionment it was necessary to get the figures for the Company as a whole, the apportionment in the Chicago area being shown in X-147.

Plaintiff's objection is: (2) X-138 gives no consideration for costs relating to funds held available for Long Lines. This is inconsistent with X-145.

Defendants' answer is: All of the exhibits furnished by plaintiff to the defendants prior to the trial and prepared by Mr. Heiss, and upon which Exhibit X-138 was based, showed the cost of holding funds to meet the cash requirements of the licensee companies distinct from any cost which the American Company might have in holding funds for the Long Lines (D-116). X-138 makes use of these figures.

Ex. X-140

Plaintiff's objection is: (1) "In computing the total costs defendants have deducted one million dollars for 1923 up to two and one-half million dollars in 1930, which are termed 'Estimated amount of corporate expenses attributable to ownership of System securities and related expenses,' which figures are incorrect and without support in the case."

(2) "Furthermore, Mr. Heiss' deductions were intended to cover any non-license expenses which might exist in all classes of costs, whereas this exhibit concentrates that to a certain limited number of expenses."

Defendants' answer is: Defendants used Mr. Heiss' figures, to which he testified in the Ohio case and which plain- [fol. 2364] tiff furnished to the defendants prior to Mr. Heiss' hearing in the instant case, as plaintiff's proposed exhibits. Plaintiff's objection confirms defendants' position in its Brief under the topic "Mr. Heiss' shifting use of facts and figures destroys the probative value of the showings presented by him" as shown in Defendants' Brief, page 362.

Plaintiff's objection is: The allocation of costs are made on the basis of license payment.

Defendants' answer is: Prior to the trial plaintiff refused to make available the data from which other bases of allocation could be developed by defendants (Defendants' Brief, pages 136-8). (It was on this ground defendants objected to the offer by plaintiff of its allocation). (A-100-114.)

Ex. X-141

Plaintiff's objection is: The exhibit is "redundant" as similar information is included in Plaintiff's Exhibit A-170, in supporting exhibit.

Defendants' answer is: Exhibit A-170 covers the period 1923-1931. X-141, prepared by Mr. Heiss, covers the period 1920-1922.

Ex. X-145 and X-149

Plaintiff's objection is: The propriety of the return from license payment is based upon return on investment which basis is wrong.

Defendants' answer is: Plaintiff's Exhibits, A-198 and A-200, as presented by plaintiff, are on the same basis.

Plaintiff's objection is: Physical property should be valued at fair value instead of book cost.

[fol. 2365] Defendants' answer is: The special circumstances in the record require that only book cost should be used, as the evidence of value, as shown in Defendants' Brief, pages 71-75.

Plaintiff's objection is: Either X-149 or X-145 is incorrect as the per cent return from the Long Lines in each of these are not the same.

Defendants' answer is: The per cent return in the two exhibits could not possibly be the same. X-145 is based upon Mr. Heiss' figures, furnished by the plaintiff before the trial and X-149 is based upon Mr. Heiss' figures offered at the trial. Any inconsistency between the two sets of figures arises from Mr. Heiss' shifting use of facts and figures to which defendants have drawn attention in their brief, page 362.

Ex. X-146, X-147, X-150 and X151

Plaintiff's objection is: These exhibits are based upon Exhibits X-145 and X-149.

Defendants' answer is: The same reasons given by defendants in support of Exhibits X-145 and X-149 are applicable in respect to these exhibits based thereon.

Ex. X-148

Plaintiff's objection is: Although the figures are correct the total "Balance Available for Additional Return to American Telephone and Telegraph Company" and likewise the legend at the foot of the exhibit are misleading because certain other allowances which plaintiff claimed in Exhibits A-198 to A-201 should be deducted were not deducted.

Defendants' answer is: The additional allowances which plaintiff claimed in Exhibits A-198 and A-201 are improper [fol. 2366] including (a) additional return for fair rental of instruments in excess of the actual experience of the American Company (Defendants' Brief, pages 63-84); and (b) patent infringement liability cost (Defendants' Brief, pp. 286-318). Cost of Acquiring Rights from General Electric in the Radio field as shown in Defendants' Brief, pages 382, 388.

Ex. X-153

Plaintiff's objection is: There is no relation between the cash payments by plaintiff to the Western Electric with the cash obtained by plaintiff from American Company.

Defendants' answer is: The loans which the American Company made to the licensees, including plaintiff, for construction, were part of the American Company's program to promote sales from the Western Electric pursuant to its promotion arrangement with the Western Electric, as shown in Defendants' Brief, pages 125-126.

Ex. X-192

Plaintiff's objection is: Comptroller's Report, CR-51A, which is X-192, "unnecessarily pads the record."

Defendants' answer is: This exhibit is important as showing the contrast between the actual experience of the American Company in relation to the Bell Operating Companies and Plaintiff's contention that there is a relation between the figures which it represents to be the American Company's experience and an 8% return on its property investment, as discussed in Defendants' Brief, pages 1007-1008.

[fol. 2367]

Ex. X-193

Plaintiff's objection is: Comptroller's Report 53, which is X-193, has no value, even to show whether there was a gain or a loss on license contract services.

Defendants' answer is: This exhibit is important as showing (1) the actual experience of the American Company in its investment relation to the licensees on the basis of which it made its investments during the period 1923-1930, in contrast to plaintiff's prognosticated minimum return required to attract capital as discussed in Defendants' Brief, page 1007; and (2) the relative importance of the holding company's operations and the license contract operations to the American Company, in contradiction of Mr. Heiss' testimony that the holding company's operations are negligible, as discussed in Defendants' Brief, pages 333-338.

Ex. X-194 to X-198

Plaintiff's objection is: "The actual experience of the 195 and 205 Broadway Corporations for various years is so remote as to destroy the value of this material even in determining the reasonableness of the license contract services, or any portion thereof.''.

Defendants' answer is: The data contained in these exhibits is important to show (1) the unfairness of Mr. Heiss' inclusion as part of the License Contract costs, the losses to the American Company in holding title to the property, as shown in Defendants' Brief, pages 381-2; and (2) the unfairness of Mr. Heiss' showing as to the fair return which the American Company should be entitled from its investment in the telephone instruments in contrast to the fair return which the American Company actually received [fol. 2368] on its investment from its building operations, as shown in Defendants' Brief, pages 67-68.

Ex. X-202

Plaintiff's objection is: While some of the figures taken from these exhibits are taken by Dr. Jewett in his exhibits, it contains a mass of other material ''and it would be an imposition on the court and on the plaintiff to include these reports.''

Defendants' answer is: These reports are important as showing the continuity of the operations in respect to the same subject from the Department of Development and Research to the Bell Telephone Laboratories and as showing the magnitude of the various classes of operations, the results of which found application in the Bell and non-Bell fields and in respect to which plaintiff's allocation of Development and Research expense and of Western Electric expense were disregarded, as shown in Defendants' Brief, pages 190, 838.

Ex. X-203 and X-204

Plaintiff's objection is: The expenses of the Bell Telephone Securities Company are remote.

Defendants' answer is: These documents show the small amount of expenses incurred by the Company in contrast to the magnitude of its operations, and show the small amount of reimbursement to the licensees, including plaintiff, for the services rendered by them on behalf of the Bell Telephone Securities Company, as a part of the co-operative plan by which the American Company is benefited, as shown in Defendants' Brief, pages 416-7, 421-2.

[fol. 2369]

Ex. X-205 and X-206

Plaintiff's objection is: "They show merely cash transactions which are no guide to actual earnings or to the costs of License Contract services rendered."

Defendants' answer is: The magnitude of the operations of the American Company, other than in servicing the licensees under the license contract, show the unfairness of Mr. Heiss' allocation of holding funds between the license contract operations and the other operations of the American Company, as shown in Defendants' Brief, pages 130-134.

These reports also show the error of plaintiff's contention that the transfer of the telephone instruments to the Long Lines was not considered a sale, as shown in Defendants' Brief, page 39.

Ex. X-207 and X-208

Plaintiff's objection is: These statements, prepared by Mr. Heiss, which divide the total revenues of the American Company between the Long Lines Department, License Contract operations and Holding Company operations, were prepared by him on the basis of his Ohio exhibits and not upon his presentation in the instant case. "There are no inconsistencies between the two but the method is different and the exhibits should be excluded."

Defendants' answer is: There is a glaring inconsistency, as shown in Defendants' Brief under the topic, "Mr. Heiss' shifting use of facts and figures destroys the probative value of the showing presented by him," page 362. These exhibits are also necessary as the basis for defendants' exhibits which were prepared on the facts therein contained, which defendants had a right to assume repre- [fol. 2370] sented the true facts, as represented by the Comptroller of the American Company.

Ex. X-209 and X-210

Plaintiff's objection is: These are the detailed analysis of figures in Dr. Jewett's Exhibit A-114 and throw no light on the subject.

Defendants' answer is: They show the character of the work of the Engineering Department of the Western Electric and the essential unity of the operations, part of which are billed to the American Company and part of which is retained by the Western Electric, as discussed in Defendants' Brief, pages 188-212.

Ex. X-211

Plaintiff's objection is: The Balance Sheet of the Bell Telephone Laboratories is "irrelevant, immaterial and incompetent."

Defendants' answer is: These exhibits disclose how the Western Electric made a profit of $2,115,000 on the transfer of the Engineering Department to the Bell Telephone Laboratories, Inc., in 1925, to which profit Defendants contend the Western Electric was not entitled, as shown in Defendants' Brief, page 380.

This exhibit also shows the character of the operations of the Bell Telephone Laboratories in its Bell and non-Bell operations.

Ex. X-212–X-216

Plaintiff's objection is: Although the circulars to the stockholders of the American Company tie up the purchase of stock with the operations of the licensee companies, "a [fol. 2371] very slight connection between such statements and any other statements in these exhibits to the issue of License Contract cost in the Illinois Bell is so small and remote as to render it of no value as evidence."

Defendants' answer is: Plaintiff's presentation has failed to claim the proper credit for the large amount of expenses and amount of costs incurred by plaintiff in carrying out the services called for in these circulars. Defendants claimed, on behalf of plaintiff, such credit, as shown in Defendants' Brief, pages 416-25.

Ex. X-218

Plaintiff's objection is: The receipts and disbursements of the Bell Telephone Laboratories for the years 1925-1930 cannot be tied up with any figures on the cost of rendering the license contract services.

Defendants' answer is: These exhibits show clearly the magnitude and unity of the Bell Telephone Laboratories' operations the expenses of which are divided between the American Company, the Western Electric and the Western

Electric's subsidiaries, as bearing upon the benefits to the non-licensee operations from the functions of the laboratory for which the licensees are charged, as shown in Defendants' Brief, pages 189, 838.

Ex. X-225

Plaintiff's objection is: The amount of funds of plaintiff and all the other companies loaned to the American Company has no bearing upon the issues of the license contract.

Defendants' answer is: This exhibit is important as showing the essential difference of plaintiff's financial [fol. 2372] situation and that of the other licensees, as bearing upon Mr. Heiss' allocation of the costs of financial services of advances, as shown in Defendants' Brief, pages 425-9.

This exhibit is also important as showing the benefit which the plaintiff was to the American Company in supplying it with funds which it could make available to other licensees, as well as to plaintiff, as shown in Defendants' Brief, pages 97-108.

Ex. X-227-X-262 (except X-252-X-256)

Plaintiff's objection is: (1) None of these exhibits is of any value to the Court in determining the issue of confiscations as not one of them takes into consideration the value of the property, the entire earnings of the company or the particular capital structure of the company.

Defendants' answer is: These exhibits are of value to the Court in showing that plaintiff's prognosticated minimum return required to attract capital and to maintain the stability of its securities is contradicted by its own experience and by the experience of the Bell System during the period under investigation, as revealed by (1) the cost of issuing credit obligations, (2) the yield on their original public offering, (3) the yield on their resale, and (4) the yield and record of stability of their stock issues under incomes which were only a fraction of the amount which plaintiff claimed it needed to avoid confiscation, as shown in Defendants' Brief, page 983.

Plaintiff's objection is: (2) X-227, X-228, X-229, X-235, X-236, X-237, X-246 and X-247 "compare things that are not comparable—namely, they compare the yields on bonds of highest ratings issued by the Bell System with bonds of [fol. 2373] much lower ratings issued by railroads and other public utilities."

Defendants' answer is: Plaintiff's objection conclusively proves that which defendants intended to prove by these exhibits—namely, that Mr. Crunden's presentation at the 1929 hearings as plaintiff's sole evidence on Rate of Return was fatally defective (O. R. II, 869; O. R. IV., 1276) in that he used the yields of all grades of issues of all utilities as the basis for his prognostication of the minimum return required by plaintiff whose securities were of the highest grade as shown in Defendants' Brief, page 988.

Similarly, plaintiff's objection conclusively proves that which defendant intended to prove by these exhibits—namely, that a comparison between plaintiff's required return and that of other companies, which were the subject matter of other cases cited by plaintiff (Plaintiff's Brief, pages 315-16) means nothing without knowing the investment grade of the securities issue, the relative amount of high grade and low grade issues of the same company and the investment experience in respect to the matters revealed by the exhibits to which plaintiff objects.

Ex. X-250 and X-251

Plaintiff's objection is: The exhibits purport to show the comparison between stock and bond yields; there is no basis for the selection; they are valueless on the issue of Rate of Return to attract capital.

Defendants' answer is: The exhibits are material as showing that during the period under investigation, the stocks of companies whose bonds were of the same grade as those of the Bell System and of plaintiff did not sell on [fol. 2374] the basis of investment yield predicated on the "risk of investment" in capital obligations; to that extent the actual financial experience of the period contradicted plaintiff's argument in support of its prognosticated minimum return as shown in Plaintiff's Brief, page 310. Similarly the same experience contradicts plaintiff's assumption in respect to the required cash return to attract equity capital to the American Company, which assumption formed one basis for plaintiff's prognostication of minimum return, as shown in Defendants' Brief, page 1038.

Ex. X-252 and X-253

Plaintiff's objection is: The ratios of capital, surplus and reserves are different for plaintiff, the Commonwealth Edison and Peoples Gas Company; the difference vitiates any conclusions to be drawn from a comparison between them; the comparisons have no value.

Defendants' answer is: The comparison shows the extent to which plaintiff's subscribers, as involuntary investors, have contributed through advance contributions for anticipated depreciation on contemplated future additions, to the capital of plaintiff for the benefit of its capital investors in contrast to the experience of ultilities, with whom Mr. Hoyt, plaintiff's expert on Rate of Return, claimed plaintiff's investment position was comparable, as shown in Plaintiff's Brief, page 313.

The comparison shows one of the reasons why plaintiff's prognosticated required minimum return on property value is contradicted by plaintiff's actual experience in comparison with high grade utilities, to-wit: the large percentage of capital provided by depreciation accumulations through the use by it of the straight line method of computing de- [fol. 2375] preciation expense charges as shown in Defendants' Brief, page 983, et seq.

Ex. X-254 and X-255

Plaintiff's objection is: These exhibits "are objected to for the same reasons as X-252 and X-253."

Defendants' answer is: These exhibits show that even if plaintiff were to deduct the entire depreciation reserve from the book cost of its property, the rate base would cover plaintiff's credit obligations, capital and surplus, thereby proving defendants' contention in respect to the relation of the depreciation reserve to the original undepreciated book cost of property and the true ground for deducting such amount from the rate base value, whether measured by original cost or reproduction cost new of the property, as shown in Defendants' Brief, page 954 et seq.

Ex. X-256

Plaintiff's objection is: The exhibit is worthless because it fails to take into account the values of the properties of the various enterprises, the difference in capital structures and in proportion of capital and credit obligations, and because the exhibit weights interest and dividends and not earnings.

Defendants' answer is: The exhibit shows that plaintiff whose credit securities were on as favorable an investment basis as those of the Commonwealth Edison and Peoples Gas Company did not get the benefit thereof as reflected in the cost of equity capital during the period when cost of money became cheaper. The American Company, as the [fol. 2376] sole investor in the equity capital of plaintiff, did not permit it to get the advantages which the two other companies received in attracting equity capital from the public and which the American Company itself received in its relations to its investors, as shown in Defendants' Brief, pages 343-344.

Ex. X-261 and X-262

Plaintiff's objection is similar to that in respect to X-256.

Defendants' answer is: These exhibits, showing the investment experience of the individual companies, summaries of which appear in previous exhibits, enable this Court to see the absurdity of plaintiff's prognostication of a required minimum return by comparison with the experience of other utilities with whom plaintiff and the Bell System compete for capital, as shown in Defendant's Brief, page 986, et seq. The absence of such facts in the previous record enabled plaintiff to impose upon this Court in 1929, in its presentation on Rate of Return based on prognostication (O. R. II, 869; O. R. IV, 1276). Defendants consider these exhibits a valuable contribution to destroy forever the possibility of making presentations such as plaintiff has made herein and which would lead to returns of 14% to 25% on its capital and surplus as minimum returns to avoid confiscation as shown in Defendants' Brief, page 1034.

Ex. X-285

Plaintiff's objection is: This exhibit can have no bearing on the issue of rate of return, and can have no bearing as a basis for comparison in respect to license contract.

[fol. 2377] Defendants' answer is: This exhibit is material as showing the discrimination in the actual experience of the American Company's relationship to plaintiff, in contrast to the American Company's relationship to other licensees, as shown in Defendant's Brief, pages 428-429.

This exhibit is also material in contrasting the actual experience of the American Company with plaintiff's prognosticated minimum return required to attract capital, as shown in Defendant's Brief, page 996.

Ex. X-286

Plaintiff's objection is: This exhibit shows a percentage of total earnings related to stock, which is not an issue in this case.

Defendants' answer is: The facts contained in this exhibit are material in showing the unreasonable earnings which the American Company would receive from its investment in telephone instruments under the claim of fair return made by it in Mr. Heiss' exhibits, as shown in Defendants' Brief, page 81; also as showing the unreasonable return which the American Company would receive from a rental equal to the amount of $709,000 shown by plaintiff as the required amount to maintain its own instruments in 1923, as shown in Defendants' Brief, page 84.

This exhibit is material as showing the unreasonable return which the American Company was making on its investment in the Long Lines Division of its business, in comparison with its return on investment in its entire operations during the period under investigation, and as bearing upon the improper allocation made by plaintiff of the De- [fol. 2378] velopment and Research Department cost, as shown in Defendants' Brief, pages 274-82.

This Exhibit is material as showing the picture of the American Company's entire operations and the separate operations, as bearing upon the contradiction between the American Company's actual experience and plaintiff's contention of a prognosticated minimum return to attract capital, as shown in Defendants' Brief, page 1010, et seq.

Ex. X-287.

Plaintiff's objection is: Per cent return on funds does not show the return on assets, and even if it did, it would not be material in determining rate of return.

Defendants' answer is: This exhibit furnishes the data by which comparison may be made of the relative profitableness to the American Company from particular transactions in comparison to that of its entire operations, as shown in Defendants' Brief, pages 81, 84, 247 and 1076. X-287 is used as a basis for X-298, which is used in Defendants' Brief, pages 81, 84, 247 and 1076.

Ex. X-290

Plaintiff's objection is: The return per dollar of investment on capital and surplus, after deducting interest, is immaterial; in any event the value of the property should be taken into account.

Defendants' answer is: Because of the special facts in the record, on the basis on which Mr. Heiss made use of the cost of funds, the American Company has made possible one basis of comparison as to the relative profitableness [fol. 2379] of particular operations—a comparison on the basis of a return per dollar of investment on capital stock, as shown in Defendants' Brief, pages 55-58, 86-90, 247.

Ex. X-291

Plaintiff's objection is: The rate of return upon so-called holding company activities is immaterial and that the return should be expressed on the entire investment instead of capital stock.

Defendants' answer is: For the same reasons as stated above under X-287, the comparison made on the basis of return on the equity investment of the stockholders of the American Company is proper. X-291 is the basis for X-298, which is used in Defendants' Brief, pages 81, 84, 247 and 1076.

Ex. X-292

Plaintiff's objection is the same as to X-287.

Defendants' answer is the same as that given in connection with X-287. Mr. Heiss' exhibits, which include cost of funds as part of the costs, necessarily relate the earnings from the license contract operations to investment.

Ex. X-293, X-294 and X-295

Plaintiff's objection is: The comparisons are based upon the book investment of the American Company and not on the capital and surplus of the Western Electric.

Defendants' answer is: X-295 (P. 19) is based upon the capital and surplus of the Western Electric, such exhibit being entitled "Earnings available for common stock re-[fol. 2380] lated to capital and surplus based on averages per share."

X-293 and X-294 did not take into account the surplus of the Western Electric because these exhibits are the basis for X-298 which shows the return on the holding company operations of the American Company. Defendants' treatment of American Company's investment in Western Electric is identical to that used by plaintiff in Exhibit A-260, which treatment was justified by plaintiff simply "because it seems to be a custom of the company (American Company) to treat that as an investment and not as a telephone operating property" (N. R. IV, 1365-6).

[fol. 2381] Defendants related the Western Electric's earnings to the capital and surplus of the Western Electric when they considered the American Company's relationship to that company in respect to the promotion arrangement for the sale of apparatus to the Bell System as shown in Defendant's Brief, pages 126 and 284.

Ex. X-296, X-297 and X-298

Plaintiff's objection is: The value of the property is the only basis upon which a comparison can be made.

Defendants' answer is: The special circumstances in the record, based upon the method used by Mr. Heiss in figuring cost of funds used in the business, established a standard of comparison on the basis used in these three exhibits, as shown in Defendants' Brief on pages 81, 84, 247 and 1076.

Plaintiff's objection is: The allocations in X-298 are based upon the same infirmities as pointed out in plaintiff's objection to X-145. Plaintiff's objection is answered by defendants in their answer under X-145.

Ex. X-299 and X-300

Plaintiff's objection is: These exhibits are based upon book figures instead of value.

Defendants' answer is: (1) plaintiff itself used book figures as a basis of comparison in its Exhibit A-268, entitled "Illinois Bell Telephone Co.—Comparison of rates of return for Chicago Area with all associated operating companies, including Long Lines"; (2) the special circumstances in the record require that the value of the property shall not be in excess of the book value, as shown in Defendants' Brief, pages 71-75; and (3) on the basis of plain-[fol. 2382] tiff's presentation of the Western Electric Profits and Prices the properties shown in the fixed plant accounts of each of the licensees, as appears on the books, would bear the same ratio to the reproduction cost new of such properties as do those of every other licensee. The book value, therefore, forms a proper basis of comparison under the standard of the Bluefield Case, taking into account the unique features of Bell System operations as shown in Defendants' Brief, pages 984, 986, 998 and 1035.

Ex. X-301

Plaintiff's objection is: The return earned by the Long Lines is irrelevant, particularly when it is based on book figures less depreciation reserve rather than on fair value.

Defendants' answer is: Plaintiff itself used book figures in A-268 and included the rate of return earned by the Long Lines. Moreover the return by the Long Lines is relevant in connection with the issues of Development and Research and in connection with Separation and Revenue, as shown in Defendants' Brief, pages 244 and 245.

Ex. X-302

Plaintiff's objection is: (1) the comparison of return on the basis of all licensees and of plaintiff is of no value; (2) the comparison is on the basis of book figures and not fair value; and (3) the accrued depreciation is deducted in the amount shown in the reserve.

Defendants' answer is; Plaintiff's Exhibit A-260 made the comparison on the basis of book value and made com-[fol. 2383] parison between plaintiff and all licensees, including Long Lines. Defendants' position is that the special circumstances in the record require that the entire amount of depreciation reserve should be deducted in any comparison, as shown in Defendants' Brief, pages 246 and 75-78.

Ex. X-303 and X-304

Plaintiff's objection is the same as the objection made in connection with X-302.

Defendants' answer is the same as in connection with X-302. The purport of plaintiff's objection is that the comparison of the results of X-302 with the percentage of return, as shown in the MR and CR Reports, is meaningless. Before the hearings plaintiff refused to make available the data in its possession from which the defendants could compute the per cent return on fixed capital of the associated companies. Because of such refusal defendants were compelled to make such computations from the reports of the Interstate Commerce Commission. When plaintiff finally made available the data in its possession covering the same subject matter, defendants, to check the accuracy of their computations taken from the Interstate Commerce reports, as shown in X-302, made the comparison with the data contained in the MR and CR Reports to show that defendants' results in X-302 were accurate.

Ex. X-308

Plaintiff's objection is: That it is irrelevant, incompetent and immaterial.

Defendants' answer is: Plaintiff, by the use of the Interstate Commerce Commission Reports, sought to show that [fol. 2384] defendants could have derived therefrom more accurate results than from the quarterly balances furnished by plaintiff to defendants in respect to loans (N. R. VI, 1777-9). Examination of the Reports shows that they have no relation to the facts in respect to which plaintiff produced them (N. R. VI, 1804-12) as shown in Defendants' Brief, page 367.

Ex. X-328-340

Plaintiff's objection is: The witness who presented these exhibits used an expression "I do not know what they mean."

Defendants' answer is: The witness testified "it is a fact that in all of these exhibits that I have put in today, I have made them up especially as directed by counsel" (N. R. VI, 2042). The witness is an accountant who is responsible for the mathematical correctness of the figures therein stated. The exhibits on their face show what they intend to represent. Counsel and not the witness are responsible for the purpose of the exhibits, and the meaning they import into the cause. Their very important meaning in the cause is shown in Defendants' Brief, pages 1032, 1033, 1034, 1050, 1088, 1089.

Ex. X-328

Plaintiff's objection is: The exhibit used as a base book cost less reserve for depreciation, excluding cash working capital.

Defendants' answer is: Plaintiff's Exhibit A-260 used book cost. Defendants' position is that the entire amount of depreciation reserve should be deducted and cash working capital is excluded from each one, and, therefore, could not affect the comparative result. It is significant that [fol. 2385] Plaintiff's Exhibit A-260 does not include cash working capital. X-328 is used as a basis for X-330, which is used in Defendants' Brief, pages 1050, 1088 and 1089.

Ex. X-329–X-332 and X-334

Plaintiff's objection is: These exhibits are subject to the same infirmities as X-328.

Defendants' answer is: The same as that given for X-328.

Plaintiff's objection is: For the year 1928 the adjustment is for three months instead of on an annual basis.

Defendants' answer is: The purpose of the exhibit is to show the actual experience subject to adjustments, and the actual experience for the first nine months would in any event be on the basis of existing rates.

Ex. X-329

Plaintiff's objection is: X-329 assumes the corectness of the Straight Line method of depreciation accounting for the associated companies but rejected it for the Illinois Bell.

Defendants' answer is: They do not reject the Straight Line method of accounting depreciation.

Ex. X-333

Plaintiff's objection is the same as its objection to X-328 and X-332.

Defendants' answer in respect to those exhibits applies equally to this exhibit.

[fol. 2386] Ex. X-334

Plaintiff's objection is the same as its objection to X-328, and is subject to the same answer. See Defendants' Brief, pages 1050, 1088 and 1089.

Ex. X-335

Plaintiff's objection is: Cost of funds is no indication of what it would cost plaintiff to obtain money in the open market.

Defendants' answer is: Plaintiff's objection proves Defendants' position against plaintiff's making use of the American Company's cost of funds as the basis for its rate of return, as shown in Defendants' Brief, on pages 1016-1041. Defendants did not commit plaintiff's error of using cost of funds as a basis for rate of return. It is merely used as a short cut in computations to determine the percentages from varying rates of return in Exhibits X-336 and X-337.

Ex. X-336 and X-337

Plaintiff's objection is: Theoretically the rate of return would decrease as the ratio of capital investment to value of property decreased.

Defendants' answer is: Whatever may be possible theoretically the fact is that we have in the record actual experience showing the ratio of capitalization to property value, and it is on the basis of known facts that the comparison is made. In this connection it is significant that the American Company in its reports, and plaintiff in its reports to the American Company, make use of the same basis for showing of return as that used by defendants in [fol. 2387] X-336 and X-337, as appears from Defendants' Brief, pages 87, 88, 1032, 1033 and 1034.

Ex. X-338

Plaintiff's objection is: The exhibit is based on book cost of plant less depreciation reserve instead of fair value.

Defendants' answer is: Plaintiff used book cost in A-260 as a basis of comparison.

Defendants' position is that only book cost less depreciation reserve can be used under the special circumstances in the record, as shown in Defendants' Brief, page 859.

Ex. X-339

Plaintiff's objection is the same as its objection to X-338, plus the fact that the depreciation reserve is raised to the level of the reproduction cost.

Defendants' answer is the same as that given in connection with X-338, plus the fact that where the book cost is raised to reproduction cost, the depreciation reserve should be raised to correspond, as shown in Defendants' Brief, pages 958-9.

Ex. X-340

Plaintiff's objection is: That the Rate of Return includes adjustments which in plaintiff's opinion are wrong.

Defendants' answer is: That this exhibit gives effect to the adjustments which on defendants' theory of the case should be made.

[fol. 2388]

Ex. X-346

Plaintiff's objection is: The Public Utilities Commission's Order of November 29, 1919, has no probative value.

Defendants' answer is: It is a link in the history which contradicts plaintiff's version of the intent to have the Chicago Exchange rates cover the interstate and intrastate uses of its Chicago Exchange plant facilities, as shown in Defendants' Brief, page 704.

Ex. X-355

Plaintiff's objection is: The provisional estimates are estimates and prophecies by officers of companies not parties to the litigation, and unless they are called the evidence is inadmissible.

Defendants' answer is: Plaintiff's presentation on Cost of Holding Funds, under License Contract Services and Payments, divided such cost between plaintiff and the other licensees on the basis that their provisional estimate requirements were all pooled and met by the American Company. X-355, relating to the other licensees, and X-354, relating to plaintiff, show that the American Company's experience in meeting the requirements of the other licensees is of an entirely different character than its experience in respect to plaintiff, which showing vitiates plaintiff's allocation of any part of the cost to plaintiff, as shown in Defendants' Brief, pages 425-429.

Plaintiff's presentation on Depreciation Expense attaches probative value to the depreciation rates of the other licensees in relation to plaintiff's rates. Exhibit X-355 reveals the lack of comparability, as shown in Defendants' Brief, pages 626 to 630.

[fol. 2389] Ex. X-373

Plaintiff's objection is: The Outside Engineering Manual contradicts nothing that is claimed by plaintiff.

Defendants' answer is: This Manual shows that the basis on which plaintiff computes advance contributions for anticipated depreciation on contemplated future additions in its depreciation expense computations before this Court is contrary to the basis which it uses in making its investments therein, as shown in Defendants' Brief, page 557. This Manual shows that plaintiff's depreciation expense witness had access to, and did not use, the facts of the earning power of the advance contributions in his presentation before this Court, as shown in Defendants' Brief, pages 552-3. This Manual shows the importance which the Bell System places in the "estimates and prophecies" contained in the provisional estimates and to that extent contradicts the position of plaintiff in respect to them before this Court, as shown in its objection to X-357 and in its refusal to make them available to plaintiff until too late for practical use, as shown in Defendants' Brief, page 137.

Ex. X-396

Plaintiff's objection is: The two special license contracts of 1880, which alone contain provisions similar to Section 10 of plaintiff's Original License Contract of 1881, were not in force during the period 1923 to 1931, are too remote and have no probative value.

Defendants' answer is: They are links in the history of rate-making in the Bell System, which proves conclusively that plaintiff's presentation on which it justified its separation of revenues was based on an imaginary and not on an actual history, as shown in Defendants' Brief, page 659, et seq.

[fol. 2390] Ex. X-401

Plaintiff's objection is: The papers relating to the Central Union purchase were offered and excluded at the previous trial and have no probative value.

Defendants' answer is: The Supreme Court found plaintiff was part of an organization "to which the benefits of its operations accrue."

Plaintiff's objection proves its disregard of its own right to claim proper credit for "the benefits of its operations," in so far as they relate to the use of plaintiff's credit to finance the Central Union properties in order to liquidate for the American Company its frozen investment in the Central Union and to relieve the American Company from the necessity of financing the Central Union after 1923, which financing for many years prior to 1923 the American Company was required to do, as shown in Defendants' Brief, pages 409-415.

Ex. X-402

Plaintiff's objection is: The correspondence pads the record.

Defendants' answer is: They characterize plaintiff's conduct in hampering defendants' getting information and show the effort of defendants to get the facts, which have not been made available, as shown in Defendants' Brief, pages 137-138.

Ex. X-403

Plaintiff's objection is: Too remote.

Defendant's answer is: These reports contain the data showing the actual experience of the American Company and of plaintiff, which data was in the possession of the [fol. 2391] American Company but which plaintiff refused to make available to defendants or which they made available to the defendants at a time when it was impossible for defendants to make use of same.

Ex. X-420

Plaintiff's objection is: "Ex. X-420 consists of 293 pages of various minutes of the Executive Committee of the American Company and of agreements executed pursuant thereto. No part or portion of any of these papers has been pointed out by defendants as bearing upon any issue in this case but they have merely been offered en masse. Such procedure is objected to and the receipt of the papers in evidence is objected to on the ground that they are irrelevant, immaterial and incompetent and if admitted would unreasonably pad the record."

Defendants' answer is: Plaintiff's objection really is that the material is too revealing to remain in the record, as appears from the following vital evidence shown in Defendants' Brief:

(1) The authorization to sell telephone instruments on a basis different than that testified to by Mr. Heiss as shown in Defendants' Brief, pages 23-24;

(2) Character of "advances" authorized for the Bell System as a whole and for plaintiff, as shown in Defendants' Brief, pages 97, 98, 100, 101, 102, 103, 105, 106, 107, 108, 114 and 120;

(3) Agreement with the DeForest Radio Company covering the use of the American Company's patents which plaintiff failed to take into account in Development and Research allocations, as shown in Defendants' Brief, page 170;

[fol. 2392] (4) Arrangement with International Western Electric in respect to the use of the American Company's patents which plaintiff failed to take into account in Development and Research allocations and which Plaintiff's Brief failed to mention, as shown in Defendants' Brief, page 192;

(5) Grant by the American Company to the International Standard Electric Co., of a license to the foreign rights of the inventions of the American Company, to which the plaintiff failed to give effect in its Development and Research allocations and which Plaintiff's Brief failed to mention as shown in Defendants' Brief, page 196;

(6) Grant by the American Company in 1925 and in 1927 to the Automatic Electric of the use of the American Company's inventions which plaintiff failed to take into account and which Plaintiff's Brief failed to mention, as shown in Defendants' Brief, pages 199, 200 and 201;

(7) The real facts surrounding the sale of the Graybar stock in 1928, as shown in Defendants' Brief, pages 205, 206 and 207;

(8) The facts showing the conclusion reached by the American Company prior to 1923 in respect to the potential field for the development of radio which is contrary to plaintiff's basis of allocating the radio expenses incurred by the American Company, as shown in Defendants' Brief, pages 224, 225, 229, 230, 232, 233 and 234;

(9) The facts regarding the use of the American Company's inventions in teletype service which plaintiff failed to take into account in its Development and Research allocations, as shown in Defendants' Brief, pages 256-7;

(10) The facts regarding the use of the reserve for contingencies subsequent to 1923 for purposes other than [fol. 2393] patent infringement liability in contradiction of Mr. Heiss' testimony in respect thereto, as shown in Defendants' Brief, pages 290, 295;

(11) The facts regarding relationship between the American Company and Kellogg Switchboard & Supply Co. and Stromberg-Carlson Mfg. Co. in respect to the use of the American Company's inventions, as shown in Defendants' Brief, page 300;

(12) The facts in respect to the rebate by the American Company of more than the entire amount of the license payments made by the Indiana Bell during the entire period under investigation through cancellation of interest and principal indebtedness due from that licensee to the American Company, as shown in Defendants' Brief, page 413.

The effort of plaintiff to keep out these minutes and the discussion in respect thereto appear in Defendants' Brief, page 201.

Ex. X-424

Plaintiff's objection is: The 100-mile contract is too remote and has no probative value.

Defendants' answer is: It is one link in the plaintiff's history of rate-making, which disproves plaintiff's presentation of an imaginary history to justify its separation of exchange revenues, as shown in Defendants' Brief, pages 659, et seq.

Ex. X-435

Plaintiff's objection is the same as X-403.

Defendants' answer is the same as the answer to X-403.

[fol. 2394]

Part II

DEFENDANTS' ANSWERS TO PLAINTIFF'S OBJECTIONS TO DEPOSITION EXHIBITS—Filed December 10, 1932

Ex. 1

Plaintiff's objection: Too remote.

Defendant's answer: This article presents the picture of Bell System operations during the period under investigation, which is contrary to the picture which plaintiff presented through Mr. Heiss in allocating license contract costs, as shown in Defendants' Brief, page 221, et seq.

Ex. 2

Plaintiff's objection: The facts in respect to the scope of the work of the Research Laboratories of more than 1500 manufactures is too remote.

Defendants' answer: These facts prove that the American Company, by the 1919 Revision of the License Contract, took over part of the functions of the Western Electric which other manufacturers retain as part of their operations. The significance of charging manufacturing costs as part of the License Contract is discussed in Defendants' Brief, page 274, et seq.

Ex. 7

Plaintiff's objection: The page showing distribution of Treasury Department expenses by "one VanCise" was not vouched for and is "without foundation."

Defendants' answer: The "one VanCise" was the Assistant Treasurer who prepared this for the Treasurer, who testified in respect thereto and produced the paper, pur- [fol. 2395] suant to Mr. Heiss' direction. The paper shows how Mr. Heiss shifted into the License Contract services cost the costs which the Treasury Department stated to him were non-license contract costs, as shown in Defendant-' Brief, page 328, et seq.

Ex. 8

Plaintiff's objection: These exhibits deal with the Treasury Department's work and are too remote.

Defendants' answer: They show the extent of the assistance given by plaintiff and the other licensees to the American Company in the sale of its stock. Plaintiff failed to claim credit therefor. Defendants claimed credit on its behalf as shown in Defendants' Brief, page 416, et seq. They also show the extent of the Holding Company operations of the American Company, the costs of which Mr. Heiss included as part of the License Contract costs, as shown in Defendants' Brief, page 339, et seq.

Ex. 13

Plaintiff's objection: Too remote.

Defendants' answer: This gives the picture of the radio broadcasting operations of the Long Lines which plaintiff failed to take into account in its Development and Research allocations, as shown in Defendants' Brief, pages 236, 239.

Ex. 14

Plaintiff's objection: Too remote.

Defendants' answer: This shows the magnitude of the telegraphic service which plaintiff failed to take into account [fol. 2396] in connection with its Development and Research allocations, as shown in Defendants' Brief, pages 254-259.

Ex. 15

Plaintiff's objection: Too remote.

Defendants' answer: Same answer as given in connection with Ex. 14.

Ex. 16

Plaintiff's objection: Too remote.

Defendants' answer: Same answer as given in connection with Ex. 14.

Ex. 17

Plaintiff's objection: Too remote.

Defendants' answer: This shows the manner in which the Long Lines Department accounts for the gross revenues, particularly in respect to its special contract services which plaintiff failed to take into account in its Development and Research allocations, as shown in Defendants' Brief, page 213, et seq.

Ex. 18

Plaintiff's objection: Too remote.

Defendants' answer: This shows that the Development and Research work covering "Carrier Systems," most of which was charged to plaintiff and the other licensees, has no application to the kind of territory in which plaintiff is operating in Chicago, and shows the importance of the work to the Long Lines, contrary to plaintiff's allocations, as [fol. 2397] shown in Defendants' Brief page 262.

Ex. 21, 22, 23, 37, 38 and 39

Plaintiff's objection: Too remote.

Defendants' answer: These articles give the facts of the regular operations of the American Company in respect to the manner in which it makes its investments, the manner in which the Western Electric manufactures are planned and the manner in which the operations are carried on, which are contrary to the representations which plaintiff made in respect to the same subject matters, as shown in Defendants' Brief, page 148, et seq.

Ex. 19

Plaintiff's objection: Too remote.

Defendants' answer: This states the facts of the regular operations of the American Company, which indicates the importance of the Development and Research work during the period under investigation to the Long Lines, as shown in Defendants' Brief, pages 213, et seq. 274.

Ex. 20, 25, 27, 29, 35, 36 and 188

Plaintiff's objection: Too remote.

Defendants' answer: These articles show the operations of the American Company in the Bell System as an integral organization, contrary to the basis upon which plaintiff has treated it, as discussed in Defendants' Brief, pages 433-436.

[fol. 2398] Ex. 24

Plaintiff's objection: Too remote.

Defendants' answer: This shows the magnitude of operations of the Long Lines for which plaintiff failed to give proper credit, as discussed in Defendants' Brief, page 213, et seq.

Ex. 28

Plaintiff's objection: Too remote.

Defendants' answer: This shows the basis upon which the American Company's capital is attracted to the licensees in the regular course of business and is contrary to plaintiff's prognostications as to what would be required, as shown in Defendants' Brief, page 1010, et seq.

Ex. 30

Plaintiff's objection: Too remote.

Defendants' answer: This shows the extent of the operations of the Western Electric resulting from the benefits of the Development and Research work of the American Company for which plaintiff has failed to give proper credit, as discussed in Defendants' Brief, pages 170, et seq. 242.

Ex. 31

Plaintiff's objection: Too remote.

Defendants' answer: This shows what the American Company, in the regular course of its business, considered the potential field for radio development and is contrary to [fol. 2399] plaintiff's allocations, as discussed in Defendants' Brief, page 222, et seq.

Ex. 33

Plaintiff's objection: Too remote.

Defendants' answer: This shows the relationship of the Electrical Research Products, Inc., to the Bell Telephone Laboratories, which received the benefit of the American Company's Development and Research work.

Ex. 34

Plaintiff's objection: Too remote.

Defendants' answer: Same as answer in connection with Exhibit 28. This article contradicts Mr. Heiss' testimony as shown in Defendants' Brief, page 378.

Ex. 40-48, 50, 50A and 50B

Plaintiff's objection: Too remote.

Defendants' answer: These are all relevant as giving the facts of the operations of the American Company contrary to plaintiff's representations as to the nature of its activities during the period under investigation. They merely continue City's Exhibit 90 and the Annual Reports were quoted by the Supreme Court in its Opinion.

Ex. 79, 80-103 and 122-133½

Plaintiff's objection: Too remote.

Defendants' answer: These forms are important as showing the financial data upon which the American Company bases its capital investments—the information which the [fol. 2400] American Company had in its possession and which plaintiff sought to obtain, but which was refused to defendants either entirely or until such late date that it was impossible to make use of same—as discussed in Defendants' Brief, pages 137-138.

Ex. 110-119.

Plaintiff's objection: Too remote.

Defendants' answer: These show the picture of the American Company's operations as well as that of plaintiff, upon which the capital is attracted, and shows the facts contrary to the testimony of Mr. Heiss, as shown in Defendants' Brief, pages 291-295.

Ex. 120-121

Plaintiff's objection: Too remote.

Defendants' answer: These show the stability of the American Company's outstanding securities under Rate of Return, which is much below the prognosticated minimum return which plaintiff claims is necessary to attract capital, as discussed in Defendants' Brief, page 1010, et seq.

Ex. 146-181

Plaintiff's objection: Too remote.

Defendants' answer: These contain the data in the regular course of business of the Long Lines, which indicate the extent of its operations, which plaintiff failed to give effect to in its Development and Research allocations, as discussed in Defendants' Brief, page 213, et seq.

[fol. 2401] Ex. 191

Plaintiff's objection: Too remote.

Defendants' answer: The statement of facts contained therein contradicts plaintiff's basis of allocation in connection with its Development and Research work, as shown in Defendants' Brief, page 222, et seq.

Ex. 192

Plaintiff's objection: Too remote.

Defendants' answer: These documents show that the American Company, in the regular course of its business, did not consider the license contract to cover the services which plaintiff claimed were covered by it, as shown in Defendants' Brief, pages 148-160, 170-190.

[fol. 2402] Part III

Defendants' Answers to Plaintiff's Objections to Exhibits Offered by Defendants in the Hearings Before Judge Wilkerson, Made in the Record

Ex. 99, X-294 and X-295 (N. R. VI, 2020)

Plaintiff's objection is: They include $45,000,000 dividends earned by Western Electric from 1882 to 1927.

Defendants' answer is: The $45,000,000 dividends do not represent the non-Bell profits but represent profits in which the Associated Companies are entitled to participate, as shown in Defendants' Brief, pages 193 and 197.

Ex. X-84, X-85, X-87 and X-88 (N. R. VI, 1920, 2020)

Plaintiff's objection is: They eliminate $12,000,000 good will of Teletype Corporation for which Western Electric paid cash; also they include the entire profit of the International Western Electric.

Defendants' answer is: Western Electric did not pay $12,000,000 cash for the good will of Teletype. Western Electric did not purchase any stock from the Teletype Corporation. Western Electric bought from the American

Company for $30,000,000 stock for which the American Company paid $15,000,000 of its own stock. The American Company w[illegible] improperly cashing in on the future profits of Telety[illegible]tent of $15,000,000, as shown in Defendants' [illegible] 259. The entire profit of the International W[illegible]ric was properly included, as shown in Defend[illegible]ages 196 and 197.

[fol. 2403] Ex. [illegible] X-55, X-57, X-58, X-60, X-61, X-63 and X-64 (N. R. VI, 2021)

Plaintiff's objection is: They eliminate too much excess cash and do not give effect to sufficient interest.

Defendants' answer is: The deduction of excess cash and interest was proper, as shown in Defendants' Brief, pages 748, 749 and 768.

Ex. X-50, X-53 to X-58 (N. R. VI, 2021)

Plaintiff's objection is: These exhibits contain an erroneous apportionment of Western Electric Pension Fund.

Defendants' answer is: The apportionment was properly made, as shown in Defendants' Brief, pages 754-5.

Ex. X-317, X-317A, X-318 and X-319 (N. R. VI, 2021-2)

Plaintiff's objection is: They are not probative, are based on unit sales and on provisional estimates and do not show profits.

Defendants' answer is: In so far as the objection other than that they are based on provisional estimates is concerned, defendants' answer to X-313, X-313A and X-314 applies; in so far as they are based upon provisional estimates, they form the basis upon which the Western Electric engineers its production and the basis which enters into its standard cost, is shown in Defendants' Brief, page 826.

Ex. X-67, X-69, X-72, X-81 and X-82 (N. R. VI, 2022)

Plaintiff's objection is: They are based upon stock. As to X-67, it includes profit on the sale of International Western [fol. 2404] Electric; and as to X-69, it includes dividends from the Western Electric Company of London.

Defendants' answer is: The showings in these exhibits are proper as they conform to the practice of the Bell System and are based upon known facts, as shown in Defendants' Brief, pages 86, 87 and 88.

Ex. X-313, X-313A and X-314 (N. R. VI, 2023)

Plaintiff's objection is: They deal with items only and not with dollar purchases and give no information on profits of sale.

Defendants' answer is: The purpose for which these exhibits are used is to determine a representative distribution of variations of labor, material and overhead between actual and standard cost of production. The bases upon which these exhibits are computed are proper, as shown in Defendants' Brief, pages 825, et seq.

Ex. X-347, X-429, X-430 and X-431 (N. R. VI, 2054, 2055, 2058)

Plaintiff's objection is: No probative value.

Defendants' answer is: These are links in the plaintiff's history of rate-making, which disprove plaintiff's presentation of an imaginary history to justify its separation of exchange revenues, as shown in Defendants' Brief, pages 659, et seq.

Ex. X-425 (N. R. VI, 2059)

Plaintiff's objection is: Irrelevant.

Defendants' answer is: This exhibit characterizes the sheets which plaintiff offered from other jurisdictions as bearing upon interstate separation and shows that they can [fol. 2405] have no bearing upon the issues involved, as shown in Defendants' Brief, pages 657-8.

Ex. D-92 (N. R. VI, 2059)

Plaintiff's objection is: Irrelevant.

Defendants' answer is: Plaintiff's President's description of the relation of the American Company and of plaintiff to its investors is contrary to the basis upon which plaintiff made its presentation of Rate of Return and the basis upon which it treated its license contract allocations, as shown in Defendants' Brief, pages 89, 974 and 975.

Ex. X-436 (N. R. VI, 1426)

Plaintiff's objection is: This is a petition before the Commerce Commission.

Defendants' answer is: This exhibit is a summary sheet of Mr. Turner's restudy of Depreciation, and, of course, is relevant, as it discloses the basis upon which it was made.

[fols. 2406 & 2407] IN UNITED STATES DISTRICT COURT

[Title omitted]

PLAINTIFF'S AMENDED REQUESTS FOR FINDINGS*

Plaintiff requests the court to make the following finding of facts:

Property Valuation and Separation

1. All of the property in plaintiff's Chicago area, the reproduction cost, book cost, and the fair value of which are found hereunder for the several years involved in this suit, [fol. 2408] was property exclusively used and useful in rendering its telephone service to the public in Chicago (N. R. I, 187).

All of the revenues and expenses of plaintiff, the amounts of which are found hereunder for the several years involved in this suit, were revenues and expenses arising exclusively from the telephone service rendered by plaintiff to the public in Chicago.

2. The reproduction cost new as of December 31 for each of the years 1923 to 1931 of plaintiff's property in service in the said Chicago area (exclusive of working cash capital, materials and supplies, construction work in progress and going value) was as follows (Exhibits A2 to A10, 12, 14 and 41):

1923	$148,581,042
1924	156,452,212
1925	172,257,055

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* Requests 25 and 51 are amended. Otherwise there is no change from plaintiff's original requests.

1926	178,413,771
1927	191,820,622
1928	202,604,906
1929	219,327,112
1930	228,411,330
1931	226,912,713

There is included in the reproduction costs above set out for each of the years, the market value of plaintiff's real estate (land) as of December 31, which was as follows (Exhibits A18, A2 to A10):

1923	$2,017,821
1924	2,210,466
1925	2,501,741
1926	2,581,066
1927	3,256,350
1928	3,241,475
1929	3,497,427
1930	3,497,427
1931	3,124,530

[fol. 2409] 3. The actual existing depreciation from all causes in plaintiff's said property was determined by a thorough and careful inspection of the property made by qualified witnesses.

The weighted total or overall condition of the said property was 91 per cent (or 9 per cent depreciation from condition new) for each of the years 1923-1928 inclusive, and 92 per cent (or 8 per cent depreciation from condition new) for the subsequent years.

The depreciation from all causes in the said property on the basis of its reproduction cost as set out in Finding 2 hereof was, as of December 31 for each of the years 1923 to 1931, as follows (Exhibit A22; N. R. I, 73):

1923	$12,553,160
1924	13,043,0[illegible]9
1925	14,177,776
1926	14,686,228
1927	15,697,178
1928	16,487,821
1929	17,001,087
1930	17,703,975
1931	17,607,716

4. The book cost of the plaintiff's said Chicago area property (exclusive of working cash capital, materials and supplies, construction work in progress, and going value) as of December 31 for each of the years 1923 to 1931 was as follows (Exhibit A54, line 12):

1923	$100,040,051
1924	110,987,626
1925	126,493,467
1926	140,915,840
1927	155,508,437
1928	169,390,828
1929	182,657,561
1930	191,286,165
1931	195,422,113

[fol. 2410] 5. Plaintiff reasonably and necessarily employed, in rendering telephone service to the public in the Chicago area in each of the years 1923 to 1931, the following average amounts of working cash capital (Exhibit A54; N. R. I, 251):

1923	$3,000,000
1924	3,150,000
1925	3,325,000
1926	3,550,000
1927	3,825,000
1928	4,050,000
1929	4,500,000
1930	4,550,000
1931	4,250,000

6. The average investment of plaintiff in its Chicago area in materials and supplies necessary in the conduct of its telephone business in each of the following years was (Exhibit A54; N. R. I, 229):

1923	$233,022
1924	299,310
1925	358,227
1926	336,693
1927	326,599
1928	344,336
1929	276,091
1930	209,784
1931	224,433

7. Plaintiff had invested in each of the years 1923 to 1931 substantial sums of money in telephone property in process of construction. This property is similar to plaintiff's telephone property already in operation, but the investment therein is not included in plaintiff's regular plant accounts until construction is completed. The amount of such construction work in progress is not included in Find- [fol. 2411] ings 2 and 4 hereof, and was as of December 31 for each of the years as follows (Exhibit A54; N. R. 1, 228):

1923	$812,543
1924	2,100,245
1925	1,390,296
1926	775,279
1927	5,437,059
1928	3,275,756
1929	1,974,688
1930	4,415,765
1931	441,956

8. Plaintiff's said Chicago property is well planned, efficiently engineered and properly constructed. It has a capable staff of operating employees. It is well adapted to the needs of the City of Chicago and through years of operation has become fully efficient and serviceable to that community. Continuously from 1923 to the present time it has had established routines, attached customers and trained employees. The plant has been efficiently and economically operated and has had a high standard of maintenance. The Company's credit has been excellent and if given reasonable rates it has good earning power. The number of its telephone stations increased from 690,000 at the end of 1923 to over 980,000 at the end of 1930. Plaintiff has engineered and planned its property so that as additions are required to meet the future needs of the community they may be made efficiently and economically (N. R. I, 24; O. R. II, 709).

9. Plaintiff's said Chicago area property has had during this entire period and now has a value, commonly called the element of going value, over and above the bare structural value of its physical plant, the reproduction cost of which physical plant is set forth in Finding 2 hereof. Such [fol. 2412] going value as of December 31 in each of the years 1923 to 1931 was as follows (N. R. I, 24):

1923	$22,350,000
1924	23,500,000
1925	25,900,000
1926	26,850,000
1927	28,900,000
1928	30,500,000
1929	33,000,000
1930	34,400,000
1931	34,000,000

10. The fair value of all of plaintiff's said Chicago area property (including working cash capital, materials and supplies, construction work in progress, and going value), as an average amount during the year for each of the years 1923 to 1931 was as follows (See Note p. 60 Plaintiff's Original Brief):

1923	$155,116,606
1924	167,549,232
1925	180,872,724
1926	192,247,892
1927	205,058,262
1928	219,571,008
1929	233,372,868
1930	248,171,701
1931	251,109,470

11. The average fair value of all of plaintiff's said property (as described in the foregoing Finding 10) for the year 1932 is in excess of the sum of $250,000,000 (Exhibit A10 and Plaintiff's Original Brief, pp. 76-77).

[fol. 2413] 12. The average fair value of plaintiff's said property for each of the years 1923 to 1931, inclusive, separated as between its exchange (intrastate), intrastate toll, total intrastate, and interstate toll property is as follows (See Note p. 75, Plaintiff's Original Brief):

	Exchange (intrastate)	Intrastate toll	Total intrastate	Interstate toll
1923	$141,644,521	$6,572,754	$148,217,275	$6,899,331
1924	152,359,903	7,343,312	159,703,215	7,846,017
1925	163,119,146	8,295,249	171,414,395	9,458,329
1926	172,071,875	9,257,198	181,329,073	10,918,819
1927	182,014,796	10,680,529	192,695,325	12,362,937
1928	192,223,654	12,439,698	204,663,352	14,907,656
1929	200,317,547	14,677,685	214,995,232	18,377,636
1930	209,952,979	16,768,694	226,721,673	21,450,028
1931	210,787,245	17,218,596	228,005,841	23,103,629

In arriving at the fair values above set out, plaintiff's entire Chicago property has been separated on the basis of its actual use. Certain portions of said property were used exclusively for exchange or local intrastate purposes, certain portions exclusively for intrastate toll purposes, and certain portions exclusively for interstate toll purposes. Such portions of property required no apportionment and have been directly segregated in accordance with their respective uses. The remainder of the property not so directly segregated, including the subscribers' station apparatus and equipment, the subscribers' lines and the local central office equipment, has been apportioned to plaintiff's exchange (intrastate), intrastate toll and interstate toll business, respectively, in accordance with its actual proportionate use for each of such classes of business (N. R. I, 169 et seq.).

There appear in the table set out below percentages for exchange (intrastate), intrastate toll, total intrastate and [fol. 2414] interstate toll, which represent the percentage proportions of the average fair value of plaintiff's total Chicago property (Finding 10) used respectively for the said classes of business during the several years (N. R. I, 177):

	Exchange (intrastate)	Intrastate toll	Total intrastate	Interstate toll
1923	91.31%	4.24%	95.55%	4.45%
1924	90.94	4.38	95.32	4.68
1925	90.18	4.59	94.77	5.23
1926	89.51	4.81	94.32	5.68
1927	88.76	5.21	93.97	6.03
1928	87.55	5.66	93.21	6.79
1929	85.84	6.29	92.13	7.87
1930	84.60	6.76	91.36	8.64
1931	83.94	6.86	90.80	9.20

Revenues and Expenses

13. The plaintiff's revenues from its Chicago business for each of the years 1923 to 1931, likewise separated on the basis of use between its exchange (intrastate), intrastate tolls, total intrastate and interstate toll revenues, were as follows (Exhibits A55, A187, A192; See Original Brief, p. 79):

	Exchange (intrastate)	Intrastate toll	Total intrastate	Interstate toll
1923	$34,722,009	$2,424,172	$37,146,181	$1,831,641
1924	36,893,027	2,760,927	39,653,954	1,996,198
1925	39,325,191	3,235,260	42,560,451	2,337,343
1926	42,065,536	3,867,162	45,932,698	2,743,565
1927	44,784,758	4,378,822	49,163,580	3,148,991
1928	48,664,346	5,013,414	53,677,760	4,248,800
1929	52,696,315	5,583,287	58,279,602	7,634,313
1930	52,945,453	5,752,810	58,698,263	7,986,725
1931	51,129,424	5,366,875	56,496,299	7,535,843

[fol. 2415] 14. Plaintiff's reasonable and necessary expenses, including the expense of depreciation, likewise separated on the basis of use, as between its exchange (intrastate), intrastate toll, total intrastate and interstate expenses for its Chicago business for each of the years 1923 to 1931 were as follows (Exhibits A55, A187, A192):

	Exchange (intrastate)	Intrastate toll	Total intrastate	Interstate toll
1923	$30,877,663	$1,867,740	$32,745,403	$1,292,058
1924	32,824,096	2,112,617	34,936,713	1,436,330
1925	34,873,441	2,364,290	37,237,731	1,676,405
1926	37,386,539	2,744,850	40,131,389	1,927,004
1927	39,851,087	3,112,864	42,963,951	2,199,454
1928	42,851,344	3,557,068	46,408,412	3,180,379
1929	44,575,535	4,103,076	48,678,611	6,118,975
1930	45,545,288	4,397,707	49,942,995	6,218,132
1931	44,261,227	4,318,297	48,579,524	5,896,824

15. The net earnings (Finding 13, less Finding 14) from plaintiff's Chicago business available for a return, separated between plaintiff's exchange (intrastate), intrastate toll, total intrastate and interstate business, for each of the years 1923 to 1931 were as follows:

	Exchange (intrastate)	Intrastate toll	Total intrastate	Interstate toll
1923	$3,844,346	$556,432	$4,400,778	$539,583
1924	4,068,931	648,310	4,717,241	559,868
1925	4,451,750	870,970	5,322,720	660,938
1926	4,678,997	1,122,312	5,801,309	816,561
1927	4,933,671	1,265,958	6,199,629	949,537
1928	5,813,002	1,456,346	7,269,348	1,068,421
1929	8,120,780	1,480,211	9,600,991	1,515,338
1930	7,400,165	1,355,103	8,755,268	1,768,593
1931	6,868,197	1,048,578	7,916,775	1,639,019

16. If the rates in suit had been made effective, the plaintiff's said revenues and net earnings available for a return [fol. 2416] for each of the years 1923 to 1931 would have been reduced in the following amounts, divided between its intrastate and interstate business (Exhibit A55; N. R. I, 234; N. R. II, 338, 592):

	Exchange (intrastate)	Intrastate toll	Total intrastate	Interstate toll
1923	$1,512,859	$28,809	$1,541,668	$15,572
1924	1,519,815	31,180	1,550,995	15,825
1925	1,548,150	34,411	1,582,561	17,925
1926	1,611,533	39,037	1,650,570	17,684
1927	1,635,362	41,715	1,677,077	18,653
1928	1,668,214	45,087	1,713,301	20,809
1929	1,693,349	47,233	1,740,582	21,854
1930	1,599,053	46,825	1,645,878	20,496
1931	1,396,167	37,577	1,433,744	17,120

17. The total net intrastate earnings from its said Chicago business available to plaintiff for a return if the rates in suit had been in effect, divided as between plaintiff's exchange (intrastate), and intrastate toll, and the total intrastate net earnings for each of the years 1923 to 1931, would have been as follows (Finding 15, minus Finding 16):

	Exchange (intrastate)	Intrastate toll	Total intrastate
1923	$2,331,487	$527,623	$2,859,110
1924	2,549,116	617,130	3,166,246
1925	2,903,600	836,559	3,740,159
1926	3,067,464	1,083,275	4,150,739
1927	3,298,309	1,224,243	4,522,552
1928	4,144,788	1,411,259	5,556,047
1929	6,427,431	1,432,978	7,860,409
1930	5,801,112	1,308,278	7,109,390
1931	5,472,030	1,011,001	6,483,031

[fol. 2417] The net earnings of plaintiff from its entire Chicago business for the year 1932 will be approximately $2,000,000 less than in 1931. The decrease will be proportionately larger in the intrastate than in the interstate business. The additional loss in revenue if the rates in suit had been in effect would have amounted to $1,270,000 for the year 1932. The amount available for a return on plaintiff's intrastate business in Chicago for 1932 will be approximately $1,800,000 less than in 1931 (N. R. IV, 1082).

These net earnings would have resulted in the following rates of return to plaintiff upon the fair value of its property devoted to its intrastate business in the Chicago area as found in Finding 12 hereof:

	Exchange (intrastate)	Intrastate toll	Total intrastate
1923	1.65%	8.03%	1.93%
1924	1.67	8.40	1.98
1925	1.78	10.08	2.18
1926	1.78	11.70	2.29
1927	1.81	11.46	2.35
1928	2.16	11.34	2.71
1929	3.21	9.76	3.66
1930	2.76	7.80	3.14
1931	2.60	5.87	2.84
1932	Lower than in 1931		

18. In making Findings 15 and 17 hereof there have been apportioned to plaintiff's interstate earnings, the following amounts representing net revenues properly attributable to the interstate use of plaintiff's exchange property and facilities:

[fol. 2418]

	Based on present rates	Based on rates in suit
1923	$260,614	$245,042
1924	278,223	262,398
1925	327,430	309,505
1926	335,599	317,915
1927	373,025	354,372
1928	448,464	427,655
1929	508,729	486,875
1930	492,965	472,469
1931	448,700	431,580

From the commencement of the telephone industry, exchange rates have been fixed by the Bell Companies, including plaintiff, and by independent companies to provide compensation for every use of the exchange facilities, including their use for both intrastate and interstate toll messages. Likewise, during that period of time, toll rates have been fixed to provide compensation only for the use of the toll plant up to its connection with the exchange facilities. Exchange rates of plaintiff, therefore, produce both intrastate and interstate revenues. The portion shown above of the exchange revenues which has been determined to be interstate revenues and excluded in Findings 15 and 17 under the intrastate headings relates to and was received as compensation for the interstate use of such exchange facilities. Unless such revenues are apportioned to the interstate revenues, plaintiff will receive no compensation for the interstate use of its exchange facilities (N. R. I, 270, 295, 300).

[fol. 2419]

Fair Rate of Return

19. Plaintiff was entitled to the opportunity to earn a fair rate of return upon the fair value of its property. We find that, having regard to all the facts and circumstances of this case, the fair rate of return upon the average fair value of the intrastate property as determined in Finding 12 was 8 per cent for each of the years 1923 to 1927 inclusive; 7 per cent for each of the years 1928, 1929 and 1930; 7½ per cent for 1931; and 8 per cent for 1932 (N. R. I, 159, 160, N. R. IV, 1154).

20. From 1916 to the present time, the Western Electric Company has engaged chiefly in the manufacture of telephone apparatus and lead covered cable and in the purchase of supplies manufactured by others and in their sales to the Bell Associate Companies (N. R. II, 319). In this same period, Western's business with its Bell customers amounted to more than 90 per cent of its sales of its own manufactures, and its business with the Bell customers, if supplies are included, amounted to 82 per cent of its total sales. Western's sales of its manufactured articles constitute approximately 70 per cent of its total sales to its Bell customers (Exhibit A90).

21. "Average investment" of Western, as that term is used in these findings, includes its plant and manufacturing facilities, merchandise, receivables and cash, less current accounts payable, all at cost to Western except merchandise, which is cost or market, whichever is lower. There is not included in Western's "average investment" any [fol. 2420] amount for patents, good will, development expense, or going concern value. A large part of Western's manufacturing plant and facilities have been constructed by it at less cost than they could have been purchased from others and these savings are reflected in its "average investment" (N. R. II, 330, 339, 502).

22. Western's factories are advantageously located, well designed and equipped for efficient and economical operation. It maintains a group of engineers, who plan its manufacturing operations and constantly study the problem of cheapening its products. As a result, Western's operating costs are low and its products are of a high standard (N. R. II, 486, et seq.).

23. The prices charged by Western to plaintiff and its other Bell customers have, during the entire period 1916 to 1932, inclusive, been lower than prices charged by other manufacturers for comparable materials, and lower than the prices charged by Western to independent telephone companies and others for the same materials, and have at all times been reasonable and fair prices (O. R. III, 1076, et seq.; N. R. II, 421-422, 574).

24. At any given time Western's prices to all of its Bell customers for its telephone apparatus, lead covered cable and supplies have always been the same (N. R. II, 342).

25. (As amended.) Plaintiff's Exhibit A 194 shows the sales of Western to its Bell customers, the earnings on such sales, the per cent of earnings to sales, average investment, per cent earnings to average investment, average investment less amount of depreciation reserve account and per cent earnings to average investment less amount of depreciation reserve account, for each of the years 1916 to 1932, for that total period and also for the period 1923 to 1932, inclusive (N. R. IV, 1071).

[fol. 2421] We find that four adjustments should be made to the figures appearing in said Exhibit A194, and that when effect is given to these adjustments said exhibit is correct. These adjustments are on account of the accrual of an extraordinary reserve against plant and machinery in the years 1924, 1925, 1926 and 1927; the difference between the accruals for Federal income taxes made currently and the actual taxes paid; the inclusion in the Bell expenses for the year 1924 of an accrual for pension fund purposes relating to non-Bell business, and a charge to expense on account of patents purchased applicable to the Bell business, which were charged to surplus (N. R. IV, 1383; Exhibit A257). When effect is given to these adjustments, Western's earnings and profits on sales are as follows:

	Profit on sales	Earnings on average investment	Earnings on average investment less amount of depreciation reserve account
For period 1916 to 1932 . . .	4.7	6.1	.8
For period 1923 to 1932 . . .	4.5	5.9	7.6

[fol. 2422] Western's earnings and profits on sales for each of the years 1916 to 1932, when effect is given to these adjustments, are as follows:

	Profit on sales	Earnings on average investment	Earnings on average investment less amount of depreciation reserve account
1916	.5	.8	1.1
1917	2.3	3.6	4.4
1918	2.7	3.1	3.9
1919	3.4	3.9	5.0
1920	3.7	4.9	6.1
1921	7.7	8.7	10.7
1922	4.0	5.2	6.6
1923	3.4	4.8	6.2
1924	4.7	6.9	8.8
1925	7.2	10.2	12.9

	Profit on sales	Earnings on average investment	Earnings on average investment less amount of depreciation reserve account
1926	5.2	8.3	10.6
1927	6.9	10.4	13.6
1928	6.8	11.8	15.8
1929	4.8	9.1	11.7
1930	3.5	9.1	5.8
1931	5.0	4.2	5.6
193[illegible]	(3.9)	(2.3)	(3.3)

26. Western, because of its relationship with the Bell System, has no sales expense and no credit risk involved in its Bell business. By receiving advance estimates from the Bell Associate Companies of their requirements, it is able to plan its manufacturing work more efficiently and economically. These factors result in reducing Western's costs, but they are not advantages retained by Western, since such reductions in costs are passed on by it in the prices charged to its Bell customers. As a result of this relationship, Western has been enabled to sell and has sold its manufac- [fol. 2423] tured articles to its Bell customers at lower prices than otherwise would have been possible (N. R. II, 412, 418).

27. Western's earnings on investment and profit on sales vary from year to year due to the relative weighting of several important factors, among which are reductions in prices of its products, rate of turnover, changes in costs of material and wage schedules (N. R. II, 329). Western's relationship to the Bell System is permanent, not casual. It supplies substantially all the requirements of all the Bell Associated Companies for telephone apparatus and lead covered cable at all times.

It is, therefore, necessary, in arriving at what are reasonable earnings on investment and profit on sales in the Bell business of Western, to take into consideration the results for a period of years and not merely a single year (N. R. II, 329, 430).

28. Western's rate of earnings on its investment in its Bell business, and on its investment less the amount of its depreciation reserve account, has been substantially one-third lower than those of other large manufacturing companies whose risks and hazards make them fairly comparable with Western. Its rate of profit on sales in its Bell business—as distinguished from earnings on investment—has been less than one-half of the rate of profit made on

sales by other large comparable manufacturing industries (Exhibits A85, A86, A87, A271).

29. The earnings of Western on its Bell business for the entire period 1916 to 1932, and for the period 1923 to 1932, have been reasonable. Its profits on sales during the same periods have also been reasonable.

30. It would not have been possible for Western to sell its manufactured products as cheaply as it did except for [fol. 2424] the economies resulting from quantity production for the entire Bell System. Western develops for the present and future needs of all of these companies which are engaged in rendering a uniform and nation-wide telephone service through plants engineered and constructed along similar lines. Because of these facts, Western's total earnings on its investment and its profit on its total sales are a fair basis for determining the reasonableness of Western's earnings in its dealings with plaintiff (N. R. II, 450).

31. The sales of Western to plaintiff for use in its entire business and for use in its Chicago area have been a reasonably fair and representative cross section of the total sales of Western to all of its Bell customers. The earnings made by Western on its investment allocated to the business done with the plaintiff and its profit on sales made to plaintiff for its Chicago area have been fair and reasonable during the periods 1916 to 1932 and 1923 to 1932. No unreasonable or unfair profit has been made by the Western in any of its dealings with the plaintiff, and all of the telephone apparatus, lead covered cable and supplies sold by Western to plaintiff have been sold at fair and reasonable prices (N. R. II, 334, 344, 438, 450; Exhibits A88, A89, A93 to A98, inclusive).

Depreciation Expense

32. The reasonable and proper amount, fair alike to public and private interest, to be allowed as the annual charge for depreciation applicable to the reproduction cost of the intrastate portion of plaintiff's said Chicago area property (and included in the expenses shown in Finding 14, [fol. 2425] in the column headed "Total Intrastate") for each of the years is as follows:

1923	$5,662,154
1924	6,382,159
1925	6,768,618
1926	7,217,128
1927	7,608,468
1928	7,981,108
1929	8,148,888
1930	8,581,118
1931	8,934,628

Plaintiff's Original Brief, page 129. Column 3 of the table at the top of the page gives the amounts shown in this finding, which are derived and may be verified as follows:

The table at the bottom of page 128 of the brief gives, in column 3, the total annual charge for depreciation based on reproduction cost (these figures being taken from plaintiff's Exhibit A267 identified by witness Kruse, N. R. IV, page 1397). In order to obtain the intrastate part shown in this request 32, apply to these total figures the percentages shown in the table at the bottom of page 129 of the brief, in the column headed "Total Intrastate, Reproduction New". These percentages are in turn derived from the dollar amounts shown in Exhibit A55.

License Contract

33. On the 1st day of February, 1919, the American Telephone and Telegraph Company, a corporation organized under the laws of New York, hereinafter called the American Company, entered into a contract with the Chicago Telephone Company, the predecessor of plaintiff, and at about the same time entered into a contract in similar form [fol. 2426] with each of twenty-two other operating telephone companies in the United States (which said contract is generally known and has been referred to and will be referred to hereinafter as the License Contract). By the terms of said contract the American Company agreed to furnish to the predecessor of plaintiff and to each of the other so-called Licensee Companies certain services and assistance and benefits necessary for the conduct of their several businesses on a high plane of efficiency. The principal items of said services and benefits were as follows:

A. Furnishing the transmitters, receivers and induction coils (called telephones) necessary to supply one set to each telephone sub-station, with a margin over for safety; maintaining at its own cost (that of the American Company) the said instruments in first class working order and condition (Plaintiff's Ex. 7, Sec. 3, O. R. IV, 1198-1200).

B. The right of the Licensee to:

(1) "* * * use, subject to the provisions herein set forth, all telephonic devices, apparatus, methods and systems covered by patents now or hereafter owned or controlled by the Licensor or which it may have the right to authorize the Associated Companies of the Bell System to use, and also the right to use, subject to the provisions herein set forth, as and when completed and standardized, all new and improved apparatus and developments in the art of telephony resulting from research and experimental work conducted by or under the direction of the Licensor * * *; and without expense to the Licensee, protection and defense against and to be saved harmless from all actions or suits, charging infringement of patents, aris- [fol. 2427] ing out of the use of telephones furnished hereunder to the Licensee; as well as ample provision for protecting and defending against, and insuring the Licensee against judgments for damages and profits in, all actions or suits, charging infringement of patents, arising out of the use of any apparatus, methods or systems which the Licensor may recommend" (Plaintiff's Ex. 7, Sec. 9(a), O. R. IV, 1206).

(2) "The continuous prosecution by the Licensor of the fundamental work of research, investigation and experimentation in the development of the art and science of telephony and in the development of plans, methods, systems and ideas designed to promote safety, economy and efficiency in the equipment, construction and operation of the telephone plants of the Associated Companies of the Bell System, and the direction of the Licensor of the development work by others for the production of materials and apparatus necessary for rendering the products of such work of the Licensor available for use by such Associated Companies" (Plaintiff's Ex. 7, Sec. 9(b), O. R. 1206-1207).

(3) "Advice and assistance in general engineering, plant, traffic, operating, commercial, accounting (including

the auditing of accounts), patent, legal, administrative and others matters pertaining to the efficient, economical and successful conduct of the telephone business of the Licensee * * *" (Plaintiff's Ex. 7, Sec. 9(c), O. R. IV, 1207).

(4) "Advice and assistance in any financing required to be done by the Licensee in the extension, development or improvement of its telephone system * * *" (Plaintiff's Ex. 7, Sec. 9(d), O. R. IV, 1207).

(5) "Active assistance, cooperation and support in connection with the adoption from time to time by the Licensee [fol. 2428] of such measures as will, in the united judgment of the parties hereto, best protect and preserve the health and promote the well-being in employment of the employees of the Licensee and, in other ways, conserve the high quality of its service to the public through the maintenance of a stable, contented and efficient personnel * * *" (Plaintiff's Ex. 7, Sec. 9(f), O. R. IV, 1208).

The American Company further agreed that in order that the foregoing services might be promptly and efficiently performed when needed by the Licensee, it would

(a) "Render available for use by the Associated Companies of the Bell System all products of the Licensor's fundamental work of research, investigation and experimentation, and all inventions, discoveries and patents, and all methods and systems covered by patents, relating to the art of telephony, or all apparatus and appliances, methods and systems embodying such inventions, discoveries and patents, which, after investigation, experimentation and tests, are in each case pronounced by the technical experts of the Licensor to be of advantageous and practical usefulness in telephony and recommended for use, and to this end, if any patent rights held by others in any such invention or discovery are necessary to make such invention or discovery available for such use, the Licensor will, in case such invention or discovery relates to telephones, acquire the requisite patent rights therein, * * *" (Plaintiff's Ex. 7, Sec. 10(a), O. R. IV, 1209).

(b) "Maintain continuously an organization of specialists trained in the various branches of the work required to be done by the Licensor in rendering the foregoing services, of such numbers and possessed of such technical knowledge and experience as will enable said work to be [fol. 2429] so done as to relieve the Licensee from the necessity of attempting to perform said work for itself" (Plaintiff's Ex. 7, Sec. 10(b), O. R. IV, 1209).

On September 25th, 1930, the 1919 contract was by mutual agreement of the parties restated in slightly briefer form embodying substantially the same rights and privileges to the Licensee Companies, which latter contract has remained in force up to the present time (Plaintiff's Ex. A-206).

34. For all of the above services and others provided for in the contract the plaintiff and each of the other Licensee Companies agreed to pay to the American Company four and one-half per cent (4½%) of its gross annual earnings. That rate was paid for the years 1923, 1924 and 1925 (Plaintiff's Ex. 7, Sec. 11, O. R. IV, 1210).

In 1926 the rate of compensation for said services was voluntarily and temporarily reduced by the American Company without consideration to it, from 4½% to 4%, which rate of 4% continued for the years 1926 and 1927 (Plaintiff's Ex. 7, O. R. IV, 1215).

At the end of 1927 the rate of compensation was again reduced, this time from 4% to 2% of the gross earnings of the Licensee Companies, at which time the American Company ceased to furnish the instruments, which rate was paid for the year 1928 (N. R. IV, 1165).

At the end of 1928 there was a further voluntary reduction by the American Company from 2% to 1½% of the gross earnings of the Licensee Companies, which rate has remained in force to date (N. R. IV, 1165).

35. Said License Contract was a modification of an agreement entered into on the 23rd day of December, 1881, between the American Bell Telephone Company, predecessor of the American Company, and the Chicago Telephone [fol. 2430] Company, predecessor of the Illinois Bell Telephone Company, the plaintiff (Plaintiff's Ex. 7, Preamble, O. R. IV, 1196).

36. At the time when the said agreement was entered into the said American Company was the owner of all or practically all of the capital stock of sixteen of said twenty-two companies; was the owner of the majority of the stock of three of the said companies, but was only a minority

holder of the stock of the following companies: Southern New England Telephone Company, and Cincinnati and Suburban Bell Telephone Company, each of which was a large and important company, having an investment in plant of many millions of dollars (Plaintiff's Ex. A-99).

37. At the time the said contract of 1881 was entered into, the American Company or its predecessor owned fundamental patents which practically excluded from the telephone business in the United States all persons other than its licensees. (City's Ex. 23, Sec. 1, O. R. VI, 1925); between 1881 and 1919 the American Company had taken out or acquired a great number of important patents bearing upon the construction and operation of telephone plants, and throughout that period had permitted the said Licensee Companies to use all of its said patents; during said period the American Company had also gradually built up the practice of performing for the said Associated Companies all or practically all of the services referred to in said License Contract agreement of the first day of February 1919.

38. The American Company from the first day of February, 1919, until the first day of January, 1928, performed all of the services required of it by the said License Contract and enumerated in Finding (33) above. On the first [fol. 2431] day of January, 1928, by mutual agreement, the American Company ceased to supply to the plaintiff and to the other Licensee Companies telephone receivers, transmitters and induction coils, and the compensation paid to said American Company by the Licensee Companies was reduced to two per cent (2%) of their respective gross earnings (N. R. IV, 1165).

39. The actual costs to the American Company of the work performed by its twelve departments which each rendered services to the Licensee Companies pursuant to the License Contract, to wit, Operation and Engineering, Development and Research, Information, Personnel, Public Relations, Treasurer, Comptroller, Secretary, Administration (including Sundry Items), General Service Bureau, Operation-C (General) and Legal, were the following amounts in the following years:

1923	$10,678,072
1924	11,428,025

1925	12,254,366
1926	14,167,860
1927	15,667,287
1928	17,111,950
1929	19,139,695
1930	23,611,735
1931	21,448,341

(Plaintiff's Ex. A-170, Col. (a), line (a).)

Those portions of the costs set forth above in this Finding (39), which were incurred in furnishing License Contract Services to the Licensee Companies, were the following amounts in the following years:

[fol. 2432]

1923	$10,134,582
1924	10,941,548
1925	11,716,894
1926	13,625,573
1927	15,108,267
1928	16,444,163
1929	18,402,303
1930	22,494,383
1931	20,742,677

(Totals of Plaintiff's Exs. A-103, Col. 6; A-117, Col. 3; A-124, Col. 4; A-150, Col. 6, plus A-151, Col. 6; A-153, Col. 2; A-154, Col. 4; A-155, Col. 4; A-156, Col. 4; A-157, Col. 4; A-158, Col. 4; A-159, Col. 4; A-160, Col. 4.)

The reasonable amounts of the said costs which should be allocated to the operating expenses of the Chicago area of the plaintiff are the following amounts in the following years:

1923	$604,547
1924	632,691
1925	668,092
1926	776,420
1927	844,578
1928	923,333
1929	1,019,735
1930	1,194,793
1931	1,083,370

(Plaintiff's Ex. A-170, Col. (b), line (a).)

The reasonable amounts of said costs which should be allocated to the operating expenses of the intrastate busi- [fol. 2433] ness of the Chicago area of plaintiff are the following amounts in the following years:

1923	$581,514
1924	608,586
1925	640,233
1926	741,713
1927	804,460
1928	864,886
1929	907,257
1930	1,063,725
1931	967,126

(Plaintiff's Ex. A-170, Col. (b), line (a) modified by percentages set forth in Plaintiff's Main Brief, pp. 231-2.)

40. The actual costs incurred by the American Company and shown on its books for maintaining the said receivers, transmitters and induction coils (telephones) furnished to said Licensee Companies, were the following amounts in the following years:

1923	$1,086,422
1924	1,328,873
1925	1,613,737
1926	2,033,810
1927	2,066,815

(Plaintiff's Ex. A-162, p. 2, upper set of figures for total for each year, less lower set.)

The reasonable amounts of said costs which should be allocated to the operating expenses of the intrastate busi- [fol. 2434] ness of the Chicago area of plaintiff are the following amounts in the following years:

1923	$68,931
1924	83,036
1925	100,469
1926	126,225
1927	129,852

(Plaintiff's Ex. A-162, p. 2, last Col., Balance after subtracting figures in lower group for each year from those in upper group for Chicago area modified by the percentages set forth in Plaintiff's Main Brief pp. 231-2.)

41. The said receivers, transmitters and induction coils (telephones) owned by the American Company and supplied to the Licensee Companies were subject to wear and tear and loss of value from other causes and a reasonable annual charge for the expense of depreciation constituted a part of the costs to the American Company of furnishing said telephone instruments to said Licensee Companies.

The American Company in the years 1923 to 1927, both inclusive, used an annual depreciation rate of seven per cent (7%) in connection with said instruments, which was a a fair and reasonable rate applicable to those years (N. R. III, 939). The American Company applied said seven per cent (7%) rate to the cost of the instruments and thereby developed depreciation charges for each of the years 1923-1927 both inclusive, which were not in any way excessive; said amounts were as follows:

[fol. 2435]

1923	$2,133,172
1924	2,390,753
1925	2,648,034
1926	2,920,151
1927	3,150,992

(Plaintiff's Ex. A-162, lower group, p. 2.)

The reasonable amounts of the said costs which should be allocated to the operating expenses of the intrastate business of the Chicago area of the plaintiff are the following amounts in the following years:

1923	$135,344
1924	149,389
1925	164,862
1926	181,235
1927	197,969

(Plaintiff's Ex. A-162; Chicago area figures modified by percentages set forth in Plaintiff's Main Brief, pp. 231-2.)

42. The reasonable value of the said receivers, transmitters and induction coils (telephones) furnished by the said American Company were the following amounts in the following years:

1923	$33,775,912
1924	38,727,620
1925	42,681,064
1926	44,548,049
1927	43,182,189

(Plaintiff's Ex. A-202, line 3, N. R. IV, 1176.)

[fol. 2436] The fair rate of return thereon was eight per cent (8%) per annum (N. R. I, 159-160). The fair return rate for expense of depreciation was seven per cent (7%), (N. R. III, 939) and the fair amounts which should be allowed to the American Company for annual expense of depreciation and fair return upon its property which includes in addition to the amounts set forth above in this Finding (42), a margin over for safety held by the American Company in its warehouses on call, conservatively estimated to be at least 6% of the instruments furnished aggregated the following amounts in the following years:

1923	$5,588,298
1924	6,407,570
1925	7,061,674
1926	7,370,571
1927	7,144,587

(Plaintiff's Ex. A-202, line 6 plus line 7.)

Adding to the above the cost of maintaining the instruments, as found in Finding (40) above, the total fair allowances to the American Company for furnishing and maintaining said instruments are the following amounts in the following years:

1923	$6,674,720
1924	7,736,443
1925	8,675,411
1926	9,404,381
1927	9,211,402

(Plaintiff's Ex. A-202, line 9.)

The reasonable amounts thereof which should be allocated to the operating expenses of the intrastate business [fol. 2437] of the Chicago area of the plaintiff are the following amounts in the following years:

1923	$415,482
1924	478,354
1925	529,282
1926	570,327
1927	563,855

See p. 301, line 2 (b) plus line 2 (c), Plaintiff's Ex. A-163, line 9 modified by percentages set forth in Plaintiff's Original Brief pp. 231-2.)

43. During the period from 1923 to 1931, both inclusive, the American Company maintained average annual sums varying from $60,000,000 to $93,000,000, in the form of cash of short term non-fluctuating low yield securities for the purpose of meeting any reasonable demands of the Licensee Companies (excluding Long Lines) for funds. The difference between the amounts received as interest on said funds and the amounts which it cost the American Company to obtain the money to supply such funds were the following amounts in the following years:

1923	$2,274,354
1924	2,526,771
1925	3,280,316
1926	2,876,385
1927	2,287,094
1928	2,313,767
1929	898,015
1930	3,460,721
1931	3,126,906

(Plaintiff's Ex. A-169, p. 2, Col. (5).)

[fol. 2438] The reasonable amounts thereof which should be allocated to the operating expenses of the intrastate business of the Chicago area of the plaintiff are the following amounts in the following years:

1923	$94,071
1924	106,942
1925	163,463
1926	153,878

1927	139,421
1928	140,875
1929	39,149
1930	157,135
1931	131,196

(Plaintiff's Ex. A-169, p. 2, Col. (10), modified by percentages set forth in Plaintiff's Original Brief pp. 231-2.)

44. Under the said License Contract the American Company was obligated to insure and hold harmless the plaintiff and all of the other licensee companies against loss or damage from suits or judgments for infringements of any patents, when such infringement was the result of the use of any apparatus recommended to said Licensees by the American Company. (Plaintiff's Ex. 7, Sec. 9 (a), O. R. 1206.) Said obligation constituted a real and serious liability and one which might subject the American Company to losses amounting to millions of dollars. (N. R. IV, 1088-1089, 1218, 1219.)

The American Company made reasonable provision to meet the possible losses, resulting from said undertaking on its part, by setting up large sums in a contingent reserve which sums aggregated $30,395,800 over the period from January 1, 1923 to January 1, 1932.

(Plaintiff's Ex. A-200, (a) last column.)

It was reasonable for the said American Company to make provision for its said liability over a number of years [fol. 2439] rather than to charge heavy losses in particular years when incurred. Also, there was no practical way by which plaintiff and the other licensee companies could make compensation to the said American Company for its said undertaking except by charging against their revenues fairly equal amounts over the period covered by said undertaking of the American Company.

The reasonable amounts which should be allocated to the operating expenses of the intrastate business of the Chicago area of the plaintiff with respect to said undertaking of the American Company are the following amounts in the following years:

1923	$152,942
1924	147,171
1925	281,740

1926	191,060
1927	140,018
1928	137,695
1929	130,786
1930	125,532
1931	98,382

(Plaintiff's Original Brief, p. 301, line 2 (g).)

45. The American Company incurred and paid taxes in connection with rendering its License Contract services to the plaintiff and to the other Licensee Companies. The amount of said taxes in each of the years 1923-1931 inclusive, were as follows:

1923	$2,932,233
1924	3,481,426
1925	3,889,407
1926	3,360,113
1927	3,304,572
1928	1,642,660
1929	987,520
1930	956,597
1931	1,495,940

(Plaintiff's Ex. A-161, col. 3.)

[fol. 2440] The reasonable amounts thereof which should be allocated to the operating expenses of the intrastate business of the Chicago area of the plaintiff are the following amounts in the following years:

1923	$203,459
1924	211,228
1925	238,046
1926	160,482
1927	154,036
1928	57,446
1929	22,390
1930	19,844
1931	45,895

(Plaintiff's Ex. A-161, last column, Chicago area modified by percentages set forth in Plaintiff's Main Brief, pp. 231-2.)

46. In addition the foregoing, the American Company furnished office space and office furniture and fixtures at cost, and at less than value, to its twelve departments which devoted the whole or greater part of their time and efforts to rendering License Contract services to the said Licensee Companies, including the plaintiff. The costs to the American Company of providing these facilities in connection with the rendition of the License Contract services were the following amounts in the following years:

1923	$196,297
1924	90,907
1925	155,186
1926	36,826
1927	42,338
1928	45,384
1929	47,816
1930	51,245
1931	55,610

(Plaintiff's Ex. A-167, col. 3.)

[fol. 2441] The reasonable amounts thereof which should be allocated to the operating expenses of the intrastate business of the Chicago area of the Plaintiff are the following amounts in the following years:

1923	$11,739
1924	5,289
1925	8,863
1926	2,094
1927	2,391
1928 ✓	2,502
1929	2,482
1930	2,605
1931	2,795

(Plaintiff's Ex. A-167, col. 6, Chicago area, modified by percentages set forth in Plaintiff's Original Brief, pp. 231-2.)

47. The total License Contract payments received by the American Company (excluding those received from its Long Lines Department) were the following amounts in the following years:

1923	$24,309,368
1924	26,784,492
1925	30,197,214
1926	29,850,303
1927	32,454,652
1928	17,622,365
1929	14,455,588
1930	15,025,890
1931	14,718,361
Total	$205,418,233

(Plaintiff's Ex. A-199, line A.)

[fol. 2442] 48. The costs incurred by the American Company in rendering said License Contract services, excluding the services to its Long Lines Department, but including the cost of Temporary Financing and including fair allowances for the use of the receivers, transmitters and induction coils of the American Company and after making all due allowances for credits for royalties received by the American Company were the following amounts in the following years:

1923	$25,793,132
1924	29,076,869
1925	35,206,249
1926	34,221,972
1927	33,375,679
1928	22,996,160
1929	23,799,813
1930	28,604,025
1931	27,130,086
Total	$260,203,985

(Plaintiff's Ex. A-198, line B plus the total of the figures in D plus the amount in line (a) of foot note diminished by Long Lines plant in service percentage shown on Ex. A-118, minus one third (N. R. IV, 1172) of credit for royalties in line (e)2, of foot note in Ex. A-199.)

The total amount of said costs exceeded the total amount of said payments found in Finding (47) by fifty-four million seven hundred and eighty-five thousand and seven hundred and fifty-two dollars.

[fol. 2443] 49. The amounts which have been included in the costs in Finding (48), for Temporary Financing are the following amounts in the following years:

1923	$1,535,913
1924	2,260,603
1925	2,606,279
1926	2,095,365
1927	1,839,609
1928	1,051,430
1929	2,452,536
1930	1,137,450
1931	1,709,528
Total	$16,688,713

(Plaintiff's Ex. A-170 line (f).)

50. The total amounts which should be allocated to the operating expenses of the intrastate business of the Chicago area of the plaintiff for all of the matters specifically dealt with above, excluding the cost of Temporary Financing and after making all due allowances for offsets and credits including those in respect of royalties received and for expenses incurred in other than License Contract activities, are the following amounts in the following years:

1923	$1,457,551
1924	1,555,714
1925	1,858,300
1926	1,815,398
1927	1,795,773
1928	1,195,664
1929	1,084,145
1930	1,353,084
1931	1,229,850
Total	$13,345,479

(Tabulation, plaintiff's original brief, p. 301, line 2(d) minus line 4. Note: The amounts actually paid by plaintiff to the American Company for the License Contract services [fol. 2444] in accordance with the contract, and for which plaintiff claims credit as proper expenses in this suit, are shown in the next succeeding Request 51.)

51. (As Amended.) Plaintiff paid to the American Company for its License Contract services over the period 1923-1931, both inclusive, annual amounts which it charged on its book as deductions from gross revenues.

The portion thereof allocable to plaintiff's intrastate telephone expenses in the Chicago area are the following amounts in the following years:

1923	$1,662,014
1924	1,787,095
1925	1,901,069
1926	1,845,571
1927	1,980,880
1928	1,036,616
1919	834,276
1930	864,131
1931	834,199
Total	$12,745,851

We find that the foregoing amounts represent the reasonable and proper proportion, applicable to the intrastate business in the Chicago Area, of the payments made by plaintiff to the American Company in each year in accordance with the provisions of the License Contract, and that these amounts should be allowed in full.

(Tabulation, plaintiff's original brief, p. 301, line 1. See also plaintiff's Exhibit A-49. These are the amounts for which plaintiff has taken credit in arriving at the net earnings as shown, in Request 15 herein, p. 9, supra, in the [fol. 2445] column headed "Total Intrastate". Note: These amounts paid by plaintiff are comparable with the "Costs" to the American Company of rendering the License Contract Services, applicable to the intrastate business of plaintiff in the Chicago Area, shown in the preceding Request 50.)

52. The American Company permitted the employees of the plaintiff to purchase stock of the American Company on such terms and conditions that they need never lose and might make substantial profits, and during the period 1923-

1931, inclusive, plaintiff's employees availed themselves of that right and purchased stock of the American Company to such amounts and on such terms that the aggregate purchase price paid was five million dollars less than the amounts at which the stock could have been sold on the dates of purchase. This privilege was a great assistance to the plaintiff in building up and maintaining its organization (N. R. III, 866).

53. The American Company, moreover, under the said License Contract of the 1st day of February, 1919, licensed plaintiff and all of the other Licensee Companies, to use several thousand patents which it had acquired prior to 1919, (Plaintiff's Ex. 7, Sec. 9 (a), O. R. IV, 1206) no part of the costs of which and no return on the value of which is included in any of the above figures, although said patents had been acquired at considerable cost and had a value of many million dollars (Defendants' Deposition Exs. 196 and 197).

54. The License Contract services were of great value to plaintiff and it could not have obtained the same or similar services from any source other than the American Company without paying substantially more therefor than it [fol. 2446] actually did pay to the said American Company. (Testimony of F. L. Rhodes, O. R. III, 970-1033 and testimony of Frank Redmund, O. R. III, 112-124.)

55. At the time the said License Contract Agreement of the 1st day of February, 1919, was entered into, both the plaintiff and the American Company considered it fair and beneficial to the plaintiff, and that it would provide the American Company with no more than a fair profit.

56. The American Company has been reasonably diligent, and has been fair to the plaintiff in reducing percentages of gross earnings, which plaintiff was obligated to pay under said License Contract, as and when the amount of the gross earnings increased, in order to prevent said payments becoming excessive or oppressive.

57. Throughout the period 1923-1931, both inclusive, the arrangement between the plaintiff and the American Company with respect to said License Contract services and payments has been a fair and reasonable one to plaintiff.

58. The costs incurred by the American Company in rendering its License Contract services, together with fair compensation for, or a fair return upon the value of, the properties of the American Company, the use of which it contributed to its said licensees as a part of said License Contract, exceeded the amounts which the American Company collected from its said Licensees over said period from 1923 to 1931, inclusive; and the reasonable amounts of said costs and allowances which should be allocated to the operating expenses of the intrastate business of the Chicago area of the plaintiff for the years 1923-1931 inclusive exceded the amounts which plaintiff paid to the American Company as its License payments under said Licensee [fol. 2447] Contract during said period and has charged as a deduction from revenues of its said intrastate telephone business by an amount of approximately six hundred thousand dollars. (See Plaintiff's Original Brief, table on p. 301, last column.)

59. The payments made by plaintiff to the American Company shown in Finding (51) were proper deductions from gross revenues.

Plaintiff further requests the Court to find, as

Conclusions of Law

1. At all times since the effective date of the order of the Illinois Commerce Commission herein complained of, the telephone rates prescribed in said order have been, and they are now, confiscatory of plaintiff's property; and said order is void.

2. The interlocutory injunction issued herein should be made permanent.

3. Plaintiff should be released and discharged from all obligation to refund any sums of money collected by it under the terms of the preliminary and interlocutory decrees herein, whether on account of the bond filed herein or otherwise.

4. Plaintiff should recover its taxable costs herein.

A final decree will be entered accordingly.

Respectfully submitted.

Charles M. Bracelen, William H. Thompson, Edward L. Blackman, Kenneth F. Burgess, Leslie N. Jones, Solicitors for Plaintiff. John H. Ray, of Counsel.

[fols. 2448 & 2449] IN UNITED STATES DISTRICT COURT

[Title omitted]

DEFENDANTS' REQUESTS FOR FINDINGS

Defendants request the Court to make the following findings:

This Court finds:

Net Income Avaliable for Return from Existing and Attacked Rates

Existing Rates*

1. That plaintiff's showing of net income available for return from the existing telephone rates is subject to three [fol. 2450] adjustments, the effect of each of which can be measured for each year under investigation:

(a) Excess of Charges for Depreciation, included in plaintiff's showing, over the allowance by the 1920 Order;

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* Plaintiff's Requested Findings do not show the "rate of return which was realized from the intrastate business," as directed by the Supreme Court's Decision (Defendant's Brief, Appendix p. 22), shown in Plaintiff's Original Brief, p. 319, and discussed in Defendants' Brief, p. 983. Defendants' Requested Findings 70, 74, show such rate of return related to Plaintiff's Requested Rate Base and the adequacy thereof, although much below the rate of return estimated to be produced by the attacked rates and much below the prognosticated minimum rate of return to which plaintiff claims it is constitutionally entitled.

(b) Adjustment in respect to License Contract payments;

(c) Adjustment in respect to Separation of Revenues.

That the adjustment in respect to excess profits of the Western Electric can not be measured so as to be reflected in net income and should be reflected in Rate of Return.

That the net income available for return from the existing telephone rates, after giving effect to the three adjustments is:

[fol. 2451]

Net Income Available for Return from Existing Rates

Intrastate Exchange

	1923	1924	1925	1926	1927	1928	1929	1930	1931
Plaintiff's Showing of Net Earnings (Plaintiff's Finding No. 15)	$3,844,346	$4,068,931	$4,451,750	$4,678,997	$4,933,671	$5,813,002	$8,120,780	$7,400,165	$6,868,197
Add: Adjustments for									
(a) Excess of Charges for Depreciation, included in Plaintiff's Showing, over Allowance by 1920 Order	2,852,322	3,077,287	3,045,275	2,932,410	2,844,777	2,705,114	2,341,595	2,433,515	2,568,626
(b) Adjustment in respect to License Contract Payments	1,230,692	1,303,492	1,349,801	1,268,883	1,376,580	708,860	523,432	547,768	531,214
(c) Adjustment in respect to Separation of Revenues	742,845	825,842	955,115	1,075,354	1,206,851	1,418,756	1,607,254	1,618,918	1,440,500
Adjusted Net Income	8,670,205	9,275,552	9,801,941	9,955,644	10,361,879	10,645,732	12,593,061	12,000,366	11,408,537
Intrastate Total									
Plaintiff's Showing of Net Earnings (Plaintiff's Finding No. 15)	$4,400,778	$4,717,241	$5,322,720	$5,801,309	$6,199,629	$7,269,348	$9,600,991	$8,755,268	$7,916,775
Add: Adjustments for									
(a) Excess of Charges for Depreciation, included in plaintiff's Showing, over Allowance by 1920 Order	2,981,053	3,235,315	3,196,136	3,092,901	3,015,624	2,891,817	2,556,086	2,663,528	2,808,145
(b) Adjustment in respect to License Contract Payments	1,318,988	1,404,254	1,411,592	1,411,592	1,516,622	785,355	583,859	612,065	590,567
(c) Adjustment in respect to Separation of Revenues	260,614	278,223	327,430	335,599	373,025	448,464	508,729	492,965	448,700
Adjusted Net Income	8,961,433	9,635,033	10,312,285	10,641,401	11,104,900	11,394,984	13,249,665	12,523,826	11,764,187

Attacked Rates

2. That plaintiff's showing of net income available for return from the attacked telephone rates is subject to three adjustments, the effect of each of which can be measured for each year under investigation:

(a) Excess of Charges for Depreciation, included in plaintiff's showing, over the allowance by the 1923 Order;

(b) Adjustment in respect to License Contract Payments;

(c) Adjustment in respect to Separation of Revenues.

That the adjustment in respect to excess profits of the Western Electric can not be measured so as to be reflected in the net income and should be reflected in Rate of Return.

That the net income available for return from the attacked telephone rates, after giving effect to the three adjustments, is:

[fol. 2453]

Net Income Available for Return from Attacked Rates

Intrastate Exchange

	1923	1924	1925	1926	1927	1928	1929	1930	1931
Plaintiff's showing of net income produced by present rates (Plaintiff's Finding 15)	$3,844,346	$4,068,931	$4,451,750	$4,678,997	$4,933,671	$5,813,002	$8,120,780	$7,400,165	$6,868,197
Deduct:									
Reduction of Net Revenues by reduction of telephone rates prescribed by 1923 Order (P. Brief, p. 87)	1,557,240	1,566,820	1,600,486	1,668,254	1,695,730	1,734,110	1,762,436	1,666,374	1,450,864
Net	2,287,106	2,502,111	2,851,264	3,010,743	3,237,941	4,078,892	6,358,344	5,733,791	5,417,333
Add:									
Excess of charges for Depreciation, included in Plaintiff's showing over Allowance by 1923 Order	3,045,699	3,169,205	3,123,656	3,447,770	3,867,964	4,201,016	4,260,342	4,327,877	3,695,384
Adjustment in respect to License Contract Payment	1,205,946	1,205,162	1,253,334	1,195,959	1,288,628	665,246	489,740	514,729	498,214
Adjustment in respect to Separation of Revenues	698,464	778,837	902,779	1,018,633	1,146,483	1,352,860	1,538,167	1,551,597	1,385,803
Adjusted Net Income	7,237,215	7,655,315	8,131,033	8,673,105	9,541,016	10,298,014	12,646,593	12,127,994	10,996,734

[fol. 2454]

Net Income Available for Return from Attacked Rates

Intrastate Total

	1923	1924	1925	1926	1927	1928	1929	1930	1931
Plaintiff's showing of net income produced by present rates (Plaintiff's Finding 15)	$4,400,778	$4,717,241	$5,322,720	$5,801,309	$6,199,629	$7,269,348	$9,600,991	$8,755,268	$7,916,775
Deduct:									
Reduction of Net Revenues by reduction of telephone rates prescribed by 1923 Order (P. Brief, p. 87)	1,557,240	1,566,820	1,600,486	1,668,254	1,695,730	1,734,110	1,762,436	1,666,374	1,450,864
Net	2,843,538	3,150,421	3,722,234	4,133,055	4,503,899	5,535,238	7,838,555	7,088,894	6,465,911
Add:									
Excess of charges for Depreciation over Allowance by 1923 Order	3,184,572	3,331,832	3,279,140	3,634,925	4,094,665	4,474,590	4,598,960	4,694,696	4,019,763
Adjustment in respect to License Contract Payment	1,294,242	1,305,924	1,369,532	1,320,668	1,428,670	741,741	550,167	579,026	557,567
Adjustment in respect to Separation of Revenues	245,042	262,398	309,505	317,915	354,372	427,655	486,875	472,469	431,580
Adjusted Net Income	7,567,394	8,050,575	8,680,411	9,406,563	10,381,606	11,179,224	13,474,557	12,835,085	11,474,821

[fol. 2455] Adjustments to Net Income

Expense of Depreciation

Part I

Depreciation Allowance Fixed by 1920 Order

3. That plaintiff has charged and collected during each of the years 1923 to 1931, inclusive, exchange service rates prescribed by the Order of December 20, 1920.

4. That plaintiff has made no attack on the exchange service rates prescribed by the 1920 Order and no ground exists to hold void that portion of the 1920 Order which prescribes the depreciation charges on intrastate and exchange service property to be charged and recorded against gross income produced by the existing telephone rates.

In determining the instrastate and exchange net income produced by the existing telephone rates prescribed by the 1920 Order as required by the Supreme Court's direction, this Court, on the present pleadings and record, must give the binding force of a valid legislative act to the State's judgment, as expressed by such Order, on the amount of depreciation charges properly to be covered by the telephone rates prescribed by such Order and properly to be charged and recorded against the gross income produced by them (Defendants' Brief, p. 464).

Under the law plaintiff should have charged and recorded against gross income produced by the existing telephone rates only the amount of depreciation charges fixed by the [fol. 2456] 1920 Order on Depreciation (Defendants' Brief, p. 447).

5. That plaintiff recorded on its books, against gross income produced by the existing telephone rates prescribed by the Order of December 20, 1920, in force during the years 1923 to 1931, inclusive, depreciation charges on intrastate and intrastate exchange property which exceeded the amount of depreciation charges fixed by the 1920 Order for each of said years as follows (Defendants' Brief, pp. 445-6):

	Intrastate	Intrastate exchange
1923	$1,540,414	$1,468,147
1924	1,323,046	1,264,338
1925	1,475,531	1,405,925
1926	1,643,145	1,564,490
1927	1,741,736	1,653,390
1928	1,919,774	1,815,308
1929	1,843,678	1,731,900
1930	1,947,182	1,816,781
1931	2,006,806	1,867,609

6. That plaintiff's showing of intrastate and exchange service net income available for return from the existing telephone rates included depreciation charges in excess of the amount of depreciation which plaintiff recorded on its books, and in excess of the allowance by the 1920 Order in the following amounts (Plaintiff's Brief, pp. 128-9, Finding 5, supra):

[fol. 2457]

	Intrastate		Intrastate exchange	
	Excess of plaintiff's showing		Excess of plaintiff's showing	
	Over recorded charges	Over allowance by 1920 order	Over recorded charges	Over allowance by 1920 order
1923	$1,440,639	$2,981,053	$1,384,175	$2,852,322
1924	1,912,269	3,235,315	1,812,949	3,077,287
1925	1,720,605	3,196,136	1,639,350	3,045,275
1926	1,449,756	3,092,901	1,367,920	2,932,410
1927	1,273,888	3,015,624	1,191,387	2,844,777
1928	972,043	2,891,817	889,806	2,705,114
1929	712,048	2,556,086	609,695	2,341,595
1930	716,346	2,663,528	616,734	2,433,515
1931	801,339	2,808,145	701,017	2,568,626

Part II

Depreciation Allowance Fixed by 1923 Order

7. That the allowance for depreciation prescribed by the 1923 Order is (Defendants' Brief, p. 593):

Year	Intrastate	Intrastate exchange
1923	$2,477,582	$2,361,524
1924	3,050,327	2,914,929
1925	3,489,478	3,324,823
1926	3,582,203	3,410,683
1927	3,513,803	3,335,412
1928	3,506,518	3,315,818
1929	3,549,928	3,334,828
1930	3,886,422	3,626,025
1931	4,914,865	4,574,439

[fol. 2458] 8. That the decrease in depreciation allowance of the 1923 Order under the allowance of the 1920 Order is (Defendants' Brief, p. 593):

Year	Intrastate	Intrastate exchange
1923	$191,030	$182,081
1924	83,131	79,441
1925	68,476	65,245
1926	526,668	501,451
1927	1,062,695	1,008,744
1928	1,571,038	1,485,598
1929	2,030,809	1,907,757
1930	2,019,758	1,884,431
1931	1,199,464	1,116,384

9. That the excess of recorded depreciation charges and of the depreciation charges included in plaintiff's showing of intrastate and exchange service net income available for return from the telephone rates prescribed by the 1923 Order is (Plaintiff's Brief, pp. 128-9, Finding 7, supra):

	Intrastate		Intrastate exchange	
	Excess of recorded charges	Excess of plaintiff's showing	Excess of recorded charges	Excess of plaintiff's showing
	Over allowance by 1923 order		Over allowance by 1923 order	
1923	$1,743,933	$3,184,572	$1,661,524	$3,045,699
1924	1,419,563	3,331,832	1,356,256	3,169,205
1925	1,558,535	3,279,140	1,484,306	3,123,656
1926	2,185,169	3,634,925	2,079,850	3,447,770
1927	2,820,777	4,094,665	2,676,577	3,867,964
1928	3,502,547	4,474,590	3,311,210	4,201,016
1929	3,886,552	4,598,960	3,650,647	4,260,342
1930	3,978,350	4,694,696	3,711,143	4,327,877
1931	3,218,424	4,019,763	2,994,367	3,695,384

[fol. 2459] 10. That this Court, in determining for itself what would be earned under the attacked telephone rates, must treat with the respect to be attached to a legislative act, the State's judgment expressed in the 1923 Order, on the amount of depreciation charges to be covered by such telephone rates and to be charged and recorded against the gross income produced by them (Defendants' Brief, p. 497).

11. That the presumption of law is in favor of the validity of the 1923 Order on depreciation (Defendants' Brief, pp. 497, 503).

12. That plaintiff has failed in the following respects to establish its burden of proof that the depreciation allowance fixed by the 1923 Order was constitutionally inadequate (Defendants' Brief, p. 503):

(a) Plaintiff is not constitutionally entitled to recover through its telephone service rates as operating expenses during the period 1923-1931, annual advance contributions for anticipated depreciation on contemplated future additions to buildings and central office equipment under the three following conditions under which it operated in respect thereto:

(1) As plaintiff made no provision whatever at the date of such annual advance contributions to assure that such contemplated future additions will, in fact, be acquired, and be placed in the future service (Defendants' Brief, p. 520).

(2) As the acquisition and placing of the contemplated future additions in the future service is within the sole and uncontrolled discretion and power of plaintiff (Defendants' Brief, p. 521).

(3) As plaintiff made no provision whatsoever at the date of such annual advance contributions to assure that to the [fol. 2460] extent that plaintiff does not in fact acquire and place in the future service such contemplated future additions, it will account to its telephone users for the amount of such advance contributions and for all earnings thereon applicable thereto (Defendants' Brief, p. 520).

Plaintiff's showing of depreciation expense in each of the years 1923 to 1931, inclusive, included in each year advance contributions for anticipated depreciation on contemplated future additions to buildings and central office equipment (Defendants' Brief, p. 515).

The contemplated future additions for manual central office buildings on December 31, 1929, was $5,995,000, all to be retired by 1984, and the undepreciated book investment in manual central office buildings on the same date was $5,775,086; on December 31, 1929, the undepreciated book investment in manual central office equipment was $31,081,262, and the contemplated future additions thereon aggregated $11,563,000, all to be retired by 1944. The record does not show the amount of contemplated future additions on dial central office buildings and equipment, nor does it show the amount of contemplated future additions on manual central office buildings or equipment for any other years (Defendants' Brief, p. 517).

The record does not show, nor is it possible to determine, what portion of the depreciation expense charges on buildings and central office equipment is represented by advance contributions for anticipated depreciation on contemplated future additions (Defendants' Brief, p. 516).

The inclusion in the depreciation expense charges in violation of law of advance contributions for contemplated [fol. 2461] future additions on central office equipment and buildings destroys the probative value of the entire depreciation expense charges on buildings and central office equipment, and destroys the possibility of using plaintiff's showing in respect thereto as a basis to determine the invalidity of the depreciation allowance fixed by the 1923 Order. The depreciation expense charges on buildings and central office equipment represented in each year such portion of the total depreciation expense charges that the effect of excluding from consideration such expense charges destroys the possibility of plaintiff's sustaining its burden to have the 1923 Order on depreciation constitutionally inadequate (Defendants' Brief, p. 504):

	Depreciation expense charges recorded on books			Decrease in allowance of 1923 order under 1920 order		Excess of recorded charges over allowance of 1920 order	
Year	Total (acct. 608) (A-127) (1)	Buildings & C. O. equip. (X-176) (2)	Ratio of col. (2) to col. (1) (3)	Amount (4)	Ratio of col. (2) to col. (4) (5)	Amount (6)	Ratio of col: (2) to col. (6) (7)
1923	$4,480,954	$2,234,177	50%	$203,375	986%	$1,639,889	136%
1924	4,709,950	2,223,132	47	87,858	2530	1,398,326	159
1925	5,385,712	2,475,699	46	73,268	3379	1,578,785	157
1926	6,203,022	2,913,526	47	567,959	513	1,772,017	164
1927	6,839,392	3,208,885	47	1,150,352	279	1,885,400	170
1928	7,641,461	3,491,328	46	1,715,669	204	2,096,461	167
1929	8,120,382	3,840,800	47	2,221,163	173	2,016,546	190
1930	8,769,886	4,203,213	48	2,255,453	186	2,174,487	193
1931	9,146,268	4,445,298	49	1,350,900	329	2,259,987	197
Totals and averages	$61,297,027	$29,306,058	47%	$9,625,997	302%	$16,821,898	173%

There is no connection between the principle of applying the group plan of depreciation accounting to buildings and central office equipment and the principle that plaintiff is entitled to include as part of its depreciation charges advance contributions for anticipated depreciation on con- [fol. 2462] templated future additions (Defendants' Brief, p. 586).

Plaintiff's use of the straight line method to compute annual advance contributions for anticipated depreciation on contemplated future additions precludes the possibility of using the reproduction value of the property in service as a base for the computation of the amounts thereof (Defendants' Brief, p. 571).

(b) That plaintiff failed to recompute the composite depreciation rate for buildings and central office equipment during the period under investigation, although new buildings and offices were added or retired, and additions were made to existing buildings and central offices (Defendants' Brief, p. 578).

(c) That plaintiff's method of computing the average life of aerial cable, underground cable, pole lines and non-multiple private branch exchange is erroneous and the average life so determined is from 9 per cent to 15 per cent too short, and the depreciation rates are accordingly too high (Defendants' Brief, p. 589).

(d) That no issue can arise in respect to the inadequacy in the years 1923, 1924 and 1925 of the depreciation allowance fixed by the 1923 Order as plaintiff's experience reveals that such allowance was substantially the same in each of such years as the depreciation allowance fixed by the 1920 Order as shown in Finding 8 above (Defendants' Brief, p. 592).

(e) That the fact of the excess in the years 1928-1931 of the actual losses realized from retirements over the amount of depreciation allowance of the 1923 Order has little probative value, as evidence that the 1923 Order on depreciation was constitutionally inadequate. Special non-[fol. 2463] recurring conditions prevailed in such years (Defendants' Brief, p. 594).

(f) That plaintiff included as part of its current depreciation expense, charges for depreciation on property which had already been written out of its plant account (Defendants' Brief, p. 607).

13. That the proper interpretation of the 1923 Order on depreciation is that the combined allowance for maintenance and depreciation in each of the years 1923 to 1931, inclusive, shall be computed by applying a ratio of 9.18% to the property in service at December 31, 1922, less all retirements made thereafter and a rate of 8.75% on all gross additions made thereafter (Defendants' Brief, p. 612.)

14. That the decision of the Supreme Court in United Railways & Electric Company v. West, 280 U. S. 234, is rendered inapplicable in the determination of the proper method of computing depreciation expense charges of plaintiff's depreciable property throughout the use by plaintiff of the group basis of depreciation treatment and the inclusion of advance contributions for anticipated depreciation on contemplated future additions; through the use by plaintiff of depreciation accumulations to reimburse itself for its investment in property in service and not to provide for replacements thereof; through the use by plaintiff of long lived property in service whose replacement value cannot be assumed to be "for all purposes" "present value"; and through the use by plaintiff of spot prices as synonymous with fair value of its property (Defendants' Brief, p. 619).

[fol. 2464] License Contract Payments

15. That the fair rental for telephone instruments allocable to the Chicago Division in the years 1923 to 1927, is (Defendants' Brief, pp. 91-2):

1923	$187,260
1924	223,320
1925	261,149
1926	236,165
1927	237,777

To cover:

(a) Actual maintenance:

1923	$71,661
1924	86,325
1925	104,841
1926	132,126
1927	136,328

(b) Taxes paid:

1923	$41,651
1924	52,802
1925	61,824
1926	1,540

(c) Depreciation expense charges—as charged by American Company:

1923	$140,705
1924	155,306
1925	172,036
1926	189,715
1927	207,841

(d) Less credit of an equal amount to undo the illegal and discriminatory burden on plaintiff's telephone service charges for the unjust enrichment of the American Com- [fol. 2465] pany resulting from plaintiff's purchase of the telephone instruments from the American Company on December 31, 1927.

That plaintiff's purchase on December 31, 1927, of the telephone instruments from the American Company created an illegal and discriminatory burden on plaintiff's telephone service charges in Chicago, for the unjust enrichment of the American Company, in an amount in excess of $865,000 (Defendants' Brief, p. 23).

That plaintiff recorded the purchase of the telephone instruments as of December 31, 1927, as part of its Station Apparatus Account in which was recorded a large investment in station apparatus other than instruments. Beginning with 1928 the depreciation rate applied to the entire account was increased due in part to the recording of the instruments as a part thereof. It is impossible to determine how much of the increase in the depreciation expense charges of the entire account is applicable to telephone instruments; this accounting procedure renders impossible any adjustments for the period subsequent to December 31, 1928, adequate to offset the illegal and discriminatory burden on the telephone service charges in Chicago arising from the sale (Defendants' Brief, pp. 23, 593).

That substantial offset to the illegal and discriminatory burden on the telephone service charges in Chicago and to the unjust enrichment of the American Company resulting from the sale of the telephone instruments as of December 31, 1927, may be made through an adjustment by way of credit against instrument rental allowances for the period 1923 to 1927, inclusive, measured by the amount of the claimed depreciation expense charges on the instruments for these years.

[fol. 2466] (e) Return equal to cost to American Company of carrying investment in telephone instruments (A-166; Defendants' Brief, p. 55):

1923	$73,948
1924	84,193
1925	94,484
1926	102,494
1927	101,389

16. That all expenses of the Department of Operation and Engineering allocated by plaintiff to Chicago are allowed as part of the costs of the License Contract Services to be charged by plaintiff as an operating expense, to cover the work of that department together with such other work of the other departments not otherwise compensated for (Defendants' Brief, pp. 405,435):

1923	$157,340
1924	161,066

1925	177,718
1926	197,583
1927	212,344
1928	299,449
1929	240,601
1930	244,652
1931	238,958

17. That the expense of the class of work of the Department of Development and Research, concerned with the protection of telephone and telegraph plant from inductive interference from neighboring trolley wires, high tension circuits, electrolysis and lightning, allocable to Chicago, is allowed as part of the License Contract services to be charged by plaintiff as an operating expense (Defendants' Brief, pp. 140, 435):

[fol. 2467]

1923	$7,381
1924	9,709
1925	10,237
1926	15,898
1927	31,674
1928	33,929
1929	33,957
1930	32,451
1931	28,139

18. That the expenses covering the cost of giving advice to the Licensee Companies and to the Long Lines in their Treasury Department work allocated by plaintiff to Chicago are allowed as part of the costs of the License Contract services to be charged by plaintiff as an operating expense (Defendants' Brief, p. 435):

1923	$564
1924	668
1925	999
1926	1,148
1927	2,059
1928	1,598
1929	1,841
1930	2,133
1931	2,110

19. That plaintiff has adequately compensated the American Company for any services actually rendered to it under the License Contract and not otherwise compensated for in the above Findings 15 to 18, inclusive, by the following services rendered by plaintiff to the American Company without being adequately compensated therefor (Defendants' Brief, p. 407):

(a) Plaintiff's financing of the Central Union properties to liquidate frozen assets of American Company and to [fol. 2468] relieve it of incurring losses in connection therewith (Defendants' Brief, p. 409).

(b) Plaintiff's assistance to American Company in the sale of the American Company's stock (Defendants' Brief, p. 416).

(c) Losses to plaintiff resulting from the American Company's method of financing the licensee companies (Defendants' Brief, p. 425).

(d) Plaintiff's surrender of its right under Section 10 of the Original License Contract of 1881 to participate in the receipts and profits of the long distance business in Chicago as part consideration for the present license contract arrangement (Defendants' Brief, p. 430).

20. That in addition to the above credits, as shown in Finding 19, the total amount of the license contract payments which are properly chargeable and are allowed as an operating expense (the total of Findings 15 to 18, inclusive), in each year, is (Defendants' Brief, p. 435):

	Chicago division	Chicago intrastate	Chicago intrastate exchange
1923	$352,545	$343,026	$327,867
1924	394,763	382,841	364,721
1925	450,103	435,070	412,339
1926	450,794	433,979	408,464
1927	483,854	464,258	435,565
1928	264,976	251,261	235,166
1929	276,399	250,417	233,640
1930	279,236	252,066	235,033
1931	269,207	243,632	227,615
Total	3,221,877	3,056,550	2,880,410

[fol. 2469] 21. That the difference between the amount paid by the plaintiff and charged as an operating expense under existing rates each year and the amount properly chargeable is (Defendants' Brief, p. 437):

Years	Chicago division	Chicago intrastate	Chicago intrastate exchange
1923	$1,371,706	$1,318,988	$1,230,692
1924	1,465,675	1,404,254	1,303,492
1925	1,537,432	1,465,999	1,349,801
1926	1,485,084	1,411,592	1,286,883
1927	1,601,866	1,516,622	1,376,580
1928	839,917	785,355	708,860
1929	654,897	583,859	523,432
1930	688,986	612,065	547,768
1931	662,445	590,567	531,214
Total	10,308,008	9,689,301	8,858,722

22. That giving effect to the reduction in revenue by the reduction in telephone rates prescribed by the 1923 Order, the net difference between the amount properly chargeable as an operating expense and the license contract payment in each year is (Defendants' Brief, p. 435):

[fol. 2470]

	Chicago division	Chicago intrastate	Chicago intrastate exchange
1923	$1,346,960	$1,294,242	$1,205,946
1924	1,367,345	1,305,924	1,205,162
1925	1,440,965	1,369,532	1,253,334
1926	1,394,160	1,320,668	1,195,959
1927	1,513,914	1,428,670	1,288,628
1928	796,303	741,741	665,246
1929	621,205	550,167	480,740
1930	655,947	579,026	514,729
1931	629,445	557,567	498,214
Total	9,766,244	9,147,537	8,316,958

23. That prior to the execution of the 1919 License Contract, the American Company had already reduced the plaintiff to a mere department of an integrated single organization, of which the American Company was the head, operating the properties and personnel of the plaintiff without limitation in the administration of its affairs arising from

legal restraints incident to the separate and distinct corporate existence of plaintiff; that the 1919 License Contract was the action of the American Company, prescribing the functional operations of the American Company and the plaintiff in their relation to each other and to the other licensees in the rendering of this nation-wide unified telephone service and was the action of the American Company in prescribing the yearly uniform assessment to be paid by the plaintiff as determined by the American Company to maintain outside its territory the operations of the American Company as the headquarters department functioning for the Bell System as a whole (Defendants' Brief, pp. 433, 1071).

[fol. 2471] 24. That the reduction in license contract payments in 1926 from 4½ per cent to 4 per cent (in consideration of which the plaintiff was required to pay the property taxes on telephone instruments, which theretofore the American Company was paying), the reduction from 4 per cent to 2 per cent at the time of the sale of the telephone instruments in 1927, and the reduction from 2 per cent to 1½ per cent at the beginning of 1929, were made during the period of the following increasingly large profits which the American Company derived from its operations with the Licensee Companies:

(a) In the years 1923 to 1930, inclusive, the American Company increased, through purchase, its stock investment in the Licensee Companies from $643,645,207 in 1922 to $1,720,202,857; during this period the yield to the American Company on such investments increased, while its cash cost of producing funds to make the investment decreased as follows (Defendants' Brief, pp. 343-4):

	Yield to American Company in stock holdings in licensees	American Company's cost of funds
1922	6.43%	6.90%
1923	6.65%	6.87%
1924	6.97%	6.85%
1925	7.03%	6.93%
1926	7.35%	6.83%
1927	7.39%	6.86%
1928	7.48%	6.55%
1929	7.48%	6.53%
1930	7.26%	6.25%

as a result of the increase in yield to the American Company on its stock investment, the decrease in cost of funds to purchase the stock and the large increase in stock pur-[fol. 2472] chases by the American Company during the period of decrease in its own cost of procuring funds, the American Company was able to pay from its dividends on its stock investment in the Licensee Companies, its expenses allocated by it to Holding Company operations, interest and amortization on credit obligations, its regular dividend on its capital investment in such securities, and to accumulate a progressively larger surplus, as follows (Defendants' Brief, pp. 343-4):

1926	$4,353,558
1927	4,895,088
1928	11,309,069
1929	12,444,626
1930	15,095,258

(b) During this period the inventions resulting from the work of the Department of Development and Research (the cost of which was charged to the Licensee Companies), and embodied in the by-products used in non-telephone fields yielded to the American Company progressively larger royalties each year, which cash royalties, beginning with the year 1926, were (Defendants' Brief, p. 145):

1926	$260,981
1927	540,427
1928	505,893
1929	1,233,101
1930	1,295,655
1931	1,135,555

in addition to which cash royalties the American Company was entitled, under royalty contracts, to receive additional royalties for a long period of years beyond 1931, all of which royalties and rights the American Company retained (Defendants' Brief, 160, et seq.).

[fol. 2473] (c) During this period the American Company received progressively larger amounts of cash dividends on the bonus stock, which it had received in consideration for the license given to the Western Electric to sell to the Licensee Companies, including plaintiff, apparatus embodying the inventions resulting from the development and research work of the American Company, which cash dividends were (Defendants' Brief, p. 284):

1923	$244,900
1924	244,900
1925	275,512
1926	367,350
1927	2,755,155
1928	551,025
1929	918,375
1930	734,700

(d) The return to the Western Electric from its Bell and non-Bell business during the period 1926 to 1930, inclusive, related to capital and surplus, was (Defendants' Brief, p. 781):

1926	22.38%
1927	26.13%
1928	30.27%
1929	25.53%
1930	7.45%

that the division of such profits between Bell and non-Bell business is impossible of determination with accuracy, as plaintiff failed to present the facts necessary for a proper distribution of the Western Electric through expenses and/or investment between Bell and non-Bell operations (Defendants' Brief, pp. 783, 817, 838).

(e) The American Company's return on its capital and surplus, resulting from the cash dividends received from [fol. 2474] the Western Electric, increased as follows (Defendants' Brief, p. 1076):

1923	9.94%
1924	10.06
1925	11.71
1926	15.97
1927	127.16
1928	23.76
1929	35.65
1930	19.47

Included in the above return is a cash dividend from the Western Electric in the sum of $47,935,585 on December 31, 1927, a large portion of which cash dividend represented earnings resulting from the Western Electric's operations with the Licensee Companies or from operations the expenses of which were charged to the Licensee Companies (Defendants' Brief, pp. 195, 247).

(f) The American Company, as the operator of the Long Distance services, making use of the exchange plant facilities of the Licensee Companies, including the plaintiff, without compensating the plaintiff for the uses of its Chicago exchange plant facilities, earned in said Long Distance service the following returns on its capital and surplus allocable to said Long Lines business (Defendants' Brief, p. 247):

1922	21.00%
1923	18.95
1924	16.99
1925	19.70
1926	17.17
1927	14.27
1928	14.66
1929	13.53
1930	8.51

[fol. 2475] in connection with which showing consideration must be given to the fact that the Long Lines plant investment is built in advance of and to provide for increased business five years ahead of requirements, and to the fact that the per cent of increase of the Long Lines average investment in fixed capital, material and supplies, from 1926 to 1930, was 139.7 per cent over the investment in 1926 (Defendants' Brief, p. 245).

(g) That in the fall of 1927, the American Company sold to the Licensee Companies, including plaintiff, the telephone instruments which it had theretofore rented to them under the license contract, at a profit to it of $14,395,000 (Defendants' Brief, p. 24).

25. That Account 527 of the Accounting Rules of the Interstate Commerce Commission and of the Illinois Com-

merce Commission does not by its terms cover license contract payments to include all the services enumerated in the 1919 License Contract (Defendants' Brief, p. 119).

26. That plaintiff's showing of the amount which it would have cost it to procure from any source other than the American Company the same or similar services as those which it claimed were rendered by the American Company was an unfair presentation; an allowance based on plaintiff's showing of $709,000 as the required amount to maintain its own instruments in 1923 would be sufficient to cover the actual maintenance, depreciation expense charges, and taxes as claimed by the American Company for 1923, plus a return of 39.02 per cent on its current investment in instruments in service (Defendants' Brief, p. 84).

[fol. 2476] Separation of Revenues

27. That plaintiff's showing of intrastate and intrastate exchange net income received under the existing rates, or to be received under the rates in suit, allocated to intrastate toll and to interstate toll a portion of the net revenues arising under the rates fixed for exchange service in the following amounts (Defendants' Brief, pp. 633, 725):

Under Present Rates
Net Amount of Chicago Exchange Service revenues allocated to

	Intrastate toll service	Interstate toll service	Total allocated to toll services
1923	$482,231	$260,614	$742,845
1924	547,619	278,223	825,842
1925	627,685	327,430	955,115
1926	739,755	335,599	1,075,354
1927	833,826	373,025	1,206,851
1928	970,292	448,464	1,418,756
1929	1,098,525	508,729	1,607,254
1930	1,125,953	492,965	1,618,918
1931	991,800	448,700	1,440,500

Under Rates in Suit
Net Amount of Chicago Exchange Service revenues allocated to

	Intrastate toll service	Interstate toll service	Total allocated to toll services
1923	$453,442	$245,042	$698,464
1924	516,439	262,398	778,837
1925	593,274	309,505	902,779
1926	700,718	317,915	1,018,633
1927	792,111	354,372	1,146,483
1928	925,205	427,655	1,352,860
1929	1,051,292	486,857	1,538,167
1930	1,079,128	472,469	1,551,597
1931	954,223	431,580	1,385,803

28. That plaintiff's allocation of exchange service revenues disregarded the findings of fact by this Court in its opinion of January 31, 1930, and the findings of fact [fol. 2477] and direction by the Supreme Court in its opinion of December 1, 1930, and the orders establishing the exchange service rates from which such revenues were collected (Defendants' Brief, pp. 641, 646).

29. That plaintiff presented no evidence and that there is no evidence in the record that the Chicago exchange service rates ever compensated plaintiff for the unlimited interstate and intrastate uses of its Chicago exchange plant facilities by the users of the interstate and intrastate toll services including the services of the American Company and other connecting companies and its own interstate and intrastate toll services (Defendants' Brief, p. 653).

30. That plaintiff's claim that the Chicago exchange service and exchange rates compensated it for the intertsate and intrastate uses of the Chicago exchange plant facilities by the users of the interstate and intrastate toll services is contrary to the basis upon which its Chicago exchange service and Chicago exchange service rates have been built up and were established and in force during its history, including the period under investigation (Defendants' Brief, p. 659).

31. That the compliance with the requirements of the Illinois Public Utilities Act and of the Illinois Commerce Commission law necessary as a condition precedent to making applicable to the Chicago exchange service rates (a) the

1919. License Contract covering the use in the American Company's services (interstate and intrastate) of the Chicago exchange plant facilities; (b) the 1925 and the 1926 revisions of the intrastate toll rate schedules covering the use in the intrastate toll service of the Chicago exchange plant facilities; and (c) the 1926 and 1929 revisions of the [fol. 2478] connecting company contracts covering the use in the intrastate toll service of the Chicago exchange plant facilities, was not in each case made (Defendants' Brief, pp. 717, 723-4).

32. That in determining the intrastate and intrastate exchange net incomes, respectively, derived from the existing rates, or to be derived from the attacked rates, there should be reallocated to exchange service earnings the amounts shown in Findings 1, 2, 27 (Defendants' Brief, pp. 633, 725).

33. That plaintfff's showing of Rate of Return from intrastate exchange and intrastate toll services on the basis of plaintiff's showing of rate base expressed in terms of book cost and fair value as set forth in Plaintiff's Exhibit A-53, after restoring to the Exchange Service Revenue, that portion thereof which plaintiff illegally allocated to intrastate toll service, is as follows:

Rate of Return

(Computed from Ptf. Exh. A-53; Def. Exh. X-264-270-B)

	Return on average book cost, intrastate		Return on reproduction cost new less depreciation, intrastate	
Year	Exchange	Toll	Exchange	Toll
1923	6.31%	2.96%	4.04%	1.88%
1924	6.39	3.91	4.21	2.56
1925	6.04	5.57	4.14	3.80
1926	5.55	6.83	4.00	4.90
1927	5.18	6.23	3.91	4.69
1928	5.33	5.76	4.15	4.46
1929	6.50	4.11	5.09	3.20
1930	5.71	2.32	4.47	1.80
1931	5.05	.77	4.02	.61

[fol. 2479] That plaintiff voluntarily reduced its intrastate toll rates on February 1, 1929, by an estimated amount of $62,000 per year, and on January 1, 1930, by an estimated amount of $262,000 (X-352, 1930, p. 6).

That plaintiff's failure to include as part of the intrastate toll service rates the cost of the intrastate uses of the Chicago Exchange plant facilities and its voluntary reduction in intrastate toll rates in the face of the Rate of Return which plaintiff claimed was received by it from such service are inconsistent with plaintiff's position in respect to the minimum return to which it claims it is constitutionally entitled from the intrastate and interstate exchange services, and is convincing evidence that its prognosticated minimum return is at variance with its experience.

[fol. 2480] Valuation.

The issues in respect to Valuation are:

(a) Western Electric Profits and Prices.

(b) Depreciation in Valuation.

(c) Value of Property in Service for Rate-Making Purposes.

Western Electric Profits and Prices

34. That Western Electric profits and prices enter into the following issues of confiscation:

(a) Valuation:

Plaintiff's showing on valuation applied the spot Western Electric price on December 31 of each of the years 1923-1931 and the spot Western Electric price for June 30, 1923, to measure the difference between the value of the plant in 1911 plus the book cost of gross additions and retirements for each of the years beginning with 1912 to the date of each revaluation. Plaintiff then assumed that such application would produce the fair value new of the property as of the date of revaluation.

On such showing the Western Electric's prices enter into the reasonableness of the book cost and the reasonableness of the spot prices used in connection with such valuation (Defendants' Brief, pp. 795, 908).

(b) Expense of Depreciation:

Plaintiff's showing of the proper current depreciation allowance in each of the years 1923-1931, was computed on the [fol. 2481] basis of the current value of the depreciable property through the application of a depreciation rate to the current undepreciated reproduction value new of such property built as above stated on spot Western Electric prices in each year of revaluation (Defendants' Brief, p. 795).

(c) Maintenance:

Substantial amounts of Western Electric purchases each year were used for current maintenance (Defendants' Brief, p. 796).

(d) Rate of Return:

The American Company as the investor in plaintiff provided capital to purchase Western Electric manufactures. The American Company acted as the purchasing agent for plaintiff and as selling agent for the Western Electric. The American Company received royalties from the Western Electric as consideration for the promotion contract to Western Electric to sell its products to the Licensee Companies, including plaintiff. The American Company as the principal investor in the Western Electric received earnings on its investment from the Western Electric. The profits to the American Company from its relationship to Western Electric enter into the consideration of the extent to which the American Company's investment in plaintiff is made to receive therefrom only the return of ordinary investors and of the extent to which the capital is attracted to plaintiff from the American Company on the basis of the standard of the Bluefield Case (Finding 70).

35. That on plaintiff's own showing the Western Electric's rate of return from Bell business during the years 1924 to 1930 was excessive (Defendants' Brief, p. 734).

[fol. 2482] In arriving at "Average Investment" there should be deducted from plaintiff's showing:

(a) Notes payable to others and Trustee of Pension Fund (Defendants' Brief, p. 738);

(b) Reserves for Pension Fund (Defendants' Brief, p. 747);

(c) Working Reserves (Defendants' Brief, p. 748);

(d) Excess Cash (Defendants' Brief, p. 748);

(e) Amounts shown in Reserve for Depreciation (Defendants' Brief, p. 750).

In arriving at "Profits," there should be:

(a) Redistributed excess Pension Fund Accruals appropriated in the years 1925, 1926, 1927, 1928 and 1929 over the years prior to 1925 in which the deficiency existed as the difference between the actual accruals and the accruals shown on an actuarial basis made by the Western Electric (Defendants' Brief, p. 754);

(b) Deducted extraordinary depreciation on buildings and machinery for the years 1924 to 1927 (Defendants' Brief, p. 757);

(c) Deducted extraordinary depreciation of machinery in 1928 (Defendants' Brief, p. 766);

(d) Deducted excessive depreciation on Tools, Furniture and Fixtures (Defendants' Brief, p. 767);

(e) Deducted interest on current obligations which plaintiff failed to deduct and which should be deducted in arriving at "Average Investment" (Defendants' Brief, p. 768);

(f) Deducted interest on Excessive Cash Balances (Defendants' Brief, p. 768);

[fol. 2483] (g) Redistributed Federal Income Tax over the years in which earnings were made in respect to which the taxes were paid (Defendants' Brief, p. 769).

The net effect of the adjustments to "Average Investment" and "Profits" on plaintiff's showing, and plaintiff's showing of Rate of Return from combined Bell and non-Bell sales and from Bell and non-Bell separately are for each of the years 1916 to 1930, inclusive, as follows (Defendants' Brief, pp. 735-6):

	Rate of return combined sales	
	Plaintiff's showing (X-48), A-77 & A 79 combined	Adjusted showing (X-55)
1916	6.5%	9.2%
1917	7.0%	10.3%
1918	6.4%	7.9%

	Rate of return combined sales	
	Plaintiff's showing (X-48), A-77 & A 79 combined	Adjusted showing (X-55)
1919	5.8%	7.1%
1920	5.8%	7.5%
1921	5.6%	6.0%
1922	5.7%	5.7%
1923	6.0%	6.3%
1924	7.4%	11.1%
1925	8.4%	15.7%
1926	8.3%	16.4%
1927	10.2%	19.7%
1928	11.3%	21.3%
1929	10.3%	20.4%
1930	4.5%	6.5%

Rate of return

	Bell sales		Non-Bell sales	
	Plaintiff's showing (A-77)	Adjusted showing (X-55)	Plaintiff's showing (A-79)	Adjusted showing (X-55)
1916	4.6%	6.3%	13.3%	19.8%
1917	3.8	5.5	19.5	31.0
1918	3.4	3.8	15.6	21.9
1919	3.8	4.4	11.7	17.0
1920	4.9	6.0	9.2	15.0
1921	8.9	11.1	9.8*	36.4*
1922	5,2	5.0	9.7	12.8
1923	4.7	4.4	15.2	25.1
1924	6.9	10.3	11.6	18.6
1925	10.0	17.0	3.1*	5.8
1926	7.8	15.6	13.7	28.3
1927	10.1	19.6	11.6	22.1
1928	10.7	20.3	17.0	32.7
1929	8.5	17.2	24.2	44.3
1930	4.3	6.2	6.6	10.4

Plaintiff's showing of the per cent return on capital stock and surplus allocable to Bell and non-Bell business is as follows (Defendants' Brief, p. 779):

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* Red.

	% return on capital stock and surplus		
	Total	Non-Bell	Bell
1926	16.52	27.46	15.68
1927	22.01	25.29	21.80
1928	26.36	39.93	25.08
1929	23.40	55.01	19.44
1930	8.44	12.55	8.15

That the plaintiff's showing of the Rate of Return from Bell and non-Bell business, after giving effect to defendants' adjustments, is as follows (Defendants' Brief, p. 781):

[fol. 2485]

	% return on capital stock and surplus		
	Total	Non-Bell	Bell
1926	22.38	33.48	21.53
1927	26.13	29.47	25.90
1928	30.27	43.78	29.00
1929	25.53	56.93	21.48
1930	7.45	11.50	7.17

The Rate of Return from Bell business and from non-Bell business is grossly excessive (Defendants' Brief, p. 782).

The grossly excessive Rate of Return from the non-Bell business is convincing evidence of the failure by plaintiff to make proper distribution of the Western Electric expenses and/or investment between the Bell and non-Bell operations (Defendants' Brief, p. 782).

36. That plaintiff's showing of the Western Electric's profits allocated between Bell and non-Bell operations failed to give effect to all non-Bell sales which received the benefits of the Western Electric's development and research work, covered by its operating expenses; that among these sales are:

(a) Sales in foreign countries other than in Canada by International Western Electric from its own factories of telephonic appliances, using Western Electric's inventions (Defendants' Brief, p. 840);

(b) Sales in Canada by Northern Electric Company, Ltd., from its own factories of telephonic appliances, using Western Electric's inventions (Defendants' Brief, p. 842);

(c) Sales in foreign countries by International Standard Electric from its own factories of telephonic appliances using Western Electric's invention (Defendants' Brief, p. 844);

[fol. 2486] (d) Sales by the Automatic Electric Company (Defendants' Brief, p. 846);

(e) Sales by the Graybar Electric (Defendants' Brief, p. 849);

(f) Sales by the Electric Research Products, Inc. (Defendants' Brief p. 850).

37. The Western Electric's sales prices of its manufactured products, during the period 1916-1931, inclusive, were based on standard costs which are assumed material and labor costs which remain constant for many years and assumed overhead costs which have no relation to the conditions under which the products are manufactured. The Western Electric prices since 1925 have been based on copper and lead prices fixed as standard in 1925, and since 1929 on labor costs fixed as standard in the spring of 1929 (Defendants' Brief, p. 786).

The variations in each of the years 1916-1931, inclusive, between the actual and standard costs of production of the entire product were substantial. For the entire period the variations which increased cost were $163,873,000 and the variations which decreased cost were $109,415,000 (Defendants' Brief, p. 792).

The Total Dollars of variations between the actual and standard costs of the entire production represent corresponding variations in the sales prices of products sold to any one customer or to a group of customers and a corresponding variation in the net profits (subject to income tax) of Western Electric on the products sold to such one customer or customers (Defendants' Brief, p. 794).

The distribution by plaintiff of the $273,288,000 variations between the actual and standard costs of entire pro-[fol. 2487] duction for the years 1916-1931 on the basis of standard costs of sales for the purpose of showing the current costs of sales before interest and expenses of Bell and non-Bell sales, considered as separate units, and their distribution on the basis of sales for the purpose of showing the current cost of sales before interest and expenses of sales to the Bell System as a unit and to plaintiff considered separately, is based in each case on assumptions of facts which were not proved (Defendants' Brief, p. 808).

38. That plaintiff's distribution of Development and Research expense, General Expense, and plant facilities between Bell and non-Bell business on the basis of standard cost of sales is based on assumptions of fact which were not proved (Defendants' Brief, p. 817; N. R. II, 385).

39. That it is impossible to determine from the record the costs of Western Electric manufactures to plaintiff and the profits of the Western Electric from its sales of such manufactures for any of the years in question or the extent to which the Western Electric profits are excessive. It is impossible to allocate in any given year such excesses as are found to exist in the profits of the Western Electric. It is impossible to determine the extent to which such excess profits increased in any given year the maintenance and depreciation expenses of plaintiff and the value of plaintiff's property.

40. That the consequences of the use by the Western Electric of standard costs as a factor in establishing prices of manufactured products sold to the Bell System are that (a) Western Electric spot prices have no possible probative force as a basis for reproduction cost estimate of plaintiff's property; (b) Western Electric's spot prices do not reflect [fol. 2488] an honest and intelligent forecast of probable material and labor costs for a reasonable period in the immediate future after the date of such spot prices and have no probative force to determine fair value of the property in service to which such spot prices are applied; (c) plaintiff's showing of Western Electric's actual profits derived from the manufactures have no probative force as a basis for plaintiff's showing of the reasonableness of the Western Electric prices of manufactured products to plaintiff.

41. That plaintiff's presentation to show the reasonableness of the current Western Electric prices of Bell apparatus in any one year was predicated on the showing of the reasonableness of the profits derived from prices over a period of years. Such a showing precludes the possibility of determining the reasonableness of current Western Electric prices which are not the composite average

of all the separate prices of the period of years in which the profits were used in the showing to establish the reasonableness of Western Electric current prices. The only current price which is a composite average in any one year is the composite of the average of the Western Electric prices used to build up the investment in plant purchase from the Western Electric in a given year. As practically all of plaintiff's purchases were through the Western Electric, for that purpose such composite average prices are substantially reflected in the investment as shown in the Fixed Capital Account. Plaintiff's presentation to show the reasonableness of current Western Electric prices of Bell apparatus precludes the possibility of using current Western Electric prices as a basis for the determination of present value of plaintiff's plant account.

[fol. 2489] For the purpose of proving the reasonableness of the spot Western Electric prices by the profits of the Western Electric in each year of revaluation, it is necessary, in view of Western Electric use of standard costs as a basis for prices, to make a proper distribution of the variations in such year between the actual and standard costs of the Western Electric's entire production. Plaintiff's Western Electric showing was based upon a proper distribution over a period of years of the variations of a period of years considered as a unit. Plaintiff's showing merely shows the relation of the costs to the composite of the Western Electric prices for the entire period used by plaintiff for its proper distribution and not to the prices of any of the individual years of the period. Plaintiff's showing can be reflected only in the book cost of the Western Electric purchases during the entire period and not in the actual reproduction cost new during any one year of such period. The use of the Western Electric's standard costs as part of plaintiff's showing renders impossible of proof the reasonableness of spot Western Electric prices as a basis for determining the reproduction cost new in any one year (Defendants' Brief, pp. 797, 908-910).

Plaintiff's showing to arrive at the portion of the total Western Electric profits allocable to Bell business considered as a unit and to the component parts thereof separately, distributed the variations between actual and standard costs of entire production between Bell and non-Bell sales. Such variations gave effect to actual volume compared to the estimated volume of sales of a given year. Plaintiff's showing of such an effect precludes the possibility of varying the volume of production of any item or items in any given year without varying correspondingly [fol. 2490] the effect of such changing volume on the amount and character of the adjustments. The reproduction of the property necessarily involves the purchase of a larger volume in a given year than the actual costs of sales in fact made during any one year in the period to establish the reasonableness of the prices. Plaintiff made no showing of the varying effect in the adjustments and on the profits of such increased volume in each year of the reconstruction period of each of the revaluations in each of the years under investigation. Without such showing the reasonableness of the Western Electric profits to substantiate the reasonableness of the spot prices cannot be determined as required by the Supreme Court's direction. Plaintiff's showing of the basis upon which the Western Electric engineers its manufacture precludes the possibility of using spot Western Electric prices to determine the reproduction cost new of property using Western Electric apparatus (Defendants' Brief, pp. 911-913).

Depreciation in Valuation

42. That the following represents the percentage of book cost of physical property represented by the amounts shown by

(a) Depreciation Reserve shown on plaintiff's books;

(b) The amount which would have been in the Depreciation Reserve had plaintiff complied with the 1920 Order on depreciation;

(c) The amount which would have been in the Reserve had the 1923 Order on depreciation been in effect; and

(d) The amount which plaintiff claimed represented the existing depreciation based upon inspection evidence as of [fol. 2491] December 31st of each of the years under investigation (Defendants' Brief, p. 522):

Year	Actual depreciation* reserve per plaintiff's books	Deprec. reserve* on basis of P.U.C. order of 1920	Deprec. reserve* basis of I.C.C. order of 1923	Existing depreciation claimed by plaintiff
1923	29.37%	25.09%	28.75%	9%
1924	28.94%	23.81%	27.03%	9%
1925	28.25%	22.51%	25.27%	9%
1926	28.19%	21.81%	23.86%	9%
1927	28.32%	21.30%	22.45%	9%
1928	27.98%	20.33%	20.37%	9%
1929	26.70%	18.50%	17.29%	8%
1930	26.91%	17.90%	15.60%	8%
1931	28.11%	18.15%	15.21%	8%

43. That the following represents the average depreciation reserve for the same years on the same bases as the percentages shown in Finding 42:

Average Depreciation Reserve as recorded on books (Computed from Defendants' Brief, p. 921):

Year	Intrastate exchange	Intrastate total	Total Chicago area
1923	$25,376,345	$26,554,700	$27,791,419
1924	27,977,545	29,325,045	30,764,839
1925	30,593,736	32,150,903	33,925,190
1926	33,768,966	35,583,609	37,726,473
1927	37,202,669	39,386,377	41,913,778
1928	40,162,022	42,758,448	45,873,241
1929	41,378,972	44,411,052	48,204,767
1930	42,402,101	45,790,260	50,120,687
1931	44,661,239	48,311,181	53,206,146

Average Depreciation Reserve as recorded on books raised to level of Plaintiff's Reproduction Cost (Computed from Defendants' Brief, p. 921):

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*Includes Reserve for amortization of Intangible Capital.

[fol. 2492]

Year	Intrastate exchange	Intrastate total	Total Chicago area
1923	$35,451,349	$37,097,541	$38,825,265
1924	40,429,888	42,377,138	44,457,761
1925	42,357,495	44,513,416	46,969,944
1926	44,288,411	46,668,338	49,478,730
1927	46,429,665	49,154,975	52,309,221
1928	48,595,702	51,737,354	55,506,227
1929	49,464,953	53,089,540	57,624,596
1930	50,770,925	54,827,798	60,012,914
1931	52,068,256	56,323,537	62,030,327

Average Depreciation Reserve on basis of 1920 Order (Computed from Defendants' Brief, p. 921):

Year	Intrastate exchange	Intrastate total	Total Chicago area
1923	$22,204,540	$23,235,613	$24,317,753
1924	23,438,632	24,567,521	25,773,732
1925	24,750,377	26,010,127	27,445,528
1926	26,469,369	27,891,754	29,571,410
1927	28,341,073	30,004,626	31,930,006
1928	29,678,171	31,596,828	33,898,539
1929	29,334,585	31,484,102	34,173,561
1930	28,758,894	31,056,886	33,993,964
1931	29,263,320	31,654,866	34,862,187

Average Depreciation Reserve on basis of 1920 Order raised to level of Plaintiff's Reproduction Cost (Computed from Defendants' Brief, p. 921):

Year	Intrastate exchange	Intrastate total	Total Chicago area
1923	$32,951,945	$34,481,186	$36,087,060
1924	33,888,907	35,521,120	37,265,128
1925	34,280,275	36,025,079	38,013,168
1926	34,768,864	36,637,239	38,843,553
1927	35,401,853	37,479,857	39,884,918
1928	35,916,236	38,238,177	41,023,685
1929	35,093,578	37,665,091	40,882,547
1930	34,458,063	37,211,451	40,730,572
1931	34,444,899	37,259,908	41,035,143

[fol. 2493] Average Depreciation Reserve Based on 1923 Order (X-338):

Year	Intrastate exchange	Intrastate total	Total Chicago area
1923	$25,100,048	$26,248,803	$27,476,795
1924	26,735,747	28,007,019	29,392,498
1925	27,949,654	29,351,908	30,983,731
1926	29,356,603,	30,914,716	32,789,000
1927	30,445,384	32,204,666	34,288,440
1928	30,514,793	32,468,077	34,823,962
1929	28,518,005	30,583,958	33,130,569
1930	26,024,534	28,082,291	30,712,663
1931	25,035,005	27,060,466	29,777,709

Average Depreciation Reserve on basis of 1923 Order raised to level of Plaintiff's Reproduction Cost (Computed from Defendant's Brief, p. 921):

Year	Intrastate exchange	Intrastate total	Total Chicago area
1923	$35,463,296	$37,110,042	$38,838,349
1924	38,652,266	40,513,900	42,503,042
1925	38,695,513	40,665,045	42,909,196
1926	38,533,556	40,604,233	43,049,442
1927	38,004,039	40,234,785	42,816,628
1928	36,917,362	39,304,023	42,167,175
1929	33,989,326	36,479,923	39,596,139
1930	31,113,268	33,599,388	36,776,913
1931	29,440,105	31,846,099	35,072,796

44. That the portion of the depreciation reserve which represents the advance contributions made prior to and during the period 1923-1931, inclusive, for anticipated depreciation on contemplated future additions to central office equipment and buildings, should be deducted from the rate base (Defendants' Brief, p. 923).

Plaintiff's book investment in buildings and central office equipment represents the following per cent of total depreciable property (Defendants' Brief, p. 923):

[fol. 2494] 1923	41.44%
1924	40.83
1925	41.23
1926	41.47
1927	40.00

1928	41.27
1929	41.17
1930	41.36
1931	41.94

Plaintiff having invested in funds derived from the advance contributions in property placed in service, credit must be given for all income which such property produces by virtue thereof, whether the rate base is determined on the basis of book cost or reproduction value (Defendants' Brief, pp. 923-4).

As the record does not show what per cent of the depreciation reserve is represented by the cumulative advance contributions, the remainder of the depreciation reserve not covered by existing depreciation in property in service found by plaintiff, should be held to represent the advance contributions. By deducting such portion of the depreciation reserve, the same result is accomplished as by giving credit for the income on these funds reflected therein (Defendants' Brief, p. 924).

45. That plaintiff's showing of depreciation in valuation was based on inspection. The per cent condition of depreciable property in service determined by inspection, gives effect to deterioration and realized obsolescence in evidence, but excludes from consideration facts and contingencies which may not yet be manifest but which plaintiff has determined are certain of realization within the period of service life and against which plaintiff has made provision in its depreciation expense computations (Defendants' Brief, p. 926).

The per cent condition of property as of any given date pending the ultimate property retirement, even if it reflected the operation of all causes of property retirement, [fol. 2495] cuts off consideration of the balance of the period during which the causes were expected to operate to produce the property consumption reimbursed by the depreciation charges already made and covered by subscribers' rates then in force (Defendants' Brief, p. 948).

46. That the use by plaintiff of the straight line method of determining depreciation charges involves the principle that it has no right to return on the amount of property

cost, which is represented by the balance in the depreciation reserve (Defendants' Brief, p. 952).

47. That the straight line method of computing depreciation expense charges is based on the theory that plaintiff is being reimbursed by each annual depreciation charge for a portion of the total property cost which has been and will be consumed during the period of the service life (Defendants' Brief, p. 952).

48. That the straight line method of computing depreciation charges is intended to provide a fund which does not require any additional income accumulations thereon to provide the full reimbursement of the depreciation expense to which plaintiff is entitled under the law (Defendants' Brief, p. 952).

49. That by using the straight line method of computing depreciation charges plaintiff has elected to treat the funds represented by the balance in the depreciation reserve as payment for a portion of its capital investment in the service consumed and to be consumed in respect to which it is entitled to reimbursement during the service life of the property (Defendants' Brief, p. 954).

50. That where fair value of physical property is determined on the basis of reproduction cost new as of any given [fol. 2496] date, there should be deducted from such reproduction cost new the percentage thereof equal to the percentage which the amount of the depreciation reserve is of the undepreciated book cost of such physical property as of the same date—the company receiving a return on the fair value of the property into which the funds represented by the depreciation reserve were invested (Defendants' Brief, p. 959; Galveston Elec. Co. v. City of Galveston, 258 U. S. 388, 393, Note 1).

51. That where fair value is based upon the undepreciated book cost of physical property there should be deducted from such book cost the amount of the depreciation reserve as of the same date (Defendants' Brief, p. 959).

Value of Property in Service for Rate-making Purposes

52. That plaintiff has failed to present any convincing evidence of the undepreciated value of its property in serv-

ice, which would enable this Court to assign to it any greater value new than appears on plaintiff's books for each of the years 1923-1931, inclusive (Defendants' Brief, p. 910; United Fuel Gas Co. et al. v. R. R. Commission of Kentucky, 278 U. S. 300, 318).

53. That Findings 39, 40, 41, above preclude the possibility of using Western Electric spot prices as a basis for determination of present value of plaintiffs plant account as of the date of revaluation.

Physical Plant

54. That the index numbers used by plaintiff and by it applied to book costs are uncertain and not reasonably [fol. 2497] usable to ascertain reproduction costs new (Defendants' Brief, p. 876).

55. That the index numbers used by plaintiff to adjust book costs were made by pricing out each year of the years 1911 to 1923 a constant cross-section of the plant in service on June 30, 1923 (Defendants' Brief, pp. 878, 885).

While the items and quantities of property added to plaintiff's Chicago plant each year were not constant and were not substantially a cross-section of the plant in service on June 30, 1923 (Defendants' Brief, p. 878).

56. That plaintiff's material cost index is made up by pricing out each year a constant cross-section of the plant in service on June 30, 1923, while the items and quantities actually added each year were different therefrom (Defendants' Brief, p. 877).

57. That the labor cost index used by plaintiff is inconsistent with its books and with actual labor cost trends (Defendants' Brief, p. 885).

58. That for the purpose of weighting its material and labor cost indices into the construction cost index, which it applied to the book costs, the plaintiff used proportions of material and labor which are inconsistent with its material and labor indices (Defendants' Brief, p. 894).

59. That the methods used in plaintiff's estimate of reproduction cost new preclude the possibility of attaching any probative value to them as a basis for any finding of

reproduction cost new as of the respective dates of its estimates (Defendants' Brief, p. 913).

[fol. 2498]

Buildings

60. That plaintiff used the spot or current construction cost to arrive at reproduction cost new of the property but failed to make an "honest and intelligent forecast as to the probable price and wage levels during a reasonable period in the immediate future." Such reproduction cost new figures during each of the years under investigation did not and could not produce the fair value new of such physical plant and buildings within the requirements of law (Defendants' Brief, p. 914; McCardle v. Indianapolis Water Co., 272 U. S. 400).

Overheads

61. That overheads should be computed on the same basis as direct charges (Defendants' Brief, p. 916).

62. That the average undepreciated value of the plaintiff's property in Chicago (based upon undepreciated book cost, exclusive of working cash capital, material and supplies, construction work in progress and Going Value) for each of the years 1923 to 1931, is (X-338):

Year	Intrastate	Intrastate exchange
1923	$88,663,316	$84,783,048
1924	100,540,215	95,976,573
1925	112,486,829	107,112,897
1926	126,061,831	119,708,266
1927	139,205,005	131,600,492
1928	151,459,710	142,347,871
1929	162,493,935	151,517,431
1930	170,958,739	158,431,574
1931	175,710,631	162,558,785

[fol. 2499]

Working Cash Capital

63. That the average amount of working cash capital to be included in the rate base for each of the years 1923 to 1931 is (X-338):

Year	intrastate	Intrastate exchange
1923	$2,915,000	$2,750,000
1924	3,060,000	2,880,000
1925	3,225,000	3,025,000
1926	3,440,000	3,200,000
1927	3,695,000	3,425,000
1928	3,840,000	3,550,000
1929	3,975,000	3,635,000
1930	4,050,000	3,690,000
1931	3,800,000	3,450,000

Materials and Supplies

64. That the average investment of plaintiff in Chicago in materials and supplies is (X-338):

Year	Intrastate	Intrastate exchange
1923	$222,618	$212,875
1924	284,538	271,196
1925	338,324	321,892
1926	316,963	300,465
1927	306,108	288,668
1928	319,489	299,325
1929	253,664	235,475
1930	190,933	176,653
1931	203,648	188,393

Going Value

65. That the average annual amount of Going Value which should be included in the rate base, if plaintiff were to be considered as an independent enterprise apart from its relationship to the American Company as an integrated [fol. 2500] department thereof, by comparison with the allowances under similar circumstances in the case of other operating companies of the Bell System, (including the allowance for New York City) should not exceed the allowance by the 1923 Order which is (New York Telephone Company v. Prendergast, 36 Fed. (2) 54; Defendants' Brief, p. 963; X-338):

Year	Intrastate	Intrastate exchange
1923	$4,346,376	$4,156,161
1924	4,926,495	4,702,852
1925	5,511,855	5,248,532

Year	Intrastate	Intrastate exchange
1926	6,177,020	5,865,706
1927	6,821,045	6,448,425
1928	7,421,526	6,975,046
1929	7,962,203	7,424,355
1930	8,376,978	7,763,148
1931	8,609,821	7,965,380

66. That the average value of plaintiff's property in service in Chicago for each of the years 1923 to 1931, inclusive, separated as between Intrastate and Intrastate Exchange (including physical property, working cash capital, material and supplies, going value and construction work in progress), before deducting the balance in the depreciation reserve account is:

Year	Intrastate	Intrastate exchange
1923	$96,888,766	$92,606,167
1924	110,207,894	105,155,508
1925	123,231,118	117,292,251
1926	137,023,029	130,048,842
1927	152,974,551	144,524,763
1928	167,005,081	156,893,443
1929	176,903,557	164,880,569
1930	186,481,135	172,740,151
1931	190,523,862	176,146,536

[fol. 2501] 67. That the above average value in Finding 66 less the balance in the depreciation reserve account after giving effect to the 1920 Order on depreciation (Finding 43) is:

Year	Intrastate	Intrastate exchange
1923	$73,653,153	$70,401,627
1924	85,640,373	81,716,876
1925	97,220,991	92,541,874
1926	109,131,275	103,579,473
1927	122,969,925	116,183,690
1928	135,408,253	127,215,272
1929	145,419,455	135,545,984
1930	155,423,249	143,981,357
1931	158,868,996	146,883,216

68. That the above average value in Finding 66, less the balance in the depreciation reserve account after giving effect to the 1923 Order on depreciation (Finding 43) is:

Year	Intrastate	Intrastate exchange
1923	$70,639,963	$67,506,119
1924	82,200,875	78,419,761
1925	93,879,210	89,342,597
1926	106,108,313	100,692,239
1927	120,769,886	114,079,379
1928	134,537,004	126,378,650
1929	146,319,599	136,362,564
1930	158,397,844	146,715,717
1931	163,463,396	151,111,531

[fol. 2502]

Rate of Return

Part I

On the Basis of Treating the Plaintiff as an Independent Enterprise

69. That the constitutional inadequacy of the intrastate and intrastate exchange net income produced by the attacked rates may be tested, (1) by comparing such net income with the corresponding recorded net income under the existing rates, which latter net income is, by the company's experience and course of conduct, revealed to be constitutionally adequate, and (2) by testing the rate of return from the intrastate and intrastate exchange net income produced by the existing and attacked rates according to the standard of the Bluefield Case (Defendants' Brief, pp. 1042, 1053).

Test I

70. That plaintiff's recorded net income under existing rates produced the following rate of return related to plaintiff's requested rate base:

[fol. 2503] Rate of Return from Recorded Net Income Under Existing Rates.*

	Recorded net income	Intrastate exchange Rate of return on plaintiff's requested rate base
1923	$4,996,252	3.53%
1924	5,597,580	3.67
1925	5,817,884	3.57
1926	5,821,960	3.38
1927	5,941,909	3.26
1928	6,575,395	3.42
1929	8,634,791	4.31
1930	7,931,134	3.78
1931	7,480,717	3.55
		Intrastate total
1923	$5,602,721	3.78%
1924	6,333,828	3.97
1925	6,761,049	3.94
1926	7,015,503	3.87
1927	7,277,439	3.78
1928	8,101,974	3.96
1929	10,204,411	4.75
1930	9,372,355	4.13
1931	8,616,679	3.78
	Intrastate exchange	Intrastate total
1923	2.71%	2.97%
1924	2.67	2.95
1925	2.73	3.11
1926	2.72	3.20
1927	2.71	3.22
1928	3.02	3.55
1929	4.05	4.47
1930	3.52	3.86
1931	3.26	3.47

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*Plaintiff's showing of Rate of Return Under Existing Rates Related to its Requested Rate Base, as appears from Plaintiff's Original Brief, p. 319, which is even lower than the Rate of Return from the Recorded Net Income Shown in the Text is:

[fol. 2504] In addition to the above rate of return the American Company, as the investor in plaintiff,* received the following advantages and pecuniary profits that are not reflected in the net earnings available for return and are not received by the ordinary investor on his investment in other business undertakings:

(a) The free use of the Chicago Exchange plant facilities in the interstate and intrastate services of the American Company (Defendants' Brief, p. 647);

(b) The receipt by the American Company of royalties from the Western Electric as consideration for the franchise to the latter to sell its manufactures to plaintiff and the receipt by the American Company of unreasonably large returns on its investment in the Western Electric [fol. 2505] resulting from such manufactures—the American Company as the investor in plaintiff providing capital to purchase such manufactures and acting at the same time as the purchasing agent for plaintiff and as selling agent for the Western Electric (Defendants' Brief, p. 282; Finding 23 (b, c));

(c) The joinder of plaintiff's employees and the employees of the other operating companies of the Bell Sys-

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* In Chesapeake & Potomac Tel. Co. v. Commonwealth, 136 S. E. 575, the court said (585, 587):

"So that there are distinct but undisclosed advantages and pecuniary profits to the owner of the stock and property of the Virginia Company that are not reflected in the net earnings and dividends of the Virginia Company which are paid directly to such owner. There is the profit from sales and services of the Western Electric Company to the Virginia Company; there is the profit derived from the use of the facilities and agencies of the Virginia Company as well as from the interstate business which the Virginia Company does in aid of and for the benefit of the American Company. These profits cannot be stated. The facts upon which some estimate thereof might be made are not disclosed. Perhaps the complications are so great that they cannot be determined accurately, but the fact that they surely exist is as clear as any other fact in the case.

These intercorporate relations are relevant not only to determine the going concern value as part of the rate base, tem, of which the American Company is the sole or principal investor, under a plan where the American Company can shift experienced personnel from one section of the country to the other as it sees fit, to protect its interests wherever situated, to strengthen the organization wherever necessary (Defendants' Brief, p. 403);

(d) The making and furnishing by plaintiff to the American Company, as its investor, of a detailed statement each year, and for a period of years, in advance of plaintiff's requirements for the purchase of supplies and materials, such statement to be used by the American Company as the investor in the Western Electric for the purpose of enabling the latter company to engineer its manufactures for the protection of the investment of the American Company therein;

(e) The specification by the American Company, as the investor in plaintiff, what new inventions, discoveries and improvements in the art should be woven into the plant of plaintiff to protect the American Company's investment against impairment through failure to keep abreast or ahead of the art.

The above rate of return is, also, after giving effect to the inflation in maintenance, depreciation expense, valuation of physical property and going value, due to the excessive profits made by Western Electric in its sales to

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but also to ascertain whether the rate of return to the owner is just and reasonable" (p. 585).

* * * * * * * *

"Because of the intercorporate relations of the American Company with the Virginia Company and the complications to which we have referred, it is impossible to tell with any precision just the amount of the returns to the owner of the Virginia Company, either considered as a separate entity, or as a part of the Bell System.

The profit to the owner of the stock of the Virginia Company is the return produced by the rates prescribed, estimated at more than 6 per cent on the value, or investment, plus the additional return to this owner, the Bell System, produced by the Virginia Company growing out of the subserviency to and cooperation with the American Company (owner) of its business)" (p. 587).

[fol. 2506] plaintiff and resulting from the spot prices used by plaintiff in connection with its requested rate base (Finding 35).

71. That with such recorded net income during the period 1923 to 1931, inclusive, plaintiff attracted capital on the most favorable basis and maintained the stability of its securities on a comparable basis with those of the highest grade securities of other utilities. During this period, plaintiff was able to expand its business so as to meet increasing demands, to pay its operating expenses including interest on money borrowed, to earn and pay 8% dividends on its capital stock and to accumulate a surplus (Defendants' Brief, p. 995, Supreme Court Decision, Appendix, 22). Plaintiff has never taken any steps to have increased the rates prescribed by the Order of December 20, 1920, although under the Illinois Commerce Commission Law it had the right so to do at any time after two years from the effective date of such order, i. e., at any time after January 1, 1923. Plaintiff's position in its pleadings and on the record shows that it considered its net income under the existing rates adequate (Defendants' Brief, pp. 1045, 994).

Plaintiff's prognosticated minimum return of 8% for the years 1923 to 1927 and 7% for the years 1928 to 1931, on plaintiff's requested rate base, would yield to plaintiff's stockholders on their investment in capital and surplus allocable to the Chicago Intrastate Exchange, the following per cents of return in each of the years 1923 to 1930 and would yield to the American Company's stockholders on their proportionate investment (capital and surplus) in plaintiff the following percentages of return (Defendants' Brief, p. 1034):

[foll. 2507]	Per cent of return to plaintiff's stockholders on capital and surplus	Per cent of return to American Company's stockholders on capital and surplus.
1923	25.17	33.04
1924	23.55	31.76
1925	24.01	34.02
1926	22.34	30.99
1927	21.25	24.70
1928	16.19	21.37
1929	16.05	22.16
1930	14.81	20.03
1931	Not available	Not available

The rate of return resulting from the recorded intrastate and intrastate exchange net income was in each year constitutionally adequate.

72. The rate of return resulting from the recorded net income after giving effect to the adjustments of (a) 1920 Order on depreciation; and (b) the reduction in net revenue resulting from the reduction in telephone rates prescribed by the 1923 Order is, for each year:

Intrastate Exchange

	Plaintiff's showing of balance available for return from recorded net income under rates in suit	Excess of recorded depreciation charges over depreciation allowance by 1920 order	Adjusted balance available for return	Rate of return from adjusted net income to plaintiff's showing of rate base
1923	$3,483,393	$1,468,147	$4,951,540	3.50%
1924	4,077,765	1,264,338	5,342,103	3.51
1925	4,269,734	1,405,925	5,675,659	3.48
1926	4,210,427	1,564,490	5,774,917	3.36
1927	4,306,547	1,653,390	5,959,937	3.27
1928	4,907,181	1,815,308	6,722,489	3.50
1929	6,941,442	1,731,900	8,673,342	4.33
1930	6,332,081	1,816,781	8,148,862	3.88
1931	6,084,550	1,867,609	7,952,159	3.77

[fol. 2508]

Intrastate Total

1923	$4,060,603	$1,540,414	$5,601,017	3.78%
1924	4,782,833	1,323,046	6,105,879	3.82
1925	5,178,488	1,475,531	6,654,019	3.88
1926	5,364,933	1,643,145	7,008,078	3.86
1927	5,600,362	1,741,736	7,342,098	3.81
1928	6,388,673	1,919,774	8,308,447	4.06
1929	8,463,829	1,843,678	10,307,507	4.79
1930	7,726,477	1,947,182	9,673,659	4.27
1931	7,182,935	2,006,806	9,189,741	4.03

In addition to such Rate of Return the investor of plaintiff received the advantages and pecuniary profits set forth in Finding 70. Such Rate of Return is also after giving effect to the inflation in expenses and valuation stated in Finding 70.

Such rate of return in each year by comparison with the rate of return resulting from the corresponding recorded net income for each of said years is constitutionally adequate.

73. The recorded net income, after giving effect to the adjustments of (a) depreciation expense fixed by the 1923 Order; (b) license contract payments; and (c) separation of revenues; and (d) net reduction in revenue resulting from the reduction in telephone rates prescribed by the 1923 Order is, for each year:

[fol. 2509]

	Plaintiff's showing of balance available for return under rates in suit	Excess of recorded depreciation charges over allowance under 1923 order after adjustments for license payments and separation of revenue	Adjusted balance available for return	Rate of return from adjusted net income to plaintiff's showing of rate base
		Intrastate Exchange		
1923	$3,483,393	$2,512,251	$5,995,644	4.23%
1924	4,077,765	3,344,458	7,422,223	4.87
1925	4,269,734	3,657,490	7,927,224	4.86
1926	4,210,427	4,330,072	8,540,499	4.99
1927	4,306,547	5,172,954	9,479,501	5.21
1928	4,907,181	5,413,830	10,321,011	5.37
1929	6,941,442	5,713,687	12,655,129	6.32
1930	6,332,081	5,915,418	12,247,499	5.83
1931	6,084,550	5,009,269	11,093,819	5.26
		Intrastate Total		
1923	$4,060,603	$2,148,095	$6,208,698	4.19%
1924	4,782,833	2,982,340	7,765,173	4.86
1925	5,178,488	3,241,429	8,419,917	4.91
1926	5,364,933	3,843,997	9,208,930	5.08
1927	5,600,362	4,643,154	10,243,516	5.32
1928	6,388,673	4,731,248	11,119,921	5.43
1929	8,463,829	4,925,489	13,389,318	6.23
1930	7,772,647	5,120,657	12,893,304	5.69
1931	7,182,935	4,298,370	11,481,305	5.04

In addition to such Rate of Return the investor of plaintiff received the advantages and pecuniary profits set forth in Finding 70. Such Rate of Return is also after giving effect to the inflation in expenses and valuation stated in Finding 70.

Such rate of return in each year by comparison with the rate of return resulting from the corresponding recorded net income for each of said years is constitutionally adequate.

[fol. 2510]

Test 2

74. That the adjusted net income from existing and attacked telephone rates (Findings 1 and 2) produced the following rate of return on (a) plaintiff's intrastate and intrastate exchange rate base as requested by defendants; (b) on plaintiff's requested rate base (Plaintiff's Requested Finding 12); and (c) on plaintiff's requested rate base adjusted to give effect to the defendants' request for Going Value and the deduction of the depreciation reserve account in each of the years under investigation:

Rate of Return from Adjusted Net Income Produced by Existing Telephone Rates

	Related to defendants' requested rate base		Related to plaintiff's requested rate base		Related to plaintiff's rate base adjusted*	
	Intrastate Exchange	Intrastate Total	Intrastate Exchange	Intrastate Total	Intrastate Exchange	Intrastate Total
1923	12.32%	12.17%	6.12%	6.05%	8.32%	8.21%
1924	11.35	11.25	6.09	6.03	8.15	8.07
1925	10.59	10.61	6.01	6.02	7.91	7.91
1926	9.61	9.75	5.79	5.87	7.52	7.62
1927	8.92	9.03	5.69	5.76	7.31	7.40
1928	8.37	8.42	5.54	5.57	7.04	7.08
1929	9.29	9.11	6.29	6.16	7.91	7.75
1930	8.33	8.06	5.72	5.52	7.10	6.86
1931	7.77	7.40	5.41	5.16	6.71	6.39

In addition to such Rate of Return, the investor of plaintiff received the advantages and pecuniary profits set forth in Finding 70. Such Rate of Return is, also, after giving effect to the inflation in expenses and valuation, stated in Finding 70.

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* The adjustment to plaintiff's rate base gives effect for all the elements included therein adjusted by defendants' request for Going Value and for deduction of Depreciation in Valuation.

[fol. 2511] Rate of Return from Adjusted Net Income Produced by Attacked Rates

	Related to defendants' requested rate base		Related to plaintiff's requested rate base		Related to plaintiff's rate base adjusted*	
	Intrastate Exchange	Intrastate Total	Intrastate Exchange	Intrastate Total	Intrastate Exchange	Intrastate Total
1923	10.72%	10.71%	5.11%	5.11%	7.12%	7.11%
1924	9.76	9.79	5.02	5.04	7.02	7.04
1925	9.10	9.25	4.98	5.06	6.80	6.91
1926	8.61	8.87	5.04	5.19	6.74	6.94
1927	8.36	8.60	5.24	5.39	6.86	7.05
1928	8.15	8.31	5.36	5.46	6.86	6.99
1929	9.27	9.21	6.31	6.27	7.89	7.83
1930	8.27	8.10	5.78	5.66	7.03	6.89
1931	7.28	7.02	5.22	5.03	6.28	6.05

In addition to such Rate of Return, the investor of plaintiff received the advantages and pecuniary profits set forth in Finding 70. Such Rate of Return is, also, after giving effect to the inflation in expenses and valuation, stated in Finding 70.

Such rate of return resulting from the net income produced by the existing and attacked rates, taking into account the unique features of plaintiff's operations not existing in the case of other businesses in their relations to their investors, as shown in Finding 70, is in each case and in each year under investigation constitutionally adequate. (Chesapeake & Potomac Tel. Co. of Va. v. Commonwealth, 147 Va. 43; 136 S. E. 575; Chesapeake & Potomac Tel. Co. v. Whitman, 3. Fed. (2d) 938).

[fol. 2512] Part II

On the Basis of Treating the Plaintiff as a Component Part of the Integrated Bell System

75. That plaintiff, as part of the Bell System, differs so widely in form of organization and in relation to the pub-

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*The adjustment to plaintiff's rate base gives effect to all the elements included therein excepting only the defendants' request for Going Value and deduction of Depreciation in Valuation.

lic and the investors from independent enterprises considered that their experience is rendered wholly inapplicable to it (Defendants' Brief, p. 1053).

That the American Company has made itself the financing company to provide the permanent capital for the licensee companies of the Bell System (Defendants' Brief, p. 1070).

That the American Company, as the financing company, has provided a cooperative plan for the financing of the licensee companies (Defendants' Brief, p. 1071).

Six Contributions by Licensee Companies

(a) The licensee companies pay a yearly uniform assessment determined by the American Company to maintain outside their respective territories its operations as the headquarters department functioning for the Bell System as a whole (license payment) (Defendants' Brief, p. 1071).

(b) The licensee companies perform within their own territories without charge such uniform services for the headquarters department as it may require, such as selling stock, advertising the Bell System as a whole, and making available personnel to other licensee companies, as required for their efficient operation (Defendants' Brief, p. 1071).

[fol. 2513] (c) The licensee companies use within their own territories without compensation their exchange plant facilities for the interconnection between them by long distance lines, as the headquarters department may require (Defendants' Brief, p. 1071).

(d) The licensee companies pay to the headquarters department for the use of permanent capital or of temporary funds supplied by it to them, uniform cash dividend or interest rates (Defendants' Brief, p. 1072).

(e) The licensee companies pay uniform prices for all purchases made from the manufacturing department of the Bell System represented by the Western Electric (Defendants' Brief, p. 1072).

(f) Each licensee company, after absorbing the costs and expenses of performing the above services in its own territory and of the assessment to the headquarters department just described, is expected to maintain net earnings from its own operations to yield a per cent return on its investment not less than the average per cent return on a comparable basis on the investment of the licensee companies as a whole as used or found necessary to attract capital and to maintain the stability of the securities of the Bell System (Defendants' Brief, p. 1072).

Six Contributions by the American Company

(a) The physical assets of the American Company and the physical assets of all of the licensee companies are pooled to form the rate base upon which the adequate per cent amount of return is calculated in order to attract the investor of the American Company, who are considered the investors of the Bell System (Defendants' Brief, p. 1072).

[fol. 2514] (b) All of the earnings in the treasury of the American Company over and above the actual expenses of the Central Administration, plus all of the net earnings of the Western Electric, plus all of the earnings of the Long Lines, are pooled with the net earnings of the licensee companies from their own operations, for the financing of all of the parts of the Bell System (Defendants' Brief, p. 1073).

(c) The cash dividends paid to the American Company by the licensee companies are pooled with the net earnings of its own treasury from the long distance service and from the license payments remaining above the expenses of the Central Administration, and with the cash dividends from the Western Electric, to form the fund to pay the cash return to its own investors as the investors of the Bell System (Defendants' Brief, p. 1073).

(d) The surplus in the treasury of each licensee company is pooled with the surplus of the net profits of the Central Administration, the surplus of the net profits from the Long Lines Department, to form the combined surplus to safeguard the continuity of dividends to the investors of the Bell System from the American Company (Defendants' Brief, p. 1073).

(e) All of the funds derived by the American Company from its investors are used to finance every part of the Bell System (Defendants' Brief, p. 1073).

(f) The American Company, by consenting to the pledge by a licensee company of the latter's rights under its contract defining its relationship to the Bell System, makes available to the holders of the credit securities issued by each such licensee company, the same benefits of the cooperative financing plan as are available to the stock in- [fol. 2515] vestors of the American Company as investors of the Bell System (Defendants' Brief, p. 1074).

76. Under the plan of cooperative financing of the licensee companies shown in Finding 75, when plaintiff makes the six uniform contributions required by it to be made, it has complied with all possible requirements necessary on its part to enable the American Company as the financing department to attract capital for it and to maintain the stability of its securities.

The constitutional inadequacy of the rates of plaintiff should therefore be determined by viewing the relation of the net earnings from its own intrastate and intrastate exchange operations to the average required minimum net earnings, on a comparable basis, of the other licensee companies. In the absence of a showing that the average net earnings from the operations of the other licensee companies are inadequate no issue of confiscation can arise as to the intrastate and intrastate exchange net earnings from the operations of plaintiff so long as such licensee's showing is as good as or is better than such average.

77. That the average rate of return of the other licensees after making the six contributions required of them as shown in Finding 75 during each of the years under investigation, resulting from their recorded net income related to average fixed capital, material and supplies, less average accrued depreciation is (X-302):

[fol. 2516]

	For all companies	For all licensees other than plaintiff.
1923	6.84%	6.72%
1924	6.56	6.42
1925	7.26	7.16
1926	7.80	7.77
1927	7.52	7.50
1928	7.87	7.85
1929	7.91	7.86
1930	7.09	7.04
1931	6.74	6.72

That no showing was made that the average net earnings from the operations of the licensees under the cooperative plan of financing, as shown in Finding 75, was not sufficient to attract capital and to maintain the stability of the securities of the Bell System during any year or years of this period. The record shows that during each of the years under investigation the licensees and the American Company attracted capital on a most favorable basis and maintained the stability of their securities on a comparable basis with those of the highest grade securities of other utilities (Defendants' Brief, pp. 999, 1010); the rate of return related to the investment in this finding is in each of the years 1923 to 1931, inclusive, clearly adequate to permit plaintiff, as a part of the Bell System, to attract capital and to maintain the stability of its securities.

78. That the license payment of plaintiff under the attacked telephone rates as its yearly assessment under the cooperative financing plan stated in Finding 75 would exceed the average yearly assessment of the other licensees by the following amounts (X-151):

[fol. 2517]

	Intrastate	Intrastate Exchange
1923	$407,722	$388,610
1924	403,527	369,826
1925	352,535	329,077
1926	258,047	237,496
1927	307,909	283,444
1928	83,898	75,684
1929	201,050	185,323
1930	162,277	149,079
1931	199,096	184,190

79. That the amount of excess under the attacked rates of the net income of the Chicago Intrastate and Chicago Intrastate Exchange Service, after giving effect to the adjustments indicated below, over the average return of the other licensees, upon the basis of the cooperative plan of financing above stated in Finding 75(f), for each year would be:

	Chicago Intrastate excess—under attacked rates of net income—after adjustment for (a) 1923 order on depreciation; (b) separation of revenue and (c) license payment as per finding 78—over return of other licensees (X-333-4; Def. brief, p. 1089)	Chicago Intrastate exchange excess under attacked rates of net income—after adjustment for (a) 1923 order on depreciation; (c) separation of revenues and (e) license payment as per finding 78—over return of other licensees (X-333-4) (Def. brief, p. 1089)
1923	$2,084,085	$2,114,052
1924	2,155,865	2,097,754
1925	1,389,265	1,274,422
1926	682,375	497,564
1927	752,701	571,614
1928	663,651	538,494
1929	2,048,304	2,111,058
1930	2,220,250	2,419,576
1931	1,043,590	1,450,269
Total	$13,040,086	$13,074,803

[fol. 2518] That on the basis of Finding 77 each class of plaintiff's intrastate net income is constitutionally adequate.

80. That plaintiff has not shown that the telephone rates prescribed by the 1923 Order if made effective for 1932 thereafter are and would be constitutionally inadequate.

General Conclusions of Law.

81. All times since the effective date of the Order of the Illinois Commerce Commission herein complained of, the telephone rates prescribed in said Order have been, and they are now, constitutionally adequate; and said Order is valid.

82. The plaintiff's bill of complaint should be dismissed for want of equity.

83. The interlocutory injunction herein should be vacated.

84. That plaintiff should be directed to make refunds, under further order of this Court, in the following amounts in addition to the amounts to be determined for the year 1932 and to the date of final decree herein (Defendants' Brief, p. 1090):

	Principal a	5% Simple Interest b	Total of a & b
1923	$527,926	$213,301	$741,227
1924	2,124,632	792,003	2,916,635
1925	2,181,614	704,313	2,885,927
1926	2,203,556	601,073	2,804,629
1927	2,221,798	495,141	2,716,939
1928	2,168,357	375,168	2,543,525
1929	2,060,444	253,693	2,314,137
1930	1,879,411	138,369	2,017,780
1931	1,632,466	38,372	1,670,838
Total	$17,000,204	$3,611,433	$20,611,637

[fol. 2519] 85. The burden is upon the plaintiff to make out a clear case for the relief sought.

Judicial interference with the State's prescribing rates for public utilities by legislative act or by acts of a Commission duly authorized, should never occur unless the case made by the plaintiff presents clearly and beyond all doubt, such a flagrant attack upon the rights of property under the guise of regulations as to compel the court to say that the rates prescribed will necessarily have the effect to deny just compensation for private property taken for the public use (San Diego Land and Town Co. v. National City, 176 U. S. 739, 754). Before a Federal Court of equity ought to intervene in a case of this character, the case of plaintiff should be of serious magnitude clearly and fully proved, and the principle of law to be applied should be one which the court is prepared deliberately to maintain against all considerations of the other side (Missouri v. Illinois, 200 U. S. 496, 521—defines what is meant by a clear case).

86. In view of the relationship between the American Company and plaintiff, and between the American Company and the Western Electric and its subsidiaries, and between the American Company and other licensee or operating companies similar to plaintiff, and the relationship between plaintiff and such other operating or constituent companies and between plaintiff and Western Electric, resulting from the integration of the business and affairs of all such companies through the ownership of stock and control of such companies by the American Company, there is an absence of arm's length bargaining between the corporate entities involved and of all the elements which go to fix market value, or the fairness, of any such contracts or transactions. Consequently, the opportunity exists for [fol. 2520] charges, contracts and transactions unfavorable to the plaintiff (Western Distributing Co. v. Public Service Commission, 285 U. S. 119). Under such circumstances it is difficult, if not impossible, for a court to ascertain and determine the fairness of every transaction and charge between such parties entering into the question of confiscation. It must follow, therefore, that the action of a Commission empowered by a State to fix rates of a constituent operating company such as plaintiff, a member of such combination, should have greater weight and greater force and effect than the action of such Commission with reference to rates of a utility acting independently and autonomously where it had no such relations with a parent company and its other subsidiaries.

87. Plaintiff on the original hearing which result in the decree that was appealed to the Supreme Court, claimed and took the position that plaintiff was entitled to fix the annual charges for depreciation expense according to its judgment, and that such annual depreciation charges or expense so fixed by plaintiff were unassailable except for arbitrariness or fraud, on the ground that neither the Illinois Public Utilities Commission under the 1920 Order nor the Illinois Commerce Commission under the 1923 Order, had the authority and power to fix by order such depreciation rates or annual depreciation charges or expense. The Supreme Court, having held that such position was unsound, the orders of the State Commissions of 1920 and 1923 with reference to depreciation became and were res

adjudicata, and plaintiff is precluded from claiming that either one or both of said orders are now invalid.

[fol. 2521] 88. The defendants should recover their taxable costs herein and damages as required by the Court.

Respectfully submitted.

Oscar E. Carlstrom, Attorney General, State of Illinois, and Attorney and Solicitor for the Illinois Commerce Commission. William H. Sexton, Corporation Counsel, City of Chicago. George I. Haight, Benjamin F. Goldstein, Edmund D. Adcock, Special Counsel for City of Chicago, Intervenor.

[fols. 2522 & 2523] IN UNITED STATES DISTRICT COURT

MANDATE OF UNITED STATES SUPREME COURT

UNITED STATES OF AMERICA, ss:

(Seal of the Supreme Court of the United States.)

The President of the United States of America to the Honorable the Judges of the District Court of the United States for the Northern District of Illinois, Greeting:

Whereas lately, in the District Court of the United States for the Northern District of Illinois, before you, or some of you, in a cause between Illinois Bell Telephone Company, plaintiff, and Frank L. Smith, Cicero J. Lindley, Hal W. Trovillion, et al., etc., Defendants, and City of Chicago, a Municipal Corporation, Intervening Defendant, in Equity, No. 3746, wherein the decree of the said District Court, entered in said cause on the 28th day of February, A.D., 1930, in the following words, viz:

This cause came on to be further heard at a term of this Court and was argued by counsel, and thereupon, upon consideration thereof, and the Court having filed a formal opinion containing specific findings of fact, it is

Ordered, adjudged, and decreed as follows:

1. That the rates prescribed by Illinois Commerce Commission in its order of August 16, 1923, are confiscatory and deprive plaintiff of its property without due process of law and deny plaintiff the equal protection of the laws in violation of its rights under the Constitution of the United

States. That said order was therefore null and void and plaintiff never had any adequate remedy at law in the premises.

[fol. 2524] 2. That the defendants, Frank L. Smith, Cicero J. Lindly, Hal W. Trovillion, P. H. Moynihan, William Burkhardt, Edward H. Wright and William J. Smith, the persons constituting the Illinois Commerce Commission of the State of Illinois, and Oscar E. Carlstrom, Attorney-General of the State of Illinois, and their respective successors in office, and the City of Chicago, a municipal corporation, be, and they are hereby severally and permanently enjoined and restrained from attempting to compel plaintiff, its officers, agents, or employees hereafter to observe or enforce the rates, charges and rentals for telephone service prescribed by the order of the Illinois Commerce Commission, dated August 16, 1923, and attached to the Bill of Complaint herein as Exhibit "A."

3. That the said defendants and their respective successors in office and all other persons be, and they are hereby, severally and permanently enjoined and restrained from taking any steps or proceedings against the plaintiff, its officers, agents, or employees, to enforce any penalties or any remedy against the plaintiff for disregarding the rates prescribed by the said order of the Illinois Commerce Commission, dated August 16, 1923, and from taking any such steps or proceedings against the plaintiff, its officers, agents or employees, to enforce any penalties or any other remedy against the plaintiff for charging rates in excess of the rates prescribed in said order of the Illinois Commerce Commission, dated August 16, 1923.

4. That all sums of money collected by the plaintiff under the terms of the preliminary and interlocutory decrees entered herein, in excess of the sums which would have been collected under the rates prescribed by said Illinois Commerce Commission, are the property and funds of the plaintiff and belong to it, and plaintiff is released from all obligation to refund to its subscribers any sums of money collected by it under the terms of the preliminary and interlocutory decrees herein.

5. That the plaintiff is hereby released and discharged from any and all liability on account of the certain bond, in the penal sum of one million dollars, executed by said

plaintiff, and filed with this Court pursuant to the terms of the temporary injunction entered herein on December 21, 1923.

6. That plaintiff shall recover its taxable costs and disbursements of the defendants and intervenor-defendant.

Dated at Chicago, Illinois, February 28, 1930.

Evan A. Evans, George T. Page, Circuit Judges.
James H. Wilkerson, District Judge."

[fol. 2525] as by the inspection of the transcript of the record of the said District Court, which was brought into the Supreme Court of the United States by virtue of an appeal agreeably to the act of Congress in such case made and provided, fully and at large appears:

And Whereas, in the present term of October, in the year of our Lord one thousand nine hundred and thirty, the said cause came on to be heard before the said Supreme Court, on the said transcript of record, and was argued by counsel:

On Consideration Thereof, it is now here ordered, adjudged, and decreed by this court that the decree of the said District Court, in this cause be, and the same is, hereby, set aside, with costs in this court to appellants; and that the said defendants, Frank L. Smith, Cicero J. Lindly, Hal W. Trovillion, et al., etc., et al., recover against the said plaintiff two hundred seventy-five dollars and ninety-five cents for their costs herein expended and have execution therefor.

And It Is Further Ordered that this cause be, and the same is hereby, remanded to the said District Court, specially constituted as provided by the statute, for further proceedings in conformity with the opinion of this court, the restraining order entered in the suit to be continued pending further action of the District Court.

December 1, 1930.

You, therefore, are hereby commanded that such execution and further proceedings be had in such cause, in conformity with the opinion and decree of this court, as according to right and justice, and the laws of the United States, ought to be had, the said appeal notwithstanding.

Witness the Honorable Charles E. Hughes, Chief Justice of the United States, the twenty-sixth day of December in the year of our Lord one thousand nine hundred and thirty.

Charles Elmore Cropley, Clerk of the Supreme Court of the United States.

[fol. 2526] IN UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF ILLINOIS, EASTERN DIVISION

In Equity

No. 3746

ILLINOIS BELL TELEPHONE COMPANY, Plaintiff,

vs.

FRANK L. SMITH et al., Defendants

ORDER DENYING MOTION TO DISMISS, etc.—February 28, 1931

Defendants' motion to dismiss the above entitled suit and to vacate the restraining order and for other relief specified in said motion filed in this Court on January 8, 1931, coming on to be heard, and the Court after being advised in the premises by oral argument and written briefs and being advised that the hearing of the cause on its merits may be begun in the near future,

(1) It Is Ordered that said motion to dismiss the suit be and the same is hereby denied.

(2) It is Further Ordered that the motion to vacate the restraining order be and the same is hereby denied.

[fol. 2527] (3) It Is Further Ordered that the interlocutory injunctional decree, entered on the 21st day of December, 1923, be and the same is hereby reinstated and upon the same terms and conditions as were imposed when said interlocutory decree was first entered.

(4) It Is Further Ordered that said reinstated interlocutory injunctional decree supersede the restraining order in force since the decision of the Supreme Court of the United States entered December 1, 1930.

(5) It Is Further Ordered that either party to the suit may apply at any time for a modification or a vacation of said interlocutory injunctional decree.

(6) It Is Further Ordered that defendants' motion for an order declaring the rates prescribed by the Order of the Illinois Commerce Commission bearing date, August 16, 1923, to be valid, be held in abeyance until the parties have

offered such further evidence as may be necessary to the determination of this issue and until this Court can make findings of fact in accordance with the directions of the Supreme Court in its decision of December 1, 1930.

(7) It Is Further Ordered that defendants' motion for a decree directing the plaintiff to refund to its several subscribers the sum collected by it during the pendency of any restraining order or injunction entered in this cause in excess of the sums properly chargeable to said subscribers be denied, but without prejudice to a presentation of the same motion after the Court has made findings in accordance with the directions of the Supreme Court appearing in its decision of December 1, 1930.

(8) It Is Further Ordered that defendants' motion to set aside so much of this Court's final decree entered on [fol. 2528] February 28, 1930, releasing the plaintiff from its liability on account of a certain bond executed by said plaintiff and filed in this Court pursuant to the terms of the interlocutory injunction entered December 21, 1923, be and the same is hereby granted.

(9) It Is Further Ordered that defendants' request to "save and reserve unto themselves all of their rights to presentation of evidence and proof and hearing upon the merits of the issues of fact and law" be and the same is hereby granted.

To the foregoing, and each and every order and provision thereof, the defendants object and except. And the defendants are hereby given leave to file within thirty days a certificate of evidence showing the proceedings before the Court upon defendants' motion and upon this Order.

Evan A. Evans, George T. Page, James H. Wilkerson, Judges.

Dated February 28, 1931.

[fol. 2529] IN UNITED STATES DISTRICT COURT

[Title omitted]

ORDER AMENDING ORDER OF FEBRUARY 28, 1931, NUNC PRO TUNC—March 5, 1931

This cause coming on to be heard upon the motion of defendants to amend the Order entered herein on February

28, 1931, nunc pro tunc as of said February 28, 1931, and the Court being advised in the premises,

It is ordered that the said Order entered herein on February 28, 1931, be and the same is hereby amended nunc pro tunc as of said February 28, 1931, by adding at the end of said Order the following:

"To the foregoing, and each and every order and provision thereof, the defendants object and except. And the defendants are hereby given leave to file within thirty days a certificate of evidence showing the proceedings before the Court upon defendants' motion and upon this Order."

Evan A. Evans, James H. Wilkerson, Judges.

[fol. 2530] IN UNITED STATES DISTRICT COURT

[Title omitted]

ORDER DENYING MOTION TO DISMISS, CONTINUING RESTRAINING ORDER AND SETTING CAUSE FOR HEARING—March 5, 1931

An appeal having been taken to the Supreme Court of the United States from the final decree made and entered in this cause on February 28, 1930 by this Court, Honorable Evan A. Evans, Honorable George T. Page, Circuit Judges, and Honorable James H. Wilkerson, District Judge, constituting the special Statutory Court under the provisions of Section 266 of the Judicial Code; and the said decree having been set aside by the decision of the Supreme Court made and entered on December 1, 1930, and the cause remanded to this Court, specially constituted, as provided by the statute, for further proceedings in conformity with the opinion of the Supreme Court; and the restraining order heretofore entered herein having been continued in effect by said decision of the Supreme Court, pending further action by this Court:

This cause came duly on to be further heard before this Court, specially constituted as aforesaid, on February 17, 1931, upon the motion of the defendants to dismiss the bill of complaint and to dissolve the restraining order herein, and for further relief, all as set forth in said motion. And said motion having been argued by counsel and the Court [fol. 2531] being fully advised, it is

Ordered, adjudged, and decreed as follows:

I. Said motion is in all respects denied.

II. The restraining order entered by this Court on December 21, 1923, being the interlocutory decree herein, be, and it is hereby, continued until the final disposition of this cause or the further order of this Court with the same force and effect as if said final decree had not been entered; upon condition, however, that the plaintiff shall file an undertaking or bond in the penal sum of Five Million Dollars ($5,000,000), to be approved by this Court, and to be filed in the office of the Clerk of Court upon the entry of this order.

The Court being further advised at said hearing, in open Court, by counsel for plaintiff that plaintiff desires to have this cause proceed for the introduction of additional evidence to be as hereinafter specified, in conformity with the said opinion and the mandate of the Supreme Court; that the work of collecting the necessary data and of preparing said evidence was begun in the month of December 1930, soon after the said decision of the Supreme Court was made, and before the mandate came down, and at all times since has been and is being diligently carried on with a view to expediting the final disposition of said cause; that plaintiff will be ready to proceed with the introduction of said [fol. 2532] evidence on or about June 1, 1931, and cannot reasonably be ready before that date, and that it is the best judgment of counsel for plaintiff that said evidence can be presented in a period of three weeks of continuous sessions, including therein the time necessary for reasonable and proper cross-examination of its witnesses;

And plaintiff having applied for a setting of the cause for further trial, as aforesaid;

And plaintiff having advised the Court that the further evidence it desires to introduce is as follows:

1. Separation of Property, Revenue, and Expenses

Such additional evidence as is necessary to enable the Court to determine and find, for the entire period and for each of the years involved in the suit, the value of the property devoted to intra-state service and to intra-state toll and exchange service, respectively; the expenses incident to each kind of service, respectively; the revenues attributable to and arising from each of said services, respectively, and the net revenue, under the rates for telephone service that have been in effect throughout the period of this suit, and under the rates complained of and sought to be enjoined; to the end that by a practical and lawful method the different uses of the property may be recognized and the return properly attributable to the intrastate service may be ascertained accordingly.

2. Net Earnings of the Western Electric Company Arising from its Bell System Business

Evidence showing the net earnings of the Western Elec- [fol. 2533] tric Company arising from the manufacture and sale of apparatus and equipment, and any other business transacted by it with the companies comprising the Bell System, including the plaintiff, and evidence concerning the reasonableness of such net earnings under all the relevant facts and circumstances, to the end that the Court may make findings with respect to the reasonableness of the profits upon this portion of the business of the Western Electric Company, separately considered, and the reasonableness of its prices in relation to any issue in the case bearing upon the charge of confiscation.

3. Cost to the American Telephone and Telegraph Company in Connection with the "License Contract"

Evidence to show, and to enable this Court to determine by specific findings, the cost to the American Company of rendering the "license contract services" to the licensee companies of the Bell System, the payments therefor under said contract, the reasonable amount to be allowed as operating expenses on account of such services, and the reasonable amount which should be allocated in this respect to the operating expenses of the intra-state business of plaintiff in the years to be covered by the final decree.

4. Annual Allowance for Depreciation

Additional evidence to enable this Court to determine by specific findings the proper and lawful amount for depreciation to be included in the annual expenses of plaintiff on account of the intra-state business for the period and for each of the years involved in this suit.

[fol. 2534] 5. Rate of Return

Additional evidence to enable this Court to determine by specific findings the rate of return realized from plaintiff's intra-state business, the rate of return which would have been realized from such business under the prescribed rates, and the fair rate of return which the plaintiff is entitled to an opportunity to earn upon its intra-state business, as a matter of constitutional right, having regard to the general considerations adverted to by the Supreme Court in its opinion herein, and also to the special considerations specifically referred to in said opinion as having a bearing upon the question of the fair rate of return to plaintiff from its intra-state business, for the entire period and for each of the years involved in this suit.

6. Such Additional Evidence as May be Required Upon Any Issue in the Case in Order to Extend Over the Entire Period the Showing Heretofore Made by Plaintiff Covering Only the Year 1923, or Covering Less Than All of the Years in Controversy.

In connection with all of the foregoing offer of further evidence, counsel for plaintiff have advised the Court that according to their understanding of the meaning and effect of the decision and mandate of the Supreme Court, the case is not to be reopened for a general and unlimited new trial, but only for the purpose of receiving such additional evidence as is reasonably necessary to enable this Court to make findings in conformity with the opinion of the Su- [fol. 2535] preme Court, and it is upon this understanding that the foregoing specifications of evidence to be offered by plaintiff have been made.

It is further ordered, adjudged, and decreed:

That said cause be set down for hearing, at a date to be fixed by the further order of the Court and upon notice thereof to be given to the parties, for the purpose of permitting the parties to introduce evidence upon the several matters above set forth; and for the further purpose of permitting the parties hereto to introduce such additional evidence as they may offer and as shall be held by this Court to be in conformity with the decision and mandate of the Supreme Court in this cause.

Dated at Chicago, Illinois, March 5, 1931.

Evan A. Evans, James H. Wilkerson, Judges.

[fol. 2536] IN UNITED STATES DISTRICT COURT

[Title omitted]

BOND OF ILLINOIS BELL TELEPHONE COMPANY—Filed March 5, 1931

Know all men by these presents, that the Illinois Bell Telephone Company, a corporation organized and existing under the laws of the State of Illinois, is held and firmly bound unto the Illinois Commerce Commission of the State of Illinois, and/or the City of Chicago, for the benefit of the telephone subscribers of the said Illinois Bell Telephone Company, in the sum of Five Million and no/100 Dollars ($5,000,000.00), lawful money of the United States, to be paid to said subscribers, for which payment well and truly to be made, the undersigned binds itself and its legal successors and assigns.

Signed and sealed this 28th day of February A. D. 1931.

[fol. 2537] The foregoing obligation is such that:

Whereas, on or about the 27th day of September, A. D. 1923, in a suit in equity then and now pending in the District Court of the United States, for the Northern District of Illinois, in which the said Illinois Bell Telephone Company is plaintiff, and Frank L. Smith, Cicero J. Lindly, Hal W. Trovillion, P. H. Moynihan, James F. Sullivan, Alex J. Johnson and William J. Smith, the persons constituting the said Illinois Commerce Commission of the State of Illinois, and Oscar E. Carlstrom, Attorney General of the State of Illinois, and the City of Chicago, a municipal corporation, are defendants, a temporary restraining order was entered in the said court by which said defendants were severally enjoined and restrained, pending the trial and determination of the cause, and until further order of the court, from attempting to compel the plaintiff, its officers, agents or employees, to observe or put in force the rates for telephone service prescribed by the Illinois Commerce Commission of the State of Illinois on the 16th day of August, A. D. 1923, and set forth in the bill of complaint therein; and

Whereas, thereafter on or about the 21st day of December, A. D. 1923 an interlocutory injunction order was duly made and filed in said court, by which said defendants were severally enjoined and restrained, pending the trial and determination of the cause, and until the further order of the court, from attempting to compel the plaintiff, its officers, agents, or employees to observe or put in force the rates for telephone service prescribed by the aforesaid order of the Illinois Commerce Commission; and were further enjoined and restrained, pending the trial and determination of the cause, and until the further order of the court, from taking any steps or proceedings against the plaintiff, its officers, agents, or employees, to enforce any penalties [fol. 2538] or any other remedy against the plaintiff for disregarding the rates prescribed by the said order; and

Whereas, thereafter on or about the 28th day of February, A. D. 1930, a permanent injunction was duly issued in the said court by which the said defendants were severally enjoined and restrained from attempting to compel the plaintiff, its officers, agents, or employees, to observe or put into force the rates for telephone service prescribed by the aforesaid order of the Illinois Commerce Commission, and were further enjoined and restrained from taking any steps or proceedings against plaintiff, its officers, agents, or employees to enforce any penalties or any other remedy against the plaintiff for disregarding the rates prescribed by the said order of August 16th, 1923; and

Whereas, the defendants perfected an appeal from the said final injunction to the Supreme Court of the United States; and

Whereas, the Supreme Court of the United States set aside the said injunction order of February 28th, 1930, and remanded the said cause to the District Court of the United States, for the Northern District of Illinois, for further proceedings therein, and directed that the restraining order entered in this suit be continued in effect pending the further action of the District Court of the United States, for the Northern District of Illinois, and

Whereas, by an order entered this day the District Court of the United States, for the Northern District of Illinois, directed that the interlocutory injunction continued in effect by the Supreme Court of the United States, be further continued in effect pending the trial and determination of said cause, and further directed that there be filed in the proceedings herein a bond in the sum of Five Million and no/100 Dollars ($5,000,000.00), to be approved by the Statutory Court hearing said cause.

[fol. 2539] Now, therefore, in the event that said interlocutory injunction shall be hereafter dissolved, and the said Illinois Bell Telephone Company shall in such event well and truly pay to the defendants all costs and damages which may be incurred or suffered by any party who may be found to have been wrongfully enjoined or restrained by said temporary restraining order or by said interlocutory injunction, as continued in effect by order of the Supreme Court of the United States and further continued by order of the District Court of the United States, for the Northern District of Illinois, from the date of said temporary restraining order to the date of the final decree that may be hereafter entered, and shall also well and truly repay to each or any of its subscribers, or to the persons entitled thereto, with interest, either in cash or by credit on subsequent bills, and in such way and manner as the said District Court of the United States, for the Northern District of Illinois, may hereafter direct, any sums paid by the said subscribers to the plaintiff for telephone service rendered such subscribers, in excess of the sums chargeable to said subscribers, or any of them, pursuant to the provisions of the said order of the Illinois Commerce Commission, during the period from the date of said temporary restraining order to the date of the final decree that may be hereafter entered, the enforcement of which is enjoined, then this obligation shall be null and void; otherwise, to remain in full force and effect.

Illinois Bell Telephone Company, by F. O. Hale, President.

Attest: A. R. Bone, Secretary. (Corporate Seal.)

Approved.

Evan A. Evans, Judge. James H. Wilkerson, U. S. District Judge.

[fol. 2540] STATE OF ILLINOIS,
County of Cook, ss:

I, G. J. MacLennan, a notary public for the County and State aforesaid, do hereby certify that F. O. Hale, personally known to me to be the President of the Illinois Bell Telephone Company, a corporation, and A. R. Bone, personally known to me to be the Secretary of said corporation, whose names are subscribed to the foregoing instrument, appeared before me this day in person and severally acknowledged that as such President and Secretary of said corporation, they signed and delivered the said instrument of writing as President and Secretary of said corporation and caused the corporate seal of said corporation to be affixed thereto, as they were authorized so to do, as their free and voluntary act and as the free and voluntary act and deed of said corporation, for the uses and purposes therein set forth.

Given under my hand and notarial seal this 28th day of February, A. D. 1931.

G. J. MacLennan. My commission expires March 30, 1932. (Notarial Seal.)

[fol. 2541] Copy

IN UNITED STATES DISTRICT COURT

[Title omitted]

ORDER SUBSTITUTING PARTIES DEFENDANTS

It appearing to the Court that defendants, Frank L. Smith, Cicero J. Lindly, Hal W. Trovillion, P. H. Moynihan, William Burkhardt, Edward H. Wright and William J. Smith, have heretofore ceased to be members of the Illinois Commerce Commission of the State of Illinois and that the present persons composing the Illinois Commerce Commission are Charles W. Hadley, J. Paul Kuhn, G. Gale Gilbert, Walter H. Wilson, William M. Brinkman and Phil W. Collins.

1. It is ordered, with the consent of parties by stipulation filed herein, that Frank L. Smith, Cicero J. Lindly, Hal W. Trovillion, P. H. Moynihan, William Burkhardt, Edward H. Wright and William J. Smith be, and they are, hereby dismissed as defendants in this cause and that there

be substituted as parties defendants in their place the said [fol. 2542] Charles W. Hadley, J. Paul Kuhn, G. Gale Gilbert, Walter H. Wilson, William M. Brinkman and Phil W. Collins, the persons now composing the Illinois Commerce Commission.

2. It is further ordered, with the consent of all parties hereto, that said Charles W. Hadley, J. Paul Kuhn, G. Gale Gilbert, Walter H. Wilson, William M. Brinkman and Phil W. Collins, so made parties defendants herein, hereby adopt for all purposes the answer of Frank L. Smith, et al., filed herein on October 6, 1923, and agree to abide by all decrees and orders of this Court heretofore entered herein as fully as though they had been named as defendants therein, and agree to abide by all further orders of this Court.

3. It is further ordered, with the consent of all parties hereto, that in all future proceedings in this cause the said six individuals now composing the Illinois Commerce Commission, namely: Charles W. Hadley, J. Paul Kuhn, G. Gale Gilbert, Walter H. Wilson, William M. Brinkman and Phil W. Collins, shall be considered the proper parties defendants in this cause as fully as though all of said individuals had been originally named in the bill of complaint herein, and the names of the said six persons shall hereafter be used in the entitling of all pleadings or orders herein.

4. It is further ordered, with the consent of all parties hereto, that all proceedings, orders or decrees heretofore filed or entered in this cause wherein the individual members of the Illinois Commerce Commission are improperly named, or wherein these six individuals now composing the Illinois Commerce Commission are not properly set forth [fol. 2543] and referred to as parties defendants are hereby amended so as to properly name and describe said six persons now composing the Illinois Commerce Commission as defendants herein as fully as though they had been originally named in all of said pleadings, orders or decrees heretofore filed or entered herein.

Evan A. Evans, James H. Wilkerson, Judges of the District Court of the United States.

Entered Nov. 12, 1931.

O. K.

Oscar E. Carlstrom, Solicitor for the Members of the Illinois Commerce Commission.

[fol. 2544] IN UNITED STATES DISTRICT COURT

[Title omitted]

EXTRACT FROM MOTION OF DEFENDANTS FOR RULE UPON PLAINTIFF TO FURNISH OR MAKE AVAILABLE FOR EXAMINATION CERTAIN DATA, DOCUMENTS, AND RECORDS—Filed November 3, 1931

Now come the defendants and ask that the court direct and enter a rule upon plaintiff to furnish or make available for examination by the defendants or their counsel or representatives, the following information, data, documents and records:

* * * * * * *

(5) Minute books of Illinois Bell and A. T. & T.

* * * * * * *

Respectfully submitted.

Oscar E. Carlstrom, Attorney General, State of Illinois; William H. Sexton, Corporation Counsel, City of Chicago; Geo. I. Haight, Edmund D. Adcock, Benjamin Goldstein, Counsel for Defendants.

[fol. 2545] IN UNITED STATES DISTRICT COURT

[Title omitted]

EXTRACT FROM MEMORANDUM OF PLAINTIFF IN OPPOSITION TO DEFENDANTS' MOTION OF NOVEMBER 3, 1931

Defendants have failed in many respects to bring themselves within the rules with respect to their request for an examination of the minute books of either the Illinois Bell Company or of the American Telephone and Telegraph Company.

(a) Defendant's demand for the minute books of the plaintiff and of the American Telephone and Telegraph Company is a plain "fishing bill."

In their motion, defendants demand the right to an inspection of the minute book of the Board of Directors of

the Illinois Bell Telephone Company and of the Board of Directors and Executive Committee of the American Telephone and Telegraph Company covering the years 1923 to 1930. (Motion paper, page 1 and page 36.)
[fol. 2546] The only foundation for this demand which we have been able to find in defendants' voluminous papers is the following statement on page 37:

> "Relevancy.—An important method to determine the policies of plaintiff and of the A. T. & T., the real operator of the facilities of plaintiff, is by examination of the record of the proceedings wherein these policies were formulated. The policies are pertinent in the determination of the extent to which they are intended for the benefit of the utility service or the non-utility service of each company, and the extent to which the expenses and expenditures charged to the utility service in fact are incurred in connection with or for the benefit of the non-utility service. Without these records defendants and this court will be hampered and must depend upon the representations of plaintiff without verification."

The above statement of defendants shows affirmatively that with respect to the minute books of the two companies their application is a "fishing excursion" pure and simple and in plain violation of the restrictions which the courts have uniformly put upon discoveries under Equity Rule 58 or under a bill of discovery.

Defendants seek to examine all of the transactions of the directors of two companies and Executive Committee of one company over a period of eight years. They do not allege even in the most general way that any resolution dealing with the subject matter in issue was actually adopted. Their desire to see the minute books is based upon 'mere suspicion, surmise or vague guesses.' They are seeking to examine into scores, maybe hundreds of transactions in the hope that in one or two they may find something upon which to base an argument. The defendants themselves show this most clearly in their own statement quoted above wherein they state that the purpose of [fol. 2547] the examination of the minutes is to "determine the policies of plaintiff and of the A. T. & T". They then state "The policies are pertinent in the determination of the extent to which they are intended for the benefit of the utility service or the non-utility service of each company and extent to which the expenses and expenditures charged to the utility service in fact are incurred in connection with or for the benefit of the non-utility service". In this statement defendants pile "suspicion, surmise and guess" upon "suspicion, surmise and guess."

[fol. 2548] Copy

In United States District Court

[Title omitted]

Order Granting Leave to Take Depositions

This cause coming on to be heard on the motion of defendants for leave to take the depositions of certain named witnesses in said motion mentioned, and the Court having before it the said written motion of defendants to take said depositions, in which said motion and in support of same certain facts are set forth and alleged, said motion being verified by the affidavit of counsel; and the Court being fully advised in the premises,

It is ordered that leave be and it is hereby given to the defendants to take the depositions upon oral interrogatories of the witnesses whose names appear below, before Walter O. Verbryck (Imperial Hotel, New York City, N. Y.), a Notary Public in and for the County of New York, New York, at the building of the American Telephone & Telegraph Company, 195 Broadway, New York City, New York, beginning at 11:00 o'clock A. M. on Tuesday, December 15, 1931, and continuing from day to day thereafter, subject to subsequent provisions hereof, the said Walter O. Verbryck being a proper qualified and disinterested person before whom to take such depositions and not of counsel for either of the parties herein or interested in [fol. 2549] the event of said suit, or before any other notary public in and for the City and County of New York, New York, qualified and disinterested and not of counsel for either of the parties herein or interested in the event of said suit:

S. L. Andrew.
F. N. Ankeney.
H. D. Arnold.
J. F. Behan.
O. B. Blackwell.
Edgar S. Bloom.
R. H. Burcher.
Robert W. Burgess.
G. A. Campbell.
H. H. Carter.
H. P. Charlsworth.
E. J. Clarke.
T. T. Cook.
C. P. Cooper.
F. A. Cowan.
E. V. Cox.
Alan B. Crunden.
A. F. Dixon.
W. L. Dusenberry.
C. J. Eggeman.
H. J. Foster.
M. B. French.
G. E. Folk.
Bancroft Gherardi.
S. P. Grace.
C. H. Hadlock.
W. E. Harkness.
Sidney Hocerton.
A. E. Holcomb.
H. Jeavons.
R. L. Jones.
F. W. Jewett.
M. R. Koehler.
R. G. Keeler.
H. L. Kane.
G. B. Larkin.
E. C. McAllister.
E. Miller.
T. G. Miller.
J. E. Moravec.
L. F. Morehouse.
A. G. Morris.
C. Morsack.
John Mills.
H. H. Nance.
R. N. Nicely.
W. J. O'Connor.
John E. Otterson.
A. W. Page.
G. B. Parker.
J. J. Pilliod.
J. H. Ray.
R. I. Rees.
J. G. Roberts.
K. T. Rood.
R. B. Shaver.
H. Blair Smith.
G. C. Southworth.
Clarence G. Stoll.
W. J. Stout.
H. S. Sheppard.
G. B. Thomas.
W. G. Thompson.
C. Uhrig.
C. S. Vancise.
J. L. R. Van Meter.
H. J. Warren.
Carl Waterson.
E. F. Watson.
K. L. Wilkinson.
E. S. Wilson.

[fol. 2550] all residing at or near New York City, New York, and more than one hundred miles from the place of trial herein.

The taking of these depositions is subject to the following provisions:

These depositions shall continue from day to day after Tuesday, December 15th, 1931, but there shall be an adjournment not later than noon on Wednesday, December 23rd, 1931, until December 28th, 1931, or until such time thereafter as the solicitors for defendants shall elect, providing they shall give three days notice to solicitors for plaintiff of such date, and thereupon the taking of such depositions shall continue from day to day thereafter until completed.

The persons whose depositions are to be taken are officers or employees of the American Telephone & Telegraph Company, the Western Electric Company, Inc., or their subsidiaries. So that the order in which the testimony is to be taken shall be fixed, solicitors for the defendants shall notify solicitors for the plaintiff on or before Thursday, December 10th, 1931, that they will first examine witnesses who are officers of or employed in a designated department of the American Telephone & Telegraph Company or the Western Electric Company or by some subsidiary corporation of one of said companies, and such witnesses shall be first examined. Solicitors for the defendants shall notify solicitors for the plaintiff on or before Monday, December 14th, 1931, of the order in which the remaining witnesses shall be examined by stating the departments of the American Telephone & Telegraph Company or the Western Electric Company or the names of the subsidiaries in which such witnesses are officers or are employed, and the witnesses shall be examined in said order, by departments, [fol. 2551] subject to the right of solicitors for the defendants to change such order stated in their notice of December 14th, 1931, upon twenty-four hours notice to solicitors for plaintiff; provided, however, that in the event defendants desire to examine witnesses employed in any department of the Western Electric or the American Telephone & Telegraph Company or any of their subsidiaries after other witnesses have been examined in any such department and after the defendants' solicitors have started the examination of witnesses in other departments, then defendants may examine such other witnesses in any such department upon giving twenty-four hours notice of their intention so to do to solicitors for plaintiff.

It is further ordered that said depositions be certified by the notary taking the same and transmitted under seal to the Clerk of this Court and filed herein on or before February 1, A. D. 1932.

Enter.

(Signed) Evan A. Evans, James A. Wilkerson, Judges.

(Entered December 4, 1931.)

Copy

[fol. 2552] IN UNITED STATES DISTRICT COURT

[Title omitted]

ORDER GRANTING LEAVE TO TAKE DEPOSITIONS OF CERTAIN WITNESSES AT NEW YORK CITY, NEW YORK, AND TO AMEND ORDER ENTERED DECEMBER 4, 1931, GIVING LEAVE TO TAKE DEPOSITIONS OF CERTAIN OTHER WITNESSES AT NEW YORK CITY.

This cause coming on to be heard on the motion of defendants for leave to take the depositions of certain named witnesses in said motion mentioned, at the same time and place and before the same notary public as is provided by order entered December 4, 1931, for the taking of the depositions of certain other named witnesses at New York City beginning at 11:00 o'clock A. M. Tuesday, December 15, 1931, at the building of the American Telephone & Telegraph Company, 195 Broadway, New York City, New York, and to amend the said order of December 4, 1931, so as to include in the list of witnesses therein named the witnesses in said motion mentioned; and the Court having before it the said written motion of defendants to take said depositions, in which said motion and in support of same certain facts are set forth and alleged, said motion being verified by the affidavit of counsel; and it appearing to the Court that the solicitors for plaintiff have been duly notified of said motion, and the Court being fully advised in the premises,

[fol. 2553] It is ordered that leave be and it is hereby given to the defendants to take the depositions upon oral interrogatories of the witnesses whose names appear below, at the same time and place and before the same notary public as is provided by the order of December 4, 1931, with respect to the taking of depositions of certain witnesses whose names appear in said order of December 4, 1931, and that the said order of December 4, 1931, be and the same is hereby amended so as to include or add to the said list of persons whose depositions are provided to be taken by said order, the persons whose names appear below:

Western Electric Company, Inc.:

T. K. Stevenson—Comptroller of manufacture.
D. Levinger—Engineer of manufacture.
O. C. Spurling—Engineer of plant.
W. F. Hosford—Vice President in charge of manufacture.
W. T. Teague—Vice President in charge of sales.
J. W. Bancker—Vice President in charge of traffic and purchasing.
R. H. Gregory—Comptroller.
H. A. Halligan—Vice President, general staff.
F. T. Gilman—Treasurer.
H. B. Gilman—Secretary
D. C. Tanner—General Patent Attorney.

American Telephone & Telegraph Company:

A. A. Marsters—Secretary.
E. F. Carter—Vice President.
C. A. Heiss—Comptroller.
John H. Peck—Attorney.

Bell Telephone Laboratories, Inc.:

J. W. Farrell—Secretary and general attorney.
J. G. Roberts—General patent attorney.

all residing at New York City, New York, and more than one hundred miles from the place of trial herein.

It is further ordered that the taking of the depositions of the witnesses above named shall be subject to the same conditions as are provided by said order of December 4,

[fol. 2554] 1931, with reference to the taking of the depositions of the witnesses therein named, and the depositions of the above named witnesses herein shall be taken in the same way and in the same manner and on the same conditions as if their names had been included in said order of December 4, 1931.

Enter.

(Signed) Evan A. Evans, James H. Wilkerson, Judges.

(Entered December 8, 1931.)

[fol. 2555] IN UNITED STATES DISTRICT COURT

[Title omitted]

ORDER DENYING DEFENDANTS' MOTION FOR PRODUCTION AND INSPECTION OF DOCUMENTS—Dec. 17, 1931

This cause came on at this term upon application by defendants for production and inspection of books and other documents, and the Court having heard arguments of counsel, it is hereby

Ordered and adjudged that the application for production and inspection of books and other documents other than those covered by agreement, is for the present denied.

To the foregoing, defendants object and except.

Enter.

James H. Wilkerson, Judge.

[fol. 2556] IN UNITED STATES DISTRICT COURT

[Title omitted]

ORDER SUBSTITUTING PARTY DEFENDANT

In appearing to the Court that defendant, Charles W. Hadley, has heretofore ceased to be a member of the Illinois Commerce Commission of the State of Illinois, and that Paul Samuell has heretofore become a member of said Illinois Commerce Commission:

1. It is ordered, with the consent of parties by stipulation filed herein, that Charles W. Hadley be, and he is hereby dismissed as defendant in this cause, and that there by substituted as party defendant in his place the said Paul Samuell.

2. It is further ordered, with the consent of all parties hereto, that said Paul Samuell, so made party defendant

herein, hereby adopts for all purposes the answer of Frank [fol. 2557] L. Smith, et al., filed herein on October 6, 1923, and agrees to abide by all decrees and orders of this Court heretofore entered herein as fully as though he had been named as defendant therein, and agrees to abide by all further orders of this Court.

3. It is further ordered, with the consent of all parties hereto, that in all future proceedings in this cause the said six individuals now composing the Illinois Commerce Commission, namely: G. Gale Gilbert, J. Paul Kuhn, Walter H. Wilson, William M. Brinkman, Phil W. Collins and Paul Samuell, shall be considered the proper parties defendants in this cause as fully as though all of said individuals had been originally named in the bill of complaint herein, and the names of the said six persons shall hereafter be used in the entitling of all pleadings or orders herein.

4. It is further ordered, with the consent of all parties hereto, that all proceedings, orders or decrees heretofore filed or entered in this cause wherein the individual members of the Illinois Commerce Commission are improperly named, or wherein these six individuals now composing the Illinois Commerce Commission are not properly set forth and referred to as parties defendants are hereby amended so as to properly name and describe said six persons now composing the Illinois Commerce Commission as defendants herein as fully as though they had been originally named in all of said pleadings, orders or decrees heretofore filed or entered herein.

Evan A. Evans, James H. Wilkerson, Judges of the District Court of the United States.

Approved.

Oscar E. Carlstrom, Atty. Gen'l, Sol'r for Certain Defendants.

[fol. 2558] Copy

In United States District Court

[Title omitted]

Order Substituting Judge

Whereas a statutory court was heretofore formed in the above-entitled cause pursuant to section 266 of the Judicial

Code, which court consisted of the following judges: Evan A. Evans, Circuit Judge, George T. Page, Circuit Judge, and James H. Wilkerson, District Judge, and

Whereas it has now become necessary for George T. Page, Circuit Judge to withdraw as a member of said statutory court,

It is hereby ordered that William M. Sparks, judge of the circuit court of appeals for the seventh circuit, be appointed as a member of the statutory court in the above-entitled cause, in the place of Judge Page.

(Signed) Evan A. Evans, James H. Wilkerson.

Dec. 8th, 1932.

[fol. 2559] IN UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF ILLINOIS, EASTERN DIVISION

In Equity. No. 3746

ILLINOIS BELL TELEPHONE COMPANY, Plaintiff,

vs.

G. GALE GILBERT, J. PAUL KUHN, WALTER H. WILSON, WILLIAM M. BRINKMAN, PHIL W. COLLINS, and PAUL SAMUELL, the Persons Constituting the Illinois Commerce Commission of the State of Illinois, and Oscar E. Carlstrom, Attorney General of the State of Illinois, Defendants, and City of Chicago, a Municipal Corporation, Intervenor

Before Evans and Sparks, Circuit Judges, and Wilkerson, District Judge

OPINION—Filed April 29, 1933

PER CURIAM:

The final decree of this Court entered on January 31, 1930, enjoined the enforcement of an order of the Illinois Commerce Commission which prescribed rates for telephone service in the City of Chicago upon the ground that the order was confiscatory (38 Fed. (2d) 77). The order of the Commission was made on August 16, 1923, effective [fol. 2560] October 1, 1923. The decree of January 31, 1930, was set aside by the Supreme Court and the cause remanded to this Court (282 U. S. 133). The Supreme Court said that "there should be appropriate findings as to the results of the intrastate business in Chicago and the effect of the rates in question for each of the years since the date of the Commission's order."

As to the separation of the intrast[illegible]erstate property, revenues and expenses of the [illegible] Supreme Court (p. 149) said:

> "In view of the questions present[illegible]e, the validity of the order of the state commis[illegible] suitably tested only by an appropriate determinat[illegible] the value of the property employed in the intrastate business and of the compensation receivable for the intrastate service under the rates prescribed * * *. As to the value of that property, and as to the revenue and expenses incident to that business, separately considered, there should be specific findings * * *."

And again on the same subject:

> "In the method used by the Illinois Company in separating its interstate and intrastate business, for the purpose of the computations which were submitted to the court, what is called exchange property, that is, the property used at the subscriber's station and from that station to the toll switchboard, or to the toll trunk lines, was attributed entirely to the intrastate service. This method was adopted as a matter of convenience, in view of the practical difficulty of dividing the property between the interstate and intrastate services. The appellants insist that this method is erroneous, and they point to the indisputable fact that the subscriber's station, and the other facilities of the Illinois Company which are used in connecting with the long distance toll board, are employed in the interstate transmission and reception of messages. While the difficulty in making an exact apportionment of the property is apparent, and extreme nicety is not required, only reasonable measures being essential * * * it is quite another matter to ignore altogether the actual uses to which the property is put. It is obvious that, unless an apportionment is made, the intrastate service to which the exchange property is allocated will bear an undue burden—to what extent is a matter of controversy. We think that this subject requires

[fol. 2561] further consideration to the end that by some practical method the different uses of the property may be recognized and the return properly attributable to the intrastate service may be ascertained accordingly."

We have endeavored to comply with this mandate in making the separation of intrastate and interstate property, revenue and expenses. The difficulties is so doing, are, of course, apparent. Such separation has been made on the basis of actual use. Certain portions of the property were used exclusively for exchange or local intrastate business, certain portions exclusively for intrastate toll purposes and certain portions exclusively for interstate toll purposes. Such portions of property require no apportionment and have been directly segregated in accordance with their respective uses. The remainder of the property not so directly segregated, including the subscriber's station apparatus and equipment of subscriber's lines, and the local central office equipment, has been apportioned to plaintiff's exchange (intrastate) interstate toll and intrastate toll business, respectively, in accordance with its actual proportionate use for each of such classes of business. Obviously this apportionment cannot be exact. In our opinion, however, it is reasonably accurate.

In valuing the property one of the elements to which consideration has been given is the reproduction cost new as of December 31 for each of the years 1923 to 1931. In the findings of January 31, 1930, we approved the method employed by plaintiff in determining the reproduction cost new of the property. We have adhered to that conclusion, and are now of opinion that the reproduction costs determined in accordance with the method pursued by plaintiff are substantially accurate. Such reproduction costs of plaintiff's property in service in the Chicago area, exclusive of working cash capital, materials and supplies, construction work in progress, and going value, based upon the estimates of plaintiff's engineer, Sloan, are as follows: 1923, $148,581,042; 1924, $156,452,212; 1925, $172,257,055; 1926, $178,413,771; 1927, $191,820,622; 1928, $202,604,906; 1929, $219,327,112; 1930, $228,411,330; 1931, $226,912,713.

The evidence as to the book cost of plaintiff's Chicago area property, exclusive of working cash capital, materials and supplies, construction work in progress, and going value, as of December 31, for each of the years 1923 to 1931, is as follows: 1923, $100,040,051; 1924, $110,987,626; 1925, [fol. 2562] $126,493,467; 1926, $140,915,840; 1927, $155,508,437; 1928, $169,390,828; 1929, $182,657,561; 1930, $191,286,165; 1931, $195,422,113.

The evidence shows that the average amounts of working cash capital reasonably employed in the Chicago area were as follows: 1923, $3,000,000; 1924, $3,150,000; 1925, $3,325,000; 1926, $3,550,000; 1927, $3,825,000; 1928, $4,050,000; 1929, $4,500,000; 1930, $4,550,000; 1931, $4,250,000.

The average investment of plaintiff in its Chicago area in materials and supplies necessary in the conduct of its business as shown by the evidence are as follows: 1923, $233,022; 1924, $299,310; 1925, $358,227; 1926, $336,693; 1927, $326,599; 1928, $344,336; 1929, $276,091; 1930, $209,784; 1931, $224,433.

The amounts invested in property in the process of construction are shown by the evidence to be as follows: 1923, $812,543; 1924, $2,100,245; 1925, $1,390,296; 1926, $775,279; 1927, $5,437,059; 1928, $3,275,756; 1929, $1,974,688; 1930, $4,415,765; 1931, $441,956.

The valuation of plaintiff's property for 1931 and 1932 presents some difficulties which are not present in the other years. We are obliged to take notice of the general decline in property values which has accompanied the present period of business stagnation. For this reason we cannot take the reproduction estimates, based on the costs of labor and material stated in the record at their face. We have fixed values, therefore, for 1931 and 1932 which in our opinion give due consideration to the element of the present general decline in values.

In considering reproduction cost new as an element in arriving at value, it is necessary to deduct the actual existing depreciation in the property as compared with the new one in order to find the value of the physical elements commonly referred to as the structural value of the property.

A consideration of the evidence on this subject, including that of the witnesses who inspected the property, has led to the conclusion that the fair rate of depreciation is sixteen per cent for the years 1923 to 1928, inclusive, and fifteen per cent for the succeeding years.

In determining the element of going value, consideration has been given to the evidence relating to the construction and management of plaintiff's Chicago property. It is well planned, effectively engineered and properly constructed. It has a capable staff of operating employes. It is well adapted to the needs of Chicago and through years of op- [fol. 2563] erations has become fully efficient and serviceable to that community. Continuously from 1923 to the present time, it has had established routines, attached customers, and trained employes. The plaintiff has been efficiently and economically operated and has had a high standard of maintenance. The company's credit has been excellent and if given reasonable rates it has good earning power. The number of its telephone stations increased from 690,000 at the end of 1923 to over 980,000 at the end of 1930. Plaintiff has engineered and planned its property so that as additions are required to meet the future needs of the community they may be made efficiently and economically.

From a consideration of the pertinent facts, we have reached the conclusion that eight per cent is a reasonable allowance for going value.

With reference to purchases by the Illinois Company from the Western Electric Company, the Supreme Court (p. 153) said:

> "The point of the appellants' contention is that the Western Electric Company, through the organization and control of the American Company, occupied a special position with particular advantages in relation to the manufacture and sale of equipment to the licensees of the Bell system, including the Illinois Company, that is, that it was virtually the manufacturing department for that system, and the question is as to the net earnings of the Western Electric Company realized in that department and the extent to which, if at all, such profit figures in the estimates upon which the charge of confiscation is predicated. We think that there should be findings upon this point."

We have set out in the findings the gross purchases by the Illinois Company from Western Electric Company chargeable to construction accounts, as well as the gross purchases attributable to maintenance and other expense accounts. We have also made findings as to the earnings and profits of the Western Electric Company on sales to its Bell customers, including the plaintiff. We have found that, with an exception hereafter stated, the prices charged by the Western Electric Company have been fair and reasonable, and that its profits have not been excessive.

The term "average investment" of Western Electric Company, as used in the findings, includes its plant and [fol. 2564] manufacturing facilities, merchandise, receivables and cash, less current accounts payable, all at cost to Western except merchandise, which is cost or market, whichever is lower. There is not included in Western's "average investment" any amount for patents, good will, development expense, or going concern value. A large part of Western's manufacturing plant and facilities have been constructed by it at less than they could have purchased from others, and these savings are reflected in its "average investment." Western's factories are advantageously located, well designed and equipped for efficient and economical operation. It maintains a group of engineers who plan its manufacturing operations and constantly study the problem of cheapening its products.

The Western Electric Company, because of its relationship with the Bell system, has no sales expense and no credit risk involved in its Bell business. By receiving advance estimates from the Bell associate companies of their requirements, it is able to plan its manufacturing work more efficiently and economically. These factors result in reducing Western's costs, but they are not advantages retained by Western, since such reductions in costs are passed on by it in prices charged to its Bell customers. As a result of this relationship, Western has been enabled to sell and has sold its manufactured articles to its Bell customers at lower prices than otherwise would have been possible. Western's earnings on investment and profit on sales vary from year to year, due to the relative weighting of several important factors, among which are reductions in prices of its products, rate of turn over, changes in costs of materials and wage schedules. Western's relationship to the Bell system is permanent, not casual. It supplies substantially all of the requirements of all the Bell associated companies for telephone apparatus and lead covered cable at all times. It is, therefore, necessary in arriving at what are reasonable earnings on investment and profit on sales in the Bell business of Western to take into consideration the results for a period of years and not merely a single year. Western's rate of earnings on its investment in its Bell business and on its investment, less the amount of its depreciation reserve account, has been substantially one-third lower than those of other large manufacturing companies whose risks and hazards make them fairly comparable with Western. Its rate of profit on sales in its Bell business, as distinguished from earnings on investment, has been less than one-half of the rate of [fol. 2565] profit made on sales by other large, comparable manufacturing industries.

It would not have been possible for Western to sell its manufactured products as cheaply as it did except for the economies resulting from quantity production for the entire Bell system. Western develops for the present and future needs of all of those companies which are engaged in rendering a uniform and nation-wide telephone service, through plants engineered and constructed along similar lines. Because of these facts, Western's total earnings on its investment and its profit on its total sales are a fair basis for determining the reasonableness of Western's earnings in its dealings with plaintiff.

It appears from the evidence that taking the price level of December 31, 1920, as one-hundred per cent, the annual changes in price level of sales by Western Electric Company to plaintiff were as follows: 1921, —1.7%; 1922, —10.7%; 1923, +0.2%; 1924, —5.6%; 1925, —1.1%; 1926, —8.7%; 1927, —4.9%; 1928, —10.3%; 1929, —8.6%.

The price level at the end of 1929 was 58.3% of that of December 31, 1920. Effective November 1, 1930, prices were advanced 10.2%. We have reached the conclusion that in the computations relating to value and operating expenses, this advance should not be allowed. Plaintiff attempts to justify this advance by directing attention to the large reductions made in prices between 1920 and 1930. Giving due weight to that fact, we are of the opinion that in view of the general price trend during the years 1931 and 1932 this advance in prices should be eliminated from the computations upon which the charge of confiscation is determined. Considering, however, the reduction in prices prior to November 1, 1930, we are of the opinion that plaintiff is entitled to a maintenance of the 1930 price level during the years 1931 and 1932. We have given effect to the elimination of the 10.2% advance in the findings.

As to the "license contract" between the Illinois Company and the American Company, the Supreme Court said:

> "In view of the findings, both of the state commissions and of the court, we see no reason to doubt that valuable services were rendered by the American Company, but there should be specific findings by the statutory court with regard to the cost of these services to the American Company and the reasonable amount which should be allocated [fol. 2566] in this respect to the operating expenses of the intrastate business of the Illinois Company in the years covered by the decree."

In arriving at the cost to the American Company of the service rendered by it to the Illinois Company we must consider, first, the evidence as to the work performed by the twelve departments of the American Company. Those departments are: (1) operation and engineering; (2) development and research; (3) information; (4) personnel; (5) public relations; (6) treasurer; (7) controller; (8) secretary; (9) administration (including sundry items; (10) general service bureau; (11) operation-C (general), and (12) legal. Each of these departments furnished license contract services to the licensee companies. The reasonable amount of such costs which should be allocated to the operating expenses of the intrastate business of the Chicago area of plaintiff are as follows: 1923, $581,514; 1924, $608,586; 1925, $640,233; 1926, $741,713; 1927, $804,460; 1928, $864,886; 1929, $907,257; 1930, $1,063,725; 1931, $967,126.

The American Company, during the years 1923 to 1927, inclusive, incurred costs for maintaining the receivers, transmitters and induction coils (telephones) furnished to the licensee companies under the license agreements. The reasonable amount of such costs which should be allocated to the operating expenses of the intrastate business of the Chicago area of plaintiff are as follows: 1923, $68,931; 1924, $83,036; 1925, $100,469; 1926, $126,225; 1927, $129,852.

Such receivers, transmitters and induction coils (telephones) owned by the American Company and supplied to the licensee companies were subject to wear and tear and loss of value from other causes, and a reasonable annual charge for the expense of depreciation constituted a part of the costs to the American Company of furnishing such telephone instruments to the licensee companies. The reasonable amount of such cost of the expense of depreciation is represented by an annual depreciation rate of six per cent applied to the cost of such instruments. The reasonable amounts of such cost of the expense of depreciation which should be allocated to the operating expense of the intrastate business of the Chicago area of the plaintiff are shown by the evidence to be as follows: 1923, $115,000; 1924, $128,000; 1925, $141,000; 1926, $155,000; 1927, $169,000.

The American Company is entitled to charge also as a [fol. 2567] cost of furnishing such receivers, transmitters and induction coils (telephones) under the license agreement an annual return of six per cent of the reasonable value of such instruments. The total amounts of the cost of maintaining such instruments and other apparatus which should be allocated to the operating expenses of the intrastate business of the Chicago area of plaintiff are shown by the evidence to be as follows: 1923, $342,000; 1924, $395,000; 1925, $439,000; 1926, $478,000; 1927, $476,000.

Under the license contract the American Company was obligated to insure and hold harmless the plaintiff and all of the other licensee companies against loss or damage from suits or judgments for infringements of any patents, when such infringement was the result of the use of any apparatus recommended to such licensees by the American Company. That obligation constituted a substantial liability and one which might subject the American Company to large losses. The American Company provided for meeting such possible losses by setting up a contingent reserve over the period from January 1, 1923, to January 1, 1932. Such provision was a reasonable one and it was proper to distribute the amount so set up over a number of years rather than to charge heavy losses in particular years when incurred. The only practical way by which plaintiff and other licensee companies could make compensation to the American Company for that undertaking was to charge against their revenues fairly equal amounts over the period covered by the undertaking of the American Company. The reasonable amounts which should be allocated to the operating expenses of the intrastate business of the Chicago area of the plaintiff with respect to such undertaking of the American Company, as shown by the evidence, are the following amounts in the following years: 1923, $152,942; 1924, $147,171; 1925, $281,740; 1926, $191,060; 1927, $140,018; 1928, $137,695; 1929, $130,786; 1930, $125,532; 1931, $98,382.

The American Company furnished office space and office furniture and fixtures at cost and at less than value, to its twelve departments. The reasonable amount of these costs which should be allocated to the operating expenses of the intrastate business of the Chicago area of the plaintiff are shown by the evidence to be as follows: 1923, $11,739; 1924, $5,289; 1925, $8,863; 1926, $2,094; 1927, $2,391; 1928, $2,502; 1929, $2,482; 1930, $2,605; 1931, $2,795.

[fol. 2568] During the period from 1923 to 1931, both inclusive, the American Company maintained average annual sums varying from sixty million dollars to ninety-three million dollars in the form of cash for short term, non-fluctuating, low yield securities, for the purpose of meeting any reasonable demands of the licensee companies (excluding long lines) for funds. The amounts received as interest on such funds were insufficient to cover the cost to the American Company of obtaining money to supply such funds. The amounts of such differences which should be allocated to the operating expenses of the intrastate business of the Chicago area of the plaintiff, if such difference is distributed according to the percentages on which the actual costs to the American Company's twelve departments were distributed are as follows: 1923, $94,071; 1924, $106,942; 1925, $163,463; 1926, $153,878; 1927, $139,421; 1928, $140,875; 1929, $39,149; 1930, $157,135; 1931, $131,196. We have reached the conclusion, however, that this expense is not covered by the contract and that the amounts last above stated should not be included under the allowances made for operating expenses.

The evidence shows that the American Company paid taxes in each of the years 1923 to 1931, inclusive. The amounts thereof which should be allocated to the operating expenses of the intrastate business of the Chicago area of plaintiff, if such taxes were distributed in accordance with the percentages on which the actual costs to the American Company of its twelve departments were distributed, are as follows: 1923, $203,459; 1924, $211,228; 1925, $238,046;

1926, $160,482; 1927, $154,036; 1928, $57,446; 1929, $22,390; 1930, $19,844; 1931, $45,895. We have reached the conclusion, however, that those amounts are not covered by the contract and should not be included under the allowances made herein for operating expenses.

From a consideration of the foregoing items which we think are established by the evidence, we have made findings as to the cost of the services under the contract to the American Company, and the reasonable amount which should be allocated in this respect to the operating expenses of the intrastate business of the Illinois Company for the years covered by the contract. We have also made findings as to the portions of the amounts paid by plaintiff to the American Company for license contract services which should be allocated to plaintiff's intrastate telephone expenses in the Chicago area.

[fol. 2569] In determining the amounts to be allowed under the contract as operating expenses, we have taken the amounts found to be the costs to the American Company of those services, unless such amount for a given year is larger than the amount charged on the books of the company. In the latter case, we have allowed as an operating expense the smaller amount charged on the books of the company.

Concerning the annual charge for depreciation, the Supreme Court (p. 158) said:

> "While it has been held by this Court that property paid for out of moneys received for past services belongs to the Company, and that the property represented by the credit balance in the reserve for depreciation cannot be used to support the imposition of a confiscatory rate * * * it is evident that past experience is an indication of the Company's requirements for the future. The recognition of the ownership of the property represented by the reserve does not make it necessary to allow similar accumulations to go on if experience shows that these are excessive. The experience of the Illinois Company, together with a careful analysis of the results shown, under comparable conditions, by other companies which are part of the Bell system, and thus enjoy the advantage of the continuous and expert supervision of a central technical organization, should afford a sound basis for judgment as to the amount which in

fairness both to public and private interest should be allowed as an annual charge for depreciation."

And again:

"Accordingly, the (district) court should make appropriate findings with respect to the amount to be allowed in this case as an annual charge for depreciation in connection with the intrastate business."

In determining the amounts which should be allowed as annual charges for depreciation, we have given consideration to the estimates in the orders of the Illinois Public Utilities Commission and Illinois Commerce Commission, to the adjustment of such estimates which is necessary to place them on the basis of the present value of the property for the respective years for which such estimates were made by the commission, to the amounts set up by plaintiff on its books for that expense, to the adjustments of the [fol. 2570] amounts set up by plaintiff on the basis of original or book cost to make the amounts of such allowances correspond with the present value of the property at the time such amounts were set up on the books of the company, to the experience of the Illinois Company and to the results shown in comparable conditions by other companies which are a part of the Bell system. From a consideration of the evidence on the subjects above stated, we have determined the amounts which in our opinion are reasonable and proper amounts, fair alike to public and private interest, to be allowed as the annual charges for depreciation applicable to the intrastate portion of plaintiff's Chicago area property.

With reference to the rate of return, the Supreme Court (p. 161) said:

"It was found by the court that the reduction in revenue caused by the rates in question, as applied to the entire business for the year 1923, would amount to about $1,700,000, and the question is whether the loss when ascertained with respect to the intrastate business would cause confiscation under the applicable standard as above set forth in the Bluefield case, supra. In order to determine this question, the court should find the rate of return which was realized from the intrastate business and the rate of return which it is fair to conclude would have been realized from that business under the prescribed rates."

Accordingly, we have made findings as to the rate of return which was realized from plaintiff's intrastate business under the rates in force for each of the years during the period in question, and also the rate of return which it is fair to conclude would have been realized in each of those years from that business under the rates prescribed by the commission in its order of 1923.

Applying the standard prescribed by the Supreme Court, we have made findings as to the proper rate of return for each year which is necessary to avoid the charge of confiscation. One of the factors to be considered is that of the rates "generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties."

We have given weight to the facts of which the court takes judicial notice relative to the general decline in cor- [fol. 2571] porate earnings during the years 1931 and 1932. It is for this reason that we have fixed 6½% as the proper rate of return for 1931 and 5½% as the proper rate of return for 1932. A public utility enjoying the advantages of plaintiff is not entitled to the large earnings made by many undertakings during periods of great prosperity. On the other hand, its return in times of business adversity should not be reduced to the extent that the earnings of many private corporations have been impaired. The range of from 7½% to 5½% as found in this case gives weight, in our opinion, to all of the elements which under the ruling of the Supreme Court we are required to consider.

[fol. 2572] IN UNITED STATES DISTRICT COURT

[Title omitted]

FINDINGS OF FACT AND CONCLUSIONS OF LAW—Filed April 29, 1933.

The above entitled cause having come on to be heard pursuant to the mandate of the Supreme Court and the parties having appeared by their respective counsel and offered evidence in support of their respective contentions, the Court having heard arguments and being advised in the premises, now finds as

Findings of Fact

1. The fair value of all of plaintiff's property in the Chicago area, including working cash capital, materials and supplies, construction work in progress and going value, as an average amount during each of the years 1923 to 1932, inclusive, was as follows: 1923, $130,000,000; 1924, [fol. 2573] $143,000,000; 1925, $157,000,000; 1926, $161,000,000; 1927, $178,000,000; 1928, $186,000,000; 1929, $200,000,000; 1930, $205,000,000; 1931, $197,500,000; 1932, $185,000,000.

2. The fair value of plaintiff's said Chicago area property, used and useful in its entire intrastate business, as an average amount during each of the years 1923 to 1932, inclusive, was as follows: 1923, $124,200,000; 1924, $136,500,000; 1925, $148,500,000; 1926, $151,500,000; 1927, $167,000,000; 1928, $173,000,000; 1929, $184,000,000; 1930, $187,120,000; 1931, $179,100,000; 1932, $166,500,000.

3. The fair value of plaintiff's said Chicago area property, used and useful in its intrastate toll business, as an average amount during each of the years 1923 to 1932, inclusive, was as follows: 1923, $5,515,000; 1924, $6,250,000; 1925, $7,200,000; 1926, $7,800,000; 1927, $9,300,000; 1928, $10,500,000; 1929, $12,600,000; 1930, $13,850,000; 1931, $13,600,000; 1932, $13,100,000.

4. The original or book cost of plaintiff's property is correctly stated in plaintiff's exhibit A54.

5. Sloan's method of estimating reproduction cost new of plaintiff's property is reliable, and plaintiff's estimates of reproduction cost new set forth in plaintiff's exhibit A2 to A10, both inclusive, 12, 14, 18 and 43 are substantially correct. The facts with reference to working cash capital, investment in materials and supplies, and investment in property in process of construction are correctly stated in plaintiff's exhibit A54.

6. The fair rate of depreciation to be applied to the reproduction cost new in determining the valuations for rate making purposes is sixteen per cent for the years 1923 to

1928, inclusive, and fifteen per cent for the succeeding years.

7. The amount to be added on account of going value to the reproduction cost new of the physical property of the plaintiff in determining valuations for rate making purposes is eight per cent thereof.

8. The plaintiff's revenues from that portion of its property used in its intrastate business in its Chicago area for each of the years 1923 to 1931, inclusive, were as follows: 1923, $37,146,181; 1924, $39,653,954; 1925, $42,560,451; 1926, $45,932,698; 1927, $49,163,580; 1928, $53,677,760; 1929, $58,279,602; 1930, $58,698,263; 1931, $56,496,299.

9. The plaintiff's revenues from that portion of its prop- [fol. 2574] erty used in its intrastate toll business in its Chicago area for the years 1923 to 1931, inclusive, were as follows: 1923, $2,424,172; 1924, $2,760,927; 1925, $3,235,260; 1926, $3,867,162; 1927, $4,378,822; 1928, $5,013,414; 1929, $5,583,287; 1930, $5,752,810; 1931, $5,366,875.

10. Plaintiff's reasonable operating expenses, including expense of depreciation, for the intrastate portion of its said Chicago area business for each of the years 1923 to 1931, inclusive, are as follows: 1923, $30,500,000; 1924, $32,170,000; 1925, $34,680,000; 1926, $37,880,000; 1927, $40,800,000; 1928, $45,050,000; 1929, $47,600,000; 1930, $48,560,000; 1931, $46,670,000.

11. The portions of plaintiff's said operating expenses which *is* allocated to its intrastate toll business for each of the years 1923 to 1931, inclusive, are as follows: 1923, $1,750,000; 1924, $1,875,000; 1925, $2,110,000; 1926, $2,570,000; 1927, $2,820,000; 1928, $3,480,000; 1929, $4,020,000; 1930, $4,133,000; 1931, $4,200,000.

12. The gross purchases by plaintiff from Western Electric Company chargeable to construction accounts were for the years 1923 to 1931 inclusive, as follows: 1923, $8,140,067.67; 1924, $10,972,514.19; 1925, $14,372,524.49; 1926, $13,931,933.13; 1927, $17,353,252.96; 1928, $14,877,809.09; 1929, $16,186,266.66; 1930, $16,594,189.87; 1931, $8,809,711.73.

13. The gross purchases by plaintiff from Western Electric Company attributable to maintenance and other expense accounts for the years 1923 to 1931, inclusive, were as fol-

lows: 1923, $1,868,622.44; 1924, $1,446,856.71; 1925, $1,659,293.12; 1926, $2,389,450.58; 1927, $2,740,833.38; 1928, $3,533,042.40; 1929, $4,526,227.72; 1930, $4,411,113.76; 1931, $3,661,567.61.

14. The relations between plaintiff and the Western Electric Company are complicated by the fact that the American Telephone & Telegraph Company owns substantially all of the stock of plaintiff, and also practically all of the stock of the Western Electric Company. Plaintiff assumed the burden of showing and has shown that the prices of goods sold by Western Electric Company to plaintiff, except as hereafter found, were fair and reasonable; that the apparatus manufactured and sold by Western Electric Company to plaintiff was no higher than prices received from the sale by said manufacturer to other purchasers, and that the net earnings of Western Electric Company were not excessive.

15. During the period from 1916 to 1932 the business of [fol. 2575] Western Electric Company with its Bell customers amounted to more than ninety per cent of its sales of its own manufactures, and its business with the Bell customers, if supplies are included, amounted to 82% of its total sales. Western's sales of its manufactured articles constituted approximately 70% of its total sales to its Bell customers.

16. The operating costs of Western Electric Company have been low and its products are of a high standard. The prices charged by Western Electric Company to plaintiff and its other Bell customers have, during the entire period 1916 to 1932, inclusive, been lower than prices charged by other manufacturers for comparable materials and also lower than the prices charged by Western to independent telephone companies and others for the same materials.

17. Plaintiff's exhibit A194 shows the sales by Western Electric to its Bell customers, the earnings on such sales, the per cent of earnings to sales, average investment, per cent of earnings to average investment, average investment less amount of depreciation reserve account, and per cent earnings to average investment less amount of depreciation reserve account, for each of the years 1916 to 1932, for that total period and also for the period 1923 to 1932, inclusive. Said exhibit is correct if adjustments are made: (1) on ac-

count of the accrual of an extraordinary reserve against plant and machinery depreciation in the years 1924, 1925, 1926 and 1927; (2) the difference between the accruals for federal income taxes made currently and the actual taxes paid; (3) the inclusion in the Bell expenses for the year 1924 of an accrual for pension-fund purposes relating to non-Bell business, and (4) a charge to expense on account of patents purchased applicable to the Bell business which were charged to surplus.

18. The earnings and profits by Western Electric Company on sales by its Bell customers are as follows:

	Profit on sales	Earnings on average investment	Earnings on average investment less amount of depreciation reserve account
For period 1916 to 1932	4.5	5.9	7.6
For period 1923 to 1932	4.7	6.1	8.

19. The earnings and profits of Western Electric Company on sales to its Bell customers for each of the years 1916 to 1932, inclusive, are as follows:

[fol. 2576]

	Profit on sales	Earnings on average investment	Earnings on average investment less amount of depreciation reserve account
1916	.5	.8	1.1
1917	2.3	3.6	4.4
1918	2.7	3.1	3.9
1919	3.4	3.9	5.0
1920	3.7	4.9	6.1
1921	7.7	8.7	10.7
1922	4.0	5.2	6.6
1923	3.4	4.8	6.2
1924	4.7	6.9	8.8
1925	7.2	10.2	12.9
1926	5.2	8.3	10.6
1927	6.9	10.4	13.6
1928	6.8	11.8	15.8
1929	4.8	9.1	11.7
1930	3.5	4.6	5.8
1931	5.0	4.2	5.6
1932	(3.9)	(2.3)	(3.3)

20. The sales of Western Electric to plaintiff for use in its entire business and for use in its Chicago area have been a reasonably fair and representative cross section of the total sales of Western Electric to all of its Bell customers. The earnings made by Western Electric Company on its investment allocated to the business done with the plaintiff and its profit on sales made to plaintiff in its Chicago area have been fair and reasonable, except as hereafter found, during the periods 1916 to 1932 and 1923 to 1932. No unreasonable or unfair profit, except as hereafter found, has been made by Western Electric Company in any of its dealings with plaintiff and all of the telephone apparatus, lead covered cable and supplies sold by Western Electric Company to plaintiff have been sold at fair and reasonable prices, except as hereinafter found.

21. In determining reasonable operating expenses to be allowed to plaintiff after November 1, 1930, there should be a reduction of 10% from the prices charged by Western Electric Company on purchases made by plaintiff attributable to maintenance and other expense accounts and this deduction has been made in determining the amount allowed in these findings on account of plaintiff's operating expenses.

[fol. 2577] 22. The amounts of the cost of the services rendered by the American Company under the license contracts which should be allocated to the operating expenses of the intrastate business of the Illinois Company for each of the years 1923 to 1931, inclusive, are as follows: 1923, $1,088,195; 1924, $1,156,046; 1925, $1,369,836; 1926, $1,412,867; 1927, $1,422,869; 1928 $1,005,063; 1929, $1,040,529; 1930, $1,191,882; 1931, $1,068,303.

23. The portions of the amounts paid to the American Company for license contract services and charged on the books of plaintiff as deductions from gross revenues, allocable to plaintiff's intrastate telephone expense in the Chicago area for the years 1923 to 1931, inclusive, are as follows: 1923, $1,662,014; 1924, $1,787,095; 1925, $1,901,069; 1926, $1,845,571; 1927, $1,980,880; 1928, $1,036,616; 1929, $834,276; 1930, $864,131; 1931, $834,199.

24. The amounts stated in finding No. 23 were paid pursuant to a license contract entered into between the plaintiff

and American Telephone & Telegraph Company whereby the latter company granted plaintiff a license to use its patented articles and for advice of counsel and assistance rendered by the American Telephone & Telegraph Company, and plaintiff agreed to pay 4½% of its gross revenues for the use of the instruments and for engineering, financial and advisory services. In the early part of 1926 this percentage was reduced to 4%. At the end of 1927 the license contract was again modified by providing for the sale by the American Telephone & Telegraph Company to the plaintiff of the telephone instruments and plaintiff assumed the obligation to replace and repair them. The royalty contract was changed so that plaintiff paid only two per cent of the gross revenues thereafter until January 1, 1929, when the payment was further reduced to 1½%.

25. In determining plaintiff's reasonable operating expense the amounts to be charged on account of the license agreement for the years 1923 to 1928, inclusive, are the amounts above found to be the cost of the service for each of those years respectively. The amounts to be charged on account of said license agreement for the years 1929 to 1931, both inclusive, are the amounts above found to be charged on the books of the company for each of those years respectively.

26. The reasonable and proper amount to be allowed as [fol. 2578] the annual charge for depreciation applicable to the intrastate portion of plaintiff's said Chicago area property for each of the years 1923 to 1931, inclusive, is as follows: 1923, $4,000,000; 1924, $4,250,000; 1925, $4,750,000; 1926, $5,400,000; 1927, $6,000,000; 1928, $6,650,000; 1929, $7,000,000; 1930, $7,200,000; 1931, $7,400,000.

27. The net income available for return from that portion of plaintiff's property used in its intrastate business in its Chicago area for each of the years 1923 to 1932, inclusive, was as follows: 1923, $6,646,183; 1924, $7,483,954; 1925, $7,880,451; 1926, $8,052,698; 1927, $8,363,580; 1928, $8,627,760; 1929, $10,679,602; 1930, $10,138,263; 1931, $9,826,299; 1932, $8,000,000.

28. If the rates in suit had been effective plaintiff's revenues and net earnings on its intrastate business for each of

the years 1923 to 1931, inclusive, would have been reduced in the following amounts: 1923, $1,541,668; 1924, $1,550,995; 1925, $1,582,561; 1926, $1,650,570; 1927, $1,677,077; 1928, $1,713,301; 1929, $1,740,000; 1930, $1,645,878; 1931, $1,433,744.

29. The amounts of said reduced earnings, if the rates in suit had been in effect, are allocated to intrastate toll business are as follows: 1923, $28,809; 1924, $31,180; 1925, $34,411; 1926, $39,037; 1927, $41,715; 1928, $45,087; 1929, $47,233; 1930, $46,825; 1931, $37,577.

30. The net income available for return from that portion of plaintiff's property used in its intrastate business in its Chicago area under the rates fixed by the Illinois Commerce Commission by its order of August 16, 1923, effective October 1, 1923, for each of the years 1923 to 1932, inclusive, was as follows: 1923, $5,104,515; 1924, $5,932,959; 1925, $6,297,890; 1926, $6,402,128; 1927, $6,686,503; 1928, $6,914,459; 1929, $8,939,602; 1930, $8,492,385; 1931, $8,392,555; 1932, $6,750,000.

31. The net earnings of plaintiff for the year 1932 are approximately two million dollars less than those for 1931. Such decrease is proportionately larger in the intrastate than in the interstate business. The additional loss in revenues, if the rates in suit had been in effect, is $1,270,000 for the year 1932. The amount available for a return on plaintiff's intrastate business in the Chicago area for 1932 is $1,800,000 less than the amount available for the year 1931.

32. The fair rate of return on the average fair value of plaintiff's intrastate property was 7½% for each of the [fol. 2579] years 1923 to 1927, inclusive, 7% for each of the years 1928, 1929 and 1930, 6½% for 1931, and 5½% for 1932.

33. Plaintiff has earned upon the fair value of its intrastate property as found herein above, for each of the years 1923 to 1932, inclusive, a return in percentages as follows: 1923, 5.4%; 1924, 5.5%; 1925, 5.3%; 1926, 5.3%; 1927, 5.0%; 1928, 5.0%; 1929, 5.8%; 1930, 5.3%; 1931, 5.5%; 1932, 4.8%.

34. If the rates in suit had been in effect, plaintiff would have received upon the fair value of its intrastate property as found herein above, rates of return for each of the years 1923 to 1932, inclusive, percentages as follows: 1923, 4.1%; 1924, 4.4%; 1925, 4.2%; 1926, 4.2%; 1927, 4.0%; 1928, 4.0%; 1929, 4.9%; 1930, 4.5%; 1931, 4.7%; 1932, 4.1%.

35. If the intrastate toll business is separated from the other intrastate business of plaintiff, the rates of return which plaintiff would have received upon its intrastate exchange business for the Chicago area, if the rates in suit had been in force, would have been slightly lower than the rates hereinabove stated for plaintiff's total intrastate business in its Chicago area.

Conclusions of Law

1. At all times since the effective date of the order of the Illinois Commerce Commission herein complained of, the telephone rates prescribed in said order have been, and they are now, confiscatory of plaintiff's property; and said order is void.

2. The interlocutory injunction issued herein should be made permanent.

3. Plaintiff should be released and discharged from all obligation to refund any sums of money collected by it under the terms of the preliminary and interlocutory decrees herein, whether on account of the bond filed herein or otherwise.

Plaintiff should recover its taxable costs herein.

Evan A. Evans, William M. Sparks, Circuit Judges.
James H. Wilkerson, District Judge.

[fol. 2580] IN UNITED STATES DISTRICT COURT

[Title omitted]

ORDER SUBSTITUTING PARTIES DEFENDANTS

It appearing to the Court that defendants J. Paul Kuhn, Walter H. Wilson and William M. Brinkman have heretofore ceased to be members of the Illinois Commerce Commission of the State of Illinois, and that Benjamin F. Lindheimer, Andrew Olson, Charles E. Byrne and Ernest J. Kruetgen have replaced them as members of the Illinois Commerce Commission, and that Oscar E. Carlstrom has heretofore ceased to be the Attorney General of the State of Illinois, and Otto Kerner has replaced him as Attorney General of the State of Illinois,

[fol. 2581] 1. It is ordered, with the consent of parties by stipulation filed herein, that J. Paul Kuhn, Walter H. Wilson and William M. Brinkman, be and they are hereby dismissed as defendants in this cause and that there be substituted as party defendants in their place the said Benjamin F. Lindheimer, Andrew Olson, Charles E. Byrne and Ernest J. Kruetgen, the persons who replaced them on the Illinois Commerce Commission and Oscar E. Carlstrom be and he is hereby dismissed as party defendant in this cause and there be substituted in his place the said Otto Kerner, the present Attorney General of the State of Illinois;

2. It is further ordered, with the consent of all parties hereto that said Benjamin F. Lindheimer, Andrew Olson, Charles E. Byrne and Ernest J. Kruetgen and Otto Kerner, Attorney General of the State of Illinois, made parties defendants herein, hereby adopt for all purposes the answer of Frank L. Smith, et al., filed on October 6, 1923, and agree to abide by all decrees and orders of this court heretofore entered herein as fully as though they had been named as defendants therein, and agree to abide by all further orders of this Court.

3. It is further ordered, with the consent of all parties hereto that in all future proceedings in this cause the persons now composing the Illinois Commerce Commission, namely, Benjamin F. Lindheimer, Ernest J. Kruetgen, Andrew Olson, G. Gale Gilbert, Phil W. Collins, Paul Samuell, Charles E. Byrne and Otto Kerner, Attorney General, shall be considered the proper parties defendants in this cause as fully as though all individuals had been originally named in the Bill of Complaint herein, and the names of said persons shall hereafter be used in the entitling of all pleadings or orders herein.

[fol. 2582] 4. It is further ordered, with the consent of all parties hereto that all previous orders or decrees heretofore filed or entered in this cause wherein the individual members of the Illinois Commerce Commission are improperly named, or wherein the Attorney General of the State of Illinois is improperly named, are hereby amended so as to properly name and describe the persons now composing the Illinois Commerce Commission, and the person who is the Attorney General of the State of Illinois, as defendants herein as fully as though they had been originally named in all of said pleadings, orders or decrees heretofore filed or orders herein.

Evan A. Evans, William M. Sparks, James H. Wilkerson, Judges.

[fol. 2583] IN UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF ILLINOIS, EASTERN DIVISION

In Equity. No. 3746

ILLINOIS BELL TELEPHONE COMPANY, Plaintiff,

vs.

BENJAMIN F. LINDHEIMER, ERNEST J. KRUETGEN, ANDREW OLSON, G. Gale Gilbert, Phil W. Collins, Paul Samuell, Charles E. Byrne, the Persons Constituting the Illinois Commerce Commission of the State of Illinois, and Otto Kerner, Attorney General of the State of Illinois, Defendants, and City of Chicago, a Municipal Corporation, Intervenor

FINAL DECREE

This cause came on to be further heard at a term of this Court pursuant to the mandate of the Supreme Court filed herein, and further evidence having been introduced, and the cause having been argued by counsel, and the Court having filed herein an Opinion and Findings of Fact and Conclusions of Law, it is

Ordered, adjudged, and decreed as follows:

1. That the defendants, Benjamin F. Lindheimer, Ernest J. Kruetgen, Andrew Olson, G. Gale Gilbert, Phil W. Collins, Paul Samuell and Charles E. Byrne, the persons con- [fol. 2584] stituting the Illinois Commerce Commission of the State of Illinois, and Otto Kerner, Attorney General of

the State of Illinois, and their respective successors in office, and the City of Chicago, a municipal corporation, be, and they are hereby, severally and permanently enjoined and restrained from attempting to compel plaintiff, its officers, agents, or employees, to observe, enforce, or charge the rates, charges and rentals for telephone service prescribed by the said order of the Illinois Commerce Commission, dated August 16, 1923, a copy of which said order is attached to the Bill of Complaint herein as Exhibit "A".

2. That the said defendants, Benjamin F. Lindheimer, Ernest J. Kruetgen, Andrew Olson, G. Gale Gilbert, Phil W. Collins, Paul Samuell and Charles E. Byrne, the persons constituting the Illinois Commerce Commission of the State of Illinois, and Otto Kerner, Attorney General of the State of Illinois, and their respective successors in office, and the City of Chicago, a municipal corporation, and all other persons be, and they are hereby, severally and permanently enjoined and restrained from taking any steps or proceedings against the plaintiff, its officers, agents, or employees, to enforce any statutory or other penalties or any remedy against the plaintiff for disregarding the rates prescribed by the said order of the Illinois Commerce Commission, dated August 16, 1923, and from taking any such steps or proceedings against the plaintiff, its officers, agents, or employees, to enforce any statutory or other penalties or any other remedy against the plaintiff for charging rates in excess of the rates prescribed in said order of the Illinois Commerce Commission, dated August 16, 1923.

[fol. 2585] 3. That all sums of money collected by the plaintiff under the terms of the preliminary and interlocutory decrees entered herein, in excess of the sums which would have been collected under the rates prescribed by said Illinois Commerce Commission, are the property and funds of the plaintiff and belong to it, and plaintiff is released from all obligation to refund to its subscribers any sums of money collected by it under the terms of the preliminary and interlocutory decrees herein.

4. That the plaintiff is hereby released and discharged from any and all liability on account of the certain bond, in the penal sum of one million dollars, executed by said plaintiff and filed with this Court pursuant to the terms of the temporary injunction entered herein on December 21, 1923;

and is further released and discharged from any and all liability on account of the certain bond, in the penal sum of five million dollars, executed by said plaintiff on February 28, 1931, and filed with this Court on March 5, 1931, pursuant to the order of this Court entered on February 28, 1931.

5. That plaintiff shall recover its taxable costs and disbursements of the defendants and intervenor-defendant.

Dated at Chicago, Illinois, June 28, 1933.
Evan A. Evans, William M. Sparks, Circuit Judges.
James H. Wilkerson, District Judge.

To the Decree and the entry the defendants except and their exception is allowed.

Evan A. Evans.

[fol. 2586] In United States District Court

[Title omitted]

Petition for Appeal

To the Honorable Evan A. Evans and William M. Sparks, Circuit Judges for the Northern District of Illinois, and the Honorable James H. Wilkerson, District Judge for said District, constituting a special statutory court under the provisions of Section 266 of the Judicial Code:

Now come Benjamin F. Lindheimer, Ernest J. Kruetgen, G. Gale Gilbert, Andrew Olson, Paul Samuell, Phil W. Collins and Charles E. Byrne constituting the Illinois Commerce Commission of the State of Illinois, and Otto Kerner, Attorney General of the State of Illinois, and the City of Chicago, a municipal corporation, defendants in the above entitled cause, and feeling themselves aggrieved by the final [fol. 2587] decree of said Court entered in said cause on the 28th day of June, 1933, granting a permanent injunction herein and other relief, as appears from said decree, do hereby jointly and severally appeal from said decree so entered in said cause on the 28th day of June, 1933, to the Supreme Court of the United States for the reasons set forth in the Assignment of Errors filed herewith.

Your petitioners pray that their appeal be allowed from the said final decree to the Supreme Court of the United States and that a citation be issued, as provided by law, and that transcripts of the records, proceedings and documents upon which said decree was based, duly authenticated, be sent to the Supreme Court of the United States under the rules of said Court in such cases made and provided, and that the decree of said Statutory Court entered in the United States District Court for the Northern District of Illinois may be reversed and such order made as to the said Supreme Court of the United States may seem meet and just.

And your petitioners further pray that pending the said appeal the plaintiff shall be required to keep such records and accounts as shall enable it, in case said final decree is reversed, to make refund to its several subscribers of any sums paid by them in excess of the sums chargeable to them which would have been collected under the rates prescribed by the Illinois Commerce Commission under its order dated August 16, 1923, and permanently enjoined by this Court, as the Court may direct.

Your petitioners further pray that an order be entered herein by this Court dispensing with an appeal bond or [fol. 2588] other security as a condition for the allowance or perfection of said appeal:

Dated Chicago, Illinois, June 28th, 1933.

Benjamin F. Lindheimer, Ernest J. Kruetgen, Andrew Olson, G. Gale Gilbert, Phil W. Collins, Paul Samuell, Charles E. Byrne, Constituting the Illinois Commerce Commission. Otto Kerner, Attorney General of the State of Illinois. City of Chicago, Intervenor, by Wm. H. Sexton, Corporation Counsel; Benjamin F. Goldstein, George I. Haight, Edmund D. Adcock, Special Counsel.

[fol. 2589] IN UNITED STATES DISTRICT COURT

[Title omitted]

ASSIGNMENT OF ERRORS

Now come Benjamin F. Lindheimer, Ernest J. Kreutgen, Andrew Olson, G. Gale Gilbert, Phil W. Collins, Paul

Samuell, and Charles E. Byrne, constituting the Illinois Commerce Commission of the State of Illinois, Otto Kerner, Attorney General of the State of Illinois, and the City of Chicago, a municipal corporation, defendants in the above entitled cause, by their solicitors, and in connection with their petition for appeal in the above entitled cause now filed herein, make and file their Assignment of Errors setting forth the several errors upon which they rely in the prosecution of the appeal in said cause from the final decree entered in this Court in said cause on the 28th day of June, 1933, and the above named defendants-appellants state that in the record and proceedings, and in the entering of said final decree aforesaid, manifest error has inter- [fol. 2590] vened to the prejudice of said defendants-appellants, to wit:

Separation of Revenues

(1) The Court erred in Finding of Fact No. 8 in allocating to interstate toll business the following amount of gross revenues arising under existing rates for intrastate exchange service for each of the years 1923 to 1932, inclusive:

1923	$356,041
1924	383,633
1925	453,006
1926	460,104
1927	509,369
1928	588,491
1929	650,247
1930	648,613
1931	601,189
1932	Amount undisclosed.

(2) The Court erred in Finding of Fact No. 9 in allocating to intrastate toll business the following amount of gross revenues arising under existing rates for intrastate exchange service for each of the years 1923 to 1932, inclusive:

1923	$658,676
1924	755,871
1925	869,610
1926	1,015,703

1927	1,139,135
1928	1,275,065
1929	1,405,373
1930	1,481,792
1931	1,319,560
1932	Amount undisclosed.

(3) The Court erred in Findings of Fact Nos. 27, 29, 31, 33, and 34 in allocating to intertsate toll business the following amounts of net income arising under existing rates, and under the rates in suit for intrastate exchange service for each of the years 1923 to 1932, inclusive:

[fol. 2591]	Under existing rates	Under rates in suit
1923	$260,614	$245,042
1924	278,223	262,398
1925	327,430	309,505
1926	335,599	317,915
1927	373,025	354,372
1928	448,464	427,655
1929	508,729	486,875
1930	492,965	472,469
1931	448,700	431,580
1932	Amount undisclosed.	Amount undisclosed.

(4) The Court erred in Finding of Fact No. 35 in allocating to intrastate toll business the following amounts of net income arising under existing rates, and under the rates in suit for intrastate exchange service for each of the years 1923 to 1932, inclusive:

	Under existing rates	Under rates in suit
1923	$482,231	$453,422
1924	547,619	516,439
1925	627,685	593,274
1926	739,755	700,718
1927	883,826	792,111
1928	970,292	925,205
1929	1,098,525	1,051,292
1930	1,125,953	1,079,128
1931	991,800	954,223
1932	Amount undisclosed.	Amount undisclosed.

(5) The Court erred in Findings of Fact No. 27 and 33 in failing to include in the net income available for return from plaintiff's intrastate business under the existing rates and under the rates in suit the following amounts of net income arising under the existing rates and under the rates in suit for intrastate exchange service:

	Under existing rates	Under rates in suit
1923	$260,614	$245,042
1924	278,223	282,398
1925	327,430	309,505
1926	335,599	317,915
1927	373,025	354,372
1928	448,464	427,655
1929	508,729	486,875
1930	492,965	472,469
1931	448,700	431,580
1932	Amount undisclosed.	Amount undisclosed.

[fol. 2592] (6) The Court erred in Finding of Fact No. 35 in failing to include in the net income available for return from plaintiff's intrastate exchange business under existing rates and under the rates in suit, the following amounts of net income arising under the existing rates and under the rates in suit for intrastate exchange service:

	Under existing rates	Under rates in suit
1923	$742,845	$698,464
1924	825,842	778,837
1925	955,115	902,779
1926	1,075,354	1,018,633
1927	1,206,851	1,146,483
1928	1,418,756	1,352,860
1929	1,607,254	1,538,167
1930	1,618,918	1,551,597
1931	1,440,500	1,385,803
1932	Amount undisclosed.	Amount undisclosed.

(7) The Court erred in Findings of Fact Nos. 8, 9, 27, 29, 31, 33 and 34 and 35 in disregarding the findings of fact and direction by the United States Supreme Court in its Opinion and Mandate of December 1, 1930, in Smith v. Illinois Bell Telephone Co., 282 U. S. 133, in allocating each

year, 1923 to 1932, inclusive, to interstate toll business and to intrastate toll business, substantial portions of the gross and net revenues arising under the existing rates and under the rates in suit for intrastate exchange service.

(8) The Court erred in finding that its separation of intrastate and interstate revenues "has been made on the basis of actual use".

(9) The Court erred in failing to find and to give effect to the fact that the filed Chicago exchange service rates were not intended to, and did not, compensate plaintiff for the unlimited interstate and intrastate uses of its Chicago exchange plant facilities by the users of the interstate and [fol. 2593] intrastate toll services of plaintiff, of the American Telephone & Telegraph Company and of other connecting companies.

(10) The Court erred in failing to find and to give effect to the fact that the compliance was not in each case made with the requirements of the Illinois Public Utilities Act and of the Illinois Commerce Commission Laws necessary as a condition precedent to making applicable to the Chicago exchange service rates (a) the 1919 License Contract between plaintiff and the American Telephone and Telegraph Company covering compensation to plaintiff by its Chicago exchange service rates for the unlimited use by the American Telephone & Telegraph Company or its customers in the American Telephone & Telegraph Company's services (intertsate and intrastate) of the Chicago exchange plant facilities; (b) the 1925 and 1926 revisions of plaintiff's intrastate toll rate schedules covering compensation to plaintiff by its Chicago exchange service rates for the unlimited use by plaintiff's customers in plaintiff's intrastate toll service of the Chicago exchange plant facilities; and (c) the 1926 and 1929 revisions of the connecting company contracts between plaintiff and its connecting companies covering compensation to plaintiff by its Chicago exchange service rates for the unlimited use by them and their customers in their respective interstate and intrastate toll services of the Chicago exchange plant facilities.

[fol. 2594] License Contract Services and Payments

(11) The Court erred in Finding of Fact No. 22 in finding that the amounts of the cost of the services rendered by

the American Company under the license contracts which should be allocated to the operating expenses of the intrastate business of the Illinois Company for each of the years 1923 to 1931, inclusive, are as follows:

1923	$1,088,195
1924	1,156,046
1925	1,369,836
1926	1,412,867
1927	1,422,869
1928	1,005,063
1929	1,040,529
1930	1,191,882
1931	1,068,303

(12) The Court erred in Finding of Fact No. 25 in finding that in determining plaintiff's reasonable operating expense the amounts to be charged on account of the license agreement for the years 1923 to 1931, inclusive, are:

1923	$1,088,195
1924	1,156,046
1925	1,369,836
1926	1,412,867
1927	1,422,869
1928	1,005,063
1929	834,276
1930	864,131
1931	834,199

(13) The Court erred in failing to find that the maximum amount properly chargeable to plaintiff's intrastate operating expenses on account of the license agreement was:

1923	$494,000
1924	550,000
1925	610,000
1926	660,000
1927	680,000
1928	215,000
1929	215,000
1930	219,000
1931	215,000

[fol. 2595] Development and Research Expense

(14) The Court erred in its Findings of Fact Nos. 22 and 25 by allocating to plaintiff the following amounts as representing properly allocable license contract costs of the American Telephone & Telegraph Company's Development and Research Department:

1923	$139,476
1924	145,247
1925	160,036
1926	197,747
1927	241,935
1928	242,605
1929	293,601
1930	387,281
1931	355,295

(15) The Court erred in Findings of Fact Nos. 22 and 25 in failing to give effect to the fact that as part of the American Telephone & Telegraph Company's license contract costs aggregating over $48,000,000 for the period 1923 to 1931, inclusive, to cover its Development and Research expense, plaintiff included the entire expense of developing patents and inventions which found their usefulness outside the telephone communication field.

(16) The Court erred in failing to give effect to the fact that plaintiff was entitled to a credit for its portion of:

(a) The $5,229,141 cash royalties received by the American Telephone & Telegraph Company from 1923 to 1931, inclusive, and the royalties received (amount undisclosed) by it in 1932 under outstanding licenses for the use of its patents and inventions outside the telephone communication field;

(b) The value of the right in the American Telephone & Telegraph Company on December 31, 1932, to receive thereafter—

[fol. 2596] 1. Royalties from outstanding licenses to the Western Electric Company for the sale of Special commercial products outside the telephone communication field embodying the American Telephone & Telegraph Company's patents and inventions;

2. Royalties from outstanding licenses to the motion picture producers and exhibitors comprising over 90% of the industry in the United States and abroad and to the Victor Talking Machine Company, the Columbia Phonograph Company, the Gramophone Company, Ltd., The International Standard Electric Company and others, for the use of the American Telephone and Telegraph Company's patents and iventions embodied in systems and apparatus used by them outside the telephone communication field.

(17) The Court erred in failing to give effect to the fact that plaintiff included, as part of the American Telephone & Telegraph Company license contract costs, the entire amount of its development and research expense to December 31, 1932, of developing patents and inventions embodied in telephonic appliances manufactured and sold during the period 1923 to 1932, inclusive, outside the Bell System, in the United States and abroad, and to be sold thereafter under outstanding licenses by International Western Electric Company, Northern Electric Company, Ltd., International Standard Electric Company, Automatic Electric Company and Graybar Electric Company.

(18) The Court erred in failing to give effect to the fact that plaintiff was entitled to a credit for its portion of—

[fol. 2597] (a) $21,255,085 paid during the period 1923 to 1932, inclusive, by International Western Electric Company, Northern Electric-Company, Ltd., International Standard Electric Company, Automatic Electric Company and Graybar Electric Company to the American Telephone & Telegraph Company and its subsidiaries applicable in part as consideration for licenses to use in telephonic appliances manufactured and sold, and to be manufactured and sold, by them outside the Bell System, American Telephone & Telegraph Company's patents and inventions;

(b) Royalties (amount undisclosed) paid from 1923 to 1932, inclusive, to the American Telephone & Telegraph Company and its subsidiaries under outstanding licenses for the use of its patents and inventions embodied in telephonic appliances manufactured and sold outside the Bell System by Northern Electric Company, Ltd., and International Standard Electric Company, and

(c) The value of the right in the American Telephone & Telegraph Company and its subsidiaries on December 31, 1932, to receive thereafter—

1. Royalties from outstanding licenses to Northern Electric Company, Ltd., and to International Standard Electric Company for the right to use the American Telephone & Telegraph Company's patents and inventions in telephonic appliances manufactured and sold by them outside the Bell System;

2. Special participation in the earnings of Graybar Electric Company, as consideration for the license to sell telephonic appliances outside the Bell System embodying American Telephone & Telegraph Company's patents and inventions.

[fol. 2598] (19) The Court erred in failing to give effect to the fact that plaintiff was entitled to credit for its portion of the $6,091,887 cash and of the 159,185 shares of Common Stock of Western Electric Company received by the American Telephone & Telegraph Company during the years 1923 to 1930, inclusive, as bonus consideration for the license granted to the Western Electric Company by the American Telephone & Telegraph Company to sell to the Bell System operating companies, including plaintiff, telephonic appliances embodying American Telephone & Telegraph Company's patents and inventions.

(20) The Court erred in failing to give effect to the fact that the plaintiff's allocation of the Bell System portion of the American Telephone & Telegraph Company's Development and Research expense between the licensee companies (including plaintiff) on the other hand, and the American Telephone & Telegraph Company's Long Lines Department on the other hand, on the basis of plant investment, was contrary to the direction of the Supreme Court and was in violation of law.

(21) The Court erred in failing to give effect to the fact that plaintiff's allocation of the Bell System portion of the American Telephone & Telegraph Company's Development and Research expense between the licensee companies (including plaintiff) on the other hand, and the American Telephone & Telegraph Company's Long Lines Department on the other hand, on the basis of plant investment, unjustly

enriched the American Telephone & Telegraph Company in its Long Lines Department in excess of $20,000,000 for the period 1923 to 1931, inclusive, at their expense.

[fol. 2599] (22) The Court erred in failing to give effect to the fact that plaintiff disregarded existing contractual arrangements between the American Telephone & Telegraph Company, the Western Electric Company and plaintiff, in respect to the manufacture, sale and use of telephones and telephonic appliances embodying the American Telephone & Telegraph Company's patents and inventions in allocating to plaintiff's operating expenses of its Chicago intrastate business and of its Chicago intrastate exchange business Development and Research expenses of the American Telephone & Telegraph Company.

(23) The Court erred in failing to give effect to the fact that the specification by the American Telephone & Telegraph Company as the investor in plaintiff, as to what new inventions, discoveries and improvements in the art should be woven into the plant of plaintiff, protected the American Telephone & Telegraph Company's investment in plaintiff against impairment through failure to keep abreast or ahead of the art.

Ten Departments

(24) The Court erred in Findings of Fact Nos. 22 and 25 by allocating to plaintiff the following amounts, as representing properly allocable license contract costs, of the American Telephone & Telegraph Company's Treasury Department, Information Department, Public Relations Department, the Comptroller's Department, the Secretary's Department, the Administration Department, including sundry items, the General Service Bureau, the Operation O General Bureau, the Legal Department and the Personnel Department:

[fol. 2600]

1923	$290,692
1924	308,410
1925	309,890
1926	355,215
1927	360,267

1928	407,356
1929	399,593
1930	458,630
1931	398,513

(25) The Court erred in its Findings of Fact Nos. 22 and 25, in failing to give effect to the fact that as part of the American Telephone & Telegraph Company's license contract costs aggregating over $60,000,000 for the period 1923 to 1931, inclusive, to cover the operations of the ten departments specified in Assignment of Error No. 24, plaintiff included the entire expense of the operation of each of the departments applicable to the American Telephone & Telegraph Company as the Holding Company investor in the securities of the licensee companies, including plaintiff.

(26) The Court erred in its Findings of Fact Nos. 22 and 25 in failing to give effect to the fact that plaintiff included, as part of the American Telephone & Telegraph Company's license contract costs, more than $11,000,000 of its Treasury Department expense during the years 1923 to 1932, inclusive, which represented the entire expense of the American Telephone & Telegraph Company as a Holding Company investor in the securities of the licensee companies, to distribute among its own stockholders its own stocks and bonds offered direct to them during this period for subscription and purchase and to service all of its own securities outstanding during this period in the hands of its investors.

[fol. 2601] (27) The Court erred in failing to give effect to the fact that the orders of the Illinois Commerce Commission authorizing the sale of plaintiff's stock to the American Telephone & Telegraph Company and the Accounting Rules under which plaintiff functioned during the period 1923 to 1932, inclusive, prohibit the inclusion, as an operating expense of plaintiff, of any portion of its license payment to cover the cost of the American Telephone & Telegraph Company during such period of distribution by the American Telephone & Telegraph Company of its own securities offered by it direct to its investors and of servicing its own outstanding securities issued to raise funds to enable it to purchase, as investor, the securities of plaintiff:

(28) The Court erred in failing to give effect to the fact that plaintiff included as part of its operating expenses, the cost to the American Telephone & Telegraph Company, during the period 1923 to 1932, inclusive, of distributing American Telephone & Telegraph Company's securities offered by it direct to its own investors and of servicing its outstanding securities without allowing credit on account thereof to plaintiff in the Court's finding of rate of return to which plaintiff was entitled to avoid confiscation.

(29) The Court erred in failing to give effect to the fact that the American Telephone & Telegraph Company, as the Holding Company investor in the securities of plaintiff, derived during the period 1923 to 1932, inclusive, at least $10,000,000 earnings more than the American Telephone & Telegraph Company derived on a comparable [fol. 2602] basis from its investment as the Holding Company investor in the securities of the other licensee companies during the same period.

(30) The Court erred in failing to find and to give effect to the fact that plaintiff included, as part of its operating expenses during the years 1923 to 1932, inclusive, the cost to the American Telephone & Telegraph Company of its operations in the departments specified in Assignment of Error No. 24 applicable to the American Telephone & Telegraph Company, as the Holding Company investor in the securities of plaintiff, without allowing credit on account thereof in the Court's finding of the rate of return to which plaintiff was entitled to avoid confiscation.

(31) The Court erred in finding that the reasonable amount of the cost to the American Telephone & Telegraph Company of the services rendered to plaintiff in its twelve departments which should be allocable to the operating expenses of the intrastate business of plaintiff are:

1923	$581,514
1924	608,586
1925	640,233
1926	741,713
1927	804,460
1928	864,886
1929	907,257
1930	1,063,725
1931	967,126

Patent Infringement Liability

(32) The Court erred in its Findings of Fact Nos. 22 and 25, by allocating to plaintiff the following amounts, as representing properly allocable license contract costs, to cover plaintiff's compensation to the American Telephone & Telegraph Company for an alleged undertaking by the American Telephone & Telegraph Company to insure and hold harmless plaintiff against patent infringement liability resulting from the use of any apparatus other than telephones recommended to plaintiff by the American Telephone & Telegraph Company:

[fol. 2603] 1923	$152,942
1924	147,171
1925	281,740
1926	191,060
1927	140,018
1928	137,695
1929	130,786
1930	125,532
1931	98,382

(33) The Court erred in finding that the American Telephone & Telegraph Company was obligated during the years 1923 to September 25, 1930, to insure and hold harmless plaintiff against patent infringement liability resulting from the use of any recommended apparatus other than telephones.

(34) The Court erred in finding that the American Telephone & Telegraph Company provided for meeting possible losses resulting from liability on any obligation in effect during the years 1923 to September 25, 1930, to insure and hold harmless plaintiff against loss or damage from suits or judgments from patent infringements resulting from the use of any recommended apparatus other than telephones by setting up a contingency reserve during that period.

(35) The Court erred in measuring for each of the years 1923 to 1932, inclusive, the reasonable yearly compensation which the licensees should make as part of their license payments to the American Telephone & Telegraph Company for its alleged undertaking to insure and hold them harmless against patent infringement liability result-

ing from the use of any recommended apparatus other than telephones, the $3,000,000 transferred by the American Telephone & Telegraph Company's Executive Committee to Reserve for Contingencies in 1923, the $3,000,000 transferred in 1924, the $6,000,000 transferred in 1925, the $4,000,000 transferred in 1926, and the $14,395,800 transferred in 1927 (spread by the Court over the years 1927 to 1931, inclusive).

[fol. 2604] (36) The Court erred in finding that the $16,000,000 transferred by the American Telephone & Telegraph Company's Executive Committee from surplus to Reserve for Contingencies during 1923 to 1927, inclusive, and the $14,395,800 profit to American Telephone & Telegraph Company (resulting from its sale of telephone instruments on December 31, 1927, to the licensees) transferred by it to Reserve for Contingencies in 1927 should be allocated among the licensees and plaintiff's portion thereof included as an operating expense of plaintiff's Chicago intrastate business or of plaintiff's Chicago intrastate exchange business during the years 1923 to 1932, inclusive.

License Payment as Plaintiff's Contribution to Plan of Unified Operation of Bell System

(37) The Court erred in failing to find and to give effect to the fact that the license payment of plaintiff was its yearly uniform assessment determined by the American Telephone & Telegraph Company to maintain outside plaintiff's territory the operations of the American Telephone & Telegraph Company as the Headquarters' Department functioning for the Bell System as a whole; that such uniform yearly assessment was established upon the basis of an arbitrary percentage of plaintiff's gross operating revenues; that such percentage bore no relation whatsoever to the cost of rendering the service or measurable benefit derived therefrom; that no provision was made for any standard by which its fairness in any particular case might [fol. 2605] be tested, or for any accounting of the surplus remaining over and above the actual costs and expenses thereof, or of the profits made by the American Telephone & Telegraph Company through the benefits of such operations to others than the licensees; that in lieu of such ac-

counting this surplus, together with the surplus remaining from the yearly uniform assessments contributed by the other licensees and the profits from such other uses made by the American Telephone & Telegraph Company, remained in the treasury of the American Telephone & Telegraph Company for the benefit of all the licensee companies; and that machinery was provided, through the prescribed special standard to determine the fair return for each licensee from its own operations, for equitable adjustment among them in lieu of a strict accounting by the American Telephone & Telegraph Company to each for its distributive share thereof.

Depreciation Expense

(38) The Court erred in finding that

"in determining the amounts which should be allowed as annual charges for depreciation, we have given consideration to the estimates in the orders of the Illinois Public Utilities Commission and Illinois Commerce Commission, to the adjustment of such estimates which is necessary to place them on the basis of the present value of the property for the respective years for which such estimates were made by the Commission, to the amounts set up by plaintiff on its books for that expense, to the adjustments of the amounts set up by plaintiff on the basis of original or book cost to make the amounts of such allowances correspond with the present value of the property at the time such amounts were set up on the books of the company, to the experience of the Illinois Company and to the results shown in comparable conditions by other companies which are a part of the Bell System. From a consideration of the evidence on the subjects above stated, we have determined the amounts which in our opinion are reasonable and proper amounts, fair alike to public and private [fol. 2606] interests, to be allowed as the annual charges for depreciation applicable to the intrastate portion of plaintiff's Chicago area property."

(39) The Court erred in finding that the reasonable and proper amount to be allowed as the annual charge for depreciation applicable to the intrastate portion of plaintiff's

said Chicago area property for each of the years 1923 to 1931, inclusive, is as follows:

1923	$4,000,000
1924	4,250,000
1925	4,750,000
1926	5,400,000
1927	6,000,000
1928	6,650,000
1929	7,000,000
1930	7,200,000
1931	7,400,000

Depreciation Expense under 1920 Order

(40) The Court erred in Findings of Fact Nos. 26, 27 and 33 in finding for each of the years 1923 to 1932, inclusive, as the amount of depreciation charges properly applicable to the intrastate and intrastate exchange business in the Chicago area under the existing rates for each of the years 1923 to 1932, inclusive, an amount which exceeded the allowance prescribed by the Public Utilities Commission Order of December 20, 1920, as follows:

	Intrastate	Intrastate exchange
1923	$1,331,388	$1,276,671
1924	1,116,542	1,057,777
1925	1,192,046	1,136,289
1926	1,291,129	1,220,811
1927	1,423,502	1,337,998
1928	1,572,444	1,462,634
1929	1,419,263	1,282,944
1930	1,293,820	1,165,008
1931	1,285,671	1,159,879
1932	Amount undisclosed.	Amount undisclosed.

[fol. 2607] (41) The Court erred in failing to find and to give effect to the fact that plaintiff has made no attack on the exchange service rates prescribed by the 1920 order and no ground exists to hold void that portion of the 1920 Order which prescribes the depreciation charges on Chicago Intrastate and Chicago Intrastate exchange service property to be charged and recorded against gross income produced by the existing telephone rates.

(42) The Court erred in failing to find and to give effect to the fact that in determining the intrastate and intrastate exchange net income produced by the existing telephone rates prescribed by the 1920 Order, this Court, on the present pleadings and record, must give the binding force of a valid legislative act to the 1920 Order on depreciation expense.

(43) The Court erred in failing to find and to give effect to the fact that plaintiff should have charged and recorded against gross income produced by the existing telephone rates only the amount of depreciation charges fixed by the 1920 Order on depreciation.

(44) The Court erred in failing to find and to give effect to the fact that plaintiff's recorded depreciation charge exceeded the amount of depreciation charges fixed by the 1930 Order for each of the years 1923 to 1932, inclusive, as follows:

	Intrastate	Intrastate exchange
1923	$1,540,414	$1,468,147
1924	1,323,046	1,264,338
1925	1,475,531	1,405,925
1926	1,643,145	1,564,490
1927	1,741,736	1,653,390
1928	1,919,774	1,815,308
1929	1,843,678	1,831,900
1930	1,947,182	1,816,781
1931	2,006,806	1,867,609
1932	Amount undisclosed.	Amount undisclosed.

[fol. 2608]

Under 1923 Order

(45) The Court erred in Finding of Fact Nos. 26, 30, 34 and 35 in finding for each of the years 1923 to 1932, inclusive, as the amount of depreciation charges properly applicable to the intrastate and intrastate exchange business in the Chicago area under the attacked telephone rates established by the Illinois Commerce Commission Order of August 16, 1923, an amount which exceeded the allowance prescribed the said Order of August 16, 1923, as follows:

	Intrastate	Intrastate exchange
1923	$1,522,418	$1,458,752
1924	1,199,673	1,137,218
1925	1,260,522	1,201,534
1926	1,817,797	1,722,262
1927	2,486,197	2,346,742
1928	3,143,482	2,948,232
1929	3,450,072	3,190,701
1930	3,313,578	3,049,439
1931	2,485,135	2,276,263
1932	Amount undisclosed.	Amount undisclosed.

(46) The Court erred in failing to give effect to the fact that this Court, in determining for itself what would be earned under the attacked telephone rates, must treat with the respect to be attached to a legislative act, the 1923 Order on depreciation expense.

(47) The Court erred in failing to give effect to the fact that the presumption of law is in favor of the validity of the 1923 Order on depreciation expense.

(48) The Court erred in failing to give effect to the fact that plaintiff has failed to establish its burden of proof that the depreciation expense prescribed by the 1923 Order was constitutionally inadequate.

[fol. 2609] (49) The Court erred in failing to give effect to the fact that plaintiff is not constitutionally entitled to recover, through its telephone service rates, as operating expenses during the period 1923 to 1932, inclusive, annual advance contributions for anticipated depreciation on future additions to buildings and central office equipment contemplated to be acquired and to be placed in service from time to time to 1974, under the three following conditions:

(a) Where plaintiff made no provision whatever at the date of such annual advance contributions to assure that such contemplated future additions to 1974 will, in fact, be acquired, and be placed in the future service;

(b) Where the acquisition and placing of the contemplated future additions in the future service to 1974 is within the sole and uncontrolled discretion and power of plaintiff; and

(c) Where plaintiff made no provision whatsoever at the date of such annual advance contributions to assure that to the extent that plaintiff does not in fact acquire and place in the future service to 1974 such contemplated future additions, it will account to its telephone users for the amount of such advance contributions and for all earnings thereon applicable thereto.

[fol. 2610] (50) The Court erred in failing to give effect to the fact that the advance contributions for anticipated depreciation on contemplated future additions are illegal and improper operating expense charges.

(51) The Court erred in failing to give effect to the fact that plaintiff's recorded depreciation expense in each of the years 1923 to 1932, inclusive, included advance contributions for anticipated depreciation on contemplated future additions to buildings and central office equipment.

(52) The Court erred in failing to give effect to the fact that the recorded depreciation expense charges on buildings and central office equipment represented in each year from 46% to 50% of the total recorded depreciation expense and exceeded, by a wide margin, the difference between the recorded depreciation charges and the allowance by the 1920 Order and by the 1923 Order.

(53) The Court erred in failing to give effect to the fact that the contemplated future additions for manual central office buildings on December 31, 1929, of $5,995,000 (All contemplated to be acquired and installed by 1974 and to be retired by 1984) exceeded the undepreciated book investment in manual central office buildings in service on December 31, 1929; that the contemplated future additions for manual central office equipment of $11,563,000 (all contemplated to be acquired and installed by 1943 and to be [fol. 2611] retired by 1944), represented more than one-third of the manual central office equipment in service on December 31, 1929; that the record does not show the amount each year of contemplated future additions for dial central office buildings and equipment or the amount of contemplated future additions for manual central office buildings or equipment other than as on December 31, 1929.

(54) The Court erred in failing to give effect to the fact that plaintiff's recorded depreciation charges on building

and central office equipment each year were very substantially inflated by the inclusion therein of advance contributions for anticipated depreciation on contemplated future additions.

(55) The Court erred in failing to give effect to the fact that plaintiff's use of the straight line method of computing advance contributions for anticipated depreciation on contemplated future additions, without taking into account the earnings on such contributions to the scheduled date for placing in service such contemplated additions, was illegal and created an unfair burden on its telephone subscribers for the unjust enrichment of plaintiff's capital investors.

(56) The Court erred in failing to give effect to the fact that plaintiff's recorded depreciation charges on buildings and central office equipment were very substantially inflated by the inclusion therein of advance contributions for anticipated depreciation on contemplated future additions [fol. 2612] computed on the straight line method without taking into account the earnings on such contributions to the scheduled date for placing in service such contemplated additions.

(57) The Court erred in failing to give effect to the fact that the inclusion in the recorded depreciation charges of advance contributions on contemplated future additions to buildings and central office equipment destroys the probative value of plaintiff's showing of the recorded depreciation expense charges on buildings and central office equipment and destroys the possibility of plaintiff's sustaining its burden of proof that the depreciation allowance prescribed by the 1923 Order was constitutionally inadequate.

(58) The Court erred in failing to give effect to the fact that plaintiff's showing of adjusted recorded depreciation charges on the basis of original or book cost, to make them correspond with its claimed present value of depreciable property at the time such charges were recorded illegally applied to the claimed present value of buildings and central office equipment the same per cent figure as it had applied to their book investment when it computed the recorded advance contributions for anticipated depreciation on contemplated future additions to such buildings and central office equipment.

(59) The Court erred in failing to give effect to the fact that plaintiff illegally inflated, to a very substantial amount, its adjusted recorded depreciation charges on buildings and central office equipment on the basis of original or book cost [fol. 2613] to make them correspond with their claimed present value at the time such charges were recorded, by including therein annual advance contributions for anticipated depreciation on contemplated future additions to such buildings and central office equipment computed on the straight line method.

(60) The Court erred in failing to give effect to the fact that the inclusion in plaintiff's showing of recorded depreciation charges on the basis of original or book cost to make them correspond to the claimed present value of depreciable property at the time when such depreciation charges were recorded, of advance contributions for anticipated depreciation on contemplated future additions to buildings and central office equipment destroys the probative value of the showing of the adjusted depreciation charges on buildings and central office equipment, and destroys the possibility of plaintiff's sustaining its burden of proof that the depreciation allowance prescribed by the 1923 Order was constitutionally inadequate.

(61) The Court erred in failing to give effect to the fact that no issue can arise in respect to the inadequacy in the years 1923, 1924 and 1925 of the depreciation allowance fixed by the 1923 Order as such allowance was substantially the same in each of such years as the depreciation allowance fixed by the 1920 Order.

[fol. 2614] (62) The Court erred in failing to give effect to the fact that the principles established by the United States Supreme Court in United Railways & Electric Co. v. West, 280 U. S. 234, are rendered inapplicable in the determination of the proper method of computing depreciation expense charges of plaintiff's depreciable property by at least six unique features of plaintiff's operation:

(a) The use of the group basis of depreciation treatment on property.

(b) The inclusion in depreciation charges of advance contributions for anticipated depreciation on contemplated future additions computed by the straight line method;

(c) The use of depreciation accumulations to provide reimbursement for its investment in property in service and not to provide for replacements thereof;

(d) The application of depreciation charges to long-lived property in service scheduled for replacement to 1984, whose cost at time of replacement cannot be assumed to be "for all purposes" "present value";

(e) The use in revaluation of its depreciable property of the average of "spot prices" of the Western Electric Company at the beginning and end of the year, as synonymous with "fair value";

(f) The investment experience of the Bell System that

"Investors in Bell Telephone securities are not primarily interested in property, as such, but are interested in safeguarding the money invested in the property which so far [fol. 2615] as it will some day be lost in operations is, therefore, what should be covered by the depreciation provision."

(63) The Court erred in failing to give effect to the fact that the depreciation expense charges of other companies which are a part of the Bell System are not comparable and have no probative value in the determination of proper depreciation expense on plaintiff's property in the Chicago area.

(64) The Court erred in failing to find and to give effect to the fact that if the Order of August 16, 1923, on depreciation is held void, the amount of depreciation charges properly applicable under the attacked telephone rates could not in any year exceed the amount of depreciation charges prescribed by the Public Utilities Commission Order of December 20, 1920.

(65) The Court erred in failing to find and to give effect to the fact that plaintiff on the original hearing which resulted in the decree that was appealed to the Supreme Court, claimed and took the position that plaintiff was entitled to fix the annual charges for depreciation expense according to its judgment, and that such annual depreciation charges or expense so fixed by plaintiff were unassailable except for arbitrariness or fraud, on the ground that neither the Illinois Public Utilities Commission under the 1920 Order nor the Illinois Commerce Commission under the 1923 Order, had the authority and power to fix by order

such depreciation rates or annual depreciation charges or expense. The Supreme Court, having held that such position was unsound, the orders of the State Commissions of 1920 and 1923 with reference to depreciation became and were res adjudicata, and plaintiff is precluded from claiming that either one or both of said orders are now invalid.

[fol. 2616] Western Electric Company

(66) The Court erred in finding that for the purpose of determining the reasonableness of the profits of the Western Electric Company, its "average investment" should include "its plant and manufacturing facilities, merchandise, receivables and cash, less current accounts payable, all at cost to Western Electric except merchandise, which is cost or market, whichever is lower".

(67) The Court erred in failing to find that for the purpose of determining the reasonableness of the profits of the Western Electric Company there should be deducted from "average investment" as defined by the Court:

(a) Notes payable on demand and short term notes due on or before one year from date—issued to the American Telephone & Telegraph Company, to Trustee under Pension Fund and to banks and others—aggregating for the period 1916 to 1930, inclusive, $277,545,000, and for the period 1923 to 1930, inclusive, $165,440,000, and ranging from $465,000 to $52,000,000 per year;

(b) The amount of Reserves for Pension Fund aggregating for the period 1916 to 1928, inclusive, $46,210,000 and for the period 1923 to 1928, inclusive, $36,310,000, and ranging from $1,000,000 to $15,364,000 per year;

(c) The amount of Working Reserves representing accrued interest, accrued taxes and accrued accounts payable, aggregating for the period 1926 to 1930, inclusive, $43,511,000 and ranging from $6,912,000 to $11,110,000 per year; and

(d) The amount of excess cash above the normal cash balances—calculated by the Western Electric Company in the regular course of its business, as required for its [fol. 2617] manufacturing operations—aggregating for the period 1916 to 1925, inclusive, $34,966,000, and for the period 1923 to 1925, inclusive, $22,205,000, and ranging from $901,000 to $20,561,000 per year.

(68) The Court erred in Finding of Fact No. 17 in failing to find that plaintiff's showing in its Exhibit A-194 of the Western Electric Company's "earnings" should be adjusted to:

(a) Redistribute among the years 1916 to 1924, inclusive, the portion allocable to Bell business of $9,393,078, included as part of the operating expenses for the period 1925 to 1929, inclusive, and representing the excess Pension Fund accruals appropriated during the years 1925 to 1929, inclusive, to make up the claimed deficiency in Pension Fund accruals during the period prior thereto to 1916:

(b) Add back to earnings the portion allocable to Bell business of $7,636,000 included as part of the operating expenses for the period 1924 to 1927, inclusive, and representing current deductions from current income during the years 1924 to 1927, inclusive, to make up to the Western Electric Company the excess difference between its book cost of plant and machinery in service during such period over their forecasted reproduction value new during the following 10 to 15 years;

(c) Add back to earnings the portion allocable to Bell business of the $2,000,000 appropriation in 1928 from current earnings as additional depreciation on machinery for the period 1924 to 1927, inclusive;

(d) Add back to earnings the portion allocable to Bell business of depreciation charges on small tools, furniture and fixtures in excess of the amount allowed by the Internal [fol. 2618] Revenue Department and followed by other manufacturers, aggregating for the period 1916 to 1930, inclusive, $12,047,000, and for the period 1923 to 1930, inclusive, $7,286,000, and ranging from $77,000 to $4,690,000 per year; and

(e) Subtract from current earnings the portion allocable to Bell business of interest received on excessive cash balances and paid on demand and short term notes properly deductible from "average investment".

(69) The Court erred in Finding of Fact No. 17 in failing to find that plaintiff's showing in its Exhibit A-194

of the Western Electric Company's "average investment" should be adjusted to deduct therefrom the portion allocable to Bell business of—

(a) Notes payable on demand and short term notes due on or before one year from date;

(b) Working reserves;

(c) Reserve for Pension Fund, and

(d) Excess cash balances.

(70) The Court erred in Finding of Fact No. 17 in finding that plaintiff's showing of "average investment" in its Exhibit A-194 should be adjusted by deducting therefrom the portion allocable to Bell business of the $7,636,000 included as part of the operating expenses for the period 1924 to 1927, inclusive, to make up to the Western Electric Company the excess difference between its book cost of plant and machinery in service during such period over their forecasted reproduction value new during the following 10 to 15 years.

(71) The Court erred in finding in Finding of Fact No. 17 that plaintiff's showing of earnings in its Exhibit A-194 should be adjusted by deducting therefrom, as an operating expense, during the years 1916 to 1922, inclusive, the por- [fol. 2619] tion allocable to Bell business of $2,125,000 purchase price of patents purchased by Western Electric Company during and prior to such period and charged to surplus by Western Electric Company in the regular course of business.

(72) The Court erred in Findings of Fact Nos. 18 and 19 in failing to make the adjustments to "average investment" enumerated in Assignment of Error No. 67, in failing to make the adjustments to "earnings" enumerated in Assignment of Error No. 68, and in making the adjustments enumerated in Assignment of Error No. 70, in its finding of "The Earnings and Profits by Western Electric Company on sales by its Bell Customers".

(73) The Court erred in failing to find that the Western Electric Company's net earnings on average investment less the amount of its depreciation reserve account from Bell sales and non-Bell sales combined for each of the years 1916 to 1930, inclusive, were:

1916	9.2%
1917	10.3
1918	7.9
1919	7.1
1920	7.5
1921	6.0
1922	5.7
1923	6.3
1924	11.1
1925	15.7
1926	16.4
1927	19.7
1928	21.3
1929	20.4
1930	6.5

(74) The Court erred in failing to find that on the basis of separation between Bell sales and non-Bell sales employed by plaintiff in arriving at its showings in its Exhibit [fol. 2620] A 194 and employed by the Court in arriving at its findings in Finding of Fact No. 18, the Western Electric Company's net profits on average investment less the amount of depreciation reserve account from Bell sales and from non-Bell sales separately for each of the years 1923 to 1930, inclusive, were:

	Bell sales	Non-Bell sales
1916	6.3%	19.8%
1917	5.5	31.0
1918	3.8	21.9
1919	4.4	17.0
1920	6.0	15.0
1921	11.1	36.4*
1922	5.0	12.8
1923	4.4	25.1
1924	10.3	18.6
1925	17.0	5.8
1926	15.6	28.3
1927	19.6	22.1
1928	20.3	32.7
1929	17.2	44.3
1930	6.2	10.4

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* Red.

(75) The Court erred in Finding of Fact No. 17 in failing to find that plaintiff's showings in its Exhibit A-194, in each case and for each year, represented arbitrary figures resulting from plaintiff's employment of Standard Cost of Sales of each year as the basis of separation between Bell Sales and non-Bell Sales of Current Cost of Sales Before Interest and Expenses (aggregating more than 80% of the total cost of sales) of Development and Research expense, of General Expense and of plant facilities incurred and used to produce the total production.

(76) The Court erred in failing to give effect to the fact that standard costs are:-

(a) Assumed Material Costs which remain constant for many years—the standard cost since 1925 of products using copper or lead is based on 15 cent (per 100 lbs.) copper, and 8 cent (per 100 lbs.) lead, fixed in each case as standard in 1925;

[fol. 2621] (b) Assumed Labor Costs which remain constant for many years—the standard cost from 1928 to the present time of products using labor is based on the labor wage scale fixed as standard in the Spring of 1929; and,

(c) Assumed Overhead Costs which have no relation to the conditions under which the products are manufactured.

(77) The court erred in Findings of Fact Nos. 18 and 19 in employing the Standard Cost of Sales during the period 1916 to 1932, inclusive, as the basis of separation between Bell and non-Bell Sales of the Current Cost of Sales Before Interest and Expenses, Development and Research expense, General Expense and plant facilities incurred and used to produce the total production in arriving at the earnings and profits of Western Electric Company on Bell Sales.

(78) The Court erred in failing to give effect to the fact that the total dollars of variation between the actual and standard costs of the Western Electric Company's total production each year during the period 1916 to 1931, inclusive, (aggregating $273,288,000 for the period 1916 to 1931, inclusive, $182,612,000 for the period 1923 to 1931, inclusive, and ranging from $7,935,000 in 1916 to $37,573,000 in 1929,) represent corresponding variations in the sales

prices of products sold to any one customer or to a group of customers considered as a unit, and represent corresponding variations in the annual net profits of the Western Electric Company from its sales to such one customer or to such group of customers considered as a unit.

[fol. 2622] (79) The Court erred in failing to find that the employment of the Standard Cost of Sales of each year as the basis of distribution between Bell Sales and non-Bell Sales of the total dollars of variation in such year between the standard and actual cost of total production, to arrive at their respective Current Cost of Sales before Interest and Expenses, is arbitrary and fatally defective in the absence of a showing that each year's Bell Sales and non-Bell Sales represent reasonably fair and representative cross sections of the year's total production.

(80) The Court erred in failing to find that the employment of the Standard Cost of Sales of a group of years as the basis of distribution between Bell Sales and non-Bell Sales of the total dollars of variation between the standard and actual cost of such period's total production to arrive at their Current Cost of Sales Before Interest and Expenses is arbitrary and fatally defective in the absence of a showing that such period's Bell Sales and non-Bell Sales represent reasonably fair and representative cross sections of the period's total production.

(81) The Court erred in failing to find that the employment of the Standard Cost of Sales of each year or of a group of years as the basis of separation between Bell Sales and non-Bell Sales of Development & Research expense, and of General Expense, of such year or period of years, is arbitrary and fatally defective in the absence of a showing that such Bell Sales and non-Bell Sales represent reasonably fair and representative cross sections of the total production of each such year or of such period of years.

[fol. 2623] (82) The Court erred in failing to give effect to the fact that plaintiff failed to make any showing that the Bell Sales and Non-Bell Sales represented in any one year or in any group of years from 1916 to 1932, inclusive, reasonably fair and representative cross sections of the

Western Electric Company's total production for such year or period of years.

(83) The Court erred in failing to give effect to the fact that the Bell Sales and non-Bell Sales did not represent in each case in any one year or in any group of years from 1916 to 1932, inclusive, reasonably fair and representative cross sections of the Western Electric Company's entire production for such year or period of years.

(84) The Court erred in failing to give effect to the fact that plaintiff's showing in its Exhibit A-194 of Western Electric Company's earnings on Bell Sales, allocated to Bell Sales more than ninety per cent of the cost to the Western Electric Company of developing patents and inventions embodied in telephonic appliances manufactured and sold outside the Bell System under licenses from the Western Electric Company, by International Western Electric Company, Northern Electric Company, Ltd., International Standard Electric Company, Automatic Electric Company and Graybar Electric Company, and of developing, prior to 1927, patents and inventions which found their usefulness outside the telephone communication field.

(85) The Court erred in Findings of Fact Nos. 18 and 19 in finding the earnings and profits of the Western Electric Company on Bell System Sales on the basis of allocating to Bell System Sales more than ninety per cent of the cost to the Western Electric Company of developing patents and inventions embodied in telephonic appliances [fol. 2624] manufactured and sold outside the Bell System under licenses from the Western Electric Company, by International Western Electric Company, Northern Electric Company, Ltd., International Standard Electric Company, Automatic Electric Company and Graybar Electric Company, and of developing, prior to 1927, patents and inventions which found their usefulness outside the telephone communication field.

(86) The Court erred in its findings of earnings and profits of Western Electric Company on Bell Sales in Findings of Fact Nos. 18 and 19 by failing to allow credit to Bell Sales for their portion of—

(a) $21,255,085 paid during the period 1923 to 1932, inclusive, by International Western Electric Company, Northern Electric Company, Ltd., International Standard Electric Company, Automatic Electric Company and Graybar Electric Company to the Western Electric Company and its subsidiaries applicable in part as consideration for licenses to use in telephonic appliances manufactured and sold, and to be manufactured and sold, by them outside the Bell System, the Western Electric Company's patents and inventions;

(b) royalties (amounts undisclosed) paid from 1923 to 1932, inclusive, to the Western Electric Company and its subsidiaries under outstanding licenses for the use of its patents and inventions embodied in telephonic appliances manufactured and sold outside the Bell System by Northern Electric Company, Ltd., and International Standard Electric Company; and,

(c) The value of the right in the Western Electric Company and its subsidiaries on December 31, 1932, to receive thereafter—

1. Royalties from outstanding licenses to Northern Electric Company, Ltd., and to International Standard Electric Company for the right to use the Western Electric Company's patents and inventions in telephonic appliances manufactured and sold by them outside the Bell System;

2. Special participation in the earnings of Graybar Electric Company, as consideration for the license to sell telephonic appliances outside the Bell System embodying Western Electric Company's patents and inventions.

[fol. 2625] (87) The Court erred in failing to give effect to the fact that the grossly excessive per cent of earnings, as shown in Assignment of Error No. 74, from non-Bell Sales, is convincing evidence that plaintiff's arbitrary allocation and separation between Bell Sales and non-Bell Sales of revenues, expenses, plant facilities resulted in a substantially unfair discrimination against the Bell Sales.

(88) The Court erred in failing to give effect to the fact that the grossly excessive per cent of earnings, as shown in Assignment of Error No. 74, from non-Bell Sales, is convincing evidence that plaintiff's arbitrary allocation and separation between Bell Sales and non-Bell Sales of revenues, expenses and plant facilities resulted in a substantial

understatement of the earnings of the Western Electric Company from Bell Sales, as shown in plaintiff's Exhibit A-194, in the Court's Findings of Fact Nos. 18 and 19, and in Assignment of Error No. 74.

(89) The Court erred in failing to find that the employment of Standard Cost of Sales as the basis of separation between Bell Sales and non-Bell Sales of plant facilities used for the total production in each year, is arbitrary and fatally defective.

(90) The Court erred in failing to find that the employment of Standard Cost of Sales to measure the usage of plant facilities in the manufacture of Bell Sales and of non-Bell Sales for any one year or for a period of years, is arbitrary and fatally defective.

[fol. 2626] (91) The Court erred in failing to find that the employment of "Cost of Sales" of any year, as synonymous with "Cost of Production" of such year in measuring the usage of plant facilities in the production of such year is arbitrary and fatally defective.

(92) The Court erred in finding that it is necessary in arriving at what are reasonable earnings on investment and profit on sales in the Bell business of Western Electric Company, to take into consideration the results for a period of years and not merely a single year.

(93) The Court erred in failing to find, under the direction of the United States Supreme Court, and to require the plaintiff to show, the reasonableness of Western Electric Company's net earnings on its Bell business for each year in suit.

(94) The Court erred in failing to give effect to the fact that a substantial portion of plaintiff's purchases from Western Electric Company each year 1923 to 1932, inclusive, are attributable to maintenance and other expense accounts, makes it necessary that the reasonableness of West-Electric Company's net earnings on its Bell business be determined for each year in suit.

(95) The Court erred in failing to give effect to the fact that its own finding that Western Electric Company's net earnings on its Bell business are a fair basis for determin-

ing, the reasonableness of Western Electric Company's [fol. 2627] earnings in its dealings with plaintiff, makes it necessary that the reasonableness of Western Electric Company's earnings in its Bell business be determined for each year in suit.

(96) The Court erred in failing to give effect to the fact that plaintiff's method of determining the reproduction cost new of its property as of December 31st for each of the years 1923 to 1931, inclusive, on the basis of the Western Electric Company's prices on December 31st of each of such year makes it necessary that the reasonableness of Western Electric Company's earnings in its Bell business should be for each of such years and not for a period of years considered as a unit.

(97) The Court erred in failing to give effect to the fact that its own finding which approved plaintiff's method of determining the reproduction cost new of its property as of December 31st for each of the years 1923 to 1931, inclusive, makes it necessary that the reasonableness of Western Electric Company's earnings on Bell business be determined for each such years and not for a period of years considered as a unit.

(98) The Court erred in failing to give effect to the fact that its own finding that the reproduction cost new of its property in each of the years 1923 to 1929, inclusive, was the undepreciated fair value of plaintiff's property for each such years, makes it necessary that the reasonableness of Western Electric Company's earnings on Bell business be determined for each of such years and not for a period of years considered as a unit.

[fol. 2628] (99) The Court erred in failing to give effect to the fact that plaintiff's showing of the proper current depreciation allowance in each of the years 1923 to 1931 inclusive, based on the application of a depreciation rate to the current undepreciated reproduction cost new of its property makes it necessary that the results of Western Electric Company's earnings on Bell business be determined for each year and not for a period of years considered as a unit.

(100) The Court erred in failing to give effect to the fact that its own finding of the proper annual depreciation

charge in each year 1923 to 1932 inclusive, which gave consideration to plaintiff's showing of the proper current depreciation allowance for each such year and to the adjustments to convert the yearly depreciation allowances by the 1920 Order and the 1923 Order on the basis of the current value of the property makes it necessary that the reasonableness of the Western Electric Company's earnings on Bell business be determined for each such year and not for a period of years considered as a unit.

(101) The Court erred in failing to give effect to the fact that plaintiff's failure to show that Western Electric Company's Bell Sales and Non-Bell Sales considered as separate units each represents each year a reasonably fair and representative cross-section of Western's total production of the same year, renders impossible of proof the reasonableness of Western's net earnings on Bell business in each year.

[fol. 2629] (102) The Court erred in failing to give effect to the fact that plaintiff's failure to make any showing and its admission that it had no information that the sales of Western Electric Company to plaintiff in any one year represented a reasonably fair and representative cross section of the total Bell sales for the same year, render impossible of proof the reasonableness of Western's earnings on its dealings with plaintiff on the basis of the reasonableness of Western's earnings on its Bell business in the same year.

(103) The Court erred in failing to find and to give effect to the fact that on the basis of plaintiff's separation of revenues, expenses and plant facilities of Western Electric Company between Bell and Non-Bell sales, Western's net earnings from Bell sales (Assignment of Error No. 74) were excessive in 1923, 1924, 1925, 1926, 1927, 1928, 1929 and 1930.

(104) The Court erred in failing to find and to give effect to the fact that on the basis of its finding earnings on average investment less amount of depreciation reserve account in its Finding of Fact No. 19, the Western Electric Company net earnings from Bell Sales were excessive in the years 1925, 1926, 1927, 1928 and 1929.

(105) The Court erred in comparing the Western Electric Company's rate of operating earnings on its Bell business with other manufacturing companies.

(106) The Court erred in finding that Western Electric Company's rate of profit on its Bell sales, in comparison with other manufacturing industries, has probative force [fol. 2630] in proving the reasonableness of Western's earnings from its Bell sales and from its dealings with plaintiff.

(107) The Court erred in finding that Western's rate of earnings on its investment in its Bell business and on its investment, less the amount of its depreciation reserve account, has been substantially one-third lower than those of other large manufacturing companies whose risks and hazards make them fairly comparable with Western.

(108) The Court erred in failing to give effect to the fact that plaintiff's showing of earnings made each year by the Western Electric Company during the period 1916 to 1931, inclusive, on its investment allocated to the business done with plaintiff, represented arbitrary figures resulting from plaintiff's separation of the Western Electric Company's annual cost of Bell System Sales and of plant facilities, between plaintiff's business, and the balance of the Bell System business, on the basis of each year's sales to plaintiff and to the balance of the Bell System.

(109) The Court erred in failing to give effect to the fact that the use of sales of each year as the basis of distribution of the total dollars of variation between the standard and actual cost of the Bell System's portion of entire production of each year to arrive at the cost of plaintiff's sales and of the sales to the balance of the Bell System during such year, is arbitrary and fatally defective in the absence of a showing that each year's sales to plaintiff represent a reasonably fair and representative cross section of the total Bell sales for the same year considered as a unit.

[fol. 2631] (110) The Court erred in failing to give effect to the fact that the use of sales as the basis of separation between plaintiff's sales and the sales to the balance of the Bell System considered as separate units, of the Bell System's portion of plant facilities used for the production in each year, is arbitrary and fatally defective in the absence of a showing that each year's sales to plaintiff represent a reasonably fair and representative cross section of the total Bell System Sales for the same year considered as a unit.

(111) The Court erred in failing to find and give effect to the fact that plaintiff made no showing of the reasonableness in each of the years 1923 to 1932, inclusive, of Western Electric Company's prices and earnings in its dealings with plaintiff during each of such years.

(112) The Court erred in failing to give effect to the fact that plaintiff made no showing from which findings can be made, of the reasonableness in each of the years 1923 to 1932, inclusive, of Western Electric Company's prices and earnings in its dealings with plaintiff during each of such years.

(113) The Court erred in failing to find and to give effect to the fact that on the basis of the Court's finding in Finding of Fact No. 19 of Western Electric Company's earnings from Bell business during each of the years 1925, 1926, 1927, 1928 and 1929, Western's prices and earnings in its dealings with plaintiff were unreasonable and excessive in each of such years.

(114) The Court erred in failing to give effect to the fact that the Western Electric Company's sales prices of its manufactured products, during the period 1916 to 1932, inclusive, were based on standard costs.

[fol. 2632] (115) The Court erred in finding that no unreasonable or unfair profit was made by Western Electric Company prior to 1931 in its dealings with plaintiff, that the prices charged during that period by Western Electric Company have been fair and reasonable, and that its profits have not been excessive.

(116) The Court erred in finding that the earnings made by Western Electric Company in its investment allocated to the business done with plaintiff and its profits on sales to plaintiff were fair and reasonable during the period 1916 to 1930, inclusive, and 1923 to 1930, inclusive.

(117) The Court erred in Finding of Fact No. 19 in finding that the Western Electric Company's profit on Bell Sales in 1931 were 5%, its earnings on average investment

4.2% and earnings on average investment less amount of depreciation reserve account were 5.6%.

(118) The Court erred in Finding of Fact No. 19 that the Western Electric Company's losses on Bell Sales in 1932 were 3.9%, its losses, on average investment 2.3%, and its losses on average investment less amount of depreciation reserve account 3.3%.

(119) The Court erred in failing to give effect to the fact that plaintiff made no showing, and that there is nothing in the record from which any finding can be made, of earnings or losses of Western Electric Company from Bell Sales in 1931 or 1932.

(120) The Court erred in failing to find and to give effect to the fact that the consequences of the use by the Western Electric of standard costs as a factor in establishing prices [fol. 2633] of manufactured products sold to the Bell System are that (a) Western Electric spot prices have no possible probative force as a basis for reproduction cost estimate of plaintiff's property; (b) the average of the Western Electric's spot prices at the beginning and end of each year do not reflect an honest and intelligent forecast of probable material and labor costs for a reasonable period in the immediate future after the date of such spot prices and have no probative force to determine fair value of the property in service to which such spot prices are applied; (c) plaintiff's showing of Western Electric's actual profits derived from the manufactures have no probative force as a basis for plaintiff's showing of the reasonableness of the Western Electric prices of manufactured products to plaintiff.

(121) The Court erred in finding that the prices charged by Western Electric Company to plaintiff and its other Bell customers have, during the entire period 1916 to 1932, inclusive, been lower than prices charged by other manufacturers for comparable materials and also lower than the prices charged by Western to independent telephone companies and others for the same materials.

(122) The Court erred in finding that in determining reasonable operating expenses to be allowed to plaintiff after November 1, 1930, there should be a reduction of only 10% from the prices charged by Western Electric Company on

purchases made by plaintiff attributable to maintenance and other expense accounts.

(123) The Court erred in finding that a large part of Western Electric Company's manufacturing plant and facilities have been constructed by it at less than they could have been purchased from others, and these savings are reflected in its "average investment", as used by the Court in its findings.

[fol. 2634] (123-a) The Court erred in finding that "it appears from the evidence that taking the price level of December 31, 1920, as one hundred per cent, the annual changes in price level of sales by Western Electric Company to plaintiff were as follows:

1921	1.7%
1922	10.7%
1923	0.2%
1924	5.6%
1925	1.1%
1926	8.7%
1927	4.9%
1928	10.3%
1929	8.6%

the price level at the end of 1929 was 58.3% of that of December 31, 1920."

Maintenance

(123-b) The Court erred in failing to find that the maintenance charges of plaintiff in its intrastate and intrastate exchange business were in each case for each of the years 1923 to 1932, inclusive, inflated.

(123-c) The Court erred in failing to find that the amounts included by the plaintiff and by the Court as maintenance charges for each of the years 1923 to 1932, inclusive, in its intratsate and intrastate exchange business were arbitrary amounts.

[fol. 2635] Value of Property in Service for Rate-making Purposes

General

(124) The Court erred in Finding of Fact No. 1, in finding that the fair value of all of plaintiff's property in the

Chicago area, including working cash capital, materials and supplies, construction work in progress and going value, as an average amount during each of the years 1923 to 1932, inclusive, was as follows:

1923	$130,000,000
1924	143,000,000
1925	157,000,000
1926	161,000,000
1927	178,000,000
1928	186,000,000
1929	200,000,000
1930	205,000,000
1931	197,500,000
1932	185,000,000

(125) The Court erred in Finding of Fact No. 2, in finding that the fair value of plaintiff's said Chicago area property, used and useful in its entire intrastate business, as an average amount during each of the years 1923 to 1932, inclusive, was as follows:

1923	$124,200,000
1924	136,500,000
1925	148,500,000
1926	151,500,000
1927	167,000,000
1928	173,000,000
1929	184,000,000
1930	187,120,000
1931	179,100,000
1932	166,500,000

(126) The Court erred in failing to find that there was no evidence whatever in the record upon which the Court could make any finding of fair value of plaintiff's property for the year 1932.

[fol. 2636] Undepreciated Physical Property

(127) The Court erred in approving the method employed by plaintiff in determining the reproduction cost new of the property.

(128) The Court erred in finding that the reproduction costs determined in accordance with the method pursued by plaintiff are reasonably accurate.

(129) The Court erred in finding that the reproduction costs of plaintiff's property in service in the Chicago area exclusive of working cash capital, materials and supplies, construction work in progress and going value on December 31st of each of the years 1923 to 1931 are:

1923	$148,581,042
1924	156,452,212
1925	172,257,055
1926	178,413,771
1927	191,820,622
1928	202,604,906
1929	219,327,112
1930	228,411,330
1931	226,912,713

(130) The Court erred in its Finding of Fact No. 5 in finding that Sloan's method of estimating reproduction cost new of plaintiff's property is reliable, and plaintiff's estimates of reproduction cost new set forth in plaintiff's exhibits A2 to A10, both inclusive, 12, 14, 18 and 43 are substantially correct.

(131) The Court erred in failing to find and to give effect to the fact that the plaintiff has failed to present any convincing evidence of the undepreciated value of its property in service for the years 1923 to 1929, inclusive, which would enable this Court to assign to it any greater [fol. 2637] value new than appears on plaintiff's books for each of the years 1923 to 1929, inclusive.

(132) The Court erred in failing to give proper consideration to the general decline in values beginning with 1929.

(133) The Court erred in failing to give effect to the fact that the Western Electric Company's spot prices have no probative force as a basis for reproduction cost estimate of plaintiff's property.

(134) The Court erred in failing to give effect to the fact that the average of the Western Electric Company's spot prices at the beginning and end of each year have no probative force to determine fair value of plaintiff's property in service to which average prices are applied.

(135) The Court erred in failing to give effect to the fact that plaintiff failed, in respect to valuations for each of the years 1923 to 1932, inclusive, to make an honest and intelligent forecast as to the probable prices and wage levels during a reasonable period in the immediate future.

(136) The Court erred in failing to give effect to the fact that plaintiff's showing of reproduction cost new estimate for each year 1923 to 1931, inclusive, included as a part thereof in each case an excessive amount for undistributed construction costs (overheads).

(137) The Court erred in failing to give effect to the fact that plaintiff's showing of reproduction cost new estimate [fol. 2638] for each year 1923 to 1931, inclusive, included as a part thereof in each case an amount for undistributed construction costs (overheads) which substantially exceeded the amount of such costs shown by the experience and accounting practice of plaintiff to be proper.

(138) The Court erred in finding that plaintiff is entitled to a maintenance of the 1930 price level during the years 1931 and 1932.

(139) The Court erred in failing to give effect to the fact that plaintiff's use of index numbers to adjust book costs to reproduction costs new of its property destroys any probative value of plaintiff's reproduction cost new estimate as a basis for any finding of reproduction cost new or of fair value of the property as of the respective dates of its estimates.

(139-a) The Court erred in failing to give effect to the fact that Western Electric prices during each of the years 1924 to 1930, inclusive, were unreasonable and excessive.

(139-b) The Court erred in failing to find and to give effect to the fact that the book cost of plaintiff's property during each of the years 1923 to 1932, inclusive, was excessive and inflated.

[fol. 2639] (139-c) The Court erred in failing to give effect to the investment experience of the Bell System that "Investors in Bell Telephone securities are not primarily interested in property as such, but are interested in safeguarding the money invested in the property".

Depreciation in Valuation

(140) The Court erred in Finding of Fact No. 6, in finding that the fair rate of depreciation to be applied to reproduction cost new in determining the valuations for rate-making purposes, is sixteen percent for the years 1923 to 1928, inclusive, and fifteen percent for the succeeding years.

(141) The Court erred in failing to give effect to the fact that the portion of the depreciation reserve which represents the advance contributions made prior to and during the period 1923 to 1932, inclusive, for anticipated depreciation on contemplated future additions to central office equipment and buildings, should be deducted from the fair value new of the property in arriving at the rate base.

[fol. 2640] (142) The Court erred in arriving at the fair value of plaintiff's property each year 1923 to 1932, inclusive, by deducting from the reproduction cost new of the property of each such years as found by it, a percentage thereof which was less than the percentage which the amount of plaintiff's depreciation reserve was of the undepreciated book cost of such property as of the same date.

(143) The Court erred in failing to give effect to the fact that by using the straight line method of computing depreciation charges plaintiff has elected to treat the funds represented by the balance in the depreciation reserve as payment for a portion of its capital investment in the service consumed and to be consumed in respect to which it is entitled to reimbursement during the service life of the property.

(144) The Court erred in failing to give effect to the fact that in arriving at the fair value of plaintiff's physical property on the basis of the reproduction cost new of the property each year 1923 to 1932, inclusive, the Court should deduct from the reproduction cost new of such property the percentage new thereof equal to the percentage which the amount of plaintiff's depreciation reserve was of the undepreciated book cost of such physical property as of the same date.

(145) The Court erred in failing to give effect to the fact that in arriving at the fair value of physical property on the

basis of its book cost there should be deducted therefrom the amount of the depreciation reserve as of the same date.

[fol. 2641]

Going Value

(146) The Court erred in its Finding of Fact No. 7 in finding that the amount to be added on account of going value to the reproduction cost new of the physical property of the plaintiff in determining valuations for rate-making purposes is eight per cent thereof.

(147) The Court erred in finding that eight per cent is a reasonable allowance for going value.

(148) The Court erred in failing to find and to give effect to the fact that the average annual amount of Going Value which should be included in the rate base, if plaintiff were to be considered as an independent enterprise apart from its relationship to the American Telephone & Telegraph Company as an integrated department thereof, should not exceed the allowance by the Illinois Commerce Commission Order of August 16, 1923.

Rate of Return

(149) The Court erred in Finding of Fact No. 32 in finding that the fair rate of return on the average fair value of plaintiff's intrastate property was 7½% for each of the years 1923 to 1927, inclusive 7% for each of the years 1928, 1929 and 1930, 6½% for 1931, and 5½% for 1932.

(150) The Court erred in finding that the range of from 7½% to 5½%, as found in this case, gives weight "to all of the elements which under the rulings of the Supreme Court we are required to consider".

[fol. 2642] (151) The Court erred in violating the direction of the Supreme Court in failing to find and to give effect to the fact that the amount of recorded intrastate and intrastate exchange net income under existing rates was in each case constitutionally adequate for each of the years 1923 to 1932, inclusive.

(152) The Court erred in failing to give effect to the fact that the rate of return realized by plaintiff from its intrastate and intrastate exchange business under existing

rates was in each case constitutionally adequate for each of the years 1923 to 1932, inclusive.

(153) The Court erred in violating the direction of the Supreme Court in failing to give effect to the finding by the Supreme Court that "in the present case we are not dealing with an ordinary public utility company, but with one that is part of a large system organized for the purpose of maintaining the credit of the constituent companies and securing their efficient and economical management".

(154) The Court erred in violating the direction of the Supreme Court in failing to test the constitutional inadequacy of the intrastate and intrastate exchange net income produced by the attacked rates upon the basis of—(a) comparing such net income with the corresponding recorded net income under the existing rates; and (b) testing the rate of return produced by such net income according to the standard of the Bluefield Case, but giving effect to the unique features of Bell System operations not existing in the case of other businesses in relation to their investors.

[fol. 2643] (155) The Court erred in failing to find and to give effect to the fact that the intrastate and intrastate exchange net income under the attacked rates was in each case constitutionally adequate for each year 1923 to 1932, inclusive, by comparison with the corresponding recorded net income under the existing rates for each such years.

(156) The Court erred in failing to find and to give effect to the fact that the intrastate and intrastate exchange net income under the attacked rates was in each case constitutionally adequate for each year 1923 to 1932, inclusive, according to the standard of the Bluefield Case, as defined by the Supreme Court in its Opinion of December 1, 1930 in Smith v. Illinois Bell Telephone Co., 282 U. S. 133.

(157) The Court erred in failing to give effect to the fact that the intrastate and intrastate exchange net income under the attacked rates was in each case constitutionally adequate for each of the years 1923 to 1932, inclusive, according to the tests for adequate returns used by the Bell Telephone companies throughout the entire Bell System as a basis for financing their respective operations.

(158) The Court erred in failing to give effect to the fact that the intrastate and intrastate exchange net income under the attacked rates was in each case constitutionally adequate for each of the years 1923 to 1932, inclusive, upon the standard of the average return of the Bell Telephone companies throughout the entire Bell System for each of such years.

[fol. 2644] (159) The Court erred in failing to give effect to the fact that plaintiff, as part of the Bell System, differs so widely in form of organization and in relation to the public and the investors from independent enterprises considered that their experience is rendered wholly inapplicable to it.

(160) The Court erred in failing to give effect to the fact that neither the recorded net earnings available for return, nor plaintiff's showing of net earnings available for return, nor the Court's finding of net earnings available for return from the intrastate and intrastate exchange business under the existing rates and under the attacked rates for each of the years 1923 to 1932, inclusive, reflected in any case the following advantages and pecuniary profits, among others, which the American Telephone & Telegraph Company received as the investor in plaintiff, but which are not received by the investor on investments in other business undertakings outside the Bell System:

(a) The free use of the Chicago Exchange Plant facilities in the interests and intrastate services of the American Telephone & Telegraph Company, the expenses of which use the plaintiff reimbursed itself by allocating to the interstate toll and intrastate toll services substantial portions of the intrastate exchange service revenues each year, which said allocation the Court adopted in its findings (Assignment of Error Nos. 1, 2, 3 and 4).

(b) The use free of charge and without payment of adequate compensation, of plaintiff's facilities and personnel to merchandise the American Telephone & Telegraph Company's stocks and bonds aggregating over $52,000,000, in plaintiff's territory to the public, and to plaintiff's em- [fol. 2645] ployes—the expenses of which use are charged by plaintiff and by the Court as part of plaintiff's operating expenses;

(c) The receipt by the American Telephone & Telegraph Company of reimbursement from plaintiff of the entire amount of the American Telephone & Telegraph Company's expense allocable to the latter as the Holding Company investor in the securities of plaintiff of—

(1) Distributing the American Telephone & Telegraph Company's own stocks and bonds offered by it to its own investors during the period 1923 to 1930, inclusive;

(2) Servicing all of the American Telephone & Telegraph Company's securities outstanding in the hands of its investors during the same period, issued since 1886 through subscription or through underwriters;

(3) Operating ten departments of the American Telephone & Telegraph Company whose operations are concerned in whole or in part with the functions of the American Telephone & Telegraph Company as the Holding Company investor in the securities of the Bell Telephone Operating Companies, including plaintiff (Assignment of Error No. 25);

(d) The receipt to December 31, 1932, and the right to receive thereafter, by the American Telephone & Telegraph Company of substantial royalties and profits from the nontelephone field and from the telephone field outside the Bell System for the use therein of patents and inventions, the expense of development of which was charged as an operating expense of the Bell Telephone Operating Companies, including plaintiff (Assignment of Error No. 18);

[fol. 2646] (e) The receipt by the American Telephone & Telegraph Company of unreasonably large returns on its investment in its Long Lines Department ranging from 13½% to 19.7% on its capital and surplus invested therein during the years 1923 to 1929 and resulting in whole or in part from—

(1) The discriminatory allocation between that department and the Bell Telephone Operating Companies, including plaintiff, of the Bell System portion of development and research expense of the American Telephone & Telegraph Company charged to such companies as part of the license contract costs (Assignment of Error No. 21) and

(2) The surrender by plaintiff of its right under Section 10 of the Original License Contract of 1881 to participate in the receipts and profits of the long distance business transacted in Chicago;

(f) The receipt by the American Telephone & Telegraph Company from the Western Electric Company of substantial royalties as consideration for the franchise to the latter to sell its manufactures to plaintiff, and of unreasonably large returns on its investment in the Western Electric Company resulting from such manufactures—the American Telephone & Telegraph Company as the investor in plaintiff providing capital to purchase such manufactures and acting at the same time as the purchasing agent for plaintiff and as selling agent for the Western Electric Company (Assignment of Error No. 19);

(g) The receipt by the American Telephone & Telegraph Company of unreasonably large returns on its investment in the Western Electric Company allocable to non-Bell business resulting from the arbitrary separation by the Court of revenues, expenses and property between the Bell and non-Bell business and from the failure by the Court to allocate to the non-Bell business its proper portion of the Development and Research expense of the Western Electric Company (Assignment of Error No. 87);

(h) The use in 1923 and thereafter of plaintiff's re-[fol. 2647] sources and credit—

(1) To liquidate to the American Telephone & Telegraph Company $13,800,000 long-past-due indebtedness of the Central Union Telephone Company, which had been impaired and which could not be liquidated upon the credit of the latter;

(2) To permit the American Telephone & Telegraph Company to withdraw in cash as a profit $3,700,000 from the sale of the Central Union properties in Illinois to plaintiff; and

(3) To finance, beginning with 1923, the Central Union properties in Illinois in lieu of using the American Telephone & Telegraph Company's credit, theretofore for many years the sole credit for that purpose;

(i) The receipt by the American Telephone & Telegraph Company of more than $725,000 profit on its transfer to plaintiff of telephone instruments on December 31, 1927, representing plaintiff's Chicago intrastate portion of the $14,385,800 illegal and discriminatory profits made by the American Telephone & Telegraph Company in its transfer of telephone instruments to the Bell Operating Companies on that date;

(j) The receipt by the American Telephone & Telegraph Company of $2,115,000 profit in the transfer of the Western Electric Company's engineering department properties to the Bell Telephone Laboratories, Inc., on January 1, 1927;

(k) The specification by the American Telephone & Telegraph Company, as the investor in plaintiff, what new inventions, discoveries and improvements in the art should be woven into the plant of plaintiff to protect the American Telephone & Telegraph Company's investment against impairment through failure to keep abreast or ahead of the art (Assignment of Error No. 23);

(l) The joinder of plaintiff's employes and the employes of the other operating companies of the Bell System, and of the Western Electric Company, of which the American [fol. 2648] Company is the sole or principal investor, under a plan where the American Company can shift experienced personnel from one section of the country to the other as it sees fit, to protect its interests wherever situated, to strengthen the organization wherever necessary;

(m) The making and furnishing by plaintiff to the American Telephone & Telegraph Company, as its investor, of a detailed statement each year, and for a period of years, in advance of plaintiff's requirements for the purchase of supplies and materials, such statement to be used by the American Telephone & Telegraph Company as the investor in the Western Electric Company for the purpose of enabling the latter company to engineer its manufactures for the protection and benefit of the investment of the American Telephone & Telegraph Company therein;

(n) The security of investment resulting from the insurance by the American Telephone & Telegraph Company, at the expense of plaintiff, as found by the Court, against patent infringement liability in the use of plaintiff's property in which the American Telephone & Telegraph Company is the investor;

(o) The use of the large fund and the accumulated earnings thereon, of advance contributions for anticipated depreciation on contemplated future additions—

(1) To increase the security for plaintiff's outstanding credit obligations and to increase the equity behind its outstanding capital obligations;

(2) To provide and make available additional earnings and assets to meet the current interest and dividend requirements on plaintiff's credit and capital obligations, to meet the maturing principal of plaintiff's outstanding credit obligations, and to improve plaintiff's earning record in its [fol. 2649] relation to its capital investors; and,

(3) To provide a large portion of plaintiff's capital funds employed in the telephone service from the telephone users, as involuntary investors without their right of interest therein, in lieu of raising such funds through the issue of securities to its capital investors.

(p) The construction and engineering of plaintiff's plant to conform to the plan deemed advisable by the American Company enable the American Telephone & Telegraph Company to furnish satisfactory and profitable long distance service.

(q) The transfer, with the consent of plaintiff, of the allegiance of its employees to the American Company as the operator of the long distance service.

(r) The right granted by plaintiff to the American Telephone & Telegraph Company to settle all questions of policy and operation of plaintiff on any question that might affect any other Company in the Bell System in which the American Telephone & Telegraph Company is also a stockholder or that might affect the long distance service of which the American Company was the operator.

General

(161) The Court erred in its Findings of Fact No. 10 in finding that plaintiff's reasonable operating expenses, including expense of depreciation, for the intrastate portion

of its said Chicago area business for each of the years 1923 to 1931, inclusive, are as follows:

1923	$30,500,000
1924	32,170,000
1925	34,680,000
1926	37,880,000
1927	40,800,000
1928	45,050,000
1929	47,600,000
1930	48,560,000
1931	46,670,000

(162) The Court erred in its Finding of Fact No. 30 in finding that the net income available for return from that portion of plaintiff's property used in its intrastate business in its Chicago area under the rates fixed by the Illinois Commerce Commission by its order of August 16, 1923, effective October 1, 1923, for each of the years 1923 to 1932, inclusive, was as follows:

1923	$5,104,515
1924	5,932,959
1925	6,297,890
1926	6,402,128
1927	6,686,503
1928	6,914,459
1929	8,939,602
1930	8,492,385
1931	8,392,555
1932	6,750,000

[fol. 2650] (163) The Court erred in finding that plaintiff has earned upon the fair value of its intrastate property, as found hereinabove, for each of the years 1923 to 1932, inclusive, a return in percentages as follows:

1923	5.4%
1924	5.5
1925	5.3
1926	5.3
1927	5.0
1928	5.0
1929	5.8
1930	5.3
1931	5.5
1932	4.8

(164) The Court erred in finding that if the rates in suit had been in effect, plaintiff would have received upon the fair value of its intrastate property as found hereinabove, rates of return for each of the years 1923 to 1932, inclusive, percentages as follows:

1923	4.1%
1924	4.4
1925	4.2
1926	4.2
1927	4.0
1928	4.0
1929	4.9
1930	4.5
1931	4.7
1932	4.1

(165) The Court erred in finding that if the intrastate toll business is separated from the other intrastate business of plaintiff, the rates of return which plaintiff would have received upon its intrastate exchange business for the Chicago area, if the rates in suit had been in force, would have been slightly lower than the rates hereinabove stated for plaintiff's total intrastate business in its Chicago area.

[fol. 2651]

Conclusions of Law

(166) The Court erred in denying defendant's motion to require plaintiff to make available for inspection the Minute Books of the Board of Directors of the American Telephone & Telegraph Company covering the period beginning with 1923 and covering the period 1920 to 1922, inclusive.

(167) The Court erred in finding that at all times since the effective date of the order of the Illinois Commerce Commission herein complained of, the telephone rates prescribed in said order have been, and they are now, confiscatory of plaintiff's property; and said order is void.

(168) The Court erred in finding that the interlocutory injunction issued herein should be made permanent.

(169) The Court erred in finding that plaintiff should be released and discharged from all obligation to refund any sums of money collected by it under the terms of the pre-

liminary and interlocutory decrees herein, whether on account of the bond filed herein or otherwise.

(170) The Court erred in finding that plaintiff should recover its taxable costs herein.

(171) The Court erred in failing to find that in view of the relationship between the American Telephone & Telegraph Company and plaintiff, and between the American Telephone & Telegraph Company and the Western Electric Company and its subsidiaries, and between the American Telephone & Telegraph Company and other licensees or operating companies similar to plaintiff, and the relation- [fol. 2652] ship between plaintiff and such other operating or constituent companies, and between plaintiff and the Western Electric Company, resulting from the integration of the business and affairs of all such companies through the ownership of stock and control of such companies by the American Telephone & Telegraph Company, there is an absence of arm's length bargaining between the corporate entities involved and of all the elements which go to fix market value, or the fairness of any contracts or transactions between them. Consequently, the opportunity exists for charges, contracts and transactions unfavorable to the plaintiff (Western Distributing Co. v. Public Service Commission, 285 U. S. 119). Under such circumstances it is difficult, if not impossible, for a court to ascertain and determine the fairness of every transaction and charge between such parties entering into the question of confiscation. It must follow, therefore, that the action of a Commission empowered by a State to fix rates of a constituent operating company such as plaintiff, a member of such combination, should have greater weight and greater force and effect than the action of such Commission with reference to rates of a utility acting independently and autonomously where it had no such relations with a parent company and its other subsidiaries.

(172) The Court erred in failing to find that at all times since the effective date of the Order of the Illinois Commerce Commission herein complained of, the telephone rates prescribed in said Order have been, and they are now, constitutionally adequate; and said Order is valid.

(173) The Court erred in failing to find that plaintiff's bill of complaint should be dismissed for want of equity.

[fol. 2653] (174) The Court erred in failing to find that the interlocutory injunction herein should be vacated.

(175) The Court erred in failing to find that plaintiff should be directed to make refunds, under further order of this Court, in the following amounts in addition to the amounts to be determined for the year 1932 and to the date of final decree herein, together with interest thereon to date of payment.

	Principal (a)	5% Simple interest to April 30, 1933 (b)	Total of (a) & (b)
1923	$527,926	$248,498	$776,424
1924	2,124,632	933,653	3,058,285
1925	2,181,614	849,762	3,031,376
1926	2,203,556	747,984	2,951,540
1927	2,221,798	643,268	2,865,066
1928	2,168,357	519,733	2,688,090
1929	2,060,444	391,063	2,451,507
1930	1,879,411	263,670	2,143,081
1931	1,632,466	147,208	1,779,674
Total	$17,000,204	$4,744,839	$21,745,043
1932	Amount undisclosed.	Amount undisclosed.	Amount undisclosed.
1933	Amount undisclosed.	Amount undisclosed.	Amount undisclosed.

(176) The Court erred in entering the final decree of June 28, 1933.

(177) The Court erred in failing to comply with the terms of Federal Equity Rule 70½ in failing to find the facts specially and stating separately its conclusions of law thereon.

(178) The Court erred in failing to comply with the terms of Federal Equity Rule 70½ in failing to render a [fols. 2654-2659] statement of the grounds of decision on the issues involved both as to fact and law.

Benjamin F. Lindheimer, Ernest J. Kreutgen, Andrew Olson, G. Gale Gilbert, Phil. W. Collins, Paul Samuell, Charles E. Byrne, Constituting Illinois Commerce Commission. Otto Kerner, Attorney General of the State of Illinois. City of Chicago, Intervenor, by William H. Sexton, Corporation Counsel, and Benjamin F. Goldstein, George I. Haight, Edmund D. Adcock, Special Counsel.

[fol. 2660] IN UNITED STATES DISTRICT COURT

[Title omitted]

ORDER ALLOWING APPEAL

This day came the defendants and presented to the Court their petition for appeal and assignment of errors, and moved the Court for the allowance of an appeal to the Supreme Court of the United States from the final decree entered herein on June 28, 1933, and upon consideration thereof, it is hereby

Ordered and Adjudged by the Court that leave is hereby given to file their petition and assignment of errors and that said appeal be and the same is hereby allowed from [fol. 2661] the said decree entered June 28, 1933, in the above entitled and numbered cause, and that said appeal shall be returnable to the Supreme Court of the United States.

It is further Ordered that no appeal bond or other security be required by the said defendants, as a condition for the allowance or perfection of this appeal.

It is Further Ordered that pending the said appeal the plaintiff shall be required to keep such records and accounts as shall enable it, in case said final decree is reversed, to make refund to its several subscribers of any sums paid by them in excess of the sums chargeable to them which would have been collected under the rates prescribed by the Illinois Commerce Commission under its order dated August 16, 1923, and permanently enjoined by this court, as the court may direct.

Enter.

Evan A. Evans, William M. Sparks, James H. Wilkerson, Judges.

[fol. 2662] IN UNITED STATES DISTRICT COURT

[Title omitted]

ORDER EXTENDING TIME

The parties in the above entitled cause appearing here in open court by their respective solicitors, and for satisfactory reasons appearing to the Court, the time for filing the transcript of record in this cause in the Supreme Court of the United States, pursuant to the appeal sued out, is hereby extended until and including the 31st day of August, A. D. 1933.

Enter.

Evan A. Evans, William M. Sparks, James H. Wilkerson, Judges.

[fol. 2663] IN UNITED STATES DISTRICT COURT

[Title omitted]

ORDER EXTENDING TIME

This cause came on at this term, and upon stipulation of the parties hereto, and upon due consideration, and for satisfactory reasons appearing to the Court, the time for filing the transcript of record in this cause in the Supreme Court of the United States, pursuant to the appeal sued out, is hereby extended until and including the 15th day of September, A. D. 1933.

Enter.

Evan A. Evans, James A. Wilkerson, Judges.

Dated August 25, 1933.

[fol. 2664] IN UNITED STATES DISTRICT COURT

[Title omitted]

NOTICE OF LODGMENT AND MOTION FOR APPROVAL OF STATEMENT OF EVIDENCE

To Charles M. Bracelen, William H. Thompson, Kenneth F. Burgess, Leslie N. Jones, counsel for plaintiff-appellee:

You will please take notice that the defendants in said cause, by their solicitors, have this day lodged with the Clerk of the United States District Court for the Northern District of Illinois, Eastern Division, a statement of the evidence adduced at the hearings of the cause under Rule 75 of Rules of Practice for the Courts of Equity of the

United States, and they will apply to the statutory court [fol. 2665] hearing said cause for the settlement and approval of the statement of evidence as a true, complete and properly prepared statement in that behalf, and to become a part of the record therein on to-wit: the 7th day of September, A. D. 1933, in the court rooms of the Honorable James H. Wilkerson of the said District Court, or at such *further time or other place, either or both as said Statutory* Court or Judge may appoint.

Otto Kerner, Attorney General of the State of Illinois; William H. Sexton, Corporation Counsel; Benjamin F. Goldstein, George I. Haight, Edmund D. Adcock, Solicitors for Defendants.

September 6th, 1933.

We, the undersigned solicitors for the plaintiff-appellee in the above entitled cause, hereby acknowledge receipt of a duplicate copy of the foregoing notice, and waive the ten day notice for approval of the statement of evidence, this 7th day of September, 1933.

Charles M. Bracelen, William H. Thompson, Edward L. Blackman, Kenneth F. Burgess, Leslie N. Jones, Solicitors for Plaintiff-Appellee.

[fol. 2666] IN UNITED STATES DISTRICT COURT

[Title omitted]

ORDER APPROVING STATEMENT OF EVIDENCE

This cause came on to be further heard upon proceedings for the approval of a narrative statement in simple and condensed form of the evidence adduced at the trial, and it appearing to the Court that the foregoing statement of the evidence was lodged in due time with the Clerk of this Court and plaintiff received notice of such lodgment, and waived the ten day notice for the approval of same by this Court, and it further appearing to the Court that the testimony of witnesses has been reduced to narrative form and printed, and the various documentary evidence and exhibits have been condensed and bound into volumes, and it further appearing that the printed volumes of testimony in narrative form and exhibits filed in the Supreme Court on April [fol. 2667] 25, 1930, were used in the hearing of this cause;

It is therefore ordered, adjudged, and decreed that the foregoing statement and narrative of evidence, consisting of seven printed volumes of testimony, numbered 1 to 7 inclusive, and 6 volumes of exhibits and documentary evidence, and the statement of evidence contained in the seven *printed volumes* constituting the Transcript of Record filed in the Supreme Court of the United States April 25, 1930, be and the same is hereby settled, allowed and approved as a full, true and correct statement in simple and condensed form of all the testimony, documentary evidence and exhibits introduced in connection with all the proceedings and motions in the above cause essential for the decision of the questions presented by the appeal herein;

It is further ordered, adjudged, and decreed that the said printed volumes of narrative testimony, and the bound volumes of condensed documentary evidence and exhibits, as aforesaid, as filed in the Clerk's office shall be incorporated in the Transcript of Record by the Clerk of this Court on the appeal of this cause to the Supreme Court of the United States.

Enter.

James H. Wilkerson, Judge.

Dated September 7th, 1933.

[fol. 2668] IN UNITED STATES DISTRICT COURT

[Title omitted]

ORDER IDENTIFYING DOCUMENTS TO BE INCORPORATED IN TRANSCRIPT OF RECORD

This cause came on at this term and upon stipulation of the parties hereto, and upon due consideration, and it appearing to the Court that the parties hereto have identified the documents called for in the præcipe for Transcript of Record, filed by defendants on Sept. 7, 1933, by the initials "B. F. G.—L. N. J." and have agreed that the documents so identified are the documents called for in said præcipe,

It is, therefore, ordered, adjudged and decreed that the said documents identified by the initials "B. F. G.—L. N. J."

are the documents called for in the præcipe for Transcript [fols. 2669-2671] of Record, and they shall be treated and accepted in all respects the same as the said original documents, exhibits and testimony taken in this cause, and shall be incorporated in the Transcript of Record by the Clerk of this Court on the appeal of this cause to the Supreme Court of the United States.

Enter.

James H. Wilkerson, Judge.

[fol. 2672] IN UNITED STATES DISTRICT COURT

[Title omitted]

PRÆCIPE FOR TRANSCRIPT OF RECORD

To Charles M. Bates, Clerk of the District Court of the United States for the Northern District of Illinois, Eastern Division:

You will please prepare the transcript of record for appeal in the above entitled cause to the Supreme Court of the United States and incorporate in said transcript the following documents, certified as required by law:

1. Placita,

2. Transcript of Record consisting of seven printed volumes filed in the Supreme Court of the United States on April 25, 1930, in this cause entitled Frank L. Smith et al., appellants, vs. Illinois Bell Telephone Company, to the [fol. 2673] October Term, 1930, of the Supreme Court, No. 90, including:

(a) Bill of Complaint,

(b) Petition of the City of Chicago for leave to intervene, filed September 27, 1923,

(c) Order of September 27, 1923, making the City of Chicago defendant, giving the City of Chicago the right to plead,

(d) Order of September 27, 1923, restraining the Illinois Commerce Commission from putting new rates into effect pending the hearing,

(e) Answer of the City of Chicago, filed October 6, 1923, including Exhibits A and B attached thereto,

(f) Answer of Frank L. Smith, et al., filed October 6, 1923,

(g) Motion of complainant for interlocutory injunction,

(h) Interlocutory injunction decree entered December 21, 1923,

(i) Testimony of all parties in narrative form,

(j) Exhibits of all parties including exhibits rejected by order of court,

(k) Opinion of the Court filed January 31, 1930,

(l) Final decree entered February 28, 1930.

3. Mandate from the Supreme Court filed December 29, 1930, reversing decree entered February 28, 1930, and remanding cause for further proceedings in conformity with opinion of Supreme Court rendered December 1, 1930,

4. Order of February 28, 1931, denying defendants' motion to dismiss bill of complaint and reinstating interlocutory injunction,

[fol. 2674] 5. Order of March 5, 1931, amending order of February 28, 1931, nunc pro tunc.

6. Order of March 5, 1931,

7. Bond of plaintiff for $5,000,000 filed March 5, 1931,

8. Order of November 12, 1931, substituting party defendants,

9. Extract from motion of defendants for rule upon plaintiff to furnish or make available for examination certain data, documents and records, filed November 3, 1931,

10. Extract from Memorandum of Plaintiff in Opposition to Defendants' Motion of November 3, 1931,

11. Order of December 4, 1931, granting leave to defendants to take depositions,

12. Order of December 8, 1931, granting leave to defendants to take depositions of certain witnesses at New York City.

13. Order of December 17, 1931, denying defendants' motion for production and inspection of documents filed November 3, 1931,

14. Order of February 19, 1932, substituting Paul Samuell as member of the Illinois Commerce Commission in place of C. W. Hadley,

15. Narrative and condensed statement of evidence of all parties on the hearings held pursuant to mandate of Su-[fol. 2675] preme Court of United States filed December 29, 1930, including:

(a) Testimony of all parties in narrative form as contained in seven volumes,

(b) Extracts from plaintiff's Exhibits A-1 to A-271, both inclusive,

(c) Extracts from defendants' Exhibits X-1 to X-439, both inclusive, D-1 to D-140, both inclusive, Deposition Exhibits 1 to 205, both inclusive,

(d) Plaintiff's additional objections to Exhibits offered by defendants; answers to Plaintiff's additional objections to exhibits offered by Defendants, and to Plaintiff's objections made in the Record; Plaintiff's Request for Findings (Annotated); Defendants' Request for Findings (Annotated),

16. Order entered December 8, 1932, that William M. Sparks, Judge of the Circuit Court of Appeals for the Seventh Circuit be appointed as member of Statutory Court in place of Judge Page,

17. Opinion of the Court filed April 29, 1933,

18. Findings of Fact, and conclusions of law of the Court, filed April, 29, 1933,

19. Order of June 28, 1933, substituting party defendants,

20. Final decree entered June 28, 1933,

21. Petition for Appeal,

22. Assignment of Errors,

23. Statement showing Basis of Jurisdiction as required by Rule 12 of the Rules of Practice of the United States Supreme Court,

[fol. 2676] 24. Statement directing attention to Provisions of Paragraph 3 of Rule 12 of the Rules of Practice of the United States Supreme Court;

25. Order Allowing Appeal and dispensing with bond,

26. Order extending time for filing Transcript of Record entered June 28, 1933.

27. Order extending time for filing Transcript of Record entered August 25, 1933,

28. Notice of Lodgment and Motion for Approval of statement of evidence filed September 7th, 1933,

29. Order approving Statement of Evidence entered September 7th, 1933,

30. Order identifying documents to be incorporated in Transcript of Record,

31. Proof of Service of the following documents on plaintiff by defendants:

(a) Petition for Appeal,

(b) Order Allowing Appeal,

(c) Assignments of Error,

(d) Statements showing the basis of jurisdiction in the Supreme Court,

(e) Statement directing Appellee's attention to Paragraph 3 or Rule 12 of the Rules of Practice of the United States Supreme Court, effective December 15, 1931, and as amended May 31, 1932,

32. This Præcipe for Transcript of Record, and acknowledgement of service of præcipe on Appellee and waiver by Appellee of issuance and service of citation.

Otto Kerner, William H. Sexton, Benjamin F. Goldstein, Edmund D. Adcock, George I. Haight, Counsel for Defendants-Appellants.

Dated at Chicago, Illinois, September 6th, 1933.

[fol. 2677] On this 7th day of September, 1933, the undersigned counsel for the Illinois Bell Telephone Company hereby acknowledge service of the above and foregoing Præcipe, and hereby waive the issuance and service of a citation.

Charles M. Bracelen, William H. Thompson, Edward L. Blackman, Kenneth F. Burgess, Leslie N. Jones, Counsel for Plaintiff-Appellee.

[fol. 2677a] IN SUPREME COURT OF THE UNITED STATES

STATEMENT OF POINTS UPON WHICH APPELLANTS INTEND TO RELY, UNDER RULE 13 OF RULES OF SUPREME COURT OF UNITED STATES, AND DESIGNATION OF PARTS OF RECORD TO BE PRINTED—Filed Sept. 8, 1933

Now come Appellants and state that the points on which they rely in this Court in this case are as follows:

Separation of Revenues

The District Court erred in allocating each year under investigation to interstate toll business and to intrastate toll business substantial portions of the gross and net revenues arising under the existing rates and under the [fol. 2677b] rates in suit from the Chicago intrastate exchange service. (Assignments of Error 1 to 10 inclusive.)

License Contract, Services and Payments

The District Court erred in its Findings each year under investigation of Appellees' License Contract costs allocable to its operating expenses (Assignments of Error 11, 12, 13), in that it included therein a portion of:

(1) The American Telephone & Telegraph Company's expense properly allocable to it as a Holding Company investor of the securities of Appellee:

(a) of raising capital from the American Telephone & Telegraph Company's investors,
(b) of servicing the American Telephone & Telegraph Company's outstanding securities, and
(c) of operating ten departments of the American Telephone & Telegraph Company whose operations are concerned in whole or in part with the functions of the American Telephone & Telegraph Company as the Holding Company investor of the securities of Appellee.

(Assignments of Error 24 to 31 inclusive, 37, 160.)

(2) Development and Research expense properly allocable to:

(a) the field outside the telephone communication field,
(b) the telephone communication field outside the field covered by the Western Electric Company's sales to its retail customers,
[fol. 2677c] (c) the American Telephone & Telegraph Company's Long Line,
(d) the American Telephone & Telegraph Company as the Holding Company investor in the securities of Appellee,
(e) the American Telephone & Telegraph Company as the licensor, for valuable consideration, of the Western Electric Company to manufacture and sell to Appellee products embodying the results of the American Telephone & Telegraph Company's Development and Research work.

(Assignments of Error 14 to 23 inclusive, 37, 160.)

(3) $30,395,800 transferred from 1923 to 1927 inclusive by the American Telephone & Telegraph Company to its Reserve for Contingencies.

(Assignments of Error 32 to 36, inclusive.)

Depreciation Expense

The District Court erred in allowing as proper depreciation expenses under the existing rates and under the rates in suit during each year under investigation amounts in excess of those prescribed by the Public Utilities Commission Order of December 20, 1920, and the Illinois Commerce Commission Order of August 16, 1923, respectively.

(Assignments of Error 38 to 65, inclusive.)

Western Electric Company

The District Court erred in its Findings on the Rate of Return of the Western Electric Company from its Bell business and from its business with Appellee in that:

[fol. 2677d] (1) Its Findings on "Average Investment" gave no effect as proper deductions to demand and short term notes, Reserve for Pension Fund, Working Reserve, and excess cash above normal cash balances, and the amount of the Depreciation reserve account.

(Assignments of Error 66, 67, 69, 70, 72, 73, 74.)

(2) Its Findings on "Earnings" gave effect as proper deductions for current income, Excess Pension Fund Accruals to make up deficiencies in accruals for prior years, appropriations to make up anticipated future decline in the reproduction value of plant, excess depreciation on machinery, tools, furniture and fixtures, the purchase price of patents and the Development and Research expense of developing patents and inventions of patents properly applicable to the field outside the telephone communication field and to the telephone communication field outside the field covered by Western Electric Company's sales.

(Assignments of Error 68, 71, 73, 84, 85, 86.)

(3) Its separation between Bell sales and non-Bell sales of plant facilities, of Current Cost of Sales before interest

and expense of Development and Research expense, and of general expense, on the basis of "standard cost of sales," was arbitrary and fatally defective.

(Assignments of Error 75 to 83, inclusive, 87, 88 to 91 inclusive, 108 to 110 inclusive, 114.)

[fol. 2677e] (4) The District Court erred in its Findings on the reasonableness of the Western Electric Company's earnings on its Bell business, and on its business with Appellee as determined by it, and on the extent to which they enter into the issue of confiscation, in that:

(a) it determined the reasonableness of such earnings on the basis of periods of years 1916 to 1932, inclusive, and 1923 to 1932, inclusive, considered as two units of time, instead of for each year under investigation;

(b) it failed to find that in each the years 1923 to 1930, inclusive, considered as separate units of time, Western Electric Company's earnings on its Bell business and on its business with Appellee were excessive;

(c) it failed to find that there was nothing in the record from which any findings could be made of the return to Western Electric Company from Bell sales in 1931 and 1932;

(d) it determined the reasonableness of Western Electric Company's earnings on Bell business by comparison with non-comparable earnings of other non-comparable manufacturing companies;

(e) it determined the reasonableness of Western Electric Company's earnings on Bell business by comparison of Western Electric Company's prices to its Bell System customers with noncomparable Western Electric Company's prices to its non-Bell customers.

(Assignments of Error 92 to 107, inclusive, 111 to 113 inclusive, 115 to 123-a, inclusive.)

[fol. 2677f] Maintenance

The District Court erred in failing to find that on the basis of its Findings on the Western Electric Company's earnings on business with Appellee, the maintenance charges of Appellee representing purchases from the Western Electric Company were arbitrary and excessive for each year under investigation. (Assignments of Error, 122, 123-b, 123-c.)

Value of Property in Service for Rate-making Purposes

The District Court erred in its Findings of Fair Value for each of the years 1923 to 1932 inclusive. (Assignments of Error 124 and 125), in that:

(1) Its Findings on Reproduction Cost New of the Property in Service gave effect to:

(a) Appellee's showing on Reproduction Cost New of the physical property based on methods of computation which were arbitrary and fatally defective and on prices established on an arbitrary basis;

(b) Appellee's showing of undistributed construction costs (overheads) based on arbitrary assumptions, which were contrary to Appellee's experience and accounting practices.

(2) Its Findings on Undepreciated Value New of the Property in Service failed to give effect to:

(a) an honest and intelligent forecast as to the probable prices and wage level during a reasonable period in the immediate future after the date of the respective valuations, and

[fol. 2677g] (b) the general decline in value beginning with 1929, and.

(c) the absence in the record of any facts on which to predicate Findings for the year 1932 and thereafter.

(Assignments of Error 126 to 139-c inclusive.)

(3) Its Findings on Fair Value of the Property in Service for Rate Making purposes:

(a) Included amounts for Going Value in excess of the allowance by the Illinois Commerce Commission Order of August 16, 1923, which amounts were based on assumptions which were arbitrary and in violation of the applicable principles established by this Court (Assignments of Error 146 to 148, inclusive);

(b) Failed to give effect to the amounts in the depreciation reserve account as payments through the rates for service to Appellee for a portion of its capital investment in the service consumed and to be consumed during the service life of the property (Assignments of Error 140 to 145, inclusive).

Fair Return

The District Court erred in its Findings on the required minimum return to avoid confiscation and on the constitutional inadequacy of the existing and attacked rates, in that:

[fol. 2677h] (1) It failed to give effect to the fact that Appellee was part of a system which functioned under a unique Mutual Plan of Operation, under which Appellee burdened its operations for the benefit of the American Telephone & Telegraph Company as consideration for the reciprocal benefits from the American Telephone & Telegraph Company as its investor and as its financing agency. The District Court gave effect to the burdens on Appellee in its Findings on Separation of Revenues, License Contract Service and Payment, Western Electric Company, Maintenance, and Value of Property in Service for rate making purposes, but failed to give effect to the reciprocal benefits from the American Telephone & Telegraph Company in its Findings on Fair Return.

(Assignments of Error 149 to 151 inclusive, 153, 158 to 160 inclusive.)

(2) It failed to give effect to Appellee's actual experience during the years under investigation under the recorded return from the existing rates and to the comparable actual experience of the Associated Companies of the Bell System.

(Assignments of Error 152, 154, 155 to 157 inclusive.)

(3) It failed to make any application of that part of the standard of the Bluefield case covering the required minimum return to attract capital and to maintain the stability of the securities of the complaining utility, and misapplied [fol. 2677i] that part of the standard of the Bluefield case covering the required minimum return by comparison with the return generally received by investors in other business undertakings of corresponding risks and uncertainties.

(Assignment of Error 156.)

(4) Its Findings on Fair Return covering the year 1932 and thereafter had no facts in the record in support thereof and were based on facts of other business undertakings of

which the District Court claimed it took judicial notice which had no application to the distinctive essential conditions surrounding Appellee's operations and its relations to its investors.

(Assignment of Error 153.)

Minute Book

The District Court erred in denying Appellants' Motion to require Appellee to make available for inspection the Minute Books of the American Telephone & Telegraph Company, covering the periods 1920 to 1922 inclusive, and 1923 through the years under investigation. (Assignment of Error 166.)

General.

The District Court erred in the relief granted, in failing to find the conclusions set forth in Assignments of Error 171 to 175 inclusive, and in making the conclusions set forth in Assignments of Error 161 to 170 inclusive, and 176.

The District Court erred in failing to comply with the terms of Federal Equity Rule 70½. (Assignments of Error 177 and 178.)

[fol. 2677j] And Appellants further state that the entire Transcript of Record is necessary for proper consideration of the case on appeal; and there has been printed Volumes 1 to 7 and Volumes 15 to 21 of the Transcript, and the Clerk should therefore print the portions of the Transcript of Record not printed, which are:

Volume Number 8 of Transcript of Record, containing Objections to Exhibits, Answers to Objections, and Requests for Findings by the parties hereto;

Volume Number 9 of Transcript of Record, containing Orders, Motions, etc.;

Volume Numbers 10 to 14 inclusive of Transcript of Record, containing Exhibits of the parties hereto.

Proof of Service on Appellee is appended hereto.

Benjamin F. Lindheimer, Ernest J. Kruetgen, Andrew Olson, G. Gale Gilbert, Phil. W. Collins, Paul Samuell, Charles E. Byrne, Constituting the Illinois Commerce Commission. Otto Kerner, Attorney General of the State of Illinois. City of Chicago, Intervenor, by Wm. H. Sexton, Corporation Counsel; Geo. I. Haight, Benjamin F. Goldstein, Edmund D. Adcock, Special Counsel.

[fol. 2677k] AFFIDAVIT OF SERVICE

STATE OF ILLINOIS,
County of Cook, ss:

Harry H. Ruskin, being first duly sworn, upon his oath deposes and says that he is a resident of the state aforesaid, and of the County of Cook; that he is employed in the office of Benjamin F. Goldstein, one of the Counsel for Appellants in the above entitled cause; that he has this day served on the attorneys for the Illinois Bell Telephone Company the following documents:

[fols. 2677l & 2677m] Copy of Statement of Points Upon Which Appellants Intend to Rely, Under Rule 13 of Rules of Supreme Court of United States, and Designation of Parts of Record to be Printed,

by delivering the said document to Leslie N. Jones, counsel for Appellee, 212 West Washington Street, Chicago, Illinois, on the 7th day of September, 1933, at the hour of 10 A. M.

Harry H. Ruskin.

Subscribed and sworn to before me this 7th day of September, A. D. 1933. Kathleen Butler, Notary Public. (Seal of Kathleen Butler, Notary Public, Cook County, Ill.)

[fol. 2677n] [File endorsement omitted.]

[fols. 2678 & 2679] IN UNITED STATES DISTRICT COURT

LINDHEIMER et al., etc., and CITY OF CHICAGO, Appellants,

vs.

ILLINOIS BELL TELEPHONE COMPANY, Appellee

STIPULATION AS TO EXHIBITS

For the purpose of shortening the record in the Supreme Court it is stipulated:

1. That there be included in the record on appeal to the Supreme Court a complete copy of Exhibit A-2 containing the Sloan study for December 31, 1923 and the summary sheet only of Exhibits A-3 to A-10, inclusive, with such further sheets therefrom as were specifically referred to during the testimony of W. F. Sloan. Plaintiff's Exhibits A-2 to A-10, both inclusive, are a series of exhibits cover-

ing the years 1923 to 1931, respectively, identical in form, each comprising 78 pages showing corresponding data for each year.

2. That the method employed by Sloan in the studies identified as Exhibits A-3 to A-10, inclusive, was identically the same method shown in Exhibit A-2 except for those variations specifically disclosed in the testimony of Sloan, which variations Appellants do not question and shall not question in the Supreme Court.

3. That the method employed by Sloan as shown by Exhibit A-2 and the testimony was applied, without mathematical error in the computations, to arrive at the results shown by the summary sheets of A-3 to A-10, inclusive.

[fol. 2680] 4. Appellants shall not, in the Supreme Court, urge that the plaintiff has failed to sustain its burden of proof by reason of the fact that said Exhibits A-3 to A-10 are not in the record in the Supreme Court.

For the purpose of shortening the record in the Supreme Court it is agreed:

1. That Appellants will not raise, in the Supreme Court, the issue of the correctness of the separation made by plaintiff of its property in its Chicago Exchange as between exchange, intrastate and interstate.

2. That Appellants shall not raise, in the Supreme Court, any question of the correctness of the amount of the Pension Fund Accruals of the American Telephone and Telegraph Company and of the Illinois Bell Telephone Company.

3. That there is included in the record in the Supreme Court, from Exhibit A-17, Items 1, 2, 3 and 4 and Sheets 20, 21 and 22. The method employed by witness Renwick in arriving at the reconstruction value of each of the buildings of Appellee in its Chicago Exchange as of December 31st of each of the years 1923 to 1930, inclusive, was identical to that shown by said Items 1 to 4, inclusive; that the figures shown on Sheet 20 of said Exhibit, which is also included in the record, are the correct totals of the reconstruction costs of the various buildings so arrived at, the details for which are omitted from the record in the Supreme Court, except for Items 1 to 4, inclusive; that Sheets

21 and 22 contain reconstruction costs of said buildings for 1931 arrived at on the same basis as for the previous years.

[fol. 2681] 4. That there is included in the record Sheet 1 of Exhibit A-18, which gives the total valuations as of December 31st of each of the years 1923 to 1930, inclusive, of all of the real estate and leaseholds, exclusive of improvements, valued in the opinion of witness Huston in the manner stated in the evidence. Said valuations are the totals for each year of the corresponding values for the several individual parcels of land and leaseholds owned by said Appellee during said period, as such individual values were shown in the detail sheets of Exhibit A-18, which said detail sheets are omitted from the record in the Supreme Court. That the values shown on Sheet 48 covering the year 1931 were arrived at on the same basis, and the detail sheets covering that year are likewise omitted.

5. That Appellants will not raise, in the Supreme Court, any question relating to the accuracy and correctness of Exhibits A-146, A-147 and A-148 as an Actuarial Study, nor will they question that Exhibits A-131 to A-145, inclusive, and Exhibit A-149 (showing in part the details and method by which Witness Hunter arrived at his conclusions shown in Exhibits A-146, A-147 and A-148) support said Exhibits A-146, A-147 and A-148.

6. That Appellants will not raise any issue on this appeal that the figures shown in Exhibit A-108 are unsupported because of the omission from the record of Exhibits [fol. 2682] A-102 to A-107, inclusive, which said exhibits showed the details of the amounts appearing in A-108 on the basis described by Witness Gherardi, nor will Appellants raise any issue of the correctness of the figures in A-108 on the basis of the method of allocation described by said Witness Gherardi.

7. It is agreed that, for all issues arising on appeal, Exhibits A-19 to A-21, inclusive, A-23 to A-38, inclusive, and A-210, omitted from the record in the Supreme Court, showed a very thorough inspection of Appellee's property in its Chicago Area in minute detail as of December 31, 1930, the summary sheet of which, Exhibit A-2, is included, and accurately recorded what the inspection purported to show, that is, the per cent condition of the property as that term was used and understood by Appellee's witnesses. No

question will be raised by Appellants in the Supreme Court because of the omission of said exhibits from the record.

WM. H. SEXTON,
GEO. I. HAIGHT,
BENJAMIN F. GOLDSTEIN,
EDMUND D. ADCOCK,
OTTO KERNER,
Solicitors for Appellants.
CHARLES M. BRACELEN,
W. H. THOMPSON,
E. L. BLACKMAN,
K. F. BURGESS,
LESLIE N. JONES,
Solicitors for Appellee.

[illegible]

[illegible]

TRANSCRIPT OF RECORD

EXHIBITS

Supreme Court of the United States

OCTOBER TERM, 1933

No. 440

BENJAMIN F. LINDHEIMER AND OTHERS, CONSTITUTING THE ILLINOIS COMMERCE COMMISSION OF THE STATE OF ILLINOIS; OTTO KERNER, ATTORNEY GENERAL OF THE STATE OF ILLINOIS, AND THE CITY OF CHICAGO, APPELLANTS,

vs.

ILLINOIS BELL TELEPHONE COMPANY

No. 548

ILLINOIS BELL TELEPHONE COMPANY, APPELLANT,

vs.

BENJAMIN F. LINDHEIMER AND OTHERS, CONSTITUTING THE ILLINOIS COMMERCE COMMISSION OF THE STATE OF ILLINOIS; OTTO KERNER, ATTORNEY GENERAL OF THE STATE OF ILLINOIS, AND THE CITY OF CHICAGO

APPEALS FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF ILLINOIS

FILED SEPTEMBER [illegible], 1933

FILED OCTOBER [illegible], 1933

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1933

No. 440

BENJAMIN F. LINDHEIMER AND OTHERS, CONSTITUTING THE ILLINOIS COMMERCE COMMISSION OF THE STATE OF ILLINOIS; OTTO KERNER, ATTORNEY GENERAL OF THE STATE OF ILLINOIS, AND CITY OF CHICAGO, APPELLANTS,

vs.

ILLINOIS BELL TELEPHONE COMPANY

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF ILLINOIS

VOL. IV

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[fol. 2683]

EXHIBIT A-1

Illinois Bell Telephone Company, Chicago Area

Final Summary, June 30, 1923

	I. C. C. Account	Cost of Reproduction
207–01	Right of Way—Exchange	$340,761
207–02	Right of Way—Toll	2,611
211	Land	1,781,774
212	Buildings	13,690,978
221	Central Office Telephone Equipment	30,442,545
222	Other Equipment of Central Offices	847,150
231	Station Apparatus	9,903,479
232	Station Installations	7,180,006
233	Interior Block Wires	38,965
~~234~~	Private Branch Exchanges	5,192,846
235	Booths and Special Fittings	508,127
241	Exchange Pole Lines	3,259,502
242	Exchange Aerial Cable	3,885,604
243	Exchange Aerial Wire	2,380,134
244	Exchange Underground Conduit	20,370,111
245	Exchange Underground Cable	20,244,068
246	Exchange Submarine Cable	1,051
251	Toll Pole Lines	129,991
252	Toll Aerial Cable	9,220
253	Toll Aerial Wire	166,771
254	Toll Underground Conduit	736,754
255	Toll Underground Cable	1,371,615
256	Toll Submarine Cable	
	Miscellaneous (Pict. transm. equip't, etc.)	1,044
	Omissions and Contingencies	551,264
	Total	$123,036,371
	Engineering—5%	6,151,819
	Administrative and Legal—2%	2,460,727
	Insurance	443,520
	Taxes during Construction	2,163,856
	Interest during Construction	9,604,676
	Total Structural Plant	$143,860,969
	General Equipment	1,387,375
	Total	$145,248,344
	Adjustment in Station Installation Account	583,465

I. C. C. Account	Cost of Reproduction
Undistributed Construction Costs	98,755
Total Adjustment	$682,220
Total	$144,566,124

[fol. 2684] Cost of Reproduction of Property of Illinois Bell Telephone Company

Chicago Area

December 31, 1923

[fol. 2685] Exhibit A-2

Illinois Bell Telephone Company, Chicago Area

December 31, 1923

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[fol. 2686] Illinois Bell Telephone Company, Chicago Area

Final Summary, December 31, 1923

I. C. C. Account		Cost of Reproduction
207–01	Right of Way—Exchange	$364,130
207–02	Right of Way—Toll	2,656
211	Land	2,017,821
212	Buildings	13,922,895
221	Central Office Telephone Equipment	31,350,450
222	Other Equipment of Central Offices	841,928
231	Station Apparatus	10,322,633
232	Station Installations	6,539,138
233	Interior Block Wires	36,698
234	Private Branch Exchanges	5,445,772
235	Booths and Special Fittings	498,926
241	Exchange Pole Lines	3,373,904
242	Exchange Aerial Cable	3,909,636
243	Exchange Aerial Wire	2,342,593
244	Exchange Underground Conduit	20,756,618
245	Exchange Underground Cable	21,436,984
246	Exchange Submarine Cable	1,068
251	Toll Pole Lines	135,341
252	Toll Aerial Cable	9,476
253	Toll Aerial Wire	163,641
254	Toll Underground Conduit	737,886
255	Toll Underground Cable	1,421,795
256	Toll Submarine Cable	
	Miscellaneous (Pict. transm. equip't, etc.)	16,982
	Omissions and Contingencies	539,236
	Total	$126,188,207
	Engineering—5%	6,309,410
	Administrative and Legal—2%	2,523,764
	Insurance	390,045
	Taxes during Construction	2,220,912
	Interest during Construction	9,905,774
	Total Structural Plant	$147,538,112
	General Equipment	1,509,746
	Total	$149,047,858

[fol. 2687]

Illinois Bell Telephone Company, Chicago Area

Cost of Reproduction of Plant in Service Exclusive of Land, Buildings and Capitalized Overheads as of December 31, 1923

	J. C. C. Account	Cost of Reproduction June 30, 1923 at Dec. 31, 1923 Cost Level	Gross Additions July 1 to Dec. 31, 1923 at Dec. 31, 1923 Cost Level	Retirements July 1 to Dec. 31, 1923 at Dec. 31, 1923 Cost Level	Cost of Reproduction Dec. 31, 1923
207-01	Right of Way—Exch	$346,622	$15,193	$2,315*	$364,130
207-02	Right of Way—Toll	2,656	....	....	2,656
221	C. O. Telephone Equip	30,328,069	1,198,089	175,708	31,350,450
222	Other Equip. of C. O.	821,905	41,353	21,330	841,928
231	Station Apparatus	9,764,830	1,208,645	650,842	10,322,633
232	Station Installations	6,291,121	603,013	354,996	6,539,138
233	Interior Block Wires	36,705	7*	....	36,698
234	Private Branch Exchanges	5,185,004	539,475	278,707	5,445,772
235	Booths & Spl. Fittings	504,113	13,013	18,200	498,926
241	Exchange Poll Lines	3,308,802	122,868	57,766	3,373,904
242	Exchange Aerial Cable	3,845,971	142,970	79,305	3,909,636
243	Exchange Aerial Wire	2,223,283	184,208	64,898	2,342,593
244	Exchange U. G. Conduit	20,400,666	386,915	30,963	20,756,618
245	Exchange U. G. Cable	20,563,924	1,055,354	182,294	21,436,984
246	Exchange Submarine Cable	1,068	....	....	1,068
251	Toll Pole Lines	134,814	1,502	975	135,341
252	Toll Aerial Cable	9,476	....	....	9,476
253	Toll Aerial Wire	163,169	472	....	163,641
254	Toll U. G. Conduit	737,859	27	....	737,886
255	Toll U. G. Cable	1,407,277	14,833	315	1,421,795
256	Toll Submarine Cable	....	....	....	....
	Miscellaneous	1,044	15,938	....	16,982
	Total	$106,078,378	$5,543,861	$1,913,984	$109,708,255

* Red.

[fol. 2688]

Illinois Bell Telephone Company, Chicago Area

Total Plant.

I. C. C. Account		Cost of Reproduction Exclusive of Capitalized Overheads June 30, 1923	% Ratio of Dec. 31, 1923 Cost Level to June 30, 1923 Cost Level	Cost of Reproduction of June 30, 1923 at Cost Level of Dec. 31, 1923
207-01	Right of Way—Exchange	$340,761	101.72	$346,622
207-02	Right of Way—Toll	2,611	101.72	2,656
221	Cent. Office Tel. Equip't.			
	Manual—Local Exchange	23,759,535	101.20	24,044,649
	Local Tandem	56,059	100.88	56,552
	Toll—I. B. T.	598,962	101.92	610,462
	Toll Recording—I. B. T.	70,842	101.92	72,202
	Toll—Long Lines	741,764	101.92	756,006
	Toll— Telephone Term. Equip't.	206,501	100.00	206,501
	Telegraph Equip't.	521,644	100.00	521,644
	Dial	4,487,238	90.48	4,060,053
	Total	$30,442,545		$30,328,069
222	Other Equip't. of Cent. Off.	847,150	97.02	821,905
231	Station Apparatus Exchange Equip't.	9,903,479	98.60	9,764,830
	Teletypewriter Equip't.	....	.....	....
	Total	$9,903,479		$9,764,830
232	Station Installations	6,596,541	95.37	6,291,121
233	Interior Block Wires	38,965	94.20	36,705
234	Private Branch Exchanges			
	Non-Multiple	3,634,992	100.05	3,636,809
	Multiple	1,557,854	99.38	1,548,195
	Total	$5,192,846		$5,185,004
235	Booths and Special Fittings	508,127	99.21	504,113
241	Exchange Pole Lines	3,259,502	101.51	3,308,802
242	Exchange Aerial Cable	3,885,604	98.98	3,845,971

Illinois Bell Telephone Company, Chicago Area

Total Plant

	I. C. C. Account	Cost of Reproduction Exclusive of Capitalized Overheads June 30, 1923	% Ratio of Dec. 31, 1923 Cost Level to June 30, 1923 Cost Level	Cost of Reproduction of June 30, 1923 at Cost Level of Dec. 31, 1923
243	Exchange Aerial Wire	2.380.134	93 41	2.223.283
244	Exchange Underground Conduit	20.370.111	100 15	20.400,666
245	Exchange Underground Cable	20.244.068	101 58	20.563.924
246	Exchange Submarine Cable	1.051	101 58	1,068
251	Toll Pole Lines	129.991	103 71	134,814
252	Toll Aerial Cable	9.220	102 78	9,476
253	Toll Aerial Wire	166.771	97 84	163,169
254	Toll Underground Conduit	736.754	100 15	737,859
255	Toll Underground Cable	1.371.615	102 60	1.407,277
256	Toll Submarine Cable			
	Miscellaneous	1.044	100 00	1,044
	Total	$106.428.890		$106.078,378

[fol. 2689]

Illinois Bell Telephone Company, Chicago Area

Gross Additions, July 1 to December 31, 1923

	I. C. C. Account	Gross Additions as per Books	Gross Additions as per Books Exclusive of Capitalized Overheads	% Ratio of Dec. 31, 1923 Cost Level to Average Cost Level of July-Dec. 1923	Gross Additions at Cost Level of Dec. 31, 1923
207–01	Right of Way—Exchange	$17.319	$15.102	100.60	$15.193
207–02	Right of Way—Toll				
221	Cent. Office Tel. Equip.				
	Manual—Local Exchange	826.253	788.741	96 93	764.527
	Local Tandem				
	Toll—I. B. T.	938	895	102 03	913

	Toll Recording—I. B. T.	....	....	......	....
	Toll—Long Lines	....	....	......	....
	Toll—Telephone Term. Equip.	53.730	51.291	100.00	51.291
	Telegraph Equip.	13.570	12.954	100.00	12,954
	Dial	421.833	407.617	90.38	368,404
	Total	$1,316,324	$1.261.498		$1,198,089
222	Other Equip. of Cent. Off.	41.987	41.987	98.49	41,353
231	Station Apparatus Exchange Equipment	1.142.369	1.138.942	106.12	1,208,645
232	Station Installations	679,145	606.137	99.49	603,013
233	Interior Block Wires	8*	7*	95.07	7*
234	Private Branch Exchanges				
	Non-Multiple	447.845	438.082	100.71	441,192
	Multiple	101.209	97.930	100.36	98,283
	Total	$549.054	$536.012		$539,475
235	Booths & Special Fittings	13.257	13.013	100.00	13,013
241	Exchange Pole Lines	130.048⁑	122.505	100.30	122.868
242	Exchange Aerial Cable	152.924⁑	142.984	99.99	142,970
243	Exchange Aerial Wire	203.534⁑	192,747	95.57	184,208
244	Exchange Underground Conduit	429.061⁑	385.297	100.42	386,915
245	Exchange Underground Cable	1,093.870⁑	1.040.270	101.45	1,055,354
246	Exchange Submarine Cable	....	....		
251	Toll Pole Lines	1,572⁑	1.487	101.03	1,502
252	Toll Aerial Cable	....	....		....
253	Toll Aerial Wire	519⁑	501	94.18	472
254	Toll Underground Conduit	30⁑	27	100.42	27
255	Toll Underground Cable	14.861⁑	14.475	102.47	14,833
256	Toll Submarine Cable	....	....		....
	Miscellaneous	16.777	15.938	100.00	15,938
	Total	$5.802.643	$5.528.915		$5,543,861

* Red.
⁑ Adjusted.

[fol. 2690]

Illinois Bell Telephone Company, Chicago Area

Retirements, July 1 to December 31, 1923

	I. C. C. Account	Retirements as per Books	% Ratio of Dec. 31, 1923, Cost Level (Excl. of Cap. Overheads) to Avg. Retirement Cost Level of July 1 to Dec. 31, 1923	Retirements at Cost Level of Dec. 31, 1923, Exclusive of Overheads
207 01	Right of Way—Exchange	$1,610*	143.76	$2,315*
207 02	Right of Way—Toll			
221	Cent. Office Tel. Equip't.			
	Manual—Local Exchange	70,843	177.04	125,420
	Local Tandem			
	Toll—I. B. T.	4,857	93.55	4,544
	Toll Recording—I. B. T.			
	Toll—Long Lines			
	Toll—Tel. Term. Equip't.	3,691	98.47	3,635
	Telegraph Equip't.	30,735	118.16	36,318
	Dial	6,630	87.35	5,791
	Total	$116,756		$175,708
222	Other Equip't. of Cent. Off.	22,665	94.11	21,330
231	Station Apparatus Exchange Equipment	561,718	115.87	650,842
232	Station Installations	332,611	106.73	354,996
233	Interior Block Wires			
234	Private Branch Exchanges:			
	Non-Multiple	239,921	108.66	260,698
	Multiple	12,099	148.85	18,009
	Total	$252,020		$278,707
235	Booths and Special Fittings	18,541	98.16	18,200
241	Exchange Pole Lines	37,192	155.32	57,766

242	Exchange Aerial Cable	62.376	127.14	[illegible]
243	Exchange Aerial Wire	60.777	103.78	[illegible]
244	Exchange Underground Conduit	14.159	218.68	[illegible]
245	Exchange Underground Cable	156.261	116.66	[illegible]
246	Exchange Submarine Cable			[illegible]
251	Toll Pole Lines			
252	Toll Aerial Cable	624	153.32	975
253	Toll Aerial Wire			
254	Toll Underground Conduit			
255	Toll Underground Cable			
256	Toll Submarine Cable	307	102.65	315
	Miscellaneous			
	Total	$1.634.397		$1.913.984

* Red.

[fol. 2691] Illinois Bell Telephone Company, Chicago Area

Account 207 Right of Way

Cost Trend, June 30 to Dec. 31, 1923

		Average Monthly Rates of Pay		
	Quan.	6 30 23	7-1 to 12-31	12 31 23
Right of Way Agent	1	$200.00	$202.26	$203.57
Plant Supervision and Tool Expense		16.60	16.70	16.75
Transportation Cost		8.80	8.85	8.95
Total Cost		$225.40	$227.90	$229.27

Ratio Dec. 31, 1923 to June 30, 1923	101.72%
" " " " " July-December Average	100.60%

[fol. 2692] Illinois Bell Telephone Company, Chicago Area

Account 207-01 Right of Way Exchange

Retirement Conversion Factor, June 30 to Dec. 31, 1923

Book Cost, including capitalized overheads, of plant in service June 30, 1923	$241,113
Appraisal Cost at Dec. 31, 1923 cost level, exclusive of capitalized overheads, of plant in service June 30, 1923	346,622
Ratio of Dec. 31, 1923 cost to Book Cost	143.76%

[fol. 2693] Illinois Bell Telephone Company, Chicago Area

Account 207-02 Right of Way Toll

Retirement Conversion Factor, June 30 to Dec. 31, 1923

Book Cost, including capitalized overheads, of plant in service June 30, 1923	$1,662
Appraisal Cost at Dec. 31, 1923 cost level, exclusive of capitalized overheads, of plant in service June 30, 1923	2,656
Ratio of Dec. 31, 1923 cost to Book Cost	159.81%

[fol. 2694] Illinois Bell Telephone Company, Chicago Area

Account 221 Central Office Telephone Equipment

Manual—Local Exchange

Composite Material and Labor Cost Trend

Total Plant, June 30 to Dec. 31, 1923

	Unit	Quan.	Cost 6-30-23	Cost 12-31-23
Sections, "A" Board	Sect.	927	$519,769	$519,769
Cord circuits, subscriber	Cct.	47,277	1,715,682	1,926,065
Subscriber answering jacks	"	330,800	2,474,384	2,477,692

	Unit	Quan.	Cost 6 30 23	Cost 12 31 23
Outgoing trunk multiple jacks	Jack	1,981,300	970,837	970,837
Message registers	Ea.	122,830	520,799	520,799
Outgoing call wire circuits	Cct.	268,367	206,643	230,796
Sections, "B" Board	Sect.	663	363,715	357,145
Subscriber multiple jacks	Jack	5,887,740	4,769,069	4,769,069
Incoming trunk circuits				
Call wire	Cct.	56,599	1,688,348	1,739,853
Straightforward	"			
Key display call indicator	"	3,950	254,657	256,197
Frames and protectors	C. Lines	7,174	744,087	750,257
Power plants	Ea.	34	541,803	568,372
Total Material Cost			$14,769,793	$15,086,851
Equipment Specifications			827,108	814,690
Installation Cost			3,618,599	3,545,410
Total Cost Installed			$19,215,500	$19,446,951

Ratio Dec. 31, 1923 to June 30, 1923 Cost Installed 101.20%

[fol. 2695] Illinois Bell Telephone Company, Chicago Area

Account 221 Central Office Telephone Equipment

Manual Local Exchange

Composite Material and Labor Cost Trend

Gross Additions, June 30 to Dec. 31, 1923

	Unit	Quan.	Avg. Cost 7 1 to 12 31	Cost 12 31 23
Positions				
"A" Board	Pos.	311	$195,777.61	$215,392.38
Call circuit, "B" Board	"	122	175,621.44	180,013.44
Straightforward	"			
Key display call indicator	"	2	6,189.40	6,226.28
Automatic display call indicator	"			
Straightforward applique	"			
Outgoing call wire circuits	Cct.	26,187	20,687.73	22,520.82
Sections, "A" Board	Sect.	105	58,873.50	58,873.50
" "B" "	"	64	35,008.64	34,475.52
Subscriber multiple jacks	Jack	691,800	560,358.00	560,358.00
" answering jacks	Cct.	36,240	271,075.20	271,437.60
Message registers	Ea.	71,800	304,432.00	304,432.00
Outgoing trunk multiple jacks	Jack	330,840	162,111.60	162,111.60
Battery, 24 volt	Ea.	4	13,726.72	13,726.72
" 48 "	"	2	1,940.92	1,940.92
Charging sets	"	5	9,470.70	10,003.15
Ringing sets	"	4	4,180.24	4,180.24
Total Material Cost			$1,819,453.70	$1,845,692.17
Equipment Specifications			109,167.22	99,667.38
Installation Costs			525,822.12	433,737.66
Total Cost Installed			$2,454,443.04	$2,379,097.21

Ratio Dec. 31, 1923 to July to Dec. Average Cost Installed.... 96.93%

[fol. 2696] Illinois Bell Telephone Company, Chicago Area

Account 221 Central Office Telephone Equipment

Manual Local Exchange

Retirement Conversion Factor, June 30 to Dec. 31, 1923

Original cost, including capitalized overheads, of retirements analyzed	$410,898
Dec. 31, 1923 cost, exclusive of capitalized overheads, of retirements analyzed	727,436
Ratio of Dec. 31, 1923 cost to original cost	177.04%

[fol. 2697] Illinois Bell Telephone Company, Chicago Area

Account 221 Central Office Telephone Equipment

Manual Local Tandem

Composite Material and Labor Cost Trend

Total Plant, June 30 to Dec. 31, 1923

	Unit	Quan.	Cost 6 30 23	Cost 12 31 23
Sections, tandem	Sect.	15	$8,228 85	$8,080 20
Outgoing trunk multiple jacks	Jack	15,000	7,350 00	7,350 00
Outgoing call wire circuits	Cct.	2,880	2,217 60	2,476 80
Incoming trunk circuits	"			
Call wire	"	770	22,969 10	23,669 80
Key display call indicator	"	90	5,802 30	5,837 40
Straightforward applique	"		....	....
Total Material Cost			$46,567 85	$47,414 20
Equipment Specifications			2,607 80	2,560 37
Installation Cost			11,409 12	11,142 34
Total Cost Installed			$60,584 77	$61,116 91
Ratio Dec. 31, 1923 to June 30, 1923 Cost Installed				100 88%

[fol. 2698] Illinois Bell Telephone Company, Chicago Area

Account 221—Central Office Telephone Equipment

Manual—Local Tandem

Composite Material and Labor Cost Trend

Gross Additions, June 30 to Dec. 31, 1923

No Gross Additions during this period.

[fol. 2699] Illinois Bell Telephone Company, Chicago Area
Account 221—Central Office Telephone Equipment
Manual—Toll—I. B. T. and Long Lines
Composite Material and Labor Cost Trend
Total Plant, June 30 to Dec. 31, 1923

	Unit	Quan.	Cost 6-30-23	Cost 12-31-23
Sections, toll	Sect.	182	$71,393	$74,123
Toll primary answering jacks	Cct.	1,310	12,091	12,104
Toll secondary answering jacks	Jack	5,290	18,832	18,885
Toll cord circuits	Cct.	2,554	128,492	141,773
" recording trunk ans. jacks	Jack	9,140	20,318	20,291
Toll line multiple jacks	"	44,880	117,406	117,586
" recording cord circuit	Cct.	180	4,932	6,336
" outgoing trunk multiple jacks	Jack	309,000	152,492	151,410
Frames and protectors	C Lines	215	22,300	22,485
Power plants	Ea.	1	15,935	16,717
Total Material Cost			$564,191	$581,710
Equipment Specifications			31,595	30,831
Installation Cost			138,227	135,538
Total Cost Installed			$734,013	$748,079

Ratio Dec. 31, 1923 to June 30, 1923 Cost Installed 101.92%

Above ratio used on Manual—Toll Recording Switchboard.

[fol. 2700] Illinois Bell Telephone Company, Chicago Area
Account 221—Central Office Telephone Equipment
Manual—Toll—I. B. T. and Long Lines
Composite Material and Labor Cost Trend
Gross Additions, June 30 to Dec. 31, 1923

	Unit	Quan.	Avg. Cost 7-1 to 12-31	Cost 12-31-23
Sections, toll	Sect.	182	$71,848	$74,123
Toll primary answering jacks	Cct.	1,310	12,104	12,104
Toll secondary answering jacks	Jack	5,290	18,885	18,885
Toll cord circuits	Cct.	2,554	130,714	141,773
" recording trunk ans. jacks	Jack	9,140	20,291	20,291
Toll line multiple jacks	"	44,880	117,586	117,586
" recording cord circuits	Cct.	180	5,166	6,336
Toll outgoing trunk multiple jacks	Jack	309,000	151,410	151,410
Frames and protectors	C Lines	215	22,485	22,485
Power plants	Ea.	1	16,344	16,717
Total Material Cost			$566,833	$581,710
Equipment Specifications			30,831	30,831
Installation Cost			135,538	135,538
Total Cost Installed			$733,202	$748,079

Ratio Dec. 31, 1923 to July to December Average Cost Installed 102.03%

[fol. 2701] Illinois Bell Telephone Company, Chicago Area

Account 221—Central Office Telephone Equipment

Toll—Telephone Terminal Equipment

Composite Material and Labor Cost Trend

Total Plant, June 30 to Dec. 31, 1923

	Cost 6-30-23	Cost 12-31-23
Typical plant in service 6–30–23	$147,114	$147,114
Total Material Cost	147,114	147,114
Equipment Specification	8,238	8,091
Installation Cost	36,043	35,307
Total Cost Installed	$191,395	$190,512
Ratio Dec. 31, 1923 to June 30, 1923 Cost Installed		100%

[fol. 2702] Illinois Bell Telephone Company, Chicago Area

Account 221—Central Office Telephone Equipment

Toll—Telegraph Equipment

Composite Material and Labor Cost Trend

Total Plant, June 30 to Dec. 31, 1923

	Cost 6-30-23	Cost 12-31-23
Typical plant in service 6–30–23	$242,425	$242,425
Total Material Cost	$242,425	$242,425
Equipment Specifications	13,576	13,333
Installation Cost	59,394	58,182
Total Cost Installed	$315,395	$313,940
Ratio Dec. 31, 1923 to June 30, 1923 Cost Installed		100%

[fol. 2703] Illinois Bell Telephone Company, Chicago Area

Account 221—Central Office Telephone Equipment

Dial

Composite Material and Labor Cost Trend

Total Plant, June 30 to Dec. 31, 1923

	Cost 6-30-23	Cost 12-31-23
State—Central Office Total Cost Installed	$4,487,238	$4,060,243
Ratio Dec. 31, 1923, to June 30, 1923, Cost Installed		90.48%

[fol. 2704] Illinois Bell Telephone Company, Chicago Area.

Account 221—Central Office Telephone Equipment

Dial

Composite Material and Labor Cost Trend

Gross Additions, June 30 to Dec. 31, 1923

The gross additions to Dial Equipment during this period consist principally of equipment purchased under the original State-Central contract but cut into service after June 30, 1923. The cost ratio is therefore based on the relation of the cost of this equipment at the Dec. 31, 1923 cost level and its original cost. This ratio is 90.38%.

[fol. 2705] Illinois Bell Telephone Company, Chicago Area

Account 221—Central Office Telephone Equipment

Dial

Retirement Conversion Factor, June 30 to Dec. 31, 1923

Original cost, including capitalized overheads, of retirements analyzed	$6,630
Dec. 31, 1923 cost, exclusive of capitalized overheads, of retirements analyzed	5,791
Ratio of Dec. 31, 1923 cost to original cost	87.35%

[fol. 2706] Illinois Bell Telephone Company, Chicago Area

Account 222 Other Equipment of Central Offices

Material Cost Trend

Total Plant, June 30 to Dec. 31, 1923

	Unit	Quan.	Cost 6 30 23	Cost 12 31 23
Lockers steel	ea.	29.4	$999.00	$934.92
" material	"	5.7	176.70	176.70
Chairs rest room	"	27.1	460.70	453.92
" operators	"	67.5	600.08	527.85
" office	"	27.2	456.42	456.14
Desks double	"	3.4	234.30	234.29
" single	"	4.6	211.05	211.05
Linoleum	sq. yd.	977.7	2933.10	2933.10
Fire eq'p't. exting	ea.	17.2	220.68	220.68
" " tanks	"	4.1	79.99	79.99
Electric fans	"	15.5	372.00	372.00
Total			$6744.68	$6600.64
Supply Expense			539.57	466.67
Total Material Cost			$7284.25	$7067.31
Average Material Cost, July-Dec. 1923			$7175.78	
Ratio Dec. 31, 1923 to June 30, 1923				97.02%
" " " " " July-December average				98.49%

Gross Additions

Using the average material cost, the cost trend ratio for gross additions for the period June 30, 1923 to Dec. 31, 1923 is computed to be 98.49%.

[fol. 2707] Illinois Bell Telephone Company, Chicago Area

Account 222 Other Equipment of Central Offices

Retirement Conversion Factor, June 30 to Dec. 31, 1923

Book cost, including capitalized overheads, of plant in service June 30, 1923	$873,376
Appraisal cost at Dec. 31, 1923 cost level, exclusive of capitalized overheads, of plant in service June 30, 1923	821,905
Ratio of Dec. 31, 1923 cost to book cost	94.11%

[fol. 2708] Illinois Bell Telephone Company, Chicago Area

Account 231—Station Apparatus

Material Cost Trend

Total Plant, June 30 to Dec. 31, 1923

	Unit	Quan.	Cost 6–30–23	Cost 12–31–23
Desk stands, 40AL	ea.	2.91	$7.57	$7.57
" " 20CF	"	3.64	10.56	10.56
" " 50AL	"	.11	.33	.33

Hand sets, B1 A3	"			
Subscribers sets, 534A	"	3.13	12.36	12.36
" " 534AC	"	3.64	21.48	21.48
Coin collectors, 7A	"	1.89	14.91	14.35
" " 7J	"	2.00	18.70	18.70
" " 50G	"	.15	4.52	4.52
Cords, 450	"	2.91	2.88	2.88
" 6009	"			
" 473	"	3.64	4.37	4.37
" 6011	"			
" 600B	"	.11	.16	.16
" 6000	"			
Dials, 2AE	"	.11	.54	.54
" 2HA3	"			
Transmitters, 323	"			
Receiver, 144	"			
Backboards, 148A	"	2.73	1.64	1.64
" 150A	"	1.17	.41	.41
Protector, 58AP	"	3.18	3.31	3.31
Total			$103.74	$103.18
Supply Expense			8.30	7.29
Total Material Cost			$112.04	$110.47

Ratio Dec. 31, 1923 to June 30, 1923 .... 98.60%

[fol. 2709] Illinois Bell Telephone Company, Chicago Area

Account 231 Station Apparatus

Material Cost Trend

Gross Additions, June 30 to Dec. 31, 1923

	Unit	Quan.	Avg. Cost 7 1 to 12 31	Cost 12 31 23
Desk stands, 40AL	ea.	.24	$.62	$.62
" " 20CF	"	.36	1.04	1.04
" " 50AL	"	.03	.09	.09
Hand sets, B1 A3	"			
Subscribers sets, 534A	"	.27	1.07	1.07
" " 534AC	"	.36	2.12	2.12
Coin collectors, 7A	"	.14	.52	1.10
" " 7J	"	.25	2.34	2.34
" " 50G	"	.01	.30	.30
Cords, 450	"	.24	.24	.24
" 6009	"			
" 473	"	.36	.43	.43
" 6011	"			
" 600B	"	.03	.04	.04
" 6000	"			
Dials, 2AE	"	.03	.15	.15
" 2HA3	"			
Transmitters, 323	"			
Receiver, 144	"			
Backboards, 148A	"	.22	.13	.13
" 150A	"	.16	.06	.06
Protector, 58AP	"	.30	.31	.31
Total			$9.46	$10.04
Supply Expense			.67	.71
Total Material Cost			$10.13	$10.75

Ratio Dec. 31, 1923 to July-December Average 106.12%

[fol. 2710] Illinois Bell Telephone Company, Chicago Area

Account 231—Station Apparatus

Retirement Conversion Factor, June 30 to Dec. 31, 1923

Complete Sets are retired at average book costs.	
Book cost, including capitalized overheads, of plant in service June 30, 1923	$8,322,949
Appraisal cost at Dec. 31, 1923 cost level, exclusive of capitalized overheads, of plant in service June 30, 1923	9,903,479
Ratio of Dec. 31, 1923 cost to book cost, Retirement Conversion Factor—Complete Sets	117.32%
Component Parts are retired at average current costs.	
Material cost trend ratio Dec. 31, 1923 to July-December average—gross additions	106.12%
Factor to exclude capitalized overheads	99.9%
Retirement Conversion Factor—Component Parts	106.01%
Per Cent of total retirements—Complete Sets	87.15%
" " " " —Component Parts	12.85%
Composite Retirement Conversion Factor	115.87%

[fol. 2711] Illinois Bell Telephone Company, Chicago Area

Account 232—Station Installations

Composite Material and Labor Cost Trend, June 30 to Dec. 31, 1923

Total Plant

	Cost 6-30-23	Cost 12-31-23
Average total cost per installation	$9.725	$9.275
Ratio Dec. 31, 1923 to June 30, 1923 Cost		95.37%

Gross Additions

	Avg. Cost 6-30 to 12-31	Cost 12-31-23
Average total cost per installation	$9.323	$9.275
Ratio Dec. 31, 1923 to July-December Average		99.49%

[fol. 2712] Illinois Bell Telephone Company, Chicago Area

Account 232 Station Installations

Retirement Conversion Factor, June 30 to Dec. 31, 1923

Average retirement unit cost per installation, including capitalized overheads	$8.690
Average reproduction unit cost per installation at Dec. 31, 1923 cost level, exclusive of capitalized overheads	9.275
Ratio Dec. 31, 1923 unit cost to retirement unit cost	106.73%

[fol. 2713] Illinois Bell Telephone Company, Chicago Area

Account 233 Interior Block Wires

Material and Labor Cost Trend, June 30 to Dec. 31, 1923

Total Plant

	Unit	Quan.	Cost 6 30 23	Cost 12 31 23
#17 2-conductor wire	ft.	260	$3.48	$3.09
Supply Expense			.28	.22
Total Material Cost			$3.76	$3.31
Labor	hrs.	8	$5.72	$5.42
Direct Supervision			3.39	3.33
Total			$9.11	$8.75
Plant Supervision and Tool Expense			.76	.72
Truck Cost			.69	.71
Total Labor Cost			$10.56	$10.18
Total Cost in Place			$14.32	$13.49
Ratio Dec. 31, 1923 to June 30, 1923				94.20%

Gross Additions

	Unit	Quan.	Avg. Cost 7-1 to 12-31	Cost 12-31-23
#17 2-conductor wire	ft.	260	$3.22	$3.09
Supply Expense			.23	.22
Total Material Cost			$3.45	$3.31
Labor	hrs.	8	$5.75	$5.42
Direct Supervision			3.53	3.33
Total			$9.28	$8.75
Plant Supervision and Tool Expense			.77	.72
Truck Cost			.69	.71
Total Labor			$10.74	$10.18
Total Cost in Place			$14.19	$13.49
Ratio Dec. 31, 1923 to July-December Average				95.07%

[fol. 2714] Illinois Bell Telephone Company, Chicago Area

Account 233—Interior Block Wires

Retirement Conversion Factor, June 30 to Dec. 31, 1923

Book cost, including capitalized overheads, of plant in service June 30, 1923	$25,083
Appraisal cost at Dec. 31, 1923 cost level, exclusive of capitalized overheads of plant in service June 30, 1923	36,705
Ratio of Dec. 31, 1923 cost to book cost	146.33%

[fol. 2715] Illinois Bell Telephone Company, Chicago Area

Account 234—Private Branch Exchanges

Non-Multiple

Composite Material and Labor Cost Trend, June 30, to Dec. 31, 1923

Total Plant

	Unit	Quan.	Cost 6-30-23	Cost 12-31-23
Cordless Boards	ea.	3.3	$627.00	$674.03
Cord Boards 30 line	"	3.0	1,451.55	1,428.36
" " 80 "	"	.4	300.76	298.71
Total			$2,379.31	2,401.10
Supply Expense			190.34	169.76
Total Material Cost			$2,569.65	2,570.86
Installation Cost			434.27	434.48
Total Cost Installed			$3,003.92	3,005.34

Ratio Dec. 31, 1923 to June 30, 1923 Cost Installed 100.05%

Gross Additions

	Unit	Quan.	Avg. Cost 6-30 to 12-31	Cost 12-31-23
Cordless Boards	ea.	1.2	$236.54	$245.10
Cord Boards 30 line	"	.7	335.98	333.28
" " 80 "	"	.2	149.86	149.35
Total			$722.38	$727.73
Supply Expense			51.29	51.45
Total Material Cost			$773.67	$779.18
Installation Cost			140.03	141.03
Total Cost Installed			$913.70	$920.21

Ratio Dec. 31, 1923 to July-Dec. Average Cost Installed 100.71%

[fol. 2716] Illinois Bell Telephone Company, Chicago Area

Account 234—Private Branch Exchanges

Non-Multiple

Retirement Conversion Factor, June 30 to Dec. 31, 1923

Book cost, including capitalized overheads, of plant in service June 30, 1923	$3,347,063
Appraisal cost at Dec. 31, 1923 cost level, exclusive of capitalized overheads, of plant in service June 30, 1923	3,636,809
Ratio of Dec. 31, 1923 cost to book cost	108.66%

[fol. 2717] Illinois Bell Telephone Company, Chicago Area

Account 234—Private Branch Exchanges

Multiple

Composite Material and Labor Cost Trend, June 30, to Dec. 31, 1923

Total Plant

	Unit	Quan.	Cost 6-30-23	Cost 12-31-23
Switchboard 600-C	ea.	1.0	$5,911	$5,911
" 700-C	"	.....	......	....
Total			$5,911	$5,911
Supply Expense			473	418
Total Material Cost			$6,384	$6,329
Installation Cost			1,653	1,658
Total Cost Installed			$8,037	$7,987

Ratio Dec. 31, 1923 to June 30, 1923 Cost Installed 99.38%

Gross Additions

	Unit	Quan.	Avg. Cost 6-30 to 12-31	Cost 12-31-23
Switchboard 600-C	ea.	1.0	$5,911	$5,911
" 700-C	"	.....	......	....
Total			$5,911	$5,911
Supply Expense			420	418
Total Material Cost			$6,331	$6,329
Installation Cost			1,627	1,658
Total Cost Installed			$7,958	$7,987

Ratio Dec. 31, 1923 to July-December Average Cost Installed 100.36%

[fol. 2718] Illinois Bell Telephone Company, Chicago Area

Account 234—Private Branch Exchanges

Multiple

Retirement Conversion Factor, June 30, to Dec. 31, 1923

Original cost, including capitalized overheads, of retirements analyzed	$30,460
Dec. 31, 1923 cost, exclusive of capitalized overheads, of retirements analayzed	45,341
Ratio of Dec. 31, 1923 cost to original cost	148.85%

[fol. 2719] Illinois Bell Telephone Company, Chicago Area

Account 235—Booths and Special Fittings

Material and Labor Cost Trend, June 30 to Dec. 31, 1923

Total Plant

	Unit	Quan.	Cost 6-30-23	Cost 12-31-23
Booth, No. B-17, Mahogany finish, glass in door and one side	ea.	1	$52.92	$52.92
Supply Expense			4.23	3.74
Total Material Cost			$57.15	$56.66
Labor	hrs.	1.2	.62	.63
Direct Supervision			.37	.39
Total			$.99	$1.02
Plant Supervision and Tool Expense			.08	.08
Total Labor			$1.07	$1.10
Total Cost in Place			$58.22	$57.76
Ratio Dec. 31, 1923 to June 30, 1923				99.21%

Gross Additions

	Unit	Quan.	Avg. Cost 7-1 to 12-31-23	Cost 12-31-23
Booth, No. B-17, Mahogany finish, glass in door and one side	ea.	1	$52.92	$52.92
Supply Expense			3.76	3.74
Total Material Cost			$56.68	$56.66
Labor	hrs.	1.2	.62	.63
Direct Supervision			.38	.39
Total			$1.00	$1.02
Plant Supervision and Tool Expense			.08	.08
Total Labor			$1.08	$1.10
Total Cost in Place			$57.76	$57.76
Ratio Dec. 31, 1923 to July-December Average				100.00%

[fol. 2720] Illinois Bell Telephone Company, Chicago Area.

Account 235—Booths and Special Fittings

Retirement Conversion Factor, June 30 to Dec. 31, 1923

During the period June 30 to Dec. 31, 1923 retirements of Booths and Special Fittings were made at current costs. The retirement conversion factor therefore includes only the percentage to exclude capitalized overheads. It is 98.16%.

[fol. 2721] Illinois Bell Telephone Company, Chicago Area

Account 241—Exchange Pole Lines

Composite Material and Labor Cost Trend, June 30 to Dec. 31, 1923

Total Plant

Ratio Dec. 31, 1923 to June 30, 1923 Cost of Material	100.54%
Ratio Dec. 31, 1923 to June 30, 1923 Cost of Labor	102.70%
Ratio Dec. 31, 1923 to June 30, 1923 Cost of C. E. Co. Joint Construction	100.00%
Per Cent of Total Cost—Material	53.2%
Per Cent of Total Cost—Labor	41.4%
Per Cent of Total Cost—C. E. Co. Joint Construction	5.4%
Ratio Dec. 31, 1923 to June 30, 1923 Cost of Material and Labor	101.51%

Gross Additions

Ratio Dec. 31, 1923 to July-December Average Cost of Material	101.44%
Ratio Dec. 31, 1923 to July-December Average Cost of Labor	99.49%
Ratio Dec. 31, 1923 to July-December Average Cost of C. E. Co. Joint Construction	100.00%
Per Cent of Total Cost—Material	31.7%
Per Cent of Total Cost—Labor	31.7%
Per Cent of Total Cost—C. E. Co. Joint Construction	36.8%
Ratio Dec. 31, 1923 to July-December Average Cost of Material and Labor	100.30%

[fol. 2722] Illinois Bell Telephone Company, Chicago Area

Account 241—Exchange Pole Lines

Material Cost Trend,

Total Plant, June 30 to Dec. 31, 1923

	Unit	Quan.	Cost 6-30-23	Cost 12-31-23
Class B Poles, northern white cedar				
30 ft.	ea.	5.6	$78.51	$78.90
35 "	"	33.5	634.82	638.18
40 "	"	17.5	392.18	394.45
45 "	"	3.2	89.38	89.92
50 "	"	1.2	36.30	36.54
Class B poles, western red cedar				
30 "	ea.			
35 "	"			
40 "	"			
45 "	"			
50 "	"			
Total			$1231.19	$1237.99

	Unit	Quan.	Cost 6-30-23	Cost 12-13-23
Pole yard charges			198.22	219.99
Guard arms	ea.	97.1	67.19	58.32
Anchors	"	11.1	7.08	7.79
Strand—6M	ft.	444.0	6.15	7.85
Cross arms—10 pin	ea.	13.5	13.77	16.34
Total			$1523.60	$1548.28
Supply Expense			121.89	109.46
Total Material Cost			$1645.49	$1657.74

Ratio Dec. 31, 1923 to June 30, 1923 .... 100.74%

[fol. 2723] Illinois Bell Telephone Company, Chicago Area

Account 241—Exchange Pole Lines

Material Cost Trend

Gross Additions, June 30 to Dec. 31, 1923

	Unit	Quan.	Avg. Cost 7-1 to 12-31	Cost 12-31-23
Class B poles—30 ft.	ea.	2	$3.44	$3.45
35 "	"	1.4	27.96	28.01
40 "	"	4	9.43	9.45
45 "	"	1	2.82	2.83
Total			$43.65	$43.74
Pole yard charges			7.11	7.77
Cross arms—10 pin	ea.			
Guard arms	"	3.1	1.86	1.86
Anchors	"	4	.26	.28
Strand—6M	ft.	16.0	.27	.28
Total			$53.15	$53.93
Supply Expense			3.77	3.81
Total Material Cost			$56.92	$57.74

Ratio Dec. 31, 1923 to July-December Average 101.44%

[fol. 2724] Illinois Bell Telephone Company, Chicago Area

Account 241—Exchange Pole Lines

Labor Cost Trend, June 30 to Dec. 31, 1923

		Average Monthly Rates of Pay		
	Quan.	6-30-23	7-1 to 12-31	12-31-23
Line Gang				
Line foreman	1	$189.00	$190.74	$191.50
Linemen	3	465.00	464.04	465.00
Groundmen	1	105.00	106.75	107.50
Driver	1	105.00	106.75	107.50
		$864.00	$868.28	$871.50
Direct Supervision		146.02	171.31	171.95
Total		$1,010.02	$1,039.59	$1,043.45
Plant Supervision and Tool Expense		83.83	86.29	85.88
Truck Cost		222.56	232.96	222.56
Total Line Gang		$1,316.41	$1,358.84	$1,351.89

Ratio Dec. 31, 1923 to June 30, 1923 .... 102.70%
Ratio Dec. 31, 1932 to July-December Average 99.49%

[fol. 2725] Illinois Bell Telephone Company, Chicago Area

Account 241—Exchange Pole Lines

Retirement Conversion Factors, June 30 to Dec. 31, 1923

Book cost, including capitalized overheads, of plant in service June 30, 1923	$2,130,277*
Appraisal cost at Dec. 31, 1923 cost level, exclusive of capitalized overheads, of plant in service June 30, 1923	3,308,802
Ratio of Dec. 31, 1923 cost to book cost	155.32%

* Adjusted.

[fol. 2726] Illinois Bell Telephone Company, Chicago Area

Account 242—Exchange Aerial Cable

Composite Material and Labor Cost Trend, June 30 to Dec. 31, 1923

Total Plant

Ratio Dec. 31, 1923 to June 30, 1923 Cost of Material	96.77%
Ratio Dec. 31, 1923 to June 30, 1923 Cost of Labor	101.61%
Per Cent of Total Cost—Material	54.4%
Per Cent of Total Cost—Labor	45.6%
Ratio Dec. 31, 1923 to June 30, 1923 Cost of Material and Labor	98.98%

Gross Additions

Ratio Dec. 31, 1923 to July-December Average Cost of Material	98.64%
Ratio Dec. 31, 1923 to July-December Average Cost of Labor	101.29%
Per Cent of Total Cost—Material	48.9%
Per Cent of Total Cost—Labor	51.1%
Ratio Dec. 31, 1923 to July-December Average Cost of Material and Labor	99.99%

[fol. 2727] Illinois Bell Telephone Company, Chicago Area

Account 242—Exchange Aerial Cable

Material Cost Trend, June 30 to Dec. 31, 1923

Total Plant

	Unit	Quan.	Cost 6-30-23	Cost 12-31-23
26 pr., 24 ga. cable	ft.	3.9	$.30	$.30
51 " " " "	"	19.4	2.33	2.32
101 " " " "	"	6.5	1.27	1.29
152 " " " "	"	.1	.03	.03
202 " " " "	"	.6	.21	.21
26 pr., 22 ga. cable	"	232.5	22.41	20.72
51 " " " "	"	272.5	41.37	38.23
101 " " " "	"	40.5	10.33	9.81
51 pr., 19 ga. cable	"	28.0	7.02	6.75
101 " " " "	"	10.2	4.11	4.30
303 " " " "	"	.6	.63	.67
Strand—6M	"	645.0	8.94	11.40
Terminals—14B	ea.	.3	1.67	1.67
" —14C	"	3.1	21.39	21.39
Total			$122.01	$119.09
Supply Expense			9.76	8.42
Total Material Cost			$131.77	$127.51

Ratio Dec. 31, 1923 to June 30, 1923 .... 96.77%

Gross Additions

	Unit	Quan.	Avg. Cost 1923	Cost 12 31 23
26 pr., 24 ga. cable	ft.	1.4	$.12	$.11
51 " " " "	"	5.0	.64	.60
101 " " " "	"	2.4	.50	.48
152 " " " "	"	.3	.09	.08
202 " " " "	"			
26 pr., 22. ga. cable	"	2.3	.20	.20
51 " " " "	"	4.2	.59	.59
101 " " " "	"	1.6	.39	.39
51 pr., 19 ga. cable	"	.2	.05	.05
101 " " " "	"	....	....	....
303 " " " "	"			
Strand 6M	"	18.0	.30	.32
Terminals 14B	ea.	.1	.56	.56
" 14C	"	.1	.69	.69
Total			$4.13	$4.07
Supply Expense			.29	.29
Total Material Cost			$4.42	$4.36
Ratio Dec. 31, 1923 to Yearly Average				98.64%

[fol. 2728] Illinois Bell Telephone Company, Chicago Area

Account 242 Exchange Aerial Cable

Labor Cost Trend, June 30 to Dec. 1923

	Quan.	Average Monthly Rates of Pay 6 30 23	7 1 to 12 31	12 31 23
Placing Gang				
Line foreman	1	$189.00	$190.74	$191.50
Linemen	3	465.00	464.04	465.00
Groundmen	1	105.00	106.75	107.50
Driver	1	105.00	106.75	107.50
		$864.00	$868.28	$871.50
Direct Supervision		146.02	171.31	171.95
Total		$1,010.02	$1,039.59	$1,043.45
Splicing Gang				
Splicing foreman	.75	$152.43	$152.20	$152.05
Splicers and helpers	9.00	1,107.00	1,083.33	1,116.00
		$1,259.43	$1,235.53	$1,269.05
Direct Supervision		144.83	143.57	147.35
Total		$1,404.26	$1,379.10	$1,415.40
Total Placing and Splicing Gangs		$2,414.28	$2,418.69	$2,458.85
Plant Supervision and Tool Expense		200.39	200.75	202.36
Truck Cost		283.40	287.56	283.40
Total Cable Gang		$2,898.07	$2,907.00	$2,944.61

Ratio Dec. 31, 1923 to June 30, 1923 .... 101.61%
Ratio Dec. 31, 1923 to July-December Average 101.29%

fol. 2729] Illinois Bell Telephone Company, Chicago Area

Account 242—Exchange Aerial Cable

Retirement Conversion Factor, June 30 to Dec. 31, 1923

Book cost, including capitalized overheads, of plant in service June 30, 1923	$3,025,054*
Appraisal cost at Dec. 31, 1923 cost level, exclusive of capitalized overheads, of plant in service June 30, 1923	3,845,971
Ratio of Dec. 31, 1923 cost to book cost	127.14%

* Adjusted.

[fol. 2730] Illinois Bell Telephone Company, Chicago Area

Account 243—Exchange Aerial Wire

Composite Material and Labor Cost Trend, June 30 to Dec. 31, 1923

Total Plant

Ratio Dec. 31, 1923 to June 30, 1923 Cost of Material	88.39%
Ratio Dec. 31, 1923 to June 30, 1923 Cost of Labor	96.44%
Per Cent of Total Cost—Material	37.6%
Per Cent of Total Cost—Labor	62.4%
Ratio Dec. 31, 1923 to June 30, 1923 Cost of Material and Labor	93.41%

Gross Additions

Ratio Dec. 31, 1923 to July-December Average Cost of Material	96.33%
Ratio Dec. 31, 1923 to July-December Average Cost of Labor	94.77%
Per Cent of Total Cost—Material	51.2%
Per Cent of Total Cost—Labor	48.8%
Ratio Dec. 31, 1923 to July-December Average Cost of Material and Labor	95.57%

[fol. 2731] Illinois Bell Telephone Company, Chicago Area

Account 243—Exchange Aerial Wire

Material Cost Trend, June 30 to Dec. 31, 1923

Total Plant

	Unit	Quan.	Cost 6-30-23	Cost 12-31-23
17 2-conductor wire	pr. mi.	10.9	$771.18	$684.85
Knobs, type "B"	ea.	414.2	12.01	13.46
Total			$783.19	$698.31
Supply Expense			62.66	49.37
Total Material Cost			$845.85	$747.68
Ratio Dec. 31, 1923 to June 30, 1923				88.39%

Gross Additions

	Unit	Quan.	Avg. Cost 7/1 to 12/31	Cost 12/31/23
17 2 conductor wire	pr. mi.	1.0	$65.42	$62.83
Knobs, type "B"	ea.	38.0	1.07	1.24
Total			$66.49	$64.07
Supply Expense			4.72	4.53
Total Material Cost			$71.21	$68.60

Ratio Dec. 31, 1923 to July December Average 96.33%

[fol. 2732] Illinois Bell Telephone Company, Chicago Area

Account 243 Exchange Aerial Wire

Labor Cost Trend, June 30 to Dec. 31, 1923

	Quan.	Average Monthly Rates of Pay 6/30/23	7/1 to 12/31	12/31/23
Installers	1	$148.70	$149.46	$141.00
Direct Supervision		88.18	91.87	86.67
Total		$236.88	$241.33	$227.67
Plant Supervision and Tool Expense		19.66	20.03	18.74
Truck Cost		18.06	18.06	18.41
Total Line Gang		$274.60	$279.42	$264.82

Ratio Dec. 31, 1923 to June 30, 1923 .... 96.44%
Ratio Dec. 31, 1923 to July December Average 94.77%

[fol. 2733] Illinois Bell Telephone Company, Chicago Area

Account 243 Exchange Aerial Wire

Retirement Conversion Factor, June 30 to Dec. 31, 1923

Book cost, including capitalized overheads, of plant in service June 30, 1923	$2,082,463*
Appraisal cost at Dec. 31, 1923 cost level, exclusive of capitalized overheads, of plant in service June 30, 1923	2,223,283
Ratio of Dec. 31, 1923 cost to book cost	106.78%

* Adjusted.

[fol. 2734] Illinois Bell Telephone Company, Chicago Area

Account 244—Exchange Underground Conduit

Composite Material and Labor Cost Trend, June 30 to Dec. 31, 1923

Total Plant

Ratio Dec. 31, 1923 to June 30, 1923 Cost of Material	100.45%
Ratio Dec. 31, 1923 to June 30, 1923 Cost of Labor	100.00%
Per Cent of Total Cost—Material	33.3%
Per Cent of Total Cost—Labor	66.7%
Ratio Dec. 31, 1923 to June 30, 1923 Cost of Material and Labor	100.95%

Gross Additions

Ratio Dec. 31, 1923 to July-December Average Cost of Material	101.52%
Ratio Dec. 31, 1923 to July-December Average Cost of Labor	100.00%
Per Cent of Total Cost Material	27.6%
Per Cent of Total Cost Labor	72.4%
Ratio Dec. 31, 1923 to July-December Average Cost of Material and Labor	100.42%

[fol. 2735] Illinois Bell Telephone Company, Chicago Area

Account 244 Exchange Underground Conduit

Material Cost Trend

Total Plant, June 30 to Dec. 31, 1923

		Unit	Quan.	Cost 6 30 23	Cost 12 31 23
McRoy conduit	1 duct	tr. ft.	1378.6	$110.98	$111.53
	2 "	" "	643.0	129.50	130.14
	3 "	" "	389.7	117.73	118.31
	4 "	" "	880.4	283.49	284.90
	6 "	" "	476.0	229.91	231.05
	8 "	" "	219.7	141.49	142.19
	10 "	" "	71.4	57.48	57.76
	12 "	" "	186.4	180.06	180.96
	15 "	" "	47.2	59.85	60.15
	18 "	" "	84.0	121.72	122.32
	20 "	" "	26.8	43.15	43.36
	24 "	" "	25.7	49.65	49.90
Manhole frames and covers	24"	ea.	1.6	34.69	43.04
" " " "	27"	"	8.0	207.44	221.84
Brick		M	17.96	215.52	215.52
Cement		bags	664.6	365.53	348.92
Sand		M lb.	247.7	265.04	265.04
Gravel		M lb.	426.7	456.57	456.57
Total Material Cost				$3069.80	$3083.50

Ratio Dec. 31, 1923 to June 30, 1923	100.45%

[fol. 2736] Illinois Bell Telephone Company, Chicago Area

Account 244 Exchange Underground Conduit

Material Cost Trend

Gross Additions, June 30 to Dec. 31, 1923

		Unit	Quan.	Avg. Cost 7-1 to 12-31-23	Cost 12-31-23
McRoy conduit	1 duct	tr. ft.	15.1	$1.21	$1.22
	2 "	" "	18.0	3.44	3.64
	3 "	" "			
	4 "	" "	28.0	8.94	9.06
	6 "	" "	28.9	13.91	14.03
	8 "	" "			
	10 "	" "			
	12 "	" "			
	15 "	" "			
	18 "	" "			
	20 "	" "			
	24 "	" "			

		Unit	Quan.	Avg. Cost 7-1 to 12-31-23	Cost 12-21-23
Manhole frames and covers	24"	ea.			
" " " "	27"	"			
Brick		M			
Cement		bags	3.1	1.68	1.63
Sand		M lb.	1.2	1.25	1.28
Gravel		M lb.	2.4	2.50	2.57
Total Material Cost				$32.93	$33.43
Ratio Dec. 31, 1923 to July-December Average					101.52%

[fol. 2737] Illinois Bell Telephone Company, Chicago Area

Account 244 Exchange Underground Conduit

Labor Cost Trend, June 30 to Dec. 31, 1923

	Quan.	Average Monthly Rates of Pay 6-30-23	7-1 to 12-31	12-31-23
Foreman	1	$350.00	$350.00	$350.00
Sub-foremen	3	826.80	826.80	826.80
Bricklayer	1	360.67	360.67	360.67
Timekeeper	1	190.00	190.00	190.00
Laborers	50	9,193.60	9,193.60	9,193.60
Total Underground Conduit Gang		$10,921.07	$10,921.07	$10,921.07
Ratio Dec. 31, 1923 to June 30, 1923				100.00%
Ratio Dec. 31, 1923 to July-December Average				100.00%

[fol. 2738] Illinois Bell Telephone Company, Chicago Area

Account 244 Exchange Underground Conduit

Retirement Conversion Factor, June 30 to Dec. 31, 1923

Book cost, including capitalized overheads, of plant in service June 30, 1923	$9,329,096*
Appraisal cost at Dec. 31, 1923 cost level, exclusive of capitalized overheads, of plant in service June 30, 1923	20,400,666
Ratio of Dec. 31, 1923 cost to book cost	218.68%

* Adjusted.

[fol. 2739] Illinois Bell Telephone Company, Chicago Area

Account 245 Exchange Underground Cable

Composite Material and Labor Cost Trend, June 30 to Dec. 31, 1923

Total Plant

Ratio Dec. 31, 1923 to June 30, 1923 Cost of Material	102.01%
Ratio Dec. 31, 1923 to June 30, 1923 Cost of Labor	100.36%
Per Cent of Total Cost—Material	74.2%
Per Cent of Total Cost—Labor	25.8%
Ratio Dec. 31, 1923 to June 30, 1923 Cost of Material and Labor	101.58%

Gross Additions

Ratio Dec. 31, 1923 to July-December Average Cost of Material	101.28%
Ratio Dec. 31, 1923 to July-December Average Cost of Labor	101.75%
Per Cent of Total Cost—Material	63.0%
Per Cent of Total Cost—Labor	37.0%
Ratio Dec. 31, 1923 to July-December Average Cost of Material and Labor	101.45%

[fol. 2740] Illinois Bell Telephone Company, Chicago Area

Account 245 Exchange Underground Cable

Material Cost Trend, Total Plant, June 30 to Dec. 31, 1923

	Unit	Quan.	Cost 6-30-23	Cost 12-31-23
51 pr., 24 ga. cable	ft.	7.1	$.85	$.85
101 " " " "	"	5.5	1.08	1.09
202 " " " "	"	3.0	1.03	1.06
606 " " " "	"	12.8	11.24	11.70
1212 " " " "	"	30.4	46.86	47.01
26 " 22 " "	"	46.3	4.46	4.13
51 " " " "	"	112.6	17.09	15.80
101 " " " "	"	47.5	12.11	11.50
202 " " " "	"	30.3	13.74	13.01
303 " " " "	"	17.0	10.06	10.47
404 " " " "	"	40.8	31.21	32.71
606 " " " "	"	278.2	288.83	293.31
909 " " " "	"	50.1	72.16	76.43
202 " 19 " "	"	41.6	30.77	32.39
303 " " " "	"	406.2	429.23	451.45
455 " " " "	"	6.1	8.18	8.71
Cable Terminal, 50 pr. protected	ea.	4	24.20	24.20
" " 100 " "	"	1	9.35	9.35
Loading coils				
#22 C case, 50 #574 B coils	ea.	.024	14.52	14.52
#23 J " 98 #575 B "	"	.010	10.45	10.45
#23 T " 200 #601 "	"			
#43 B " 300 #613 "	"			
#44 A " 300 #612 "	"			
House cable				
16 pr., 24 ga. cable	ft.	1.2	.07	.07
26 " " " "	"	7.8	.60	.59
51 " " " "	"	8.3	1.00	.99
101 " " " "	"	4.0	.78	.79
202 " " " "	"	1.2	.41	.42
606 " " " "	"	.3	.26	.27
1212 " " " "	"	1	.15	.15
16 " 22 " "	"	44.6	3.55	2.92
16 " " " " S. & C.	"			
26 " " " "	"	60.0	5.78	5.35
26 " " " " S. & C.	"			
51 " " " "	"	48.2	7.32	6.76
51 " " " " S. & C.	"			
101 " " " "	"	20.0	5.10	4.84
Cable terminal, 16 pr. unprotected	ea.	1.65	4.72	4.85
" " 26 " "	"	.76	3.26	3.31
Total			$1070.42	$1101.45
Supply Expense			85.63	77.87
Total			$1156.05	$1179.32

Ratio Dec. 31, 1923 to June 30, 1923 .... 102.01%

[fol. 2741] Illinois Bell Telephone Company, Chicago Area

Account 245 - Exchange Underground Cable

Material Cost Trend

Gross Additions, June 30 to Dec. 31, 1923

	Unit	Quan.	Avg. Cost 7-1 to 12-31-23	Cost* 12 31 23
51 pr., 24 ga. cable	ft.	2.1	$ .27	$ .25
101 " " " "	"	1.3	.27	.26
202 " " " "	"	1.8	.65	.63
606 " " " "	"	.2	.18	.18
1212 " " " "	"	3.5	5.33	5.41
26 " 22 " "	"	.6	.05	.05
51 " " " "	"	.8	.11	.11
101 " " " "	"	1.7	.41	.41
202 " " " "	"	.6	.23	.26
303 " " " "	"	.2	.11	.12
404 " " " "	"	.6	.46	.48
606 " " " "	"	6.4	6.68	6.75
909 " " " "	"	15.9	23.85	24.26
202 " 19 " "	"	1.1	.80	.86
303 " " " "	"	2.8	3.02	3.11
455 " " " "	"	.1	.15	.14
Cable terminal, 50 pr. protected	ea.			
" " 400 " "	"			
Loading coils				
#22 C case, 50 #574 B coils	ea.	.001	.60	.60
#23 J " 98 #575 B "	"	.005	5.23	5.23
#23 T " 200 #601 "	"			
#43 B " 300 #613 "	"			
#44 A " 300 #612 "	"			
House cable				
16 pr., 24 ga. cable	ft.	.4	.03	.02
26 " " " "	"	2.3	.20	.18
51 " " " "	"	2.7	.35	.32
101 " " " "	"	.8	.17	.16
202 " " " "	"	.5	.18	.18
606 " " " "	"	.1	.09	.09
1212 " " " "	"			
16 pr., 22 ga. cable	"	1.5	.10	.10
16 " " " " S. & C.	"			
26 " " " "	"	4.0	.34	.36
26 " " " " S. & C.	"			
51 " " " "	"	1.6	.22	.22
51 " " " " S. & C.	"			
101 " " " "	"	.8	.19	.19
Cable terminal, 16 pr. unprotected	ea.	.09	.26	.26
Cable terminal, 26 pr. unprotected	"	.10	.43	.44
Total			$50.96	$51.63
Supply expense			3.62	3.65
Total			$54.58	$55.28

Ratio Dec. 31, 1923 to July-December Average 101.28%

[fol. 2742]

Illinois Bell Telephone Company, Chicago Area

Account 245—Exchange Underground Cable

Labor Cost Trend, June 30 to Dec. 31, 1923

		Average Monthly Rates of Pay		
	Quan.	6-30-23	7-1 to 12-31	12-31-23
Placing Gang				
Placing foreman	1	$199.00	$204.00	$201.50
Cablemen	7	948.50	946.61	948.50
		$1,147.50	$1,150.61	$1,150.00
Direct Supervision		173.27	158.78	158.70
Total		$1,320.77	$1,309.39	$1,308.70
Splicing Gang				
Splicing foreman	1.5	$304.86	$304.40	$304.10
Splicers and helpers	30.0	3,690.00	3,611.10	3,720.00
		$3,994.86	$3915.50	$4,024.10
Direct Supervision		459.41	454.98	467.60
Total		$4,454.27	$4,370.48	$4,491.70
Total Placing and Splicing Gangs		$5,775.04	$5,679.87	$5,800.40
Plant Supervision and Tool Expense		479.33	471.43	477.37
Truck Cost		344.24	342.16	344.24
Total Underground Cable Gang		$6,598.61	$6,493.46	$6,622.01
Building Cable Gang				
Foreman	1	$205.40	$205.40	$205.40
Cablemen and splicers	5	860.65	861.00	862.75
		$1,066.05	$1,066.40	$1,068.15
Direct Supervision		125.79	128.61	128.82
Total		$1,191.84	$1,195.01	$1,196.97
Plant Supervision and Tool Expense		98.92	99.19	98.51
Truck Cost		12.17	10.92	12.17
Total Building Cable Gang		$1,302.93	$1,305.12	$1,307.65

[fol. 2743]

Illinois Bell Telephone Company, Chicago Area

Account 245—Exchange Underground Cable

Labor Cost Trend, June 30 to Dec. 31, 1923

Total Plant

	Average Monthly Rates of Pay	
	6-30-23	12-31-23
Underground Cable Gang—71.5%	$4,718.01	$4,734.74
Building Cable Gang—28.5%	371.34	372.68
Total	$5,089.35	$5,107.42

Ratio Dec. 31, 1923 to June 30, 1923 .... 100.36%

Gross Additions

		Average Monthly Rates of Pay	
		7-1 to 12-31	12-31-23
Underground Cable Gang	57.6%	$3,740.23	$3,814.28
Building Cable Gang	42.4%	553.37	554.44
Total		$4,293.60	$4,368.72
Ratio Dec. 31, 1923 to July-December Average			101.75%

[fol. 2744] Illinois Bell Telephone Company, Chicago Area

Account 245. Exchange Underground Cable

Retirement Conversion Factor, June 30 to Dec. 31, 1923

Book cost, including capitalized overheads, of plant in service June 30, 1923	
Underground cable	$15,266,094*
House cable	2,317,411
Appraisal cost at Dec. 31, 1923 cost level, exclusive of capitalized overhead, of plant in service June 30, 1923	
Underground cable	17,979,919
House cable	2,532,676
Ratio of Dec. 31, 1923 cost to book cost	
Underground cable	117.78%
House cable	109.29%
Per cent of total retirements	
Underground cable	86.81%
House cable	13.19%
Composite Ratio of Dec. 31, 1923 Cost to Book Cost	116.66%

* Adjusted.

[fol. 2745] Illinois Bell Telephone Company, Chicago Area

Account 251—Toll Pole Lines

Composite Material and Labor Cost Trend, June 30 to Dec. 31, 1923

Total Plant

Ratio Dec. 31, 1923 to June 30, 1923 Cost of Material	104.88%
Ratio Dec. 31, 1923 to June 30, 1923 Cost of Labor	102.70%
Per Cent of Total Cost—Material	46.3%
Per Cent of Total Cost—Labor	53.7%
Ratio Dec. 31, 1923 to June 30, 1923 Cost of Material and Labor	103.71%

Gross Additions

Ratio Dec. 31, 1923 to July-December Average Cost of Material	102.95%
Ratio Dec. 31, 1923 to July-December Average Cost of Labor	99.49%
Per Cent of Total Cost—Material	44.4%
Per Cent of Total Cost—Labor	55.6%
Ratio Dec. 31, 1923 to July-December Average Cost of Material and Labor	101.03%

[fol. 2746] Illinois Bell Telephone Company, Chicago Area

Account 251 Toll Pole Lines

Material Cost Trend, June 30 to Dec. 31, 1923

Total Trend

		Unit	Quan	Cost 6 30 23	Cost 12 31 23
Class B poles	35 ft.	ea.			
	40 "	"	6	$13 45	$13 52
	45 "	"	4	11 17	11 24
	50 "	"			
Total				$24 62	$24 76
Pole yard charges				3 96	4 40
Cross arms 10 pin		"	8 0	8 16	9 68
Anchors		"	2	13	14
Strand 6M		ft.	8 0	11	14
Total				$36 98	$39 12
Supply Expense				2 96	2 77
Total Material Cost				$39 94	$41 89

Ratio Dec. 31, 1923 to June 30, 1923 104.88%

Gross Additions

		Unit	Quan	Avg. Cost 7 1 to 12 31	Cost 12 31 23
Class B poles	35 ft.	ea.			
	40 "	"	6	$13 51	$13 52
	45 "	"	4	11 23	11 24
	50 "	"			
Total				$24 74	$24 76
Pole yard charges				4 03	4 40
Cross arms 10 pin		"	8 0	8 96	9 68
Anchors		"	2	13	14
Strand 6M		ft.	8 0	13	14
Total				$37 99	$39 12
Supply Expense				2.70	2 77
Total Material Cost				$40 69	$41 89

[Ratio Dec. 31, 1923 to six months' average 102 95%

fol. 2747] Illinois Bell Telephone Company, Chicago Area

Account 251 Toll Pole Lines

Labor Cost Trend, June 30 to Dec. 31, 1923

	Quan.	Average Monthly Rates of Pay 6 30 23	7 1 to 12 31	12 31 23
Line Gang				
Line foreman	1	$189 00	$190 74	$191 50
Linemen	3	465.00	464 04	465 00
Groundmen	1	105 00	106 75	107 50
Driver	1	105 00	106 75	107 50
		$864 00	$868 28	$871 50
Direct Supervision		146 02	171 31	171 95
Total		$1,010.02	$1,039 59	$1,043 45

Plant Supervision and Tool Expense	83.83	86.29	85.88
Truck Cost	222.56	232.96	222.56
Total Line Gang	$1,316.41	$1,358.84	$1,351.89

Ratio Dec. 31, 1923 to June 30, 1923	102.70%
Ratio Dec. 31, 1923 to July-December Average	99.49%

[fol. 2748] Illinois Bell Telephone Company, Chicago Area

Account 251—Toll Pole Lines

Retirement Conversion Factor, June 30 to Dec. 31, 1923

Book cost, including capitalized overheads, of plant in service June 30, 1923	$86,244#
Appraisal cost at Dec. 31, 1923 cost level, exclusive of capitalized overheads, of plant in service June 30, 1923	134,814
Ratio of Dec. 31, 1923 cost to book cost	156.32%

Adjusted.

[fol. 2749] Illinois Bell Telephone Company, Chicago Area

Account 252—Toll Aerial Cable

Composite Material and Labor Cost Trend, June 30 to Dec. 31, 1923

Total Plant

Ratio Dec. 31, 1923 to June 30, 1923 Cost of Material	103.67%
Ratio Dec. 31, 1923 to June 30, 1923 Cost of Labor	101.82%
Per Cent of Total Cost—Material	51.9%
Per Cent of Total Cost—Labor	48.1%
Ratio Dec. 31, 1923 to June 30, 1923 Cost of Material and Labor	102.78%

Gross Additions

Ratio Dec. 31, 1923 to July-December Average Cost of Material	106.67%
Ratio Dec. 31, 1923 to July-December Average Cost of Labor	100.89%
Per Cent of Total—Material	%
Per Cent of Total—Labor	%
Ratio Dec. 31, 1923 to July-December Average Cost of Material and Labor	%

[fol. 2750] Illinois Bell Telephone Company, Chicago Area

Account 252—Toll Aerial Cable

Material Cost Trend, June 30 to Dec. 31, 1923

Total Plant

	Unit	Quan.	Cost 6-30-23	Cost 12-31-23
100 pr., 19 ga. cable	ft.	10.00	$4.03	$4.22
Strand, 10M	"	10.50	.26	.26
Total			$4.29	$4.48
Supply Expense			.34	.32
Total Material Cost			$4.63	$4.80
Ratio Dec. 31, 1923 to June 30, 1923				103.67%

Gross Additions

	Unit	Quan.	Avg. Cost 7-1 to 12-31	Cost 12-31-23
100 pr., 19 ga. cable	ft.	10.00	$3.94	$4.22
Strand, 10M	"	10.50	.26	.26
Total			$4.20	$4.48
Supply Expense			.30	.32
Total Material Cost			$4.50	$4.80
Ratio Dec. 31, 1923 to July-Dec. Average				106.67%

[fol. 2751] Illinois Bell Telephone Company, Chicago Area

Account 252—Toll Aerial Cable

Labor Cost Trend, June 30 to Dec. 31, 1923

	Quan.	Average Monthly Rates of Pay 6-30-23	7-1 to 12-31	12-31-23
Placing Gang				
Line foreman	1	$189.00	$190.74	$191.50
Linemen	3	465.00	464.04	465.00
Groundmen	1	105.00	106.75	107.50
Driver	1	105.00	106.75	107.50
		$864.00	$868.28	$871.50
Direct Supervision		146.02	171.31	171.95
Total		$1,010.02	$1,039.59	$1,043.45
Splicing Gang				
Splicing foreman	.5	$101.62	$101.46	$101.36
Splicers and helpers	6.0	738.00	722.22	744.00
		$839.62	$823.68	$845.36
Direct Supervision		96.56	95.71	98.23
Total		$936.18	$919.39	$943.59
Total Placing and Splicing Gangs		$1,946.20	$1,958.98	$1,987.04
Plant Supervision and Tool Expense		161.53	162.60	163.53
Truck Cost		246.90	254.80	246.90
Total Cable Gang		$2,354.63	$2,376.38	$2,397.47
Ratio Dec. 31, 1923 to June 30, 1923				101.82%
Ratio Dec. 31, 1923 to July-December Average				100.89%

[fol. 2752] Illinois Bell Telephone Company, Chicago Area

Account 252—Toll Aerial Cable

Retirement Conversion Factor, June 30 to Dec. 31, 1923

Book cost, including capitalized overheads, of plant in service June 30, 1923	$7,660*

Appraisal cost at Dec. 31, 1923 cost level,* exclusive of capitalized overheads,* of plant in service June 30, 1923	9,476
Ratio of Dec. 31, 1923 cost to book cost	123.72%

* Adjusted.

[fol. 2753] Illinois Bell Telephone Company, Chicago Area

Account 253—Toll Aerial Wire

Composite Material and Labor Cost Trend, June 30 to Dec. 31, 1923

Total Plant

Ratio Dec. 31, 1923 to June 30, 1923 Cost of Material	95.83%
Ratio Dec. 31, 1923 to June 30, 1923 Cost of Labor	102.70%
Per Cent of Total Cost—Material	70.8%
Per Cent of Total Cost—Labor	29.2%
Ratio Dec. 31, 1923 to June 30, 1923 Cost of Material and Labor	97.84%

Gross Additions

Ratio Dec. 31, 1923 to July-December Average Cost of Material	92.56%
Ratio Dec. 31, 1923 to July-December Average Cost of Labor	99.49%
Per Cent of Total—Material	76.6%
Per Cent of Total—Labor	23.4%
Ratio Dec. 31, 1923 to July-December Average Cost of Material and Labor	94.18%

[fol. 2754] Illinois Bell Telephone Company, Chicago Area

Account 253—Toll Aerial Wire

Material Cost Trend, June 30 to Dec. 31, 1923

Total Plant

	Unit	Quan.	Cost 6-30-23	Cost 12-31-23
#12 bare copper wire	mi.	11.1	$343.77	$331.45
Insulators, glass-toll	ea.	577.2	25.86	25.86
Total			$369.63	$357.31
Supply Expense			29.57	25.26
Total Material Cost			$399.20	$382.57
Ratio Dec. 31, 1923 to June 30, 1923				95.83%

Gross Additions

	Unit	Quan.	Avg. Cost 7-1 to 12-31	Cost 12-31-23
#12 bare copper wire	mi.	1.0	$32.44	$29.86
Insulators, glass-toll	ea.	52.0	2.33	2.33
Total			$34.77	$32.19
Supply Expense			2.47	2.28
Total Material Cost			$37.24	$34.47
Ratio Dec. 31, 1923 to July-December Average				92.56%

[fol. 2755] Illinois Bell Telephone Company, Chicago Area

Account 253—Toll Aerial Wire

Labor Cost Trend, June 30 to Dec. 31, 1923

	Quan.	Average Monthly Rates of Pay 6-30-23	 7-1 to 12-31	 12-31-23
Line Gang				
Line foreman	1	$189.00	$190.74	$191.50
Linemen	3	465.00	464.04	465.00
Groundman	1	105.00	108.75	107.50
Driver	1	105.00	106.75	107.50
		$864.00	$868.28	$871.50
Direct Supervision		146.02	171.31	171.95
Total		$1,010.02	$1,039.59	$1,043.45
Plant Supervision and Tool Expense		83.83	86.29	85.88
Truck Cost		222.56	232.96	222.56
Total Line Gang		$1,316.41	$1,358.84	$1,351.89
Ratio Dec. 31 to June 30, 1923				102.70%
Ratio Dec. 31 to July-December Average				99.49%

[fol. 2756] Illinois Bell Telephone Company, Chicago Area

Account 253—Toll Aerial Wire

Retirement Conversion Factor, June 30 to Dec. 31, 1923

Book cost, including capitalized overheads, of plant in service June 30, 1923	$124,589*
Appraisal cost at Dec. 31, 1923 cost level, exclusive of capitalized overheads, of plant in service June 30, 1923	163,169
Ratio of Dec. 31, 1923 cost to book cost	130.96%

* Adjusted.

[fol. 2757] Illinois Bell Telephone Company, Chicago Area

Account 254—Toll Underground Conduit

Composite Material and Labor Cost Trend, June 30 to Dec. 31, 1923

Use factors developed for Account 244—Exchange Underground Conduit

Total Plant	100.15%
Gross Additions	100.42%

[fol. 2758] Illinois Bell Telephone Company, Chicago Area

Account 254 Toll Underground Conduit

Retirement Conversion Factor, June 30 to Dec. 31, 1923

Book cost, including capitalized overheads, of plant in service June 30, 1923	$456,695*
Appraisal cost at Dec. 31, 1923 cost level, exclusive of capitalized overheads, of plant in service June 30, 1923	737,859
Ratio of Dec. 31, 1923 cost to book cost	161.56%

* Adjusted.

[fol. 2759] Illinois Bell Telephone Company, Chicago Area

Account 255 Toll Underground Cable

Composite Material and Labor Cost Trend, June 30 to Dec. 31, 1923

Total Plant

Ratio Dec. 31, 1923 to June 30, 1923 Cost of Material	103.04%
Ratio Dec. 31, 1923 to June 30, 1923 Cost of Labor	100.31%
Per Cent of Total Cost Material	83.9%
Per Cent of Total Cost Labor	16.1%
Ratio Dec. 31, 1923 to June 30, 1923 Cost of Material and Labor	102.60%

Gross Additions

Ratio Dec. 31, 1923 to July-December Average Cost of Material	102.70%
Ratio Dec. 31, 1923 to July-December Average Cost of Labor	101.52%
Per Cent of Total Cost Material	80.5%
Per Cent of Total Cost Labor	19.5%
Ratio Dec. 31, 1923 to July-December Average Cost of Material and Labor	102.47%

[fol. 2760] Illinois Bell Telephone Company, Chicago Area

Account 255 Toll Underground Cable

Material Cost Trend Total Plant, June 30 to Dec. 31, 1923

	Unit.	Quan.	Cost 6-30-23	Cost 12-31-23
909 pr., 22 ga. cable	ft.	2	$.29	$.31
303 " 19 " "	"	57.8	61.08	64.24
455 " " " "	"	6	.80	.86
Loading coils				
◆33 C case, 50 ◆574 B coils	ea.	.001	.60	.60
◆23 J " 98 ◆575 " "	"			
◆23 L " 75 ◆574 " "	"	.003	2.60	2.60
◆23 T " 200 ◆601 coils	"			
◆25 D " 9-533 & 18-534	"	.006	5.09	5.09
◆27 A " 24-561 B & 48-562 B	"	.003	4.09	4.09
◆31 A " 41-555 & 22-556	"	.001	1.77	1.77
◆32 B " 35-583 A & 70-584 A	"	.003	6.04	6.04
◆37 P " 10-703	"			
◆43 B " 300-613	"			
◆44 A " 300-612	"			

	Unit	Quan.	Cost 6-30-23	Cost 12-31-23
#49 A " 62 P2	"			
#49 B " 28 P3 & 56 P2	"			
Total Material Cost			$82.36	$85.60
Supply Expense			6.59	6.05
Total			$88.95	$91.65
Ratio of Dec. 31, 1923 to June 30, 1923				103.04%

[fol. 2761] Illinois Bell Telephone Company, Chicago Area

Account 255 Toll Underground Cable

Material Cost Trend, Gross Additions, June 30 to Dec. 31, 1923

	Unit	Quan.	Avg. Cost 7-1 to 12-31	Cost 12-31-23
909 pr., 22 ga. cable	ft.	1	$ .15	$ .15
303 " 19 " "	"	5	.54	.56
455 " " " "	"			
Loading coils				
#22 C case, 50 #574 B coils	ea.			
#23 J " 98 #575 " "	"			
#23 L " 75 #574 " "	"			
#23 T " 200 #601 coils	"			
#25 D " 9 533 & 18 534	"			
#27 A " 24 561 B & 48 562 B	"			
#31 A " 11 555 & 22 556	"			
#32 B " 35 583 A & 70 584 A	"			
#37 P " 10 703	"			
#43 B " 300 613	"			
#44 A " 300 612	"			
#49 A " 62 P2	"			
#49 B " 28 P3 & 56 P2	"			
Total Material Cost			$ .69	$ .71
Supply Expense			.05	.05
Total			$ .74	$ .76
Ratio of Dec. 31, 1923 to July-December Average				102.70%

[fol. 2762] Illinois Bell Telephone Company, Chicago Area

Account 255 Toll Underground Cable

Labor Cost Trend, June 30 to Dec. 31, 1923

		Average Monthly Rates of Pay		
	Quan.	6-30-23	7-1 to 12-31	12-31-23
Placing Gang				
Placing foreman	1	$199.00	$204.00	$201.50
Cablemen	7	948.50	946.61	948.50
		$1,147.50	$1,150.61	$1,150.00
Direct Supervision		173.27	158.78	158.70
Total		$1,320.77	$1,309.39	$1,308.70

	Quan.	Average Monthly Rates of Pay 6/30/23	 7/1 to 12/31	 12/31/23
Splicing Gang				
Splicing foreman	1.5	$304.80	$304.40	$304.10
Splicers and helpers	30.0	*3,690.00	3,611.10	3,720.00
		$3,994.80	$3,915.50	$4,024.10
Direct Supervision		459.41	454.98	467.60
Total		$4,454.27	$4,370.48	$4,491.70
Transmission Testers				
Foreman	.5	$112.50	$112.50	$112.50
Transmission testers	4.0	634.00	652.32	634.00
		$746.50	$764.82	$746.50
Direct Supervision		85.85	88.87	86.74
Total		$832.35	$853.69	$833.24
Total Underground Cable Gangs		$6,607.39	$6,533.56	$6,633.64
Plant Supervision and Tool Expense		548.41	542.29	545.95
Truck Costs		425.36	414.96	425.36
Total		$7,581.16	$7,490.81	$7,604.91

Ratio Dec. 31, 1923 to June 30, 1923	100.31%
Ratio Dec. 31, 1923 to July-December Average	101.52%

[fol. 2763] Illinois Bell Telephone Company, Chicago Area

Account 255 Toll Underground Cable

Retirement Conversion Factor, June 30 to Dec. 31, 1923

Book cost, including capitalized overheads, of plant in service June 30, 1923	$1,260,801*
Appraisal cost at Dec. 31, 1923 cost level, exclusive of capitalized overheads, of plant in service June 30, 1923	1,407,277
Ratio of Dec. 31, 1923 cost to book cost	102.65%

* Adjusted.

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(Sheets 1, 3, 41 and 42)

[fol. 2767] EXTRACTS FROM EXHIBIT A-3

1

Illinois Bell Telephone Company, Chicago Area

Final Summary, December 31, 1924

I. C. C. Account	Cost of Reproduction
207-01 Right of Way—Exchange	$409,636
207-02 Right of Way—Toll	2,898

I. C. C. Account		Cost of Reproduction
211	Land	2,210,466
212	Buildings	14,956,193
221	Central Office Telephone Equipment	30,941,311
222	Other Equipment of Central Offices	895,928
231	Station Apparatus	11,423,309
232	Station Installations	6,307,477
233	Interior Block Wires	49,934
234	Private Branch Exchanges	5,999,170
235	Booths and Special Fittings	514,633
241	Exchange Pole Lines	3,241,882
242	Exchange Aerial Cable	4,369,831
243	Exchange Aerial Wire	2,452,397
244	Exchange Underground Conduit	21,321,684
245	Exchange Underground Cable	24,308,603
246	Exchange Submarine Cable	6,311
251	Toll Pole Lines	126,746
252	Toll Aerial Cable	7,553
253	Toll Aerial Wire	152,492
254	Toll Underground Conduit	739,253
255	Toll Underground Cable	1,628,078
256	Toll Submarine Cable	
	Miscellaneous (Pict. transm. equip't, etc.)	49,436
	Omissions and Contingencies	497,238
	Total	$132,612,456
	Engineering 5%	6,630,623
	Administrative and Legal 2%	2,652,249
	Insurance	409,681
	Taxes during Construction	2,572,682
	Interest during Construction	10,410,078
	Total Structural Plant	$155,287,769
	General Equipment	1,685,832
	Total	$156,973,601

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Illinois Bell Telephone Company, Chicago Area

Total Plant

	I. C. C. Account	Cost of Reproduction Exclusive of Capitalized Overheads Dec. 31, 1923	% Ratio of Dec. 31, 1924 Cost Level to Dec. 31, 1923 Cost Level	Cost of Reproduction of Dec. 31, 1923 at Cost Level of Dec. 31, 1924
207 01	Right of Way Exchange	$364,130	109.22	$397,703*
207 02	Right of Way Toll	2,656	109.22	2,901
221.	Cent. Office Tel. Equip't.			
	Manual Local Exchange	24,683,756	92.57	22,849,753
	Local Tandem	56,552	92.89	52,531
	Toll I. B. T.	606,831	96.24	584,014
	Toll Recording I. B. T.	72,202	96.24	69,487
	Toll Long Lines	756,006	96.24	727,580
	Toll Telephone Term. Equip't	254,157	99.00	251,615
	Telegraph Equip't	498,280	100.00	498,280
	Dial	4,422,666	86.28	3,815,876
	Total	$31,350,450		$28,849,136
222	Other Equip't. of Cent. Off.	841,829	94.97	799,579
231	Station Apparatus			
	Exchange Equip't	10,322,633	99.39	10,259,665
	Teletypewriter Equip't			10,309*
	Total	$10,322,633		$10,269,974
232	Station Installations	6,539,138	89.20	5,832,911
233	Interior Block Wires	36,698	96.59	35,442
234	Private Branch Exchanges			
	Non-Multiple	3,817,303	96.98	3,702,020
	Multiple	1,628,469	98.57	1,605,182
	Total	$5,445,772		$5,307,202
235	Booths and Special Fittings	498,926	99.29	495,384
241	Exchange Pole Lines	3,373,904	91.81	3,097,377
242	Exchange Aerial Cable	3,909,636	102.61	4,011,677
243	Exchange Aerial Wire	2,342,593	97.31	2,279,577
244	Exchange Underground Conduit	20,756,618	100.16	20,789,829
245	Exchange Underground Cable	21,436,984	101.83	21,829,281
246	Exchange Submarine Cable	1,068	101.83	1,088
251	Toll Pole Lines	135,341	93.86	127,031
252	Toll Aerial Cable	9,476	103.33	9,792
253	Toll Aerial Wire	163,641	92.85	151,941
254	Toll Underground Conduit	737,886	100.16	739,067
255	Toll Underground Cable	1,421,795	100.56	1,429,757
256	Toll Submarine Cable			
	Miscellaneous	16,982	100.00	16,982
	Total	$109,708,255		$106,473,636

* Priced Inventory as of Dec. 31st.

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Illinois Bell Telephone Company, Chicago Area

Account 242—Exchange Aerial Cable

Composite Material and Labor Cost Trend, 1924

Total Plant

Ratio Dec. 31, 1924 to Dec. 31, 1923 Cost of Material	101.19%
" " " " " " " " " " Labor	104.21%
Per Cent of Total Cost—Material	53.0%
" " " " " Labor	47.0%
Ratio Dec. 31, 1924 to Dec. 31, 1923 Cost of Material and Labor	102.61%

Gross Additions

Ratio Dec. 1924 to 1924 Yearly Average Cost of Material	104.04%
" " " " " " " " " " Labor	100.90%
Per Cent of Total Cost—Material	56.0%
" " " " " Labor	44.0%
Ratio Dec. 31, 1924 to 1924 Yearly Average Cost of Material and Labor	102.66%

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Illinois Bell Telephone Company, Chicago Area

Account 242—Exchange Aerial Cable

Material Cost Trend, 1924

Total Plant

	Unit	Quan.	Cost 12-31-23	Cost 12-31-24
26 pr., 24 ga. cable	ft.	5.1	$ .39	$ .43
51 " " "	"	24.2	2.90	3.13
101 " " "	"	8.8	1.74	1.86
152 " " "	"	.1	.03	.03
202 " " "	"	.6	.21	.22
26 pr., 22 ga. cable	"	230.5	20.54	22.20
51 " " "	"	272.3	38.20	40.71
101 " " "	"	41.7	10.10	10.64
51 pr., 19 ga. cable	"	27.8	6.70	7.11
101 " " "	"	10.0	4.22	4.41
303 " " "	"	.6	.67	.68
Strand—6M	"	655.0	11.57	9.39
Terminals—14B	ea.	.4	2.22	2.20
" —14C	"	3.1	21.39	21.24
Total			$120.88	$124.25
Supply Expense			8.55	6.72
Total Material Cost			$129.43	$130.97

Ratio Dec. 31, 1924 to Dec. 31, 1923	101.19%

Gross Additions

	Unit	Quan.	Avg. Cost 1924	Cost 12-31-24
26 pr., 24 ga. cable	ft.	5.6	$ .44	$ .47
51 " " "	"	30.7	3.71	3.97
101 " " "	"	16.7	3.35	3.53
152 " " "	"	1.1	.30	.32
202 " " "	"	1.1	.39	.41
26 pr., 22 ga. cable	"	1.6	.14	.15
51 " " "	"	12.2	1.71	1.82

	Unit	Quan.	Avg. Cost 1924	Cost 12-31-24
101 " " "	"	4.2	1.03	1.07
51 pr., 19 ga. cable	"	8.4	2.04	2.15
101 " " "	"	1.9	.78	.84
303 " " "	"	.5	.54	.57
Strand—6M	"	87.0	1.28	1.25
Terminals—14B	ea.	.4	2.20	2.20
" —14C	"	.4	2.74	2.74
Total			$20.65	$21.49
Supply Expense			1.12	1.16
Total Material Cost			21.77	$22.65
Ratio Dec. 31, 1924 to Yearly Average				104.04%

[fol. 2771] A-4

(Pages 1, 3, 9 to 18)

[fol. 2772] EXTRACTS FROM EXHIBIT A-4

1

Illinois Bell Telephone Company, Chicago Area

Final Summary, December 31, 1925

I. C. C. Account		Cost of Reproduction
207-01	Right of Way—Exchange	$438,658
207-02	Right of Way—Toll	3,048
211	Land	2,501,741
212	Buildings	15,325,753
221	Central Office Telephone Equipment	35,910,773
222	Other Equipment of Central Offices	976,540
231	Station Apparatus	12,619,403
232	Station Installations	6,477,066
233	Interior Block Wires	55,182
234	Private Branch Exchanges	6,892,456
235	Booths and Special Fittings	546,301
241	Exchange Pole Lines	3,123,274
242	Exchange Aerial Cable	4,909,633
243	Exchange Aerial Wire	2,689,874
244	Exchange Underground Conduit	22,245,123
245	Exchange Underground Cable	27,731,638
246	Exchange Submarine Cable	7,577
251	Toll Pole Lines	105,687
252	Toll Aerial Cable	7,570
253	Toll Aerial Wire	136,184
254	Toll Underground Conduit	739,259

	I. C. C. Account	Cost of Reproduction
255	Toll Underground Cable	1,866,532
256	Toll Submarine Cable	....
	Miscellaneous (Pict. transm. equip't, etc.)	85,004
	Omissions and contingencies	443,535
	Total	$145,837,811
	Engineering—5%	7,291,891
	Administrative and Legal—2%	2,916,756
	Insurance	420,287
	Taxes during Construction	3,091,762
	Interest during Construction	11,448,268
	Total Structural Plant	$171,006,775
	General Equipment	1,850,596
	Total	$172,857,371

[fol. 2773] 3

Illinois Bell Telephone Company, Chicago Area

Total Plant

	I. C. C. Account	Cost of Reproduction Exclusive of Capitalized Overheads Dec. 31, 1924	% Ratio of Dec. 31, 1925 Cost Level to Dec. 31, 1924 Cost Level	Cost of Reproduction of Dec. 31, 1924 at Cost Level of Dec. 31, 1925
207-01	Right of Way—Exchange	$409,636	103.49	$423,932
207-02	Right of Way—Toll	2,898	103.49	2,999
221	Cent. Office Tel. Equip't.			
	Manual—Local Exchange	24,565,409	98.14	24,108,492
	Local Tandem	60,407	97.72	59,030
	Toll—I. B. T.	590,327	98.46	581,236
	Toll Recording—I. B. T.	69,487	98.46	68,417
	Toll—Long Lines	811,000	98.46	798,511
	Toll—Telephone Term. Equip't	342,041	99.00	338,621
	Telegraph Equip't	671,164	99.00	664,452
	Dial	3,831,476	100.36	3,845,2[illegible]
	Total	$30,941,311		$30,464,028
222	Other Equip't. of Cent. Off.	895,928	96.70	866,362
231	Station Apparatus			
	Exchange Equip't	11,413,000	101.40	11,572,782
	Teletypewriter Equip't	....	....	23,114*
	Total	$11,413,000		$11,595,896

* Priced Inventory as of Dec. 31st.

	I. C. C. Account	Cost of Reproduction Exclusive of Capitalized Overheads Dec. 31, 1924	% Ratio of Dec. 31, 1925 Cost Level to Dec. 31, 1924, Cost Level	Cost of Reproduction of Dec. 31, 1924 at Cost Level of Dec. 31, 1925
232	Station Installations	6,307,477	95.83	6,044,455
233	Interior Block Wires	49,934	98.31	49,090
234	Private Branch Exchanges			
	Non-Multiple	4,199,150	98.37	4,130,704
	Multiple	1,800,020	101.19	1,821,440
	Total	$5,999,170		$5,952,144
235	Booths and Special Fittings	514,633	99.95	514,376
241	Exchange Pole Lines	3,241,882	91.52	2,966,704
242	Exchange Aerial Cable	4,369,831	100.38	4,386,436
243	Exchange Aerial Wire	2,452,397	99.47	2,439,399
244	Exchange Underground Conduit	21,321,681	98.76	21,057,292
245	Exchange Underground Cable	24,308,603	102.23	24,850,685
246	Exchange Submarine Cable	6,311	102.23	6,452
251	Toll Pole Lines	126,746	91.05	115,402
252	Toll Aerial Cable	7,553	99.82	7,539
253	Toll Aerial Wire	152,492	103.51	157,844
254	Toll Underground Conduit	739,253	98.76	730,086
255	Toll Underground Cable	1,628,078	101.16	1,646,964
256	Toll Submarine Cable			
	Miscellaneous	49,436	100.00	49,436
	Total	$114,938,250		$114,327,611

[fol. 2774]

9

Illinois Bell Telephone Company, Chicago Area

Account 221 Central Office Telephone Equipment

Manual Local Exchange

Composite Material and Labor Cost Trend

Total Plant, 1925

	Unit	Quan.	Cost 12-31-24	Cost 12-31-25
Sections, "A" Board	Sect.	1,017	$560,794	$582,934
Cord circuits, subscriber	Cct.	50,891	1,898,234	1,967,446
Subscriber answering jacks	"	360,060	2,246,774	2,181,964
Outgoing trunk multiple jacks	Jack	2,480,620	1,141,085	1,141,085
Message registers	Ea.	133,830	479,111	475,097
Outgoing call wire circuits	Cct.	323,337	268,370	258,670
Sections "B" Board	Sect.	715	377,634	391,620
Subscriber multiple jacks	Jack	6,630,760	4,906,762	4,707,840
Incoming trunk circuits				
Call wire	Cct.	53,784	1,473,144	1,406,989
Straightforward	"		....	....
Key display call indicator	"	4,372	241,422	236,394
Frames and protectors	C Lines	7,550	789,579	777,726
Power plants	Ea.	34	578,083	599,811
Total Material Cost			$14,960,992	$14,727,576

	Unit	Quan.	Cost 12 31 24	Cost 12 31 25
Equipment Specifications			852,777	810,017
Installation Cost			3,815,053	3,726,077
Total Cost Installed			$19,628,822	$19,263,670
Ratio Dec. 31, 1925 to Dec. 31, 1924 Cost Installed				98 14%

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Illinois Bell Telephone Company, Chicago Area

Account 221 . Central Office Telephone Equipment

Manual Local Exchange

Composite Material and Labor Cost Trend

Gross Additions, 1925

	Unit	Quan	Avg. Cost 1925	Cost 12 31 25
Positions				
"A" Board	Pos	307	$199,522 37	$201,766 54
Call circuit, "B" Board	"	140	176,131 20	175,795 20
Straightforward	"			
Key display call indicator	"	25	65,020 25	64,880 75
Automatic display call indicator	"			
Straightforward applique	"			
Outgoing call wire circuits	Cct.	47,283	37,826 40	37,826 40
Sections, "A" Board	Sect.	101	56,107 52	57,892 19
" "B" "	"	79	42,016 15	43,269 88
Subscriber multiple jacks	Jack	806,080	580,377 60	572,316 80
" answering jacks	Cct.	40,820	249,002 40	247,369 20
Message registers	Ea.	17,400	61,770 00	61,770 00
Outgoing trunk multiple jacks	Jack	674,300	303,435 00	310,478 00
Battery, 24 volt	Ea.	1	3,758.84	3,713 27
" 48 "	"			
Charging sets	"			
Ringing sets	"			
Total Material Cost			$1,774,967 33	$1,776,778 23
Equipment Specifications			110,047 97	97,722 80
Installation Costs			654,962 94	449,524 89
Total Cost Installed			$2,539,978 24	$2,324,025 92
Ratio Dec. 30, 1925 to Yearly Average				91 50%

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Illinois Bell Telephone Company, Chicago Area

Account 221 Central Office Telephone Equipment

Manual Local Exchange

Retirement Conversion Factor, 1925

Original cost, including capitalized overheads, of retirements analyzed	$283,756

Dec. 31, 1925 cost, exclusive of capitalized overheads, of retirements analyzed	279,540
Ratio of Dec. 31, 1925 cost to original cost	98.50%

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Illinois Bell Telephone Company, Chicago Area

Account 221—Central Office Telephone Equipment

Manual—Local Tandem

Composite Material and Labor Cost Trend

Total Plant, 1925

	Unit	Quan.	Cost 12-31-24	Cost 12-31-25
Sections, tandem	Sect.	16	$8,450.56	$8,763.52
Outgoing trunk multiple jacks	Jack	19,200	8,832.00	8,832.00
Outgoing call wire circuits	Cct.	3,840	3,187.20	3,072.00
Incoming trunk circuits				
Call wire	"	870	23,829.30	22,759.20
Key display call indicator	"	90	4,969.80	4,866.30
Straightforward applique	"			
Total Material Cost			$49,268.86	$48,293.02
Equipment Specifications			2,808.33	2,656.12
Installation Cost			12,563.56	12,218.13
Total Cost Installed			$64,640.75	$63,167.27
Ratio Dec. 31, 1925 to Dec. 31, 1924 Cost Installed				97.72%

[fol. 2778] 13

Illinois Bell Telephone Company, Chicago Area

Account 221—Central Office Telephone Equipment

Manual—Local Tandem

Composite Material and Labor Cost Trend

Gross Additions, 1925

	Unit	Quan.	Avg. Cost 1925	Cost 12-31-25
Sections, tandem	Sect.		$	$
Outgoing trunk multiple jacks	Jack	4,800	2,160.00	2,208.00
Outgoing call circuits	Cct.			
Incoming trunk circuits				
Call wire	Cct.	50	1,310.50	1,308.00
Key display call indicator	"			
Straightforward applique	"	920	15,032.80	15,032.80
Total Material Cost			$18,503.30	$18,548.80
Equipment Specifications			1,020.18	1,020.18
Installation Cost			4,692.85	4,692.85
Total Cost Installed			$24,216.33	$24,261.83
Ratio Dec. 31, 1925 to Yearly Average				100.19%

[fol. 2779] 14

Illinois Bell Telephone Company, Chicago Area

Account 221 Central Office Telephone Equipment

Manual Toll I. B. T. and Long Lines

Composite Material and Labor Cost Trend

Total Plant, 1925

	Unit	Quan.	Cost 12-31-24	Cost 12-31-25
Sections, toll	Sect.	182	$72,622	$76,058
Toll primary answering jacks	Cct.	1,310	10,729	9,733
" secondary answering jacks	Jack	5,290	15,182	13,860
" cord circuits	Cct.	2,554	135,975	131,837
" recording trunk ans. jacks	Jack	9,140	19,285	18,371
" line multiple jacks	"	44,880	115,790	111,751
" recording cord circuit	Cct.	180	6,043	6,367
" outgoing trunk multiple jacks	Jack	309,000	142,140	142,140
Frames and protectors	C. Lines	215	22,485	22,147
Power plants	Ea.	1	17,002	17,642
Total Material Cost			$557,253	$549,906
Equipment Specifications			30,092	28,595
Installation Cost			132,626	130,328
Total Cost Installed			$719,971	$708,829
Ratio Dec. 31, 1925 to Dec. 31, 1924, Cost Installed				98.45%

[fol. 2780] 15

Illinois Bell Telephone Company, Chicago Area

Account 221 Central Office Telephone Equipment

Manual Toll I. B. T. and Long Lines

Composite Material and Labor Cost Trend

Gross Additions, 1925

	Unit	Quan.	Avg. Cost 1925	Cost 12-31-25
Sections, toll	Sect.	182	$73,331	$76,058
Toll primary answering jacks	Cct.	1,310	9,943	9,733
" secondary answering jacks	Jack	5,290	14,230	13,860
" cord circuits	Cct.	2,554	135,056	131,837
" recording trunk ans. jacks	Jack	9,140	18,737	18,371
" line multiple jacks	"	44,880	113,546	111,751
" recording cord circuits	Cct.	180	6,232	6,367
" outgoing trunk multiple jacks	Jack	309,000	139,050	142,140
Frames and protectors	C. Lines	215	22,147	22,147
Power plants	Ea.	1	17,539	17,642
Total Material Cost			$549,811	$549,906
Equipment Specifications			28,595	28,595
Installation Cost			130,328	130,328
Total Cost Installed			$708,734	$708,829
Ratio Dec. 31, 1925 to Yearly Average				100.08%

[fol. 2781] 16

Illinois Bell Telephone Company, Chicago Area

Account 221 Central Office Telephone Equipment

Toll Telephone Terminal Equipment

Composite Material and Labor Cost Trend

Total Plant, 1925

	Cost 12 31 24	Cost 12 31 25
Typical plant in service 6 30 23	$145,931	$145,667
" gross addition 1923	63,210	63,157
" " " 1924	29,451	29,240
Total Material Cost	$238,592	$238,064
Equipment Specifications	12,884	12,441
Installation Cost	56,785	56,231
Total Cost Installed, original plant and gross additions	$308,261	$305,436
Typical retirements 1923		
" " 1924		
Total Cost Installed, retirements		
Total Cost Installed, plant in service 12 31 24	$308,261	$305,436
Ratio Dec. 31, 1925 to Dec. 31, 1924 Cost Installed		99%

[fol. 2782] 17

Illinois Bell Telephone Company, Chicago Area

Account 221 Central Office Telephone Equipment

Toll Telegraph Equipment

Composite Material and Labor Cost Trend

Total Plant, 1925

	Cost 12 31 24	Cost 12 31 25
Typical plant in service 6 30 23	$242,982	$241,384
" gross additions 1923	31,662	31,560
" " " 1924	179,138	179,502
Total Material Cost	$453,782	$452,446
Equipment Specifications	24,050	22,622
Installation Cost	107,093	104,063
Total Cost Installed, original plant and gross additions	$584,925	$579,131
Typical retirements 1923		
" " 1924	115,324	115,373
Total Cost Installed, retirements	$115,324	$115,373
Total Cost Installed, plant in service 12-31-24	$469,601	$463,758
Ratio Dec. 31, 1925 to Dec. 31, 1924 Cost Installed		99%

[fol. 2783] 18

Illinois Bell Telephone Company, Chicago Area

Account 221—Central Office Telephone Equipment

Dial

Composite Material and Labor Cost Trend

Total Plant, 1925

	Cost 12-31-24	Cost 12-31-25
State Central Office		
Material cost (major items)	$2,423,798	$2,452,326
Equipment specifications	60,580	58,856
Installation cost	494,332	483,108
Total Cost Installed	$2,978,110	$2,994,290
Superior Office		
Material cost (major items)	$1,339,195	$1,352,278
Equipment specifications	58,925	55,443
Installation cost	336,138	327,251
Total Cost Installed	$1,734,258	$1,734,972
Total Cost Installed	$4,712,368	$4,729,262
Ratio Dec. 31, 1925 to Dec. 31, 1924 Cost Installed		100.36%

[fol. 2784] A-5

(Summary Sheet and Page 3)

[fol. 2785] EXTRACTS FROM EXHIBIT A-5

1

Illinois Bell Telephone Company, Chicago Area

Final Summary, December 31, 1926

I. C. C. Account		Cost of Reproduction
207-01	Right of Way—Exchange	$475,055
207-02	Right of Way—Toll	4,289
211	Land	2,581,066
212	Buildings	15,931,523
221	Central Office Telephone Equipment	36,725,406
222	Other Equipment of Central Offices	1,105,801
231	Station Apparatus	12,588,945
232	Station Installations	6,786,887
233	Interior Block Wires	68,513
234	Private Branch Exchanges	7,454,289
235	Booths and Special Fittings	558,044

I. C. C. Account		Cost of Reproduction
241	Exchange Pole Lines	3,263,721
242	Exchange Aerial Cable	5,182,732
243	Exchange Aerial Wire	2,861,841
244	Exchange Underground Conduit	23,459,068
245	Exchange Underground Cable	28,717,944
246	Exchange Submarine Cable	7,159
251	Toll Pole Lines	95,726
252	Toll Aerial Cable	
253	Toll Aerial Wire	107,858
254	Toll Underground Conduit	28,090
255	Toll Underground Cable	2,254,251
256	Toll Submarine Cable	
	Miscellaneous (Pict. transm. equip't, etc.)	79,026
	Omissions and Contingencies	372,705
	Total	$150,709,939
	Engineering 5%	7,535,497
	Administrative and Legal 2%	3,014,199
	Insurance	440,056
	Taxes during Construction	3,466,329
	Interest during Construction	11,830,730
	Total Structural Plant	$176,996,750
	General Equipment	2,047,146
	Total	$179,043,896

[fol. 2786] 3

Illinois Bell Telephone Company, Chicago Area

Total Plant

I. C. C. Account			Cost of Reproduction Exclusive of Capitalized Overheads Dec. 31, 1925	% Ratio of Dec. 31, 1926 Cost Level to Dec. 31, 1925 Cost Level	Cost of Reproduction of Dec. 31, 1925 at Cost Level of Dec. 31, 1926
207 01	Right of Way—Exchange		$438,658	105.00	$460,591
207 02	Right of Way—Toll		3,048	105.00	3,200
221	Cent. Office Tel. Equip't.				
	Manual	Local Exchange	26,844,296	88.42	23,735,726
		Local Tandem	84,111	96.88	81,487
		Toll—I. B. T.	581,236	90.72	527,297

	Toll Recording			
	I. B. T.	68,417	90 72	62,068
	Toll Long Lines	943,403	90 72	855,855
	Toll Telephone Term Equip't	609,690	94 00	573,109
	Telegraph Equip't	866,456	99 00	857,791
	Dial	5,913,164	96 89	5,729,265
	Total	35,910,773		$32,422,598
222	Other Equip't of Cent. Off	976,540	91 71	895,585
231	Station Apparatus			
	Exchange Equip't	12,596,289	91 29	11,499,152
	Teletypewriter Equip't			41,869*
	Total	$12,596,289		$11,541,021
232	Station Installations	6,477,066	97 19	6,295,060
233	Interior Block Wires	55,182	100 16	55,270
234	Private Branch Exchanges			
	Non-Multiple	4,767,416	98 82	4,711,160
	Multiple	2,125,040	95 50	2,029,413
	Total	$6,892,456		$6,740,573
235	Booths and Special Fittings	546,301	102 09	557,719
241	Exchange Pole Lines	3,123,274	100 04	3,124,457
242	Exchange Aerial Cable	4,909,633	95 64	4,695,573
243	Exchange Aerial Wire	2,689,874	98 15	2,640,111
244	Exchange Underground Conduit	22,245,123	98 28	21,851,384
245	Exchange Underground Cable	27,731,638	94 48	26,200,852
246	Exchange Submarine Cable	7,577	94 48	7,159
251	Toll Pole Lines	105,687	102 03	107,832
252	Toll Aerial Cable	7,570	96 88	7,334
253	Toll Aerial Wire	136,184	99 27	135,190
254	Toll Underground Conduit	739,259	98 23	726,174
255	Toll Underground Cable	1,866,592	88 46	1,651,134
256	Toll Submarine Cable			
	Miscellaneous	85,004	100 00	85,004
	Total	$127,543,668		$120,203,821

*Priced Inventory as of Dec. 31st.

[fol. 2787] A 6

(Summary Sheet and Page [illegible])

[fol. 2788] EXTRACTS FROM EXHIBIT A 6

1

Illinois Bell Telephone Company, Chicago Area

Final Summary, December 31, 1927

I. C. C. Account	Cost of Reproduction
207-01 Right of Way—Exchange	$514,510
207-02 Right of Way—Toll	4,509

211	Land	3,256,350
212	Buildings	15,951,321
221	Central Office Telephone Equipment	37,977,354
222	Other Equipment of Central Offices	1,137,043
231	Station Apparatus	16,771,515
232	Station Installations	6,958,811
233	Interior Block Wires	91,330
234	Private Branch Exchanges	8,195,367
235	Booths and Special Fittings	597,183
241	Exchange Pole Lines	3,478,704
242	Exchange Aerial Cable	5,462,309
243	Exchange Aerial Wire	3,105,070
244	Exchange Underground Conduit	24,235,930
245	Exchange Underground Cable	30,852,311
246	Exchange Submarine Cable	7,640
251	Toll Pole Lines	76,534
252	Toll Aerial Cable	3,397
253	Toll Aerial Wire	91,998
254	Toll Underground Conduit	49,606
255	Toll Underground Cable	2,549,858
256	Toll Submarine Cable	
	Miscellaneous (Pict. transm. equip't, etc.)	99,638
	Omissions and Contingencies	327,154
	Total	$161,795,442
	Engineering—5%	8,089,772
	Administrative and Legal—2%	3,735,909
	Insurance	465,982
	Taxes during Construction	4,012,527
	Interest during Construction	12,700,942
	Total Structural Plant	$190,300,574
	General Equipment	2,341,675
	Total	$192,642,249

[fol. 2789] 3

Illinois Bell Telephone Company, Chicago Area

Total Plant

I. C. C. Account		Cost of Reproduction Exclusive of Capitalized Overheads Dec. 31, 1926	% Ratio of Dec. 31, 1927 Cost Level to Dec. 31, 1926 Cost Level	Cost of Reproduction of Dec. 31, 1926 at Cost Level of Dec. 31, 1927
207 01	Right of Way Exchange	$475,055	105.12	$499,378
207 02	Right of Way Toll	4,289	105.12	4,509
221	Cent. Office Tel. Equip't.			
	Manual Local Exchange	26,611,342	95.70	25,467,026
	Local Tandem	92,476	94.64	87,519
	Toll I. B. T.	568,197	95.36	541,833
	Toll Recording I. B. T.	62,068	95.36	59,188
	Toll Long Lines	1,038,584	95.36	990,394
	Toll Telephone Term. Equip't	692,135	91.00	629,843
	Telegraph Equip't	1,074,542	97.00	1,042,306
	Dial	6,586,092	96.98	6,387,192
	Total	$36,725,406		$35,205,301
222	Other Equip't. of Cent. Off.	1,105,801	97.91	1,082,690
231	Station Apparatus			
	Exchange Equipment	12,547,076	99.39	12,470,539
	Teletypewriter Equipment			57,696*
	Total	$12,547,076		$12,528,235
232	Station Installations	6,786,887	97.14	6,592,782
233	Interior Block Wires	68,513	104.87	71,850
234	Private Branch Exchanges			
	Non-Multiple	5,040,307	96.61	4,869,441
	Multiple	2,413,982	97.18	2,345,908
	Total	$7,454,289		$7,215,349
235	Booths and Special Fittings	558,044	100.32	559,830
241	Exchange Pole Lines	3,263,721	102.51	3,345,541
242	Exchange Aerial Cable	5,182,732	98.74	5,117,430
243	Exchange Aerial Wire	2,861,841	102.49	2,933,101
244	Exchange Underground Conduit	23,459,068	99.49	23,339,427
245	Exchange Underground Cable	28,717,944	97.41	27,974,149
246	Exchange Submarine Cable	7,159	97.41	6,974
251	Toll Pole Lines	95,726	100.63	96,329
252	Toll Aerial Cable			
253	Toll Aerial Wire	107,858	98.44	106,175
254	Toll Underground Conduit	28,090	99.49	27,947
255	Toll Underground Cable	2,254,251	97.47	2,197,218
256	Toll Submarine Czble			
	Miscellaneous	79,026	100.00	79,026
	Total	$131,782,776		$128,983,241

*Priced Inventory as of Dec. 31st.

[fol. 2790]

A-7

(Summary Sheet and Page 3)

[fol. 2791]

EXTRACTS FROM EXHIBIT A-7

1.

Illinois Bell Telephone Company, Chicago Area

Final Summary, December 31, 1928

	I. C. C. Account	Cost of Reproduction
207-01	Right of Way—Exchange	$535,540
207-02	Right of Way—Toll	1,106
211	Land	3,241,475
212	Buildings	16,838,729
221	Central Office Telephone Equipment	39,736,558
222	Other Equipment of Central Offices	1,354,196
231	Station Apparatus	17,053,137
232	Station Installations	8,252,246
233	Interior Block Wires	117,298
234	Private Branch Exchanges	8,482,390
235	Booths and Special Fittings	624,016
241	Exchange Pole Lines	3,428,339
242	Exchange Aerial Cable	5,685,309
243	Exchange Aerial Wire	3,350,968
244	Exchange Underground Conduit	25,923,531
245	Exchange Underground Cable	32,330,859
246	Exchange Submarine Cable	6,891
251	Toll Pole Lines	67,964
252	Toll Aerial Cable	3,576
253	Toll Aerial Wire	98,206
254	Toll Underground Conduit	54,620
255	Toll Underground Cable	2,904,680
256	Toll Submarine Cable	537
	Miscellaneous (Pict. transm. equip't, etc.)	59,101
	Omissions and Contingencies	314,823
	Total	$170,466,095
	Engineering—5%	8,523,305
	Administrative and Legal—2%	3,409,323
	Insurance	498,156
	Taxes during Construction	4,534,398
	Interest during Construction	13,381,588
	Total Structural Plant	$200,812,865
	General Equipment	2,624,092
	Total	$203,436,957

[fol. 2792]

Illinois Bell Telephone Company, Chicago Area

Total Plant

	I. C. C. Account	Cost of Reproduction Exclusive of Capitalized Overheads Dec. 31, 1927	% Ratio of Dec. 31, 1928 Cost Level to Dec. 31, 1927 Cost Level	Cost of Reproduction of Dec. 31, 1927 at Cost Level of Dec. 31, 1928
207-01	Right of Way—Exchange	$514,510	100.19	$515,488
207-02	Right of Way—Toll	4,509	100.19	4,518
221	Cent. Office Tel. Equip't:			
	Manual—Local Exchange	27,244,164	90.63	24,691,386
	Local Tandem	96,873	91.90	89,026
	Toll—I. B. T.	*577,721	92.38	533,699
	Toll Recording I. B. T.	59,188	92.38	54,678
	Toll—Long Lines	1,230,026	92.38	1,136,298
	Toll—Telephone Term. Equip't	821,016	90.00	738,914
	Telegraph Equip't	1,185,705	97.00	1,150,134
	Dial	6,762,661	93.76	6,340,671
	Total	$37,977,354		$34,734,806
222	Other Equip't. of Cent. Off.	1,137,043	100.00	1,137,043
231	Station Apparatus			
	Exchange Equipment	16,713,819	93.30	15,593,993
	Teletypewriter Equipment	....	....	232,621*
	Total	$16,713,819		$15,826,614
232	Station Installations	6,958,811	112.29	7,814,049
233	Interior Block Wires	91,330	106.11	96,910
234	Private Branch Exchanges			
	Non-Multiple	5,406,295	94.89	5,130,033
	Multiple	2,789,072	92.09	2,568,456
	Total	$8,195,367		$7,698,489
235	Booths and Special Fittings	597,183	[illegible].88	596,466
241	Exchange Pole Lines	3,478,704	99.10	3,447,489
242	Exchange Aerial Cable	5,462,309	99.57	5,438,821
243	Exchange Aerial Wire	3,105,070	104.22	3,236,104
244	Exchange Underground Conduit	24,235,930	104.29	25,275,651
245	Exchange Underground Cable	30,852,311	98.58	30,414,208
246	Exchange Submarine Cable	7,640	98.58	7,532
251	Toll Pole Lines	76,534	98.40	75,309
252	Toll Aerial Czble	3,397	101.88	3,461
253	Toll Aerial Wire	91,998	107.51	98,907
254	Toll Underground Conduit	49,606	104.29	51,734
255	Toll Underground Czble	2,549,858	95,63	2,438,429
256	Toll Submarine Czble	....	....	....
	Miscellaneous	99,638	100.00	99,638
	Total	$142,202,921		$139,011,666

*Priced Inventory as of Dec. 31st

[fol. 2793] A–8

(Summary Sheet and Page 3)

[fol. 2794] EXTRACTS FROM EXHIBIT A–8

1

Illinois Bell Telephone Company, Chicago Area

Final Summary, December 31, 1929

I. C. C. Account		Cost of Reproduction
207–01	Right of Way—Exchange	$570,221
207–02	Right of Way—Toll	1,156
211	Land	3,497,427
212	Buildings	18,327,848
221	Central Office Telephone Equipment	42,681,217
222	Other Equipment of Central Offices	1,574,561
231	Station Apparatus	15,424,517
232	Station Installations	8,626,273
233	Interior Block Wires	142,647
234	Private Branch Exchanges	8,800,618
235	Booths and Special Fittings	776,918
241	Exchange Pole Lines	3,490,942
242	Exchange Aerial Cable	6,335,210
243	Exchange Aerial Wire	3,909,658
244	Exchange Underground Conduit	27,316,974
245	Exchange Underground Cable	37,754,914
246	Exchange Submarine Cable	13,399
251	Toll Pole Lines	54,794
252	Toll Aerial Cable	23,982
253	Toll Aerial Wire	89,983
254	Toll Underground Conduit	395,807
255	Toll Underground Cable	4,128,661
256	Toll Submarine Cable	6,326
	Miscellaneous (Pict. transm. equip't, etc.)	47,375
	Omissions and Contingencies	311,333
	Total	$184,302,761
	Engineering—5%	9,215,138
	Administrative and Legal—2%	3,686,055
	Insurance	529,096

Taxes during Construction	5,234,198
Interest during Construction	14,467,767
Total Structural Plant	$217,435,015
General Equipment	2,792,614
Total	$220,227,629

[fol. 2795]

3

Illinois Bell Telephone Company, Chicago Area

Total Plant

	I. C. C. Account	Cost of Reproduction Exclusive of Capitalized Overheads Dec. 31, 1928	% Ratio of Dec. 31, 1929 Cost Level to Dec. 31, 1928 Cost Level	Cost of Reproduction of Dec. 31, 1928 at Cost Level of Dec. 31, 1929
207 01	Right of Way—Exchange	$535,540	103.28	$553,106
207 02	Right of Way—Toll	1,106	103.28	1,142
221	Cent. Office Tel. Equip't.			
	Manual—Local Exchange	24,869,801	95.64	23,785,478
	Local Tandem	115,660	95.50	110,455
	Toll—I. B. T. Toll Recording—I. B. T. Toll—Long Lines	1,781,430	97.16	1,730,837
	Toll—Telephone Term. Equip't.	1,119,583	97.00	1,085,996
	Telegraph Equip't.	1,211,038	94.00	1,138,376
	Dial	10,639,046	96.46	10,262,424
	Total	$39,736,558		$38,113,566
222	Other Equip't. of Cent. Off.	1,354,196	100.42	1,359,884
231	Station Apparatus			
	Exchange Equipment	16,820,516	84.58	14,226,792
	Teletypewriter Equipment			338,346
	Total	$16,820,516		$14,565,138
232	Station Installations	8,252,246	100.01	8,253,071
233	Interior Block Wires	117,298	108.65	127,444
234	Private Branch Exchanges			
	Non-Multiple	5,593,512	93.02	5,203,085
	Multiple	2,888,878	94.48	2,729,412
	Total	$8,482,390		$7,932,497
235	Booths and Special Fittings	624,016	98.40	614,032
241	Exchange Pole Lines	3,428,339	100.31	3,438,793
242	Exchange Aerial Cable	5,685,309	108.35	6,160,032
243	Exchange Aerial Wire	3,350,968	108.90	3,649,204
244	Exchange Underground Conduit	25,923,531	101.30	26,260,537
245	Exchange Underground Cable	32,330,859	113.07	36,556,502
246	Exchange Submarine Cable	6,891	113.07	7,792

	I. C. C. Account	Cost of Reproduction Exclusive of Capitalized Overheads Dec. 31, 1928	% Ratio of Dec. 31, 1929 Cost Level to Dec. 31, 1928 Cost Level	Cost of Reproduction of Dec. 31, 1928 at Cost Level of Dec. 31, 1929
251	Toll Pole Lines	67,964	103.15	70,105
252	Toll Aerial Cable	3,576	110.48	3,951
253	Toll Aerial Wire	98,206	107.30	105,375
254	Toll Underground Conduit	54,620	101.30	55,330
255	Toll Underground Cable	2,904,680	111.02	3,224,776
256	Toll Submarine Cable	537	113.07	607
	Miscellaneous	59,101	100.00	59,101
	Total	$149,838,447		$151,111,985

*Priced Inventory as of Dec. 31st

[fol. 2796] A-9

(Summary Sheet and Page 3)

[fol. 2797] Extracts from Exhibit A-9

1

Illinois Bell Telephone Company, Chicago Area
Final Summary, December 31, 1930

	I. C. C. Account	Cost of Reproduction
207-01	Right of Way—Exchange	$591,656
207-02	Right of Way—Toll	1,209
211	Land	3,497,427
212	Buildings	17,831,770
221	Central Office Telephone Equipment	49,890,846
222	Other Equipment of Central Offices	1,522,380
231	Station Apparatus	15,409,338
232	Station Installations	7,956,235
233	Interior Block Wires	161,192
234	Private Branch Exchanges	10,029,938
235	Booths and Special Fittings	1,069,506
241	Exchange Pole Lines	3,562,089
242	Exchange Aerial Cable	6,328,445
243	Exchange Aerial Wire	3,851,780
244	Exchange Underground Conduit	28,756,173
245	Exchange Underground Cable	35,623,638
246	Exchange Submarine Cable	11,646

251	Toll Pole Lines	58,124
252	Toll Aerial Cable	20,271
253	Toll Aerial Wire	73,991
254	Toll Underground Conduit	471,391
255	Toll Underground Cable	4,452,581
256	Toll Submarine Cable	5,418
	Miscellaneous (Pict. transm. equip't, etc.)	46,385
	Omissions and Contingencies	304,168
	Total	$191,527,597
	Engineering—5%	9,576,380
	Administrative and Legal—2%	3,830,552
	Insurance	522,830
	Taxes during Construction	5,768,920
	Interest during Construction	15,198,500
	Total Structural Plant	$226,424,779
	General Equipment	2,900,569
	Total	$229,325,348

3

[fol. 2798]

Illinois Bell Telephone Company, Chicago Area
Total Plant

I. C. C. Account		Cost of Reproduction Exclusive of Capitalized Overheads Dec. 31, 1929	% Ratio of Dec. 31, 1930 Cost Level to Dec. 31, 1929 Cost Level	Cost of Reproduction of Dec. 31, 1929 at Cost Level of Dec. 31, 1930
207-01	Right of Way—Exchange	$570,221	100.95	$575,638
207-02	Right of Way—Toll	1,156	100.95	1,167
221	Cent. Office Tel. Equip't:			
	Manual—Local Exchange	23,118,448	113.23	26,177,018
	Local Tandem	112,129	110.55	123,959
	Toll—Switchboard	3,190,030	109.54	3,494,359
	Toll—Telephone Term. Equip	1,248,216	101.00	1,260,698
	Toll—Telegraph Equip	1,353,843	103.00	1,394,458
	Dial	13,658,551	110.67	15,115,918
	Total	$42,681,217		$47,566,410
222	Other Equip't. of Cent. Off.	1,574,561	100.30	1,579,285
231	Station Apparatus			
	Exchange Equipment	15,086,171	99.52	15,013,757
	Teletypewriter Equip't	....	....	375,700
	Total	$15,086,171		$15,389,457

	I. C. C. Account	Cost of Reproduction Exclusive of Capitalized Overheads Dec. 31, 1929	% Ratio of Dec. 31, 1930 Cost Level to Dec. 31, 1929 Cost Level	Cost of Reproduction of Dec. 31, 1929 at Cost Level of Dec. 31, 1930
232	Station Installations	8,626,273	93.43	8,059,527
233	Interior Block Wires	142,647	100.12	142,818
234	Private Branch Exchanges			
	Non-Multiple	5,587,961	108.07	6,038,909
	Multiple	3,212,657	105.48	3,388,711
	Total	$8,800,618		$9,427,620
235	Booths and Special Fittings	776,918	100.47	780,570
241	Exchange Pole Lines	3,490,942	102.09	3,563,739
242	Exchange Aerial Cable	6,335,210	98.03	6,210,406
243	Exchange Aerial Wire	3,909,658	95.70	3,741,543
244	Exchange Underground Conduit	27,316,974	102.11	27,893,362
245	Exchange Underground Cable	37,754,914	90.59	34,202,177
246	Exchange Submarine Cable	13,399	90.59	12,138
251	Toll Pole Lines	54,794	102.93	56,399
252	Toll Aerial Cable	23,982	83.18	19,948
253	Toll Aerial Wire	89,983	77.37	69,620
254	Toll Underground Conduit	395,807	102.11	404,159
255	Toll Underground Cable	4,128,661	90.55	3,738,503
256	Toll Submarine Cable	6,326	90.59	5,731
	Miscellaneous	47,375	100.00	47,375
	Total	$161,827,807		$163,487,592

*Priced Inventory as of Dec. 31st

[fol. 2799] A-10

(Summary Sheet and Page 3)

[fol. 2800] EXTRACTS FROM EXHIBIT A-1

1

Illinois Bell Telephone Company, Chicago Area
Final Summary, December 31, 1931

	I. C. C. Account	Cost of Reproduction
207-01	Right of Way—Exchange	$620,803
207-02	Right of Way—Toll	1,236
211	Land	3,124,530
212	Buildings	13,308,981
221	Central Office Telephone Equipment	53,343,791
222	Other Equipment of Central Offices	1,460,226

	I. C. C. Account	Cost of Reproduction
231	Station Apparatus	15,312,474
232	Station Installations	7,653,328
233	Interior Block Wires	185,050
234	Private Branch Exchanges	9,906,717
235	Booths and Special Fittings	1,324,813
241	Exchange Pole Lines	3,544,155
242	Exchange Aerial Cable	6,237,825
243	Exchange Aerial Wire	3,821,410
244	Exchange Underground Conduit	28,896,331
245	Exchange Underground Cable	35,924,072
246	Exchange Submarine Cable	42,249
251	Toll Pole Lines	53,940
252	Toll Aerial Cable	20,288
253	Toll Aerial Wire	30,762
254	Toll Underground Conduit	465,310
255	Toll Underground Cable	4,599,931
256	Toll Submarine Cable	5,420
	Miscellaneous (Pict. transm. equip't, etc.)	45,297
	Omissions and Contingencies	295,072
	Total	$190,224,011
	Engineering—5%	9,511,201
	Administrative and Legal—2%	3,804,481
	Insurance	529,137
	Taxes during Construction	5,908,742
	Interest during Construction	14,937,011
	Total Structural Plant	$224,914,583
	General Equipment	2,837,540
	Total	$227,752,123

[fol. 2801]

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Illinois Bell Telephone Company, Chicago Area
Total Plant

I. C. C. Account		Cost of Reproduction Exclusive of Capitalized Overheads Dec. 31, 1930	% Ratio of Dec. 31, 1931 Cost Level to Dec. 31, 1930 Cost Level	Cost of Reproduction of Dec. 31, 1930 at Cost Level of Dec. 31, 1931
207-01	Right of Way—Exchange	$591,656	102.25	$604,968
207-02	Right of Way—Toll	1,209	102.25	1,236
221	Cent. Office Tel. Equip't.			
	Manual—Local Exchange	27,214,469	101.67	27,668,951
	Local Tandem	123,959	101.44	125,744
	Toll—Switchboard	3,832,394	100.02	3,833,160
	Toll—Telephone Term. Equip.	1,702,354	104.00	1,770,448
	Toll—Telegraph Equip.	1,588,868	101.00	1,604,757
	Dial—Exchange	15,428,802	100.03	15,433,431
	Total	$49,890,846		$50,436,491
222	Other Equipt. of Cent. Off.	1,522,380	100.18	1,525,120
231	Station Apparatus			
	Exchange Equipment	15,033,638	101.07	15,194,498
	Teletypewriter Equip't.			481,319*
	Total	$15,033,638		$15,675,817
232	Station Installations	7,956,235	100.00	7,956,235
233	Interior Block Wires	161,192	98.01	157,984
234	Private Branch Exchanges			
	Non-Multiple	5,884,607	99.38	5,848,122
	Multiple	4,145,331	100.28	4,156,938
	Total	$10,029,938		$10,005,060
235	Booths and Special Fittings	1,069,506	100.83	1,078,383
241	Exchange Pole Lines	3,562,089	99.60	3,547,841
242	Exchange Aerial Cable	6,328,445	99.34	6,286,677
243	Exchange Aerial Wire	3,851,780	96.48	3,716,197
244	Exchange Underground Conduit	28,756,173	98.71	28,385,218
245	Exchange Underground Cable	35,623,638	100.03	35,634,325
246	Exchange Submarine Cable	11,646	100.03	11,649
251	Toll Pole Lines	58,124	99.98	58,112
252	Toll Aerial Cable	20,271	100.00	20,271
253	Toll Aerial Wire	73,991	80.25	59,378
254	Toll Underground Conduit	471,391	98.71	465,310
255	Toll Underground Cable	4,452,581	100.89	4,492,209
256	Toll Submarine Cable	5,418	100.03	5,420
	Miscellaneous	46,385	100.00	46,385
	Total	$169,518,532		$170,170,286

*Priced Inventory as of Dec. 31st

(Here follows Exhibit A-11, side folios 2802-2804)

[fols. 2802 & 2803]

Exhibit A-11

Illinois Bell Telephone Company, Chicago Area

Amount of Construction Undertaken During Each Year of Reproduction Period, December 31, 1930

	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th Year	Total
Right of Way	$	$25,000	$50,000	$100,000	$100,000	$100,000	$100,000	$50,000	$50,000	$17,865	$592,865
Land		2,577,030	349,500	88,645	258,940					223,312	3,497,724
Buildings		4,000,000	8,500,000	2,500,000	1,500,000	1,331,770					17,831,770
Central Office Equipment			10,000,000	10,000,000	10,000,000	9,000,000	7,000,000	4,000,000	1,413,226		51,413,226
Station Equipment			1,000,000	4,000,000	5,000,000	6,000,000	6,000,000	5,000,000	4,000,000	3,626,209	34,626,209
Pole Lines		100,000	300,000	500,000	750,000	750,000	500,000	400,000	250,000	70,213	3,620,213
Aerial Cable			300,000	500,000	1,000,000	1,200,000	1,200,000	1,000,000	750,000	398,716	6,348,716
Aerial Wire				200,000	400,000	600,000	800,000	800,000	700,000	425,771	3,925,771
Underground Conduit		1,500,000	3,000,000	5,000,000	6,000,000	5,000,000	4,000,000	3,000,000	1,000,000	727,564	29,227,564
Underground and Sub. Cable and Misc.		1,000,000	3,000,000	5,000,000	7,000,000	8,000,000	7,000,000	5,000,000	3,000,000	1,139,668	40,139,668
Total	$	$9,202,030	$26,499,500	$27,888,645	$32,008,940	$31,981,770	$26,600,000	$19,250,000	$11,163,226	$6,629,318	$191,223,429
Omissions and Contingencies		15,000	30,000	50,000	65,000	50,000	40,000	30,000	15,000	9,168	304,168
Total	$	$9,217,030	$26,529,500	$27,938,645	$32,073,940	$32,031,770	$26,640,000	$19,280,000	$11,178,226	$6,638,486	$191,527,597
Engineering	1,000,000	1,000,000	1,250,000	1,250,000	1,250,000	1,250,000	1,000,000	750,000	500,000	326,380	9,576,380
Administrative and Legal	500,000	750,000	750,000	600,000	500,000	300,000	200,000	125,000	75,000	30,552	3,830,552
Insurance		5,000	25,000	50,000	75,000	100,000	100,000	75,000	50,000	42,830	522,830
Taxes during Construction				311,801	1,025,663	848,532	1,024,636	972,999	871,557	713,732	5,768,920
Total	$1,500,000	$10,972,030	$28,554,500	$30,150,446	$34,924,603	$34,530,302	$28,964,636	$21,202,999	$12,674,783	$7,751,980	$211,226,279

[fol. 2804]

Illinois Bell Telephone Company, Chicago Area

Cumulative Cost of Construction Undertaken During Each Year of Reproduction Period, December 31, 1930

	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th Year	Total
Right of Way	$	$25,000	$75,000	$175,000	$275,000	$375,000	$475,000	$525,000	$575,000	$592,865	$592,865
Land		2,577,030	2,926,530	3,015,175	3,274,115	3,274,115	3,274,115	3,274,115	3,274,115	3,497,427	3,497,427
Buildings		4,000,000	12,500,000	15,000,000	16,500,000	17,831,770	17,831,770	17,831,770	17,831,770	17,831,770	17,831,770
Central Office Equipment			10,000,000	20,000,000	30,000,000	39,000,000	46,000,000	50,000,000	51,413,226	51,413,226	51,413,226
Station Equipment			1,000,000	5,000,000	10,000,000	16,000,000	22,000,000	27,000,000	31,000,000	34,626,209	34,626,209
Pole Lines		100,000	400,000	900,000	1,650,000	2,400,000	2,900,000	3,300,000	3,550,000	3,620,213	3,620,213
Aerial Cable			300,000	800,000	1,800,000	3,000,000	4,200,000	5,200,000	5,950,000	6,348,716	6,348,716
Aerial Wire				200,000	600,000	1,200,000	2,000,000	2,800,000	3,500,000	3,925,771	3,925,771
Underground Conduit		1,500,000	4,500,000	9,500,000	15,500,000	20,500,000	24,500,000	27,500,000	28,500,000	29,227,564	29,227,564
Underground and Sub. Cable and Misc.		1,000,000	4,000,000	9,000,000	16,000,000	24,000,000	31,000,000	36,000,000	39,000,000	40,139,668	40,139,668
Total	$	$9,202,030	$35,701,530	$63,590,175	$ 95,599,115	$127,580,885	$154,180,885	$173,430,885	$184,594,111	$191,223,429	$191,223,429
Omissions and Contingencies		15,000	45,000	95,000	160,000	210,000	250,000	280,000	295,000	304,168	304,168
Total	$	$9,217,030	$35,746,530	$63,685,175	$95,759,115	$127,790,885	$154,430,885	$173,710,885	$184,889,111	$191,527,597	$191,527,597
Engineering	1,000,000	2,000,000	3,250,000	4,500,000	5,750,000	7,000,000	8,000,000	8,750,000	9,250,000	9,576,380	9,576,380
Administrative and Legal	500,000	1,250,000	2,000,000	2,600,000	3,100,000	3,400,000	3,600,000	3,725,000	3,800,000	3,830,552	3,830,552
Insurance		5,000	30,000	80,000	155,000	255,000	355,000	430,000	480,000	522,830	522,830
Taxes during Construction				311,801	1,337,464	2,185,996	3,210,632	4,183,631	5,055,188	5,768,920	5,768,920
Total	$1,500,000	$12,472,030	$41,026,530	$71,176,976	$106,101,579	$140,631,881	$169,596,517	$190,799,516	$203,474,299	$211,226,279	$211,226,279

[fol. 2805]

Illinois Bell Telephone Company, Chicago Area

Interest During Construction

Interest Charged

December 31, 1930

Year and Month	Original Notes	No. of Half Year Periods to Run	Compound Interest Factor	Amount Including Compound Interest for "N" Half Year Periods	Additional Mos. to Run	Interest on Amount for Additional Months	Total Amount Including All Interest
1st Yr., 1st Mo.	$125,000	20	1.80613	$225,766		$	$225,766
" " 2nd "	125,000	19	1.75352	219,190	5	5,480	224,670
" " 3rd "	125,000	19	1.75352	219,190	4	4,384	223,574
" " 4th "	125,000	19	1.75352	219,190	3	3,288	222,478
" " 5th "	125,000	19	1.75352	219,190	2	2,192	221,382
" " 6th "	125,000	19	1.75352	219,190	1	1,096	220,286
" " 7th "	125,000	19	1.75352	219,190			219,190
" " 8th "	125,000	18	1.70245	212,806	5	5,320	218,126
" " 9th "	125,000	18	1.70245	212,806	4	4,256	217,062
" " 10th "	125,000	18	1.70245	212,806	3	3,192	215,998
" " 11th "	125,000	18	1.70245	212,806	2	2,128	214,934
" " 12th "	125,000	18	1.70245	212,806	1	1,064	213,870
2nd Yr., 1st Mo.	914,336	18	1.70245	1,556,611			1,556,611
" " 2nd "	914,336	17	1.65286	1,511,269	5	37,782	1,549,051
" " 3rd "	914,336	17	1.65286	1,511,269	4	30,225	1,541,494
" " 4th "	914,336	17	1.65286	1,511,269	3	22,669	1,533,938
" " 5th "	914,336	17	1.65286	1,511,269	2	15,113	1,526,382
" " 6th "	914,336	17	1.65286	1,511,269	1	7,556	1,518,825
" " 7th "	914,336	17	1.65286	1,511,269			1,511,269
" " 8th "	914,336	16	1.60472	1,467,253	5	36,681	1,503,934
" " 9th "	914,336	16	1.60472	1,467,253	4	29,345	1,496,598

Illinois Bell Telephone Company, Chicago Area

Interest During Construction

Interest Charged

December 31, 1930

Year and Month	Original Notes	No. of Half Year Periods to Run	Compound Interest Factor	Amount Including Compound Interest for "N" Half Year Periods	Additional Mos. to Run	Interest on Amount for Additional Months	Total Amount Including All Interest
" " 10th "	914,336	16	1.60472	1.467.253	3	22.009	1,489,262
" " 11th "	914,336	16	1.60472	1.467.253	2	14.673	1,481,926
" " 12th "	914,334	16	1.60472	1.467,250	1	7.336	1,474,586
3rd Yr., 1st Mo.	2,379,542	16	1.60472	3.818.499			3,818,499
" " 2nd "	2,379,542	15	1.55798	3.707.279	5	92.682	3,799,961
" " 3rd "	2,379,542	15	1.55798	3.707.279	4	74.146	3,781,425
" " 4th "	2,379,542	15	1.55798	3.707.279	3	55.609	3,762,888
" " 5th "	2,379,542	15	1.55798	3,707.279	2	37.073	3,744.352
" " 6th "	2,379,542	15	1.55798	3.707.279	1	18.536	3,725.815
" " 7th "	2,379,542	15	1.55798	3.707.279			3,707.279
" " 8th "	2,379,542	14	1.51260	3.599.295	5	89.982	3,689.277
" " 9th "	2,379,542	14	1.51260	3.599.295	4	71.986	3,671.281
" " 10th "	2,379,542	14	1.51260	3.599.295	3	53.989	3,653,284
" " 11th "	2,379,542	14	1.51260	3.599.295	2	35.993	3,635.288
" " 12th "	2,379,538	14	1.51260	3.599.289	1	17.996	3.617,285

[fol, 2806]

Year and Month	Original Notes	No. of Half Year Periods to Run	Compound Interest Factor	Amount Including Compound Interest for "N" Half Year Periods	Additional Mos. to Run	Interest on Amount for Additional Months	Total Amount Including All Interest
4th Yr., 1st Mo.	2,512,537	14	1.51260	3.800.463			3,800,463
" " 2nd "	2,512,537	13	1.46854	3.689.761	5	92.244	3,782,005
" " 3rd "	2,512.537	13	1.46854	3.689.761	4	73.795	3,763,556

“ “ 4th “	2,512,537	13	1.46854	3.689.761	3	55.346	3.745,107
“ “ 5th “	2,512.537	13	1.46854	3.689.761	2	36.898	3.726,659
“ “ 6th “	2,512.537	13	1.46854	3.689.761	1	18.449	3.708.210
“ “ 7th “	2,512.737	13	1.46854	3.689.761	..	....	3.689.761
“ “ 8th “	2,512.537	12	1.42577	3.582.300	5	89.558	3.671.858
“ “ 9th “	2,512.537	12	1.42577	3.582.300	4	71,646	3.653.946
“ “ 10th “	2,512.537	12	1.42577	3.582.300	3	53.734	3.636.034
“ “ 11th “	2,512.537	12	1.42577	3.582.300	2	35.823	3.618.128
“ “ 12th “	2,512,539	12	1.42577	3.582.303	1	17.912	3,600.215
5th Yr., 1st Mo.	2,910.384	12	1.42577	4.149.538	..	....	4,149.538
“ “ 2nd “	2,910.384	11	1.38424	4.028.670	5	100.717	4,129.387
“ “ 3rd “	2,910.384	11	1.38424	4.028.670	4	80.573	4.109.243
“ “ 4th “	2,910.384	11	1.38424	4.028.670	3	60.430	4.089.100
“ “ 5th “	2,910.384	11	1.38424	4.028.670	2	40.287	4.068.957
“ “ 6th “	2,910.384	11	1.38424	4.028.670	1	20.143	4.048.813
“ “ 7th “	2,910.384	11	1.38424	4.028.670	..	....	4.028.670
“ “ 8th “	2,910.384	10	1.34392	3.911.323	5	97.783	4.009.106
“ “ 9th “	2,910.384	10	1.34392	3.911.323	4	78.226	3.989.549
“ “ 10th “	2,910.384	10	1.34392	3.911.323	3	58.670	3.969,993
“ “ 11th “	2,910.384	10	1.34392	3.911.323	2	39.113	3.950.436
“ “ 12th “	2,910,379	10	1.34392	3.911.317	1	19.557	3.930,874
6th Yr., 1st Mo.	2,877.525	10	1.34392	3.867.163	..	....	3,867,163
“ “ 2nd “	2,877.525	9	1.30478	3.754.537	5	93.863	3.848,400
“ “ 3rd “	2,877.525	9	1.30478	3.754.537	4	75.091	3.829,628
“ “ 4th “	2,877.525	9	1.30478	3.754.537	3	56.318	3.810.855
“ “ 5th “	2,877.525	9	1.30478	3.754.537	2	37.545	3.792.082
“ “ 6th “	2,877.525	9	1.30478	3.754.537	1	18.773	3.773,310
“ “ 7th “	2,877.525	9	1.30478	3.754.537	..	....	3,754.537
“ “ 8th “	2,877.525	8	1.26678	3.645.191	5	91,130	3.736.321
“ “ 9th “	2,877,525	8	1.26678	3.645.191	4	72.904	3.718.095
“ “ 10th “	2,877.525	8	1.26678	3.645.191	3	54,678	3,699.869
“ “ 11th “	2,877.525	8	1.26678	3.645.191	2	36.452	3.681.643
“ “ 12th “	2,877.527	8	1.26678	3.645.194	1	18.226	3.663.420

Illinois Bell Telephone Company, Chicago Area

Interest During Construction

Interest Charged

December 31, 1930

Year and Month	Original Notes	No. of Half Year Periods to Run	Compound Interest Factor	Amount Including Compound Interest for "N" Half Year Periods	Additional Mos. to Run	Interest on Amount for Additional Months	Total Amount Including All Interest
7th Yr., 1st Mo.	2,413.720	8	1.26678	3.057.652			3.057.652
" " 2nd "	2,413.720	7	1.22988	2.968.586	5	74.215	3.042.801
" " 3rd "	2.413.720	7	1.22988	2.968.586	4	59.372	3.027.958
" " 4th "	2.413.720	7	1.22988	2.968.586	3	44.529	3.013.115
" " 5th "	2.413.720	7	1.22988	2.968.586	2	29.686	2.998.272
" " 6th "	2,413,720	7	1.22988	2.968.586	1	14.843	2.983.429
" " 7th "	2.413.720	7	1.22988	2.968.586			2.968.586
" " 8th "	2.413.720	6	1.19406	2.882.127	5	72.053	2.954.180
" " 9th "	2.413.720	6	1.19406	2.882.127	4	57.643	2.939.770
" " 10th "	2.413.720	6	1.19406	2.882.127	3	43.232	2.925.359
" " 11th "	2.413.720	6	1.19406	2.882.127	2	28.821	2.910.948
" " 12th "	2,413.716	6	1.19406	2.882.122	1	14.411	2.896.533
8th Yr., 1st Mo.	1.766.917	6	1.19406	2.109.805			2.109.805
" " 2nd "	1.766.917	5	1.15928	2.048.352	5	51.209	2.099.561
" " 3rd "	1.766.917	5	1.15928	2.048.352	4	40.967	2.089.319
" " 4th "	1.766.917	5	1.15928	2.048.352	3	30.725	2.079.077
" " 5th "	1.766.917	5	1.15928	2.048.352	2	20.484	2.068.836
" " 6th "	1.766.917	5	1.15928	2.048.352	1	10.242	2.058.594
" " 7th "	1,766.917	5	1.15928	2.048.352			2.048.352

" " 8th "	1.766.917	4	1.12551	1.988.683	5	49.717	2.038.400
" " 9th "	1.766.917	4	1.12551	1.988.683	4	39.774	2.028.457
" " 10th "	1.766.917	4	1.12551	1.988.683	3	29.830	2.018.513
" " 11th "	1.766.917	4	1.12551	1.988.683	2	19.887	2.008.570
" " 12th "	1.766.912	4	1.12551	1.988.677	1	9.943	1.998.620
9th Yr., 1st Mo.	1,056.232	4	1.12551	1.188.800			1.188.800
" " 2nd "	1,056.232	3	1.09273	1.154.176	5	28.854	1.183.030
" " 3rd "	1,056.232	3	1.09273	1.154.176	4	23.064	1.177.260
" " 4th "	1,056.232	3	1.09273	1.154.176	3	17.313	1.171.489
" " 5th "	1,056.232	3	1.09273	1.154.176	2	11.542	1.165.718
" " 6th "	1,056.232	3	1.09273	1.154.176	1	5.771	1.159.947
" " 7th "	1,056.232	3	1.09273	1.154.176			1.154.176
" " 8th "	1,056.232	2	1.06090	1.120.557	5	28.014	1.148.571
" " 9th "	1,056.232	2	1.06090	1.120.557	4	22.411	1.142.968
" " 10th "	1,056.232	2	1.06090	1.120.557	3	16.808	1,137.365
" " 11th "	1,056.232	2	1.06090	1.120.557	2	11.206	1,131.763
" " 12th "	1.056.231	2	1.06090	1.120.555	1	5.603	1.126.158

[fol. 2808]

10th Yr., 1st Mo.	645.998	2	1.06090	685.339			685.339
" " 2nd "	645.998	1	1.03000	665.378	5	16.634	682.012
" " 3rd "	645.998	1	1.03000	665.378	4	13.308	678.686
" " 4th "	645.998	1	1.03000	665.378	3	9.981	675.359
" " 5th "	645.998	1	1.03000	665.378	2	6.654	672.032
" " 6th "	645.998	1	1.03000	665.378	1	3.327	668.705
" " 7th "	645.998	1	1.03000	665.378			665.378
" " 8th "	645.998			645.998	5	16.150	662.148
" " 9th "	645.998			645.998	4	12.920	658.918
" " 10th "	645.998			645.998	3	9.690	655.688
" " 11th "	645.998			645.998	2	6.460	652.458
" " 12th "	646.002			646.002	1	3.230	649.235
Total	$211.226.279			$282.220.471		$3.510.208	$285.730.679

[fol. 2809] Illinois Bell Telephone Company, Chicago Area

Interest During Construction

Interest Credited on Plant in Service
December 31, 1930

Average Date Cut into Service	Amount Cut into Service	Number of Months in Service	Compound Interest Factor	Total Compound Interest
7-1 4th Year	40,000,000	78	.47552	$19,020,800
7-1 5th "	30,000,000	66	.38981	11,694,300
7-1 6th "	40,000,000	54	.30907	10,817,450
7-1 7th "	35,000,000	42	.23301	9,320,400
7-1 8th "	30,000,000	30	.16140	5,649,000
7-1 9th "	30,000,000	18	.09393	2,348,250
7-1 10th "	15,000,000	6	.03038	455,700
1-1 11th "	6,424,779	..	......	....
Total Interest Credited				$59,305,900

Summary

Total cost including all interest	$285,730,679
" " less " " (Appraisal Total)	211,226,279
Total interest during construction	$74,504,400
Less interest credited on Plant in service	59,305,900
Net Interest During Construction	$15,198,500

[fol. 2810] Illinois Bell Telephone Company, Chicago Area

Taxes During Construction
December 31, 1930

Period	Cumulative Cost of Plant Exclusive of Taxes and Interest During Construction	Cumulative Cost of Property Ready for Service on Assessment Date	Cost of Plant Assessed for Taxes During Construction Period	Amount of Taxes Chargeable to Construction at Annual Rate of 2.5%*
1st Year	$1,500,000	$..........	$1,500,000	$..........
2nd "	12,472,030	....	12,472,030	....
3rd "	41,026,530	....	41,026,530	....
4th "	70,865,175	36,923,877	33,941,298	311,801
5th "	104,764,115	63,778,658	40,985,457	1,025,663
6th "	138,445,885	99,525,909	38,919,976	848,532
7th "	166,385,885	131,523,590	34,862,295	1,024,636
8th "	186,615,885	158,066,590	28,549,295	972,999
9th "	198,419,111	186,615,885	11,803,226	871,557
10th "	205,457,359	198,419,111	7,038,248	713,732
Total amount of taxes during construction				$5,768,920

* Based on 1930 tax accrual related to Cost of Reproduction.

[fol. 2811]

Illinois Bell Telephone Company, Chicago Area

Insurance During Construction

December 31, 1930

Accident and Liability Insurance:	
Company Cost—based on 1926–1930 experience:	
Total accidents and damages expense	$1,057,960
Total Plant Department payroll	60,633,438
Ratio of accidents and damages expense to Plant Department payroll	1.74%
Total construction payroll included in above total	15,018,908
Total cost of construction	105,045,060
Ratio of construction payroll to total construction cost	14.3%
Ratio of accidents and damages expense to construction cost 1.74% x 14.3%=	.25%
Cost of Workmen's Compensation and Public Liability insurance based on commercial rates:	
Labor portion of Cost of Reproduction on which company must carry insurance	$33,504,080
Cost of insurance premiums	631,031
Cost of Reproduction exclusive of overheads as of December 31, 1930	191,527,597
Ratio of cost of premiums to Cost of Reproduction of Plant	.33%
It is estimated that 15% of the plant will be built using insurance at commercial rates and the balance of the plant based on company costs.	
15% of $191,527,597 at .33% =	$94,806
85% of 191,527,597 at .25% =	406,996
Total Accident and Liability Insurance costs	$501,802

[fol. 2812]

Fire Insurance:

	Cost of Reproduction	Cost of Reproduction Multiplied by Average Number of Months During Which Insurance is Chargeable to Construction
Buildings	$17,831,770	$225,224,727
Central Office Equip't	49,890,846	397,324,548
Total	$67,722,616	$622,549,275

Average length of time during which insurance must be carried—9.2 months.

Cost to company, 1926–1930 inclusive, of fire insurance premiums adjusted to 80% co-insurance for the full period—$.405 per $1,000 per annum.

Cost of fire insurance premiums on $67,722,616 of property for 9.2 months at rate of $.405 per $1,000 per annum—$21,028.

Summary

Accident and Liability Insurance Cost	$501,802
Fire Insurance Cost	21,028
Total Insurance during Construction	$522,830

(Here follows Exhibit A-12, side folios 2813–2814)

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[fols. 2813 & 2814]

Exhibit A-12

Illinois Bell Telephone Company, Chicago Area

Total Undistributed Construction Costs Allocated to Plant Accounts

		6-30-23	12-31-23	12-31-24	12-31-25	12-31-26	12-31-27	12-31-28	12-31-29	12-31-30
207-01	Right of Way—Exchange	$65,030	$67,821	$76,883	$82,858	$90,333	$99,874	$104,743	$110,912	$115,682
207-02	Right of Way—Toll	498	495	545	576	815	875	216	225	236
211	Land	412,532	466,816	521,389	600,316	630,125	821,627	832,051	900,517	914,018
212	Buildings	3,007,046	3,053,291	3,330,006	3,460,016	3,647,706	3,766,547	4,031,763	4,382,718	4,315,631
221	Central Office Tel. Equip't	5,751,588	5,912,639	5,913,930	6,949,753	7,197,485	7,666,556	8,121,868	8,697,379	10,276,626
222	Other Equip't. of Central Offices	22,809	22,663	24,236	26,533	30,180	31,325	37,482	43,593	42,319
231	Station Apparatus	442,777	461,307	516,582	[illegible]76,739	581,529	790,804	812,861	736,730	743,007
232	Station Installations	436,517	382,501	369,450	3[illegible],088	394,544	407,614	483,312	501,723	460,815
233	Interior Block Wires	2,321	2,122	2,878	3,160	3,953	5,335	6,879	8,284	9,432
234	Private Branch Exchange	347,778	361,709	401,131	4[illegible]3,502	504,750	566,453	590,915	610,420	697,423
235	Booths and Special Fittings	22,813	22,375	23,362	2[illegible],061	25,873	28,263	29,858	37,254	51,778
241	Exchange Pole Lines	404,522	411,300	400,845	390,732	410,463	445,605	440,979	446,082	456,857
242	Exchange Aerial Cable	667,492	664,482	745,789	839,197	891,574	963,586	1,010,150	1,112,079	1,117,110
243	Exchange Aerial Wire	144,460	137,436	141,927	154,004	165,493	182,518	198,037	228,030	227,607
244	Exchange Underground Conduit	4,654,337	4,731,296	4,912,519	5,179,205	5,520,221	5,870,410	6,344,802	6,643,199	7,056,122
245	Exchange Underground Cable	3,869,528	4,071,426	4,670,204	5,371,903	5,627,187	6,220,316	6,592,673	7,638,151	7,284,779
246	Exchange Submarine Cable	201	202	1,212	1,467	1,403	1,540	1,404	2,710	2,382
251	Toll Pole Line	16,131	16,499	15,670	13,221	12,039	9,804	8,742	7,002	7,455
252	Toll Aerial Cable	1,584	1,612	1,289	1,295	...	600	636	4,212	3,579
253	Toll Aerial Wire	10,121	9,602	8,825	7,798	6,237	5,407	5,803	5,248	4,365
254	Toll Underground Conduit	168,339	168,195	170,323	172,116	6,610	12,016	13,368	96,258	115,669
255	Toll Underground Cable	262,176	270,035	312,789	361,567	441,714	514,092	592,302	835,264	910,520
256	Toll Submarine Cable	...	...	...	...	...	...	111	1,281	1,106
	Miscellaneous	179	2,946	8,653	15,010	14,080	18,209	10,889	8,682	8,566
	Omissions and Contingencies	113,819	111,135	104,876	95,847	82,497	75,756	74,926	74,301	74,098
	Total	$20,824,598	$21,349,905	$22,675,313	$25,168,964	$26,286,811	$28,505,132	$30,346,770	$33,132,254	$34,897,182
	Detail of Omissions and Contingencies Total									
207-01	Right of Way—Exchange	$424	$434	$477	$494	$520	$555	$546	$546	$534
221	Central Office Tel. Equip't	9,481	8,582	5,694	3,230	1,705	...	...	...	...
233	Interior Block Wires	40	38	26	11	1	...	...	...	...
241	Exchange Pole Lines	4,374	4,094	3,463	2,839	2,538	2,260	1,452	859	131
242	Exchange Aerial Cable	1,974	1,529	506	...	...	...	...	...	...
244	Exchange Underground Conduit	69,099	68,826	69,387	68,570	67,356	68,007	71,019	71,293	72,823
245	Exchange Underground Cable	21,935	21,099	18,818	14,331	7,810	2,536	...	...	...
251	Toll Pole Line	331	334	308	242	184	139	98	35	28
252	Toll Aerial Cable	43	44	33	34	...	...	...	...	...
253	Toll Aerial Wire	225	215	194	164	110	82	77	53	46
254	Toll Underground Conduit	3,166	3,163	3,203	3,182	...	...	...	...	...
255	Toll Underground Cable	2,727	2,777	2,767	2,750	2,273	2,177	1,734	1,515	536
	Total	$113,819	$111,135	$104,876	$95,847	$82,497	$75,756	$74,926	$74,301	$74,098

[fol. 2815] Illinois Bell Telephone Company, Chicago Area

Total Undistributed Construction Costs Allocated to Plant Accounts

		12-13-31
207-01	Right of Way—Exchange	$121,055
207-02	Right of Way—Toll	241
211	Land	839,410
212	Buildings	3,613,120
221	Central Office Tel. Equip't	10,914,961
222	Other Equip't. of Central Offices	40,543
231	Station Apparatus	737,524
232	Station Installations	448,314
233	Interior Block Wires	10,853
234	Private Branch Exchanges	683,222
235	Booths and Special Fittings	64,062
241	Exchange Pole Lines	451,848
242	Exchange Aerial Cable	1,088,445
243	Exchange Aerial Wire	226,538
244	Exchange Underground Conduit	7,023,013
245	Exchange Underground Cable	7,280,349
246	Exchange Submarine Cable	8,561
251	Toll Pole Lines	6,877
252	Toll Aerial Cable	3,540
253	Toll Aerial Wire	1,824
254	Toll Underground Conduit	113,089
255	Toll Underground Cable	932,220
256	Toll Submarine Cable	1,099
	Miscellaneous	8,304
	Omissions and Contingencies	71,560
	Total	$34,690,572

Detail of Omissions and Contingencies

Total:

207–01	Right of Way—Exchange	$532
221	Central Office Tel. Equip't	
233	Interior Block Wires	
241	Exchange Pole Lines	
242	Exchange Aerial Cable	
244	Exchange Underground Conduit	70,930
245	Exchange Underground Cable	
251	Toll Pole Lines	8
252	Toll Aerial Cable	
253	Toll Aerial Wire	
254	Toll Underground Conduit	
255	Toll Underground Cable	90
	Total	$71,560

[fols. 2816 & 2817]

Exhibit A-14

Illinois Bell Telephone Company, Chicago Area

Omissions and Contingencies Allocated to Plant Accounts

	I. C. C. Account	6-30-23	12-31-23	12-31-24	12-31-25	12-31-26	12-31-27	12-31-28	12-31-29	12-31-30
207-01	Right of Way—Exch.	$2,223	$2,331	$2,537	$2,612	$2,731	$2,857	$2,789	$2,810	$2,729
221	C. O. Tel. Equip't	50,176	45,507	29,793	16,685	8,702	....	....	....	....
233	Interior Block Wires	692	651	462	208	25	....	....	....	....
241	Exch. Pole Lines	34,761	33,585	28,015	22,698	20,188	17,645	11,284	6,724	1,020
242	Exch. Aerial Cable	11,488	8,992	2,961	....	....	....	....	....	....
244	Exch. U. G. Conduit	302,419	301,944	301,159	294,515	286,243	280,771	290,172	293,159	296,783
245	Exch. U. G. Cable	114,759	111,104	97,947	73,979	39,864	12,574	....	....	....
251	Toll Pole Lines	2,657	2,726	2,502	1,948	1,454	1,086	762	274	222
252	Toll Aerial Cable	244	250	191	191	....	....	....	....	....
253	Toll Aerial Wire	3,720	3,639	3,372	2,830	1,892	1,419	1,302	877	792
254	Toll U. G. Conduit	13,858	13,879	13,901	13,667	....	....	....	....	....
255	Toll U. G. Cable	14,267	14,628	14,398	14,202	11,606	10,802	8,514	7,489	2,622
	Total	$551,264	$539,236	$497,238	$443,535	$372,705	$327,154	$314,823	$311,333	$304,168

[fol. 2818]

Illinois Bell Telephone Company, Chicago Area

Omissions and Contingencies Allocated to Plant Accounts

	I. C. C. Account	12-31-31
207-01	Right of Way—Exch	$2,729
221	C. O. Tel. Equip't	
233	Interior Block Wires	
241	Exch. Pole Lines	
242	Exch. Aerial Cable	
244	Exch. U. G. Conduit	291,846
245	Exch. U. G. Cable	
251	Toll Pole Lines	57
252	Toll Aerial Cable	
253	Toll Aerial Wire	
254	Toll U. G. Conduit	
255	Toll U. G. Cable	440
	Total	$295,072

(Here follows Exhibit A-15, side folios 2819 and 2820).

EXHIBIT A–15

Illinois Bell Telephone Company, Chicago Area

[fols. 2819 & 2820]

Comparison of Book Costs Less Capitalized Overheads with Appraisal Totals Le

I. C. C. Account		June 30, 1923		Dec. 31, 1923		Dec. 31, 1924		Dec. 31, 1925		Dec. 31
		Books	Appraisal	Books	Appraisal	Books	Appraisal	Books	Appraisal	Books
207-01	Right of Way—Exchange	$228,961	$340,761	$245,592	$364,130	$257,381	$409,636	$271,922	$438,658	$286,287
207-02	Right of Way—Toll	1,578	2,611	1,578	2,656	1,580	2,898	1,606	3,048	2,676
211	Land	1,639,332	1,781,774	1,644,235	2,017,821	1,641,558	2,210,466	1,707,721	2,501,741	2,050,071
212	Buildings	9,002,570	13,690,978	9,186,448	13,922,895	10,211,533	14,956,193	10,643,412	15,325,753	10,955,500
221	Central Office Tel. Equip't	25,390,210*	30,442,545	26,538,303*	31,350,450	28,902,957*	30,941,311	34,648,183*	35,910,773	39,707,362*
222	Other Equip't. of Central Offices	873,376	847,150	892,698	841,928	987,256	895,928	1,091,276	976,540	1,303,418
231	Station Apparatus	8,322,949	9,903,479	8,900,173	10,322,633	10,050,787	11,423,309	11,083,316	12,619,403	12,038,964
232	Station Installations	5,543,549	6,596,541**	5,834,171	6,539,138	6,380,477	6,307,477	6,789,359	6,477,066	7,257,204
233	Interior Block Wires	24,875	38,965	24,868	36,698	44,488	49,934	51,595	55,182	65,304
234	Private Branch Exchanges	4,699,755	5,192,846	4,988,057	5,445,772	5,736,774	5,999,170	6,755,638	6,892,456	7,539,715
235	Booths & Special Fittings	269,792	508,127	264,344	498,926	317,380*	514,633	372,478*	546,301	400,242*
241	Exchange Pole Lines	2,066,795*	3,259,502	2,153,183	3,373,904	2,326,891	3,241,882	2,507,634	3,123,274	2,663,259
242	Exchange Aerial Cable	2,911,312*	3,885,604	2,994,264	3,909,636	3,390,685	4,369,831	3,977,426	4,909,633	4,517,977
243	Exchange Aerial Wire	2,010,120*	2,380,134	2,144,024	2,342,593	2,379,491	2,452,397	2,638,512	2,689,874	2,870,028
244	Exchange Underground Conduit	8,704,047*	20,370,111	9,028,630	20,756,618	9,585,083	21,321,681	10,828,832	22,245,123	12,254,388
245	Exchange Underground Cable	16,829,173*	20,244,068	17,693,986	21,436,984	20,172,836	24,308,603	23,226,075	27,731,638	25,919,439
246	Exchange Submarine Cable	968	1,051	968	1,068	6,024	6,311	7,151	7,577	7,151
251	Toll Pole Lines	83,674*	129,991	84,589	135,341	85,007	126,746	78,233	105,687	70,552
252	Toll Aerial Cable	7,372*	9,220	7,373	9,476	5,689	7,553	5,720	7,570	1
253	Toll Aerial Wire	120,278*	166,771	120,948	163,641	121,561	152,492	104,961	136,184	84,629
254	Toll Underground Conduit	426,096*	736,754	473,627	737,886	473,813	739,253	483,731	739,259	20,043
255	Toll Underground Cable	1,206,713*	1,371,615	1,246,794	1,421,795	1,444,537	1,628,078	1,663,289	1,866,532	2,271,421
256	Toll Submarine Cable	....	....	....	....	....	....	....	....	....
	Miscellaneous (Picture trans. equip't., etc.)	1,036	1,044	16,974	16,982	49,428	49,436	84,993	85,004	79,013
	Omissions and Contingencies	....	551,264	....	539,236	....	497,238	....	443,535	....
	Total	$90,364,531	$122,452,906	$94,485,827	$126,188,207	$104,570,216	$132,612,456	$119,023,063	$145,837,811	$132,364,644
	Undistributed Construction Costs	3,768,742	20,725,843	4,024,478	21,349,905	4,692,944	22,675,313	5,564,720	25,168,964	6,426,710
	General Accounts	1,387,375	1,387,375	1,509,746	1,509,746	1,685,832	1,685,832	1,850,596	1,850,596	2,047,146
	Total	$95,520,648	$144,566,124	$100,020,051	$149,047,858	$110,948,992	$156,973,601	$126,438,379	$172,857,371	$140,838,500

* Adjusted Book Costs
** Revised.

EXHIBIT A-15

Illinois Bell Telephone Company, Chicago Area

Less Capitalized Overheads with Appraisal Totals Less Capitalized Overheads

	Dec. 31, 1925		Dec. 31, 1926		Dec. 31, 1927		Dec. 31, 1928		Dec. 31, 1929		Dec. 31, 1930	
isal	Books	Appraisal	Books	Appraisal	Books	Appraisal	Books	Appraisal	Books	Appraisal	Books	Appraisal
9,636	$271,922	$438,658	$286,287	$475,055	$301,330	$514,510	$322,243	$535,540	$340,341	$570,221	$357,478	$591,656
2,898	1,606	3,048	2,676	4,289	2,676	4,509	654	1,106	668	1,156	709	1,209
0,466	1,707,721	2,501,741	2,050,071	2,581,066	2,186,364	3,256,350	1,902,521	3,241,475	2,106,579	3,497,427	2,121,194	3,497,427
6,193	10,643,412	15,325,753	10,955,500	15,931,523	11,329,478	15,951,321	12,454,556	16,838,729	12,913,180	18,327,848	14,145,303	17,831,770
1,311	34,648,183*	35,910,773	39,707,362*	36,725,406	42,703,089*	37,977,354	48,258,557*	39,736,558	52,952,258*	42,681,217	55,215,326*	49,890,846
5,928	1,091,276	976,540	1,303,418	1,105,801	1,333,669	1,137,043	1,541,722	1,354,196	1,742,347	1,574,561	1,653,715	1,522,380
3,309	11,083,316	12,619,403	12,038,964	12,588,945	15,527,600	16,771,515	16,650,580	17,053,137	17,384,682	15,424,517	16,962,465	15,409,338
7,477	6,789,359	6,477,066	7,257,204	6,786,887	7,511,333	6,958,811	7,875,089	8,252,246	8,306,979	8,626,273	8,190,421	7,956,235
9,934	51,595	55,182	65,304	68,513	84,696	91,330	105,308	117,298	122,378	142,647	143,613	161,192
9,170	6,755,638	6,892,456	7,539,715	7,454,289	8,573,792	8,195,367	9,369,441	8,482,390	10,100,391	8,800,618	10,562,329	10,629,938
4,633	372,478*	546,301	400,242*	558,044	454,889*	597,183	498,396*	624,016	677,27[illegible]	776,918	982,218*	1,069,506
1,882	2,507,634	3,123,274	2,663,259	3,263,721	2,817,155	3,478,704	2,845,181	3,428,339	2,937,029	3,490,942	2,976,872	3,562,089
9,831	3,977,426	4,909,633	4,517,977	5,182,732	4,908,979	5,462,309	5,193,083	5,685,309	5,426,983	6,335,210	5,607,508	6,328,445
2,397	2,638,512	2,689,874	2,870,028	2,861,841	3,046,983	3,105,070	3,174,322	3,350,968	3,431,695	3,909,058	3,583,281	3,851,780
1,681	10,828,832	22,245,123	12,254,388	23,459,068	13,237,060	24,235,930	13,935,023	25,923,531	15,027,539	27,316,974	15,930,775	28,756,173
8,603	23,226,075	27,731,638	25,919,439	28,717,944	28,921,072	30,852,311	30,902,835	32,330,859	32,281,943	37,754,914	33,942,423	35,623,638
6,311	7,151	7,577	7,151	7,159	7,828	7,640	7,185	6,891	12,890	13,399	12,403	11,646
6,746	78,233	105,687	70,552	95,726	54,118	76,534	49,791	67,964	39,585	54,794	42,063	58,124
7,553	5,720	7,570	1	....	3,376	3,397	3,491	3,576	22,773	23,982	23,117	20,271
2,492	104,961	136,184	84,629	107,858	73,454	91,998	74,448	98,206	64,252	89,983	68,447	73,991
9,253	483,731	739,259	20,043	28,090	42,307	49,606	45,278	54,620	393,292	395,807	460,598	471,391
8,078	1,663,289	1,866,532	2,271,421	2,254,251	2,631,608	2,549,858	3,096,109	2,904,680	3,954,136	4,128,661	4,729,741	4,452,581
......	....	....	....	....	....	....	539	537	6,297	6,326	5,957	5,418
9,436	84,993	85,004	79,013	79,026	99,625	99,638	59,088	59,101	47,363	47,375	46,373	46,385
7,238	....	443,535	....	372,705	....	327,154	....	314,823	....	311,333	....	304,168
2,456	$119,023,063	$145,837,811	$132,364,644	$150,709,939	$145,852,481	$161,795,442	$158,365,440	$170,466,095	$170,292,855	$184,302,761	$177,764,329	$191,527,597
5,313	5,564,720	25,168,964	6,426,710	26,286,811	7,219,441	28,505,132	8,298,749	30,346,770	9,521,975	33,132,254	10,546,373	34,897,182
5,832	1,850,596	1,850,596	2,047,146	2,047,146	2,341,675	2,311,675	2,624,092	2,624,092	2,792,614	2,792,614	2,900,569	2,900,569
3,601	$126,438,379	$172,857,371	$140,838,500	$179,043,896	$155,413,597	$192,642,249	$169,288,281	$203,436,957	$182,607,444	$220,227,629	$191,211,271	$229,325,348

[fol. 2821]

Illinois Bell Telephone Company, Chicago Area

Comparison of Book Costs Less Capitalized Overheads with Appraisal Totals Less Capitalized Overheads

		Dec. 31, 1931	
	I. C. C. Account	Books	Appraisal
207–01	Right of Way—Exchange	$374,174	$620,803
207–02	Right of Way—Toll	709	1,236
211	Land	2,248,541	3,124,530
212	Buildings	14,109,102	13,308,981
221	Central Office Tel. Equip't.	57,714,759*	53,343,791
222	Other Equip't of Central Offices	1,578,308	1,460,226
231	Station Apparatus	16,531,706	15,312,474
232	Station Installations	7,892,950	7,653,328
233	Interior Block Wires	173,384	185,050
234	Private Branch Exchanges.	10,481,454	9,906,717
235	Booths & Special Fittings	1,245,448*	1,324,813
241	Exchange Pole Lines	3,004,872	3,544,155
242	Exchange Aerial Cable	5,609,488	6,237,825
243	Exchange Aerial Wire	3,722,900	3,821,410
244	Exchange Underground Conduit	16,453,744	28,896,331
245	Exchange Underground Cable	34,324,083	35,924,072
246	Exchange Submarine Cable	43,003	42,249
251	Toll Pole Lines	39,562	53,940
252	Toll Aerial Cable	23,135	20,288
253	Toll Aerial Wire	35,474	30,762
254	Toll Underground Conduit	460,598	465,310
255	Toll Underground Cable	4,837,692	4,599,931
256	Toll Submarine Cable	5,957	5,420
	Miscellaneous (Picture trans. equip't., etc.)	45,285	45,297
	Omissions and Contingencies	....	295,072
	Total	$180,956,328	$190,224,011

Undistributed Construction Costs	11,565,021	34,690,572
General Accounts	2,837,540	2,837,540
Total	$195,358,889	$227,752,123

*Adjusted Book Costs.

[fol. 2822] EXTRACT FROM EXHIBIT A–17

P–1

Inspection and Valuation of City of Chicago Buildings for Illinois Bell Telephone Company, December 31, 1923, to December 31, 1930

1. Douglas Office, 418 E. 35th Street:

1903. Original Building—2 stories and basement.

Ordinary wood construction with cinder fill in floors, stepped brick piers in basement, steel columns in 1st and 2nd story, walls carry load. Exterior treatment is pressed brick with stone trim front, with brick rear and sides. Steam heating.

Reconstruction value as of December 31st, for the following years with cubic contents and price per cubic foot.

1923—237,630	cu. ft.	at	31.80¢	cu. ft.	75,566.34
1924—237,630	"	"	32.10¢	"	76,279.23
1925—237,630	"	"	32.10¢	"	76,279.23
1926—237,630	"	"	32.72¢	"	77,752.54
1927—237,630	"	"	32.10¢	"	76,279.23
1928—237,630	"	"	31.80¢	"	75,566.34
1929—237,630	"	"	31.49¢	"	74,829.69
1930—237,630	"	"	30.56¢	"	72,619.73

2. Canal Office, 1454 W. 19th Street:

1902. Original building—2 stories and basement.
1920. Additional area to east—2 stories and basement.
1925. Partial 3rd story addition.

Framing: Original building brick footing and brick piers under columns to 1st floor, C. I. interior columns and steel beams, wood joists and floors, exterior walls carry load. 1920 and 1925 additions are similar, except that interior column footings are reinforced concrete. Exterior treatment is pressed brick with stone base and trim on south and west elevations, remainder common brick. Steam heating.

Reconstruction value as of December 31st, for the following years with cubic contents and price per cubic foot.

1923—240,250	cu. ft. at	42.55¢	cu. ft	102,226.37
1924—240,250	" "	42.96¢	"	103,211.40
1925— 240,250 Addition 30,256 } 270,506	" "	42.96¢	"	116,209.38
1926—270,506	" "	43.79¢	"	118,454.58
1927—270,506	" "	42.96¢	"	116,209.38
1928—270,506	" "	42.55¢	"	115,100.30
1929—270,506	" "	42.14¢	"	113,991.23
1930—270,506	" "	40.90¢	"	110,636.95

[fol. 2823] A-17, P. 2

3. Delaware Office, 54 West Chicago Avenue:
1900. Original building—2 stories and basement.
(Prior to 1924 known as Superior Office.)

Footings are stepped, columns are cast iron, beams are steel, floors are tile arch with wood finish, walls carry load. Exterior treatment is terra cotta front, brick sides and rear with terra cotta trim. Stairs are iron, steam heating.

Reconstruction value as of December 31st, for the following years with cubic contents and price per cubic foot:

1923—233,848	cu. ft. at	47.95¢	cu. ft	112,130.12
1924—233,848	" "	48.41¢	"	113,205.82
1925—233,848	" "	48.41¢	"	113,205.82
1926—233,848	" "	49.34¢	"	115,380.60
1927—233,848	" "	48.41¢	"	113,205.82
1928—233,848	" "	47.95¢	"	112,130.12
1929—233,848	" "	47.48¢	"	111,031.03
1930—233,848	" "	46.08¢	"	107,757.16

3½. Superior Office—Dearborn and Erie Streets:
1924. Original building, basement and part two stories and part three stories.

Caissons to bed rock, steel columns and girders, reinforced concrete beams and floors, cement finish. Exterior treatment, cut stone facing on west and north, common brick on east and south. Provision for ten stories and attic and horizontal extension to east, steel stairways, terrazzo floors and landings, marble wainscot, steam heating.

Reconstruction value as of December 31st, for the following years with cubic contents and price per cubic foot:

1924—1,066,757	cu. ft. at	65.44¢	cu. ft.	698,085.78
1925—1,066,757	“ “	65.44¢	“	698,085.78
1926—1,066,757	“ “	66.74¢	“	711,953.62
1927—1,066,757	“ “	65.44¢	“	698,085.78
1928—1,066,757	“ “	64.78¢	“	691,045.18
1929—1,066,757	“ “	64.13¢	“	684,111.26
1930—1,066,757	“ “	62.21¢	“	663,629.53

4. Lawndale Office—3606 Ogden Avenue:
1909. Original building, 3 stories and basement.
1913. Addition, two stories and basement.
1917. Addition, 3 stories and basement.
1924. Addition, 4th story.

Framing: Original building and 1913 section has steel interior columns and beams, tile arch floors with wood finish, walls are load bearing. 1917 Addition reinforced concrete, spread footings, steel columns and beams, tile arch floors with wood finish, walls carrying load. 1924 Addition, steel columns and beams, tile arch floor with wood finish, walls carry load. Exterior treatment is terra cotta front, pressed brick sides, common brick rear.

[fol. 2824] A-17, P. 3

Reconstruction value as of December 31st, for the following years with cubic contents and price per cubic foot:

1923—447,200		cu. ft. at	47.69¢	cu. ft.	213,269.68
1924—447,200 Addition 62,677	509,877	“ “	48.15¢	“	245,505.78
1925—509,877		“ “	48.15¢	“	245,505.78
1926—509,877		“ “	49.08¢	“	250,247.63
1927—509,877		“ “	48.15¢	“	245,505.78
1928—509,877		“ “	47.69¢	“	243,160.34
1929—509,877		“ “	47.23¢	“	240,814.91
1930—509,877		“ “	45.84¢	“	233,727.62

[fol. 2825] A-17, P. 4

39. Longbeach Office—1512 Carmen Avenue:
1927. Three stories and basement.

Reinforced concrete spread foundations, columns, beams and floors, cement finish. Exterior treatment pressed brick with one story stone base on street sides and stone trim. Provision for 3 additional stories and future extension to north. Woodwork is oak, stairs and platforms are tutti colori, steam heating, unit ventilators.

Reconstruction value as of December 31st, for the following years with cubic contents and price per cubic foot:

1927—673,155 cu. ft. at 50.11¢ cu. ft. 337,317.97
1928—673,155 " " 49.61¢ " 338,952.20
1929—673,155 " " 49.10¢ " 330,519.11
1930—673,155 " " 47.60¢ " 320,421.78

40. Newcastle Office—6682 Oliphant Street:
1917. Original building, 2 stories and basement.
Leased to I. B. T. Co. until purchased in 1928.
1929. Addition, two stories and basement.

Reinforced concrete spread footings, walls carry load with the exception of a few auxiliary columns, steel beams bearing on walls, wood joists and floors. Exterior treatment is pressed brick front, and one side, remainder common brick. Provision for one more story, steam heating. Cubic contents for 1929 addition 54,000 cu. ft.

Reconstruction value as of December 31st, for the following years with cubic contents and price per cubic foot:
1928—72,500 Original at 31.79¢ cu. ft. 23,047.75
Addition 54,000
1929 136,500 cu. ft. at 31.48¢ cu. ft. . . . 42,970.20
1930—136,500 " " 30.56¢ " 41,714.40

The following is a total of the reconstruction value (including the cost of buildings built since 1923) for each year from 1923 to 1930 inclusive:

1923	$13,907,707.28
1924	14,930,251.46
1925	15,299,519.16
1926	15,904,865.95
1927	15,921,134.53
1928	16,798,070.38
1929	18,285,230.91
1930	17,785,924.33

[fol. 2826] A-17, P. 21

Inspection and Valuation of City of Chicago Buildings for Illinois Bell Telephone Company, December 31, 1931

No.	Building	Volume in cu. ft.	Reconstruction Value as of 12-31-31	
			Per cu. ft.	Total
1.	Douglas Office	237,630	22.92¢	$54,464.80
2.	Canal Office	270,506	30.68¢	82,991.24
3.	Superior Office	1,066,757	46.66¢	497,748.81
4.	Lawndale Office	509,877	34.38¢	175,302.31
5.	West Office	371,586	40.16¢	149,228.93
6.	Yards Office	321,353	34.38¢	110,481.16
7.	Monroe Office	427,782	34.38¢	147,071.45
8.	Lakeview Office	805,773	36.98¢	297,974.85
9.	Wentworth Office	303,372	34.38¢	104,299.29
10.	Edgewater Office	363,531	37.12¢	134,892.70
11.	Humboldt Office	438,637	36.68¢	160,892.51
12.	Oakland Office	Cost reduced 25% under 1930		112,280.35
13.	Kedzie Office	486,462	34.38¢	167 245.64
14.	Lincoln Office	353,042	34.38¢	121,375.84
15.	Belmont Office	472,933	38.21¢	180,707.70
16.	Main Office	Cost reduced 25% under 1930		481,053.96
18.	Wabash Office	2,158,979	45.85¢	989,891.87
19.	Toll Building	1,010,500	42.02¢	424,613.10
20.	General Office Building	Cost reduced 25% below 1930		2,647,543.66
21.	Franklin Office	Cost reduced 25% below 1930		3,249,390.02

[fol. 2827] A-17, P. 22

No.	Building	Volume in cu. ft.	Per cu. ft.	Total
22.	Stewart Office	624,277	36.68¢	$228,984.80
23.	Rogers Park Office	505,115	36.68¢	185,276.18
24.	Irving Office	465,372	36.68¢	170,698.45
25.	Beverly Office	283,791	36.68¢	104,094.53
26.	Pullman Office	294,779	36.68¢	108,124.93
27.	Prospect Office	523,735	38.21¢	200,092.96
28.	Austin Office	571,801	36.68¢	209,736.60
	Value of Parapet Wall			1,491.38
	Total			211,227.98
29.	Calumet Office	Cost reduced 25% below 1930		184,382.50
30.	Lafayette Office	326,245	39.73¢	129,617.13
31.	South Chicago Office	442,347	36.68¢	162,252.88
32.	Hyde Park Office	804,234	36.68¢	294,993.03
33.	Kildare Office	540,827	36.68¢	198,375.34
36.	Central Division Barn	1,680,000	19.93¢	334,824.00
37.	Morrell Park Office	106,680	34.56¢	36,868.60
38.	Merrimac Office	388,023	39.34¢	152,648.24
39.	Longbeach Office	673,155	35.70¢	240,316.33
40.	Newcastle Office	136,500	22.92¢	31,295.80
	Grand Total			$13,263,523.87

[fol. 2828] EXTRACTS FROM EXHIBIT A-18

1

Chicago, Illinois, April 14, 1931.

Illinois Bell Telephone Company, Chicago, Illinois.

GENTLEMEN: As requested I have personally inspected and considered the values as of December 31, 1923, 1924, 1925, 1926, 1927, 1928, 1929 and 1930 of the several parcels of real estate and leaseholds owned and controlled by you situated in the City of Chicago, Illinois, and described in the accompanying report as Tracts #1 to 44, inclusive:

In my opinion the value of said real estate and leaseholds, exclusive of improvements thereon, was as follows:

December 31, 1923	$2,017,821.00
December 31, 1924	2,210,466.00
December 31, 1925	2,501,741.00
December 31, 1926	2,581,066.00
December 31, 1927	3,256,350.00
December 31, 1928	3,241,475.00
December 31, 1929	3,497,427.00
December 31, 1930	3,497,427.00

Respectfully submitted.

Ward T. Huston.

[fol. 2829] A-18, P. 48

Chicago, Illinois, January 15, 1932.

Illinois Bell Telephone Company, Chicago, Illinois.

GENTLEMEN: As requested I have personally inspected and considered the values as of December 31, 1931, of the several parcels of real estate and leaseholds owned and controlled by you situated in the City of Chicago, Illinois, and described in the accompanying report [as Tracts #1 to 39, inclusive]*.

In my opinion the value of said real estate and leaseholds, exclusive of improvements thereon, was $3,124,530.00.

Respectfully submitted.

Ward R. Huston.

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*Stricken in copy.

(Here follows Exhibit A-22, side folio 2830)

1

EXHIBIT A-22

PER CENT CONDITION OF PLANT ON DECEMBER 31 OF EACH YEAR FROM 1923 TO 1930 - CHICAGO.

Acct. No.	Classes of Plant	1923			1924			1925			1926			1927			
		Reproduction Cost	% Cond.		Reproduction Cost	% Cond.		Reproduction Cost	% Cond.		Reproduction Cost	% Cond.		Reproduction Cost	% Cond.		Reproduction Cost
212	Buildings	16976186	93	15787853	18286199	93	17006165	18785769	93	17470765	19579229	93	18208683	19717868	93	18337617	20870492
221	Central Ofc. Telephone Eqpt.	37317178	92	34331804	36890728	92	33939470	42880441	92	39450006	43933298	92	40418634	45643910	92	41992397	47858426
222	Other Central Office Eqpt.	864591	94	812716	920164	94	864954	1003073	94	942889	1135981	94	1067822	1168368	94	1098266	1391676
231	Station Apparatus	10783940	91	9813385	11939891	91	10865301	13196142	91	12008489	13170474	91	11985131	17562319	91	15981710	17865998
232	Station Installations	6921639	90	6229475	6676927	90	6009234	6854154	90	6168739	7181431	90	6463288	7366425	90	6629783	8735558
233	Interior Block Wires	39509	86	33978	53300	86	45838	58561	86	50362	72492	86	62343	96665	86	83132	124177
234	Private Branch Exchanges	5807481	88	5110583	6400301	89	5696268	7355958	90	6620362	7959039	91	7242725	8761820	92	8060874	9073305
235	Booths & Special Fittings	521301	78	406615	537995	79	425016	571362	79	451376	583917	80	467134	625446	80	500357	653874
241	Exchange Pole Lines	3822883	78	2981849	3674205	78	2865880	3539543	78	2760844	3696910	78	2883590	3944214	78	3076487	3882054
242	Exchange Aerial Cable	4584639	88	4034482	5119087	88	4504797	5748830	88	5058970	6074306	88	5345389	6425895	88	5654788	6695459
243	Exchange Aerial Wire	2480029	84	2083224	2594324	84	2179232	2843878	84	2388858	3027334	84	2542961	3287588	84	2761574	3549005
244	Exchange Underground Conduit	25858684	91	23531402	26604746	91	24210319	27787413	91	25286546	29332888	91	26692928	30455118	91	27714157	32629524
245	Exchange Underground Cable	25640613	95	24358582	29095572	95	27640793	33191851	95	31532258	34392805	95	32673165	37087737	95	35233350	38923532
246	Exchange Submarine Cable	1270	94	1194	7523	94	7072	9044	94	8501	8562	94	8048	9180	94	8629	8295
251	Toll Pole Lines	154900	77	119273	145226	77	111824	121098	77	93245	109403	77	84240	87563	77	67424	77566
252	Toll Aerial Cable	11382	98	11154	9066	98	8885	9090	98	8908	-	-	-	3997	98	3917	4212
253	Toll Aerial Wire	177097	99	175326	164883	99	163234	146976	99	145506	116097	99	114936	98906	99	97917	105388
254	Toll Underground Conduit	923123	99	913892	926680	99	917413	928224	99	918942	34700	99	34353	61622	99	61006	67988
255	Toll Underground Cable	1709235	96	1640866	1958032	96	1879711	2245051	96	2155249	2709844	96	2601450	3076929	96	2953852	3507230
256	Toll Submarine Cable	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	648
274	Miscellaneous	19928	85	16939	58089	85	49376	100014	85	85012	93106	85	79140	117847	85	100170	69990
	Sub-Total	144815608	91	132394592	152062938	91	139390782	167376472	91	153605827	173211816	91	158975960	185599417	91	170447407	196094399
260	General Equipment	1509746	78	1177802	1685832	78	1314949	1850596	78	1443465	2047146	78	1596774	[illegible]	78	1826507	[illegible]

EXHIBIT A-22

PER CENT CONDITION OF PLANT ON DECEMBER 31 OF EACH YEAR FROM 1923 TO 1930 - CHICAGO.

924		1925			1926			1927			1928			1929			1930		
% Cond.		Reproduction Cost	% Cond.		Reproduction Cost	% Cond.		Reproduction Cost	% Cond.		Reproduction Cost	% Cond.		Reproduction Cost	% Cond.		Reproduction Cost	% Cond.	
93	17006165	18785769	93	17470765	19579229	93	18208683	19717868	93	18337617	20870492	93	19409558	22710566	93	21120826	22147401	93	20597083
92	33939470	42880441	92	39450006	43933298	92	40418634	45643910	92	41992397	47858426	92	44029752	51378596	93	47782094	60167472	93	55955749
94	864954	1003073	94	942889	1135981	94	1067822	1168368	94	1098266	1391676	94	1308177	1618154	94	1521065	1564699	94	1470817
91	10865301	13196142	91	12008489	13170474	91	11985131	17562319	91	15981710	17865998	91	16258058	16161247	91	14706735	16152345	91	14698634
90	6009234	6854154	90	6168739	7181431	90	6463288	7366425	90	6629783	8735558	90	7862002	9127996	90	8215196	8417050	90	7575345
86	45838	58561	86	50362	72492	86	62343	96665	86	83132	124177	86	106792	150931	86	129801	170624	86	146737
89	5696268	7355958	90	6620362	7959039	91	7242725	8761820	92	8060874	9073305	93	8438174	9411038	94	8846376	10727361	94	10083719
79	425016	571362	79	451376	583917	80	467134	625446	80	500357	653874	81	529638	814172	83	675763	1121284	85	953091
78	2865880	3539543	78	2760844	3696910	78	2883590	3944214	78	3076487	3882054	78	3028002	3944607	78	3076793	4020097	78	3135676
88	4504797	5748830	88	5058970	6074306	88	5345389	6425895	88	5654788	6695459	88	5892004	7447289	88	6553614	7445555	88	6552088
84	2179232	2843878	84	2388858	3027334	84	2542961	3287588	84	2761574	3549005	84	2981164	4137688	84	3475658	4079387	84	3426685
91	24210319	27787413	91	25286546	29332888	91	26692928	30455118	91	27714157	32629524	91	29692867	34324625	91	31235409	36181901	91	32925530
95	27640793	33191851	95	31532258	34392805	95	32673165	37087737	95	35233350	38923532	95	36977355	45393065	95	43123412	42908417	95	40762996
94	7072	9044	94	8501	8562	94	8048	9180	94	8629	8295	94	7797	16109	94	15142	14028	94	13186
77	111824	121098	77	93245	109403	77	84240	87563	77	67424	77566	77	59726	62106	77	47821	65829	77	50688
98	8885	9090	98	8908	-	-	-	3997	98	3917	4212	98	4128	28194	98	27630	23850	98	23373
99	163234	146976	99	145506	116097	99	114936	98906	99	97917	105388	99	104334	96161	99	95199	79194	99	78402
99	917413	928224	99	918942	34700	99	34353	61622	99	61006	67988	99	67308	492065	99	487144	587060	99	581189
96	1879711	2245051	96	2155249	2709844	96	2601450	3076929	96	2953852	3507230	96	3366941	4972929	96	4774012	5366259	96	5151609
-		-	-	-	-	-	-	-		-	648	94	609	7607	94	7151	6524	94	6133
85	49376	100014	85	85012	93106	85	79140	117847	85	100170	69990	85	59492	56057	85	47648	54951	85	46708
91	139390782	167376472	91	153605827	173211816	91	158975960	185599417	91	170417407	196094399	91	180183878	212351201	92	195964489	221301288	92	204235438
[illegible]	[illegible]	[illegible]	78	[illegible]	2047148	78	1596774	2341675	78	1826507	2624092	78	2046792	2792614	78	2178239	2900569	78	2262444

	Sub-Total	144615608	91	132394592	152062938	91	139390782	167376472	91	153605827	173211816	91	158975960	185699417	91	170417407	19609439
260	General Equipment	1509746	78	1177602	1685832	78	1314949	1850596	78	1443465	2047146	78	1596774	2241675	78	1826507	2[illegible]409
	Total	146125354	91	133572194	153748770	91	140705731	169227068	91	155049292	175258962	91	160572734	187941092	91	172243914	19[illegible]71849

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	47648	54951	[illegible]	[illegible]
91	139390782	167376472	91	153605827	173211816	91	158975960	185599417	91	170417407	196094399	91	180183878	212351201	92	195964489	221301288	92	204235138
78	1314949	1850596	78	1443465	2047146	78	1596774	2341675	78	1826507	2624092	78	2046792	2792614	78	2178239	2900569	78	2262444
91	140705731	169227068	91	155049292	175258962	91	160572734	187941092	91	172243914	198718491	91	182230670	215143815	92	198142728	224201857	92	206497582

[fol. 2831] EXTRACTS FROM EXHIBIT A-40

Page 1

Section II

Analysis of Traffic in Connection with Separation of Property Between Intrastate Use and Interstate Use

* * * * * * *

[fol. 2832] A-40, Page 5

Excerpt from Section II

* * * * * * *

9. Local Central Offices:

The offices under this classification are the manually operated and dial operated offices within the city of Chicago used principally for handling:

(a) Local subscriber to local subscriber connections.

(b) Local subscriber to Toll Office for placing requests for toll connections.

(c) Toll Office to local subscriber for completing toll connections.

Page 6

(d) Local subscriber to A-B toll point directly or via the Tandem Office.

(e) A-B toll point to local subscriber directly or via the Tandem Office.

These equipments including the subscribers' lines and stations served therefrom were separated on the basis of use.

"Use" in this connection denotes the total time subscribers' lines are connected at the switchboards including both conversation time and holding time necessary to establish the connections and to make the disconnections.

[fol. 2833] For calls between local stations of the exchange system total minutes' use was determined by applying to the annual number of such calls the average holding time in minutes per call.

For calls between subscriber stations and the Toll Office, total minutes' use was determined by applying to the annual volume of each class of call (person to person intrastate and interstate, station to station intrastate and interstate) the average holding time in minutes. This average holding time includes allowance for incidental use such as requests for information on toll calls, reports on calls placed, information on charges, etc.

For calls from the Toll Office to subscribers' stations in connection with the completion of both outgoing requests for toll connections and incoming toll board calls from distant points the total minutes' use was determined by applying to the annual volume of incoming toll switching attempts or number of times the subscriber line is taken and held on such calls, the average number of minutes per switching attempt.

For calls outgoing from the local stations to short haul toll points (A-B Toll) handled by local central office operators either directly or via the Tandem Office the total minutes' use was determined by applying to the annual volume of such calls the average holding time in minutes per call.

For calls incoming from short haul toll points (A-B Toll) handled by local central office operators either directly or via the Tandem Office total minutes' use was determined by applying to the annual volume of such calls the average holding time in minutes per call.

Page 7

The sum of the above products provides total minutes' use of the subscriber lines, stations and equipment for all services which when divided into the respective minutes' [fol. 2834] use for local exchange, intrastate and interstate toll, provide the relative percentages of use of the jointly used plant and equipment for local exchange, intrastate and interstate toll purposes.

[fol. 2835]

Section IV

Apportionment of Operators' Wages and Transmission Power

Operators' Wages—Account 624-11:

Operators' wages were apportioned on the basis of the relative number of operating labor units of operators using the equipment in handling local exchange, intrastate toll and interstate toll calls. An operating labor unit is the unit of labor required to complete a local flat rate call by the "A" operator at multiple type switchboards. The operating labor units for other calls of various classes, exchange and toll, are measured in terms of this unit.

The operating labor unit volumes were obtained as follows:

Local Manual and Dial Offices:

From Forms E-108, E-436, E-344 and E-425 "Local Peg Count Summaries" available for all years 1923-1930 inclusive the average day total originating and incoming units were obtained. The units applying to the various classes of toll calls such as originating A-B toll intrastate, originating A-B toll interstate, incoming A-B toll intrastate, incoming A-B toll interstate, originating for toll board intrastate, originating for toll board interstate and incoming from toll board were obtained by the application of coefficients derived from basic records or built up using the standard coefficient allowances weighted for distribution of traffic. These coefficients vary each year due to changes in operating methods and to the changes in the relative proportion of particular types of calls handled on particular types of equipment. The total units corresponding to the volume of calls incoming from the toll board were apportioned to interstate and intrastate by applying ratios of interstate outfiled calls to total outfiled calls and intrastate outfiled calls to total outfiled calls, respectively. The units applying to local exchange calls were obtained by deducting the toll units from the total units.

Tandem Office

The average day units were obtained from Forms E-108 and E-436 and distributed to local, intrastate toll and interstate toll as the calls handled at the board were distributed to these three classes.

[fol. 2836]

Toll Office

The units per outward, inward and through switch calls were obtained from supplementary peg count records

Forms E-428 and E-864 for all years and applied to the respective volumes of intrastate and interstate calls to obtain the total number of intrastate and interstate units.

Transmission Power—Account 628:

The cost of power, electric or other, purchased for transmitting traffic and for operating signals was obtained by applying to the respective classes of traffic, local, intrastate toll and interstate toll, the respective average current drain or energy in ampere seconds used per call.

Form 3102

EXHIBIT A-41

APPORTIONMENT OF REPRODUCTION COST NEW TO INTRASTATE AND INTERSTATE PROPERTY AS OF DEC. 31ST OF EACH OF THE YEARS 1923-1930 INCLUSIVE.

CITY OF CHICAGO

STATION TO ST

PERIOD	COST OF REPRODUCTION (A)	APPORTIONMENT OF (A) DOLLARS					APPORTION	
		TOLL			INTRASTATE EXCHANGE	INTRASTATE TOTAL	TOLL	
		TOTAL	INTERSTATE	INTRASTATE			TOTAL	INTER
12-31-1923	149 047 858	12 886 511	6 655 078	6 231 433	136 161 347	142 392 780	8. 646	4. 46
12-31-1924	156 973 601	14 743 809	7 749 564	6 994 245	142 229 792	149 224 037	9. 393	4. 93
12-31-1925	172 857 371	17 532 270	9 603 725	7 928 545	155 325 101	163 253 646	10. 143	5. 5
12-31-1926	179 043 896	19 264 814	10 491 368	8 773 446	159 779 082	168 552 528	10. 760	5. 8
12-31-1927	192 642 249	22 372 823	[illegible] 086 103	10 286 720	170 269 426	180 556 146	11. 614	6. 2
12-31-1928	203 436 957	26 592 358	14 679 451	11 912 907	176 844 599	188 757 506	13. 072	7. 2
12-31-1929	220 227 629	32 397 498	17 888 543	14 508 955	187 830 131	202 339 086	14. 711	8. 12
12-31-1930	229 325 348	36 218 671	20 607 875	15 610 796	193 106 677	208 717 473	15. 794	8. 9

EXHIBIT A-41

ENT OF REPRODUCTION COST NEW TO INTRASTATE AND INTERSTATE PROPERTY AS OF DEC. 31ST OF EACH OF THE YEARS 1923-1930 INCLUSIVE.

CITY OF CHICAGO

STATION TO STATION BASIS.

APPORTIONMENT OF (A) DOLLARS					APPORTIONMENT OF (A) PERCENT				
TOLL			INTRASTATE EXCHANGE	INTRASTATE TOTAL	TOLL			INTRA EXCH.	INTRA TOTAL
TOTAL	INTERSTATE	INTRASTATE			TOTAL	INTER	INTRA		
12 886 511	6 655 078	6 231 433	136 161 347	142 392 780	8. 646	4. 465	4. 181	91. 354	95. 535
14 743 809	7 749 564	6 994 245	142 229 792	149 224 037	9. 393	4. 937	4. 456	90. 607	95. 063
17 532 270	9 603 725	7 928 545	155 325 101	163 253 646	10. 143	5. 556	4. 587	89. 857	94. 444
19 264 814	10 491 368	8 773 446	159 779 082	168 552 528	10. 760	5. 860	4. 900	89. 240	94. 140
22 372 823	12 086 103	10 286 720	170 269 426	180 556 146	11. 614	6. 274	5. 340	88. 386	93. 726
26 592 358	14 679 451	11 912 907	176 844 599	188 757 506	13. 072	7. 216	5. 856	86. 928	92. 784
32 397 498	17 888 543	14 508 955	187 830 131	202 339 086	14. 711	8. 123	6. 588	85. 289	91. 877
36 218 671	20 607 875	15 610 796	193 106 677	208 717 473	15. 794	8. 987	6. 807	84. 207	91. 014

Form 3102

APPORTIONMENT OF REPRODUCTION COST NEW TO INTRASTATE AND INTERSTATE PROPE

AS OF DEC. 31ST OF EACH YEAR

CITY OF CHICAGO STATION

PERIOD	COST OF REPRODUCTION (A)	APPORTIONMENT OF (A) DOLLARS					APPORTIONM	
		TOLL			INTRASTATE EXCHANGE	INTRASTATE TOTAL	TOL	
		TOTAL	INTERSTATE	INTRASTATE			TOTAL	INTE
12-31-1931	227 752 123	36 573 446	21 093 017	15 480 429	191 178 677	206 659 106	16.058	9.26

OF REPRODUCTION COST NEW TO INTRASTATE AND INTERSTATE PROPERTY
DEC. 31ST OF EACH YEAR

CITY OF CHICAGO

STATION TO STATION

APPORTIONMENT OF (A) DOLLARS					APPORTIONMENT OF (A) PERCENT				
TOLL			INTRASTATE EXCHANGE	INTRASTATE TOTAL	TOLL			INTRA EXCH.	INTRA TOTAL
L	INTERSTATE	INTRASTATE			TOTAL	INTER	INTRA		
446	21 093 017	15 480 429	191 178 677	206 659 106	16.058	9.261	6.797	83.942	90.739

ILLINOIS BELL TELEPHONE COMPANY – CHICAG

APPORTIONMENT OF REPRODUCTION COST NEW AS OF 12-31-23
TO
INTRASTATE AND INTERS[illegible]OPERTY BY ACCOUNTS AND SUB-AC

ACCOUNT NUMBERS		CLASS OF PLANT	COST OF REPRODUCTION (A)	APPO[illegible]NT OF (A) DOLLARS				
					TO[illegible]			
I.C.C.	I.B.T.			TOTAL	INTERST[illegible]	[illegible]TRASTATE	INTRASTATE EXCHANGE	INTRASTATE TOTAL
207-01		RIGHT OF WAY (EXCH)	434 716	12 419	4 375	8 044	422 297	430
207-02		" " " (TOLL)	3 151	3 151	2 902	249	-	
212		BUILDINGS	16 960 998	1 977 144	1 215 087	762 057	14 983 854	15 745
212	10-AC	IMPROV. TO RENTED BUILDINGS	15 188	1 771	1 089	682	13 417	14
211		LAND	2 484 637	287 656	177 205	110 451	2 196 981	2 307
221	7C	CENT. OFFICE EQUIPMENT	31 157 131	2 577 823	1 276 066	1 301 757	28 579 308	29 881
221	87C-97C	" "	5 264 404	418 590	169 092	249 498	4 845 814	5 095
221	307-C	" "	895 643	895 643	853 178	42 465	-	42
222		OTHER EQUIP. OF CENT. OFFS.	864 591	113 219	69 902	43 317	751 372	794
231		STATIONS (TELETYPEWRITER)	-	-	-	-	-	-
231		" OTHER	10 783 940	320 337	128 642	191 695	10 463 603	10 655
232		STATION INSTALLATION	6 921 639	200 890	80 922	119 968	6 720 749	6 840
233		INTERIOR BLOCK WIRES	39 509	1 126	395	731	38 383	39
234		PRIVATE BRANCH EXCHANGES	5 807 481	137 095	48 104	88 991	5 670 386	5 759
235		BOOTHS AND SPECIAL FITTINGS	521 301	14 857	5 213	9 644	506 444	516
241-251		EXCH. AND TOLL POLE LINES	3 977 763	263 852	162 189	101 663	3 713 931	3 815
242-252		" " " AER. CABLE	4 596 021	134 894	48 631	86 263	4 461 127	4 547
243-253		" " " " WIRE	2 657 126	193 328	126 973	66 355	2 463 798	2 530
244-254		" " " U.G. CONDUIT	26 781 807	2 171 545	877 254	1 294 291	24 610 262	25 904
245-255		" " " " CABLE	27 351 118	2 922 814	1 232 646	1 690 168	24 428 304	26 118
246-256		" " SUBM. "	-	-	-	-	-	-
274	-02	MISCELLANEOUS CONST.	1 [illegible]	[illegible]				

ILLINOIS BELL TELEPHONE COMPANY - CHICAGO

APPORTIONMENT OF REPRODUCTION COST NEW AS OF 12-31-23
TO
NTRASTATE AND INTERSTATE PROPERTY BY ACCOUNTS AND SUB-ACCOUNTS.

STATION TO STATION BASIS

	APPORTIONMENT OF (A) DOLLARS					APPORTIONMENT OF (A) PERCENT				
	TOLL			INTRASTATE EXCHANGE	INTRASTATE TOTAL	TOLL			INTRA EXCH.	INTRA TOTAL
ION	TOTAL	INTERSTATE	INTRASTATE			TOTAL	INTER	INTRA		
716	12 419	4 375	8 044	422 297	430 341	2.857	1.006	1.851	97.143	98.994
151	3 151	2 902	249	-	249	100.000	92.098	7.902	-	7.902
998	1 977 144	1 215 087	762 057	14 983 854	15 745 911	11.657	7.164	4.493	88.343	92.836
188	1 771	1 089	682	13 417	14 099	11.661	7.170	4.491	88.339	92.830
637	287 656	177 205	110 451	2 196 981	2 307 432	11.577	7.132	4.445	88.423	92.868
131	2 577 823	1 276 066	1 301 757	28 579 308	29 881 065	8.274	4.096	4.178	91.726	95.904
404	418 590	169 092	249 498	4 845 814	5 095 312	7.951	3.212	4.739	92.049	96.788
643	895 643	853 178	42 465	-	42 465	100.000	95.259	4.741	-	4.741
591	113 219	69 902	43 317	751 372	794 689	13.095	8.085	5.010	86.905	91.915
	-	-	-	-	-	-	-	-	-	-
940	320 337	128 642	191 695	10 463 603	10 655 298	2.971	1.193	1.778	97.029	98.807
639	200 890	80 922	119 968	6 720 749	6 840 717	2.902	1.169	1.733	97.098	98.831
509	1 126	395	731	38 383	39 114	2.850	1.000	1.850	97.150	99.000
481	137 095	48 104	88 991	5 670 386	5 759 377	2.361	.829	1.532	97.639	99.171
301	14 857	5 213	9 644	506 444	516 088	2.850	1.000	1.850	97.150	99.000
763	263 852	162 189	101 663	3 713 931	3 815 594	6.633	4.077	2.556	93.367	95.923
021	134 894	48 631	86 263	4 461 127	4 547 390	2.935	1.058	1.877	97.065	98.942
126	193 328	126 973	66 355	2 463 798	2 530 153	7.276	4.779	2.497	92.724	95.221
807	2 171 545	877 254	1 294 291	24 610 262	25 904 553	8.108	3.275	4.833	91.892	96.725
118	2 922 814	1 232 646	1 690 168	24 428 304	26 118 472	10.686	4.507	6.179	89.314	95.493
	-	-	-	-	-	-	-	-	-	-
172	33	12	21	1 139	1 160	2.816	1.024	1.792	97.184	98.976

					[illegible]	[illegible]	2 463 798	2 530
[illegible]		U. G. CONDUIT	26 781 807	2 171 545	877 254	1 294 291	24 610 262.	25 904
245-255		" CABLE	27 351 118	2 922 814	1 232 646	1 690 168	24 428 304	26 118
246-256		" SUBM. "	-	-	-	-	-	-
274	-02	MISCELLANEOUS CONST.	1 172	33	12	21	1 139	1
274	80C-90C	"	-	-	-	-	-	-
274	70-73C	"	18 756	-	-	-	18 756	18
		TOTAL STRUCTURAL PLANT	147 538 112	12 648 187	6 479 877	6 168 310	134 889 925	141 058
		GENERAL EQUIPMENT	1 509 746	129 431	66 308	63 123	1 380 315	1 443
		SUB-TOTAL	149 047 858	12 777 618	6 546 185	6 231 433	136 270 240	142 501
		INTRASTATE EXCHANGE PROPERTY USED FOR INTERSTATE SERVICE		+ 108 893	+ 108 893		- 108 893	- 108
		GRAND TOTAL	149 047 858	12 886 511	6 655 078	6 231 433	136 161 347	142 392

5

							1.877	97.065	98.942
			2 463 798	2 530 153	7.276	4.779	2.497	92.724	95.221
2 171 545	877 254	1 294 291	24 610 262	25 904 553	8.108	3.275	4.833	91.892	96.725
2 922 814	1 232 646	1 690 168	24 428 304	26 118 472	10.686	4.507	6.179	89.314	95.493
-	-	-	-	-	-	-	-	-	-
33	12	21	1 139	1 160	2.816	1.024	1.792	97.184	98.976
-	-	-	-	-	-	-	-	-	-
-	-	-	18 756	18 756	-	-	-	100.000	100.000
12 648 187	6 479 877	6 168 310	134 889 925	141 058 235	8.573	4.392	4.181	91.427	95.608
129 431	66 308	63 123	1 380 315	1 443 438	8.573	4.392	4.181	91.427	95.608
12 777 618	6 546 185	6 231 433	136 270 240	142 501 673	8.573	4.392	4.181	91.427	95.608
+ 108 893	+ 108 893		- 108 893	- 108 893					
12 886 511	6 655 078	6 231 433	136 161 347	142 392 780	8.646	4.465	4.181	91.354	95.535

ILLINOIS BELL TELEPHONE COMPANY - CHIC

APPORTIONMENT OF REPRODUCTION COST NEW AS OF 12-31-24
TO
INTRASTATE AND INTERSTATE PROPERTY BY ACCOUNTS AND SUB-

ACCOUNT NUMBERS I.C.C.	ACCOUNT NUMBERS I.B.T.	CLASS OF PLANT	COST OF REPRODUCTION (A)	APPORTIONMENT OF (A) DOLLARS: TOLL TOTAL	TOLL INTERSTATE	TOLL INTRASTATE	INTRASTATE EXCHANGE	INTRAS TOT
207-01		RIGHT OF WAY (EXCH)	489 533	14 717	4 974	9 743	474 816	48
207-02		" " (TOLL)	3 443	3 443	3 209	234	-	
212		BUILDINGS	18 260 257	2 263 722	1 408 038	855 684	15 996 535	16 85
212	10-AC	IMPROV. TO RENTED BUILDINGS	25 942	3 217	2 000	1 217	22 725	
211		LAND	2 731 855	345 309	216 176	129 133	2 386 546	2 51
221	7C	CENT. OFFICE EQUIPMENT	31 114 508	2 647 109	1 321 842	1 325 267	28 467 399	29 7
221	87C-97C	" "	4 568 195	399 599	154 796	244 803	4 168 596	4 4
221	307-C	" "	1 208 025	1 208 025	1 153 024	55 001	-	
222		OTHER EQUIP. OF CENT. OFFS.	920 164	121 015	72 735	48 280	799 149	84
231		STATIONS (TELETYPEWRITER)	10 775	-	-	-	10 775	
231		" OTHER	11 929 116	369 440	141 837	227 603	11 559 676	11 7
232		STATION INSTALLATION	6 676 927	202 122	78 188	123 934	6 474 805	6 5
233		INTERIOR BLOCK WIRES	53 300	1 599	538	1 061	51 701	
234		PRIVATE BRANCH EXCHANGES	6 400 301	159 003	53 531	105 472	6 241 298	6 3
235		BOOTHS AND SPECIAL FITTINGS	537 995	16 140	5 434	10 706	521 855	5
241-251		EXCH. AND TOLL POLE LINES	3 819 431	235 954	148 969	86 985	3 583 477	3 6
242-252		" " " AER. CABLE	5 128 153	157 829	54 610	103 219	4 970 324	5 0
243-253		" " " " WIRE	2 759 207	192 547	121 752	70 795	2 566 660	2 6
244-254		" " " U.G. CONDUIT	27 531 426	2 444 854	1 002 326	1 442 528	25 086 572	26 5
245-255		" " " " CABLE	31 061 127	3 613 167	1 535 731	2 077 436	27 447 960	29 5
246-256		" " " SUBM. "	-	-	-	-	-	
274	-02	MISCELLANEOUS CONST.	1 174	35	12	23	1 139	
274	80C-90C	" "	-	-	-	-	-	
274	70-73C	" "	56 915	56 915	56 915	-	-	

ILLINOIS BELL TELEPHONE COMPANY - CHICAGO

APPORTIONMENT OF REPRODUCTION COST NEW AS OF 12-31-24
TO
INTRASTATE AND INTERSTATE PROPERTY BY ACCOUNTS AND SUB-ACCOUNTS.

STATION TO STATION BASIS

T OF UCTION	APPORTIONMENT OF (A) DOLLARS					APPORTIONMENT OF (A) PERCENT				
	TOLL			INTRASTATE EXCHANGE	INTRASTATE TOTAL	TOLL			INTRA EXCH.	INTRA TOTAL
	TOTAL	INTERSTATE	INTRASTATE			TOTAL	INTER	INTRA		
9 533	14 717	4 974	9 743	474 816	484 559	3.006	1.016	1.990	96.994	98.984
3 443	3 443	3 209	234	-	234	100.000	93.204	6.796	-	6.796
0 257	2 263 722	1 408 038	855 684	15 996 535	16 852 219	12.397	7.711	4.686	87.603	92.289
5 942	3 217	2 000	1 217	22 725	23 942	12.40	7.71	4.69	87.60	92.29
1 855	345 309	216 176	129 133	2 386 546	2 515 679	12.640	7.913	4.727	87.360	92.087
4 508	2 647 109	1 321 842	1 325 267	28 467 399	29 792 666	8.508	4.248	4.260	91.492	95.752
8 195	399 599	154 796	244 803	4 168 596	4 413 399	8.747	3.388	5.359	91.253	96.612
8 025	1 208 025	1 153 024	55 001	-	55 001	100.000	95.447	4.553	-	4.553
0 164	121 015	72 735	48 280	799 149	847 429	13.151	7.904	5.247	86.849	92.096
0 775	-	-	-	10 775	10 775	-	-	-	100.000	100.000
9 116	369 440	141 837	227 603	11 559 676	11 787 279	3.097	1.189	1.908	96.903	98.811
6 927	202 122	78 188	123 934	6 474 805	6 598 739	3.027	1.171	1.856	96.973	98.889
5 300	1 599	538	1 061	51 701	52 762	3.000	1.009	1.991	97.000	98.991
0 301	159 003	53 531	105 472	6 241 298	6 346 770	2.484	.836	1.648	97.516	99.164
7 995	16 140	5 434	10 706	521 855	532 561	3.000	1.010	1.990	97.000	98.990
431	235 954	148 969	86 985	3 583 477	3 670 462	6.178	3.900	2.278	93.822	96.100
153	157 829	54 610	103 219	4 970 324	5 073 543	3.078	1.065	2.013	96.922	98.935
207	192 547	121 752	70 795	2 566 660	2 637 455	6.978	4.412	2.566	93.022	95.588
426	2 444 854	1 002 326	1 442 528	25 086 572	26 529 100	8.880	3.641	5.239	91.120	96.359
127	3 613 167	1 535 731	2 077 436	27 447 960	29 525 396	11.632	4.944	6.688	88.368	95.056
-	-	-	-	-	-	-	-	-	-	-
174	35	12	23	1 139	1 162	2.961	1.022	1.959	97.019	98.978
-	-	-	-	-	-	-	-	-	-	-
915	56 915	56 915	-	-	-	100.000	100.000	-	-	-

242-252		" " " AER. CABLE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
243-253		" " " " WIRE	2 759 207	192 547	121 752	70 795	2 566 660	2 637
244-254		" " " U.G. CONDUIT	27 531 426	2 444 854	1 002 326	1 442 528	25 086 572	26 529
245-255		" " " " CABLE	31 061 127	3 613 167	1 535 731	2 077 436	27 447 960	29 525
246-256		" " " SUBM. "	-	-	-	-	-	-
274	-02	MISCELLANEOUS CONST.	1 174	35	12	23	1 139	1
274	80C-90C	" "	-	-	-	-	-	-
274	70-73C	" "	56 915	56 915	56 915	-	-	-
		TOTAL STRUCTURAL PLANT	155 287 769	14 455 761	7 536 637	6 919 124	140 832 008	147 751
		GENERAL EQUIPMENT	1 685 832	156 934	81 813	75 121	1 528 898	1 604
		SUB TOTAL	156 973 601	14 612 695	7 618 450	6 994 245	142 360 906	149 355
		INTRASTATE EXCHANGE PROPERTY USED FOR INTERSTATE SERVICE		+ 131 114	+ 131 114		- 131 114	- 131
		GRAND TOTAL	156 973 601	14 743 809	7 749 564	6 994 245	142 229 792	149 224

207	192 547	121 752	70 795	2 566 660	2 637 455	6.978	4.412	2.566	93.022	
426	2 444 854	1 002 326	1 442 528	25 086 572	26 529 100	8.880	3.641	5.239	91.120	96.359
127	3 613 167	1 535 731	2 077 436	27 447 960	29 525 396	11.632	4.944	6.688	88.368	95.056
-	-	-	-	-	-	-	-	-	-	-
1 174	35	12	23	1 139	1 162	2.981	1.022	1.959	97.019	98.978
-	-	-	-	-	-	-	-	-	-	-
915	56 915	56 915	-	-	-	100.000	100.000	-	-	-
769	14 455 761	7 536 637	6 919 124	140 832 008	147 751 132	9.309	4.853	4.456	90.691	95.147
832	156 934	81 813	75 121	1 528 898	1 604 019	9.309	4.853	4.456	90.691	95.147
601	14 612 695	7 618 450	6 994 245	142 360 906	149 355 151	9.309	4.853	4.456	90.691	95.147
	+ 131 114	+ 131 114		- 131 114	- 131 114					
601	14 743 809	7 749 564	6 994 245	142 229 792	149 224 037	9.393	4.937	4.456	90.607	95.063

ILLINOIS BELL TELEPHONE COMPANY - CHICAG

APPORTIONMENT OF REPRODUCTION COST NEW AS OF 12-31-25
TO
INTRASTATE AND INTERSTATE PROPERTY BY ACCOUNTS AND SUB-A

ACCOUNT NUMBERS		CLASS OF PLANT	COST OF REPRODUCTION (A)	APPORTIONMENT OF (A) DOLLARS				
				TOLL			INTRASTATE EXCHANGE	INTRASTA TOTA
I.C.C.	I.B.T.			TOTAL	INTERSTATE	INTRASTATE		
207-01		RIGHT OF WAY (EXCH)	524 622	17 155	5 876	11 279	507 467	518
207-02		" " " (TOLL)	3 624	3 596	3 596	-	28	
212		BUILDINGS	18 759 535	2 354 010	1 496 998	857 012	16 405 525	17 262
212	10-AC	IMPROV. TO RENTED BUILDINGS	26 234	3 292	2 093	1 199	22 942	24
211		LAND	3 102 057	395 603	251 447	144 156	2 706 454	2 850
221	7C	CENT. OFFICE EQUIPMENT	34 056 992	2 975 591	1 568 567	1 407 024	31 081 401	32 488
221	87C-97C	" "	7 060 808	616 414	240 823	375 591	6 444 394	6 819
221	307-C	" "	1 762 641	1 762 641	1 706 151	56 490	-	56
222		OTHER EQUIP. OF CENT. OFFS.	1 003 073	136 776	84 488	52 288	866 297	918
231		STATIONS (TELETYPEWRITER)	24 170	833	835	-	23 337	23
231		" OTHER	13 171 972	438 958	167 681	271 277	12 733 014	13 004
232		STATION INSTALLATION	6 854 154	223 426	86 356	137 070	6 630 728	6 767
233		INTERIOR BLOCK WIRES	58 561	1 915	656	1 259	56 646	57
234		PRIVATE BRANCH EXCHANGES	7 355 958	199 215	68 233	130 982	7 156 743	7 287
235		BOOTHS AND SPECIAL FITTINGS	571 368	18 684	6 399	12 285	552 678	564
241-251		EXCH. AND TOLL POLE LINES	3 660 641	209 682	127 669	82 013	3 450 959	3 532
242-252		" " " AER. CABLE	5 757 920	189 694	64 852	124 842	5 568 226	5 693
243-253		" " " " WIRE	2 990 854	187 995	114 977	73 016	2 802 861	2 875
244-254		" " " U.G. CONDUIT	28 715 637	2 868 618	1 247 181	1 621 437	25 847 019	27 468
245-255		" " " " CABLE	35 445 946	4 508 387	2 017 974	2 484 413	30 945 559	33 427
246-256		" " " SUBM.	-	-	-	-	-	-

ILLINOIS BELL TELEPHONE COMPANY - CHICAGO

APPORTIONMENT OF REPRODUCTION COST NEW AS OF 12-31-25
TO
INTRASTATE AND INTERSTATE PROPERTY BY ACCOUNTS AND SUB-ACCOUNTS.

STATION TO STATION BASIS

OF TION	APPORTIONMENT OF (A) DOLLARS					APPORTIONMENT OF (A) PERCENT				
	TOLL			INTRASTATE EXCHANGE	INTRASTATE TOTAL	TOLL			INTRA EXCH.	INTRA TOTAL
	TOTAL	INTERSTATE	INTRASTATE			TOTAL	INTER	INTRA		
622	17 155	5 876	11 279	507 467	518 746	3.270	1.120	2.150	96.730	98.880
624	3 596	3 596	-	28	28	99.227	99.227	-	.773	.773
535	2 354 010	1 496 998	857 012	16 405 525	17 262 537	12.548	7.980	4.568	87.452	92.020
234	3 292	2 093	1 199	22 942	24 141	12.55	7.98	4.57	87.45	92.02
057	395 605	251 447	144 156	2 706 454	2 850 610	12.755	8.106	4.647	87.247	91.894
992	2 975 591	1 568 567	1 407 024	31 081 401	32 488 425	8.737	4.606	4.131	91.263	95.394
808	616 414	240 823	375 591	6 444 394	6 819 985	8.730	3.411	5.319	91.270	96.589
641	1 762 641	1 706 151	56 490	-	56 490	100.000	96.795	3.205	-	3.205
073	136 776	84 488	52 288	866 297	918 585	13.636	8.423	5.213	86.364	91.577
170	833	833	-	23 337	23 337	3.446	3.446	-	96.554	96.554
972	438 958	167 681	271 277	12 733 014	13 004 291	3.333	1.273	2.060	96.667	98.727
154	223 426	86 356	137 070	6 630 728	6 767 798	3.260	1.260	2.000	96.740	98.740
561	1 915	656	1 259	56 646	57 905	3.270	1.120	2.150	96.730	98.880
958	199 215	68 233	130 982	7 156 743	7 287 725	2.708	.927	1.781	97.292	99.073
362	18 684	6 399	12 285	552 678	564 963	3.270	1.120	2.150	96.730	98.880
641	209 682	127 669	82 013	3 450 959	3 532 972	5.728	3.488	2.240	94.272	96.512
920	189 694	64 852	124 842	5 568 226	5 693 068	3.294	1.126	2.168	96.706	98.874
854	187 993	114 977	73 016	2 802 861	2 875 877	6.286	3.844	2.442	93.714	96.156
637	2 868 618	1 247 181	1 621 437	25 847 019	27 468 456	9.990	4.343	5.647	90.010	95.657
946	4 502 387	2 017 974	2 484 413	30 943 559	33 427 972	12.708	5.693	7.009	87.298	94.307
-	-	-	-	-	-	-	-	-	-	-
170	38	13	25	1 132	1 157	3.248	1.111	2.137	96.752	98.889
355	37 355	37 355	-	-	-	100.000	100.000	-	-	-
489	61 489	61 489	-	-	-	100.000	100.000	-	-	

[illegible]		WIRE	2	[illegible]	[illegible]		187	993		114	977		73	016	2	802	861	2	875	
244-254		" " " U.G. CONDUIT	28	715	637	2	868	618	1	247	181	1	621	437	25	847	019	27	468	
245-255		" " " " CABLE	35	445	946	4	502	387	2	017	974	2	484	413	30	943	559	33	427	
246-256		" " " SUBM. "			-			-			-			-			-			-
274	-02	MISCELLANEOUS CONST.		1	170			38			-13			25		1	132		1	
274	80C-90C	" "		37	355		37	355		37	355			-			-			-
274	70C-73C	" "		61	489		61	489		61	489			-			-			-
		TOTAL STRUCTURAL PLANT	171	006	775	17	205	365	9	361	707	7	843	658	153	801	410	161	645	
		GENERAL EQUIPMENT	1	850	596		186	188		101	301		84	887	1	664	408	1	749	
		SUB TOTAL	172	857	371	17	391	553	9	463	008	7	928	545	155	465	818	163	394	
		INTRASTATE EXCHANGE PROPERTY USED FOR INTERSTATE SERVICE				+	140	717	+	140	717				-	140	717	-	140	
		GRAND TOTAL	172	857	371	17	532	270	9	603	725	7	928	545	155	325	101	163	253	

[illegible]	[illegible]	73 016	2 802 861	2 875 877	6.286	3.844	2.442	93.714	96.156
2 868 618	1 247 181	1 621 437	25 847 019	27 468 456	9.990	4.343	5.647	90.010	95.657
4 502 387	2 017 974	2 484 413	30 943 559	33 427 972	12.702	5.693	7.009	87.298	94.307
-	-	-	-	-	-	-	-	-	-
38	13	25	1 132	1 157	3.248	1.111	2.137	96.752	98.889
37 355	37 355	-	-	-	100.000	100.000	-	-	-
61 489	61 489	-	-	-	100.000	100.000	-	-	-
17 205 365	9 361 707	7 843 658	155 801 410	161 645 068	10.061	5.474	4.587	89.939	94.526
186 188	101 301	84 887	1 664 408	1 749 295	10.061	5.474	4.587	89.939	94.526
17 391 553	9 463 008	7 928 545	155 465 818	163 394 363	10.061	5.474	4.587	89.939	94.526
+ 140 717	+ 140 717		- 140 717	- 140 717					
17 532 270	9 603 725	7 928 545	155 325 101	163 253 646	10.143	5.556	4.587	89.857	94.444

ILLINOIS BELL TELEPHONE COMPANY - CHICAGO

APPORTIONMENT OF REPRODUCTION COST NEW AS OF 12-31-26
TO
INTRASTATE AND INTERSTATE PROPERTY BY ACCOUNTS AND SUB-ACCOUNTS.

ACCOUNT NUMBERS		CLASS OF PLANT	COST OF REPRODUCTION (A)	APPORTIONMENT OF (A) DOLLARS					AP
				TOLL			INTRASTATE EXCHANGE	INTRASTATE TOTAL	
I.C.C.	I.B.T.			TOTAL	INTERSTATE	INTRASTATE			TO
207-01		RIGHT OF WAY (EXCH)	568 639	19 334	6 028	13 306	549 305	562 611	3.
207-02		" " (TOLL)	5 104	3 011	2 960	51	2 093	2 144	58.
212		BUILDINGS	19 552 572	2 471 741	1 549 073	922 668	17 080 831	18 003 499	12.
212	10-AC	IMPROV. TO RENTED BUILDINGS	26 657	3 369	2 111	1 258	23 288	24 546	12.
211		LAND	3 211 191	412 528	255 473	157 055	2 798 663	2 955 718	12.
221	7.C	CENT. OFFICE EQUIPMENT	33 941 177	3 089 332	1 680 076	1 409 256	30 851 845	32 261 101	9.1
221	87C-97C	" " "	7 878 708	834 972	283 361	551 611	7 043 736	7 595 347	10.
221	307-C	" " "	2 113 413	2 113 413	2 090 017	23 396	-	23 396	100.0
222		OTHER EQUIP. OF CENT. OFFS.	1 135 981	159 955	96 036	63 919	976 026	1 039 945	14.0
231		STATIONS (TELETYPEWRITER)	43 803	9 918	5 785	4 133	33 885	38 018	22.6
231		" OTHER	13 126 671	454 790	160 482	294 308	12 671 881	12 966 189	3.4
232		STATION INSTALLATION	7 181 431	241 892	85 976	155 916	6 939 539	7 095 455	3.3
233		INTERIOR BLOCK WIRES	72 492	2 465	769	1 696	70 027	71 723	3.40
234		PRIVATE BRANCH EXCHANGES	7 959 039	224 225	69 905	154 320	7 734 814	7 889 134	2.8
235		BOOTHS AND SPECIAL FITTINGS	583 917	19 853	6 190	13 663	564 064	577 727	3.40
241-251		EXCH. AND TOLL POLE LINES	3 806 313	206 986	119 797	87 189	3 599 327	3 686 516	5.4
242-252		" " " AER. CABLE	6 074 306	206 526	64 387	142 139	5 867 780	6 009 919	3.4
243-253		" " " " WIRE	3 143 431	163 568	91 386	72 182	2 979 863	3 052 045	5.2
244-254		" " " U.G. CONDUIT	29 367 588	3 323 016	1 416 468	1 906 548	26 044 572	27 951 120	11.3
245-255		" " " " CABLE	37 111 211	4 857 199	2 158 705	2 698 494	32 254 012	34 952 506	13.0
246-256		" " " SUBM. "	-	-	-	-	-	-	-
274	-02	MISCELLANEOUS CONST.	1 173	40	12	28	1 133	1 161	3.4
274	80C-90C	" "	38 723	38 723	38 723	-	-	-	100.0
274	70-73C	" "	53 210	53 210	53 210	-	-		

ILLINOIS BELL TELEPHONE COMPANY - CHICAGO

APPORTIONMENT OF REPRODUCTION COST NEW AS OF 12-31-26
TO
TRASTATE AND INTERSTATE PROPERTY BY ACCOUNTS AND SUB-ACCOUNTS.

STATION TO STATION BASIS

ON	APPORTIONMENT OF (A) DOLLARS					APPORTIONMENT OF (A) PERCENT				
	TOLL			INTRASTATE EXCHANGE	INTRASTATE TOTAL	TOLL			INTRA EXCH.	INTRA TOTAL
	TOTAL	INTERSTATE	INTRASTATE			TOTAL	INTER	INTRA		
	19 334	6 028	13 306	549 305	562 611	3.400	1.060	2.340	96.600	98.940
	3 011	2 960	51	2 093	2 144	58.993	57.994	.999	41.007	42.006
	2 471 741	1 549 073	922 668	17 080 831	18 003 499	12.642	7.923	4.719	87.358	92.077
	3 369	2 111	1 258	23 288	24 546	12.638	7.919	4.719	87.362	92.081
	412 528	255 473	157 055	2 798 663	2 955 718	12.847	7.956	4.891	87.153	92.044
	3 089 332	1 680 076	1 409 256	30 851 845	32 261 101	9.102	4.950	4.152	90.898	95.050
	834 972	283 361	551 611	7 043 736	7 595 347	10.598	3.597	7.001	89.402	96.403
	2 113 413	2 090 017	23 396	-	23 396	100.000	98.893	1.107	-	1.107
	159 955	96 036	63 919	976 026	1 039 945	14.081	8.454	5.627	85.919	91.546
	9 918	5 785	4 133	33 885	38 018	22.642	13.207	9.435	77.358	86.793
	454 790	160 482	294 308	12 671 881	12 966 189	3.465	1.223	2.242	96.535	98.777
	241 892	85 976	155 916	6 939 539	7 095 455	3.368	1.197	2.171	96.632	98.803
	2 465	769	1 696	70 027	71 723	3.400	1.061	2.339	96.600	98.939
	224 225	69 905	154 320	7 734 814	7 889 134	2.817	.878	1.939	97.183	99.122
	19 853	6 190	13 663	564 064	577 727	3.400	1.060	2.340	96.600	98.940
	206 986	119 797	87 189	3 599 327	3 686 516	5.438	3.147	2.291	94.562	96.853
	206 526	64 387	142 139	5 867 780	6 009 919	3.400	1.060	2.340	96.600	98.940
	163 568	91 386	72 182	2 979 883	3 052 045	5.203	2.907	2.296	94.797	97.093
	3 323 016	1 416 468	1 906 548	26 044 572	27 951 120	11.315	4.823	6.492	88.685	95.177
	4 857 199	2 158 705	2 698 494	32 254 012	34 952 506	13.088	5.817	7.271	86.912	94.183
	-	-	-	-	-	-	-	-	-	-
	40	12	28	1 133	1 161	3.410	1.023	2.387	96.590	98.977
	38 723	38 723	-	-	-	100.000	100.000	-	-	-
	53 210	53 210	-	-	-	100.000	100.000	-	-	-

246-256		SUBM.		-			-			-			-			-			-			-
274	-02	MISCELLANEOUS CONST.		1	173			40			12			28		1	133		1	161	3.41	
274	80C-90C	" "		38	723		38	723		38	723		-			-			-		100.00	
274	70-73C	" "		53	210		53	210		53	210		-			-			-		100.00	
		TOTAL STRUCTURAL PLANT	176	996	750	18	910	066	10	236	930	8	673	136	158	086	684	166	759	820	10.68	
		GENERAL EQUIPMENT	2	047	146		218	717		118	407		100	310	1	828	429	1	928	739	10.68	
		SUB TOTAL	179	043	896	19	128	783	10	355	337	8	773	446	159	915	113	168	688	559	10.68	
		INTRASTATE EXCHANGE PROPERTY USED FOR INTERSTATE SERVICE				+	136	031	+	136	031				-	136	031	-	136	031		
		GRAND TOTAL	179	043	896	19	264	814	10	491	368	8	773	446	159	779	082	168	552	528	10.76	

	-	-	-	-	-	-	-	-	-	-
173	40	12	28	1 133	1 161	3.410	1.023	2.387	96.590	98.977
723	38 723	38 723	-	-	-	100.000	100.000	-	-	-
210	53 210	53 210	-	-	-	100.000	100.000	-	-	-
750	18 910 066	10 236 930	8 673 136	158 086 684	166 759 820	10.684	5.784	4.900	89.316	94.216
146	218 717	118 407	100 310	1 828 429	1 928 739	10.684	5.784	4.900	89.316	94.216
896	19 128 783	10 355 337	8 773 446	159 915 113	168 688 559	10.684	5.784	4.900	89.316	94.216
	+ 136 031	+ 136 031		- 136 031	- 136 031					
896	19 264 814	10 491 368	8 773 446	159 779 082	168 552 528	10.760	5.860	4.900	89.240	94.140

ILLINOIS BELL TELEPHONE COMPANY - CHICAGO

APPORTIONMENT OF REPRODUCTION COST NEW AS OF 12-31-27 TO INTRASTATE AND INTERSTATE PROPERTY BY ACCOUNTS AND SUB-ACCOUNTS.

ACCOUNT NUMBERS I.C.C.	ACCOUNT NUMBERS I.B.T.	CLASS OF PLANT	COST OF REPRODUCTION (A)	APPORTIONMENT OF (A) DOLLARS TOLL TOTAL	TOLL INTERSTATE	TOLL INTRASTATE	INTRASTATE EXCHANGE	INTRASTATE TOTAL	APP TOT
207-01		RIGHT OF WAY (EXCH)	617 796	21 994	6 796	15 198	595 802	611 000	3.5
207-02		" " (TOLL)	5 384	3 177	3 121	56	2 207	2 263	59.0
212		BUILDINGS	19 687 682	2 816 560	1 779 140	1 037 420	16 871 122	17 908 542	14.
212	10-AC	IMPROV. TO RENTED BUILDINGS	30 186	4 320	2 729	1 591	25 866	27 457	14.
211		LAND	4 077 977	664 732	425 416	239 316	3 413 245	3 658 561	16.
221	7C	CENT. OFFICE EQUIPMENT	35 104 238	3 415 422	1 939 912	1 475 510	31 688 816	33 164 326	9.7
221	87C-97C	" " "	8 127 851	846 345	294 290	552 055	7 281 506	7 833 561	10.4
221	307-C	" " "	2 411 821	2 411 821	2 380 409	31 412	-	31 412	100.0
222		OTHER EQUIP. OF CENT. OFFS.	1 168 368	174 548	102 417	72 131	993 820	1 065 951	14.9
231		STATIONS (TELETYPEWRITER)	60 416	21 750	8 861	12 889	38 666	51 555	36.0
231		" OTHER	17 501 903	620 027	210 333	409 694	16 881 876	17 291 570	3.5
232		STATION INSTALLATION	7 366 425	256 971	89 575	167 396	7 109 454	7 276 850	3.4
233		INTERIOR BLOCK WIRES	96 665	3 441	1 063	2 378	93 224	95 602	3.5
234		PRIVATE BRANCH EXCHANGES	8 761 820	258 270	79 802	178 468	8 503 550	8 682 018	2.9
235		BOOTHS AND SPECIAL FITTINGS	625 446	22 266	6 880	15 386	603 180	618 566	3.5
241-251		EXCH. AND TOLL POLE LINES	4 031 777	213 727	115 289	98 438	3 818 050	3 916 488	5.3
242-252		" " " AER. CABLE	6 429 892	232 759	70 767	161 992	6 197 133	6 359 125	3.6
243-253		" " " " WIRE	3 386 494	162 672	80 438	82 234	3 223 822	3 306 056	4.
244-254		" " " U.G. CONDUIT	30 516 740	3 871 703	1 602 630	2 269 073	26 645 037	28 914 110	12.
245-255		" " " " CABLE	40 173 846	5 809 527	2 470 519	3 339 008	34 364 319	37 705 327	14.4
246-256		" " " SUBM. "	-	-	-	-	-		-
274	-02	MISCELLANEOUS CONST.	1 190	42	13	29	1 148	1 177	3.5
274	80C-90C	"	42 331	42 331	42 331	-	-	-	100.0
274	70-73C	"	74 [illegible]	74 [illegible]	[illegible]				

ILLINOIS BELL TELEPHONE COMPANY – CHICAGO

APPORTIONMENT OF REPRODUCTION COST NEW AS OF 12-31-27 TO NTRASTATE AND INTERSTATE PROPERTY BY ACCOUNTS AND SUB-ACCOUNTS.

STATION TO STATION BASIS

F TION	APPORTIONMENT OF (A) DOLLARS					APPORTIONMENT OF (A) PERCENT				
	TOLL			INTRASTATE EXCHANGE	INTRASTATE TOTAL	TOLL			INTRA EXCH.	INTRA TOTAL
	TOTAL	INTERSTATE	INTRASTATE			TOTAL	INTER	INTRA		
796	21 994	6 796	15 198	595 802	611 000	3.560	1.100	2.460	96.440	98.900
384	3 177	3 121	56	2 207	2 263	59.008	57.968	1.040	40.992	42.032
688	2 816 560	1 779 140	1 037 420	16 871 122	17 908 542	14.306	9.037	5.269	85.694	90.963
186	4 320	2 729	1 591	25 866	27 457	14.311	9.040	5.271	85.689	90.960
977	664 732	425 416	239 316	3 415 245	3 652 561	16.301	10.432	5.869	83.699	89.568
238	3 415 422	1 939 912	1 475 510	31 688 816	33 164 326	9.729	5.526	4.203	90.271	94.474
851	846 345	294 290	552 055	7 281 506	7 833 561	10.413	3.621	6.792	89.587	96.379
821	2 411 821	2 380 409	31 412	-	31 412	100.000	98.698	1.302	-	1.302
368	174 548	102 417	72 131	993 820	1 065 951	14.939	8.766	6.173	85.061	91.234
416	21 750	8 861	12 889	38 666	51 555	36.000	14.666	21.334	64.000	85.334
903	620 027	210 333	409 694	16 881 876	17 291 570	3.543	1.202	2.341	96.457	98.798
425	256 971	89 575	167 396	7 109 454	7 276 850	3.488	1.216	2.272	96.512	98.784
665	3 441	1 063	2 378	93 224	95 602	3.560	1.100	2.460	96.440	98.900
820	258 270	79 802	178 468	8 503 550	8 682 018	2.948	.911	2.037	97.052	99.089
446	22 266	6 880	15 386	603 180	618 566	3.560	1.100	2.460	96.440	98.900
777	213 727	115 289	98 438	3 818 050	3 916 488	5.301	2.859	2.442	94.699	97.141
892	232 759	70 767	161 992	6 197 133	6 359 125	3.620	1.101	2.519	96.380	98.899
494	162 672	80 438	82 234	3 223 822	3 306 056	4.804	2.375	2.429	95.196	97.625
740	3 871 703	1 602 630	2 269 073	26 645 037	28 914 110	12.687	5.252	7.435	87.313	94.748
846	5 809 527	2 470 519	3 339 008	34 364 319	37 703 327	14.461	6.150	8.311	85.539	93.850
	-	-	-	-		-	-	-	-	-
190	42	13	29	1 148	1 177	3.529	1.092	2.437	96.471	98.908
331	42 331	42 331	-	-	-	100.000	100.000	-	-	-
326	74 326	74 326	-	-	-	100.000	100.000	-	-	-

274	-02	*MISCELLANEOUS CONST.*	1 190	42	13	29	1 148	1 177	3.529
274	80C-90C	"	42 331	42 331	42 331	-	-	-	100.000
274	70-73C	"	74 326	74 326	74 326	-	-	-	100.000
		TOTAL STRUCTURAL PLANT	190 300 574	21 948 731	11 787 057	10 161 674	168 351 843	178 513 517	11.534
		GENERAL EQUIPMENT	2 341 675	270 089	145 043	125 046	2 071 586	2 196 632	11.534
		SUB TOTAL	192 642 249	22 218 820	11 932 100	10 286 720	170 423 429	180 710 149	11.534
		INTRASTATE EXCHANGE PROPERTY USED FOR INTERSTATE SERVICE		+ 154 003	+ 154 003		- 154 003	- 154 003	
		GRAND TOTAL	192 642 249	22 372 823	12 086 103	10 286 720	170 269 426	180 556 146	11.614

1 190	42	13	29	1 148	1 177	3.529	1.092	2.437	96.471	98.908
42 331	42 331	42 331	-	-	-	100.000	100.000	-	-	-
74 326	74 326	74 326	-	-	-	100.000	100.000	-	-	-
190 300 574	21 948 731	11 787 057	10 161 674	168 351 843	178 513 517	11.534	6.194	5.340	88.466	93.806
2 341 675	270 089	145 043	125 046	2 071 586	2 196 632	11.534	6.194	5.340	88.466	93.806
192 642 249	22 218 820	11 932 100	10 286 720	170 423 429	180 710 149	11.534	6.194	5.340	88.466	93.806
	+ 154 003	+ 154 003		- 154 003	- 154 003					
192 642 249	22 372 823	12 086 103	10 286 720	170 269 426	180 556 146	11.614	6.274	5.340	88.386	93.726

ILLINOIS BELL TELEPHONE COMPANY - CHICAGO

APPORTIONMENT OF REPRODUCTION COST NEW AS OF 12-31-28
TO
INTRASTATE AND INTERSTATE PROPERTY BY ACCOUNTS AND SUB-ACCOUNTS

ACCOUNT NUMBERS		CLASS OF PLANT	COST OF REPRODUCTION (A)	APPORTIONMENT OF (A) DOLLARS					AP
				TOLL			INTRASTATE EXCHANGE	INTRASTATE TOTAL	
I.C.C.	I.B.T.			TOTAL	INTERSTATE	INTRASTATE			TO
207-01		RIGHT OF WAY (EXCH)	643 618	26 171	9 483	16 688	617 447	634 135	4.
207-02		" " " (TOLL)	1 322	1 322	1 322	-	-	-	100.
212		BUILDINGS	20 829 833	3 793 527	2 482 513	1 311 014	17 036 306	18 347 380	18.
212	10-AC	IMPROV. TO RENTED BUILDINGS	40 659	7 404	4 847	2 557	33 255	35 812	18.
211		LAND	4 073 526	859 322	568 913	290 409	3 214 204	3 504 613	21.
221	7C	CENT. OFFICE EQUIPMENT	32 237 852	3 298 844	1 873 723	1 425 121	28 939 008	30 364 129	10.
221	87C-97C	" " "	12 813 591	1 407 290	503 888	903 402	11 406 301	12 309 703	10.
221	307-C	" " "	2 806 983	2 806 983	2 735 007	71 976	-	71 976	100.
222		OTHER EQUIP. OF CENT. OFFS.	1 391 678	220 511	130 870	89 641	1 171 167	1 260 808	15.
231		STATIONS (TELETYPEWRITER)	243 674	178 017	162 718	15 299	65 657	80 956	73.
231		" OTHER	17 622 324	660 186	225 481	434 705	16 962 138	17 396 843	3.
232		STATION INSTALLATION	8 735 558	352 075	127 352	224 723	8 383 483	8 608 206	4.
233		INTERIOR BLOCK WIRES	124 177	4 719	1 490	3 229	119 458	122 687	3.
234		PRIVATE BRANCH EXCHANGES	9 073 305	285 310	90 098	195 212	8 787 995	8 983 207	3.
235		BOOTHS AND SPECIAL FITTINGS	653 874	24 847	7 846	17 001	629 027	646 028	3.
241-251		EXCH. AND TOLL POLE LINES	3 959 620	211 390	109 104	102 286	3 748 230	3 850 516	5.
242-252		" " " AER. CABLE	6 699 671	258 639	80 523	178 116	6 441 032	6 619 148	3.
243-253		" " " WIRE	3 654 393	184 084	90 292	93 792	3 470 309	3 564 101	5.
244-254		" " " U.G. CONDUIT	32 697 512	4 694 471	2 051 203	2 643 268	28 003 041	30 646 309	14.
245-255		" " " CABLE	42 439 705	6 744 705	3 003 935	3 740 770	35 695 000	39 435 770	15.
246-256		" " " SUBM. "	-	-	-	-	-	-	-
274	-02	MISCELLANEOUS CONST.	1 183	45	14	31	1 138	1 169	3.
274	80C-90C	" "	43 667	43 667	43 667	-	-	-	100.
274	70-73C	" "	25 140	25 140	25 140				

ILLINOIS BELL TELEPHONE COMPANY - CHICAGO

APPORTIONMENT OF REPRODUCTION COST NEW AS OF 12-31-28
TO
INTRASTATE AND INTERSTATE PROPERTY BY ACCOUNTS AND SUB-ACCOUNTS.

STATION TO STATION BASIS

COST OF PRODUCTION (A)	APPORTIONMENT OF (A) DOLLARS					APPORTIONMENT OF (A) PERCENT				
	TOLL			INTRASTATE EXCHANGE	INTRASTATE TOTAL	TOLL			INTRA EXCH.	INTRA TOTAL
	TOTAL	INTERSTATE	INTRASTATE			TOTAL	INTER	INTRA		
643 618	26 171	9 483	16 688	617 447	634 135	4.066	1.473	2.593	95.934	98.527
1 322	1 322	1 322	-	-	-	100.000	100.000	-	-	-
829 833	3 793 527	2 482 513	1 311 014	17 036 306	18 347 380	18.212	11.918	6.294	81.788	88.082
40 659	7 404	4 847	2 557	33 255	35 812	18.210	11.921	6.289	81.790	88.079
073 526	859 322	568 913	290 409	3 214 204	3 504 613	21.095	13.966	7.129	78.905	86.034
237 852	3 298 844	1 873 723	1 425 121	28 939 008	30 364 129	10.233	5.812	4.421	89.767	94.188
813 591	1 407 290	503 888	903 402	11 406 301	12 309 703	10.983	3.933	7.050	89.017	96.067
806 983	2 806 983	2 735 007	71 976	-	71 976	100.000	97.436	2.564	-	2.564
1 391 678	220 511	130 870	89 641	1 171 167	1 260 808	15.845	9.404	6.441	84.155	90.596
243 674	178 017	162 718	15 299	65 657	80 956	73.055	66.777	6.278	26.945	33.223
622 324	660 186	225 481	434 705	16 962 138	17 396 843	3.746	1.279	2.467	96.254	98.721
735 558	352 075	127 352	224 723	8 383 483	8 608 206	4.030	1.458	2.572	95.970	98.542
124 177	4 719	1 490	3 229	119 458	122 687	3.800	1.200	2.600	96.200	98.800
073 305	285 310	90 098	195 212	8 787 995	8 983 207	3.144	.993	2.151	96.856	99.007
653 874	24 847	7 846	17 001	629 027	646 028	3.800	1.200	2.600	96.200	98.800
959 620	211 390	109 104	102 286	3 748 230	3 850 516	5.339	2.756	2.583	94.661	97.244
699 671	258 639	80 523	178 116	6 441 032	6 619 148	3.860	1.202	2.658	96.140	98.798
654 393	184 084	90 292	93 792	3 470 309	3 564 101	5.037	2.471	2.566	94.963	97.529
697 512	4 694 471	2 051 203	2 643 268	28 003 041	30 646 309	14.357	6.273	8.084	85.643	93.727
439 705	6 744 705	3 003 935	3 740 770	35 695 000	39 435 770	15.892	7.078	8.814	84.108	92.922
-	-	-	-	-	-	-	-	-	-	-
1 183	45	14	31	1 138	1 169	3.804	1.183	2.621	96.196	98.817
43 667	43 667	43 667	-	-	-	100.000	100.000	-	-	-
25 140	25 140	25 140	-	-	-	100.000	100.000	-	-	-

[illegible]		〃 〃 〃 〃 WIRE	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]												
244-254		〃 〃 〃 U.G. CONDUIT	32	697	512	4	694	471	2	051	203	2	643	268	28	003	041	30	646	309	14.35
245-255		〃 〃 〃 〃 CABLE	42	439	705	6	744	705	3	003	935	3	740	770	35	695	000	39	435	770	15.8
246-256		〃 〃 〃 SUBM 〃			-			-			-			-			-			-	-
274	-02	MISCELLANEOUS CONST.		1	183			45			14			31		1	138		1	169	3.8
274	80C-90C	〃 〃		43	667		43	667		43	667			-			-			-	100.0
274	70-73C	〃 〃		25	140		25	140		25	140			-			-			-	100.0
		TOTAL STRUCTURAL PLANT	200	812	865	26	088	669	14	329	429	11	759	240	174	724	196	186	483	436	12.9
		GENERAL EQUIPMENT	2	624	092		340	922		187	255		153	667	2	283	170	2	436	837	12.9
		SUB TOTAL	203	436	957	26	429	591	14	516	684	11	912	907	177	007	366	188	920	273	12.9
		INTRASTATE EXCHANGE PROPERTY USED FOR INTERSTATE SERVICE				+	162	767	+	162	767				-	162	767	-	162	767	
		GRAND TOTAL	203	436	957	26	592	358	14	679	451	11	912	907	176	844	599	188	757	506	13.07

512	4 694 471	2 051 203	2 643 268	28 003 041	30 646 309	14.357	6.273	8.084	85.643	93.727
705	6 744 705	3 003 935	3 740 770	35 695 000	39 435 770	15.892	7.078	8.814	84.108	92.922
-	-	-	-	-	-	-	-	-	-	-
183	45	14	31	1 138	1 169	3.804	1.183	2.621	96.196	98.817
667	43 667	43 667	-	-	-	100.000	100.000	-	-	-
140	25 140	25 140	-	-	-	100.000	100.000	-	-	-
865	26 088 669	14 329 429	11 759 240	174 724 196	186 483 436	12.992	7.136	5.856	87.008	92.864
092	340 922	187 255	153 667	2 283 170	2 436 837	12.992	7.136	5.856	87.008	92.864
957	26 429 591	14 516 684	11 912 907	177 007 366	188 920 273	12.992	7.136	5.856	87.008	92.864
	+ 162 767	+ 162 767		- 162 767	- 162 767					
957	26 592 358	14 679 451	11 912 907	176 844 599	188 757 506	13.072	7.216	5.856	86.928	92.784

ILLINOIS BELL TELEPHONE COMPANY – C

APPORTIONMENT OF REPRODUCTION COST NEW AS OF 12-31-29
TO
INTRASTATE AND INTERSTATE PROPERTY BY ACCOUNTS AND

ACCOUNT NUMBERS		CLASS OF PLANT	COST OF REPRODUCTION (A)	APPORTIONMENT OF (A) DOLLARS			
				TOLL			INTRASTATE EXCHANGE
I.C.C.	I.B.T.			TOTAL	INTERSTATE	INTRASTATE	
207-01		RIGHT OF WAY (EXCH)	684 489	28 534	10 237	18 297	655 955
207-02		" " " (TOLL)	1 381	1 381	1 381	-	-
212		BUILDINGS	22 667 949	4 808 326	3 105 290	1 703 036	17 859 623
212	10-AC	IMPROV. TO RENTED BUILDINGS	42 617	9 039	5 838	3 201	33 578
211		LAND.	4 397 944	972 904	621 033	351 871	3 425 040
221	7C	CENT. OFFICE EQUIPMENT	31 804 475	4 883 081	3 100 002	1 783 079	26 921 394
221	87C-97C	" " "	16 441 826	1 768 583	621 309	1 147 274	14 673 243
221	307-C	" " "	3 132 295	3 132 295	2 991 659	140 636	-
222		OTHER EQUIP. OF CENT. OFFS.	1 618 154	322 397	209 779	112 618	1 295 757
231		STATIONS (TELETYPEWRITER)	354 505	277 925	256 719	21 206	76 580
231		" OTHER	15 806 742	609 799	209 948	399 851	15 196 943
232		STATION INSTALLATION	9 127 996	360 003	135 270	224 733	8 767 993
233		INTERIOR BLOCK WIRES	150 931	5 916	1 871	4 045	145 015
234		PRIVATE BRANCH EXCHANGES	9 411 038	305 460	96 625	208 835	9 105 578
235		BOOTHS AND SPECIAL FITTINGS	814 172	31 916	10 096	21 820	782 256
241-251		EXCH. AND TOLL POLE LINES	4 006 712	206 450	95 575	110 875	3 800 262
242-252		" " " AER. CABLE	7 475 483	320 128	92 437	227 691	7 155 355
243-253		" " " " WIRE	4 233 849	199 033	86 488	112 545	4 034 816
244-254		" " " U.G. CONDUIT	34 816 690	5 228 695	2 209 166	3 019 529	29 587 995
245-255		" " " " CABLE	50 389 710	8 281 116	3 567 312	4 713 804	42 108 594
246-256		" " SUBM. "	-	-	-	-	-
274	-02	MISCELLANEOUS CONST.	1 177	46	15	31	1 131
274	80C-90C	" "	44 745	44 745	44 745		
274	70-73C						

ILLINOIS BELL TELEPHONE COMPANY – CHICAGO

APPORTIONMENT OF REPRODUCTION COST NEW AS OF 12-31-22
TO
TRASTATE AND INTERSTATE PROPERTY BY ACCOUNTS AND SUB-ACCOUNTS

STATION TO STATION BASIS

ION	APPORTIONMENT OF (A) DOLLARS					APPORTIONMENT OF (A) PERCENT				
	TOLL			INTRASTATE EXCHANGE	INTRASTATE TOTAL	TOLL			INTRA EXCH.	INTRA TOTAL
	TOTAL	INTERSTATE	INTRASTATE			TOTAL	INTER	INTRA		
89	28 534	10 237	18 297	655 955	674 252	4.169	1.496	2.673	95.831	98.504
81	1 381	1 381	–	–	–	100.000	100.000	–	–	–
49	4 808 326	3 105 290	1 703 036	17 859 623	19 562 659	21.212	13.699	7.513	78.788	86.301
17	9 039	5 838	3 201	33 578	36 779	21.210	13.699	7.511	78.790	86.301
44	972 904	621 033	351 871	3 425 049	3 776 911	22.122	14.121	8.001	77.878	85.879
75	4 883 081	3 100 002	1 783 079	26 921 394	28 704 473	15.353	9.747	5.606	84.647	90.253
26	1 768 583	621 309	1 147 274	14 673 243	15 820 517	10.757	3.779	6.978	89.243	96.221
95	3 132 295	2 991 659	140 636	–	140 636	100.000	95.510	4.490	–	4.490
54	322 397	209 779	112 618	1 295 757	1 408 375	19.924	12.964	6.960	80.076	87.036
05	277 925	256 719	21 206	76 580	97 786	78.398	72.416	5.982	21.602	27.584
42	609 799	209 948	399 851	15 196 943	15 596 794	3.858	1.328	2.530	96.142	98.672
26	360 003	135 270	224 733	8 767 993	8 992 726	3.944	1.482	2.462	96.056	98.518
31	5 916	1 871	4 045	145 015	149 060	3.920	1.240	2.680	96.080	98.760
38	305 460	96 625	208 835	9 105 578	9 314 413	3.246	1.027	2.219	96.754	98.973
72	31 916	10 096	21 820	782 256	804 076	3.920	1.240	2.680	96.080	98.760
12	206 450	95 575	110 875	3 800 262	3 911 137	5.153	2.386	2.767	94.847	97.614
23	320 128	92 437	227 691	7 155 355	7 383 046	4.282	1.236	3.046	95.718	98.764
19	199 033	86 488	112 545	4 034 816	4 147 361	4.701	2.043	2.658	95.299	97.957
20	5 228 695	2 209 166	3 019 529	29 587 995	32 607 524	15.018	6.345	8.673	84.982	93.655
10	8 281 116	3 567 312	4 713 804	42 108 594	46 822 398	16.434	7.079	9.355	83.566	92.[illegible]
	–	–	–	–	–	–	–	–	–	–
77	46	15	31	1 131	1 162	3.908	1.274	2.634	96.092	98.726
15	44 745	44 745	–	–	–	100.000	100.000	–	–	–

					-	-	-	-
274	-02	MISCELLANEOUS CONST.						
274	80C-90C	"	1 177	46	15	31	1 131	1 162
274	70 - 73C	"	44 745	44 745	44 745	-	-	-
			10 135	10 135	10 135	-	-	-
		TOTAL STRUCTURAL PLANT	217 435 015	31 807 907	17 482 930	14 324 977	185 627 108	199 952 085
		GENERAL EQUIPMENT	2 792 614	408 532	224 554	183 978	2 384 082	2 568 060
		SUB TOTAL	220 227 629	32 216 439	17 707 484	14 508 955	188 011 190	202 520 145
		INTRASTATE EXCHANGE PROPERTY USED FOR INTERSTATE SERVICE		+ 181 059	+ 181 059		- 181 059	- 181 059
		GRAND TOTAL	220 227 629	32 397 498	17 888 543	14 508 955	187 830 131	202 339 086

1 177	46	15	31	1 131	1 162	3.908	1.274	2.634	96.092	98.726
745	44 745	44 745	-	-	-	100.000	100.000	-	-	-
135	10 135	10 135	-	-	-	100.000	100.000	-	-	-
015	31 807 907	17 482 930	14 324 977	185 627 108	199 952 085	14.629	8.041	6.588	85.371	91.959
614	408 532	224 554	183 978	2 384 082	2 568 060	14.629	8.041	6.588	85.371	91.959
629	32 216 439	17 707 484	14 508 955	188 011 190	202 520 145	14.629	8.041	6.588	85.371	91.959
	+ 181 059	+ 181 059		- 181 059	- 181 059					
629	32 397 498	17 888 543	14 508 955	187 830 131	202 339 086	14.711	8.123	6.588	85.289	91.877

ILLINOIS BELL TELEPHONE COMPANY – CHICAG

APPORTIONMENT OF REPRODUCTION COST NEW AS OF 12-31-30
TO
INTRASTATE AND INTERSTATE PROPERTY BY ACCOUNTS AND SUB-AC

ACCOUNT NUMBERS		CLASS OF PLANT	COST OF REPRODUCTION (A)	APPORTIONMENT OF (A). DOLLARS				
				TOLL			INTRASTATE EXCHANGE	INTRASTATE TOTAL
I.C.C.	I.B.T.			TOTAL	INTERSTATE	INTRASTATE		
207-01		RIGHT OF WAY (EXCH)	710 601	28 708	8 740	19 968	681 893	701 8
207-02		" (TOLL)	1 445	755	735	20	690	71
212		BUILDINGS	22 101 555	5 582 541	3 701 583	1 880 958	16 519 014	18 399 97
212	10-AC	IMPROV. TO RENTED BUILDINGS	45 846	11 581	7 679	3 902	34 265	38 16
211		LAND	4 411 445	1 145 014	750 569	394 445	3 266 431	3 660 87
221	7C	CENT. OFFICE EQUIPMENT	37 591 457	5 810 387	3 653 840	2 156 547	31 781 070	33 937 61
221	87C-97C		18 606 860	1 956 949	669 591	1 287 358	16 649 911	17 937 26
221	307-C		3 969 155	3 969 155	3 760 888	208 267	-	208 26
222		OTHER EQUIP. OF CENT. OFFS.	1 564 699	336 209	212 810	123 399	1 228 490	1 351 88
231		STATIONS (TELETYPEWRITER)	393 816	305 315	276 195	29 120	88 501	117 62
231		OTHER	15 758 529	626 199	210 275	415 924	15 132 330	15 548 25
232		STATION INSTALLATION	8 417 050	342 775	125 558	217 217	8 074 275	8 291 49
233		INTERIOR BLOCK WIRES	170 624	6 893	2 099	4 794	163 731	168 52
234		PRIVATE BRANCH EXCHANGES	10 727 361	358 366	109 106	249 260	10 368 995	10 618 25
235		BOOTHS AND SPECIAL FITTINGS	1 121 284	45 300	13 792	31 508	1 075 984	1 107 49
241-251		EXCH. AND TOLL POLE LINES	4 085 926	216 175	96 709	119 466	3 869 751	3 989 21
242-252		" " " AER. CABLE	7 469 405	324 650	91 580	233 070	7 144 755	7 377 82
243-253		" " " " WIRE	4 158 581	197 188	81 186	116 002	3 961 393	4 077 39
244-254		" " " U.G. CONDUIT	36 768 961	5 874 288	2 572 311	3 301 977	30 894 673	34 196 65
245-255		" " " " CABLE	48 295 228	8 397 194	3 777 075	4 620 119	39 898 034	44 518 15
246-256		" " " SUBM. "	-	-	-	-	-	-
274	-02	MISCELLANEOUS CONST.	1 181	48	15	33	1 133	1 16
274	80C-90C	"	48 187	48 187	48 187	-	-	-
274	70-73C	"	5 583	5 583	5 583	-	-	-

ILLINOIS BELL TELEPHONE COMPANY - CHICAGO

APPORTIONMENT OF REPRODUCTION COST NEW AS OF 12-31-30
TO
INTRASTATE AND INTERSTATE PROPERTY BY ACCOUNTS AND SUB-ACCOUN[illegible]

STATION TO STATION BASIS

T OF DUCTION A)	APPORTIONMENT OF (A) DOLLARS					A[illegible]MENT OF (A') PERCENT				
	TOLL			INTRASTATE EXCHANGE	INTRASTATE TOTAL	[illegible]LL			INTRA EXCH.	INTRA TOTAL
	TOTAL	INTERSTATE	INTRASTATE			TOTAL	[illegible]TER	INTRA		
710 601	28 708	8 740	19 968	681 893	701 861	4.040	1.230	2.810	95.960	98.770
1 445	755	735	20	690	710	52.249	50.865	1.384	47.751	49.135
101 555	5 582 541	3 701 583	1 880 958	16 519 014	18 399 972	25.259	16.748	8.511	74.741	83.252
45 846	11 581	7 679	3 902	34 265	38 167	25.261	16.750	8.511	74.739	83.250
11 445	1 145 014	750 569	394 445	3 266 431	3 660 876	25.956	17.014	8.942	74.044	82.986
591 457	5 810 387	3 653 840	2 156 547	31 781 070	33 937 617	15.457	9.720	5.737	84.543	90.280
06 860	1 956 949	669 591	1 287 358	16 649 911	17 937 269	10.517	3.598	6.919	89.483	96.402
69 155	3 969 155	3 760 888	208 267	-	208 267	100.000	94.753	5.247	-	5.247
64 699	336 209	212 810	123 399	1 228 490	1 351 889	21.487	13.601	7.886	78.513	86.399
93 816	305 315	276 195	29 120	88 501	117 621	77.527	70.133	7.394	22.473	29.867
58 529	626 199	210 275	415 924	15 132 330	15 548 254	3.974	1.334	2.640	96.026	98.666
17 050	342 775	125 558	217 217	8 074 275	8 291 492	4.072	1.492	2.580	95.928	98.508
70 624	6 893	2 099	4 794	163 731	168 525	4.040	1.230	2.810	95.960	98.770
27 361	358 366	109 106	249 260	10 368 995	10 618 255	3.341	1.017	2.324	96.659	98.983
21 284	45 300	13 792	31 508	1 075 984	1 107 492	4.040	1.230	2.810	95.960	98.770
85 926	216 175	96 709	119 466	3 869 751	3 989 217	5.291	2.367	2.924	94.709	97.633
69 405	324 650	91 580	233 070	7 144 755	7 377 825	4.346	1.226	3.120	95.654	98.774
8 581	197 188	81 186	116 002	3 961 393	4 077 395	4.742	1.952	2.790	95.258	98.048
68 961	5 874 288	2 572 311	3 301 977	30 894 673	34 196 850	15.976	6.996	8.980	84.024	93.004
95 228	8 397 194	3 777 075	4 620 119	39 898 034	44 518 153	17.387	7.821	9.566	82.613	92.179
-	-	-	-	-	-	-	-	-	-	-
1 181	48	15	33	1 133	1 166	4.064	1.270	2.794	95.936	98.730
48 187	48 187	48 187	-	-	-	100.000	100.000	-	-	-
5 583	5 583	5 583	-	-	-	100.000	100.000	-	-	-

245-255		" " " " CABLE	48	295	228	8	397	194	3	777	075	4	620	119	39	898	034	44	518	153
246-256		" " SUBM "			-			-			-			-			-			-
274	-02	MISCELLANEOUS CONST		1	181			48			15			33		1	133		1	166
274	80C-90C	"		48	187		48	187		48	187			-			-			-
274	70-73C	" "		5	583		5	583		5	583			-			-			-
		TOTAL STRUCTURAL PLANT	226	424	779	35	589	460	20	176	106	15	413	354	190	835	319	206	248	673
		GENERAL EQUIPMENT	2	900	569		455	911		258	469		197	442	2	444	658	2	642	100
		SUB TOTAL	229	325	348	36	045	371	20	434	575	15	610	796	193	279	977	208	890	773
		INTRASTATE EXCHANGE PROPERTY USED FOR INTERSTATE SERVICE				+	173	300	+	173	300				-	173	300	-	173	300
		GRAND TOTAL	229	325	348	36	218	671	20	607	875	15	610	796	193	106	677	208	717	473

228	8	397	194	3	777	075	4	620	119	39	898	034	44	518	153	17.587	7.621	9.966	82.413	92.379
			-			-			-			-			-	-	-	-	-	-
181			48			15			33		1	133		1	166	4.064	1.270	2.794	95.936	98.730
187		48	187		48	187			-			-			-	100.000	100.000	-	-	-
583		5	583		5	583			-			-			-	100.000	100.000	-	-	-
779	35	589	460	20	176	106	15	413	354	190	835	319	206	248	673	15.718	8.911	6.807	84.282	91.089
569		455	911		258	469		197	442	2	444	658	2	642	100	15.718	8.911	6.807	84.282	91.089
348	36	045	371	20	434	575	15	610	796	193	279	977	208	890	773	15.718	8.911	6.807	84.282	91.089
	+	173	300	+	173	300				-	173	300	-	173	300					
348	36	218	671	20	607	875	15	610	796	193	106	677	208	717	473	15.794	8.987	6.807	84.207	91.014

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ILLINOIS BELL TELEPHONE COMPANY - CHICAG

APPORTIONMENT OF REPRODUCTION COST NEW AS OF 12-31-31 TO EXCHANGE, TOTAL TOLL, INTRASTATE TOLL AND INTERSTATE TOLL US

ACCOUNT NUMBERS		CLASS OF PLANT	COST OF REPRODUCTION (A)	APPORTIONMENT OF (A) DOLLARS				
				TOLL			INTRASTATE EXCHANGE	INTRASTA TOTAL
I.C.C.	I.B.T.			TOTAL	INTERSTATE	INTRASTATE		
207-01		RIGHT OF WAY (EXCH)	745 119	28 091	8 792	19 299	717 028	736
207-02		" " (TOLL)	1 477	770	751	19	707	
212		BUILDINGS	16 864 303	4 189 258	2 887 487	1 301 771	12 675 045	13 976
212	10-AC	IMPROV. TO RENTED BUILDINGS	57 798	14 357	9 895	4 462	43 441	47
211		LAND	3 963 940	1 022 494	694 482	328 012	2 941 446	3 269
221	7C	CENT. OFFICE EQUIPMENT	37 073 265	5 886 083	3 879 699	2 006 384	31 187 182	33 193
221	87C-97C	" " "	23 062 673	2 830 633	760 892	2 069 741	20 232 040	22 301
221	307-C	" " "	4 122 814	4 122 814	3 880 638	242 176	-	242
222		OTHER EQUIP. OF CENT. OFFS.	1 500 769	331 613	211 598	120 015	1 169 156	1 289
231		STATIONS (TELETYPEWRITER)	504 502	425 600	310 794	114 806	78 902	193
231		" OTHER	15 545 496	577 218	198 720	378 498	14 968 278	15 346
232		STATION INSTALLATION	8 101 642	314 510	118 132	196 378	7 787 132	7 983
233		INTERIOR BLOCK WIRES	195 903	7 386	2 312	5 074	188 517	193
234		PRIVATE BRANCH EXCHANGES	10 589 939	329 972	103 280	226 692	10 259 967	10 486
235		BOOTHS AND SPECIAL FITTINGS	1 388 875	52 361	16 389	35 972	1 336 514	1 372
241-251		EXCH. AND TOLL POLE LINES	4 056 885	211 414	107 915	103 499	3 845 471	3 948
242-252		" " " AER. CABLE	7 350 098	300 028	86 450	213 578	7 050 070	7 263
243-253		" " " " WIRE	4 080 534	183 836	78 958	104 878	3 896 698	4 001
244-254		" " " U.G. CONDUIT	36 860 519	6 165 933	2 929 991	3 235 942	30 694 586	33 930
245-255		" " " " CABLE }	48 794 431	8 904 442	4 324 106	4 580 336	39 889 989	44 470
246-256		" " " SUBM. " }	-	-	-	-	-	-
274	-02	MISCELLANEOUS CONST.	1 179	44	14	30	1 135	1
274	80C-90C	" "	47 657	47 657	47 657	-	-	-
274	70-73C	" "	4 765	4 765	4 765	-	-	-

ILLINOIS BELL TELEPHONE COMPANY - CHICAGO

APPORTIONMENT OF REPRODUCTION COST NEW AS OF 12-31-31
TO
EXCHANGE, TOTAL TOLL, INTRASTATE TOLL AND INTERSTATE TOLL USE

STATION TO STATION BASIS

T OF DUCTION A)	APPORTIONMENT OF (A) DOLLARS					APPORTIONMENT OF (A) PERCENT				
	TOLL			INTRASTATE EXCHANGE	INTRASTATE TOTAL	TOLL			INTRA EXCH.	INTRA TOTAL
	TOTAL	INTERSTATE	INTRASTATE			TOTAL	INTER	INTRA		
745 119	28 091	8 792	19 299	717 028	736 327	3.770	1.180	2.590	96.230	98.820
1 477	770	751	19	707	726	52.133	50.846	1.287	47.867	49.154
64 303	4 189 258	2 887 487	1 301 771	12 675 045	13 976 816	24.841	17.122	7.719	75.159	82.878
57 798	14 357	9 895	4 462	43 441	47 903	24.840	17.120	7.720	75.160	82.880
63 940	1 022 494	694 482	328 012	2 941 446	3 269 458	25.795	17.520	8.275	74.205	82.480
73 265	5 886 083	3 879 699	2 006 384	31 187 182	33 193 566	15.877	10.465	5.412	84.123	89.535
62 673	2 830 633	760 892	2 069 741	20 232 040	22 301 781	12.274	3.299	8.975	87.726	96.701
22 814	4 122 814	3 880 638	242 176	-	242 176	100.000	94.126	5.874	-	5.874
00 769	331 613	211 598	120 015	1 169 156	1 289 171	22.096	14.099	7.997	77.904	85.901
04 502	425 600	310 794	114 806	78 902	193 708	84.360	61.604	22.756	15.640	38.396
45 496	577 218	198 720	378 498	14 968 278	15 346 776	3.713	1.278	2.435	96.287	98.722
01 642	314 510	118 132	196 378	7 787 132	7 983 510	3.882	1.458	2.424	96.118	98.542
95 903	7 386	2 312	5 074	188 517	193 591	3.770	1.180	2.590	96.230	98.820
89 939	329 972	103 280	226 692	10 259 967	10 486 659	3.116	.975	2.141	96.884	99.025
88 875	52 361	16 389	35 972	1 336 514	1 372 486	3.770	1.180	2.590	96.230	98.820
56 885	211 414	107 915	103 499	3 845 471	3 948 970	5.211	2.660	2.551	94.789	97.340
50 098	300 028	86 450	213 578	7 050 070	7 263 648	4.082	1.176	2.906	95.918	98.824
80 534	183 836	78 958	104 878	3 896 698	4 001 576	4.505	1.935	2.570	95.495	98.065
60 519	6 165 933	2 929 991	3 235 942	30 694 586	33 930 528	16.728	7.949	8.779	83.272	92.051
94 431	8 904 442	4 324 106	4 580 336	39 889 989	44 470 325	18.249	8.862	9.387	81.751	91.138
-	-	-	-	-	-	-	-	-	-	-
1 179	44	14	30	1 135	1 165	3.732	1.187	2.545	96.268	98.813

246-256		SUBM }	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4	324	106	4	580	336	39	889	989	44	470	3
				-			-			-			-			-			-	
274	-02	MISCELLANEOUS CONST.		1	179			44			14			30		1	135		1	16
274	80C-90C	"		47	657		47	657		47	657		-			-			-	
274	70-73C	"		4	765		4	765		4	765		-			-			-	
		TOTAL STRUCTURAL PLANT	224	914	583	35	951	279	20	663	717	15	287	562	188	963	304	204	250	86
		GENERAL EQUIPMENT	2	837	540		453	552		260	685		192	867	2	383	988	2	576	85
		SUB TOTAL	227	752	123	36	404	831	20	924	402	15	480	429	191	347	292	206	827	72
		INTRASTATE EXCHANGE PROPERTY USED FOR INTERSTATE SERVICE		-		+	168	615	+	168	615		-		-	168	615	-	168	61
		GRAND TOTAL	227	752	123	36	573	446	21	093	017	15	480	429	191	178	677	206	659	10

																		[illegible]	[illegible]
									[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	528	16.728	7.949	8.779	83.272	92.051
[illegible]	[illegible]	[illegible]	4	324	106	4	580	336	39	889	989	44	470	325	18.249	8.862	9.387	81.751	91.138
	-			-			-			-			-		-	-	-	-	-
		44			14			30		1	135		1	165	3.732	1.187	2.545	96.268	98.813
	47	657		47	657		-			-			-		100.000	100.000	-	-	-
	4	765		4	765		-			-			-		100.000	100.000	-	-	-
35	951	279	20	663	717	15	287	562	188	963	304	204	250	866	15.984	9.187	6.797	84.016	90.813
	453	552		260	685		192	867	2	383	988	2	576	855	15.984	9.187	6.797	84.016	90.813
36	404	831	20	924	402	15	480	429	191	347	292	206	827	721	15.984	9.187	6.797	84.016	90.813
+	168	615	+	168	615		-		-	168	615	-	168	615	-	-	-	-	-
36	573	446	21	093	017	15	480	429	191	178	677	206	659	106	16.058	9.261	6.797	83.942	90.739

Form 3102

EXHIBIT A-43

ADJUSTMENT OF TOTAL REPRODUCTION COST ON THE BASIS OF ELIMINATING ALL OVERHEAD ON LAND

	(A)	APPORTIONMENT OF (A) DOLLARS					APPORTIONMENT OF (A) PERCENT				
	TOT. REPRO. COST	TOLL			INTRA EXCH	INTRA TOTAL	TOLL			INTRA EXCH.	INTRA TOTAL
		TOTAL	INTER	INTRA			TOTAL	INTER	INTRA		
1923-TOT. STRU. PLANT (A)	147 538 112	12 648 187	6 479 577	6 168 310	134 887 925	141 058 235	8.573	4.392	4.181	91.427	95.608
TOT. OVERHEAD ON LAND (B)	466 816	34 043	33 279	20 764	412 773	433 537					
TOT. (LESS LAND O.H.) (C)=A-B	147 071 296	12 594 144	6 446 598	6 147 546	134 477 152	140 624 698	8.563	4.383	4.180	91.437	95.617
GENERAL EQUIP. (D)	1 509 746	129 280	66 172	63 108	1 380 466	1 443 574					
REVISED REP. COST (E)=C+D	148 581 042	12 723 424	6 512 770	6 210 654	135 857 618	142 068 272					
INTRA. EXCH. ADJUST. (F)		+ 108 569	+ 108 569		− 108 569	− 108 569					
REVISED TOT. REP. COST (G)=E+F	148 581 042	12 831 993	6 621 339	6 210 654	135 749 049	141 959 703	8.636	4.456	4.180	91.364	95.544
ORIG. REP. COST PERCENT							8.646	4.465	4.181	91.354	95.535
1924-TOT. STRU. PLANT (A)	155 287 769	14 455 761	7 536 637	6 919 124	140 832 008	147 751 132	9.309	4.853	4.456	90.691	95.147
TOT. OVERHEAD ON LAND (B)	521 389	65 896	41 268	24 628	455 493	480 121					
TOT. (LESS LAND O.H.) (C)=A-B	154 766 380	14 389 865	7 495 369	6 894 496	140 376 515	147 271 011	9.298	4.843	4.455	90.702	95.157
GENERAL EQUIP. (D)	1 685 832	156 749	81 645	75 104	1 529 083	1 604 187					
REVISED REP. COST (E)=C+D	156 452 212	14 546 614	7 577 014	6 969 600	141 905 598	148 875 198					
INTRA. EXCH. ADJUST. (F)		+ 131 700	+ 131 700		− 131 700	− 131 700					
REVISED TOT. REP. COST (G)=E+F	156 452 212	14 678 314	7 708 714	6 969 600	141 773 898	148 743 498	9.382	4.927	4.455	90.618	95.073
ORIG. REP. COST PERCENT							9.393	4.937	4.456	90.607	95.063
1925-TOT. STRU. PLANT (A)	171 006 775	17 205 365	9 361 707	7 843 658	153 801 410	161 645 068	10.061	5.474	4.587	89.939	94.526
TOT. OVERHEAD ON LAND (B)	600 316	76 549	48 671	27 878	523 767	551 645					
TOT. (LESS LAND O.H.) (C)=A-B	170 406 459	17 128 816	9 313 036	7 815 780	153 277 643	161 093 423	10.052	5.465	4.587	89.948	94.535
GENERAL EQUIP. (D)	1 850 598	186 022	101 135	84 887	1 664 574	1 749 461					
REVISED REP. COST (E)=C+D	172 257 055	17 314 838	9 414 171	7 900 667	154 942 217	162 842 884					
INTRA. EXCH. ADJUST. (F)		+ 140 250	+ 140 250		− 140 250	− 140 250					
REVISED TOT. REP. COST (G)=E+F	172 257 055	17 455 088	9 554 421	7 900 667	154 801 967	162 702 634	10.133	5.547	4.586	89.867	94.453
ORIG. REP. COST PERCENT							10.143	5.556	4.587	89.857	94.444
1926-TOT. STRU. PLANT (A)	176 996 750	18 910 066	10 236 930	8 673 136	158 086 684	166 759 820	10.684	5.784	4.900	89.316	94.216
TOT. OVERHEAD ON LAND (B)	630 125	80 950	50 118	30 832	549 175	580 007					
TOT. (LESS LAND O.H.) (C)=A-B	176 366 625	18 829 116	10 186 812	8 642 304	157 537 509	166 179 813	10.676	5.776	4.900	89.324	94.224
GENERAL EQUIP. (D)	2 047 146	218 553	118 243	100 310	1 828 593	1 928 903					
REVISED REP. COST (E)=C+D	178 413 771	19 047 669	10 305 055	8 742 614	159 366 102	168 108 716					
INTRA. EXCH. ADJUST. (F)		+ 135 560	+ 135 560		− 135 560	− 135 560					
REVISED TOT. REP. COST (G)=E+F	178 413 771	19 183 229	10 440 615	8 742 614	159 230 542	167 973 156	10.752	5.852	4.900	89.248	94.148
ORIG. REP. COST PERCENT							10.760	5.860	4.900	89.240	94.140
1927-TOT. STRU. PLANT (A)	190 300 574	21 948 731	11 787 257	10 161 474	168 351 843	178 513 517	11.534	6.194	5.340	88.466	93.806
TOT. OVERHEAD ON LAND (B)	821 627	133 944	85 722	48 222	687 683	725 905					
TOT. (LESS LAND O.H.) (C)=A-B	189 478 947	21 814 787	11 701 335	10 113 452	167 664 160	177 777 612	11.513	6.176	5.337	88.487	93.824
GENERAL EQUIP. (D)	2 341 675	269 577	144 622	124 975	2 072 078	2 197 053					
REVISED REP. COST (E)=C+D	191 820 622	22 084 384	11 845 957	10 238 427	169 736 238	179 974 665					
INTRA. EXCH. ADJUST. (F)		+ 153 387	+ 153 387		− 153 387	− 153 387					
REVISED TOT. REP. COST (G)=E+F	191 820 622	22 237 771	11 999 344	10 238 427	169 582 851	179 821 278	11.593	6.256	5.337	88.407	93.744
ORIG. REP. COST PERCENT							11.614	6.274	5.340	88.386	93.726
1928-TOT. STRU. PLANT (A)	200 812 865	26 088 669	14 329 429	11 759 240	174 724 196	186 483 436	12.992	7.136	5.856	87.008	92.864
TOT. OVERHEAD ON LAND (B)	832 051	175 491	116 164	59 327	656 560	715 887					
TOT. (LESS LAND O.H.) (C)=A-B	199 980 814	25 913 178	14 213 265	11 699 913	174 067 636	185 767 549	12.958	7.107	5.851	87.042	92.893
GENERAL EQUIP. (D)	2 624 092	340 030	186 494	153 536	2 284 062	2 437 598					
REVISED REP. COST (E)=C+D	202 604 906	26 253 208	14 399 759	11 853 449	176 351 698	188 205 147					
INTRA. EXCH. ADJUST. (F)		+ 162 188	+ 162 188		− 162 188	− 162 188					
REVISED TOT. REP. COST (G)=E+F	202 604 906	26 415 396	14 561 947	11 853 449	176 189 510	188 042 959	13.038	7.187	5.851	86.962	92.813
ORIG. REP. COST PERCENT							13.072	7.216	5.856	86.928	92.784
1929-TOT. STRU. PLANT (A)	217 435 015	31 807 907	17 482 930	14 324 977	185 627 108	199 952 085	14.629	8.041	6.588	85.371	91.959
TOT. OVERHEAD ON LAND (B)	900 517	199 230	127 204	72 026	701 287	773 313					
TOT. (LESS LAND O.H.) (C)=A-B	216 534 498	31 608 677	17 355 726	14 252 951	184 925 821	199 178 772	14.597	8.015	6.582	85.403	91.985
GENERAL EQUIP. (D)	2 792 614	407 638	223 828	183 810	2 384 976	2 568 786					
REVISED REP. COST (E)=C+D	219 327 112	32 016 315	17 579 554	14 436 761	187 310 797	201 747 558					
INTRA. EXCH. ADJUST. (F)											

TOT.(LESS LAND O.H.)	(C)=A-B	216 534 898	31 608 677	17 355 726	14 252 951	184 925 871	199 178 772	14.597	8.015	6.582	85.403	91.985
GENERAL EQUIP.	(D)	2 742 614	407 638	223 828	183 810	2 384 976	2 568 786					
REVISED REP COST	(E)=C+D	219 327 112	32 016 315	17 579 554	14 436 761	187 310 797	201 747 558					
INTRA. EXCH. ADJUST.	(F)		+ 180 399	+ 180 399		− 180 399	− 180 399					
REVISED TOT. REP. COST	(G)=E+F	219 327 112	32 196 714	17 759 953	14 436 761	187 130 398	201 567 159	14.680	8.078	6.582	85.320	91.902
ORIG. REP. COST PERCENT								14.711	8.123	6.588	85.289	91.877
1930-TOT. STRU. PLANT	(A)	226 424 779	35 589 460	20 176 106	15 413 354	190 835 319	206 248 673	15.718	8.911	6.807	84.282	91.089
TOT. OVERHEAD ON LAND	(B)	914 018	237 271	155 538	81 733	676 747	758 480					
TOT.(LESS LAND O.H.)	(C)=A-B	225 510 761	35 352 189	20 020 568	15 331 621	190 158 572	205 490 193	15.677	8.878	6.799	84.323	91.122
GENERAL EQUIP	(D)	2 900 569	454 782	257 513	197 209	2 445 847	2 643 056					
REVISED REP. COST	(E)=C+D	228 411 330	35 806 911	20 278 081	15 528 830	192 604 419	208 133 249					
INTRA. EXCH ADJUST	(F)		+ 172 705	+ 172 705		− 172 705	− 172 705					
REVISED TOT. REP. COST	(G)=E+F	228 411 330	35 979 616	20 450 786	15 528 830	192 431 714	207 960 544	15.752	8.953	6.799	84.248	91.047
ORIG. REP COST PERCENT								15.794	8.987	6.807	84.206	91.013
1931-TOT. STRU. PLANT	(A)	224 914 583	35 951 279	20 663 717	15 287 562	188 963 304	204 250 866	15.934	9.187	6.797	84.016	90.813
TOT OVERHEAD ON LAND	(B)	839 410	216 553	147 050	69 503	622 857	692 360					
TOT (LESS LAND O.H.)	(C)=A-B	224 075 173	35 734 726	20 516 667	15 218 059	188 340 447	203 558 506	15.948	9.156	6.792	84.052	90.844
GENERAL EQUIP	(D)	2 837 540	452 531	259 805	192 726	2 385 009	2 577 735					
REVISED REP COST	(E)=C+D	226 912 713	36 187 257	20 776 472	15 410 785	190 725 456	206 136 241					
INTRA. EXCH. ADJUST	(F)		+ 168 078	+ 168 078		− 168 078	− 168 078					
REVISED TOT REP COST	(G)=E+F	226 912 713	36 355 335	20 944 550	15 410 785	190 557 378	205 968 163	16.022	9.230	6.792	83.978	90.770
ORIG. REP. COST PERCENT								16.058	9.261	6.797	83.942	90.739

Form 3102

EXHIBIT A-44

ADJUSTMENT OF TOTAL DEPRECIATED REPRODUCTION COST ON THE BASIS OF ELIMINATING ALL OVERHEAD ON LAND

	(A)	APPORTIONMENT OF (A) DOLLARS					APPORTIONMENT OF (A) PERCENT				
	TOT REPRO COST	TOLL			INTRA EXCH	INTRA TOTAL	TOLL			INTRA EXCH	INTRA TOTAL
		TOTAL	INTER	INTRA			TOTAL	INTER	INTRA		
1923 - TOT STRU. PLANT (A)	135 226 775	11 677 889	5 978 890	5 698 999	123 548 696	129 247 695	8.635	4.421	4.214	91.365	95.579
TOT. OVERHEAD ON LAND (B)	466 816	54 243	33 279	20 764	412 773	433 537					
TOT. (LESS LAND O.H.) (C)=A-B	134 759 769	11 623 346	5 945 611	5 678 235	123 135 923	128 814 158	8.626	4.412	4.214	91.374	95.588
GENERAL EQUIP (D)	1 177 602	101 880	51 756	49 684	1 076 022	1 175 646					
REVISED REP COST (E)C+D	135 937 371	11 725 426	5 997 567	5 727 859	124 211 945	129 939 804					
INTRA EXCH. ADJUST (F)		+ 99 330	+ 99 330		− 99 330	− 99 330					
REVISED TOT. REP. COST (G)=E+F	135 937 371	11 824 756	6 096 897	5 727 859	124 112 615	129 840 474	8.699	4.485	4.214	91.301	95.515
ORIG. REP. COST PERCENT							8.708	4.494	4.214	91.292	95.506
1924 - TOT. STRU. PLANT (A)	142 525 378	13 265 903	6 862 385	6 403 518	129 159 475	135 562 993	9.377	4.885	4.492	90.623	95.115
TOT. OVERHEAD ON LAND (B)	521 389	65 896	41 268	24 628	455 493	480 121					
TOT. (LESS LAND O.H.) (C)=A-B	142 003 989	13 300 007	6 921 117	6 378 890	128 703 982	135 082 872	9.366	4.874	4.492	90.634	95.126
GENERAL EQUIP (D)	1 314 949	122 158	64 091	57 067	1 191 791	1 250 858					
REVISED REP COST (E)=C+D	143 318 738	13 423 165	6 985 208	6 437 957	129 895 773	136 333 730					
INTRA EXCH. ADJUST (F)		+ 120 645	+ 120 645		− 120 645	− 120 645					
REVISED TOT. REP COST (G)=E+F	143 318 938	13 543 810	7 105 853	6 437 957	129 775 128	136 213 085	9.450	4.958	4.492	90.550	95.042
ORIG. REP COST PERCENT							9.461	4.968	4.493	90.539	95.032
1925 TOT. STRU. PLANT (A)	157 147 878	15 922 522	8 657 309	7 265 213	141 225 156	148 490 369	10.132	5.509	4.623	89.868	94.491
TOT. OVERHEAD ON LAND (B)	600 316	76 549	48 671	27 878	523 767	551 645					
TOT. (LESS LAND O.H.) (C)=A-B	156 547 562	15 845 973	8 608 638	7 237 335	140 701 389	147 938 724	10.122	5.499	4.623	89.878	94.501
GENERAL EQUIP (D)	1 443 465	146 107	79 376	66 731	1 297 358	1 364 089					
REVISED REP COST (E)=C+D	157 990 827	15 992 080	8 688 014	7 304 066	141 998 747	149 302 813					
INTRA EXCH ADJUST (F)		+ 128 634	+ 128 634		− 128 634	− 128 634					
REVISED TOT REP. COST (G)=E+F	157 990 827	16 120 714	8 816 648	7 304 066	141 870 113	149 174 179	10.204	5.581	4.623	89.796	94.419
ORIG. REP. COST PERCENT							10.213	5.590	4.623	89.787	94.410
1926 TOT STRU PLANT (A)	162 746 220	17 503 105	9 470 114	8 032 991	145 243 115	153 276 106	10.754	5.819	4.935	89.246	94.181
TOT. OVERHEAD ON LAND (B)	630 125	80 950	50 118	30 832	549 175	580 007					
TOT. (LESS LAND O.H.) (C)=A-B	162 116 095	17 422 155	9 419 996	8 002 159	144 693 940	152 696 099	10.747	5.811	4.936	89.253	94.189
GENERAL EQUIP (D)	1 596 774	171 605	92 788	78 867	1 425 169	1 503 986					
REVISED REP COST (E)=C+D	163 712 869	17 593 760	9 512 784	8 080 976	146 119 109	154 200 085					
INTRA EXCH ADJUST (F)		+ 124 390	+ 124 390		− 124 390	− 124 390					
REVISED TOT REP COST (G)=E+F	163 712 869	17 718 150	9 637 174	8 080 976	145 994 719	154 075 695	10.823	5.887	4.936	89.177	94.113
ORIG REP COST PERCENT							10.830	5.895	4.935	89.170	94.105
1927 TOT STRU. PLANT (A)	175 068 597	20 340 443	10 918 429	9 422 014	154 728 154	164 150 168	11.618	6.236	5.382	88.382	93.764
TOT OVERHEAD ON LAND (B)	821 627	133 944	85 722	48 222	687 683	735 905					
TOT. (LESS LAND O.H.) (C)=A-B	174 246 970	20 206 499	10 832 707	9 373 792	154 040 471	163 414 263	11.597	6.217	5.380	88.403	93.783
GENERAL EQUIP (D)	1 826 507	211 820	113 555	98 266	1 614 687	1 712 953					
REVISED REP COST (E)=C+D	176 073 477	20 418 319	10 946 261	9 472 058	155 655 158	165 127 216					
INTRA EXCH ADJUST (F)		+ 140 795	+ 140 795		− 140 795	− 140 795					
REVISED TOT REP COST (G)=E+F	176 073 477	20 559 114	11 087 056	9 472 058	155 514 363	164 986 421	11.676	6.297	5.379	88.324	93.703
ORIG REP COST PERCENT							11.698	6.316	5.382	88.302	93.684
1928 TOT STRU PLANT (A)	184 846 469	24 195 262	13 289 530	10 905 732	160 651 207	171 556 939	13.088	7.159	5.899	86.912	92.811
TOT OVERHEAD ON LAND (B)	832 051	175 491	116 164	59 327	656 560	715 887					
TOT (LESS LAND O.H.) (C)=A-B	184 014 418	24 019 771	13 173 366	10 846 405	159 994 647	170 841 052	13.053	7.159	5.894	86.947	92.841
GENERAL EQUIP (D)	2 046 792	267 168	146 530	120 638	1 779 624	1 900 262					
REVISED REP COST (E)=C+D	186 061 210	24 286 939	13 319 296	10 967 043	161 774 271	172 741 314					
INTRA EXCH ADJUST (F)		+ 148 945	+ 148 945		− 148 945	− 148 945					
REVISED TOT. REP. COST (G)=E+F	186 061 210	24 435 884	13 468 841	10 967 043	161 625 326	172 592 369	13.133	7.239	5.894	86.867	92.761
ORIG REP COST PERCENT							13.168	7.269	5.899	86.832	92.731
1929 - TOT. STRU PLANT (A)	201 374 319	29 870 074	16 492 865	13 377 209	171 504 245	184 881 454	14.831	8.189	6.642	85.169	91.811
TOT OVERHEAD ON LAND (B)	900 517	199 230	127 204	72 026	701 287	773 313					
TOT. (LESS LAND O.H.) (C)=A-B	200 473 802	29 670 844	16 365 661	13 305 183	170 802 958	184 108 141	14.800	8.163	6.637	85.200	91.837
GENERAL EQUIP (D)	2 178 239	322 379	177 810	144 569	1 855 860	2 000 439					
REVISED REP. COST (E)C+D	202 652 041	29 993 223	16 543 471	13 449 752	172 658 818	186 108 570					
INTRA EXCH ADJUST (F)		+ 166 285	+ 166 285		− 166 285	− 166 285					

TOT.(LESS LAND O.H.) (C)=A-B	200	473	802		29	670	844	16	365	669	13	305	183	170	802	958	184	108	141		14.	800	8.	163	6.	637	85.	200	91.	837
GENERAL EQUIP (D)	2	178	239			322	379		177	810		144	569	1	855	860	2	000	429											
REVISED REP.COST (E)C+D	202	652	041		29	993	223	16	543	471	13	449	752	172	658	818	186	108	570											
INTRA EXCH ADJUST (F)					+	166	683	+	166	683				—	166	683	—	166	683											
REVISED TOT. REP COST (G)=E+F	202	652	041		30	159	906	16	710	154	13	449	752	172	492	135	185	941	887		14.	883	8.	246	6.	637	86.	117	91.	754
ORIG. REP. COST PERCENT																					14.	913	8.	271	6.	642	85.	087	91.	729
1930-TOT. STRU. PLANT (A)	209	763	069		33	443	996	19	049	291	14	394	705	176	319	073	190	713	778		15.	941	9.	079	6.	862	84.	057	90.	921
TOT. OVERHEAD ON LAND (B)		914	018			237	271		155	538		81	733		676	747		758	480											
TOT.(LESS LAND O.H.) (C)=A-B	208	849	051		33	206	725	18	893	753	14	312	972	175	642	326	189	955	298		15.	900	9.	047	6.	853	84.	100	90.	953
GENERAL EQUIP (D)	2	262	444			359	728		204	683		155	045	1	902	716	2	057	761											
REVISED REP. COST (E)=C+D	211	111	495		33	566	453	19	098	436	14	468	017	177	545	042	192	013	059											
INTRA EXCH ADJUST (F)					+	159	624	+	159	624				—	159	624	—	159	624											
REVISED TOT. REP COST (G)=E+F	211	111	495		33	726	077	19	258	060	14	468	017	177	385	418	191	853	435		15.	975	9.	122	6.	853	84.	025	90.	878
ORIG REP COST PERCENT																					16.	017	9.	155	6.	862	83.	983	90.	845
1931-TOT. STRU. PLANT (A)	208	374	589		33	798	065	19	514	674	14	283	391	174	576	524	188	859	915		16.	217	9.	363	6.	854	83.	783	90.	637
TOT OVERHEAD ON LAND (B)		839	410			216	553		147	050		69	503		622	857		692	360											
TOT.(LESS LAND O.H.) (C)=A-B	207	535	179		33	581	512	19	367	624	14	213	888	173	953	667	188	167	555		16.	181	9.	332	6.	849	83.	819	90.	668
GENERAL EQUIP (D)	2	213	281			358	131		286	543		151	588	1	855	150	2	006	738											
REVISED REP. COST (E)=C+D	209	748	460		33	939	643	19	654	167	14	365	476	175	808	817	190	174	293											
INTRA EXCH ADJUST (F)					+	155	363	+	155	363				—	155	363	—	155	363											
REVISED TOT. REP COST (G)=E+F	209	748	460		34	095	006	19	729	530	14	365	476	175	653	454	190	018	930		16	255	9.	406	6.	849	83.	745	90.	594
ORIG REP COST PERCENT																					16	291	9	437	6.	854	83.	709	90.	563

EXHIBIT A-46

ORIGINATING ~~ANNUAL~~ CALL VOLUMES (ALL CLASSES)
IN LOCAL CENTRAL OFFICES
CITY OF CHICAGO

		% A-B OF TOTAL ORIG CALLS			% L.D. OF TOTAL ORIG. CALLS			% A-B + L.D OF TOTAL ORIG CALLS			% MISC. CALLS OF TOT. ORIG. CALLS			% TOT. TOLL CALLS OF TOT. ORIG CALLS			% PURE EXCH. OF TOT. ORIG. CALLS.
		INTRA.	INTER.	TOTAL	INTRA.	INTER.	TOTAL	INTRA	INTER.	TOTAL	INTRA	INTER.	TOTAL	INTRA.	INTER.	TOTAL	
		R = B÷A	S = C÷A	T = D÷A	U = E÷A	V = F÷A	W = G÷A	X = H÷A	Y = I÷A	Z = J÷A	A' = K÷A	B' = L÷A	C' = M÷A	D' = N÷A	E' = O÷A	F' = P÷A	G' = Q÷A
ALL OFFICES COMBINED (MANUAL + DIAL)																	
12 ″	1923	1.1671	.0572	1.2243	.2654	.2214	.4868	1.4325	.2786	1.7111	.0774	.1475	.2249	1.5099	.4261	1.9360	98.0640
″ ″	1924	1.2607	.0614	1.3221	.2640	.2179	.4819	1.5247	.2793	1.8040	.0723	.1272	.1995	1.5970	.4065	2.0035	97.9965
″ ″	1925	1.3515	.0659	1.4174	.2587	.2320	.4907	1.6102	.2979	1.9081	.0747	.1207	.1954	1.6849	.4186	2.1035	97.8965
″ ″	1926	1.4966	.0734	1.5700	.2571	.2421	.4992	1.7537	.3155	2.0642	.0792	.1368	.2160	1.8330	.4522	2.2852	97.7148
″ ″	1927	1.7326	.0856	1.8182	.2088	.2560	.4648	1.9414	.3416	2.2830	.0652	.1187	.1839	2.0066	.4603	2.4669	97.5331
″ ″	1928	1.8820	.0931	1.9751	.1857	.2802	.4659	2.0677	.3733	2.4410	.0595	.1178	.1773	2.1272	.4911	2.6183	97.3817
″ ″	1929	1.9887	.1020	2.0907	.1615	.3209	.4824	2.1502	.4229	2.5731	.0583	.1440	.2023	2.2085	.5669	2.7754	97.2246
″ ″	1930	2.0443	.1047	2.1490	.1684	.3342	.5026	2.2127	.4389	2.6516	.0603	.1496	.2091	2.2730	.5885	2.8615	97.1385
12 MOS	1931	1.9909	.0958	2.0867	.1664	.3318	.4982	2.1573	.4276	2.5849	.0639	.1684	.2323	2.2212	.5960	2.8172	97.1828

ANNUAL VOLUME OF ORIGINATING AND INCOMING CALLS FOR
PURE EXCHANGE, A-B TOLL (INTRASTATE AND INTERSTATE), TOLL RECORDING (INTRASTATE AND INTERSTATE), TOLL SWITC

		PURE EXCHANGE - ANNUAL CALL VOLUME				A-B TOLL (INTRASTATE)						A-B TOLL		
		ORIGINATING CALLS	INCOMING CALLS			ORIGINATING CALLS			INCOMING CALLS			ORIGINATING CALLS		
			INC. FROM MANUAL	INC. FROM E AL	TOTAL	DIRECT	VIA TANDEM	TOTAL	DIRECT	VIA TANDEM	TOTAL	DIRECT	VIA TANDEM	TOTAL
ALL OFFICES (COMBINED) (MANUAL + DIAL)														
12 MOS	1923	1 040 830 848	979 703 270	25 739 329	1 005 442 599	8 656 919	3 730 513	12 387 432	7 457 791	4 782 034	12 239 825	228 320	379 021	607
" "	1924	1 090 391 218	995 335 273	60 163 426	1 055 498 699	9 625 247	4 402 814	14 [illegible]8 061	8 494 965	5 353 232	13 848 197	250 811	432 055	682
" "	1925	1 158 488 334	1 050 479 530	72 930 316	1 123 409 846	11 621 105	4 372 497	15 993 602	10 028 467	5 740 099	15 768 566	312 477	467 847	780
" "	1926	1 249 820 598	1 109 621 722	105 203 899	1 214 825 621	14 598 667	4 543 923	19 142 590	12 391 811	6 476 088	18 867 899	400 671	537 520	938
" "	1927	1 276 673 311	1 124 105 743	119 374 061	1 243 479 804	18 205 869	4 473 111	22 678 980	15 220 726	7 111 784	22 332 510	488 561	632 604	1 121
" "	1928	1 327 683 139	1 154 056 174	141 762 570	1 295 818 744	20 826 398	4 832 193	25 658 591	17 760 111	7 494 716	25 254 827	669 644	599 512	1 269
" "	1929	1 402 477 947	1 122 536 619	249 086 814	1 371 623 433	23 649 564	5 037 341	28 686 905	20 506 014	7 615 014	28 121 028	939 742	631 491	1 471
" "	1930	1 357 799 284	1 011 187 479	318 098 020	1 329 285 499	24 059 178	4 516 396	28 575 574	20 304 043	7 137 597	27 441 640	957 349	505 932	1 463
12 MOS	1931	1 287 501 073	918 006 802	334 731 738	1 252 738 540	22 128 236	4 247 251	26 375 487	18 042 713	6 319 102	24 361 815	831 781	437 435	1 26

ANNUAL VOLUME OF ORIGINATING AND INCOMING CALLS FOR
TOLL (INTRASTATE AND INTERSTATE), TOLL RECORDING (INTRASTATE AND INTERSTATE), TOLL SWITCHING (INTRASTATE AND INTERSTATE).

A-B TOLL (INTRASTATE)					A-B TOLL (INTERSTATE)						TOLL BOARD (RECORDING)			INCOMING TOLL SWITCH ATTEMPTS	
NG CALLS		INCOMING CALLS			ORIGINATING CALLS			INCOMING CALLS			OUTFILED CALLS				
NDEM	TOTAL	DIRECT	VIA TANDEM	TOTAL	DIRECT	VIA TANDEM	TOTAL	DIRECT	VIA TANDEM	TOTAL	INTRASTATE	INTERSTATE	TOTAL	TOTAL ATTEMPTS	ATTPTS PER OUTFILED CALL
0 513	12 387 432	7 457 791	4 782 034	12 239 825	228 320	379 021	607 341	125 956	531 822	657 778	2 816 428	2 349 802	5 166 230	20 546 274	3.977
2 814	14 028 061	8 494 965	5 353 232	13 848 197	250 811	432 055	682 866	138 364	605 849	744 213	2 937 614	2 424 444	5 362 058	21 937 917	4.091
2 497	15 993 602	10 028 467	5 740 099	15 768 566	312 477	467 847	780 324	199 602	665 340	864 942	3 061 346	2 745 302	5 806 648	24 696 314	4.253
3 923	19 142 590	12 391 811	6 476 088	18 867 899	400 671	537 520	938 191	238 834	796 114	1 034 948	3 288 651	3 096 997	6 385 648	25 229 434	3.951
3 111	22 678 980	15 220 726	7 111 784	22 332 510	488 561	632 604	1 121 165	356 356	893 510	1 249 866	2 732 622	3 351 048	6 083 670	23 492 940	3.861
2 193	25 658 591	17 760 111	7 494 716	25 254 827	669 644	599 512	1 269 156	438 992	974 425	1 413 417	2 531 775	3 820 247	6 352 022	25 395 603	3.998
7 341	28 686 905	20 506 014	7 615 014	28 121 028	939 742	531 491	1 471 233	616 537	988 680	1 605 217	2 329 706	4 629 673	6 959 379	27 881 755	4.006
6 396	28 575 574	20 304 043	7 137 597	27 441 640	957 349	505 932	1 463 281	656 283	910 153	1 566 436	2 353 054	4 671 934	7 024 988	26 734 608	3.806
7 251	26 375 487	18 042 713	6 319 102	24 361 815	831 781	437 435	1 269 216	549 801	714 118	1 263 919	2 204 939	4 394 748	6 599 687	20 509 419	3.108

Form 3102

TIME IN USE PER CALL (IN MINUTE

PURE EXCHANGE, A-B TOLL (INTRASTATE AND INTERSTATE), TOLL RECORDING(INTRASTATE AND

		PURE EXCHANGE MINUTES USE PER CALL				A-B TOLL (INTRASTATE) MINUTES USE PER CALL					A-B TOLL (INTERSTATE) MINUTES USE PER CALL					TOL
		ORIG.	INC. FROM MANUAL	INC. FROM DIAL	AV. H.T. PER ORIG. CALL	ORIGINATING		INCOMING		AV. H.T. PER ORIG. CALL	ORIGINATING		INCOMING		AV. H.T. PER ORIG. CALL	PE
						DIRECT	VIA TANDEM	DIRECT	VIA TANDEM		DIRECT	VIA TANDEM	DIRECT	VIA TANDEM		IN
ALL OFFICES (COMBINED) (MANUAL + DIAL)																
12 MOS	1923	3.010	2.810	1.850	5.700	3.154	3.299	2.779	2.785	5.946	3.157	3.310	2.792	2.779	6.265	1.
	1924	3.002	2.854	1.882	5.711	3.253	3.393	2.778	2.792	6.045	3.258	3.407	2.807	2.778	6.386	1.
	1925	2.990	2.821	1.878	5.665	3.480	3.604	2.807	2.831	6.290	3.507	3.616	2.816	2.816	6.693	1.
	1926	2.982	2.847	1.884	5.668	3.541	3.669	2.843	2.876	6.385	3.583	3.663	2.854	2.854	6.778	1.
	1927	2.969	2.840	1.871	5.644	3.535	3.684	2.911	2.963	6.447	3.590	3.651	2.857	2.956	6.888	1.
	1928	2.955	2.841	1.887	5.626	3.483	3.641	2.942	3.000	6.425	3.484	3.639	2.888	2.991	6.853	1.
	1929	2.939	2.905	1.872	5.597	3.473	3.652	2.938	3.003	6.402	3.446	3.697	2.847	3.024	6.762	1.
	1930	2.913	2.938	1.905	5.547	3.530	3.747	2.987	3.072	6.454	3.500	3.770	2.882	3.101	6.815	1.
12 MOS	1931	2.984	3.035	2.002	5.668	3.497	3.692	2.885	2.927	6.203	3.479	3.757	2.837	2.945	6.461	3.

TIME IN USE PER CALL (IN MINUTES) FOR
TOLL (INTRASTATE AND INTERSTATE), TOLL RECORDING (INTRASTATE AND INTERSTATE), TOLL SWITCHING (INTRASTATE AND INTERSTATE).

RASTATE) ER CALL			A-B TOLL (INTERSTATE) MINUTES USE PER CALL					TOLL BOARD (RECORDING) MINUTES USE			INCOMING TOLL SWITCH ATTEMPTS - MINUTES USE			RECORDING + TOLL SWITCH MINUTES USE		
OMING		AV. H.T. PER ORIG. CALL	ORIGINATING		INCOMING		AV. H.T. PER ORIG. CALL	PER OUTFILED CALL			PER OUTFILED CALL			PER OUTFILED CALL		
ECT	VIA TANDEM		DIRECT	VIA TANDEM	DIRECT	VIA TANDEM		INTRA	INTER	TOTAL	INTRA	INTER	TOTAL	INTRA	INTER	TOTAL
779	2.785	5.946	3.157	3.310	2.792	2.779	6.265	1.077	1.583	1.307	12.951	22.740	17.404	14.028	24.323	18.711
778	2.792	6.045	3.258	3.407	2.807	2.778	6.386	1.036	1.507	1.249	13.514	23.515	18.036	14.550	25.022	19.285
07	2.831	6.290	3.507	3.616	2.816	2.816	6.693	9.042	1.444	1.232	13.662	24.480	18.776	14.704	25.924	20.008
43	2.876	6.385	3.583	3.663	2.854	2.854	6.778	1.070	1.521	1.289	13.801	21.584	17.576	14.871	23.105	18.865
11	2.963	6.417	3.590	3.651	2.857	2.956	6.888	1.085	1.372	1.243	12.792	20.837	17.223	13.877	22.209	18.466
42	3.000	6.425	3.484	3.639	2.888	2.991	6.853	1.137	1.336	1.257	13.415	20.833	17.876	14.552	22.169	19.133
38	3.003	6.402	3.446	3.697	2.847	3.024	6.762	1.590	1.959	1.836	13.667	17.711	16.357	15.257	[illegible]9.670	18.193
87	3.072	6.454	3.500	3.770	2.882	3.101	6.815	1.547	1.900	1.782	13.633	16.648	15.638	15.180	18.548	17.420
885	2.927	6.203	3.479	3.757	2.837	2.945	6.461	3.602	5.157	4.633	11.272	13.329	12.642	14.874	18.486	17.280

Form 3102

PERCENT TIME USE FOR INTRASTATE TOLL, INTERSTATE TOLL AND EXCHANGE
OF THE TOTAL TIME USE OF SUBSCRIBERS LINES AND STATIONS SERVED FROM LOCAL CENTRAL OFFICES

		TOTAL MINUTES USE	TOLL MINUTES			PURE EXCHANGE MINUTES	PERCENT USE			
			INTRASTATE	INTERSTATE	TOTAL		INTRA TOLL	INTER TOLL	TOTAL TOLL	EXCH.
ALL OFFICES COMBINED (MANUAL + DIAL)										
12 MOS	1923	6 107 051 979	113 167 830	60 958 326	174 126 156	5 932 925 823	1.85	1.00	2.85	97.15
" "	1924	6 419 503 597	127 540 348	65 025 402	192 565 750	6 226 937 847	1.99	1.01	3.00	97.00
" "	1925	6 785 301 392	145 613 448	76 393 327	222 006 775	6 563 294 617	2.15	1.12	3.27	96.73
" "	1926	7 333 448 218	171 134 429	77 917 321	249 051 750	7 084 396 468	2.34	1.06	3.40	96.60
" "	1927	7 472 000 710	184 135 029	82 147 111	266 282 140	7 205 718 570	2.46	1.10	3.56	96.44
" "	1928	7 764 369 444	201 699 072	93 389 515	295 088 587	7 469 280 857	2.60	1.20	3.80	96.20
" "	1929	8 170 398 635	219 198 629	101 014 018	320 212 647	7 850 125 888	2.68	1.24	3.92	96.08
" "	1930	7 848 387 045	220 142 223	96 629 092	316 771 315	7 531 615 730	2.81	1.23	4.04	95.96
12 MOS	1931	7 583 845 186	196 397 697	89 443 323	285 841 020	7 298 004 166	2.59	1.18	3.77	96.23

[fol. 2854] **Exhibit A-48**

Illinois Bell Telephone Company, Chicago Exchange

Method of Separating and Apportioning Revenues and Expenses Between Exchange, Intrastate Toll, and Interstate Toll under the Station to Station Separation

The Uniform System of Accounts for Telephone Companies, as prescribed by the Interstate Commerce Commission, does not require the accounts to show separately the exchange, intrastate toll and interstate toll business. For the purposes of this case the various methods listed below were developed for separating and apportioning the revenue and expense accounts:

Revenues

500. Subscribers' Station Revenues:

This account was apportioned to exchange, intrastate toll and interstate toll on the basis of percentages furnished by the Chief Engineer representing the respective time in use of subscribers' lines for exchange, intrastate toll and interstate toll, except the following minor items in this account which were allocated to exchange, intrastate toll and interstate toll as indicated below:

(a) The annual revenue credited to this account from Long Distance terminals and related extensions was apportioned to intrastate toll and interstate toll on the basis of the use of such terminals each year as furnished by the Chief Engineer.

(b) The portion of revenues for P. B. X. terminals and extensions applicable to calls from one terminal or extension to another on the same switchboard was treated as exchange. This amount was determined by applying (a) the percentage of use P. B. X. terminals and extensions for such calls, as furnished by the Chief Engineer for each year, to (b) the total annual revenues for P. B. X. terminals and extensions. Such total P. B. X. terminal and extension annual revenues were computed at the annual rate of $9.00 applied to the average number of P. B. X. terminals and extensions (excluding Public Pay and Official) in service each year. Similarly, a portion of the revenues for P. B. X. switchboards and additional equipment for each year was treated as exchange. This was based on (a) the percentage use of P. B. X. switchboards for calls from one P. B. X. terminal or extension to another on the same P. B. X. switchboard, as furnished by the Chief Engineer for each year, applied to (b) the total revenues for P. B. X. switchboards and additional equipment, as determined from the Accounting Department records for each year.

[fol. 2855] 501. Public Pay Station Revenues:

This account was apportioned to exchange, intrastate toll and interstate toll on the basis of percentages furnished by the Chief Engineer representing the respective time in use in subscribers' lines for exchange, intrastate toll and interstate toll.

504. Private Exchange Lines:

The revenue credited to this account for stations on private lines extending outside of Chicago was treated as toll and apportioned to intrastate and interstate according to use. Such annual amounts were computed at the annual $9.00 rate applied to the average number of such stations in service in Chicago each year.

The annual revenue credited to this account for the master teletypewriter station on each circuit involving toll lines was apportioned to exchange, intrastate and interstate toll on the basis of the number of other teletypewriter stations on the same circuit located inside of Chicago and outside of Chicago—intrastate and interstate—as of the end of each year.

The annual revenue credited to this account for loops on teletypewriter circuits having all terminals outside of Chicago was apportioned to intrastate toll and interstate toll according to the use of each such circuit.

The revenue credited to this account for loops furnished on short period talking circuits involving the use of toll lines was treated as toll and apportioned to intrastate and interstate according to use.

The revenue credited to this account for special terminal loops furnished the A. T. & T. Company for use in radio service was treated as interstate toll.

The revenue from circuits furnished to the National Broadcasting Company was treated as interstate toll.

The balance of this account was treated as exchange.

505. Minor Rents of Exchange Plant:

Such revenues were treated as exchange except the 5¢ portion credited to this account in 1923 from the originating commission received on each A. T. & T. Company message and report charge. Such portion was allocated to intrastate toll and interstate toll based on a complete analysis of the number of A. T. & T. intrastate and interstate messages and report charges originating in Chicago during the month of October 1923. Effective with January 1924 business a change in accounting was made whereby such 5¢ portion of the originating commissions on A. T. & T. Co. messages was credited to Account 510. Such amounts for the Year 1924 and the first five months of 1925 were apportioned to intrastate toll and interstate toll on the basis of the number of A. T. & T. Company intrastate and interstate messages and report charges originating in Chicago during 1 month in each of the periods. Subsequent to June 1, 1925 all commissions on A. T. & T. Company messages and report charges were treated as interstate toll as all intrastate A. T. & T. Company business was taken over by the Illinois Bell on June 1, 1925.

[fol. 2856] 510. Message Tolls:

The portion of this account prior to June 1, 1925, representing billing to the American Telephone & Telegraph Company for use of plant in Chicago reserved for Long Lines purposes, was apportioned to intrastate toll and interstate toll on the basis of use, as furnished by the Chief Engineer for each class of such plant for each year. Since June 1, 1925, when all A. T. & T. intrastate business was taken over by the Illinois Bell Telephone Company, all billing has been treated as 100% interstate toll.

The originating commission on A. T. & T. tolls for the years 1923 and 1924 and the first five months of 1925 was apportioned to intrastate toll and interstate toll on the basis of the number of A. T. & T. intrastate and interstate messages and report charges originating in Chicago, as determined from a complete analysis of one month's business during each of the three periods. Since June 1, 1925, such originating commissions have been treated as interstate toll.

The mileage prorate on A. T. & T. tolls originating and/or terminating at certain Suburban Exchanges and routed over Illinois Bell lines to the toll board in Chicago for the period prior to June 1, 1925, was apportioned to intrastate toll and interstate toll on the basis of a study of all such tolls at those points during the month of October 1923. Subsequent to June 1, 1925, all mileage prorate received on such A. T. & T. messages has been treated as interstate toll.

Similarly, the mileage prorate on A. T. & T. tolls originating or terminating in the Illinois Division and routed over Illinois Bell lines to the toll board in Chicago since this item was started in 1926 was treated as interstate toll.

Chicago's portion of tolls from Chicago to Suburban points for the years 1923, 1924 and 1925 was apportioned to intrastate toll and interstate toll on the basis of the July 1921 revenue prorate study. The interstate portion for each year was determined as follows:

(1) From the July 1921 revenue prorate study was developed the ratio of (a) Chicago's gross originating tolls to Suburban interstate points to (b) the total of Chicago's gross originating tolls to all Suburban points.

(2) Also from the July 1921 revenue prorate study was developed the ratio of (a) Chicago's portion of the mileage prorate on originating tolls to interstate Suburban points to (b) the gross tolls on such business after deducting the originating commissions.

(3) To the gross originating tolls from Chicago to all Suburban points for the years 1923, 1924 and 1925 was applied the ratio developed in (1) above to determine the interstate portion.

(4) From the interstate portions developed in (3) was deducted an originating commission of 15% and to the remainder was applied the ratio developed in (2) above to determine Chicago's portion of the mileage prorate on such messages.

[fol. 2857] (5) The total of the originating commissions and Chicago's portion of the mileage prorate, referred to in (4) above, was treated as interstate toll.

The balance on these tolls credited to Chicago Area during 1923, 1924 and 1925 was assigned to intrastate toll. For each of the years 1926 to 1930, inclusive, the procedure, as outlined above, was followed, based on ratios developed from the October 1925 Revenue Prorate Study. In this 1925 study the originating commissions were based on our Standard Connecting Company Contract.

Chicago's mileage prorate on tolls from Suburban Illinois and Suburban Indiana points to Chicago, also from tolls interchanged between Suburban Illinois and Suburban Indiana points routed through Chicago, was apportioned to intrastate toll and interstate toll on a basis comparable to that outlined above for business from Chicago to Suburban points using the ratios developed from the July 1921 Revenue Prorate Study for apportioning the amounts for 1923, 1924 and 1925, and the October 1925 study as a basis for the later years. In the case of these tolls, all originating commissions are credited to the Suburban Division.

Chicago's portion of Illinois Bell tolls interchanged between Chicago and the Illinois Division prior to October 1926 was treated as intrastate toll. Effective October 1, 1926, all A. T. & T. Company business interchanged between Illinois points but routed interstate was taken over by the Illinois Bell. Subsequent to such date Chicago's portion of Illinois Bell tolls interchanged between Chicago and the Illinois Division was apportioned to intrastate toll and interstate toll on the basis of ratios developed from the October 1925 Revenue Prorate Study after weighting in that class of A. T. & T. Company business for that month which was taken over October 1, 1926 by the Illinois Bell.

Chicago's mileage prorate on traffic in each direction interchanged between Suburban and Illinois Division points and routed through Chicago for the years 1923, 1924 and 1925, was separately apportioned to intrastate toll and interstate toll on the basis of similar traffic included in the July 1921 Revenue Prorate Study. For the later years the portion applicable to business interchanged between Suburban Indiana and Illinois Division points was determined on the basis of ratios developed from the October 1925 Revenue Prorate Study. The portion applicable to business interchanged during the first nine months of 1926 between Suburban Illinois and Illinois Division points, was treated as intrastate toll. Effective October 1, 1926 all A. T. & T.

Company business interchanged between Illinois points but routed interstate was taken over by the Illinois Bell. Subsequent to such date Chicago's mileage prorate on traffic between Suburban Illinois and Illinois Division points was apportioned to intrastate toll and interstate toll on the basis of the October 1925 Revenue Prorate Study after weighting in that class of A. T. & T. Company business for that month which was taken over by the Illinois Bell on October 1, 1926.

Chicago's portion of tolls interchanged between the Illinois Bell and Associated Companies, such as the Wisconsin Bell and Indiana Bell Telephone Companies was treated as interstate toll.

The balance of this account representing subscribers and miscellaneous adjustments for each year was apportioned to intrastate toll and interstate toll on the basis of the combined yearly distribution to intrastate toll and interstate toll of all other items in this account except amounts covering billing to the American Telephone and Telegraph Company for use and operation of plant in Chicago reserved for Long Lines purposes.

[fol. 2858] 512. Leased Toll Lines:

The portion of this account prior to June 1, 1925 representing billing to the American Telephone and Telegraph Company for use of plant in Chicago reserved for Long Lines purposes was apportioned to intrastate toll and interstate toll on the basis of use as furnished by the Chief Engineer for each class of plant for each year. Since July 1, 1925, when all A. T. & T. Company intrastate business was taken over by the Illinois Bell Telephone Company, all billing has been treated as interstate toll.

The amount billed the American Telephone and Telegraph Company for terminal loops furnished in connection with Public News Telephone and Special Contract Services during the years 1923 and 1924 and the first five months of 1925 was apportioned to intrastate toll and interstate toll on the basis of an analysis of the actual charges for the first seven months of 1923, divided between intrastate and interstate. As of June 1, 1925 all intrastate business handled by the A. T. & T. Co. was taken over by the Illinois Bell and all such billing to the A. T. & T. Co. since that date was treated as interstate toll.

The annual revenues from terminal loops furnished the A. T. & T. Company for their own official use, also amounts billed for use of circuits for certain periods on the basis of the time used and the miles of circuits involved, were treated as interstate toll, based on an analysis of the use of the individual circuits involved.

Amounts billed to subscribers and miscellaneous debtors for toll circuits used for short period talking services, radio broadcasting purposes and for leased toll lines were apportioned to intrastate toll and interstate toll on the basis of an analysis of the revenues from each source for the month of December of each year. In cases where a few items were involved, the actual amount of intrastate and interstate revenues for the year was obtained from an analysis of the records for the full year.

514. Telegraph Service on Toll Lines:

The portion of this account prior to June 1, 1925 representing billing to the American Telephone and Telegraph Company for use of plant in Chicago reserved for Long Lines purposes was apportioned to intrastate toll and interstate toll on the basis of use as furnished by the Chief Engineer for each class of plant for each year. Since June 1, 1925, when all A. T. & T. Company intrastate business was taken over by the Illinois Bell Telephone Company, all billing has been treated as interstate toll.

The amounts billed the American Telephone and Telegraph Company for terminal loops furnished in connection with Public News Service and for Special Contract Service during the years 1923 and 1924 and the first five months of 1925 were assigned to intrastate toll and interstate toll based on a complete analysis of such billing for the first seven months of 1923. As all intrastate business handled by the A. T. & T. Co. was taken over by the Illinois Bell as of June 1, 1925, all amounts billed subsequent to that date were treated as interstate toll.

The annual revenue from terminal loops furnished the A. T. & T. Co. for their official use was treated as interstate toll based on an analysis of the use of the individual circuits involved.

[fol. 2859] Chicago's portion of annual amounts billed to Chicago and Suburban Division subscribers for telegraph privileges on private lines and connecting trunks, also for telegraph service on toll lines, was apportioned to intrastate toll and interstate toll on the basis of an analysis of such items credited in the month of December of each year. In cases where a few items were involved, the amount of intrastate toll and interstate toll revenues for the year was obtained from an analysis of the records for the full year. The amount billed to Illinois Division subscribers was assigned to intrastate toll based on an analysis of the individual items.

Amounts billed for teletypewriter circuits using toll lines were apportioned to intrastate toll and interstate toll based on the number of intrastate toll and interstate toll teletypewriter stations located on each circuit as of the end of each year.

516. Other Toll Revenues:

The entire amount in this account represents billing to the A. T. & T. Company in connection with picture transmission equipment which is used for interstate purposes.

520. Messenger Service:
521. Telegraph Commissions:
523. Advertising and Directory:

These accounts were assigned to exchange.

524. Rents from Other Operating Property:

The portion of this account representing billing to the A. T. & T. Co. for main group floor space, etc., used in connection with equipment reserved for Long Lines purposes during 1923, 1924 and the first five months of 1925 was apportioned to intrastate toll and interstate toll as follows:

(a) The amount applicable to equipment used in connection with Special Contract Services was apportioned on the basis of the Chief Engineer's separation of the reproduction cost of such equipment;

(b) The amount applicable to picture transmission equipment was assigned to interstate toll; and

(c) The balance which is applicable to principally Traffic Quarters, was apportioned on the basis of Long Lines

Traffic Labor Units on intrastate toll and interstate toll calls.

Such billing subsequent to June 1, 1925 was treated as all interstate toll.

The balance of this account was assigned to exchange.

[fol. 2860] 525 Other Miscellaneous Revenues:

The portion of this account representing billing to the American Company in connection with the operation of plant in Chicago reserved for Long Lines purposes, was apportioned to intrastate toll and interstate toll on the various bases outlined under Account 524 for related billing amounts.

All revenues from radio broadcasting equipment, also terminal loops furnished the A. T. & T. Company for radio broadcasting purposes, were treated as interstate toll.

Revenues from broadcasting lines billed to subscribers and miscellaneous debtors and credited to this account, were assigned to exchange, intrastate toll and interstate toll based on an analysis of the individual circuits in use each year.

The balance of this account was assigned to exchange.

311. Miscellaneous Rent Revenues:

The portion of this account included in the Income Statement represents part of the rent received from buildings not presently used for operations located on land acquired for telephone purposes. Such portion was determined by applying to the total rent from each building the percentage that the book cost of the land bore to the total book cost of such premises, including the buildings located thereon, and was apportioned to exchange, intrastate toll and interstate toll on the basis of the Chief Engineer's apportionment of the appraised value of such land.

The remaining portion of the account was excluded from the Income Statement as the related premises were not used for telephone operations and were not included in the appraisal.

313-01. Interest Earned:

This item represents principally interest on working cash capital items which was apportioned to exchange, intrastate toll and interstate toll on the basis of the amount of working cash capital allocated to each.

313-02. Interest During Construction:

This account was apportioned to exchange, intrastate toll and interstate toll on the basis of the Chief Engineer's separation of the reproduction cost of the Total Plant in Service.

316. Miscellaneous Non-Operating Revenues:

The portion of this account representing billing to the American Company in connection with the operation of plant in Chicago reserved for Long Lines purposes, was apportioned to intrastate toll and interstate toll on the various bases outlined under Account 524 for related billing amounts.

The balance of this account was assigned to exchange.

527. Licensee Revenue Debtor:

This account was apportioned to exchange, intrastate toll and interstate toll on the basis of the related accounts on which the licensee payment to the American Telephone and Telegraph Company is based.

[fol. 2861] Expenses

601. Supervision of Maintenance:

This account was apportioned on the basis of the distribution made of Accounts 602 to 607, inclusive, to exchange, intrastate toll and interstate toll.

602. Repairs of Aerial Plant:
603. Repairs of Underground Plant:

Repairs of aerial and underground plant were apportioned by individual classes of plant (for example, exchange and toll poles combined) on the basis of the Chief Engineer's distribution of the reproduction cost of the respective classes of plant to exchange, intrastate toll and interstate toll.

604. Repairs of Central Office Equipment:

Ordinary repairs charged to this account were apportioned by types (manual, dial, etc.) of equipment on the basis of the Chief Engineer's distribution of the reproduction cost of the respective central office equipment to exchange, intrastate toll and interstate toll.

Rearrangements and changes charged to this account were apportioned in the following manner: The relation of expenses for rearrangements and changes prior to March 17, 1929 to the book cost of equipment was ascertained for each year from the records for the toll switchboards and related equipment reserved for Long Lines purposes. This relation was applied to the total book cost each year of all toll switchboards and related equipment used exclusively for intrastate toll and interstate toll to obtain the proportion of the total charges for rearrangements and changes applicable to such toll equipment. For the period subsequent to March 17, 1929, the amount for rearrangements and changes of all toll switchboards and related equipment was available from the records. Such annual toll amounts were apportioned on the basis of the Chief Engineer's separation of the reproduction cost of the toll switchboards and related equipment to intrastate toll and interstate toll. The balance of the charges for rearrangements and changes was apportioned by types of equipment to exchange, intrastate and interstate toll on the basis of the Chief Engineer's separation of the reproduction cost of the respective central office equipment.

605. Repairs of Station Equipment:
606. Repairs of Buildings and Grounds:
607. Station Removals and Changes;

These accounts were apportioned by classes of plant on the basis of the Chief Engineer's separation of the reproduction cost of the respective classes of plant to exchange, intrastate toll and interstate toll.

Note.—In the apportionment of the above Maintenance Accounts 601 to 607, inclusive, the amounts applicable to plant in Chicago reserved for Long Lines purposes and the balance of the charges in such accounts were separately apportioned each on the basis of the Chief Engineer's distribution of the reproduction cost of the plant and equipment in each such group.

[fol. 2862] 608. Depreciation of Plant and Equipment:

The amount of annual depreciation accrued on the books for each class of plant was apportioned on the basis of the Chief Engineer's distribution of the respective classes of plant to exchange, intrastate toll and interstate toll.

610. Other Maintenance Expenses:

The portion of this account representing improvements to rented quarters was apportioned on the basis of the percentage use of rented space for exchange, intrastate toll and interstate toll as furnished by the Chief Engineer.

The portion applicable to radio broadcasting and picture transmission equipment was assigned to interstate toll.

In 1923 a small portion was applicable to public address equipment which was assigned to exchange.

In 1929 a portion of the account represented expenditures in connection with repairs to the City of Chicago sewer system as a result of additions made to the Wabash Central Office building. This amount was apportioned on the basis of the Chief Engineer's distribution of the reproduction cost of the Wabash Central Office building to exchange, intrastate and interstate toll.

The balance of this account represents principally plant men employed as inspectors on various jobs where men of the Peoples Gas, Light and Coke Company and other utilities are working in Illinois Bell manholes, which balance was apportioned to exchange, intrastate toll and interstate toll on the basis of the Chief Engineer's distribution of the reproduction cost of underground cable. The purpose of these men on such jobs is to see that no damage is done to our underground plant.

624. Operators' Wages:

Telephone Operators' Wages were apportioned by the Chief Engineer on the basis of the number of traffic labor units assigned to exchange, intrastate toll and interstate toll. During the later years a small amount of Telegraph Operators' Wages was incurred and billed to the A. T. & T. Co. Such amounts were assigned to interstate toll as they relate to A. T. & T. Co. business which is interstate. The amount billed was credited to the Toll Revenue Accounts and similarly treated as interstate toll.

628. Transmission Power:

This account was also apportioned by the Chief Engineer based on the amount of current drain used for exchange, intrastate toll and interstate toll.

630. Messenger Service:

This account was assigned to exchange.

[fol. 2863] 621. Traffic Superintendence:
622. Service Inspection:
623. Operating Clerical Wages:
626. Rest and Lunch Rooms:
627. Operators' Schooling:
629. Central Office Stationery and Printing:
631. Miscellaneous Central Office Expenses:
632. Pay Station Expenses:
633. Other Traffic Expenses:

These accounts were apportioned to exchange, intrastate toll and interstate toll on the basis of the Chief Engineer's apportionment of telephone operators' wages.

635. Special Contract Service—Operating Expenses:
636. Telephotography—Operating Expenses:

These accounts were assigned to interstate toll.

640-10. General Commercial Administration:

This account was apportioned to exchange, intrastate toll and interstate toll on the basis of the total of the other Commercial Expense Accounts 640-30 to 650, except Accounts 646 and 648.

640-30. Local Commercial Administration:
642. Advertising:
643. Canvassing:
650. Other Commercial Expenses:

These accounts were apportioned to exchange, intrastate toll and interstate toll on the basis of the Operating Revenue Accounts 500 to 525, inclusive, including billing to the A. T. and T. Company for the operation of plant in Chicago reserved for Long Lines purposes.

Account 646, Revenue Accounting:

The annual expense in this account was first divided by groups of employees. The portion of such amounts applicable to toll messages was based on percentages developed from a study of the Revenue Accounting work performed in November 1925 applied to the number of items billed each year. Such amounts applicable to Toll messages were separated between intrastate toll and interstate toll on the basis of the number of intrastate toll and interstate toll messages involved each year. The balance of this account was apportioned to exchange, intrastate toll and interstate toll on the basis of the Exchange Service Revenue Accounts 500 to 505 and the Miscellaneous Operating Revenue Accounts 520 to 525, excluding the amounts related to toll messages as billed the A. T. and T. Company in connection with the operation of plant in Chicago reserved for Long Lines purposes and credited to Accounts 524 and 525.

[fol. 2864] 647. Revenue Collecting:

This account was apportioned each year on the basis of the monthly average number of coin box collections and bills rendered to telephone subscribers other than coin box subscribers each of which was considered one collection item. The portion of each such collection item applicable to toll messages and telegrams was computed as follows:

1.	Bills involving toll and telegram charges and additional message charges in addition to the regular monthly charge for exchange service	⅓
2.	Bills involving toll and telegram charges and the monthly charge for exchange service, but no charge for additional messages	½
3.	Bills involving exchange service items only	Nothing
4.	Coin box collections involving toll and telegram charges as well as exchange service charges	⅓
5.	Coin box collections not involving toll and telegram charges	Nothing

The above ratios were applied to the monthly average number of collection items involved each year which resulted in the number of collection items for each year applicable to toll messages and telegrams. To this result was applied the percentage relationship of the total toll tickets to the total toll and telegram tickets each year. This furnished the portion applicable to only toll messages, which was separated between intrastate toll and interstate toll, based on percentages developed from the number of intrastate and interstate originating toll messages for each year. The balance of the collection items was apportioned to exchange, intrastate toll and interstate toll on the basis of the Exchange Service Revenue Accounts 500 to 505 and the Miscellaneous Operating Revenue Accounts 520 to 525 excluding the amounts related to toll messages as billed the A. T. & T. Company in connection with the operation of plant in Chicago reserved for Long Lines purposes and credited to Accounts 524 and 525.

648. Pay Station Commissions:

Prior to 1929 a separation was kept on the records of commissions paid on local messages and the amount paid on toll messages. The toll portion for the last six months of 1928 included commissions paid on telegrams telephoned which were charged to Account 521 prior to July 1, 1928. Such commissions paid on telegrams were eliminated from the toll portion shown on the records by finding the percentage which the total tolls from pay stations, etc., bore to the total tolls and telegrams from such stations during the months of November and December 1928, and applying this percentage to the total commissions paid on toll messages and telegrams from pay stations from July 1, 1928 to December 31, 1928. This was added to the amount of commissions paid on toll messages not originating at pay stations for the last six months of 1928 and the total actual commissions paid on all toll messages during the first six months of 1928, in order to find the total commissions paid on toll messages for the year as a whole.

[fol. 2865] For the years 1929 and 1930 commissions paid on toll messages from public pay stations was determined by applying percentages based on the year 1928 to the amount of tolls from such stations during 1929 and 1930, to which was added the actual commissions paid on toll messages originating at other stations.

Such amounts of commissions paid on toll messages were apportioned to intrastate toll and interstate toll on the basis of studies of the amount of commissions paid on pay station toll tickets for June 16 to 19, 1922 and February 18, 1931. The results of the 1922 study were used for the years 1923 to 1926 and the 1931 study for the subsequent years.

The balance of the commissions was apportioned on the basis of the distribution made of the related revenues in Account 501 to exchange, intrastate toll and interstate toll.

649. Directory Expenses:

The cost of the Chicago Alphabetical Directory relates to exchange except a few pages devoted to toll rates, information, etc. The toll portion of this cost was based on the relation of the number of such toll pages to the total number of pages in the directories issued each year and was separated between intrastate and interstate toll on the basis of the annual number of calls of each class originating in Chicago.

The cost of the daily addendum to the Chicago Alphabetical Directory, which addendum is used for information work, was apportioned to exchange and toll based on a study made in May 1930 by the Traffic Department of the information work performed. The toll portion was separated between intrastate toll and interstate toll on the basis of the relative number of intrastate and interstate originating toll board calls each year.

The cost of the Chicago Suburban Directory and the related semi-weekly addendum was apportioned to intrastate toll and interstate toll on the basis of the number of stations in service in the territory of the Suburban Division as of the end of each year.

The cost of directories purchased from other telephone companies for information work on A. T. & T. calls was treated as interstate toll.

The balance of this account represents principally the cost of directories of other telephone companies sold to subscribers, etc., mainly for use as mailing lists. Such balance was treated as exchange similar to the revenues received and credited to Account 523 from the sale of such directories.

660. General Office Salaries:
663. General Office Supplies and Expenses:
667. General Law Expenses:

669. Accidents and Damages:
670. Law Expenses Connected with Damages:
672. Relief Department and Pensions:
675. Other General Expenses:
690. General Expenses Charged to Construction—Cr.:

These accounts were apportioned to exchange, intrastate toll and interstate toll on the basis of the total of the Total Current Maintenance, Traffic and Commercial Expense Accounts.

[fol. 2866] 668. Insurance:

This account was apportioned on the basis of the Chief Engineer's distribution of the reproduction cost of insurable property that is, buildings, central office equipment and general equipment, to exchange, intrastate toll and interstate toll.

673. Telephone Franchise Requirements:
676. Telephone Franchise Requirements—Cr.:

The net of these two accounts represents expense in connection with the Telephone Bureau. This amount was apportioned to exchange, intrastate toll and interstate toll on the basis of the Operating Revenue Accounts 500 to 525 including billing to the A. T. & T. Company for the operation of plant in Chicago reserved for Long Lines purposes.

304. Uncollectible Operating Revenues:

This account represents accruals for uncollectible revenues and was apportioned to exchange, intrastate toll and interstate toll on the basis of the actual uncollectibles charged to Account 118-17 Reserve for Uncollectible Accounts. Prior to June 1, 1925, the portion of the actual uncollectibles applicable to A. T. & T. toll messages was apportioned to intrastate toll and interstate toll on the basis of percentages developed from a study of the intrastate and interstate A. T. & T. messages for the month of May, 1925. Since June 1, 1925, when the intrastate business of the A. T. & T. Co. was taken over by the Illinois Bell, the portion of the actual uncollectibles applicable to A. T. & T. toll messages was treated as interstate toll. The portion of the actual uncollectible tolls applicable to other than A. T. & T.

Co. messages was apportioned to intrastate and interstate toll on the basis of the annual intrastate and interstate originating tolls excluding A. T. & T. tolls. In determining the intrastate and interstate separation of such originating tolls, the originating tolls to Associated Companies were treated as interstate. On originating tolls to the Suburban and Illinois Divisions for the years 1923, 1924 and 1925, the separation was made on the basis of ratios developed from the July, 1921 Revenue Prorate Study. For the later years the October, 1925 Revenue Prorate Study was used as a base. The balance of the actual uncollectibles were apportioned to exchange, intrastate toll and interstate toll on the basis of the Exchange Revenue Accounts 500 to 505 and the Miscellaneous Operating Revenue Accounts 520 to 525 excluding the amounts related to toll messages as billed the A. T. & T. Co. in connection with the operation of Plant in Chicago reserved for Long Lines purposes and credited to Accounts 524 and 525.

305. Taxes Assignable to Operations:

Real Estate Taxes, Personal Property Taxes and other taxes assessed within the state on operating property were apportioned to exchange, intrastate toll and interstate toll on the basis of the Chief Engineer's distribution of the reproduction cost of the various plant items indicated below:

Real Estate Taxes—on the basis of Total Land and Buildings.

Personal Property Taxes—on the basis of Total Plant in Service excluding Land and Buildings.

Other Taxes—on the basis of Total Plant in Service.

[fol. 2867] The 3% franchise payments to the City of Chicago were apportioned to exchange, intrastate toll and interstate toll on the basis of the Operating Revenue Accounts 500 to 525, including billing to the A. T. & T Company for the operation of plant in Chicago reserved for Long Lines purposes.

The federal income and other federal taxes applicable to operating property, were apportioned to exchange, intrastate toll and interstate toll on the basis of the net income before deducting federal income tax, less interest expense which was apportioned to exchange, intrastate toll and interstate toll on the basis of the Chief Engineer's distribution of Total Plant in Service.

323. Uncollectible Non-operating Revenues:

This account was assigned to exchange.

331. Rent Deductions for Telephone Offices:

This account was apportioned, by buildings, on the basis of the percentage use of rented space for exchange, intrastate toll and interstate toll as furnished by the Chief Engineer.

332. Rent Deductions for Conduits, Poles and Other Supports:

This account covers principally rental of duct space and was apportioned on the basis of the Chief Engineer's distribution of the reproduction cost of company-owned Underground Conduit to exchange, intrastate toll and interstate toll.

334. Miscellaneous Rent Deductions:

This account was assigned to exchange.

340. Amortization of Landed Capital:

The portion representing amortization of right of way was apportioned on the basis of the Chief Engineer's distribution of the reproduction cost of right of way to exchange, intrastate toll and interstate toll. The amount covering amortization of leaseholds and special assessments was apportioned by parcels of property to exchange, intrastate toll and interstate toll on the basis of the percentage use of the buildings to which the items relate as furnished by the Chief Engineer.

341. Miscellaneous Deductions from Income:

This account was apportioned on the basis of the Chief Engineer's distribution of the reproduction cost of the Total Plant in Service to exchange, intrastate toll and interstate toll.

[fol. 2868] "Interstate Foreign Exchange Service:"

The revenues and expenses in connection with the furnishing of Chicago exchange service to subscribers located outside of the State of Illinois has for convenience been treated as intrastate exchange during the application of the various methods of separation and apportionment previously outlined. After such separation and apportionment was completed for all the revenue and expense accounts, the amount of Subscribers' Station Revenues for each year applicable to foreign exchange interstate lines and interstate trunks included in the revenues apportioned to intrastate exchange for each year was transferred to interstate toll. A similar transfer was made of the related licensee payment to the American Telephone and Telegraph Company. Correspondingly, an appropriate part of the total expenses allocated or apportioned to intrastate exchange was also transferred to interstate toll based on the percentage relation of (a) the reproduction cost of the plant used for interstate foreign exchange service as transferred by the Chief Engineer to interstate toll to (b) the total reproduction cost of the property allocated or apportioned by the Chief Engineer to intrastate exchange before such transfer. These transfers include minor amounts covering the revenues and expenses in connection with tie lines connecting with P. B. X. switchboards located outside of the State of Illinois, terminals and extensions located outside the State of Illinois but connected with Chicago P. B. X. switchboards and foreign exchange trunks from interstate points connected with Chicago P. B. X. switchboards.

EXHIBIT A-49

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses, and Net Income for the Year 1923

	Intrastate			Interstate Toll	Total Chicago
	Exchange	Toll	Total		
Exchange Revenues	$35,187,550	$673,513	$35,861,063	$481,163	$36,342,226
Toll Revenues	....	1,828,914	1,828,914	1,214,080	3,042,994
Miscellaneous Operating Revenues	562,934	8,515	571,449	101,600	673,049
Non-Operating Revenues	212,401	16,685	229,086	97,035	326,121
Gross Revenues	$35,962,885	$2,527,627	$38,490,512	$1,893,878	$40,384,390
Less Licensee Revenue—Dr.	1,558,559	103,455	1,662,014	62,237	1,724,251
Total Revenues	34,404,326	2,424,172	36,828,498	1,831,641	38,660,139
Traffic Expenses	12,298,447	665,329	12,963,776	228,897	13,192,673
Commercial Expenses	3,573,425	450,733	4,024,158	178,115	4,202,273
General and Miscellaneous Expenses	973,064	59,101	1,032,165	31,029	1,063,194
Current Maintenance	5,468,607	175,016	5,643,623	258,110	5,901,733
Depreciation	4,011,667	197,473	4,209,140	271,814	4,480,954
Taxes	3,131,391	229,620	3,361,011	241,053	*3,602,064
Other Expenses and Deductions	211,414	40,881	252,295	36,868	289,163
Total Expenses	29,668,015	1,818,153	31,486,168	1,245,886	32,732,054
Balance	4,736,311	606,019	5,342,330	585,755	5,928,085
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	259,941	....	259,941	....	259,941
Balance Available for Return under present rates	$4,996,252	$606,019	$5,602,271	$585,755	$6,188,026
Less reduction under rates in suit	1,512,859	28,809	1,541,668	15,572	1,557,240
Balance available for Return under rates in suit	$3,483,393	$577,210	$4,060,603	$570,183	$4,630,786

* Represents actual taxes paid for the Year 1923 applicable to above operations and is $68,283 less than the total amount accrued on the books for all taxes during that year.

EXHIBIT A-49—Continued

[fol. 2870]

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses and Net Income for the Year 1924

	Intrastate			Interstate	Total
	Exchange	Toll	Total	Interstate Toll	Total Chicago
Exchange Revenues	$37,497,773	$758,471	$38,256,244	$417,514	$38,673,758
Toll Revenues	....	2,100,548	2,100,548	1,440,308	3,540,856
Miscellaneous Operating Revenues	614,956	8,656	623,612	120,760	744,372
Non-Operating Revenues	116,846	12,134	128,980	90,959	219,939
Gross Revenues	38,229,575	2,879,809	41,109,384	2,069,541	43,178,925
Less Licensee Revenue—Dr	1,668,213	118,882	1,787,095	73,343	1,860,438
Total Revenues	36,561,362	2,760,927	39,322,289	1,996,198	41,318,487
Traffic Expenses	12,422,269	684,761	13,107,030	224,394	13,331,424
Commercial Expenses	3,959,092	539,929	4,499,021	194,300	4,693,321
General and Miscellaneous Expenses	1,003,687	64,338	1,068,025	33,387	1,101,412
Current Maintenance	5,844,038	199,699	6,043,737	282,594	6,326,331
Depreciation	4,258,675	197,664	4,456,339	253,611	4,709,950
Taxes	3,482,711	276,197	3,758,908	281,141	*4,040,049
Other Expenses and Deductions	270,975	62,091	333,066	49,691	382,757
Total Expenses	31,241,447	2,024,679	33,266,126	1,319,118	34,585,244
Balance	5,319,915	736,248	6,056,163	677,080	6,733,243
Net Compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	277,665	....	277,665	....	-277,665
Balance Available for Return under present rates	$5,597,580	$736,248	$6,333,828	$677,080	$7,010,908
Less reduction under rates in suit	1,519,815	31,180	1,550,995	15,825	1,566,820
Balance available for Return under rates in suit	$4,077,765	$705,068	$4,782,833	$661,255	$5,444,088

* Represents actual taxes paid for the year 1924 applicable to above operations and is $13,294 less than the total amount accrued on the books for all taxes during that year.

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses and Net Income for the Year 1925

	Intrastate			Interstate Toll	Total Chicago
	Exchange	Toll	Total		
Exchange Revenues	$39,856,670	$871,790	$40,728,460	$487,830	$41,216,290
Toll Revenues	....	2,477,668	2,477,668	1,706,797	4,184,465
Miscellaneous Operating Revenues	646,130	11,184	657,314	129,332	786,646
Non-Operating Revenues	215,035	13,547	228,582	99,850	328,432
Gross Revenues	40,717,835	3,374,189	44,092,024	2,423,809	46,515,833
Less Licensee Revenue—Dr	1,762,140	138,929	1,901,069	86,466	1,987,535
Total Revenues	38,955,695	3,235,260	42,190,955	2,337,343	44,528,298
Traffic Expenses	12,861,116	755,270	13,616,386	240,925	13,857,311
Commercial Expenses	4,078,936	582,018	4,660,954	206,553	4,867,507
General and Miscellaneous Expenses	990,402	66,056	1,056,458	34,595	1,091,053
Current Maintenance	6,347,832	215,361	6,563,193	313,395	6,876,588
Depreciation	4,796,032	237,491	5,033,523	352,189	5,385,712
Taxes	4,024,298	350,846	4,375,144	350,380	#4,725,524
Other Expenses and Deductions	352,456	85,053	437,509	57,140	494,649
Total Expenses	33,451,072	2,292,095	35,743,167	1,555,177	37,298,344
Balance	5,504,623	943,165	6,447,788	782,166	7,229,954
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	313,261	....	313,261	....	313,261
Balance Available for Return under present rates	$5,817,884	$943,165	$6,761,049	$782,166	$7,543,215
Less reduction under rates in suit	1,548,150	34,411	1,582,561	17,925	1,600,486
Balance Available for Return under rates in suit	$4,269,734	$908,754	$5,178,488	$764,241	$5,942,729

Represents actual taxes paid for the Year 1925 applicable to above operations and is $115,053 more than the total amount accrued on the books for all taxes during that year.

[fol. 2872]

Exhibit A-49—Continued

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses and Net Income for the Year 1926

	Intrastate			Interstate Toll	Total Chicago
	Exchange	Toll	Total		
Exchange Revenues	$42,790,484	$1,019,348	$43,809,832	$495,797	$44,305,629
Toll Revenues	....	2,976,666	2,976,666	2,084,196	5,060,862
Miscellaneous Operating Revenues	629,901	14,712	644,613	133,517	778,130
Non-Operating Revenues	127,363	6,660	134,023	120,362	254,385
Gross Revenues	43,547,748	4,017,386	47,565,134	2,833,872	50,399,006
Less Licensee Revenue—Dr	1,695,347	150,224	1,845,571	90,307	1,935,878
Total Revenues	41,852,401	3,867,162	45,719,563	2,743,565	48,463,128
Traffic Expenses	13,265,949	906,240	14,172,189	256,610	14,428,799
Commercial Expenses	4,223,179	638,020	4,861,199	223,949	5,085,148
General and Miscellaneous Expenses	1,075,279	78,303	1,153,582	39,383	1,192,965
Current Maintenance	7,440,549	273,815	7,714,364	370,343	8,084,707
Depreciation	5,476,586	275,391	5,751,927	451,096	6,203,023
Taxes	4,469,404	437,841	4,907,245	422,806	*5,330,051
Other Expenses and Deductions	254,403	64,009	318,412	55,256	373,668
Total Expenses	36,205,299	2,673,619	38,878,918	1,819,443	40,698,361
Balance	5,647,102	1,193,543	6,840,645	924,122	7,764,767
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	174,858	....	174,858	....	174,858
Balance Available for Return under present rates	$5,821,960	$1,193,543	$7,015,503	$924,122	$7,939,625
Less reduction under rates in suit	1,611,533	39,037	1,650,570	17,684	1,668,254
Balance Available for Return under rates in suit	$4,210,427	$1,154,506	$5,364,933	$906,438	$6,271,371

* Represents actual taxes paid for the Year 1926 applicable to above operations and is $16,346 less than the total amount accrued on the books for all taxes during that year.

[fol. 2873]

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses and Net Income for the [illegible]

	Intrastate				
	Exchange	Toll	Total	[illegible]	Total Chicago
Exchange Revenues	$45,693,545.	$1,144,705	$46,838,250	[illegible]	$47,391,951
Toll Revenues	....	3,395,072	3,395,07[illegible]	[illegible]	5,828,975
Miscellaneous Operating Revenues	593,422	....	593,42[illegible]	[illegible]	717,626
Non-Operating Revenues	142,225	7,780	150,005	142,023	292,028
Gross Revenues	46,429,192	4,547,557	50,976,749	3,253,831	54,230,580
Less Licensee Revenue—Dr.	1,812,145	168,735	1,980,880	104,840	2,085,720
Total Revenues	44,617,047	4,378,822	48,995,869	3,148,991	52,144,860
Traffic Expenses	12,804,628	963,018	13,767,646	276,808	14,044,454
Commercial Expenses	4,724,389	719,809	5,444,198	257,772	5,701,970
General and Miscellaneous Expenses	1,619,332	124,824	1,744,156	62,174	1,806,330
Current Maintenance	8,521,672	327,878	8,849,550	410,304	9,259,854
Depreciation	5,997,744	320,589	6,318,333	521,059	6,839,392
Taxes	4,790,899	491,307	5,282,206	485,950	#5,768,156
Other Expenses and Deductions	360,515	95,867	456,382	74,995	531,377
Total Expenses	38,819,179	3,043,292	41,862,471	2,089,062	43,951,533
Balance	5,797,868	1,335,530	7,133,398	1,059,929	8,193,327
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	144,041	....	144,041	....	144,041
Balance Available for Return under present rates	$5,941,909	$1,335,530	$7,277,439	$1,059,929	$8,337,368
Less reduction under rates in suit	1,635,362	41,715	1,677,077	18,653	1,695,730
Balance Available for Return under rates in suit	$4,306,547	$1,293,815	$5,600,362	$1,041,276	$6,641,638

# Represents actual taxes paid for the Year 1927 applicable to the above operations and is $299,542 less than the total amount accrued on the books for all taxes during that year.

Exhibit A-49—Continued

[fol. 2874]

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses and Net Income for the Year 1928

	Intrastate			Interstate Toll	Total Chicago
	Exchange	Toll	Total		
Exchange Revenues	$48,323,639	$1,282,540	$49,606,179	$638,344	$50,244,523
Toll Revenues	....	3,800,457	3,800,457	3,354,217	7,154,674
Miscellaneous Operating Revenues	723,312	....	723,312	178,209	901,521
Non-Operating Revenues	350,931	23,007	373,938	146,307	520,245
Gross Revenues	49,397,882	5,106,004	54,503,886	4,317,077	58,820,963
Less Licensee Revenue—Dr.	944,026	92,590	1,036,616	68,277	1,104,893
Total Revenues	$48,453,856	$5,013,414	$53,467,270	$4,248,800	$57,716,070
Traffic Expenses	$13,115,081	$1,036,520	$14,151,601	$781,627	$14,933,228
Commercial Expenses	5,080,559	808,557	5,889,116	316,037	6,205,153
General and Miscellaneous Expenses	1,916,599	155,885	2,072,484	116,884	2,189,368
Current Maintenance	9,531,773	409,370	9,941,143	546,357	10,487,500
Depreciation	6,616,668	380,829	6,997,497	643,963	7,641,460
Taxes	5,355,333	551,472	5,906,805	566,610	*6,473,415
Other Expenses and Deductions	450,464	144,202	594,666	109,085	703,751
Total Expenses	$42,066,477	$3,486,835	$45,553,312	$3,080,563	$48,633,875
Balance	$6,387,379	$1,526,579	$7,913,958	$1,168,237	$9,082,195
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	188,016	....	188,016	....	188,016
Balance Available for Return under present rates	$6,575,395	$1,526,579	$8,101,974	$1,168,237	$9,270,211
Less reduction under rates in suit	1,668,214	45,087	1,713,301	20,809	1,734,110
Balance available for Return under rates in suit	$4,907,181	$1,481,492	$6,388,673	$1,147,428	$7,536,101

* Represents actual taxes paid for the Year 1928 applicable to above operations and is $162,037 less than the total amount accrued on the books for all taxes during that year.

[fol. 2875]

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses and Net Income for the Year 1929

	Intrastate			Interstate Toll	Total Chicago
	Exchange	Toll	Total		
Exchange Revenues	$51,673,447	$1,413,957	$53,087,404	$710,796	$53,798,200
Toll Revenues	....	4,225,964	4,225,964	6,989,353	11,215,317
Miscellaneous Operating Revenues	1,254,238	....	1,254,238	5,394	1,259,632
Non-Operating Revenues	278,013	20,570	298,583	25,790	324,373
Gross Revenues	$53,205,698	$5,660,491	$58,866,189	$7,731,333	$66,597,522
Less Licensee Revenue—Dr	757,072	77,204	834,276	97,020	931,296
Total Revenues	$52,448,626	$5,583,287	$58,031,913	$7,634,313	$65,666,226
Traffic Expenses	$13,216,005	$1,271,673	$14,487,678	$2,794,535	$17,282,213
Commercial Expenses	5,257,238	877,099	6,134,337	385,222	6,519,559
General and Miscellaneous Expenses	1,917,567	176,545	2,094,112	275,632	2,369,744
Current Maintenance	10,178,530	492,996	10,671,526	929,194	11,600,720
Depreciation	6,974,241	449,930	7,424,171	696,211	8,120,382
Taxes	6,105,533	618,198	6,723,731	744,885	*7,468,616
Other Expenses and Deductions	382,563	127,226	509,789	133,965	643,754
Total Expenses	44,031,677	4,013,667	48,045,344	5,959,644	54,004,988
Balance	$8,416,949	$1,569,620	$9,986,569	$1,674,669	$11,661,238
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	217,842	....	217,842	....	217,842
Balance Available for Return under present rates	$8,634,791	$1,569,620	$10,204,411	$1,674,669	$11,879,080
Less reduction under rates in suit	1,693,349	47,233	1,740,582	21,854	1,762,436
Balance Available for Return under rates in suit	$6,941,442	$1,522,387	$8,463,829	$1,652,815	$10,116,644

* Represents actual taxes paid for the Year 1929 applicable to above operations and is $490,895 less than the total amount accrued on the books for all taxes during that year.

EXHIBIT A-49—Continued

[fol. 2876]

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses and Net Income for the Year 1930

	Intrastate			Interstate Toll	Total Chicago
	Exchange	Toll	Total		
Exchange Revenues	$52,042,219	$1,494,403	$53,536,622	$715,498	$54,252,120
Toll Revenues	....	4,321,661	4,321,661	7,345,653	11,667,314
Miscellaneous Operating Revenues	1,219,486	....	1,219,486	6,080	1,225,566
Non-Operating Revenues	232,040	18,076	250,116	23,585	273,701
Gross Revenues	53,493,745	5,834,140	59,327,885	8,090,816	67,418,701
Less Licensee Revenue—Dr.	782,801	81,330	864,131	104,091	968,222
Total Revenues	52,710,944	5,752,810	58,463,754	7,986,725	66,450,479
Traffic Expenses	12,320,929	1,300,952	13,621,881	2,664,532	16,286,413
Commercial Expenses	5,569,642	975,105	6,544,747	435,446	6,980,193
General and Miscellaneous Expenses	2,122,604	205,854	2,328,458	287,892	2,616,350
Current Maintenance	10,859,015	513,843	11,372,858	788,123	12,160,981
Depreciation	7,327,237	525,993	7,853,230	916,656	8,769,886
Taxes	6,518,550	678,105	7,196,655	896,176	*8,092,831
Other Expenses and Deductions	408,587	122,792	531,379	99,734	631,113
Total Expenses	45,126,564	4,322,644	49,449,208	6,088,559	55,537,767
Balance	7,584,380	1,430,166	9,014,546	1,898,166	10,912,712
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	221,691	....	221,691	....	221,691
Balance Available for Return under present rates	$7,806,071	$1,430,166	$9,236,237	$1,898,166	$11,134,403
Less reduction under rates in suit	1,599,053	46,825	1,645,878	20,496	1,666,374
Balance Available for Return under rates in suit	$6,207,018	$1,383,341	$7,590,359	$1,877,670	$9,468,029

* Represents actual payments for those taxes which have been paid and the latest estimate of unpaid taxes for the Year 1930 applicable to above operations and is $149,392 more than the total amount accrued on the books for all taxes during that year.

[fol. 2877]

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses and Net Income for the Year 1931

	Intrastate			Interstate	Total
	Exchange	Toll	Total	Toll	Chicago
Exchange Revenues	$50,471,229	$1,321,735	$51,792,964	$665,191	$52,458,155
Toll Revenues	18,018	4,112,509	4,130,527	6,951,847	11 082,374
Miscellaneous Operating Revenues	1,050,286	....	1,050,286	5,730	1,056,016
Non-Operating Revenues	107,177	8,001	115,178	10,528	125,706
Gross Revenues	$51,646,710	$5,442,245	$57,088,955	$7,633,296	$64,722,251
Less Licensee Revenue—Dr.	758,829	75,370	834,199	97,453	931,652
Total Revenues	$50,887,881	$5,366,875	$56,254,756	$7,535,843	$63,790,599
Traffic Expenses	$10,540,816	$1,194,978	$11,735,794	$2,250,640	$13,986,434
Commercial Expenses	5,534,184	955,991	6,490,175	429,970	6,920,145
General and Miscellaneous Expenses	2,445,809	244,230	2,690,039	314,283	3,004,322
Current Maintenance	10,351,339	490,714	10,842,053	704,029	11,546,082
Depreciation	7,558,432	562,703	8,121,135	1,025,133	9,146,268
Taxes	7,138,889	694,116	7,833,005	980,484	*8,813,489
Other Expenses and Deductions	498,304	127,072	625,376	102,891	728,267
Total Expenses	$44,067,773	$4,269,804	$48,337,577	$5,807,430	$54,145,007
Balance	6,820,108	1,097,071	7,917,179	1,728,413	9,645,592
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	236,661	....	236,661	....	236,661
Balance Available for Return under present rates	$7,056,769	$1,097,071	$8,153,840	$1,728,413	$9,882,253
Less reduction under rates in suit	1,396,167	37,577	1,433,744	17,120	1,450,864
Balance Available for Return under rates in suit	$5,660,602	$1,059,494	$6,720,096	$1,711,293	$8,431,389

* Represents actual payments for those taxes which have been paid and the latest estimate of unpaid taxes for the Year 1931 applicable to above operations and is $500,760 more than the total amount accrued on the books for all taxes during that year.

EXHIBIT A-50

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses and Net Income for the Year 1923

(Excluding all Overheads on Lands)

	Intrastate			Interstate Toll	Total Chicago
	Exchange	Toll	Total		
Exchange Revenues	$35,187,550	$673,513	$35,861,063	$481,163	$36,342,226
Toll Revenues	....	1,828,914	1,828,914	1,214,080	3,042,994
Miscellaneous Operating Revenues	562,934	8,515	571,449	101,600	673,049
Non-Operating Revenues	212,417	16,684	229,101	97,020	326,121
Gross Revenues	$35,962,901	$2,527,626	$38,490,527	$1,893,863	$40,384,390
Less Licensee Revenue—Dr.	1,558,559	103,455	1,662,014	62,237	1,724,251
Total Revenues	34,404,342	2,424,171	36,828,513	1,831,626	38,660,139
Traffic Expenses	12,298,447	665,329	12,963,776	228,897	13,192,673
Commercial Expenses	3,573,425	450,733	4,024,158	178,115	4,202,273
General and Miscellaneous Expenses	973,064	59,101	1,032,165	31,029	1,063,194
Current Maintenance	5,468,607	175,016	5,643,623	258,110	5,901,733
Depreciation	4,011,672	197,473	4,209,145	271,809	4,480,954
Taxes	3,131,419	229,617	3,361,036	241,028	*3,602,064
Other Expenses and Deductions	211,414	40,881	252,295	36,868	289,163
Total Expenses	29,668,048	1,818,150	31,486,198	1,245,856	32,732,054
Balance	4,736,294	606,021	5,342,315	585,770	5,928,085
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	259,941	....	259,941	....	259,941
Balance Available for Return under present rates	$4,996,235	$606,021	$5,602,256	$585,770	$6,188,026
Less reduction under rates in suit	1,512,859	28,809	1,541,668	15,572	1,557,240
Balance available for Return under rates in suit	$3,483,376	$577,212	$4,060,588	$570,198	$4,630,786

* Represents actual taxes paid for the Year 1923 applicable to above operations and is $68,283 less than the total amount accrued on the books for all taxes during that year.

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses and Net Income for the Year 1924

(Excluding all Overheads on Lands)

	Intrastate			Interstate	Total
	Exchange	Toll	Total	Toll	Chicago
Exchange Revenues	$37,497,773	$758,471	$38,256,244	$417,514	$38,673,758
Toll Revenues	....	2,100,548	2,100,548	1,440,308	3,540,856
Miscellaneous Operating Revenues	614,956	8,656	623,612	120,760	744,372
Non-Operating Revenues	116,854	12,133	128,987	90,952	219,939
Gross Revenues	38,229,583	2,879,808	41,109,391	2,069,534	43,178,925
Less Licensee Revenue—Dr.	1,668,213	118,882	1,787,095	73,343	1,860,438
Total Revenues	36,561,370	2,760,926	39,322,296	1,996,191	41,318,478
Traffic Expenses	12,422,269	684,761	13,107,030	224,394	13,331,424
Commercial Expenses	3,959,092	539,929	4,499,021	194,300	4,693,321
General and Miscellaneous Expenses	1,003,687	64,338	1,068,025	33,387	1,101,412
Current Maintenance	5,844,038	199,699	6,043,737	282,594	6,326,331
Depreciation	4,258,681	197,663	4,456,344	253,606	4,709,950
Taxes	3,482,756	276,194	3,758,950	281,099	*4,040,049
Other Expenses and Deductions	271,198	62,091	333,289	49,468	382,757
Total Expenses	31,241,721	2,024,675	33,266,396	1,318,848	34,585,244
Balance	5,319,649	736,251	6,055,900	677,343	6,733,243
Net Compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	277,665	....	277,665	....	277,665
Balance Available for Return under present rates	$5,597,314	$736,251	$6,333,565	$677,343	$7,010,908
Less reduction under rates in suit	1,519,815	31,180	1,550,995	15,825	1,566,820
Balance available for Return under rates in suit	$4,077,499	$705,071	$4,782,570	$661,518	$5,444,088

* Represents actual taxes paid for the year 1924 applicable to above operations and is $13,294 less than the total amount accrued on the books for all taxes during that year.

[fol. 2880]

EXHIBIT A-50—Continued

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses and Net Income for the Year 1925

(Excluding all Overheads on Lands)

	Intrastate			Interstate	Total
	Exchange	Toll	Total	Toll	Chicago
Exchange Revenues	$39,856,670	$871,790	$40,728,460	$487,830	$41,216,290
Toll Revenues	....	2,477,668	2,477,668	1,706,797	4,184,465
Miscellaneous Operating Revenues	646,130	11,184	657,314	129,332	786,646
Non-Operating Revenues	215,053	13,545	228,598	99,834	328,432
Gross Revenues	40,717,853	3,374,187	44,092,040	2,423,793	46,515,833
Less Licensee Revenue—Dr.	1,762,140	138,929	1,901,069	86,466	1,987,535
Total Revenues	38,955,713	3,235,258	42,190,971	2,337,327	44,528,298
Traffic Expenses	12,861,116	755,270	13,616,386	240,925	13,857,311
Commercial Expenses	4,078,936	582,018	4,660,954	206,553	4,867,507
General and Miscellaneous Expenses	990,402	66,056	1,056,458	34,595	1,091,053
Current Maintenance	6,347,832	215,361	6,563,193	313,395	6,876,588
Depreciation	4,796,038	237,491	5,033,529	352,183	5,385,712
Taxes	4,024,298	350,846	4,375,144	350,380	*4,725,524
Other Expenses and Deductions	352,453	85,053	437,506	57,143	494,649
Total Expenses	33,451,075	2,292,095	35,743,170	1,555,174	37,298,344
Balance	5,504,638	943,163	6,447,801	782,153	7,229,954
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	313,261	....	313,261	....	313,261
Balance Available for Return under present rates	$5,817,899	$943,163	$6,761,062	$782,153	$7,543,215
Less reduction under rates in suit	1,548,150	34,411	1,582,561	17,925	1,600,486
Balance Available for Return under rates in suit	$4,269,749	$908,752	$5,178,501	$764,228	$5,942,729

* Represents actual taxes paid for the Year 1925 applicable to above operations and is $115,053 more than the total amount accrued on the books for all taxes during that year.

[fol. 2881]

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses and Net Income for the Year 1926

(Excluding all Overheads on Lands)

	Intrastate			Interstate	
	Exchange	Toll	Total	Interstate Toll	Total Chicago
Exchange Revenues	$42,790,484	$1,019,348	$43,809,832	$495,797	$44,305,629
Toll Revenues	....	2,976,666	2,976,666	2,084,196	5,060,862
Miscellaneous Operating Revenues	629,901	14,712	644,613	133,517	778,130
Non-Operating Revenues	127,371	6,660	134,031	120,354	254,385
Gross Revenues	43,547,756	4,017,386	47,565,142	2,833,864	50,399,006
Less Licensee Revenue—Dr	1,695,347	150,224	1,845,571	90,307	1,935,878
Total Revenues	41,852,409	3,867,162	45,719,571	2,743,557	48,463,128
Traffic Expenses	13,265,949	906,240	14,172,189	256,610	14,428,799
Commercial Expenses	4,223,179	638,020	4,861,199	223,949	5,085,148
General and Miscellaneous Expenses	1,075,279	78,303	1,153,582	39,383	1,192,965
Current Maintenance	7,440,549	273,815	7,714,364	370,343	8,084,707
Depreciation	5,476,541	275,391	5,751,932	451,091	6,203,023
Taxes	4,469,445	437,841	4,907,286	422,765	*5,330,051
Other Expenses and Deductions	254,404	64,009	318,413	55,255	373,668
Total Expenses	36,205,346	2,673,619	38,878,965	1,819,396	40,698,361
Balance	5,647,063	1,193,543	6,840,606	924,161	7,764,767
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	174,858	....	174,858	....	174,858
Balance Available for Return under present rates	$5,821,921	$1,193,543	$7,015,464	$924,161	$7,939,625
Less reduction under rates in suit	1,611,533	39,037	1,650,570	17,684	1,668,254
Balance Available for Return under rates in suit	$4,210,388	$1,154,506	$5,364,894	$906,477	$6,271,371

* Represents actual taxes paid for the Year 1926 applicable to above operations and is $16,346 less than the total amount accrued on the books for all taxes during that year.

[fol. 2882]

EXHIBIT A-50—Continued

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses and Net Income for the Year 1927

(Excluding All Overheads on Lands)

	Intrastate			Interstate	Total
	Exchange	Toll	Total	Toll	Chicago
Exchange Revenues	$45,693,545	$1,144,705	$46,838,250	$553,701	$47,391,951
Toll Revenues	....	3,395,072	3,395,072	2,433,903	5,828,975
Miscellaneous Operating Revenues	593,422	....	593,422	124,204	717,626
Non-Operating Revenues	142,249	7,777	150,026	142,002	292,028
Gross Revenues	46,429,216	4,547,554	50,976,770	3,253,810	54,230,580
Less Licensee Revenue—Dr	1,812,145	168,735	1,980,880	104,840	2,085,720
Total Revenues	44,617,071	4,378,819	48,995,890	3,148,970	52,144,860
Traffic Expenses	12,804,628	963,018	13,767,646	276,808	14,044,454
Commercial Expenses	4,724,389	719,809	5,444,198	257,772	5,701,970
General and Miscellaneous Expenses	1,619,332	124,824	1,744,156	62,174	1,806,330
Current Maintenance	8,521,672	327,878	8,849,550	410,304	9,259,854
Depreciation	5,997,760	320,587	6,318,347	521,045	6,839,392
Taxes	4,791,344	491,061	5,282,405	485,751	*5,768,156
Other Expenses and Deductions	360,514	95,867	456,381	74,996	531,377
Total Expenses	38,819,639	3,043,044	41,862,683	2,088,850	43,951,533
Balance	5,797,432	1,335,775	7,133,207	1,060,120	8,193,327
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	144,041	....	144,041	....	144,041
Balance Available for Return under present rates	$5,941,473	$1,335,775	$7,277,248	$1,060,120	$8,337,368
Less reduction under rates in suit	1,635,362	41,715	1,677,077	18,653	1,695,730
Balance Available for Return under Rates in suit	$4,306,111	$1,294,060	$5,600,171	$1,041,467	$6,641,638

* Represents actual taxes paid for the Year 1927 applicable to the above operations and is $299,542 less than the total amount accrued on the books for all taxes during that year.

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses and Net Income for the Year 1928

(Excluding All Overheads on Lands)

	Intrastate Exchange	Intrastate Toll	Intrastate Total	Interstate Toll	Total Chicago
Exchange Revenues	$48,323,639	$1,282,540	$49,606,179	$638,344	$50,244,523
Toll Revenues	....	3,800,457	3,800,457	3,354,217	7,154,674
Miscellaneous Operating Revenues	723,312	....	723,312	178,209	901,521
Non-Operating Revenues	351,052	22,989	374,041	146,204	520,245
Gross Revenues	49,398,003	5,105,986	54,503,989	4,316,974	58,820,963
Less Licensee Revenue—Dr	944,026	92,590	1,036,616	68,277	1,104,893
Total Revenues	$48,453,977	$5,013,396	$53,467,373	$4,248,697	$57,716,070
Traffic Expenses	$13,115,081	$1,036,520	$14,151,601	$781,627	$14,933,228
Commercial Expenses	5,080,559	808,557	5,889,116	316,037	6,205,153
General and Miscellaneous Expenses	1,916,599	155,885	2,072,484	116,884	2,189,368
Current Maintenance	9,531,773	409,370	9,941,143	546,357	10,487,500
Depreciation	6,616,696	380,825	6,997,521	643,939	7,641,460
Taxes	5,355,757	551,373	5,907,130	566,285	*6,473,415
Other Expenses and Deductions	450,460	144,202	594,662	109,089	703,751
Total Expenses	$42,066,925	$3,486,732	$45,553,657	$3,080,218	$48,633,875
Balance	$6,387,052	$1,526,664	$7,913,716	$1,168,479	$9,082,195
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	188,016	....	188,016	....	188,016
Balance Available for Return under present rates	$6,575,068	$1,526,664	$8,101,732	$1,168,479	$9,270,211
Less reduction under rates in suit	1,668,214	45,087	1,713,301	20,809	1,734,110
Balance available for Return under rates in suit	$4,906,854	$1,481,577	$6,388,431	$1,147,670	$7,536,101

* Represents actual taxes paid for the Year 1928 applicable to above operations and is $162,037 less than the total amount accrued on the books for all taxes during that year.

[fol. 2884]

EXHIBIT A-50—Continued

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses and Net Income for the Year 1929

(Excluding all Overheads on Lands)

	Intrastate			Interstate	Total
	Exchange	Toll	Total	Toll	Chicago
Exchange Revenues	$51,673,447	$1,413,957	$53,087,404	$710,796	$53,798,200
Toll Revenues	....	4,225,964	4,225,964	6,989,353	11,215,317
Miscellaneous Operating Revenues	1,254,238	....	1,254,238	5,394	1,259,632
Non-Operating Revenues	278,098	20,553	298,651	25,722	324,373
Gross Revenues	$53,205,783	$5,660,474	$58,866,257	$7,731,265	$66,597,522
Less Licensee Revenue—Dr	757,072	77,204	834,276	97,020	931,296
Total Revenues	$52,448,711	$5,583,270	$58,031,981	$7,634,245	$65,666,226
Traffic Expenses	$1,216,005	$1,271,673	$14,487,678	$2,794,535	$17,282,213
Commercial Expenses	5,257,238	877,099	6,134,337	385,222	6,519,559
General and Miscellaneous Expenses	1,917,567	176,545	2,094,112	275,632	2,369,744
Current Maintenance	10,178,530	492,996	10,671,526	929,194	11,600,720
Depreciation	6,974,270	449,925	7,424,195	696,187	8,120,382
Taxes	6,106,126	618,117	6,724,243	744,373	*7,468,616
Other Expenses and Deductions	382,563	127,225	509,788	133,966	643,754
Total Expenses	44,032,299	4,013,580	48,045,879	5,959,109	54,004,988
Balance	$8,416,412	$1,569,690	$9,986,102	$1,675,136	$11,661,238
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	217,842	....	217,842	....	217,842
Balance Available for Return under present rates	$8,634,254	$1,569,690	$10,203,944	$1,675,136	$11,879,080
Less reduction under rates in suit	1,693,349	47,233	1,740,582	21,854	1,762,436
Balance Available for Return under rates in suit	$6,940,905	$1,522,457	$8,463,362	$1,653,282	$10,116,644

* Represents actual taxes paid for the Year 1929 applicable to above operations and is $490,895 less than the total amount accrued on the books for all taxes during that year.

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses and Net Income for the Year 1930

(Excluding all Overheads on Lands)

	Intrastate			Interstate	Total
	Exchange	Toll	Total	Toll	Chicago
Exchange Revenues	$52,042,219	$1,494,403	$53,536,622	$715,498	$54,252 120
Toll Revenues	....	4,321,661	4,321,661	7,345,653	11,667,314
Miscellaneous Operating Revenues	1,219,486	....	1,219,486	6,080	1,225,566
Non-Operating Revenues	232,119	18,061	250,180	23,521	273,701
Gross Revenues	53,493,824	5,834,125	59,327,949	8,090,752	67,418,701
Less Licensee Revenue—Dr	782,801	81,330	864,131	104,091	968,222
Total Revenues	52,711,023	5,752,795	58,463,818	7,986,661	66,450,479
Traffic Expenses	12,320,929	1,300,952	13,621,881	2,664,532	16,286,413
Commercial Expenses	5,569,642	975,105	6,544,747	435,446	6,980,193
General and Miscellaneous Expenses	2,122,604	205,854	2,328,458	287,892	2,616,350
Current Maintenance	10,859,015	513,843	11,372,858	788,123	12,160,981
Depreciation	7,327,286	525,983	7,853,269	916,617	8,769,886
Taxes	6,518,599	678,136	7,196,735	896,096	#8,092,831
Other Expenses and Deductions	408,588	122,792	531,380	99,733	631,113
Total Expenses	45,126,663	4,322,665	49,449,328	6,088,439	55,537,767
Balance	7,584,360	1,430,130	9,014,490	1,898,222	10,912,712
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	221,691	....	221,691	....	221,691
Balance Available for Return under present rates	$7,806,051	$1,430,130	$9,236,181	$1,898,222	$11,134,403
Less reduction under rates in suit	1,599,053	46,825	1,645,878	20,496	1,666,374
Balance Available for Return under rates in suit	$6,206,998	$1,383,305	$7,590,303	$1,877,726	$9,468,029

Represents actual payments for those taxes which have been paid and the latest estimate of unpaid taxes for the Year 1930 applicable to above operations and is $149,392 more than the total amount accrued on the books for all taxes during that year.

[fol. 2886]

Exhibit A-50—Continued

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses and Net Income for the Year 1931

(Excluding All Overheads on Lands)

	Intrastate			Interstate Toll	Total Chicago
	Exchange	Toll	Total		
Exchange Revenues	$50,471,229	$1,321,735	$51,792,964	$665,191	$52,458,155
Toll Revenues	18,018	4,112,509	4,130,527	6,951,847	11,082,374
Miscellaneous Operating Revenues	1,050,286	....	1,050,286	5,730	1,056,016
Non-Operating Revenues	107,210	7,996	115,206	10,500	125,706
Gross Revenues	$51,646,743	$5,442,240	$57,088,983	$7,633,258	$64,722,251
Less Licensee Revenue—Dr	758,829	75,370	834,199	97,453	931,652
Total Revenues	$50,887,914	$5,366,870	$56,254,784	$7,535,815	$63,790,599
Traffic Expenses	$10,540,816	$1,194,978	$11,735,794	$2,250,640	$13,986,434
Commercial Expenses	5,534,184	955,991	6,490,175	429,970	6,920,145
General and Miscellaneous Expenses	2,445,812	244,230	2,690,042	314,280	3,004,322
Current Maintenance	10,351,339	490,714	10,842,053	704,029	11,546,082
Depreciation	7,558,477	562,696	8,121,173	1,025,095	9,146,268
Taxes	7,139,151	694,025	7,833,176	980,313	*8,813,489
Other Expenses and Deductions	498,302	127,072	625,374	102,893	728,267
Total Expenses	$44,068,081	$4,269,706	$48,337,787	$5,807,220	$54,145,007
Balance	6,819,833	1,097,164	7,916,997	1,728,595	9,645,592
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	236,661	....	236,661	....	236,661
Balance Available for Return under present rates	$7,056,494	$1,097,164	$8,153,658	$1,728,595	$9,882,253
Less reduction under rates in suit	1,396,167	37,577	1,433,744	17,120	1,450,864
Balance Available for Return under rates in suit	$5,660,327	$1,059,587	$6,719,914	$1,711,475	$8,431,389

* Represents actual payments for those taxes which have been paid and the latest estimate of unpaid taxes for the Year 1931 applicable to above operations and is $500,766 more than the total amount accrued on the books for all taxes during that year.

[fol. 2887]

EXHIBIT A-51

Illinois Bell Telephone Company

Detail of Net Compensation to Chicago for Use of Chicago Properties for Other Than Chicago Purposes and Use of State Area Properties for Chicago Purposes

	1923	1924	1925	1926	1927	1928	1929	1930
Compensation due Chicago Area for the following items used in part for State Area purposes								
(a) Land and Buildings	$113,287	$116,370	$121,816	$124,650	$76,367	$77,733	$100,326	$75,628
(b) Office Furniture and Fixtures	15,522	16,062	17,355	32,331	40,652	52,736	64,035	84,645
(c) General Store Equipment	....	....	....	....	....	2,000	2,064	890
(d) General Stable and Garage Equipment	1,406	1,893	2,096	2,165	2,217	2,371	2,462	5,973
(e) General Tools and Implements	258	309	226	276	429	584	695	1,885
(f) Official Private Branch Exchange	21,792	22,767	23,782	22,807	23,620	52,185	53,666	57,867
(g) Plant and Equipment used to operate Chicago Served Suburban Exchanges	140,529	151,501	182,207	13,500	9,257	10,733	10,322	18,111
(h) Improvements to Leased Buildings	....	....	....	....	6,886	7,590	6,742	7,066
(i) Amortization of Special Assessments	....	....	24	34	24	24	34	27
(j) Chicago Residence Telephone Service furnished on concession basis to State Area employees	12,157	14,320	14,981	17,216	19,218	22,609	26,393	29,490
(k) Toll Calls on Company business	1,498	2,508	4,322	7,173	9,333	16,853	18,767	19,944
(l) Employees Recreational Activities	750	1,008	667	698	1,328	1,826	1,295	1,516
(m) Official Telephone Directory	92	109	88	106	181	361	480	271
Total	307,291	326,847	367,564	220,956	189,512	247,605	287,281	303,313
Compensation due State Area for the following items used in part for Chicago Area purposes								
(a) Land and Buildings	11,746	11,765	11,331	12,502	12,036	14,534	14,148	13,768
(b) Office Furniture and Fixtures	1,647	1,494	1,491	1,503	1,488	1,533	1,711	1,728
(c) General Stable and Garage Equipment	87	88	71	129	94	97	389	270
(d) Plant and Equipment used to operate Suburban Served Chicago Stations	132	206	258	286	276	5,467	10,693	19,595

EXHIBIT A-51—Continued

	1923	1924	1925	1926	1927	1928	1929	1930
(e) Suburban Residence Telephone Service furnished on concession basis to Chicago Area employees	$11,772	$12,024	$13,5[illegible]6	$14,904	$16,416	$19,176	$21,444	$23,699
(f) Toll Calls on Company business	896	1,027	1,117	1,642	1,836	2,191	2,026	2,841
Total	26,280	26,604	27,804	30,966	32,146	42,998	50,411	61,901
Net Difference	281,011	300,243	339,760	189,990	157,366	204,607	236,870	241,412
Federal Income Tax on net difference	21,070	22,578	26,499	15,132	13,325	16,591	19,028	19,721
Net Compensation to Chicago for use of Chicago Properties for Other Than Chicago purposes and use of State Area properties for Chicago purposes	$259,941	$277,665	$313,261	$174,858	$144,041	$188,016	$217,842	$221,691

[fol. 2888]

Illinois Bell Telephone Company

Detail of Net Compensation to Chicago for Use of Chicago Properties for Other Than Chicago Purposes and Use of State Area Properties for Chicago Purposes

Year 1931

Compensation due Chicago Area for the following items used in part for State Area purposes	
(a) Land and Buildings	$88,402
(b) Office Furniture and Fixtures	90,118
(c) General Store Equipment	757
(d) General Stable and Garage Equipment	4,341
(e) General Tools and Implements	1,988
(f) Official Private Branch Exchange	58,641
(g) Plant and Equipment used to operate Chicago served Suburban Exchanges	15,157
(h) Improvements to Leased Buildings	2,928
(i) Amortization of Special Assessments	33
(j) Chicago Residence Telephone Service furnished on concession basis to State Area employees	30,757
(k) Toll Calls on Company business	22,477
(l) Employees' Recreational Activities	491
(m) Official Telephone Directory	288
Total	316,378
Compensation due State Area for the following items used in part for Chicago Area purposes	
(a) Land and Buildings	11,517
(b) Office Furniture and Fixtures	1,682
(c) General Stable and Garage Equipment	219
(d) Plant and Equipment used to operate Suburban Served Chicago Stations	14,953
(e) Suburban Residence Telephone Service furnished on concession basis to Chicago Area employees	26,151
(f) Toll Calls on Company business	4,376
Total	58,898
Net Difference	257,480
Federal Income Tax on net difference	20,819
Net Compensation to Chicago for use of Chicago Properties for Other Than Chicago purposes and use of State Area properties for Chicago purposes	$236,661

[fol. 2889]

EXHIBIT A-52

Illinois Bell Telephone Company, Chicago Exchange
Estimated Reduction in Net Income from Rates in Suit

	Oct.-Dec. 1923	1924	1925	1926	1927	1928	1929	1930
1. Decrease in Annual Revenues from rates in suit..........	$549,900	$2,185,100	$2,143,700	$2,273,100	$2,198,800	$2,180,700	$2,246,100	$2,202,600
2. Decrease in Traffic Expenses..	71,731	264,689	178,025	220,463	119,764	135,397	197,235	239,355
3. Decrease in Licensee Revenue—Dr..................	24,746	98,330	96,467	90,924	87,952	43,614	33,692	33,039
4. Decrease in 3% payment to City of Chicago..........	16,497	65,553	64,311	68,193	65,964	65,421	67,383	66,078
5. Total of above decreased expenses (2+3+4)..........	112,974	428,572	338,803	379,580	273,680	244,432	298,310	338,472
6. Less: Increased Revenue Accounting Expense.........	8,000	34,124	34,742	35,097	35,261	34,311	32,475	29,479
7. Net decrease in above expenses (line 5 minus 6).........	104,974	394,448	304,061	344,483	238,419	210,121	265,835	308,993
8. Net reduction in Net Income before Federal Income Tax (line 1 minus 7).........	444,926	1,790,652	1,839,639	1,928,617	1,960,381	1,970,579	1,980,265	1,893,607
9. Federal Income Tax..........	55,616	223,832	239,153	260,363	264,651	236,469	217,829	227,233
10. Net reduction in Net Income under Rates in Suit (line 8 minus 9)..........	$389,310	$1,566,820	$1,600,486	$1,668,254	$1,695,730	$1,734,110	$1,762,436	$1,666,374

[fol. 2890] Illinois Bell Telephone Company, Chicago Exchange

Estimated Reduction in Net Income from Rates in Suit, Year 1931

1.	Decrease in Annual Revenues from rates in suit	$1,817,641
2.	Decrease in Traffic Expenses	113,105
3.	Decrease in Licensee Revenue—Dr	27,265
4.	Decrease in 3% payment to City of Chicago	54,529
5.	Total of above decreased expenses (2+3+4)	194,899
6.	Less: Increased Revenue Accounting Expense	25,967
7.	Net decrease in above expenses (line 5 minus 6)	168,932
8.	Net reduction in Net Income before Federal Income Tax (line 1 minus 7)	1,648,709
9.	Federal Income Tax	197,845
10.	Net reduction in Net Income under Rates in Suit (line 8 minus 9)	$1,450,864

Exhibit A-53

Illinois Bell Telephone Company, Chicago Exchange

Rate of Return Under (a) Present Rates and (b) Rates in Suit for the Year 1923.

		Intrastate			Interstate Toll	Total Chicago
		Exchange	Toll	Total		
1	Balance Available for Return under					
2	(a) Present Rates	$4,996,252	$606,019	$5,602,271	$585,755	$6,188,026
3	(b) Rates in Suit	3,483,393	577,210	4,060,603	570,183	4,630,786
4	Reproduction Cost New Less Depreciation of Plant in Service and General Equipment	$124,525,686	$5,748,235	$130,273,921	$6,130,266	$136,404,187
5	Construction Work in Progress	737,955	39,172	777,127	35,416	812,543
6	Going Value	20,417,619	934,453	21,352,072	997,928	22,350,000
7	Total (Lines 4, 5 and 6)	145,681,260	6,721,860	152,403,120	7,163,610	159,566,730
8	Average for the year	138,994,490	6,413,327	145,407,817	6,834,800	152,242,617
9	Average Material and Supplies	212,875	9,743	222,618	10,404	233,022
10	Average Working Cash Capital	2,750,000	165,000	2,915,000	85,000	3,000,000
11	Total (Lines 8, 9 and 10)	$141,957,365	$6,588,070	$148,545,435	$6,930,204	$155,475,639
12	Book Cost of Plant in Service and General Equipment	$91,390,588	$4,182,675	$95,573,263	$4,466,788	$100,040,051
13	Construction Work in Progress	737,955	39,172	777,127	35,416	812,543
14	Total (Lines 12 and 13)	92,128,543	4,221,847	96,350,390	4,502,204	100,852,594
15	Average for the year	87,903,294	4,028,222	91,931,516	[illegible],295,722	96,227,238
16	Average Material and Supplies	212,875	9,743	222,618	10,404	233,022
17	Average Working Cash Capital	2,750,000	165,000	2,195,000	85,000	3,000,000
18	Total (Lines 15, 16 and 17)	$90,866,169	$4,202,965	$95,069,134	$4,391,126	$99,460;260
19	Percent of Return under					
20	(a) Present Rates based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	3.52%	9.20%	3.77%	8.45%	3.98%
21	(a) Present Rates based on Average Book Cost (Line 18)	5.50%	14.42%	5.89%	13.34%	6.22%
22	(b) Rates in Suit based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	2.45%	8.76%	2.73%	8.23%	2.98%
23	(b) Rates in Suit based on Average Book Cost (Line 18)	3.83%	13.73%	4.27%	12.98%	4.66%

Illinois Bell Telephone Company, Chicago Exchange

Rate of Return Under (a) Present Rates and (b) Rates in Suit for the Year 1924

		Intrastate				
		Exchange	Toll	Total	Interstate Toll	Total Chicago
1	Balance Available for Return under					
2	(a) Present Rates	$5,597,580	$736,248	$6,333,828	$677,080	$7,010,908
3	(b) Rates in Suit	4,077,765	705,068	4,782,833	661,255	5,444,088
4	Reproduction Cost New Less Depreciation of Plant in Service and General Equipment	$130,231,871	$6,462,113	$136,693,984	$7,146,343	$143,840,327
5	Construction Work in Progress	1,911,818	104,356	2,016,174	84,071	2,100,245
6	Going Value	21,292,645	1,047,160	22,339,805	1,160,195	23,500,000
7	Total (Lines 4, 5 and 6)	153,436,334	7,613,629	161,049,963	8,390,609	169,440,572
8	Average for the year	149,558,797	7,167,745	156,726,542	7,777,109	164,503,651
9	Average Material and Supplies	271,196	13,337	284,533	14,777	299,310
10	Average Working Cash Capital	2,880,000	180,000	3,060,000	90,000	3,150,000
11	Total (Lines 8, 9 and 10)	$152,709,993	$7,361,082	$160,071,075	$7,881,886	$167,952,961
12	Book Cost of Plant in Service and General Equipment	$100,562,558	$4,945,609	$105,508,167	$5,479,459	$110,987,626
13	Construction Work in Progress	1,911,818	104,356	2,016,174	84,071	2,100,245
14	Total (Lines 12 and 13)	102,474,376	5,049,965	107,524,341	5,563,530	113,087,871
15	Average for the year	97,301,460	4,635,906	101,937,366	5,032,867	106,970,233
16	Average Material and Supplies	271,196	13,337	284,533	14,777	299,310
17	Average Working Cash Capital	2,880,000	180,000	3,060,000	90,000	3,150,000
18	Total (Lines 15, 16 and 17)	$100,452,656	$4,829,243	$105,281,899	$5,137,644	$110,419,543
19	Percent of Return under					
20	(a) Present Rates based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	3.67%	10.00%	3.96%	8.59%	4.17%
21	Average Book Cost (Line 18)	5.57%	15.25%	6.02%	13.18%	6.35%
22	(b) Rates in Suit based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	2.67%	9.58%	2.99%	8.39%	3.24%
23	Average Book Cost (Line 18)	4.06%	14.60%	4.54%	12.87%	4.93%

EXHIBIT A-53—Continued

Illinois Bell Telephone Company, Chicago Exchange

Rate of Return Under (a) Present Rates and (b) Rates in Suit for the Year 1925)

		Instrastate			Interstate Toll	Total Chicago
		Exchange	Toll	Total		
1	Balance Available for Return under					
2	(a) Present Rates	$5,817,884	$943,165	$6,761,049	$782,166	$7,543,215
3	(b) Rates in Suit	4,269,734	908,754	5,178,488	764,241	5,942,729
4	Reproduction Cost New Less Depreciation of Plant in Service and General Equipment	$142,394,290	$7,331,425	$149,725,715	$8,865,428	$158,591,143
5	Construction Work in Progress	1,256,041	66,004	1,322,045	68,251	1,390,296
6	Going Value	23,272,963	1,188,033	24,460,996	1,439,004	25,900,000
7	Total (Lines 4, 5 and 6)	166,923,294	8,585,462	175,508,756	10,372,683	185,8[illegible],439
8	Average for the year	160,179,814	8,099,546	168,279,360	9,381,646	177,661,006
9	Average Material and Supplies	321,892	16,432	338,324	19,903	358,227
10	Average Working Cash Capital	3,025,000	200,000	3,225,000	100,000	3,325,000
11	Total (Lines 8, 9 and 10)	$163,526,706	$8,315,978	$171,842,684	$9,501,549	$181,344,233
12	Book Cost of Plant in Service and General Equipment	$113,663,235	$5,802,255	$119,465,490	$7,027,977	$126,493,467
13	Construction Work in Progress	1,256,041	66,004	1,322,045	68,251	1,390,296
14	Total (Lines 12 and 13)	114,919,276	5,868,259	120,787,535	7,096,228	127,883,763
15	Average for the year	108,696,826	5,459,112	114,155,938	6,329,879	120,485,817
16	Average Material and Supplies	321,892	16,432	338,324	19,903	358,227
17	Average Working Cash Capital	3,025,000	200,000	3,225,000	100,000	3,325,000
18	Total (Lines 15, 16 and 17)	$112,043,718	$5,675,544	$117,719,262	$6,449,782	$124,169,044
19	Percent of Return under					
20	(a) Present Rates based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	3.56%	11.34%	3.93%	8.23%	4.16%
21	(a) Present Rates based on Average Book Cost (Line 18)	5.19%	16.62%	5.74%	12.13%	6.07%
22	(b) Rates in Suit based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	2.61%	10.93%	3.01%	8.04%	3.28%
23	(b) Rates in Suit based on Average Book Cost (Line 18)	3.81%	16.01%	4.40%	11.85%	4.79%

Illinois Bell Telephone Company, Chicago Exchange

Rate of Return Under (a) Present Rates and (b) Rates in Suit for the Year 1926

		Intrastate			Interstate Toll	Total Chicago
		Exchange	Toll	Total		
1	Balance Available for Return under					
2	(a) Present Rates	$5,821,960	$1,193,543	$7,015,503	$924,122	$7,939,625
3	(b) Rates in Suit	4,210,427	1,154,506	5,364,933	906,438	6,271,371
4	Reproduction Cost New Less Depreciation of Plant in Service and General Equipment	$146,544,429	$8,111,233	$154,655,662	$9,687,332	$164,342,994
5	Construction Work in Progress	692,768	39,597	732,365	42,914	775,279
6	Going Value	23,960,940	1,315,650	25,276,590	1,573,410	26,850,000
7	Total (Lines 4, 5 and 6)	$171.198.137	9.466.480	180.664,617	11,303,656	191,968,273
8	Average for the year	169,060,716	9,025,971	178,086,687	10,838,169	188,924,856
9	Average Material and Supplies	300,465	16,498	316,963	19,730	336,693
10	Average Working Cash Capital	3,200,000	240,000	3,440,000	110,000	3,550,000
11	Total (Lines 8, 9 and 10)	$172,561,181	$9,282,469	$181,843,650	$10,967,899	$192,811,549
12	Book Cost of Plant in Service and General Equipment	$125,753,296	$6,904,876	$132,658,172	$8,257,668	$140,915,840
13	Construction Work in Progress	692,768	39,597	732,365	42,914	775,279
14	Total (Lines 12 and 13)	$126,446,064	$6,944,473	$133,390.537	$8.300.582	$141,691,119
15	Average for the year	120,682,670	6,406,366	127,089,036	7,698,405	134,787,441
16	Average Material and Supplies	300,465	16,498	316,963	19,730	336,693
17	Average Working Cash Capital	3,200,000	240,000	3,440,000	110,000	3,550,000
18	Total (Lines 15, 16 and 17)	$124,183,135	$6,662,864	$130,845,999	$7,828,135	$138,674,134
19	Percent of Return under					
20 21	(a) Present Rates based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	3.37%	12.86%	3.86%	8.43%	4.12%
	Average Book Cost (Line 18)	4.69%	17.91%	5.36%	11.81%	5.73%
22 23	(b) Rates in Suit based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	2.44%	12.44%	2.95%	8.26%	3.25%
	Average Book Cost (Line 18)	3.39%	17.33%	4.10%	11.58%	4.52%

[fol. 2895]

EXHIBIT A-53—Continued

Illinois Bell Telephone Company, Chicago Exchange

Rate of Return Under (a) Present Rates and (b) Rates in Suit for the Year 1927

			Intrastate		Interstate Toll	Total Chicago
		Exchange	Toll	Total		
1	Balance Available for Return under					
2	(a) Present Rates	$5,941,909	$1,335,530	$7,277,439	$1,059,929	$8,337,368
3	(b) Rates in Suit	4,306,547	1,293,815	5,600,362	1,041,276	6,641,638
4	Reproduction Cost New Less Depreciation of Plant in Service and General Equipment	$156,202,576	$9,519,550	$165,722,126	$11,172,978	$176,895,104
5	Construction Work in Progress	4,831,588	330,832	5,162,420	274,639	5,437,059
6	Going Value	25,543,554	1,543,260	27,086,814	1,813,186	28,900,000
7	Total (Lines 4, 5 and 6)	186,577,718	11,393,642	197,971,360	13,260,803	211,232,163
8	Average for the year	178,887,928	10,430,061	189,317,989	12,282,229	201,600,218
9	Average Material and Supplies	288,668	17,440	306,108	20,491	326,599
10	Average Working Cash Capital	3,425,000	270,000	3,695,000	130,000	3,825,000
11	Total (Lines 8, 9 and 10)	$182,601,596	$10,717,501	$193,319,097	$12,432,720	$205,751,817
12	Book Cost of Plant in Service and General Equipment	$137,447,687	$8,304,151	$145,751,838	$9,756,599	$155,508,437
13	Construction Work in Progress	4,831,588	330,832	5,162,420	274,639	5,437,059
14	Total (Lines 12 and 13)	142,279,275	8,634,983	150,914,258	10,031,238	160,945,496
15	Average for the year	134,362,670	7,789,728	142,152,398	9,165,910	151,318,308
16	Average Material and Supplies	288,668	17,440	306,108	20,491	326,599
17	Average Working Cash Capital	3,425,000	270,000	3,695,000	130,000	3,825,000
18	Total (Lines 15, 16 and 17)	$138,076,338	$8,077,168	$146,153,506	$9,316,401	$155,469,907
19	Percent of Return under					
20	(a) Present Rates based on: Average Reproduction Cost New Less Depreciation, etc., (Line 11)	3.25%	12.46%	3.76%	8.53%	4.05%
21	Average Book Cost (Line 18)	4.30%	16.53%	4.98%	11.38%	5.36%
22	(b) Rates in Suit based on: Average Reproduction Cost New Less Depreciation, etc. (Line 11)	2.36%	12.07%	2.90%	8.38%	3.23%
23	Average Book Cost (Line 18)	3.12%	16.02%	3.83%	11.18%	4.27%

[fol. 2896]

Illinois Bell Telephone Company, Chicago Exchange

Rate of Return Under (a) Present Rates and (b) Rates in Suit for the Year 1928

		Intrastate				
		Exchange	Toll	Total	Interstate Toll	Total Chicago
1	Balance Available for Return under					
2	(a) Present Rates	$6,575,395	$1,526,579	$8,101,974	$1,168,237	$9,270,211
3	(b) Rates in Suit	4,907,181	1,481,492	6,388,673	1,147,428	7,536,101
4	Reproduction Cost New Less Depreciation of Plant in Service and General Equipment	$162,282,549	$11,025,592	$173,308,141	$13,585,120	$186,893,261
5	Construction Work in Progress	2,610,813	155,479	2,766,292	509,464	3,275,756
6	Going Value	26,513,040	1,786,080	28,299,120	2,200,880	30,500,000
7	Total (Lines 4, 5 and 6)	$191,406,402	$12,967,151	$204,373,553	$16,295,464	$220,669,017
8	Average for the year	188,992,060	12,180,397	201,172,457	14,778,133	215,950,590
9	Average Material and Supplies	299,325	20,164	319,489	24,847	344,336
10	Average Working Cash Capital	3,550,000	290,000	3,840,000	210,000	4,050,000
11	Total (Lines 8, 9 and 10)	$192,841,385	$12,490,561	$205,331,946	$15,012,980	$220,344,926
12	Book Cost of Plant in Service and General Equipment	$147,248,055	$9,919,527	$157,167,582	$12,223,242	$169,390,824
13	Construction Work in Progress	2,610,813	155,479	2,766,292	509,464	3,275,756
14	Total (Lines 12 and 13)	$149,858,868	$10,075,006	$159,933,874	$12,732,706	$172,666,580
15	Average for the year	146,069,072	9,354,994	155,424,066	11,381,972	166,806,038
16	Average Material and Supplies	299,325	20,164	319,489	24,847	344,336
17	Average Working Cash Capital	3,550,000	290,000	3,840,000	210,000	4,050,000
18	Total (Lines 15, 16 and 17)	$149,918,397	$9,665,158	$159,583,555	$11,616,819	$171,200,374
19	Percent of Return under					
20	(a) Present Rates based on: Average Reproduction Cost New Less Depreciation, etc. (Line 11)	3.41%	12.22%	3.95%	7.78%	4.21%
21	Average Book Cost (Line 18)	4.39%	15.79%	5.08%	10.06%	5.41%
22	(b) Rates in Suit based on: Average Reproduction Cost New Less Depreciation, etc. (Line 11)	2.54%	11.86%	3.11%	7.64%	3.42%
23	Average Book Cost (Line 18)	3.27%	15.33%	4.00%	9.88%	4.40%

[fol. 2897]

Exhibit A-53.—Continued

Illinois Bell Telephone Company, Chicago Exchange.

Rate of Return Under (a) Present Rates and (b) Rates in Suit for the Year 1929

		Intrastate			Interstate Toll	Total Chicago
		Exchange	Toll	Total		
1	Balance Available for Return under					
2	(a) Present Rates	$8,634,791	$1,569,620	$10,204,411	$1,674,669	$11,879,080
3	(b) Rates in Suit	6,941,442	1,522,387	8,463,829	1,652,815	10,116,644
4	Reproduction Cost New Less Depreciation of Plant in Service and General Equipment	$173,196,480	$13,520,712	$186,717,192	$16,835,366	$203,552,558
5	Construction Work in Progress	1,525,803	145,414	1,671,217	303,471	1,974,688
6	Going Value	28,145,370	2,174,040	30,319,410	2,680,590	33,000,000
7	Total (Lines 4, 5 and 6)	202,867,653	15,840,166	218,707,819	19,819,427	238,527,246
8	Average for the year	197,137,028	14,403,658	211,540,686	18,057,446	229,598,132
9	Average Material and Supplies	235,475	18,189	253,664	22,427	276,091
10	Average Working Cash Capital	3,635,000	340,000	3,975,000	525,000	4,500,000
11	Total (Lines 8, 9 and 10)	$201,007,503	$14,761,847	$215,769,350	$18,604,873	$234,374,223
12	Book Cost of Plant in Service and General Equipment	$155,786,807	$12,033,480	$167,820,287	$14,837,274	$182,657,561
13	Construction Work in Progress	1,525,803	145,414	1,671,217	303,471	1,974,688
14	Total (Lines 12 and 13)	157,312,610	12,178,894	169,491,504	15,140,745	184,632,249
15	Average for the year	153,585,739	11,126,950	164,712,689	13,936,726	178,649,415
16	Average Material and Supplies	235,475	18,189	253,664	22,427	276,091
17	Average Working Cash Capital	3,635,000	340,000	3,975,000	525,000	4,500,000
18	Total (Lines 15, 16 and 17)	$157,456,214	$11,485,139	$168,941,353	$14,484,153	$183,425,506
19	Percent of Return under					
20	(a) Present Rates based on: Average Reproduction Cost New Less Depreciation, etc. (Line 11)	4.30%	10.63%	4.73%	9.00%	5.07%
21	(a) Present Rates based on: Average Book Cost (Line 18)	5.[illegible]8%	13.67%	6.04%	11.56%	6.48%
22	(b) Rates in Suit based on: Average Reproduction Cost New Less Depreciation, etc. (Line 11)	3.45%	10.31%	3.92%	8.88%	4.32%
23	(b) Rates in Suit based on: Average Book Cost (Line 18)	4.41%	13.26%	5.01%	11.41%	5.52%

[fol. 2898]

Illinois Bell Telephone Company, Chicago Exchange

Rate of Return Under (a) Present Rates and (b) Rates in Suit for the Year 1930

			Infrastate				
			Exchange	Toll	Total	Interstate Toll	Total Chicago
1	Balance Available for Return under						
2	(a) Present Rates		$7,806,071	$1,430,166	$9,236,237	$1,898,166	$11,134,403
3	(b) Rates in Suit		6,207,018	1,383,341	7,590,359	1,877,670	9,468,029
4	Reproduction Cost New Less Depreciation of Plant in Service and General Equipment		$178,065,680	$14,548,710	$192,614,390	$19,411,123	$212,025,513
5	Construction Work in Progress		3,831,948	303,804	4,135,752	280,013	4,415,765
6	Going Value		28,967,208	2,341,608	31,308,816	3,091,184	34,400,000
7	Total (Lines 4, 5 and 6)		210,864,836	17,194,122	228,058,958	22,782,320	250,841,278
8	Average for the year		206,866,245	16,517,144	223,383,389	21,300,873	244,684,262
9	Average Material and Supplies		176,653	14,280	190,933	18,851	209,784
10	Average Working Cash Capital		3,690,000	360,000	4,050,000	500,000	4,550,000
11	Total (Lines 8, 9 and 10)		$210,732,898	$16,891,424	$227,624,322	$21,819,724	$249,444,046
12	Book Cost of Plant in Service and General Equipment		$161,076,341	$13,020,849	$174,097,190	$17,188,975	$191,286,165
13	Construction Work in Progress		3,831,948	303,804	4,135,752	280,013	4,415,765
14	Total (Lines 12 and 13)		164,908,289	13,324,653	178,232,942	17,468,988	195,701,930
15	Average for the year		161,110,450	12,751,773	173,862,223	16,304,867	190,167,090
16	Average Material and Supplies		176,653	14,280	190,933	18,851	209,784
17	Average Working Cash Capital		3,690,000	360,000	4,050,000	500,000	4,550,000
18	Total (Lines 15, 16 and 17)		$164,977,103	$13,126,053	$178,103,156	$16,823,718	$194,926,874
19	Percent of Return under						
20	(a) Present Rates based on	Average Reproduction Cost New Less Depreciation, etc. (Line 11)	3.70%	8.47%	4.06%	8.70%	4.46%
21		Average Book Cost (Line 18)	4.73%	10.90%	5.19%	11.28%	5.71%
22	(b) Rates in Suit based on	Average Reproduction Cost New Less Depreciation, etc. (Line 11)	2.95%	8.19%	3.33%	8.61%	3.80%
23		Average Book Cost (Line 18)	3.76%	10.54%	4.26%	11.16%	4.86%

[fol. 2899]

EXHIBIT A-53—Continued

Illinois Bell Telephone Company, Chicago Exchange

Rate of Return Under (a) Present Rates and (b) Rates in Suit for the Year 1931

		Intrastate			Interstate Toll	Total Chicago
		Exchange	Toll	Total		
1	Balance Available for Return under					
2	(a) Present Rates	$7,056,769	$1,097,071	$8,153,840	$1,728,413	$9,882,253
3	(b) Rates in Suit	5,660,602	1,059,494	6,720,096	1,711,293	8,431,389
4	Reproduction Cost New Less Depreciation of Plant in Service and General Equipment	$176,280,127	$14,433,827	$190,713,954	$19,873,916	$210,587,870
5	Construction Work in Progress	136,008	27,763	163,771	278,185	441,956
6	Going Value	28,540,280	2,310,980	30,851,260	3,148,740	34,000,000
7	Total (Lines 4, 5 and 6)	204,956,415	16,772,570	221,728,985	23,300,841	245,029,826
8	Average for the year	207,910,626	16,983,346	224,893,972	23,041,580	247,935,552
9	Average Material and Supplies	188,393	15,255	203,648	20,785	224,433
10	Average Working Cash Capital	3,450,000	350,000	3,800,000	450,000	4,250,000
11	Total (Lines 8, 9 and 10)	$211,549,019	$17,348,601	$228,897,620	$23,512,365	$252,409,985
12	Book Cost of Plant in Service and General Equipment	$164,041,230	$13,282,842	$177,324,072	$18,098,041	$195,422,113
13	Construction Work in Progress	136,008	27,763	163,771	278,185	441,956
14	Total (Lines 12 and 13)	164,177,238	13,310,605	177,487,843	18,376,226	195,864,069
15	Average for the year	164,542,764	13,317,629	177,860,393	17,922,607	195,783,000
16	Average Material and Supplies	188,393	15,255	203,648	20,785	224,433
17	Average Working Cash Capital	3,450,000	350,000	3,800,000	450,000	4,250,000
18	Total (Lines 15, 16 and 17)	$168,181,157	$13,682,884	$181,864,041	$18,393,392	$200,257,433
19	Percent of Return under					
20	(a) Present Rates based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	3.34%	6.32%	3.56%	7.35%	3.92%
21	(a) Present Rates based on Average Book Cost (Line 18)	4.20%	8.02%	4.48%	9.40%	4.93%
22	(b) Rates in Suit based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	2.68%	6.11%	2.94%	7.28%	3.34%
23	(b) Rates in Suit based on Average Book Cost (Line 18)	3.37%	7.74%	3.70%	9.30%	4.21%

Exhibit A-54

Illinois Bell Telephone Company, Chicago Exchange

Rate of Return Under (a) Present Rates and (b) Rates in Suit for the Year 1923

(Excluding all Overheads on Land)

		Intrastate				
		Exchange	Toll	Total	Interstate Toll	Total Chicago
1	Balance Available for Return under					
2	(a) Present Rates	$4,996,235	$606,021	$5,602,256	$585,770	$6,188,026
3	(b) Rates in Suit	3,483,376	577,212	4,060,588	570,198	4,630,786
4	Reproduction Cost New Less Depreciation of Plant in Service and General Equipment	$124,112,615	$5,727,859	$129,840,474	$6,096,897	$135,937,371
5	Construction Work in Progress	737,955	39,172	777,127	35,416	812,543
6	Going Value	20,419,854	934,230	21,354,084	995,916	22,350,000
7	Total (Lines 4, 5 and 6)	145,270,424	6,701,261	151,971,685	7,128,229	159,099,914
8	Average for the year	138,602,512	6,393,673	144,996,185	6,801,043	152,797,228
9	Average Material and Supplies	212,898	9,740	222,638	10,384	233,022
10	Average Working Cash Capital	2,750,000	165,000	2,915,000	85,000	3,000,000
11	Total (Lines 8, 9 and 10)	$141,565,410	$6,568,413	$148,133,823	$6,896,427	$155,030,250
12	Book Cost of Plant in Service and General Equipment	$91,400,592	$4,181,674	$95,582,266	$4,457,785	$100,040,051
13	Construction Work in Progress	737,955	39,172	777,127	35,416	812,543
14	Total (Lines 12 and 13)	92,138,547	4,220,846	96,359,393	4,493,201	100,852,594
15	Average for the year	87,909,388	4,027,109	91,936,497	4,286,963	96,223,460
16	Average Material and Supplies	212,898	9,740	222,638	10,384	233,022
17	Average Working Cash Capital	2,750,000	165,000	2,915,000	85,000	3,000,000
18	Total (Lines 15, 16 and 17)	$90,872,286	$4,201,849	$95,074,135	$4,382,347	$99,456,482
19	Percent of Return under					
20	(a) Present Rates based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	3.53%	9.23%	3.78%	8.49%	3.99%
21	(a) Present Rates based on Average Book Cost (Line 18)	5.50%	14.42%	5.89%	13.37%	6.22%
22	(b) Rates in Suit based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	2.46%	8.79%	2.74%	8.27%	2.99%
23	(b) Rates in Suit based on Average Book Cost (Line 18)	3.83%	13.74%	4.27%	13.01%	4.66%

Exhibit A-54—Continued

Illinois Bell Telephone Company, Chicago Exchange

Rate of Return Under (a) Present Rates and (b) Rates in Suit for the Year 1924

(Excluding all Overheads on Lands)

		Intrastate				
		Exchange	Toll	Total	Interstate Toll	Total Chicago
1	Balance Available for Return under					
2	(a) Present Rates	$5,597,314	$736,251	$6,333,565	$677,343	$7,010,908
3	(b) Rates in Suit	4,077,499	705,071	4,782,570	661,518	5,444,088
4	Reproduction Cost New Less Depreciation of Plant in Service and General Equipment	$129,775,128	$6,437,957	$136,213,085	$7,105,853	$143,318,938
5	Construction Work in Progress	1,911,818	104,356	2,016,174	84,071	2,100,245
6	Going Value	21,295,230	1,046,925	22,342,155	1,157,845	23,500,000
7	Total (Lines 4, 5 and 6)	152,982,176	7,589,238	160,571,414	8,347,769	168,919,183
8	Average for the year	149,126,300	7,145,250	156,271,550	7,737,999	164,009,549
9	Average Material and Supplies	271,229	13,334	284,563	14,747	299,310
10	Average Working Cash Capital	2,880,000	180,000	3,060,000	90,000	3,150,000
11	Total (Lines 8, 9 and 10)	$152,277,529	$7,338,584	$159,616,113	$7,842,746	$167,458,859
12	Book Cost of Plant in Service and General Equipment	$100,574,767	$4,944,499	$105,519,266	$5,468,360	$110,987,626
13	Construction Work in Progress	1,911,818	104,356	2,016,174	84,071	2,100,245
14	Total (Lines 12 and 13)	102,486,585	5,048,855	107,535,440	5,552,431	113,087,871
15	Average for the year	97,312,566	4,634,851	101,947,417	5,022,816	106,970,233
16	Average Material and Supplies	271,229	13,334	284,563	14,747	299,310
17	Average Working Cash Capital	2,880,000	180,000	3,060,000	90,000	3,150,000
18	Total (Lines 15, 16 and 17)	$100,463,795	$4,828,185	$105,291,980	$5,127,563	$110,419,543
19	Percent of Return under					
20	(a) Present Rates based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	3.68%	10.03%	3.97%	8.64%	4.19%
21	(a) Present Rates based on Average Book Cost (Line 18)	5.57%	15.25%	6.02%	13.21%	6.35%
22	(b) Rates in Suit based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	2.68%	9.61%	3.00%	8.43%	3.25%
23	(b) Rates in Suit based on Average Book Cost (Line 18)	4.06%	14.60%	4.54%	12.90%	4.93%

Illinois Bell Telephone Company, Chicago Exchange

Rate of Return Under (a) Present Rates and (b) Rates in Suit for the Year 1925

(Excluding all Overheads on Lands)

		Intrastate			Interstate Toll	Total Chicago
		Exchange	Toll	Total		
1	Balance Available for Return under					
2	(a) Present Rates	$5,817,899	$943,163	$6,761,062	$782,153	$7,543,215
3	(b) Rates in Suit	4,269,749	908,752	5,178,501	764,228	5,942,729
4	Reproduction Cost New Less Depreciation of Plant in Service and General Equipment	$141,870,113	$7,304,066	$149,174,179	$8,816,648	$157,990,827
5	Construction Work in Progress	1,256,041	66,004	1,322,045	68,251	1,390,296
6	Going Value	23,275,553	1,187,774	24,463,327	1,436,673	25,900,000
7	Total (Lines 4, 5 and 6)	166,401,707	8,557,844	174,959,551	10,321,572	185,281,123
8	Average for the Year	159,691,942	8,073,541	167,765,483	9,334,670	177,100,153
9	Average Material and Supplies	321,928	16,428	338,356	19,871	358,227
10	Average Working Cash Capital	3,025,000	200,000	3,225,000	100,000	3,325,000
11	Total (Lines 8, 9 and 10)	$163,038,870	$8,289,969	$171,328,839	$9,454,541	$180,783,380
12	Book Cost of Plant in Service and General Equipment	$113,675,884	$5,800,990	$119,476,874	$7,016,593	$126,493,467
13	Construction Work in Progress	1,256,041	66,004	1,322,045	68,251	1,390,296
14	Total (Lines 12 and 13)	114,931,925	5,866,994	120,798,919	7,084,844	127,883,763
15	Average for the year	108,709,255	5,457,925	114,167,180	6,318,637	120,485,817
16	Average Material and Supplies	321,928	16,428	338,356	19,871	358,227
17	Average Working Cash Capital	3,025,000	200,000	3,225,000	100,000	3,325,000
18	Total (Lines 15, 16 and 17)	$112,056,183	$5,674,353	$117,730,536	$6,438,508	$124,169,044
19	Percent of Return under					
20	(a) Present Rates based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	3.57%	11.38%	3.95%	8.27%	4.17%
21	Average Book Cost (Line 18)	5.19%	16.62%	5.74%	12.15%	6.07%
22	(b) Rates in Suit based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	2.62%	10.96%	3.02%	8.08%	3.29%
23	Average Book Cost (Line 18)	3.81%	16.02%	4.40%	11.87%	4.79%

[fol. 2903]

Exhibit A-54—Continued

Illinois Bell Telephone Company, Chicago Exchange

Rate of Return Under (a) Present Rates and (b) Rates in Suit for the Year 1926

(Excluding All Overheads on Lands)

		Intrastate			Interstate	Total
		Exchange	Toll	Total	Toll	Chicago
1	Balance Available for Return under					
2	(a) Present Rates	$5,821,921	$1,193,543	$7,015,464	$924,161	$7,939,625
3	(b) Rates in Suit	4,210,388	1,154,506	5,364,894	906,477	6,271,371
4	Reproduction Cost New Less Depreciation of Plant in Service and General Equipment	145,994,719	8,080,976	154,075,695	9,637,174	163,712,869
5	Construction Work in Progress	692,768	39,597	732,365	42,914	775,279
6	Going Value	23,963,088	1,315,650	25,277,738	1,571,262	26,850,000
7	Total (Lines 4, 5 and 6)	170,650,575	9,436,223	180,086,798	11,251,350	191,338,148
8	Average for the year	168,526,141	8,997,034	177,523,175	10,786,461	188,309,636
9	Average Material and Supplies	300,492	16,498	316,990	19,703	336,693
10	Average Working Cash Capital	3,200,000	240,000	3,440,000	110,000	3,550,000
11	Total (Lines 8, 9 and 10)	172,026,633	9,253,532	181,280,165	10,916,164	192,196,329
12	Book Cost of Plant in Service and General Equipment	125,764,569	6,904,876	132,669,445	8,246,395	140,915,840
13	Construction Work in Progress	692,768	39,597	732,365	42,914	775,279
14	Total (Lines 12 and 13)	126,457,337	6,944,473	133,401,810	8,289,309	141,691,119
15	Average for the year	120,694,631	6,405,734	127,100,365	7,687,077	134,787,441
16	Average Material and Supplies	300,492	16,498	316,990	19,703	336,693
17	Average Working Cash Capital	3,200,000	240,000	3,440,000	110,000	3,550,000
18	Total (Lines 15, 16 and 17)	$124,195,123	$6,662,232	130,857,355	$7,816,780	$138,674,134
19	Percent of Return under					
20	(a) Present Rates based on — Average Reproduction Cost New Less Depreciation, etc. (Line 11)	3.38%	12.90%	3.87%	8.47%	4.13%
21	(a) Present Rates based on — Average Book Cost (Line 18)	4.69%	17.92%	5.36%	11.82%	5.73%
22	(b) Rates in Suit based on — Average Reproduction Cost New Less Depreciation, etc. (Line 11)	2.45%	12.48%	2.96%	8.30%	3.26%
23	(b) Rates in Suit based on — Average Book Cost (Line 18)	3.39%	17.33%	4.10%	11.60%	4.52%

Illinois Bell Telephone Company, Chicago Exchange

Rate of Return Under (a) Present Rates and (b) Rates in Suit for the Year 1927

(Excluding All Overheads on Lands)

		Intrastate			Interstate Toll	Total Chicago
		Exchange	Toll	Total		
1	Balance Available for Return under					
2	(a) Present Rates	$5,941,473	$1,335,775	$7,277,248	$1,060,120	$8,337,368
3	(b) Rates in Suit	4,306,111	1,294,060	5,600,171	1,041,467	6,641,638
4	Reproduction Cost New Less Depreciation of Plant in Service and General Equipment	$155,514,363	$9,472,058	$164,986,421	$11,087,056	$176,073,477
5	Construction Work in Progress	4,831,588	330,832	5,162,420	274,639	5,437,059
6	Going Value	25,549,623	1,542,393	27,092,016	1,807,984	28,900,000
7	Total (Lines 4, 5 and 6)	185,895,574	11,345,283	197,240,857	13,169,679	210,410,536
8	Average for the year	178,273,075	10,390,753	188,663,828	12,210,514	200,874,342
9	Average Material and Supplies	288,736	17,431	306,167	20,432	326,599
10	Average Working Cash Capital	3,425,000	270,000	3,695,000	130,000	3,825,000
11	Total (Lines 8, 9 and 10)	$181,986,811	$10,678,184	$192,664,995	$12,360,946	$205,025,941
12	Book Cost of Plant in Service and General Equipment	$137,480,344	$8,299,485	$145,779,829	$9,728,608	$155,508,437
13	Construction Work in Progress	4,831,588	330,832	5,162,420	274,639	5,437,059
14	Total (Lines 12 and 13)	142,311,932	8,630,317	150,942,249	10,003,247	160,945,496
15	Average for the year	134,384,635	7,787,395	142,172,030	9,146,278	151,318,308
16	Average Material and Supplies	288,736	17,431	306,167	20,432	326,599
17	Average Working Cash Capital	3,425,000	270,000	3,695,000	130,000	3,825,000
18	Total (Lines 15, 16 and 17)	$138,098,371	$8,074,826	$146,173,197	$9,296,710	$155,469,907
19	Percent of Return under					
20	(a) Present Rates based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	3.26%	12.51%	3.78%	8.58%	4.07%
21	Average Book Cost (Line 18)	4.30%	16.54%	4.98%	11.40%	5.36%
22	(b) Rates in Suit based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	2.37%	12.12%	2.91%	8.43%	3.24%
23	Average Book Cost (Line 18)	3.12%	16.03%	3.83%	11.20%	4.27%

[fol. 2905]

Exhibit A-54—Continued

Illinois Bell Telephone Company, Chicago Exchange

Rate of Return Under (a) Present Rates and (b) Rates in Suit for the Year 1928

(Excluding All Overheads on Lands)

		Intrastate			Interstate	Total
		Exchange	Toll	Total	Toll	Chicago
1	Balance Available for Return under					
2	(a) Present Rates	$6,575,068	$1,526,664	$8,101,732	$1,168,479	$9,270,211
3	(b) Rates in Suit	4,906,854	1,481,577	6,388,431	1,147,670	7,536,101
4	Reproduction Cost New Less Depreciation of Plant in Service and General Equipment	$161,625,326	$10,967,043	$172,592,369	$13,468,841	$186,061,210
5	Construction Work in Progress	2,610,813	155,479	2,766,292	509,464	3,275,756
6	Going Value	26,523,410	1,784,555	28,307,965	2,192,035	30,500,000
7	Total (Lines 4, 5 and 6)	$190,759,549	$12,907,077	$203,666,626	$16,170,340	$219,836,966
8	Average for the year	188,327,562	12,126,180	200,453,742	14,670,009	215,123,751
9	Average Material and Supplies	299,442	20,147	319,589	24,747	344,336
10	Average Working Cash Capital	3,550,000	290,000	3,840,000	210,000	4,050,000
11	Total (Lines 8, 9 and 10)	$192,177,004	$12,436,327	$204,613,331	$14,904,756	$219,518,087
12	Book Cost of Plant in Service and General Equipment	$147,305,648	$9,911,057	$157,216,705	$12,174,119	$169,390,824
13	Construction Work in Progress	2,610,813	155,479	2,766,292	509,464	3,275,756
14	Total (Lines 12 and 13)	$149,916,461	$10,066,536	$159,982,997	$12,683,583	$172,666,580
15	Average for the year	146,114,197	9,348,426	155,462,623	11,343,415	166,806,038
16	Average Material and Supplies	299,442	20,147	319,589	24,747	344,336
17	Average Working Cash Capital	3,550,000	290,000	3,840,000	210,000	4,050,000
18	Total (Lines 15, 16 and 17)	$149,963,639	$9,658,573	$159,622,212	$11,578,162	$171,200,374
19	Percent of Return under					
20	(a) Present Rates based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	3.42%	12.28%	3.96%	7.84%	4.22%
21	(a) Present Rates based on Average Book Cost (Line 18)	4.38%	15.81%	5.08%	10.09%	5.41%
22	(b) Rates in Suit based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	2.55%	11.91%	3.12%	7.70%	3.43%
23	(b) Rates in Suit based on Average Book Cost (Line 18)	3.27%	15.34%	4.00%	9.91%	4.40%

[fol. 2906]

Illinois Bell Telephone Company, Chicago Exchange

Rate of Return Under (a) Present Rates and (b) Rates in Suit for the Year 1929

(Excluding All Overheads on Lands)

		Intrastate			Interstate Toll	Total Chicago
		Exchange	Toll	Total		
1	Balance Available for Return under					
2	(a) Present Rates	$8,634,254	$1,569,690	$10,203,944	$1,675,136	$11,879,080
3	(b) Rates in Suit	6,940,905	1,522,457	8,463,362	1,653,282	10,116,644
4	Reproduction Cost New Less Depreciation of Plant in Service and General Equipment	$172,492,135	$13,449,752	$185,941,887	$16,710,154	$202,652,041
5	Construction Work in Progress	1,525,803	145,414	1,671,217	303,471	1,974,688
6	Going Value	28,155,600	2,172,060	30,327,660	2,672,340	33,000,200
7	Total (Lines 4, 5 and 6)	202,173,538	15,767,226	217,940,764	19,685,965	237,626,729
8	Average for the year	196,466,544	14,337,151	210,803,695	17,928,153	228,731,848
9	Average Material and Supplies	235,561	18,172	253,733	22,358	276,091
10	Average Working Cash Capital	3,635,000	340,000	3,975,000	525,000	4,500,000
11	Total (Lines 8, 9 and 10)	$200,337,105	$14,695,323	$215,032,428	$18,475,511	$233,507,939
12	Book Cost of Plant in Service and General Equipment	$155,843,431	$12,022,521	$167,865,952	$14,791,609	$182,657,561
13	Construction Work in Progress	1,525,803	145,414	1,671,217	303,471	1,974,688
14	Total (Lines 12 and 13)	157,369,234	12,167,935	169,537,169	15,095,080	184,632,249
15	Average for the year	153,642,848	11,117,235	164,760,083	13,889,332	178,649,415
16	Average Material and Supplies	235,561	18,172	253,733	22,358	276,091
17	Average Working Cash Capital	3,635,000	340,000	3,975,000	525,000	4,500,000
18	Total (Lines 15, 16 and 17)	$157,513,409	$11,475,407	$168,988,816	$14,436,690	$183,425,506
19	Percent of Return under					
20	(a) Present Rates based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	4.31%	10.68%	4.75%	9.07%	5.09%
21	(a) Present Rates based on Average Book Cost (Line 18)	5.48%	13.68%	6.04%	11.60%	6.48%
22	(b) Rates in Suit based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	3.46%	10.36%	3.94%	8.95%	4.33%
23	(b) Rates in Suit based on Average Book Cost (Line 18)	4.41%	13.27%	5.01%	11.45%	5.52%

[fol. 2907]

Exhibit A-54—Continued

Illinois Bell Telephone Company, Chicago Exchange

Rate of Return Under (a) Present Rates and (b) Rates in Suit for the Year 1930

(Excluding All Overheads on Lands)

		Intrastate			Interstate Toll	Total Chicago
		Exchange	Toll	Total		
1	Balance Available for Return under					
2	(a) Present Rates	$7,806,051	$1,430,130	$9,236,181	$1,898,222	$11,134,403
3	(b) Rates in Suit	6,206,998	1,383,305	7,590,303	1,877,726	9,468,029
4	Reproduction Cost New Less Depreciation of Plant in Service and General Equipment	$177,385,418	$14,468,017	$191,853,435	$19,258,060	$211,111,495
5	Construction Work in Progress	3,831,948	303,804	4,135,752	280,013	4,415,765
6	Going Value	28,981,312	2,338,856	31,320,168	3,079,832	34,400,000
7	Total (Lines 4, 5 and 6)	210,198,678	17,110,677	227,309,355	22,617,905	249,927,260
8	Average for the year	206,186,108	16,438,952	222,625,060	21,151,935	243,776,995
9	Average Material and Supplies	176,739	14,263	191,002	18,782	209,784
10	Average Working Cash Capital	3,690,000	360,000	4,050,000	500,000	4,550,000
11	Total (Lines 8, 9 and 10)	$210,052,847	$16,813,215	$226,866,062	$21,670,717	$248,536,779
12	Book Cost of Plant in Service and General Equipment	$161,154,768	$13,005,546	$174,160,314	$17,125,851	$191,286,165
13	Construction Work in Progress	3,831,948	303,804	4,135,752	280,013	4,415,765
14	Total (Lines 12 and 13)	164,986,716	13,309,350	178,296,066	17,405,864	195,701,930
15	Average for the year	161,177,975	12,738,643	173,916,618	16,250,472	190,167,090
16	Average Material and Supplies	176,739	14,263	191,002	18,782	209,784
17	Average Working Cash Capital	3,690,000	360,000	4,050,000	500,000	4,550,000
18	Total (Lines 15, 16 and 17)	$165,044,714	$13,112,906	$178,157,620	$16,769,254	$194,926,874
19	Percent of Return under					
20	(a) Present Rates based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	3.72%	8.51%	4.07%	8.76%	4.48%
21	(a) Present Rates based on Average Book Cost (Line 18)	4.73%	10.91%	5.18%	11.32%	5.71%
22	(b) Rates in Suit based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	2.95%	8.23%	3.35%	8.66%	3.81%
23	(b) Rates in Suit based on Average Book Cost (Line 18)	3.76%	10.55%	4.26%	11.20%	4.86%

[fol. 2908]

Illinois Bell Telephone Company, Chicago Exchange

Rate of Return Under (a) Present Rates and (b) Rates in Suit for the Year 1931

(Excluding All Overheads on Lands)

		Intrastate			Interstate	Total
		Exchange	Toll	Total	Toll	Chicago
1	Balance Available for Return under					
2	(a) Present Rates	$7,056,494	$1,097,164	$8,153,658	$1,728,595	$9,882,253
3	(b) Rates in Suit	5,660,327	1,059,587	6,719,914	1,711,475	8,431,389
4	Reproduction Cost New Less Depreciation of Plant in Service and General Equipment	$175,653,454	$14,365,476	$190,018,930	$19,729,530	$209,748,460
5	Construction Work in Progress	136,008	27,763	163,771	278,185	441,956
6	Going Value	28,552,520	2,309,280	30,861,800	3,138,200	34,000,000
7	Total (Lines 4, 5 and 6)	204,341,982	16,702,519	221,044,501	23,145,915	244,190,416
8	Average for the year	207,270,330	16,906,598	224,176,928	22,881,910	247,058,838
9	Average Material and Supplies	188,474	15,244	203,718	20,715	224,433
10	Average Working Cash Capital	3,450,000	350,000	3,800,000	450,000	4,250,000
11	Total (Lines 8, 9 and 10)	$210.908,804	$17,271.842	$228,180,646	$23,352,625	$251,533,271
12	Book Cost of Plant in Service and General Equipment	$164,111,582	$13,273,070	$177,384,652	$18,037,461	$195,422,113
13	Construction Work in Progress	136,008	27,763	163,771	278,185	441,956
14	Total (Lines 12 and 13)	164,247,590	13,300.833	177,548,423	18,315,646	195,864,069
15	Average for the year	164,617,153	13,305,092	177,922,245	17,860,755	195,783,000
16	Average Material and Supplies	188,474	15,244	203,718	20,715	224,433
17	Average Working Cash Capital	3,450,000	350,000	3,800,000	450,000	4,250,000
18	Total (Lines 15, 16 and 17)	$168,255,627	$13,670,336	$181,925,963	$18,331,470	$200,257,433
19	Percent of Return under					
20	(a) Present Rates based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	3.35%	6.35%	3.57%	7.40%	3.93%
21	(a) Present Rates based on Average Book Cost (Line 18)	4.19%	8.03%	4.48%	9.43%	4.93%
22	(b) Rates in Suit based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	2.68%	6.13%	2.94%	7.33%	3.35%
23	(b) Rates in Suit based on Average Book Cost (Line 18)	3.36%	7.75%	3.69%	9.34%	4.21%

[fol. 2909]

Exhibit A–55

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses and Net Income, also Rate of Return for the Year 1923
(Depreciation and Amortization of Landed Capital based on Reproduction Cost New with related changes in Federal Income Tax)

	Intrastate			Interstate Toll	Total Chicago
	Exchange	Toll	Total		
Total Revenues	$34,404,326	$2,424,172	$36,828,498	$1,831,641	$38,660,139
Total Current Mtce., Traffic, Com'l., General and Miscellaneous Expenses	22,313,543	1,350,179	23,663,722	696,151	24,359,873
Depreciation	5,387,638	253,603	5,641,241	322,942	5,964,183
Taxes	2,957,655	222,915	3,180,570	235,007	*3,415,577
Other Expenses and Deductions	218,827	41,043	259,870	37,958	297,828
Total Expenses	30,877,663	1,867,740	32,745,403	1,292,058	34,037,461
Balance	3,526,663	556,432	4,083,095	539,583	4,622,678
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	259,941	....	259,941	....	259,941
Balance Available for Return under present rates	3,786,604	556,432	4,343,036	539,583	4,882,619
Less reduction under rates in suit	1,512,859	28,809	1,541,668	15,572	1,557,240
Balance Available for Return under rates in suit	2,273,745	527,623	2,801,368	524,011	3,325,379
Per Cent of Return under					
(a) Present Rates based on — Avg. Reproduction Cost New Less Depreciation, etc	2.67%	8.45%	2.92%	7.79%	3.14%
(a) Present Rates based on — Average Book Cost	4.17%	13.24%	4.57%	12.29%	4.91%
(b) Rates in Suit based on — Avg. Reproduction Cost New Less Depreciation, etc	1.60%	8.01%	1.89%	7.56%	2.14%
(b) Rates in Suit based on — Average Book Cost	2.50%	12.55%	2.95%	11.93%	3.34%

* Represents actual taxes paid for the Year 1923 applicable to above operations after adjusting Federal Income Tax for difference between Depreciation, etc., Expense based on book costs and reproduction cost new, and is $254,770 less than the total amount accrued on the books for all taxes during that year.

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses and Net Income, also Rate of Return for the Year 1924

(Depreciation and Amortization of Landed Capital based on Reproduction Cost New with related changes in Federal Income Tax)

	Intrastate			Interstate	Total
	Exchange	Toll	Total	Toll	Chicago
Total Revenues	$36,561,362	$2,760,927	$39,322,289	$1,996,198	$41,318,487
Total Current Mtce., Traffic, Com'l., General and Miscellaneous Expenses	23,229,086	1,488,726	24,717,812	734,675	25,452,487
Depreciation	6,063,100	295,840	6,358,940	384,398	6,743,338
Taxes	3,252,918	265,762	3,518,680	265,970	*3,784,650
Other Expenses and Deductions	278,992	62,289	341,281	51,287	392,568
Total Expenses	32,824,096	2,112,617	34,936,713	1,436,330	36,373,043
Balance	3,737,266	648,310	4,385,576	559,868	4,945,444
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	277,665	....	277,665	....	277,665
Balance Available for Return under present rates	4,014,931	648,310	4,663,241	559,868	5,223,109
Less reduction under rates in suit	1,519,815	31,180	1,550,995	15,825	1,566,820
Balance Available for Return under rates in suit	2,495,116	617,130	3,112,246	544,043	3,656,289
Per Cent of Return under					
(a) Present Rates based on: Avg. Reproduction Cost New Less Depreciation, etc.	2.63%	8.81%	2.91%	7.10%	3.11%
(a) Present Rates based on: Average Book Cost	4.00%	13.42%	4.43%	10.90%	4.73%
(b) Rates in Suit based on: Avg. Reproduction Cost New Less Depreciation, etc.	1.63%	8.38%	1.94%	6.90%	2.18%
(b) Rates in Suit based on: Average Book Cost	2.48%	12.78%	2.96%	10.59%	3.31%

* Represents actual taxes paid for the Year 1924 applicable to above operations after adjusting Federal Income Tax for difference between Depreciation, etc., Expense based on book costs and reproduction cost new, and is $268,604 less than the total amount accrued on the books for all taxes during that year.

Exhibit A-55—Continued

[fol. 2911]

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses and Net Income, also Rate of Return for the Year 1925

(Depreciation and Amortization of Landed Capital based on Reproduction Cost New with related changes in Federal Income Tax)

	Intrastate			Interstate Toll	Total Chicago
	Exchange	Toll	Total		
Total Revenues	$38,955,695	$3,235,260	$42,190,955	$2,337,343	$44,528,298
Total Current Mtce., Traffic, Com'l., General and Miscellaneous Expenses	24,278,286	1,618,706	25,896,992	795,468	26,692,460
Depreciation	6,425,369	317,632	6,743,001	488,637	7,231,638
Taxes	3,807,727	342,657	4,150,384	333,700	*4,484,084
Other Expenses and Deductions	362,059	85,295	447,354	58,600	505,954
Total Expenses	34,873,441	2,364,290	37,237,731	1,676,405	38,914,136
Balance	4,082,254	870,970	4,953,224	660,938	5,614,162
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	313,261	....	313,261	....	313,261
Balance Available for Return under present rates	4,395,515	870,970	5,266,485	660,938	5,927,423
Less reduction under rates in suit	1,548,150	34,411	1,582,561	17,925	1,600,486
Balance Available for Return under rates in suit	2,847,365	836,559	3,683,924	643,013	4,326,937
Per Cent of Return under					
(a) Present Rates based on: Avg. Reproduction Cost New Less Depreciation, etc.	2.69%	10.47%	3.06%	6.96%	3.27%
(a) Present Rates based on: Average Book Cost	3.92%	15.35%	4.47%	10.25%	4.77%
(b) Rates in Suit based on: Avg. Reproduction Cost New Less Depreciation, etc.	1.74%	10.06%	2.14%	6.77%	2.39%
(b) Rates in Suit based on: Average Book Cost	2.54%	14.74%	3.13%	9.97%	3.48%

* Represents actual taxes paid for the Year 1925 applicable to above operations after adjusting Federal Income Tax for difference between Depreciation, etc., Expense based on book costs and reproduction cost new, and is $126,387 less than the total amount accrued on the books for all taxes during that year.

[fol. 2912]

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses and Net Income, also Rate of Return for the Year 1926

(Depreciation and Amortization of Landed Capital based on Reproduction Cost New with related changes in Federal Income Tax)

	Intrastate			Interstate	Total
	Exchange	Toll	Total	Toll	Chicago
Total Revenues	$41,852,401	$3,867,162	$45,719,563	$2,743,565	$48,463,128
Total Current Mtce., Traffic, Com'l., General and Miscellaneous Expenses	26,004,955	1,896,378	27,901,333	890,285	28,791,618
Depreciation	6,833,505	355,907	7,189,412	573,456	7,762,868
Taxes	4,282,695	428,266	4,710,961	406,832	*5,117,793
Other Expenses and Deductions	265,384	64,299	329,683	56,431	386,114
Total Expenses	37,386,539	2,744,850	40,131,389	1,927,004	42,058,393
Balance	4,465,862	1,122,312	5,588,174	816,561	6,404,735
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	174,858	....	174,858	....	174,858
Balance Available for Return under present rates	4,640,720	1,122,312	5,763,032	816,561	6,579,593
Less reduction under rates in suit	1,611,533	39,037	1,650,570	17,684	1,668,254
Balance Available for Return under rates in suit	3,029,187	1,083,275	4,112,462	798,877	4,911,339
Per Cent of Return under					
(a) Present Rates based on: Avg. Reproduction Cost New Less Depreciation, etc.	2.69%	12.09%	3.17%	7.45%	3.41%
(a) Present Rates based on: Average Book Cost	3.74%	16.84%	4.40%	10.43%	4.74%
(b) Rates in Suit based on: Avg. Reproduction Cost New Less Depreciation, etc.	1.76%	11.67%	2.26%	7.28%	2.55%
(b) Rates in Suit based on: Average Book Cost	2.44%	16.26%	3.14%	10.21%	3.54%

* Represents actual taxes paid for the Year 1926 applicable to above operations after adjusting Federal Income Tax for difference between Depreciation, etc., Expense based on book costs and reproduction cost new, and is $228,606 less than the total amount accrued on the books for all taxes during that year.

EXHIBIT A-55—Continued

[fol. 2913]

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses and Net Income, also Rate of Return for the Year 1927

(Depreciation and Amortization of Landed Capital based on Reproduction Cost New with related changes in Federal Income Tax)

	Intrastate			Interstate Toll	Total Chicago
	Exchange	Toll	Total		
Total Revenues	$44,617,047	$4,378,822	$48,995,869	$3,148,991	$52,144,860
Total Current Mtce., Traffic, Com'l., General and Miscellaneous Expenses	27,670,022	2,135,529	29,805,551	1,007,058	30,812,609
Depreciation	7,176,523	401,953	7,578,476	647,979	8,226,455
Taxes	4,631,544	479,173	5,110,717	468,303	*5,579,020
Other Expenses and Deductions	372,998	96,209	469,207	76,114	545,321
Total Expenses	39,851,087	3,112,864	42,963,951	2,199,454	45,163,405
Balance	4,765,960	1,265,958	6,031,918	949,537	6,981,455
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	144,041	....	144,041	....	144,041
Balance Available for Return under present rates	4,910,001	1,265,958	6,175,959	949,537	7,125,496
Less reduction under rates in suit	1,635,362	41,715	1,677,077	18,653	1,695,730
Balance Available for Return under rates in suit	$3,274,639	$1,224,243	$4,498,882	$930,884	$5,429,766
Per Cent of Return under					
(a) Present Rates based on Avg. Reproduction Cost New Less Depreciation, etc.	2.69%	11.81%	3.19%	7.64%	3.46%
(a) Present Rates based on Average Book Cost	3.56%	15.67%	4.23%	10.19%	4.58%
(b) Rates in Suit based on Avg. Reproduction Cost New Less Depreciation, etc.	1.79%	11.42%	2.33%	7.49%	2.64%
(b) Rates in Suit based on Average Book Cost	2.37%	15.16%	3.08%	9.99%	3.49%

* Represents actual taxes paid for the Year 1927 applicable to above operations after adjusting Federal Income Tax for difference between Depreciation, etc., Expense based on book costs and reproduction cost new, and is $488,678 less than the total amount accrued on the books for all taxes during that year.

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses and Net Income, also Rate of Return for the Year 1928

(Depreciation and Amortization of Landed Capital based on Reproduction Cost New with related changes in Federal Income Tax)

	Intrastate			Interstate Toll	Total Chicago
	Exchange	Toll	Total		
Total Revenues	$48,453,856	$5,013,414	$53,467,270	$4,248,800	$57,716,070
Total Current Mtce., Traffic, Com'l., General and Miscellaneous Expenses	29,644,011	2,410,334	32,054,345	1,760,904	33,815,249
Depreciation	7,498,008	462,009	7,960,017	756,842	8,716,859
Taxes	5,250,288	540,272	5,790,560	552,639	*6,343,199
Other Expenses and Deductions	459,037	144,453	603,490	109,994	713,484
Total Expenses	42,851,344	3,557,068	46,408,412	3,180,379	49,588,791
Balance	5,602,512	1,456,346	7,058,858	1,068,421	8,127,279
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	188,016	....	188,016	....	188,016
Balance Available for Return under present rates	5,790,528	1,456,346	7,246,874	1,068,421	8,315,295
Less reduction under rates in suit	1,668,214	45,087	1,713,301	20,809	1,734,110
Balance Available for Return under rates in suit	4,122,314	1,411,259	5,533,573	1,047,612	6,581,185
Per Cent of Return under					
(a) Present Rates based on: Avg. Reproduction Cost New Less Depreciation, etc.	3.00%	11.66%	3.53%	7.12%	3.77%
(a) Present Rates based on: Average Book Cost	3.86%	15.07%	4.54%	9.20%	4.86%
(b) Rates in Suit based on: Avg. Reproduction Cost New Less Depreciation, etc.	2.14%	11.30%	2.69%	6.98%	2.99%
(b) Rates in Suit based on: Average Book Cost	2.75%	14.60%	3.47%	9.02%	3.84%

* Represents actual taxes paid for the Year 1928 applicable to above operations after adjusting Federal Income Tax for difference between Depreciation, etc., Expense based on book costs and reproduction cost new, and is $292,253 less than the total amount accrued on the books for all taxes during that year.

[fol. 2915]

EXHIBIT A-55—Continued

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses and Net Income, also Rate of Return for the Year 1929

(Depreciation and Amortization of Landed Capital based on Reproduction Cost New with related changes in Federal Income Tax)

	Intrastate			Interstate Toll	Total Chicago
	Exchange	Toll	Total		
Total Revenues	$52,448,626	$5,583,287	$58,031,913	$7,634,313	$65,666,226
Total Current Mtce., Traffic, Com'l., General and Miscellaneous Expenses	30,569,340	2,818,313	33,387,653	4,384,583	37,772,236
Depreciation	7,576,113	550,616	8,126,729	874,176	9,000,905
Taxes	6,038,438	606,652	6,645,090	725,564	*7,370,654
Other Expenses and Deductions	391,644	127,495	519,139	134,652	653,791
Total Expenses	44,575,535	4,103,076	48,678,611	6,118,975	54,797,586
Balance	7,873,091	1,480,211	9,353,302	1,515,338	10,868,640
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	217,842	....	217,842	....	217,842
Balance Available for Return under present rates	8,090,933	1,480,211	9,571,144	1,515,338	11,086,482
Less reduction under rates in suit	1,693,349	47,233	1,740,582	21,854	1,762,436
Balance Available for Return under rates in suit	$6,397,584	$1,432,978	$7,830,562	$1,493,484	$9,324,046
Per Cent of Return under					
(a) Present Rates based on — Avg. Reproduction Cost New Less Depreciation, etc.	4.03%	10.03%	4.44%	8.14%	4.73%
(a) Present Rates based on — Average Book Cost	5.14%	12.89%	5.67%	10.46%	6.04%
(b) Rates in Suit based on — Avg. Reproduction Cost New Less Depreciation, etc.	3.18%	9.71%	3.63%	8.03%	3.98%
(b) Rates in Suit based on — Average Book Cost	4.06%	12.48%	4.64%	10.31%	5.08%

* Represents actual taxes paid for the Year 1929 applicable to above operations after adjusting Federal Income Tax for difference between Depreciation, etc., Expense based on book costs and reproduction cost new, and is $588,857 less than the total amount accrued on the books for all taxes during that year.

[fol. 2916]

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses and Net Income, also Rate of Return for the Year 1930

(Depreciation and Amortization of Landed Capital based on Reproduction Cost New with related changes in Federal Income Tax)

	Intrastate			Interstate	Total
	Exchange	Toll	Total	Interstate Toll	Total Chicago
Total Revenues	$52,710,944	$5,752,810	$58,463,754	$7,986,725	$66,450,479
Total Current Mtce., Traffic, Com'l., General and Miscellaneous Expenses	30,872,190	2,995,754	33,867,944	4,175,993	38,043,937
Depreciation	7,936,822	623,776	8,560,598	1,078,211	9,638,809
Taxes	6,444,386	666,326	7,110,712	876,752	*7,987,464
Other Expenses and Deductions	416,860	123,048	539,908	100,340	640,248
Total Expenses	45,670,258	4,408,904	50,079,162	6,231,296	56,310,458
Balance	7,040,686	1,343,906	8,384,592	1,755,429	10,140,021
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	221,691	....	221,691	....	221,691
Balance Available for Return under present rates	7,262,377	1,343,906	8,606,283	1,755,429	10,361,712
Less reduction under rates in suit	1,599,053	46,825	1,645,878	20,496	1,666,374
Balance Available for Return under rates in suit	$5,663,324	$1,297,081	$6,960,405	$1,734,933	$8,695,338
Per Cent of Return under					
(a) Present Rates based on Avg. Reproduction Cost New Less Depreciation, etc.	3.45%	7.96%	3.78%	8.05%	4.15%
(a) Present Rates based on Average Book Cost	4.40%	10.24%	4.83%	10.43%	5.32%
(b) Rates in Suit based on Avg. Reproduction Cost New Less Depreciation, etc.	2.69%	7.68%	3.06%	7.95%	3.49%
(b) Rates in Suit based on Average Book Cost	3.43%	9.88%	3.91%	10.31%	4.46%

* Represents actual payments for those taxes which have been paid and the latest estimate of unpaid taxes for the Year 1930 applicable to above operations after adjusting Federal Income Tax for difference between Depreciation, etc., Expense based on book costs and reproduction cost new, and is $44,025 more than the total amount accrued on the books for all taxes during that year.

[fol. 2917]

Exhibit A-55—Continued

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses and Net Income, also Rate of Return for the Year 1931

(Depreciation and Amortization of Landed Capital based on Reproduction Cost New with related changes in Federal Income Tax)

		Intrastate			Interstate Toll	Total Chicago
		Exchange	Toll	Total		
Total Revenues		$50,887,881	$5,366,875	$56,254,756	$7,535,843	$63,790,599
Total Current Mtce., Traffic, Com'l., General and Miscellaneous Expenses		28,872,149	2,885,913	31,758,062	3,698,920	35,456,982
Depreciation		8,251,465	661,778	8,913,243	1,188,291	10,101,534
Taxes		7,054,330	682,249	7,736,579	961,152	*8,697,731
Other Expenses and Deductions		506,786	127,315	634,101	103,553	737,654
Total Expenses		44,684,730	4,357,255	49,041,985	5,951,916	54,993,901
Balance		6,203,151	1,009,620	7,212,771	1,583,927	8,796,698
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes		236,661	....	236,661	....	236,661
Balance Available for Return under present rates		6,439,812	1,009,620	7,449,432	1,583,927	9,033,359
Less reduction under rates in suit		1,396,167	37,577	1,433,744	17,120	1,450,864
Balance Available for Return under rates in suit		5,043,645	972,043	6,015,688	1,566,807	7,582,495
Per Cent of Return under						
(a) Present Rates based on	Avg. Reproduction Cost New Less Depreciation, etc.	3.04%	5.82%	3.25%	6.74%	3.58%
	Average Book Cost	3.83%	7.38%	4.10%	8.61%	4.51%
(b) Rates in Suit based on	Avg. Reproduction Cost New Less Depreciation, etc.	2.38%	5.60%	2.63%	6.66%	3.00%
	Average Book Cost	3.00%	7.10%	3.31%	8.52%	3.79%

* Represents actual payments for those taxes which have been paid and the latest estimate of unpaid taxes for the Year 1931 applicable to above operations after adjusting Federal Income Tax for difference between Depreciation, etc., Expense based on book costs and reproduction cost new, and is $443,970 more than the total amount accrued on the books for all taxes during that period.

[fol. 2918] EXHIBIT A-56

Illinois Bell Telephone Company, Chicago Exchange

Company Stations

	Net Increase	No. in Service End of Period
Year 1923	52,851	691,545
" 1924	50,391	741,936
" 1925	48,828	790,764
" 1926	57,306	848,070
" 1927	55,390	903,460
" 1928	38,555	942,015
" 1929	45,876	987,891
" 1930	6,566*	981,325
Jan.-June 1931	19,015*	962,310

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* Decrease.

[fol. 2919]

Illinois Bell Telephone Company, Chicago Exchange

Company Stations

	Net Decrease During Period	No. in Service End of Period
Year 1931	41,844	939,481

(Here follows Exhibit A-57, side folios 2920 and 2921)

[fol. 2920]

Exhibit A-57

Illinois Bell Telephone Company, Chicago Exchange

Annual Gross Additions, Displacements, and Net Additions to Plant in Service and General Equipment

	1923			1924			1925			
	Gross Additions	Dis-placements	Net Additions	Gross Additions	Dis-placements	Net Additions	Gross Additions	Dis-placements	Net Additions	Gr Additi
Exchange Right of Way (207-01)	$23,662	$337	$23,325	$13,838	$206	$13,632	$16,853	$290	$16,563	$1
Toll Right of Way (207-02)	....	1	1*	10	6	4	....	28*	28	1,
Total	23,662	338	23,324	13,848	212	13,636	16,853	262	16,591	17,
Land (211)	336,031	....	336,031	6,789	9,425	2,636*	84,949	14,384	70,565	368,
Buildings (212)	349,301	38,367	310,934	1,199,309	129,504	1,069,805	489,331	30,877	458,454	474,
Total Land and Bldgs.	685,332	38,367	646,965	1,206,098	138,929	1,067,169	574,280	45,261	529,019	837,
C. O. Telephone Equipment (221)	8,404,804	483,441	7,921,363	2,931,083	546,616	2,384,467	6,390,640	410,316	5,980,324	5,511,
Other Equipment of C. O. (222)	102,500	41,793	60,707	148,454	53,896	94,558	178,819	74,799	104,020	266,
Total C. O. Equipment	8,507,304	525,234	7,982,070	3,079,537	600,512	2,479,025	6,569,459	485,115	6,084,344	5,778,
Station Apparatus (231)	2,262,763	1,184,968	1,077,795	2,573,514	1,41[illegible],776	1,157,738	2,945,003	1,905,584	1,039,419	3,113,
Station Installations (232)	1,362,369	668,741	693,628	1,475,256	[illegible]6,956	668,300	1,544,452	1,041,186	503,266	1,690,
Interior Block Wires (233)	25	....	25	26,260	3,948	22,312	16,080	7,918	8,162	21,
Private Branch Exchange (234)	1,194,347	600,253	594,094	1,505,454	735,316	770,138	1,899,632	849,660	1,049,972	1,705,
Booths and Special Fittings (235)	46,909	31,532	15,377	92,336	20,241	72,095	92,94[illegible]	21,053	71,896	83,
Total Station Equipment	4,866,413	2,485,494	2,380,919	5,672,820	2,982,237	2,690,583	6,498,116	3,825,401	2,672,715	6,614,
Exchange Pole Lines (241)	311,396	62,071	249,325	249,838	62,864	186,974	266,743	73,049	193,694	235,
" Aerial Cable (242)	353,510	118,335	235,175	587,563	162,198	425,365	831,493	213,042	618,451	811,
" " Wire (243)	450,023	121,574	328,449	477,021	217,489	259,532	522,833	236,680	286,153	612,
" Underground Conduit (244)	724,582	25,221	699,361	640,100	19,707	620,393	1,380,375	47,495	1,332,880	1,599,
" " Cable (245)	2,162,176	347,741	1,814,435	3,048,798	430,031	2,618,767	3,919,410	7[illegible]8,331	3,181,079	3,621,
" Submarine Cable (246)	145	....	145	5,333	....	5,333	1,175	....	1,175	....
Total Exchange Lines	4,001,832	674,942	3,326,890	5,008,653	892,289	4,116,364	6,922,029	1,308,597	5,613,432	6,880,
Toll Pole Lines (251)	59,667*	1,089	60,756*	1,791	1,300	491	1,417	8,346	6,929*	5,
" Aerial Cable (252)	10,263*	....	10,263*	9	1,758	1,749*	33	....	33	5,
" " Wire (253)	74,199*	23	74,222*	838	198	640	364	17,558	17,194*	3,
" Underground Conduit (254)	88,669*	....	88,669*	207	....	207	12,054	1,423	10,631	496,
" " Cable (255)	60,377*	4,745	65,122*	209,489	9,495	199,994	23[illegible],087	11,040	226,047*	655,
" Submarine " (256)	....	....	....	....	....	....	....	....	....	....
Total Toll Lines	293,175*	5,857	299,032*	212,334	12,751	199,583	250,955	38,367	212,588	162,
Interest During Construction (268)	157,392	....	157,392	65,600	....	65,600	174,948	....	174,948	108,
Undistributed Construction Expenditures (270)	16,809	....	16,809	34,162	....	34,162	49,176	11,736	37,440	5,
Total Plant in Service	$17,965,569	$3,730,232	$14,235,337	$15,293,052	$4,626,930	$10,666,122	$21,055,816	$5,714,739	$15,341,077	$20,406,
Office Furniture and Fixtures (261)	138,908	33,475	105,433	150,573	47,042	103,531	99,450	23,513	75,937	146,
General Store Equipment (263)	5,572	3,416	2,156	2,269	595	1,674	1,230	935	295	
" Stable and Garage Equipment (264)	152,907	80,922	71,985	84,334	62,646	21,688	61,711	49,028	12,683	129,
" Tools and Implements (265)	172,683	129,991	42,692	213,129	163,937	49,192	223,975	148,126	75,849	242,
Total Plant in Service and General Equipment	$18,435,639	$3,978,036	$14,457,603	$15,743,357	$4,901,150	$10,842,207	$21,442,182	$5,936,341	$15,505,841	$20,924,

* Red.

Exhibit A-57

Illinois Bell Telephone Company, Chicago Exchange

Annual Gross Additions, Displacements, and Net Additions to Plant in Service and General Equipment

	1923			1924			1925			1926		
	Gross Additions	Dis-placements	Net Additions	Gross Additions	Dis-placements	Net Additions	Gross Additions	Dis-placements	Net Additions	Gross Additions	Dis-placements	Net Additions
	$23,662	$337	$23,325	$13,838	$206	$13,632	$16,853	$290	$16,563	$16,763	$252	$16,511
		1	1*	10	6	4		28*	28	1,228		1,228
	23,662	338	23,324	13,848	212	13,636	16,853	262	16,591	17,991	252	17,739
	336,031		336,031	6,789	9,425	2,636*	84,949	14,384	70,565	363,045		363,045
	349,301	38,367	310,934	1,199,309	129,504	1,069,805	489,331	30,877	458,454	474,755	139,528	335,227
	685,332	38,367	646,965	1,206,098	138,929	1,067,169	574,280	45,261	529,019	837,800	139,528	698,272
	8,404,804	483,441	7,921,363	2,931,083	546,616	2,384,467	6,390,640	410,316	5,980,324	5,511,905	212,682	5,299,223
	102,500	41,793	60,707	148,454	53,896	94,558	178,819	74,799	104,020	266,894	54,751	212,143
	8,507,304	525,234	7,982,070	3,079,537	600,512	2,479,025	6,569,459	485,115	6,084,344	5,778,799	267,433	5,511,366
	2,262,763	1,184,968	1,077,795	2,573,514	1,415,776	1,157,738	2,945,003	1,905,584	1,039,419	3,113,065	2,148,508	964,557
	1,362,369	668,741	693,628	1,475,256	806,956	668,300	1,544,452	1,041,186	503,266	1,690,858	1,115,888	574,970
	25		25	26,260	3,948	22,312	16,080	7,918	8,162	21,597	6,137	15,460
	1,194,347	600,253	594,094	1,505,454	735,316	770,138	1,899,632	849,660	1,049,972	1,705,109	891,346	813,763
	46,909	31,532	15,377	92,336	20,241	72,095	92,949	21,053	71,896	83,772	32,320	51,452
	4,866,413	2,485,494	2,380,919	5,672,820	2,982,237	2,690,583	6,498,116	3,825,401	2,672,715	6,614,401	4,194,199	2,420,202
	311,396	62,071	249,325	249,838	62,864	186,974	266,743	73,049	193,694	235,352	68,073	167,279
	353,510	118,335	235,175	587,563	162,198	425,365	831,493	213,042	618,451	811,933	236,339	575,594
	450,023	121,574	328,449	477,021	217,489	259,532	522,833	236,680	286,153	612,536	351,828	260,708
	724,582	25,221	699,361	640,100	19,707	620,393	1,380,375	47,495	1,332,880	1,599,102	54,346	1,544,756
	2,162,176	347,741	1,814,435	3,048,798	430,031	2,618,767	3,919,410	738,331	3,181,079	3,621,972	784,961	2,837,011
	145		145	5,333		5,333	1,175		1,175			
	4,001,832	674,942	3,326,890	5,008,653	892,289	4,116,364	6,922,029	1,308,597	5,613,432	6,880,895	1,495,547	5,385,348
	59,667*	1,089	60,756*	1,791	1,300	491	1,417	8,346	6,929*	5,491	13,326	7,835*
	10,263*		10,263*	9	1,758	1,749*	33		33	5,942*		5,942*
	74,199*	23	74,222*	838	198	640	364	17,558	17,194*	3,550	24,586	21,036*
	88,669*		88,669*	207		207	12,054	1,423	10,631	496,926*		496,926*
	60,377*	4,745	65,122*	209,489	9,495	199,994	237,087	11,040	226,047	655,869	33,374	622,495
	293,175*	5,857	299,032*	212,334	12,751	199,583	250,955	38,367	212,588	162,042	71,286	90,756
	157,392		157,392	65,600		65,600	174,948		174,948	108,433		108,433
70)	16,809		16,809	34,162		34,162	49,176	11,736	37,440	5,941	12,234	6,293*
	$17,965,569	$3,730,232	$14,235,337	$15,293,052	$4,626,930	$10,666,122	$21,055,816	$5,714,739	$15,341,077	$20,406,302	$6,180,479	$14,225,823
	138,908	33,475	105,433	150,573	47,042	103,531	99,450	23,513	75,937	146,233	86,444	59,789
	5,572	3,416	2,156	2,269	595	1,674	1,230	935	295	846	341	505
)	152,907	80,922	71,985	84,334	62,046	21,688	61,711	49,028	12,683	129,032	57,585	71,447
	172,683	129,991	42,692	213,129	163,937	49,192	223,975	148,126	75,849	242,285	177,476	64,809
quipment	$18,435,639	$3,978,036	$14,457,603	$15,743,357	$4,901,150	$10,842,207	$21,442,182	$5,936,341	$15,505,841	$20,924,698	$6,502,325	$14,422,373

Illinois Bell Telephone Company, Chicago Exchange

Annual Gross Additions, Displacements, and Net Additions to Plant in Service and General Equipment

	1927			1928			1929			
	Gross Additions	Dis-placements	Net Additions	Gross Additions	Dis-placements	Net Additions	Gross Additions	Dis-placements	Net Additions	Gross Additions
Exchange Right of Way (207-01)	$17,923	$283	$17,640	$25,874	$1,524	$24,350	$24,437	$1,491	$22,946	$24,364
Toll Right of Way (207-02)	....	....	....	2,127*	79	2,206*	17	....	17	52
Total	17,923	283	17,640	23,747	1,603	22,144	24,454	1,491	22,963	24,416
Land (211)	145,649	2,443	143,206	259,809*	36,924	296,733*	247,246	33,851	213,395	16,275
Buildings (212)	638,968	241,392	397,576	1,276,009	96,444	1,179,565	717,519	236,272	481,247	1,435,507
Total Land and Bldgs.	784,617	243,835	540,782	1,016,200	133,368	882,832	964,765	270,123	694,642	1,451,782
C. O. Telephone Equipment (221)	3,916,229	548,847	3,367,382	7,216,617	818,367	6,398,250	8,607,524	4,552,317	4,055,207	3,793,335
Other Equipment of C. O. (222)	184,148	153,897	30,251	269,792	61,740	208,052	314,217	113,591	200,626	246,382
Total C. O. Equipment	4,100,377	702,744	3,397,633	7,486,409	880,107	6,606,302	8,921,741	4,665,908	4,255,833	4,039,717
Station Apparatus (231)	5,893,658	2,396,145	3,497,513	5,260,510	4,126,570	1,133,940	5,182,765	4,431,767	750,998	4,445,243
Station Installations (232)	1,600,836	1,259,017	341,819	1,865,563	1,400,489	465,074	2,030,988	1,470,696	560,292	1,706,889
Interior Block Wires (233)	25,331	3,353	21,978	29,747	6,175	23,572	41,882	21,389	20,493	45,549
Private Branch Exchanges (234)	2,048,540	971,921	1,076,619	2,248,183	1,402,987	845,196	2,496,584	1,713,497	783,087	2,138,790
Booths and Special Fittings (235)	99,095	26,273	72,822	96,663	32,159	64,504	251,228	83,052	168,176	420,722
Total Station Equipment	9,667,460	4,656,709	5,010,751	9,500,666	6,968,380	2,532,286	10,003,447	7,720,401	2,283,046	8,757,193
Exchange Pole Lines (241)	270,799	86,132	184,667	221,859	176,602	45,257	262,081	135,047	127,034	245,104
" Aerial Cable (242)	735,708	307,279	428,429	697,065	377,918	319,147	570,232	302,102	268,130	550,846
" " Wire (243)	532,028	328,946	203,082	487,469	338,282	149,187	558,603	263,318	295,285	509,462
" Underground Conduit (244)	1,169,898	75,605	1,094,293	836,077	49,801	786,276	1,251,597	15,030	1,236,567	1,045,421
" " Cable (245)	4,045,389	851,218	3,194,171	3,262,073	1,131,973	2,130,100	2,204,848	666,789	1,538,059	2,685,403
" Submarine Cable (246)	718	....	718	685*	....	685*	6,560	333	6,227	231*
Total Exchange Lines	6,754,540	1,649,180	5,105,360	5,503,858	2,074,576	3,429,282	4,853,921	1,382,619	3,471,302	5,036,005
Toll Pole Lines (251)	7,799*	9,536	17,335*	3,238	7,549	4,311*	2,056	12,473	10,417*	4,376
" Aerial Cable (252)	3,641	....	3,641	119	....	119	19,909	311	19,598	760
" " Wire (253)	638	12,208	11,570*	6,848	5,733	1,115	2,159	12,714	10,555*	754
" Underground Conduit (254)	25,074	326	24,748	3,594	249	3,345	393,933	245	393,688	74,146
" " Cable (255)	386,679	18,213	368,466	549,582	67,488	482,094	954,307	64,972	889,335	837,384
" Submarine " (256)	....	....	....	573	....	573	6,272	....	6,272	376*
Total Toll Lines	408,233	40,283	367,950	563,954	81,019	482,935	1,378,636	90,715	1,287,921	917,044
Interest During Construction (268)	90,248	9,193	81,055	315,818	15,592	300,226	284,690	48,004	236,686	128,967
Undistributed Construction Expenditures (270)	25,987	4,291	21,696	26,237*	16,434	42,671*	11,975*	368	12,343*	1,042*
Total Plant in Service	$21,849,385	$7,306,518	$14,542,867	$24,384,415	$10,171,079	$14,213,336	$26,419,679	$14,179,629	$12,240,050	$20,354,082
Office Furniture and Fixtures (261)	289,867	58,218	231,649	299,595	92,099	207,496	320,215	82,060	238,155	281,567
General Store Equipment (263)	858	183	675	29,671	2,117	27,554	9,213	2,906	6,307	1,709
" Stable and Garage Equipment (264)	120,843	62,148	58,695	141,450	118,707	22,743	179,929	157,229	22,700	55,711
" Tools and Implements (265)	206,055	202,545	3,510	322,666	298,041	24,625	195,416	294,057	98,641*	191,149
Total Plant in Service and General Equipment	$22,467,008	$7,629,612	$14,837,396	$25,177,797	$10,682,043	$14,495,754	$27,124,452	$14,715,881	$12,408,571	$20,884,218

*Red.

Illinois Bell Telephone Company, Chicago Exchange

Annual Gross Additions, Displacements, and Net Additions to Plant in Service and General Equipment

1927			1928			1929			1930		
Gross Additions	Displacements	Net Additions	Gross Additions	Displacements	Net Additions	Gross Additions	Displacements	Net Additions	Gross Additions	Displacements	Net Additions
$17,923	$283	$17,640	$25,874	$1,524	$24,350	$24,437	$1,491	$22,946	$24,364	$2,304	$22,060
....	....	....	2,127*	79	2,206*	17	....	17	52	....	52
17,923	283	17,640	23,747	1,603	22,144	24,454	1,491	22,963	24,416	2,304	22,112
145,649	2,443	143,206	259,809*	36,924	296,733*	247,246	33,851	213,395	16,275	....	16,275
638,968	241,392	397,576	1,276,009	96,444	1,179,565	717,519	236,272	481,247	1,435,507	58,869	1,376,638
784,617	243,835	540,782	1,016,200	133,368	882,832	964,765	270,123	694,642	1,451,782	58,869	1,392,913
3,916,229	548,847	3,367,382	7,216,617	818,367	6,398,250	8,607,524	4,552,317	4,055,207	3,793,335	1,385,708	2,407,627
184,148	153,897	30,251	269,792	61,740	208,052	314,217	113,591	200,626	246,382	335,014	88,632*
4,100,377	702,744	3,397,633	7,486,409	880,107	6,606,302	8,921,741	4,665,908	4,255,833	4,039,717	1,720,722	2,318,995
5,893,658	2,396,145	3,497,513	5,260,510	4,126,570	1,133,940	5,182,765	4,431,767	750,998	4,445,243	4,855,098	409,855*
1,600,836	1,259,017	341,819	1,865,563	1,400,489	465,074	2,030,988	1,470,696	560,292	1,706,889	1,705,525	1,364
25,331	3,353	21,978	29,747	6,175	23,572	41,882	21,389	20,493	45,549	18,543	27,006
2,048,540	971,921	1,076,619	2,248,183	1,402,987	845,196	2,496,584	1,713,497	783,087	2,138,790	1,606,921	531,869
99,095	26,273	72,822	96,663	32,159	64,504	251,228	83,052	168,176	420,722	120,812	299,910
9,667,460	4,656,709	5,010,751	9,500,666	6,968,380	2,532,286	10,003,447	7,720,401	2,283,046	8,757,193	8,306,899	450,294
270,799	86,132	184,667	221,859	176,602	45,257	262,081	135,047	127,034	245,104	171,628	73,476
735,708	307,279	428,429	697,065	377,918	319,147	570,232	302,102	268,130	550,846	332,291	218,555
532,028	328,946	203,082	487,469	338,282	149,187	558,603	263,318	295,285	509,462	317,537	191,925
1,169,898	75,605	1,094,293	836,077	49,801	786,276	1,251,597	15,030	1,236,567	1,045,421	49,925	995,496
4,045,389	851,218	3,194,171	3,262,073	1,131,973	2,130,100	2,204,848	666,789	1,538,059	2,685,403	816,246	1,869,157
718	....	718	685*	....	685*	6,560	333	6,227	231*	299	530*
6,754,540	1,649,180	5,105,360	5,503,858	2,074,576	3,429,282	4,853,921	1,382,619	3,471,302	5,036,005	1,687,926	3,348,079
7,799*	9,536	17,335*	3,238	7,549	4,311*	2,056	12,473	10,417*	4,376	1,468	2,908
3,641	....	3,641	119	....	119	19,909	311	19,598	760	364	396
638	12,208	11,570*	6,848	5,733	1,115	2,159	12,714	10,555*	754	3,627*	4,381
25,074	326	24,748	3,594	249	3,345	393,933	245	393,688	74,146	21	74,125
386,679	18,213	368,466	549,582	67,488	482,094	954,307	64,972	889,335	837,384	31,411	805,973
....	....	....	573	....	573	6,272	....	6,272	376*	....	376*
408,233	40,283	367,950	563,954	81,019	482,935	1,378,636	90,715	1,287,921	917,044	29,637	887,407
90,248	9,193	81,055	315,818	15,592	300,226	284,690	48,004	236,686	128,967	27,076	101,891
25,987	4,291	21,696	26,237*	16,434	42,671*	11,975*	368	12,343*	1,042*	....	1,042*
21,849,385	$7,306,518	$14,542,867	$24,384,415	$10,171,079	$14,213,336	$26,419,679	$14,179,629	$12,240,050	$20,354,082	$11,833,433	$8,520,649
289,867	58,218	231,649	299,595	92,099	207,496	320,215	82,060	238,155	281,567	140,014	141,553
858	183	675	29,671	2,117	27,554	9,213	2,906	6,307	1,709	530	1,179
120,843	62,148	58,695	141,450	118,707	22,743	179,929	157,229	22,700	55,711	78,838	23,127*
206,055	202,545	3,510	322,666	298,041	24,625	195,416	294,057	98,641*	191,149	202,798	11,649*
22,467,008	$7,629,612	$14,837,396	$25,177,797	$10,682,043	$14,495,754	$27,124,452	$14,715,881	$12,408,571	$20,884,218	$12,255,613	$8,628,605

[fol. 2922] Illinois Bell Telephone Company, Chicago Exchange

Gross Additions, Displacements, and Net Additions to Plant in Service and General Equipment, Year 1931

	Gross Additions	Displacements	[illegible]
Exchange Right of Way (207-01)	$23,913	$1,338	[illegible]
Toll Right of Way (207-02)	....	....	[illegible]
Total	23,913	1,338	[illegible]
Land (211)	201,928	24,493	17[illegible]
Buildings (212)	70,669	92,685	22,01[illegible]
Total Land and Bldgs	272,597	117,178	155,419
C. O. Telephone Equipment (221)	4,953,884	2,235,574	2,718,310
Other Equipment of C. O. (222)	59,039	134,446	75,407*
Total C. O. Equipment	5,012,923	2,370,020	2,642,903
Station Apparatus (231)	4,694,615	5,143,412	448,797*
Station Installations (232)	1,553,798	1,730,763	176,965*
Interior Block Wires (233)	51,434	12,290	39,144
Private Branch Exchanges (234)	1,522,419	1,570,482	48,063*
Booths and Special Fittings (235)	430,905	166,289	264,616
Total Station Equipment	8,253,171	8,623,236	370,065*
Exchange Pole Lines (241)	173,284	121,216	52,068
“ Aerial Cable (242)	242,521	203,573	38,768
“ “ Wire (243)	494,097	306,592	187,505
“ Underground Conduit (244)	685,119	22,532	662,587
“ “ Cable (245)	1,281,975	719,233	562,742
“ Submarine Cable (246)	41,295	....	41,295
Total Exchange Lines	2,918,291	1,373,326	1,544,965
Toll Pole Lines (251)	1,696	4,129	2,433*
“ Aerial Cable (252)	21	....	21
“ “ Wire (253)	29,975*	4,195	34,170*
“ Underground Conduit (254)	....	....	....
“ “ Cable (255)	201,459	80,123	121,336
“ Submarine Cable (256)	....	....	....
Total Toll Lines	173,201	88,447	84,754
Int[illegible] During Construction (268)	154,867	35,295	119,572
Undistributed Construction Expenditures (270)	2,937	4,082	1,145*
Total Plant in Service	$16,811,900	$12,612,922	$4,198,978
Office Furniture and Fixtures (261)	111,229	46,508	64,721
General Store Equipment (263)	370	2,401	2,031*
“ Stable and Garage Equipment (264)	65,390	122,541	57,151*
“ Tools and Implements (265)	119,368	187,937	68,569*
Total Plant in Service and General Equipment	$17,108,257	$12,972,309	$4,135,948

*Red.

(Here follows Exhibit A-58, side folios 2923 and 2[illegible]24)

[fol. 2923]

Exhibit A–58

Illinois Bell Telephone Company

Plant and General Equipment Accounts for the Chicago and State Areas as of the end of Each Year from 1923 to 1926, Inclusive

		December 31, 1923		December 31, 1924		December 31, 1925		December 31, 1926	
		Chicago Area	State Area	Chicago Area	State Area	Chicago Area	State Area	Chicago Area	State Area
207–01	Exchange Right of Way	$260,043	$184,051	$273,675	$207,198	$290,238	$229,713	$306,748	$268,170
207–02	Toll Right of Way	1,661	147,996	1,665	148,481	1,693	172,913	2,921	185,988
	Total Right of Way	261,704	332,047	275,340	355,679	291,931	402,626	309,669	454,158
211	Land	1,685,671	483,217	1,683,035	495,014	1,753,600	493,562	2,116,644	490,732
212	Buildings	9,423,101	1,554,171	10,492,906	1,704,841	10,951,361	2,547,551	11,286,589	2,681,432
	Total Land and Buildings	11,108,772	2,037,388	12,175,941	2,199,855	12,704,961	3,041,113	13,403,233	3,172,164
221	C. O. Telephone Equipment	27,465,377	7,010,754	29,849,844	7,863,497	35,830,167	9,219,231	41,129,391	10,273,034
222	Other Equipment of C. O	892,698	219,166	987,256	255,506	1,091,276	307,843	1,303,418	367,799
	Total C. O. Equipment	28,358,075	7,229,920	30,837,100	8,119,003	36,921,443	9,527,074	42,432,809	10,640,833
231	Station Apparatus	8,903,600	2,568,728	10,061,338	2,925,649	11,100,757	3,301,081	12,065,315	3,633,633
232	Station Installations	6,190,460	1,466,390	6,858,760	1,627,003	7,362,026	1,769,849	7,936,996	1,910,074
233	Interior Block Wires	25,075	24,490	47,387	38,287	55,549	41,470	71,009	46,559
234	Private Branch Exchanges	5,078,553	593,113	5,848,691	666,263	6,898,663	742,676	7,712,426	868,537
235	Booths and Special Fittings	265,673	68,464	337,768	89,899	409,664	121,182	461,116	146,536
	Total Station Equipment	20,463,361	4,721,104	23,153,944	5,347,101	25,826,659	5,976,258	28,246,862	6,605,339
241	Exchange Pole Lines	2,223,099	5,036,473	2,410,072	5,487,968	2,603,766	5,953,406	2,771,046	6,609,760
242	Exchange Aerial Cable	3,115,604	4,152,065	3,540,969	4,615,647	4,159,420	5,230,892	4,735,013	6,284,983
243	Exchange Aerial Wire	2,224,745	3,151,531	2,484,277	3,384,770	2,770,431	3,554,183	3,031,139	3,771,397
244	Exchange Underground Conduit	9,693,083	2,427,620	10,313,476	2,580,377	11,646,356	2,989,588	13,191,112	3,363,161
245	Exchange Underground Cable	18,494,053	3,281,526	21,112,820	3,650,690	24,293,899	4,201,475	27,130,910	4,971,478
246	Exchange Submarine Cable	1,011	5,836	6,345	5,836	7,519	7,519	7,519	6,371
	Total Exchange Lines	35,751,595	18,055,051	39,867,959	19,725,288	45,481,391	21,937,018	50,866,739	25,007,150
251	Toll Pole Lines	87,226	4,196,658	87,717	4,082,365	80,788	4,321,593	72,953	4,352,996
252	Toll Aerial Cable	7,659	819,832	5,910	1,126,556	5,942	1,600,511	....	2,311,844
253	Toll Aerial Wire	125,283	3,517,991	125,924	3,328,483	108,730	3,313,599	87,693	3,023,786
254	Toll Underground Conduit	507,639	987,067	507,846	1,019,834	518,477	1,064,696	21,552	1,113,305
255	Toll Underground Cable	1,302,416	1,667,152	1,502,409	1,749,399	1,728,457	2,166,707	2,350,952	2,527,776
256	Toll Submarine Cable	....	19,235	....	21,464	....	30,013	....	31,012
	Total Toll Lines	2,030,223	11,207,935	2,229,806	11,328,101	2,442,394	12,497,119	2,533,150	13,360,719
268	Interest During Construction	644,083	100,208	709,683	116,399	884,631	164,360	993,064	197,864
270	Undistributed Construction Expenditures	17,859	....	52,021	....	89,461	473	83,168	1,321
	Total Plant in Service	98,635,672	43,683,653	109,301,794	47,191,426	124,642,871	53,546,041	138,868,694	59,439,548
104	Construction Work in Progress	812,543	370,222	2,100,245	925,603	1,390,296	466,142	775,279	643,839
	Total Plant	99,448,215	44,053,875	111,402,039	48,117,029	126,033,167	54,012,183	139,643,973	60,083,387
261	Office Furniture and Fixtures	757,956	237,658	861,486	283,409	937,423	324,293	997,212	251,009
262	General Shop Equipment	....	....	....	....	....	....	....	....
263	General Store Equipment	20,236	25,497	21,911	25,894	22,206	27,437	22,711	31,029
264	General Stable and Garage Equipment	459,240	475,477	480,928	480,066	493,611	541,550	565,058	623,603
265	General Tools and Implements	272,315	233,615	321,507	259,326	397,356	305,293	462,165	347,772
	Total General Equipment	1,509,747	972,247	1,685,832	1,048,695	1,850,596	1,198,573	2,047,146	1,253,413
	Total Plant and General Equipment	$100,957,962	$45,026,122	$113,087,871	$49,165,724	$127,883,763	$55,210,756	$141,691,119	$61,336,800

A-58, P-2

Illinois Bell Telephone Company

Plant and General Equipment Accounts for the Chicago and State Areas as of the end of Each Year from 1927 to 1930, Inclusive

		December 31, 1927		December 31, 1928		December 31, 1929		December 31, 1930	
		Chicago Area	State Area	Chicago Area	State Area	Chicago Area	State Area	Chicago Area	State Area
207-01	Exchange Right of Way	$324,388	$299,007	$348,739	$346,535	$371,685	$414,481	$393,745	$469,307
207-02	Toll Right of Way	2,921	204,081	715	247,551	732	285,468	783	320,624
	Total Right of Way	327,309	503,088	349,454	594,086	372,417	699,949	394,528	789,931
211	Land	2,259,851	706,428	1,963,117	780,205	2,176,513	851,440	2,192,788	992,167
212	Buildings	11,684,164	2,822,613	12,863,730	3,387,895	13,344,977	4,018,052	14,721,615	4,917,625
	Total Land and Buildings	13,944,015	3,529,041	14,826,847	4,168,100	15,521,490	4,869,492	16,914,403	5,909,792
221	C. O. Telephone Equipment	44,496,773	11,624,007	50,895,022	13,639,767	54,950,229	14,948,208	57,357,857	17,028,991
222	Other Equipment of C. O.	1,333,669	404,181	1,541,722	492,489	1,742,348	623,055	1,653,715	743,604
	Total C. O. Equipment	45,830,442	12,028,188	52,436,744	14,132,256	56,692,577	15,571,263	59,011,572	17,772,595
231	Station Apparatus	15,562,829	4,958,215	16,696,769	5,591,114	17,447,767	6,087,946	17,037,912	6,480,252
232	Station Installations	8,278,815	1,973,347	8,743,889	2,122,085	9,304,181	2,253,170	9,305,545	2,295,455
233	Interior Block Wires	92,987	49,994	116,559	58,570	137,052	63,506	164,057	69,253
234	Private Branch Exchange	8,789,044	1,041,253	9,634,240	1,224,358	10,417,327	1,381,278	10,949,197	1,609,347
235	Booths and Special Fittings	533,938	175,984	598,441	207,129	766,617	258,698	1,066,528	340,171
	Total Station Equipment	33,257,613	8,198,793	35,789,898	9,203,256	38,072,944	10,044,598	38,523,239	10,794,478
241	Exchange Pole Lines	2,955,713	7,206,929	3,000,970	8,027,431	3,128,005	8,642,475	3,201,481	8,969,953
242	Exchange Aerial Cable	5,163,442	7,111,953	5,482,590	8,189,398	5,750,720	9,072,566	5,969,274	9,759,232
243	Exchange Aerial Wire	3,234,221	3,821,396	3,383,408	4,057,282	3,678,692	4,169,867	3,870,616	4,002,994
244	Exchange Underground Conduit	14,285,405	3,863,581	15,071,680	4,352,781	16,308,248	5,061,048	17,303,744	5,624,205
245	Exchange Underground Cable	30,325,081	5,768,797	32,455,181	6,319,582	33,993,240	6,967,868	35,862,398	7,522,296
246	Exchange Submarine Cable	8,237	8,289	7,552	7,394	13,779	9,337	13,249	12,996
	Total Exchange Lines	55,972,099	27,780,945	59,401,381	30,953,868	62,872,684	33,923,161	66,220,762	35,891,676
251	Toll Pole Lines	55,619	4,236,307	51,308	4,251,336	40,891	4,391,600	43,799	4,469,615
252	Toll Aerial Cable	3,641	2,884,296	3,759	3,420,213	23,357	3,955,717	23,753	4,627,219
253	Toll Aerial Wire	76,123	2,885,654	77,238	2,857,964	66,683	2,875,383	71,063	2,820,855
254	Toll Underground Conduit	46,300	1,192,647	49,645	1,512,886	443,332	1,833,875	517,458	2,087,340
255	Toll Underground Cable	2,719,417	3,052,384	3,201,511	3,517,506	4,090,846	3,853,973	4,896,819	4,514,615
256	Toll Submarine Cable	....	29,335	574	33,529	6,846	43,981	6,470	56,718
	Total Toll Lines	2,901,100	14,280,622	3,384,035	15,593,434	4,671,955	16,954,529	5,559,362	18,576,362
268	Interest During Construction	1,074,119	236,514	1,374,345	268,966	1,611,030	340,708	1,712,922	407,019
270	Undistributed Construction Expenditures	104,864	2,519	62,193	3,335	49,850	2,611	48,808	1,080
	Total Plant in Service	153,411,561	66,559,710	167,624,897	74,917,301	179,864,947	82,406,311	188,385,596	90,142,933
104	Construction Work in Progress	5,192,260	561,829	3,275,755	1,154,424	1,974,688	1,050,716	4,415,765	1,021,080
	Total Plant	158,603,821	67,121,539	170,900,652	76,071,725	181,839,635	83,457,027	192,801,361	91,164,013
261	Office Furniture and Fixtures	1,228,861	305,420	1,436,357	342,492	1,674,513	367,014	1,816,065	393,886
262	General Shop Equipment	....	....	....	....	....	....	....	....
263	General Store Equipment	23,386	28,449	50,940	29,216	57,246	26,702	58,426	28,413
264	General Stable and Garage Equipment	623,753	665,775	646,497	709,378	669,196	756,724	646,068	717,826
265	General Tools and Implements	465,675	366,976	490,299	400,609	391,659	367,524	380,010	375,022
	Total General Equipment	2,341,675	1,366,620	2,624,093	1,481,695	2,792,614	1,517,964	2,900,569	1,515,147
	Total Plant and General Equipment	$160,945,496	$68,488,159	$173,524,745	$77,553,420	$184,632,249	$84,974,991	$195,701,930	$92,679,160

[fol. 2925] A-58, P. 3

Illinois Bell Telephone Company

Plant and General Equipment Accounts for the Chicago and State Areas as of December 31, 1931

		Chicago Area	State Area
207-01	Exchange Right of Way	$416,319	$530,341
207-02	Toll Right of Way	784	344,904
	Total Right of Way	417,103	875,245
211	Land	2,370,223	1,132,562
212	Buildings	14,699,599	5,231,811
	Total Land and Buildings	17,069,822	6,364,373
221	Central Office Equipment	60,076,167	18,091,413
222	Other Equipment of Central Offices	1,578,308	717,834
	Total Central Office Equipment	61,654,475	18,809,247
231	Station Apparatus	16,589,115	6,639,162
232	Station Installations	9,128,580	2,308,387
233	Interior Block Wires	203,202	85,124
234	Private Branch Exchanges	10,901,134	1,687,452
235	Booths and Special Fittings	1,331,143	432,182
	Total Station Equipment	38,153,174	11,152,307
241	Exchange Pole Lines	3,253,549	9,266,061
242	Exchange Aerial Cable	6,008,043	9,681,932
243	Exchange Aerial Wire	4,058,121	3,850,535
244	Exchange Underground Conduit	17,966,330	6,104,371
245	Exchange Underground Cable	36,425,140	7,885,643
246	Exchange Submarine Cable	54,544	13,034
	Total Exchange Lines	67,765,727	36,801,576
251	Toll Pole Lines	41,365	4,569,238
252	Toll Aerial Cable	23,775	4,873,827
253	Toll Aerial Wire	36,893	2,853,371
254	Toll Underground Conduit	517,458	2,157,336
255	Toll Underground Cable	5,018,155	4,869,330
256	Toll Submarine Cable	6,470	58,777
	Total Toll Lines	5,644,116	19,381,879
268	Interest During Construction	1,832,494	442,027
270	Undistributed Construction Expenditures	47,663	964
	Total Plant in Service	192,584,574	93,827,618
104	Construction Work in Progress	441,956	222,936
	Total Plant	193,026,530	94,050,554
261	Office Furniture and Fixtures	1,880,787	393,258
263	General Store Equipment	56,394	28,957
264	General Stable and Garage Equipment	588,918	616,485
265	General Tools and Implements	311,441	306,256
	Total General Equipment	2,837,540	1,344,956
	Total Plant and General Equipment	$195,864,070	$95,395,510

(Here follows Exhibit A-59, side folio 2926.)

[fol. 2926]

Exhibit A-59

Illinois Bell Telephone Company, Chicago Exchange

Comparison of Commission's Allowance for Maintenance and Depreciation with (a) Actual Charges for Maintenance and Depreciation Accruals per Company's Books and (b) Actual Charges for Maintenance and Retirements per Company's Books

	1923	1924	1925	1926	1927	1928	1929	1930
Plant and Equipment in Service—End of Year	$100,145,419	$110,987,626	$126,493,467	$140,915,840	$155,753,236	$170,248,990	$182,657,561	$191,286,165
–Net Additions	14,457,603	10,842,207	15,505,841	14,422,373	14,837,396	14,495,754	12,408,571	8,628,605
–Average Net Additions	7,228,802	5,421,104	7,752,921	7,211,187	7,418,698	7,247,877	6,204,286	4,314,302
Average Plant and Equipment in Service During Year	92,916,617	105,566,522	118,740,546	133,704,653	148,334,538	163,001,113	176,453,275	186,971,863
Commission's Allowance								
Fixed Amount as of December 31, 1922	7,869,400	7,869,400	7,869,400	7,869,400	7,869,400	7,869,400	7,869,400	7,869,400
Plus 8¾% on Subsequent Net Additions	632,520	1,739,387	2,892,114	4,201,473	5,481,588	6,764,913	7,941,977	8,862,353
Total	8,501,920	9,608,787	10,761,514	12,070,873	13,350,988	14,634,313	15,811,377	16,731,753
Company's Books								
(a) Actual Charges for Maintenance and Depreciation Accruals								
Accounts 601 to 607, inclusive, and 610 Current Maintenance	5,901,733	6,326,331	6,876,589	8,084,707	9,259,854	10,487,500	11,600,720	12,160,980
Account 608 Depreciaion of Plant and Equipment	4,480,954	4,709,950	5,385,712	6,203,022	6,839,392	7,641,461	8,120,382	8,769,886
Accounts 701-702-703-704 Depreciation Charged to Clearing Accounts	109,080	130,510	143,921	170,637	162,485	190,902	179,300	173,525
Total	10,491,767	11,166,791	12,406,222	14,458,366	16,261,731	18,319,863	19,900,402	21,104,391
Difference Company's Books Over Commission's Allowance	1,989,847	1,558,004	1,644,708	2,387,493	2,910,743	3,685,550	4,089,025	4,372,638
% of Average Plant and Equipment in Service	2.14%	1.48%	1.39%	1.79%	1.96%	2.26%	2.32%	2.34%
(b) Actual Charges for Maintenance and Retirements								
Accounts 601 to 607, inclusive, and 610 Current Maintenance	5,901,733	6,326,331	6,876,589	8,084,707	9,259,854	10,487,500	11,600,720	12,160,980
Net Charges to Depreciation Reserve	1,509,877	2,151,612	1,932,472	2,424,024	2,644,517	4,314,317	7,223,157	6,269,689
Total	7,411,610	8,477,943	8,809,061	10,508,731	11,904,371	14,801,817	18,823,877	18,430,669
Excess of Commission's Allowance over Actual Charges for Maintenance and Retirements	1,090,310	1,130,844	1,952,453	1,562,142	1,446,617	167,504#	3,012,500#	1,698,916#
% of Average Plant and Equipment in Service	1.17%	1.07%	1.64%	1.17%	.98%	.10%#	1.71%#	.91%#

Red

[fol. 2927]

Illinois Bell Telephone Company, Chicago Exchange

Comparison of Commission's Allowance for Maintenance and Depreciation with (a) Actual Charges for Maintenance and Depreciation Accruals per Company's Books and (b) Actual Charges for Maintenance and Retirements per Company's Books, Year 1931

Plant and Equipment in Service—End of Year	$195,422,114
—Net Additions	4,135,948
—Average Net Additions	2,067,974
Average Plant and Equipment in Service During Year	193,354,140
Commission's Allowance	
Fixed Amount as of December 31, 1922	7,869,400
Plus 8¾% on Subsequent Net Additions	9,420,803
Total	17,290,203
Company's Books	
(a) Actual Charges for Maintenance and Depreciation Accruals	
Accounts 601 to 607, inclusive, and 610 Current Maintenance	11,546,082
Account 608 Depreciation of Plant and Equipment	9,146,268
Accounts 701–702–703–704 Depreciation Charged to Clearing Accounts	162,383
Total	20,854,733
Difference Company's Books Over Commission's Allowance	3,564,530
% of Average Plant and Equipment in Service	1.84%
(b) Actual Charges for Maintenance and Retirements	
Accounts 601 to 607, inclusive, and 610 Current Maintenance	11,546,082
Net Charges to Depreciation Reserve	5,846,810
Total	17,392,892
Excess of Commission's Allowance over Actual Charges for Maintenance and Retirements	102,689#
% of Average Plant and Equipment in Service	.05%#

Red.

(Here follows Exhibit A-60, side folio 2928)

[fol. 2928]

Exhibit A-60

Illinois Bell Telephone Company, Chicago Exchange

Analysis of Fixed Capital Reserves*, Years 1923 to 1930

	1923	1924	1925	1926	1927	1928	1929	1930
Balance at Beginning of Period	$26,169,631	$29,413,207	$32,116,470	$35,733,909	$39,719,037	$44,108,518	$47,637,963	$48,771,570
Cr.—Charged Deprec'n. of Plant and Eq't. (608)	4,480,954	4,709,950	5,385,712	6,203,022	6,839,392	7,641,461	8,120,382	8,769,886
" Exps. & Income Ded. (340–674)	12,565	13,767	14,771	15,726	16,565	11,881	12,666	11,884
" Clearing Accts. (701 to 704)	109,080	130,510	143,921	170,637	162,485	190,902	179,300	173,525
" Surplus (413-414)								
Other Credits	141,355	860	5,769	20,019	15,910	1,121	45,907	14,931
Total Credits	4,743,954	4,855,087	5,550,173	6,409,404	7,034,352	7,845,365	8,358,255	8,970,226
Dr.—Charged Debit Subaccounts (102)	1,506,160	2,151,612	1,919,336	2,424,024	2,644,517	4,300,859	7,223,157	6,269,689
" Right of Way (103)	9,499†	212	262	252	283	1,603	1,491	2,304
" Other Amortization (103)					71			
Other Debits	3,717		13,136			13,458		
Total Debits	1,500,378	2,151,824	1,932,734	2,424,276	2,644,871	4,315,920	7,224,648	6,271,993
Reserves Increased	3,243,576	2,703,263	3,617,439	3,985,128	4,389,481	3,529,445	1,133,607	2,698,233
Balance at End of Period	$29,413,207	$32,116,470	$35,733,909	$39,719,037	$44,108,518	$47,637,963	$48,771,570	$51,469,803
Total Plant in Service and General Equipment—End of Period	$100,145,419	$110,987,626	$126,493,467	$140,915,840	$155,753,236	$170,248,990	$182,657,561	$191,286,165
Percent Fixed Capital Reserves to Total Plant in Service and General Equipment—End of Period	29.37%	28.94%	28.25%	28.19%	28.32%	27.98%	26.70%	26.91%

* Account 102 Reserve for Accrued Depreciation and Account 103 Reserve for Amortization of Intangible Capital. † Red

[fol. 2929]

Illinois Bell Telephone Company, Chicago Exchange

Analysis of Fixed Capital Reserves,* Year 1931

Balance at Beginning of Year	$51,469,803
Cr.—Charged Deprec'n. of Plant and Eq't. (608)	9,146,268
" Exps. & Income Ded. (340-674)	12,501
" Clearing Accts. (701 to 704)	162,383
" Surplus (413-414)	....
Other Credits	171**
Total Credits	9,320,981
Dr.—Charged Debit Subaccounts (102)	5,846,810
" Right of Way (103)	1,338
" Other Amortization (103)	147
Other Debits	....
Total Debits	5,848,295
Reserves Increased	3,472,686
Balance at End of Year	$54,942,489
Total Plant in Service and General Equipment—End of Year	$195,422,114
Per cent Fixed Capital Reserves to Total Plant in Service and General Equipment—End of Year	28.11%

* Account 102 Reserve for Accrued Depreciation and Account 103 Reserve for Amortization of Intangible Capital.

** Red.

[fol. 2930] EXHIBIT A-61

Illinois Bell Telephone Company

Per Cent of Gross Purchases of Chicago Area from Western Electric Company as shown on Supplement to City's Exhibit 57 for the Years 1923 to 1931, Inclusive, Attributable to Maintenance and Other Expense Accounts

1923	18.67%
1924	11.65%

1925	10.35%
1926	14.64%
1927	13.64%
1928	19.19%
1929	21.83%
1930	21.00%
1931	29.36%

[fol. 2931] EXHIBIT A-62

Illinois Bell Telephone Company, Chicago Area

Book Cost of Local Manual Central Office Equipment

December 31, 1923	$20,495,080
1924	22,467,542
1925	25,636,691
1926	29,440,587
1927	31,779,406
1928	32,914,489
1929	31,437,467
1930	32,653,114
1931	31,336,518

[fol. 2932] EXHIBIT A-63

Illinois Bell Telephone Company, Chicago Area

Account 510—Message Tolls

January	1930	$854,925.84
February	"	771,680.30
March	"	835,272.31
April	"	868,017.39
May	"	873,542.92
June	"	852,455.10
July	"	853,940.65
August	"	839,410.84
September	"	819,787.48
October	"	846,067.56
November	"	825,391.45
December	"	891,278.98
Total—Year 1930		$10,131,770.82

January	1931	799,145.64
February	"	752,194.81
March	"	818,562.62
April	"	808,836.18
May	"	825,816.58
June	"	828,461.95
July	"	784,403.72
August	"	798,224.41
September	"	784,340.49
October	"	786,297.11
November	"	743,126.01
December	"	801,343.90
Total—Year 1931		$9,530,753.42
January	1932	732,209.20

[fol. 2933]

Exhibit A-64

Illinois Bell Telephone Company, Chicago Area

Class of Service	Guarantee Day	Guarantee Month	Guarantee Year	Excess Message Rate
	Rates Collected By The Illinois Bell Telephone Company			
Individual Business..	20¢	$6.10	$73.00	5¢ Each
Coin Box..........	4 Mess.	122.0 Mess.	1460.0 Mess.	
Two-Party Business.	15¢	$4.575	$54.75	5¢ Each
Coin Box..........	3 Mess.	91.5 Mess.	1095.0 Mess.	
Two-Party Residence	12.5¢	$3.8125	$45.625	5¢ Each
Coin Box..........	2.5 Mess.	76.25 Mess.	912.5 Mess.	
Four-Party Residence	9¢	$2.745	$32.85	5¢ Each
Coin Box..........	1.8 Mess.	54.9 Mess.	657.0 Mess.	
	Rates Fixed By The Illinois Commerce Commission			
Individual Business..	18¢	$5.49	$65.70	4¢ Each
Coin Box..........	3.6 Mess.	109.8 Mess.	1314.0 Mess.	
Two-Party Business.	13¢	$3.965	$47.45	2.6 to 3.67 Mess.
Coin Box..........	2.6 Mess.	79.3 Mess.	949.0 Mess.	@ 5¢ Each. Over 3.67 Mess. @ 4¢ Each.
Two-Party Residence	11¢	$3.355		
Coin Box..........	2.2 Mess.	67.1 Mess.		
Four-Party Residence	7½¢	$2.2875	$27.375	1.5 to 2.0 Mess.
Coin Box..........	1.5 Mess.	45.75 Mess.	547.5 Mess.	@ 5¢ Each. Over 2.0 Mess. @ 4¢ Each.
	Two-party residence measured rate			
	....	$2.75	$33.00	55 to 200 Mess. 4¢.
	....	55.0 Mess.	660.0 Mess.	Over 200 Mess. 3½¢ Each.

[fol. 2934]

EXHIBIT A-65

Illinois Bell Telephone Company, Chicago Area

Estimated Message Reduction

	Decrease on Existing 4 CR Subscribers		Change from 2 MR to 4 CR			
			40% under 45 Mess. 20% 45 to 55 Mess.		50% under 45 Mess. 25% 45 to 55 Mess.	
	Aver. Subs.	Messages	Aver. Subs.	Messages	Aver. Subs.	Messages
*1923......	313,063	5,103	5,021	504	6,276	636
1924......	318,721	16,637	7,058	2,808	8,822	3,516
1925......	320,986	11,138	11,112	4,368	13,889	5,472
1926......	320,771	15,012	15,841	6,192	19,802	7,752
1927......	318,327	8,404	21,041	8,160	26,302	10,200
1928......	303,619	9,868	19,307	7,512	24,135	9,384
1929......	278,283	14,666	31,148	12,072	38,935	15,096
1930......	241,726	17,985	39,824	15,384	49,780	19,236
1931......	204,166	7,452	46,426	17,903	58,031	22,354

"000" Omitted in Message Figures.
*1923 for 3 months.

(Here follow extracts from Exhibit A-66, side folios 2935, 2936, and 2937)

EXHIBIT A-66

I. P. U. C. No. 1

TARIFF AND ROUTE BOOK

This Book Cancels and Supersedes (S. P. U. C. I. No. 1) Tariff and Route Book of
January 1, 1914 and Supplements Thereto

American Telephone & Telegraph Company

LIST OF TELEPHONE OFFICES
IN THE STATE OF ILLINOIS ONLY

ALWAYS CONSULT THE
SUPPLEMENT FIRST

READ THE EXPLANATORY STATEMENT.
IT IS IMPORTANT

ISSUED JULY 2, 1917

EFFECTIVE AUGUST 1, 1917

ISSUED BY
AMERICAN TELEPHONE AND TELEGRAPH COMPANY
BY H. S. BROOKS, GENERAL COMMERCIAL SUPERINTENDENT
LONG DISTANCE LINES DEPARTMENT
195 BROADWAY, NEW YORK, N. Y.

2786A

EXPLANATORY STATEMENT

1. This Tariff and Route Book, together with the Rate Sheets described below and all Supplements as issued, constitutes the American Telephone and Telegraph Company's tariff for telephone toll service in the State of Illinois.

The service covered by this tariff consists in furnishing for the use of patrons facilities, other than exchange facilities, intended for use in telephonic communication between the points listed. The exchange facilities used in connection with this service are the facilities required to establish connection between an exchange station and the toll board, or between an exchange station and the toll trunks, when such trunks are employed to effect connection with the toll board, and the use of such facilities is covered by the charges for exchange service.

TARIFF AND ROUTE BOOK

2. This Tariff and Route Book, together with its Supplements, contains the names of all points on the lines of the American Telephone and Telegraph Company, its Associated Companies and their connecting companies in the State of Illinois.

3. **CLASSIFICATION OF POINTS.** Points listed in the Tariff and Route Book are classified as Check Direct, Check and Other Line.

Check Direct: A Check Direct point is a point for which specific rates and routes are given. Check Direct points are printed in heavy-faced type. For example:

Square Sect.

782 .63 CHICAGO 4 .... **Route Block 628**

Route Class 1

Check: A Check point is a point which takes the same rates and routes as some Check Direct point, unless otherwise specified. A Check point is printed in light-faced type and is followed by the abbreviation "Ck." and the name of its Check Direct point. For example:

Square Sect.
752 71 Barclay ck Springfield

Other Line: An Other Line point is a point on the lines of the Associated Companies or their connecting companies whose rates are the sum of a uniform rate (known as an Other Line rate) and the A. T. & T. rates of a designated connecting point. An Other Line point takes the same routes as the designated connecting point, unless otherwise specified. Other Line poitns are printed in light-faced type and are followed by the Other Line rate and the name of the connecting point. For example:

Square Sect.
(713 62) Gifford 10-3 Rantoul

4. **SQUARE AND SECTION NUMBERS.** Square and Section numbers are given to Check Direct points for convenience in quoting rates and appear opposite their names in the columns headed "Square" and "Section." Check points are given the same Square and Section numbers as their Check Direct points. The Square and Section numbers which appear in parentheses opposite the name of each Other Line point are the Square and Section numbers of its connecting point and should be used in determining the rate to that point, to which rate the Other Line rate is added.

For the purposes of this tariff Square numbers only are used, and the Section numbers should be disregarded in all cases.

5. **ROUTE BLOCK AND TOLL CHARGE CLAIM NUMBERS.** The numbers which appear under the heading "Route Block" and those which follow the word "Route" refer only to the routing and have no connection with the determination of rates.

The numbers printed in heavy-faced type immediately following the names of the Check Direct points are used for accounting purposes and have no connection with the determination of rates.

6. **SUPPLEMENTS.** Supplements to the Tariff and Route Book will be issued from time to time, as may be necessary, giving all changes and additions. Each Supplement supersedes all previous Supplements. ALWAYS CONSULT THE LATEST SUPPLEMENT BEFORE CONSULTING THE TARIFF AND ROUTE BOOK.

RATE SHEETS

7. A Rate Sheet is provided for each Check Direct point. The rates on this sheet also apply to its Check points except when special rates are shown for such points.

The Rate Sheet shows, in the columns headed "Square" on the pages of Square Rates the Square numbers of all points in the State of Illinois. Opposite these Square numbers, under the heading "Rates," appears the rate for an initial period of service specified and for each additional minute or fraction thereof.

Any exception rates to these Square rates are shown under the heading "Special Rates," in the Rate Sheets.

TO ASCERTAIN A RATE

8. **"This Line" Rates:** Find in the latest Supplement or, if not found there, in the Tariff and Route Book the Square number of the point to which the rate is wanted, then refer to the Rate Sheets. If on the Rate Sheet a rate is shown opposite the Square number of the point to which the rate is desired, it is the correct rate to use.

9. In those cases where an exception rate is in effect, it is indicated on the Rate Sheet by the notation "See note," opposite the Square number. In such cases the exception rate, which is the correct rate to use, will be found under the heading "Special Rates" in the Rate Sheet.

10. Certain points are listed in the Tariff and Route Book with the notation, "Certain Subscribers Connected with ——————." The correct rate to use in such cases is the rate of the point with which the subscriber is connected. For example:

Square	Sect.	
752	71	Sllwood ck Springfield Suburban *Certain subscribers connected with Carlinville*

This means that if the subscriber is found to be connected to Carlinville, the rate to Carlinville should be used.

11. **Rates to "Other Line" Points.** The rate to or from an "Other Line" point is the sum of two separate rates; that is, the rate to or from the connecting point, plus the "Other Line" rate.

"Other Line" Rate: The "Other Line" rate, together with the name of the connecting point, is shown immediately following the name of the "Other Line" station in the Tariff and Route Book. The "Other Line" rate shown is for an initial period of three minutes and for each additional minute, unless otherwise indicated by a figure enclosed in parentheses immediately following the rate.

"Connecting Point" Rate: The rate to the connecting point, to which rate the "Other Line" rate is to be added, should be determined in the manner described in paragraphs 7 to 10, inclusive.

12. In computing the charges on a connection to or from an "Other Line" station for a conversation longer than the specified initial period, the charges should be figured separately for the rate to the connecting point and for the "Other Line" rate before adding the two together to obtainthe through rate.

13. **Multi-Terminal Service:** If service is furnished by connecting simultaneously more than one telephone station located at either the originating or terminating exchange, the charge will be at the rates given in the Rate Sheets for service between the two exchanges so connected, plus 25 per cent thereof for each telephone station in excess of one so connected.

14. **MESSENGER CHARGES.** The charge for messenger service shall be the amount actually disbursed, and shall be made against the telephone from which the request for service is received, or the charge may be made "collect" if guaranteed by the calling party and accepted by the called party.

Exception: Where the instructions at an office differ from the preceding, such instructions shall apply.

[fol. 2938] **EXTRACTS FROM EXHIBIT A-67**

This exhibit consists of certain certified portions of tariffs of Bell telephone companies throughout the United States containing the following:

(1) Toll schedule of the Bell Telephone Company of Pennsylvania described as "P.S.C.-Pa.-Toll No. 1A, Section 1, Fifth Revised Sheet 2, Canceling Fourth Revised Sheet 2" issued and filed with the Public Service Commission of the Commonwealth of Pennsylvania, effective September 1, 1929. It contained the following provision:

"This tariff covers toll service, which consists in furnishing facilities, other than exchange facilities, for use in telephone communication between different local service areas. The exchange facilities in connection with toll service are the facilities required to establish connection between an exchange station and the toll board, or between an exchange station and the toll trunks when such trunks are employed to effect connection with the toll board, and such exchange facilities are covered by the charges for exchange service."

(2) Toll schedule of the Bell Telephone Company of Pennsylvania, The Delaware and Atlantic Telegraph and Telephone Company and The Diamond State Telephone Company, known and described as "P.S.C.-Pa. Del.-No. 1A, Section 1, Second Revised Sheet 2, Canceling First Revised Sheet 2" filed with the Public Service Commission of the Commonwealth of Pennsylvania, effective October 1, 1926, containing the following provision:

"This tariff covers toll service, which consists in furnishing facilities, other than exchange facilities, for use in telephone communication between different local service areas. The exchange facilities in connection with toll service are the facilities required to establish connection between an exchange station and the toll board, or between an exchange station and the toll trunks when such trunks are employed to effect connection with the toll board, and such exchange facilities are covered by the charges for exchange service."

(3) Toll schedule of The Chesapeake & Potomac Telephone Company of Baltimore City, described as "P.S.C.-
[fol. 2939] Md.-Toll No. 1, Fourth Revision of Sheet 1, Can-

celling Third Revision of Sheet 1," filed with the Public Service Commission of the State of Maryland, effective March 1, 1931, containing the following provision:

"Toll rates cover compensation for all service, additional to any exchange service required, rendered in connection with any message or order for communication subject to a toll charge in accordance with the toll tariffs. Toll rates include no compensation for the use of exchange facilities."

(4) Part of toll schedule of The Chesapeake & Potomac Telephone Company of Baltimore City known and described as "First Revision of P.S.C.-Md.-Toll No. 1, Cancelling Original P.S.C.-Md.-Toll No. 1, Sheet 1," filed with the Public Service Commission of Maryland, effective April 1, 1925, containing the following provision:

"Toll rates cover compensation for all service, additional to any exchange service required, rendered in connection with any message or order for communication subject to a toll charge in accordance with the toll tariffs. Toll rates include no compensation for the use of exchange facilities."

(5) Part of the toll schedule of The Chesapeake & Potomac Telephone Company of Virginia described as "S.C.C.-Va.-Toll No. 1, Fourth Revision of Sheet 1, Cancelling Third Revision of Sheet 1," filed with the State Corporation Commission of the Commonwealth of Virginia, effective August 1, 1931, containing the following provision:

"Toll rates cover compensation for all service, additional to any exchange service required, rendered in connection with any message or order for communication subject to a toll charge in accordance with the toll tariffs. Toll rates include no compensation for the use of exchange facilities."

(6) Part of the toll rate schedule of The Chesapeake & Potomac Telephone Company of Virginia described as "Second Revision of S.C.C.-Va.-Toll No. 1, Cancelling First Revision of S.C.C.-Va.-Toll No. 1, Sheet 1," filed with the State Corporation Commission of the Commonwealth of Virginia in compliance with an order of that Commission dated July 31, 1926, in Case No. 2557, with modifications and changes to April 1, 1927, containing the following provision:

[fol. 2940] "Toll rates cover compensation for all service, additional to any exchange service required, rendered in connection with any message or order for communication subject to a toll charge in accordance with the toll tariffs. Toll rates include no compensation for the use of exchange facilities.''

(7) Part of the general exchange tariff of The Chesapeake & Potomac Telephone Company of Virginia described as ''S.C.C.-Va.-No. 1, section 31,'' filed with the State Corporation Commission of the Commonwealth of Virginia, effective August 1, 1926, containing the following provisions:

''4. Exchange Service.—The privilege of communication, by means of facilities connected with telephone central offices, offered and made available under the provisions of the exchange tariffs; including the privilege of initiating and receiving toll messages subject to the toll tariffs.

* * * * * * *

''9. Toll Service.—All service, additional to any exchange service required, rendered in connection with any message or order for communication subject to a toll charge in accordance with the toll tariffs.''

(8) Part of the toll schedule of the Chesapeake & Potomac Telephone Company of West Virginia described as ''Second Revision of P.S.C.-W. Va.-Toll No. 1, Cancelling First Revision of P.S.C.-W. Va.-Toll No. 1, Sheet 1,'' filed with the Public Service Commission of West Virginia, effective October 1, 1926, containing the following provision:

''Toll rates cover compensation for all service, additional to any exchange service required, rendered in connection with any message or order for communication subject to a toll charge in accordance with the toll tariffs. Toll rates include no compensation for the use of exchange facilities.''

(9) Part of the toll tariff of the Michigan Bell Telephone Company described as ''Revised Sheet 1 (Cancelling Original Sheet),'' filed with the Michigan Public Utilities Commission, effective October 1, 1926, containing the following provision:

''This tariff covers toll service, which consists in furnishing facilities, other than exchange facilities, for use in telephone communication between different local service areas. The exchange facilities in connection with toll service are the facilities required to establish connection between an [fol. 2941] exchange station and the toll board, or between an exchange station and the toll trunks when such trunks are employed to effect connection with the toll board, and such exchange facilities are covered by the charges for exchange service."

(10) Part of the toll tariff of the Northwestern Bell Telephone Company filed with the Railroad and Warehouse Commission of the State of Minnesota, effective January 1, 1930, and still in effect, containing the following provision:

"The toll service covered by this tariff consists in the establishment of telephone communication between different local service areas and the provision of the serivies and facilities other than exchange services and facilities, necessary therefor. The exchange services and facilities in connection with toll service are those required to establish connection between an exchange station and the toll-board, or between an exchange station and the toll trunks when such trunks are employed to effect connection with the toll board, and such exchange services and facilities are covered by the charges for exchange service."

(11) Part of the toll tariff of the Northwestern Bell Telephone Company filed with the Railroad and Warehouse Commission of the State of Minnesota, effective August 21, 1926, containing the following provision:

"The toll service covered by this tariff consists in the establishment of telephone communication between different local service areas and the provision of the services and facilities other than exchange services and facilities, necessary therefor. The exchange services and facilities in connection with toll service are those required to establish connection between an exchange station and the toll board, or between an exchange station and the toll trunks when such trunks are employed to effect connection with the toll board, and such exchange services and facilities are covered by the charges for exchange service."

(12) Part of the rules of the Northwestern Bell Telephone Company filed with the Nebraska State Railway Commission on May 12, 1926, and approved by said Com-

mission on June 12, 1926, containing the following provision.

"The toll service covered by this tariff consists in the establishment of telephone communication between different local service areas and the provision of the services and facilities other than exchange services and facilities, necessary therefor. The exchange services and facilities [fol. 2942] in connection with toll services are those required to establish connection between an exchange station and the toll board, or between an exchange station and the toll trunks when such trunks are employed to effect connection with the toll board, and such exchange services and facilities are covered by the charges for exchange service."

(13) Part of the general rules of the Northwestern Bell Telephone Company filed with the North Dakota Board of Railroad Commissioners, effective June 1, 1926, containing the following provision:

"The toll service covered by this tariff consists in the establishment of telephone communication between different local service areas and the provision of the services and facilities other than exchange services and facilities, necessary therefor. The exchange services and facilities in connection with toll service are those required to establish connection between an exchange station and the toll board, or between an exchange station and the toll trunks when such trunks are employed to effect connection with the toll board, and such exchange services and facilities are covered by the charges for exchange service."

(14) Part of the rules of the Northwestern Bell Telephone Company filed with the Board of Railroad Commissioners of the State of South Dakota on September 7, 1925, permitted to become effective by order of said Commission as of June 1, 1926, containing the following provision:

"The Toll Service covered by this tariff consists in the establishment of telephone communication between different local service areas and the provision of the services and facilities other than exchange services and facilities, necessary therefor. The exchange services and facilities in connection with toll service are those required to establish connection between an exchange station and the toll board, or between an exchange station and the toll trunks when such trunks are employed to effect connection with the toll Board, and such exchange services and facilities are covered by the charges for exchange service."

(15) Part of a tariff of the Pacific Telephone and Telegraph Company described as "Original Sheet No. 451, W.D.P.W. No. 5," filed with the Department of Public Works of the State of Washington, effective April 1, 1927, containing the following provision:

"Interexchange service is telephone service from one toll station or exchange to another toll station or exchange."

[fol. 2943] (16) Rule No. 87 of the Louisiana Public Service Commission as it has been in effect since January 1, 1913, as follows:

"Long distance toll rates from exchanges shall commence from the long distance toll board, and shall be the same for all subscribers, to the exchange with which they are connected, regardless of the distance from the susbcriber's telephone to the exchange with which he is connected."

(17) Order No. 247 of the Railroad Commission of Louisiana dated November 20, 1902:

Order No. 247.

CUMBERLAND TELEPHONE AND TELEGRAPH COMPANY.
Ex Parte

Upon the application of the Cumberland Telephone and Telegraph Company, through its Attorney H. C. Cage, the following rule is adopted as Rule No. 29-A, Revised Rules and Regulations, Railroad Commission of Louisiana, applicable to all telephone companies in Louisiana:

Rules

Long distance toll rates from exchanges shall commence from the long distance toll board, and shall be the same for all subscribers to the exchange with which they are connected, regardless of the distance from the subscriber to the exchange.

By order of the Commission.

Baton Rouge, Louisiana, November 20, 1902.

(Here follows Exhibit A-68, side folio 2944.)

EXHIBIT A-68

TARIFF DESCRIPTION OF TOLL SERVICE
NON-BELL COMPANIES

[fol. 2945] STATE OF ILLINOIS:

ILLINOIS COMMERCE COMMISSION

I, Julius Johnson, do hereby certify that I am Secretary of the Illinois Commerce Commission of the State of Illinois and keeper of the records of said Commission.

I further certify that included in and constituting a part of rate schedule Ill. C. C. No. 2, Section 1, Sheet 1 of the Illinois Valley Telephone Company, applicable to Versailles, Illinois, filed with the Illinois Commerce Commission and made effective August 10, 1930, are two paragraphs which are worded and read as follows:

"The local exchange rates herein shown are for local exchange service which includes service and connection with the toll boards having connected thereto the toll lines which connect with the Versailles, Illinois, local exchange.

"This company acts as the agent for the long distance companies for the purpose only of quoting and collecting charges for service over the long distance lines of these companies, and is not responsible or liable for any acts or omissions on the part of the owners or employees of the said long distance companies or their connections."

Given under my hand and seal of said Illinois Commerce Commission, at Springfield, Illinois, this 19th day of October, 1931.

Julius Johnson, Secretary.

1 Exchange.

[fol. 2946] STATE OF ILLINOIS:

ILLINOIS COMMERCE COMMISSION

I, Julius Johnson, do hereby certify that I am Secretary of the Illinois Commerce Commission of the State of Illinois and keeper of the records of said Commission.

I further certify that included in and constituting a part of rate schedule Ill. C. C. No. 1, Section 1, Sheet 1 of the Illinois Valley Telephone Company, applicable to Vermont, Illinois, filed with the Illinois Commerce Commission and made effective June 1, 1929, are two paragraphs which are worded and read as follows:

"The local exchange rates herein shown are for local exchange service which includes service and connection with the toll boards having connected thereto the toll lines which connect with the Vermont local exchange.

"This company acts as the agent for the long distance companies for the purpose only of quoting and collecting charges for service over the long distance lines of these companies, and is not responsible or liable for any acts or omissions on the part of the owners or employees of the said long distance companies or their connections."

Given under my hand and seal of said Illinois Commerce Commission, at Springfield, Illinois, this 19th day of October, 1931.

Julius Johnson, Secretary.

Exchange.

[fol. 2947] STATE OF ILLINOIS:

ILLINOIS COMMERCE COMMISSION

I, Julius Johnson, do hereby certify that I am Secretary of the Illinois Commerce Commission of the State of Illinois and keeper of the records of said Commission.

I further certify that included in and constituting a part of rate schedule Ill. C. C. No. 1, Section 1, Sheet 1 of the Illinois Valley Telephone Company, applicable to Mt. Sterling, Illinois, filed with the Illinois Commerce Commission and made effective April 1, 1929, are two paragraphs which are worded and read as follows:

"The local exchange rates herein shown are for local exchange service which includes service and connection with the toll boards having connected thereto the toll lines which connect with the Mount Sterling local exchange.

"This company acts as the agent for the long distance companies for the purpose only of quoting and collecting charges for service over the long distance lines of these companies, and is not responsible or liable for any acts or omissions on the part of the owners or employees of the said long distance companies or their connections."

Given under my hand and seal of said Illinois Commerce Commission, at Springfield, Illinois, this 19th day of October, 1931.

Julius Johnson, Secretary.

1 Exchange.

[fol. 2948] STATE OF ILLINOIS:

ILLINOIS COMMERCE COMMISSION

I, Julius Johnson, do hereby certify that I am Secretary of the Illinois Commerce Commission of the State of Illinois and keeper of the records of said Commission.

I further certify that included in and constituting a part of rate schedule Ill. C. C. No. 1, Section 1, Sheet 1 of the Illinois Valley Telephone Company, applicable to Camp Point, filed with the Illinois Commerce Commission and made effective May 1, 1930, are two paragraphs which are worded and read as follows:

"The local exchange rates herein shown are for local exchange service which includes service and connection with the toll boards having connected thereto the toll lines which connect with the Camp Point, Illinois, local exchange.

"This company acts as the agent for the long distance companies for the purpose only of quoting and collecting charges for service over the long distance lines of these companies, and is not responsible or liable for any acts or omissions on the part of the owners or employees of the said long distance companies or their connections."

Given under my hand and seal of said Illinois Commerce Commission, at Springfield, Illinois, this 19th day of October, 1931.

Julius Johnson, Secretary.

1 Exchange.

[fol. 2949] STATE OF ILLINOIS:

ILLINOIS COMMERCE COMMISSION

I, Julius Johnson, do hereby certify that I am Secretary of the Illinois Commerce Commission of the State of Illinois and keeper of the records of said Commission.

I further certify that included in and constituting a part of rate schedule Ill. C. C. No. 3, Section 1, Sheet 1, of the Illinois Valley Telephone Company, applicable to Bushnell, Illinois, filed with the Illinois Commerce Commission and made effective April 1, 1929, are two paragraphs which are worded and read as follows:

"The local exchange rates herein shown are for local exchange service which includes service and connection with the toll boards having connected thereto the toll lines which connect with the Bushnell local exchange.

"This company acts as the agent for the long distance companies for the purpose only of quoting and collecting charges for service over the long distance lines of these companies, and is not responsible or liable for any acts or omissions on the part of the owners or employees of the said long distance companies or their connections."

Given under my hand and seal of said Illinois Commerce Commission, at Springfield, Illinois, this 19th day of October, 1931.

Julius Johnson, Secretary.

1 Exchange.

[fol. 2950] STATE OF ILLINOIS:

ILLINOIS COMMERCE COMMISSION

I, Julius Johnson, do hereby certify that I am Secretary of the Illinois Commerce Commission of the State of Illinois and keeper of the records of said Commission.

I further certify that included in and constituting a part of rate schedule Ill. C. C. No. 3, Section 1, Sheet 1, of The Boynton Telephone Company, applicable to New Berlin, Illinois, filed with the Illinois Commerce Commission and made effective January 1, 1929, are two paragraphs which are worded and read as follows:

"The local exchange rates herein shown are for local exchange service which includes service and connection with the toll boards having connected thereto the toll lines which connect with the New Berlin, Illinois, local exchange.

"This Company acts as the agent for the long distance companies for the purpose only of quoting and collecting charges for service over the long distance lines of these Companies, and is not responsible or liable for any acts or omissions on the part of the owners or employees of the said long distance companies or their connections."

Given under my hand and seal of said Illinois Commerce Commission, at Springfield, Illinois, this 19th day of October, 1931.

Julius Johnson, Secretary.

1 Exch.

[fol. 2951] STATE OF ILLINOIS:

ILLINOIS COMMERCE COMMISSION

I, Julius Johnson, do hereby certify that I am Secretary of the Illinois Commerce Commission of the State of Illinois and keeper of the records of said Commission.

I further certify that included in and constituting a part of rate schedule Ill. C. C. No. 3, Section 1, Sheet 1, of The Boynton Telephone Company applicable to Pleasant Plains, Illinois, filed with the Illinois Commerce Commission and made effective January 1, 1929, are two paragraphs which are worded and read as follows:

"The local exchange rates herein shown are for local exchange service which includes service and connection with the toll boards having connected thereto the toll lines which connect with the Pleasant Plains local exchange.

"This Company acts as the agent for the long distance companies for the purpose only of quoting and collecting charges for service over the long distance lines of these Companies, and is not responsible or liable for any acts or omissions on the part of the owners or employees of the said long distance companies or their connections."

Given under my hand and seal of said Illinois Commerce Commission, at Springfield, Illinois, this 19th day of October, 1931.

Julius Johnson, Secretary.

1 Exch.

[fol. 2952] STATE OF ILLINOIS:

ILLINOIS COMMERCE COMMISSION

I, Julius Johnson, do hereby certify that I am Secretary of the Illinois Commerce Commission of the State of Illinois and keeper of the records of said Commission.

I further certify that included in and constituting a part of rate schedule Ill. C. C. No. 1, Original Sheet No. 4 of the Wabash Telephone Company, applicable to Bloomington and Normal, Illinois, filed with the Illinois Commerce Commission and made effective March 1, 1931, are two paragraphs which are worded and read as follows:

"The local exchange rates herein shown are for local exchange service, which includes service and connections with the toll boards having connected thereto the toll lines which connect with the Bloomington and Normal, Illinois, local exchanges.

"This company acts as the agent for the long distance companies, for the purpose only of quoting and collecting charges for long distance service over the lines of these companies, and is not responsible or liable for any acts or omission on the part of the owners or employees of the said long distance companies or their connections."

Given under my hand and seal of said Illinois Commerce Commission, at Springfield, Illinois, this 19th day of October, 1931.

Julius Johnson, Secretary.

1 Exch.

[fol. 2953] STATE OF ILLINOIS:

ILLINOIS COMMERCE COMMISSION

I, Julius Johnson, do hereby certify that I am Secretary of the Illinois Commerce Commission of the State of Illinois and keeper of the records of said Commission.

I further certify that included in and constituting a part of rate schedule Ill. C. C. No. 5, Section 1, Sheet 1 of The Illinois Telephone Company, applicable to Greenfield, Illinois, filed with the Illinois Commerce Commission and made effective April 1, 1930, are two paragraphs which are worded and read as follows:

"The local exchange rates herein shown are for local exchange service which includes service and connection with the toll boards having connected thereto the toll lines which connect with the Greenfield, Illinois, local exchange.

"This company acts as the agent for the long distance companies for the purpose only of quoting and collecting charges for service over the long distance lines of these companies, and is not responsible or liable for any acts or omissions on the part of the owners or employees of the said long distance companies or their connections."

Given under my hand and seal of said Illinois Commerce Commission, at Springfield, Illinois, this 19th day of October, 1931.

Julius Johnson, Secretary.

1 Exch.

[fol. 2954] STATE OF ILLINOIS:

ILLINOIS COMMERCE COMMISSION

I, Julius Johnson, do hereby certify that I am Secretary of the Illinois Commerce Commission of the State of Illinois and keeper of the records of said Commission.

I further certify that included in and constituting a part of rate schedule Ill. C. C. No. 5, Section 1, Sheet 1 of The Illinois Telephone Company, applicable to Roodhouse, Illinois, filed with the Illinois Commerce Commission and made effective April 1, 1930, are two paragraphs which are worded and read as follows:

"The local exchange rates herein shown are for local exchange service which includes service and connection with the toll boards, having connected thereto the toll lines which connect with the Roodhouse, Illinois, local exchange.

"This company acts as the agent for the long distance companies for the purpose only of quoting and collecting charges for service over the long distance lines of these companies, and is not responsible or liable for any acts or omissions on the part of the owners or employees of the said long distance companies or their connections."

Given under my hand and seal of said Illinois Commerce Commission, at Springfield, Illinois, this 19th day of October, 1931.

Julius Johnson, Secretary.

1 Exch.

[fol. 2955] STATE OF ILLINOIS:

ILLINOIS COMMERCE COMMISSION

I, Julius Johnson, do hereby certify that I am Secretary of the Illinois Commerce Commission of the State of Illinois and keeper of the records of said Commission.

I further certify that included in and constituting a part of rate schedule Ill. C. C. No. 5 of the Automatic Home Telephone Company applicable to Pontiac, filed with the Illinois Commerce Commission and made effective May 1, 1926, are two paragraphs which are worded and read as follows:

"The local exchange rates herein shown are for local exchange service, which includes service and connections with the toll boards having connected thereto the toll lines which connect with the Pontiac Illinois local exchange.

"This Company acts as the agent for the long distance companies, for the purpose only of quoting and collecting charges for long distance service over the lines of these companies, and is not responsible or liable for any acts or omission on the part of the owners or employees of the said long distance companies or their connections."

Given under my hand and seal of said Illinois Commerce Commission, at Springfield, Illinois, this 19th day of October, 1931.

Julius Johnson, Secretary.

1 Exch.

[fol. 2956] STATE OF ILLINOIS:

ILLINOIS COMMERCE COMMISSION

I, Julius Johnson, do hereby certify that I am Secretary of the Illinois Commerce Commission of the State of Illinois and keeper of the records of said Commission.

I further certify that included in and constituting a part of rate schedule Ill. C. C. No. 5, Section 1, Sheet 1, of The Illinois Telephone Company, applicable to White Hall, Illinois, filed with the Illinois Commerce Commission and made effective April 1, 1930, are two paragraphs which are worded and read as follows:

"The local exchange rates herein shown are for local exchange service which includes service and connection with the toll boards having connected thereto the toll lines which connect with the White Hall, Illinois, local exchange.

"This company acts as the agent for the long distance companies for the purpose only of quoting and collecting charges for service over the long distance lines of these companies, and is not responsible or liable for any acts or omissions on the part of the owners or employees of the said long distance companies or their connections."

Given under my hand and seal of said Illinois Commerce Commission, at Springfield, Illinois, this 19th day of October, 1931.

Julius Johnson, Secretary.

1 Exch.

[fol. 2957] STATE OF ILLINOIS:

ILLINOIS COMMERCE COMMISSION

I, Julius Johnson, do hereby certify that I am Secretary of the Illinois Commerce Commission of the State of Illinois and keeper of the records of said Commission.

I further certify that included in and constituting a part of rate schedule Ill. C. C. No. 4, Section 1 Sheet 1 of The Home Telephone Company of Bluffs, as applies to Bluffs, Illinois, filed with the Illinois Commerce Commission and made effective May 1, 1929, are two paragraphs which are worded and read as follows:

"The local exchange rates herein shown are for local exchange service which includes service and connection with the toll boards having connected thereto the toll lines which connect with the Bluffs, Illinois, local exchange.

"This company acts as the agent for the long distance companies for the purpose only of quoting and collecting charges for service over the long distance lines of these companies, and is not responsible or liable for any acts or omissions on the part of the owners or employees of the said long distance companies or their connections."

Given under my hand and seal of said Illinois Commerce Commission, at Springfield, Illinois, this 19th day of October, 1931.

Julius Johnson, Secretary.

1 Exch.

[fol. 2958] STATE OF ILLINOIS:

ILLINOIS COMMERCE COMMISSION

I, Julius Johnson, do hereby certify that I am Secretary of the Illinois Commerce Commission of the State of Illinois and keeper of the records of said Commission.

I further certify that included in and constituting a part of rate schedule Ill. C. C. No. 4, Section 1, Sheet 1, of the Streator Telephone Company applicable to Tremont, Illinois, filed with the Illinois Commerce Commission and made effective April 1, 1929, are two paragraphs which are worded and read as follows:

"The local exchange rates herein shown are for local exchange service which includes service and connection with the toll boards having connected thereto the toll lines which connect with the Tremont local exchange.

"This company acts as the agent for the long distance companies for the purpose only of quoting and collecting charges for service over the long distance lines of these companies, and is not responsible or liable for any acts or omissions on the part of the owners or employees of the said long distance companies or their connections."

Given under my hand and seal of said Illinois Commerce Commission, at Springfield, Illinois, this 19th day of October, 1931.

Julius Johnson, Secretary.

1 Exch.

[fol. 2959] STATE OF ILLINOIS:

ILLINOIS COMMERCE COMMISSION

I, Julius Johnson, do hereby certify that I am Secretary of the Illinois Commerce Commission of the State of Illinois and keeper of the records of said Commission.

I further certify that included in and constituting a part of rate schedule Ill. C. C. No. 3 of the Streator Telephone Company applicable to Streator, Illinois, filed with the Illinois Commerce Commission and made effective May 1, 1926, are two paragraphs which are worded and read as follows:

"The local exchange rates herein shown are for local exchange service, which includes service and connections with the toll boards having connected thereto the toll lines which connect with the Streator, Illinois local exchange.

"This company acts as the agent for the long distance companies, for the purpose only of quoting and collecting charges for long distance service over the lines of these companies, and is not responsible or liable for any acts or omissions on the part of the owners or employees of the said long distance companies or their connections."

Given under my hand and seal of said Illinois Commerce Commission, at Springfield, Illinois, this 19th day of October, 1931.

Julius Johnson, Secretary.

1 Exch.

[fol. 2960] STATE OF ILLINOIS:

ILLINOIS COMMERCE COMMISSION

I, Julius Johnson, do hereby certify that I am Secretary of the Illinois Commerce Commission of the State of Illinois and keeper of the records of said Commission.

I further certify that included in and constituting a part of rate schedule Ill. C. C. No. 5, Section 1, Sheet 1, of the Streator Telephone Company applicable to Stanford, Illinois, filed with the Illinois Commerce Commission and made effective April 1, 1929, are two paragraphs which are worded and read as follows:

"The local exchange rates herein shown are for local exchange service which includes service and connection with the toll boards having connected thereto the toll lines which connect with the Stanford local exchange.

"This company acts as the agent for the long distance companies for the purpose only of quoting and collecting charges for service over the long distance lines of these companies, and is not responsible or liable for any acts or omissions on the part of the owners or employees of the said long distance companies or their connections."

Given under my hand and seal of said Illinois Commerce Commission, at Springfield, Illinois, this 19th day of October, 1931.

Julius Johnson, Secretary.

1 Exch.

[fol. 2961] STATE OF ILLINOIS:

ILLINOIS COMMERCE COMMISSION

I, Julius Johnson, do hereby certify that I am Secretary of the Illinois Commerce Commission of the State of Illinois and keeper of the records of said Commission.

I further certify that included in and constituting a part of rate schedule Ill. C. C. No. 4, Section 1, Sheet 1, of the Streator Telephone Company applicable to Morton, Illinois, filed with the Illinois Commerce Commission and made effective April 1, 1929, are two paragraphs which are worded and read as follows:

"The local exchange rates herein shown are for local exchange service which includes service and connection with the toll boards having connected thereto the toll lines which connect with the Morton local exchange.

"This company acts as the agent for the long distance companies for the purpose only of quoting and collecting charges for service over the long distance lines of these companies, and is not responsible or liable for any acts or omissions on the part of the owners or employees of the said long distance companies or their connections."

Given under my hand and seal of said Illinois Commerce Commission, at Springfield, Illinois, this 19th day of October, 1931.

Julius Johnson, Secretary.

1 Exch.

[fol. 2962] STATE OF ILLINOIS:

ILLINOIS COMMERCE COMMISSION

I, Julius Johnson, do hereby certify that I am Secretary of the Illinois Commerce Commission of the State of Illinois and keeper of the records of said Commission.

I further certify that included in and constituting a part of rate schedule Ill. C. C. No. 5, Section 1, Sheet 1, of the Streator Telephone Company applicable to Minier, Illinois, filed with the Illinois Commerce Commission and made effective April 1, 1929, are two paragraphs which are worded and read as follows:

"The local exchange rates herein shown are for local exchange service which includes service and connection with the toll boards having connected thereto the toll lines which connect with the Minier local exchange.

"This company acts as the agent for the long distance companies for the purpose only of quoting and collecting charges for service over the long distance lines of these companies, and is not responsible or liable for any acts or omissions on the part of the owners or employees of the said long distance companies or their connections."

Given under my hand and seal of said Illinois Commerce Commission, at Springfield, Illinois, this 19th day of October, 1931.

Julius Johnson, Secretary.

1 Exch.

[fol. 2963] STATE OF ILLINOIS:

ILLINOIS COMMERCE COMMISSION

I, Julius Johnson, do hereby certify that I am Secretary of the Illinois Commerce Commission of the State of Illinois and keeper of the records of said Commission.

I further certify that included in and constituting a part of rate schedule Ill. C. C. No. 5, Section 1, Sheet 1, of the Streator Telephone Company, applicable to Mackinaw, Illinois, filed with the Illinois Commerce Commission and made effective April 1, 1929, are two paragraphs which are worded and read as follows:

"The local exchange rates herein shown are for local exchange service which includes service and connection with the toll boards having connected thereto the toll lines which connect with the Mackinaw local exchange.

"This company acts as the agent for the long distance companies for the purpose only of quoting and collecting charges for service over the long distance lines of these Companies, and is not responsible or liable for any acts or omissions on the part of the owners or employees of the said long distance companies or their connections."

Given under my hand and seal of said Illinois Commerce Commission, at Springfield, Illinois, this 19th day of October, 1931.

Julius Johnson, Secretary.

[fol. 2964] STATE OF ILLINOIS:

ILLINOIS COMMERCE COMMISSION

I, Julius Johnson, do hereby certify that I am Secretary of the Illinois Commerce Commission of the State of Illinois and keeper of the records of said Commission.

I further certify that included in and constituting a part of rate schedule Ill. C. C. No. 1, Section 1, Sheet 1 of the Streator Telephone Company, applicable to Grand Ridge, Illinois, filed with the Illinois Commerce Commission and made effective April 1, 1924, are two paragraphs which are worded and read as follows:

"The local exchange rates herein shown are for local exchange service, which includes service and connections with the toll boards having connected thereto the toll lines which connect with the Grand Ridge, Illinois, local exchange.

"This Company acts as the agent for the long distance companies, for the purpose only of quoting and collecting charges for long distance service over the lines of these companies, and is not responsible or liable for any acts or omissions on the part of the owners or employees of the said long distance companies or their connections."

Given under my hand and seal of said Illinois Commerce Commission, at Springfield, Illinois, this 19th day of October, 1931.

Julius Johnson, Secretary.

1 Exch.

[fol. 2965] STATE OF ILLINOIS:

ILLINOIS COMMERCE COMMISSION

I, Julius Johnson, do hereby certify that I am Secretary of the Illinois Commerce Commission of the State of Illinois and keeper of the records of said Commission.

I further certify that included in and constituting a part of rate schedule Ill. C. C. No. 4, Section 1, Sheet 1, of The Home Telephone Company of Bluffs, Illinois, as applies to Meredosia, Illinois, filed with the Illinois Commerce Commission and made effective June 1, 1929, are two paragraphs which are worded and read as follows:

"The local exchange rates herein shown are for local exchange service which includes service and connection with the toll boards having connected thereto the toll lines which connect with the Meredosia local exchange.

"This Company acts as the agent for the long distance companies for the purpose only of quoting and collecting charges for service over the long distance lines of these Companies, and is not responsible or liable for any acts or omissions on the part of the owners or employees of the said long distance companies or their connections."

Given under my hand and seal of said Illinois Commerce Commission, at Springfield, Illinois, this 19th day of October, 1931.

Julius Johnson, Secretary.

1 Exch.

[fol. 2966] STATE OF ILLINOIS:

ILLINOIS COMMERCE COMMISSION

I, Julius Johnson, do hereby certify that I am Secretary of the Illinois Commerce Commission of the State of Illinois and keeper of the records of said Commission.

I further certify that included in and constituting a part of rate schedule Ill. C. C. No. 4, Section 1, Sheet 1 of the Streator Telephone Company, applicable to Groveland. Illinois, filed with the Illinois Commerce Commission and made effective April 1, 1929, are two paragraphs which are worded and read as follows:

"The local exchange rates herein shown are for local exchange service which includes service and connections with the toll boards having connected thereto the toll lines which connect with the Groveland local exchange.

"This company acts as the agent for the long distance companies for the purpose only of quoting and collecting charges for service over the long distance lines of these companies, and is not responsible or liable for any acts or omissions on the part of the owners or employees of the said long distance companies or their connections."

Given under my hand and seal of said Illinois Commerce Commission, at Springfield, Illinois, this 19th day of October, 1931.

Julius Johnson, Secretary.

1 Exch.

[fol. 2967] To all whom these presents shall come:

I, Fred I. King, Secretary of the Indiana Public Service Commission do hereby certify that included in and constituting a part of the tariff of the Citizens Independent Telephone Company on file with said Commission and applicable to the Terre Haute properties of said company are two paragraphs which (omitting exchange name) are worded and read as follows:

"The local exchange rates herein shown are for local exchange service which includes service and connection with the toll boards having connected thereto the toll lines which connect with the —— exchange.

"This company acts as the agent for the long distance companies for the purpose only of quoting and collecting charges for long distance service over the lines of these companies and is not responsible or liable for any acts or omissions on the part of the owners or employes of said long distance companies or their connections."

I do further certify that the tariff containing these paragraphs was authorized by said Commission to be made effectice as of January 1, 1930.

In witness whereof I have hereunto set my hand and affixed the seal of said Commission at its Office in the Capitol in the City of Indianapolis, Indiana, this 20th day of October, 1931.

Fred I. King, Secretary Indiana Public Service Commission.

1 Exch.

[fol. 2968] To all whom these presents shall come:

I, Herman L. Gees, Secretary of the Public Service Commission for the State of Kansas, do hereby certify that included in and constituting a part of the Tariffs of The East Kansas Telephone Company filed with said Commission and applicable to its Easton, Lancaster, McLouth, Meridan, Nortonville, Ozawkie, Perry and Potter, Kansas exchanges respectively, are two paragraphs which are worded and read as follows (omitting exchange names):

"The local exchange rates herein shown are for local exchange service which includes service and connection with the toll boards having conneced thereto the toll lines which connect with the —— exchange.

This company acts as the agent for the long distance companies for the purpose only of quoting and collecting charges for service over long distance lines of these companies and is not responsible or liable for any acts or omissions on the part of the owners or employes of said long distance companies or their connections."

I do further certify that the Tariffs containing these paragraphs were made effective for the following exchanges of The East Kansas Telephone Company on the following dates:

Lancaster	April 1, 1928
Easton	January 1, 1929
McLouth	January 1, 1929
Nortonville	January 1, 1929
Perry	January 1, 1929
Potter	January 1, 1929
Meridan	February 1, 1929
Ozawkie	April 1, 1929

In witness whereof I have hereunto set my hand and affixed the seal of said Commission at its Office in the Capitol in the City of Topeka, Kansas, this 20th day of Oct., 1931.

Herman L. Gees, C. B. B., Secretary Public Service Commission for the State of Kansas.

8 Exch.

[fol. 2969] Monday, October 19, 1931.

4. The local exchange rates herein shown are for local exchange service which includes service and connection with the toll boards having connected thereto the toll lines which connect with the above named exchanges.

5. This company acts as the agent for the long distance companies for the purpose only of quoting and collecting charges for service over long distance lines of these companies, and is not responsible or liable for any acts or omissions on the part of the owners or employee- of the said long distance companies or their connections.

I, Lucile Tobin, Secretary of the Kentucky Railroad Commission, do hereby certify that this is an exact copy of paragraphs four and five, of page one, of the Tariff-Rules-Regulations of the Southern Continental Telephone Company, filed in this office on May 1, 1931.

Lucile Tobin, Sec'y.

Applies to 34 exchanges.

[fol. 2970] State of Minnesota:

Office of the Railroad and Warehouse Commission

I, Thomas Yapp, Secretary of the Minnesota Railroad and Warehouse Commission, do hereby certify that the attached is a true and correct copy of that portion of the toll tariffs of The Tri-State Telephone and Telegraph Company covering general definitions and classifications of its toll service, which definitions and classifications are now in effect on the toll lines of The Tri-State Telephone and Telegraph Company within this State; and I further certify that the above have been in effect from and since August 21st, 1926.

Witness my hand and the seal of this Commission this 26th day of October, A. D. 1931.

Thos. Yapp, Secretary of the Minnesota Railroad and Warehouse Commission. (Seal.)

42 Exch.

[fol. 2971] The Tri-State Telephone and Telegraph Company, State of Minnesota

Toll Tariff, Sheet 1

A. General

1. This tariff covers intrastate toll service in the state of Minnesota furnished by The Tri-State Telephone and Telegraph Company and applies to both joint and exclusive traffic of that company.

2. The toll service covered by this tariff consists in the establishment of telephone communication between different local service areas and the provision of the services and facilities other than exchange services and facilities, necessary therefor. The exchange services and facilities in connection with toll service are those required to establish connection between an exchange station and the toll board, or between an exchange station and the toll trunks when such trunks are employed to effect connection with the toll board, and such exchange services and facilities are covered by the charges for exchange service.

3. Toll messages are classified into two groups known as: Station-to-Station and Person-to-Person.

4. On certain toll calls which cannot be completed, a partial charge known as a Report Charge is made.

[fol. 2972] To all whom these presents shall come:

I, David P. Janes, Secretary of the Missouri Public Service Commission, do hereby certify that paragraph 4 of Section 1, Sheet 1, Local Exchange Tariff, effective February 1, 1922, of the Kansas City Telephone Company applicable to its Kansas City, Missouri, properties, and filed with and approved by said Commission, was in words and figures as follows, to-wit:

"4. This Company does not furnish toll service except to suburban exchange areas adjacent to Kansas City, Missouri. However, through the medium of trunk lines connected with the toll boards of the long distance companies, local subscribers, as a part of the local exchange service, receive the benefit of toll connections."

and that paragraphs 5 and 6 of Section 1, Sheet 1, of said tariff, rules and regulations of the said Kansas City Telephone Company so filed and approved as aforesaid and applicable to said properties, was in words and figures as follows, to-wit:

"5. This Company acts as the Agent for the long distance companies for the purpose only of quoting and collecting charges for long distance service and is not responsible or liable for any actions or omissions on the part of the owners or employees of the Long Distance Companies or their connections.

6. This Company does not transmit messages but provides the use of its available facilities for that purpose and is not liable for errors in the transmission of same or for failures in establishing connections."

In witness whereof I have hereunto set my hand and affixed the seal of said Commission at its Office in the Capitol in the City of Jefferson City, Missouri, this 20th day of October, 1931.

David P. Janes, Secretary, Missouri Public Service Commission.

1 Exch. Kem.

[fol. 2973] To all whom these presents shall come:

I, J. F. Miller, Secretary of the Nebraska State Railway Commission, do hereby certify that included in and constituting a part of the tariffs of Nebraska Continental Telephone Company filed with said Commission and applicable to its Columbus, Duncan and Newman Grove, Nebraska exchanges respectively, are two paragraphs which (omitting exchange name) are worded and read as follows:

"The local exchange rates herein shown are for local exchange service which includes service and connection with the toll boards having connected thereto the toll lines which connect with the —— exchange.

This company acts as the agent for the long distance companies for the purpose only of quoting and collecting charges for service over long distance lines of these companies and is not responsible or liable for any acts or omissions on the part of the owners or employes of said long distance companies or their connections."

I do hereby further certify that the tariffs containing these paragraphs were approved by said Commission on December 28, 1930 for said three exchanges, and were made effective for these exchanges as follows:

For the Newman Grove exchange of said company—March 1, 1931;

For the Columbus exchange of said company—May 1, 1931, and for the Duncan exchange of said company—June 1, 1931.

In witness whereof I have hereunto set my hand and affixed the seal of said Commission at its Office in the Capitol in the City of Lincoln, Nebraska, this 19th day of October, 1931.

J. F. Miller, Secretary, Nebraska State Railway Commission.

3 Exchanges.

(Here follows A-68, page 30, side folio 2974)

SSIONERS
AUL A WALKER, CHAIRMAN
C CHILDERS
R. HUGHES

E D HICKS, JR
SECRETARY

OFFICE OF
CORPORATION COMMISSION
OF OKLAHOMA
OKLAHOMA CITY, OKLA.

IN REPLY REFER TO FILE

A-68
P-30

CERTIFICATE

TO ALL WHOM THESE PRESENTS SHALL COME:

I, E. D. Hicks, Jr., Secretary of the Corporation Commission of Oklahoma, do hereby certify that included in and constituting a part of the tariffs of Oklahoma Telephone Company filed with said Commission and applicable to its Hominy, Broken Arrow and Fairfax, Oklahoma, exchanges, respectively, are two paragraphs which are worded and read as follows, omitting exchange names:-

> "The local exchange rates herein shown are for local exchange service which includes service and connection with the toll boards having connection thereto the toll lines which connect with the __________ exchange.
>
> "This company acts as the agent for the long distance companies for the purpose only of quoting and collecting charges for service over long distance lines of these companies and is not responsible or liable for any acts or omissions on the part of the owners or employes of said long distance companies or their connections."

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of said Commission at its Office in the State Capitol, Oklahoma City, this 21st day of October, 1931.

E D Hicks Jr
Secretary.

28124

[fol. 2975] To all whom these presents shall come:

I, Dorsey B. Thomas, Secretary of the Tennessee Railroad and Public Utilities Commission, do hereby certify that included in and constituting a part of the tariffs of Southern Continental Telephone Company on file with said Commission and applicable to the Algood, Baxter, Chestnut Mound, Cookeville, Crossville, Davidson, Doyle, Dresden, Jamestown, Livingston, McMinnville, Martin, Monterey, Oakdale, Oneida, Pikeville, Sharon, Sparta, Viola, and Wartburg, Tennessee exchanges of said company are two paragraphs which are worded and read as follows:

"The local exchange rates herein shown are for local exchange service which includes service and connection with the toll boards having connected thereto the toll lines which connect with the —— exchange.

This company acts as the agent for the long distance companies for the purpose only of quoting and collecting charges for service over long distance lines of these companies and is not responsible or liable for any acts or omissions on the part of the owners or employes of said long distance companies or their connections."

I do further certify that the tariffs containing these paragraphs were approved by the Tennessee Railroad and Public Utilities Commission to become effective as of the First day of Feb., 1931 for all of said above named exchanges.

In witness whereof I have hereunto set my hand and affixed the seal of said Commission at its Office in the Capitol in the City of Nashville, Tennessee this 19th day of Oct., 1931.

Dorsey B. Thomas, Secretary, Tennessee Railroad and Public Utilities Commission.

2d Exchanges.

[fol. 2976] EXTRACTS FROM EXHIBIT A-69

This exhibit contains forms of traffic agreements used by the various Bell companies with connecting companies, specifying the terms for the interexchange of telephone messages between the contracting parties. These agreements contain, among others, the following provisions:

(1) Section 3 of Exhibit C of the contract used by the New York Telephone Company reads as follows:

"The sum of the Commissions, determined as above from Columns 3 and 4 of the foregoing Table, is the total amount to be received by each company for facilities furnished and services rendered in originating and terminating communications interchanged under said Traffic Agreement, but does not include compensation for the use of exchange service facilities required to establish connection between an exchange station and the toll terminal plant, for the use of which facilities each company is compensated by its rates for exchange service."

(2) The form used by the Southwestern Bell Telephone Company known as S-8615-A contains the following provision:

"Above compensation shall not be construed as compensating for connection of exchange subscribers with toll boards, as such service is performed for the subscriber and compensated for in the exchange rate."

(3) The form used by the Southwestern Bell Telephone Company known as S-8614-A contains the same provision quoted under (2).

(4) The form used by the Southwestern Bell Telephone Company known as S-8615 a-T (8-23) contains the same provision quoted in (2) above.

(5) The form of the Southwestern Bell Telephone Company described as Form S-8614 a-T (8-23) contains the same provision quoted in (2) above.

(6) The contract between the Michigan Bell Telephone Company and the Alamo Mutual Telephone Company, of Alamo, Michigan, dated November 1, 1924, contains the following provision:

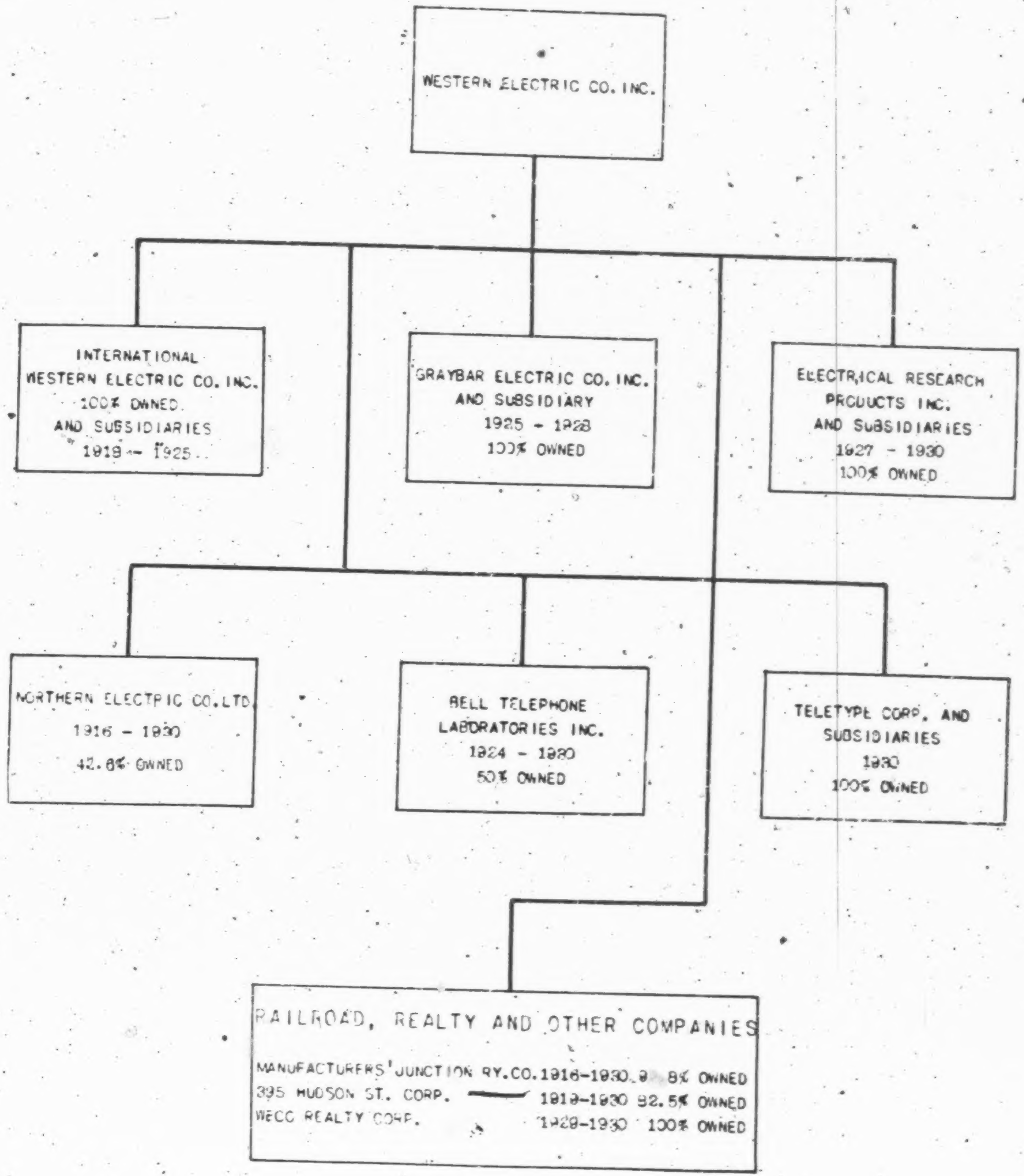
[fol. 2977] "Note.—The above compensation is not compensation for the connection of exchange subscribers with toll switchboards as that service is performed for the subscriber and paid for in his exchange rate. It does cover toll terminal service on both inward and outward messages, although for convenience it is computed on the basis of originating messages only."

(Here follows Exhibit A-75, side folio 2978)

EXHIBIT A-75

PRINCIPAL SUBSIDIARIES OF WESTERN ELECTRIC CO. INC.

1916 - 1930


WESTERN ELECTRIC CO. INC.
INTERNATIONAL WESTERN ELECTRIC CO. INC. 100% OWNED AND SUBSIDIARIES 1919 - 1925
GRAYBAR ELECTRIC CO. INC. AND SUBSIDIARY 1925 - 1928 100% OWNED
ELECTRICAL RESEARCH PRODUCTS INC. AND SUBSIDIARIES 1927 - 1930 100% OWNED
NORTHERN ELECTRIC CO. LTD. 1916 - 1930 42.8% OWNED
BELL TELEPHONE LABORATORIES INC. 1924 - 1930 50% OWNED
TELETYPE CORP. AND SUBSIDIARIES 1930 100% OWNED
RAILROAD, REALTY AND OTHER COMPANIES
MANUFACTURERS' JUNCTION RY. CO. 1916-1930 8[illegible]8% OWNED
395 HUDSON ST. CORP. 1919-1930 92.5% OWNED
WECC REALTY CORP. 1929-1930 100% OWNED

[fol. 2979]

EXHIBIT A-76

List of Classes of Devices Which Are Marketed by the Electrical Research Products, Inc.

A. Phonograph Recording Apparatus.

B. Talking Motion Picture Equipment (Theatrical and Non-Theatrical).

  1. Recording Apparatus.
  2. Reproducing Apparatus.
  3. Testing Apparatus.

C. Public Address Apparatus for Theatres.

D. Electric Phonographs for Theatres.

E. Electric Phonographs for Broadcasting Stations.

F. Amplifiers for Submarine Telegraph Cables.

G. Terminal Apparatus for Multiplex Telegraphy on Submarine Cables.

H. Testing Apparatus for Submarine Cables.

I. Picture Transmission Apparatus.

J. Hearing Aids

  1. Audiphones.
  2. Audiometers.
  3. Stethoscopes.
  4. Artificial Larynges.

[fol. 2980]

Exhibit A-77

Sales, Net Profits, and Average Investment, Bell Business, 1916 to 1930, Inclusive

(Dollars in Thousands)

	Sales	Total Cost of Sales	Net Profits	Per Cent Net Profits to Sales	Average Investment	Per Cent Return on Investment
1916	$73,915	$71,775	$2,140	2.9	$46,112	4.6
1917	104,682	102,157	2,525	2.4	66,184	3.8
1918	79,217	76,796	2,421	3.1	70,685	3.4
1919	80,361	77,674	2,687	3.3	69,939	3.8
1920	130,712	125,857	4,855	3.7	98,914	4.9
1921	142,885	131,747	11,138	7.8	125,330	8.9
1922	159,957	153,595	6,362	4.0	123,089	5.2
1923	188,159	181,967	6,192	3.3	131,504	4.7
1924	233,300	222,425	10,875	4.7	158,488	6.9
1925	226,700	210,448	16,252	7.2	163,085	10.0
1926	247,203	234,652	12,551	5.1	160,255	7.8
1927	241,062	224,194	16,868	7.0	167,371	10.1
1928	267,808	250,524	17,284	6.5	161,378	10.7
1929	372,384	355,012	17,372	4.7	204,507	8.5
1930	338,830	327,145	11,685	3.4	270,556	4.3
Total	2,887,175	2,745,968	141,207	4.9	2,017,397	7.0

[fol. 2981]

EXHIBIT A-78

Sales, Net Profits, and Average Investment, Bell Business, 1916 to 1931, Inclusive

(Dollars in Thousands)

	Sales	Total Cost of Sales	Net Profits	Per Cent Net Profits to Sales	Average Investment	Per Cent Return on Investment
1916	$73,915	$71,775	$2,140	2.9	$46,112	4.6
1917	104,682	102,157	2,525	2.4	66,184	3.8
1918	79,217	76,796	2,421	3.1	70,685	3.4
1919	80,361	77,674	2,687	3.3	69,939	3.8
1920	130,712	125,857	4,855	3.7	98,914	4.9
1921	142,885	131,747	11,138	7.8	125,380	8.9
1922	159,957	153,595	6,362	4.0	123,089	5.2
1923	188,159	181,967	6,192	3.3	131,504	4.7
1924	233,300	222,425	10,875	4.7	158,488	6.9
1925	226,700	210,448	16,252	7.2	163,085	10.0
1926	247,203	234,652	12,551	5.1	160,255	7.8
1927	241,062	224,194	16,868	7.0	167,371	10.1
1928	267,808	250,524	17,284	6.5	161,378	10.7
1929	372,384	355,012	17,372	4.7	204,507	8.5
1930	338,830	327,145	11,685	3.4	270,556	4.3
1931 estimated as basis of 8 mos.	219,233	209,748	9,485	4.3	270,766	3.5
Total	3,106,408	2,955,716	150,692	4.9	2,288,163	6.6

[fol. 2982]

Exhibit A-79

Sales, Net Profits, and Average Investment, Non-Bell Business, 1916 to 1930, Inclusive

(Dollars in Thousands)

	Sales	Total Cost of Sales	Net Profits	Per Cent Net Profits to Sales	Average Investment	Per Cent Return on Investment
1916	$33,072	$31,342	$1,730	5.2	$12,983	13.3
1917	45,658	42,383	3,275	7.2	16,774	19.5
1918	66,009	62,396	3,613	5.5	23,105	15.6
1919	55,361	52,672	2,689	4.9	22,919	11.7
1920	75,400	72,965	2,435	3.2	26,557	9.2
1921	46,880	49,544	(2,664)	(5.7)	27,181	(9.8)
1922	50,984	49,312	1,672	3.3	17,254	9.7
1923	67,018	64,095	2,923	4.4	19,267	15.2
1924	64,981	62,611	2,370	3.6	20,432	11.6
1925	71,029	71,701	(672)	(.9)	21,384	(3.1)
1926	15,902	14,206	1,696	10.7	12,367	13.7
1927	12,662	11,365	1,297	10.2	11,186	11.6
1928	20,123	17,531	2,592	12.9	15,202	17.0
1929	33,566	32,177	6,389	16.6	26,419	24.2
1930	22,648	21,399	1,249	5.5	18,798	6.6
Total	686,293	655,699	30,594	4.5	291,828	10.5

[fol. 2983]

EXHIBIT A-80

Sales, Net Profits, and Average Investment, Non-Bell Business, 1916 to 1931, Inclusive

(Dollars in Thousands)

	Sales	Total Cost of Sales	Net Profits	Per Cent Net Profits to Sales	Average Investment	Per Cent Return on Investment
1916	$33,072	$31,342	$1,730	5.2	$12,983	13.3
1917	45,658	42,383	3,275	7.2	16,774	19.5
1918	66,009	62,396	3,613	5.5	23,105	15.6
1919	55,361	52,672	2,689	4.9	22,919	11.7
1920	75,400	72,965	2,435	3.2	26,557	9.2
1921	46,880	49,544	(2,664)	(5.7)	27,181	(9.8)
1922	50,984	49,312	1,672	3.3	17,254	9.7
1923	67,018	64,095	2,923	4.4	19,267	15.2
1924	64,981	62,611	2,370	3.6	20,432	11.6
1925	71,029	71,701	(672)	(.9)	21,384	(3.1)
1926	15,902	14,206	1,696	10.7	12,367	13.7
1927	12,662	11,365	1,297	10.2	11,186	11.6
1928	20,123	17,531	2,592	12.9	15,202	17.0
1929	38,566	32,177	6,389	16.6	26,419	24.2
1930	22,648	21,399	1,249	5.5	18,798	6.6
1931 estimated on basis of 8 mos.	9,963	9,851	112	1.1	12,900	.9
Total	696,256	665,550	30,706	4.4	304,728	10.1

(Here follows side folio 2984)

[fol. 2984]

Exhibit A-81

Analysis of Sales of W. E. Manufactures to Non-Bell Customers, 1916 to 1931, Inclusive

(Dollars in Thousands)

Year	Total	Domestic Customers (of Supply Department)	Export and Foreign (Int'l Western Electric Co. Inc. and Northern Electric Co. Ltd.)	U. S. Government	Distributors: Graybar Electric Company Inc.	Distributors: International Standard Electric Corporation	Distributors: Northern Electric Company Limited	Distributors: Electrical Research Products Inc.	Other Customers
1916	$6,664	$3,910	$2,754(A)	$.....	$.....	$.....	$.....	$.....	$.....
1917	8,507	3,557	2,801(A)	2,149	......	......	......	......	......
1918	21,537	4,639	2,543	14,355	......	......	......	......	......
1919	12,950	3,865	4,388	4,697	......	......	......	......	......
1920	9,209	4,547	4,051	611	......	......	......	......	......
1921	10,918	4,637	6,281	......	......	......	......	......	......
1922	8,963	7,092	1,871	......	......	......	......	......	......
1923	11,525	8,140	3,385	......	......	......	......	......	......
1924	14,594	10,486	4,108	......	......	......	......	......	......
1925	14,768	11,535	3,233(B)	......	......	......	......	......	......
1926	15,454	......	......	......	9,667	2,399	1,016	......	2,372
1927	12,192	......	......	......	6,662	1,920	1,285	2,325	......
1928	19,756	......	......	......	7,010	1,744	1,691	9,311	......
1929	35,631	......	......	......	7,986	1,782	2,949	22,914	......
1930	21,024	......	......	......	6,888	1,222	2,700	9,461	753
1931 Estimated on basis of 8 mos	9,406	......	......	......	4,619	592	1,109	2,254	832
Total	233,008	62,408	35,415	21,812	42,832	9,659	10,750	46,265	3,957

(A) Includes sales to foreign companies and sales by Export Department, which in 1918 were owned by or were part of the International Western Electric Company, Inc.
(B) Includes $190,000 sales to foreign submarine cable manufacturing companies.

[fol. 2985]

Exhibit A-82

Income from Royalties and Patents Sold and Expenses Applicable Thereto for the Periods 1916 to 1931 and 1923 to 1931

(Dollars in Thousands)

	1916 to 1931	1923 to 1931
Gross Royalties Received by:		
Western Electric Company	$4,173	$4,038
Electrical Research Products Inc.	13,453	13,453
International Western Electric from Subsidiaries	1,811	740
International Western Electric and Subsidiaries from Others	589	541
Total Royalties	20,026	18,772
Patents Sold	946	581
Total	20,972	19,353
Less Amounts Distributed to:		
American Tel. & Tel. Co.	2,529	2,529
Vitaphone Corporation	2,211	2,211
Northern Electric Co. Ltd.	288	288
International Standard Electric Corp.	110	110
G. H. Davis	4	4
German Electric Companies	10	10
Graybar Electric Company	44	44
	5,196	5,196
Balance Retained by:		
Western Electric Company	4,891	4,391
Electrical Research Products Inc.	8,485	8,485
International Western Electric and Subsidiaries	2,400	1,281
Total Retained	15,776	14,157
Expenses Applicable to Royalties Received and Patents Sold:		
Western Electric Co.—Royalties	2,842	2,797
Western Electric Co.—Patents Sold	674	581
Electrical Research Products Inc. Development Expense	8,913	8,913
Electrical Research Products Inc. Other Expenses	1,104	1,104
Total Expenses	13,533	13,395
Net Royalties and Patents Sold	2,243	762

[fol. 2986] EXHIBIT A-83

Approximate Effect of Price Changes on Apparatus and Equipment Sold to Bell Companies, 1921-1930

Non-Cumulative

	Estimated Amount of Price Change Made Effective Each Year (Annual Basis)
1921	$(—1,200,000)
1922	(—8,800,000)
1923	+200,000
1924	(—6,100,000)
1925	(—1,100,000)
1926	(—9,400,000)
1927	(—5,000,000)
1928	(—11,500,000)
1929	(—12,500,000)
1930	+14,400,000

[fol. 2987] EXHIBIT A-84

Consolidated Earnings Statement of Western Electric Company, Incorporated, and Subsidiaries, 1916-1931, Inclusive

(Dollars in Thousands)

Net Profits	$244,594
Average Investment	3,229,000
Per Cent Return on Investment	7.6%

[fol. 2988]

EXHIBIT A-85

Return on Investment of 88 Manufacturing Companies

(Six-year Period 1925–1930)

(Dollars in Thousands)

	Average Investment	Average Annual Earnings
1. Air Reduction	$29,171	$3,521
2. Allied Chemical	317,681	25,249
3. American Agricultural Chemical	72,555	2,394
4. American Chain	31,065	2,415
5. American Cyanamid	28,676	2,079
6. American Ice	37,458	3,459
7. American Locomotive	112,353	4,732
8. American Radiator	124,972	13,159
9. American Safety Razor	7,440	1,220
10. American Snuff	13,165	1,912
11. American Steel Foundry	59,479	4,154
12. Archer-Daniels-Midland	18,730	1,816
13. Atlas Powder	26,590	2,005
14. Bliss, E. W.	28,809	890
15. Brown Shoe	19,485	1,631
16. Burroughs	39,294	7,629
17. Case, J. I.	41,660	3,398
18. Caterpillar Tractor	32,807	7,265
19. Chrysler Motors	123,142	19,026
20. Columbian Carbon	29,456	2,763
21. Congoleum-Nairn	39,583	1,674
22. Congress Cigar	10,255	2,492
23. Consolidated Cigar	19,614	3,606
24. Continental Baking	68,676	7,181
25. Continental Can	59,168	6,352
26. Continental Motors	34,680	1,350
27. Deere & Co	76,065	9,248
28. Dennison	16,260	1,121
29. Diamond Match	31,728	1,610
30. DuPont	243,927	22,626
31. Electric Storage Battery	50,490	6,467
32. Endicott-Johnson	53,036	3,762
33. Eureka Vacuum Cleaner	6,218	1,144
34. Fairbanks-Morse	40,040	2,409
35. General Baking	36,734	6,784
36. General Cigar	28,873	3,650
37. General Electric	529,720	52,797
38. General Motors	824,210	201,377
39. General Railway Signal	13,477	2,809
40. Glidden	22,924	2,259
[fol. 2989] 41. Goodrich	130,924	8,063
42. Goodyear	221,163	18,755
43. Holland Furnace	12,920	1,790
44. Hudson Motor	61,361	10,716
45. Hupp Motor	28,880	3,146
46. Ingersoll-Rand	45,340	7,391
47. International Business Machine	29,165	5,304
48. International Cement	51,447	4,853
49. International Harvester	338,023	26,635
50. International Shoe	98,871	14,899
51. International Silver	22,314	1,208
52. Liggett & Myers	138,031	21,207
53. Liquid Carbonic	16,305	1,582
54. Lorillard	72,333	4,858
55. Mack Truck	72,175	6,488

	Average Investment	Average Annual Earnings
56. Marlin Rockwell	10,539	1,605
57. Mathieson Alkali	22,063	1,915
58. Motor Wheel	15,848	2,202
59. Nash Motors	53,539	18,118
60. National Cash Register	57,172	6,983
61. National Lead	114,498	6,023
62. National Supply	48,184	4,172
63. Parke, Davis	26,652	7,454
64. Proctor & Gamble	104,195	16,936
65. Purity Bakeries	22,278	4,109
66. Radio Corp.	71,324	10,890
67. Remington Arms	133,482	1,544
68. Reo Motors	35,059	3,099
69. Reynolds Tobacco	143,283	29,532
70. St. Regis Paper	46,603	2,601
71. Simmons	47,061	3,382
72. Smith, A. O.	25,055	3,967
73. Spalding, A. G.	21,065	1,717
74. Spicer Mfg.	15,074	1,560
75. Stewart Warner	32,822	5,297
76. Studebaker	114,453	11,339
77. Timken Detroit Axle	20,509	1,465
78. Timken Roller Bearing	41,962	10,254
79. Torrington Mfg.	11,346	2,120
80. Union Carbide	256,803	27,968
81. U. S. Gypsum	54,436	6,812
82. U. S. Industrial Alcohol	38,306	2,048
83. Ward Baking	39,214	3,773
84. Warren Bros.	16,002	1,982
85. Westinghouse Electric	255,637	18,938
86. White Motor	44,973	1,634
87. Willys-Overland	84,668	2,767
88. Yale & Towne	24,956	1,913
Total 88 Companies	$6,687,979	$814,449
Per Cent Earned on Investment 88 Companies	12.2%	

[fol. 2990]

EXHIBIT A-86

Net Profits to Sales, 38 Manufacturing Companies

(Six-year Period 1925–1930)

This list includes all of the manufacturing companies used in computations of earnings on investment, for which sales information is available in at least four out of the five years, 1925–1929 inclusive.

(Dollars in Thousands)

	Sales	Net Profits
Air Reduction	$93,756	$20,193
American Ice	118,497	18,217
Atlas Powder	120,499	10,581
Brown Shoe	197,077	9,783
Caterpillar Tractor	200,726	43,842
Chrysler	1,371,184	102,978
Columbian Carbon	56,905	15,179
Congress Cigar	97,740	14,537
Electric Storage Battery	231,359	26,969
Endicott-Johnson	405,335	22,574
Eureka Vacuum Cleaner	62,769	6,865
Fairbanks-Morse	175,472	13,728

	Sales	Net Profits
General Electric	2,058,562	219,291
General Motors	7,009,808	1,187,674
Glidden	176,084	13,265
Goodrich	904,872	43,216
Goodyear	1,369,399	95,015
Holland Furnace	96,537	10,739
Hupp Motor	290,004	14,786
International Cement	146,012	28,039
International Shoe	712,752	86,714
International Silver	112,583	6,522
Liquid Carbonic*	57,102	6,943
Mack Truck	349,986	38,928
National Cash Register	291,982	40,394
National Supply	60,853	20,213
Procter and Gamble	996,246	94,500
Purity Bakeries**	170,721	18,616
Remington Arms	112,755	8,275
Reo Motors	290,813	12,369
Simmons	229,742	19,852
Spalding, A. G.	146,495	8,729
St. Regis Paper	81,760	13,720
Studebaker	845,425	66,263
U. S. Industrial Alcohol***	107,037	3,801
Warren Bros.	123,120	7,096
Westinghouse Electric	1,112,706	92,670
White Motor**	305,208	6,473
Total	21,289,883	2,469,549
Net Profits to Sales, 38 Companies		11.6%

* 1926–1930 only.
** 1925–1929 only.
*** 1925–1928 only.

[fol. 2991]

EXHIBIT A-87

Net Profits to Sales, 39 Manufacturing Companies

(Six-year Period 1925–1930)

This list includes all of the manufacturing companies used in computations of earnings on investment, for which sales information is available in at least four out of the five years 1925–1929 inclusive:

	Per cent
1. National Supply	33.2
2. Columbian Carbon	26.7
3. Caterpillar Tractor	21.8
4. Air Reduction	21.5
5. International Cement	19.2
6. General Motors	16.9
7. St. Regis Paper	16.8
8. American Ice	15.4
9. Congress Cigar	14.9

		Per cent
10.	National Cash Register	13.8
11.	International Shoe	12.2
12.	Liquid Carbonic*	12.2
13.	Electric Storage Battery*	11.7
14.	Holland Furnace	11.1
15.	Mack Truck	11.1
16.	Eureka Vacuum Cleaner	10.9
17.	Purity Bakeries**	10.9
18.	General Electric	10.7
19.	Proctor & Gamble	9.5
20.	Atlas Powder	8.8
21.	Simmons	8.6
22.	Westinghouse Electric	8.3
23.	Studebaker	7.8
24.	Fairbanks—Morse	7.8
25.	Glidden	7.5
26.	Chrysler	7.5
27.	Remington Arms	7.3
28.	Goodyear	6.9
29.	A. G. Spalding	6.0
30.	International Silver	5.8
31.	Warren Bros.	5.8
32.	Endicott–Johnson	5.6
33.	Western Electric	5.4
34.	Hupp-Motor	5.1
35.	Brown Shoe	5.0
36.	Goodrich	4.8
37.	Reo Motors	4.3
38.	U. S. Industrial Alcohol***	3.6
39.	White Motor**	2.1

* 1926–1930 only.
** 1925–1929 only.
*** 1925–1928 only.

[fol. 2992]

EXHIBIT A-88

Sales by the Western Electric Company, Inc., of Telephone Apparatus, Lead Covered Cable and Supplies to all Bell Telephone Companies Expressed in Percentages of Total Sales to Bell Companies and Sales to the Illinois Bell Telephone Company of the Same Expressed in Percentages of Total Sales to That Company.

1916 to 1930

	Telephone Apparatus		Lead Covered Cable		Supplies	
	% of Total Sales to all Bell Cos.	% of Total Sales to Illinois Bell Tel. Co.*	% of Total Sales to all Bell Cos.	% of Total Sales to Illinois Bell Tel. Co.*	% of Total Sales to all Bell Cos.	% of Total Sales to Illinois Bell Tel. Co.*
1916	31.4	46.0	22.4	27.0	46.2	27.0
1917	34.2	40.9	23.0	34.6	42.8	24.5
1918	44.9	64.6	12.5	11.4	42.6	24.0
1919	43.5	56.1	9.6	15.2	46.9	28.7
1920	41.4	54.0	12.3	13.2	46.3	32.8
1921	62.4	76.8	8.1	3.9	29.5	19.3
1922	61.9	65.6	10.6	10.3	27.5	24.1
1923	57.5	57.7	12.7	15.0	29.8	27.3
1924	61.4	62.7	14.7	15.0	23.9	22.3
1925	55.9	59.2	17.7	20.1	26.4	20.7
1926	54.2	53.9	17.3	21.7	28.5	24.4
1927	55.2	62.3	15.7	15.9	29.1	21.8
1928	50.9	61.1	16.2	15.4	32.9	23.5
1929	47.8	59.8	17.2	12.1	35.0	28.1
1930	57.6	61.4	16.7	11.5	25.7	27.1
Total 1916 to 1930 Inclusive	52.9	59.9	15.4	15.6	31.7	24.5

NOTE.—*This exhibit is based on shipments made in each of the years, and includes 20 per cent of the shipments to the Central Union Telephone Company, on the assumption that such percentage covers shipments for territory in Illinois now owned by the Illinois Bell Telephone Company, and does not include shipments of junk material by Illinois Bell Telephone Company to Western Electric Company.

[fol. 2993]

Sales by the Western Electric Company, Inc., of Telephone Apparatus, Lead Covered Cable and Supplies to all Bell Telephone Companies Expressed in Percentages of Total Sales to Bell Companies and Sales to the Illinois Bell Telephone Company of the Same Expressed in Percentages of Total Sales to That Company.

1931

	Telephone Apparatus		Lead Covered Cable		Supplies	
	% of Total Sales to all Bell Cos.	% of Total Sales to Illinois Bell Tel. Co.	% of Total Sales to all Bell Cos.	% of Total Sales to Illinois Bell Tel. Co.	% of Total Sales to all Bell Cos.	% of Total Sales to Illinois Bell Tel. Co.
1931	64.3	43.3	9.8	5.7	25.9	51.0

[fol. 2994]

EXHIBIT A-89

Division of Western Electric Company Sales for 1928, 1929 and 1930 of Telephone Apparatus, Lead Covered Cable and Supplies to the Illinois Bell Telephone Company Between Chicago and State

(Dollars in Thousands)

	1928	Per Cent of Total	1929	Per Cent of Total	1930	Per Cent of Total
Total						
Telephone Apparatus	$12,779	61.1	$13,326	59.8	$14,634	61.4
Lead Covered Cable	3,212	15.4	2,708	12.1	2,746	11.5
Supplies	4,901	23.5	6,255	28.1	6,468	27.1
	20,892	100.0	22,289	100.0	23,848	100.0
Chicago						
Telephone Apparatus	7,720	59.5	9,537	64.0	9,118	60.2
Lead Covered Cable	1,801	13.9	1,336	9.0	1,409	9.3
Supplies	3,456	26.6	4,013	27.0	4,617	30.5
	12,977	100.0	14,886	100.0	15,144	100.0
State						
Telephone Apparatus	5,059	63.9	3,789	51.2	5,516	63.4
Lead Covered Cable	1,411	17.8	1,372	18.5	1,337	15.3
Supplies	1,445	18.3	2,242	30.3	1,851	21.3
	7,915	100.0	7,403	100.0	8,704	100.0

[fol. 2995] Division of Western Electric Company Sales for 1931 of Telephone Apparatus, Lead Covered Cable and Supplies to the Illinois Bell Telephone Company Between Chicago and State

(Dollars in Thousands)

		Percent of Total
Total		
Telephone Apparatus	$4,271	43.3
Lead Covered Cable	558	5.7
Supplies	5,028	51.0
	$9,857	100.0
Chicago		
Telephone Apparatus	2,783	42.1
Lead Covered Cable	219	3.3
Supplies	3,612	54.6
	6,614	100.0
State		
Telephone Apparatus	1,488	45.9
Lead Covered Cable	339	10.4
Supplies	1,416	43.7
	3,243	100.0

[fol. 2996]

Exhibit A-90

Western Electric Co., Inc.

Sales to Bell Telephone Companies and Total Sales, 1916–1930, and Sales for 8 Months 1930 Compared with 8 Months 1931.

(Dollars in Thousands)

	W. E. Manufactures			Supplies			Total W. E. Manufacturers and Supplies		
	Total	Bell	% Bell of Total	Total	Bell	% Bell of Total	Total	Bell	% Bell of Total
1916	$46,457	$39,793	85.7	$60,530	$34,122	56.4	$106,987	$73,915	69.1
1917	68,342	59,835	87.6	81,998	44,847	54.7	150,340	104,682	69.6
1918	66,986	45,449	67.8	78,240	33,768	43.2	145,226	79,217	54.6
1919	55,657	42,707	76.7	80,065	37,654	47.0	135,722	80,361	59.2
1920	79,406	70,197	88.4	126,706	60,515	47.8	206,112	130,712	63.4
1921	111,614	100,696	90.2	78,151	42,189	54.0	189,765	142,885	75.3
1922	124,915	115,952	92.8	86,026	44,005	51.2	210,941	159,957	75.8
1923	143,643	132,118	92.0	111,534	56,041	50.3	255,177	188,159	73.7
1924	192,021	177,427	92.4	106,260	55,873	52.6	298,281	233,300	78.2
1925	181,653	166,885	91.8	116,076	59,815	51.5	297,729	226,700	76.2
1926	192,237	176,783	92.0	70,868	70,420	99.4	263,105	247,203	94.0
1927	183,106	170,914	93.3	70,618	70,148	99.3	253,724	241,062	95.0
1928	199,562	179,806	90.1	88,369	88,002	99.6	287,931	267,808	93.0
1929	277,715	242,084	87.2	133,235	130,300	97.8	410,950	372,384	90.6
1930	272,880	251,856	92.3	88,598	86,974	98.2	361,478	338,830	93.7
Total	2,196,194	1,972,502	89.8	1,377,274	914,673	66.4	3,573,468	2,887,175	80.8
8 Months 1930	184,808	168,993	91.4	68,970	67,608	98.0	253,778	236,601	93.2
8 Months 1931	114,564	108,293	94.5	38,233	37,862	99.0	152,797	146,155	95.7
Decrease	70,244	60,700	......	30,737	29,746	......	100,981	90,446	....
Per Cent Decrease	38.0	35.9	......	44.5	44.0	......	39.8	38.2	....

fol. 2997]

EXHIBIT A–91

Western Electric Company, Incorporated Book Cost of Plant Facilities (Land, Buildings, Service Equipment, Machinery, Tools, Furniture and Fixtures) with Annual Increases, 1916–1930

(Dollars in Thousands)

	Book Cost	Increase During Year
December 31, 1915	$19,434	....
" " 1916	20,843	$1,409
" " 1917	25,046	4,203
" " 1918	27,972	2,926
" " 1919	30,544	2,572
" " 1920	37,838	7,294
" " 1921	45,570	7,732
" " 1922	49,206	3,636
" " 1923	57,366	8,160
" " 1924	71,797	14,431
" " 1925	73,244	1,447
" " 1926	78,208	4,964
" " 1927	86,739	8,531
" " 1928	94,426	7,687
" " 1929	134,564	40,138
" " 1930	163,818	29,254

[fol. 2998]

EXHIBIT A–92

Owned Factories of the Western Electric Co., Inc., at June 30, 1931

Location	Date of Erection, Acquisition, or Major Addition	Product Manufactured
Hawthorne Works, Chicago, Ill....	1905	Lead Covered Cable
	1906	" " "
	1907	Telephone Apparatus
	1908	" "
	1909	" "
	1911	" "
	1912	Lead Covered Cable
	1917	Telephone Apparatus
	1920	" "
	1921	" "
	1922	" "
	1923	" "
	1924	" "
	1924	Copper Wire
	1928	Lead Covered Cable
	1929	" " "
Kearny Works, Kearny, N. J.......	1925	Lead Covered Cable
	1926	Telephone Apparatus
	1928	" "
	1929	" "
Queensboro Works, Maspeth Station, N. Y....................	1929	Telephone Booths and other wood products
Point Breeze Works, Baltimore, Md..	1929	Lead Covered Cable Telephone Apparatus

[fol. 2999]

EXHIBIT A–93

Sales, per Cent Net Profits to Sales and per Cent Return on Average Investment, Total Bell Business and Illinois Bell Business for the Period 1916 to 1931, Inclusive

Total Bell Business

Sales	$3,106,710,000
Per Cent Net Profits to Sales	4.9
Per Cent Return on Investment	6.6

Illinois Bell Business

Sales	$209,158,000
Per Cent Net Profits to Sales	5.3
Per Cent Return on Investment	7.0

[fol. 3000]

EXHIBIT A–94

Sales, per Cent Net Profits to Sales and per Cent Return on Average Investment, Total Bell Business and Illinois Bell Business for the Period 1916 to 1931, Inclusive

(Dollars in Thousands)

Total Bell Business

	Telephone Apparatus	Lead Covered Cable	Supplies	Total
Sales	$1,668,177	$467,027	$971,506	$3,106,710
Per Cent Net Profits to Sales	7.3	5.2	.6	4.9
Per Cent Return on Investment	7.1	8.1	2.2	6.6

Illinois Bell Business

	Telephone Apparatus	Lead Covered Cable	Supplies	Total
Sales	$123,654	$31,618	$53,886	$209,158
Per Cent Net Profits to Sales	7.5	5.3	.5	5.3
Per Cent Return on Investment	7.4	8.8	1.8	7.0

[fol. 3001]

EXHIBIT A–95

Sales, per Cent Net Profits to Sales and per Cent Return on Average Investment, Total Bell Business and Illinois Bell Business for the Period 1923 to 1931, Inclusive

Total Bell Business

Sales	$2,334,981,000
Per Cent Net Profits to Sales	5.1
Per Cent Return on Investment	7.1

Illinois Bell Business

Sales	$159,557,000
Per Cent Net Profits to Sales	5.4
Per Cent Return on Investment	7.5

[fol. 3002]

EXHIBIT A-96

Sales, per Cent Net Profits to Sales and per Cent Return on Average Investment, Total Bell Business and Illinois Bell Business for the Period 1923 to 1931, Inclusive

(Dollars in Thousands)

Total Bell Business

	Telephone Apparatus	Lead Covered Cable	Supplies	Total
Sales	$1,206,388	$364,187	$674,406	$2,334,981
Per Cent Net Profits to Sales	7.5	5.2	.5	5.1
Per Cent Return on Investment	7.7	7.7	2.1	7.1

Illinois Bell Business

	Telephone Apparatus	Lead Covered Cable	Supplies	Total
Sales	$94,011	$23,989	$41,557	$159,557
Per Cent Net Profits to Sales	7.7	5.2	.3	5.4
Per Cent Return on Investment	8.1	8.3	1.3	7.5

[fol. 3003]

EXHIBIT A-97

Sales, per Cent Net Profits to Sales and per Cent Return on Average Investment, Total Bell Business and Illinois Bell Business, Chicago Area, for the Period 1928 to 1931, Inclusive

(Dollars in Thousands)

Total Bell Business

Sales	$1,198,557
Per Cent Net Profits to Sales	4.8
Per Cent Return on Investment	6.3

Illinois Bell Business—Chicago Area

Sales	49,621
Per Cent Net Profits to Sales	4.5
Per Cent Return on Investment	6.3

[fol. 3004]

EXHIBIT A-98

Sales, per Cent Net Profits to Sales and per Cent Return on Average Investment, Total Bell Business and Illinois Bell Business, Chicago Area, for the Period 1928 to 1931, Inclusive

(Dollars in Thousands)

Total Bell Business

	Telephone Apparatus	Lead Covered Cable	Supplies	Total
Sales	$650,887	$185,561	$362,109	$1,198,557
Per Cent Net Profits to Sales	6.9	5.8	.3	4.8
Per Cent Return on Investment	6.8	7.4	1.0	6.3

Illinois Bell Business, Chicago Area

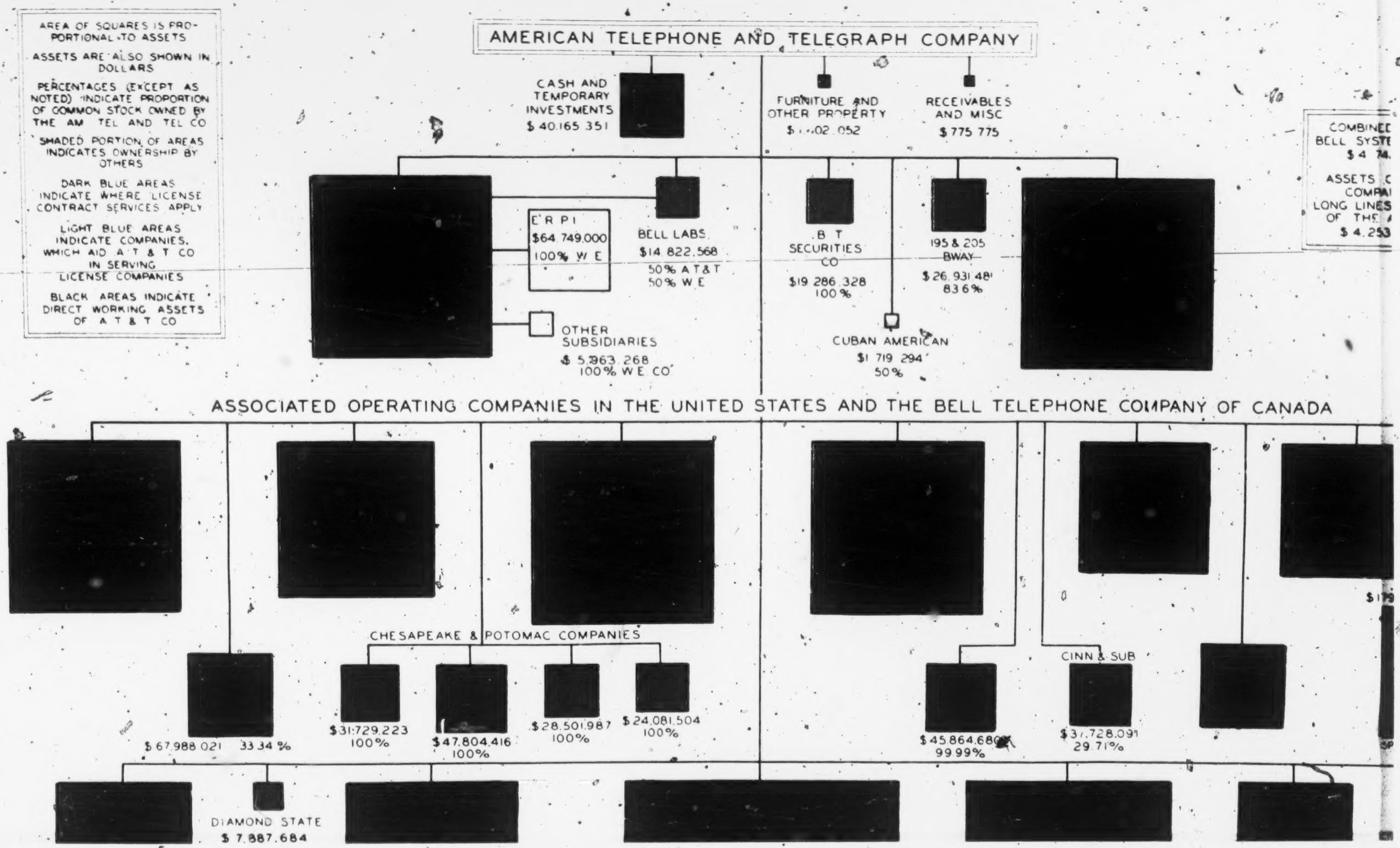
	Telephone Apparatus	Lead Covered Cable	Supplies	Total
Sales	$29,158	$4,765	$15,698	$49,621
Per Cent Net Profits to Sales	6.8	6.1	(.1)	4.5
Per Cent Return on Investment	7.1	8.7	(.4)	6.3

(Here follows Exhibit A-99, side folio 3005).

EXHIBIT A-99

GRAPHIC PRESENTATION OF EXTENT AND EMPLOYMENT OF BELL SYSTEM ASSETS

DECEMBER 31, 1929



AREA OF SQUARES IS PROPORTIONAL TO ASSETS

ASSETS ARE ALSO SHOWN IN DOLLARS

PERCENTAGES (EXCEPT AS NOTED) INDICATE PROPORTION OF COMMON STOCK OWNED BY THE AM TEL AND TEL CO

SHADED PORTION OF AREAS INDICATES OWNERSHIP BY OTHERS

DARK BLUE AREAS INDICATE WHERE LICENSE CONTRACT SERVICES APPLY

LIGHT BLUE AREAS INDICATE COMPANIES WHICH AID A T & T CO IN SERVING LICENSE COMPANIES

BLACK AREAS INDICATE DIRECT WORKING ASSETS OF A T & T CO

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

CASH AND TEMPORARY INVESTMENTS
$ 40.165 351

FURNITURE AND OTHER PROPERTY
$ [illegible]02 052

RECEIVABLES AND MISC
$ 775 775

COMBINE
BELL SYST
$ 4 74.

ASSETS C
COMPA
LONG LINES
OF THE
$ 4.253

E R P I
$64 749.000
100% W E

BELL LABS
$14 822.568
50% A T & T
50% W E

B T SECURITIES CO
$19 286 328
100%

195 & 205 BWAY
$ 26 931 48
83 6%

OTHER SUBSIDIARIES
$ 5.963.268
100% W E CO

CUBAN AMERICAN
$1 719 294
50%

ASSOCIATED OPERATING COMPANIES IN THE UNITED STATES AND THE BELL TELEPHONE COMPANY OF CANADA

CHESAPEAKE & POTOMAC COMPANIES

$ 67.988 021 33 34 %

$ 31.729.223
100%

$ 47.804.416
100%

$ 28.501.987
100%

$ 24.081.504
100%

$ 45.864.680
99 99%

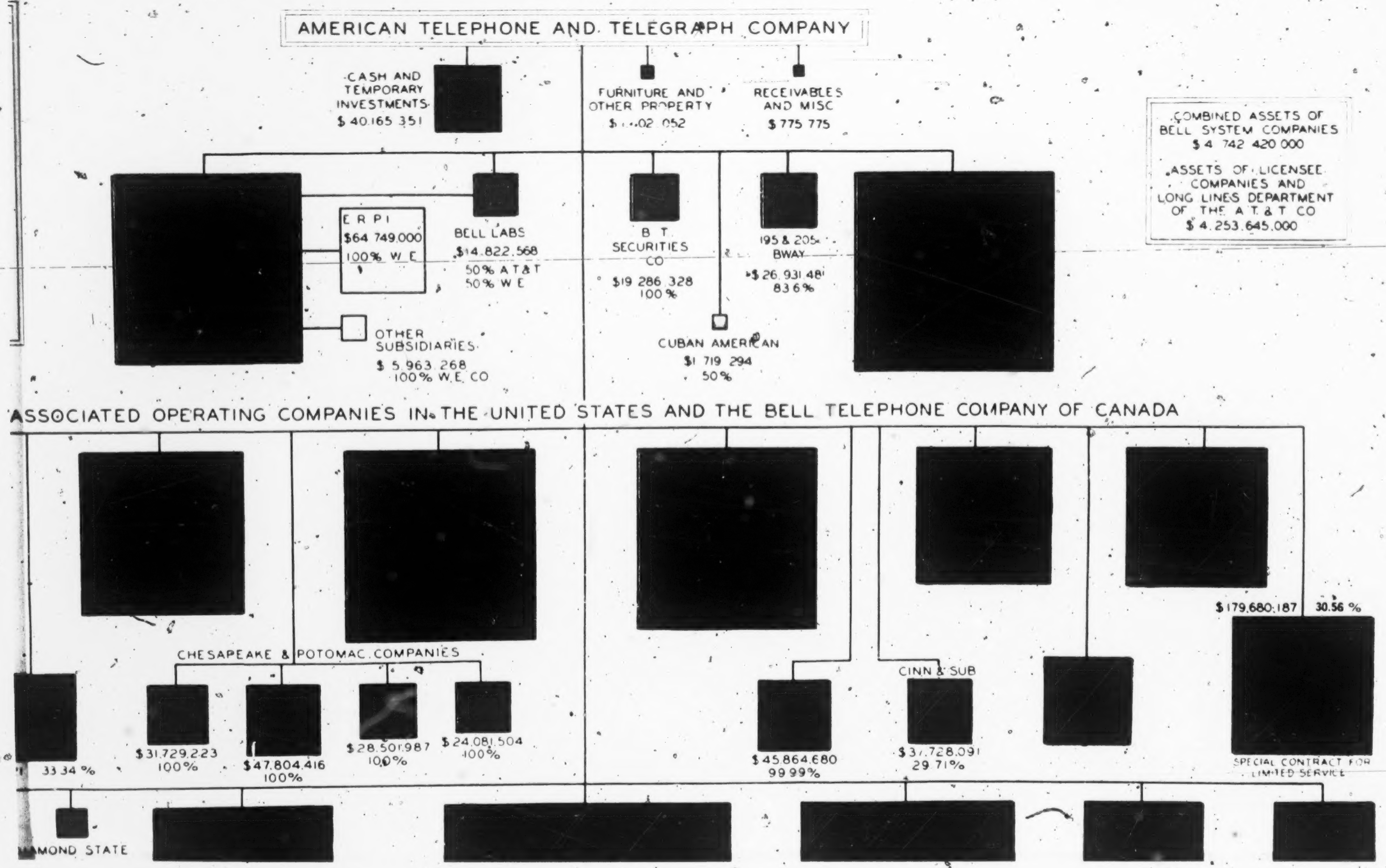
CINN & SUB
$ 37.728.091
29 71%

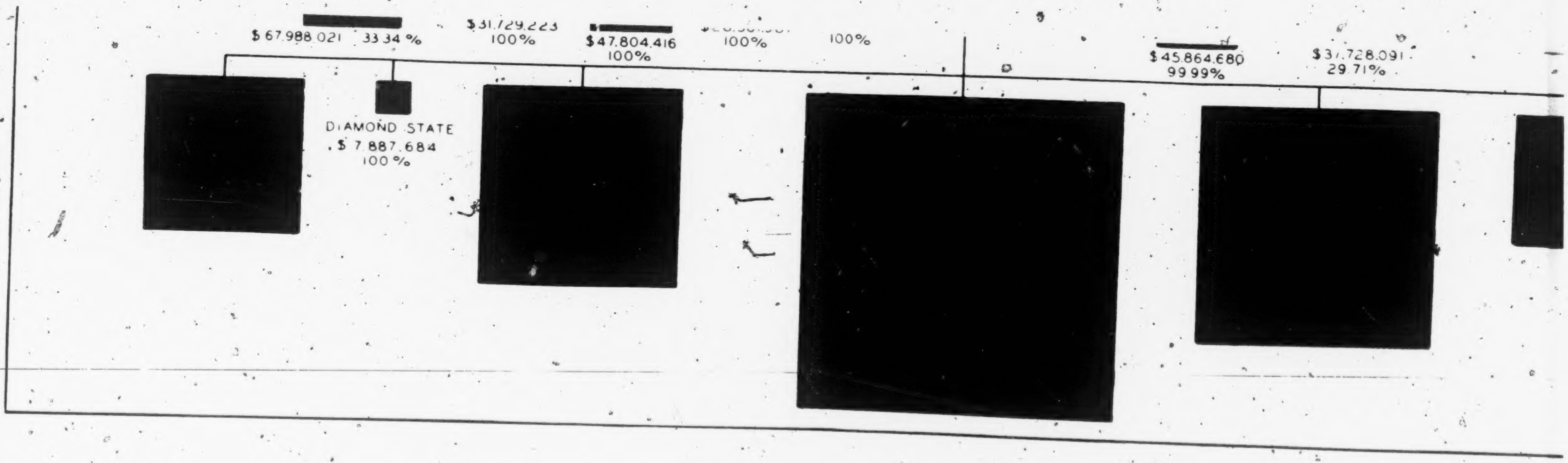
$ 179

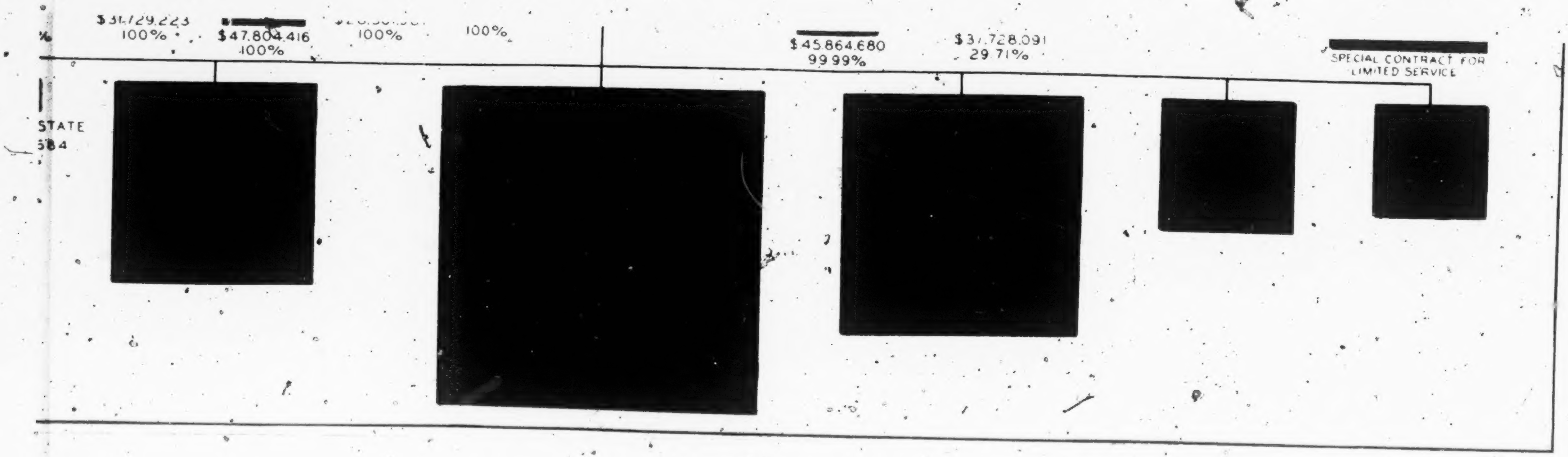
DIAMOND STATE
$ 7.887.684

PHIC PRESENTATION OF EXTENT AND EMPLOYMENT OF BELL SYSTEM ASSETS

DECEMBER 31, 1929


AMERICAN TELEPHONE AND TELEGRAPH COMPANY
CASH AND TEMPORARY INVESTMENTS $ 40.165 351
FURNITURE AND OTHER PROPERTY $ [illegible]02 052
RECEIVABLES AND MISC $ 775 775
COMBINED ASSETS OF BELL SYSTEM COMPANIES $ 4 742 420 000
ASSETS OF LICENSEE COMPANIES AND LONG LINES DEPARTMENT OF THE A T & T CO $ 4.253.645.000
E R P I $64 749.000 100% W E
BELL LABS $14.822.568 50% A T & T 50% W E
B T SECURITIES CO $19 286 328 100 %
195 & 205 BWAY $ 26 931 481 83 6%
OTHER SUBSIDIARIES $ 5.963.268 100% W.E. CO
CUBAN AMERICAN $1 719 294 50%
ASSOCIATED OPERATING COMPANIES IN THE UNITED STATES AND THE BELL TELEPHONE COMPANY OF CANADA
CHESAPEAKE & POTOMAC COMPANIES
33 34 %
$31.729.223 100%
$47.804.416 100%
$28.501.987 100%
$24.081.504 100%
$45.864.680 99 99%
CINN & SUB
$37.728.091 29 71%
$179.680.187 30.56 %
SPECIAL CONTRACT FOR LIMITED SERVICE
MOND STATE


[redacted]
$ 67.988.021 33.34 %
$31.729.223
100%
[redacted]
$47.804.416
100%
100%
100%
[redacted]
$45.864.680
99.99%
$37.728.091
29.71%
DIAMOND STATE
$ 7.887.684
100 %


%
$31,729,223
100%
$47,804,416
100%
100%
100%
$45,864,680
99.99%
$37,728,091
29.71%
SPECIAL CONTRACT FOR LIMITED SERVICE
STATE
584

[fol. 3006]

EXHIBIT A-100

% Long Lines of Total Associated Operating Companies, Including Long Lines Department and the Bell Telephone Company of Canada

	Long Lines	Total Associated Operating Companies, Long Lines and Bell of Canada	% Long Lines of Total
	Plant in Service		
June 30, 1923	$106,754,270	$1,785,892,407	6.0
" 30, 1924	125,359,671	2,054,099,512	6.1
" 30, 1925	138,633,542	2,361,575,372	5.9
" 30, 1926	150,434,899	2,657,226,222	5.7
" 30, 1927	180,983,696	2,940,006,674	6.2
" 30, 1928	218,082,743	3,199,368,308	6.8
" 30, 1929	264,961,353	3,504,655,454	7.6
" 30, 1930	352,729,332	3,938,948,405	9.0
	Regular Employees		
June 30, 1923	9,317	267,674	3.5
" 30, 1924	9,506	285,478	3.3
" 30, 1925	9,016	291,946	3.1
" 30, 1926	10,926	308,372	3.5
" 30, 1927	12,897	314,634	4.1
" 30, 1928	14,842	324,874	4.6
" 30, 1929	20,907	362,489	5.8
" 30, 1930	21,959	354,316	6.2

Sources of Information

	Plant in Service	Regular Employees
Total Associated Operating Companies	GR 64A	....
Long Lines	MR 6	MR 23
Bell of Canada	MR 6	MR 23
Bell System	....	CR 89 less MR 23—Genl

[fol. 3007]

Per Cent Long Lines of Total Associated Companies, Long Lines, and Bell Telephone Company of Canada

Total Expenses, "000" Omitted

Year	Total Ass'd Operating Companies (a)	Long Lines (b)	Bell of Canada (c)	Total Columns a, b and c (d)	Per Cent Long Lines of Total Ass'd Cos., Long Linesand Bell of Canada b + d (e)
1923	$437,070	$27,897	$17,437	$482,404	5.78
1924	486,166	28,697	19,572	534,435	5.37
1925	531,686	31,495	21,234	584,415	5.39
1926	587,170	37,202	24,433	648,805	5.73
1927	642,257	43,057	26,383	711,697	6.05
1928	699,010	52,253	28,628	779,891	6.70
1929	767,493	63,738	31,918	863,149	7.38
1930	804,969	68,934	33,130	907,033	7.60

Sources of Information

Total Expenses (including license Contract Payment)	CR 51A	MR 1	MR 1
less, License Contract Payment)	ICC Annual Reports Acct. 526	Annual Cash Statements, Genl. Dept.	MR 4

[fol. 3008]

% Long Lines of Total Associated Operating Companies, Including Long Lines Department and the Bell Telephone Company of Canada

Toll Plant Investment

	Long Lines	Total Associated Operating Companies, Long Lines and Bell of Canada	% Long Lines of Total
June 30, 1923	$86,364,442	$331,275,763	26.1
" 30, 1924	100,136,957	356,624,282	28.1
" 30, 1925	109,001,640	362,240,522	28.5
" 30, 1926	115,095,564	409,036,516	28.1
" 30, 1927	135,993,922	446,104,704	30.5
" 30, 1926	158,850,559	493,385,069	32.2
" 30, 1929	193,597,835	566,410,437	34.2
" 30, 1930	256,037,716	700,216,255	36.6

Sources of Information

Total Associated Operating Companies	CR 64
Long Lines	MR 6
Bell of Canada	MR 6

[fol. 3009]

% Long Lines of Total Associated Operating Companies, Including Long Lines Department and the Bell Telephone Company of Canada

Year	Long Lines	Total Associated Operating Companies Long Lines and Bell of Canada	% Long Lines of Total
	Total Toll Messages		
1923	30,894,146	559,451,425	5.5
1924	31,583,533	609,822,850	5.2
1925	33,730,930	701,379,030	4.8
1926	33,465,407	793,546,269	4.2
1927	35,645,685	874,150,788	4.1
1928	42,209,356	949,793,409	4.4
1929	49,312,631	1,049,552,934	4.7
1930	50,528,418	982,189,299	5.1
	Toll Board Messages		
1923	30,894,146	234,969,598	13.1
1924	31,583,533	256,125,597	12.3
1925	33,730,930	278,447,475	12.1
1926	33,465,407	288,850,842	11.6
1827	35,645,685	290,218,062	12.3
1928	42,209,356	306,783,271	13.8
1929	49,312,631	348,602,000	14.1
1930	50,528,418	355,911,000	14.2

Sources of Information

A. T. & T. Co. Annual Report to Stockholders.
Bell of Canada Annual Report to Stockholders.
A. T. & T. Co. Report to I. C. C. Schedule 406.

[fol. 3010]

% Long Lines of Total Associated Operating Companies, Including Long Lines and Bell Tel. Co. of Canada

1923

Year 1923	Long Lines	Assoc. Oper. Cos. Long Lines and Bell Tel. Co. of Canada	% Long Lines to Total
Total Messages—Exchange and Toll	30,894,146	15,392,873,488	.2
June 30, 1923			
Total Regular Employees	9,317	267,674	3.5
Total Regular Plant Employees	4,572	76,176	6.0
Total Regular Traffic Employees	4,281	163,670	2.6
Total Plant in Service	$106,754,270	$1,785,892,407	6.0
Exchange and Toll Lines	86,364,442	998,121,193	8.7
Toll Lines	86,364,442	331,275,765	26.1
Central Office Equipment	13,860,277	353,715,709	3.9
Buildings	1,177,312	128,947,679	.9
Land and Buildings	1,266,020	161,919,615	.8
Plant in Service (Excl. Land and Buildings)	105,488,250	1,623,972,792	6.5
Total Company Stations	324	10,392,087	....

Sources of Information

Employees	CR 89 and MR 23
Plant	CR 64A and MR 6
Stations	CR 51A and MR 1
Messages	A. T. & T. Co. and Bell of Canada Annual Reports to Stockholders

[fol. 3011]

% Long Lines of Total Associated Operating Companies, Including Long Lines and Bell Tel. Co. of Canada

1930

Year 1930	Long Lines	Assoc. Oper. Cos. Long Lines and Bell Tel. Co. of Canada	% Long Lines to Total
Total Messages—Exchange and Toll	50,528,418	23,515,282,650	.2
June 30, 1930			
Total Regular Employees	21,959	354,316	6.2
Total Regular Plant Employees	13,106	120,195	10.9
Total Regular Traffic Employees	7,831	182,128	4.3
Total Plant in Service	$352,729,332	$3,938,948,405	9.0
Exchange and Toll Lines	256,037,716	1,939,859,716	13.2
Toll Lines	256,037,716	700,216,255	36.6
Central Office Equipment	71,994,364	986,286,782	7.3
Buildings	5,337,994	351,686,561	1.5
Land and Buildings	6,301,179	432,950,752	1.5
Plant in Service (Excl. Land and Buildings)	346,428,153	3,505,997,653	9.9
No. of Morse and Teletypewriter Stations	6,743	14,389	47
Total Company Stations	76	16,368,365	....

Sources of Information

Employees	CR 89 and MR 23
Plant	CR 64A and MR 6
Stations	CR 51A, MR 1 and MR 7A and CR 65B
Messages	A. T. & T. Co. and Bell of Canada Annual Reports to Stockholders and I. C. C. Annual Report, Schedule 406

[fol. 3012]

EXHIBIT A–101

% Chicago Area of Total Associated Operating Companies (Excluding Long Lines) and Including Bell Telephone Company of Canada

Company Stations

	Chicago Area	Total Associated Operating Companies and Bell Tel. Co. of Canada	% Chicago Area to. Total
June 30, 1923	657,435	10,391,763	6.3
June 30, 1924	714,508	11,281,123	6.3
June 30, 1925	758,718	12,128,014	6.3
June 30, 1926	814,515	12,985,765	6.3
June 30, 1927	872,823	13,927,123	6.3
June 30, 1928	914,904	14,707,500	6.2
June 30, 1929	961,122	15,645,243	6.1
June 30, 1930	984,964	16,368,289	6.0

Plant in Service

June 30, 1923	$94,238,639	$1,679,138,137	5.6
June 30, 1924	103,709,064	1,928,739,841	5.4
June 30, 1925	115,463,286	2,222,941,830	5.2
June 30, 1926	131,497,639	2,506,791,323	5.2
June 30, 1927	144,222,924	2,759,022,978	5.2
June 30, 1928	158,194,532	2,981,285,565	5.3
June 30, 1929	172,064,784	3,239,694,101	5.3
June 30, 1930	184,176,238	3,586,219,073	5.1

Sources of Information

	Company Stations	Plant in Service
Total Associated Operating Companies (excluding Long Lines)	CR 51A	CR 64A
Bell of Canada	MR 1	MR 6
Chicago Area	MR 1	MR 6

[fol. 3013]

% Chicago Area of Total Associated Operating Companies (Excluding Long Line and Including Bell Telephone Company of Canada

Regular Employees

	Regular Employees Chicago Area	Regular Employees Total Associated Operating Companies and Bell Tel. Co. of Canada	% Chicago Area to Tota
June 30, 1923	18,012	258,357	7.0
1924	18,584	275,972	6.8
1925	19,403	282,930	6.9
1926	21,199	297,446	7.1
1927	21,094	301,737	7.0
1928	22,268	310,032	7.3
1929	23,127	341,582	6.8
1930	22,258	332,357	6.8

Sources of Information

Total Associated Operating Companies	CR 89 less (MR 23 Genl. (MR 23 Long Lines
Bell of Canada	MR 23
Chicago Area	MR 23

[fol. 3014]

Per Cent Chicago Area of Total Associated Companies (Excluding Long Lines) and Bell Telephone Company of Canada

	Total Expenses, "000" Omitted				
Year	Total Ass'd Operating Companies (a)	Bell of Canada (b)	Total a and b (c)	Chicago Area (d)	Per Cent Chicago Area of Total Ass'd Cos., and Bell of Canada (e)
1923	$437,070	$17,437	$454,507	$32,732	7.20
1924	486,166	~~19,572~~	505,738	34,585	6.84
1925	531,686	21,234	552,920	37,298	6.75
1926	587,170	24,433	611,603	40,698	6.65
1927	642,257	26,383	668,640	43,952	6.57
1928	699,010	28,628	727,638	48,634	6.68
1929	767,493	31,918	799,411	54,005	6.76
1930	804,969	33,130	838,099	55,538	6.63

Sources of Information

Total Expenses (including License Contract Payment	CR 51A	MR 1	Exhibit A49
Less, License Contract Payment	ICC Annual Reports Acct. 526	MR 4	

[fol. 3015]

EXHIBIT A-108

Allocation to Chicago Area of O. & E. Department Expenses for Services to Associated Companies (Incl. Canada)

Year	Per cent. Chicago Area is of Assoc. Cos. (Incl. Canada)					Expenses of O. & E. in License Services to Assoc. Cos. (Inc. Canada)	
	Stations	Plant Investment	Employees	Expenses	Composite	Total	Allocated to Chicago Area
1923..........	6.3	5.6	7.0	7.2	6.5	$2,420,623	$157,340
1924..........	6.3	5.4	6.8	6.8	6.3	2,556,611	161,066
1925..........	6.3	5.2	6.9	6.8	6.3	2,820,927	177,718
1926..........	6.3	5.2	7.1	6.7	6.3	3,136,241	197,583
1927..........	6.3	5.2	7.0	6.6	6.3	3,370,541	212,344
1928..........	6.2	5.3	7.3	6.7	6.4	3,585,144	229,449
1929..........	6.1	5.3	6.8	6.8	6.3	3,819,060	240,601
1930..........	6.0	5.1	6.8	6.6	6.1	4,010,685	244,652

(Here follows Exhibit A-109, side folio 3016)

-A-109V

EXHIBIT A-109

SALES OF SPECIAL COMMERCIAL PRODUCTS BY WESTERN ELECTRIC COMPANY, INCORPORATED
1918 TO 1931 INCLUSIVE

	Aviation Communication Equipment	Sound Picture Equipment	Permalloy and Related Machinery and Equipment	Phonograph Equipment	Radio Transmitting Equipment	Radio Receiving Equipment	Public Address and Music Reproduction Equipment	Railway Equipment	Power Line Carrier Terminal Apparatus	Scientific Equipment (A)	Engineering, Installation, Rentals and Repairs	Other	Total Special Commercial Products	Total Sales of W.E. Manufacture	Per Cent Special Commercial Products of Total W.E. Manufacture
1918-1919 Inclusive:															
Bell - - - - - - - -	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 167,764,000	.0
Non-Bell - - - - - -	0	0	0	0	0	0	0	500,000	0	0	0	0	500,000	43,658,000	1.1
Total - - -	0	0	0	0	0	0	0	500,000	0	0	0	0	500,000	211,442,000	.2
1920.															
Bell - - - - - - - -	0	0	0	0	0	0		0	0	0	0	0	0	70,197,000	.0
Non-Bell # - - - -	0	0	0	0	0	(Included with Other)		225,000	0	0	0	336,000	561,000	9,209,000	6.1
Total - - -	0	0	0	0	0	-	-	225,000	0	0	0	336,000	561,000	79,406,000	.7
1921.															
Bell - - - - - - -	0	0	0	0	0	-	-	8,752	0	0	0	69,052	77,804	100,696,000	.1
Non-Bell - - - (B)	0	0	0	0	0	-	-	157,390	0	0	0	437,522	594,912	10,918,000	5.4
Total - - -	0	0	0	0	0	-	-	166,142	0	0	0	506,574	672,716	111,614,000	.6
1922.															
Bell - - - - - - -	0	0	0	0	14,669	38,993	12,046	13,715		0	(Included with Other)	8,480	87,906	115,952,000	.1
Non-Bell - - - (B)	0	0	111,000	0	254,126	1,201,481	27,256	150,396	0	0	-	144,847	1,889,095	8,963,000	21.1
Total - - -	0	0	111,000	0	268,795	1,240,474	39,302	164,111	0	0	-	153,327	1,977,000	124,915,000	1.6
1923.															
Bell - - - - - - -	0	0	0	0	129,102	336,136	41,911	10,593	0	0	-	56,575	574,317	132,118,000	.4
Non-Bell - - - (B)	0	0	303,000	0	264,663	1,447,014	52,550	277,952	0	0	-	515,504	2,860,683	11,525,000	24.8
Total - - -	0	0	303,000	0	393,765	1,783,150	94,461	288,545	0	0	-	572,079	3,435,000	143,643,000	2.4
1924.															
Bell - - - - - - -	0	0	0	0	178,017	374,708	57,761	3,141	0	0	-	138,046	751,673	177,427,000	.4
Non-Bell - - - (B)	0	0	243,000	0	849,830	1,486,789	514,717	316,594	0	46,000	-	281,522	3,738,452	14,594,000	25.6
Total - - -	0	0	243,000	0	1,027,847	1,861,497	572,478	319,735	0	46,000	-	419,568	4,490,125	192,021,000	2.3
1925.															
Bell - - - - - - -	0	0	0	0	125,000	119,000	30,000	24,000	0	0	18,000	166,000	482,000	166,885,000	.3
Non-Bell - - - (B)	0	0	640,000	0	1,350,000	1,170,000	185,000	294,000	0	90,000	119,000	412,000	4,260,000	14,768,000	28.9
Total - - -	0	0	640,000	0	1,475,000	1,289,000	215,000	318,000	0	90,000	137,000	578,000	4,742,000	181,653,000	2.6
1926.															
Bell - - - - - - -	0	38,878	12,481	0	19,430	294,652	20,721	5,805	0	5,004	4,905	286,124	698,000	176,783,000	.4
Non-Bell - - - - -	0	1,171,122	1,188,519	14,000	936,570	1,485,348	196,279	501,195	23,000	74,996	82,095	430,876	6,094,000	15,454,000	39.4
Total - - -	0	1,210,000	1,201,000	14,000	956,000	1,780,000	217,000	507,000	23,000	80,000	87,000	717,000	6,792,000	192,237,000	3.5
1927.															
Bell - - - - - - -	0	25,131	14,925	374	19,212	462,570	22,284	9,316	4,220	6,780	20,553	317,359	902,724	170,914,000	.5
Non-Bell - - - - -	0	1,969,014	224,907	94,399	213,860	882,767	63,342	330,688	31,659	90,960	109,026	378,654	4,389,276	12,192,000	36.0
Total - - -	0	1,994,145	239,832	94,773	233,072	1,345,337	85,626	340,004	35,879	97,740	129,579	696,013	5,292,000	183,106,000	2.9
1928.															
Bell - - - - - - -	0	3,039	5,198	90	(12,357)	211,005	23,915	12,092	294	9,021	29,098	156,000	437,395	179,806,000	.2
Non-Bell - - - - -	0	7,973,630	43,628	39,886	908,500	426,392	103,524	156,987	22,891	62,873	101,962	526,727	10,367,000	19,756,000	52.5
Total - - - -	0	7,976,669	48,826	39,976	896,143	637,397	127,439	169,079	23,185	71,894	131,060	682,727	10,804,395	199,562,000	5.4
1929.															
Bell - - - - - - - -	0	84,855	3,156	0	697,853	92,784	148,909	15,377	1,332	11,227	291,100	175,427	1,521,980	242,084,000	.6
Non-Bell - - - - -	4,275	21,993,800	15,948	37,186	1,236,300	239,100	396,969	165,926	7,512	81,981	214,400	131,625	24,525,012	35,631,000	68.8
Total - - -	4,275	22,078,655	19,104	37,186	1,934,153	331,884	545,878	181,303	8,844	93,208	505,500	307,052	26,046,992	277,715,000	9.4
1930.															
Bell - - - - - - - -	16,100	10,400	2,394	0	386,700	41,900	51,900	7,600	0	10,100	(C)	157,906	685,000	251,856,000	.3
Non-Bell - - - - -	582,100	8,475,400	5,769	3,826	894,800	148,500	232,300	137,700	507	49,700	(C)	122,398	10,653,000	21,024,000	50.7
Total - - -	598,200	8,485,800	8,163	3,826	1,281,500	190,400	284,200	145,300	507	59,800	(C)	280,304	11,338,000	272,880,000	4.2
1931.															
Bell - - - - - - - -	(1,600)	14,500	0	0	278,800	11,500	29,300	3,600	0	13,200	(C)	71,600	421,900	162,702,000	.3
Non-Bell - - - - -	652,100	1,777,500	0	0	961,300	36,700	286,600	72,300	0	39,100	(C)	87,500	3,903,100	8,896,000	43.9
Total - - -	650,500	1,792,000	0	0	1,240,100	48,200	315,900	75,900	0	52,300	(C)	160,100	4,325,000	171,598,000	2.5
Summary.															
Bell - - - - - - - -	14,500	176,803	38,154	464	1,836,426	1,983,248	446,709	111,991	5,846	55,332	363,656	1,605,569	6,640,698	2,135,204,000	.3
Non-Bell - - - - -	1,238,475	43,360,466	2,775,771	189,297	7,869,949	8,524,091	2,048,526	3,286,128	85,569	535,610	626,483	3,805,165	74,335,530	232,588,000	32.0
Grand Total -	1,252,975	43,537,269	2,813,925	189,761	9,706,375	10,507,339	2,497,235	3,398,119	91,415	590,942	990,139	5,410,734	80,976,228	2,367,792,000	3.4
Per Cent of Total W.E. Manufactures -	.052	1.839	.119	.008	.410	.444	.105	.144	.004	.025	.042	.228	3.420		

A Includes audiometers, stethoscopes, artificial larynges and other scientific equipment.
B Includes sales to the Supply Department.
C Billing of engineering, installation, rentals and repairs amounting to $584,900 in 1930 and $583,200 in 1931 were not classified as Special Commercial Products.

[fol. 3017] **EXHIBIT A-110**

Net Profits on Sales of New A. T. & T. Instruments, 1916 to 1926, Inclusive

(Dollars in Thousands)

	Sales	Net Profits on Sales Before Deducting Federal Taxes	Per Cent Net Profits to Sales Before Federal Taxes	Federal Taxes	Net Profits After Deducting Federal Taxes	Per Cent Net Profits to Sales
1926	$5,262	$1,043	19.8	$141	$902	17.2
1925	5,017	624	12.4	85	539	10.8
1924	4,900	975	19.9	117	858	17.5
1923	4,496	698	15.5	79	619	13.8
1922	4,343	894	20.6	112	782	18.0
1921	4,598	1,064	23.1	106	958	20.8
1920	3,853	606	15.7	61	545	14.1
1919	2,530	(187)	(7.4)	0	(187)	(7.4)
1918	2,230	124	5.6	15	109	4.9
1917	2,421	423	17.5	31	392	16.2
1916	2,201	180	8.2	4	176	8.0
	$41,851	$6,444	15.4	751	$5,693	13.6

[fol. 3018] **EXHIBIT A-111**

% Long Lines Department of Total Associated Operating Companies, Long Lines Department and Bell Telephone Company of Canada

	Long Lines	Total Associated Operating Companies, Long Lines and Bell Tel. Co. of Canada	% Long Lines of Total
	Exchange and Toll Lines		
June 30, 1923	$86,364,442	$998,121,193	8.7
" " 1924	100,136,957	1,094,114,581	9.2
" " 1925	109,001,640	1,211,085,689	9.0
" " 1926	115,095,564	1,328,182,792	8.7
" " 1927	135,993,922	1,456,049,780	9.3
" " 1928	158,850,559	1,552,488,595	10.2
" " 1929	193,597,835	1,703,305,492	11.4
" " 1930	256,037,716	1,939,859,716	13.2
" " 1931	286,544,602	2,046,332,918	14.0
	Central Office Equipment		
June 30, 1923	$13,860,277	$353,715,709	3.9
" " 1924	17,547,735	453,652,736	3.9
" " 1925	20,999,405	577,190,066	3.6
" " 1926	26,008,678	673,073,831	3.9
" " 1927	33,661,393	753,939,243	4.5
" " 1928	44,590,008	823,227,892	5.4
" " 1929	53,081,575	888,102,943	6.0
" " 1930	71,994,364	986,286,782	7.3
" " 1931	84,025,601	1,071,330,966	7.8

	Long Lines	Total Associated Operating Companies, Long Lines and Bell, Tel. Co. of Canada	% Long Lines of Total
	Plant in Service less Land and Buildings		
June 30, 1923	$105,488,250	$61,623,972,792	6.5
" " 1924	123,658,267	1,862,290,597	6.6
" " 1925	136,747,451	2,131,226,971	6.4
" " 1926	148,363,095	2,383,383,293	6.2
" " 1927	178,612,785	2,629,022,079	6.8
" " 1928	214,855,143	2,866,965,736	7.5
" " 1929	260,865,457	3,124,230,109	8.3
" " 1930	346,428,153	3,505,997,653	9.9
" " 1931	390,673,492	3,721,151,171	10.5
	Plant in Service		
June 30, 1931	$397,791,104	$4,194,639,752	9.5

Source of Information

Total Associated Operating Cos.	CR 64A
Long Lines	M.R. 6
Bell of Canada	M.R. 6

[fol. 3019]

EXHIBIT A-112

% Chicago Area of Total Associated Operating Companies (Excluding Long Lines) and Including Bell Tel. Co. of Canada

	Chicago Area	Total Associated Operating Companies and Bell Tel. Co. of Canada	% Chicago Area of Total
	Exchange and Toll Lines		
June 30, 1923	$36,087,094	$911,756,751	4.0
" " 1924	39,784,143	993,977,624	4.0
" " 1925	44,789,091	1,102,084,049	4.1
" " 1926	51,048,837	1,213,087,227	4.2
" " 1927	55,822,402	1,320,055,858	4.2
" " 1928	60,380,843	1,393,638,036	4.3
" " 1929	64,413,366	1,509,707,657	4.3
" " 1930	69,360,366	1,683,822,000	4.1
" " 1931	72,898,702	1,759,788,316	4.1
	Central Office Equipment		
June 30, 1923	$27,119,185	$339,855,432	8.0
" " 1924	29,655,864	436,105,001	6.8
" " 1925	32,484,664	556,190,661	5.8
" " 1926	39,184,813	647,065,153	6.1
" " 1927	43,474,725	720,277,850	6.0
" " 1928	47,699,022	778,637,884	6.1
" " 1929	53,749,067	835,021,368	6.4
" " 1930	57,300,466	914,292,418	6.3
" " 1931	61,300,843	987,305,365	6.2
	Plant in Service Less Land and Buildings		
June 30, 1923	$83,329,463	$1,518,484,542	5.5
" " 1924	92,419,845	1,738,632,330	5.3
" " 1925	102,977,121	1,994,479,520	5.2
" " 1926	118,579,263	2,235,020,198	5.3
" " 1927	130,535,249	2,450,409,294	5.3
" " 1928	144,347,829	2,652,110,593	5.4
" " 1929	157,013,155	2,863,364,652	5.5
" " 1930	167,447,070	3,159,569,500	5.3
" " 1931	175,153,258	3,330,477,679	5.3

Plant in Service

June 30, 1931	$192,119,634	$3,796,848,648	5.1

Company Stations

June 30, 1931	$962,310	$16,267,882	5.9

Source of Information

	Exch. and Toll Lines C. O. Equip. Plant in Service and Plant in Service Less Land and Buildings	Company Stations
Total Assoc. Oper. Cos.	CR 64A	CR 51A
Bell Tel. Co. of Canada	M.R. 6[illegible]	M.R. 1
Chicago Area	M.R. [illegible]	M.R. 1

[fol. 3020]

EXHIBIT A-113

% Chicago Area of Total Associated Operating Com[illegible] Long Lines and Bell Telephone Company of C[illegible]

Plant in Service

	Chicago Area	Total Associated Operating Companies, Plus Long Lines and Bell of Canada	% Chicago Area of Total
June 30, 1923	$94,238,639	$1,785,892,407	5.3
" 30, 1924	103,709,064	2,054,099,512	5.1
" 30, 1925	115,463,286	2,361,575,372	4.9
" 30, 1926	131,497,639	2,657,226,222	5.0
" 30, 1927	144,222,924	2,940,006,674	4.9
" 30, 1928	158,194,532	3,199,368,308	4.9
" 30, 1929	172,064,784	3,504,655,454	4.9
" 30, 1930	184,176,238	3,938,948,405	4.7
" 30, 1931	192,119,634	4,194,630,752	4.6

(Here follow side folios 3021-3042)

EXHIBIT A-114

Chart I.

Consolidation of Charts II, III & IV

COMPARISON WITH BUDGETS OF EXPENDITURES OF DEPARTMENT OF DEVELOPMENT AND RESEARCH AND OF ENGINEERING DEPARTMENT WESTERN ELECTRIC CO.

(NON BELL AND DIRECT SERVICES OTHER THAN DEVELOPMENT EXCLUDED EXCEPT AS NOTED ON CHART IV) - DECEMBER 31, 1923.

		Month of December	Cumulative 12 Months	Budget 1923	Percent of Budget for 12 Mo Expended
LOCAL CENTRAL OFFICE EQUIPMENT	Panel Machine Switching	$230,158.00	$1,751,093.00		
	Step-by-Step Machine Switching	23,406.	291,540.		
	Fundamental Development Machine Switching	23,402.	253,895.		
	Equipment Editing Engineering	1,613.	6,832.		
	Manual Central Office Equipment	68,658.	530,223.		
	General	2,076.	27,464.		
	TOTAL	343,513.	2,861,047.	$2,623,400.00	109.1
TOLL CENTRAL OFFICE EQUIPMENT	Switchboards and Desks	7,384.	44,802.		
	Manual Switchboard Circuits and Apparatus	6,002.	54,294.		
	Machine Switching	8,508.	74,998.		
	Signaling	9,022.	67,061.		
	Test Boards and Testing Equipment	3,835.	30,832.		
	TOTAL	34,751.	271,987.	232,400.	117.0
PRIVATE BRANCH EXCHANGES	Manual	4,700.	53,902.		
	Machine Switching	4,871.	63,516.		
	Power	136.	1,133.		
	Fundamental	704.	7,716.		
	TOTAL	10,411.	126,267.	168,300.	75.0
SUBSTATION EQUIPMENT	A. T. & T. Co.'s Instruments	Cr. 164.	333,504.		
	Substation Sets	8,242.	77,634.		
	Operators' Sets	291.	2,781.		
	Other Equipment	11,065.	155,289.		
	Maintenance	733.	6,116.		
	TOTAL	20,167.	575,324.	605,900.	94.9
TELEPHONE TRANSMISSION OVER WIRES EQUIPMENT AND METHODS	Repeaters	22,035.	236,671.		
	Carrier Telephone	30,474.	351,701.		
	Vacuum Tubes	29,197.	211,467.		
	Loading	6,921.	74,464.		
	Cross Induction	6,276.	58,312.		
	Local Circuits	3,220.	20,268.		
	Transformers	1,315.	7,056.		
	Toll Line Transmission Maintenance	545.	8,204.		
	General	3,029.	41,763.		
	TOTAL	103,012.	1,009,906.	950,300.	106.3
TELEGRAPH TRANSMISSION OVER WIRES EQUIPMENT AND METHODS	Direct Current Metallic Telegraph	3,944.	54,322.		
	Direct Current Grounded Telegraph	2,166.	21,707.		
	Carrier Telegraph	6,898.	120,091.		
	Low Frequency A-C. Telegraph	5,974.	140,955.		
	Printing Telegraph	6,269.	64,926.		
	Ocean Cable Telegraph	-	3,306.		
	Relays and General Apparatus and Matters	1,023.	12,159.		
	TOTAL	26,274.	417,466.	501,400.	83.3
RADIO	Systems	12,844.	63,659.		
	Fundamental Development	89,474.	451,667.		
	Radio Repeaters	-	-		
	Signaling	Cr. 28.	4,584.		
	Apparatus and Equipment	22,050.	149,675.		
	U.S. Government	-	-		
	Radio Regulations and Outside Relations	-	-		
	General	23,905.	92,075.		
	TOTAL	148,245.	761,660.	597,700.	127.4
OUTSIDE PLANT	Materials	Cr.189,236.	165,774.		
	Cables	116,029.	495,015.		
	Apparatus	4,947.	46,143.		
	General	1,182.	9,364.		
	Methods Development	13.	2,310.		
	TOTAL	Cr. 67,065.	718,606.	845,300.	85.0
PROTECTION	Central Office				
	Substation				
	Cable				
	General				
	TOTAL	4,190.	40,256.	55,300.	72.8
INTERFERENCE PREVENTION	Negotiations and Cooperation with Government Representatives, National Societies, etc.	814.	13,207.		
	Inductive Interference from Power Circuits	9,235.	88,025.		
	Interference from Electric Railroads	2,290.	14,363.		
	Hazards	-	427.		
	Electrolysis	424.	4,595.		
	Interference from Radio	-	75.		
	General	76.	16,889.		
	TOTAL	12,839.	137,581.	147,400.	93.3
FUNDAMENTAL RESEARCH	Contact Study	5,801.	84,479.		
	Magnetic Iron Study	3,139.	42,811.		
	Telephone Quality Study	11,185.	153,670.		
	Paper Study for Cable	-	116.		
	Transmission Theory	1,326.	16,512.		
	Non-Linear Circuit Elements	-	-		
	General	2,342.	16,343.		
	TOTAL	23,793.	313,931.	373,000.	84.2
LICENSE CONTRACT SERVICES	Testimony TOTAL	1,787.	19,768.	26,300.	75.2
CONSOLIDATIONS	TOTAL	1,502.	14,179.	16,900.	83.9
SPECIAL SERVICES	Loud Speakers	47,093.	271,059.		
	Wire Broadcasting	10,651.	85,525.		
	General	5,818.	66,514.		
	TOTAL	63,562.	423,098.	436,700.	96.9
MISCELLANEOUS	Cuba Cable	-	Cr. 1,009.		
	Patents and Inventions	5,294.	51,336.		
	Special Work in Connection with Legal Cases	1,678.	14,678.		
	General Data for Guiding Development Work	3,143.	28,979.		
	General	59,884.	672,602.		
	TOTAL	69,999.	766,586.	479,600.	159.8
	GRAND TOTAL	$796,980.	$8,457,662.	$8,059,900.	104.9

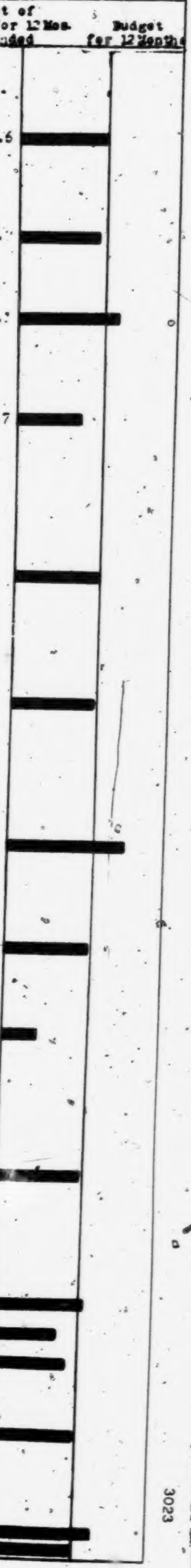
Chart II.

DEPARTMENT OF DEVELOPMENT AND RESEARCH

COMPARISON OF EXPENDITURES WITH BUDGET - DECEMBER 31, 1923.

(Western Electric Development Bills not included)

		Month of December	Cumulative 12 Months	Budget 1923	Percent of Budget for 12 Mos. Expended
LOCAL CENTRAL OFFICE EQUIPMENT	Panel Machine Switching	$ 14,290.00	$ 161,456.00		
	Step-by-Step Machine Switching	5,274.	71,924.		
	Fundamental Development Machine Switching	3,543.	26,808.		
	Equipment Editing Engineering	-	-		
	Manual Central Office Equipment	5,736.	65,070.		
	General	1,637.	13,717.		
	TOTAL	33,486.	342,375.	$340,400.00	100.6
TOLL CENTRAL OFFICE EQUIPMENT	Switchboards and Desks	9.	396.		
	Manual Switchboard Circuits and Apparatus	4,354.	34,354.		
	Machine Switching	699.	1,7[illegible].		
	Signaling	1,400.	16,690.		
	Test Boards and Testing Equipment	1,219.	5,470.		
	TOTAL	7,72[illegible].	58,487.	62,400.	93.[illegible]
PRIVATE BRANCH EXCHANGES	Manual	1,369.	16,471.		
	Machine Switching	1,020.	13,7[illegible].		
	Power	136.	1,362.		
	Fundamental	-	1,251.		
	TOTAL	2,525.	32,859.	28,300.	116.[illegible]
SUBSTATION EQUIPMENT	A. T. & T. Co.'s Instruments	540.	6,575.		
	Substation Sets	1,656.	15,[illegible].		
	Operators' Sets	[illegible]	2,76[illegible].		
	Other Equipment	354.	13,550.		
	Maintenance	25[illegible].	2,127.		
	TOTAL	4,402.	40,956.	54,[illegible]00.	74.7
TELEPHONE TRANSMISSION OVER WIRES EQUIPMENT AND METHODS	Repeaters	12,303.	100,35[illegible].		
	Carrier Telephone	6,205.	55,176.		
	Vacuum Tubes	572.	7,590.		
	Loading	2,394.	29,172.		
	Cross Induction	6,006.	[illegible]		
	Local Circuits	[illegible]	20,268.		
	Transformers	[illegible]	7,056.		
	Toll Line Transmission Maintenance	545.	6,204.		
	General	204.	[illegible]67.		
	TOTAL	31,[illegible]73.	253,356.	2[illegible]	
TELEGRAPH TRANSMISSION OVER WIRES EQUIPMENT AND METHODS	Direct Current Metallic Telegraph	[illegible]	25,0[illegible].		
	Direct Current Grounded Telegraph	[illegible]	[illegible]		
	Carrier Telegraph	[illegible]	[illegible]		
	Low Frequency A.C. Telegraph	[illegible]	47,735.		
	Printing Telegraph	[illegible]	25,010.		
	Ocean Cable Telegraph	[illegible]344.	-		
	Relays and General Apparatus and Batteries	[illegible]023.	12,[illegible].		
	TOTAL	15,[illegible].	[illegible]2,[illegible]53.	17[illegible],400.	
RADIO	Systems	530.	3,42[illegible].		
	Fundamental Development	540.	[illegible]		
	Radio Repeaters	-	-		
	Signaling	-	-		
	Apparatus and Equipment	-	514.		
	U.S. Government	-	-		
	Radio Regulations and Outside Relations	-	-		
	General	23,905.	94,28[illegible].		
	TOTAL	24,975.	125,032.	85,700.	1[illegible]
OUTSIDE PLANT	Materials	16,56[illegible].	103,635.		
	Cables	2,674.	25,759.		
	Apparatus	3,0[illegible]5.	36,091.		
	General	1,362.	6,541.		
	Methods Development	[illegible]	2,310.		
	TOTAL	27,4[illegible].	1[illegible]0,336.	[illegible]	9[illegible]
PROTECTION	Central Office	69.	1,386.		
	Substation	79.	1,443.		
	Cable	[illegible]	4,361.		
	General	[illegible]54.	1,398.		
	TOTAL	754.	5,566.	21,300.	4[illegible]
INTERFERENCE PREVENTION	Negotiations and Cooperation with Government Representatives, National Societies, etc.	514.	13,207.		
	Inductive Interference from Power Circuits	[illegible],656.	83,420.		
	Interference from Electric Railroads	2,7[illegible].	14,242.		
	Hazards	-	427.		
	Electrolysis	424.	4,595.		
	Interference from Radio.	-	75.		
	General	76.	16,889.		
	TOTAL	12,660.	132,861.	137,400.	96.[illegible]
FUNDAMENTAL RESEARCH	Contact Study	-	-		
	Magnetic Iron Study	-	-		
	Telephone Quality Study	2,203.	15,360.		
	Paper Study for Cable	-	35.		
	Transmission Theory	1,326.	16,512.		
	Non-Linear Circuit Elements	-	-		
	General	2,342.	16,343.		
	TOTAL	5,871.	48,238.	45,000.	107.2
LICENSEE CONTRACT SERVICES	Testimony				
	TOTAL	1,456.	19,437.	26,300.	● 73.[illegible]
CONSOLIDATIONS					
	TOTAL	1,502.	14,179.	16,900.	83.9
SPECIAL SERVICES	Loud Speakers	699.	15,743.		
	Wire Broadcasting	3,985.	38,682.		
	General	1,341.	20,245.		
	TOTAL	6,025.	74,870.	**76,700.	97.6
MISCELLANEOUS	Cuba Cable	-	166.		
	Patents and Inventions	1,811.	16,858.		
	Special Work in Connection with Legal Cases	28.	28.		
	General Data for Guiding Development Work	3,143.	28,979.		
	General	5,308.	75,840.		
	TOTAL	10,290.	121,871.	100,000.	121.8
	GRAND TOTAL	$176,270.00	$1,636,778.00	$1,636,900.00	100.0



● $15,000 erroneously included in budget under this heading in April - August Statements.

** Does not include any part of special authorization of $5,000 for "Transmission of Pictures".

Chart III.

WESTERN ELECTRIC ENGINEERING EXPENSE BILLED TO DEPARTMENT OF DEVELOPMENT AND RESEARCH

COMPARISON WITH BUDGET - DECEMBER 31, 1923.

		Month of December	Cumulative 12 Months	Budget 1923	Percent of Budget for 12 Mos. Expended
LOCAL CENTRAL OFFICE EQUIPMENT	Panel Machine Switching	$ 7.00	1,573.00		
	Step-by-Step Machine Switching	18,225.	$ 213,854.		
	Fundamental Development Machine Switching	-	-		
	Equipment Editing Engineering	-	-		
	Manual Central Office Equipment	595.	Cr. 1,596.		
	General	Cr. 920.	4,146.		
	T O T A L	17,907.	217,977.	$ 128,000.00	170.3
TOLL CENTRAL OFFICE EQUIPMENT	Switchboards and Desks	-	-		
	Manual Switchboard Circuits and Apparatus	-	-		
	Machine Switching	-	-		
	Signaling	Cr. 355.	Cr. 768.		
	Test Boards and Testing Equipment	Cr. 452	2,401.		
	T O T A L	Cr. 807.	1,633.	5,000.	32.7
PRIVATE BRANCH EXCHANGES	Manual	8.	1,473.		
	Machine Switching	1,719.	37,451.		
	Power	-	Cr. 249		
	Fundamental	-	-		
	T O T A L	1,727.	38,675.	50,000	77.4
SUBSTATION EQUIPMENT	A.T. & T. Co.'s Instruments	-	122.		
	Substation Sets	1,186.	2,660.		
	Operators' Sets	-	-		
	Other Equipment	1,343	15,673.		
	Maintenance	496	3,989		
	T O T A L	3,024.	22,444	8,000.	280.6
TELEPHONE TRANSMISSION OVER WIRES EQUIPMENT AND METHODS	Repeaters	945.	22,280.		
	Carrier Telephone	-	45,069.		
	Vacuum Tubes	26,445.	177,774.		
	Loading	2,066	10,026.		
	Cross Induction	216.	1,381.		
	Local Circuits	-	-		
	Transformers	-	-		
	Toll Line Transmission Maintenance	-	-		
	General	2,825	33,776.		
	T O T A L	32,497	290,306.	270,000.	107.3
TELEGRAPH TRANSMISSION OVER WIRES EQUIPMENT AND METHODS	Direct Current Metallic Telegraph	-	Cr. 1,816.		
	Direct Current Grounded Telegraph	-	-		
	Carrier Telegraph	-	38,879.		
	Low Frequency A.C. Telegraph	2,535.	93,220.		
	Printing Telegraph	-	-		
	Ocean Cable Telegraph	-	-		
	Relays and General Apparatus and Matters	-	Cr. 778.		
	T O T A L	2,535.	129,505.	126,000.	102.8
RADIO	Systems	-	-		
	Fundamental Development	12,314.	30,181		
	Radio Repeaters	8.	197,049.		
	Signaling	-	-		
	Apparatus and Equipment	Cr. 28.	4,584.		
	U.S. Government	4,816.	59,863.		
	Radio Regulations and Outside Relations	-	-		
	General	-	Cr. 2,207.		
	T O T A L	17,110	289,470.	282,000.	102.6
OUTSIDE PLANT	Materials	-	-		
	Cables	1,165	14,874		
	Apparatus	-	1,797.		
	General	6.	113.		
	Methods Development	20.	423		
	T O T A L	1,171.	17,207.	40,000.	43.02
PROTECTION	Central Office	-	-		
	Substation	-	-		
	Cable	-	-		
	General	180.	565.		
	T O T A L	180	565.	8,000.	7.1
INTERFERENCE PREVENTION	[illegible]	-	-		
	Representatives, [illegible] Committees, etc.	-	-		
	Inductive Interference from Power Circuits	-	-		
	Interference from Electric [illegible]	179	4,699.		
	Hazards	-	21.		
	Electrolysis	-	-		
	Interference from Radio	-	-		
	General	-	-		
	T O T A L	179.	4,720.	10,000.	47.2
FUNDAMENTAL RESEARCH	Contact Study	-	-		
	Magnetic Iron Study	-	-		
	Telephone Quality Study	5,287.	66,007.		
	Paper Study for Cable	-	-		
	Transmission Theory	-	-		
	Non-linear Circuit Elements	-	-		
	General	-	-		
	T O T A L	5,287.	66,007	98,000.	67.4
LISENSE CONTRACT SERVICES	Testimony				
	T O T A L	331.	331.	-	
CONSOLIDATIONS	T O T A L	-	-	-	
SPECIAL SERVICES	Loud Speakers	7,865.	58,034.		
	Wire Broadcasting	6,666.	46,643.		
	General	4,477.	46,269.		
	T O T A L	19,008.	150,946.	230,000.	65.6
MISCELLANEOUS	Cuba Cable	-	Cr. 1,175.		
	Patents and Inventions	-	-		
	Special Work in Connection with Legal Cases	1,650.	14,650.		
	General Data for Guiding Development Work	-	-		
	General	181.	3,717.		
	T O T A L	1,831.	17,192.	12,000.	143.3
	GRAND TOTAL	$115,580.00	$1,246,978.00	$1,267,000.00	98.4

Note; Data for these expenditures are obtained by classifying the monthly statements rendered to this Department. This billing includes a certain amount of expense carried over from 1922, and also includes a loading charge of 2-1/2 per cent. on the actual expenditures of the Western Electric Company.

* Includes $22,000 (Estimated billing on pictures for the year) of special authorizations totaling $65,000 for "Transmission of Pictures".

Chart IV.

WESTERN ELECTRIC COMPANY'S CHARGES TO DEVELOPMENT ACCOUNT

COMPARISON WITH BUDGET - DECEMBER 31, 1923.

		Month of December	Cumulative 12 Months	Budget 1923	Percent of Budget For 12 Mos. Expended	Budget for 12 Mos.
LOCAL CENTRAL OFFICE EQUIPMENT	Panel Machine Switching	$216,053.00	$1,587,664.00			
	Step-by-Step Machine Switching	Cr. 93.00	5,762.			
	Fundamental Development Machine Switching	19,859.	227,087.			
	Equipment Editing Engineering	1,613.	6,832.			
	Manual Central Office Equipment	53,327.	463,749.			
	General	1,359.	9,601.			
	TOTAL	292,118.	2,300,695.	$2,155,000.00	106.8	
TOLL CENTRAL OFFICE EQUIPMENT	Switchboards and Desks	7,375.	44,406.			
	Manual Switchboard Circuits and Apparatus	1,608.	20,160.			
	Machine Switching	7,809.	73,201.			
	Signaling	7,969.	51,139.			
	Test Boards and Testing Equipment	3,068.	22,961.			
	TOTAL	27,829.	211,867.	165,000.	128.4	
PRIVATE BRANCH EXCHANGES	Manual	3,323.	35,958.			
	Machine Switching	2,132.	12,350.			
	Power	-	-			
	Fundamental	704.	6,425.			
	TOTAL	6,159.	54,733.	90,000.	60.8	
SUBSTATION EQUIPMENT	A. T. & T. Co.'s Instruments	Cr.1,004.	326,803.			
	Substation Sets	5,376.	59,015.			
	Operators' Sets	-	-			
	*Other Equipment	8,369.	126,066.			
	Maintenance	-	-			
	TOTAL	12,741.	511,884.	543,000.	94.3	
TELEPHONE TRANSMISSION OVER WIRES EQUIPMENT AND METHODS	Repeaters	9,787.	114,039.			
	Carrier Telephone	24,274.	251,056.			
	Vacuum Tubes	2,180.	25,843.			
	Loading	2,651.	35,266.			
	Cross-Induction	-	-			
	Local Circuits	-	-			
	Transformers	-	-			
	Toll Line Transmission Maintenance	-	-			
	General	-	-			
	TOTAL	38,892.	426,204.	385,000.	110.7	
TELEGRAPH TRANSMISSION OVER WIRES EQUIPMENT AND METHODS	Direct Current Metallic Telegraph	1,317.	31,056.			
	Direct Current Grounded Telegraph	308.	5,797.			
	Carrier Telegraph	2,814.	45,033.			
	Low Frequency A-C. Telegraph	-	-			
	Printing Telegraph	3,925.	39,916.			
	Ocean Cable Telegraph	-	3,300.			
	Relays and General Apparatus and Matters	-	-			
	TOTAL	8,364.	125,106.	205,000.	61.0	
RADIO	Systems	-	30,049.			
	Fundamental Development	75,326.	237,811.			
	Radio Repeaters	-	-			
	Signaling	-	-			
	Apparatus and Equipment	17,234.	89,298.			
	U. S. Government	-	-			
	Radio Regulations and Outside Relations	-	-			
	General	-	-			
	TOTAL	92,560.	357,158.	230,000.	155.3	
OUTSIDE PLANT	Materials	200,969.Cr.	47,265.			
	Cables	113,355.	467,459.			
	Apparatus	1,883.	15,959.			
	General	-	-			
	Methods Development	-	-			
	TOTAL	85,731.Cr.	530,663.	629,400.	84.3	
PROTECTION	Central Office					
	Substation					
	Cable					
	General					
	TOTAL	3,256.	31,103.	26,000.	119.6	
INTERFERENCE PREVENTION	Negotiations and Cooperation with Government Representatives, National Societies, etc.					
	Inductive Interference from Power Circuits					
	Interference from Electric Railroads					
	Hazards					
	Electrolysis					
	Interference from Radio					
	General					
	TOTAL					
FUNDAMENTAL RESEARCH	Contact Study	5,801.	84,479.			
	Magnetic Iron Study	3,139.	42,811.			
	Telephone Quality Study	3,695.	72,363.			
	Paper Study for Cable	-	33.			
	Transmission Theory	-	-			
	Non-Linear Circuit Elements	-	-			
	General	-	-			
	TOTAL	12,635.	199,686.	230,000.	86.8	
LICENSE CONTRACT SERVICES	Testimony					
	TOTAL					
CONSOLIDATIONS	TOTAL					
SPECIAL SERVICES	Loud Speakers	38,529.	197,282.			
	Wire Broadcasting	-	-			
	General	-	-			
	TOTAL	38,529.	197,282.	130,000.	151.8	
***MISCELLANEOUS	Cuba Cable	-	-			
	Patents and Inventions	3,483.	34,478.			
	Special Work in Connection with Legal Cases	-	-			
	General Data for Guiding Development Work	-	-			
	General	54,395.	593,045.			
	TOTAL	57,878.	627,523.	367,600.	170.7	
	****GRAND TOTAL	$505,230.	$5,573,906.	$5,156,000.	108.1	

*Includes Dry Cells.
**Includes Inspection & Insulating Materials
***Train Dispatching Systems and Submarine Signaling Omitted.
**** Not W.E. Appliances, Train Dispatching Systems and Submarine Signaling Omitted.

Note 1: The larger part of the charges under "Radio" and "Loud Speakers" is to be liquidated against sales outside of the Bell System. On all other items the proportion of the charges to be liquidated on outside sales is small.
Note 2: Data for this sheet are taken from Western Electric Company's Progress Report for December. Changes indicated have been made in the classification of some of the items. These figures are final and replace any preliminary report.

Chart II

DEPARTMENT OF DEVELOPMENT AND RESEARCH

COMPARISON OF EXPENDITURES WITH BUDGET - DECEMBER 31, 1924

(Western Electric Development Bills not included)

		Expenditures		Budget 1924	Percent of Budget for 12 Mo's Expended
		Month of December	Cumulative 12 Months		
LOCAL CENTRAL OFFICE EQUIPMENT	Panel Machine Switching	$ 14,205.00	$ 165,086.00		
	Step-by-Step Machine Switching	6,080.	69,191.		
	Fundamental Development Machine Switching	4,262.	49,046.		
	Equipment Editing Engineering	-	-		
	Manual Central Office Equipment	5,839.	85,697.		
	General	1,474.	16,200.		
	TOTAL	31,860.	385,220.	$ 385,400.00	99.95
TOLL CENTRAL OFFICE EQUIPMENT	Switchboards and Desks	15.	314.		
	Manual Switchboard Circuits and Apparatus	3,597.	37,896.		
	Machine Switching	456.	5,072.		
	Signaling	3,342.	26,012.		
	Test Boards and Testing Equipment	968.	16,661.		
	TOTAL	8,378.	85,955.	75,300.	114.2
PRIVATE BRANCH EXCHANGE	Manual	1,217.	16,319.		
	Machine Switching	1,143.	14,740.		
	Power	36.	1,605.		
	Fundamental	326.	416.		
	TOTAL	2,722.	33,080.	37,600.	88.0
SUBSTATION EQUIPMENT	A. T. & T. Co.'s Instruments	1,712.	18,434.		
	Substation Sets	3,025.	25,425.		
	Operators' Sets	24.	1,748.		
	Other Equipment	1,311.	16,876.		
	Maintenance	101.	2,868.		
	TOTAL	6,173.	65,351.	65,800.	99.3
TELEPHONE TRANSMISSION OVER WIRES EQUIPMENT AND METHODS	Repeaters	7,055.	70,957.		
	Carrier Telephone	4,933.	62,672.		
	Vacuum Tubes	637.	9,343.		
	Loading	2,132.	26,378.		
	Cross Induction	5,839.	63,020.		
	Local Circuits	2,863.	39,803.		
	Transformers	564.	6,301.		
	Toll Line Transmission Maintenance	1,140.	10,107.		
	General	956.	12,810.		
	TOTAL	26,319.	305,471.	336,200.	90.9
TELEGRAPH TRANSMISSION OVER WIRES EQUIPMENT AND METHODS	Direct Current Metallic Telegraph	1,459.	20,347.		
	Direct Current Grounded Telegraph	1,451.	23,281.		
	Carrier Telegraph	3,256.	44,117.		
	Low Frequency A-C. Telegraph	1,723.	28,520.		
	Printing Telegraph	1,487.	19,552.		
	Ocean Cable Telegraph	-	-		
	Relays and General Apparatus and Matters	1,573.	13,326.		
	TOTAL	10,949.	149,143.	168,300.	88.6
RADIO	Systems	150.	1,455.		
	Fundamental Development	192.	10,939.		
	Radio Repeaters	-	-		
	Signaling	-	-		
	Apparatus and Equipment	13.	1,022.		
	U.S. Government	-	-		
	Radio Regulations and Outside Relations	25.	9,016.		
	General	51,412.	197,473.		
	TOTAL	51,792.	219,905.	172,100.	127.8
OUTSIDE PLANT	Materials	9,382.	113,545.		
	Cables	3,567.	38,710.		
	Apparatus	2,191.	28,207.		
	General	940.	10,839.		
	Methods Development	241.	1,774.		
	TOTAL	16,321.	193,075.	182,700.	105.7
PROTECTION	Central Office	255.	1,981.		
	Substation	452.	2,758.		
	Cable	212.	6,334.		
	General	28.	995.		
	TOTAL	947.	12,068.	19,000.	63.5
INTERFERENCE PREVENTION	Negotiations and Cooperation with Government Representatives, National Societies, etc.	1,273.	12,166.		
	Inductive Interference from Power Circuits	26,546.	136,606.		
	Interference from Electric Railroads	999.	22,095.		
	Hazards	-	118.		
	Electrolysis	572.	6,012.		
	Interference from Radio	-	96.		
	General	-	41.		
	TOTAL	29,390.	177,134.	178,100.	99.5
SPECIAL RESEARCH PROBLEMS	Contact Study	-	-		
	Magnetic Iron Study	-	-		
	Telephone Quality Study	1,008.	16,628.		
	Paper Study for Cable	-	-		
	Transmission Theory	956.	11,496.		
	Non-Linear Circuit Elements	-	-		
	General	2,454.	27,284.		
	TOTAL	4,418.	55,408.	55,900.	99.1
RATE CASE TESTIMONY	TOTAL	3,573.	29,930.	21,800.	137.3
CONSOLIDATIONS	TOTAL	1,265.	12,078.	20,400.	59.2
NEW TYPES OF SERVICES	Loud Speakers	253.	5,200.		
	Wire Broadcasting	2,710.	41,288.		
	Phototelegraphy	3,922.	63,720.		
	General	2,217.	21,030.		
	TOTAL	9,102.	131,238.	88,700.	148.0
MISCELLANEOUS	Patents and Inventions	1,405.	18,325.		
	Special Work in Connection with Legal Cases	-	-		
	General Data for Guiding Development Work	1,703.	24,533.		
	General	6,957.	75,104.		
	TOTAL	10,065.	117,962.	133,700.	88.2
	GRAND TOTAL	$213,274.	$1,973,018.	$1,941,000.	101.6

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Chart III

WESTERN ELECTRIC ENGINEERING EXPENSE BILLED TO DEPARTMENT OF DEVELOPMENT AND RESEARCH

COMPARISON WITH BUDGET - DECEMBER 31, 1924

		Expenditures		Budget 1924	Percent of Budget for 12 Mo's Expended
		Month of December	Cumulative 12 Months		
LOCAL CENTRAL OFFICE EQUIPMENT	Panel Machine Switching	$ 3.00	$ 149.00		
	Step-by-Step Machine Switching	-	449.		
	Fundamental Development Machine Switching	-	-		
	Equipment Editing Engineering	-	-		
	Manual Central Office Equipment	-	Cr. 1,647.		
	General	407.	Cr. 1,453.		
	TOTAL	410.	Cr. 2,502.	$ * 13,000.00	-
TOLL CENTRAL OFFICE EQUIPMENT	Switchboards and Desks	-	-		
	Manual Switchboard Circuits and Apparatus	-	-		
	Machine Switching	-	-		
	Signaling	-	Cr. 2,129		
	Test Boards and Testing Equipment	23.	1,513.		
	TOTAL	23.	Cr. 616.	4,000.	-
PRIVATE BRANCH EXCHANGE	Manual	604.	6,183.		
	Machine Switching	-	440.		
	Power	-	-		
	Fundamental	-	-		
	TOTAL	604.	6,623.	* 2,000.	331.1
SUBSTATION EQUIPMENT	A. T. & T. Co.'s Instruments	-	-		
	Substation Sets	-	42.		
	Operators' Sets	-	-		
	Other Equipment	706.	5,137.		
	Maintenance	1,675.	14,215.		
	TOTAL	2,381.	19,394.	21,000.	92.3
TELEPHONE TRANSMISSION OVER WIRES EQUIPMENT AND METHODS	Repeaters	1,609.	14,962.		
	Carrier Telephone	7,849.	70,261.		
	Vacuum Tubes	19,656.	198,150.		
	Loading	406.	9,416.		
	Cross Induction	232.	3,569.		
	Local Circuits	-	-		
	Transformers	-	-		
	Toll Line Transmission Maintenance	-	-		
	General	21.	Cr. 6,700.		
	TOTAL	29,773.	289,658.	242,000.	119.7
TELEGRAPH TRANSMISSION OVER WIRES EQUIPMENT AND METHODS	Direct Current Metallic Telegraph	-	Cr. 1.		
	Direct Current Grounded Telegraph	-	-		
	Carrier Telegraph	4,745.	45,148.		
	Low Frequency A-C. Telegraph	1,606.	17,577.		
	Printing Telegraph	-	-		
	Ocean Cable Telegraph	-	-		
	Relays and General Apparatus and Matters	-	-		
	TOTAL	6,351.	62,724.	81,000.	77.4
RADIO	Systems	5,807.	38,072.		
	Fundamental Development	32,725.	251,149.		
	Radio Repeaters	-	-		
	Signaling	-	-		
	Apparatus and Equipment	8,565.	62,373.		
	U.S. Government	-	-		
	Radio Regulations and Outside Relations	-	-		
	General	-	2,377.		
	TOTAL	47,097.	353,971.	460,000.	76.9
OUTSIDE PLANT	Materials	3,217.	32,096.		
	Cables	543.	3,137.		
	Apparatus	-	268.		
	General	46.	730.		
	Methods Development	-	-		
	TOTAL	3,806.	36,231.	41,200.	87.7
PROTECTION	Central Office	-	160.		
	Substation	-	1,845.		
	Cable	-	-		
	General	-	-		
	TOTAL	-	2,005.	7,500.	26.7
INTERFERENCE PREVENTION	Negotiations and Cooperation with Government Representatives, National Societies, etc.	-	-		
	Inductive Interference from Power Circuits	2,407.	9,483.		
	Interference from Electric Railroads	-	-		
	Hazards	-	-		
	Electrolysis	-	-		
	Interference from Radio	-	-		
	General	-	-		
	TOTAL	2,407.	9,483.	36,000.	26.3
SPECIAL RESEARCH PROBLEMS	Contact Study	-	-		
	Magnetic Iron Study	-	-		
	Telephone Quality Study	8,136.	69,094.		
	Paper Study for Cable	-	-		
	Transmission Theory	-	-		
	Non-linear Circuit Elements	-	-		
	General	-	-		
	TOTAL	8,136.	69,094.	70,000.	98.7
RATE CASE TESTIMONY	TOTAL	-	-	-	-
CONSOLIDATIONS	TOTAL	822.	822.	-	-
NEW TYPES OF SERVICES	Loud Speakers	7,720.	77,543.		
	Wire Broadcasting	4,673.	38,518.		
	Phototelegraphy	10,010.	118,961.		
	General	54.	2,937.		
	TOTAL	22,458.	237,959.	143,000.	166.4
MISCELLANEOUS	Patents and Inventions	-	-		
	Special Work in Connection with Legal Cases	903.	1,856.		
	General Data for Guiding Development Work	-	-		
	General	6,782.	61,740.		
	TOTAL	7,685.	63,596.	33,000.	192.7
	GRAND TOTAL	$131,953.	$1,148,342.	$1,153,700.	99.5

* Budget for Step-by-Step Machine Switching Subtracted from Original Budget and Added to W.E. Co. Development Account

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Chart I.
Consolidation of Charts II and III.

DEPARTMENT OF DEVELOPMENT AND RESEARCH

COMPARISON OF PRINCIPAL EXPENDITURES WITH BUDGET - YEAR 1925

(Including Bell Telephone Laboratories Bills)

		Expenditures			
		Month of December	Cumulative 12 Months	Budget 1925	Per cent of Budget for 12 Mo's. Expended
LOCAL CENTRAL OFFICE EQUIPMENT	Panel Machine Switching	$ 11,218.00	$ 165,178.00		
	Step-by-Step Machine Switching	5,625.	68,513.		
	Fundamental Development Machine Switching	4,970.	73,150.		
	Equipment Editing Engineering	-	-		
	Manual Central Office Equipment	8,261.	106,039.		
	General	2,702.	31,130.		
	TOTAL	33,336.	444,010.	$ 485,104.00	91.7%
TOLL CENTRAL OFFICE EQUIPMENT	Switchboards and Desks	66.	24.		
	Manual Switchboard Circuits and Apparatus	2,328.	37,905.		
	Machine Switching	1,578.	19,413.		
	Signaling	1,235.	25,131.		
	Test Boards and Testing Equipment	1,438.	23,244.		
	TOTAL	6,095.	105,995.	103,575.	102.3
PRIVATE BRANCH EXCHANGES	Manual	1,626.	10,302.		
	Machine Switching	571.	13,750.		
	Power	227.	2,666.		
	Fundamental	-	2,106.		
	TOTAL	2,424.	30,000.	30,300.	96.3
SUBSTATION EQUIPMENT	A. T. & T. Co.'s Instruments	1,662.	31,924.		
	Substation Sets	1,050.	25,580.		
	Operators' Sets	925.	5,370.		
	Other Equipment	2,685.	33,926.		
	Maintenance	1,469.	17,519.		
	TOTAL	7,791.	114,319.	101,475.	112.6
TELEPHONE TRANSMISSION OVER WIRES EQUIPMENT AND METHODS	Repeaters	4,313.	72,007.		
	Carrier Telephone	11,741.	126,421.		
	Vacuum Tubes	23,137.	227,704.		
	Loading	2,720.	42,593.		
	Cross Induction	5,851.	74,453.		
	Local Circuits	530.	11,715.		
	Transformers	713.	8,176.		
	Toll Line Transmission Maintenance	863.	14,412.		
	General	8,040.	54,260.		
	TOTAL	57,986.	632,601.	683,743.	92.5
TELEGRAPH TRANSMISSION OVER WIRES EQUIPMENT AND METHODS	Direct Current Metallic Telegraph	1,191.	22,796.		
	Direct Current Grounded Telegraph	3,006.	35,652.		
	Carrier Telegraph	6,478.	82,244.		
	Low Frequency A-C. Telegraph	3,638.	35,273.		
	Printing Telegraph	4,380.	47,406.		
	Ocean Cable Telegraph	-	-		
	Relays and General Apparatus and Matters	341.	8,722.		
	TOTAL	19,034.	232,293.	299,621.	77.5
RADIO	Systems	3,586.	24,7[illegible].		
	Fundamental Development	32,333.	318,160.		
	Radio Repeaters	-	-		
	Signaling	-	-		
	Apparatus and Equipment	10,643.	83,337.		
	U. S. Government	-	-		
	Radio Regulations and Outside Relations	1,865.	20,591.		
	General	100,445.	334,422.		
	TOTAL	148,872.	751,216.	685,253.	109.6
OUTSIDE PLANT	Materials	17,635.	183,795.		
	Cables	4,834.	51,833.		
	Apparatus	2,054.	30,350.		
	General	687.	7,374.		
	Methods Development	161.	3,774.		
	TOTAL	25,371.	277,126.	262,617.	105.5
PROTECTION	Central Office	-	584.		
	Substation	-	1,418.		
	Cable	240.	7,383.		
	General	431.	4,796.		
	TOTAL	671.	14,181.	29,263.	48.5
INTERFERENCE PREVENTION	Negotiations and Cooperation with Government Representatives, National Societies, etc.	577.	10,143.		
	Inductive Interference from Power Circuits	14,693.	163,916.		
	Interference from Electric Railroads	1,409.	23,947.		
	Hazards	-	56.		
	Electrolysis	364.	6,277.		
	Interference from Radio	71.	363.		
	General	-	-		
	TOTAL	17,114.	200,732.	210,108.	95.6
SPECIAL RESEARCH PROBLEMS	Contact Study	-	-		
	Magnetic Iron Study	-	-		
	Telephone Quality Study	12,091.	122,768.		
	Paper Study for Cable	-	-		
	Transmission Theory	214.	4,845.		
	Non-Linear Circuit Elements	-	-		
	General -	2,079.	27,953.		
	TOTAL	14,384.	155,566.	142,201.	109.4
RATE CASE TESTIMONY	TOTAL	1,851.	42,251.	27,127.	155.7
CONSOLIDATIONS	TOTAL	12.	8,087.	12,952.	62.4
NEW TYPES OF SERVICES	Loud Speakers	5,899.	48,873.		
	Wire Broadcasting	3,434.	79,894.		
	Phototelegraphy	14,705.	231,288.		
	General	5,400.	63,669.		
	TOTAL	30,440.	423,724.	415,498.	102.0
MISCELLANEOUS	Patents and Inventions	2,402.	22,993.		
	Special Work in Connection with Legal Cases	-	68.		
	General Data for Guiding Development Work	1,153.	18,812.		
	General	10,364.	114,529.		
	TOTAL	13,919.	156,402.	191,891.	81.5
	GRAND TOTAL	$379,916.	$3,602,169.	$3,694,785.	97.5

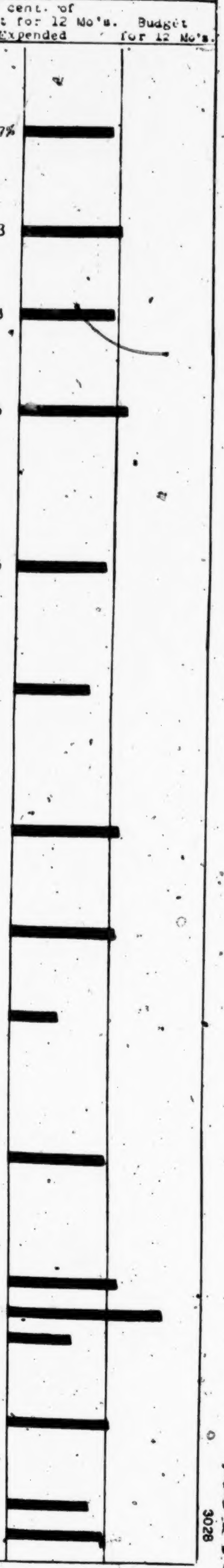

CHART II

DEPARTMENT OF DEVELOPMENT AND RESEARCH

COMPARISON OF EXPENDITURES WITH BUDGET - FOR YEAR 1925

(Bell Telephone Laboratories Billing not included)

		Month of December	Cumulative 12 Months	Budget 1925	Per Cent of Budget for the Year Expended
LOCAL CENTRAL OFFICE EQUIPMENT	Panel Machine Switching	$ 11,670.00	$ 165,062.00		
	Step-by-Step Machine Switching	5,625.	68,424.		
	Fundamental Development Machine Switching	4,970.	73,150.		
	Equipment Editing Engineering	-	-		
	Manual Central Office Equipment	8,227.	104,664.		
	General	1,481.	18,159.		
	TOTAL	31,973.	429,459.	$ 461,954.00	93.0%
TOLL CENTRAL OFFICE EQUIPMENT	Switchboards and Desks	66.	242.		
	Manual Switchboard Circuits and Apparatus	2,328.	37,965.		
	Machine Switching	1,578.	19,413.		
	Signaling	1,235.	25,131.		
	Test Boards and Testing Equipment	1,488.	23,227.		
	TOTAL	6,695.	105,978.	96,075.	110.3
PRIVATE BRANCH EXCHANGES	Manual	1,332.	15,978.		
	Machine Switching	571.	13,750.		
	Power	227.	2,666.		
	Fundamental	-	2,108.		
	TOTAL	2,130.	34,502.	37,050.	93.1
SUBSTATION EQUIPMENT	A. T. & T. Co.'s Instruments	1,662.	31,924.		
	Substation Sets	1,050.	25,580.		
	Operators' Sets	925.	5,370.		
	Other Equipment	1,459.	17,828.		
	Maintenance	53.	1,472.		
	TOTAL	5,149.	82,174.	79,125.	103.9
TELEPHONE TRANSMISSION OVER WIRES EQUIPMENT AND METHODS	Repeaters	4,313.	67,525.		
	Carrier Telephone	7,056.	79,318.		
	Vacuum Tubes	459.	14,173.		
	Loading	1,851.	35,962.		
	Cross Induction	5,851.	73,726.		
	Local Circuits	530.	11,715.		
	Transformers	713.	8,176.		
	Toll Line Transmission Maintenance	883.	14,412.		
	General	2,458.	38,508.		
	TOTAL	24,114.	343,515.	380,243.	90.3
TELEGRAPH TRANSMISSION OVER WIRES EQUIPMENT AND METHODS	Direct Current Metallic Telegraph	1,191.	22,796.		
	Direct Current Grounded Telegraph	3,066.	35,852.		
	Carrier Telegraph	3,355.	50,842.		
	Low Frequency A-C. Telegraph	1,646.	17,695		
	Printing Telegraph	944.	25,416.		
	Ocean Cable Telegraph	-	-		
	Relays and General Apparatus and Matters	341.	8,722.		
	TOTAL	10,543.	161,323.	184,621.	87.4
RADIO	Systems	-	776.		
	Fundamental Development	-	6,639.		
	Radio Repeaters	-	-		
	Signaling	-	-		
	Apparatus and Equipment	-	15.		
	U. S. Government	-	-		
	Radio Regulations and Outside Relations	1,865.	20,591.		
	General	92,415.	281,690.		
	TOTAL	94,280.	309,711.	225,253.	137.5
OUTSIDE PLANT	Materials	10,601.	135,448.		
	Cables	2,377.	34,919.		
	Apparatus	2,054.	30,350.		
	General	617.	6,150.		
	Methods Development	161.	3,774.		
	TOTAL	15,810.	210,641.	222,267.	94.8
PROTECTION	Central Office	-	556.		
	Substation	-	1,418.		
	Cable	51.	5,530.		
	General	413.	2,398.		
	TOTAL	464.	9,902.	19,260.	51.4
INTERFERENCE PREVENTION	Negotiations and Cooperation with Government Representatives, National Societies, etc.	577.	10,143.		
	Inductive Interference from Power Circuits	14,693.	163,916.		
	Interference from Electric Railroads	1,409.	23,947.		
	Hazards	-	56.		
	Electrolysis	364.	8,277.		
	Interference from Radio	71.	363.		
	General	-	-		
	TOTAL	17,114.	206,702.	187,108.	110.5
SPECIAL RESEARCH PROBLEMS	Contact Study	-	-		
	Magnetic Iron Study	-	-		
	Telephone Quality Study	1,918.	29,965.		
	Paper Study for Cable	-	-		
	Transmission Theory	214.	4,845.		
	Non-Linear Circuit Elements	-	-		
	General	2,079.	27,953.		
	TOTAL	4,211.	62,763.	67,261.	93.3
RATE CASE TESTIMONY	TOTAL	1,851.	42,247.	27,127.	155.7
CONSOLIDATIONS	TOTAL	12.	8,010.	11,952.	67.0
NEW TYPES OF SERVICES	Loud Speakers	390.	4,454.		
	Wire Broadcasting	300.	23,914.		
	Phototelegraphy	1,895.	45,786.		
	General	4,815.	37,072.		
	TOTAL	7,400.	111,226.	135,498.	82.1
MISCELLANEOUS	Patents and Inventions	2,402.	22,993.		
	Special Work in Connection with Legal Cases	-	2.		
	General Data for Guiding Development Work	1,153.	18,812.		
	General	9,168.	83,864.		
	TOTAL	12,723.	125,671.	134,891.	93.2
	GRAND TOTAL	$234,469.	$2,243,824.	$2,269,685.	98.9

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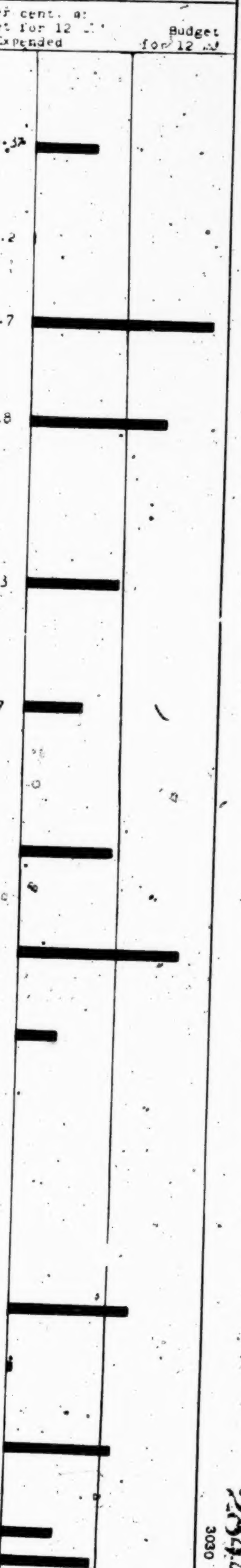
CHART III

BELL TELEPHONE LABORATORIES EXPENSE BILLED TO DEPARTMENT OF DEVELOPMENT AND RESEARCH

COMPARISON WITH BUDGET - FOR YEAR 1925

		Expenditures			
		Month of December	Cumulative 12 Months	Budget 1925	Per cent. of Budget for 12 Expended
LOCAL CENTRAL OFFICE EQUIPMENT	Panel Machine Switching	$ 48.00	$ 116.00		
	Step-by-Step Machine Switching	-	89.		
	Fundamental Development Machine Switching	-	-		
	Equipment Editing Engineering	-	-		
	Manual Central Office Equipment	34.	2,175.		
	General	1,281.	12,979.		
	TOTAL	1,363.	15,359.	$ 23,150.00	66.3
TOLL CENTRAL OFFICE EQUIPMENT	Switchboards and Desks	-	-		
	Manual Switchboard Circuits and Apparatus	-	-		
	Machine Switching	-	-		
	Signaling	-	-		
	Test Boards and Testing Equipment	-	17.		
	TOTAL	-	17.	7,500.	.2
PRIVATE BRANCH EXCHANGES	Manual	294.	2,384.		
	Machine Switching	-	-		
	Power	-	-		
	Fundamental	-	-		
	TOTAL	294.	2,384.	1,250.	190.7
SUBSTATION EQUIPMENT	A. T. & T. Co.'s Instruments	-	-		
	Substation Sets	-	-		
	Operators' Sets	-	-		
	Other Equipment	1,226.	16,098.		
	Maintenance	1,416.	16,047.		
	TOTAL	2,642.	32,145.	22,350.	143.8
TELEPHONE TRANSMISSION OVER WIRES EQUIPMENT AND METHODS	Repeaters	-	5,282.		
	Carrier Telephone	4,685.	47,103.		
	Vacuum Tubes	22,728.	213,591.		
	Loading	869.	6,631.		
	Cross Induction	-	727.		
	Local Circuits	-	-		
	Transformers	-	-		
	Toll Line Transmission Maintenance	-	-		
	General	5,590.	15,752.		
	TOTAL	33,872.	289,086.	303,500.	95.3
TELEGRAPH TRANSMISSION OVER WIRES EQUIPMENT AND METHODS	Direct Current Metallic Telegraph	-	-		
	Direct Current Grounded Telegraph	-	-		
	Carrier Telegraph	3,123.	31,402.		
	Low Frequency A-C. Telegraph	1,992.	17,578.		
	Printing Telegraph	3,436.	21,990.		
	Ocean Cable Telegraph	-	-		
	Relays and General Apparatus and Matters	-	-		
	TOTAL	8,551.	70,970.	115,000.	61.7
RADIO	Systems	3,586.	23,932.		
	Fundamental Development	32,333.	311,521.		
	Radio Repeaters	-	-		
	Signaling	-	-		
	Apparatus and Equipment	10,643.	83,322.		
	U. S. Government	-	-		
	Radio Regulations and Outside Relations	-	-		
	General	8,050.	22,732.		
	TOTAL	54,012.	441,507.	460,000.	96.
OUTSIDE PLANT	Materials	7,034.	48,347.		
	Cables	2,457.	16,914.		
	Apparatus	-	-		
	General	-	1,224.		
	Methods Development	-	-		
	TOTAL	9,491.	66,485.	40,350.	164.8
PROTECTION	Central Office	-	28.		
	Substation	-	-		
	Cable	189.	1,853.		
	General	18.	2,398.		
	TOTAL	207.	4,279.	10,000.	42.8
INTERFERENCE PREVENTION	Negotiations and Cooperation with Government Representatives, National Societies, etc.				
	Inductive Interference from Power Circuits				
	Interference from Electric Railroads				
	Hazards				
	Electrolysis				
	Interference from Radio				
	General				
	TOTAL	-	-	29,000.	
SPECIAL RESEARCH PROBLEMS	Contact Study	-	-		
	Magnetic Iron Study	-	-		
	Telephone Quality Study	10,173.	92,803		
	Paper Study for Cable	-	-		
	Transmission Theory	-	-		
	Non-Linear Circuit Elements	-	-		
	General	-	-		
	TOTAL	10,173.	92,803.	75,000.	123.7
RATE CASE TESTIMONY	TOTAL	-	4.		
CONSOLIDATIONS	TOTAL	-	77.	1,000.	7.7
NEW TYPES OF SERVICES	Loud Speakers	5,509.	44,419.		
	Wire Broadcasting	3,134.	55,980.		
	Phototelegraphy	12,810.	185,502.		
	General	1,593.	26,597.		
	TOTAL	23,046.	312,498.	280,000.	111.6
MISCELLANEOUS	Patents and Inventions	-	-		
	Special Work in Connection with Legal Cases	-	66.		
	General Data for Guiding Development Work	-	-		
	General	1,196.	30,665.		
	TOTAL	1,196.	30,731.	57,000.	54.0
	GRAND TOTAL	$145,447.	$1,358,345.	$1,425,100.	95.3



AMERICAN TELEPHONE AND TELEGRAPH CO
Department of
Development & Research

March 21, 1927
2 Sheets Sheet 1

ANALYSIS OF EXPENSE BY CLASSES OF WORK

DEPARTMENT OF DEVELOPMENT AND RESEARCH

DECEMBER 1926

	TOTAL EXPENSE BY CLASSES OF WORK		EXPENSE RECLASSIFIED					
			MONTH OF DEC.		CUMULATIVE 12 MOS.			
	MONTH OF DEC.	CUMULATIVE 12 MONTHS	INCURRED BY DEPT OF DEV & RES.	INCURRED BY BELL TEL. LAB. BILLABLE TO A. T. & T. CO.	INCURRED BY DEPT OF DEV. & RES.	INCURRED BY BELL TEL. LAB. BILLABLE TO A. T. & T. CO.		
1. CENTRAL OFFICE SYSTEMS AND APPARATUS								
LOCAL MANUAL EQUIPMENT & CIRCUITS	$ 3,676	$ 43,042	$ 3,676	$ -	$ 43,042	$ -		
MANUAL APPARATUS	159	3,990	40	119	199	3,791		
TOTAL MANUAL	3,835	47,032	3,716	119	43,241	3,791		
PANEL MACH. SW. EQUIPMENT & CIRCUITS	7,669	79,354	7,669	-	79,354	-		
PANEL MACH. SW. APPARATUS	4,102	40,937	4,102	-	40,937	-		
TOTAL PANEL MACHINE SWITCHING	11,771	120,291	11,771	-	120,291	-		
STEP-BY-STEP MACH. SW. EQUIPMENT & CIRCUITS	4,853	55,076	4,853	-	55,076	-		
STEP-BY-STEP MACH. SW. APPARATUS	1,948	16,013	1,948	-	16,013	-		
TOTAL STEP-BY-STEP MACH. SW.	6,801	71,089	6,801	-	71,089	-		
OTHER MACH. SW. EQUIPMENT & CIRCUITS	850	4,426	850	-	4,426	-		
OTHER MACH. SW. APPARATUS	-	-	-	-	-	-		
TOTAL OTHER MACHINE SWITCHING	850	4,426	850	-	4,426	-		
TOLL EQUIPMENT & CIRCUITS	18,335	134,393	18,335	-	134,393	-		
P. B. X. EQUIPMENT & CIRCUITS	2,238	29,744	2,238	-	28,947	797		
POWER EQUIPMENT	3,582	28,075	3,582	-	28,075	-		
TESTING & MAINTENANCE EQUIPMENT & APPARATUS	8,548	74,967	8,548	-	74,967	-		
ENGINEERING ON EQUIPMENT ORDERS	-	-	-	-	-	-		
FUNDAMENTAL STUDIES (A. T. & T. CO. ONLY)	6,593	70,732	6,593	-	70,732	-		
MISCELLANEOUS	10,591	95,699	8,476	2,115	78,930	16,769		
TOTAL CLASS 1	73,144	676,448	70,910	2,234	655,091	21,357		
PER CENT. REALIZED		113			111	190		
ANNUAL BUDGET		765,000			724,400	40,600		
2. SUBSTATION EQUIPMENT	8,354	51,337	4,142	4,212	31,195	20,142		
PER CENT. REALIZED		122			140	94		
ANNUAL BUDGET		62,600			43,600	19,000		
3. OUTSIDE PLANT	38,866	310,798	26,062	12,804	215,394	95,404		
PER CENT. REALIZED		84			87	76		
ANNUAL BUDGET		260,600			188,100	72,500		
4. TRANSMITTERS, RECEIVERS AND INDUCTION COILS								
TRANSMISSION AND RECEPTION OF SPEECH	5,049	40,162	1,206	3,843	11,351	28,811		
APPARATUS	4,578	66,031	2,967	1,611	35,352	30,679		
TOTAL	9,627	106,193	4,173	5,454	46,703	59,490		
PER CENT. REALIZED		99			85	110		
ANNUAL BUDGET		105,300			39,600	65,700		
5. WIRE TRANSMISSION SYSTEMS								
VOICE FREQUENCY TELEPHONE EQUIPMENT & CIRCUITS	18,880	149,796	15,569	3,311	121,037	28,759		
CARRIER TELEPHONE EQUIPMENT & CIRCUITS	14,775	200,077	9,536	5,239	107,547	92,530		
CARRIER TELEGRAPH EQUIPMENT & CIRCUITS	5,856	82,055	5,587	269	69,574	12,481		
D. C. TELEGRAPH EQUIPMENT	11,038	123,956	6,782	4,256	79,610	44,346		
SUBMARINE CABLE TELEGRAPH EQUIPMENT	-	-	-	-	-	-		
CROSS INDUCTION STUDIES (A. T. & T. CO. ONLY)	29,164	106,821	29,164	-	106,821	-		
TOLL TRANSMISSION MAINTENANCE STUDIES (A. T. & T. CO. ONLY)	2,924	25,084	2,924	-	25,084	-		
PICTURE TRANSMISSION	15,743	151,220	5,147	10,596	37,121	114,099		
WIRE BROADCASTING	9,650	41,163	3,788	5,862	14,786	26,377		
TELEVISION	2,171	33,420	-	2,171	-	33,420		
GENERAL	5,477	89,581	5,412	65	87,004	2,577		
TOTAL	115,678	1,003,173	83,909	31,769	648,584	354,589		
PER CENT. REALIZED		105			95	122		
ANNUAL BUDGET		1,049,800			615,600	434,200		
6. RADIO TRANSMISSION SYSTEMS								
SHIP-TO-SHORE	10,730	4,092	6,536	4,194	7,213	3,121*		
TRANSATLANTIC	168,501	499,631	144,897	23,604	333,742	165,889		
BROADCASTING	229	25,596	183	46	14,380	11,216		
SHORT WAVE	23,346	237,914	5,882	17,464	34,660	203,254		
OTHER RADIO TRANSMITTING SYSTEMS	5,238	35,607	-	5,238	77	35,530		
OTHER RADIO RECEIVING SYSTEMS	5,265	39,951	368	4,897	1,560	38,391		
RADIO REGULATIONS & OUTSIDE RELATIONS (A. T. & T. CO. ONLY)	1,437	14,203	1,437	-	14,203	-		
GENERAL	3,131	33,083	3,131	-	32,838	245		
TOTAL	217,877	890,077	162,434	55,443	438,673	451,404		
PER CENT. REALIZED		91			77	105		
ANNUAL BUDGET		813,700			338,700	475,000		
7. GENERAL TRANSMISSION APPARATUS								
VACUUM TUBES	29,919	312,793	-	29,919	-	312,793		
LOADING COILS	2,044	22,473	2,044	-	22,473	-		
PHOTO-ELECTRIC CELL	2,700	27,213	-	2,700	-	27,213		
TESTING APPARATUS	849	2,261	-	849	-	2,261		
TRANSMITTERS AND RECEIVERS FOR SPECIAL USE	55	4,442	55	-	4,442	-		
OTHER TRANSMISSION APPARATUS	1,425	10,924	1,235	190	10,236	688		
TOTAL	36,992	380,126	3,334	33,658	37,151	342,975		
PER CENT. REALIZED		123			173	118		
ANNUAL BUDGET		467,600			64,100	403,500		
8. OTHER COMMUNICATION SYSTEMS & APPARATUS								
PUBLIC ADDRESS & LOUD-SPEAKING SYSTEMS	-	-	-	-	-	-		
TRAIN DISPATCHING & SUPERVISORY SYSTEMS	-	-	-	-	-	-		
POWER LINE CARRIER	-	-	-	-	-	-		
APPARATUS FOR THE HARD OF HEARING	-	-	-	-	-	-		
ELECTRICAL STETHOSCOPE	-	-	-	-	-	-		
PHONOGRAPH RECORDING - DISC	-	-	-	-	-	-		
PHONOGRAPH REPRODUCTION - ELECTRICAL	-	-	-	-	-	-		
PHONOGRAPH RECORDING - PHOTOGRAPHIC	618	8,036	-	618	-	8,036		
PHONOGRAPH REPRODUCTION - ACOUSTIC	-	-	-	-	-	-		
SYNCHRONIZED TALKING PICTURES	971	7,052	-	971	-	7,052		
ELECTRICAL DICTATION	-	-	-	-	-	-		
MISCELLANEOUS SCIENTIFIC APPARATUS	-	-	-	-	-	-		
TOTAL	1,589	15,088	-	1,589	-	15,088		
PER CENT. REALIZED		62			-	62		
ANNUAL BUDGET		9,300			-	9,300		

* Denotes Credit.

AMERICAN TELEPHONE AND TELEGRAPH CO
Department of
Development & Research

March 21, 1927.
2 Sheets · Sheet 2

ANALYSIS OF EXPENSE BY CLASSES OF WORK
DEPARTMENT OF DEVELOPMENT AND RESEARCH
DECEMBER 1926

	TOTAL EXPENSE BY CLASSES OF WORK		EXPENSE RECLASSIFIED			
			MONTH OF DEC		CUMULATIVE 12 MO S	
	MONTH OF DEC	CUMULATIVE 12 MONTHS	INCURRED BY DEPT OF DEV & RES	INCURRED BY BELL TEL LAB BILLABLE TO A T & T CO	INCURRED BY DEPT OF DEV & RES	INCURRED BY BELL TEL LAB BILLABLE TO A T & T CO
9. LEAD COVERED CABLE	$ 8,587	$ 79,279	$ 4,100	$ 4,487	$ 37,799	$ 41,480
PER CENT REALIZED		92			100	84
ANNUAL BUDGET		72,700			37,700	35,000
10. SUBMARINE CABLE	-	-	-	-	-	-
PER CENT REALIZED		-			-	-
ANNUAL BUDGET		-			-	-
11. MATERIALS & PROCESSES	2,677	16,714	-	2,677	-	16,714
PER CENT REALIZED		48			-	48
ANNUAL BUDGET		9,000			-	9,000
12. RESEARCH & DEVELOPMENT OF GENERAL APPLICATION	-	-	-	-	-	-
PER CENT REALIZED		-			-	-
ANNUAL BUDGET		-			-	-
13. FUNDAMENTAL STUDIES APPLYING TO COMMUNICATION						
TELEPHONE QUALITY STUDIES (A T & T CO ONLY)	13,142	143,743	2,423	10,719	27,010	116,733
TRANSMISSION THEORY (A T & T CO ONLY)	2,833	30,762	2,065	768	18,697	12,065
GENERAL (A T & T CO ONLY)	5,785	44,369	3,034	2,751	29,135	15,234
TOTAL	21,760	218,874	7,522	14,238	74,842	144,032
PER CENT REALIZED		94			109	86
ANNUAL BUDGET		205,900			81,600	124,300
14. PATENT	3,747	21,386	-	3,747	-	21,386
PER CENT REALIZED		98			-	98
ANNUAL BUDGET		21,000			-	21,000
15. INSPECTION ENGINEERING	-	-	-	-	-	-
PER CENT REALIZED		-			-	-
ANNUAL BUDGET		-			-	-
16. RATE CASE TESTIMONY (A T & T CO ONLY)	1,806	29,580	1,806	-	29,580	-
PER CENT REALIZED		127			127	-
ANNUAL BUDGET		37,700			37,700	-
17. INTERFERENCE PREVENTION AND PROTECTION						
NEGOTIATION AND COOPERATION WITH GOVT REPRESENTATIVES NATIONAL SOCIETIES ETC	500	4,101	500	-	4,101	-
INDUCTIVE INTERFERENCE FROM POWER CIRCUITS	36,762	163,705	36,762	-	182,658	1,047
INTERFERENCE FROM ELECTRIC RAILWAYS	19,111	110,612	12,261	6,850	98,511	12,101
ELECTROLYSIS	190	2,830	190	-	2,830	-
PROTECTION STUDIES	3,609	29,308	1,341	2,268	11,227	18,081
GENERAL	-	812	-	-	812	-
TOTAL	60,172	331,368	51,054	9,118	300,139	31,229
PER CENT REALIZED		98			96	110
ANNUAL BUDGET		323,600			289,200	34,400
18. MISCELLANEOUS						
HISTORICAL MUSEUM	233	6,956	147	86	1,139	5,817
OTHER	19,105	196,928	19,027	78	191,700	5,228
TOTAL	19,338	203,884	19,174	164	192,839	11,045
PER CENT REALIZED		107			105	149
ANNUAL BUDGET		218,200			201,700	16,500
TOTAL CLASSES 1 - 18 INCLUSIVE	620,214	4,336,325	438,620	181,594	2,707,990	1,628,335
PER CENT REALIZED		102			98	108
ANNUAL BUDGET		4,422,000			2,662,000	1,760,000

Note: Development and Research figures are for the calendar month of December, 1926.

Bell Telephone Laboratories, Inc. figures for December are for period November 29 to December 31, inclusive.

PER CENT REALIZED MEANS CUMULATIVE EXPENSE COMPARED WITH THE ANNUAL BUDGET UNDER 100% INDICATES THAT EXPENSE EXCEEDS BUDGET

AMERICAN TELEPHONE AND TELEGRAPH CO
Department of
Development & Research

February 14, 1928.
2 Sheets Sheet 1

ANALYSIS OF EXPENSE BY CLASSES OF WORK
DEPARTMENT OF DEVELOPMENT AND RESEARCH
DECEMBER 1927

	TOTAL EXPENSE BY CLASSES OF WORK		EXPENSE RECLASSIFIED			
			MONTH OF DEC		CUMULATIVE 12 MOS.	
	MONTH OF DEC	CUMULATIVE 12 MONTHS	INCURRED BY DEPT OF DEV & RES	INCURRED BY BELL TEL LAB BILLABLE TO A T & T CO	INCURRED BY DEPT OF DEV & RES	INCURRED BY BELL TEL LAB BILLABLE TO A. T. & T. CO
1. CENTRAL OFFICE SYSTEMS AND APPARATUS						
LOCAL MANUAL EQUIPMENT & CIRCUITS	$ 5,040	$ 49,015	$ 1,216	$ 3,822	$ 24,698	$ 24,317
MANUAL APPARATUS	744	5,421	-	744	235	5,186
TOTAL MANUAL	5,784	54,436	1,218	4,566	24,933	29,503
PANEL MACH SW EQUIPMENT & CIRCUITS	8,967	85,743	8,967	-	85,743	-
PANEL MACH SW APPARATUS	4,032	41,712	4,032	-	41,712	-
TOTAL PANEL MACHINE SWITCHING	12,999	127,455	12,999	-	127,455	-
STEP BY STEP MACH SW EQUIPMENT & CIRCUITS	3,724	44,059	3,724	-	44,059	-
STEP BY STEP MACH SW APPARATUS	1,342	18,635	1,342	-	18,635	-
TOTAL STEP BY STEP MACH SW	5,066	62,694	5,066	-	62,694	-
OTHER MACH SW EQUIPMENT & CIRCUITS	1,349	9,155	1,349	-	9,155	-
OTHER MACH SW APPARATUS	-	-	-	-	-	-
TOTAL OTHER MACHINE SWITCHING	1,349	9,155	1,349	-	9,155	-
TOLL EQUIPMENT & CIRCUITS	16,310	174,515	16,310	-	174,515	-
P B X EQUIPMENT & CIRCUITS	2,237	26,102	2,237	-	26,102	-
POWER EQUIPMENT	3,953	32,601	3,953	-	32,601	-
TESTING & MAINTENANCE EQUIPMENT & APPARATUS	12,201	98,205	6,788	5,413	76,812	21,393
ENGINEERING ON EQUIPMENT ORDERS	-	-	-	-	-	-
FUNDAMENTAL STUDIES (A T & T CO ONLY)	4,769	62,684	4,769	-	62,684	-
MISCELLANEOUS	9,924	120,331	8,381	1,543	97,251	23,060
TOTAL CLASS 1	74,592	768,178	63,070	11,522	694,202	73,976
PER CENT REALIZED		99			107	19
ANNUAL BUDGET		757,700			744,000	13,700
2. SUBSTATION EQUIPMENT	9,768	83,169	4,564	5,204	41,962	41,207
PER CENT REALIZED		77			95	58
ANNUAL BUDGET		64,100			40,000	24,100
3. OUTSIDE PLANT	48,674	437,158	15,665	33,009	165,349	271,809
PER CENT REALIZED		101			99	102
ANNUAL BUDGET		440,200			163,000	277,200
4. TRANSMITTERS, RECEIVERS AND INDUCTION COILS						
TRANSMISSION AND RECEPTION OF SPEECH	4,457	39,965	-	4,457	7,398	32,567
APPARATUS	10,550	82,093	5,380	5,170	31,952	50,141
TOTAL	15,007	122,058	5,380	9,627	39,350	82,708
PER CENT REALIZED		102			127	91
ANNUAL BUDGET		125,100			50,000	75,100
5. WIRE TRANSMISSION SYSTEMS						
VOICE FREQUENCY TELEPHONE EQUIPMENT & CIRCUITS	27,328	194,696	18,009	9,319	124,403	70,293
CARRIER TELEPHONE EQUIPMENT & CIRCUITS	19,351	174,723	14,101	5,250	122,761	51,962
CARRIER TELEGRAPH EQUIPMENT & CIRCUITS	7,001	82,127	6,600	401	74,696	7,431
D C TELEGRAPH EQUIPMENT	10,894	107,331	6,610	4,284	73,901	33,430
SUBMARINE CABLE TELEGRAPH EQUIPMENT	-	-	-	-	-	-
CROSS INDUCTION STUDIES (A T & T CO ONLY)	9,600	107,563	9,600	-	107,563	-
TOLL TRANSMISSION MAINTENANCE STUDIES (A T & T CO ONLY)	1,892	19,071	1,892	-	19,071	-
PICTURE TRANSMISSION	13,954	146,546	9,816	4,138	75,499	71,047
WIRE BROADCASTING	217	8,593	217	-	6,328	2,265
TELEVISION	26,768	249,604	-	26,768	-	249,604
GENERAL	11,632	111,319	9,628	2,004	95,692	15,627
TOTAL	128,637	1,201,573	76,473	52,164	699,914	501,659
PER CENT REALIZED		96			107	81
ANNUAL BUDGET		1,153,600			749,000	404,600
6. RADIO TRANSMISSION SYSTEMS						
SHIP TO SHORE	7,740	38,206	-	7,740	2,072	36,134
TRANSATLANTIC	35,592	386,984	21,001	14,591	143,741	243,243
BROADCASTING	-	1,995	-	-	1,995	-
SHORT WAVE	41,103	375,252	9,132	31,971	59,202	316,050
OTHER RADIO TRANSMITTING SYSTEMS	12,258	102,514	-	12,258	-	102,514
OTHER RADIO RECEIVING SYSTEMS	12,221	91,026	192	12,029	2,850	88,176
RADIO REGULATIONS & OUTSIDE RELATIONS (A T & T CO ONLY)	2,798	30,138	2,798	-	30,138	-
GENERAL	2,863	54,145	2,842	21	32,772	21,373
TOTAL	114,575	1,080,260	35,965	78,610	272,770	807,490
PER CENT REALIZED		112			120	109
ANNUAL BUDGET		1,204,700			327,000	877,700
7. GENERAL TRANSMISSION APPARATUS						
VACUUM TUBES	30,129	284,359	-	30,129	-	284,359
LOADING COILS	956	22,649	956	-	22,649	-
PHOTO ELECTRIC CELL	2,199	15,379	-	2,199	-	15,379
TESTING APPARATUS	839	7,557	-	839	-	7,557
TRANSMITTERS AND RECEIVERS FOR SPECIAL USE	-	38	-	-	38	-
OTHER TRANSMISSION APPARATUS	1,878	16,013	1,188	690	12,524	3,489
TOTAL	36,001	345,995	2,144	33,857	35,211	310,784
PER CENT REALIZED		122			99	124
ANNUAL BUDGET		421,800			35,000	386,800
8. OTHER COMMUNICATION SYSTEMS & APPARATUS						
PUBLIC ADDRESS & LOUD SPEAKING SYSTEMS	-	-	-	-	-	-
TRAIN DISPATCHING & SUPERVISORY SYSTEMS	-	-	-	-	-	-
POWER LINE CARRIER	-	-	-	-	-	-
APPARATUS FOR THE HARD OF HEARING	-	-	-	-	-	-
ELECTRICAL STETHOSCOPE	-	-	-	-	-	-
PHONOGRAPH RECORDING DISC	-	-	-	-	-	-
PHONOGRAPH REPRODUCTION ELECTRICAL	-	-	-	-	-	-
PHONOGRAPH RECORDING PHOTOGRAPHIC	716	7,008	-	716	-	7,008
PHONOGRAPH REPRODUCTION ACOUSTIC	-	-	-	-	-	-
SYNCHRONIZED TALKING PICTURES	-	2,483	-	-	-	2,483
ELECTRICAL DICTATION	-	-	-	-	-	-
MISCELLANEOUS SCIENTIFIC APPARATUS	-	-	-	-	-	-
TOTAL	716	9,491	-	716	-	9,491
PER CENT REALIZED		161			-	161
ANNUAL BUDGET		15,300			-	15,300

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Department of
Development & Research

February 14, 1928
2 Sheets Sheet 2

ANALYSIS OF EXPENSE BY CLASSES OF WORK

DEPARTMENT OF DEVELOPMENT AND RESEARCH

DECEMBER 1927

	TOTAL EXPENSE BY CLASSES OF WORK		EXPENSE RECLASSIFIED			
			MONTH OF DEC.		CUMULATIVE 12 MO'S.	
	MONTH OF DEC.	CUMULATIVE 12 MONTHS	INCURRED BY DEPT. OF DEV & RES.	INCURRED BY BELL TEL LAB BILLABLE TO A. T. & T. CO	INCURRED BY DEPT OF DEV & RES	INCURRED BY BELL TEL LAB BILLABLE TO A. T. & T. CO
9. LEAD COVERED CABLE	$ 7,019	$ 73,909	$ 3,127	$ 3,892	$ 30,199	$ 43,710
PER CENT REALIZED		125			123	127
ANNUAL BUDGET		82,300			37,000	55,300
10. SUBMARINE CABLE	11,955	96,635	-	11,955	-	96,635
PER CENT REALIZED		109			-	88
ANNUAL BUDGET		105,000			20,000	85,000
11. MATERIALS & PROCESSES	2,336	21,864	-	2,336	-	21,864
PER CENT REALIZED		126			-	126
ANNUAL BUDGET		27,600			-	27,600
12. RESEARCH & DEVELOPMENT OF GENERAL APPLICATION	-	-	-	-	-	-
PER CENT REALIZED		-			-	-
ANNUAL BUDGET		-			-	-
13. FUNDAMENTAL STUDIES APPLYING TO COMMUNICATION						
TELEPHONE QUALITY STUDIES (A. T. & T. CO. ONLY)	13,743	139,438	1,041	12,702	19,330	120,108
TRANSMISSION THEORY (A. T. & T. CO. ONLY)	1,932	30,909	1,409	523	20,959	9,950
GENERAL (A. T. & T. CO. ONLY)	6,244	40,619	3,576	2,668	32,088	8,531
TOTAL	21,919	210,966	6,026	15,893	72,377	138,589
PER CENT REALIZED		106			111	104
ANNUAL BUDGET		224,000			80,000	144,000
14. PATENT	1,234	26,254	-	1,234	-	26,254
PER CENT REALIZED		62			-	62
ANNUAL BUDGET		16,400			-	16,400
15. INSPECTION ENGINEERING	-	-	-	-	-	-
PER CENT REALIZED		-			-	-
ANNUAL BUDGET		-			-	-
16. RATE CASE TESTIMONY (A. T. & T. CO. ONLY)	556	16,757	556	-	16,757	-
PER CENT REALIZED		179			179	-
ANNUAL BUDGET		30,000			30,000	-
17. INTERFERENCE PREVENTION AND PROTECTION						
NEGOTIATION AND COOPERATION WITH GOVT REPRESENTATIVES, NATIONAL SOCIETIES ETC	525	6,610	408	117	5,103	1,507
INDUCTIVE INTERFERENCE FROM POWER CIRCUITS	28,424	198,013	28,096	328	195,250	2,763
INTERFERENCE FROM ELECTRIC RAILWAYS	115,792	433,913	106,763	9,029	375,819	58,094
ELECTROLYSIS	521	2,224	521	-	2,224	-
PROTECTION STUDIES	12,236	31,188	12,199	37	24,931	6,257
GENERAL	20	217	20	-	217	-
TOTAL	157,518	672,165	148,007	9,511	603,544	68,621
PER CENT REALIZED		63			64	57
ANNUAL BUDGET		423,800			385,000	38,800
18. MISCELLANEOUS						
HISTORICAL MUSEUM	645	6,934	77	568	873	6,061
OTHER	23,647	242,553	23,009	638	235,256	7,297
TOTAL	24,292	249,487	23,086	1,206	236,129	13,358
PER CENT REALIZED		87			87	85
ANNUAL BUDGET		217,300			206,000	11,300
TOTAL CLASSES 1 - 18 INCLUSIVE	654,799	5,415,919	384,063	270,736	2,907,764	2,508,155
PER CENT REALIZED		98			99	98
ANNUAL BUDGET		5,318,900			2,866,000	2,452,900

Note: Development and Research figures are for the calendar month of December, 1927.

Bell Telephone Laboratories, Inc. figures for December are from November 28 to December 31, inclusive.

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PER CENT REALIZED MEANS CUMULATIVE EXPENSE COMPARED WITH THE ANNUAL BUDGET UNDER 100% INDICATES THAT EXPENSE EXCEEDS BUDGET

AMERICAN TELEPHONE AND TELEGRAPH CO
Department of
Development & Research

January 30, 1929
2 Sheets Sheet 1

ANALYSIS OF EXPENSE BY CLASSES OF WORK

DEPARTMENT OF DEVELOPMENT AND RESEARCH

DECEMBER 1928

	TOTAL EXPENSE BY CLASSES OF WORK		EXPENSE RECLASSIFIED					
			MONTH OF DEC.		CUMULATIVE 12 MO'S.		* CUMULATIVE SAME PERIOD LAST YEAR	
	MONTH OF DEC	CUMULATIVE 12 MONTHS	INCURRED BY DEPT OF DEV & RES	INCURRED BY BELL TEL LAB BILLABLE TO A T & T CO	INCURRED BY DEPT OF DEV & RES	INCURRED BY BELL TEL LAB BILLABLE TO A T & T CO	INCURRED BY DEPT OF DEV & RES	INCURRED BY BELL TEL LAB BILLABLE TO A T & T CO
1. CENTRAL OFFICE SYSTEMS AND APPARATUS								
LOCAL MANUAL EQUIPMENT & CIRCUITS	$ 842	$ 21,128	$ 539	$ 303	$ 6,712	$ 14,416	$ 24,698	$ 24,317
MANUAL APPARATUS	257	2,229	-	257	20	2,209	235	5,186
TOTAL MANUAL SYSTEM	1,099	23,357	539	560	6,732	16,625	24,933	29,503
PANEL EQUIPMENT & CIRCUITS	7,588	96,505	7,588	-	96,505	-	85,743	-
PANEL APPARATUS	3,195	46,312	3,195	-	46,312	-	41,712	-
TOTAL PANEL SYSTEM	10,783	142,817	10,783	-	142,817	-	127,455	-
STEP BY STEP EQUIPMENT & CIRCUITS	3,619	38,740	3,619	-	38,740	-	44,059	-
STEP BY STEP APPARATUS	1,181	15,884	1,181	-	15,884	-	18,635	-
TOTAL STEP BY STEP SYSTEM	4,800	54,624	4,800	-	54,624	-	62,694	-
OTHER DIAL SYSTEMS EQUIPMENT & CIRCUITS	226	3,444	226	-	3,444	-	9,155	-
OTHER DIAL SYSTEMS APPARATUS	-	-	-	-	-	-	-	-
TOTAL OTHER DIAL SYSTEMS	226	3,444	226	-	3,444	-	9,155	-
TOLL EQUIPMENT & CIRCUITS	24,719	218,901	24,719	-	218,901	-	174,515	-
P B X EQUIPMENT & CIRCUITS	3,303	39,043	3,303	-	39,043	-	26,102	-
POWER EQUIPMENT	2,644	34,704	2,644	-	34,704	-	32,601	-
TESTING & MAINTENANCE EQUIPMENT & APPARATUS	6,492	84,044	6,459	33	73,951	10,093	76,812	21,393
ENGINEERING ON EQUIPMENT ORDERS	-	-	-	-	-	-	-	-
FUNDAMENTAL STUDIES (A T & T CO ONLY)	5,154	54,391	5,154	-	54,391	-	62,684	-
MISCELLANEOUS	8,231	111,852	8,069	162	101,503	10,349	97,251	23,080
TOTAL CLASS 1	67,451	767,177	66,696	755	730,110	37,067	694,202	73,976
PER CENT OF BUDGET		89			95	37	93	-
ANNUAL BUDGET		866,000			765,000	101,000	744,000	13,700
2. SUBSTATION EQUIPMENT	15,741	124,021	5,382	10,359	61,043	62,978	41,962	41,207
PER CENT OF BUDGET		111			122	102	105	171
ANNUAL BUDGET		112,000			50,000	62,000	40,000	24,100
3. OUTSIDE PLANT	62,363	588,773	16,095	46,268	184,577	404,196	165,349	271,909
PER CENT OF BUDGET		112			103	116	101	98
ANNUAL BUDGET		526,000			179,000	347,000	163,000	277,200
4. TRANSMITTERS, RECEIVERS AND INDUCTION COILS								
TRANSMISSION AND RECEPTION OF SPEECH	4,792	47,659	224	4,568	2,253	45,406	7,398	32,567
APPARATUS	6,021	81,693	2,145	3,876	31,729	50,164	31,952	50,141
TOTAL	10,813	129,552	2,369	8,444	33,982	95,570	39,350	82,708
PER CENT OF BUDGET		118			87	135	79	110
ANNUAL BUDGET		110,000			39,000	71,000	50,000	75,100
5. WIRE TRANSMISSION SYSTEMS								
VOICE FREQUENCY TELEPHONE EQUIPMENT & CIRCUITS	31,247	260,339	22,427	8,820	177,634	82,705	124,403	70,293
CARRIER TELEPHONE EQUIPMENT & CIRCUITS	17,061	194,641	13,896	3,165	161,276	33,365	122,761	51,962
CARRIER TELEGRAPH EQUIPMENT & CIRCUITS	6,444	75,452	5,801	643	66,988	8,464	74,696	7,431
D C TELEGRAPH EQUIPMENT	10,198	111,551	6,332	3,866	81,158	30,393	73,901	33,430
SUBMARINE CABLE TELEGRAPH EQUIPMENT	-	-	-	-	-	-	-	-
CROSS INDUCTION STUDIES (A T & T CO ONLY)	10,181	102,292	10,181	-	102,292	-	107,563	-
TOLL TRANSMISSION MAINTENANCE STUDIES (A T & T CO ONLY)	2,010	24,240	2,010	-	24,240	-	19,071	-
PICTURE TRANSMISSION	11,179	102,124	2,899	8,280	34,481	67,643	75,499	71,047
WIRE BROADCASTING	274	3,699	274	-	3,699	-	6,328	2,265
TELEVISION	10,332	81,418	-	10,332	-	81,418	-	249,604
GENERAL	25,908	162,252	12,396	13,512	108,917	53,335	95,692	15,627
TOTAL	124,834	1,118,008	76,216	48,618	760,685	357,323	699,914	501,659
PER CENT OF BUDGET		87			99	68	93	124
ANNUAL BUDGET		1,291,000			769,000	522,000	749,000	404,600
6. RADIO TRANSMISSION SYSTEMS								
SHIP TO SHORE	5,339	59,370	74	5,265	250	59,120	2,072	36,134
TRANSATLANTIC	17,681	219,074	9,242	8,439	88,478	130,596	143,741	243,243
BROADCASTING	7,707	7,817	7,707	-	7,817	-	1,995	-
SHORT WAVE	45,875	423,902	6,852	39,023	81,693	342,209	59,202	316,050
OTHER RADIO TRANSMITTING SYSTEMS	6,711	58,593	-	6,711	15	58,578	-	102,514
OTHER RADIO RECEIVING SYSTEMS	6,711	57,783	-	6,711	12	57,771	2,850	88,176
RADIO REGULATIONS & OUTSIDE RELATIONS (A T & T CO ONLY)	1,241	16,136	1,241	-	16,136	-	30,138	-
AIRCRAFT COMMUNICATION	25,601	215,949	-	25,601	-	215,949	-	-
GENERAL	1,967	27,251	1,413	554	21,557	5,694	32,772	21,373
TOTAL	118,833	1,085,875	26,529	92,304	215,958	869,917	272,770	807,490
PER CENT OF BUDGET		90			74	95	83	92
ANNUAL BUDGET		1,211,000			292,000	919,000	327,000	877,700
7. GENERAL TRANSMISSION APPARATUS								
VACUUM TUBES	34,251	312,417	-	34,251	-	312,417	-	284,359
LOADING COILS	1,023	14,437	1,023	-	14,437	-	22,649	-
PHOTO ELECTRIC CELL	2,720	29,799	-	2,720	-	29,799	-	15,379
TESTING APPARATUS	943	12,181	-	943	-	12,181	-	7,557
TRANSMITTERS AND RECEIVERS FOR SPECIAL USE	162	2,901	162	-	2,901	-	38	-
OTHER TRANSMISSION APPARATUS	1,077	15,369	981	96	14,460	909	12,524	3,489
TOTAL	40,176	387,104	2,166	38,010	31,798	355,306	35,211	310,784
PER CENT OF BUDGET		89			74	90	101	80
ANNUAL BUDGET		436,000			43,000	393,000	35,000	386,800
8. OTHER COMMUNICATION SYSTEMS & APPARATUS								
PUBLIC ADDRESS & LOUD SPEAKING SYSTEMS	-	1,129		-		1,129		-
TRAIN DISPATCHING & SUPERVISORY SYSTEMS	-	-		-		-		-
POWER LINE CARRIER	-	-		-		-		-
APPARATUS FOR THE HARD OF HEARING	-	-		-		-		-
ELECTRICAL STETHOSCOPE	-	-		-		-		-
PHONOGRAPH RECORDING - DISC	-	-		-		-		-
PHONOGRAPH REPRODUCTION - ELECTRICAL	-	-		-		-		-
PHONOGRAPH RECORDING - PHOTOGRAPHIC	837	6,948		837		6,948		7,008
PHONOGRAPH REPRODUCTION - ACOUSTIC	-	-		-		-		-
SYNCHRONIZED TALKING PICTURES	-	-		-		-		2,483
ELECTRICAL DICTATION	-	-		-		-		-
MISCELLANEOUS SCIENTIFIC APPARATUS	-	-		-		-		-
TOTAL	837	8,077	-	837	-	8,077	-	9,491
PER CENT OF BUDGET		162				162		62
ANNUAL BUDGET		5,000			-	5,000	-	15,300

* For comparative purposes only

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AMERICAN TELEPHONE AND TELEGRAPH CO
Department of
Development & Research

January 30, 1929.

2 Sheets Sheet 2

ANALYSIS OF EXPENSE BY CLASSES OF WORK

DEPARTMENT OF DEVELOPMENT AND RESEARCH

DECEMBER 1928

	TOTAL EXPENSE BY CLASSES OF WORK		EXPENSE RECLASSIFIED					
			MONTH OF DEC.		CUMULATIVE 12 MO'S		CUMULATIVE SAME PERIOD LAST YEAR	
	MONTH OF DEC.	CUMULATIVE 12 MONTHS	INCURRED BY DEPT OF DEV. & RES	INCURRED BY BELL TEL. LAB BILLABLE TO A T & T CO.	INCURRED BY DEPT. OF DEV. & RES	INCURRED BY BELL TEL LAB BILLABLE TO A T & T CO	INCURRED BY DEPT OF DEV & RES	INCURRED BY BELL TEL. LAB. BILLABLE TO A T & T CO
9. LEAD COVERED CABLE	$ 7,906	$ 72,276	$ 2,932	$ 4,974	$ 33,651	$ 38,625	$ 30,199	$ 43,710
PER CENT OF BUDGET		103			99	107	82	79
ANNUAL BUDGET		70,000			34,000	36,000	37,000	55,300
10. SUBMARINE CABLE								
TELEGRAPH CABLE	-	-		-		-		-
TELEPHONE CABLE	12,252	88,843		12,252		88,843		96,635
INSULATION	-	-		-		-		-
TOTAL	12,252	88,843	-	12,252	-	88,843	-	96,635
PER CENT OF BUDGET		46				49		114
ANNUAL BUDGET		193,000			10,000	183,000	20,000	85,000
11. MATERIALS & PROCESSES	2,536	24,141	-	2,536	-	24,141	-	21,864
PER CENT OF BUDGET		80				80		79
ANNUAL BUDGET		30,000			-	30,000	-	27,600
12. RESEARCH & DEVELOPMENT OF GENERAL APPLICATION	-	-	-	-	-	-	-	-
PER CENT OF BUDGET								
ANNUAL BUDGET		-			-	-	-	-
13. FUNDAMENTAL STUDIES APPLYING TO COMMUNICATION								
TELEPHONE QUALITY STUDIES (A T & T CO ONLY)	13,617	124,908	572	13,045	6,779	118,129	19,330	120,108
TRANSMISSION THEORY (A T & T CO ONLY)	3,985	50,535	3,055	930	23,303	27,232	20,959	9,950
GENERAL (A T & T CO ONLY)	2,595	29,697	2,595	-	29,697	-	32,088	8,531
TOTAL	20,197	205,140	6,222	13,975	59,779	145,361	72,377	138,589
PER CENT OF BUDGET		106			78	125	90	96
ANNUAL BUDGET		193,000			77,000	116,000	80,000	144,000
14. PATENT	1,892	17,263	-	1,892	-	17,263	-	26,254
PER CENT OF BUDGET		56				56		160
ANNUAL BUDGET		31,000			-	31,000	-	16,400
15. INSPECTION ENGINEERING	-	-	-	-	-	-	-	-
PER CENT OF BUDGET								
ANNUAL BUDGET		-			-	-	-	-
16. RATE CASE TESTIMONY (A T & T CO ONLY)	291	13,935	291	-	13,935	-	16,757	-
PER CENT OF BUDGET		70			70		56	
ANNUAL BUDGET		20,000			20,000	-	30,000	-
17. INTERFERENCE PREVENTION AND PROTECTION								
NEGOTIATION AND COOPERATION WITH GOVT REPRESENTATIVES NATIONAL SOCIETIES, ETC	857	7,559	857	-	7,559	-	5,103	1,807
INDUCTIVE INTERFERENCE FROM POWER CIRCUITS	26,544	219,997	24,812	1,732	215,240	4,757	195,250	2,763
INTERFERENCE FROM ELECTRIC RAILWAYS	53,661	474,230	51,024	2,637	447,067	27,163	375,819	58,094
ELECTROLYSIS	489	2,164	489	-	2,164	-	2,224	-
PROTECTION STUDIES	1,940	22,475	914	1,026	18,168	4,307	24,931	6,257
GENERAL	7	770	7	-	770	-	219	-
TOTAL	83,498	727,195	78,103	5,395	690,968	36,227	603,544	68,621
PER CENT. OF BUDGET		99			98	158	157	177
ANNUAL BUDGET		731,000			708,000	23,000	385,000	38,800
18. MISCELLANEOUS	18,815	211,264	18,758	57	209,494	1,770	236,129	13,358
PER CENT. OF BUDGET		81			84	16	115	118
ANNUAL BUDGET		261,000			250,000	11,000	206,000	11,300
19. ENGINEERING SERVICES								
C.O. EQUIPMENT ANALYZATION	-	-		-		-		
RADIO INSTALLATIONS	-	-		-		-		
PUBLIC ADDRESS INSTALLATIONS	-	-		-		-		
POWER LINE CARRIER INSTALLATIONS	-	-		-		-		
TRANSATLANTIC INSTALLATIONS	1	2,541		1		2,541		
CARD CATALOGUE	-	-		-		-		
MISCELLANEOUS ENGINEERING SERVICES	5,474	40,256		5,474		40,256		
TOTAL	5,475	42,797	-	5,475	-	42,797	-	-
PER CENT. OF BUDGET								
ANNUAL BUDGET		-			-	-	-	-
TOTAL CLASSES 1 - 19 INCLUSIVE	593,910	5,611,441	301,759	292,151	3,025,980	2,585,461	2,907,764	2,808,155
PER CENT. OF BUDGET		92			94	91	101	102
ANNUAL BUDGET		6,086,000			3,236,000	2,850,000	2,866,000	2,452,800

Note: Development and Research figures are for the calendar month of December, 1928.

Bell Telephone Laboratories, Inc. figures are from November 26 to December 29, Inclusive.

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AMERICAN TELEPHONE AND TELEGRAPH CO
Department of
Development & Research

February 11, 1930.
2 Sheets Sheet 1

ANALYSIS OF EXPENSE BY CLASSES OF WORK
DEPARTMENT OF DEVELOPMENT AND RESEARCH
DECEMBER 1929

	TOTAL EXPENSE BY CLASSES OF WORK		EXPENSE RECLASSIFIED					
			MONTH OF DEC.		CUMULATIVE 12 MO'S		* CUMULATIVE SAME PERIOD LAST YEAR	
	MONTH OF DEC.	CUMULATIVE 12 MONTHS	INCURRED BY DEPT OF DEV & RES	INCURRED BY BELL TEL LAB BILLABLE TO A T & T CO	INCURRED BY DEPT OF DEV & RES	INCURRED BY BELL TEL LAB BILLABLE TO A T & T CO	INCURRED BY DEPT OF DEV & RES	INCURRED BY BELL TEL LAB BILLABLE TO A T & T CO
1. CENTRAL OFFICE SYSTEMS AND APPARATUS								
LOCAL MANUAL EQUIPMENT & CIRCUITS	$ 3,762	$ 42,557	$ 3,686	$ 76	$ 40,388	$ 2,169	$ 6,712	$ 14,416
MANUAL APPARATUS	-	93	-	-	-	93	20	2,209
TOTAL MANUAL SYSTEM	3,762	42,650	3,686	76	40,388	2,262	6,732	16,625
PANEL EQUIPMENT & CIRCUITS	10,335	109,551	10,335	-	109,551	-	96,505	-
PANEL APPARATUS	3,190	33,190	3,190	-	33,190	-	46,312	-
TOTAL PANEL SYSTEM	13,525	142,741	13,525	-	142,741	-	142,817	-
STEP-BY-STEP EQUIPMENT & CIRCUITS	6,048	62,404	6,048	-	62,404	-	38,740	-
STEP-BY-STEP APPARATUS	941	12,514	941	-	12,514	-	15,884	-
TOTAL STEP-BY-STEP SYSTEM	6,989	74,918	6,989	-	74,918	-	54,624	-
OTHER DIAL SYSTEMS EQUIPMENT & CIRCUITS	-	-	-	-	-	-	3,444	-
OTHER DIAL SYSTEMS APPARATUS	-	-	-	-	-	-	-	-
TOTAL OTHER DIAL SYSTEMS	-	-	-	-	-	-	3,444	-
TOLL EQUIPMENT & CIRCUITS	15,023	190,630	15,023	-	190,630	-	218,901	-
P B X EQUIPMENT & CIRCUITS	3,261	37,466	3,261	-	37,466	-	39,043	-
POWER EQUIPMENT	4,153	43,808	4,153	-	43,808	-	34,704	-
TESTING & MAINTENANCE EQUIPMENT & APPARATUS	9,593	108,534	9,286	307	105,306	3,228	73,951	10,093
ENGINEERING ON EQUIPMENT ORDERS	-	-	-	-	-	-	-	-
FUNDAMENTAL STUDIES (A T & T CO ONLY)	3,812	49,686	2,877	935	48,766	920	54,391	-
MISCELLANEOUS	6,008	68,445	5,887	121	65,797	2,648	101,503	10,349
TOTAL CLASS 1	66,126	758,878	64,687	1,439	749,820	9,058	730,110	37,067
PER CENT OF ESTIMATE		99			99	83	95	37
ESTIMATED EXPENSE FOR YEAR		768,000			757,000	11,000	[illegible]	101,000
2. SUBSTATION EQUIPMENT	9,609	137,920	6,335	3,274	66,795	71,125	61,043	62,978
PER CENT OF ESTIMATE		108			113	103	122	102
ESTIMATED EXPENSE FOR YEAR		128,000			59,000	69,000	50,000	62,000
3. OUTSIDE PLANT	81,449	735,368	16,693	64,756	197,376	537,992	184,577	404,196
PER CENT OF ESTIMATE		102			110	99	103	116
ESTIMATED EXPENSE FOR YEAR		724,000			179,000	545,000	179,000	347,000
4. TRANSMITTERS, RECEIVERS AND INDUCTION COILS								
TRANSMISSION AND RECEPTION OF SPEECH	2,009	18,228	329	1,680	1,369	16,859	2,253	45,406
APPARATUS	5,421	56,049	2,062	3,359	25,561	32,488	31,729	50,164
TOTAL	7,430	76,277	2,391	5,039	26,930	49,347	33,982	95,570
PER CENT OF ESTIMATE		88			75	96	87	135
ESTIMATED EXPENSE FOR YEAR		87,000			36,000	51,000	39,000	71,000
5. WIRE TRANSMISSION SYSTEMS								
VOICE FREQUENCY TELEPHONE EQUIPMENT & CIRCUITS	26,232	209,996	11,216	15,016	128,425	81,571	177,634	82,705
CARRIER TELEPHONE EQUIPMENT & CIRCUITS	38,368	281,359	14,550	23,818	151,814	129,545	161,276	33,365
CARRIER TELEGRAPH EQUIPMENT & CIRCUITS	7,429	94,752	6,958	471	83,960	10,792	66,988	8,464
D C TELEGRAPH EQUIPMENT	11,010	147,290	6,537	4,473	88,349	58,941	81,158	30,393
SUBMARINE CABLE TELEGRAPH EQUIPMENT	-	-	-	-	-	-	-	-
CROSS INDUCTION STUDIES (A T & T CO ONLY)	10,175	117,392	10,175	-	117,392	-	102,292	-
TOLL-TRANSMISSION MAINTENANCE STUDIES (A T & T CO ONLY)	2,175	29,609	2,175	-	29,609	-	24,240	-
PICTURE TRANSMISSION	8,921	85,062	876	8,045	15,931	69,131	34,481	67,643
WIRE BROADCASTING	4,916	66,133	4,916	-	66,133	-	3,699	-
TELEVISION	23,930	135,759	-	23,930	2,734	133,025	-	81,418
GENERAL	74,038	331,785	30,282	43,756	119,886	211,899	108,917	53,335
TOTAL	207,194	1,499,137	87,685	119,509	804,233	694,904	760,685	357,323
PER CENT OF ESTIMATE		113			107	120	99	68
ESTIMATED EXPENSE FOR YEAR		1,327,000			749,000	578,000	769,000	522,000
6. RADIO TRANSMISSION SYSTEMS								
SHIP-TO-SHORE	46,327	176,861	3,119	43,208	11,059	165,802	250	59,120
TRANSATLANT	101,587	429,438	16,012	85,575	114.886	314,552	88,478	130,596
BROADCASTING	-	110	-	-	110	-	7,817	-
SHORT WAVE	102,648	431,992	59,291	43,357	177,770	254,222	81,693	342,209
OTHER RADIO TRANSMITTING SYSTEMS	1,632	32,905	-	1,632	-	32,905	15	58,578
OTHER RADIO RECEIVING SYSTEMS	1,797	34,078	-	1,797	1,005	33,073	12	57,771
RADIO REGULATIONS & OUTSIDE RELATIONS (A T & T CO ONLY)	3,364	24,330	3,364	-	24,330	-	16,136	-
AIRCRAFT COMMUNICATION	57,088	473,021	-	57,088	-	473,021	-	215,949
GENERAL	4,701	35,679	2,895	1,806	27,481	8,198	21,557	5,694
TOTAL	319,144	1,638,414	84,681	234,463	356,641	1281,773	215,958	869,917
PER CENT OF ESTIMATE		122			125	122	74	95
ESTIMATED EXPENSE FOR YEAR		1,338,000			285,000	1053,000	292,000	919,000
7. GENERAL TRANSMISSION APPARATUS								
VACUUM TUBES	29,496	275,615	237	29,259	8,118	267,497	-	312,417
LOADING COILS	1,180	14,689	1,180	-	14,689	-	14,437	-
PHOTO-ELECTRIC CELL	1,970	34,205	-	1,970	-	34,205	-	29,799
TESTING APPARATUS	4,672	26,796	848	3,824	11,081	15,715	-	12,181
TRANSMITTERS AND RECEIVERS FOR SPECIAL USE	-	-	-	-	-	-	2,901	-
OTHER TRANSMISSION APPARATUS	2,223	18,501	805	1,418	8,892	9,609	14,460	909
TOTAL	39,541	370,406	3,070	36,471	42,780	327,626	31,798	355,306
PER CENT OF ESTIMATE		81			78	81	74	90
ESTIMATED EXPENSE FOR YEAR		458,000			55,000	403,000	43,000	393,000
8. OTHER COMMUNICATION SYSTEMS & APPARATUS								
PUBLIC ADDRESS & LOUD SPEAKING SYSTEMS	-	1,271		-	1,013	258		1,129
TRAIN DISPATCHING & SUPERVISORY SYSTEMS	-	-		-	-	-		-
POWER LINE CARRIER	-	-		-	-	-		-
APPARATUS FOR THE HARD OF HEARING	-	-		-	-	-		-
ELECTRICAL STETHOSCOPE	-	-		-	-	-		-
PHONOGRAPH RECORDING-DISC	-	-		-	-	-		-
PHONOGRAPH REPRODUCTION-ELECTRICAL	-	-		-	-	-		-
PHONOGRAPH RECORDING-PHOTOGRAPHIC	-	-		-	-	-		-
PHONOGRAPH REPRODUCTION-ACOUSTIC	-	-		-	-	-		6,948
SYNCHRONIZED TALKING PICTURES	-	-		-	-	-		-
ELECTRICAL DICTATION	2,477	11,245		2,477	-	11,245		-
MISCELLANEOUS SCIENTIFIC APPARATUS	-	-			-	-		-
TOTAL	2,477	12,516	-	2,477	1,013	11,503	-	8,077
PER CENT OF ESTIMATE		46			51	45		162
ESTIMATED EXPENSE FOR YEAR		27,000			2,000	25,000	-	5,000

* For comparative purposes only.

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AMERICAN TELEPHONE AND TELEGRAPH CO.
Department of
Development & Research

February 11, 1930.

2 Sheets Sheet 2

ANALYSIS OF EXPENSE BY CLASSES OF WORK

DEPARTMENT OF DEVELOPMENT AND RESEARCH

DECEMBER 1929

	TOTAL EXPENSE BY CLASSES OF WORK		EXPENSE RECLASSIFIED					
			MONTH OF DEC.		CUMULATIVE 12 MO'S.		CUMULATIVE SAME PERIOD LAST YEAR	
	MONTH OF DEC.	CUMULATIVE 12 MONTHS	INCURRED BY DEPT. OF DEV. & RES.	INCURRED BY BELL TEL. LAB. BILLABLE TO A.T.&T. CO.	INCURRED BY DEPT. OF DEV. & RES.	INCURRED BY BELL TEL. LAB. BILLABLE TO A.T.&T. CO.	INCURRED BY DEPT. OF DEV. & RES.	INCURRED BY BELL TEL. LAB. BILLABLE TO A.T.&T. CO.
9. LEAD COVERED CABLE	$ 12,518	$ 79,864	$ 6,651	$ 5,867	$ 40,669	$ 39,195	$ 33,651	$ 38,625
PER CENT. OF ESTIMATE		96			120	80	99	107
ESTIMATED EXPENSE FOR YEAR		83,000			34,000	49,000	34,000	36,000
10. SUBMARINE CABLE								
TELEGRAPH CABLE	-	-	-	-	-	-		-
TELEPHONE CABLE	65,085	518,871	1,403	63,682	22,123	496,748		88,843
INSULATION	-	-	-	-	-	-		-
TOTAL	65,085	518,871	1,403	63,682	22,123	496,748	-	88,843
PER CENT. OF ESTIMATE		179			138	181		49
ESTIMATED EXPENSE FOR YEAR		290,000			16,000	274,000	10,000	183,000
11. MATERIALS & PROCESSES	3,918	35,180	-	3,918	-	35,180	-	24,141
PER CENT. OF ESTIMATE		93				93		80
ESTIMATED EXPENSE FOR YEAR		38,000			-	38,000	-	30,000
12. RESEARCH & DEVELOPMENT OF GENERAL APPLICATION	-	-	-	-	-	-	-	-
PER CENT. OF ESTIMATE								
ESTIMATED EXPENSE FOR YEAR		-			-	-	-	-
13. FUNDAMENTAL STUDIES APPLYING TO COMMUNICATION								
TELEPHONE QUALITY STUDIES (A.T.&T. CO. ONLY)	10,780	124,145	1,060	9,720	16,005	108,140	6,779	118,129
TRANSMISSION THEORY (A.T.&T. CO. ONLY)	4,768	51,483	1,343	3,425	16,926	34,557	23,303	27,232
GENERAL (A.T.&T. CO. ONLY)	4,353	42,512	3,032	1,321	33,597	8,915	29,697	-
TOTAL	19,901	218,140	5,435	14,466	66,528	151,612	59,779	145,361
PER CENT. OF ESTIMATE		102			115	97	78	125
ESTIMATED EXPENSE FOR YEAR		214,000			58,000	156,000	77,000	116,000
14. PATENT	3,154	20,897	-	3,154	-	20,897	-	17,263
PER CENT. OF ESTIMATE		116				116		56
ESTIMATED EXPENSE FOR YEAR		18,000			-	18,000	-	31,000
15. INSPECTION ENGINEERING	-	-	-	-	-	-	-	
PER CENT. OF ESTIMATE								
ESTIMATED EXPENSE FOR YEAR		-			-	-	-	-
16. RATE CASE TESTIMONY (A.T.&T. CO. ONLY)	17	10,242	17	-	10,242	-	13,935	-
PER CENT. OF ESTIMATE		205			205		70	
ESTIMATED EXPENSE FOR YEAR		5,000			5,000	-	20,000	-
17. INTERFERENCE PREVENTION AND PROTECTION								
NEGOTIATION AND COOPERATION WITH GOVT. REPRESENTATIVES, NATIONAL SOCIETIES ETC.	1,263	9,050	1,263	-	9,050	-	7,559	-
INDUCTIVE INTERFERENCE FROM POWER CIRCUITS	57,881	330,580	53,643	4,238	307,211	23,369	215,240	4,757
INTERFERENCE FROM ELECTRIC RAILWAYS	26,304	350,185	26,087	217	340,628	9,557	447,067	27,163
ELECTROLYSIS	663	5,906	663	-	5,906	-	2,164	-
PROTECTION STUDIES	2,025	29,118	780	1,245	22,189	6,929	18,168	4,307
GENERAL	-	319	-	-	319	-	770	-
TOTAL	88,136	725,158	82,436	5,700	685,303	39,855	690,968	36,227
PER CENT. OF ESTIMATE		90			86	-	98	158
ESTIMATED EXPENSE FOR YEAR		808,000			795,000	13,000	708,000	23,000
18. MISCELLANEOUS	29,372	232,343	25,195	4,177	222,996	9,347	209,494	1,770
PER CENT. OF ESTIMATE		97			94	-	84	16
ESTIMATED EXPENSE FOR YEAR		239,000			336,000	3,000	250,000	11,000
19. ENGINEERING SERVICES								
C.O. EQUIPMENT ANALYZATION		-				-		-
RADIO INSTALLATIONS		-				-		-
PUBLIC ADDRESS INSTALLATIONS		-				-		-
POWER LINE CARRIER INSTALLATIONS		-				-		-
TRANSATLANTIC INSTALLATIONS		-				-		2,541
CARD CATALOGUE		-				-		-
MISCELLANEOUS ENGINEERING SERVICES		44,390				44,390		40,256
TOTAL	-	44,390	-	-	-	44,390	-	42,797
PER CENT. OF ESTIMATE		114				114		
ESTIMATED EXPENSE FOR YEAR		39,000			-	39,000	-	-
TOTAL CLASSES 1-19 INCLUSIVE	955,071	7,114,001	386,679	568,392	3,293,449	3,820,552	3,025,980	2,585,461
PER CENT. OF ESTIMATE		108			101	115	94	91
ESTIMATED EXPENSE FOR YEAR		6,591,000			3,266,000	3,325,000	3,236,000	2,850,000

Note: Development and Research figures are for the calendar month of December, 1929.

Bell Telephone Laboratories, Inc. figures for December are from November 25 to December 31, 1929, inclusive.

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AMERICAN TELEPHONE AND TELEGRAPH CO.
Department of
Development & Research

February 10, 1931.
2 Sheets Sheet 1

ANALYSIS OF EXPENSE BY CLASSES OF WORK
DEPARTMENT OF DEVELOPMENT AND RESEARCH
DECEMBER 1930

	TOTAL EXPENSE BY CLASSES OF WORK		EXPENSE RECLASSIFIED					
			MONTH OF DEC.		CUMULATIVE 12 MO'S.		* CUMULATIVE SAME PERIOD LAST YEAR	
	MONTH OF DEC.	CUMULATIVE 12 MONTHS	INCURRED BY DEPT. OF DEV. & RES.	INCURRED BY BELL TEL. LAB. BILLABLE TO A. T. & T. CO.	INCURRED BY DEPT. OF DEV. & RES.	INCURRED BY BELL TEL. LAB. BILLABLE TO A. T. & T. CO.	INCURRED BY DEPT. OF DEV. & RES.	INCURRED BY BELL TEL. LAB. BILLABLE TO A. T. & T. CO.
1. CENTRAL OFFICE SYSTEMS AND APPARATUS								
1.01 LOCAL MANUAL EQUIPMENT & CIRCUITS	$ 3,860	$ 44,194	$ 3,860	$ -	$ 44,121	$ 73	$ 40,388	$ 2,169
1.02 MANUAL APPARATUS	1,063	14,723	1,063	-	14,723	-	-	93
TOTAL MANUAL SYSTEM	4,923	58,917	4,923	-	58,844	73	40,388	2,262
1.03 PANEL EQUIPMENT & CIRCUITS	8,461	99,949	8,461	-	99,949	-	109,551	-
1.04 PANEL APPARATUS	2,371	31,911	2,371	-	31,911	-	33,190	-
TOTAL PANEL SYSTEM	10,832	131,860	10,832	-	131,860	-	142,741	-
1.05 STEP-BY-STEP EQUIPMENT & CIRCUITS	6,243	69,294	6,243	-	69,294	-	62,404	-
1.06 STEP-BY-STEP APPARATUS	954	14,189	954	-	14,189	-	12,514	-
TOTAL STEP-BY-STEP SYSTEM	7,197	83,483	7,197	-	83,483	-	74,918	-
1.07 OTHER DIAL SYSTEMS EQUIPMENT & CIRCUITS	-	62	-	-	62	-	-	-
1.08 TOLL EQUIPMENT & CIRCUITS	15,594	206,243	15,594	-	206,243	-	190,630	-
1.09 P. B. X. EQUIPMENT & CIRCUITS	4,035	45,901	4,035	-	45,901	-	37,466	-
1.10 POWER EQUIPMENT	6,487	84,369	6,100	387	74,809	9,560	43,808	-
1.11 TESTING & MAINTENANCE EQUIPMENT & APPARATUS	8,587	105,451	8,516	71	104,687	764	105,306	3,228
1.12 ENGINEERING ON EQUIPMENT ORDERS	-	309	-	-	309	-	-	-
1.13 FUNDAMENTAL STUDIES (A. T. & T. CO. ONLY)	2,451	36,373	2,451	-	34,755	1,618	48,766	980
1.20 MISCELLANEOUS	12,273	76,993	3,546	8,727	46,112	30,881	65,797	2,648
TOTAL CLASS 1	72,379	829,961	63,194	9,185	787,065	42,896	749,820	9,058
PER CENT. OF ESTIMATE		96			94	145	99	83
ESTIMATED EXPENSE FOR YEAR		866,600			837,000	29,600	757,000	11,000
2. SUBSTATION EQUIPMENT	14,001	138,914	5,789	8,212	66,036	72,878	66,795	71,125
PER CENT. OF ESTIMATE		91			122	74	113	103
ESTIMATED EXPENSE FOR YEAR		152,600			54,000	98,600	59,000	69,000
3. OUTSIDE PLANT	79,119	823,587	18,874	60,245	223,352	600,235	197,376	537,992
PER CENT. OF ESTIMATE		88			109	82	110	99
ESTIMATED EXPENSE FOR YEAR		938,900			205,000	733,900	179,000	545,000
4. TRANSMITTERS, RECEIVERS AND INDUCTION COILS								
4.01 TRANSMISSION AND RECEPTION OF SPEECH	11,753	91,364	1,256	10,497	17,207	74,157	1,369	16,859
4.02 APPARATUS	6,701	76,718	2,951	3,750	27,584	49,134	25,561	32,488
TOTAL	18,454	168,082	4,207	14,247	44,791	123,291	26,930	49,347
PER CENT. OF ESTIMATE		93			102	90	75	96
ESTIMATED EXPENSE FOR YEAR		181,300			44,000	137,300	36,000	51,000
5. WIRE TRANSMISSION SYSTEMS								
5.01 VOICE-FREQUENCY TELEPHONE EQUIPMENT & CIRCUITS	70,977	405,926	25,543	45,434	214,514	191,412	128,425	81,571
5.02 CARRIER TELEPHONE EQUIPMENT & CIRCUITS	14,244	174,608	9,635	4,609	133,453	41,155	151,814	129,545
5.03 CARRIER TELEGRAPH EQUIPMENT & CIRCUITS	7,828	89,606	6,294	1,534	72,647	16,959	83,960	10,792
5.04 CARRIER ON CABLE	65,623	745,812	3,494	62,129	29,239	716,573	-	-
5.05 D. C. TELEGRAPH EQUIPMENT	26,798	208,784	9,976	16,822	116,583	92,201	88,349	58,941
5.06 SUBMARINE CABLE TELEGRAPH EQUIPMENT	120	3,899	120	-	3,899	-	-	-
5.07 CROSS INDUCTION STUDIES (A. T. & T. CO. ONLY)	21,496	163,002	21,496	-	163,002	-	117,392	-
5.08 TOLL TRANSMISSION MAINTENANCE STUDIES (A. T. & T. CO. ONLY)	3,046	30,606	3,046	-	30,606	-	29,609	-
5.09 PICTURE TRANSMISSION	17,586	105,518	1,000	16,586	20,292	85,226	15,931	69,131
5.10 TELEVISION	6,002	90,771	410	5,592	2,417	88,354	2,734	133,025
5.11 RADIO & SUBMARINE CABLE TELEPHONE CONNECTING EQPT. & CCTS.	48,062	365,351	10,287	37,775	62,359	302,992	-	85,961
5.20 GENERAL	74,183	527,032	12,803	61,380	152,540	374,492	186,019	211,899
TOTAL	355,965	2,910,915	104,104	251,861	1,001,551	1,909,364	804,233	780,865
PER CENT. OF ESTIMATE		132			122	137	107	126
ESTIMATED EXPENSE FOR YEAR		2,210,900			822,000	1,388,900	749,000	620,700
6. RADIO TRANSMISSION SYSTEMS								
6.01 SHIP-TO-SHORE	18,338	243,722	3,951	14,387	37,224	206,498	11,059	165,802
6.02 AIRCRAFT COMMUNICATION	53,187	453,027	-	53,187	3,026	450,001	-	473,021
6.03 TRANSOCEANIC - SHORT WAVE	33,297	319,133	6,554	26,743	91,823	227,310	-	-
6.04 SHORT WAVE - GENERAL	31,749	243,177	4,204	27,545	13,487	229,690	177,770	254,222
6.05 TRANSOCEANIC - LONG WAVE	100,033	587,358	70,961	29,072	219,850	367,508	114,886	228,591
6.06 BROADCASTING	25	368	25	-	368	-	110	-
6.07 OTHER RADIO TRANSMITTING SYSTEMS	8,220	61,309	90	8,130	1,720	59,589	-	32,905
6.08 OTHER RADIO RECEIVING SYSTEMS	9,735	81,924	-	9,735	365	81,559	1,005	33,073
6.19 RADIO REGULATIONS & OUTSIDE RELATIONS (A. T. & T. CO. ONLY)	4,016	31,651	4,016	-	31,651	-	24,330	-
6.20 GENERAL	631	10,142	631	-	10,142	-	27,481	8,198
TOTAL	259,231	2,031,811	90,432	168,799	409,656	1,622,155	356,641	1,195,812
PER CENT. OF ESTIMATE		99			105	97	125	118
ESTIMATED EXPENSE FOR YEAR		2,062,000			389,000	1,673,000	285,000	1,010,300
7. GENERAL TRANSMISSION APPARATUS								
7.01 VACUUM TUBES	37,226	350,004	2,169	35,057	12,282	337,722	8,118	267,497
7.02 LOADING COILS	739	4,763	739	-	4,763	-	14,689	-
7.03 PHOTO-ELECTRIC CELL	6,812	50,064	-	6,812	-	50,064	-	34,805
7.04 TESTING APPARATUS	4,845	76,547	1,112	3,733	10,819	65,728	11,081	15,715
7.05 TRANSMITTERS AND RECEIVERS FOR SPECIAL USE	-	651	-	-	651	-	-	-
7.06 OTHER TRANSMISSION APPARATUS	431	4,456	431	-	4,456	-	8,892	9,609
TOTAL	50,053	486,485	4,451	45,602	32,971	453,514	42,780	327,626
PER CENT. OF ESTIMATE		91			56	95	78	74
ESTIMATED EXPENSE FOR YEAR		536,700			59,000	477,700	55,000	403,000
8. OTHER COMMUNICATION SYSTEMS & APPARATUS								
8.01 SOUND RECORDING APPARATUS & SYSTEMS	26,050	212,349	-	26,050	6	212,343	-	-
8.02 SOUND REPRODUCING APPARATUS & SYSTEMS	2,404	31,368	-	2,404	-	31,368	-	-
8.03 POWER LINE CARRIER	29	297	29	-	297	-	-	-
8.04 TRAIN DISPATCHING & SUPERVISORY SYSTEMS	-	-	-	-	-	-	-	-
8.05 CLINICAL APPARATUS & FUNCTIONAL AIDS	1,411	1,408	-	1,411	-	1,408	-	-
8.20 GENERAL	13,301	113,313	-	13,301	587	112,726	1,013	11,503
TOTAL	43,195	358,735	29	43,166	890	357,845	1,013	11,503
PER CENT OF ESTIMATE		98				98	51	45
ESTIMATED EXPENSE FOR YEAR		364,700			-	364,700	2,000	25,000
9. LEAD COVERED CABLE	53,717	128,341	47,142	6,575	80,353	47,988	40,669	39,195
PER CENT OF ESTIMATE		153			179	123	120	80
ESTIMATED EXPENSE FOR YEAR		84,100			45,000	39,100	34,000	49,000

* For comparative purposes only.

AMERICAN TELEPHONE AND TELEGRAPH CO.
Department of
Development & Research

February 10, 1931.
2 Sheets Sheet 2

ANALYSIS OF EXPENSE BY CLASSES OF WORK
DEPARTMENT OF DEVELOPMENT AND RESEARCH
DECEMBER 1930

	TOTAL EXPENSE BY CLASSES OF WORK		EXPENSE RECLASSIFIED					
			MONTH OF DEC.		CUMULATIVE 12 MO'S.		CUMULATIVE SAME PERIOD LAST YEAR	
	MONTH OF DEC.	CUMULATIVE 12 MONTHS	INCURRED BY DEPT OF DEV & RES	INCURRED BY BELL TEL LAB BILLABLE TO A.T.&T CO	INCURRED BY DEPT OF DEV. & RES.	INCURRED BY BELL TEL. LAB. BILLABLE TO A.T.&T. CO.	INCURRED BY DEPT. OF DEV. & RES.	INCURRED BY BELL TEL. LAB. BILLABLE TO A.T.&T. CO
10. SUBMARINE CABLE								
10.01 TELEGRAPH CABLE	$ -	$ 308	$ -	$ -	$ 308	$ -	$ -	$ -
10.02 TELEPHONE CABLE	70,135	666,301	1,739	68,396	26,085	640,216	22,123	496,748
10.03 INSULATION	-	-	-	-	-	-	-	-
TOTAL	70,135	666,609	1,739	68,396	26,393	640,216	22,123	496,748
PER CENT OF ESTIMATE		132			56	140	138	181
ESTIMATED EXPENSE FOR YEAR		505,800			47,000	458,800	16,000	274,000
11. MATERIALS & PROCESSES	6,392	57,688	-	6,392	-	57,688	-	35,180
PER CENT OF ESTIMATE		102				102		93
ESTIMATED EXPENSE FOR YEAR		56,800			-	56,800	-	38,000
12. FUNDAMENTAL STUDIES APPLYING TO COMMUNICATION								
12.01 TELEPHONE QUALITY STUDIES (A.T.&T. CO. ONLY)	12,280	139,316	3,103	9,177	36,055	103,261	16,005	108,140
12.02 TRANSMISSION THEORY (A.T.&T. CO. ONLY)	7,446	54,320	415	7,031	11,874	42,446	16,926	34,557
12.20 GENERAL (A.T.&T. CO. ONLY)	12,863	112,389	6,675	6,188	65,240	47,149	33,597	8,915
TOTAL	32,589	306,025	10,193	22,396	113,169	192,856	66,528	151,612
PER CENT OF ESTIMATE		90			140	75	115	97
ESTIMATED EXPENSE FOR YEAR		339,600			81,000	258,600	58,000	156,000
*** 13. PATENT**	19,509	51,340	-	19,509	-	51,340	-	20,897
PER CENT OF ESTIMATE		-				-		116
ESTIMATED EXPENSE FOR YEAR		21,900			-	21,900	-	18,000
14. INSPECTION ENGINEERING	-	-	-	-	-	-	-	-
PER CENT OF ESTIMATE								
ESTIMATED EXPENSE FOR YEAR		-			-	-	-	-
15. RATE CASE TESTIMONY (A.T.&T. CO. ONLY)	428	2,965	428	-	2,965	-	10,242	-
PER CENT OF ESTIMATE		42			42		205	
ESTIMATED EXPENSE FOR YEAR		7,000			7,000	-	5,000	-
16. INTERFERENCE PREVENTION AND PROTECTION								
16.01 NEGOTIATION AND COOPERATION WITH GOVT REPRESENTATIVES, NATIONAL SOCIETIES, ETC.	2,829	29,325	2,829	-	29,325	-	9,050	-
16.02 INDUCTIVE INTERFERENCE FROM POWER CIRCUITS	70,787	456,999	67,273	3,514	411,801	45,198	307,211	23,369
* 16.03 INTERFERENCE FROM ELECTRIC RAILWAYS	16,859	168,798	16,825	34	168,200	598	340,628	9,557
16.04 ELECTROLYSIS	449	3,869	449	-	3,869	-	5,906	
16.05 PROTECTION STUDIES	6,323	70,320	4,394	1,929	45,726	24,594	22,189	6,929
16.20 GENERAL	1,156	7,576	1,156	-	7,576	-	319	
TOTAL	98,403	736,887	92,926	5,477	666,497	70,390	685,303	39,855
PER CENT OF ESTIMATE		103			104	88	86	-
ESTIMATED EXPENSE FOR YEAR		718,000			638,000	80,000	795,000	13,000
17. MISCELLANEOUS	22,362	232,909	22,091	271	218,171	14,738	222,996	9,347
PER CENT OF ESTIMATE		86			83	-	94	[illegible]
ESTIMATED EXPENSE FOR YEAR		271,100			264,000	7,100	236,000	3,000
18.								
19. ENGINEERING SERVICES								
19.01 RADIO INSTALLATIONS	-	-		-		-		-
19.02 TRANSOCEANIC RADIO - SHORT WAVE	-	-		-		-		-
19.03 TRANSOCEANIC RADIO - LONG WAVE	-	-		-		-		-
* 19.04 SHIP-TO-SHORE RADIO	5,742	62,301		5,742		62,301		-
19.05 CARD CATALOGUE	-	-		-		-		-
19.20 MISCELLANEOUS ENGINEERING SERVICES	2,682	35,257		2,682		35,257		44,390
TOTAL	8,424	97,558	-	8,424	-	97,558	-	44,390
PER CENT OF ESTIMATE		-				-		114
ESTIMATED EXPENSE FOR YEAR		25,000			-	25,000	-	39,000
TOTAL CLASSES 1 - 19 INCLUSIVE	1,204,356	10,028,812	465,599	738,757	3,673,860	6,354,952	3,293,449	3,820,552
PER CENT OF ESTIMATE		107			105	109	101	115
ESTIMATED EXPENSE FOR YEAR		9,343,000			3,492,000	5,851,000	3,266,000	3,325,000

Note: Development and Research figures are for the calendar month of December, 1930.

Bell Telephone Laboratories Inc. figures for December are from November 24 to December 31, 1930, inclusive.

* Expense chargeable to other Departments of A. T. & T. Co.

AMERICAN TELEPHONE AND TELEGRAPH CO
Department of
Development & Research

D.& R.REPORT-No. 2
February 23, 1932.

2 Sheets - Sheet 1

ANALYSIS OF EXPENSE BY CLASSES OF WORK
DEPARTMENT OF DEVELOPMENT AND RESEARCH
DECEMBER 1931

	TOTAL EXPENSE BY CLASSES OF WORK		EXPENSE RECLASSIFIED					
			MONTH OF DEC.		CUMULATIVE 12 MO'S		* CUMULATIVE SAME PERIOD LAST YEAR	
	MONTH OF DECEMBER	CUMULATIVE 12 MONTHS	INCURRED BY DEPT OF DEV & RES	INCURRED BY BELL TEL LAB BILLABLE TO A T & T CO	INCURRED BY DEPT OF DEV & RES	INCURRED BY BELL TEL LAB BILLABLE TO A T & T CO	INCURRED BY DEPT. OF DEV. & RES	INCURRED BY BELL TEL. LAB. BILLABLE TO A. T & T. CO
1. CENTRAL OFFICE SYSTEMS AND APPARATUS								
1.01 LOCAL MANUAL EQUIPMENT & CIRCUITS	$ 2,644	$ 48,330	$ 2,644	$ -	$ 48,330	$ -	$ 44,121	$ 73
1.02 MANUAL APPARATUS	1,450	14,074	1,450	-	14,074	-	14,723	-
TOTAL MANUAL SYSTEM	4,094	62,404	4,094	-	62,404	-	58,844	73
1.03 PANEL EQUIPMENT & CIRCUITS	8,488	88,390	8,488	-	88,390	-	99,949	-
1.04 PANEL APPARATUS	3,056	28,862	3,056	-	28,862	-	31,911	-
TOTAL PANEL SYSTEM	11,544	117,252	11,544	-	117,252	-	131,860	-
1.05 STEP-BY-STEP EQUIPMENT & CIRCUITS	6,439	74,815	6,439	-	74,815	-	69,294	-
1.06 STEP-BY-STEP APPARATUS	889	14,650	889	-	14,650	-	14,189	-
TOTAL STEP-BY-STEP SYSTEM	7,328	89,465	7,328	-	89,465	-	83,483	-
1.07 OTHER DIAL SYSTEMS EQUIPMENT & CIRCUITS	77	150	77	-	150	-	62	-
1.08 TOLL EQUIPMENT & CIRCUITS	15,579	162,798	15,534	45	162,753	45	206,243	-
1.09 P. B X EQUIPMENT & CIRCUITS	4,976	51,662	4,976	-	46,919	4,743	45,901	-
1.10 POWER EQUIPMENT	5,891	76,439	5,210	681	69,377	7,062	74,809	9,560
1.11 TESTING & MAINTENANCE EQUIPMENT & APPARATUS	8,819	102,564	8,509	310	98,939	3,625	104,687	764
1.12 ENGINEERING ON EQUIPMENT ORDERS	-	56	-	-	56	-	309	-
1.13 FUNDAMENTAL STUDIES (A. T. & T CO. ONLY)	2,701	30,168	2,701	-	30,168	-	34,755	1,618
1.20 MISCELLANEOUS	4,725	67,143	4,097	628	41,389	25,754	46,112	30,881
TOTAL CLASS 1	65,734	760,101	64,070	1,664	718,872	41,229	787,065	42,896
PER CENT. OF ESTIMATE		90			91	76	94	145
ESTIMATED EXPENSE FOR YEAR		847,000			793,000	54,000	837,000	29,600
2. SUBSTATION EQUIPMENT	7,515	108,646	4,937	2,578	59,993	48,653	66,036	72,878
PER CENT. OF ESTIMATE		81			97	68	122	74
ESTIMATED EXPENSE FOR YEAR		134,000			62,000	72,000	54,000	98,600
3. OUTSIDE PLANT	77,832	766,106	17,666	60,166	200,839	565,267	223,352	600,235
PER CENT. OF ESTIMATE		95			95	95	109	82
ESTIMATED EXPENSE FOR YEAR		804,000			211,000	593,000	205,000	733,900
4. TRANSMITTERS, RECEIVERS AND INDUCTION COILS								
4.01 TRANSMISSION AND RECEPTION OF SPEECH	8,099	79,391	942	7,157	10,290	69,101	17,207	74,157
4.02 APPARATUS	23,741	198,363	3,217	20,524	20,738	177,625	27,584	49,134
TOTAL	31,840	277,754	4,159	27,681	31,028	246,726	44,791	123,291
PER CENT. OF ESTIMATE		123			74	134	102	90
ESTIMATED EXPENSE FOR YEAR		226,000			42,000	184,000	44,000	137,300
5. WIRE TRANSMISSION SYSTEMS								
5.01 VOICE FREQUENCY TELEPHONE EQUIPMENT & CIRCUITS	50,829	508,202	31,413	19,416	308,133	200,069	214,514	191,412
5.02 CARRIER TELEPHONE EQUIPMENT & CIRCUITS	17,716	172,847	6,257	11,459	77,256	95,591	133,453	41,155
5.03 CARRIER TELEGRAPH EQUIPMENT & CIRCUITS	5,961	76,618	5,908	53	69,409	7,209	72,647	16,959
5.04 CARRIER ON CABLE	88,736	806,593	5,884	82,852	64,486	742,107	29,239	716,573
5.05 PRINTING AND D.C. TELEGRAPH EQUIPMENT	23,209	188,700	14,915	8,294	115,548	73,152	116,583	92,201
5.06 SUBMARINE CABLE TELEGRAPH EQUIPMENT	-	1,604	-	-	1,604	-	3,899	-
5.07 CROSS INDUCTION STUDIES (A. T. & T CO. ONLY)	19,768	173,889	19,768	-	173,889	-	163,002	-
5.08 TOLL TRANSMISSION MAINTENANCE STUDIES (A T & T CO ONLY)	3,573	35,868	3,573	-	35,868	-	30,606	-
5.09 PICTURE TRANSMISSION	30,973	190,352	1,220	29,753	14,566	175,786	20,292	85,226
5.10 TELEVISION	11,758	84,018	366	11,392	5,375	78,643	2,417	88,354
5.11 RADIO & SUBMARINE CABLE TELEPHONE CONNECTING EQPT. & CCTS.	14,954	291,380	5,140	9,814	58,164	233,216	62,359	302,992
5.20 GENERAL	51,723	532,989	12,907	38,816	136,488	396,501	152,540	374,492
TOTAL	319,200	3,063,060	107,351	211,849	1,060,786	2,002,274	1,001,551	1,909,364
PER CENT. OF ESTIMATE		95			96	94	122	137
ESTIMATED EXPENSE FOR YEAR		3,229,000			1,101,000	2,128,000	822,000	1,388,900
6. RADIO TRANSMISSION SYSTEMS								
6.01 SHIP-TO-SHORE	3,916	63,080	3,485	431	42,134	20,946	37,224	206,498
6.02 AIRCRAFT COMMUNICATION	7,136	40,474	66	7,070	266	40,208	3,026	450,001
6.03 TRANSOCEANIC - SHORT WAVE	32,495	320,212	9,271	23,224	82,650	237,562	91,823	227,310
6.04 SHORT WAVE - GENERAL	27,028	260,362	3,805	23,223	21,304	239,058	13,487	229,690
6.05 TRANSOCEANIC - LONG WAVE	37,905	241,907	22,744	15,161	124,492	117,415	219,850	367,508
6.06 BROADCASTING	-	533	-	-	533	-	368	-
6.07 OTHER RADIO TRANSMITTING SYSTEMS	12,952	119,774	-	12,952	854	118,920	1,720	59,589
6.08 OTHER RADIO RECEIVING SYSTEMS	12,951	118,918	-	12,951	-	118,918	365	81,559
6.19 RADIO REGULATIONS & OUTSIDE RELATIONS (A T & T CO ONLY)	1,687	17,052	1,687	-	17,052	-	31,651	-
6.20 GENERAL	509	10,659	509	-	10,659	-	10,142	-
TOTAL	136,579	1,192,971	41,567	95,012	299,944	893,027	409,656	1,622,155
PER CENT. OF ESTIMATE		82			71	87	105	97
ESTIMATED EXPENSE FOR YEAR		1,447,000			421,000	1,026,000	389,000	1,673,000
7. GENERAL TRANSMISSION APPARATUS								
7.01 VACUUM TUBES	33,743	382,955	1,369	32,374	18,670	364,285	12,282	337,722
7.02 LOADING COILS	1,818	15,683	1,818	-	15,683	-	4,763	-
7.03 PHOTO - ELECTRIC CELL	7,047	75,049	126	6,921	393	74,656	-	50,064
7.04 TESTING APPARATUS	3,771	41,705	447	3,324	7,590	34,115	10,819	65,728
7.05 TRANSMITTERS AND RECEIVERS FOR SPECIAL USE	-	9	-	-	9	-	651	-
7.06 OTHER TRANSMISSION APPARATUS	2,749	20,348	1,358	1,391	4,373	15,975	4,456	-
TOTAL	49,128	535,749	5,118	44,010	46,718	489,031	32,971	453,514
PER CENT. OF ESTIMATE		99			146	96	56	95
ESTIMATED EXPENSE FOR YEAR		540,000			32,000	508,000	59,000	477,700
8. OTHER COMMUNICATION SYSTEMS & APPARATUS								
8.01 SOUND RECORDING APPARATUS & SYSTEMS	10,352	157,701	-	10,352	523	157,178	6	212,343
8.02 SOUND REPRODUCING APPARATUS & SYSTEMS	2,145	51,414	-	2,145	319	51,095	-	31,368
8.03 POWER LINE CARRIER	297	2,020	245	52	1,556	464	297	-
8.04 TRAIN DISPATCHING & SUPERVISORY SYSTEMS	-	-	-	-	-	-	-	-
8.05 CLINICAL APPARATUS & FUNCTIONAL AIDS	2,062	14,736	-	2,062	-	14,736	-	1,408
8.20 GENERAL	356	12,086	356	-	12,086	-	587	112,726
TOTAL	15,212	237,957	601	14,611	14,484	223,473	890	357,845
PER CENT OF ESTIMATE		93			-	88	-	98
ESTIMATED EXPENSE FOR YEAR		256,000			2,000	254,000	-	364,700
9. LEAD COVERED CABLE	25,735	120,138	20,232	5,503	81,867	38,271	80,353	47,988
PER CENT. OF ESTIMATE		77			68	109	179	123
ESTIMATED EXPENSE FOR YEAR		156,000			121,000	35,000	45,000	39,100

* For comparative purposes only.

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AMERICAN TELEPHONE AND TELEGRAPH CO
Department of
Development & Research

D.& R.REPORT-No. 2
February 25, 1932.

2 Sheets Sheet 2

ANALYSIS OF EXPENSE BY CLASSES OF WORK

DEPARTMENT OF DEVELOPMENT AND RESEARCH

DECEMBER 1931

	TOTAL EXPENSE BY CLASSES OF WORK		EXPENSE RECLASSIFIED					
			MONTH OF DEC.		CUMULATIVE 12 MO'S		CUMULATIVE SAME PERIOD LAST YEAR	
	MONTH OF DECEMBER	CUMULATIVE 12 MONTHS	INCURRED BY DEPT OF DEV & RES	INCURRED BY BELL TEL LAB BILLABLE TO A T & T CO	INCURRED BY DEPT OF DEV & RES	INCURRED BY BELL TEL LAB BILLABLE TO A T & T CO	INCURRED BY DEPT OF DEV & RES	INCURRED BY BELL TEL LAB BILLABLE TO A T & T CO
10. SUBMARINE CABLE								
10.01 TELEGRAPH CABLE	$ -	$ 72	$ -	$ -	$ 72	$ -	$ 308	$ -
• 10.02 TELEPHONE CABLE	16,699	406,045	1,272	15,427	7,392	398,653	26,085	640,216
10.03 INSULATION	-	-	-	-	-	-	-	-
TOTAL	16,699	406,117	1,272	15,427	7,464	398,653	26,393	640,216
PER CENT OF ESTIMATE		84			37	86	56	140
ESTIMATED EXPENSE FOR YEAR		486,000			20,000	466,000	47,000	458,800
11. MATERIALS & PROCESSES	21,285	197,361	-	21,285	-	197,361	-	57,688
PER CENT OF ESTIMATE		192				192		102
ESTIMATED EXPENSE FOR YEAR		103,000			-	103,000	-	56,800
12. FUNDAMENTAL STUDIES APPLYING TO COMMUNICATION								
12.01 TELEPHONE QUALITY STUDIES (A T & T CO ONLY)	14,708	166,584	2,922	11,786	32,126	134,458	36,055	103,261
12.02 TRANSMISSION THEORY (A T & T CO ONLY)	11,431	49,187	1,180	10,251	7,493	41,694	11,874	42,446
12.20 GENERAL (A T & T CO ONLY)	12,618	138,277	10,667	1,951	102,629	35,648	65,240	47,149
TOTAL	38,757	354,048	14,769	23,988	142,248	211,800	113,169	192,856
PER CENT OF ESTIMATE	-	97			124	85	140	75
ESTIMATED EXPENSE FOR YEAR		365,000			115,000	250,000	81,000	258,600
13. PATENT	-	-	-	-	-	-	-	-
PER CENT OF ESTIMATE								
ESTIMATED EXPENSE FOR YEAR					-	-	-	-
14. INSPECTION ENGINEERING	-	-	-	-	-	-	-	-
PER CENT OF ESTIMATE								
ESTIMATED EXPENSE FOR YEAR		-			-	-	-	-
15.								
16. INTERFERENCE PREVENTION AND PROTECTION								
16.01 NEGOTIATION AND COOPERATION WITH GOVT REPRESENTATIVES NATIONAL SOCIETIES ETC	696	18,658	696	-	18,658	-	29,825	-
16.02 INDUCTIVE INTERFERENCE FROM POWER CIRCUITS	52,164	413,417	49,805	2,359	362,577	50,840	411,[illegible]	45,198
16.03 INTERFERENCE FROM ELECTRIC RAILWAYS	9,403	132,525	9,403	-	132,315	210	168,200	598
16.04 ELECTROLYSIS	929	6,219	929	-	6,219	-	3,869	-
16.05 PROTECTION STUDIES	2,839	50,488	1,824	1,015	42,286	8,202	46,726	24,594
16.20 GENERAL	825	6,941	825	-	6,941	-	7,576	-
TOTAL	66,856	627,248	63,482	3,374	567,996	59,252	666,497	70,390
PER CENT OF ESTIMATE		74			71	116	104	88
ESTIMATED EXPENSE FOR YEAR		846,000			795,000	51,000	638,000	80,000
17. MISCELLANEOUS	28,204	225,953	27,367	837	218,501	7,452	221,136	14,738
PER CENT OF ESTIMATE		102			101	149	82	-
ESTIMATED EXPENSE FOR YEAR		221,000			216,000	5,000	271,000	7,100
18.								
19. ENGINEERING SERVICES								
19.01 RADIO INSTALLATIONS	-	-		-		-		-
19.02 TRANSOCEANIC RADIO - SHORT WAVE	-	-		-		-		-
19.03 TRANSOCEANIC RADIO - LONG WAVE	-	-		-		-		-
• 19.04 SHIP-TO-SHORE RADIO	23	3,083		23		3,083		62,301
19.05 CARD CATALOGUE	-	-		-		-		-
• 19.20 MISCELLANEOUS ENGINEERING SERVICES	23,353	200,685		23,353		200,685		86,597
TOTAL	23,376	203,768	-	23,376	-	203,768	-	148,898
PER CENT OF ESTIMATE		91				91		-
ESTIMATED EXPENSE FOR YEAR		225,000			-	225,000	-	46,900
TOTAL CLASSES 1 - 19 INCLUSIVE	923,952	9,076,977	372,591	551,361	3,[illegible]50,740	5,626,237	3,673,860	6,354,952
PER CENT OF ESTIMATE		.92			88	94	105	109
ESTIMATED EXPENSE FOR YEAR		9,885,000			3,931,000	5,954,000	3,492,000	5,851,000

Note: Development and Research figures are for the calendar month of December, 1931.

Bell Telephone Laboratories, Inc., figures for December are from November 23 to December 31, 1931, inclusive.

• A portion of this expense chargeable to other departments of A. T. & T. Co. Cost and estimate of Patent work transferred to 19.20, Miscellaneous Engineering Services, in November 1931.

• Original budget reduced by $160,000, due to transfer to W. E. Co. of that amount because of reclassification of expense for certain aircraft activities.

[fol. 3043]

Exhibit A-115

Jewett Exhibit No. 2

Deductions from Analysis of Expense Statements and Similar Reports

Deductions

	Total Expense D & R Plus Billing from W. E. Co. or B.T.L.	Transfers to Other Departments Including Patent	Non License Expenses	Balance to be Allocated
1923	$2,883,756	....	*$717	$2,883,039
1924	3,121,360	....	*1,084	3,120,276
1925	3,602,169	....	*896	3,601,273
1926	4,336,325	$21,386	*421	4,314,518
1927	5,415,919	26,254	*150	5,389,515
1928	5,611,441	60,060	....	5,551,381
1929	7,114,001	65,287	....	7,048,714
1930	10,028,812	148,898	**261,647	9,618,267
1931	9,076,977	203,768	....	8,873,209

* Engineering assistance to W. E. Co.

**Expense for work for E.R.P.I.

[fol. 3044]

EXHIBIT A-116

Jewett Exhibit No. 3

Maximum Amount of D & R Expenses Allocable to Non-Bell Sales of W. E. Co. (Excluding Special Commercial Products)

	Western Electric Sales Divided (Dollars in Thousands) (Excluding Special Commercial Products)						
	1 Bell Customers	2 Non-Bell	3 Percentage Non-Bell		4 D & R Expense from Exhibits 1 & 2		5 Credit Account Western's Benefit (Non-Bell) 4 x 3
1923							
Telephone Apparatus	$107,715	$6,027	5.3%		$2,855,483		$151,000
Lead Covered Cable	23,829	2,637	10.0		27,556		2,700
				Total	2,883,039	Total	153,700
1924							
Telephone Apparatus	142,449	7,273	4.9		3,078,429		151,000
Lead Covered Cable	34,226	3,583	9.5		41,847		4,000
				Total	3,120,276	Total	155,000
1925							
Telephone Apparatus	126,311	7,388	5.5		3,549,440		195,000
Lead Covered Cable	40,092	3,120	7.2		51,833		3,700
				Total	3,601,273	Total	198,700
1926							
Telephone Apparatus	133,382	5,816	4.2		4,235,239		178,000
Lead Covered Cable	42,703	3,544	7.7		79,279		6,100
				Total	4,314,518	Total	184,100
1927							
Telephone Apparatus	132,235	5,269	3.8		5,315,606		202,000
Lead Covered Cable	37,776	2,534	6.3		73,909		4,700
				Total	5,389,515	Total	206,700

1928							
Telephone Apparatus	136,030	6,648	4.7		5,479,105		258,000
Lead Covered Cable	43,339	2,741	5.9		72,276		4,300
				Total	5,551,381	Total	262,300
1929							
Telephone Apparatus	176,647	8,063	4.4		6,968,850		307,000
Lead Covered Cable	63,915	3,043	4.5		79,864		3,600
				Total	7,048,714	Total	310,600
1930							
Telephone Apparatus	194,443	7,385	3.7		9,489,926		351,000
Lead Covered Cable	56,728	2,986	5.0		128,341		6,400
				Total	9,618,267	Total	357,400
1931							
Telephone Apparatus	140,701	3,503	2.4		8,753,071		210,000
Lead Covered Cable	21,579	1,490	6.5		120,138		7,900
				Total	8,873,209	Total	217,900

[fol. 3045] EXHIBIT A-117

Jewett Exhibit No. 4

Fair Share of D. & R. Expense Allocable to Chicago Area of Illinois Bell

	1	2	3	4	5
			1−2		4×3
Year	D. & R. Expense Exhibit−2	*Credit Account Western's Benefit (Non-Bell)	D. & R. Expense Applicable to Associate Cos. (Incl. Canada) and Long Lines	Per Cent Chicago Area is of Associated Cos.. (Incl. Canada) Plus Long Lines. Plant in Service	Expense Allocated to Chicago Area
1923...	$2,883,039	$153,700	$2,729,339	5.3	$145,000
1924...	3,120,276	155,000	2,965,276	5.1	151,000
1925...	3,601,273	198,700	3,402,573	4.9	167,000
1926...	4,314,518	184,100	4,130,418	5.0	207,000
1927...	5,389,515	206,700	5,182,815	4.9	254,000
1928...	5,551,381	262,300	5,289,081	4.9	259,000
1929...	7,048,714	310,600	6,738,114	4.9	330,000
1930...	9,618,267	357,400	9,260,867	4.7	435,000
1931...	8,873,209	217,900	8,655,309	4.6	398,000

* From Exhibit #3.

(Here follow side folios 3046-3060)

EXHIBIT A-118

May 6, 1932.

ALLOCATION OF D. & R. DEPARTMENT EXPENSES IN LICENSE SERVICES
AS BETWEEN
LONG LINES AND ASSOCIATED COMPANIES (INCL. CANADA)
AND
ALLOCATION TO CHICAGO AREA
OF
ITS FAIR SHARE OF SUCH ASSOCIATED COMPANY EXPENSES

YEAR 1923		*Total D. & R. Including W. E. Co.	Per Cent Long Lines is of Total	Expense Allocated to Long Lines	Expense Allocated to Associated Companies (Incl. Canada)	Per Cent Chicago Area is of Associated Companies (Incl. Canada)	Expense Allocated to Chicago Area
LOCAL CENTRAL OFFICE EQUIPMENT	Panel Machine Switching	163,429					
	Step-by-Step Machine Switching	285,778					
	Fundamental Development Machine Switching	26,808					
	Equipment Editing Engineering	-					
	Manual Central Office Equipment	66,474					
	General	17,863					
	TOTAL	560,352	3.9% (Central Office Equipment)	$ 21,854	$ 538,498	8.0% (Central Office Equipment)	$ [illegible]
TOLL CENTRAL OFFICE EQUIPMENT	Switchboards and Desks	396					
	Manual Switchboard Circuits and Apparatus	34,134					
	Machine Switching	1,797					
	Signaling	15,922					
	Test Boards and Testing Equipment	7,871					
	TOTAL	60,120	3.9% (Central Office Equipment)	2,345	57,775	8.0% (Central Office Equipment)	4,[illegible]
PRIVATE BRANCH EXCHANGES	Manual	17,944					
	Machine Switching	51,166					
	Power	1,133					
	Fundamental	1,291					
	TOTAL	71,534	3.9% (Central Office Equipment)	2,790	68,744	8.0% (Central Office Equipment)	[illegible]
SUBSTATION EQUIPMENT	A. T. & T. Co.'s Instruments	6,701					
	Substation Sets	18,619					
	Operators' Sets	2,781					
	Other Equipment	29,223					
	Maintenance	6,116					
	TOTAL	63,440	0%	-	63,440	6.3% (Company Stations)	3,997
TELEPHONE TRANSMISSION OVER WIRES EQUIPMENT AND METHODS	Repeaters	122,632					
	Carrier Telephone	100,645					
	Vacuum Tubes	185,624					
	Loading	39,198					
	Cross Induction	58,312					
	Local Circuits	20,268					
	Transformers	7,056					
	Toll Line Transmission Maintenance	8,204					
	General	41,763					
	TOTAL	583,702					
TELEGRAPH TRANSMISSION OVER WIRES EQUIPMENT AND METHODS	Direct Current Metallic Telegraph	23,266					
	Direct Current Grounded Telegraph	15,910					
	Carrier Telegraph	75,058					
	Low Frequency A-C. Telegraph	140,955					
	Printing Telegraph	25,010	6.0% (Plant in Service)	76,834	1,203,728	5.6% (Plant in Service)	67,409
	Ocean Cable Telegraph	-					
	Relays and General Apparatus and Matters	12,159					
	TOTAL	292,358					
RADIO	Systems	33,610					
	Fundamental Development	213,856					
	Radio Repeaters	-					
	Signaling	4,584					
	Apparatus and Equipment	60,377					
	U.S. Government	-					
	Radio Regulations and Outside Relations	-					
	General	92,075					
	TOTAL	404,502					
OUTSIDE PLANT	Materials	118,509					
	Cables	27,556					
	Apparatus	30,204					
	General	9,364					
	Methods Development	2,310					
	TOTAL	187,943	8.7% (Exchange and Toll Lines)	16,352	171,591	4.0% (Exchange and Toll Lines)	6,864
PROTECTION	Central Office	1,386					
	Substation	1,443					
	Cable	4,361					
	General	1,963					
	TOTAL	9,153	6.5% (Plant in Service Less Land and Buildings)	595	8,558	5.5% (Plant in Service Less Land and Buildings)	471
INTERFERENCE PREVENTION	Negotiations and Cooperation with Government Representatives, National Societies, etc.	13,207					
	Inductive Interference from Power Circuits	88,025					
	Interference from Electric Railroads	14,363					
	Hazards	427					
	Electrolysis	4,595					
	Interference from Radio	75					
	General	16,889					
	TOTAL	137,581	8.7% (Exchange and Toll Lines)	11,970	125,611	4.0% (Exchange and Toll Lines)	5,024
FUNDAMENTAL RESEARCH	Contact Study	-					
	Magnetic Iron Study	-					
	Telephone Quality Study	81,307					
	Paper Study for Cable	83					
	Transmission Theory	16,512					
	Non-Linear Circuit Elements	-					
	General	16,343					
	TOTAL	114,245	6.5% (Plant in Service Less Land and Buildings)	7,426	106,819	5.5% (Plant in Service Less Land and Buildings)	5,875
LICENSE CONTRACT SERVICES	Testimony TOTAL	19,768	0%	-	19,768	5.5% "	1,087
CONSOLIDATIONS	TOTAL	14,179	0%	-	14,179	5.5% "	780
SPECIAL SERVICES	Loud Speakers	73,777					
	Wire Broadcasting	85,525					
	General	66,514					
	TOTAL	225,816	6.5% (Plant in Service Less Land and Buildings)	14,678	211,138	5.5% (Plant in Service Less Land and Buildings)	11,613
MISCELLANEOUS	Cuba Cable	Cr. 1,[illegible]09					
	Patents and Inventions	16,858					
	Special Work in Connection with Legal Cases	14,678					
	General Data for Guiding Development Work	22,979					
	General	78,840					
	TOTAL**	138,346	6.5% (Plant in Service Less Land and Buildings)	8,992	129,354	5.5% (Plant in Service Less Land and Buildings)	7,114
	GRAND TOTAL**	$2,883,039	-	$163,836	$2,719,203		$163,436

* Sum of charges for 12 months appearing on Charts Nos. II and III for year 1923.
** Non-license deduction $717.

ALLOCATION OF D. & R. DEPARTMENT EXPENSES IN LICENSE SERVICES
AS BETWEEN
LONG LINES AND ASSOCIATED COMPANIES (INCL. CANADA)
AND
ALLOCATION TO CHICAGO AREA
OF
ITS FAIR SHARE OF SUCH ASSOCIATED COMPANY EXPENSES

YEAR 1924		*Total D. & R. Including A. T. & T. Co.	Per Cent Long Lines Is of Total		Expense Allocated to Long Lines	Expense Allocated to Associated Companies (Incl. Canada)	Per Cent Chicago Area Is of Associated Companies (Incl. Canada)		Expense Allocated to Chicago Area
LOCAL CENTRAL OFFICE EQUIPMENT	Panel Machine Switching	$ 165,235							
	Step-by-Step Machine Switching	69,640							
	Fundamental Development Machine Switching	49,046							
	Equipment Editing Engineering	-							
	Manual Central Office Equipment	84,050							
	General	14,747							
	TOTAL	382,718	3.9%	(Central Office Equipment)	$ 14,926	$ 367,792	6.8%	(Central Office Equipment)	$ 25,010
TOLL CENTRAL OFFICE EQUIPMENT	Switchboards and Desks	314							
	Manual Switchboard Circuits and Apparatus	37,896							
	Machine Switching	5,072							
	Signaling	23,883							
	Test Boards and Testing Equipment	18,174							
	TOTAL	85,339	3.9%	(Central Office Equipment)	3,328	82,011	6.8%	(Central Office Equipment)	5,577
PRIVATE BRANCH EXCHANGE	Manual	22,502							
	Machine Switching	15,180							
	Power	1,605							
	Fundamental	416							
	TOTAL	39,703	3.9%	(Central Office Equipment)	1,548	38,155	6.8%	(Central Office Equipment)	2,595
SUBSTATION EQUIPMENT	A. T. & T. Co.'s Instruments	18,434							
	Substation Sets	25,467							
	Operators' Sets	1,748							
	Other Equipment	22,013							
	Maintenance	17,083							
	TOTAL	84,745	0%			84,745	6.3%	(Company Stations)	5,339
TELEPHONE TRANSMISSION OVER WIRES EQUIPMENT AND METHODS	Repeaters	85,919							
	Carrier Telephone	132,933							
	Vacuum Tubes	207,493							
	Loading	37,794							
	Cross Induction	66,589							
	Local Circuits	39,893							
	Transformers	8,301							
	Toll Line Transmission Maintenance	10,107							
	General	6,110							
	TOTAL	595,129							
TELEGRAPH TRANSMISSION OVER WIRES EQUIPMENT AND METHODS	Direct Current Metallic Telegraph	20,346							
	Direct Current Grounded Telegraph	23,281	6.1%	(Plant in Service)	84,233	1,296,439	5.4%	(Plant in Service)	70,019
	Carrier Telegraph	89,265							
	Low Frequency A-C. Telegraph	46,097							
	Printing Telegraph	19,552							
	Ocean Cable Telegraph	-							
	Relays and General Apparatus and Matters	13,326							
	TOTAL	211,867							
RADIO	Systems	39,527							
	Fundamental Development	262,088							
	Radio Repeaters	-							
	Signaling	-							
	Apparatus and Equipment	63,395							
	U.S. Government	-							
	Radio Regulations and Outside Relations	9,016							
	General	199,850							
	TOTAL	573,876							
OUTSIDE PLANT	Materials	145,641							
	Cable	41,847							
	Apparatus	28,375							
	General	11,569							
	Methods Development	1,774							
	TOTAL	229,206	9.2%	(Exchange and Toll Lines)	21,087	208,119	4.0%	(Exchange and Toll Lines)	8,723
PROTECTION	Central Office	2,141							
	Substation	4,603							
	Cable	6,334							
	General	995							
	TOTAL	14,073	6.6%	(Plant in Service Less Land and Buildings)	929	13,144	5.3%	(Plant in Service Less Land and Buildings)	697
INTERFERENCE PREVENTION	Negotiations and Cooperation with Government Representatives, National Societies, etc.	12,166							
	Inductive Interference from Power Circuits	146,089							
	Interference from Electric Railroads	22,095							
	Hazards	118							
	Electrolysis	6,012							
	Interference from Radio	96							
	General	41							
	TOTAL	186,617	9.2%	(Exchange and Toll Lines)	17,169	169,448	4.0%	(Exchange and Toll Lines)	6,778
SPECIAL RESEARCH PROBLEMS	Contact Study	-							
	Magnetic Iron Study	-							
	Telephone Quality Study	85,722							
	Paper Study for Cable	-							
	Transmission Theory	11,496							
	Non-Linear Circuit Elements	-							
	General	27,284							
	TOTAL	124,502	6.6%	(Plant in Service Less Land and Buildings)	8,217	116,285	5.3%	(Plant in Service Less Land and Buildings)	6,163
RATE CASE TESTIMONY	TOTAL	29,930	0%		-	29,930	5.3%		1,586
CONSOLIDATIONS	TOTAL	12,900	0%		-	12,900	5.3%		684
NEW TYPES OF SERVICES	Loud Speakers	82,743							
	Wire Broadcasting	79,806							
	Phototelegraphy	182,681							
	General	23,967							
	TOTAL	369,197	6.6%	(Plant in Service Less Land and Buildings)	24,367	344,830	5.3%	(Plant in Service Less Land and Buildings)	18,276
MISCELLANEOUS	Patents and Inventions	18,325							
	Special Work in Connection with Legal Cases	1,856							
	General Data for Guiding Development Work	24,533							
	General	**135,760							
	TOTAL	**180,474	6.6%	(Plant in Service Less Land and Buildings)	11,911	168,563	5.3%	(Plant in Service Less Land and Buildings)	8,934
	GRAND TOTAL	$3,120,276			$ 187,715	$ 2,932,561			$ 159,983

*Sum of charges for 12 months appearing on Charts Nos. II and III for year 1924.

**Non-license deduction - $1,084.

704

May 6, 1932.

ALLOCATION OF D. & R. DEPARTMENT EXPENSES IN LICENSE SERVICES
AS BETWEEN
LONG LINES AND ASSOCIATED COMPANIES (INCL. CANADA)
AND
ALLOCATION TO CHICAGO AREA
OF
ITS FAIR SHARE OF SUCH ASSOCIATED COMPANY EXPENSES

YEAR 1925		*Total D. & R. Including W. E. Co.	Per Cent Long Lines is of Total	Expense Allocated to Long Lines	Expense Allocated to Associated Companies (incl. Canada)	Per Cent Chicago Area is of Associated Companies (incl. Canada)	Expense Allocated to Chicago Area
LOCAL CENTRAL OFFICE EQUIPMENT	Panel Machine Switching	$ 165,178					
	Step-by-Step Machine Switching	68,513					
	Fundamental Development Machine Switching	73,150					
	Equipment Editing Engineering	-					
	Manual Central Office Equipment	106,839					
	General	31,138					
	TOTAL	444,818	3.6% (Central Office Equipment)	$ 16,013	$ 428,805	5.8% (Central Office Equipment)	$ 24,871
TOLL CENTRAL OFFICE EQUIPMENT	Switchboards and Desks	242					
	Manual Switchboard Circuits and Apparatus	37,965					
	Machine Switching	19,413					
	Signaling	25,131					
	Test Boards and Testing Equipment	23,244					
	TOTAL	105,995	3.6% (Central Office Equipment)	3,816	102,179	5.8% (Central Office Equipment)	5,926
PRIVATE BRANCH EXCHANGES	Manual	18,362					
	Machine Switching	13,750					
	Power	2,666					
	Fundamental	2,108					
	TOTAL	36,886	3.6% (Central Office Equipment)	1,328	35,558	5.8% (Central Office Equipment)	2,062
SUBSTATION EQUIPMENT	A. T. & T. Co.'s Instruments	31,924					
	Substation Sets	25,580					
	Operators' Sets	5,370					
	Other Equipment	33,926					
	Maintenance	17,519					
	TOTAL	114,319	0%	-	114,319	6.3% (Company Stations)	7,202
TELEPHONE TRANSMISSION OVER WIRES EQUIPMENT AND METHODS	Repeaters	72,807)					
	Carrier Telephone	126,421)					
	Vacuum Tubes	227,764)					
	Loading	42,593)					
	Cross Induction	74,453)					
	Local Circuits	11,715)					
	Transformers	8,176)					
	Toll Line Transmission Maintenance	14,412)					
	General	54,260)					
	TOTAL	632,601)					
TELEGRAPH TRANSMISSION OVER WIRES EQUIPMENT AND METHODS	Direct Current Metallic Telegraph	22,796)	5.9% (Plant in Service)	95,351	1,520,761	5.2% (Plant in Service)	79,080
	Direct Current Grounded Telegraph	35,852)					
	Carrier Telegraph	82,244)					
	Low Frequency A-C. Telegraph	35,273)					
	Printing Telegraph	47,406)					
	Ocean Cable Telegraph	-)					
	Relays and General Apparatus and Matters	8,722)					
	TOTAL	232,293)					
RADIO	Systems	24,708)					
	Fundamental Development	318,160)					
	Radio Repeaters	-)					
	Signaling	-)					
	Apparatus and Equipment	83,337)					
	U. S. Government	-)					
	Radio Regulations and Outside Relations	20,591)					
	General	304,422)					
	TOTAL	751,218)					
OUTSIDE PLANT	Materials	183,795					
	Cables	51,833					
	Apparatus	30,350					
	General	7,374					
	Methods Development	3,774					
	TOTAL	277,126	9.0% (Exchange and Toll Lines)	24,941	252,185	4.1% (Exchange and Toll Lines)	10,340
PROTECTION	Central Office	584					
	Substation	1,418					
	Cable	7,383					
	General	4,796					
	TOTAL	14,181	6.4% (Plant in Service Less Land and Buildings)	908	13,273	5.2% (Plant in Service Less Land and Buildings)	690
INTERFERENCE PREVENTION	Negotiations and Cooperation with Government Representatives, National Societies, etc.	10,143					
	Inductive Interference from Power Circuits	163,916					
	Interference from Electric Railroads	23,947					
	Hazards	56					
	Electrolysis	8,277					
	Interference from Radio	363					
	General	-					
	TOTAL	206,702	9.0% (Exchange and Toll Lines)	18,603	188,099	4.1% (Exchange and Toll Lines)	7,712
SPECIAL RESEARCH PROBLEMS	Contact Study	-					
	Magnetic Iron Study	-					
	Telephone Quality Study	122,768					
	Paper Study for Cable	-					
	Transmission Theory	4,845					
	Non-Linear Circuit Elements	-					
	General	27,953					
	TOTAL	155,566	6.4% (Plant in Service Less Land and Buildings)	9,956	145,610	5.2% (Plant in Service Less Land and Buildings)	7,572
RATE CASE TESTIMONY	TOTAL	42,251	0%	-	42,251	5.2% "	2,197
CONSOLIDATIONS	TOTAL	8,087	0%	-	8,087	5.2% "	421
NEW TYPES OF SERVICES	Loud Speakers	46,873					
	Wire Broadcasting	79,894					
	Phototelegraphy	231,286					
	General	63,669					
	TOTAL	423,724	6.4% (Plant in Service Less Land and Buildings)	27,118	396,606	5.2% (Plant in Service Less Land and Buildings)	20,624
MISCELLANEOUS	Patents and Inventions	22,993					
	Special Work in Connection with Legal Cases	68					
	General Data for Guiding Development Work	18,912					
	General	**113,633					
	TOTAL	**155,506	6.4% (Plant in Service Less Land and Buildings)	9,952	145,554	5.2% (Plant in Service Less Land and Buildings)	7,569
	GRAND TOTAL**	$3,601,273		$ 207,986	$3,393,287		$ 176,266

* Figures from Chart I for year 1925.
** Non-License Deduction $896.

May 5, 1932
2 Sheets - Sheet 1

ALLOCATION OF D. & R. DEPARTMENT EXPENSES IN LICENSE SERVICES
AS BETWEEN
LONG LINES AND ASSOCIATED COMPANIES (INCL. CANADA)
AND
ALLOCATION TO CHICAGO AREA
OF
ITS FAIR SHARE OF SUCH ASSOCIATED COMPANY EXPENSES

YEAR 1926	Total D. & R. Including B.T.L.	Per Cent Long Lines Is of Total	Expense Allocated to Long Lines	Expense Allocated to Associated Companies (Incl. Canada)	Per Cent Chicago Area Is of Associated Companies (Incl. Canada)	Expense Allocated to Chicago Area
1. CENTRAL OFFICE SYSTEMS AND APPARATUS						
LOCAL MANUAL EQUIPMENT & CIRCUITS	$ 43,042					
MANUAL APPARATUS	3,990					
TOTAL MANUAL						
PANEL MACH SW EQUIPMENT & CIRCUITS	79,354					
PANEL MACH SW APPARATUS	40,937					
TOTAL PANEL MACHINE SWITCHING						
STEP BY STEP MACH SW EQUIPMENT & CIRCUITS	55,076					
STEP BY STEP MACH SW APPARATUS	16,013					
TOTAL STEP BY STEP MACH SW						
OTHER MACH SW EQUIPMENT & CIRCUITS	4,426					
OTHER MACH SW APPARATUS	-					
TOTAL OTHER MACHINE SWITCHING						
TOLL EQUIPMENT & CIRCUITS	134,393					
P B X EQUIPMENT & CIRCUITS	29,744					
POWER EQUIPMENT	28,075					
TESTING & MAINTENANCE EQUIPMENT & APPARATUS	74,967					
ENGINEERING ON EQUIPMENT ORDERS	-					
FUNDAMENTAL STUDIES (A T & T CO ONLY)	70,732					
MISCELLANEOUS	95,699					
TOTAL CLASS 1	676,448	3.9% (Central Office Equipment)	$ 26,381	$650,067	6.1% (Central Office Equipment)	$ 39,654
2. SUBSTATION EQUIPMENT	51,337	0%	-	51,337	6.3% (Company Stations)	3,234
3. OUTSIDE PLANT	310,798	8.7% (Exchange and Toll Lines)	27,039	283,759	4.2% (Exchange and Toll Lines)	11,918
4. TRANSMITTERS, RECEIVERS AND INDUCTION COILS						
TRANSMISSION AND RECEPTION OF SPEECH	40,162					
APPARATUS	66,031					
TOTAL	106,193	0%	-	106,193	6.3% (Company Stations)	6,690
5. WIRE TRANSMISSION SYSTEMS						
VOICE FREQUENCY TELEPHONE EQUIPMENT & CIRCUITS	149,796)					
CARRIER TELEPHONE EQUIPMENT & CIRCUITS	200,077)					
CARRIER TELEGRAPH EQUIPMENT & CIRCUITS	82,055)					
D C TELEGRAPH EQUIPMENT	123,956)					
SUBMARINE CABLE TELEGRAPH EQUIPMENT	-)					
CROSS INDUCTION STUDIES (A T & T CO ONLY)	106,821)					
TOLL TRANSMISSION MAINTENANCE STUDIES (A T & T CO ONLY)	25,084)					
PICTURE TRANSMISSION	151,220)					
WIRE BROADCASTING	41,163)					
TELEVISION	33,420)					
GENERAL	89,581)					
TOTAL	1,003,173)					
6. RADIO TRANSMISSION SYSTEMS	)	5.7% (Plant in Service)	129,582	2,143,794	5.2% (Plant in Service)	111,477
SHIP-TO-SHORE	4,092)					
TRANSATLANTIC	499,631)					
BROADCASTING	25,596)					
SHORT WAVE	237,914)					
OTHER RADIO TRANSMITTING SYSTEMS	35,607)					
OTHER RADIO RECEIVING SYSTEMS	39,951)					
RADIO REGULATIONS & OUTSIDE RELATIONS (A T & T CO ONLY)	14,203)					
GENERAL	33,083)					
TOTAL	890,077)					
7. GENERAL TRANSMISSION APPARATUS						
VACUUM TUBES	312,793)					
LOADING COILS	22,473)					
PHOTO-ELECTRIC CELL	27,213)					
TESTING APPARATUS	2,281)					
TRANSMITTERS AND RECEIVERS FOR SPECIAL USE	4,442)					
OTHER TRANSMISSION APPARATUS	10,924)					
TOTAL	380,126)					
8. OTHER COMMUNICATION SYSTEMS & APPARATUS						
PUBLIC ADDRESS & LOUD SPEAKING SYSTEMS	-					
TRAIN DISPATCHING & SUPERVISORY SYSTEMS	-					
POWER LINE CARRIER	-					
APPARATUS FOR THE HARD OF HEARING	-					
ELECTRICAL STETHOSCOPE	-					
PHONOGRAPH RECORDING DISC	-					
PHONOGRAPH REPRODUCTION ELECTRICAL	-					
PHONOGRAPH RECORDING PHOTOGRAPHIC	8,036					
PHONOGRAPH REPRODUCTION ACOUSTIC	-					
SYNCHRONIZED TALKING PICTURES	7,052					
ELECTRICAL DICTATION	-					
MISCELLANEOUS SCIENTIFIC APPARATUS	-					
TOTAL	15,088	6.2% (Plant in Service Less Land and Buildings)	935	14,153	5.3% (Plant in Service Less Land and Buildings)	750

May 6, 1932
2 Sheets - Sheet 2

ALLOCATION OF D. & R. DEPARTMENT EXPENSES IN LICENSE SERVICES AS BETWEEN LONG LINES AND ASSOCIATED COMPANIES (INCL. CANADA) AND ALLOCATION TO CHICAGO AREA OF ITS FAIR SHARE OF SUCH ASSOCIATED COMPANY EXPENSES

YEAR 1926	Total D. & R. Including L.T.L.	Per Cent Long Lines Is of Total	Expense Allocated to Long Lines	Expense Allocated to Associated Companies (Incl. Canada)	Per Cent Chicago Area Is of Associated Companies (Incl. Canada)	Expense Allocated to Chicago Area
9. LEAD COVERED CABLE	$ 79,[illegible]	8.7% (Exchange and Toll Lines)	$ 6,897	$72,382	4.2% (Exchange and Toll Lines)	$ 3,040
10 SUBMARINE CABLE	-					
11 MATERIALS & PROCESSES	18,714	6.2% (Plant in Service Less Land and Buildings)	1,160	17,554	5.3% (Plant in Service Less Land and Buildings)	930
12 RESEARCH & DEVELOPMENT OF GENERAL APPLICATION	-					
13 FUNDAMENTAL STUDIES APPLYING TO COMMUNICATION						
TELEPHONE QUALITY STUDIES (A T & T CO ONLY)	143,743					
TRANSMISSION THEORY (A T & T CO ONLY)	30,762					
GENERAL (A T & T CO ONLY)	44,369					
TOTAL	218,874	6.2% (Plant in Service Less Land and Buildings)	13,570	205,304	5.3% (Plant in Service Less Land and Buildings)	10,881
14 PATENT	21,386	(Not allocated)				
15 INSPECTION ENGINEERING	-					
16 RATE CASE TESTIMONY A T & T CO ONLY	29,580	0%	-	29,580	5.3% (Plant in Service Less Land and Buildings)	1,568
17 INTERFERENCE PREVENTION AND PROTECTION						
NEGOTIATION AND COOPERATION WITH GOV'T REPRESENTATIVES NATIONAL SOCIETIES ETC	4,101					
INDUCTIVE INTERFERENCE FROM POWER CIRCUITS	183,705					
INTERFERENCE FROM ELECTRIC RAILWAYS	110,612					
ELECTROLYSIS	2,830					
PROTECTION STUDIES	29,308					
GENERAL	812					
TOTAL	331,368	8.7% (Exchange and Toll Lines)	28,829	302,539	4.2% (Exchange and Toll Lines)	12,707
18 MISCELLANEOUS	*203,463	6.2% (Plant in Service Less Land and Buildings)	12,615	190,848	5.3% (Plant in Service Less Land and Buildings)	10,115
TOTAL						
TOTAL CLASSES 1 - 18 INCLUSIVE ALLOCATED	*$4,314,518		$247,008	$4,067,510		$212,964

*Non-License Deduction - $421.

May 6, 1932
2 Sheets - Sheet 1

ALLOCATION OF D. & R. DEPARTMENT EXPENSES IN LICENSE SERVICES
AS BETWEEN
LONG LINES AND ASSOCIATED COMPANIES (INCL. CANADA)
AND
ALLOCATION TO CHICAGO AREA
OF
ITS FAIR SHARE OF SUCH ASSOCIATED COMPANY EXPENSES

YEAR 1927	Total D. & R. Including B.T.L.	Per Cent Long Lines is of Total	Expense Allocated to Long Lines	Expense Allocated to Associated Companies (Incl. Canada)	Per Cent Chicago Area is of Associated Companies (Incl. Canada)	Expense Allocated to Chicago Area
1. CENTRAL OFFICE SYSTEMS AND APPARATUS						
LOCAL MANUAL EQUIPMENT & CIRCUITS	$ 49,015					
MANUAL APPARATUS	5,421					
TOTAL MANUAL						
PANEL MACH SW EQUIPMENT & CIRCUITS	85,743					
PANEL MACH SW APPARATUS	41,712					
TOTAL PANEL MACHINE SWITCHING						
STEP BY STEP MACH SW EQUIPMENT & CIRCUITS	44,059					
STEP BY STEP MACH SW APPARATUS	18,635					
TOTAL STEP BY STEP MACH SW						
OTHER MACH SW EQUIPMENT & CIRCUITS	9,155					
OTHER MACH SW APPARATUS	-					
TOTAL OTHER MACHINE SWITCHING						
TOLL EQUIPMENT & CIRCUITS	174,515					
P B X EQUIPMENT & CIRCUITS	26,102					
POWER EQUIPMENT	32,601					
TESTING & MAINTENANCE EQUIPMENT & APPARATUS	98,205					
ENGINEERING ON EQUIPMENT ORDERS	-					
FUNDAMENTAL STUDIES (A T & T CO ONLY)	62,684					
MISCELLANEOUS	120,331					
TOTAL CLASS 1	768,178	4.5% (Central Office Equipment)	$ 34,568	$ 733,610	6.0% (Central Office Equipment)	$ 44,017
2. SUBSTATION EQUIPMENT	83,169	0%	-	83,169	6.3% (Company Stations)	5,240
3. OUTSIDE PLANT	437,158	9.3% (Exchange and Toll Lines)	40,656	396,502	4.2% (Exchange and Toll Lines)	16,653
4. TRANSMITTERS, RECEIVERS AND INDUCTION COILS						
TRANSMISSION AND RECEPTION OF SPEECH	39,965					
APPARATUS	82,093					
TOTAL	122,058	0%	-	122,058	6.3% (Company Stations)	7,690
5. WIRE TRANSMISSION SYSTEMS						
VOICE FREQUENCY TELEPHONE EQUIPMENT & CIRCUITS	194,696	6.2% (Plant in Service)	162,926	2,464,902	5.2% (Plant in Service)	128,175
CARRIER TELEPHONE EQUIPMENT & CIRCUITS	174,723					
CARRIER TELEGRAPH EQUIPMENT & CIRCUITS	82,127					
D C TELEGRAPH EQUIPMENT	107,331					
SUBMARINE CABLE TELEGRAPH EQUIPMENT	-					
CROSS INDUCTION STUDIES (A T & T CO ONLY)	107,563					
TOLL TRANSMISSION MAINTENANCE STUDIES (A T & T CO ONLY)	19,071					
PICTURE TRANSMISSION	146,546					
WIRE BROADCASTING	8,593					
TELEVISION	249,604					
GENERAL	111,319					
TOTAL	1,201,573					
6. RADIO TRANSMISSION SYSTEMS						
SHIP TO SHORE	38,206					
TRANSATLANTIC	386,984					
BROADCASTING	1,995					
SHORT WAVE	375,252					
OTHER RADIO TRANSMITTING SYSTEMS	102,514					
OTHER RADIO RECEIVING SYSTEMS	91,026					
RADIO REGULATIONS & OUTSIDE RELATIONS (A T & T CO ONLY)	30,138					
GENERAL	54,145					
TOTAL	1,080,260					
7. GENERAL TRANSMISSION APPARATUS						
VACUUM TUBES	284,359					
LOADING COILS	22,649					
PHOTO ELECTRIC CELL	15,379					
TESTING APPARATUS	7,557					
TRANSMITTERS AND RECEIVERS FOR SPECIAL USE	38					
OTHER TRANSMISSION APPARATUS	16,013					
TOTAL	345,995					
8. OTHER COMMUNICATION SYSTEMS & APPARATUS						
PUBLIC ADDRESS & LOUD SPEAKING SYSTEMS	-					
TRAIN DISPATCHING & SUPERVISORY SYSTEMS	-					
POWER LINE CARRIER	-					
APPARATUS FOR THE HARD OF HEARING	-					
ELECTRICAL STETHOSCOPE	-					
PHONOGRAPH RECORDING - DISC	-					
PHONOGRAPH REPRODUCTION - ELECTRICAL	-					
PHONOGRAPH RECORDING - PHOTOGRAPHIC	7,008					
PHONOGRAPH REPRODUCTION - ACOUSTIC	-					
SYNCHRONIZED TALKING PICTURES	2,483					
ELECTRICAL DICTATION	-					
MISCELLANEOUS SCIENTIFIC APPARATUS	-					
TOTAL	9,491	6.8% (Plant in Service Less Land and Buildings)	645	8,846	5.3% (Plant in Service Less Land and Buildings)	469

May 6, 1932
2 Sheets - Sheet 2

ALLOCATION OF D. & R. DEPARTMENT EXPENSES IN LICENSE SERVICES
AS BETWEEN
LONG LINES AND ASSOCIATED COMPANIES (INCL. CANADA)
AND
ALLOCATION TO CHICAGO AREA
OF
ITS FAIR SHARE OF SUCH ASSOCIATED COMPANY EXPENSES

4 YEAR 1927	Total D. & R. Including B.T.L.	Per Cent Long Lines is of Total	Expense Allocated to Long Lines	Expense Allocated to Associated Companies (Incl. Canada)	Per Cent Chicago Area is of Associated Companies (Incl. Canada)	Expense Allocated to Chicago Area
9 LEAD COVERED CABLE	$ 73,909	9.3% (Exchange and Toll Lines)	$ 6,874	$ 67,035	4.2% (Exchange and Toll Lines)	$ 2,815
10 SUBMARINE CABLE	96,635	6.2% (Plant in Service)	5,991	90,644	5.2% (Plant in Service)	4,713
11 MATERIALS & PROCESSES	21,864	6.8% (Plant in Service Less Land and Buildings)	1,487	20,377	5.3% (Plant in Service Less Land and Buildings)	1,080
12 RESEARCH & DEVELOPMENT OF GENERAL APPLICATION	-					
13 FUNDAMENTAL STUDIES APPLYING TO COMMUNICATION						
TELEPHONE QUALITY STUDIES (A T & T CO ONLY)	139,438					
TRANSMISSION THEORY A T & T CO ONLY)	30,909					
GENERAL A T & T CO ONLY)	40,619					
TOTAL	210,966	6.8% (Plant in Service Less Land and Buildings)	14,346	196,620	5.3% (Plant in Service Less Land and Buildings)	10,421
14 PATENT	26,254	Not Allocated				
15 INSPECTION ENGINEERING	-					
16 RATE CASE TESTIMONY A T & T CO ONLY	16,757	0%	-	16,757	5.3% (Plant in Service Less Land and Buildings)	888
17 INTERFERENCE PREVENTION AND PROTECTION						
NEGOTIATION AND COOPERATION WITH GOVT REPRESENTATIVES NATIONAL SOCIETIES, ETC	6,610					
INDUCTIVE INTERFERENCE FROM POWER CIRCUITS	198,013					
INTERFERENCE FROM ELECTRIC RAILWAYS	433,913					
ELECTROLYSIS	2,224					
PROTECTION STUDIES	31,188					
GENERAL	217					
TOTAL	672,165	9.3% (Exchange and Toll Lines)	62,511	609,654	4.2% (Exchange and Toll Lines)	25,605
18 MISCELLANEOUS						
HISTORICAL MUSEUM	6,934					
OTHER	*242,403					
TOTAL	*249,337	6.8% (Plant in Service Less Land and Buildings)	16,956	232,382	5.3% (Plant in Service Less Land and Buildings)	12,313
TOTAL CLASSES 1-18 INCLUSIVE Allocated	*$5,389,515		$346,959	$5,042,556		$260,082

* Non-license deduction $150.

May 6, 1932
2 Sheets-Sheet 1

ALLOCATION OF D. & R. DEPARTMENT EXPENSES IN LICENSE SERVICES
AS BETWEEN
LONG LINES AND ASSOCIATED COMPANIES (INCL. CANADA)
AND
ALLOCATION TO CHICAGO AREA
OF
ITS FAIR SHARE OF SUCH ASSOCIATED COMPANY EXPENSES

YEAR 1928	Total D. & R Including B. T. L.	Per Cent Long Lines is of Total	Expense Allocated to Long Lines	Expense Allocated to Associated Companies (incl. Canada)	Per Cent Chicago Area is of Associated Companies (incl. Canada)	Expense Allocated to Chicago Area
1. CENTRAL OFFICE SYSTEMS AND APPARATUS						
LOCAL MANUAL EQUIPMENT & CIRCUITS	$ 21,128					
MANUAL APPARATUS	2,229					
TOTAL MANUAL SYSTEM						
PANEL EQUIPMENT & CIRCUITS	96,505					
PANEL APPARATUS	46,312					
TOTAL PANEL SYSTEM						
STEP-BY-STEP EQUIPMENT & CIRCUITS	38,740					
STEP-BY-STEP APPARATUS	15,884					
TOTAL STEP-BY-STEP SYSTEM						
OTHER DIAL SYSTEMS EQUIPMENT & CIRCUITS	3,444					
OTHER DIAL SYSTEMS APPARATUS	-					
TOTAL OTHER DIAL SYSTEMS						
TOLL EQUIPMENT & CIRCUITS	218,901					
P B X EQUIPMENT & CIRCUITS	39,043					
POWER EQUIPMENT	34,704					
TESTING & MAINTENANCE EQUIPMENT & APPARATUS	84,044					
ENGINEERING ON EQUIPMENT ORDERS	-					
FUNDAMENTAL STUDIES (A. T. & T CO. ONLY)	54,391					
MISCELLANEOUS	111,852					
TOTAL CLASS 1	767,177	5.4% (Central Office Equipment)	$ 41,428	$ 725,749	6.1% (Central Office Equipment)	$ 44,271
2. SUBSTATION EQUIPMENT	124,021	0%	-	124,021	6.2% (Company Stations)	7,689
3. OUTSIDE PLANT	588,773	10.2% (Exchange and Toll Lines)	60,055	528,718	4.3% (Exchange and Toll Lines)	22,735
PER CENT. OF ESTIMATE						
ESTIMATED EXPENSE FOR YEAR						
4. TRANSMITTERS, RECEIVERS AND INDUCTION COILS						
TRANSMISSION AND RECEPTION OF SPEECH	47,659					
APPARATUS	81,893					
TOTAL	129,552	0%	-	129,552	6.2% (Company Stations)	8,032
5. WIRE TRANSMISSION SYSTEMS						
VOICE FREQUENCY TELEPHONE EQUIPMENT & CIRCUITS	260,339					
CARRIER TELEPHONE EQUIPMENT & CIRCUITS	194,641					
CARRIER TELEGRAPH EQUIPMENT & CIRCUITS	75,452					
D C TELEGRAPH EQUIPMENT	111,551					
SUBMARINE CABLE TELEGRAPH EQUIPMENT	-					
CROSS INDUCTION STUDIES (A T & T CO ONLY)	102,292					
TOLL TRANSMISSION MAINTENANCE STUDIES (A T & T CO ONLY)	24,240					
PICTURE TRANSMISSION	102,124					
WIRE BROADCASTING	3,699					
TELEVISION	81,418					
GENERAL	162,252					
TOTAL	1,118,008					
6. RADIO TRANSMISSION SYSTEMS						
SHIP-TO-SHORE	59,370	6.8% (Plant in Service)	176,187	2,414,800	5.3% (Plant in Service)	127,984
TRANSATLANTIC	219,074					
BROADCASTING	7,817					
SHORT WAVE	423,902					
OTHER RADIO TRANSMITTING SYSTEMS	58,593					
OTHER RADIO RECEIVING SYSTEMS	57,783					
RADIO REGULATIONS & OUTSIDE RELATIONS (A T & T CO ONLY)	16,136					
AIRCRAFT COMMUNICATION	215,949					
GENERAL	27,251					
TOTAL	1,085,875					
7. GENERAL TRANSMISSION APPARATUS						
VACUUM TUBES	312,417					
LOADING COILS	14,437					
PHOTO-ELECTRIC CELL	29,799					
TESTING APPARATUS	12,181					
TRANSMITTERS AND RECEIVERS FOR SPECIAL USE	2,901					
OTHER TRANSMISSION APPARATUS	15,369					
TOTAL	387,164					
8. OTHER COMMUNICATION SYSTEMS & APPARATUS						
PUBLIC ADDRESS & LOUD SPEAKING SYSTEMS	1,129					
TRAIN DISPATCHING & SUPERVISORY SYSTEMS	-					
POWER LINE CARRIER	-					
APPARATUS FOR THE HARD OF HEARING	-					
ELECTRICAL STETHOSCOPE	-					
PHONOGRAPH RECORDING - DISC	-					
PHONOGRAPH REPRODUCTION - ELECTRICAL	-					
PHONOGRAPH RECORDING - PHOTOGRAPHIC	6,948					
PHONOGRAPH REPRODUCTION - ACOUSTIC	-					
SYNCHRONIZED TALKING PICTURES	-					
ELECTRICAL DICTATION	-					
MISCELLANEOUS SCIENTIFIC APPARATUS	-					
TOTAL	8,077	7.5% (Plant in Service Less Land and Buildings)	606	7,471	5.4% (Plant in Service Less Land and Buildings)	403

May 6, 1932
2 Sheets-Sheet 2

ALLOCATION OF D. & R. DEPARTMENT EXPENSES IN LICENSE SERVICES
AS BETWEEN
LONG LINES AND ASSOCIATED COMPANIES (INCL. CANADA)
AND
ALLOCATION TO CHICAGO AREA
OF
ITS FAIR SHARE OF SUCH ASSOCIATED COMPANY EXPENSES

YEAR 1928	Total D. & R. Including B.T.L.	Per Cent Long Lines is of Total	Expense Allocated to Long Lines	Expense Allocated to Associated Companies (incl. Canada)	Per Cent Chicago Area is of Associated Companies (incl. Canada)	Expense Allocated to Chicago Area
9. LEAD COVERED CABLE	$ 72,276	10.2% (Exchange and Toll Lines)	$ 7,372	$ 64,904	4.3% (Exchange and Toll Lines)	$ 2,791
10. SUBMARINE CABLE						
TELEGRAPH CABLE	-					
TELEPHONE CABLE	88,843	6.8% (Plant in Service)	6,041	82,802	5.3% (Plant in Service)	4,389
INSULATION	-					
TOTAL	88,843					
11. MATERIALS & PROCESSES	24,141	7.5% (Plant in Service Less Land and Buildings)	1,811	22,330	5.4% (Plant in Service Less Land and Buildings)	1,206
12. RESEARCH & DEVELOPMENT OF GENERAL APPLICATION	-					
PER CENT. OF ESTIMATE						
ESTIMATED EXPENSE FOR YEAR						
13. FUNDAMENTAL STUDIES APPLYING TO COMMUNICATION						
TELEPHONE QUALITY STUDIES (A.T.&T. CO. ONLY)	124,908					
TRANSMISSION THEORY (A.T.&T. CO. ONLY)	50,535					
GENERAL (A.T.&T. CO. ONLY)	29,697					
TOTAL	205,140	7.5% (Plant in Service Less Land and Buildings)	15,386	189,754	5.4% (Plant in Service Less Land and Buildings)	10,247
14. PATENT	17,263	Not Allocated				
15. INSPECTION ENGINEERING	-					
16. RATE CASE TESTIMONY (A.T.&T. CO. ONLY)	13,935	C%	-	13,935	5.4% (Plant in Service Less Land and Buildings)	752
17. INTERFERENCE PREVENTION AND PROTECTION						
NEGOTIATION AND COOPERATION WITH GOVT. REPRESENTATIVES, NATIONAL SOCIETIES ETC.	7,559					
INDUCTIVE INTERFERENCE FROM POWER CIRCUITS	219,997					
INTERFERENCE FROM ELECTRIC RAILWAYS	474,230					
ELECTROLYSIS	2,164					
PROTECTION STUDIES	22,475					
GENERAL	770					
TOTAL	727,195	10.2% (Exchange and Toll Lines)	74,174	653,021	4.3% (Exchange and Toll Lines)	28,080
18. MISCELLANEOUS	211,264	7.5% (Plant in Service Less Land and Buildings)	15,845	195,419	5.4% (Plant in Service Less Land and Buildings)	10,553
19. ENGINEERING SERVICES						
C.O. EQUIPMENT ANALYZATION	-					
RADIO INSTALLATIONS	-					
PUBLIC ADDRESS INSTALLATIONS	-					
POWER LINE CARRIER INSTALLATIONS	-					
TRANSATLANTIC INSTALLATIONS	2,541					
CARD CATALOGUE	-					
MISCELLANEOUS ENGINEERING SERVICES	40,256					
TOTAL	42,797	Not Allocated				
TOTAL CLASSES 1-19 INCLUSIVE Allocated	$5,551,381		$398,905	$5,152,476		$ 269,132

May 6, 1932
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ALLOCATION OF D. & R. DEPARTMENT EXPENSES IN LICENSE SERVICES
AS BETWEEN
LONG LINES AND ASSOCIATED COMPANIES (INCL. CANADA)
AND
ALLOCATION TO CHICAGO AREA
OF
ITS FAIR SHARE OF SUCH ASSOCIATED COMPANY EXPENSES

YEAR 1929	Total D. & R. Including B.T.L.	Per Cent Long Lines Is of Total	Expense Allocated to Long Lines	Expense Allocated to Associated Companies (Incl. Canada)	Per Cent Chicago Area Is of Associated Companies (Incl. Canada)	Expense Allocated to Chicago Area
1. CENTRAL OFFICE SYSTEMS AND APPARATUS						
LOCAL MANUAL EQUIPMENT & CIRCUITS	$ 42,557					
MANUAL APPARATUS	93					
TOTAL MANUAL SYSTEM						
PANEL EQUIPMENT & CIRCUITS	109,551					
PANEL APPARATUS	33,190					
TOTAL PANEL SYSTEM						
STEP-BY-STEP EQUIPMENT & CIRCUITS	62,404					
STEP-BY-STEP APPARATUS	12,514					
TOTAL STEP-BY-STEP SYSTEM						
OTHER DIAL SYSTEMS EQUIPMENT & CIRCUITS	-					
OTHER DIAL SYSTEMS APPARATUS	-					
TOTAL OTHER DIAL SYSTEMS						
TOLL EQUIPMENT & CIRCUITS	190,630					
P. B. X. EQUIPMENT & CIRCUITS	77,466					
POWER EQUIPMENT	[illegible],808					
TESTING & MAINTENANCE EQUIPMENT & APPARATUS	108,534					
ENGINEERING ON EQUIPMENT ORDERS	-					
FUNDAMENTAL STUDIES (A. T. & T. CO. ONLY)	49,686					
MISCELLANEOUS	68,445					
TOTAL CLASS 1	758,878	6.0% (Central Office Equipment)	$ 45,532	$ 713,346	6.4% (Central Office Equipment)	$ 45,654
2. SUBSTATION EQUIPMENT	137,920	0%	-	137,920	6.1% (Company Stations)	8,413
3. OUTSIDE PLANT	735,368	11.4% (Exchange and Toll Lines)	83,832	651,536	4.3% (Exchange and Toll Lines)	28,016
4. TRANSMITTERS, RECEIVERS AND INDUCTION COILS						
TRANSMISSION AND RECEPTION OF SPEECH	18,228					
APPARATUS	58,049					
TOTAL	76,277	0%	-	76,277	6.1% (Company Stations)	4,653
5. WIRE TRANSMISSION SYSTEMS						
VOICE FREQUENCY TELEPHONE EQUIPMENT & CIRCUITS	209,996)					
CARRIER TELEPHONE EQUIPMENT & CIRCUITS	281,359)					
CARRIER TELEGRAPH EQUIPMENT & CIRCUITS	94,752)					
D. C. TELEGRAPH EQUIPMENT	147,290)					
SUBMARINE CABLE TELEGRAPH EQUIPMENT	-)					
CROSS INDUCTION STUDIES (A. T. & T. CO. ONLY)	117,392)					
TOLL TRANSMISSION MAINTENANCE STUDIES (A. T. & T. CO. ONLY)	29,609)					
PICTURE TRANSMISSION	85,062)					
WIRE BROADCASTING	66,133)					
TELEVISION	135,759)					
GENERAL	331,785)					
TOTAL	1,499,137)					
6. RADIO TRANSMISSION SYSTEMS	)					
SHIP-TO-SHORE	176,861)	7.6% (Plant in Service)	266,605	3,241,352	5.3% (Plant in Service)	171,792
TRANSATLANTIC	429,438)					
BROADCASTING	110)					
SHORT WAVE	431,992)					
OTHER RADIO TRANSMITTING SYSTEMS	32,905)					
OTHER RADIO RECEIVING SYSTEMS	34,078)					
RADIO REGULATIONS & OUTSIDE RELATIONS (A. T. & T. CO. ONLY)	24,330)					
AIRCRAFT COMMUNICATION	473,021)					
GENERAL	35,679)					
TOTAL	1,638,414)					
7. GENERAL TRANSMISSION APPARATUS	)					
VACUUM TUBES	275,615)					
LOADING COILS	14,689)					
PHOTO-ELECTRIC CELL	34,805)					
TESTING APPARATUS	26,796)					
TRANSMITTERS AND RECEIVERS FOR SPECIAL USE	-)					
OTHER TRANSMISSION APPARATUS	18,501)					
TOTAL	370,406)					
8. OTHER COMMUNICATION SYSTEMS & APPARATUS						
PUBLIC ADDRESS & LOUD SPEAKING SYSTEMS	1,271					
TRAIN DISPATCHING & SUPERVISORY SYSTEMS	-					
POWER LINE CARRIER	-					
APPARATUS FOR THE HARD OF HEARING	-					
ELECTRICAL STETHOSCOPE	-					
PHONOGRAPH RECORDING - DISC	-					
PHONOGRAPH REPRODUCTION - ELECTRICAL	-					
PHONOGRAPH RECORDING - PHOTOGRAPHIC	-					
PHONOGRAPH REPRODUCTION - ACOUSTIC	-					
SYNCHRONIZED TALKING PICTURES	-					
ELECTRICAL DICTATION	11,245					
MISCELLANEOUS SCIENTIFIC APPARATUS	-					
TOTAL	12,516	8.3% (Plant in Service Less Land and Buildings)	1,039	11,477	5.5% (Plant in Service Less Land and Buildings)	631

ALLOCATION OF D. & R. DEPARTMENT EXPENSES IN LICENSE SERVICES
AS BETWEEN
LONG LINES AND ASSOCIATED COMPANIES (INCL. CANADA)
AND
ALLOCATION TO CHICAGO AREA
OF
ITS FAIR SHARE OF SUCH ASSOCIATED COMPANY EXPENSES

YEAR 1929	Total D.& R. Including B.T.L.	Per Cent Long Lines Is of Total	Expense Allocated to Long Lines	Expense Allocated to Associated Companies (Incl. Canada)	Per Cent Chicago Area Is of Associated Companies (Incl. Canada)	Expense Allocated to Chicago Area
9. LEAD COVERED CABLE	$ 79,864	11.4% (Exchange and Toll Lines)	$ 9,104	$ 70,760	4.3% (Exchange and Toll Lines)	$ 3,043
10. SUBMARINE CABLE						
TELEGRAPH CABLE	-					
TELEPHONE CABLE	518,871					
INSULATION	-					
TOTAL	518,871	7.6% (Plant in Service)	39,434	479,437	5.3% (Plant in Service)	25,410
11. MATERIALS & PROCESSES PER CENT. OF ESTIMATE ESTIMATED EXPENSE FOR YEAR	35,180	8.3% (Plant in Service Less Land and Buildings)	2,920	32,260	5.5% (Plant in Service Less Land and Buildings)	1,774
12. RESEARCH & DEVELOPMENT OF GENERAL APPLICATION	-					
13. FUNDAMENTAL STUDIES APPLYING TO COMMUNICATION						
TELEPHONE QUALITY STUDIES (A.T.&T. CO. ONLY)	124,145					
TRANSMISSION THEORY (A.T.&T. CO. ONLY)	51,483					
GENERAL (A.T.&T. CO. ONLY)	42,512					
TOTAL	218,140	8.3% (Plant in Service Less Land and Buildings)	18,105	200,035	5.5% (Plant in Service Less Land and Buildings)	11,002
14. PATENT PER CENT. OF ESTIMATE ESTIMATED EXPENSE FOR YEAR	20,897	Not Allocated				
15. INSPECTION ENGINEERING	-					
16. RATE CASE TESTIMONY (A.T.&T. CO. ONLY)	10,[illegible]2	0%	-	10,242	5.5% (Plant in Service Less Land and Buildings)	563
17. INTERFERENCE PREVENTION AND PROTECTION						
NEGOTIATION AND COOPERATION WITH GOVT. REPRESENTATIVES, NATIONAL SOCIETIES ETC.	9,050					
INDUCTIVE INTERFERENCE FROM POWER CIRCUITS	330,580					
INTERFERENCE FROM ELECTRIC RAILWAYS	350,185					
ELECTROLYSIS	5,906					
PROTECTION STUDIES	29,118					
GENERAL	319					
TOTAL	725,158	11.4% (Exchange and Toll Lines)	82,668	642,490	4.3% (Exchange and Toll Lines)	27,627
18. MISCELLANEOUS	232,343	8.3% (Plant in Service Less Land and Buildings)	19,284	213,059	5.5% (Plant in Service Less Land and Buildings)	11,718
19. ENGINEERING SERVICES						
C.O. EQUIPMENT ANALYZATION	-					
RADIO INSTALLATIONS	-					
PUBLIC ADDRESS INSTALLATIONS	-					
POWER LINE CARRIER INSTALLATIONS	-					
TRANSATLANTIC INSTALLATIONS	-					
CARD CATALOGUE	-					
MISCELLANEOUS ENGINEERING SERVICES	44,390					
TOTAL	44,390	Not Allocated				
TOTAL CLASSES 1 - 19 INCLUSIVE ALLOCATED	$7,048,714		$568,523	$ 6,480,191		$340,296

May 6, 1932.
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ALLOCATION OF D. & R. DEPARTMENT EXPENSES IN LICENSE SERVICES
AS BETWEEN
LONG LINES AND ASSOCIATED COMPANIES (INCL. CANADA)
AND
ALLOCATION TO CHICAGO AREA
OF
ITS FAIR SHARE OF SUCH ASSOCIATED COMPANY EXPENSES

YEAR 1930	Total D. & R. Including B.T.L.	Per Cent Long Lines is of Total	Expense Allocated to Long Lines	Expense Allocated to Associated Companies (Incl. Canada)	Per Cent Chicago Area is of Associated Companies (Incl. Canada)	Expense Allocated to Chicago Area
1. CENTRAL OFFICE SYSTEMS AND APPARATUS						
101 LOCAL MANUAL EQUIPMENT & CIRCUITS	$ 44,194					
102 MANUAL APPARATUS	14,723					
TOTAL MANUAL SYSTEM						
103 PANEL EQUIPMENT & CIRCUITS	99,949					
104 PANEL APPARATUS	31,911					
TOTAL PANEL SYSTEM						
105 STEP-BY-STEP EQUIPMENT & CIRCUITS	69,294					
106 STEP-BY-STEP APPARATUS	14,189					
TOTAL STEP-BY-STEP SYSTEM						
107 OTHER DIAL SYSTEMS EQUIPMENT & CIRCUITS	62					
108 TOLL EQUIPMENT & CIRCUITS	206,243					
109 P.B.X. EQUIPMENT & CIRCUITS	45,901					
110 POWER EQUIPMENT	84,369					
111 TESTING & MAINTENANCE EQUIPMENT & APPARATUS	105,451					
112 ENGINEERING ON EQUIPMENT ORDERS	309					
113 FUNDAMENTAL STUDIES (A T & T CO ONLY)	36,373					
120 MISCELLANEOUS	76,993					
TOTAL CLASS 1	829,961	7.3% (Central Office Equipment)	$ 60[illegible]87	$ 769,374	6.3% (Central Office Equipment)	$ 48,471
2. SUBSTATION EQUIPMENT	138,914	0%	-	138,914	6.0% (Company Stations)	8,335
3. OUTSIDE PLANT	823,587	13.2% (Exchange and Toll Line)	108,713	714,874	4.1% (Exchange and Toll Lines)	29,310
4. TRANSMITTERS, RECEIVERS AND INDUCTION COILS						
401 TRANSMISSION AND RECEPTION OF SPEECH	91,364					
402 APPARATUS	76,718					
TOTAL	168,082	0%	-	168,082	6.0% (Company Stations)	10,085
5. WIRE TRANSMISSION SYSTEMS						
501 VOICE FREQUENCY TELEPHONE EQUIPMENT & CIRCUITS	405,926					
502 CARRIER TELEPHONE EQUIPMENT & CIRCUITS	174,608					
503 CARRIER TELEGRAPH EQUIPMENT & CIRCUITS	39,606					
504 CARRIER ON CABLE	745,812					
505 D C TELEGRAPH EQUIPMENT	208,784					
506 SUBMARINE CABLE TELEGRAPH EQUIPMENT	3,899					
507 CROSS INDUCTION STUDIES (A T & T CO ONLY)	163,002					
508 TOLL TRANSMISSION MAINTENANCE STUDIES (A T & T CO ONLY)	30,306					
509 PICTURE TRANSMISSION	105,518					
510 TELEVISION	90,771					
511 RADIO & SUBMARINE CABLE TELEPHONE CONNECTING EQPT & CCTS	365,351					
520 GENERAL	527,032					
TOTAL	2,910,915					
6. RADIO TRANSMISSION SYSTEMS						
601 SHIP-TO-SHORE	243,722	9.0% (Plant In Service)	486,874	4,922,837	5.1% (Plant In Service)	251,065
602 AIRCRAFT COMMUNICATION	453,027					
603 TRANSOCEANIC - SHORT WAVE	319,133					
604 SHORT WAVE - GENERAL	243,177					
605 TRANSOCEANIC - LONG WAVE	507,358					
606 BROADCASTING	368					
607 OTHER RADIO TRANSMITTING SYSTEMS	61,309					
608 OTHER RADIO RECEIVING SYSTEMS	81,924					
619 RADIO REGULATIONS & OUTSIDE RELATIONS (A T & T CO ONLY)	31,651					
620 GENERAL	10,142					
TOTAL	2,031,811					
7. GENERAL TRANSMISSION APPARATUS						
701 VACUUM TUBES	350,904					
702 LOADING COILS	4,763					
703 PHOTO-ELECTRIC CELL	* 30,564					
704 TESTING APPARATUS	76,547					
705 TRANSMITTERS AND RECEIVERS FOR SPECIAL USE	651					
706 OTHER TRANSMISSION APPARATUS	4,456					
TOTAL	* 466,985					
8. OTHER COMMUNICATION SYSTEMS & APPARATUS						
801 SOUND RECORDING APPARATUS & SYSTEMS	* 3,089					
802 SOUND REPRODUCING APPARATUS & SYSTEMS	* 9,681					
803 POWER LINE CARRIER	297					
804 TRAIN DISPATCHING & SUPERVISORY SYSTEMS	-					
805 CLINICAL APPARATUS & FUNCTIONAL AIDS	1,408					
820 GENERAL	113,313					
TOTAL	* 127,788	9.9% (Plant in Service Less Land and Buildings)	12,651	115,137	5.3% (Plant in Service Less Land and Buildings)	6,102
9. LEAD COVERED CABLE	128,341	13.2% (Exchange and Toll Line)	16,941	111,400	4.10% (Exchange and Toll Line)	4,567

May 6, 1932.
2 Sheets - Sheet 2

ALLOCATION OF D. & R. DEPARTMENT EXPENSES IN LICENSE SERVICES
AS BETWEEN
LONG LINES AND ASSOCIATED COMPANIES (INCL. CANADA)
AND
ALLOCATION TO CHICAGO AREA
OF
ITS FAIR SHARE OF SUCH ASSOCIATED COMPANY EXPENSES

YEAR 1930	Total D. & R. Including B.T.L.	Per Cent Long Lines is of Total	Expense Allocated to Long Lines	Expense Allocated to Associated Companies (incl. Canada)	Per Cent Chicago Area is of Associated Companies (incl. Canada)	Expense Allocated to Chicago Area
10. SUBMARINE CABLE						
10.01 TELEGRAPH CABLE	$ 308					
10.02 TELEPHONE CABLE	666,301					
10.03 INSULATION	-					
TOTAL	666,609	9.0% (Plant in Service)	$ 59,995	$ 606,614	5.1% (Plant in Service)	$ 30,937
11. MATERIALS & PROCESSES	57,688	9.9% (Plant in Service Less Land and Buildings)	5,711	[illegible],977	5.3% (Plant in Service Less Land and Buildings)	2,755
12. FUNDAMENTAL STUDIES APPLYING TO COMMUNICATION						
12.01 TELEPHONE QUALITY STUDIES (A.T.& T. CO. ONLY)	139,316					
12.02 TRANSMISSION THEORY (A.T.& T. CO. ONLY)	* 43,120					
12.20 GENERAL (A.T.& T. CO. ONLY)	112,389					
TOTAL	*294,825	9.9% (Plant in Service Less Land and Buildings)	29,188	265,637	5.3% (Plant in Service Less Land and Buildings)	14,079
13. PATENT	** 51,340	(Not allocated)				
14. INSPECTION ENGINEERING						
PER CENT. OF ESTIMATE ESTIMATED EXPENSE FOR YEAR	-					
15. RATE CASE TESTIMONY (A.T.& T. CO. ONLY)	2,965	0%	-	2,965	5.3% (Plant in Service Less Land and Buildings)	157
16. INTERFERENCE PREVENTION AND PROTECTION						
16.01 NEGOTIATION AND COOPERATION WITH GOVT. REPRESENTATIVES, NATIONAL SOCIETIES ETC	29,325					
16.02 INDUCTIVE INTERFERENCE FROM POWER CIRCUITS	456,999					
16.03 INTERFERENCE FROM ELECTRIC RAILWAYS	168,798					
16.04 ELECTROLYSIS	3,869					
16.05 PROTECTION STUDIES	70,320					
16.20 GENERAL	7,576					
TOTAL	736,887	13.2% (Exchange and Toll Line)	97,269	639,618	4.1% (Exchange and Toll Line)	26,224
17. MISCELLANEOUS	232,909	9.9% (Plant in Service Less Land and Buildings)	23,058	209,851	5.3% (Plant in Service Less Land and Buildings)	11,122
18.						
19. ENGINEERING SERVICES						
19.01 RADIO INSTALLATIONS	-					
19.02 TRANSOCEANIC RADIO - SHORT WAVE	-					
19.03 TRANSOCEANIC RADIO - LONG WAVE	-					
19.04 SHIP-TO-SHORE RADIO	** 62,301					
19.05 CARD CATALOGUE	-					
19.20 MISCELLANEOUS ENGINEERING SERVICES	35,257					
TOTAL	97,558	(Not allocated)				
TOTAL CLASSES 1 - 19 INCLUSIVE ALLOCATED	$9,618,267		$ 900,987	$8,717,280		$ 443,209

* Non-License Deduction	Class. 7.03	$ 19,500
	8.01	209,260
	8.02	21,687
	12.02	11,200

** Expense chargeable to other Departments of A. T. & T. Co.

May 6, 1932.
2 Sheets - Sheet 1

ALLOCATION OF D. & R. DEPARTMENT EXPENSES IN LICENSE SERVICES
AS BETWEEN
LONG LINES AND ASSOCIATED COMPANIES (INCL. CANADA)
AND
ALLOCATION TO CHICAGO AREA
OF
ITS FAIR SHARE OF SUCH ASSOCIATED COMPANY EXPENSES

YEAR 1931	Total D. & R. Including B.T.L.	Per Cent Long Lines Is of Total	Expense Allocated to Long Lines	Expense Allocated to Associated Companies (Incl. Canada)	Per Cent Chicago Area Is of Associated Companies (Incl. Canada)	Expense Allocated to Chicago Area
1. CENTRAL OFFICE SYSTEMS AND APPARATUS						
1.01 LOCAL MANUAL EQUIPMENT & CIRCUITS	$. 48,330					
1.02 MANUAL APPARATUS	14,074					
TOTAL MANUAL SYSTEM						
1.03 PANEL EQUIPMENT & CIRCUITS	88,390					
1.04 PANEL APPARATUS	28,862					
TOTAL PANEL SYSTEM						
1.05 STEP-BY-STEP EQUIPMENT & CIRCUITS	74,815					
1.06 STEP-BY-STEP APPARATUS	14,650					
TOTAL STEP-BY-STEP SYSTEM						
1.03 OTHER DIAL SYSTEMS EQUIPMENT & CIRCUITS	150					
1.08 TOLL EQUIPMENT & CIRCUITS	162,798					
1.09 P.B.X. EQUIPMENT & CIRCUITS	51,662					
1.10 POWER EQUIPMENT	76,439					
1.11 TESTING & MAINTENANCE EQUIPMENT & APPARATUS	102,564					
1.12 ENGINEERING ON EQUIPMENT ORDERS	56					
1.13 FUNDAMENTAL STUDIES (A.T.&T.CO. ONLY)	30,168					
1.20 MISCELLANEOUS	67,143					
TOTAL CLASS 1	760,101	7.8% (Central Office - Equipment)	$ 59,288	$ 700,813	6.2% (Central Office - Equipment)	$ 43,450
2. SUBSTATION EQUIPMENT	108,646	0%	-	108,646	[illegible].9% (Company Stations)	6,410
3. OUTSIDE PLANT	766,106	14.0% (Exchange and Toll Lines)	107,255	658,851	4.1% (Exchange and Toll Lines)	27,013
4. TRANSMITTERS, RECEIVERS AND INDUCTION COILS						
4.01 TRANSMISSION AND RECEPTION OF SPEECH	79,391					
4.02 APPARATUS	198,363					
TOTAL	277,754	0%	-	277,754	5.9% (Company Stations)	16,387
5. WIRE TRANSMISSION SYSTEMS						
5.01 VOICE FREQUENCY TELEPHONE EQUIPMENT & CIRCUITS	508,202]					
5.02 CARRIER TELEPHONE EQUIPMENT & CIRCUITS	172,847]					
5.03 CARRIER TELEGRAPH EQUIPMENT & CIRCUITS	76,618]					
5.04 CARRIER ON CABLE	806,593]					
5.05 PRINTING AND D.C. TELEGRAPH EQUIPMENT	188,700]					
5.06 SUBMARINE CABLE TELEGRAPH EQUIPMENT	1,604]					
5.07 CROSS INDUCTION STUDIES (A.T.&T.CO. ONLY)	173,889]					
5.08 TOLL TRANSMISSION MAINTENANCE STUDIES (A.T.&T.CO. ONLY)	35,868]					
5.09 PICTURE TRANSMISSION	190,352]					
5.10 TELEVISION	84,018]					
5.11 RADIO & SUBMARINE CABLE TELEPHONE CONNECTING EQPT. & CCTS.	391,380]					
5.20 GENERAL	532,989]					
TOTAL	3,063,060]					
		9.5% (Plant in Service)	455,219	4,336,561	5.1% (Plant in Service)	221,165
6. RADIO TRANSMISSION SYSTEMS						
6.01 SHIP-TO-SHORE	63,080]					
6.02 AIRCRAFT COMMUNICATION	40,474]					
6.03 TRANSOCEANIC - SHORT WAVE	320,212]					
6.04 SHORT WAVE - GENERAL	260,362]					
6.05 TRANSOCEANIC - LONG WAVE	241,907]					
6.06 BROADCASTING	533]					
6.07 OTHER RADIO TRANSMITTING SYSTEMS	119,774]					
6.08 OTHER RADIO RECEIVING SYSTEMS	118,918]					
6.19 RADIO REGULATIONS & OUTSIDE RELATIONS (A.T.&T.CO. ONLY)	17,052]					
6.20 GENERAL	10,659]					
TOTAL	1,192,971]					
7. GENERAL TRANSMISSION APPARATUS						
7.01 VACUUM TUBES	382,955]					
7.02 LOADING COILS	15,683]					
7.03 PHOTO-ELECTRIC CELL	75,049]					
7.04 TESTING APPARATUS	41,705]					
7.05 TRANSMITTERS AND RECEIVERS FOR SPECIAL USE	9]					
7.06 OTHER TRANSMISSION APPARATUS	20,348]					
TOTAL	535,749]					
8. OTHER COMMUNICATION SYSTEMS & APPARATUS						
8.01 SOUND RECORDING APPARATUS & SYSTEMS	157,701					
8.02 SOUND REPRODUCING APPARATUS & SYSTEMS	51,414					
8.03 POWER LINE CARRIER	2,020					
8.04 TRAIN DISPATCHING & SUPERVISORY SYSTEMS	-					
8.05 CLINICAL APPARATUS & FUNCTIONAL AIDS	14,736					
8.20 GENERAL	12,086					
TOTAL	237,957	10.5% (Plant in Service Less Land and Buildings)	24,985	212,972	5.3% (Plant in Service Less Land and Buildings)	11,288
9. LEAD COVERED CABLE	120,138	14.0% (Exchange and Toll Lines)	16,819	103,319	4.1% (Exchange and Toll Lines)	4,236

2 Sheets - Sheet 2

ALLOCATION OF D. & R. DEPARTMENT EXPENSES IN LICENSE SERVICES
AS BETWEEN
LONG LINES AND ASSOCIATED COMPANIES (INCL. CANADA)
AND
ALLOCATION TO CHICAGO AREA
OF
ITS FAIR SHARE OF SUCH ASSOCIATED COMPANY EXPENSES

YEAR 1931	Total D. & R. Including	Per Cent Long Lines Is of Total	Expense Allocated to Long Lines	Expense Allocated to Associated Companies (Incl. Canada)	Per Cent Chicago Area is of Associated Companies (Incl. Canada)	Expense Allocated to Chicago Area
10. SUBMARINE CABLE						
1001 TELEGRAPH CABLE	$ 72					
1002 TELEPHONE CABLE	406,045					
1003 INSULATION	-					
TOTAL	406,117	9.5% (Plant in Service)	$ 38,581	$367,536	5.1% (Plant in Service)	$ 1[illegible],744
11. MATERIALS & PROCESSES						
PER CENT OF ESTIMATE ESTIMATED EXPENSE FOR YEAR	197,361	10.5% (Plant in Service Less Land and Buildings)	20,723	176,638	5.3% (Plant in Service Less Land and Buildings)	9,362
12. FUNDAMENTAL STUDIES APPLYING TO COMMUNICATION						
1201 TELEPHONE QUALITY STUDIES (A.T.&T. CO. ONLY)	166,584					
1202 TRANSMISSION THEORY (A.T.&T. CO. ONLY)	49,187					
1220 GENERAL (A.T.&T. CO. ONLY)	138,277					
TOTAL	354,048	10.5% (Plant in Service Less Land and Buildings)	37,175	316,873	5.3% (Plant in Service Less Land and Buildings)	16,794
13. PATENT	-					
14. INSPECTION ENGINEERING	-					
15.						
16. INTERFERENCE PREVENTION AND PROTECTION						
1601 NEGOTIATION AND COOPERATION WITH GOVT. REPRESENTATIVES, NATIONAL SOCIETIES ETC. *	18,658					
1602 INDUCTIVE INTERFERENCE FROM POWER CIRCUITS	413,417					
1603 INTERFERENCE FROM ELECTRIC RAILWAYS	132,525					
1604 ELECTROLYSIS	6,219					
1605 PROTECTION STUDIES	50,488					
1620 GENERAL	5,941					
TOTAL	627,248	14.0% (Exchange and Toll Lines)	87,815	539,433	4.1% (Exchange and Toll Lines)	22,117
17. MISCELLANEOUS	225,953	10.5% (Plant in Service Less Land and Buildings)	23,725	202,228	5.3% (Plant in Service Less Land and Buildings)	10,718
18.						
19. ENGINEERING SERVICES						
1901 RADIO INSTALLATIONS	-					
1902 TRANSOCEANIC RADIO - SHORT WAVE	-					
1903 TRANSOCEANIC RADIO - LONG WAVE	-					
* 1904 SHIP-TO-SHORE RADIO	3,083					
1905 CARD CATALOGUE	-					
* 1920 MISCELLANEOUS ENGINEERING SERVICES	200,685					
TOTAL	203,768	Not Allocated				
TOTAL CLASSES 1 - 19 INCLUSIVE Allocated	$8,873,209		$871,585	$8,001,624		$407,684

* A portion of this expense chargeable to other departments of A. T. & T. Co.

[fol. 3061]

EXHIBIT A-119

Jewett Exhibit No. 6

Fair Share of D. & R. Expense Allocable to Chicago Area of Illinois Bell on the Basis of Exhibits A-116 and A-118

	1	2	3	4	5
Year	Credit Account Western's Benefit (Non Bell) from *Exhibit 3	Per Cent Chgo. Area is of Assoc. Cos. (Incl. Canada) Plus Long Lines	2×1 Proportion of Credit Applicable to Chgo. Area	D. & R. Expense Allocated on **Exhibit 5 to Chgo. Area	4−3 Net Expense Applicable to Chgo. Area
1923...	$153,700	5.3	$8,150	$163,436	$155,286
1924...	155,000	5.1	7,900	159,983	152,083
1925...	198,700	4.9	9,730	176,266	166,536
1926...	184,100	5.0	9,200	212,964	203,764
1927...	206,700	4.9	10,100	260,082	249,982
1928...	262,300	4.9	12,800	269,132	256,332
1929...	310,600	4.9	15,200	340,296	325,096
1930...	357,400	4.7	16,800	443,209	426,409
1931...	217,900	4.6	10,000	407,684	397,684

* A-116.
** A-118.

[fol. 3062]

EXHIBIT A-120

Per Cent Long Lines of Total Associated Companies, Long Lines and Bell Telephone Company of Canada

	Total Telephone Revenues "000" Omitted				
Year	Total Ass'd Operating Companies (a)	Long Lines (b)	Bell of Canada (c)	Total Columns a, b and c (d)	Per Cent Long Lines, of Total Ass'd Cos., Long Lines and Bell of Canada b÷d (e)
1923.....	$547,104	$47,241	$21,867	$616,212	7.7
1924.....	611,053	48,578	24,208	683,839	7.1
1925.....	687,899	55,512	26,169	769,580	7.2
1926.....	766,847	60,939	28,461	856,247	7.1
1927.....	834,782	67,412	33,211	935,405	7.2
1928.....	900,752	82,961	36,511	1,020,224	8.1
1929.....	983,725	97,435	40,031	1,121,191	8.7
1930.....	1,018,672	99,535	41,361	1,159,568	8.6
1931.....	996,814	94,557	40,926	1,132,297	8.4

Sources of information: CR 51A, MR 1, MR 1.

[fol. 3063]

EXHIBIT A-121

Per Cent Chicago Area of Total Associated Companies (Excluding Long Lines) and Bell Telephone Company of Canada

	Total Telephone Revenues "000" Omitted				Per Cent Chicago Area of Total Ass'd Cos., and Bell of Canada d ÷ c (e)
Year	Total Ass'd Operating Companies (a)	Bell of Canada (b)	Total a and b (c)	Chicago Area (d)	
1923.....	547,104	21,867	568,971	39,610	7.0
1924.....	611,053	24,208	635,261	42,959	6.8
1925.....	687,899	26,169	714,068	46,187	6.5
1926.....	766,847	28,461	795,308	50,145	6.3
1927.....	834,782	33,211	867,993	53,939	6.2
1928.....	900,752	36,511	937,263	58,301	6.2
1929.....	983,725	40,081	1,023,756	66,273	6.5
1930.....	1,018,672	41,361	1,060,033	67,145	6.3
1931.....	996,814	40,926	1,037,740	64,597	6.2

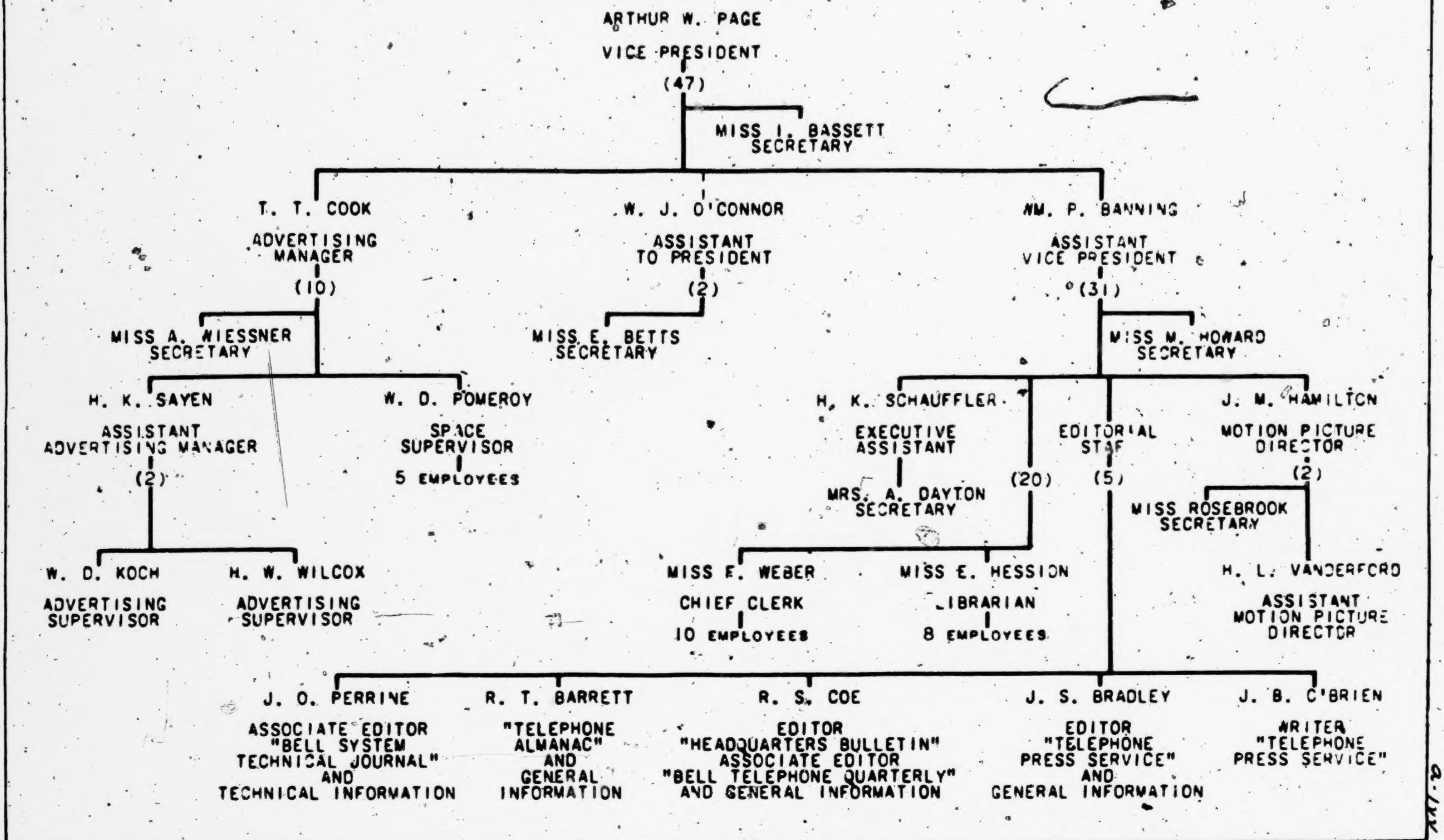
Sources of information: CR 51A, MR 1, MR 1.

(Here follows Exhibit A-122, side folio 3064.)

EXHIBIT A-122.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY - GENERAL DEPARTMENTS

INFORMATION DEPARTMENT - APRIL 15, 1931


ARTHUR W. PAGE
VICE PRESIDENT
(47)
MISS I. BASSETT SECRETARY
T. T. COOK
ADVERTISING MANAGER
(10)
W. J. O'CONNOR
ASSISTANT TO PRESIDENT
(2)
WM. P. BANNING
ASSISTANT VICE PRESIDENT
(31)
MISS A. WIESSNER SECRETARY
MISS E. BETTS SECRETARY
MISS M. HOWARD SECRETARY
H. K. SAYEN
ASSISTANT ADVERTISING MANAGER
(2)
W. D. POMEROY
SPACE SUPERVISOR
5 EMPLOYEES
H. K. SCHAUFFLER
EXECUTIVE ASSISTANT
MRS. A. DAYTON SECRETARY
(20)
EDITORIAL STAFF
(5)
J. M. HAMILTON
MOTION PICTURE DIRECTOR
(2)
MISS ROSEBROOK SECRETARY
W. D. KOCH
ADVERTISING SUPERVISOR
H. W. WILCOX
ADVERTISING SUPERVISOR
MISS E. WEBER
CHIEF CLERK
10 EMPLOYEES
MISS E. HESSION
LIBRARIAN
8 EMPLOYEES
H. L. VANDERFORD
ASSISTANT MOTION PICTURE DIRECTOR
J. O. PERRINE
ASSOCIATE EDITOR "BELL SYSTEM TECHNICAL JOURNAL" AND TECHNICAL INFORMATION
R. T. BARRETT
"TELEPHONE ALMANAC" AND GENERAL INFORMATION
R. S. COE
EDITOR "HEADQUARTERS BULLETIN" ASSOCIATE EDITOR "BELL TELEPHONE QUARTERLY" AND GENERAL INFORMATION
J. S. BRADLEY
EDITOR "TELEPHONE PRESS SERVICE" AND GENERAL INFORMATION
J. B. O'BRIEN
WRITER "TELEPHONE PRESS SERVICE"

[fol. 3065]

EXHIBIT A-123

American Telephone and Telegraph Company

Advertising

Year	Paid by Long Lines Department	Paid by Bell Telephone Securities Co.	Institutional and Sales (a) Paid by Information Department
1923	(b)	$42,683	(b) $417,174
1924	(b)	46,419	(b) 444,284
1925	$94,600	50,821	436,982
1926	146,530	52,782	454,415
1927	191,472	55,553	473,340
1928	258,587	50,816	661,377
1929	336,075	53,138	893,109
1930	335,681	49,705	946,334
1931	286,611	50,438	877,509

(a) Including Supervision.

(b) In the years 1923 and 1924 the Long Lines Department did not pay any direct advertising costs. Of the total amounts paid for Institutional and Sales Advertising by the American Tel. and Tel. Co.—Information Department, the following amounts thereof based on 1925 payments for advertising are deemed allocable to the Long Lines Department:

Year 1923	$80,084
Year 1924	85,275

(Here follows Exhibit A-124, side folio 3066.)

EXHIBIT A-124

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

ALLOCATION TO CHICAGO AREA

INFORMATION DEPARTMENT EXPENSES FOR SERVICES UNDER LICENSE CONTRACT

YEARS 1923 - 1931

Year		Regular Employees Dec. 31 (1)	Total Expenses(a) (2)	Allocated to Bell Telephone Securities (3)	Balance Associated Companies (Including Bell of Canada) and Long Lines (4)	Allocated to Long Lines (5)	
						Per Cent of Col.(4)*	Amount
1923	Institutional and Sales Advertising		$ 417,174	$2,031(c)	$ 415,143	x x	$80,084(b)
	Other Expenses		217,164	-	217,164	7.7	16,722
	Total	25	634,338	2,031	632,307	x x	96,806
1924	Institutional and Sales Advertising		444,284	2,234(c)	442,050	x x	85,275(b)
	Other Expenses		250,143	-	250,143	7.1	17,761
	Total	31	694,427	2,234	692,193	x x	103,036
1925	Institutional and Sales Advertising		436,982	2,437(c)	434,545	x x	7,459(c)
	Other Expenses		303,482	-	303,482	7.2	21,850
	Total	33	740,464	2,437	738,027	x x	29,309
1926	Institutional and Sales Advertising		454,415	2,573(c)	451,842	x x	9,785(c)
	Other Expenses		402,905	-	402,905	7.1	28,606
	Total	32	857,320	2,573	854,747	x x	38,391
1927	Institutional and Sales Advertising		473,340	2,708(c)	470,632	x x	13,878(c)
	Other Expenses		316,357	-	316,357	7.2	22,778
	Total	38	789,697	2,708	786,989	x x	36,656
1928	Institutional and Sales Advertising		661,377	2,369(c)	659,008	x x	14,756(c)
	Other Expenses		372,621	-	372,621	8.1	30,182
	Total	43	1,033,998	2,369	1,031,629	x x	44,938
1929	Institutional and Sales Advertising		893,109	2,405(c)	890,704	x x	17,426(c)
	Other Expenses		454,061	-	454,061	8.7	39,503
	Total	44	1,347,170	2,405	1,344,765	x x	56,929
1930	Institutional and Sales Advertising		946,334	2,172(c)	944,162	x x	21,145(c)
	Other Expenses		405,277	-	405,277	8.6	34,855
	Total	49	1,351,611	2,172	1,349,439	x x	56,000
1931	Institutional and Sales Advertising		877,509	2,342(c)	875,167	x x	22,229(c)

EXHIBIT A-124

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

ALLOCATION TO CHICAGO AREA

INFORMATION DEPARTMENT EXPENSES FOR SERVICES UNDER LICENSE CONTRACT

YEARS 1923 - 1931

Regular Employees Dec. 31 (1)	Total Expenses(a) (2)	Allocated to Bell Telephone Securities (3)	Balance Associated Companies (Including Bell of Canada) and Long Lines (4)	Allocated to Long Lines (5)		Balance Associated Companies (Including Bell of Canada) (6)	Allocated to Chicago Area (7)	
				Per Cent of Col.(4)*	Amount		Per Cent of Col.(6)*	Amount
	$ 417,174	$2,031(c)	$ 415,143	x x	$80,084(b)	$ 335,059	7.0	23,454
	217,164	-	217,164	7.7	16,722	200,442	7.0	14,031
25	634,338	2,031	632,307	x x	96,806	535,501	7.0	37,485
	444,284	2,234(c)	442,050	x x	85,275(b)	356,775	6.8	24,261
	250,143	-	250,143	7.1	17,761	232,382	6.8	15,802
31	694,427	2,234	692,193	x x	103,036	589,157	6.8	40,063
	436,982	2,437(c)	434,545	x x	7,459(c)	427,086	6.5	27,760
	303,482	-	303,482	7.2	21,850	281,632	6.5	18,306
33	740,464	2,437	738,027	x x	29,309	708,718	6.5	46,066
	454,415	2,573(c)	451,842	x x	9,785(c)	442,057	6.3	27,849
	402,905	-	402,905	7.1	28,606	374,299	6.3	23,581
32	857,320	2,573	854,747	x x	38,391	816,356	6.3	51,430
	473,340	2,708(c)	470,632	x x	13,878(c)	456,754	6.2	28,319
	316,357	-	316,357	7.2	22,778	293,579	6.2	18,202
38	789,697	2,708	786,989	x x	36,656	750,333	6.2	46,521
	661,377	2,369(c)	659,008	x x	14,756(c)	644,252	6.2	39,943
	372,621	-	372,621	8.1	30,182	342,439	6.2	21,230
43	1,033,998	2,369	1,031,629	x x	44,938	986,691	6.2	61,173
	893,109	2,405(c)	890,704	x x	17,426(c)	873,278	6.5	56,763
	454,061	-	454,061	8.7	39,503	414,558	6.5	26,946
44	1,347,170	2,405	1,344,765	x x	56,929	1,287,836	6.5	83,709
	946,334	2,172(c)	944,162	x x	21,145(c)	923,017	6.3	58,150
	405,277	-	405,277	8.6	34,855	370,422	6.3	23,336
49	1,351,611	2,172	1,349,439	x x	56,000	1,293,439	6.3	81,486

1930	Institutional and Sales Advertising		946,334	2,172(c)	944,162	x x	21,145
	Other Expenses		405,277	-	405,277	8.6	34,855
	Total	49	1,351,611	2,172	1,349,439	x x	56,000
1931	Institutional and Sales Advertising		877,509	2,342(c)	875,167	x x	22,229
	Other Expenses		429,971	-	429,971	8.4	36,117
	Total	47	1,307,480	2,342	1,305,138	x x	58,346

(a) Excludes Trade Mark Service Advertising and related salaries and expenses:

1929 - $113,085
1930 - 132,248
1931 - 111,904

(b) Amount of Institutional and Sales Advertising including Supervision service paid by Information Department which has been allocated to Long Lines Department on the basis of 1925 payments for advertising.

(c) Allocation to Long Lines and Bell Tel
services related to advertising pai
placed for them by A.T. and T.Co. -

* Allocated to Long Lines and to Chicag
Revenues.

	946,334 405,277	2,172(c) -	944,162 405,277	x x 8.6	21,145(c) 34,855	923,017 370,422	6.3 6.3	58,150 23,336
49	1,351,611	2,172	1,349,439	x x	56,000	1,293,439	6.3	81,486
	877,509 429,971	2,342(c) -	875,167 429,971	x x 8.4	22,229(c) 36,117	852,938 393,854	6.2 6.2	52,881 24,420
47	1,307,480	2,342	1,305,138	x x	58,346	1,246,792	6.2	77,301

Advertising and related salaries and
5,

(c) Allocation to Long Lines and Bell Tel. Securities Co. represents Supervisory services related to advertising paid for directly by those companies and placed for them by A.T. and T.Co. - Information Department.

Sales Advertising including Supervision
on Department which has been allocated
on the basis of 1925 payments for

* Allocated to Long Lines and to Chicago Area on the basis of Total Telephone Revenues.

[fol. 3067] EXHIBIT A-125

Illinois Bell Telephone Company, Chicago Area
Annual Depreciation Rates, 1923–1930, Inclusive

[fol. 3068] Illinois Bell Telephone Company

Annual Depreciation Rates, Chicago Area, January 1, 1930

Property	Basic Rates Life	Salvage	Rate	Composite Rates
Exchange Right-of-Way	35	0	2.9	2.9
Toll Right-of-Way	50	0	2.0	2.0
Buildings				
General Office	40	0	2.5	
Cent. Office—Manual	25	20	3.2	
Cent. Office—Dial	35	20	2.3	2.8
Garages and Warehouses	25	15	3.4	
Imp'ts. To Rented Qtrs.	25	0	4.0	
C. O. Telephone Equipment				
Manual	13	10	6.9	
Dial	18	5	5.3	6.8
Toll	8	20	10.0	
Other Equipment of C. O.	9	35	7.2	7.2
Station Apparatus				
Sub-Station	4.5	70	6.7	6.8
Telephone Typewriters	3	65	11.7	
Private Branch Exchanges				
Non-Multiple and Small Dial	6	55	7.5	
Multiple and Large Dial	12	15	7.1	7.3
Booths and Special Fittings	10	60	4.0	4.0
Exchange Pole Lines	23	*10	4.8	4.8
Exchange Aerial Cable	16	10	5.6	5.6
Exchange U. G. Conduit				
Main	50	0	2.0	2.3
Subsidiary	30	0	3.8	
Exchange U. G. Cable				
Main Subscribers	25	30	2.8	
Subsidiary	15	0	6.7	
House	22	0	4.5	3.4
Trunk	27	30	2.6	
Load Coils	10	40	6.0	
[fol. 3069] Exchange Submarine Cable	20	0	5.0	5.0
Toll Pole Lines	20	*5	5.3	5.3
Toll Aerial Cable				
Cable	20	20	4.0	4.1
Load Coils	20	0	5.0	
Toll Aerial Wire				
Copper	15	25	5.0	5.0
Load Coils	20	0	5.0	
Toll U. G. Conduit	50	0	2.0	2.0
Toll U. G. Cable				
Cable	30	25	2.5	3.1
Load Coils	20	0	5.0	
Toll Submarine Cable	20	0	5.0	5.0
Office Furniture and Fixtures	12	20	6.7	6.7
General Store Equipment	12	10	7.5	7.5
General Stable and Garage Equipment				
Motor Vehicles				
Group 1	4	15	21.3	
Group 2	6	10	15.0	
Group 3	8	10	11.3	14.7
Group 4	7	0	14.3	
Repair Shop Equipment	6	5	15.8	
General Tools and Implements				
Special Tools	6	5	15.8	15.8
Other Tools	1.5	70	20.0	20.0

* Red in copy.

[fol. 3070] Illinois Bell Telephone Company

Annual Depreciation Rates, Chicago Area, January 1, 1929

Property	Basic Rates			Composite Rates
	Life	Salvage	Rate	
Exchange Right-of-way	30	0	3.3	3.3
Toll Right-of-way	50	0	2.0	2.0
Buildings				
Fireproof C. O. Manual	25	20	3.2	2.7
Dial	35	20	2.3	
Other Fireproof Bldgs	40	0	2.5	
Non-Fireproof C. O.	20	20	4.0	
C. O. Telephone Equipment				
No. 1 Manual C. B.	13	10	6.9	6.7
Other Manual C. B.	16	5	5.9	
Dial	18	5	5.3	
Long Lines	8	20	10.0	
Other Equipment of C. O.	9	40	6.7	6.7
Station Apparatus	4.5	70	6.7	6.7
Private Branch Exchanges				
Multiple	12	15	7.1	7.1
Non-Multiple	7	50	7.1	
Booths and Spec. Fittings	15	35	4.3	4.3
Exchange Pole Lines	23	*10	4.8	4.8
Exchange Aerial Cable	18	10	5.0	5.0
Exchange U. G. Conduit				
Main	50	0	2.0	2.3
Subsidiary	30	0	3.3	
Exchange U. G. Cable				
Main-Trunk	25	35	2.6	3.6
Main-Subsc.	20	35	3.3	
Subsidiary	15	5	6.3	
House	20	0	5.0	
Load Coils	10	40	6.0	
[fol. 3071] Exchange Submarine Cable	20	0	5.0	5.0
Toll Pole Lines	20	*5	5.3	5.3
Toll Aerial Cable				
Cable	20	30	3.5	3.8
Load Coils	20	0	5.0	
Toll Aerial Wire				
Copper	20	25	3.8	3.9
Load Coils	20	0	5.0	
Toll U. G. Conduit	50	0	2.0	2.0
Toll U. G. Cable				
Cable	25	25	3.0	3.4
Load Coils	20	0	5.0	
Toll Submarine Cable	20	0	5.0	5.0
Office Furniture and Fixtures	14	15	6.1	6.1
General Store Equipment	12	10	7.5	7.5
General Stable and Garage Equipment				
Motor Vehicles				
Group 1	3.5	15	24.3	14.6
Group 2	6	10	15.0	
Group 3	8	10	11.3	
Group 4	7	15	12.1	
Repair Shop Equipment	7	10	12.9	
Other Equipment	4	10	22.5	
General Tools and Implements				
Special Tools	7	15	12.1	12.1
Other Tools	2.5	50	20.0	20.0

* Red in copy.

[fol. 3072]

Illinois Bell Telephone Company

Annual Depreciation Rates, Chicago Area, January 1, 1928

Property	Basic Rates			Composite Rates
	Life	Salvage	Rate	
Exchange Right-of-Way	30	0	3.3	3.3
Toll Right-of-Way	50	0	2.0	2.0
Buildings				
Fireproof C. O. Manual	25	20	3.2	2.8
Dial	35	20	2.3	
Other Fireproof Bldgs	40	0	2.5	
Non-Fireproof C. O.	20	20	4.0	
Other	18	40	3.3	
C. O. Telephone Equipment				
No. 1 Manual C. B.	13	10	6.9	6.8
Other Manual C. B.	16	5	5.9	
Dial	18	5	5.3	
Long Lines	8	20	10.0	
Other Equipment of C. O.	9	40	6.7	6.7
Station Apparatus	4.5	70	6.7	6.7
Private Branch Exchanges				
Multiple	12	15	7.1	7.1
Non-Multiple	7	50	7.1	
Booths and Spec. Fittings	15	35	4.3	4.3
Exchange Pole Lines	23	10*	4.8	4.8
Exchange Aerial Cable	18	10	5.0	5.0
Exchange Aerial Wire				
Covered (Span)	8	15	14.4	4.3
Copper	20	25*	3.8	
Exchange U. G. Conduit				
Main	50	0	2.0	2.2
Subsidiary	30	0	3.3	

[* Red figure.]

[fol. 3073]

Property	Life	Salvage	Rate	Composite Rates
Exchange U. G. Cable				
Main-Trunk	25	35	2.6	3.7
Main-Subsc.	20	35	3.3	
Subsidiary	15	5	6.3	
House	20	0	5.0	
Load Coils	10	40	6.0	
Exchange Submarine Cable	20	0	5.0	5.0
Toll Pole Lines	20	5*	5.3	5.3
Toll Aerial Cable				
Cable	20	30	3.5	3.9
Load Coils	20	0	5.0	
Toll Aerial Wire				
Copper	20	25	3.8	3.9
Load Coils	20	0	5.0	
Toll U. G. Conduit	50	0	2.0	2.0
Toll U. G. Cable				
Cable	25	25	3.0	3.6
Load Coils	20	0	5.0	
Toll Submarine Cable	20	0	5.0	5.0
Office Furniture and Fixtures	14	15	6.1	6.1
General Store Equipment	12	10	7.5	7.5
General Stable and Garage Equipment				
Motor Vehicles				
Group 1	3.5	15	24.3	14.4
Group 2	6	10	15.0	
Group 3	8	10	11.3	
Repair Shop Equipment	7	10	12.9	
Other Equipment	4	10	22.5	
General Tools and Implements				
Special Tools	7	15	12.1	19.2
Other Tools	2.5	50	20.0	

[* Red figure.]

[fol. 3074] Illinois Bell Telephone Company

Annual Depreciation Rates for Clearing Accounts, Chicago Area
January 1, 1926

Property	Life	Salvage	Rate
General Store Equipment	8	50	6.2
General Stable and Garage Equipment	5	20	16.0
General Tools and Implements			
Special Tools	6	15	14.1
Other Tools	2.5	50	20.0

[fol. 3075] Illinois Bell Telephone Company

Depreciation Rates Applicable to Classes of Plant by Divisions
Effective January 1, 1924, Chicago Area

Class of Plant	Life in Yrs.	Salvage	Deprec. Rate %	Compsoite Rates by Accounts
Right-of-Way—Exchange	20	0	5.0	5.0
" " —Toll	40	0	2.5	2.5
Buildings—Fireproof	40	40	1.5	2.5
" —Fireproof C. O.	25	30	2.8	
" —Non-Fireproof	20	20	4.0	
C. O. Equipment	12	20	6.7	6.7
Station Apparatus	5	70	6.0	6.0
Station Installations	..	..	....	..
Interior Block Wires	..	..	....	..
Private Branch Exchanges	7	50	7.0	7.0
Booths and Special Fittings	8	35	8.0	8.0
Exchange Pole Lines	14	5*	7.5	7.5
Exchange Aerial Cable	14	15	6.0	6.0
Exchange Aerial Wire—Chicago	6	15	†14.1	6.2
Exchange U. G. Conduit—Main	50	0	2.0	2.4
" " " —Subsidiary	20	0	5.0	
Exchange U. G. Cable—Main	21	40	2.9	3.4
" " " —Subsidiary	15	20	5.3	
Exchange Submarine Cable	10	0	10.0	10.0
Toll Pole Lines	16	0	6.3	6.3
Toll Aerial Cable	16	20	5.0	5.0
Toll Aerial Wire—Copper	19	30	3.7	3.8
" " " —Iron	14	15*	8.2	
" " " —Load Coils	20	0	5.0	
Toll U. G. Conduit	50	0	2.0	2.0
Toll U. G. Cable—Cable	21	40	2.9	3.1
" " " —Load Coils	21	0	4.7	
Toll Submarine Cable	10	0	10.0	10.0
Office Furniture and Fixtures	12	20	6.7	6.7

[* Red figure.]

†Applicable to 44% of Exchange Aerial Wire Account—56% of this account being retired through the Station Removals and Changes Account 607.

[fol. 3076] Illinois Bell Telephone Company

Annual Depreciation Rates for Clearing Accounts, Chicago Area
January 1, 1923

Property	Life	Salvage	Rate
General Store Equipment	8	50	6.2
General Stable and Garage Equipment	5	20	16.0
General Tools and Implements	3	45	18.3

[fol. 3077]

Illinois Bell Telephone Company

Depreciation Rates Applicable to Classes of Plant Effective January 1, 1921
Chicago Area

Class of Plant	Life in Yrs.	Salvage	Deprec. Rate %	Composite Rates by Accounts
Right-of-Way—Exchange	20	0	5.0	5.0
" " " —Toll	40	0	2.5	2.5
Buildings—Fireproof	40	40	1.5	
" —Fireproof C. O.	25	30	2.8	2.5
" —Non-Fireproof	20	20	4.0	
C. O. Equipment	10	20	8.0	8.0
Station Apparatus	5	65	7.0	7.0
Station Installations	..	...	....	...
Interior Block Wires	..	...	....	...
Private Branch Exchanges	7	45	8.0	8.0
Booths and Special Fittings	7	45	8.0	8.0
Exchange Pole Lines	13	0	7.7	7.7
Exchange Aerial Cable	14	30	5.0	5.0
Exchange Aerial Wire—Copper	15	28	4.8	
" " " —Covered Line	7	15	12.0	5.2
" " " —Covered Drop	7	15	2.4	
Exchange U. G. Conduit—Main	50	0	2.0	2.4
" " " —Subsidiary	20	0	5.0	
Exchange U. G. Cable—Main	25	40	2.4	2.7
" " " —Subsidiary	20	20	4.0	
Exchange Submarine Cable	10	0	10.0	10.0
Toll Pole Lines	16	0	6.3	6.3
Toll Aerial Cable	18	35	3.6	3.6
Toll Aerial Wire—Copper	18	30	3.9	
" " " —Iron	11	15*	10.5	3.9
" " " —Load Coils	20	0	5.0	
Toll U. G. Conduit	50	0	2.0	2.0
Toll U. G. Cable—Cable	25	40	2.4	2.5
" " " " —Load Coils	25	0	4.0	
Toll Submarine Cable	10	0	10.0	10.0
Office Furniture and Fixtures	10	20	8.0	8.0

56% of Exchange Aerial Wire account retired through the Station Removals and Changes Account 607.

[*Red figure.]

[fol. 3078]

Exhibit A-126

Illinois Bell Telephone Company

Annual Depreciation Rates, Chicago Area, January 1, 1931

	Basic Rates			Composite Rates
Property	Life	Salvage	Rate	
Exchange Right-of-Way	35	0	2.9	2.9
Toll Right-of-Way	50	0	2.0	2.0
Buildings				
General Office	40	0	2.5	
Cent. Office—Manual	25	20	3.2	
Cent. Office—Dial	35	20	2.3	2.7
Garages and Warehouses	25	15	3.4	
Imp'ts. to Rented Qtrs.	25	0	4.0	
C. O. Telephone Equipment				
Manual	13	10	6.9	
Dial	18	5	5.3	6.8
Toll	8	20	10.0	
Other Equipment of C. O	9	35	7.2	7.2
Station Apparatus				
Sub-Station	4.5	70	6.7	6.8
Telephone Typewriters	3	65	11.7	
Private Branch Exchanges				
Non-Multiple and Small Dial	6	55*	7.5	
Multiple and Large Dial	12	15	7.1	7.3
Booths and Special Fittings	10	60	4.0	4.0
Exchange Pole Lines	23	10*	4.8	4.8
Exchange Aerial Cable	16	10	5.6	5.6
Exchange U. G. Conduit				
Main	50	0	2.0	2.3
Subsidiary	30	0	3.3	
Exchange U. G. Cable				
Main Subscribers	25	30	2.8	
Subsidiary	15	0	6.7	
House	22	0	4.5	3.5
Trunk	27	30	2.6	
Load Coils	10	40	6.0	

* Red figure.

[fol. 3079]

Exchange Submarine Cable	20	0	5.0	5.0
Toll Pole Lines	20	5*	5.3	5.3
Toll Aerial Cable				
Cable	20	20	4.0	4.1
Load Coils	20	0	5.0	
Toll Aerial Wire				
Copper	15	25	5.0	5.0
Load Coils	20	0	5.0	
Toll U. G. Conduit	50	0	2.0	2.0
Toll U. G. Cable				
Cable	30	25	2.5	3.1
Load Coils	20	0	5.0	
Toll Submarine Cable	20	0	5.0	5.0
Office Furniture and Fixtures	12	20	6.7	6.7
General Store Equipment	12	10	7.5	7.5
General Stable and Garage Equipment				
Motor Vehicles				
Group 1	4	15	21.3	
Group 2	6	10	15.0	
Group 3	8	10	11.3	14.8
Group 4	7	0	14.3	
Repair Shop Equipment	6	5	15.8	
General Tools and Implements				
Special Tools	6	5	15.8	15.8
Other Tools	1.5	70	20.0	20.0

*Red figure.

[fol. 3080]

Exhibit A-127

Illinois Bell Telephone Company, Chicago Area

Depreciation Expense

Year	Annual Depreciation Expense (Acct. 608)	Average Plant in Service and Office Furn. and Fixt. excluding Land and Right-of-Way.		Average Plant in Service and Office Furn. and Fixt. excluding Land, Right-of-Way, Station Installations, Interior Block Wires and Drop Wires.	
		Amount	Depreciation %	Amount	Depreciation %
1923	4,480,954	90,963,101	4.926	83,953,040	5.337
1924	4,709,950	102,491,394	4.595	94,581,482	4.980
1925	5,385,712	114,745,425	4.694	106,112,555	5.075
1926	6,203,022	130,160,935	4.766	120,830,173	5.134
1927	6,839,392	142,699,039	4.793	132,711,243	5.154
1928	7,641,461	157,540,605	4.850	146,638,649	5.211
1929	8,120,382	171,584,396	4.733	158,921,111	5.110
1930	8,769,886	183,675,833	4.775	170,367,461	5.148
1931	9,146,268	190,958,107	4.790	177,469,064	5.154

[fol. 3081]

EXHIBIT A-128

Illinois Bell Telephone Company, Chicago Area

Jan. 1, 1930, Depreciation Study Life and Salvage Data

[fol. 3082[

Illinois Bell Telephone Company, Chicago Area

Depreciable Property Accounts Investment as of December 31, 1929

Usual Order of Accounts

- Exchange Right-of-Way.
- Toll Right-of-Way
- Buildings:
- C. O. Telephone Equip.
- Other Equip. of C. O.
- Station Apparatus
- Private Branch Exchanges
- Booths and Spec. Fittings.
- Exchange Pole Lines.
- Exchange Aerial Cable
- Exchange U. G. Conduit
- Exchange U. G. Cable
- Exchange Submarine Cable
- Toll Pole Lines.

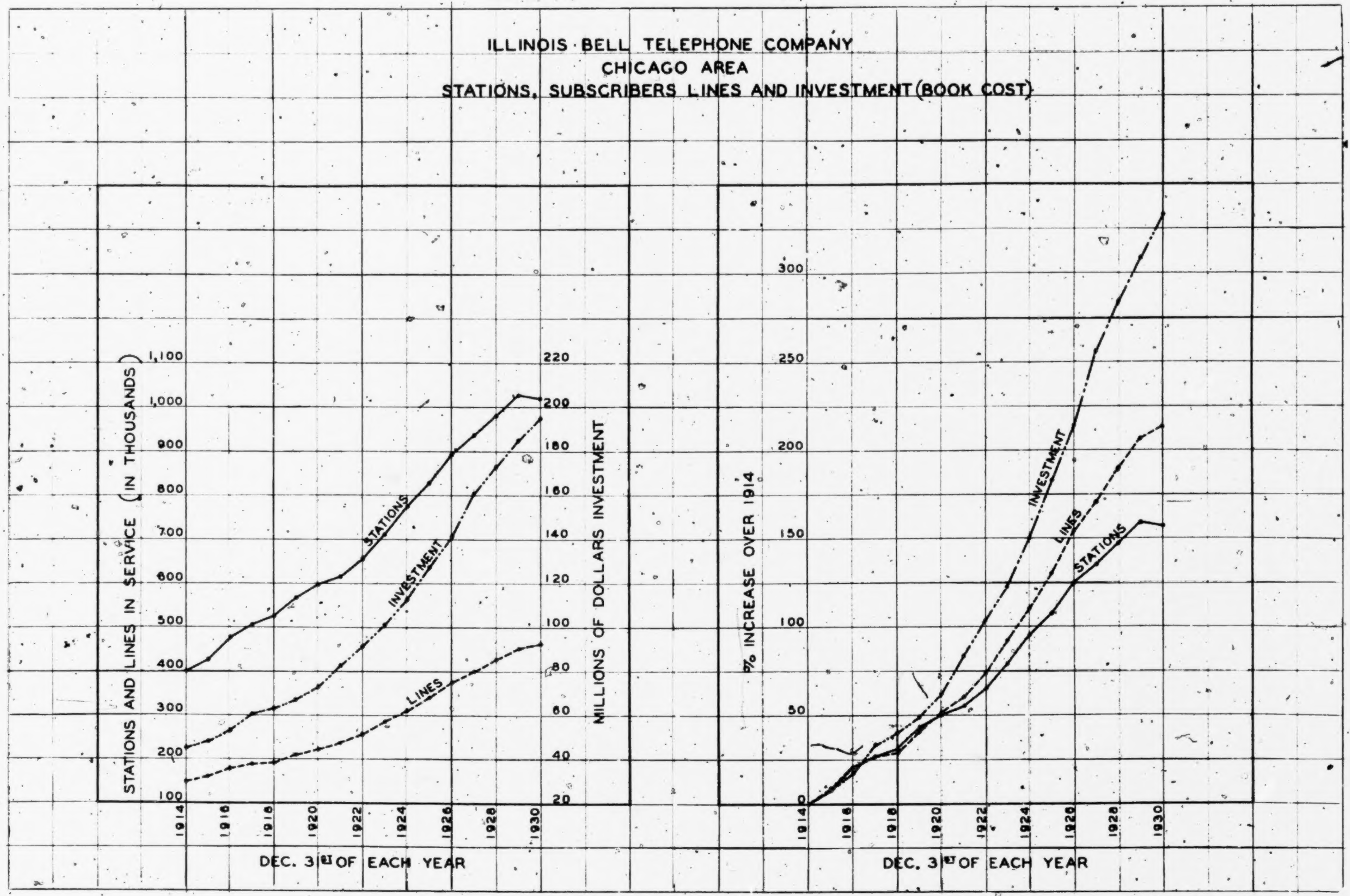
Grouping for Life Studies	Per Cent of Total Investment	Per Cent of Total Depreciation Expense (1-1-30) Rates)
Group I		
Buildings	8.05	4.31
C. O. Telephone Equip.	33.16	43.14
	41.21	47.45
Group II		
Private Branch Exchanges	6.29	8.[illegible]8
Exchange Pole Lines	1.89	1.73
Toll Pole Lines	.03	.03
Exchange Aerial Cable	3.47	3.72
Exchange U. G. Cable	20.52	13.34
General Sta. and Gar. Equip.	.40	1.14
	32.60	28.74
Group III		
Other Equipment of C. O.	1.05	1.45
Station Apparatus	10.53	13.70
Booths and Spec. Fittings	.46	.35
Toll Aerial Wire	.04	.04
Office Furniture and Fixtures	1.01	1.30
General Store Equipment	.04	.05
General Tools and Impls.	.24	.88
	13.37	17.77

Usual Order of Accounts	Grouping for Life Studies	Per Cent of Total Investment.	Per Cent of Total Depreciation Expense (1-1-30) Rates)
	Group IV		
Toll Aerial Cable	Exchange Right-of-Way	.22	.12
	Toll Right-of-Way	—*	—*
Toll Aerial Wire	Toll Aerial Cable	.01	.01
	Exchange U. G. Conduit	9.84	4.33
Toll U. G. Conduit	Toll U. G. Conduit	.27	.10
	Toll U. G. Cable	2.47	1.47
Toll U. G. Cable	Exchange Submarine Cable	.01	.01
	Toll Submarine Cable	—*	—*
Toll Submarine Cable.		12.82	6.04
Office Furniture and Fixt.			
Special Store Equip.			

*Negligible (Less than .005 in all cases)

(Here follows chart, side folio 3083)

ILLINOIS BELL TELEPHONE COMPANY
CHICAGO AREA
STATIONS, SUBSCRIBERS LINES AND INVESTMENT (BOOK COST)



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[fol. 3084] Illinois Bell Telephone Company, Chicago Area

Depreciable Property Accounts

Investment as of December 31, 1929

Description	Per Cent of Total Investment	Per Cent of Total Depreciation Expense 1-1-30 Rates
Group I		
Buildings	8.05	4.31
C. O. Telephone Equip.	33.16	43.14
	41.21	47.45
Group II		
Private Branch Exchanges	6.29	8.78
Exchange Aerial Cable	3.47	3.72
Exchange U. G. Cable	20.52	13.34
	30.28	25.84
Group III		
Station Apparatus	10.53	13.70
Group IV		
Exchange U. G. Conduit	9.84	4.33
Total of Seven Principal Accounts	91.86	91.32
Total of All Other Accounts	8.14	8.68
Total of All Accounts	100.00	100.00

[fol. 3085] Annual Depreciation Rates Effective January 1, 1930, and Relative Investment Proportions for Property Included in Group I

Property	Per Cent of Total Depreciable Property Investment Dec. 31, 1929	Basic Rates			Composite Rates
		Life	Salvage	Rate	
C. O. Telephone Equipment					
Manual	18.96	13	10	6.9	
Dial	10.25	18	5	5.3	6.8
Toll	3.95	8	20	10.0	
	33.16				
Buildings					
Central Office—Manual	3.53	25	20	3.2	
Central Office—Dial	2.93	35	20	2.3	
General Office	1.32	40	0	2.5	2.8
Garages and Warehouses	.24	25	15	3.4	
Imp'ts. to Rented Quarters	.03	25	0	4.0	
	8.05				
Total	41.21				

[fol. 3086]

Historical Data Relating to Equipment in Kedzie Central Office

Illustrating Interrelation of Parts Installed in Different Years and Effect of Additions Upon Average Life of the Equipment

	Book Cost of Equipment (Actual 1906–1929, Estimated 1930–1936)							
Year	Installed During Year (1)	Retired During Year (2)	In Service at End of Year (3)	Average in Service During Year (4)	Accumulated Dollar-Years To End of Year (5)	Total Cost of Equipment Installed To End of Year (6)	Average Realized Life of Equipment At End of Year (5) ÷ (6) (7)	Age of Office At End of Year (Years Since Initial Installation) (8)
1906	69,573	....	69,573	34,787	34,787	69,573	.50 Yrs.	0.5 Yrs.
1907	14,564	....	84,137	76,855	111,642	84,137	1.33	1.5
1908	39,421	8,307	115,251	99,694	211,336	123,558	1.71	2.5
1909	17,236	1,629	130,858	123,054	334,390	140,794	2.38	3.5
1910	28,236	1,263	157,831	144,345	478,735	169,030	2.83	4.5
1911	3,227	315	160,743	159,287	638,022	172,257	3.70	5.5
1912	46,988	4,839	202,892	181,817	819,839	219,245	3.74	6.5
1913	31,944	2,764	232,072	217,482	1,037,321	251,189	4.13	7.5
1914	48,993	6,134	274,931	253,502	1,290,823	300,182	4.30	8.5
1915	132,133	5,473	401,591	338,261	1,629,084	432,315	3.77	9.5
1916	6,427	1,391	406,627	404,109	2,033,193	438,742	4.63	10.5
1917	8,327	959	413,995	410,311	2,443,504	447,069	5.47	11.5
1918	18,982	856	432,121	423,058	2,866,562	466,051	6.15	12.5
1919	9,071	340	440,852	436,486	3,303,048	475,122	6.95	13.5
1920	7,245	597	447,500	444,176	3,747,224	482,367	7.77	14.5
1921	67,718	1,710	513,508	480,504	4,227,728	550,085	7.69	15.5
1922	95,690	5,515	603,683	558,596	4,786,324	645,775	7.41	16.5
1923	137,798	4,361	737,120	670,401	5,456,725	783,573	6.96	17.5
1924	35,685	2,041	770,764	753,942	6,210,667	819,258	7.58	18.5
1925	167,029	12,240	925,553	848,159	7,058,826	986,287	7.16	19.5
1926	148,793	429	1,073,917	999,735	8,058,561	1,135,080	7.10	20.5
1927	87,016	14,108	1,146,825	1,110,371	9,168,932	1,222,096	7.50	21.5
1928	....	....	1,146,825	1,146,825	10,315,757	1,222,096	8.44	22.5
1929	62,659	1,510	1,207,974	1,177,399	11,493,156	1,284,755	8.95	23.5

ILLINOIS BELL TELEPHONE COMPANY

CHICAGO AREA

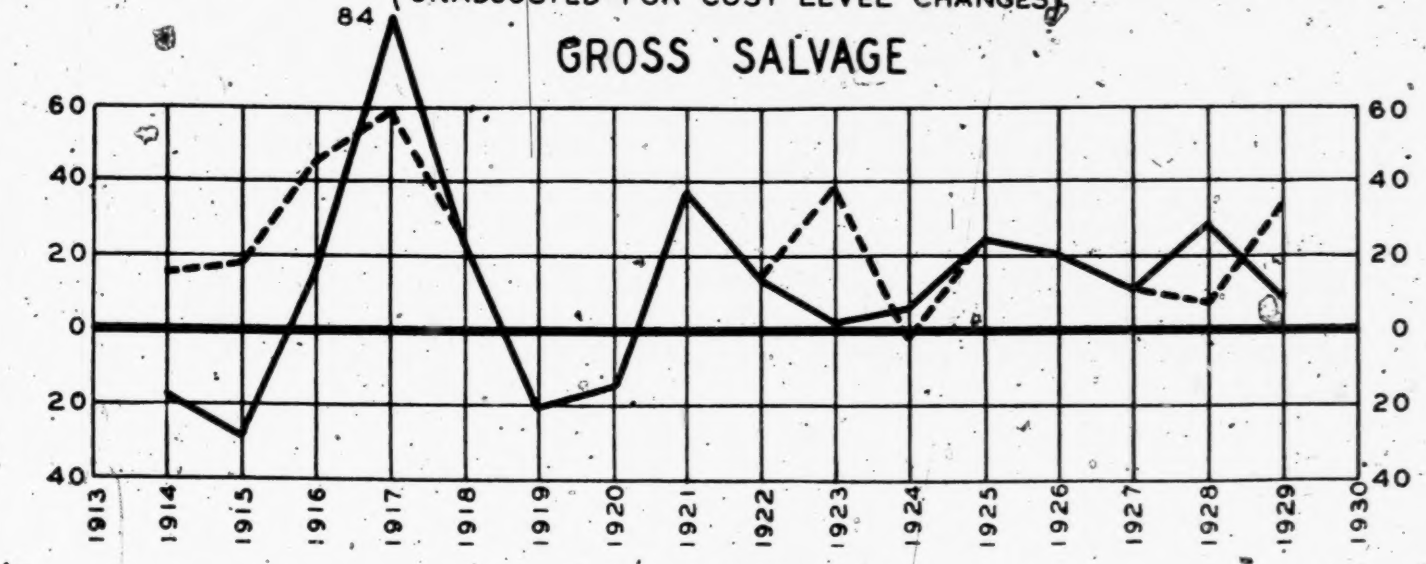
MANUAL CENTRAL OFFICE TELEPHONE EQUIPMENT

AVERAGE SERVICE LIFE

Office A.	Year of Initial Installation B	Estimated Year of Retirement C	Age from Initial Installation to 12-31-29 D	Average Realized Life 12-31-29 E	Estimated Age from Initial Installation to Retirement F	Initial Cost Plus Estimated Total Gross Additions to Retirement G	Estimated Total Dollar Years to Retirement H	Estimated Average Realized Life at Retirement I	Investment 12-31-29 J	Annual Requirements K = J ÷ I
Austin	1917	1937	12.5	6.42	20	$ 1,947,212.	$20,488,095.	10.52	1,295,538	123,150
Belmont	1912	1938	17.5	8.00	26	2,088,899.	23,923,581.	11.45	1,229,108	107,346
Beverly	1914	1940	15.5	5.10	26	1,303,263.	12,988,413.	9.97	557,454	55,913
Calumet	1900	1933	29.5	8.71	33	1,234,716.	14,263,750.	11.55	1,101,461	95,365
Canal	1902	1932	27.5	7.99	30	845,521.	8,196,910.	9.69	691,260	71,337
Dearborn	1921	1931	8.5	6.57	10	1,312,693.	10,510,236.	8.01	1,259,778	157,276
Delaware	1900	1931	29.5	12.25	31	577,266.	7,752,197.	13.43	454,785	33,863
Douglas	1903	1937	26.5	12.05	34	471,496.	8,268,450.	17.54	349,444	19,923
Edgewater	1907	1940	22.5	8.70	33	1,604,723.	29,409,702.	18.33	1,493,703	81,490
Humboldt	1905	1933	24.5	6.77	28	1,426,334.	15,925,245.	11.17	1,226,481	109,801
Hyde Park	1915	1934	14.5	7.51	19	2,213,687.	24,688,489.	11.15	1,977,822	177,383
Irving	1914	1942	15.5	7.16	28	2,124,942.	30,447,935.	14.33	1,256,706	87,698
Kedzie	1906	1936	23.5	8.95	30	1,605,055.	20,235,087.	12.61	1,207,975	95,795
Kildare	1917	1943	12.5	5.04	26	2,465,168.	32,567,557.	13.21	1,323,952	100,223
Lafayette	1918	1936	11.5	6.90	18	810,356.	7,867,017.	9.71	513,025	52,835
Lakeview	1901	1935	28.5	8.06	34	2,663,994.	29,749,848.	11.17	1,987,697	177,950
Lawndale	1910	1936	19.5	9.01	26	1,754,333.	21,526,311.	12.27	1,258,554	102,572
Lincoln	1903	1933	26.5	8.42	30	1,147,379.	12,207,724.	10.64	963,553	90,559
Merrimac	1926	1944	3.5	3.02	18	2,009,412.	22,528,483.	11.21	620,449	55,348
Monroe	1899	1932	30.5	11.22	33	1,004,683.	12,854,704.	12.79	842,348	65,860
Newcastle	1923	1942	6.5	3.62	19	674,716.	6,579,081.	9.75	228,378	23,423
Oakland	1901	1937	28.5	11.28	36	1,380,073.	24,173,599.	17.52	1,165,660	66,533
Prospect	1915	1939	14.5	5.97	24	1,994,649.	21,975,653.	11.02	1,203,229	109,186
Pullman	1916	1939	13.5	6.92	23	1,084,596.	10,925,702.	10.07	506,654	50,313
Rogers Park	1915	1935	14.5	5.84	20	2,208,492.	18,064,712.	8.18	1,409,989	172,370
South Chicago	1917	1938	12.5	5.77	21	1,242,939.	15,733,972.	12.66	978,908	77,323
Stewart	1914	1941	15.5	5.24	27	3,002,779.	35,666,086.	11.88	1,629,228	137,140
Wentworth	1901	1934	28.5	[illegible]	33	1,149,602.	17,164,860.	14.93	948,526	63,532
West	1901	1932	28.5	[illegible]	31	842,422.	10,747,904.	12.76	708,865	55,554
Yards	1901	1934	23.5	[illegible]	[illegible]	775,774.	11,782,187.	15.19	690,738	45,473
Total					26.0	$44,957,174.	$539,213,490.	11.67	31,081,268	2,662,534

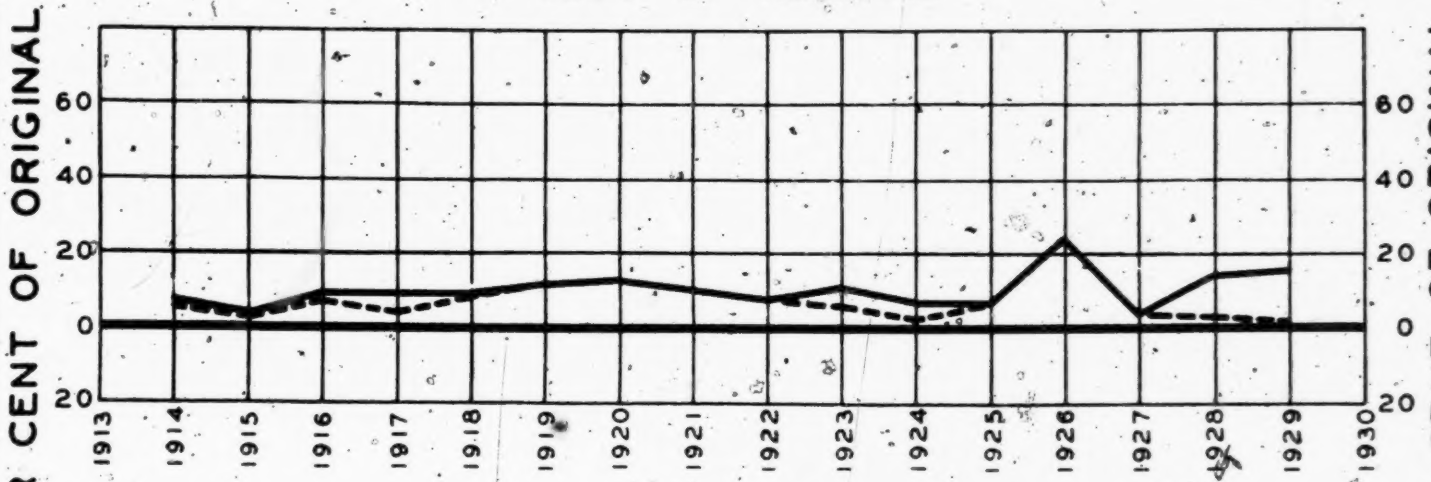
ILLINOIS BELL TELEPHONE COMPANY
CHICAGO AREA
MANUAL C.O. TELEPHONE EQUIPMENT
(UNADJUSTED FOR COST LEVEL CHANGES)

GROSS SALVAGE

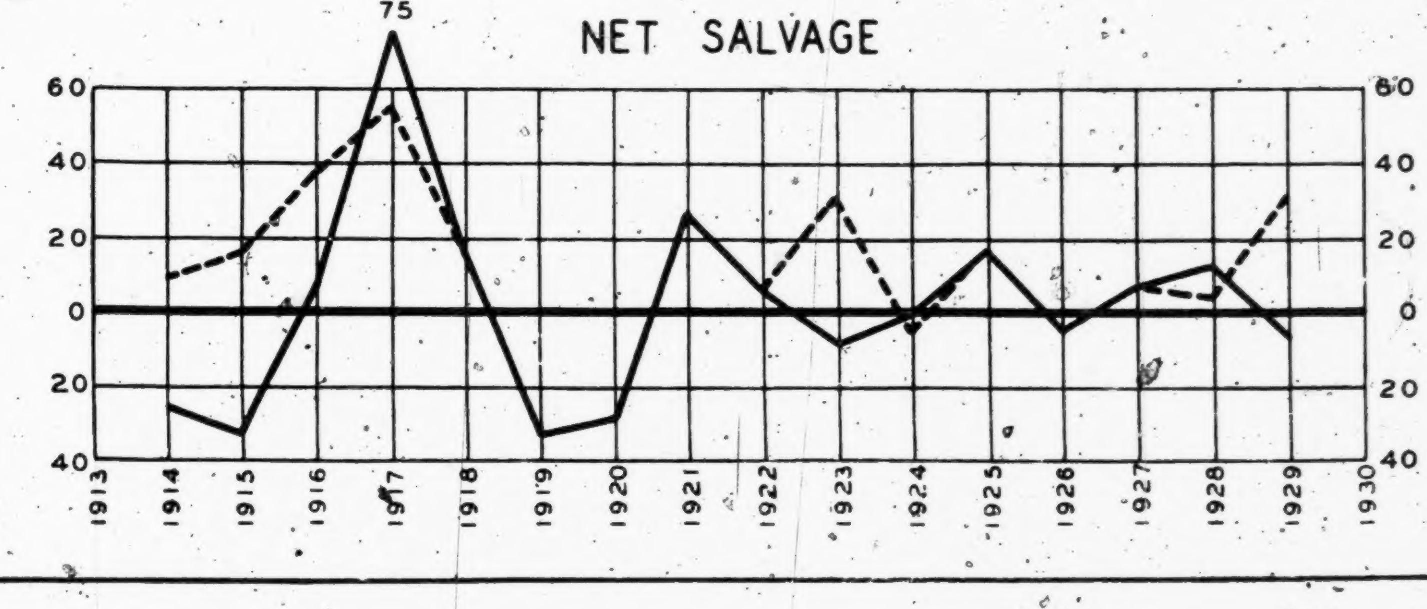


----- TOTAL RETIREMENTS
—— PIECEMEAL RETIREMENTS

COST OF REMOVAL



NET SALVAGE



36—440

1930	36,000	700	1,243,274	1,225,624	12,718,780	1,320,755	9.63	24.5
1931	51,100	6,200	1,288,174	1,265,724	13,984,504	1,371,855	10.19	25.5
1932	50,300	7,300	1,331,174	1,309,674	15,294,178	1,422,155	10.75	26.5
1933	54,700	7,100	1,378,774	1,354,974	16,649,152	1,476,855	11.27	27.5
1934	51,300	1,500	1,428,574	1,403,674	18,052,826	1,528,155	11.81	28.5
1935	39,800	400	1,467,974	1,448,274	19,501,100	1,567,955	12.44	29.5
1936	37,100	1,505,074	0	733,987	20,235,087	1,605,055	12.61	30.5
Total	1,605,055	1,605,055						

[fol. 3089]

Illinois Bell Telephone Company, Chicago Area

Toll Central Office Telephone Equipment

Average Realized Life

Toll Switchboard Equipment

Age of Office	No. 1 Toll Office Long Lines		No. 1 Toll Office Other Than Long Lines		Composite Average Realized Life
	Investment	Average Realized Life	Investment	Average Realized Life	
0	108,719	.50	246,717	.50	.50
1	108,719	1.50	276,552	1.38	1.41
2	127,051	2.10	311,874	2.15	2.14
3	135,043	2.90	314,651	3.12	3.05
4	135,340	3.85	336,607	3.86	3.86
5	144,278	4.52	340,371	4.79	4.71
6	151,213	5.23	380,993	5.21	5.22
7	168,660	5.61	446,012	5.25	5.35
8	253,983	4.49	477,449	5.83	5.36
9	314,168	4.41	512,481	6.37	5.63
10	418,493	4.06	550,153	6.86	5.65
11	514,861	4.12	594,917	7.01	5.67
12	591,962	4.48	590,998	7.92	6.20
13	755,076	4.38	597,716	8.75	6.31
14	770,417	5.04	597,716	9.68	7.07
15	784,882	5.29	641,480	9.87	7.35
16	877,187	5.27	679,660	10.24	7.44
17	1,058,707	5.20	693,438	10.96	7.48
18	1,300,710	4.97	0	11.42	4.97
19	1,346,346	5.54			5.54
20	376,780	5.76			5.76

Toll Line Equipment

Age of Office	Morrell Park		Franklin Building	
	Investment	Average Realized Life	Investment	Average Realized Life
0	70,295	.50	75,969	.50
1	71,820	1.47	92,786	1.32
2	122,567	1.51	385,636	.93
3	95,320	2.20	825,719	1.16
4	103,977	2.74	1,145,224	1.69
5	115,079	3.03	1,481,441	2.18
6	126,602	3.50	1,899,155	2.53
7	133,770	4.01	2,279,868	2.65
8	178,199	3.92		
9	273,580	3.47		
10	428,291	2.97		
11	492,862	3.38		
12	572,985	3.65		
13	699,342	3.80		
14	736,374	4.32		
15	756,049	4.65		
16	794,243	5.13		
17	807,077	5.61		

(Here follows side folio 3090)

[fol. 3090]

Illinois Bell Telephone Company, Chicago Area

Manual Central Office Buildings

Average Service Life and Net Salvage

Some Manual Buildings Incorporated into New Dial Buildings

Buildings	Year of Initial Construction	Estimated Year of Retirement	Age of Initial Construction 12-31-29	Average Realized Life 12-31-29	Age of Initial Construction at Retirement	Initial Cost Plus Estimated Total Gross Additions to Retirement	Estimated Total Dollar Years to Retirement	Average Realized Life at Retirement	Investment 12-31-29	Annual Requirements	Net Salvage Per Cent	Net Salvage on Annual Requirements
A	B	C	D	E	F	G	H	I	J	K=J÷I	L	M=K×L
Belmont	1912	1938	17.5	13.1	26	179,876	3,372,656	18.8	148,764	7,913	27.1	2,144
Calumet (Old)	1900	1933	29.5	15.1	33	26,434	471,882	17.9	20,904	1,168	14.4	168
Calumet (New)	1916	1933	13.5	12.6	17	155,741	2,508,280	16.1	154,233	9,580	38.9	3,729
Canal	1902	1932	27.5	10.0	30	127,221	1,562,615	12.3	117,647	9,565	32.3	3,089
Delaware	1900	1931	29.5	22.8	31	73,041	1,768,338	24.2	67,977	2,809	55.9	1,570
Douglas	1903	1937	26.5	18.7	34	49,603	1,269,109	25.6	45,586	1,781	79.0	1,407
Edgewater	1907	1940	22.5	13.2	33	201,016	4,629,015	23.0	189,041	8,219	23.8	1,956
Humboldt	1905	1933	24.5	14.9	28	145,483	2,651,683	18.2	139,964	7,690	35.7	2,745
Irving	1914	1942	15.5	10.0	28	273,564	4,688,192	17.1	169,959	9,939	23.6	2,346
Kedzie	1906	1936	23.5	10.6	30	236,780	3,979,876	16.8	226,072	13,457	23.0	3,095
Lakeview (Old)	1901	1935	28.5	18.4	34	103,566	2,446,436	23.6	99,147	4,201	29.0	1,218
Lawndale	1909	1936	20.5	12.1	27	224,447	3,747,231	16.7	190,198	11,389	14.8	1,686
Lincoln	1908	1933	21.5	11.6	25	188,848	2,815,404	14.9	179,256	12,031	11.7	1,408
Main	1888	1932	41.5	25.0	44	520,413	14,123,951	27.1	452,600	16,701	....	....
Monroe	1899	1932	30.5	13.1	33	179,213	2,779,767	15.5	171,882	11,089	14.5	1,608
Morrell Park	1897	1932	32.5	18.2	35	60,307	1,240,608	20.6	57,803	2,806	25.9	727
Oakland	1895	1937	34.5	14.1	42	156,889	3,320,921	21.2	147,789	6,971	8.8	613
Prospect	1915	1939	14.5	8.0	24	284,567	3,528,717	12.4	185,701	14,976	23.7	3,549
Stewart	1914	1941	15.5	6.6	27	350,057	4,827,834	13.8	240,281	17,412	26.1	4,545
Toll	1908	1932	21.5	19.1	24	575,309	12,320,906	21.4	532,640	24,890	....	....
Wentworth	1901	1934	28.5	20.9	33	120,361	3,037,189	25.2	115,755	4,593	15.6	717
West	1900	1932	29.5	13.3	32	209,143	3,281,910	15.7	198,893	12,668	11.1	1,406
Yards	1901	1934	28.5	12.5	33	144,440	2,421,530	16.8	136,754	8,140	13.2	1,074
Sub-Total	....	....	....	....	..	4,586,319	86,794,050	18.1	3,988,846	219,988	18.5	40,798
Austin	1916	1977	13.5	9.1	61	611,584	22,108,521	36.2	208,446	5,758	16.7	962
Beverly	1914	1980	15.5	7.2	66	706,713	26,466,459	37.5	134,378	3,583	7.0	251
Hyde Park	1915	1974	14.5	10.9	59	698,639	26,876,882	38.5	266,665	6,926	18.7	1,295
Kildare	1917	1983	12.5	9.0	66	885,153	33,972,002	38.4	232,212	6,047	17.7	1,070
Lafayette	1917	1976	12.5	12.2	59	590,080	19,636,777	33.3	120,859	3,629	7.1	258
Lakeview	1915	1975	14.5	14.5	60	627,746	20,464,760	32.6	121,746	3,735	21.6	807
Merrimac	1926	1984	3.5	3.5	58	1,292,221	48,979,706	37.9	237,880	6,277	15.7	985
Pullman	1916	1979	13.5	9.5	63	600,320	22,800,629	38.0	112,161	2,952	7.2	213
Rogers Park	1915	1975	14.5	9.5	60	894,500	32,289,664	36.1	181,765	5,035	18.0	906
South Chicago	1917	1978	12.5	8.6	61	628,484	21,714,256	34.6	170,135	4,917	7.7	379
Sub-Total	....	....	....	....	...	7,535,440	275,309,656	36.6	1,786,247	48,859	14.6	7,126
Total	....	....	....	....	...	12,121,759	362,103,706	21.5	5,775,093	268,847	17.8	47,924

[fol. 3091] Annual Depreciation Rates Effective January 1, 1930 and Relative Investment Proportions for Property Included in Group II

Property	Per Cent of Total Depreciable Property Investment Dec. 31, 1929	Basic Rates			Composite Rates
		Life	Salvage	Rate	
Private Branch Exchanges:					
Non-Multiple and Small Dial	3.87	6	55	7.5	7.3
Multiple and Large Dial	2.42	12	15	7.1	
	6.29				
Exchange Aerial Cable	3.47	16	10	5.6	5.6
Exchange U. G. Cable:					
Main Subscribers	8.85	25	30	2.8	
Trunk	5.70	27	30	2.6	
Subsidiary	1.44	15	0	6.7	3.4
House	3.79	22	0	4.5	
Load Coils	.74	10	40	6.0	
	20.52				
Exchange Pole Lines	1.89	23	10*	4.8	4.8
Toll Pole Lines	.03	20	5*	5.3	5.3
General Stable and Garage Eqpt.					
Motor Vehicles					
Group 1	.10	4	15	21.3	
Group 2	.07	6	10	15.0	
Group 3	.20	8	10	11.3	14.7
Group 4	—†	7	0	14.3	
Repair Shop Equipment	.03	6	5	15.8	
	.40				
Total	32.60				

*[Red figure:]

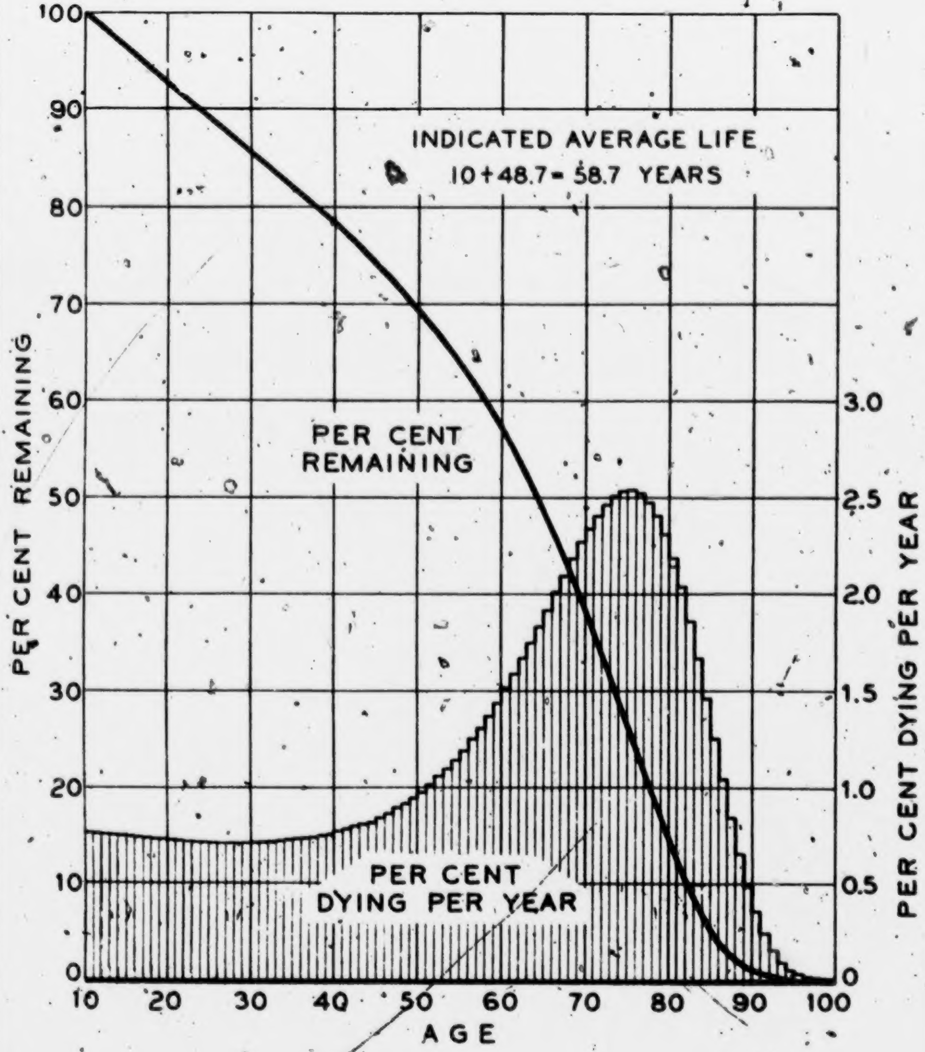
†Negligible (Less than .005)

(Here follow charts, side folios 3092-3107)

GRADUATED LIFE-TABLE AND RELATED MORTALITY CURVE

AMERICAN EXPERIENCE TABLE FOR HUMAN LIVES

(AS GRADUATED BY HUNTER)



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FORM C 538

FINAL SUMMARY OF HISTORICAL DATA FOR MORTALITY STUDY

UPPER FIGURES: PLANT REMAINING IN SERVICE AT BEGINNING OF Nᵀᴴ CALENDAR YEAR AFTER YEAR OF PLACING
LOWER FIGURES: PLANT RETIRED DURING Nᵀᴴ CALENDAR YEAR AFTER YEAR OF PLACING

YEAR OF PLACING	(a) TOTAL AMOUNT OF PLANT PLACED	(b) TOTAL AMOUNT OF PLANT RETIRED	(c) TOTAL AMOUNT OF PLANT STILL IN SERVICE (a)-(b)	N= 0	1	2	3	4	5	6	7	8	9	10
1898	1,020	1,020	-	× × × × -	1,020 -	1,020 -	1,020 -	1,020 -	1,020 -	1,020 -	1,020 -	1,020 340	680 340	340 -
1899	877	877	-	× × × × -	877 -	877 -	877 -	877 -	877 -	877 -	877 -	877 -	877 -	877 -
1900	2,208	1,528	680	× × × × -	2,208 -	2,208 -	2,208 -	2,208 -	2,208 -	2,208 -	2,208 -	2,208 -	2,208 -	2,208 -
1901	20,753	18,072	2,681	× × × × -	20,753 -	20,753 -	20,753 -	20,753 813	19,940 2,888	17,052 3,060	13,992 340	13,652 473	13,179 -	13,179 -
1902	28,366	27,346	1,020	× × × × -	28,366 -	28,366 -	28,366 340	28,026 4,200	23,826 3,854	19,969 3,306	16,663 680	15,983 1,153	14,830 813	14,017 680
1903	34,806	31,480	3,326	× × × × -	34,806 -	34,806 340	34,466 2,075	32,391 1,153	31,238 1,020	30,218 1,607	28,611 473	28,138 1,490	26,648 1,020	25,628 2,615
1904	37,082	34,702	2,380	× × × × -	37,082 -	37,082 1,020	35,392 4,110	31,248 1,833	29,409 1,766	27,643 1,360	26,083 340	25,743 2,513	23,230 1,626	21,604 1,020
1905	57,101	50,099	7,002	× × × × 340	56,761 4,493	51,268 2,386	48,878 813	47,663 1,683	45,980 1,153	44,827 1,360	43,467 3,021	40,446 3,639	36,807 4,489	32,318 2,304
1906	73,880	64,961	8,919	× × × × 1,079	72,530 2,517	70,013 1,083	68,930 3,126	65,804 2,986	62,818 3,788	59,030 3,287	56,[illegible] [illegible]	51,283 4,268	46,037 1,127	41,510 4,946
1907	103,330	90,616	12,714	× × × × 1,700	101,630 1,080	100,610 4,330	96,080 1,080	90,012 4,606	86,130 1,680	80,637 3,720	76,917 2,379	68,330 4,560	61,778 1,080	56,[illegible] 7,712
1908	110,688	91,772	18,916	× × × × 877	109,811 2,437	107,376 [illegible]	104,390 4,380	100,002 7,383	92,619 3,892	88,727 8,176	80,531 8,627	[illegible]904 [illegible]	60,286 [illegible]	56,159 3,180
1909	108,783	99,612	9,171	× × × × 1,628	104,[illegible] 3,163	103,785 2,060	98,725 7,792	90,936 6,423	84,713 11,710	73,003 8,843	64,160 10,659	55,501 7,003	47,950 2,907	44,491 4,033
1910	167,250	151,086	16,164	× × × × 2,572	164,[illegible] 6,307	158,[illegible] 6,772	151,[illegible] 7,079	143,780 15,027	109,663 12,161	97,542 10,277	87,169 10,780	76,463 7,030	69,411 [illegible]	62,729 7,840
1911	152,891	140,180	12,711	× × × × 1,188	151,163 10,819	140,366 12,729	126,605 16,112	110,493 13,336	93,139 12,[illegible]	80,891 8,908	71,702 7,132	64,571 3,[illegible]	60,756 8,[illegible]	52,925 11,278
1912	[illegible]	172,383	28,673	× × × × 2,720	216,976 7,[illegible]	207,463 [illegible]	182,939 [illegible]	160,148 [illegible]	137,175 13,[illegible]	121,910 7,[illegible]	114,[illegible] 7,[illegible]	106,431 12,[illegible]	94,334 12,[illegible]	81,700 9,[illegible]
1913	251,912	221,431	30,481	× × × × 3,121	[illegible] 30,287	216,[illegible] 30,921	[illegible]	1[illegible]010 16,[illegible]	141,664 12,[illegible]	128,[illegible] 16,[illegible]	109,083 11,911	97,772 18,[illegible]	79,167 [illegible]	72,236 10,[illegible]
1914	311,723	276,720	35,003	× × × × 12,111	270,822 [illegible]	251,976 [illegible]	[illegible]3,112 27,[illegible]	196,000 17,[illegible]	178,851 17,[illegible]	160,865 17,[illegible]	143,368 20,[illegible]	118,911 [illegible]	101,947 11,[illegible]	90,835 [illegible]
1915	[illegible]	[illegible]	34,616	× × × × 17,230	[illegible]	230,6[illegible] [illegible]	1[illegible] 27,[illegible]	160,735 17,972	142,762 17,150	127,612 [illegible]	104,916 11,676	93,[illegible] [illegible]	85,[illegible] [illegible]	67,157 [illegible]
1916	[illegible]	[illegible]	70,727	× × × × [illegible]	[illegible]	294,156 [illegible]	297,710 [illegible]	262,601 [illegible]	235,125 [illegible]	190,960 [illegible]	169,007 17,234	151,7[illegible] [illegible]	126,073 [illegible]	116,460 [illegible]
1917	[illegible]	[illegible]	78,250	× × × × [illegible]	[illegible]	350,[illegible] [illegible]	[illegible]	[illegible]	311,088 [illegible]	180,352 [illegible]	150,730 [illegible]	140,[illegible] [illegible]	133,[illegible] [illegible]	112,[illegible] [illegible]
1918	330,[illegible]	[illegible]	66,070	× × × × 39,316	[illegible] 71,360	[illegible] 63,[illegible]	[illegible] [illegible]	[illegible]	117,530 17,723	99,760 [illegible]	83,101 10,[illegible]	[illegible]	[illegible]	56,[illegible] [illegible]
1919	[illegible]	[illegible]	80,336	× × × × [illegible]	650,946 [illegible]	384,391 [illegible]	290,601 27,721	232,900 [illegible]	191,656 [illegible]	150,[illegible] [illegible]	132,166 19,270	118,770 [illegible]	97,[illegible] [illegible]	
1920	490,463	380,974	109,489	× × × × 27,[illegible]	[illegible] 113,667	307,[illegible] 64,486	[illegible] 67,723	[illegible] 27,[illegible]	206,927 [illegible]	173,[illegible] [illegible]	149,623 [illegible]	129,761 [illegible]		
1921	779,752	[illegible]	217,079	× × × × [illegible]	[illegible]	531,053 [illegible]	[illegible]	366,904 [illegible]	380,317 [illegible]	302,161 [illegible]	251,[illegible] [illegible]			
1922	[illegible]	[illegible]	[illegible]	× × × × [illegible]	[illegible]	[illegible]	366,[illegible] [illegible]	307,930 [illegible]	266,796 [illegible]	[illegible]				
1923	728,977	[illegible]	297,080	× × × × 20,727	608,250 [illegible]	550,307 [illegible]	[illegible] 60,[illegible]	612,041 [illegible]	336,[illegible] 37,[illegible]					
1924	779,[illegible]	247,[illegible]	[illegible]	× × × × 31,615	728,[illegible] [illegible]	[illegible] 67,[illegible]	561,636 73,[illegible]	687,[illegible] [illegible]						
1925	[illegible]	231,372	685,[illegible]	× × × × [illegible]	[illegible]	[illegible]	360,059 73,364							
1926	[illegible]	[illegible]	376,[illegible]	× × × × 22,182	816,[illegible] 138,112	688,[illegible] 105,[illegible]								
1927	1,[illegible]	[illegible]	871,[illegible]	× × × × 70,847	1,015,061 162,[illegible]									
1928	1,117,907	48,147	1,079,760	× × × × 48,147										
TOTAL	11,033,487	6,270,690	4,762,797	× × × 489,491	8,864,[illegible] 1,454,978	6,936,069 1,031,623	5,3[illegible],686 726,032	4,113,677 683,071	3,187,936 628,643	2,662,[illegible] 880,330	1,989,646 238,823	1,533,744 182,233	1,340,820 289,471	1,031,013 137,869

YEAR OF PLACING	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1898	340 -	340 -	340 -	340 -	340 -	340 -	340 -	340 -	340 -	340 -	340 -	340 -	340 -	340 -	340 -	340 -	340 -	340 -	340 340	- -
1899	877 -	877 -	877 -	877 -	877 -	877 197	680 -	680 -	680 -	680 -	680 -	680 340	340 -	340 340	- -	- -	- -	- -	- -	
1900	2,208 -	2,208 -	2,208 -	2,208 -	2,208 473	1,735 -	1,735 -	1,735 1,055	680 -	680 -	680 -	680 -	680 -	680 -	680 -	680 -	680 -	680 -		
1901	13,179 -	13,179 1,528	11,651 537	11,114 340	10,776 1,360	9,416 340	9,076 473	8,601 1,035	7,566 680	6,865 1,055	5,811 -	5,811 1,035	4,756 1,055	3,701 1,020	2,681 -	2,681 -	2,681 -			
1902	13,337 -	13,337 2,208	11,129 1,833	9,296 1,820	7,476 2,208	5,268 -	5,268 340	4,928 -	4,928 1,020	3,908 1,528	2,380 -	2,380 -	2,380 340	2,040 340	1,700 340	1,360 340				
1903	23,013 2,952	20,061 680	19,381 3,967	15,416 1,153	14,261 2,173	12,088 340	11,748 3,056	8,692 2,040	6,652 1,286	5,366 340	5,086 -	5,026 1,360	3,666 340	3,326 -	3,326 -					
1904	20,584 1,360	19,226 2,173	17,051 4,028	13,023 813	13,010 2,021	9,989 1,153	8,836 680	8,156 1,395	6,761 1,003	5,368 2,308	3,060 -	3,060 -	3,060 340	2,720 340						
1905	30,014 4,610	25,304 1,097	21,607 1,803	20,206 340	19,866 1,823	18,041 3,475	18,566 1,897	10,669 1,080	9,647 1,153	8,484 340	8,156 340	7,816 812	7,002 -							
1906	36,560 4,003	32,505 1,132	31,132 2,888	28,244 1,580	26,716 4,080	22,636 1,020	21,616 3,183	18,433 1,877	16,388 4,480	12,036 1,020	11,016 2,808	8,208 340								
1907	40,317 [illegible]	40,[illegible] 2,700	37,540 [illegible]	32,5[illegible] [illegible]	28,071 [illegible]	24,063 [illegible]	20,300 1,020	19,280 [illegible]	17,972 [illegible]	15,765 [illegible]	14,272 1,360									
1908	52,979 3,726	49,253 2,227	47,018 6,887	40,521 [illegible]	38,038 3,628	33,464 [illegible]	29,488 [illegible]	26,470 3,872	22,673 1,611	21,087 3,173										
1909	40,636 9,[illegible]	31,267 2,201	29,076 3,041	26,113 [illegible]	21,577 [illegible]	17,909 1,019	16,693 [illegible]	14,808 [illegible]	11,980 [illegible]											
1910	54,893 [illegible]	49,873 [illegible]	45,371 [illegible]	39,611 [illegible]	34,093 [illegible]	[illegible]	23,394 4,129	19,263 3,101												
1911	42,507 [illegible]	38,451 [illegible]	32,060 [illegible]	28,[illegible] [illegible]	24,[illegible] 3,710	21,840 3,637	16,603 [illegible]													
1912	72,536 [illegible]	63,353 [illegible]	57,[illegible] [illegible]	[illegible]	65,000 11,[illegible]	33,958 [illegible]														
1913	61,613 [illegible]	53,[illegible] [illegible]	48,[illegible] 7,076	41,900 [illegible]	35,83[illegible] [illegible]															
1914	78,764 [illegible]	68,180 11,[illegible]	56,642 [illegible]	44,360 [illegible]																
1915	57,723 [illegible]	50,081 [illegible]	41,618 [illegible]																	
1916	95,000 [illegible]	83,[illegible] [illegible]																		
1917	80,[illegible] [illegible]																			
TOTAL	837,076 106,917	631,816 69,130	511,939 72,097	405,830 65,462	353,008 32,107	340,316 31,619	180,168 23,916	162,135 19,798	106,313 16,330	80,892 10,137	51,421 2,908	34,602 2,908	22,225 2,072	13,147 2,040	8,727 340	5,061 340	3,701 -	1,020 -	340 340	-

ILLINOIS BELL TELEPHONE
COMPANY

CHICAGO
TERRITORIAL DIVISION

CLASS OF PLANT { ~~PRIVATE BRANCH EXCHANGES~~
NON-MULTIPLE

FIGURES REPRESENT { ~~[illegible]~~
* COUNTED PROPERTY UNITS EXPRESSED IN DOLLARS

DATE COMPILED

* RULE OUT LINE NOT USED

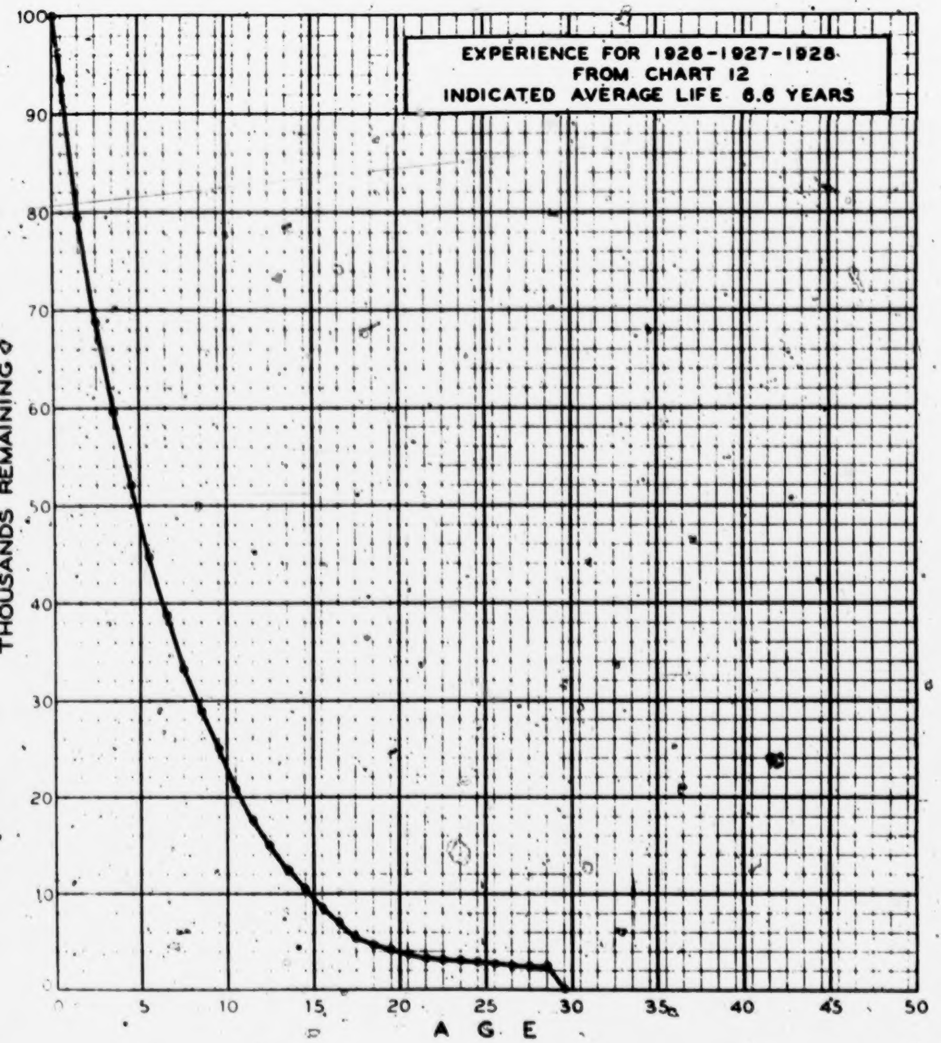
12

OBSERVED LIFE TABLE

DERIVED FROM "FINAL SUMMARY OF HISTORICAL DATA FOR MORTALITY STUDY"

CHICAGO AREA

NON MULTIPLE PRIVATE BRANCH EXCHANGES



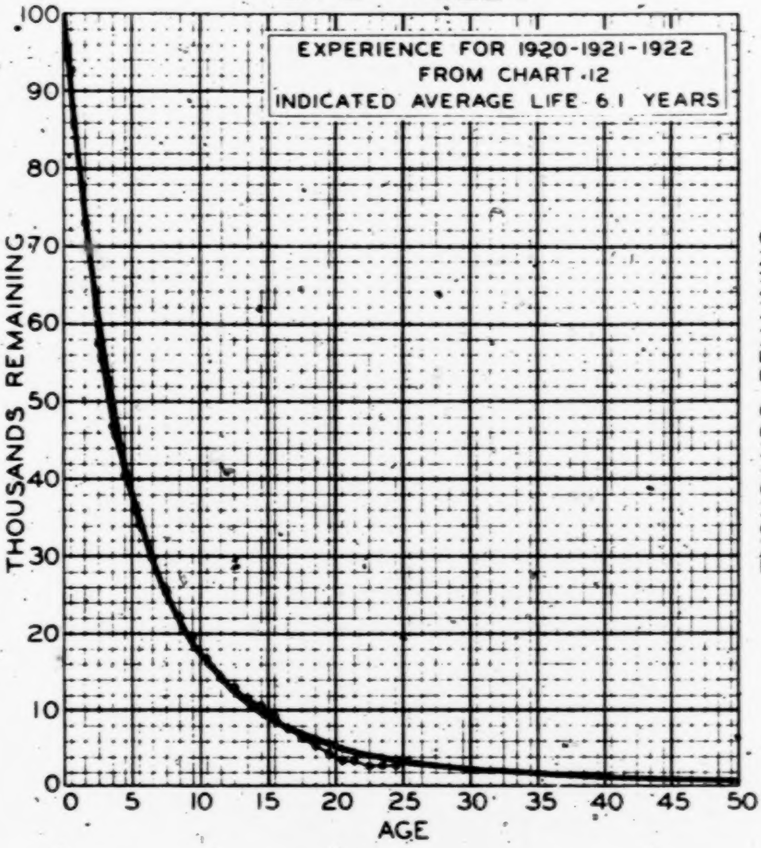
EXPERIENCE FOR 1926-1927-1928
FROM CHART 12
INDICATED AVERAGE LIFE 6.6 YEARS

GRADUATED LIFE TABLES

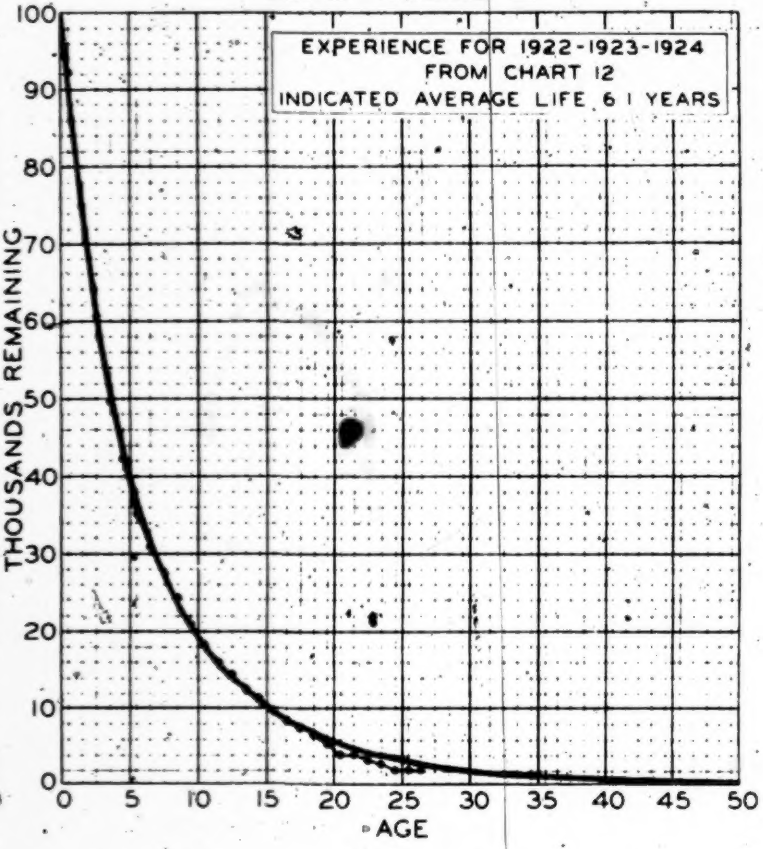
CHICAGO AREA

NON-MULTIPLE PRIVATE BRANCH EXCHANGES

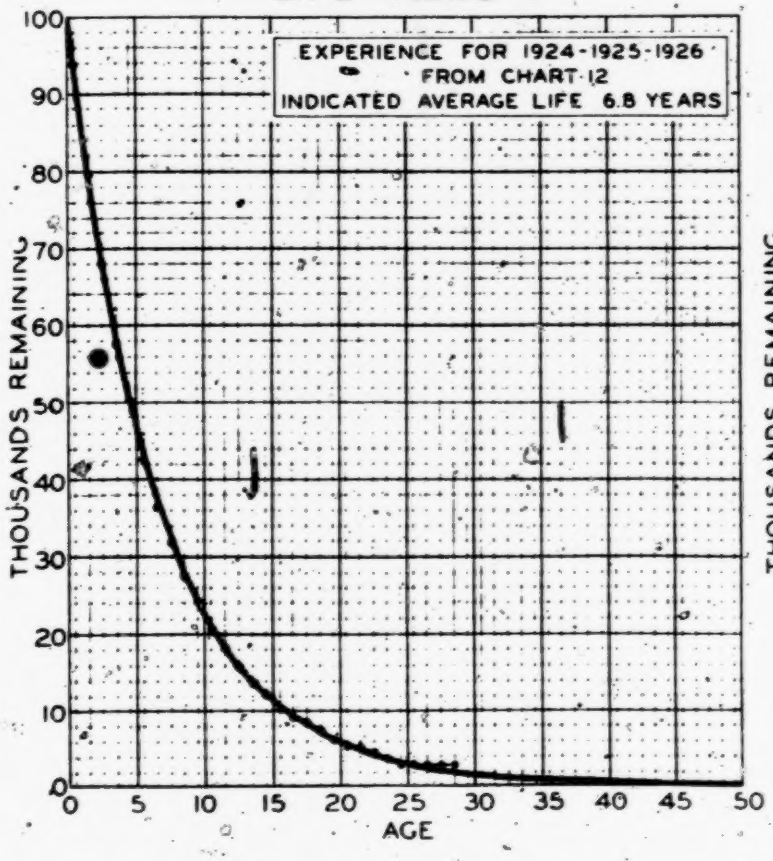
LIFE TABLE I



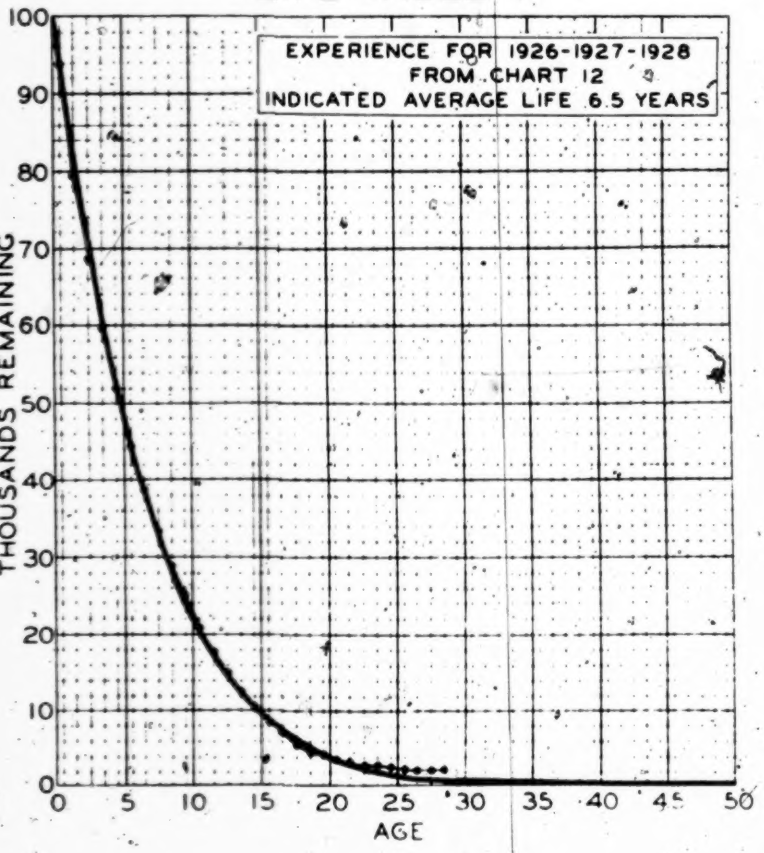
LIFE TABLE 2



LIFE TABLE 3



LIFE TABLE 4



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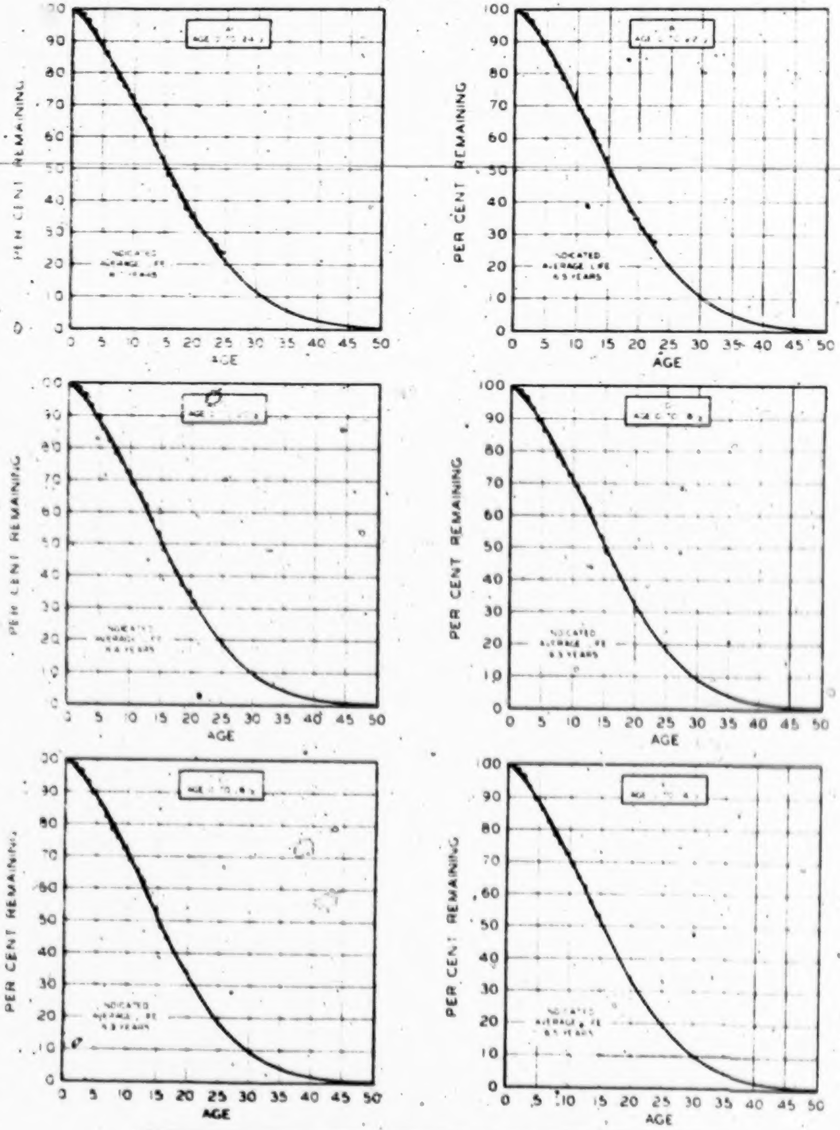
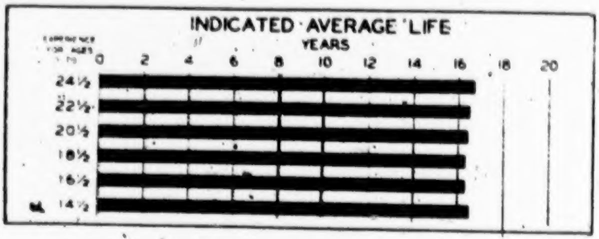
CHECK OF GRADUATION PROCESS

APPLIED TO 1924-1925-1926 DATA FOR EXCHANGE AERIAL CABLE

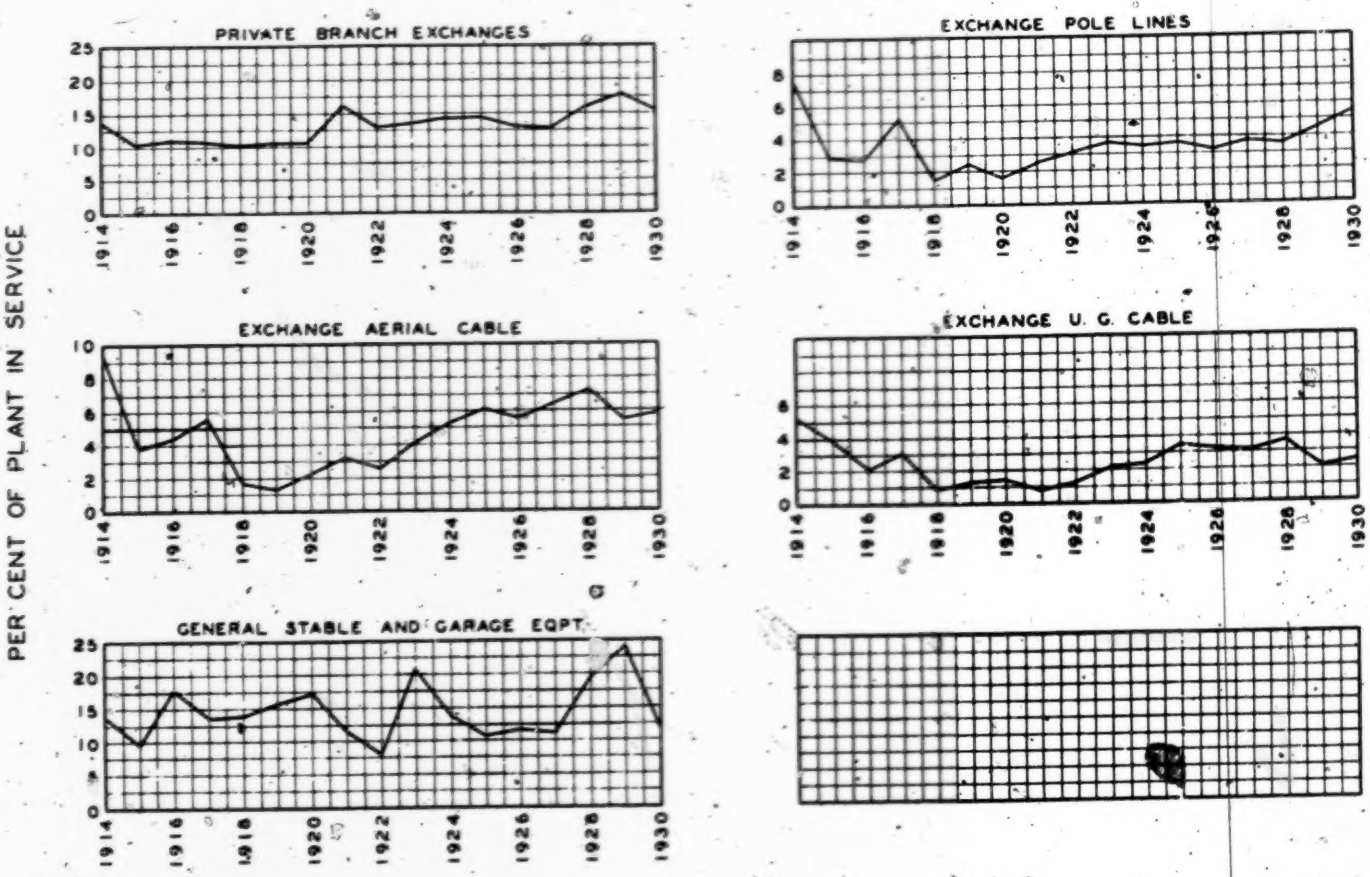




ILLINOIS BELL TELEPHONE COMPANY

CHICAGO AREA

RATE OF RETIREMENT



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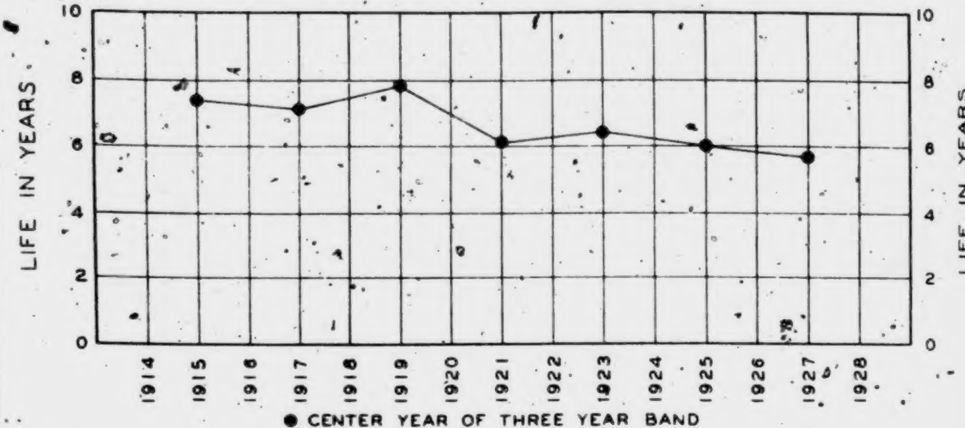
ILLINOIS BELL TELEPHONE COMPANY

CHICAGO AREA

NON-MULTIPLE PRIVATE BRANCH EXCHANGES

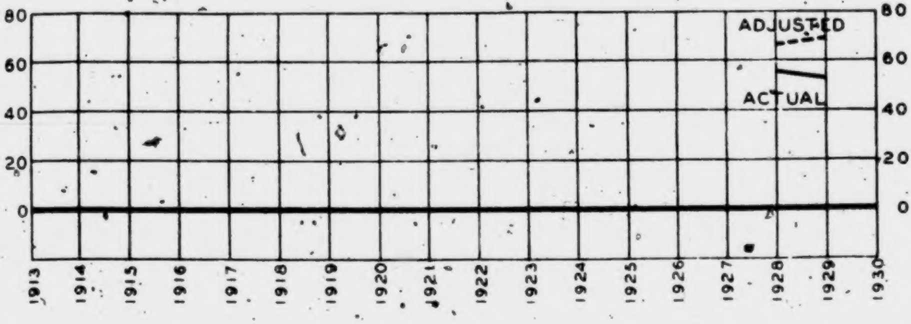
TREND OF AVERAGE LIFE AS SHOWN BY MORTALITY STUDIES



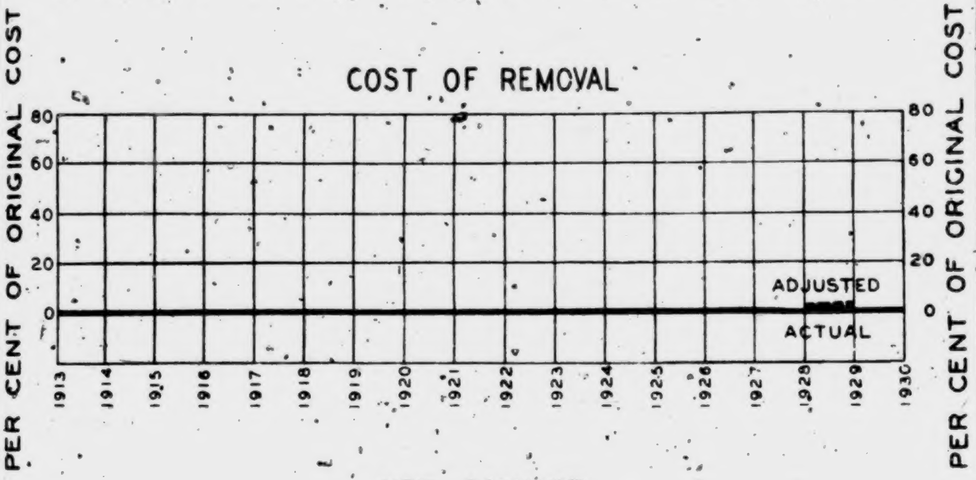
YEARS INCLUDED IN BAND ANALYSIS	AVERAGE RATIO OF PLANT DISPLACED TO BALANCE IN SERVICE JAN. 1		AVERAGE LIFE	
	MORTALITY STUDY	ENTIRE PLANT CLASS	MORTALITY STUDY	ENTIRE PLANT (MORTALITY STUDY ADJUSTED ON BASIS OF COMPARISON OF RATIOS, COL 2 AND 3)
(1)	(2)	(3)	(4)	(5)
1914 TO 1916			7.4	
1916 TO 1918			7.1	
1918 TO 1920			7.8	
1920 TO 1922			6.1	
1922 TO 1924	.184	.177	6.1	6.4
1924 TO 1926	.158	.175	6.8	6.0
1926 TO 1928	.158	.180	6.5	5.7

ILLINOIS BELL TELEPHONE COMPANY
CHICAGO AREA
NON-MULTIPLE PRIVATE BRANCH EXCHANGES

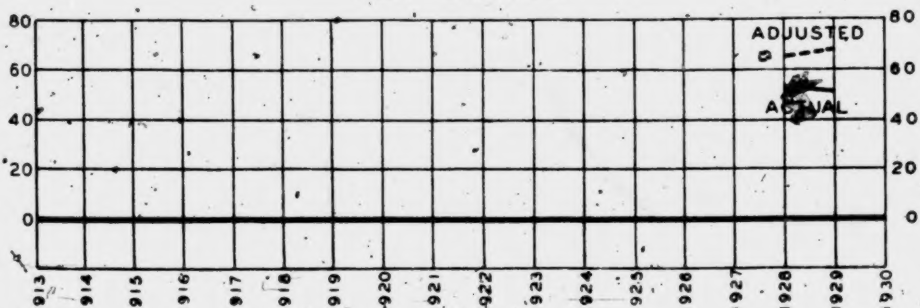
GROSS SALVAGE



COST OF REMOVAL



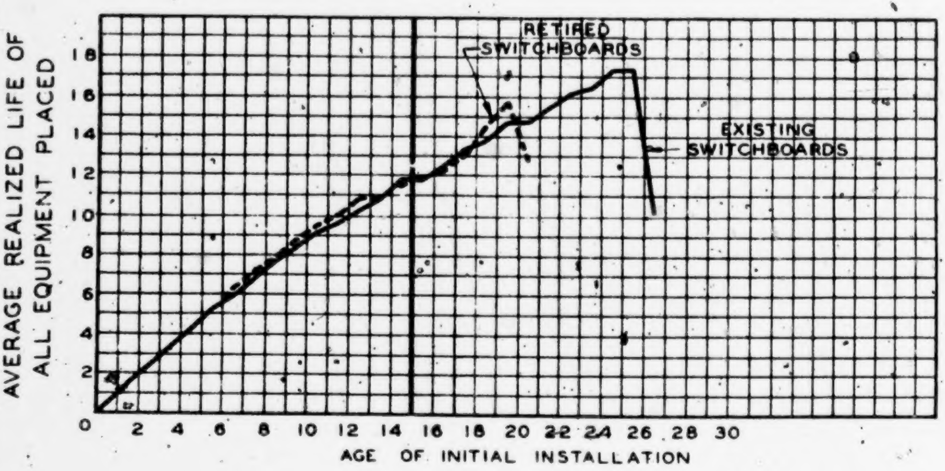
NET SALVAGE

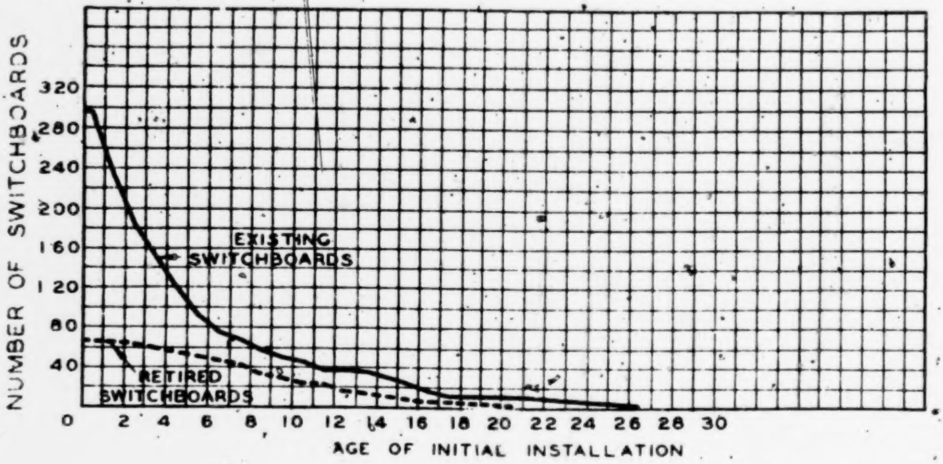


ILLINOIS BELL TELEPHONE COMPANY

CHICAGO AREA

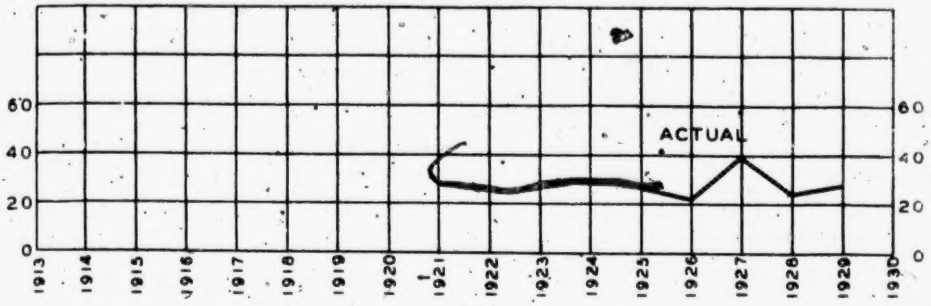
AVERAGE REALIZED LIFE OF MULTIPLE PRIVATE BRANCH EXCHANGES



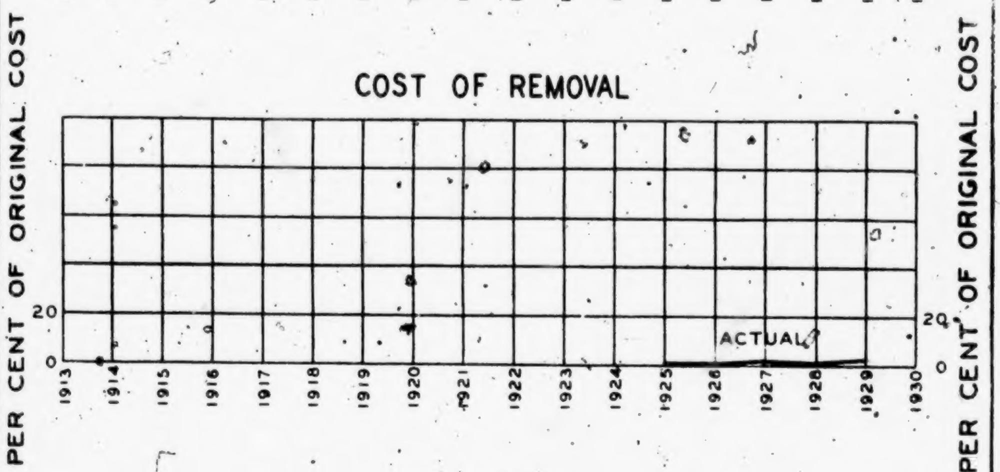


ILLINOIS BELL TELEPHONE COMPANY
CHICAGO AREA
MULTIPLE PRIVATE BRANCH EXCHANGES

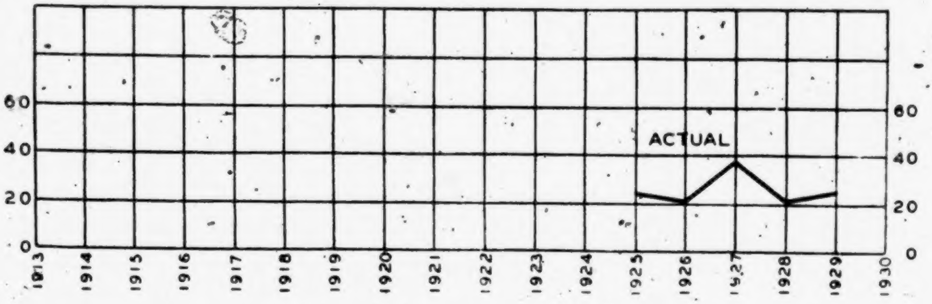
GROSS SALVAGE



COST OF REMOVAL



NET SALVAGE

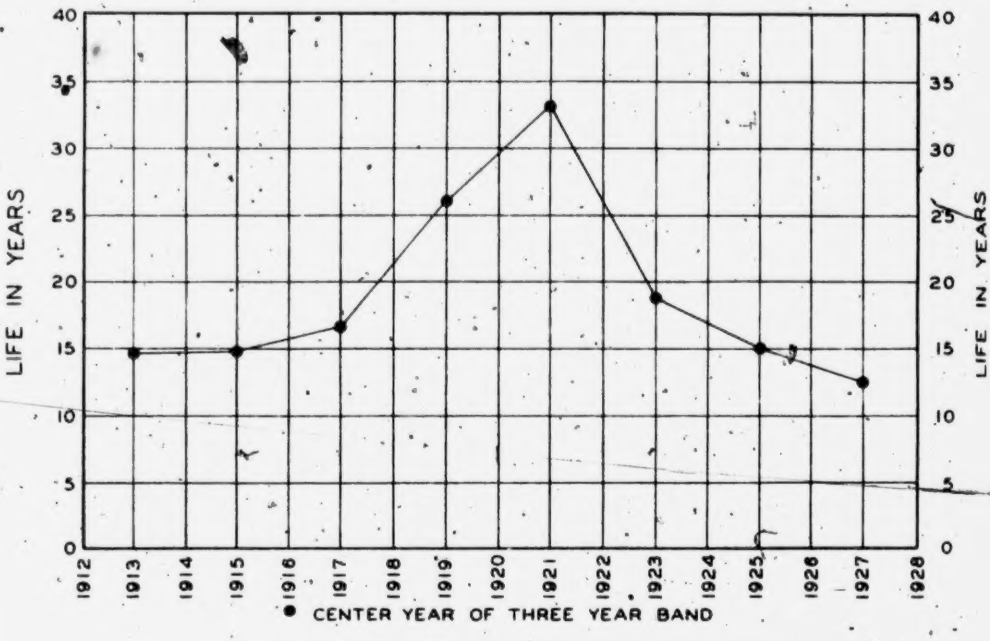


ILLINOIS BELL TELEPHONE COMPANY

CHICAGO AREA

EXCHANGE AERIAL CABLE

TREND OF AVERAGE LIFE AS SHOWN BY MORTALITY STUDIES



YEARS INCLUDED IN BAND ANALYSIS	AVERAGE RATIO OF PLANT DISPLACED TO BALANCE IN SERVICE JAN. 1.		AVERAGE LIFE	
	MORTALITY STUDY	ENTIRE PLANT CLASS	MORTALITY STUDY	ENTIRE PLANT (MORTALITY STUDY ADJUSTED ON BASIS OF COMPARISON OF RATIOS, COL 2 AND 3)
(1)	(2)	(3)	(4)	(5)
1912 TO 1914			14.6	
1914 TO 1916			14.7	
1916 TO 1918			16.8	
1917 TO 1921			26.0	
1919 TO 1923			33.3	
1922 TO 1924	.027	.040	23.8	18.7
1924 TO 1926	.048	.057	16.7	15.1
1926 TO 1928	.049	.066	15.1	12.5

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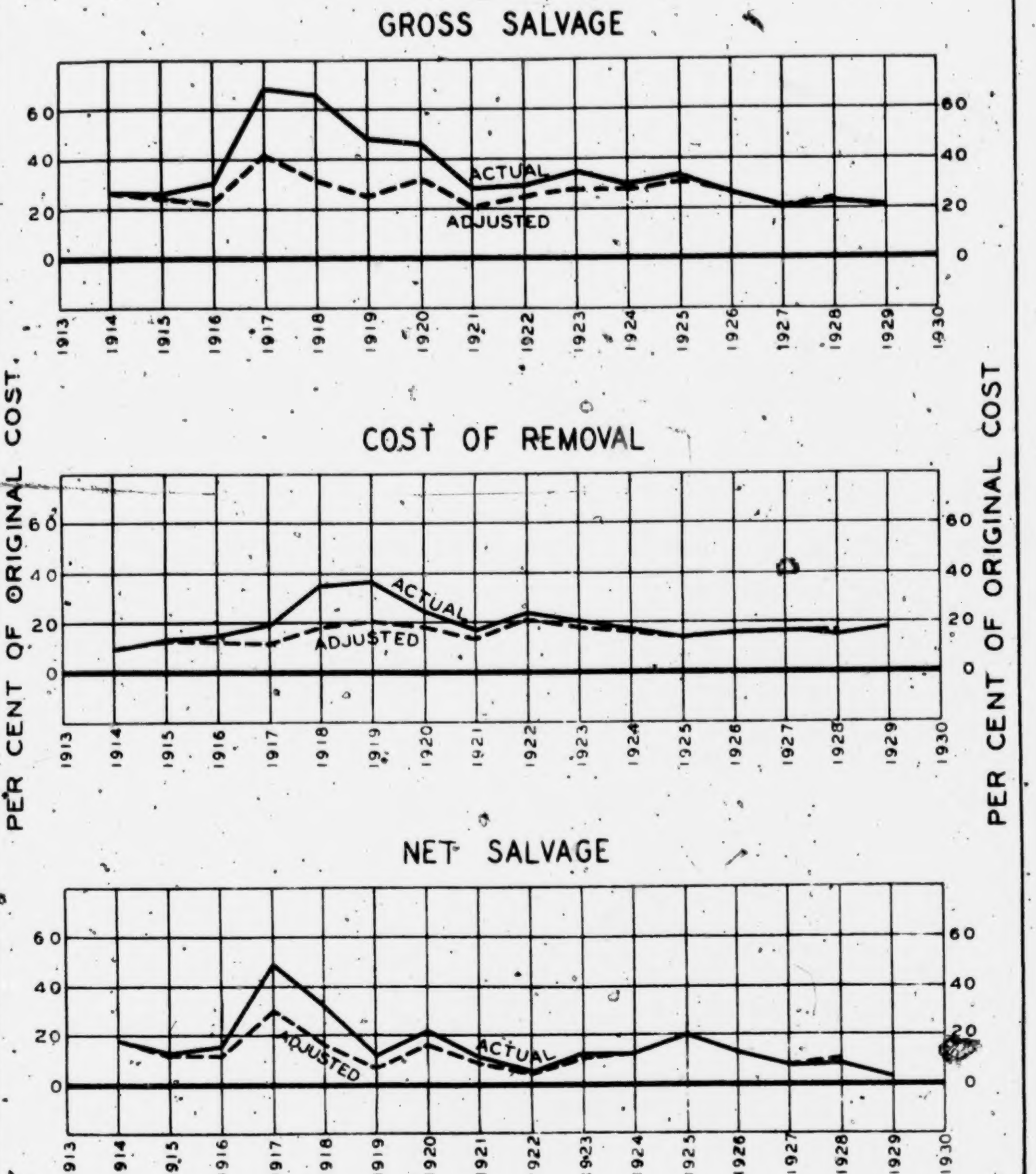
ILLINOIS BELL TELEPHONE COMPANY

CHICAGO AREA

EXCHANGE AERIAL CABLE



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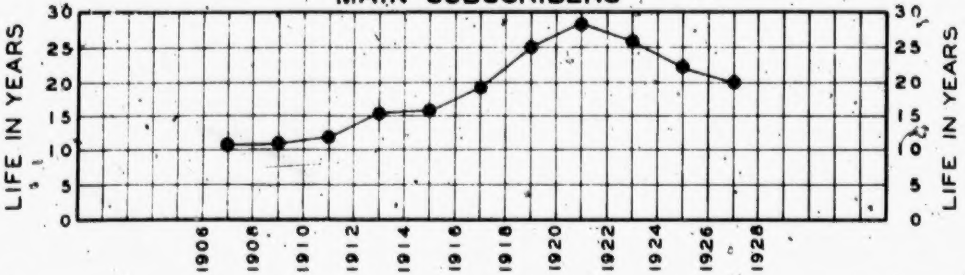
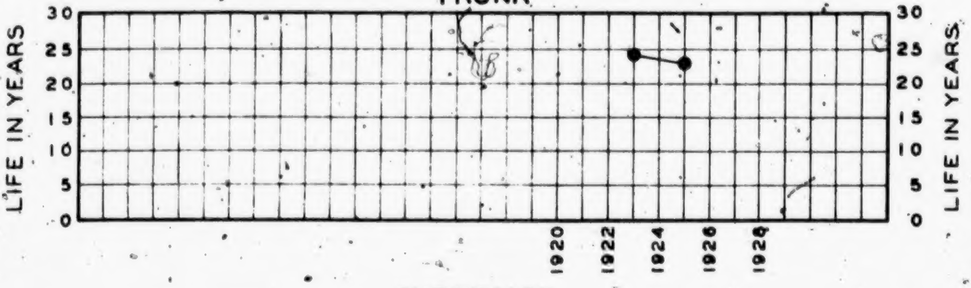
ILLINOIS BELL TELEPHONE COMPANY
CHICAGO AREA
EXCHANGE U. G. CABLE

TREND OF AVERAGE LIFE AS SHOWN BY MORTALITY STUDIES

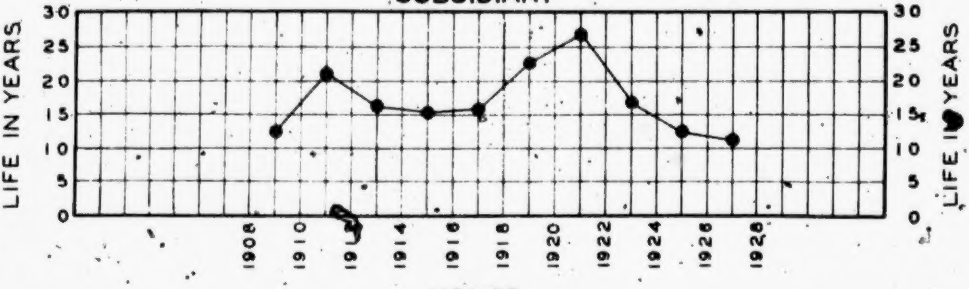
MAIN SUBSCRIBERS



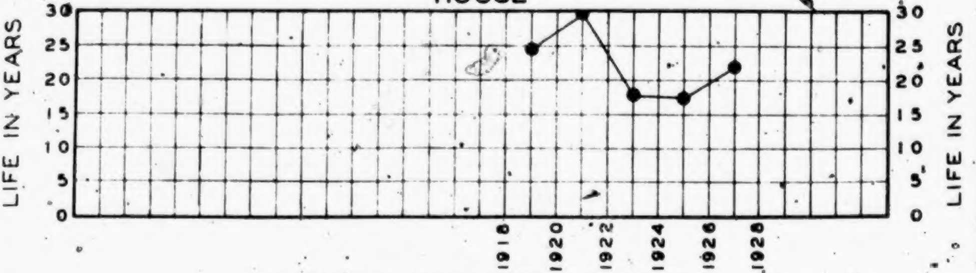
TRUNK



SUBSIDIARY



HOUSE



● CENTER YEAR OF THREE YEAR BAND

ILLINOIS BELL TELEPHONE COMPANY

CHICAGO AREA

EXCHANGE U. G. CABLE

COMPARISON OF AVERAGE LIFE SHOWN BY MORTALITY STUDIES TO LIFE OF ENTIRE PROPERTY

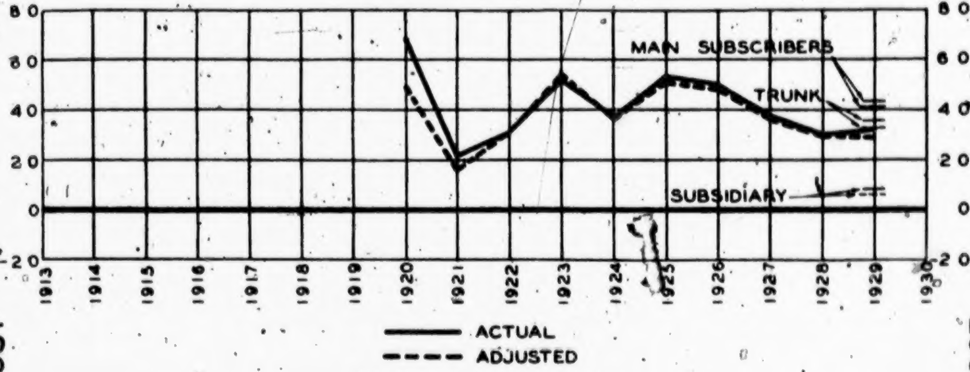
YEARS INCLUDED IN BAND ANALYSIS	AVERAGE RATIO OF PLANT DISPLACED TO BALANCE IN SERVICE JAN. 1. MORTALITY STUDY	AVERAGE RATIO OF PLANT DISPLACED TO BALANCE IN SERVICE JAN. 1. ENTIRE PLANT CLASS	AVERAGE LIFE MORTALITY STUDY	AVERAGE LIFE ENTIRE PLANT (MORTALITY STUDY ADJUSTED ON BASIS OF COMPARISON OF RATIOS COL 2 AND 3)
(1)	(2)	(3)	(4)	(5)
MAIN SUBSCRIBERS				
1906 TO 1908			10.4	
1908 TO 1910			10.8	
1910 TO 1912			12.2	
1912 TO 1914			15.3	
1914 TO 1916			15.7	
1916 TO 1918			19.2	
1917 TO 1921			24.9	
1920 TO 1922			28.4	
1922 TO 1924	.015	.017	27.6	25.7
1924 TO 1926	.020	.030	28.3	22.1
1926 TO 1928	.027	.035	23.7	20.1
TRUNK				
1921 TO 1925	.012	.014	25.3	24.3
1924 TO 1926	.013	.021	25.1	22.7
SUBSIDIARY				
1908 TO 1910			12.3	
1910 TO 1912			21.2	
1912 TO 1914			16.1	
1914 TO 1916			15.2	
1916 TO 1918			15.8	
1917 TO 1921			22.7	
1920 TO 1922			26.6	
1922 TO 1924	.033	.045	19.3	16.4
1924 TO 1926	.052	.078	15.6	12.3
1926 TO 1928	.046	.092	16.6	11.0
HOUSE				
1918 TO 1920			24.5	
1919 TO 1923			29.6	
1922 TO 1924	.015	.032	23.3	17.7
1924 TO 1926	.019	.031	21.1	17.3
1926 TO 1928	.015	.023	27.1	22.1

ILLINOIS BELL TELEPHONE COMPANY

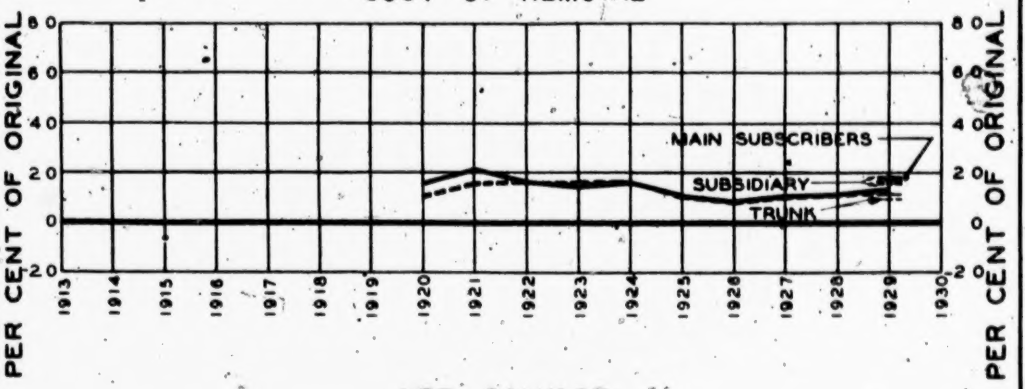
CHICAGO AREA

EXCHANGE UNDERGROUND CABLE - EXCLUDING HOUSE CABLE

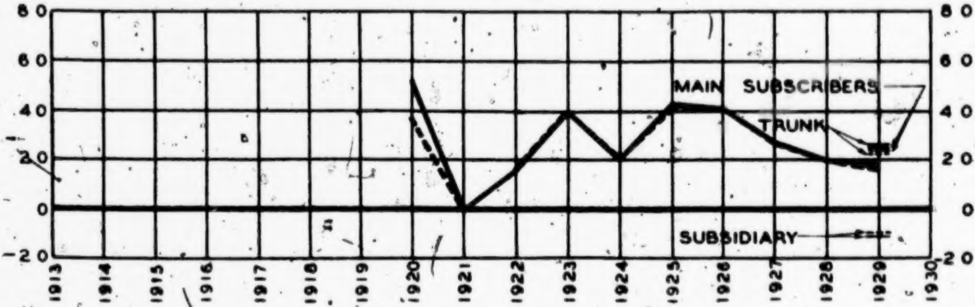
GROSS SALVAGE



COST OF REMOVAL



NET SALVAGE

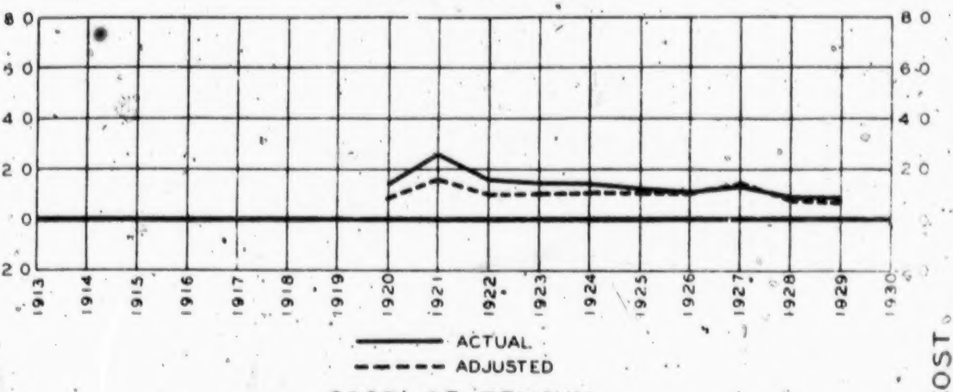


ILLINOIS BELL TELEPHONE COMPANY

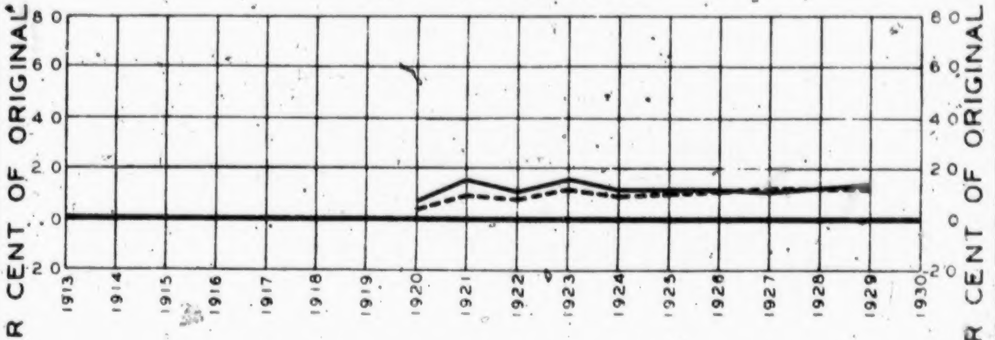
CHICAGO AREA

EXCHANGE UNDERGROUND CABLE-HOUSE CABLE

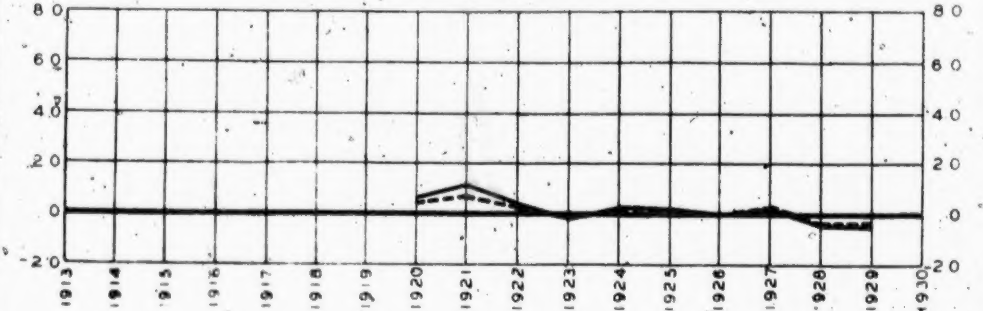
GROSS SALVAGE



COST OF REMOVAL



NET SALVAGE



[fol. 3108] Annual Depreciation Rates Effective January 1, 1930, and Relative Investment Proportions for Property Included in Group III

Property	Per Cent of Total Depreciable Property Investment Dec. 31, 1929	Basic Rates			Composite Rates
		Life	Salvage	Rate	
Station Apparatus:					
Sub-Stations	10.26	4.5	70	6.7	6.8
Telephone Typewriters	.27	3	65	11.7	
	10.53				
Other Equipment of C.O.	1.05	9	35	7.2	7.2
Booths and Spec. Fittings	.46	10	60	4.0	4.0
Toll Aerial Wire:					
Copper	.04	15	25	5.0	5.0
Load Coils	—†	20	0	5.0	
	.04				
Office Furniture and Fixtures	1.01	12	20	6.7	6.7
General Store Equipment	.04	12	10	7.5	7.5
General Tools and Implements:					
Special Tools	.04	6	5	15.8	15.8
Other Tools	.20	1.5	70	20.0	20.0
	.24				
Total	13.37				

†Negligible (Less than .005)

(Here follow charts, side folios 3109-3114)

EXAMPLE TO ILLUSTRATE PRINCIPLE OF TURNOVER METHOD

NON-GROWING PLANT. DATA IN TERMS OF QUANTITIES OF PLANT UNITS. AVERAGE LIFE OF UNITS 5 YEARS.

DISTRIBUTION BY AGES OF PLANT IN SERVICE AND PLANT RETIRED

UPPER FIGURES: PLANT REMAINING IN SERVICE AT BEGINING OF Nth CALENDAR YEAR AFTER YEAR OF PLACING
LOWER FIGURES: PLANT RETIRED DURING Nth CALENDAR YEAR AFTER YEAR OF PLACING

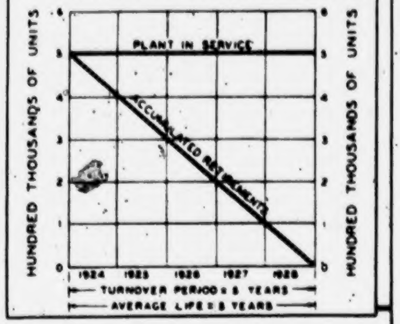
YEAR OF PLACING	(A) TOTAL AMOUNT OF PLANT PLACED	(B) TOTAL AMOUNT OF PLANT RETIRED	(C) TOTAL AMOUNT OF PLANT STILL IN SERVICE (A)-(B)	N= 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1904	100,000	100,000		XXXXX 2,404	97,596 7,914	89,682 11,152	78,530 13,031	65,499 13,488	52,011 12,710	39,301 11,054	28,247 8,945	19,302 6,768	12,534 4,804	7,730 3,204	4,526 2,012	2,514 1,190	1,324 683	641 329	312 173	139 80	59 36	23 15	8 6	2 2
1905	100,000	100,000		XXXXX 2,404	97,596 7,914	89,682 21,152	78,530 13,031	65,499 13,488	52,011 12,710	39,301 11,054	28,247 8,945	19,302 6,768	12,534 4,804	7,730 3,204	4,526 2,012	2,514 1,190	1,324 683	641 329	312 173	139 80	59 36	23 15	8 6	2 2
1906	100,000	100,000		XXXXX 2,404	97,596 7,914	89,682 11,152	78,530 13,031	65,499 13,488	52,011 12,710	39,301 11,054	28,247 8,945	19,302 6,768	12,534 4,804	7,730 3,204	4,526 2,012	2,514 1,190	1,324 683	641 329	312 173	139 80	59 36	23 15	8 6	2 2
1907	100,000	100,000		XXXXX 2,404	97,596 7,914	89,682 11,152	78,530 13,031	65,499 13,488	52,011 12,710	39,301 11,054	28,247 8,945	19,302 6,768	12,534 4,804	7,730 3,204	4,526 2,012	2,514 1,190	1,324 683	641 329	312 173	139 80	59 36	23 15	8 6	2 2
1908	100,000	100,000		XXXXX 2,404	97,596 7,914	89,682 11,152	78,530 13,031	65,499 13,488	52,011 12,710	39,301 11,054	28,247 8,945	19,302 6,768	12,534 4,804	7,730 3,204	4,526 2,012	2,514 1,190	1,324 683	641 329	312 173	139 80	59 36	23 15	8 6	2 2
1909	100,000	99,998	2	XXXXX 2,404	97,596 7,914	89,682 11,152	78,530 13,031	65,499 13,488	52,011 12,710	39,301 11,054	28,247 8,945	19,302 6,768	12,534 4,804	7,730 3,204	4,526 2,012	2,514 1,190	1,324 683	641 329	312 173	139 80	59 36	23 15	8 6	
1910	100,000	99,992	8	XXXXX 2,404	97,596 7,914	89,682 11,152	78,530 13,031	65,499 13,488	52,011 12,710	39,301 11,054	28,247 8,945	19,302 6,768	12,534 4,804	7,730 3,204	4,526 2,012	2,514 1,190	1,324 683	641 329	312 173	139 80	59 36	23 15		
1911	100,000	99,977	23	XXXXX 2,404	97,596 7,914	89,682 11,152	78,530 13,031	65,499 13,488	52,011 12,710	39,301 11,054	28,247 8,945	19,302 6,768	12,534 4,804	7,730 3,204	4,526 2,012	2,514 1,190	1,324 683	641 329	312 173	139 80	59 36			
1912	100,000	99,941	59	XXXXX 2,404	97,596 7,914	89,682 11,152	78,530 13,031	65,499 13,488	52,011 12,710	39,301 11,054	28,247 8,945	19,302 6,768	12,534 4,804	7,730 3,204	4,526 2,012	2,514 1,190	1,324 683	641 329	312 173	139 80				
1913	100,000	99,861	139	XXXXX 2,404	97,596 7,914	89,682 11,152	78,530 13,031	65,499 13,488	52,011 12,710	39,301 11,054	28,247 8,945	19,302 6,768	12,534 4,804	7,730 3,204	4,526 2,012	2,514 1,190	1,324 683	641 329	312 173					
1914	100,000	99,688	312	XXXXX 2,404	97,596 7,914	89,682 11,152	78,530 13,031	65,499 13,488	52,011 12,710	39,301 11,054	28,247 8,945	19,302 6,768	12,534 4,804	7,730 3,204	4,526 2,012	2,514 1,190	1,324 683	641 329						
1915	100,000	99,359	641	XXXXX 2,404	97,596 7,914	89,682 11,152	78,530 13,031	65,499 13,488	52,011 12,710	39,301 11,054	28,247 8,945	19,302 6,768	12,534 4,804	7,730 3,204	4,526 2,012	2,514 1,190	1,324 683							
1916	100,000	98,676	1,324	XXXXX 2,404	97,596 7,914	89,682 11,152	78,530 13,031	65,499 13,488	52,011 12,710	39,301 11,054	28,247 8,945	19,302 6,768	12,534 4,804	7,730 3,204	4,526 2,012	2,514 1,190								
1917	100,000	97,486	2,514	XXXXX 2,404	97,596 7,914	89,682 11,152	78,530 13,031	65,499 13,488	52,011 12,710	39,301 11,054	28,247 8,945	19,302 6,768	12,534 4,804	7,730 3,204	4,526 2,012									
1918	100,000	95,474	4,526	XXXXX 2,404	97,596 7,914	89,682 11,152	78,530 13,031	65,499 13,488	52,011 12,710	39,301 11,054	28,247 8,945	19,302 6,768	12,534 4,804	7,730 3,204										
1919	100,000	92,270	7,730	XXXXX 2,404	97,596 7,914	89,682 11,152	78,530 13,031	65,499 13,488	52,011 12,710	39,301 11,054	28,247 8,945	19,302 6,768	12,534 4,804											
1920	100,000	87,466	12,534	XXXXX 2,404	97,596 7,914	89,682 11,152	78,530 13,031	65,499 13,488	52,011 12,710	39,301 11,054	28,247 8,945	19,302 6,768												
1921	100,000	80,698	19,302	XXXXX 2,404	97,596 7,914	89,682 11,152	78,530 13,031	65,499 13,488	52,011 12,710	39,301 11,054	28,247 8,945													
1922	100,000	71,753	28,247	XXXXX 2,404	97,596 7,914	89,682 11,152	78,530 13,031	65,499 13,488	52,011 12,710	39,301 11,054														
1923	100,000	60,699	39,301	XXXXX 2,404	97,596 7,914	89,682 11,152	78,530 13,031	65,499 13,488	52,011 12,710															
1924	100,000	47,989	52,011	XXXXX 2,404	97,596 7,914	89,682 11,152	78,530 13,031	65,499 13,488																
1925	100,000	34,501	65,499	XXXXX 2,404	97,596 7,914	89,682 11,152	78,530 13,031																	
1926	100,000	21,470	78,530	XXXXX 2,404	97,596 7,914	89,682 11,152																		
1927	100,000	10,318	89,682	XXXXX 2,404	97,596 7,914																			
1928	100,000	2,404	97,596	XXXXX 2,404																				
TOTAL	2,500,000	2,000,000	500,000	XXXXX																				

Total For 1924 In Service Jan.1 500,000
Retired 100,000
Total For 1925 In Service Jan. 1 500,000
Retired 100,000
Total For 1926 In Service Jan.1 500,000
Retired 100,000
Total For 1927 In Service Jan.1 500,000
Retired 100,000
Total For 1928 In Service Jan.1 500,000
Retired 100,000

SUMMARIZATION OF DATA BY YEARS

YEAR	PLANT PLACED DURING YEAR (1)	PLANT RETIRED DURING YEAR (2)	PLANT RETIRED ACCUMULATED FROM 1928 (3)	PLANT IN SERVICE AT BEGINNING OF YEAR (4)
1924	100,000	100,000	500,000	500,000
1925	100,000	100,000	400,000	500,000
1926	100,000	100,000	300,000	500,000
1927	100,000	100,000	200,000	500,000
1928	100,000	100,000	100,000	500,000
1929				500,000

APPLICATION OF TURNOVER METHOD



EXAMPLE TO ILLUSTRATE PRINCIPLE OF TURNOVER METHOD

PLANT GROWING AT RATE OF 10% ANNUALLY. DATA IN TERMS OF QUANTITIES OF PLANT UNITS. AVERAGE LIFE OF UNITS 5 YEARS

DISTRIBUTION BY AGES OF PLANT IN SERVICE AND PLANT RETIRED

UPPER FIGURES: PLANT REMAINING IN SERVICE AT BEGINING OF Nth CALENDAR YEAR AFTER YEAR OF PLACING
LOWER FIGURES: PLANT RETIRED DURING Nth CALENDAR YEAR AFTER YEAR OF PLACING

YEAR OF PLACING	(A) TOTAL AMOUNT OF PLANT PLACED	(B) TOTAL AMOUNT OF PLANT RETIRED	(C) TOTAL AMOUNT OF PLANT STILL IN SERVICE (A)-(B)	N= 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1904	100,000	100,000	0	XXXX 2,404	97,596 7,914	[illegible] 11,188	78,880 13,081	65,[illegible] 13,[illegible]	52,011 13,710	39,301 11,084	[illegible] [illegible]	19,308 6,768	12,584 4,604	7,780 3,204	4,[illegible] 2,012	2,614 1,180	1,384 [illegible]	941 [illegible]	312 173	139 80	59 34	25 15	8 6	2 2
1905	110,000	110,000	0	XXXX 2,644	107,356 8,[illegible]	[illegible] 12,[illegible]	[illegible] 14,[illegible]	73,040 14,[illegible]	57,818 13,[illegible]	43,[illegible] 12,159	31,078 9,860	21,[illegible] 7,[illegible]	13,757 5,[illegible]	8,[illegible] 3,[illegible]	4,979 2,214	2,765 1,309	1,404 [illegible]	737 [illegible]	243 190	155 [illegible]	65 39	26 17	9 7	2 2
1906	121,000	121,000	0	XXXX 2,909	118,091 [illegible]	108,818 13,424	95,061 15,757	79,[illegible] 14,[illegible]	[illegible] 13,[illegible]	47,[illegible] 13,273	34,179 10,[illegible]	[illegible] [illegible]	15,166 5,612	9,[illegible] 3,877	5,476 2,[illegible]	3,048 1,440	1,608 [illegible]	800 [illegible]	378 210	168 [illegible]	72 43	29 19	10 8	2 2
1907	133,100	133,100	0	XXXX 3,200	129,900 10,[illegible]	119,307 14,[illegible]	104,[illegible] 17,[illegible]	87,179 17,[illegible]	[illegible] 14,917	[illegible] 14,715	37,[illegible] 11,[illegible]	[illegible] [illegible]	16,[illegible] [illegible]	10,[illegible] 4,[illegible]	6,084 [illegible]	3,346 1,[illegible]	1,768 [illegible]	[illegible] [illegible]	418 [illegible]	185 107	78 48	30 19	11 8	3 3
1908	146,410	146,410	0	XXXX 3,520	142,890 11,[illegible]	131,303 16,[illegible]	114,976 19,[illegible]	95,[illegible] 19,[illegible]	76,140 16,[illegible]	[illegible] 16,185	41,[illegible] 13,[illegible]	[illegible] [illegible]	18,361 7,084	11,317 4,[illegible]	6,[illegible] [illegible]	3,681 1,[illegible]	1,920 970	[illegible] 811	457 [illegible]	204 118	[illegible] [illegible]	34 [illegible]	12 9	3 3
1909	161,051	161,048	3	XXXX 3,872	157,179 12,[illegible]	144,486 17,041	[illegible] [illegible]	105,[illegible] 21,[illegible]	[illegible] [illegible]	[illegible] 17,[illegible]	[illegible] 14,[illegible]	[illegible] 10,[illegible]	[illegible] 7,727	12,[illegible] [illegible]	7,[illegible] [illegible]	4,[illegible] 1,917	2,[illegible] 1,057	1,[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	13 10	
1910	177,156	177,142	14	XXXX 4,[illegible]	172,[illegible] 14,[illegible]	[illegible] 19,[illegible]	[illegible] [illegible]	116,[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	34,[illegible] 11,[illegible]	[illegible] [illegible]	13,[illegible] [illegible]	[illegible] [illegible]	4,[illegible] 3,[illegible]	[illegible] 1,[illegible]	1,171 [illegible]	[illegible] 307	[illegible] [illegible]	105 84	41 27		
1911	194,872	194,827	45	XXXX 4,[illegible]	[illegible] [illegible]	176,765 21,[illegible]	[illegible] [illegible]	137,[illegible] [illegible]	101,[illegible] [illegible]	[illegible] 21,[illegible]	[illegible] 17,[illegible]	27,[illegible] [illegible]	[illegible] [illegible]	15,064 [illegible]	[illegible] [illegible]	4,[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	119 70			
1912	[illegible]	[illegible]	[illegible]	XXXX [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	140,[illegible] [illegible]	111,[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	41,376 [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] 1,[illegible]	1,617 [illegible]	[illegible] [illegible]	[illegible] 172				
1913	[illegible]	[illegible]	[illegible]	XXXX [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	10,[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	1,[illegible] [illegible]	736 408					
1914	[illegible]	[illegible]	[illegible]	XXXX [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	101,[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	11,[illegible] [illegible]	[illegible] [illegible]	[illegible] 1,720	1,714 908						
1915	[illegible]	[illegible]	1,[illegible]	XXXX [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	7,175 [illegible]	3,770 1,[illegible]							
1916	[illegible]	[illegible]	4,[illegible]	XXXX 7,[illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	14,[illegible] [illegible]	7,[illegible] [illegible]								
1917	[illegible]	[illegible]	[illegible]	XXXX [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] 11,[illegible]	[illegible] [illegible]									
1918	[illegible]	[illegible]	17,[illegible]	XXXX [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	107,[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]										
1919	[illegible]	[illegible]	[illegible]	XXXX 10,[illegible]	407,[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	117,[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]											
1920	[illegible]	[illegible]	[illegible]	XXXX 11,[illegible]	[illegible] [illegible]	412,[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]												
1921	[illegible]	[illegible]	[illegible]	XXXX [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	145,776 [illegible]													
1922	[illegible]	[illegible]	107,[illegible]	XXXX [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]														
1923	[illegible]	[illegible]	[illegible]	XXXX [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]															
1924	[illegible]	[illegible]	[illegible]	XXXX 16,177	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]																
1925	[illegible]	[illegible]	[illegible]	XXXX 17,[illegible]	[illegible] [illegible]	[illegible] [illegible]	[illegible] [illegible]																	
1926	[illegible]	[illegible]	[illegible]	XXXX [illegible]	[illegible] [illegible]	[illegible] [illegible]																		
1927	[illegible]	[illegible]	[illegible]	XXXX [illegible]	873,507 [illegible]																			
1928	[illegible]	[illegible]	[illegible]	XXXX [illegible]																				
TOTAL	[illegible]	[illegible]	[illegible]	XXXX																				

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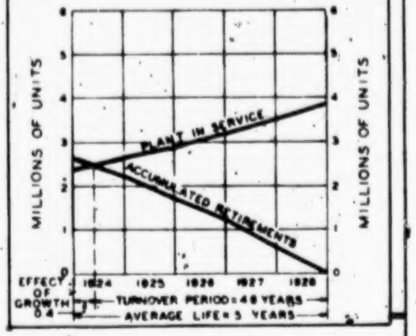
Total for 1924 In Service Jan. 1 [illegible]
Retired [illegible]
Total for 1925 In Service Jan. 1 [illegible]
Retired [illegible]
Total for 1926 In Service Jan. 1 [illegible]
Retired [illegible]
Total for 1927 In Service Jan. 1 [illegible]
Retired [illegible]
Total for 1928 In Service Jan. 1 [illegible]
Retired [illegible]

SUMMARIZATION OF DATA BY YEARS

YEAR	PLANT PLACED DURING YEAR (1)	PLANT RETIRED: DURING YEAR (2)	PLANT RETIRED: ACCUMULATED FROM 1928 (3)	PLANT IN SERVICE AT BEGINNING OF YEAR (4)
1924	672,750	438,208	2,640,277	2,394,486
1925	740,027	476,684	2,212,069	2,633,908
1926	814,030	[illegible]	1,735,435	2,897,301
1927	[illegible]	576,735	1,211,137	3,187,035
1928	[illegible]	634,404	634,404	3,505,738
1929				3,856,305

APPLICATION OF TURNOVER METHOD



DETERMINATION OF AVERAGE SERVICE LIFE EXPERIENCE
BY TURNOVER METHOD
STATION APPARATUS
CHICAGO AREA

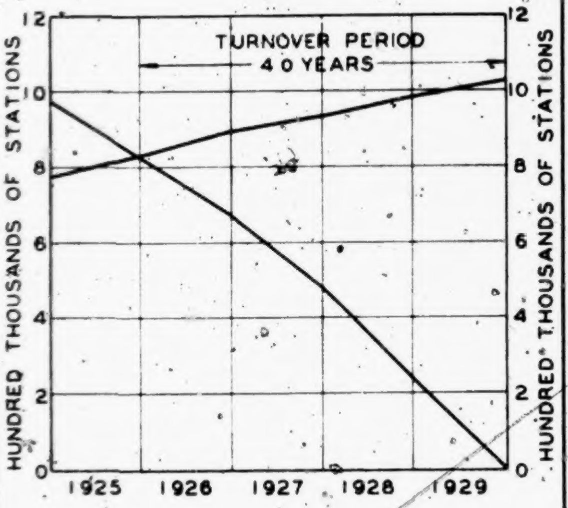
FIG. 1

ADJUSTED BASIC DATA

YEAR	STATIONS IN SERVICE AT BEGINNING OF YEAR 1	STATIONS RETIRED DURING YEAR 2	STATIONS RETIRED ACCUMULATED FROM 1929 3
1925	774,222	138,857	961,654
1926	829,185	155,783	822,797
1927	893,095	181,593	667,014
1928	934,039	245,211	485,421
1929	980,255	240,210	240,210
1930	1,027,023		

FIG. 2

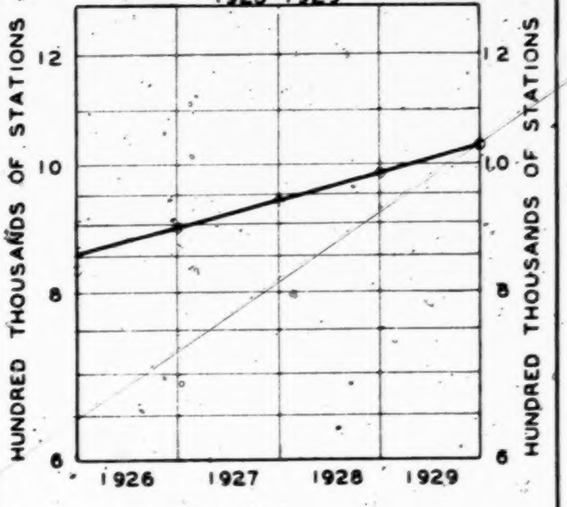
APPLICATION OF TURNOVER METHOD



– AVERAGE RATE OF GROWTH – FIG. 3

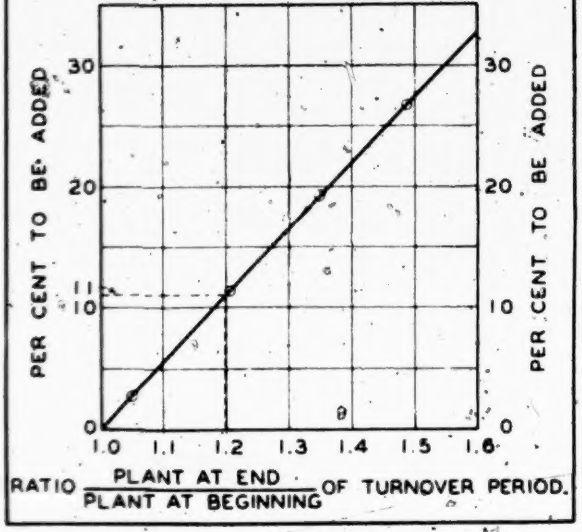
RATIO, PLANT AT END TO PLANT AT BEGINNING OF TURNOVER PERIOD (FROM UNIFORM GROWTH TREND LINE) = 1.2

1925–1929



– GROWTH ADJUSTMENT – FIG. 4

PER CENT OF TURNOVER PERIOD TO BE ADDED TO COMPENSATE FOR EFFECT OF GROWTH

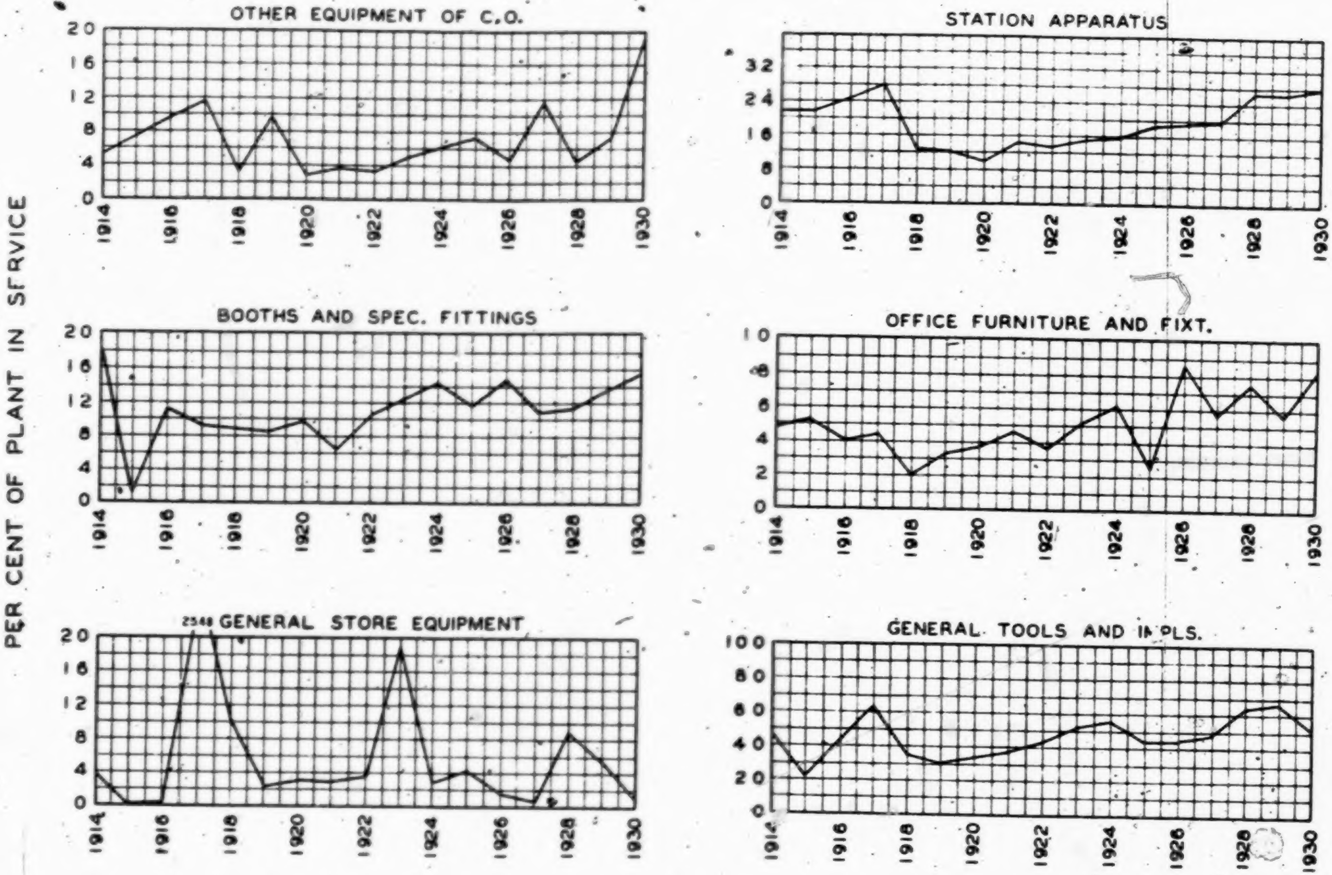


ADJUSTED TURNOVER PERIOD (4.0 YEARS + 11%) = 4.4 YEARS

ILLINOIS BELL TELEPHONE COMPANY

CHICAGO AREA

RATE OF RETIREMENT



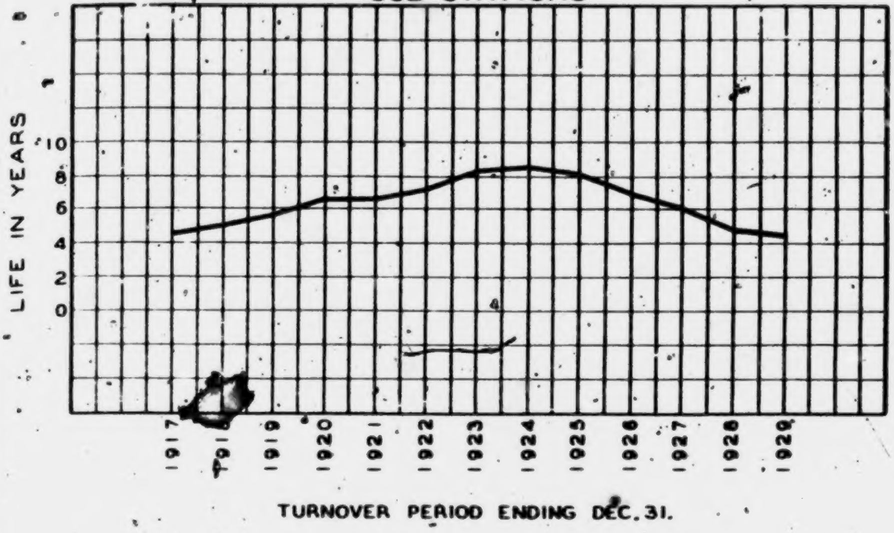
ILLINOIS BELL TELEPHONE COMPANY

CHICAGO AREA

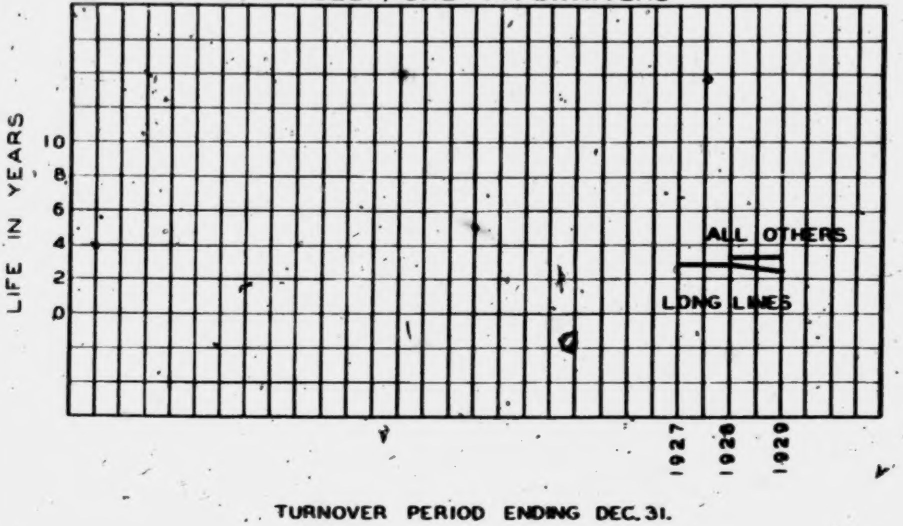
STATION APPARATUS

TREND OF AVERAGE LIFE AS SHOWN BY TURNOVER CYCLE STUDIES

SUB-STATIONS



TELEPHONE TYPEWRITERS



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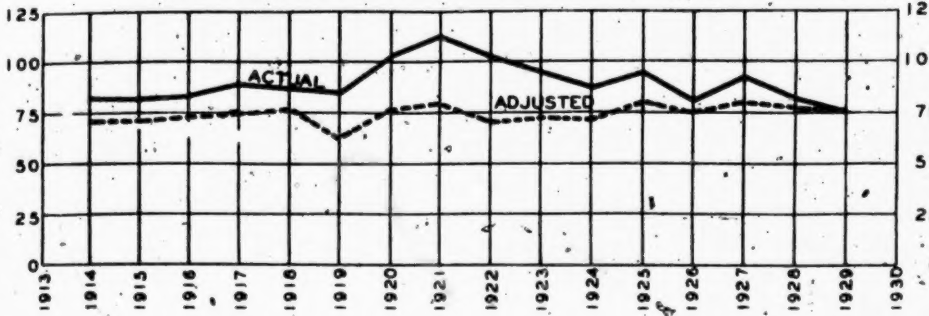
ILLINOIS BELL TELEPHONE COMPANY

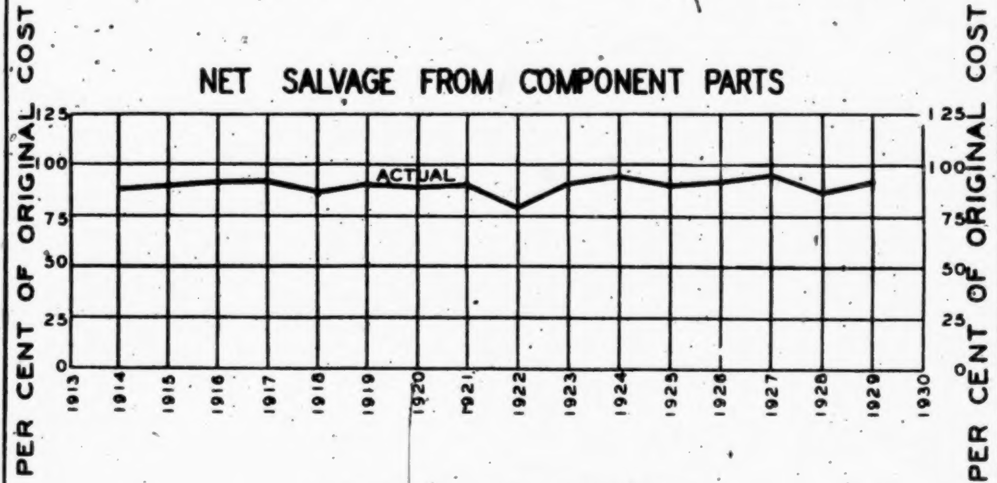
CHICAGO AREA

STATION APPARATUS - SUBSTATIONS

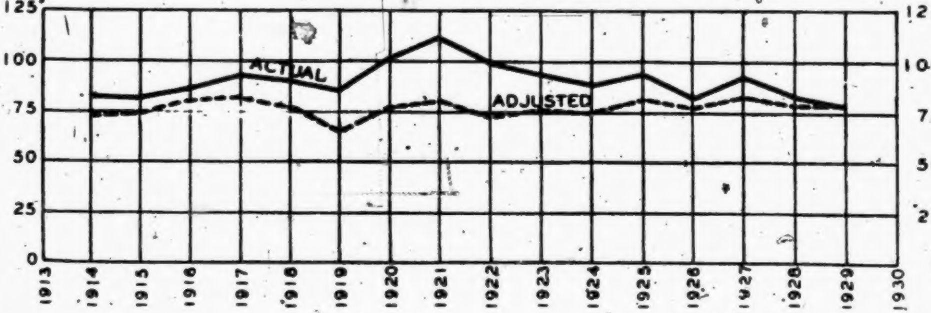
NET SALVAGE FROM COMPLETE STATIONS



NET SALVAGE FROM COMPONENT PARTS



COMPOSITE NET SALVAGE



[fol. 3115] Annual Depreciation Rates Effective January 1, 1930, and Relativ
Investment Proportions for Property Included in Group IV

Property	Per Cent of Total Depreciable Property Investment Dec. 31, 1929	Basic Rates Life	Basic Rates Salvage	Basic Rates Rate	Composite Rates
Exchange U. G. Conduit					
Main	7.42	50	0	2.0	2.3
Subsidiary	2.42	30	0	3.3	
	9.84				
Exchange Right-of-Way	.22	35	0	2.9	2.9
Toll Right-of-Way	—*	50	0	2.0	2.0
Toll Aerial Cable					
Cable	.01	20	20	4.0	4.1
Load Coils	—*	20	0	5.0	
	.01				
Toll U. G. Conduit	.27	50	0	2.0	2.0
Toll U. G. Cable					
Cable	1.92	30	25	2.5	3.1
Load Coils	.55	20	0	5.0	
	2.47				
Exchange Submarine Cable	.01	20	0	5.0	5.0
Toll Submarine Cable	—*	20	0	5.0	5.0
Total	12.82				

*Negligible (Less than .005).

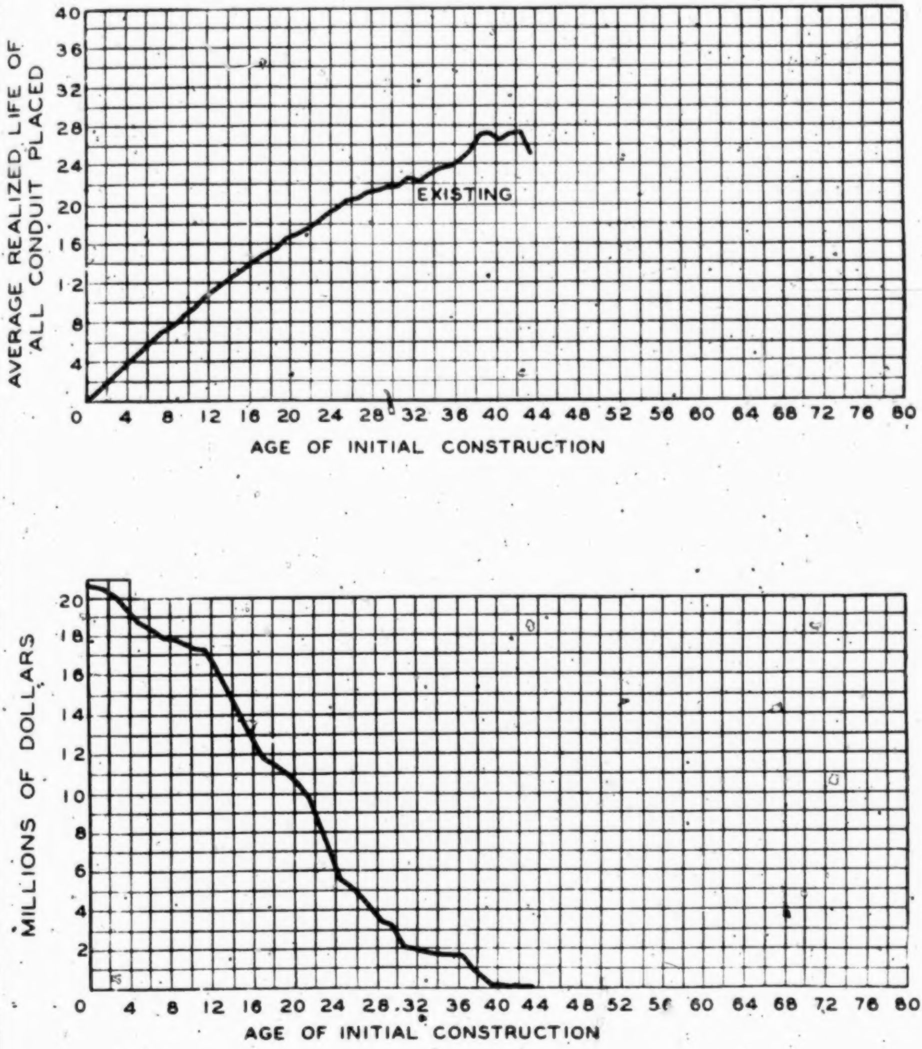
(Here follow charts, side folios 3116 and 3117)

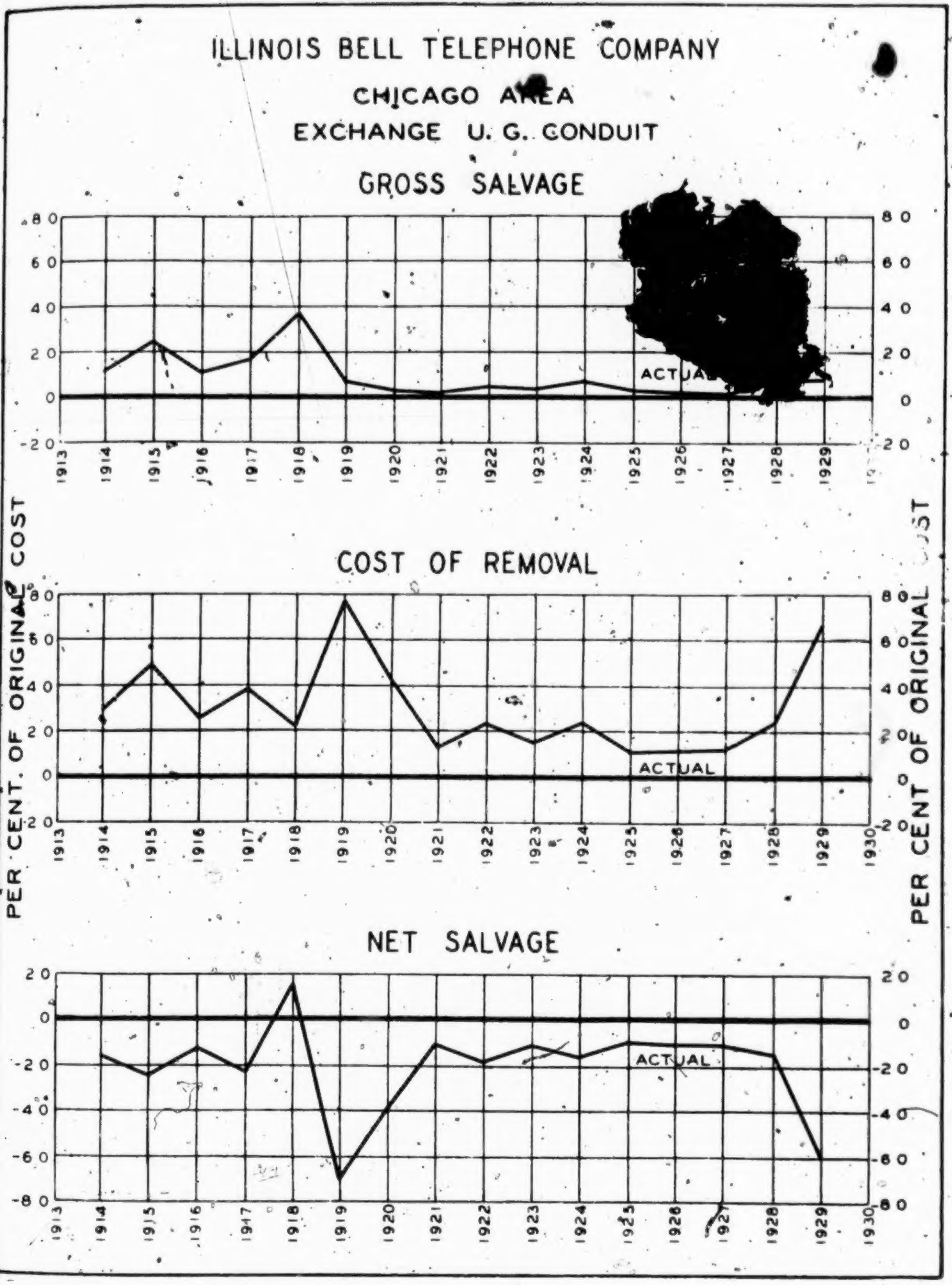
ILLINOIS BELL TELEPHONE COMPANY

CHICAGO AREA

AVERAGE REALIZED LIFE OF MAIN U.G. CONDUIT

(AT COMMON COST LEVEL)





ILLINOIS BELL TELEPHONE COMPANY
CHICAGO AREA
EXCHANGE U. G. CONDUIT

[fol. 3118] Illinois Bell Telephone Company, Chicago Area

January 1, 1930—Depreciation Study—Life and Salvage

Volume 1

The various tables, charts, etc. which have been assembled in this pamphlet show the methods employed in studying the average life and net salvage of the property of the Illinois Bell Telephone Company located in the Chicago Area. The 23 different classes of depreciable property have greatly varying physical and functional characteristics and also greatly varying lengths of average lives. For this reason, it is not possible to apply any one general method of depreciation study to all classes of property in blanket fashion, but discrimination must be employed. It has been found that the classes of property fall into four general groups for study purposes.

Page 1 of this pamphlet shows the 23 accounts containing property requiring depreciation accounting. The descriptive titles of these accounts have been arranged in the first column in accordance with their customary sequence in accounting reports. In the second column they are arranged in four groups according to the methods followed in analyzing the life experience of the property. The first of the two columns of figures shows the relative part of the total investment in depreciable property (as of Dec. 31, 1929) that is represented by the property in each account expressed as a percentage of the total and the last column shows the relative part of the total annual depreciation expense that relates to the property in each account.

Of the various causes for the retirement of telephone property, inadequacy is probably the greatest. Other causes [fol. 3119] are deterioration, obsolescence, public requirements, storms, etc. Inadequacy is brought about by growth in stations and lines and in the use of the property. Page 2 has been prepared to give some idea of what the growth has been in stations, lines and investment. The chart at the left of the page shows the actual growth in these three items while the chart at the right shows the same information expressed as a percentage of the amounts of these items in 1914. The right hand chart gives a better idea of the rate of growth experienced in the Chicago Area during recent years. The more rapid increase in lines than that shown for stations is due in part to regrading from four-party lines to two and single party lines, etc. and to the increasing number of trunks serving private branch exchanges.

Group 1

Central Office Equipment:

The property contained in Group 1 consists of a complex grouping of many items of telephone plant which, unlike certain other classes of telephone property, are largely retired on a group basis. Using Central Office Equipment as an example, a certain proportion of the ultimate installation is placed initially and additions are made from time to time until finally the entire installation is retired. There are, of course, some retirements during the overall life of the office, but these in most cases have proved to be relatively small. Additions subsequent to the initial installation are brought about by growth in lines and stations and increased use of the facilities. The average life of the equipment is, therefore, a composite of the longer lives represented by the equipment installed initially and of the shorter lived equipment installed between the time of the initial installation and the final retirement of the office.

[fol. 3120] Page 5 affords a good example of the effect of additions upon the average life of the equipment. On this page is shown the actual history of the Kedzie Central Office from 1906 to 1929 with an engineering forecast of future experience to the time of retirement in 1936, when it is expected that dial equipment will replace the present manual equipment. It will be seen in this case that whereas the office as a whole is expected to be in service for a period of thirty years, the average life to be realized from the equipment is only 12.6 years.

Computations based on past experience to date and engineering forecasts such as have been described for the Kedzie Central Office have been made for all manual central offices in the Chicago Area and the estimated average lives resulting from these computations are shown on Page 6. The last line of the statement shows an expected composite life of the present offices in service to time of retirement of 11.67 years based upon the present investment in those offices.

NOTE.—Studies of salvage for central office equipment, Page 7, and for other classes of plant, are referred to later in this memorandum.

The life experience to date with toll switchboard equipment and toll line equipment has been analyzed in a manner similar to that described for manual equipment and the resulting average realized lives are shown on Page 8.

Buildings:

The computations and forecasts for manual buildings, which have been made in a manner similar to that described for central office equipment, are shown on Page 9. The upper group of buildings are those which are expected to be discontinued for telephone use in the years shown, due [fol. 3121] to the fact that these buildings are not suitable for the installation of dial equipment. The lower group of buildings are those which are expected to be continued in service by incorporating them in the new dial buildings. The dates of retirement shown for these latter buildings, therefore, include the extended period resulting from the dial building additions. As shown by the totals on Page 9, these computations indicate an average life of 18.1 years for the first group of buildings, 36.6 years for the second group and a composite average life of 21.5 years for the two groups.

Group 2

The second group of property classes, which are shown on Page 10, is composed of those whose life experience is analyzed by mortality studies. The methods used in these mortality studies are basically the same as those employed by insurance companies in the study of human mortality. For insurance company studies the data required are the numbers of persons of each age exposed to risk of dying and the numbers of such persons who survive each year of age. From these data a series of survival rates can be computed showing for each year of age, the percentage of persons exposed to risk who survive to the following year. This information is then summarized in the form of a "life table". A standard life table for human lives known as the American Experience Table is shown on Page 11. The life table appears in the form of a curve which shows for each year of age after age 10, the per cent remaining of the original group. Correspondingly at the bottom of the page is shown the per cent of the original group of persons who die during each year of age.

[fol. 3122] In order to provide the necessary information for mortality studies of the classes of property comprising Group 2, the Illinois Bell Company has established a routine which continuously provides records of the dates of placing and retirement of the principal units of property. This information is originated in the Plant Department of the Company, is reconciled with the disbursement and recovery records of the Accounting Department and furnished the Engineering Department annually for use in the mortality studies. The units of property are then priced on a uniform pricing basis in order that they may be properly weighted together within each group or sub-class of property prior to their use in mortality studies.

Page 12 shows a summary of historical data of this kind for non-multiple private branch exchanges. The first column shows the year and the second column the amount of property placed in each year, each item of like kind and size being priced at the same price for all years, as previously mentioned. The third column shows the total amount of plant retired to date, which in this case would be to the end of 1928. The fourth column shows the total amount of plant still in service at the end of 1928. The balance of the columns, reading horizontally across the page from 0 to 30, show in the upper figure of each rectangle, the amount of property surviving at the beginning of each year of age and in the lower figure, the amount retired during each year. The numerals at the top of each column represent the elapsed number of years from the year of placing. For example, taking the sixth horizontal line for property placed in the year 1903, the 0 column would indicate the amount of property retired within the same year of placing or 1903. Column 1 shows the amount of property surviving and the amount retired during the first year after the year of placing, or 1904, and so on across the sheet up to the 25th year after 1903, or 1928. This hori- [fol. 3123] zontal line shows that of the property placed in 1903 the first retirement ($340) was made in the second year, 1905, and that $3,326 of the original installation of $34,806 survived at the end of 1928.

Data of this sort permit of the study of life of telephone property in two ways: The life of installations of any particular year can be studied in full if the length of period covered in the study is sufficient, or if not covered in full, the major part of the life history can be studied in many cases; the second method is to study the total experience of a band of recent years comprising the mortality history within that band of years of the surviving portions of all installations made at different times in the past. This latter method is the one more generally employed for the reason that it more fully reflects recent conditions and provides a full cross-sectional view of the experience of the plant. Data for this latter type of analysis are obtained from the exposures and retirements, reading diagonally across the chart, and are usually studied in bands of three to five years in order to include a representative volume of data. A three year band of data comprising the experience of the years 1926 to 1928 is shown on Page 12 below the heavy jagged line extending diagonally upward from left to right.

On Page 13 is shown the life table computed from the data for the three year band of experience referred to above. This life table is expressed in terms of the number of units remaining in service at each year of age from an original total of 100,000 units. Summing up the units remaining at each age produces a total of 660,000 unit years of service, which divided by the 100,000 original units results in an average life of 6.6 years.

[fol. 3124] Unlike the life table just discussed, many life tables do not provide information extending to the complete retirement of the original group of property. There is, however, a method available for completing the life tables in such cases. This method involves the use of a mathematical process known as the Gompertz-Makeham formula, which is also used in many of the life insurance companies' studies. The process of smoothing and completing the life tables by use of this formula is known as the graduation of observed data.

Page 14 shows comparisons of the life tables computed from observed data and those which have been graduated to represent complete experience of non-multiple private branch exchanges for four bands of years as noted on each of the charts. The dotted line in each case shows the observed or actual data while the heavy line shows the graduated data. The average life shown on each of the charts was computed from the graduated data. Life Table No. 4 shows the same observed data as the table shown on Page 13.

Page 15 shows a test of the graduation process made by graduating not only the complete data but also various portions thereof on the assumption that the remainder are not available. Each of the six tables shown is based upon different amounts of observed data taken, in this case, from a mortality study of exchange aerial cable. They range from Table "A" which is based on actual data including retirement of proximately 75% of the original group of property, to Table "F" which shows only about 45% of the original group retired. Graduating the observed data independently on the basis of these several variations in the amount available results in computed lives that differ only slightly. Although the variation in the age of the surviving portion of the original group is ten years (from 14½ to 24½ years) the variation in the resulting indicated [fol. 3125] average life is but 0.4 years or less than 3%. This is shown in the small chart at the bottom of the page which shows the indicated average lives to range from 16.3 to 16.7 years.

While the mortality studies are based on a record of all the larger units of property within each class, there are some smaller items that should be allowed for in arriving at conclusions regarding life. These items are terminals, associated with cable, crossarms associated with poles, etc. There is also some lag in the receipt of mortality reports which results in a slight understatement of retirements in the most recent years. As the capital accounts show complete retirements annually in the form of book costs, rates of retirement can be determined from this source for use in adjusting mortality study results. The rates of retirement thus secured from the accounting records are compared with those derived from the mortality studies and ratios determined which are applied to the survival rates to bring the latter into conformity with the book rates of retirement. The actual book cost rates of retirement for Group 2 are shown on Page 16.

The results of the application of mortality study methods to the principal plant classes in Group 2 are summarized herein as follows:

Page 17—Non-Multiple Private Branch Exchanges.
21—Exchange Aerial Cable.
23 & 24—Exchange Underground Cable.

NOTE.—A portion of the plant class Private Branch Exchanges is composed of multiple switchboards which may be better studied by methods similar to those described for Manual Central Office Equipment. Results of such a study for this portion of the Private Branch Exchange plant are shown on Page 19. The curve in the upper chart indicates for any age of initial installation the average realized life of equipment.

[fol. 3126]

Group 3

The classes of property in Group 3 are shown on Page 27. For these classes mortality studies are not made, as the maintenance of the required data (years of placing and retirement) would be unduly burdensome. The lives of these classes of property are studied by a process known as the "turnover cycle method".

The principle of the turnover method is illustrated on Page 28. Here a simple example of a non-growing property is assumed in which the replacements maintain the plant in a static condition. An average life of 5 years is taken for illustration.

Referring to the five lower diagonal lines of rectangles, the sum of the upper figures in each shows the units of property at the beginning of each year to be 500,000 while the sum of the lower figures shows each year's retirements to be 100,000. This simply means that the plant consists of 500,000 units of which 100,000 are replaced annually.

This information has been transferred to the small table designated "Summarization of Data by Years" and represents the kind of information available in the records of the Company. By accumulating the retirements shown in Column 2 in reverse chronological order or backwards until the equal the plant in service at some earlier year, the average life may be determined. This has been done in Column 3 in which it is shown that it requires 5 years to accumulate the 500,000 units shown in Column 4, which is in accord with the known life used in the example.

For convenience, this information has been shown also in the form of curves in the small chart at the lower right [fol. 3127] hand corner of the page entitled "Application of Turnover Method." The diagonal line shows the period required for the backward accumulation of retirements to meet the line representing the number in service to be 5 years.

While this illustration shows that in a non-growing property the turnover period and the average life are identical, in a growing plant the turnover period is less than the true average life and, therefore, certain further computations are required. This is brought about by the fact that in a growing plant the effect of units retired at less than average life more than offsets the effect of units retired at ages greater than average life. The younger plant is retired in greater proportion relative to the whole than is the case in a static plant.

On Page 29 is shown an example of a property with a 5-year average life which has a 10% annual rate of growth. It will be noted in Column "A" that instead of merely offsetting the retirements each year, the additions grow progressively larger. Otherwise the form is similar to that shown on Page 28.

Following the same procedure as that explained for Page 28, it will be noted in the lower right hand chart that the curve of accumulated retirements intercepts the curve of plant in service at a point resulting in a turnover period of but 4.6 years, whereas the average life used in this computation is 5 years.

Page 30 will serve to illustrate the method employed in compensating for the effect of growth on the result indicated by the turnover period. Figure 1 on this page shows certain actual data of recent years for station apparatus arranged in tabulated form similar to that which has been previously described. Figure 2 is also arranged as previously explained and shows a turnover period of 4.0 years for the data under consideration.

[fol. 3128] One of the steps in determining the amount to be added to the turnover period is to find the rate of growth in the property. For convenienec this is determined as the ratio of the amount of plant at the end to the amount at the beginning of the turnover period, the amounts used for this purpose being based upon the equivalent uniform annual rate of growth in order to eliminate fluctuations caused by varying conditions. This is most conveniently determined by the use of logarithmic paper as shown in Figure 3 and the result for the period under consideration indicates a ratio of 1.2.

Another factor that must be considered in compensating for the difference between the average life and that shown by the turnover period in a growing property is that of the age distribution of the retirements. Where a high rate of mortality occurs at early ages, the effect of plant placed and retired during the turnover period will be greater than where the rate of mortality is high in the later years of age. For instance, on Page 29 we note that this property has a 5-year average life and that the turnover period is 4.6 years. We are, therefore, able to determine that with the type of age distribution assumed in the example and an annual rate of growth of 10%, the life shown by the turnover period requires an adjustment of .4 of a year (9% of 4.6 years) to equal the actual average life. This compensation (percentage increase) varies with the rate of growth and type of life table and has been determined for various representative life tables and growth ratios.

Figure 4 on Page 30 shows the results of such computations for station apparatus based upon an appropriate type of life table. This figure indicates the percentage that must be added to the turnover period for various growth ratios. [fol. 3129] The curve, for example, if read at a growth ratio of 1.2 indicates a needed increase of 11% in the turnover period. As shown at the bottom of the page, this amounts to an adjustment of 0.4 year, making the correct average life for these data 4.4 years.

Page 32 shows the results of turnover studies for other periods for this class of property.

Page 31 shows the rates of retirement for all classes of property in Group 3.

Group 4

The property contained in this group is shown on Page 34 and consists of 8 accounts. As shown on Page 1, this entire group represents but 13% of the depreciable investment and only 6% of the depreciation expense.

The available life experience for most of the property in this group is too short in relation to the average life of the property to permit of life analysis. Although mortality records have been established for the Toll Cable Accounts, this information will not be of value for some years to come, due to the relative newness of this class of property and consequent insufficient retirements to date. The life of toll cables has been considered in comparison with the experience of exchange cables.

The life of right-of-way has been considered on the basis of the number of lives of the physical property for which it is obtained that may be reasonably expected for the life of the location.

As conduit represents a major portion of this group, although a relatively small part of the total depreciation expense (4.4%) data bearing upon the life of this class of property are included.

[fol. 3130] The average life of underground conduit is affected in the same way as central office telephone equipment in that most of the conduit runs represent an initial construction supplemented by additions from time to time as growth requires. It is, therefore, apparent that the overall life of the conduit run may be substantially in excess of the average life of the ducts within the fun. Manholes are also subject to the same effect due to enlargements from time to time as required.

Page 35 shows the relation of the average life of the conduit to the age of the initial conduit or overall life of the run. The upper chart shows a life curve indicating the average life at any given age of initial construction; for example, the curve shows that with an age of 40 years for the initial run, the average realized life of the conduit has been found to be about 27 years. The lower chart shows the magnitude of the available conduit experience analyzed.

Salvage

Data regarding salvage are shown for the various classes of property on pages herein as follows:

Page 7*—Manual C. O. Equipment.
9— " " Buildings.
18—Non-Multiple P. B. X.'s
20*—Multiple "
22—Exchange Aerial Cable.
25-26— " U. G. "
33—Station Apparatus.
36*—Exchange U. G. Conduit.

Actual past salvage data (gross salvage, cost of removal and net salvage) are shown as a percentage of property cost on two bases:

(a) As a percentage of original property cost.

(b) As a percentage of property cost adjusted to the cost level at which salvage was recovered except for classes in- [fol. 3131] dicated by asterisks, for which data are shown on the first mentioned basis only, and for buildings for which the expected net salvage is stated individually in terms of percentages of original cost.

(Here follow photos, side folios 3132-3149)

Exhibit A-129.

ILLINOIS BELL TELEPHONE COMPANY
CHICAGO AREA
JAN. 1, 1930, DEPRECIATION STUDY
LIFE AND SALVAGE DATA

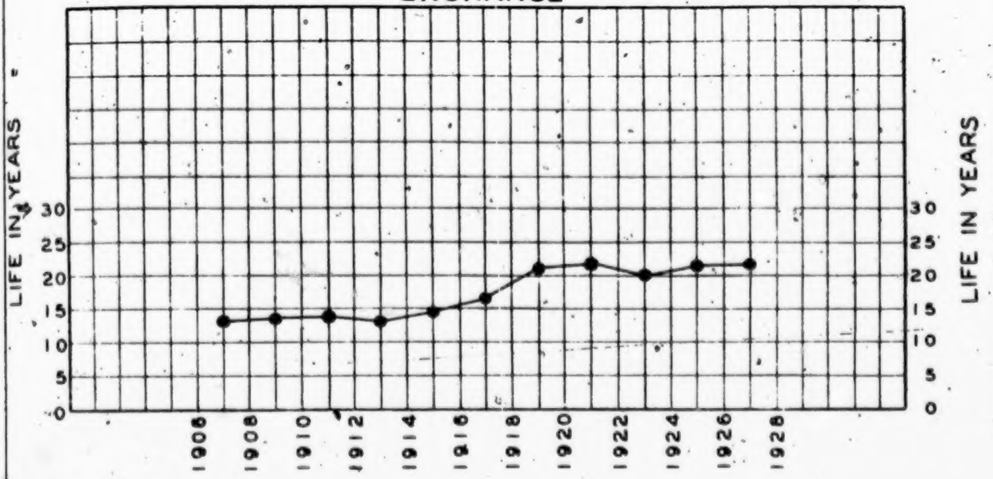
2884B
3133 1A

ILLINOIS BELL TELEPHONE COMPANY

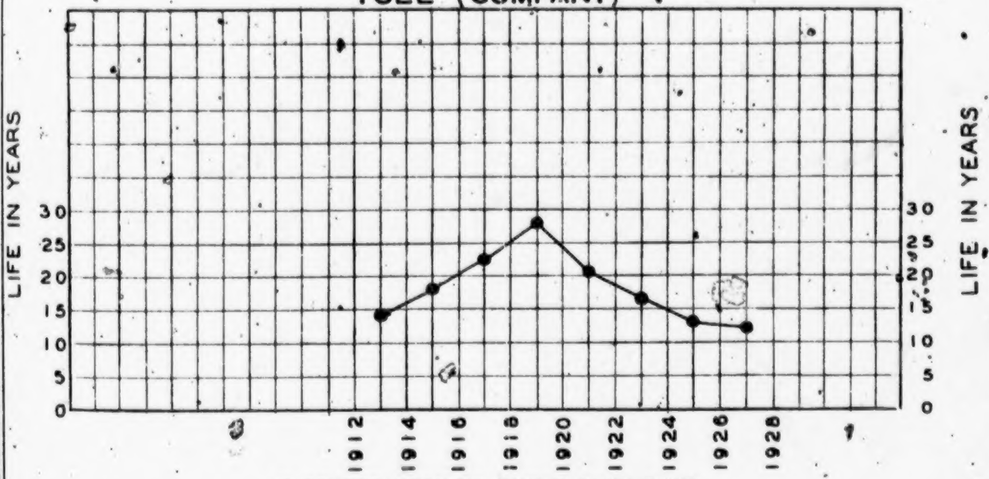
CHICAGO AREA
POLE LINES

TREND OF AVERAGE LIFE AS SHOWN BY MORTALITY STUDIES

EXCHANGE



TOLL (COMPANY)



● CENTER YEAR OF THREE YEAR BAND

2884C
3134 2884C

ILLINOIS BELL TELEPHONE COMPANY

CHICAGO AREA

POLE LINES

COMPARISON OF AVERAGE LIFE SHOWN BY MORTALITY STUDY TO LIFE OF ENTIRE PROPERTY

YEARS INCLUDED IN BAND ANALYSIS	AVERAGE RATIO OF PLANT DISPLACED TO BALANCE IN SERVICE JAN. 1.		AVERAGE LIFE	
	MORTALITY STUDY	ENTIRE PLANT CLASS	MORTALITY STUDY	ENTIRE PLANT (MORTALITY STUDY ADJUSTED ON BASIS OF COMPARISON OF RATIOS, COL. 2 AND 3)
(1)	(2)	(3)	(4)	(5)
EXCHANGE				
1906 TO 1908			13.2	
1908 TO 1910			13.5	
1910 TO 1912			13.7	
1912 TO 1914			13.0	
1914 TO 1916			14.5	
1916 TO 1918			16.5	
1918 TO 1920			21.0	
1920 TO 1922			21.6	
1922 TO 1924	.030	.034	21.1	20.0
1924 TO 1926	.028	.034	23.4	21.4
1926 TO 1928	.026	.035	24.9	21.6
TOLL (COMPANY)				
1912 TO 1914			14.2	
1914 TO 1916			18.0	
1916 TO 1918			22.6	
1918 TO 1920			27.9	
1920 TO 1922			20.5	
1922 TO 1924	.042	.067	20.8	16.6
1924 TO 1926	.067	.086	14.9	13.0
1926 TO 1928	.049	.095	17.8	12.1

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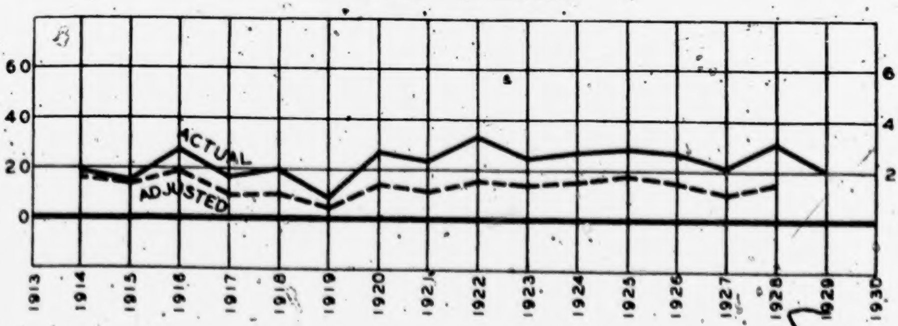
3135 2

ILLINOIS BELL TELEPHONE COMPANY

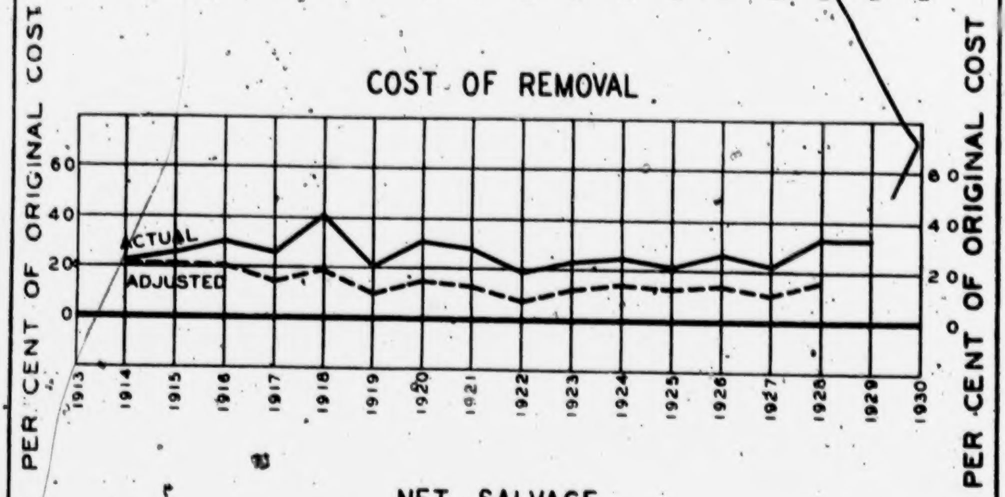
CHICAGO AREA

EXCHANGE POLE LINES

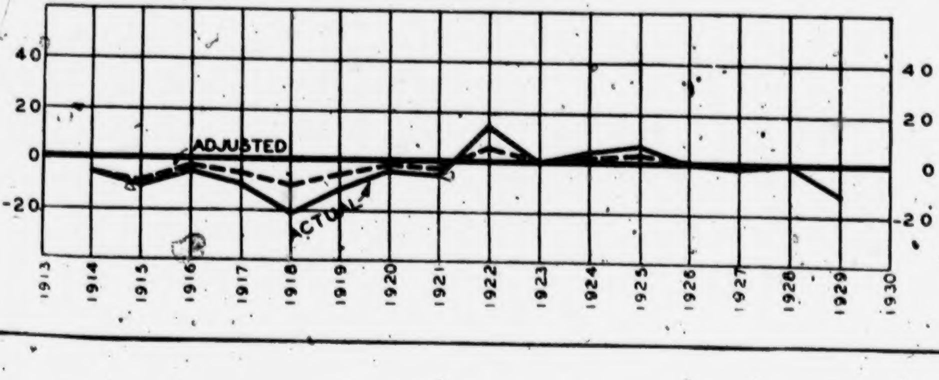
GROSS SALVAGE



COST OF REMOVAL



NET SALVAGE

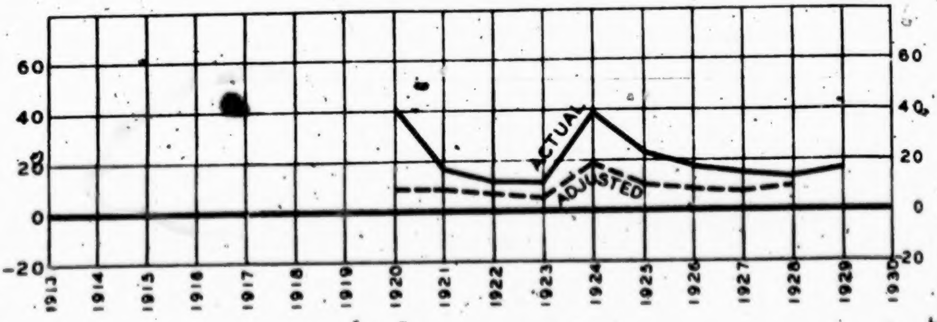


ILLINOIS BELL TELEPHONE COMPANY

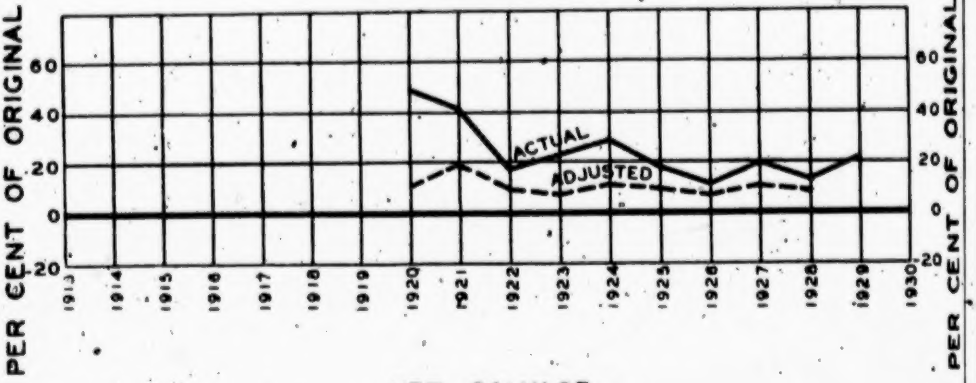
SUBURBAN DIVISION

TOLL POLE LINES

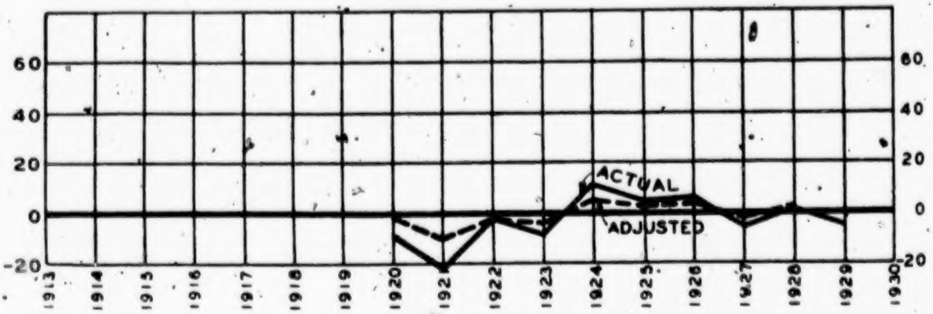
GROSS SALVAGE



COST OF REMOVAL



NET SALVAGE

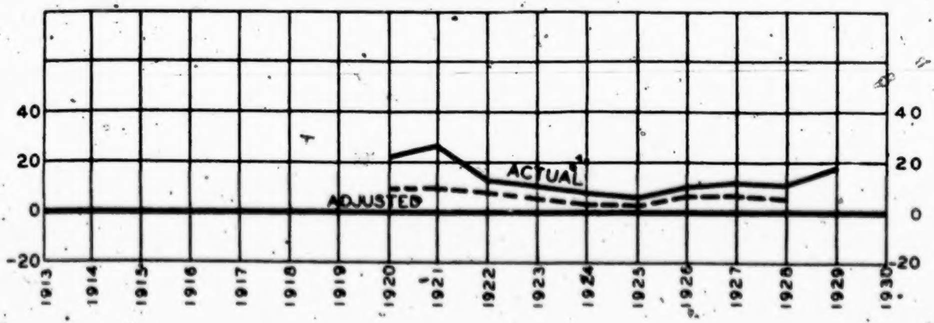


ILLINOIS BELL TELEPHONE COMPANY

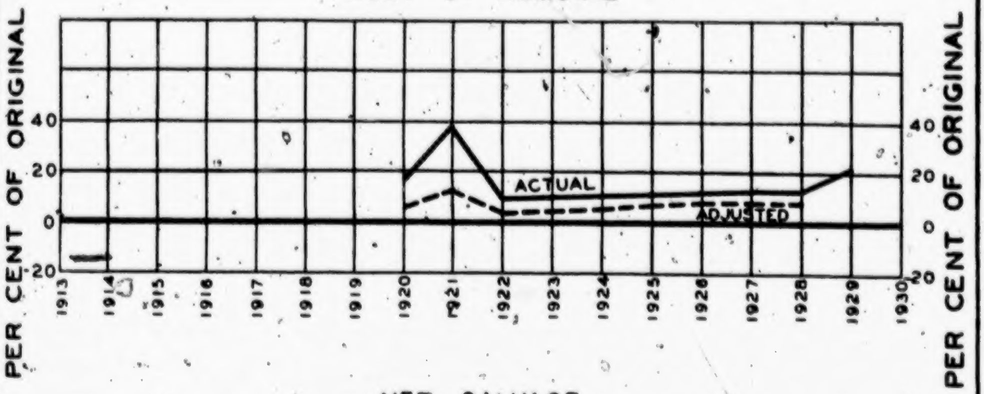
ILLINOIS DIVISION

TOLL POLE LINES

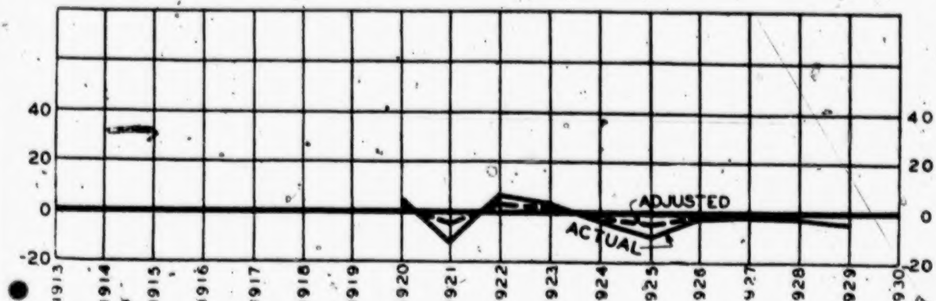
GROSS SALVAGE



COST OF REMOVAL



NET SALVAGE

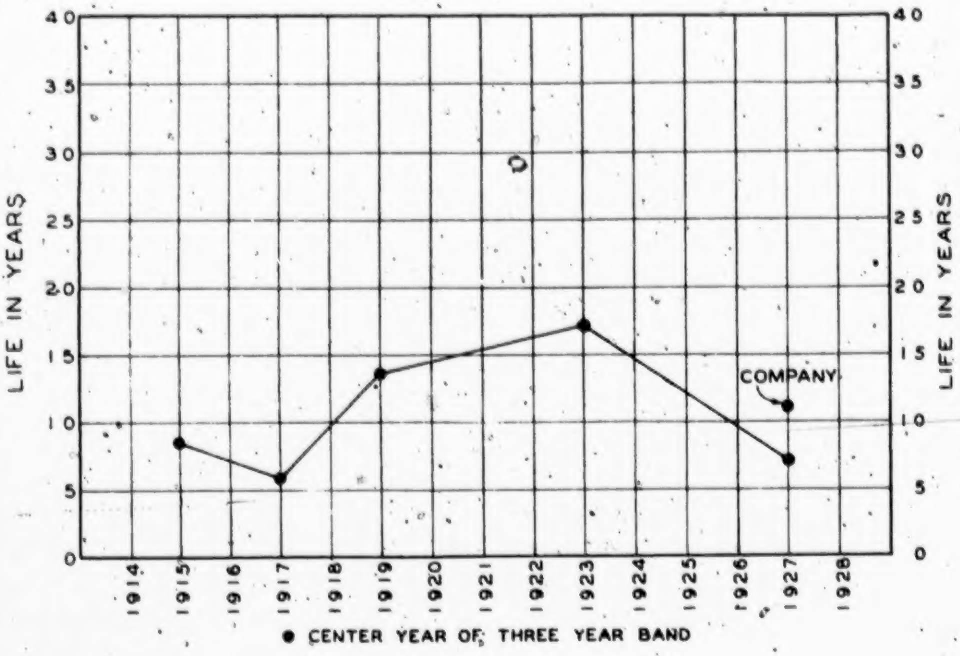


ILLINOIS BELL TELEPHONE COMPANY

CHICAGO AREA

LOAD COILS

TREND OF AVERAGE LIFE AS SHOWN BY MORTALITY STUDIES



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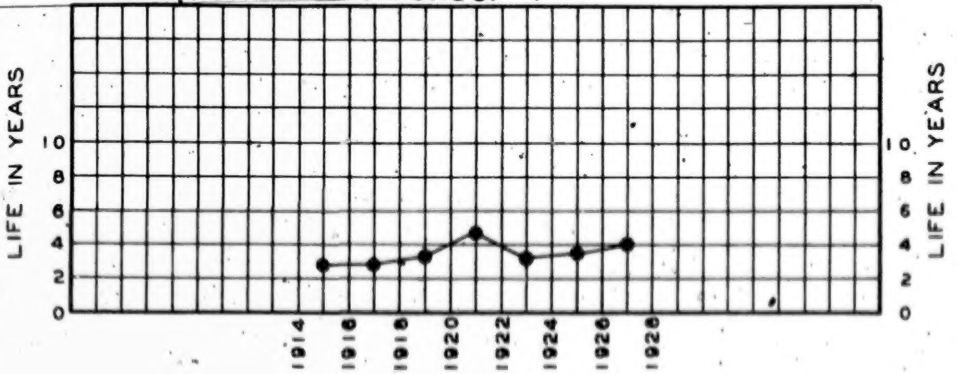
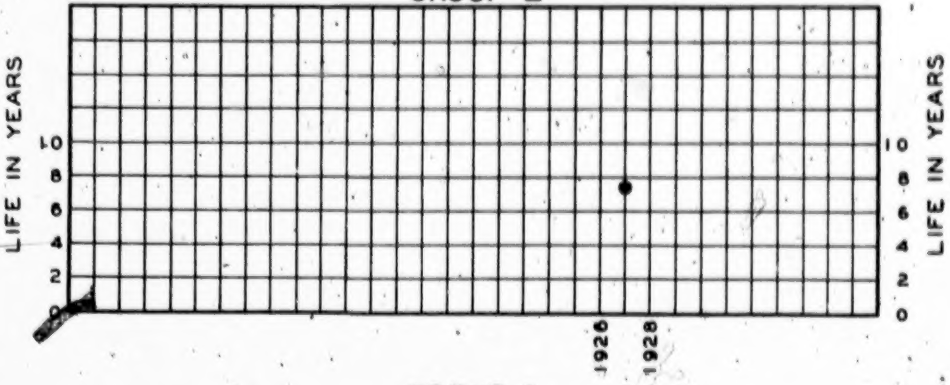
ILLINOIS BELL TELEPHONE COMPANY
CHICAGO AREA
MOTOR VEHICLES

TREND OF AVERAGE LIFE AS SHOWN BY MORTALITY STUDIES

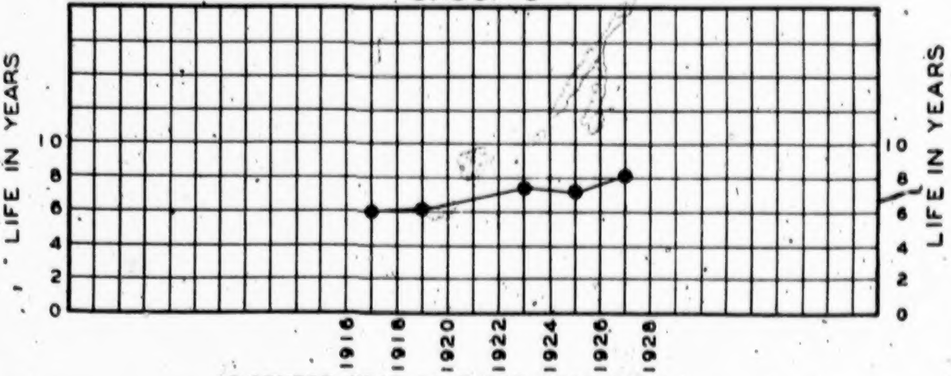
GROUP 1



GROUP 2



GROUP 3



● CENTER YEAR OF THREE YEAR BAND

ILLINOIS BELL TELEPHONE COMPANY

CHICAGO AREA

MOTOR VEHICLES

COMPARISON OF AVERAGE LIFE SHOWN BY MORTALITY STUDIES TO LIFE OF ENTIRE PROPERTY

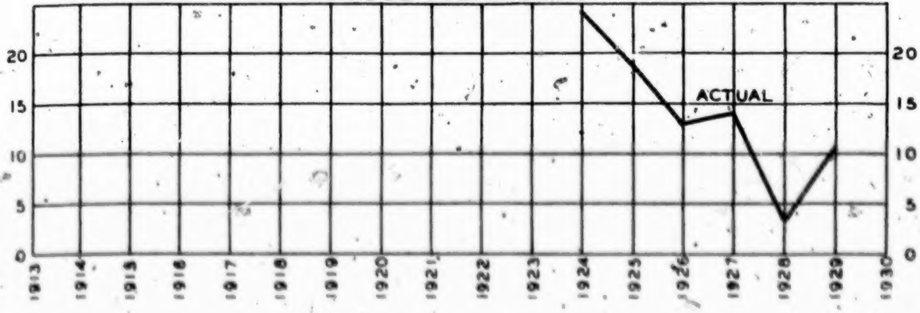
YEARS INCLUDED IN BAND ANALYSIS	AVERAGE RATIO OF PLANT DISPLACED TO BALANCE IN SERVICE JAN. 1.		AVERAGE LIFE	
	MORTALITY STUDY	ENTIRE PLANT CLASS	MORTALITY STUDY	ENTIRE PLANT (MORTALITY STUDY ADJUSTED ON BASIS OF COMPARISON OF RATIOS, COL. 2 AND 3)
(1)	(2)	(3)	(4)	(5)
GROUP 1				
1914 TO 1916			2.8	
1916 TO 1918			2.8	
1918 TO 1920			3.3	
1920 TO 1922			4.7	
1922 TO 1924	.086	.131	3.5	3.2
1924 TO 1926	.093	.122	3.8	3.5
1926 TO 1928	.129	.147	4.2	4.0
GROUP 2				
1926 TO 1928	.129	.147	7.8	7.4
GROUP 3				
1916 TO 1918			5.9	
1917 TO 1921			6.1	
1922 TO 1924	.086	.131	8.1	7.4
1924 TO 1926	.093	.122	8.0	7.1
1926 TO 1928	.129	.147	8.4	8.1

ILLINOIS BELL TELEPHONE COMPANY

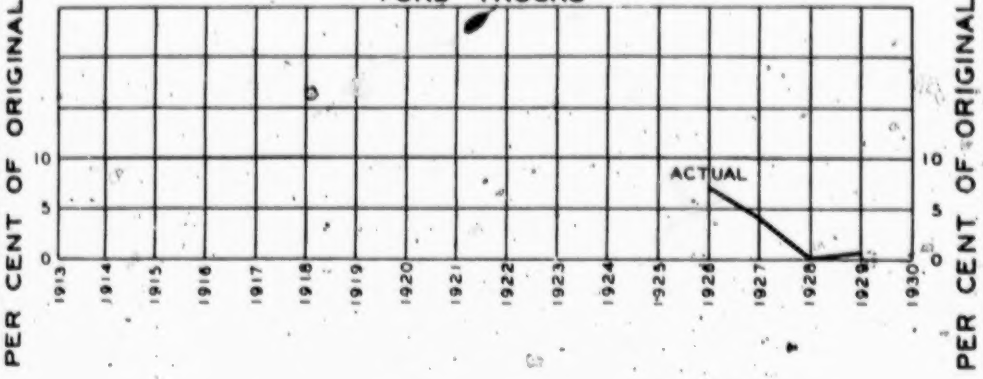
CHICAGO AREA

SALVAGE EXPERIENCE - MOTOR VEHICLES

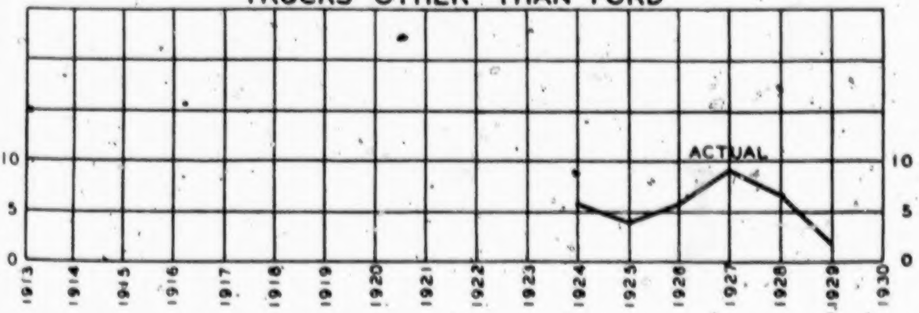
PASSENGER CARS



FORD TRUCKS



TRUCKS OTHER THAN FORD



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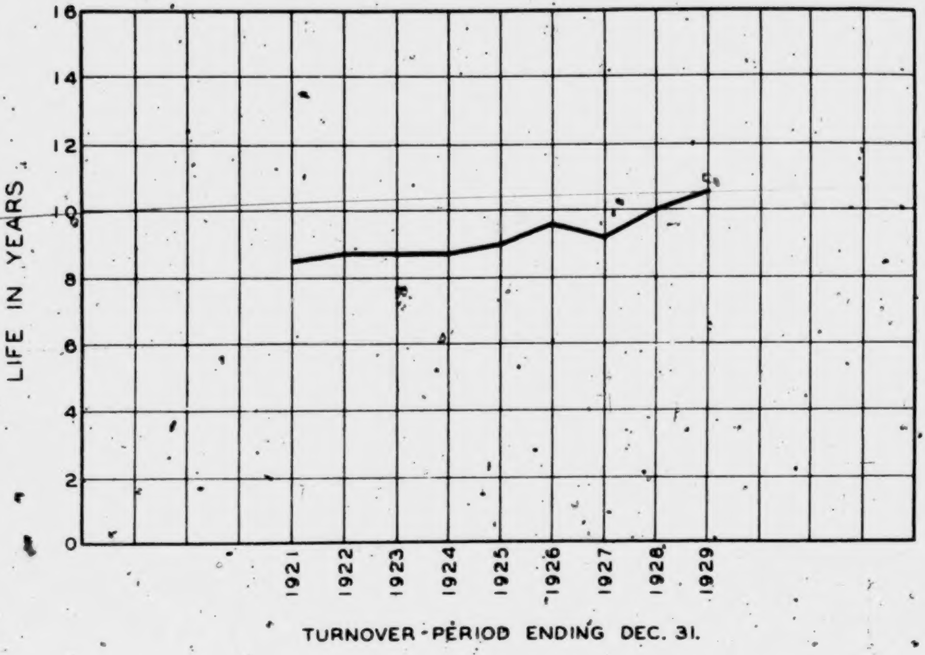
ILLINOIS BELL TELEPHONE COMPANY

CHICAGO AREA

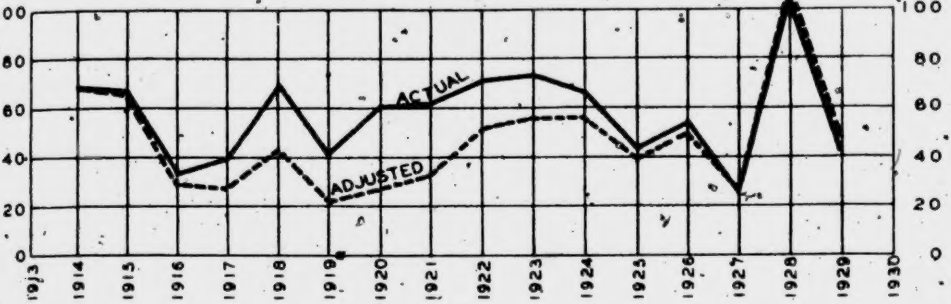
TREND OF AVERAGE LIFE AS SHOWN BY TURNOVER CYCLE STUDIES

OTHER EQUIPMENT OF CENTRAL OFFICES

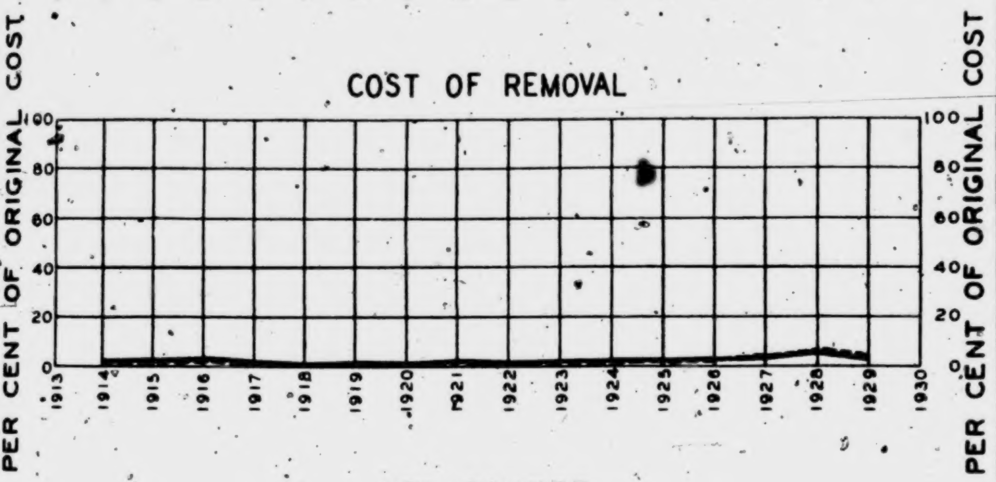


ILLINOIS BELL TELEPHONE COMPANY
CHICAGO AREA
OTHER EQUIPMENT OF CENTRAL OFFICES

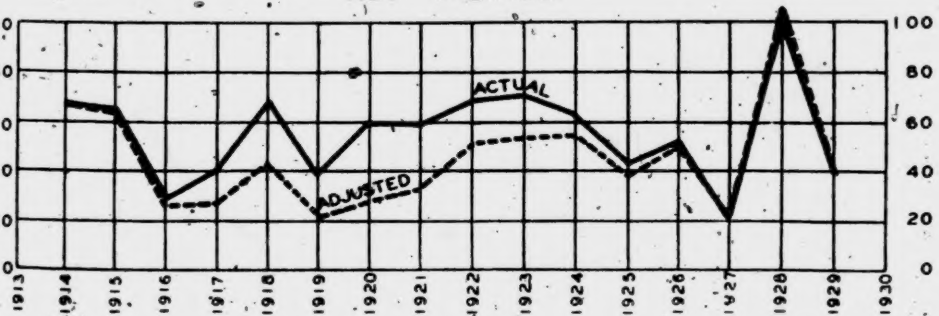
GROSS SALVAGE



COST OF REMOVAL



NET SALVAGE.



IF 1927 AND 1928 NET SALVAGE UNADJUSTED ARE CONSIDERED TOGETHER THE PERCENTAGE IS 36.3

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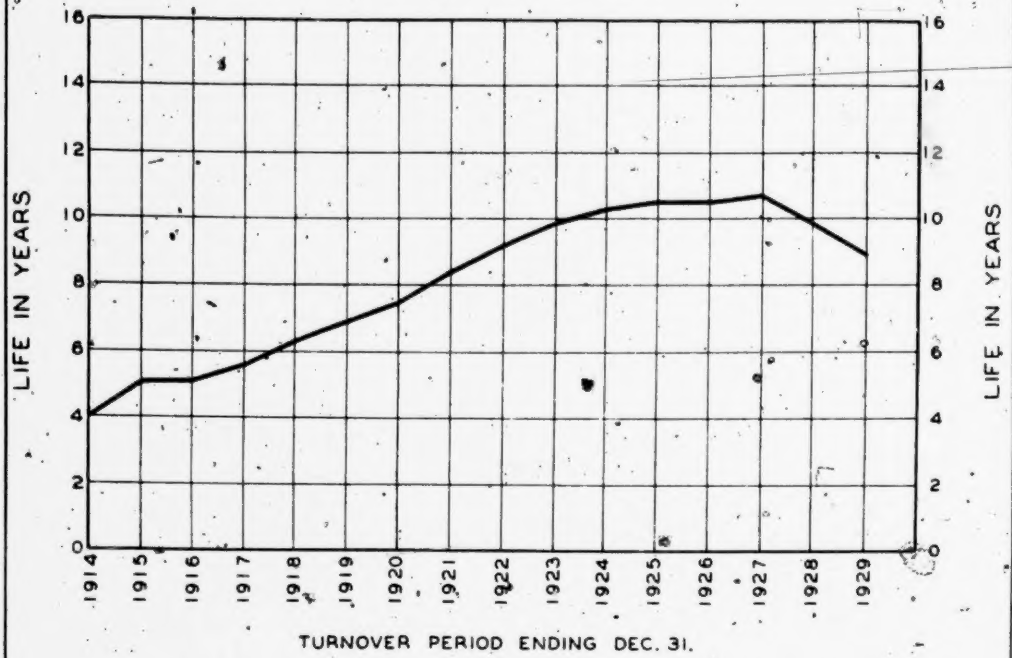
ILLINOIS BELL TELEPHONE COMPANY

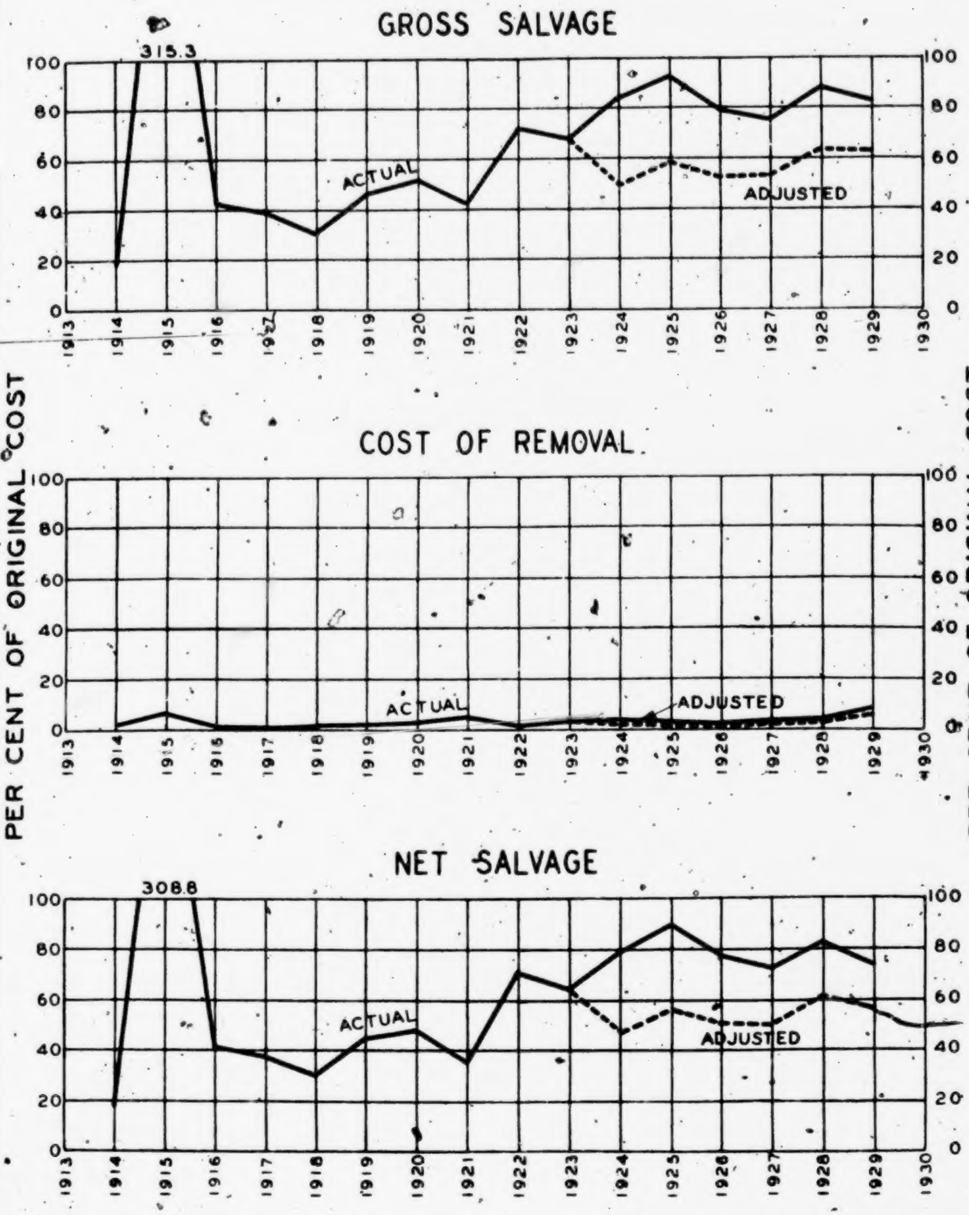
CHICAGO AREA

TREND OF AVERAGE LIFE AS SHOWN BY TURNOVER CYCLE STUDIES

BOOTHS AND SPECIAL FITTINGS



ILLINOIS BELL TELEPHONE COMPANY
CHICAGO AREA
BOOTHS AND SPECIAL FITTINGS

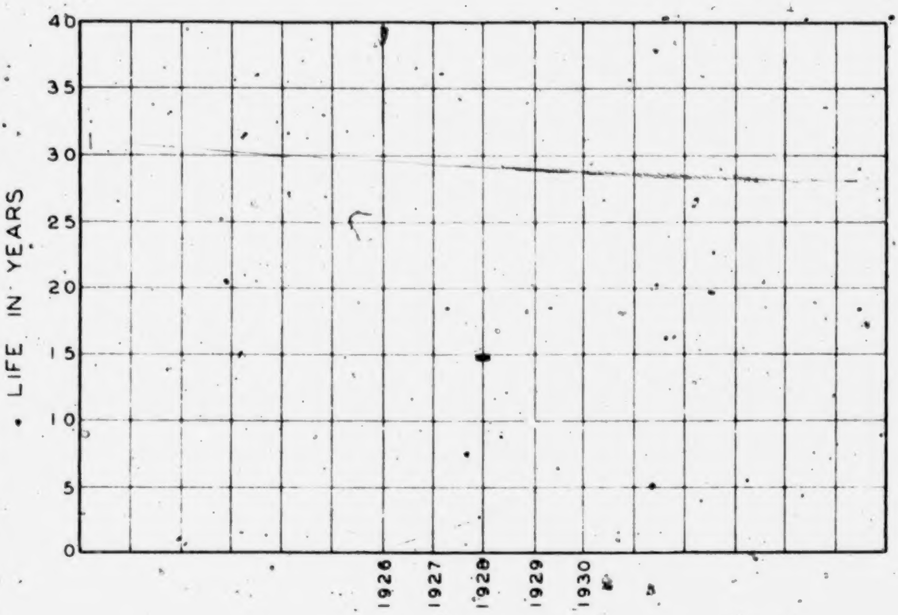


ILLINOIS BELL TELEPHONE COMPANY

CHICAGO AREA

TOLL AERIAL WIRE

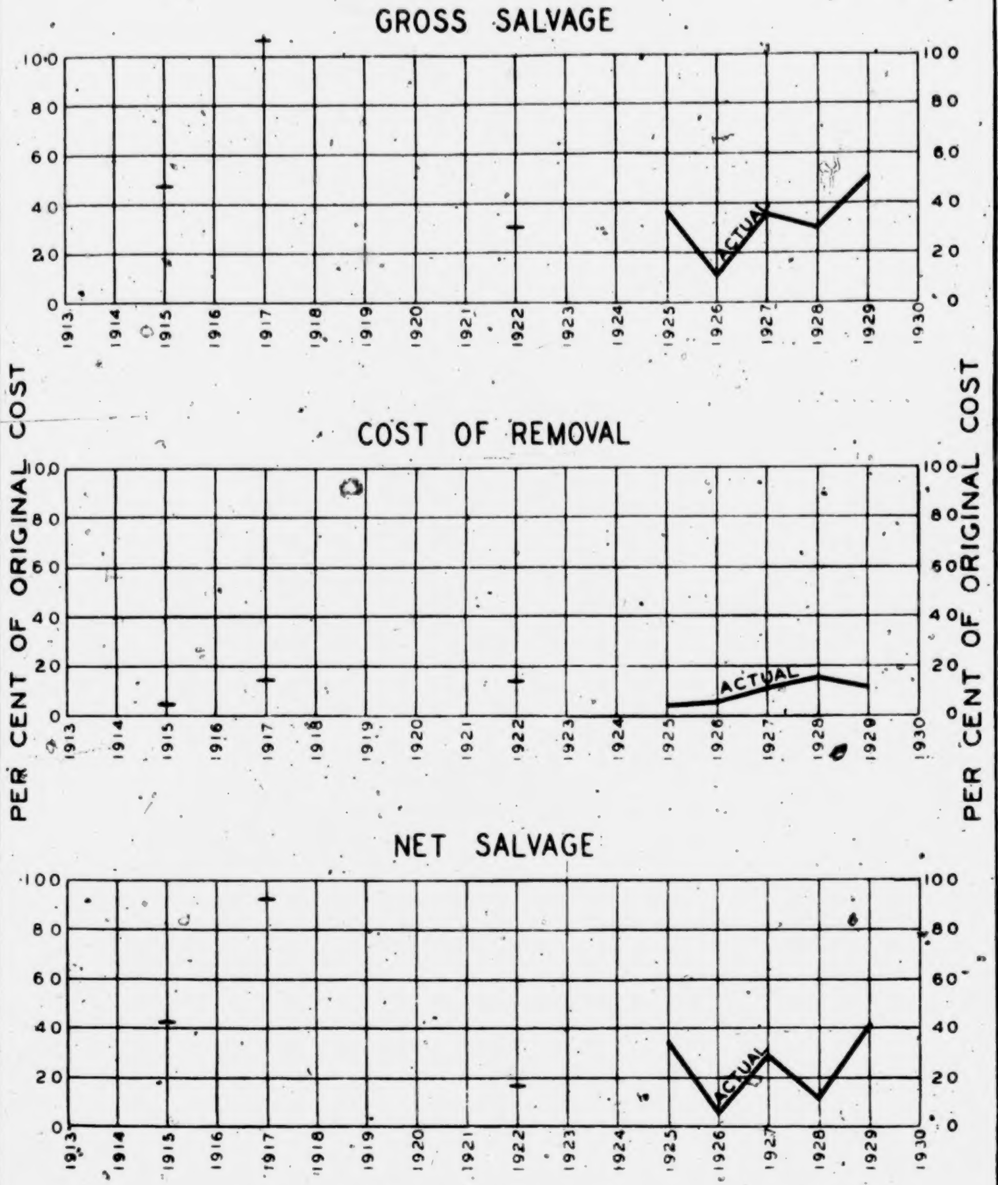
TREND OF AVERAGE LIFE AS SHOWN BY TURNOVER CYCLE STUDIES



TURNOVER PERIOD ENDING DEC. 31

ILLINOIS BELL TELEPHONE COMPANY

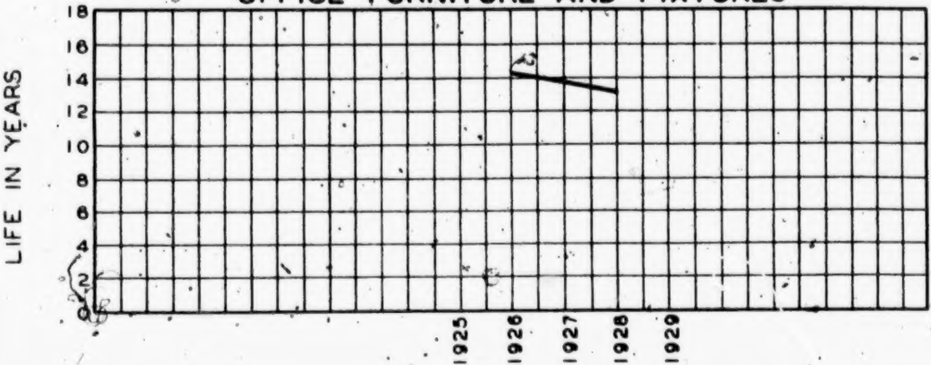
CHICAGO AREA
TOLL AERIAL WIRE



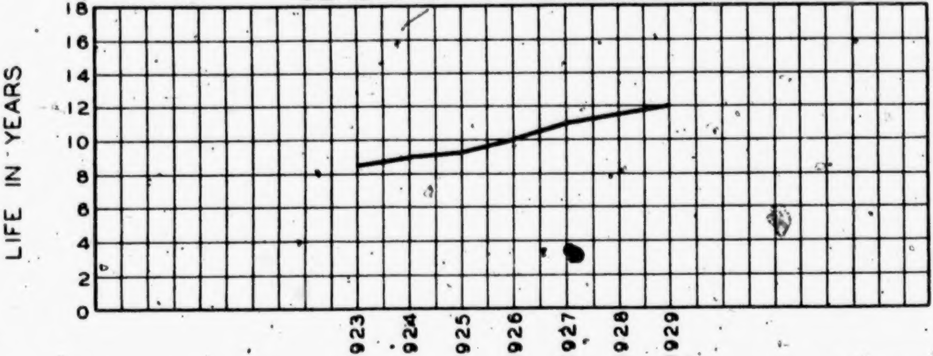
RETIREMENTS FOR 1914, 1916, 1918-1921, 1923 AND 1924 TOO SMALL TO BE REPRESENTATIVE

ILLINOIS BELL TELEPHONE COMPANY
CHICAGO AREA
GENERAL EQUIPMENT
TREND OF AVERAGE LIFE AS SHOWN BY TURNOVER CYCLE STUDIES

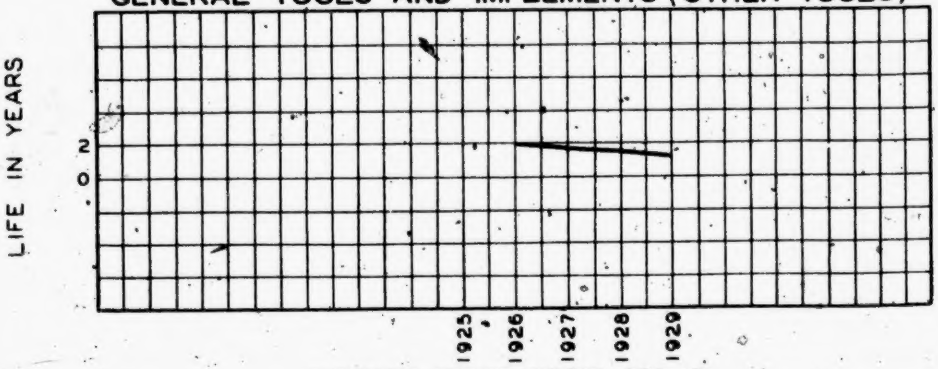
OFFICE FURNITURE AND FIXTURES



GENERAL STORE EQUIPMENT



GENERAL TOOLS AND IMPLEMENTS (OTHER TOOLS)

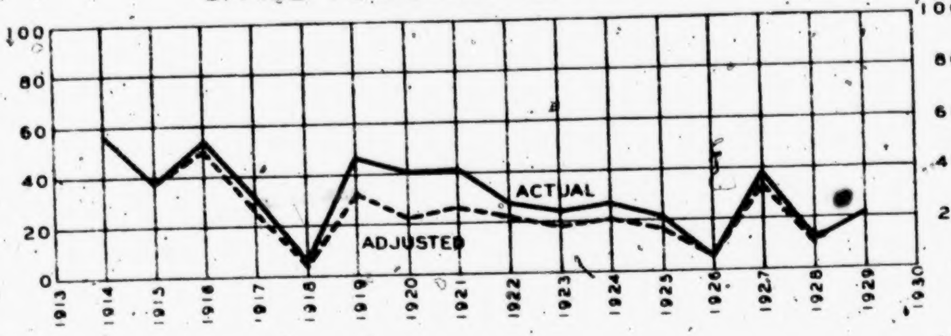


TURNOVER PERIOD ENDING DEC. 31.

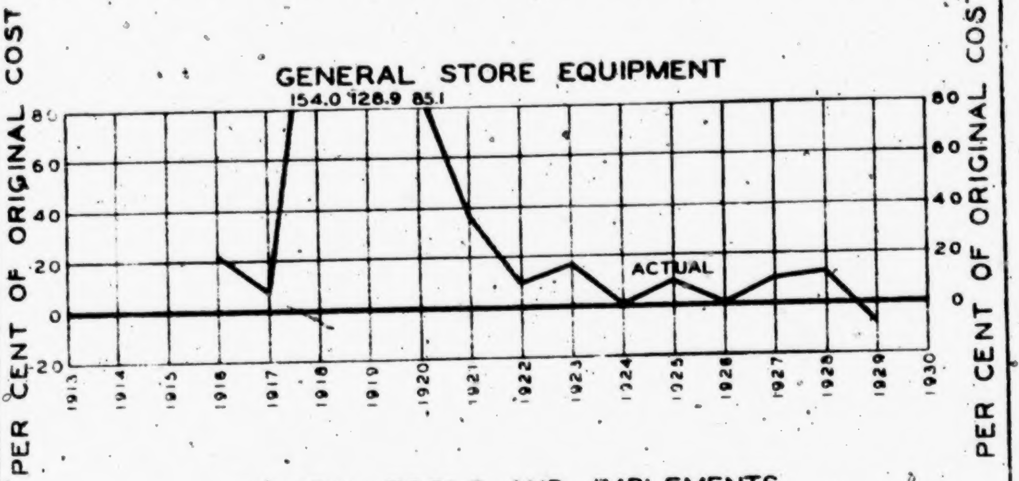
ILLINOIS BELL TELEPHONE COMPANY

CHICAGO AREA
GENERAL EQUIPMENT
SALVAGE

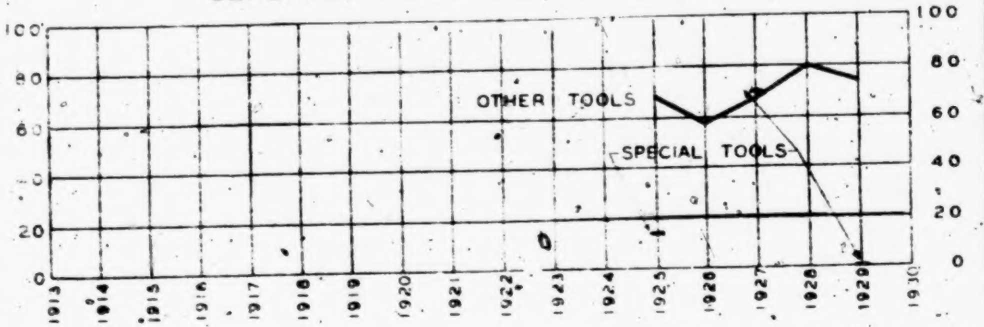
OFFICE FURNITURE AND FIXTURES



GENERAL STORE EQUIPMENT



GENERAL TOOLS AND IMPLEMENTS



[fol. 3150] Illinois Bell Telephone Company

Estimated Life of Right-of-Way, Chicago Area

	Right-of-Way Investment 9-30-29	Ave. Life of Physical Property	No. of Lives Per Permit	Life of Right-of-Way	Annual Requirements
	A	B	C	D−B×C	E−A÷D
Exchange Right-of-Way:					
Exchange Pole Lines....	54,011	23	3.0	69	783
Exchange Aerial Cable...	38,092	16	1.5	24	1,587
Exchange U. G. Conduit..	27,223	30	1.0	30	907
Main Subscribers' Cable..	775	25	1.5	38	20
Subsidiary Cable.......	30,821	15	1.5	23	1,340
House Cable...........	214,350	22	1.5	33	6,495
Trunk Cable...........	565	27	1.0	27	21
Exchange Submarine Cable...........	51	20	1.0	20	3
Total...........	365,888	...	...	33	11,156
				Use 35 Years	
Toll Right-of-Way:					
Toll Pole Lines........	732	20	2.5	50	15

[fol. 3151] Illinois Bell Telephone Company, Chicago Area

January 1, 1930—Depreciation Study Life and Salvage

Volume 2

The charts and tables contained in this pamphlet show the life and salvage experience of those accounts which were not included in the former pamphlet and which represent an extremely small part of the total depreciation expense.

In view of their similarity to the charts and tables described in the other pamphlet, they will undoubtedly be found self-explanatory.

[fol. 3152] Exhibit A-130

Plans for Employees' Pensions, Disability Benefits, and Death Benefits

Western Electric Company, Incorporated

American Telephone and Telegraph Company and Associated and Allied Companies

(Effective January 1, 1913, with Amendments to and Including January 1, 1930)

[fol. 3153] Plan for Employees' Pensions, Disability Benefits, and Death Benefits

(Effective January 1, 1913, with Amendments to and Including January 1, 1930)

This pamphlet describes the "Plan for Employees' Pensions, Disability Benefits and Death Benefits" of the Western Electric Company, Incorporated, and the word "Company" in the text of the plan on pages 5 to 20 means said Company.

A similar Plan has been adopted by the American Telephone and Telegraph Company and its Associated Operating Companies (in the United States), and agreements for interchange of benefit obligations have been made as provided in Section 9 of the Plan.

Summary of Benefits

A brief summary of benefits to which employees may become entitled is given below. The complete plan is contained in sections headed "Plan for Employees' Pensions, Disability Benefits and Death Benefits," pages 5 to 20.

1. Pensions:

1) Retirement on pension is provided for employees coming under the classes listed below. Employees in Class A may be retired on a service pension either at their own request or at the discretion of the Committee. Employees in Classes B and C may be retired on a service pension only at the discretion of the Committee and with the approval of the President or Vice-President.

a) Service Pensions:

Class A—Employees whose age is 60 years or more (females 55 or more) and whose term of employment has been 20 years or more.

Class B—Employees whose age is 55 to 59 years (females 50 to 54) and whose term of employment has been 25 years or more.

Class C—Employees whose age is less than 55 years (females less than 50) and whose term of employment has been 30 years or more.

b) Disability Pensions:

Class D—Any employee whose term of employment has been 15 years or more and who becomes totally disabled by reason of sickness may, at the discretion of the Committee and with the approval of the President or Vice-President, be granted a disability pension, which shall con- [fol. 3154] tinue for such period only as the Committee may decide.

2) The amount of the annual pension in any of the above cases is 1% of the average annual pay for 10 years, multiplied by the number of years in the employee's term of employment.

Example: An employee whose term of employment at time of retirement has been thirty years and whose average pay for ten years has been $1,500 a year, will receive an annual pension equal to 30% of $1,500, or $450, payable in monthly amounts of $37.50.

Note.—The minimum pension will be $30 a month, but this is not to apply to disability pensions granted to employees of less than 20 years' service or to pensions granted to "part time" employees.

2. Accident Disability Benefits:

Total Disability—Full pay 13 weeks, half pay for remainder of disability. Maximum benefits to be $20 a week after six years of benefit payments.

Partial Disability—For first 13 weeks, 100% of loss in earning capacity; for remainder of disability, 50% of loss in earning capacity. Period of payments not to exceed six years in all.

3. Sickness Disability Benefits:

These benefits begin on the eighth calendar day of absence on account of sickness and are as follows:

a) For employees whose term of employment has been 10 years or more—Full pay 13 weeks; half pay 39 weeks.

b) For employees whose term of employment has been 5 years or more, but less than 10 years—Full pay 13 weeks; half pay 13 weeks.

c) For employees whose term of employment has been 2 years or more but less than 5 years—Full pay 4 weeks; half pay 9 weeks.

Note.—Benefits are not provided in the Plan for sickness of employees of less than two years' service. In such cases such practice as the Company may establish from time to time will be followed.

4. Death Benefits:

If the employee leaves a wife who was living with him at the time of his death, a husband who was physically or mentally incapable of self-support and who was actually supported by the employee at the time of her death, or a child under the age of 18 years, or over that age if physically or mentally incapable of self-support) who was actually supported by the employee at the time of death, the amount to be awarded is the maximum specified in the schedules.

[fol. 3155] In all other cases the amounts to be awarded (within the limits indicated by the schedules) and the persons to whom the payments shall be made are subject to the discretion of the Benefit Committee.

Beneficiaries are limited to a wife (or husband), dependent children and other dependent relatives of the deceased.

The Death Benefit schedules are:

a) Accident Death Benefits:

Regardless of the employee's term of employment an Accident Death Benefit not to exceed the amount specified below may be paid in case of death by accident arising out of and in the course of employment:

Three years' pay, not to exceed $5,000; provided, however, that if a greater amount could have been paid under the Sickness Death Benefit schedule below had the employee died from sickness rather than from accident, the maximum of $5,000 is increased to the amount of the Sickness Death Benefit.

In addition to the Accident Death Benefit the necessary expenses of burial, not to exceed $250, will be paid.

b) Sickness Death Benefits:

If the deceased employee had a term of employment of two years or more, a Sickness Death Benefit not to exceed the maximum shown below may be paid:

Employee's term of employment	Maximum sickness death benefit
2 but less than 3 years	4 months' wages
3 " " " 4 "	5 " "
4 " " " 5 "	6 " "
5 " " " 6 "	7 " "
6 " " " 7 "	8 " "
7 " " " 8 "	9 " "
8 " " " 9 "	10 " "
9 " " " 10 "	11 " "
10 years or more	12 " "

The minimum Sickness Death Benefit shall be $250.

Payments in Case of Death of Pensioners:

In the discretion of the Committee payments may be made to the wife (or husband), dependent children or other dependent relatives of the deceased. The maximum amount of such payments shall not exceed the amount which could have been paid under the Sickness Death Benefit schedule if the pensioner had died on his last day of active service.

Manner of Payment:

The payments described above will be made in monthly amounts, unless otherwise specified by the Committee, and will cease upon the death of the beneficiary.

[fol. 3156]

Applications for Benefits

Applications for benefits shall follow the approved instructions of the Company. In default of such instructions applicants should promptly communicate with the Secretary of the Employees' Benefit Committee, to whom should also be addressed other communications with reference to the Plant.

Retirement Age

By action of the Directors of the Company a rule has been adopted which requires that every officer or other employee becoming 65 years of age shall retire at the end of the month in which that age is reached. Provision is made, however, that by specific action of the Directors the operation of this rule may be delayed from year to year with respect to any employee who is performing such services for the Company that continuation in active employment is deemed for the best interests of the service. Pensions will be voted to those persons retired by the operation of this rule who are eligible to pensions under the Plan at the date of retirement.

Employees' Record of Service

Each employee on entering the service of the Company will be given a copy of this pamphlet and, at that time or at such later time as is the practice of the Company, will be required to furnish for the files of the Committee, on a form supplied for that purpose, information regarding his previous service.

Leave of Absence, Lay-off, and Transfers

Attention is called to the provisions in regard to absences from the service contained in Paragraphs 5, 6 and 7 of Section 8 of the Plan. In order that all employees may be treated fairly, the Company has established routines which must be observed if the continuity of the employee's service is to be preserved in case of transfer from one Company to another and in case of any absence from the service without pay. Failure on the part of the employee to inform himself of these routines and to observe them may result in loss of credit for previous service. Employees may obtain information regarding the routines from their immediate supervisors or from the Secretary of the Employees' Benefit Committee.

[fol. 3157] Plan for Employees' Pensions, Disability Benefits, and Death Benefits

(Effective January 1, 1913, with Amendments to and Including January 1, 1930)

Section 1. Undertaking:

The Company undertakes, in accordance with these Regulations, to provide for the payment of definite amounts to its employees when they are disabled by accident or sickness or when they are retired from service, or, in the event of death, to their dependent relatives.

Section 2. Definitions:

1) In these Regulations the word "Plan" shall mean the Plan for Employees' Pensions, Disability Benefits and Death Benefits, as set forth in these Regulations.

2) The word "Company" shall mean the Company or Companies named on the first page or its or their successors.

3) The words "President" and "Board of Directors" or "Board" shall mean the President and Board of Directors respectively of the Company.

4) The word "Committee" shall mean the persons appointed by the Board to administer the Plan.

5) The word "Employees" shall mean those persons who receive a regular and stated compensation from the Company other than a pension or retainer.

6) The expression "term of employment" shall mean period of continuous employment in the service of the Company, or of the Company, the American Telephone and Telegraph Company, the Associated and Allied Companies with which agreements have been made by the American Company for interchange of benefit obligations and any Bell Company predecessor of any of said companies, or in the service of any one or more of said companies. Service in companies subsidiary to, allied with or predecessors of any one of the aforementioned companies will be considered, in determining "term of employment," as service in such aforementioned company, in all cases authorized by appropriate action on the part of such company and approved by the Employees' Benefit Committee of the American Company.

Section 3. Committee:

1) There shall be a Committee of five (5) appointed by the Board to serve during its pleasure, which Committee shall be called the Employees' Benefit Committee. This Committee shall be charged with the administration of the Plan.

[fol. 3158] 2) The Committee shall have the specific powers elsewhere herein granted to it and shall have such other powers as may be necessary in order to enable it to administer the Plan.

3) It shall determine conclusively for all parties all questions arising in the administration of the Plan.

4) It shall be empowered to authorize disbursements according to these Regulations.

5) It ~~shall adopt~~ such By-Laws and rules of procedure as it may find necessary, with the approval of the President and subject to the provisions of Section 9 of these Regulations.

6) It shall be empowered to employ a Secretary and such other assistants as may be required in the administration of the Plan.

7) The expenses of the Committee in administering the Plan shall be borne by the Company.

Section 4. Pensions:

1) On and after January 1, 1913:

a) All male employees who have reached the age of sixty years and whose term of employment has been twenty or more years and all female employees who have reached the age of fifty-five years and whose term of employment has been twenty or more years may, at their own request, or at the discretion of the Committee, be retired from active service and become eligible to pensions, which pensions are designated "service pensions."

b) Any employee whose term of employment has been thirty years or more, or any male employee who has reached the age of fifty-five and whose term of employment has been twenty-five or more years, or any female employee who has reached the age of fifty years and whose term of employment has been twenty-five or more years may, at the discretion of the Committee and with the approval of the President or of a Vice-President designated by the President, be retired from active service and granted a pension, which pension is also designated a "service pension."

c) At the discretion of the Committee and with the approval of the President or of a Vice-President designated by the President, any employee who has become totally disabled as a result of sickness or of injury, other than by accidental injury arising out of and in the course of employment by the Company, and whose term of employment has been fifteen years or more, may be retired from active service and granted a pension, which pension is designated a "disability pension." If a disability pension is granted it shall be for such period as the Committee may determine, and if at any time during such period the employee recovers sufficiently to resume active service, the pension may be discontinued by action of the Committee. If the employee re-enters the service of the Company at the time such pension is discontinued he shall thereupon be eligible to benefits under these Regulations, and the pe- [fol. 3159] riod of absence on pension shall be considered as a leave of absence and not as a break in the continuity of the employee's service.

2) The annual pension allowance for each employee retired with a pension on account of age, length of service or disability shall be as follows:

For each year of his term of employment, one per centum (1%) of the average annual pay during the ten years next preceding retirement, provided, however, that the Committee may, at its discretion, base such pension upon the average annual pay of the ten consecutive years of service during which the retired employee was paid the highest rate of wages. The minimum pension shall be Thirty Dollars ($30) per month, provided, however, that at the discretion of the Committee the pension allowance may be less than Thirty Dollars ($30) per month, but not less than the allowance computed as aforesaid, in the case of pensions granted under Paragraph 1 (c) of this Section to employees of less than twenty years' service, and in cases in which, in the opinion of the Committee, the days or hours constituting the employee's normal service have not been adequate to constitute full time service, during the number of years required to establish eligibility to pension in the class under which the employee is retired.

3) Pensions shall be payable monthly or at such shorter periods as the Committee may determine in each case.

4) Service pensions granted to employees shall continue from date of retirement to death of pensioner, but disability pensions shall continue for such period only as the Committee may determine in each case from time to time.

Further payments, if any, which may be made to the wife or dependent relatives of a deceased pensioner are as provided and limited by Section 7 of these Regulations.

5) Regular employment under a salary with this Company or with any company with which arrangements for interchange of benefit obligations, as described in Section 9 of these Regulations, have been made directly or indirectly, shall suspend the right of a retired employee to pension payments during the period he continues in such employment.

6) The Committee shall furnish quarterly to the President a list of all employees qualified to receive pensions.

7) The Committee shall notify all employees of their eligibility to retire on service pensions at their own request, as they become eligible.

8) In order to meet its obligations to pay service pensions (defined in Paragraph 1 (a) and 1 (b) of this Section) granted to take effect under the Plan, the Company, effective January 1, 1927, established a trust fund to be known as the "Pension Fund." It undertakes to maintain this [fol. 3160] Fund by periodic charges to operating expenses and payments to the Fund in such amounts that when an employee becomes eligible under the Plan to receive a service pension, there will be available in the Pension Fund an amount sufficient to provide for him a pension in the amount stated in the Plan. It has also made adequate provision in the Pension Fund for the payment of all service pensions granted under the Plan to take effect prior to January 1, 1927. The Pension Fund shall be held by a trustee or trustees for service pension purposes only and shall be disbursed as directed by the Company from time to time. In case of termination of the Plan, or in case of revocation or other termination of said trust, the Company undertakes to preserve the integrity of the Pension Fund as a trust fund to be applied solely to service pension purposes in the manner which in its judgment will enable it to meet its service pension obligations most effectively. All service pensions granted to take effect under the Plan shall be paid from the Pension Fund.

9) All Disability Pensions (defined in Paragraph 1 (c) of this Section) and all payments to dependent relatives of

deceased pensioners (defined in Paragraph 4 of this Section) shall be a charge to the operating expense accounts of the Company when and as paid.

Section 5. Accident Disability Benefits:

1) All employees of the Company on January 1, 1913, and thereafter shall be qualified to receive payments under these Regulations on account of physical disability to work by reason of accidental injury (not including the accidental injuries specified in Paragraphs 14 and 15 of Section 8 of these Regulations) arising out of and in the course of employment by the Company. Such payments are hereinafter referred to as Accident Disability Benefits.

2) Accident Disability Benefits shall be as follows:

a) Total Disability.—Full pay for any period of total disability during the first thirteen weeks of disability, and half pay for any period of total disability after the first thirteen weeks of disability, provided, however, that after the expiration of six years of disability payments, the benefits shall not exceed Twenty Dollars ($20) a week.

b) Partial Disability.—For any period of partial disability during the first thirteen weeks of disability, 100% of the difference between full pay at time of injury and wages which, in the judgment of the Committee, the employee is capable of earning; for any period of partial disability after the first thirteen weeks of disability, 50% of difference between full pay at time of injury and wages which, in the judgment of the Committee, employee is capable of earning, provided, however, that no payments for partial disability shall be made after the expiration of six years of disability payments.

"Full pay" and "half pay" for the purposes of this paragraph shall be based on the number of hours per week [fol. 3161] commonly regarded as constituting full time service, not including overtime, and shall be computed at the employee's rate of pay at the time the disability began.

3) If after a period of total disability the disability becomes partial or after a period of partial disability the disability becomes total, the amount of the benefits shall be changed accordingly.

4) In ascertaining the period during which Accident Disability Benefits shall be paid, the period of disability shall be taken as commencing upon the first day on which, because of disability, a full day's wages is not paid. Successive periods of disability from accident shall be counted together if from the same accident and separately if from different accidents.

5) Accidental injuries shall be considered as arising out of and in the course of employment only where the injury has resulted solely from accident during and in direct connection with the performance of duties to which the employee is assigned in the service of the Company, or which he is directed to perform by proper authority, or in voluntarily protecting the Company's *property or interests*, and there must be a clear and well-established history of the cause and circumstances of injury accidentally inflicted, and they must be sufficient to produce the alleged injury, and there must be satisfactory evidence that such injury renders the employee unable to perform his duty in the service of the Company.

6) In case of accidental injury to any employee arising out of and in the course of employment by the Company, resulting in permanent loss of a bodily member or loss of its use, special benefits, in lieu of all other benefits on account of such injury, may be awarded by the Committee, provided, however, that such special benefits shall not exceed the payment hereinafter authorized to be paid in case of death from accidental injury, except by specific authority from the Board.

7) In case of accidental injury to any employee arising out of and in the course of employment by the Company, the necessary expenses for "first aid" shall, on approval of the Committee, be paid by the Company. In addition the Company will pay for necessary surgical treatment, but no employee shall have authority to contract any bills against the Company or the Committee and nothing herein shall be held to mean or imply that the Company will be responsible for such bills as an employee may contract or his surgeon may charge. Bills for surgical treatment must be itemized before they will be considered by the Committee. The decision as to whether in any case surgical treatment was necessary and as to what constitutes surgical treatment

shall rest with the Committee. At its discretion the Committee may authorize payment of other expenses necessary for the proper care and treatment of the employee, during such period as the Committee may determine.

8) All Accident Disability Benefits and related expenses [fol. 3162] shall be a charge to the operating expense accounts of the Company when and as paid.

Section 6. Sickness Disability Benefits:

1) All employees of the Company on January 1, 1913, or thereafter shall, after a term of employment of 2 years, be qualified to receive payments under these Regulations on account of physical disability to work by reason of sickness. Such payments are hereinafter referred to as Sickness Disability Benefits. Such payments shall terminate when disability ceases and shall in no case extend beyond the periods hereinafter mentioned. For the purposes of these Regulations; sickness shall include injury other than accidental injury arising out of and in the course of employment by the Company. This Section is subject, however, to the exceptions stated in Paragraph 14 of Section 8 of these Regulations.

2) Sickness Disability Benefits shall be as follows:

a) If term of employment has been 10 years or more—full pay 13 weeks; half pay 39 weeks.

b) If term of employment has been 5 to 10 years—full pay 13 weeks; half pay 13 weeks.

c) If term of employment has been 2 to 5 years—full pay 4 weeks; half pay 9 weeks.

"Full pay" and "half pay" for the purposes of this paragraph shall be based on the number of hours per week constituting the employee's normal service under his contract of hiring, not including overtime, and shall be computed at the employee's rate of pay at the time the disability began, provided, however, that the benefits shall at no time exceed the pay which the employee would receive, based on his rate of pay and the general schedule of hours per week constituting a full week's service at the time the disability began.

3) Sickness disability benefits shall begin on the eighth calendar day of absence on account of disability, provided, however, that if an employee has received sickness disability benefits for any period and is again absent on account of sickness within two weeks after the termination of such period, any benefits on account of such further sickness shall begin on the first day of absence instead of on the eighth day.

4) Successive periods of sickness disability shall be counted together as one period in computing the period during which the employee shall be entitled to benefits, except that any sickness occurring after an employee has been continuously engaged in the performance of duty for thirteen weeks shall be *considered as a new sickness and not* as part of any disability which preceded such period of thirteen weeks.

5) Employees shall not be entitled to receive sickness disability benefits for time for which any wages are paid them by the Company.

[fol. 3163] 6) All Sickness Disability Benefits shall be a charge to the operating expense accounts of the Company when and as paid.

Section 7. Death Benefits:

1) In the event of the death of any employee, occurring on or after January 1, 1930 and resulting from accidental ferred to as death by accident, there may be paid (and, in the course of employment by the Company, hereinafter referred to as death by accident, there may be paid (and, in the circumstances described in sub-paragraph 4 (a) of this Section, there shall be paid) an Accident Death Benefit, the maximum amount of which shall be three years' wages, as defined in Paragraph 8 of this Section, but which shall not exceed Five Thousand Dollars ($5,000); provided, however, that if the maximum Sickness Death Benefit which could have been paid under the provisions of the next succeeding paragraphs had said employee died from sickness rather than from accidental injury, is in excess of said limit of Five Thousand Dollars ($5,000), said limit shall be increased to the amount of said maximum Sickness Death Benefit. Payment of the Accident Death Benefit, subject

to the conditions imposed in Paragraph 5 of this Section and Paragraph 29 of Section 8 and elsewhere in these Regulations, shall be made to the employee's beneficiaries as provided in Paragraph 4 of this Section. In addition to the Death Benefit the necessary expenses of the burial of the deceased employee, not exceeding Two Hundred and Fifty Dollars ($250), shall be paid.

2) In the event of the death of any employee, occurring on or after January 1, 1930 and resulting from sickness as defined in Paragraph 1 of Section 6 of these Regulations, hereinafter referred to as death by sickness, if the employee's term of employment has been two years or more there may be paid (and, in the circumstances described in sub-paragraph 4 (a) of this Section, there shall be paid) a Sickness Death Benefit which shall not be in excess of the amount specified in the following schedule:

Employee's term of employment	Maximum sickness death benefit
2 but less than 3 years	4 months' wages
3 " " " 4 "	5 " "
4 " " " 5 "	6 " "
5 " " " 6 "	7 " "
6 " " " 7 "	8 " "
7 " " " 8 "	9 " "
8 " " " 9 "	10 " "
9 " " " 10 "	11 " "
10 years or more	12 " "

The minimum Sickness Death Benefit shall be $250.

Payment of the Sickness Death Benefit, subject to the conditions imposed in Paragraph 5 of this Section and elsewhere in these Regulations, shall be made to the employee's beneficiaries, as provided in Paragraph 4 of this Section.

3) In the event of the death on or after January 1, 1930 of any person who at the time of death is receiving a pen- [fol. 3164] sion under these Regulations, the Committee in its discretion may authorize further payments to the wife (or husband) or dependent relatives of the pensioner the total amount of which shall not exceed the maximum amount which could have been paid as a Sickness Death Benefit.

under the terms of Paragraph 2 of this Section if the pensioner had died on his last day of active service.

4) The persons who may be beneficiaries of the Accident or Sickness Death Benefit or of payments on the death of a pensioner hereunder are limited to the wife (or husband) and the dependent children and other dependent relatives of the deceased. The amount to be paid in each case and the beneficiary or beneficiaries who shall receive the same, and the share which each shall receive, shall be determined by the Committee, subject to the following provisions and to the provisions of Paragraph 5 of this Section.

a) In the event of death by accident the maximum Accident Death Benefit specified in Paragraph 1 of this Section, or in the event of death by sickness, the maximum Sickness Death Benefit specified in Paragraph 2 of this Section, shall be paid, subject to the provisions of sub-paragraph (c) of this Paragraph 4, to the wife of the deceased employee if living with him at the time of his death; to the husband of the deceased employee, if physically or mentally incapable of self-support and actually supported in whole or in part by the deceased employee at the time of her death; or to the child or children of the deceased employee under the age of eighteen years (or over that age if physically or mentally incapable of self-support) who were actually supported in whole or in part by the deceased employee at the time of death. If the employee leaves both wife (or husband) and a child or children, as here described, the Committee, in its discretion, may pay the Death Benefit to or for any one or more of such possible beneficiaries in such portions as it may determine.

b) If there be no beneficiary of the deceased employee as described above in sub-paragraph (a), then, in the event of death by accident, an Accident Death Benefit in an amount not to exceed the amount specified in Paragraph 1 of this Section, or in the event of death by sickness, a Sickness Death Benefit in an amount not to exceed the amount specified in Paragraph 2 of this Section, may be paid to any other person or persons who may be beneficiaries, as defined in the first sentence of this Paragraph 4, and be receiving or entitled to receive support from the deceased employee at the time of his death.

Subject to the limitations expressed in this sub-paragraph (b) the Committee shall have full authority to determine to whom payments shall be made and the amount of the payments, taking into consideration the degree of dependency and such other facts as it may deem pertinent.

c) If the employee shall have made written request and shown good cause therefore, the Committee may pay all or a portion of the Death Benefit to a person or persons in- [fol. 3165] cluded in sub-paragraph (b) above, and reduce, by the amount thus paid, the amount which is payable to the persons included in sub-paragraph (a), provided in the opinion of the Committee good cause for such action still exists at the time of the employee's death.

d) Upon the death of an employee or pensioner, if there be no beneficiary qualified to receive an award under the provisions of this Section, or if the amount of such award authorized by the Committee be less than the maximum specified in Paragraph 1, 2 or 3 of this Section, as the case may be, the Committee may authorize such payments as may be required to defray the necessary expenses incident to the death of the employee or pensioner and the disability immediately preceding, together with, in the case of death by sickness, the necessary expenses, not exceeding Two Hundred and Fifty Dollars ($250.), of his burial, provided, however, that the aggregate amount so paid shall not exceed the maximum benefits specified in said paragraphs.

5) Unless otherwise specified by the Committee the Death Benefit at the death of an employee or the amount awarded at the death of a pensioner shall be paid in monthly sums equal to the monthly wages or monthly pension paid at the time of his death. In the discretion of the Committee, however, such sums and times of payments may be varied.

In the event of the death of a beneficiary who is receiving or is entitled to receive installment payments under this Section, such payments shall cease. In the discretion of the Committee, however, and within the amounts which the deceased beneficiary would have received if he had survived, the Committee may authorize payments in connection with the disability, death and burial of the deceased beneficiary under conditions similar to those described in sub-paragraph (d) of Paragraph 4 of this Section, or may authorize payments to some other person eligible as a beneficiary of the deceased employee or pensioner under the provisions of Paragraph 4.

Upon the death of an employee or pensioner, the Committee, without awaiting determination of the beneficiary or beneficiaries, if any, to whom the award will be made, may pay an amount equivalent to the wages, disability benefits or pension which the deceased was receiving, to the end of the payroll period in which the death occurs, and such payment may be made to the wife of the deceased, or to some other suitable person selected by the Committee. Such payment, if made, shall constitute a part of the award. In addition the Committee, in its discretion, may authorize payment, before the final settlement, of a part of the award not exceeding Two Hundred and Fifty Dollars ($250), to meet urgent expenses incident to the death and the immediately preceding disability of the deceased. If any of the persons to whom an award may be payable cannot be found or cannot be conveniently communicated with or are incompetent to authorize use of any part thereof for the burial of the deceased and the payment of necessary expenses in- [fol. 3166] cident to his death and preceding disability, the Committee in its discretion may make such payments, as a part of the award, as in its judgment may be reasonable for the proper burial of the deceased and the payment of necessary expenses incident to his death and disability immediately preceding.

6) A Death Benefit shall not be payable in the case of any person who dies after he has ceased to be an employee of the Company, unless such person became disabled by reason of accident or sickness while an employee and continued disabled, until death, to such a degree as to be unable to engage in any gainful occupation. In such cases a Death Benefit may be paid, in the discretion of the Committ, provided it has been furnished from time to time with such proof of continued disability as it may have required and provided it has been permitted to make, or have made by a physician, such examinations of the disabled person as it has deemed necessary in order to ascertain his condition. The amount of the Death Benefit, if any, shall not exceed the amount which could have been paid if the disabled person had died on the day he ceased to be an employee of the Company.

7) All claims for Death Benefits, to be valid, must be made in writing within one year of the death on which the claim is based. In case notice in writing of the existence of a wife ~~(or husband)~~, child or other dependent relative of a deceased employee shall not be served on the Committee within one year after such employee's death, it shall be conclusive, in so far as these Regulations are concerned. that there are no such persons in existence.

8) "Wages" for the purposes of this Section shall mean wages for full time service (not including overtime), computed at the employee's rate of pay at the date of death, provided, however, that if the employee normally serves the Company on less than a full time basis, benefits in case of death by sickness shall be computed on the basis of the time constituting the employee's normal service under his contract of hiring.

9) All amounts payable under this Section shall be a charge to the operating expense accounts of the Company when and as paid.

Section 8. General Provisions:

1) Neither the action of the Board of Directors in establishing this plan for employees' pensions, disability benefits and death benefits, nor any action hereafter taken by the Board or the Committee shall be construed as giving to any officer, agent or employee a right to be retained in the service of the Company or any right or claim to any pension or other benefit or allowance after discharge from the service of the Company, unless the right to such pension or benefit has accrued prior to such discharge. No employee shall have any right to a service pension by reason of service less than that specified in Paragraphs 1 (a) and 1 (b) of Section 4 of these Regulations, nor shall any employee have any right in the Pension Fund unless a service pension authorized by the Committee under the Plan has [fol. 3167] not been paid. No employee shall have any right against the Company to any benefit under the Plan except for the amount to which the employee has theretofore become entitled and which the Committee has directed be paid to that employee under the Plan.

2) Assignment of pensions or other benefits under these Regulations will not be permitted or recognized.

3) Pensions or disability benefits may be suspended or terminated, in the discretion of the Committee and the President, with the approval of the Board of Directors, in cases of conduct prejudicial to the interests of the Company.

4) In all questions relating to the term of employment and rates of pay of employees, the decision of the Committee, based upon these Regulations and upon the records of the Company, shall be final, provided, however, that as to service prior to June 1, 1914, the Committee shall have discretion to base its decisions upon the general intent of these Regulations and upon such information as may be obtainable from any source. As to service on or after June 1, 1914, this discretion shall not exist and the Committee shall base its decisions strictly upon the facts in the case as shown by the records of the Company.

5) Any absence from the service without pay, other than absence during a period of disability benefits, or leave of absence or temporary lay-off as defined in Paragraphs 6 and 7 of this Section, shall be considered as a break in the continuity of service unless the Board of Directors specifically authorizes the Committee to consider such absence as a leave of absence, and if any person is re-employed after such a break in the continuity of his service, his term of employment shall be reckoned from the date of such re-employment.

6) Leave of absence shall not constitute a break in the continuity of service, but in the case of any such absence prior to June 1, 1914, which was of more than six months' duration, the period of absence shall be deducted in computing term of employment. On and after June 1, 1914, leave of absence, for the purposes of these Regulations, shall mean leave formally granted in conformity with the rules of the Company, as adopted from time to time, and, except in the case of leave granted by the Board of Directors as provided in Paragraph 5 of this Section and leave on account of continued disability following the expiration of a period of disability benefits, such leave must be obtained at or before the time the absence begins. Leave of absence for any period in excess of one month shall not be effective unless approved in writing by the Committee, and in any case in which such approval is given, the Com-

mittee shall indicate whether or not the period of absence is to be deducted in computing term of employment and whether during the absence the employee shall be eligible to benefits under these Regulations. Absence following the expiration of a period of disability benefits shall be considered as a break in the continuity of service unless the [fol. 3168] employee is granted a leave of absence, provided, however, that in its discretion, the Committee may consider any such absence as a leave of absence, if satisfactory evidence is furnished that the disability was continuous during the entire period of absence.

7) Temporary lay-off on account of reduction of force shall not be considered as a break in the continuity of service, but when the period of absence from such cause exceeds six months in any twelve consecutive months, the entire period of the absence shall be deducted in computing term of employment, and all subsequent periods of lay-off shall be so deducted until the employee shall have been continuously engaged in the performance of duty for a period of twelve consecutive months. On and after June 1, 1914, a period of lay-off shall not be considered as temporary unless the employee is re-employed within such period as the rules of the Company, as adopted from time to time, may require, not in any case exceeding two years. If the employee is not thus re-employed, the continuity of his service shall be deemed to have been broken. No benefits under these Regulations shall be payable during a period of lay-off.

8) Every employee who shall be absent from duty on account of sickness or injury must at once notify his immediate superior, and the employee shall not be entitled to benefits for time previous to such notice, unless delay shall be shown to have been unavoidable and satisfactory evidence of disability is furnished.

9) All claims for disability benefits, to be valid, must be made within sixty days from the date of accident or from the first day of absence on account of sickness.

10) Disabled employees wishing to leave home shall obtain from the Committee written approval of absence for a specified time and furnish it satisfactory proof of disability while absent, otherwise no benefits shall be paid for such period of absence.

11) It shall be the duty of disabled employees, when their condition and location do not prevent, to call on the Committee or the Committee's representative at such times as the Committee may require.

12) A disabled employee shall not be entitled to benefits if he declines to permit the Committee to make or have made by a physician, from time to time, such examination as the Committee may deem necessary in order to ascertain the employee's condition, or if he fails to give proper information respecting his condition, or if he prevents the necessary examination by absenting himself from home without arranging with the Committee, or giving satisfactory reasons for not doing so and furnishing the necessary evidence, or if he fails to comply with notice to meet the Committee, at its offices or elsewhere, when his condition and location permit of his doing so.

13) Disabled employees must take proper care of themselves and have proper treatment. Benefits will be discon- [fol. 3169] tinued to employees who refuse or neglect to follow the recommendations of the Committee.

14) In case of disability or death directly or indirectly due to intoxication or to the use of alcoholic liquors as a beverage or to the use of stimulants or narcotics or to unlawful acts or immoralities or to fighting, unless in self-defense against unprovoked assaults, or to other encounter, such as wrestling or scuffling, or to injury received in any brawl or in any liquor saloon, gambling house or other disreputable resort, or to the wilful intent of the employee to injure himself or another, or to venereal disease, no right to benefits under these Regulations shall exist except at the discretion of the Committee.

15) Death or disability resulting from infection of a cut, abrasion, scratch, puncture, or other wound not immediately disabling and not reported at the time of the occurrence causing the injury, or from sunstroke or frostbite, shall not be classed as due to accident, except at the discretion of the Committee.

16) Payments under the Plan shall be made in conformity with the financial methods of the Company and on orders of or bills prepared by the Committee or such other persons as may be designated by the Committee.

17) Disability benefits will ordinarily be paid at the same intervals of time as would govern the payment of wages to the employee if he were in the performance of duty, but at the discretion of the Committee benefits on account of continued disability may be paid monthly and on account of disability for short periods when the amounts are ascertained.

18) In case of any grave injury or chronic sickness, if the employee requests that a lump sum be paid in full settlement of all claims under the Plan and against the Company on account of such injury or sickness, the Committee may, in its discretion, make full and final settlement with the employee by commuting the benefit payments into a single lump sum payment, which payment shall be the present value computed on a fair basis, of the benefits to which the employee would become entitled during such period as his disability may reasonably be expected to continue.

19) Disability benefits or pensions accrued but unpaid at the death of an employee or pensioner may, in the discretion of the Committee, be paid to the wife of the deceased person or to some other suitable person selected by the Committee, for use in payment of expenses incident to the death of the deceased person or the disability immediately preceding, or for the benefit of any one or more persons who were dependent upon him at the time of his death.

20) Benefits payable to an employee unable to execute a proper receipt may be paid to a relative or other proper person, selected by the Committee, to use for the benefit of the employee and the receipt of such person shall be a sufficient discharge.

[fol. 3170] 21) After an employee has received the maximum Sickness Disability Benefits herein provided for an employee of his term of employment, he shall not be eligible to further benefits on account of sickness until he shall have performed his duties as an employee of the Company for a continuous period of thirteen weeks. If an employee who has received Sickness Disability Benefits shall subsequently become disabled by reason of accidental injury arising out of and in the course of employment by the Company, or if an employee who has received Accident Disability Benefits shall subsequently become disabled by reason of sickness, the period during which benefits are payable on account of such subsequent disability shall not be affected by the preceding period of disability.

22) Benefits shall not be payable for both accident and sickness at the same time to the same person.

23) Granting a pension to an employee or retiring him from employment without a pension during a period of disability benefits shall not terminate or decrease his disability benefits. Granting a pension during a period of disability benefits, however, shall not entitle the employee to any payments on account of the pension, while the disability benefits continue, unless the amount of the pension is greater than the amount of the disability benefits, in which case only such amount shall be paid on account of the pension as may be necessary to make the total amount paid to such employee on account of the disability benefits and the pension equal to the amount he would have received if the pension alone had been paid.

24) "Rate of Pay" as used in these Regulations shall mean the time rate at which the employee is entitled to receive payment for services under the contract of hiring, provided, however, that if the employee's compensation is ordinarily computed on other than a time basis, the employee's average compensation (not including compensation for overtime) for so much of the preceding three months as he has been in the service of the Company, may be taken as determining the rate of pay, provided the rate thus computed is not less than the employee's time rate.

25) If an employee of this Company is an employee also of one or more other companies which have adopted plans for employees' pensions, disability benefits and death benefits, similar to that herein described and which have entered into arrangements with this Company, directly or indirectly, for an interchange of the benefit obligations to which the companies may be subject under such plans, any pension, disability benefits or death benefit to which such employee or his beneficiaries may become entitled under the plans shall be computed on the basis of the total combined pay which the employee is receiving from all such companies and, except in the case of injury or death due to

accident arising out of and in the course of employment by any of such companies, shall be pro-rated among the companies on the basis of the pay the employee was receiving from each company, and this Company shall only pay its share thus determined. Any maximum or minimum amounts f[illegible] these Regulations for pensions, dis- [fol. 317] [illegible]efits or death benefits shall apply to the total [illegible]ble by all companies and not to the portion p[illegible] Company.

26) In cas[illegible]t resulting in injury to or death of an employee wh[illegible]ntitles such employee or his beneficiaries to benefits under these Regulations, he or they may elect to accept such benefits or to prosecute such claims at law as he or they may have against the Company. If election is made to accept the benefits, such election shall be in writing and shall release the Company from all claims and demands which the employee or his beneficiaries may have against it, otherwise than under these Regulations, on account of such accident. If any persons other than the beneficiaries under these Regulations might legally assert claims against the Company on account of the death of the employee, no part of the death benefit under these Regulations shall be due or payable until there have also been delivered to the Committee good and sufficient releases of all claims, arising from or growing out of the death of the employee, which such other persons might legally assert against the Company. The Committee, in its discretion, may require that the elections and releases above described shall release any other company, connected with the accident, with which arrangements have been made, directly or indirectly, for interchange of benefit obligations, as described in Section 9 of these Regulations. The right of the employee to accident disability benefits under these Regulations shall lapse if election to accept such benefits, as above provided, is not made within sixty days after injury, or within such greater time as the Committee shall, by resolution duly entered on its records, fix for the making of such election.

27) Should claim other than under these Regulations be presented or suit brought against the Company or against any other company with which arrangements have been made, directly or indirectly, for interchange of benefit

obligations, as described in Section 9 of these Regulations, for damages on account of injury or death of an employee, nothing shall be payable under these Regulations on account of such injury or death except as provided in Paragraph 28 of this Section; provided, however, that the Committee may, in its discretion and upon such terms as it may prescribe, waive this provision if such claims be withdrawn or if such suit be discontinued.

28) In case any judgment is recovered against the Company or any settlement is made of any claim or suit on account of the injury or death of an employee, and the amount which would otherwise have been payable under these Regulations is greater than the amount paid on account of such judgment or settlement, the difference between the two amounts may, in the discretion of the Committee, be distributed to the beneficiaries who would have received benefits under these Regulations, except that no party to any such suit against the Company shall be entitled to any portion thereof.

29) In case any benefit or pension shall be payable under the laws now in force or hereafter enacted of any State or [fol. 3172] Country to any employee of the Company or his beneficiaries under such laws, the excess only, if any, of the amount prescribed in these Regulations above the amount of such benefit or pension prescribed by law shall be the benefit or pension payable under these Regulations. In those cases where because of differences in the beneficiaries, or differences in the time or methods of payment, or otherwise, whether there is such excess or not is not ascertainable by mere comparison but adjustments are necessary, the Committee in its discretion is authorized to determine whether or not in fact any such excess exists, and in case of such excess, to make the adjustments necessary to carry out in a fair and equitable manner the spirit of the provision for the payment of such excess.

30) The Committee shall publish annually to the employees a report of the operations under the Plan.

Section 9. Interchange of Benefit Obligations:

Agreement may be made by this Company with the American Telephone and Telegraph Company for an interchange with that Company and its Associated or Allied Companies, of the benefit obligations to which such Companies may be subject under plans for employees' pensions, disability benefits and death benefits similar to that herein adopted. The general provisions of such agreement will be:

a) That as long as such agreement remains in force the Plan herein adopted shall be maintained by this Company so as to conform to the Plan of the American Telephone and Telegraph Company.

b) That advance provision for the payment of service pensions shall be made by this Company in such amounts as may be necessary to provide for and fulfill all requirements of the Plan as in effect from time to time.

c) That an employee's term of employment, as hereinbefore defined, shall include employment not only in this Company and the American Telephone and Telegraph Company, but also in any other Company with which reciprocal agreements under this Plan shall have been made by the American Telephone and Telegraph Company.

d) That in case of consolidation or merger with another Company having a similar employees' benefit plan, the Pension Funds of the Companies consolidated or merged shall be combined.

Section 10. Changes in Plan:

The Committee, subject to the provisions of Section 9, with the consent of the President and subject to the approval of the Board of Directors, may from time to time make changes in the Plan set forth in these Regulations, but such changes shall not affect the rights of any employee, without his consent, to any benefit or pension to which he may have previously become entitled hereunder.

[fol. 3173] Retain this pamphlet for reference. In the event of sickness, accident or any other case requiring attention, report facts at once to your immediate supervisor.

[fol. 3174] EXHIBIT A-146

Western Electric Company, Inc.

Pension Reserve at December 31, 1931

Pension Reserves at December 31, 1930 (See Exhibit —)	$56,187,000
Interest for 12 months	2,300,000 (1)
Contribution for 12 months	3,399,000 (2)
Less Pension Payments for 12 months	197,000
Balance	61,689,000
Less Reserve released on account of low continuance rate	1,550,000 (3)
Reserve at December 31, 1931	60,139,000

Explanation of Certain Items Above

(1) Interest: On Fund beginning of year— 4.04% of $56,188,000 =	$2,270,000
One-Half year's interest on one semi-annual contribution— 2% of ½ of $3,399,000 =	34,000
	$2,304,000
Less One-Half year's interest on pension payments— 2% of $197,000 =	4,000
Balance	$2,300,000
(2) Contribution: Actual Pay Roll	$93,603,000
Add to bring to normal salary schedule basis	14,976,000
	$108,579,000
Deduct adjustment on account of low continuance rate	11,182,000
Final adjusted pay roll	$97,397,000
3.49% of $97,397,000 =	3,399,000
(3) Reserve released: Estimated reserve released in respect to prior service on account of low continuance rate	$3,100,000

Assumed one-half of $3,100,000 could be released. Part of reserve will probably be required in future in event of subsequent re-hiring.

[fol. 3175]

EXHIBIT A-147

Western Electric Company, Incorporated

Accumulation of Pension Fund, 1922-1931, with Contribution on Basis of 1931 Contribution Percentage Adjusted for Distribution by Sex and Age at Entry

	a	b	c	d	e	f	g	h
	Annual Pay Roll	1931 Contribution Percentage Adjusted for Distribution by Sex and Age at Entry	Contribution (axb)	Interest (✻)	Pension Payments	Net Additions (c+d−e)	Fund at End of Year	Computed Reserves
1922	....	....	....	....	....	....	$17,600,000	$17,600,000
1923	$82,864,000	3.48	$2,884,000	$739,000	$72,000	$3,551,000	21,151,000	
1924	91,351,000	3.48	3,179,000	885,000	75,000	3,989,000	25,140,000	25,800,000
1925	72,144,000	3.48	2,511,000	1,039,000	77,000	3,473,000	28,613,000	
1926	78,755,000	3.48	2,741,000	1,182,000	69,000	3,854,000	32,467,000	31,500,000
1927	80,709,000	3.46	2,793,000	1,338,000	86,000	4,045,000	36,512,000	
1928	88,492,000	3.46	3,062,000	1,504,000	101,000	4,465,000	40,977,000	40,600,000
1929	131,797,000	3.51	4,626,000	1,699,000	120,000	6,284,000*	47,261,000	
1930	133,603,000	3.51	4,689,000	1,953,000	147,000	6,495,000	53,756,000	56,187,000†
1931	93,603,000	3.49	3,267,000	2,201,000	197,000	5,271,000	59,027,000	60,139,000**
1923-1931	853,318,000	...	29,752,000	12,540,000	944,000	41,427,000*	....	....

✻ Interest equals 4.04% of fund at beginning of year plus 2% of half the year's contribution, minus 2% of the pension payments.

* Includes reserves transferred from another fund for a former International Western Electric Company, Incorporated employee.

† Not adjusted for reserve released due to lower continuance rate in 1931.

** Adjusted to normal salary basis and on account of lower continuance rate in 1931.

[fol. 3176]

EXHIBIT A-148

Western Electric Company, Incorporated

Accumulation of Pension Fund, 1912–1922, with Contributions on Basis of 1931 Contribution Percentage Adjusted for Distribution by Sex and Age at Entry

	a	b	c	d	e	f	g	h
	Annual Pay Roll	1931 Contribution Percentage Adjusted for Distribution by Sex and Age at Entry	Contribution (axb)	Interest (*)	Pension Payments	Net Additions (c+d−e)	Fund at End of Year	Computed Reserves
1911	....	....	....	....	....	....	$3,880,000	$3,880,000
1912	$11,470,000	3.52	$404,000	$160,000	$34,000	$530,000	4,410,000	
1913	13,927,000	3.52	490,000	183,000	35,000	638,000	5,048,000	
1914	13,147,000	3.52	463,000	208,000	38,000	633,000	5,681,000	
1915	10,930,000	3.52	385,000	232,000	44,000	573,000	6,254,000	
1916	17,228,000	3.52	606,000	258,000	40,000	824,000	7,078,000	
1917	25,022,000	3.50	876,000	294,000	36,000	1,134,000	8,212,000	
1918	27,694,000	3.48	964,000	341,000	35,000	1,270,000	9,482,000	
1919	28,202,000	3.48	981,000	392,000	45,000	1,328,000	10,810,000	
1920	43,799,000	3.48	1,524,000	451,000	51,000	1,924,000	12,734,000	
1921	56,558,000	3.48	1,968,000	533,000	63,000	2,438,000	15,172,000	
1922	63,812,000	3.48	2,221,000	634,000	67,000	2,788,000	17,960,000	17,600,000
1912–1922	311,789,000	....	10,882,000	3,686,000	488,000	14,080,000		

* Interest equals 4.04% of fund at beginning of year plus 2% of half the year's contribution, minus 2% of the pension payments.

(Here follow Exhibits 150, 151, side folios 3177, 3178.)

2914A
3177

EXHIBIT A-150

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

ALLOCATION TO CHICAGO [illegible]

PERSONNEL RELATION DEPARTMENT

YEARS 1923 - 1931

Year	Column 4 Exhibit No. 193 (1)	Allocated to "Other" by Exhibit No. 193 (2)	Deduction for "Non-License" Items (3)		Balance "Other" Allocable to License Contract (2 less 3) (4)	Allocated directly to License Contract by Exhibit No. 193 (5)	Total License Contract Associated Companies (Including Bell of Canada) and Long Lines (4 + 5) (6)	Allocated to Long Lines (7)		Balance Associated Companies (Including Bell of Canada) (6 less 7) (8)	Allocated to Chicago Area (9)	
			Per Cent of Col.(2) (a)	Amount				Per Cent of Col.(6)	Amount		Per Cent of Col. (8)	Amount
1923												
Administration	$ 56,996	$ 5,700				$ 51,296						
Personnel	131,946	13,195				118,751						
Special Training	32,435	6,487				25,948						
Total	221,377	25,382	10	$2,538	$22,844	195,995	$218,839	(b) 3.5	$ 7,659	$ 211,180	(b) 7.0	$14,783
Public Relations	80,458	0		0	0	80,458	80,458	(c) 5.8	4,667	75,791	(d) 6.6	5,002
Total	301,835	25,382		2,538	22,844	276,453	299,297	x x	12,326	286,971	x x	19,785
1924												
Administration	62,197	6,220				55,977						
Personnel	133,270	13,327				119,943						
Special Training	59,899	11,980				47,919						
Total	255,366	31,527	10	3,153	28,374	223,839	252,213	(b) 3.3	8,323	243,890	(b) 6.8	16,585
Public Relations	14,223	0		0	0	14,223	14,223	(c) 5.5	782	13,441	(d) 6.4	860
Total	269,589	31,527		3,153	28,374	238,062	266,436	x x	9,105	257,331	x x	17,445
1925												
Administration	62,263	6,226				56,037						
Personnel	156,435	15,644				140,791						
Special Training	84,332	16,866				67,466						
Total	303,030	38,736	10	3,874	34,862	264,294	299,156	(b) 3.1	9,274	289,882	(b) 6.9	20,002
Public Relations	14,719	0		0	0	14,719	14,719	(c) 5.4	795	13,914	(d) 6.3	877
Total	317,749	38,736		3,874	34,862	279,013	313,875	x x	10,069	303,796	x x	20,879
1926												
Administration	62,775	6,278				56,497						
Personnel	206,590	20,659				185,931						
Special Training	92,687	18,537				74,150						
Total	362,052	45,474	10	4,547	40,927	316,578	357,505	(b) 3.5	12,513	344,992	(b) 7.1	24,494
Public Relations	15,391	0		0	0	15,391	15,391	(c) 5.5	847	14,544	(d) 6.3	916
Total	377,443	45,474		4,547	40,927	331,969	372,896	x x	13,360	359,536	x x	25,410
1927												
Administration	62,547	6,255				56,292						
Personnel	203,982	20,398				183,584						
Special Training	74,268	14,854				59,414						
Total	340,797	41,507	10	4,151	37,356	299,290	336,646	(b) 4.1	13,802	322,844	(b) 7.0	22,599
Public Relations	15,431	0		0	0	15,431	15,431	(c) 5.9	910	14,521	(d) 6.3	915
Total	356,228	41,507		4,151	37,356	314,721	352,077	x x	14,712	337,365	x x	23,514
1928												
Administration	64,007	6,400				57,607						
Personnel	202,197	20,220				181,977						
Special Training	77,560	15,512				62,048						
Total	343,764	42,132	10	4,213	37,919	301,632	339,551	(b) 4.6	15,619	323,932	(b) 7.3	23,647
Public Relations	15,838	0		0	0	15,838	15,838	(c) 6.6	1,045	14,793	(d) 6.3	932
Total	359,602	42,132		4,213	37,919	317,470	355,389	x x	16,664	338,725	x x	24,579
1929												
Administration	67,918	6,792				61,126						
Personnel	231,143	23,114				208,029						
Special Training	89,109	17,822				71,287						
Total	388,170	47,728	10	4,773	42,955	340,442	383,397	(b) 5.8	22,237	361,160	(b) 6.8	24,559
Public Relations	17,263	0		0	0	17,263	17,263	(c) 7.4	1,277	15,986	(d) 6.3	1,007
Total	405,433	47,728		4,773	42,955	357,705	400,660	x x	23,514	377,146	x x	25,566
1930												
Administration	82,652	8,267				74,385						

1930												
Administration	82,652	8,267				74,385						
Personnel	200,227	20,022				180,205						
Special Training	91,531	18,307				73,224						
Total	374,410	46,596	10	4,660	41,936	327,814	369,750	(b)	6.2	22,925	346,825	(b) 6.8	23,584
Public Relations	17,258	0		0	0	17,258	17,258	(c)	7.9	1,363	15,895	(d) 6.2	985
Total	391,668	46,596		4,660	41,936	345,072	387,008	x x		24,288	362,720	x x	24,569
1931												
Administration	68,884	6,888				61,996						
Personnel	145,474	14,548				130,926						
Special Training	77,112	15,422				61,690						
Total	291,470	36,858	10	3,686	33,172	254,612	287,784	(b)	5.4	15,540	272,244	(b) 6.5	17,696
Public Relations	16,462	0		0	0	16,462	16,462	(c)	7.7	1,268	15,194	(d) 6.1	927
Total	307,932	36,858		3,686	33,172	271,074	304,246	x x		16,808	287,438	x x	18,623

(a) Allocated to "Non-License" on the basis of employees of American Tel. & Tel. Co., -General Department, Western Electric, Bell Laboratories, Electrical Research Products and Graybar engaged in "Non-Bell" activities.

(b) Allocated to Long Lines and Chicago Area on the basis of Employees.

(c) Allocated to Long Lines on the basis of a composite of Plant Investment, Employees, Expenses and Total Telephone Revenues.

(d) Allocated to Chicago Area on the basis of a composite of Stations, Plant Investment, Employees, Expenses and Total Telephone Revenues.

EXHIBIT A-151

ALLOCATION TO CHICAGO AREA OF EXPENSES INCURRED IN RENDERING LICENSE CONTRACT SERVICES

BENEFIT AND MEDICAL DEPARTMENT

YEARS 1923 - 1931

Year	Column 4 Exhibit No. 193 (1)	Allocated to "Other" by Exhibit No. 193 (2)	Deduction for "Non-License" Items (3)		Balance "Other" Allocable to License Contract (2 less 3) (4)	Allocated directly to License Contract by Exhibit No. 193 (5)	Total License Contract Associated Companies (including Bell of Canada) and Long Lines (6)	Allocated to Long Lines (7)		Balance Associated Companies (including Bell of Canada) (6 less 7) (8)	Allocated to Chicago Area (9)	
			Per Cent of Col. (2)	Amount				Per Cent of Col. (6)	Amount		Per Cent of Col. (8)	Amount
1923												
General Staff	$43,587	$ 8,717	(a) 10	$ 872	7,845	$34,870	$ 42,715	(d) 3.5	$1,495	$ 41,220	(d) 7.0	$2,885
Benefit	24,424											
Medical	(b) 55,802											
Benefit Payments, etc.	172,894											
Total	253,120	x x	(c) 5	12,656	x x	x x	240,464	(e) 5.8	13,947	226,517	(f) 6.6	14,950
Total	296,707	x x		13,528	x x	x x	283,179		15,442	267,737		17,835
1924												
General Staff	57,587	11,517	(a) 10	1,152	10,365	46,070	56,435	(d) 3.3	1,862	54,573	(d) 6.8	3,711
Benefit	24,726											
Medical	30,938											
Benefit Payments, etc.	132,625											
Total	188,289	x x	(c) 5	9,414	x x	x x	178,875	(e) 5.5	9,838	169,037	(f) 6.4	10,818
Total	245,876	x x		10,566	x x	x x	235,310		11,700	223,610		14,529
1925												
General Staff	102,089	20,418	(a) 10	2,042	18,376	81,671	100,047	(d) 3.1	3,101	96,946	(d) 6.9	6,689
Benefit	15,040											
Medical	37,711											
Benefit Payments, etc.	130,934											
Total	183,685	x x	(c) 5	9,184	x x	x x	174,501	(e) 5.4	9,423	165,078	(f) 6.3	10,400
Total	285,774	x x		11,226	x x	x x	274,548		12,524	262,024		17,089
1926												
General Staff	150,392	30,078	(a) 10	3,008	27,070	120,314	147,384	(d) 3.5	5,158	142,226	(d) 7.1	10,098
Benefit	17,329											
Medical	34,664											
Benefit Payments, etc.	128,132											
Total	180,125	x x	(c) 5	9,006	x x	x x	171,119	(e) 5.5	9,412	161,707	(f) 6.3	10,188
Total	330,517	x x		12,014	x x	x x	318,503		14,570	303,933		20,286
1927												
General Staff	166,368	33,274	(a) 10	3,327	29,947	133,094	163,041	(d) 4.1	6,685	156,356	(d) 7.0	10,945
Benefit	20,579											
Medical	38,857											
Benefit Payments, etc.	356,383											
Total	415,819	x x	(c) 5	20,791	x x	x x	395,028	(e) 5.9	23,307	371,721	(f) 6.3	23,418
Total	582,187	x x		24,118	x x	x x	558,069		29,992	528,077		34,363
1928												
General Staff	180,559	36,112	(a) 10	3,611	32,501	144,447	176,948	(d) 4.6	8,140	168,808	(d) 7.3	12,323
Benefit	20,913											
Medical	38,209											
Benefit Payments, etc.	325,135											
Total	384,257	x x	(c) 5	19,213	x x	x x	365,044	(e) 6.6	24,093	340,951	(f) 6.3	21,480
Total	564,816	x x		22,824	x x	x x	541,992		32,233	509,759		33,803
1929												
General Staff	198,536	39,707	(a) 10	3,971	35,736	158,829	194,565	(d) 5.8	11,285	183,280	(d) 6.8	12,463
Benefit	20,405											
Medical	37,722											
Benefit Payments, etc.	394,210											
Total	452,337	x x	(c) 5	22,617	x x	x x	429,720	(e) 7.4	31,799	397,921	(f) 6.3	25,069
Total	650,873	x x		26,588	x x	x x	624,285		43,084	581,201		37,532
1930												
General Staff	229,200	45,840	(a) 10	4,584	41,256	183,360	224,616	(d) 6.2	13,926	210,690	(d) 6.8	14,327
Benefit	21,290											
Medical	37,547											
Benefit Payments, etc.	420,568											
Total	479,405	x x	(c) 5	23,970	x x	x x	455,435	(e) 7.9	35,979	419,456	(f) 6.2	26,006

Total	462,337	x x	(c) 5	22,617	x x	x x	[illegible]	(e) [illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	650,873	x x		26,588	x x	x x	624,285		43,084	581,201		37,532
1930												
General Staff	229,200	45,840	(a) 10	4,584	41,256	183,360	224,616	(d) 6.2	13,926	210,690	(d) 6.8	14,327
Benefit	21,290											
Medical	37,647											
Benefit Payments, etc.	420,568											
Total	479,405	x x	(c) 5	23,970	x x	x x	455,435	(e) 7.9	35,979	419,456	(f) 6.2	26,006
Total	708,605	x x		28,554	x x	x x	680,051		49,905	630,146		40,333
193												
General Staff	231,293	46,259	(a) 10	4,626	41,633	185,034	226,667	(d) 5.4	12,240	214,427	(d) 6.5	13,938
Benefit	19,928											
Medical	34,355											
Benefit Payments, etc.	487,187											
Total	541,470	x x	(c) 5	27,074	x x	x x	514,396	(e) 7.7	39,608	474,788	(f) 6.1	28,962
Total	772,763	x x		31,700	x x	x x	741,063		51,848	689,215		42,900

(a) Per cent of column 2 - Allocated to "Non-license" on the basis of Employees of American Telephone and Telegraph Company - General Department, Western Electric, Bell Laboratories, Electrical Research Products and Graybar, engaged in Non-Bell activities.

(b) Excludes $4,200 specifically allocated.

(c) Per cent of column (1) allocated on the basis of the overall "Non-license" activities of the General Department. The balance, allocable to License Contract, is shown in column (6).

Allocated to:

(d) Long Lines and Chicago Area on the basis of Employees.

(e) Long Lines on the basis of a composite of Plant Investment, Employees, Expenses and Total Telephone Revenues.

(f) Chicago Area on the basis of a composite of Stations, Plant Investment, Employees, Expenses and Total Telephone Revenues.

[fol. 3179]

Exhibit A-152

American Telephone and Telegraph Company
Allocation to Chicago Area of Expenses Incurred in Rendering License Contract Services
Personnel Department
Summary, Years 1923-1931

	Column 4 Exhibit No. 193	Allocated to Chicago Area
1923		
Personnel Relations	$301,835	$19,785
Benefit and Medical	296,707	17,835
Total	598,542	37,620
1924		
Personnel Relations	269,589	17,445
Benefit and Medical	245,876	14,529
Total	515,465	31,974
1925		
Personnel Relations	317,749	20,879
Benefit and Medical	285,774	17,089
Total	603,523	37,968
1926		
Personnel Relations	377,443	25,410
Benefit and Medical	330,517	20,286
Total	707,960	45,696
1927		
Personnel Relations	356,228	23,514
Benefit and Medical	582,187	34,363
Total	938,415	57,877
1928		
Personnel Relations	359,602	24,579
Benefit and Medical	564,816	33,803
Total	924,418	58,382
1929		
Personnel Relations	405,433	25,566
Benefit and Medical	650,873	37,532
Total	1,056,306	63,098
1930		
Personnel Relations	391,668	24,569
Benefit and Medical	708,605	40,333
Total	1,100,273	64,902
1931		
Personnel Relations	397,932	18,623
Benefit and Medical	772,763	42,900
Total	1,080,695	61,523

[fol. 3180]

Exhibit A-153

American Telephone and Telegraph Company

Allocation to Chicago Area of Expenses Incurred in Rendering License Contract Services

Public Relations, Years 1923–1931

	Regular Employees Dec. 31 (1)	Total Expenses (2)	Allocated to Long Lines (3)		Balance Associated Companies (Including Bell of Can.) (4)	Allocated to Chicago Area (5)	
			Per Cent of Col. (2)	Amount		Per Cent of Col. (4)	Amount
Representation of Companies before Federal Government and National Trade Organizations*:							
1923	.	$0	..	$0	$0	...	$0
1924	3	21,878	5.5	1,203	20,675	6.4	1,323
1925	3	27,751	5.4	1,499	26,252	6.3	1,654
1926	3	27,365	5.5	1,505	25,860	6.3	1,629
1927	3	27,471	5.9	1,621	25,850	6.3	1,629
1928	3	27,878	6.6	1,840	26,038	6.3	1,640
1929	3	27,310	7.4	2,021	25,289	6.3	1,593
1930	4	27,494	7.9	2,172	25,322	6.2	1,570
1931	(a)	15,226	7.7	1,172	14,054	6.1	857
Development of telephone use in different types of business †:							
1923	.	......	..	.....	......	...	.....
1924	.	......	..	.....	......	...	.....
1925	.	......	..	.....	......	...	.....
1926	.	......	..	.....	......	...	.....
1927	.	......	..	.....	......	...	.....
1928	.	......	..	.....	......	...	.....
1929	2	8,431	8.7	733	7,698	6.5	500
1930	2	21,973	8.6	1,890	20,083	6.3	1,265
1931	2	23,213	8.4	1,950	21,263	6.2	1,318

Total Public Relations:

1923		0		0	0		0
1924	3	21,878	..	1,203	20,675	...	1,323
1925	3	27,751	..	1,499	26,252	...	1,654
1926	3	27,365	..	1,505	25,860	...	1,629
1927	3	27,471	..	1,621	25,850	...	1,629
1928	3	27,878	..	1,840	26,038	...	1,640
1929	5	35,741	..	2,754	32,987	...	2,093
1930	6	49,467	..	4,062	45,405	...	2,835
1931	2	38,439	..	3,122	35,317	...	2,175

*Allocated:

To the Long Lines on the basis of a composite ratio of Plant, Employees, Expenses, and Total Telephone Revenues.
To the Chicago Area on the composite of the above factors plus Stations.

†Allocated to Long Lines and to Chicago Area on the basis of Total Telephone Revenues.

(a) Transferred to Legal Department in 1931.

[fol. 3181]

Exhibit A-154

American Telephone and Telegraph Company

Allocation to Chicago Area of Expenses Incurred in Rendering License Contract Services

Treasurer's Department, Years 1923-1931

	Regular Employees Dec. 31	Total Expenses	Deduction for "Non-License" Items 6% of Col. (2)	Balance Associated Companies (Including Bell of Canada) and Long Lines	Allocated to Long Lines (5)		Balance Associated Companies (Including Bell of Canada)	Allocated to Chicago Area (7)	
					Per Cent of Col. (4)*	Amount		Per Cent of Col. (6)*	Amount
	(1)	(2)	(3)	(4)			(6)		
1923	276	$954,861	$57,292	$897,569	5.8	$52,059	$845,510	6.6	$55,804
1924	259	1,258,097	75,486	1,182,611	5.5	65,044	1,117,567	6.4	71,524
1925	250	944,914	56,695	888,219	5.4	47,964	840,255	6.3	52,936
1926	260	1,381,752	82,905	1,298,847	5.5	71,437	1,227,410	6.3	77,327
1927	261	1,103,130	66,188	1,036,942	5.9	61,180	975,762	6.3	61,473
1928	266	1,648,226	98,894	1,549,332	6.6	102,256	1,447,076	6.3	91,166
1929	297	1,591,063	95,464	1,495,599	7.4	110,674	1,384,925	6.3	87,250
1930	361	2,499,674	149,980	2,349,694	7.9	185,626	2,164,068	6.2	134,172
1931	351	1,652,282	99,137	1,553,145	7.7	119,592	1,433,553	6.1	87,447

* Allocated:

To the Long Lines on the basis of a composite ratio of Plant, Employees, Expenses and Total Telephone Revenues.
To the Chicago Area on the basis of the above factors plus Stations.

[fol. 3182]

EXHIBIT A-155

American Telephone and Telegraph Company

Allocation to Chicago Area of Expenses Incurred in Rendering License Contract Services

Comptroller's Department, Years 1923–1931

	Regular Employees Dec. 31 (1)	Total Expenses (2)	Deduction for "Non-License" 5% of Col: (2) (3)	Balance Associated Companies (Including Bell of Canada) and Long Lines (4)	Allocated to Long Lines (5)		Balance Associated Companies (Including Bell of Canada) (6)	Allocated to Chicago Area (7)	
					Per Cent of Col. (4)*	Amount		Per Cent of Col. (6)†	Amount
1923:									
Bell System Methods	66	$186,980							
Chief Traveling Auditor	25	134,890							
General Books and Records	43	110,722							
Chief Statistician	91	203,055							
Chief Accountant	5	19,811							
Bell System Reports	20	76,105							
Undistributed		203,980							
Administration	4	37,030							
Total	254	$972,573	$48,629	$923,944	5.8	$53,588	$870,356	6.6	$57,443
1924:									
Bell System Methods	64	$212,296							
Chief Traveling Auditor	28	152,738							
General Books and Records	50	121,885							
Chief Statistician	100	242,402							
Chief Accountant	6	25,768							
Bell System Reports	22	77,344							
Undistributed		195,364							
Administration	3	42,940							
Total	273	$1,070,737	$53,537	$1,017,200	5.5	$55,946	$961,254	6.4	$61,520

1925:										
Bell System Methods	77	$245,128								
Chief Traveling Auditor	32	191,395								
General Books and Records	51	127,904								
Chief Statistician	99	264,086								
Chief Accountant	6	34,708								
Bell System Reports	19	78,500								
Undistributed	...	193,284								
Administration	3	41,715								
Total	287	$1,176,720	$58,836	$1,117,884	5.4	$60,366	$1,057,518	6.3	$66,624	

[*] Composite of Plant Investment, Employees, Expenses and Total Telephone Revenues.

[†] Composite of Stations, Plant Investment, Employees, Expenses and Total Telephone Revenues.

[fol. 3183]

EXHIBIT A-155—Continued

American Telephone and Telegraph Company

Allocation to Chicago Area of Expenses Incurred in Rendering License Contract Services

Comptroller's Department, Years 1923–1931

	Regular Employees Dec. 31 (1)	Total Expenses (2)	Deduction for "Non-License" 5% of Col. (2) (3)	Balance Associated Companies (Including Bell of Canada) and Long Lines (4)	Allocated to Long Lines (5)		Balance Associated Companies (Including Bell of Canada) (6)	Allocated to Chicago Area (7)	
					Per Cent of Col. (4)*	Amount		Per Cent of Col. (6)†	Amount
1926:									
Bell System Methods	86	$276,794							
Chief Traveling Auditor	33	198,688							
General Books and Records	60	142,351							
Chief Statistician	118	292,594							
Chief Accountant	6	38,474							
Bell System Reports	18	79,585							
Undistributed	...	237,557							
Administration	3	40,571							
Total	324	$1,306,614	$65,330	$1,241,284	5.5	$68,270	$1,173,014	6.3	$73,899
1927:									
Bell System Methods	87	$298,690							
Chief Traveling Auditor	33	204,764							
General Books and Records	60	158,662							
Chief Statistician	117	325,119							
Chief Accountant	6	44,778							
Bell System Reports	18	82,242							
Undistributed	...	250,257							
Administration	3	47,719							
Total	324	$1,412,231	$70,611	$1,341,620	5.9	$79,155	$1,262,465	6.3	$79,535

1928:									
Bell System Methods	81	$299,111							
Chief Traveling Auditor	35	218,979							
General Books and Records	58	168,570							
Chief Statistician	118	352,646							
Chief Accountant	7	43,749							
Bell System Reports	17	86,784							
Undistributed		260,699							
Administration	3	53,933							
Total	319	$1,484,471	$74,223	$1,410,248	6.6	$93,076	$1,317,172	6.3	$82,981

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* Composite of Plant Investment, Employees, Expenses and Total Telephone Revenues.

† Composite of Stations, Plant Investment, Employees, Expenses and Total Telephone Revenues.

[fol. 3184]

American Telephone and Telegraph Company

Allocation to Chicago Area of Expenses Incurred in Rendering License Contract Services

Comptroller's Department, Years 1923–1931

	Regular Employees Dec. 31 (1)	Total Expenses (2)	Deduction for "Non-License" 5% of Col. (2) (3)	Balance Associated Companies (Including Bell of Canada) and Long Lines (4)	Allocated to Long Lines (5)		Balance Associated Companies (Including Bell of Canada) (6)	Allocated to Chicago Area (7)	
					Per Cent of Col. (4)*	Amount		Per Cent of Col. (6)†	Amount
1929:									
Bell System Methods	90	$319,861	......	......	...	......	......	...	......
Chief Traveling Auditor	37	225,685	......	......	...	......	......	...	......
General Books and Records	64	183,427	......	......	...	......	......	...	......
Chief Statistician	123	370,798	......	......	...	......	......	...	......
Chief Accountant	7	54,167	......	......	...	......	......	...	......
Bell System Reports	17	86,754	......	......	...	......	......	...	......
Undistributed	...	275,873	......	......	...	......	......	...	......
Administration	3	50,257	......	......	...	......	......	...	......
Total	341	$1,566,822	$78,341	$1,488,481	7.4	$110,147	$1,378,334	6.3	$86,835
1930:									
Bell System Methods	94	$346,110	......	......	...	......	......	...	......
Chief Traveling Auditor	39	237,307	......	......	...	......	......	...	......
General Books and Records	76	210,666	......	......	...	......	......	...	......
Chief Statistician	120	401,090	......	......	...	......	......	...	......
Chief Accountant	7	58,843	......	......	...	......	......	...	......
Bell System Reports	16	90,930	......	......	...	......	......	...	......
Undistributed	...	306,784	......	......	...	......	......	...	......

Total	355	$1,704,662	$85.233	$1.619,429	7.9	$127.935	$1,491,494	6.2	$92,472
1931:									
Bell System Methods	90	$341,991	...	...	...	...	...	...	...
Chief Traveling Auditor	39	252,061	...	...	...	...	...	...	...
General Books and Records	78	213,155	...	...	...	...	...	...	...
Chief Statistician	115	386,727	...	...	...	...	...	...	...
Chief Accountant	7	57,218	...	...	...	...	...	...	...
Bell System Reports	16	79,246	...	...	...	...	...	...	...
Undistributed	...	305,578	...	...	...	...	...	...	...
Administration	3	56,099	...	...	...	...	...	...	...
Total	348	$1,692,075	$84.604	$1.607,471	7.7	$123,775	$1,483,696	6.1	$90,505

* Composite of Plant Investment, Employees, Expenses and Total Telephone Revenues.
† Composite of Stations, Plant Investment, Employees, Expenses and Total Telephone Revenues.

[fol. 3185]

Exhibit A-156

American Telephone and Telegraph Company

Allocation to Chicago Area of Expenses Incurred in Rendering License Contract Services

Secretary's Department, Years 1923—1931

	Regular Employees Dec. 31 (1)	Total Expenses (2)	Deduction for "Non-License" Items 5% of Col. (2) (3)	Balance Associated Companies (Including Bell of Canada) and Long Lines (4)	Allocated to Long Lines (5)		Balance Associated Companies (Including Bell of Canada) (6)	Allocated to Chicago Area (7)	
					Per Cent of Col. (4)	Amount		Per Cent of Col. (6)	Amount
				(a) $4,372	x x	$1,093	$3,279		
				(b) 51,255	5.8	2,973	48,282		
1923	11	$58,555	$2,928	$55,627	x x	$4,066	$51,561	6.6	$3,403
				(a) $4,945	x x	$1,236	$3,709		
				(b) 55,589	5.5	3,057	52,532		
1924	10	$63,720	$3,186	$60,534	x x	$4,293	$56,241	6.4	$3,599
				(a) $4,776	x x	$1,194	$3,582		
				(b) 54,949	5.4	2,967	51,982		
1925	10	$62,868	$3,143	$59,725	x x	$4,161	$55,564	6.3	$3,501
				(a) $4,973	x x	$1,243	$3,730		
				(b) 57,844	5.5	3,181	54,663		
1926	10	$66,123	$3,306	$62,817	x x	$4,424	$58,393	6.3	$3,679
				(a) $5,076	x x	$1,269	$ 3,807		
				(b) 55,376	5.9	3,267	52,109		
1927	10	$63,634	$3,182	$60,452	x x	$4,536	$55,916	6.3	$3,523

				(a) $5,397	x x	$1,323	$4,074		
				(b) 59,643	6.6	3,936	55,707		
1928	9	$68,463	$3,423	$65,040	x x	$5,259	$59,781	6.3	$3,766
				(a) $5,847	x x	$1,462	$4,385		
				(b) 60,034	7.4	4,443	55,591		
1929	10	$69,348	$3,467	$65,881	x x	$5,905	$59,976	6.3	$3,778
				(a) $6,178	x x	$1,545	$4,633		
				(b) 58,787	7.9	4,644	54,143		
1930	8	$68,384	$3,419	$64,965	x x	$6,189	$58,776	6.2	$3,644
				(a) $5,128	x x	$1,282	$3,846		
				(b) 48,398	7.7	3,727	44,671		
1931	8	$56,343	$2,817	$53,526	x x	$5,009	$48,517	6.1	$2,960

(a) Specific services.
(b) Balance allocated:
To Long Lines on the basis of a composite ratio of Plant, Employees, Expenses and Total Telephone Revenues.
To Chicago Area on the composite of the above factors plus Stations.

[fol. 3186]

Exhibit A-157

American Telephone and Telegraph Company
Allocation to Chicago Area of Epenses Incurred in Rendering License Contract Services
Sundry Items (Including Administration)

	Regular Employees Dec. 31 (1)	Total Expenses (2)	Deduction for "Non-License" Items (3)	Balance Associated Companies (Including Bell of Canada) and Long Lines (4)	Allocated to Long Lines (5)		Balance Associated Companies (Including Bell of Canada) (6)	Allocated to Chicago Area (7)	
					Per Cent of Col. (4)*	Amount		Per Cent of Col. (6)*	Amount
1923:									
Administration	26	$665,055							
Vice President Wilson	4	98,331							
Restaurant Activities	..	21,970**							
Total	30	$741,416	$125,421	$615,995	5.8	$35,728	$580,267	6.6	$38,298
1924:									
Administration	27	$536,068							
Vice President Wilson	4	182,729							
Restaurant Activities	..	42,713**							
Total	31	$376,084	$50,904	$625,180	5.5	$34,385	$590,795	6.4	$37,811
1925:									
Administration	27	$636,151							
Vice President Wilson	4	148,318							
Restaurant Activities	..	38,112**							
Total	31	$746,357	$40,263	$706,094	5.4	$38,129	$667,965	6.3	$42,082
1926:									
Administration	27	$605,663							
Vice President Wilson	3	69,328							
Vice President Guernsey	4	79,744							
Total	34	$754,735	$43,936	$710,799	5.5	$39,094	$671,705	6.3	$42,317

1927:									
Administration	32	$729,100							
Vice President Wilson	3	69,442							
Vice President Guernsey	3	78,382							
Total	38	$876,924	$50,259	$826,665	5.9	$48,773	$777,892		$49,007
1928:									
Administration	30	$649,425							
Vice President Wilson	3	64,214							
Vice President Guernsey	3	63,443							
Total	36	$777,082	$50,758	$726,324	6.6	$47,937	$678,387	6.3	$42,738
1929:									
Administration	26	$675,562							
Vice President Wilson	3	67,183							
Vice President Guernsey	3	61,182							
Total	32	$803,927	$40,196	$763,731	7.4	$56,516	$707,215	6.3	$44,555
1930:									
Administration	22	$943,172							
Vice President Wilson	2	72,394							
Total	24	$1,015,566	$289,121	$726,445	7.9	$57,389	$669,056	6.2	$41,481
1931:									
Administration	17	$681,451							
Vice President Wilson	2	73,320							
Total	19	$751,771	$85,089	$666,682	7.7	$51,335	$615,347	6.1	$37,536

* Allocated: To the Long Lines on the basis of a composite ratio of Plant, Employees, Expenses and Total Telephone Revenues. To Chicago Area on the composite of the above factors plus Stations.

** Red Figures.

[fol. 318[illegible]]

American Telephone and Telegraph Company

Department Sundry Items (Including Administration)

Deduction for "Non-license" Items, Years 1923—1931

1923—Total Expenses			$741,416		x x x
	Gentry	$18,000			
	Japan Relief	75,000	93,000		$93,000
			$648,416	5% =	32,421
					$125,421
1924—Total Expenses			$676,084		x x x
	Gentry		18,000		$18,000
			$658,084	x 5% =	32,904
					$50,904
1925—Total Expenses			$746,357		x x x
	Gentry	$1,500			
	Marble Bust Alex. G. Bell	1,600	3,100		$3,100
			$743,257	x 5% =	37,163
					$40,263
1926—Total Expenses			$754,735		x x x
	Sculpture	$5,625			
	Main Hall Marble Bust	900	6,525		$6,525
			$748,210	x 5% =	37,411
					$43,936
1927—Total Expenses			$876,924		x x x
	Sculpture		6,750		$6,750
			$870,174	x 5% =	43,509
					$50,259
1928—Total Expenses			$777,082		x x x
	Sculpture		12,530		$12,530
			$764,552	x 5% =	38,228
					$50,758
1929—Total Expenses			$803,927	x 5% =	$40,196
1930—Total Expenses			$1,015,566		x x x

Telephone Pioneers (Local)	$887			
J. H. Carty Medal	25,000			
Fund for Adv. of Science	200,000			
Emergency Employment Committee	25,000	250,887		$250,887
		$764,679	x 5% =	38,234
				$289,121
1931—Total Expenses	....	$751,771		x x x
Emergency Employment Committee	....	50,000		$50,000
		$701,771	x 5% =	35,089
				$85,089

[fol. 3188]

Exhibit A-158

American Telephone and Telegraph Company

Allocation to Chicago Area of Expenses Incurred in Rendering License Contract Services

General Service Bureau, Years 1923—1931

	Regular Employees Dec. 31 (1)	Total Expenses (2)	Deduction for "Non-License" Items 5% of Col. (2) (3)	Balance Associated Companies (Including Bell of Canada) and Long Lines (4)	Allocated to Long Lines (5)		Balance Associated Companies (Including Bell of Canada) (6)	Allocated to Chicago Area (7)	
					Per Cent of Col. (4)*	Amount		Per Cent of Col. (6)*	Amount
1923	113	$283,108	$14,155	$268,953	5.8	$15,599	$253,354	6.6	$16,721
1924	126	331,265	16,563	314,702	5.5	17,309	297,393	6.4	19,033
1925	127	363,483	18,174	345,309	5.4	18,647	326,662	6.3	20,580
1926	152	427,692	21,385	406,307	5.5	22,347	383,960	6.3	24,189
1927	165	440,925	22,046	418,879	5.9	24,714	394,165	6.3	24,832
1928	167	466,002	23,300	442,702	6.6	29,218	413,484	6.3	26,049
1929	195	508,045	25,402	482,643	7.4	35,716	446,927	6.3	28,156
1930	210	555,152	27,758	527,394	7.9	41,664	485,730	6.2	30,115
1931	203	517,808	25,890	491,918	7.7	37,878	454,040	6.1	27,696

* Allocated:

To the Long Lines on the basis of composite ratio of Plant, Employees, Expenses and Total Telephone Revenues.

To the Chicago Area on basis of composite ratio of above factors plus Stations.

[fol. 3189]

EXHIBIT A-159

American Telephone and Telegraph Company

Allocation to Chicago Area of Expense Incurred in Rendering License Contract Services

Department of Operation—C (General), Years 1923—1931

	Regular Employees Dec. 31 (1)	Total Expenses (2)	Deduction for "Non-License" Items (3)	Balance Associated Companies (Including Bell of Canada) and Long Lines (a) (4)	Allocated to Long Lines (5)		Balance Associated Companies (Including Bell of Canada) (6)	Allocated to Chicago Area (7)	
					Per Cent of Col. (4)*	Amount		Per Cent of Col. (6)*	Amount
1923	37	$241.740	$28.189	$213.551	6.9	$14.735	$198.816	6.3	$12,525
1924	37	241.069	31.281	209.788	6.6	13.846	195.942	6.1	11.952
1925	40	243.589	32.024	211.565	6.6	13.963	197.602	5.9	11.659
1926	37	271.875	31.326	240.549	6.4	15,395	225.454	5.8	13.059
1927	38	265.671	32.642	233.029	6.7	15.613	217.416	5.7	12.393
1928	36	286.718	32.468	254.250	7.5	19.069	235.181	5.8	13.640
1929	36	317.727	48.934	268.793	8.2	22.041	246.752	5.9	14.558
1930	34	341.080	63.288	277.792	8.8	24.446	253.346	5.7	14.441
1931	35	327.647	54.016	273.631	9.0	(b)39.433	234.198	5.7	(b)12.862

(a) Amounts as per statement "Estimated Costs incurred in rendering License Contract Services."
* Allocated to Long Lines and to Chicago Area on the basis of a composite ratio of Plant and Total, Telephone Revenues.
(b) Includes special adjustment.

[fol. 3190]

Exhibit A-160

American Telephone and Telegraph Company

Allocation to Chicago Area of Expenses Incurred in Rendering License Contract Services

Legal Department, Years 1923—1931

	Regular Employees Dec. 31 (1)	Total Expenses (2)	Deduction for "Non-License" Items (3)	Balance Associated Companies (Including Bell of Canada) and Long Lines (4)	Allocated to Long Lines (5)		Balance Associated Companies (Including Bell of Canada) (6)	Allocated to Chicago Area (7)	
					Per Cent of Col. (4)*	Amount		Per Cent of Col. (6)*	Amount
1923	69	$759,191	$95,079	$664,112	7.7	$51,137	$612,975	7.0	$42,908
1924	70	746,667	84,567	662,100	7.1	47,009	615,091	6.8	41,826
1925	67	780,265	112,100	668,165	7.2	48,108	620,057	6.5	40,304
1926	65	750,600	90,865	659,735	7.1	46,841	612,894	6.3	38,612
1927	65	796,734	76,415	720,319	7.2	51,863	668,456	6.2	41,444
1928	69	1,029,330	93,015	936,315	8.1	75,842	860,473	6.2	53,349
1929	68	692,727	101,222	591,505	8.7	51,461	540,044	6.5	35,103
1930	66	967,031	105,767	861,264	8.6	74,069	787,195	6.3	49,593
1931	67	915,625	98,483	817,142	8.4	68,640	748,502	6.2	46,407

* Apportioned to Long Lines and to Chicago Area on the Basis of Total Telephone Revenues.

EXHIBIT A-161

American Telephone and Telegraph Company

Allocation of Taxes to Chicago Area, Years 1923—1931

	Total (1)	Allocated to A. T. & T. Co., "Non-License" (2)	Balance Allocable to Associated Companies (Including Bell of Canada) and Long Lines (3)	Allocated to Long Lines (4)		Allocated to Associated Companies (Including Bell of Canada) (5)	Allocated to Chicago Area (6)	
				Per Cent of Col. (3)	Amount		Per Ce[illegible] of Col. (5)	Amount
1923:								
Instrument—Illinois Bell	$58,913	....	$58,913	....	....	$58,913	70.7*	$41,651
Other	101,591	....	101,591	....	....	101,591	....	....
Massachusetts Franchise	39,509	....	39,509	....	....	39,509	....	....
New York Excise	84,503	$65,335	958,056	5.8#	$55,567	902,489	6.6#	59,564
New York Franchise	308,024							
Federal Capital Stock	604,736							
Stamp and Miscellaneous	26,128							
Federal Income	1,774,164	....	1,774,164	5.8#	102,902	1,671,262	6.6#	110,303
Total	2,997,568	65,335	2,932,233					
Less amount excluded from statement of "Estimated Costs, etc."	14,911	14,911	....					
Balance	$2,982,657	$50,424	$2,932,233		$158,469	$2,773,764		$211,518
1924:								
Instrument—Illinois Bell	$74,685	....	$74,685	....	....	$74,685	70.7*	$52,802
Other	110,874	....	110,874	....	....	110,874	....	....
Massachusetts Franchise	538,041	....	538,041	....	....	538,041	....	....

* Instrument Taxes—Illinois Bell allocated to Chicago Area on the basis of the ratio of instruments in the Chicago Area to the total instruments in the possession of the Illinois Bell.

New York Excise, New York Franchise, Federal Capital Stock, Stamp and Miscellaneous and Federal Income Taxes allocated:
To the Long Lines on the basis of a composite ratio of Plant, Employees, Expenses and Total Telephone Revenues.
To the Chicago Area on the composite of the above factors plus stations.

EXHIBIT A-161

American Telephone and Telegraph Company

Allocation of Taxes to Chicago Area, Years 1923—1931

	Total (1)	Allocated to A. T. & T. Co., "Non-License" (2)	Balance Allocable to Associated Companies (Including Bell of Canada) and Long Lines (3)	Allocated to Long Lines (4)		Allocated to Associated Companies (Including Bell of Canada) (5)	Allocated to Chicago Area (6)	
				Per Cent of Col. (3)	Amount		Per Cent of Col. (5)	Amount
New York Excise	91,806	62,102	1,069,219	5.5*	58,807	1,010,412	6.4*	64,666
New York Franchise	315,298							
Federal Capital Stock	692,493							
Stamp and Miscellaneous	31,724							
Federal Income	1,688,607	......	1,688,607	5.5*	92,873	1,595,734	6.4*	102,127
Total	3,543,528	62,102	3,481,426					
Less amount excluded from statement of "Estimated Costs, etc."	5,827	5,827	....					
Balance	$3,537,701	$56,275	$3,481,426	....	$151,680	$3,329,746	....	$219,595
1925:								
Instrument—Illinois Bell	$87,569	......	$87,569	....	....	$87,569	70.6*	$61,824
Other	121,264	......	121,264	....	....	121,264	....	....
Massachusetts Franchise	549,929	......	549,929	....	....	549,929	....	....
New York Excise	99,681	69,455	1,258,780	5.4	67,974	1,190,806	6.3*	75,021
New York Franchise	387,953							
Federal Capital Stock	812,483							
Stamp and Miscellaneous	28,118							
Federal Income	1,871,865	......	1,871,865	5.4*	101,018	1,770,784	6.3*	111,559
Total	3,958,862	69,455	3,889,407					

Less amount excluded from statement of "Estimated Costs, etc."	3,203	3,203	....					
Balance	$3,955,659	$66,252	$3,889,407	....	$169,055	$3,720,352	....	$248,404

[fol. 3192]

1926:								
Instrument—Illinois Bell	$2,187	....	$2,187	....	....	$2,187	70.4*	$1,540
Other	14,643	....	14,643	....	....	14,643	....	....
Massachusetts Franchise	547,433	....	547,433	....	....	547,433	....	....
New York Excise	114,034	50,456	924,948	5.5#	50,872	874,076	6.3#	55,067
New York Franchise	387,254							
Federal Capital Stock	417,690							
Stamp and Miscellaneous	26,426							
Federal Income	1,870,902	....	1,870,902	5.5#	102,900	1,768,002	6.3#	111,384
Total	3,410,569	50,456	3,360,113					
Less amount excluded from statement of "Estimated Costs, etc."	1,774	1,774	....					
Balance	$3,408,795	$48,682	$3,360,113	....	$153,772	$3,206,341	....	$167,991
1927:								
Instrument—Illinois Bell	$85	....	$85	....	....	$85	70.5*	$60
Other	17,257	....	17,257	....	....	17,257	....	....
Massachusetts Franchise	560,330	....	560,330	....	....	560,330	....	....
New York Excise	141,788	36,606	674,468	5.9#	39,794	634,674	6.3#	39,984
New York Franchise	463,167							
Federal Capital Stock	96,000							
Stamp and Miscellaneous	10,119							
Federal Income	2,193,547	141,115	2,052,432	5.9#	121,093	1,931,339	6.3#	121,674
Total	3,482,293	177,721	3,304,572					

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*Instrument Taxes—Illinois Bell allocated to Chicago Area on the basis of the ratio of instruments in the Chicago Area to the total instruments in the possession of the Illinois Bell.

#New York Excise, New York Franchise, Federal Capital Stock, Stamp and Misscellaneous and Federal Income Taxes allocated:
To the Long Lines on the basis of a composite ratio of Plant, Employees, Expenses and Total Telephone Revenues.
To the Chicago Area on the composite of the above factors plus stations.

EXHIBIT A-161

American Telephone and Telegraph Company

Allocation of Taxes to Chicago Area, Years 1923—1931

	Total (1)	Allocated to A. T. & T. Co., "Non-License" (2)	Balance Allocable to Associated Companies (Including Bell of Canada) and Long Lines (3)	Allocated to Long Lines (4)		Allocated to Associated Companies (Including Bell of Canada) (5)	Allocated to Chicago Area (6)	
				Per Cent of Col. (3)	Amount		Per Cent of Col. (5)	Amount
Less amount excluded from statement of "Estimated Costs, etc."	142,223	142,223	....					
Balance	$3,340,070	$35,498	$3,304,572	....	$160,887	$3,143,685	....	$161,718
1928:								
Massachusetts Franchise	$600,407	....	$600,407	....	....	$600,407	....	....
New York Excise	130,552							
New York Franchise	463,551	29,551	555,033	6.6%	36,632	518,401	6.3%	$32,659
Federal Capital Stock	20,129							
Stamp and Miscellaneous	10,610							
Federal Income	487,220	....	487,220	6.6%	32,157	455,063	6.3%	28,669
Total	1,672,211	29,551	1,642,660					
Less amount excluded from statement of "Estimated Costs, etc."	339	339	....					
Balance	$1,671,872	$29,212	$1,642,660	....	$68,789	$1,573,871	....	$61,328

[fol: 3193]

	Total (1)	(2)	(3)	Per Cent of Col. (3)	Amount	(5)	Per Cent of Col. (5)	Amount
1929:								
Massachusetts Franchise	$556,143	....	$556,143	....	....	$556,143	....	....
New York Excise	132,436							
New York Franchise	473,252	$31,193	581,062	7.4%	42,999	538,063	6.3%	$33,898
Stamp and Miscellaneous	6,567							

Federal Income	149,685**	....	149,685**	7.4#	11,077**	138,608**	6.3#	8,732**
Total	1,018,713	31,193	987,520					
Less amount excluded from statement of "Estimated Costs, etc."	611	611	....	....				
Balance	$1,018,102	130,582	$987,520	....	$31,922	$955,598	....	$25,166
1930:								
Massachusetts Franchise	566,257	....	$566,257	....	....	$566,257	$....	$......
New York Excise	154,174							
New York Franchise	496,402	37,129	613,712	7.9#	48,483	565,229	6.2#	35,044
Stamp and Miscellaneous	265							
Federal Income	223,372**	....	223,372**	7.9#	17,646**	205,726**	6.2#	12,755**
Total	993,726	37,129	956,597					
Less amount excluded from statement of "Estimated Costs, etc."	4,828	4,828	....					
Balance	$988,898	$32,301	$956,597	....	$30,837	$925,760	....	$22,289
1931:								
Massachusetts Franchise	$582,807	....	$582,807	....	....	$582,807	....	$.......
New York Excise	175,458							
New York Franchise	653,485	42,117	786,987	7.7#	60,598	726,389	6.1#	44,310
Stamp and Miscellaneous	161							
Federal Income	126,146	....	126,146	7.7#	9,713	116,433	6.1#	7,102
Total	1,538,057	42,117	1,495,940					
Less amount excluded from statement of "Estimated Costs, etc."	697	697	....					
Balance	$1,537,360	$41,420	$1,495,940	....	$70,311	$1,425,629	....	$51,412

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*Instrument Taxes—Illinois Bell allocated to Chicago Area on the basis of the ratio of instruments in the Chicago Area to the total instruments in the possession of the Illinois Bell.

#New York Excise, New York Franchise, Federal Capital Stock, Stamp and Misscellaneous and Federal Income Taxes allocated:
To the Long Lines on the basis of a composite ratio of Plant, Employees, Expenses and Total Telephone Revenues.
To the Chicago Area on the composite of the above factors plus stations.

**Red figures.

[fol. 3194]

Exhibit A–162

American Telephone and Telegraph Company

Number of Telephone Instruments (Receivers and Transmitters) Charged Associated Companies, Long Lines and Chicago Area, Years 1923–1927

	Associated Companies and Long Lines (1)	Long Lines (2)		Associated Companies (3)	Chicago Area (4)		Illinois Bell Tel. Co. (5)	Chicago Area (6)	
		Number	% of Col. 1		Number (Actual)	% of Col. 3		Number	% Col. (6) of Col. (5)
As of June 30th:									
1923	21,838,882	13,449	.06	21,825,433	1,429,812	6.6	2,023,667	1,429,812	70.7
1924	23,985,777	14,261	.06	23,971,516	1,561,400	6.5	2,209,425	1,561,400	70.7
1925	25,819,394	13,526	.05	25,805,868	1,677,704	6.5	2,375,628	1,677,704	70.6
1926	27,931,406	14,660	.05	27,916,746	1,804,726	6.5	2,563,864	1,804,726	70.4
1927	29,713,385	17,298	.06	29,696,087	1,949,568	6.6	2,766,800	1,949,568	70.5

Sources of Information

Associated Operating Companies
Long Lines
Illinois Bell Tel. Co.
} General Books

Chicago Area: M. R. 11—Chicago Area

[fol. 3195] American Telephone and Telegraph Company

Allocation to Chicago Area of Instrument Maintenance (Repairs and Depreciation) Expense, Years 1923-1927

	Total for Associated Companies and Long Lines (1)	Allocated to Long Lines (2)		Associated Companies (3)	Allocated to Chicago Area (4)	
		% of Col. 1*	Amount		% of Col. 3*	Amount
1923.....	$3,219,594	.06	$1,932	$3,217,662	6.6	$212,366
1924.....	3,719,626	.06	2,232	3,717,394	6.5	241,631
1925.....	4,261,771	.05	2,131	4,259,640	6.5	276,877
1926.....	4,953,961	.05	2,477	4,951,484	6.5	321,846
1927.....	5,217,807	.06	3,131	5,214,676	6.6	344,169
Depreciation Included Above (7%)						
1923.....	$2,133,172	.06	$1,280	$2,131,892	6.6	$140,705
1924.....	2,390,753	.06	1,434	2,389,319	6.5	155,306
1925.....	2,648,034	.05	1,324	2,646,710	6.5	172,036
1926.....	2,920,151	.05	1,460	2,918,691	6.5	189,715
1927.....	3,150,992	.06	1,891	3,149,101	6.6	207,841

* Allocated to Long Lines and Chicago Area on the basis of Instruments charged June 30.

Note: Instruments sold December 31, 1927.

[fol. 3196]

EXHIBIT A–163

American Telephone and Telegraph Company

Instrument Credit, Chicago Area

	1923	1924	1925	1926	1927
1. Average Current Cost	$2,366,891	$2,699,950	$2,939,714	$3,054,103	$3,046,359
2. Actual Depreciation (8% of Item 1)	189,351	215,996	235,177	244,328	243,709
3. Current Cost less 8% Depreciation (Item 1 less Item 2)	2,177,540	2,483,954	2,704,537	2,809,775	2,802,650
4. Depreciation Expense—7% of Current Cost (Item 1)	165,682	188,997	205,780	213,787	213,245
5. Return on Current Cost less 8% Depreciation (8% of Item 3)	174,203	198,716	216,363	224,782	224,212
6. Total, Items 4 and 5	339,885	387,713	422,143	438,569	437,457
7. Margin for Additional Instruments (6% of Item 6)	20,393	23,263	25,329	26,314	26,247
8. Instrument Repairs	71,661	86,325	104,841	132,131	136,328
9. Total, Items 6, 7 and 8	431,939	497,301	552,313	597,014	600,032

[fol. 3197] **EXHIBIT A-164**

American Telephone and Telegraph Company

Year 1923

Average Cost of Funds Used in Business

	Average Amount for Year	Dividends, Interest and Amortization Charges	Average Rate Paid, Per Cent
Capital Stock	$719,964,600.00	$63,274,388.10	8.79
Capital Stock Premiums	52,290,661.47	0	
Total	772,255,261.47	63,274,388.10	8.19
Surplus Unappropriated and Appropriated	110,176,041.50	0	
Total	882,431,302.97	63,274,388.10	7.17
Capital Stock Installments	19,431,657.60	1,444,818.88	7.44
Funded Debt	220,755,867.61	12,565,490.66	5.69
Loans from Associated Companies	13,121,234.70	752,339.56	5.73
Total	$1,135,740,062.88	$78,037,037.20	6.87

[fol. 3198] American Telephone and Telegraph Company

Year 1924

Average Cost of Funds Used in Business

	Average Amount for Year	Dividends, Interest and Amortization Charges	Average Rate Paid, Per Cent
Capital Stock	$805,145,900.00	$70,918,227.27	8.81
Capital Stock Premiums	53,324,737.39	0	
Total	858,470,637.39	70,918,227.27	8.26
Surplus Unappropriated and Appropriated	122,127,554.82	0	
Total	980,598,192.21	70,918,227.27	7.23
Capital Stock Installments	20,945,567.32	1,214,805.33	5.80
Funded Debt	261,296,556.84	14,648,567.22	5.61
Loans from Associated Companies	29,350,239.54	1,669,891.42	5.69
Total	$1,292,190,555.91	$88,451,491.24	6.85

[fol. 3199] American Telephone and Telegraph Company

Year 1925

Average Cost of Funds Used in Business

	Average Amount for Year	Dividends, Interest and Amortization Charges	Average Rate Paid, Per Cent
Capital Stock	$911,181,400.00	$81,044,425.93	8.89
Capital Stock Premiums	54,387,652.56	0	
Total	965,569,052.56	81,044,425.93	8.39

	Average Amount for Year	Dividends, Interest and Amortization Charges	Average Rate Paid, Per Cent
Surplus Unappropriated and Appropriated	133,007,894.94	0	
Total	1,098,576,947.50	81,044,425.93	7.38
Capital Stock Installments	26,063,889.06	1,796,636.88	6.89
Funded Debt	357,960,608.61	20,086,703.31	5.61
Loans from Associated Companies	15,632,045.95	872,038.96	5.58
Total	$1,498,233,491.12	$103,799,805.08	6.93

[fol. 3200] American Telephone and Telegraph Company

Year 1926

Average Cost of Funds Used in Business

	Average Amount for Year	Dividends, Interest and Amortization Charges	Average Rate Paid, Per Cent
Capital Stock	$979,026,200.00	$86,496,345.50	8.83
Capital Stock Premiums	55,541,177.20	0	
Total	1,034,567,377.20	86,496,345.50	8.36
Surplus Unappropriated and Appropriated	163,123,359.98	0	
Total	1,197,690,737.18	86,496,345.50	7.22
Capital Stock Installments	38,227,418.65	2,510,565.75	6.57
Funded Debt	360,153,241.89	20,167,929.09	5.60
Loans from Associated Companies	7,057,854.30	380,849.28	5.40
Total	$1,603,129,252.02	$109,555,689.62	6.83

[fol. 3201] American Telephone and Telegraph Company

Year 1927

Average Cost of Funds Used in Business

	Average Amount for Year	Dividends, Interest and Amortization Charges	Average Rate Paid, Per Cent
Capital Stock	$1,093,242,000.00	$97,379,934.00	8.91
Capital Stock Premiums	58,818,404.81	0	
Total	1,152,060,404.81	97,379,934.00	8.45
Surplus Unappropriated and Appropriated	199,229,820.85	0	
Total	1,351,290,225.66	97,379,934.00	7.21
Capital Stock Installments	36,193,644.77	2,503,986.53	6.92
Funded Debt	358,438,455.78	19,970,018.58	5.57
Loans from Associated Companies	5,324,906.63	313,104.51	5.88
Notes Payable to Pension Fund Trustees	3,468.18	190.75	5.50
Total	$1,751,250,701.02	$120,167,234.37	6.86

[fol. 3202] American Telephone and Telegraph Company

Year 1928

Average Cost of Funds Used in Business

	Average Amount for Year	Dividends, Interest and Amortization Charges	Average Rate Paid, Per Cent
Capital Stock	$1,182,374,500.00	$103,821,439.95	8.78
Capital Stock Premiums	64,125,716.80	0	
Total	1,246,500,216.80	103,821,439,95	8.33
Surplus Unappropriated and Appropriated	287,300,618.04	0	
Total	1,533,800,834.84	103,821,439.95	6.77
Capital Stock Installments	44,209,630.21	2,989,456.47	6.76
Funded Debt	356,824,082.11	19,861,971.20	5.57
Loans from Associated Companies	1,541,483.67	90,639.24	5.88
Notes Payable to Pension Fund Trustees	2,637,250.91	145,048.80	5.50
Total	$1,939,013,281.74	$126,908,555.66	6.55

[fol. 3203] American Telephone and Telegraph Company

Year 1929

Average Cost of Funds Used in Business

	Average Amount for Year	Dividends, Interest and Amortization Charges	Average Rate Paid, Per Cent
Capital Stock	$1,311,374,600.00	$116,378,771.00	8.87
Capital Stock Premiums	67,883,544.55	0	
Total	1,379,258,144.55	116,378,771.00	8.44
Surplus Unappropriated and Appropriated	330,342,670.78	0	
Total	1,709,600,815.33	116,378,771.00	6.81
Capital Stock Installments	61,546,239.25	4,294,909.67	6.98
Funded Debt	428,159,082.87	23,060,237.22	5.39
Loans from Associated Companies	2,271,897.20	132,732.00	5.84
Loans from Bankers	508,333.27	27,958.33	5.50
Notes Payable to Pension Fund Trustees	8,752,188.30	481,370.36	5.50
Total	$2,210,838,556.22	$144,375,978.58	6.53

[fol. 3204] American Telephone and Telegraph Company

Year 1930

Average Cost of Funds Used in Business

	Average Amount for Year	Dividends, Interest and Amortization Charges	Average Rate Paid Per Cent
Capital Stock	$1,585,669,600.00	$139,238,073.39	8.78
Capital Stock Premiums	207,419,729.56	0	
Total	1,793,089,329.56	139,238,073.39	7.77

	Average Amount for Year	Dividends, Interest and Amortization Charges	Average Rate Paid, Per Cent
Surplus Unappropriated and Appropriated	366,311,399.47	0	
Total	2,159,400,729.03	139,238,073.39	6.45
Capital Stock Installments	83,494,025.66	5,695,443.27	6.82
Funded Debt	481,799,323.05	25,472,548.21	5.29
Loans from Associated Companies	9,808,864.11	576,761.21	5.88
Loans from Bankers	1,828,472.20	93,611.11	5.12
Notes Payable to Pension Fund Trustees	10,293,382.73	566,136.05	5.50
Total	$2,746,624,796.78	$171,642,573.24	6.25

[fol. 3205] American Telephone and Telegraph Company

Year 1931

Average Cost of Funds Used in Business

	Average Amount for Year	Dividends, Interest and Amortization Charges	Average Rate Paid Per Cent
Capital Stock	$1,841,946,100.00	$163,588,474.25	8.88
Capital Stock Premiums	264,305,434.03	0	
Total	2,106,251,534.03	163,588,474.25	7.77
Surplus Unappropriated and Appropriated	381,265,755.21	0	
Total	2,487,517,289.24	163,588,474.25	6.58
Capital Stock Installments	96,546,858.33	6,164,026.40	6.38
Funded Debt	435,139,236.30	24,354,243.29	5.60
Loans from Associated Companies	13,028,434.86	766,071.97	5.88
Notes Payable to Pension Fund Trustees	11,949,076.18	657,199.19	5.50
Total	$3,044,180,894.91	$195,530,015.10	6.42

[fol. 3206] Exhibit A-165

American Telephone and Telegraph Company

Average Cost of Funds

	Average Rate Paid Per Cent	
Year	Including Surplus (Used in Estimate of Costs)	Excluding Surplus (Not used in Estimate of Costs)
1923	6.87	7.61
1924	6.85	7.56
1925	6.93	7.60
1926	6.83	7.61
1927	6.86	7.74
1928	6.55	7.68
1929	6.53	7.68
1930	6.25	7.21
1931	6.42	7.34

[fol. 3207]

EXHIBIT A-166

American Telephone and Telegraph Company

Allocation to Chicago Area of Cost of Carrying Investment in Telephone Instruments Used in Rendering License Contract Services, Years 1923–1927

		Total Cost (1)	Allocated to Long Lines (2)		Balance Associated Companies (3)	Allocated to Chicago Area (4)	
			% of Col. (1) *	Amount		% of Col. (3) *	Amount
1923—Total Investment	$31,329,013						
Depreciation Reserve	15,010,382						
Net	16,318,631						
Carrying Charges (6.87%)		$1,121,090	.06	$673	$1,120,417	6.6	$73,948
1924—Total Investment	$35,531,884						
Depreciation Reserve	16,611,453						
Net	18,920,431						
Carrying Charges (6.85%)		1,296,050	.06	778	1,295,272	6.5	84,193
1925—Total Investment	$39,373,616						
Depreciation Reserve	18,387,618						
Net	20,985,998						
Carrying Charges (6.93%)		1,454,330	.05	727	1,453,603	6.5	94,484
1926—Total Investment	$43,403,336						
Depreciation Reserve	20,304,999						
Net	23,098,337						
Carrying Charges (6.83%)		1,577,616	.05	789	1,576,827	6.5	102,494
1927—Total Investment	$42,848,662						
Depreciation Reserve	20,441,625						
Net	22,407,037						
Carrying Charges (6.86%)		1,537,123	.06	922	1,536,201	6.6	101,389
Total		$6,986,209	x x	$3,889	$6,982,320	x x	$456,508

* Allocated to the Long Lines and the Chicago Area on the basis of instruments charged June 30.

(Here follows Exhibit A-167, side folios 3208 and 3209.)

[fol. 3208]

EXHIBIT A-167

American Telephone and Telegraph Company

Allocation to Chicago Area of Cost (Net) of Carrying Investment in Real Estate, Office Furniture, etc., Used in Rendering License Contract Services, Years 1923–1931

		Total Cost (1)	"Non-License" (2)	Balance Associated Companies and Long Lines (3)	Allocated to Long Lines (4)		Balance Associated Companies (5)	Allocated to Chicago Area (6)	
					Per Cent of Col. (3)*	Amount		Per Cent of Col. (5)*	Amount
1923:									
Total Investment	$12,846,612								
Depreciation Reserve	340,806								
Net	12,505,806								
Carrying Charges (6.87%)	859,149								
Rent	638,374								
Net Carrying Charges		$220,775	$24,478						
Less amount excluded from statement of "Estimated Costs, etc."		14,147	14,147						
Balance		206,628	10,331	$196,297	5.8	$11,385	$184,912	6.6	$12,204
1924:									
Total Investment	$13,139,457								
Depreciation Reserve	552,502								
Net	12,586,955								
Carrying Charges (6.85%)	862,206								
Rent	751,174								
Net Carrying Charges		111,032	20,125						
Less amount excluded from statement of "Estimated Costs, etc."		15,340	15,340						
Balance		95,692	4,785	90,907	5.5	5,000	85,907	6.4	5,498

Exhibit A-167—Continued

American Telephone and Telegraph Company

Allocation to Chicago Area of Cost (Net) of Carrying Investment in Real Estate, Office Furniture, etc., Used in Rendering License Contract Services, Years 1923-1931

1925:									
Total Investment	$12,316,977								
Depreciation Reserve	717,193								
Net	11,599,784								
Carrying Charges (6.93%)	803,865								
Rent	625,548								
Net Carrying Charges		$178,317	$23,131						
Less amount excluded from statement of "Estimated Costs, etc."		14,963	14,963						
Balance		163,354	8,168	$155,186	5.4	$8,380	$146,806	6.3	$9,249
1926:									
Total Investment	$1,025,078								
Depreciation Reserve	413,538								
Net	611,540								
Carrying Charges (6.83%)	41,768								
Net Carrying Charges		41,768	4,942						
Less amount excluded from statement of "Estimated Costs, etc."		3,004	3,004						
Balance		38,764	1,938	36,826	5.5	2,025	34,801	6.3	2,192

1927:									
Total Investment	$1,114,605								
Depreciation Reserve	459,094								
Net	655,511								
Carrying Charges (6.86%)	44,968								
Net Carrying Charges		44,968	2,630						
Less amount excluded from statement of "Estimated Costs, etc."		402	402						
Balance		44,566	2,228	42,338	5.9	2,498	39,840	6.3	2,510
[fol. 3209]									
1928:									
Total Investment	$1,252,659								
Depreciation Reserve	517,083								
Net	735,576								
Carrying Charges (6.55%)	48,180								
Net Carrying Charges		$48,180	$2,796						
Less amount excluded from statement of "Estimated Costs, etc."		407	407						
Balance		47.773	2,389	$45,384	6.6	$2,995	$42,389	6.3	$2,671
1929:									
Total Investment	$1,353,336								
Depreciation Reserve	568,257								
Net	785,079								
Carrying Charges (6.53%)	51,266								
Net Carrying Charges		51,266	3,450						
Less amount excluded from statement of "Estimated Costs, etc."		933	933						
Balance		50,333	2,517	47,816	7.4	3,538	44,278	6.3	2,790

EXHIBIT A-167—Continued

		Total Cost (1)	"Non-License" (2)	Balance Associated Companies and Long Lines (3)	Allocated to Long Lines (4)		Balance Associated Companies (5)	Allocated to Chicago Area (6)	
					Per cent of Col. (3)*	Amount		Per Cent of Col. (5)*	Amount
1930:									
Total Investment	$1,482,219								
Depreciation Reserve	594,306								
Net	887,913								
Carrying Charges (6.25%)	55,494								
Net Carrying Charges		55,494	4,249						
Less amount excluded from statement of "Estimated Costs, etc."		1,552	1,552						
Balance		53,942	2,697	51,245	7.9	4,048	47,197	6.2	2,926
1931:									
Total Investment	$1,592,136								
Depreciation Reserve	662,570								
Net	929,566								
Carrying Charges (6.42%)	59,678								
Net Carrying Charges		59,678	4,068						
Less amount excluded from statement of "Estimated Costs, etc."		1,141	1,141						
Balance		$58,537	$2,927	$55,610	7.7	$4,282	$51,328	6.1	$3,131

* Allocated:

To the Long Lines on the basis of the composite ratio of Plant, Employees, Expenses and Total Telephone Revenues.
To the Chicago Area on the basis of the composite ratio of above factors plus stations.

[fol. 3210]

EXHIBIT A-168

American Telephone and Telegraph Company

Allocation to Chicago Area of Cost (Net) of Carrying Investment in Physical Property Used in Rendering License Contract Services, Years 1923–1931

	Total Cost (1)	Deductions for "Non-License" Items (2)	Balance Associated Companies and Long Lines (3)	Allocated to Long Lines (4)		Balance Associated Companies (5)	Allocated to Chicago Area (6)	
				% of Col. (3)	Amount		% of Col. (5)	Amount
Telephones*								
1923	$1,121,090	$ 0	$1,121,090	.06	$673	$1,120,417	6.6	$73,948
1924	1,296,050	0	1,296,050	.06	778	1,295,272	6.5	84,193
1925	1,454,330	0	1,454,330	.05	727	1,453,603	6.5	94,484
1926	1,577,616	0	1,577,616	.05	789	1,576,827	6.5	102,494
1927	1,537,123	0	1,537,123	.06	922	1,536,201	6.6	101,389
Total	$6,986,209	$ 0	$6,986,209	x x	$3,889	$6,982,320	x x	$456,508
Real Estate, Office Furniture, etc. †								
1923	$206,628	$10,331	$196,297	5.8	$11,385	$184,912	6.6	$12,204
1924	95,692	4,785	90,907	5.5	5,000	85,907	6.4	5,498
1925	163,354	8,168	155,186	5.4	8,380	146,806	6.3	9,249
1926	38,764	1,938	36,826	5.5	2,025	34,801	6.3	2,192
1927	44,566	2,228	42,338	5.9	2,498	39,840	6.3	2,510
1928	47,773	2,389	45,384	6.6	2,995	42,389	6.3	2,671
1929	50,333	2,517	47,816	7.4	3,538	44,278	6.3	2,790
1930	53,942	2,697	51,245	7.9	4,048	47,197	6.2	2,926
1931	58,537	2,927	55,610	7.7	4,282	51,328	6.1	3,131
Total	$759,589	$37,980	$721,609	x x	$44,151	$677,458	x x	$43,171

EXHIBIT A-168—Continued

American Telephone and Telegraph Company

Allocation to Chicago Area of Cost (Net) of Carrying Investment in Physical Property Used in Rendering License Contract Services, Years 1923–1931

Total Physical Property								
1923	$1,327,718	$10,331	$1,317,387	x x	$12,058	$1,305,329	x x	$86,152
1924	1,391,742	4,785	1,386,957	x x	5,778	1,381,179	x x	89,691
1925	1,617,684	8,168	1,609,516	x x	9,107	1,600,409	x x	103,733
1926	1,616,380	1,938	1,614,442	x x	2,814	1,611,628	x x	104,686
1927	1,581,689	2,228	1,579,461	x x	3,420	1,576,041	x x	103,899
1928	47,773	2,389	45,384	x x	2,995	42,389	x x	2,671
1929	50,333	2,517	47,816	x x	3,538	44,278	x x	2,790
1930	53,942	2,697	51,245	x x	4,048	47,197	x x	2,926
1931	58,537	2,927	55,610	x x	4,282	51,328	x x	3,131
Total	$7,745,798	$37,980	$7,707,818	x x	$48,040	$7,659,778	x x	$499,679

* Allocated to the Long Lines and the Chicago Area on the basis of Instruments charged June 30th.

† Allocated:
To the Long Lines on the basis of the composite ratio of Plant, Employees, Expenses and Total Telephone Revenues.
To the Chicago Area on the basis of the composite ratio of above factors plus stations.

(Here follows Exhibit A-169, side folios 3211 and 3212)

[fol. 3211]

Exhibit A-169

American Telephone and Telegraph Company

Average Funds Held Available by American Tel. and Tel. Co. to Meet Current Cash Requirements of A. Associated Companies and Long Lines Department (American Tel. and Tel. Co.), and B. American Telephone and Telegraph Company (for General Purposes)

		Average Amount (Estimated) held to meet needs of:							
	Average Total Amount Held Available During Year	American Tel. and Tel. Co. (General Purposes) (2)		Associated Companies and Long Lines Department (A. T. and T. Co.)	Long Lines (4)		Associated Companies	Allocation to Chicago Area (6)	
Year	(1)	Amount	% of Col. (1)	(3)	% of Col. (3)†	Amount	(5)	% of Col. (5)†	Amount
1923	$77,179,633	$5,000,000	6.5	$72,179,633	6.2	$4,475,137	$67,704,496	4.3	$2,911,293
1924	77,848,514	5,500,000	7.1	72,348,514	5.5	3,979,168	68,369,346	4.4	3,008,251
1925	88,309,945	6,000,000	6.8	82,309,945	5.4	4,444,737	77,865,208	5.2	4,048,991
1926	88,160,031	6,500,000	7.4	81,660,031	7.9	6,451,142	75,208,889	5.6	4,211,698
1927	74,330,302	7,000,000	9.4	67,330,302	9.7	6,531,039	60,799,263	6.4	3,891,153
1928	102,175,926	7,500,000	7.3	94,675,926	12.3	11,645,139	83,030,787	6.5	5,397,001
1929	71,830,584	*15,000,000	20.9	56,830,584	15.3	8,695,079	48,135,505	4.9	2,358,640
1930	270,650,760	*159,000,000	58.7	111,650,760	16.6	18,534,026	93,116,734	5.1	4,748,953
1931	328,633,154	*237,650,588	72.3	90,982,566	14.7	13,374,437	77,608,129	4.7	3,647,582

* Includes provision to meet allotment requirements of Western Electric Company. The amount shown for the year 1929 has been increased $6,500,000 over estimate used in preparing basic statement of license service costs.

† Composite ratio of Estimated Requirements, Plant Investment and Gross Additions.

[fol. 3212]

American Telephone and Telegraph Company

Allocation to Chicago Area of Estimated Cost of Holding Funds Available, Years 1923 to 1931

	Total Cost of Funds Held Available (1)	Allocated to A. T. and T. Co. General Purposes (2)		Associated Companies and Long Lines (Col. (1) Less Col. (2)) (3)	Long Lines (4)		Associated Companies (5)	Chicago Area (6)	
		% of Col. (1)*	Amount		% of Col. (3)†	Amount		% of Col. (5)†	Amount
1923	$2,593,245	6.5	$168,561	$2,424,684	6.2	$150,330	$2,274,354	4.3	$97,797
1924	2,878,183	7.1	204,351	2,673,832	5.5	147,061	2,526,771	4.4	111,178
1925	3,720,562	6.8	252,998	3,467,564	5.4	187,248	3,280,316	5.2	170,576
1926	3,372,690	7.4	249,579	3,123,111	7.9	246,726	2,876,385	5.6	161,078
1927	2,795,555	9.4	262,782	2,532,773	9.7	245,679	2,287,094	6.4	146,374
1928	2,846,036	7.3	207,761	2,638,275	12.3	324,508	2,313,767	6.5	150,395
1929	1,340,367	20.9	280,137	1,060,230	15.3	162,215	898,015	4.9	44,003
1930	10,047,325	58.7	* 5,897,780	4,149,545	16.6	688,824	3,460,721	5.1	176,497
1931	13,233,846	72.3	9,568,071	3,665,775	14.7	538,869	3,126,906	4.7	146,965

* Per Cent of total cash allocated as available for A. T. and T. Co.—General purposes.

† Composite ratio of Estimated Requirements, Plant Investment and Gross Additions.

* Includes provision to meet allotment requirements of Western Electric Co. The amount shown for the year 1929 reflects cost due to increase of $6,500,000 in requirements for general purposes over estimate used in preparing basic statement of license service costs.

[fol. 3213]

EXHIBIT A-170

American Telephone and Telegraph Company

Compilation of Costs Incurred in Rendering License Contract Services and Amounts Thereof Allocated to Chicago Area as Shown in Exhibits A-103, 108, 117, 124, 152 to 162 and 164 to 169, Incl.*

	1923			1924		
	Total Costs Incurred by American Co. (a)	Amounts of Costs in Col. (a) Allocated to Chicago Area (b)	Reference to Exhibit in Record (c)	Total Costs Incurred by American Co. (a)	Amounts of Costs in Col. (a) Allocated to Chicago Area (b)	Reference to Exhibit in Record (c)
1. Costs of Rendering License Contract Services:						
Departmental:						
Development and Research	$2,883,039	$145,000	A 117	$3,120,276	$151,000	A 117
Operaton & Engineering	2,550,709	157,340	A 103 and A 108	2,688,340	161,066	A 103 and A 108
Operation—General	241,740	12,525	A 159	241,069	11,952	A 159
Personnel	598,542	37,620	A 152	515,465	31,974	A 152
Information	634,338	37,485	A 124	694,427	40,063	A 124
Public Relations				21,878	1,323	A 153
Legal	759,191	42,908	A 160	746,667	41,826	A 160
Comptroller	972,573	57,443	A 155	1,070,737	61,520	A 155
Treasurer	954,861	55,804	A 154	1,258,097	71,524	A 154
Secretary	58,555	3,403	A 156	63,720	3,599	A 156
General Service Bureau	283,108	16,721	A 158	331,265	19,033	A 158
Sundry Items (including Administration)	741,416	38,298	A 157	676,084	37,811	A 157
a) Total Departmental Costs	10,678,072	604,547		11,428,025	632,691	
b) Instrument Maintenance	3,219,594	212,366	A 162	3,719,626	241,631	A 162
c) Taxes	2,982,657	211,518	A 161	3,537,701	219,595	A 161
d) Cost (net) of Carrying Investment in Physical Property used in Rendering License Contract Services	1,327,718	86,152	A 168	1,391,742	89,691	A 168

* These costs do not include any amount for contingencies.

EXHIBIT A-170—Continued

American Telephone and Telegraph Company

Compilation of Costs Incurred in Rendering License Contract Services and Amounts Thereof Allocated to Chicago Area as Shown in Exhibits A 103, 108, 117, 124, 152 to 162 and 164 to 169, Incl.*

	1923			1924		
	Total Costs Incurred by American Co. (a)	Amounts of Costs in Col. (a) Allocated to Chicago Area (b)	Reference to Exhibit in Record (c)	Total Costs Incurred by American Co. (a)	Amounts of Costs in Col. (a) Allocated to Chicago Area (b)	Reference to Exhibit in Record (c)
e) Cost (net) Incurred in Holding Funds Available during year to meet Cash Requirements of Licensee Companies¢	$2,593,245	$97,797	A 169	$2,878,183	$111,178	A 169
f) Cost (net) of Temporary Financing¢	1,535,913	....	.....	2,260,603	....	.....
g) Total	22,337,199	1,212,380	.....	25,215,880	1,294,786	.....
h) Deduction for "Non-License" Expenses**	772,806✱	(See Note ✱)	(From Exhibits listed above)	751,888✱	(See Note ✱)	(From Exhibits listed above)
i) Total Costs	21,564,393	1,212,380	.....	24,463,992	1,294,786	.....
¢Average Cost of Funds During Year (Per Cent)	6.87	....	A 164	6.85	....	A 164

* These costs do not include any amount for contingencies.

** This item comprises costs incurred for services other than those which benefit the Associated Companies and Long Lines.

✱ No part of the figures $772,806 for 1923 and $751,888 for 1924 belongs in Column (b) because the amounts aggregating those sums have been taken out before prorating to Chicago Area.

[fol. 3214]

	1925			1926		
	Total Costs Incurred by American Co. (a)	Amounts of Costs in Col. (a) Allocated to Chicago Area (b)	Reference to Exhibit in Record (c)	Total Costs Incurred by American Co. (a)	Amounts of Costs in Col. (a) Allocated to Chicago Area (b)	Reference to Exhibit in Record (c)
1. Costs of Rendering License Contract Services:						
Departmental:						
Development and Research	$3,601,273	$167,000	A 117	$4,314,518	$207,000	A 117
Operation & Engineering	2,963,159	177,718	A 103 and A 108	3,301,306	197,583	A 103 and A 108
Operation—General	243,589	11,659	A 159	271,875	13,059	A 159
Personnel	603,523	37,968	A 152	707,960	45,696	A 152
Information	740,464	46,066	A 124	857,320	51,430	A 124
Public Relations	27,751	1,654	A 153	27,365	1,629	A 153
Legal	780,265	40,304	A 160	750,600	38,612	A 160
Comptroller	1,176,720	66,624	A 155	1,306,614	73,899	A 155
Treasurer	944,914	52,936	A 154	1,381,752	77,327	A 154
Secretary	62,868	3,501	A 156	66,123	3,679	A 156
General Service Bureau	363,483	20,580	A 158	427,692	24,189	A 158
Sundry Items (including Administration)	746,357	42,082	A 157	754,735	42,317	A 157
a) Total Departmental Costs	12,254,366	668,092		14,167,860	776,420	
b) Instrument Maintenance	4,261,771	276,877	A 162	4,953,961	321,846	A 162
c) Taxes	3,955,659	248,404	A 161	3,408,795	167,991	A 161
d) Cost (net) of Carrying Investment in Physical Property used in Rendering License Contract Services	1,617,684	103,733	A 168	1,616,380	104,686	A 168

Exhibit A-170—Continued

American Telephone and Telegraph Company

Compilation of Costs Incurred in Rendering License Contract Services and Amounts Thereof Allocated to Chicago Area as Shown in Exhibits A 103, 108, 117, 124, 152 to 162 and 164 to 169, Incl.*

	1925			1926		
	Total Costs Incurred by American Co. (a)	Amounts of Costs in Col. (a) Allocated to Chicago Area (b)	Reference to Exhibit in Record (c)	Total Costs Incurred by American Co. (a)	Amounts of Costs in Col. (a) Allocated to Chicago Area (b)	Reference to Exhibit in Record (c)
e) Cost (net) Incurred in Holding Funds Available during year to meet Cash Requirements of Licensee Companies¢	$3.720.562	$170.576	A 169	$3.372.690	$161.078	A 169
f) Cost (net) of Temporary Financing¢	2.606.279	0		2.095.365		
g) Total	28.416.321	1.467.682		29.615.051	1.532.021	
h) Deduction for "Non-License" Expenses**	864.890✱	(See Note ✱)	(From Exhibits listed above)	942.486✱	(See Note ✱)	(From Exhibits listed above)
i) Total Costs	27.551.431	1.467.682		28.672.565	1.532.021	
¢Average Cost of Funds During Year (Per Cent)	6.93		A 164	6.83		A 164

* These costs do not include any amount for contingencies.

** This item comprises costs incurred for services other than those which benefit the Associated Companies and Long Lines.

✱ No part of the figures $864,890 for 1925 and $942,486 for 1926 belongs in Column (b) because the amounts aggregating those sums have been taken out before prorating to Chicago Area.

[fol.3215]

	1927			1928		
	Total Costs Incurred by American Co. (a)	Amounts of Costs in Col. (a) Allocated to Chicago Area (b)	Reference to Exhibit in Record (c)	Total Costs Incurred by American Co. (a)	Amounts of Costs in Col. (a) Allocated to Chicago Area (b)	Reference to Exhibit in Record (c)
1. Costs of Rendering License Contract Services:						
Departmental:						
Development and Research	$5.389.315	$254.000	A 117	$5.551.381	$259.000	A 117
Operation & Engineering	3.562.940	212.344	A 103 and A 108	3.813.983	229.449	A 103 and A 108
Operation—General	265.671	12.393	A 159	286.718	13.640	A 159
Personnel	938.415	57.877	A 152	924.418	58.382	A 152
Information	789.697	46.521	A 124	1.033.998	61.173	A 124
Public Relations	27.471	1.629	A 153	27.878	1.640	A 153
Legal	796.734	41.444	A 160	1.029.330	53.349	A 160
Comptroller	1.412.231	79.535	A 155	1.484.471	82.981	A 155
Treasurer	1.103.130	61.473	A 154	1.648.226	91.166	A 154
Secretary	63.634	3.523	A 156	68.463	3.766	A 156
General Service Bureau	440.925	24.832	A 158	466.002	26.049	A 158
Sundry Items (including Administration)	876.924	40.007	A 157	777.082	42.738	A 157
a) Total Departmental Costs	15.667.287	844.578		17.111.950	923.333	
b) Instrument Maintenance	5.217.807	344.169	A 162	....		.....
c) Taxes	3.340.070	161.718	A 161	1.671.872	61.328	A 161
d) Cost (net) of Carrying Investment in Physical Property used in Rendering License Contract Services	1.581.689	103.899	A 168	47.773	2.671	A 168

Exhibit A-170—Continued

American Telephone and Telegraph Company

Compilation of Costs Incurred in Rendering License Contract Services and Amounts Thereof Allocated to Chicago Area as Shown in Exhibits A 103, 108, 117, 124, 152 to 162 and 164 to 169, Incl.*

	1927			1928		
	Total Costs Incurred by American Co. (a)	Amounts of Costs in Col. (a) Allocated to Chicago Area (b)	Reference to Exhibit in Record (c)	Total Costs Incurred by American Co. (a)	Amounts of Costs in Col. (a) Allocated to Chicago Area (b)	Reference to Exhibit in Record (c)
e) Cost (net) Incurred in Holding Funds Available during year to meet Cash Requirements of Licensee Companies¢	$2,795,555	$146,374	A 169	$2,846,036	$150,395	A 169
f) Cost (net) of Temporary Financing¢	1,839,609	....	.....	1,051,430	....	.....
g) Total	30,442,017	1,600,738	.....	22,729,061	1,137,727	.....
h) Deduction for "Non-License" Expenses**	859,528✱	(See Note ✱)	(From Exhibits listed above)	907,149✱	(See Note ✱)	(From Exhibits listed above)
i) Total Costs	29,582,489	1,600,738	.....	21,821,912	1,137,727	.....
¢ Average Cost of Funds During Year (Per Cent)	6.86	....	A 164	6.55	....	A 164

* These costs do not include any amount for contingencies.

** This item comprises costs incurred for services other than those which benefit the Associated Companies and Long Lines.

✱ No part of the figures $859,528 for 1927 and $907,149 for 1928 belongs in Column (b) because the amounts aggregating those sums have been taken out before prorating to Chicago Area.

[fol. 3216]

	1929			1930		
	Total Costs Incurred by American Co. (a)	Amounts of Costs in Col. (a) Allocated to Chicago Area (b)	Reference to Exhibit in Record (c)	Total Costs Incurred by American Co. (a)	Amounts of Costs in Col. (a) Allocated to Chicago Area (b)	Reference to Exhibit in Record (c)
1. Costs of Rendering License Contract Services:						
Departmental:						
Development and Research	$7.048.714	$330.000	A 117	$9.618.267	$435.000	A 117
Operation & Engineering	4,102,105	240.601	A 103 and A 108	4.340.568	244.652	A 103 and A 108
Operation—General	317.727	14.558	A 159	341.080	14.441	A 159
Personnel	1.056.306	63.098	A 152	1.100.273	64.902	A 152
Information	1.347.170	83.708	A 124	1.351.611	81.486	A 124
Public Relations	35.741	2.093	A 153	49.467	2.835	A 153
Legal	692.727	35.103	A 160	967.031	49.593	A 160
Comptroller	1.566.822	86.835	A 155	1.704.662	92.472	A 155
Treasurer	1.591.063	87.250	A 154	2.499.674	134.172	A 154
Secretary	69.348	3.778	A 156	68.384	3.644	A 156
General Service Bureau	508.045	28.156	A 158	555.152	30.115	A 158
Sundry Items (including Administration)	803.927	44,555	A 157	1.015.566	41.481	A 157
a) Total Departmental Costs	19.139.695	1.019.735		23.611.735	1.194.793	
b) Instrument Maintenance						
c) Taxes	1.018.102	25,166	A 161	988.898	22.289	A 161
d) Cost (net) of Carrying Investment in Physical Property used in Rendering License Contract Services	50.333	2,790	A 168	53,942	2.926	A 168

EXHIBIT A-170—Continued

American Telephone and Telegraph Company

Compilation of Costs Incurred in Rendering License Contract Services and Amounts Thereof Allocated to Chicago Area as Shown in Exhibits A 103, 108, 117, 124, 152 to 162 and 164 to 169, Incl.*

	1929			1930		
	Total Costs Incurred by American Co. (a)	Amounts of Costs in Col. (a) Allocated to Chicago Area (b)	Reference to Exhibit in Record (c)	Total Costs Incurred by American Co. (a)	Amounts of Costs in Col. (a) Allocated to Chicago Area (b)	Reference to Exhibit in Record (c)
e) Cost (net) Incurred in Holding Funds Available during year to meet Cash Requirements of Licensee Companies¢	$1,340,367	$44,003	A 169	$4,149,545	$176,497	A 169
f) Cost (net) of Temporary Financing¢	2,452,536	......	.....	1,137,450	....	.....
g) Total	24,001,033	1,091,694	.....	29,941,570	1,396,505	.....
h) Deduction for "Non-License" Expenses**	1,050,628✱	(See Note ✱)	(From Exhibits listed above)	1,152,350✱	(See Note ✱)	(From Exhibits listed above)
i) Total Costs	22,950,405	1,091,694	.....	28,789,220	1,396,505	.....
¢Average Cost of Funds During Year (Per Cent)	6.53	....	A 164	6.25	....	A 164

*These costs do not include any amount for contingencies.

**This item comprises costs incurred for services other than those which benefit the Associated Companies and Long Lines.

✱ No part of the figures $1,050,628 for 1929 and $1,152,350 for 1930 belongs in Column (b) because the amounts aggregating those sums have been taken out before prorating to Chicago Area.

[fol. 3217] American Telephone and Telegraph Company

Compilation of Costs Incurred in Rendering License Contract Services and Amounts Thereof Allocated to Chicago Area as Shown in Exhibits A 103, 108, 117, 124, 152 to 162 and 164 to 169, Incl.*

	1931		
	Total Costs Incurred by American Co. (a)	Amounts of Costs in Col. (a) Allocated to Chicago Area (b)	Reference to Exhibit in Record (c)
1. Costs of Rendering License Contract Services:			
Departmental:			
Development and Research	$8,873,209	$398,000	A 117
Operation & Engineering	4,234,967	238,958	
Operation—General	327,647	12,862	A 159
Personnel	1,080,695	61,523	A 152
Information	1,307,480	77,301	A 124
Public Relations	38,439	2,175	A 153
Legal	915,625	46,407	A 160
Comptroller	1,692,075	90,505	A 155
Treasurer	1,652,282	87,447	A 154
Secretary	56,343	2,960	A 156
General Service Bureau	517,808	27,696	A 158
Sundry Items (including Administration)	751,771	37,536	A 157
a) Total Departmental Costs	21,448,341	1,083,370	......
b) Instrument Maintenance	....	....	......
c) Taxes	1,537,360	51,412	A 161
d) Cost (net) of Carrying Investment in Physical Property used in Rendering License Contract Services¢	58,537	3,131	A 168
e) Cost (net) Incurred in Holding Funds Available during year to meet Cash Requirements of Licensee Companies¢	3,665,775	146,965	A 169
f) Cost (net) of Temporary Financing¢	1,709,528	....	......
g) Total	28,419,541	1,284,878	......
h) Deduction for "Non-License" Expenses**	750,011Y	(See Note Y)	(From Exhibits listed above)
i) Total Costs	27,669,530	1,284,878	
¢ Average Cost of Funds During Year (Per Cent)	6.42		A 164

* These costs do not include any amount for contingencies.

** This item comprises costs incurred for services other than those which benefit the Associated Companies and Long Lines.

Y No part of the figure $750,011 for 1931 belongs in Column (b) because the amounts aggregating that sum have been taken out before prorating to Chicago Area.

[fol. 3218]

Exhibit A-171

American Telephone and Telegraph Company

Royalties Received from Western Electric Company, Incorporated, Electrical Research Products, Incorporated, and Others, Years 1923–1931

	1923	1924	1925	1926	1927	1928	1929	1930	1931	Total
Royalties Received by E.R.P.I. (assignee of W.E.Co.) and Portion thereof paid to A. T. and T. Co.	$......	$......	$42,923	$93,645	$198,087	$206,970	$304,861	$592,270	$959,450	$2,398,206
Sales by Graybar Electric Company of close talking microphones	......	......	......	......	......	......	......	......	240	240
Sales by Western Electric Company of Restricted Apparatus	94,977	67,677	82,797	77,417	203,223	218,298	899,934	514,653	161,808	2,320,784
Miscellaneous Royalties	......	......	......	......	1,167	579	2,080	3,232	14,057	21,115
Total	94,977	67,677	125,720	171,062	402,477	425,847	1,206,875	1,110,155	1,135,555	4,740,345
Patent Receipts	......	......	5,239	......	33,489	16,250	11,775	20,000	......	86,753
License Fees for Radio Broadcasting	2,500	45,859	81,557	89,919	104,461	63,796	14,451	500*	......	402,043
Total	$97,477	$113,536	$212,516	$260,981	$540,427	$505,893	$1,233,101	$1,129,655	$1,135,555	$5,229,141

*Red figure.

[fol. 3219]

Exhibit A–172

American Telephone and Telegraph Company

Capital Stock

(a) Sold to American Bell Telphone Company:

When Issued:	Par Value	Consideration	Premium
1885–1896	$17,500,000	$17,500,000	$0
1895	2,500,000	Franchise	0
1889–1900	12,110,400	12,110,400	0
1889–1900	51,772,600	258,863 shares of American Bell Tel. Co. stock having book value of about $228 per share	0
Total of above	$83,883,000	$83,883,000	0

(b) Sold to Others:

1900–1931	Par Value	Consideration	Premium
Issued in conversion of bonds—			
Convertible 4s 1936	$110,751,900	$146,935,391	$36,183,491
Convertible 4½s 1933	60,894,300	73,073,160	12,178,860
Convertible 4½s 1939	206,189,700	371,045,041	164,855,341
Convertible 6s 1925	49,116,200	52,063,172	2,946,972
	426,952,100	643,116,764	216,164,664
Exchanged on basis of 4 shares for 5 for Bell Telephone Company of Pennsylvania stock. (1918) A. T. & T. Co. $125 Bell of Pa. $100	6,000,000	7,500,000	1,500,000
Issued in exchange for common stock of Teletype Corporation (1930)	15,000,000	30,000,000	15,000,000
Issued under circular offers to stockholders (1900–1931)			
Through subscription	1,135,113,900	1,135,118,993	5,093
Unsubscribed sold	13,862,700	18,874,001	5,011,301
	1,148,976,600	1,153,992,994	5,016,394
Issued under Employees' Stock Plans (1921–1931)	185,024,400	215,911,927	30,887,527
	$1,865,836,100	$2,134,404,685	$268,568,585

[fol. 3220] EXHIBIT A-180

Statement #1

Estimated Annual Additional Cost to the Illinois Bell Telephone Company if All of Its Capital Stock Had Been Held by the Public Instead of Chiefly by the American Telephone and Telegraph Company

	1	2	3	4	5
Year	Estimated No. of Stockholders (based on the Average No. of Shares of A. T. & T. Co. Stock held by Residents of Illinois)	Average Shares Per Stockholder	Additional Cost of Maintaining Record of Stockholders, Transferring Stock, Paying Dividends, Etc.*	Handling Stock Issues	Total
1923	43,000	15	$71,000	$64,000	$135,000
1924	46,000	15	76,000	69,000	145,000
1925	51,000	15	84,000	76,000	160,000
1926	59,000	15	97,000	88,000	185,000
1927	68,000	15	112,000	102,000	214,000
1928	77,000	15	127,000	115,000	242,000
1929	85,000	15	141,000	127,000	268,000
1930	94,000	15	156,000	141,000	297,000
1931	100,000	15	166,000	150,000	316,000
Total	......	..	$1,030,000	$932,000	$1,962,000

* Present cost of $3,000 per year deducted.

[fol. 3221] EXHIBIT A-181

Statement #2

Estimated Annual Additional Cost to the Illinois Bell Telephone Company If All of Its Capital Stock Had Been Held by the Public Instead of Chiefly by the American Telephone and Telegraph Company

	1	2	3	4	5
Year	Estimated No. of Stockholders (based on the Average No. of Shares now held by A. T. & T. Co. Stockholders)	Average Shares Per Stockholder	Additional Cost of Maintaining Record of Stockholders, Transferring Stock, Paying Dividends, Etc.*	Handling Stock Issues	Total
1923	21,500	30	$37,000	$32,000	$69,000
1924	23,000	30	39,000	34,000	73,000
1925	25,500	30	44,000	38,000	82,000
1926	29,500	30	51,000	44,000	95,000
1927	34,000	30	58,000	51,000	109,000
1928	38,500	30	66,000	57,000	123,000
1929	42,500	30	73,000	63,000	136,000
1930	47,000	30	81,000	70,000	151,000
1931	50,000	30	86,000	75,000	161,000
Total	......	...	$535,000	$464,000	$999,000

* Present cost of $3,000 per year deducted.

[fol. 3222]

EXHIBIT A-182

Memorandum of Basis Used in Preparing Statement of Estimated Additional Cost to the Illinois Bell Telephone Company If All of Its Capital Stock Had Been Held by the Public Instead of Chiefly by the American Telephone and Telegraph Company

Column 1.—The estimated number of stockholders on Statement #1 is based on approximately 15 shares per stockholder, which is the average holding of A. T. & T. Company stockholders residing in the State of Illinois.

Statement #2 is based on approximately 30 shares per stockholders, which is about the average number of shares held by all A. T. & T. Company stockholders in recent years.

Column 2.—The basis of the average figures shown in Statements #1 and #2 is as explained under Column 1 above.

Column 3.—The total annual additional cost of maintaining a record of stockholders, transferring stock, paying dividends, etc. is based on the following:

Item	Statement #1 Based on 15 Shares per Stockholder (1931–100,000 Stockholders and 50,000 Transfers Annually)	Statement #2 Based on 30 Shares per Stockholder (1931—50,000 Stockholders and 25,000 Transfers Annually)
Annual Audit by outside concern Customary requirement of the Chicago Stock Exchange	$10,000	$10,000
Registrar's Fees for Transfers including forms, postage and office supplies	12,000	6,000
First 500 registrations per year—50¢ each		
Next 4,500 registrations per year—25¢ each		
Next 15,000 registrations per year—20¢ each		
Over 20,000 registrations per year—15¢ each		
Forms, postage and office supplies—extra.		
Transfer Agent's Fees, Including stationery and office supplies	88,000	44,000
Keeping stockholders' accounts—50¢ each		
Issuance of certificates on transfers—30¢ each		
(Does not include cost of certificates)		
New stockholders' accounts due to transfers—25¢ each		
Quarterly lists of stockholders—2½¢ per name		
Stationery and office supplies—extra.		
Cost of Stock Certificates 15¢ per certificate	7,500	3,750
Dividend Payments	40,000	20,000
Maintaining addressing records, imprinting names on checks, filling in amounts of dividends on checks, en-		

[fol. 3223]

Item	Statement #1 Based on 15 Shares per Stockholder (1931—100,000 Stockholders and 50,000 Transfers Annually)	Statement #2 Based on 30 Shares per Stockholder (1931—50,000 Stockholders and 25,000 Transfers Annually)
closing checks in a folder and inserting in envelopes, plus postage, cost of envelopes, checks and folders:		
Annual Notices and Proxies...	$4,000	$2,000
Cost of forms, envelopes and mailing expense, including postage.		
Annual Reports..........	8,000	4,000
Cost of the reports and mailing expense, including 4¢ postage.		
Total..............	$169,500	$89,750
Less present cost..........	3,000	3,000
	$166,500	$86,750
Annual additional cost per stockholder..........	$1.66	$1.73

Column 4.—The additional cost of handling stock issues is based on the 900,000 additional shares issued by Illinois Bell Telephone Company during this period of nine years. This is an average of 100,000 additional shares which we would have to offer to stockholders each year. The number of subscriptions by use of rights in normal times average 3/5 of the total number of stockholders receiving warrants and we have used that rate as a base for estimating the number of subscriptions. The cost of issuing warrants, handling remittances, verifying warrants used for subscriptions and issuing stock certificates, etc. would be $3.00 per subscription if the work were done by a bank. We have used $2.50 which is based on the following:

[fol. 3224] Handling Stock Issues

1. Cost of Warrants 2 at 15c each..............		.30
2. Issuing Warrants 2 at 30¢ each..............		.60
3. Letter of Explanation of value of Warrants, use of Warrants, etc., envelopes, mailing work and postage..............		.10
4. Registrar's fees:		
(a) Registering Warrant..............	.20	
(b) Cancelling Warrant..............	.10	
		.30
5. Receiving and recording remittances, checking Warrants and keeping installment accounts....		.50
6. Cost of stock certificate..............		.15
7. Issuing stock certificate..............		.30
8. Mailing work and postage on stock certificate.....		.05
9. Registrar's fees (new certificate) average.........		.20
		$2.50

[fol. 3225]

EXHIBIT A-183

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses, and Net Income for the Year 1930

(Using Actual Tax Payments for the Year)

	Intrastate			Interstate Toll	Total Chicago
	Exchange	Toll	Total		
Exchange Revenues	$52,042,219	$1,494,403	$53,536,622	$715,498	$54,252,120
Toll Revenues	....	4,321,661	4,321,661	7,345,653	11,667,314
Miscellaneous Operating Revenues	1,219,486	....	1,219,486	6,080	1,225,566
Non-Operating Revenues	232,040	18,076	250,116	23,585	273,701
Gross Revenues	53,493,745	5,834,140	59,327,885	8,090,816	67,418,701
Less Licensee Revenue—Dr.	782,801	81,330	864,131	104,091–	968,222
Total Revenues	52,710,944	5,752,810	58,463,754	7,986,725	66,450,479
Traffic Expenses	12,320,929	1,300,952	13,621,881	2,664,532	16,286,413
Commercial Expenses	5,569,642	975,105	6,544,747	435,446	6,980,193
General and Miscellaneous Expenses	2,122,604	205,854	2,328,458	287,892	2,616,350
Current Maintenance	10,859,015	513,843	11,372,858	788,123	12,160,981
Depreciation	7,327,237	525,993	7,853,230	916,656	8,769,886
Taxes	6,393,374	667,050	7,060,424	883,076	*7,943,500
Other Expenses and Deductions	408,700	122,792	531,492	99,621	631,113
Total Expenses	45,001,501	4,311,589	49,313,090	6,075,346	55,388,436
Balance	7,709,443	1,441,221	9,150,664	1,911,379	11,062,043
Net Compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	221,691	....	221,691	....	221,691
Balance Available for Return under present rates	$7,931,134	$1,441,221	$9,372,355	$1,911,379	$11,283,734
Less reduction under rates in suit	1,599,053	46,825	1,645,878	20,496	1,666,374
Balance Available for Return under rates in suit	$6,332,081	$1,394,396	$7,726,477	$1,890,883	$9,617,360

* Represents actual taxes paid for the Year 1930 applicable to above operations and is $61 more than the total amount accrued on the books for all taxes during that year.

[fol. 3226]

EXHIBIT A-184

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses, and Net Income for the Year 1930

(Using Actual Tax Payments for the Year)

(Excluding All Overheads on Lands)

	Intrastate			Interstate	Total
	Exchange	Toll	Total	Toll	Chicago
Exchange Revenues	$52,042,219	$1,494,403	$53,536,622	$715,498	$54,252,120
Toll Revenues	....	4,321,661	4,321,661	7,345,653	11,667,314
Miscellaneous Operating Revenues	1,219,486	....	1,219,486	6,080	1,225,566
Non-Operating Revenues	232,119	18,061	250,180	23,521	273,701
Gross Revenues	53,493,824	5,834,125	59,327,949	8,090,752	67,418,701
Less Licensee Revenue—Dr.	782,801	81,330	864,131	104,091	968,222
Total Revenues	52,711,023	5,752,795	58,463,818	7,986,661	66,450,479
Traffic Expenses	12,320,929	1,300,952	13,621,881	2,664,532	16,286,413
Commercial Expenses	5,569,642	975,105	6,544,747	435,446	6,980,193
General and Miscellaneous Expenses	2,122,604	205,854	2,328,458	287,892	2,616,350
Current Maintenance	10,859,015	513,843	11,372,858	788,123	12,160,981
Depreciation	7,327,286	525,983	7,853,269	916,617	8,769,886
Taxes	6,393,426	666,974	7,060,400	883,100	*7,943,500
Other Expenses and Deductions	408,701	122,792	531,493	99,620	631,113
Total Expenses	45,001,603	4,311,503	49,313,106	6,075,330	55,388,436
Balance	7,709,420	1,441,292	9,15[illegible],712	1,911,331	11,062,043
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	221,691	....	221,691	....	221,691
Balance Available for Return under present rates	$7,931,111	$1,441,292	$9,372,403	$1,911,331	$11,283,734
Less reduction under rates in suit	1,599,053	46,825	1,645,878	20,496	1,666,374
Balance Available for Return under rates in suit	$6,332,058	$1,394,467	$7,726,525	$1,890,835	$9,617,360

* Represents actual taxes paid for the Year 1930 applicable to above operations and is $61 more than the total amount accrued on the books for all taxes during that year.

EXHIBIT A-185

Illinois Bell Telephone Company, Chicago Exchange

Rate of Return under (a) Present Rates and (b) Rates in Suit for the Year 1930

(Using Actual Tax Payments for the Year)

		Intrastate			Interstate Toll	Total Chicago
		Exchange	Toll	Total		
1	Balance Available for Return under					
2	(a) Present Rates	$7,931,134	$1,441,221	$9,372,355	$1,911,379	$11,283,734
3	(b) Rates in Suit	6,332,081	1,394,396	7,726,477	1,890,883	9,617,360
4	Reproduction Cost New Less Depreciation of Plant in Service and General Equipment	$178,065,680	$14,548,710	$192,614,390	$19,411,123	$212,025,513
5	Construction Work in Progress	3,831,948	303,804	4,135,752	280,013	4,415,765
6	Going Value	28,967,208	2,341,608	31,308,816	3,091,184	34,400,000
7	Total (Lines 4, 5 and 6)	210,864,836	17,194,122	228,058,958	22,782,320	250,841,278
8	Average for the year	206,866,245	16,517,144	223,383,389	21,300,873	244,684,262
9	Average Material and Supplies	176,653	14,280	190,933	18,851	209,784
10	Average Working Cash Capital	3,690,000	360,000	4,050,000	500,000	4,550,000
11	Total (Lines 8, 9 and 10)	$210,732,898	$16,891,424	$227,624,322	$21,819,724	$249,444,046
12	Book Cost of Plant in Service and General Equipment	$161,076,341	$13,020,849	$174,097,190	$17,188,975	$191,286,165
13	Construction Work in Progress	3,831,948	303,804	4,135,752	280,013	4,415,765
14	Total (Lines 12 and 13)	164,908,289	13,324,653	178,232,942	17,468,988	195,701,930
15	Average for the year	161,110,450	12,751,773	173,862,223	16,304,867	190,167,090
16	Average Material and Supplies	176,653	14,280	190,933	18,851	209,784
17	Average Working Cash Capital	3,690,000	360,000	4,050,000	500,000	4,550,000
18	Total (Lines 15, 16 and 17)	$164,977,103	$13,126,053	$178,103,156	$16,823,718	$194,926,874
19	Per Cent of Return under					
20	(a) Present Rates based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	3.76%	8.53%	4.12%	8.76%	4.52%
21	(a) Present Rates based on Average Book Cost (Line 18)	4.81%	10.98%	5.26%	11.36%	5.79%
22	(b) Rates in Suit based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	3.00%	8.23%	3.39%	8.67%	3.86%
23	(b) Rates in Suit based on Average Book Cost (Line 18)	3.84%	10.62%	4.34%	11.24%	4.93%

Exhibit A-186

Illinois Bell Telephone Company, Chicago Exchange

Rate of Return under (a) Present Rates and (b) Rates in Suit for the Year 1930

(Using Actual Tax Payments for the Year)

(Excluding All Overheads on Lands)

		Intrastate			Interstate Toll	Total Chicago
		Exchange	Toll	Total		
1	Balance Available for Return under					
2	(a) Present Rates	$7,931,111	$1,441,292	$9,372,403	$1,911,331	$11,283,734
3	(b) Rates in Suit	6,332,058	1,394,467	7,726,525	1,890,835	9,617,860
4	Reproduction Cost New Less Depreciation of Plant in Service and General Equipment	$177,385,418	$14,468,017	$191,853,435	$19,258,060	$211,111,495
5	Construction Work in Progress	3,831,948	303,804	4,135,752	280,013	4,415,765
6	Going Value	28,981,312	2,338,856	31,320,168	3,079,832	34,400,000
7	Total (Lines 4, 5 and 6)	210,198,678	17,110,677	227,309,355	22,617,905	249,927,260
8	Average for the year	206,186,108	16,438,952	222,625,060	21,151,935	243,776,995
9	Average Material and Supplies	176,739	14,263	191,002	18,782	209,784
10	Average Working Cash Capital	3,690,000	360,000	4,050,000	500,000	4,550,000
11	Total (Lines 8, 9 and 10)	$210,052,847	$16,813,215	$226,866,062	$21,670,717	$248,536,779
12	Book Cost of Plant in Service and General Equipment	$161,154,768	$13,005,546	$174,160,314	$17,125,851	$191,286,165
13	Construction Work in Progress	3,831,948	303,804	4,135,752	280,013	4,415,765
14	Total (Lines 12 and 13)	164,986,716	13,309,350	178,296,066	17,405,864	195,701,930
15	Average for the year	161,177,975	12,738,643	173,916,618	16,250,472	190,167,090
16	Average Material and Supplies	176,739	14,263	191,002	18,782	209,784
17	Average Working Cash Capital	3,690,000	360,000	4,050,000	500,000	4,550,000
18	Total (Lines 15, 16 and 17)	$165,044,714	$13,112,906	$178,157,620	$16,769,254	$194,926,874
19	Per Cent of Return under					
20	(a) Present Rates based on — Average Reproduction Cost New Less Depreciation, etc. (Line 11)	3.78%	8.57%	4.13%	8.82%	4.54%
21	(a) Present Rates based on — Average Book Cost (Line 18)	4.81%	10.99%	5.26%	11.40%	5.79%
22	(b) Rates in Suit based on — Average Reproduction Cost New Less Depreciation, etc. (Line 11)	3.01%	8.29%	3.41%	8.73%	3.87%
23	(b) Rates in Suit based on — Average Book Cost (Line 18)	3.84%	10.63%	4.34%	11.28%	4.93%

[fol. 3229]

EXHIBIT A-187

Illinois Bell Telephone Company, Chicago Exchange.

Station to Station Separation and Apportionment of Revenues, Expenses, and Net Income, also Rate of Return for the Year 1930

(Using Actual Tax Payments for the Year)

(Depreciation and Amortization of Landed Capital Based on Reproduction Cost New with Related Changes in Federal Income Tax)

		Intrastate				
		Exchange	Toll	Total	Interstate Toll	Total Chicago
Total Revenues		$52,710,944	$5,752,810	$58,463,754	$7,986,725	$66,450,479
Total Current Mtce., Traffic Com'l., General and Miscellaneour Expenses		30,872,190	2,995,754	33,867,944	4,175,993	38,043,937
Depreciation		7,936,822	623,776	8,560,598	1,078,211	9,638,809
Taxes		6,319,303	655,129	6,974,432	863,701	*7,838,133
Other Expenses and Deductions		416,973	123,048	540,021	100,227	640,248
Total Expenses		45,545,288	4,397,707	49,942,995	6,218,132	56,161,127
Balance		7,165,656	1,355,103	8,520,759	1,768,593	10,289,352
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes		221,691	....	221,691	....	221,691
Balance Available for Return under present rates		7,387,347	1,355,103	8,742,450	1,768,593	10,511,043
Less reduction under rates in suit		1,599,053	46,825	1,645,878	20,496	1,666,374
Balance Available for Return under rates in suit		$5,788,294	$1,308,278	$7,096,572	$1,748,097	$8,844,669
Per Cent of Return under						
(a) Present Rates based on	Avg. Reproduction Cost New Less Depreciation, etc.	3.51%	8.02%	3.84%	8.11%	4.21%
	Average Book Cost	4.48%	10.32%	4.91%	10.51%	5.39%
(b) Rates in Suit based on	Avg. Reproduction Cost New Less Depreciation, etc.	2.75%	7.75%	3.12%	8.01%	3.55%
	Average Book Cost	3.51%	9.97%	3.98%	10.39%	4.54%

* Represents actual taxes paid for the Year 1930 applicable to above operations after adjusting Federal Income Tax for difference between Depreciation, etc., Expense based on book costs and reproduction cost new, and is $105,306 less than the total amount accrued on the books for all taxes during that year.

EXHIBIT A-188

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses, and Net Income for the Year 1931

(Using Revised Estimate of Taxes for the Year)

	Intrastate			Interstate Toll	Total Chicago
	Exchange	Toll	Total		
Exchange Revenues	$50,471,229	$1,321,735	$51,792,964	$665,191	$52,458,155
Toll Revenues	18,018	4,112,509	4,130,527	6,951,847	11,082,374
Miscellaneous Operating Revenues	1,050,286	....	1,050,286	5,730	1,056,016
Non-Operating Revenues	107,177	8,001	115,178	10,528	125,706
Gross Revenues	$51,646,710	$5,442,245	$57,088,955	$7,633,296	$64,722,251
Less Licensee Revenue—Dr.	758,829	75,370	834,199	97,453	931,652
Total Revenues	$50,887,881	$5,366,875	$56,254,756	$7,535,843	$63,790,599
Traffic Expenses	$10,540,816	$1,194,978	$11,735,794	$2,250,640	$13,986,434
Commercial Expenses	5,534,184	955,991	6,490,175	429,970	6,920,145
General and Miscellaneous Expenses	2,445,809	244,230	2,690,039	314,283	3,004,322
Current Maintenance	10,351,339	490,714	10,842,053	704,029	11,546,082
Depreciation	7,558,432	562,703	8,121,135	1,025,133	9,146,[illegible]68
Taxes	6,714,567	655,225	7,369,792	926,144	*8,295,936
Other Expenses and Deductions	498,678	127,072	625,750	102,517	728,267
Total Expenses	$43,643,825	$4,230,913	$47,874,738	$5,752,716	$53,627,454
Balance	7,244,056	1,135,962	8,380,018	1,783,127	10,163,145
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	236,661	....	236,661	....	236,661
Balance Available for Return under present rate	$7,480,717	$1,135,962	$8,616,679	$1,783,127	$10,399,806
Less reduction under rates in suit	1,396,167	37,577	1,433,744	17,120	1,450,864
Balance Available for Return under rates in suit	$6,084,550	$1,098,385	$7,182,935	$1,766,007	$8,948,942

* Represents actual payments for those taxes which have been paid and the latest estimate of unpaid taxes for the Year 1931 applicable to above operations and is $16,787 less than the total amount accrued on the books for all taxes during that year.

Exhibit A-189

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses, and Net Income for the Year 1931

(Using Revised Estimate of Taxes for the Year)

(Excluding All Overheads on Lands)

	Intrastate			Interstate Toll	Total Chicago
	Exchange	Toll	Total		
Exchange Revenues	$50,471,229	$1,321,735	$51,792,964	$665,191	$52,458,155
Toll Revenues	18,018	4,112,509	4,130,527	6,951,847	11,082,374
Miscellaneous Operating Revenues	1,050,286	....	1,050,286	5,730	1,056,016
Non-Operating Revenues	107,210	7,996	115,206	10,500	125,706
Gross Revenues	$51,646,743	$5,442,240	$57,088,983	$7,633,268	$64,722,251
Less Licensee Revenue—Dr.	758,829	75,370	834,199	97,453	931,652
Total Revenues	$50,887,914	$5,366,870	$56,254,784	$7,535,815	$63,790,599
Traffic Expenses	$10,540,816	$1,194,978	$11,735,794	$2,250,640	$13,986,434
Commercial Expenses	5,534,184	955,991	6,490,175	429,970	6,920,145
General and Miscellaneous Expenses	2,445,812	244,230	2,690,042	314,280	3,004,322
Current Maintenance	10,351,339	490,714	10,842,053	704,029	11,546,082
Depreciation	7,558,477	562,696	8,121,173	1,025,095	9,146,268
Taxes	6,714,754	655,265	7,370,019	925,917	*8,295,936
Other Expenses and Deductions	498,676	127,072	625,748	102,519	728,267
Total Expenses	$43,644,058	$4,230,946	$47,875,004	$5,752,450	$53,627,454
Balance	7,243,856	1,135,924	8,379,780	1,783,365	10,163,145
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	236,661	....	236,661	....	236,661
Balance Available for Return under present rates	$7,480,517	$1,135,924	$8,616,441	$1,783,365	$10,399,806
Less reduction under rates in suit	1,396,167	37,577	1,433,744	17,120	1,450,864
Balance Available for Return under rates in suit	$6,084,350	$1,098,347	$7,182,697	$1,766,245	$8,948,942

* Represents actual payments for those taxes which have been paid and the latest estimate of unpaid taxes for the Year 1931 applicable to above operations and is $16,787 less than the total amount accrued on the books for all taxes during that year.

EXHIBIT A-190

Illinois Bell Telephone Company, Chicago Exchange

Rate of Return under (a) Present Rates and (b) Rates in Suit for the Year 1931

(Using Revised Estimate of Taxes for the Year)

		Intrastate				
		Exchange	Toll	Total	Interstate Toll	Total Chicago
1	Balance Available for Return under					
2	(a) Present Rates	$7,480,717	$1,135,962	$8,616,679	$1,783,127	$10,399,806
3	(b) Rates in Suit	6,084,550	1,098,385	7,182,935	1,766,007	8,948,942
4	Reproduction Cost New, Less Depreciation of Plant in Service and General Equipment	$176,280,127	$14,433,827	$190,713,954	$19,873,916	$210,587,870
5	Construction Work in Progress	136,008	27,763	163,771	278,185	441,956
6	Going Value	28,540,280	2,310,980	30,851,260	3,148,740	34,000,000
7	Total (Lines 4, 5 and 6)	204,956,415	16,772,570	221,728,985	23,300,841	245,029,826
8	Average for the year	207,910,626	16,983,346	224,893,972	23,041,580	247,935,552
9	Average Material and Supplies	188,393	15,255	203,648	20,785	224,433
10	Average Working Cash Capital	3,450,000	350,000	3,800,000	450,000	4,250,000
11	Total (Lines 8, 9 and 10)	$211,549,019	$17,348,601	$228,897,620	$23,512,365	$252,409,985
12	Book Cost of Plant in Service and General Equipment	$164,041,230	$13,282,842	$177,324,072	$18,098,041	$195,422,113
13	Construction Work in Progress	136,008	27,763	163,771	278,185	441,956
14	Total (Lines 12 and 13)	164,177,238	13,310,605	177,487,843	18,376,226	195,864,069
15	Average for the year	164,542,764	13,317,629	177,860,393	17,922,607	195,783,000
16	Average Material and Supplies	188,393	15,255	203,648	20,785	224,433
17	Average Working Cash Capital	3,450,000	350,000	3,800,000	450,000	4,250,000
18	Total (Lines 15, 16 and 17)	$168,181,157	$13,682,884	$181,864,041	$18,393,392	$200,257,433
19	Per Cent of Return under					
20	(a) Present Rates based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	3.54%	6.55%	3.76%	7.58%	4.12%
21	(a) Present Rates based on Average Book Cost (Line 18)	4.45%	8.30%	4.74%	9.69%	5.19%
22	(b) Rates in Suit based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	2.88%	6.33%	3.14%	7.51%	3.55%
23	(b) Rates in Suit based on Average Book Cost (Line 18)	3.62%	8.03%	3.94%	9.60%	4.47%

EXHIBIT A–191

Illinois Bell Telephone Company, Chicago Exchange

Rate of Return Under (a) Present Rates and (b) Rates in Suit for the Year 1931

(Using Revised Estimate of Taxes for the Year)

(Excluding All Overheads on Lands)

		Intrastate				
		Exchange	Toll	Total	Interstate Toll	Total Chicago
1	Balance Available for Return under					
2	(a) Present Rates	$7,480,517	$1,135,924	$8,616,441	$1,783,365	$10,399,806
3	(b) Rates in Suit	6,084,350	1,098,347	7,182,697	1,766,245	8,948,942
4	Reproduction Cost New Less Depreciation of Plant in Service and General Equipment	$175,653,454	$14,365,476	$190,018,930	$19,729,530	$209,748,460
5	Construction Work in Progress	136,008	27,763	163,771	278,185	441,956
6	Going Value	28,552,520	2,309,280	30,861,800	3,138,200	34,000,000
7	Total (Lines 4, 5 and 6)	204,341,982	16,702,519	221,044,501	23,145,915	244,190,416
8	Average for the year	207,270,330	16,906,598	224,176,928	22,881,910	247,058,838
9	Average Material and Supplies	188,474	15,244	203,718	20,715	224,433
10	Average Working Cash Capital	3,450,000	350,000	3,800,000	450,000	4,250,000
11	Total (Lines 8, 9 and 10)	$210,908,804	$17,271,842	$228,180,646	$23,352,625	$251,533,271
12	Book Cost of Plant in Service and General Equipment	$164,111,582	$13,273,070	$177,384,652	$18,037,461	$195,422,113
13	Construction Work in Progress	136,008	27,763	163,771	278,185	441,956
14	Total (Lines 12 and 13)	164,247,590	13,300,833	177,548,423	18,315,646	195,864,069
15	Average for the year	164,617,153	13,305,092	177,922,245	17,860,755	195,783,000
16	Average Material and Supplies	188,474	15,244	203,718	20,715	224,433
17	Average Working Cash Capital	3,450,000	350,000	3,800,000	450,000	4,250,000
18	Total (Lines 15, 16 and 17)	$168,255,627	$13,670,336	$181,925,963	$18,331,470	$200,257,433
19	Per Cent of Return under					
20	(a) Present Rates based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	3.55%	6.58%	3.78%	7.64%	4.13%
21	Average Book Cost (Line 18)	4.45%	8.31%	4.74%	9.73%	5.19%
22	(b) Rates in Suit based on Average Reproduction Cost New Less Depreciation, etc. (Line 11)	2.88%	6.36%	3.15%	7.56%	3.56%
23	Average Book Cost (Line 18)	3.62%	8.03%	3.95%	9.64%	4.47%

[fol. 3234]

EXHIBIT A-192

Illinois Bell Telephone Company, Chicago Exchange.

Station to Station Separation and Apportionment of Revenues, Expenses and Net Income, also Rate of Return for the Year 1931

(Using Revised Estimate of Taxes for the Year)

(Depreciation and Amortization of Landed Capital based on Reproduction Cost New with related changes in Federal Income Tax)

		Intrastate			
	Exchange	Toll	Total	Interstate Toll	Total Chicago
Total Revenues	$50,887,881	$5,366,875	$56,254,756	$7,535,843	$63,790,599
Total Current Mtce., Traffic, Com'l., General and Miscellaneous Expenses	28,872,149	2,885,913	31,758,062	3,698,920	35,456,982
Depreciation	8,251,465	661,778	8,913,243	1,188,291	10,101,534
Taxes	6,630,453	643,291	7,273,744	906,434	* 8,180,178
Other Expenses and Deductions	507,160	127,315	634,475	103,179	737,654
Total Expenses	44,261,227	4,318,297	48,579,524	5,896,824	54,476,348
Balance	6,626,654	1,048,578	7,675,232	1,639,019	9,314,251
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	236,661	....	236,661	....	236,661
Balance Available for Return under present rates	6,863,315	1,048,578	7,911,893	1,639,019	9,550,912
Less reduction under rates in suit	1,396,167	37,577	1,433,744	17,120	1,450,864
Balance Available for Return under rates in suit	5,467,148	1,011,001	6,478,149	1,621,899	8,100,048
Per Cent of Return under					
(a) Present Rates based on: Average Reproduction Cost New Less Depreciation, etc.	3.24%	6.04%	3.46%	6.97%	3.78%
(a) Present Rates based on: Average Book Cost	4.08%	7.66%	4.35%	8.91%	4.77%
(b) Rates in Suit based on: Average Reproduction Cost New Less Depreciation, etc.	2.58%	5.83%	2.83%	6.90%	3.21%
(b) Rates in Suit based on: Average Book Cost	3.25%	7.39%	3.56%	8.82%	4.04%

* Represents actual payments for those taxes which have been paid and the latest estimate of unpaid taxes for the Year—1931 applicable to above operations after adjusting Federal Income Tax for difference between Depreciation, etc., Expense based on book costs and reproduction cost new, and is $132,545 less than the total amount accrued on the books for all taxes during that period.

[fol. 3235]

EXHIBIT A–193

Western Electric Company, Inc., Pension Fund

Comparison of Charges to Operating Costs with Required Contributions, 1916 to 1931

(Dollars in Thousands)

	Charges to Operating Costs	Required Contributions (Column C, Exhibits A147 and A148)	Excess of Required Contributions Over Charges to Operating Costs
1916	$40	$606	$566
1917	36	876	840
1918	35	964	929
1919	45	981	936
1920	51	1,524	1,473
1921	63	1,968	1,905
1922	67	2,221	2,154
1923	72	2,884	2,812
1924	2,075	3,179	1,104
1925	3,577	2,511	(1,066)
1926	5,069	2,741	(2,328)
1927	4,985	2,793	(2,192)
1928	2,461	3,062	601
1929	3,948	4,626	678
1930	4,032	4,689	657
1931	2,791	3,267	476
Total	$29,347	$38,892	$9,545
Total 1923–1931	29,010	29,752	742

Required Pension Reserve, Dec. 31, 1931 (Column G, Exhibit A147)	$59,027
Actual Fund, Dec. 31, 1931	34,990

[fol. 3236]

EXHIBIT A-194

Earnings of the Western Electric Company on Bell Business Expressed in Percentages of Sales and in Percentage of (a) Average Investment and (b) Average Investment Less Amount of Depreciation Reserve Account, 1916 to 1932, Inclusive

(Dollars in Thousands)

	(a) Sales	(b) Earnings	(c) Per Cent Earnings to Sales (b ÷ a)	(d) Average Investment	(e) Per Cent Earnings to Average Investment (b ÷ d)	(f) Average Investment Less Amount of Deprec. Reserve Account	(g) Per Cent Earnings to Average Investment Less amount of Deprec. Reserve Account (b ÷ f)
1916	$73,915	$2,140	2.9	$46,112	4.6	$36,167	5.9
1917	104,682	2,525	2.4	66,184	3.8	53,885	4.7
1918	79,217	2,421	3.1	70,685	3.4	56,047	4.3
1919	80,361	2,687	3.3	69,939	3.8	54,584	4.9
1920	130,712	4,855	3.7	98,914	4.9	79,956	6.1
1921	142,885	11,138	7.8	125,330	8.9	102,361	10.9
1922	159,957	6,362	4.0	123,089	5.2	96,490	6.6
1923	188,159	6,192	3.3	131,504	4.7	102,455	6.0
1924	233,300	10,875	4.7	158,488	6.9	124,613	8.7
1925	226,700	16,252	7.2	163,085	10.0	126,995	12.8
1926	247,203	12,551	5.1	160,255	7.8	121,745	10.3
1927	241,062	16,868	7.0	167,371	10.1	122,183	13.8
1928	267,808	17,284	6.5	161,378	10.7	113,560	15.2
1929	372,384	17,372	4.7	204,507	8.5	152,880	11.4
1930	338,830	11,685	3.4	270,556	4.3	206,497	5.7
1931	219,535	10,500	4.8	270,423	3.9	194,624	5.4
1932 (3 Mos. x 4)	151,472	(6,400)	(4.2)	265,253	(2.4)	173,599	(3.7)
Total	3,258,182	145,307	4.5	2,553,073	5.7	1,918,641	7.6
Total 1923 to 1931	2,334,981	119,579	5.1	1,687,567	7.1	1,265,552	9.4
Total 1923 to 1932	2,486,453	113,179	4.6	1,952,820	5.8	1,439,151	7.9

Sample

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Vol. V

TRANSCRIPT OF RECORD

EXHIBITS

Supreme Court of the United States

OCTOBER TERM, 1933

No. 440

BENJAMIN F. LINDHEIMER AND OTHERS, CONSTITUTING THE ILLINOIS COMMERCE COMMISSION OF THE STATE OF ILLINOIS; OTTO KERNER, ATTORNEY GENERAL OF THE STATE OF ILLINOIS, AND THE CITY OF CHICAGO, APPELLANTS,

vs.

ILLINOIS BELL TELEPHONE COMPANY

No. 548

ILLINOIS BELL TELEPHONE COMPANY, APPELLANT,

vs.

BENJAMIN F. LINDHEIMER AND OTHERS, CONSTITUTING THE ILLINOIS COMMERCE COMMISSION OF THE STATE OF ILLINOIS; OTTO KERNER, ATTORNEY GENERAL OF THE STATE OF ILLINOIS, AND THE CITY OF CHICAGO

APPEALS FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF ILLINOIS

FILED SEPTEMBER 8, 1933

FILED OCTOBER 25, 1933

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1933

No. 440

BENJAMIN F. LIDNHEIMER AND OTHERS, CONSTITUTING THE ILLINOIS COMMERCE COMMISSION OF THE STATE OF ILLINOIS; OTTO KERNER, ATTORNEY GENERAL OF THE STATE OF ILLINOIS, AND CITY OF CHICAGO, APPELLANTS,

vs.

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APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF ILLINOIS

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D- 7—Circular re $25,000,000 I. T. & T. Corp. 20-year 5½% convertible gold debenture bonds	4022	3608
D- 8—Circular re $40,000,000 New England T. & T. Co. 1st mortgage 4½% gold bonds, series B	4025	3616
D-12—Statement showing changes in Chicago.		
D-15—Excerpts from Special Ordinances of Chicago, 1898, Vol. 2	4030	3623
D-16—Pamphlet, proceedings of city council, Chicago, November 6, 1907	4031	3624
D-18—Pamphlet, an ordinance fixing the maximum rates for telephone service, passed by city council May 26, 1913	4048	3639
D-19—Statement as to Western Electric, analysis of cost of sales by Bell and non-Bell customers	4061	3654
D-25—Statement as to Western Electric, pension fund transactions	4062	3655
D-26—Actuarial computations of required pension accruals, 1916-1930, and minimum fund required	4063	3655
D-27—Details of journal entry for extraordinary plant depreciation, December 31, 1927	4064	3656
D-28—Statement as to Western Electric Co., Inc., extraordinary reserve against plant to bring additions to estimated cost level, 1931-1940 (2 sheets)	4065	3657
D-29—W. E. construction cost indices, as prepared by plant engineering department and general statistical department, 1914, 100 (13 sheets)	4067	3659
D-30—Statement showing net increases in the plant during 13-year period, 1916-1930, inclusive	4080	3674

	Original	Print
D-31—Details of reserve for depreciation of plant during 15-year period 1916-1930, showing gross additions to reserve and write-offs..	4081	3674B
D-32—Statement as to Western Electric, study of plant valuations.........................	4082	3675
D-33—Explanation of reserve carried on Western Electric books as of December 31, 1926, against investment in stock of Graybar (2 sheets)	4084	3677
D-34—Statement of assets and liabilities of Graybar Electric............................	4086	3678
D-35—Comparison of book value and depreciation reserve of Western Electric and Bell Telephone laboratories............................	4087	3679
D-36—Explanation of reserve on books of Western Electric as of December 31, 1926, against demand notes of Bell Telephone laboratories	4088	3679
D-38—Classification of customers.................	4089	3680
D-39—Statement—"Conditions under which we extend the benefits of the standard supply contract to Bell connecting companies"..	4090	3681
D-41—Analysis of sales to Bell customers, 1916-1930	4091	3682
D-42—Analysis of sales to non-Bell customers, 1916-1930	4092	3683
D-46—Statement as to Western Electric, basis of valuation of inventory......................	4093	3684
D-47—Statements showing method of arriving at merchandise inventories as shown on the stockholders' reports as of December 31, 1915, and December 31, 1930.............	4094	3685
D-48—Statement showing sales of apparatus and equipment designed entirely or in part by Western Electric Company, Inc., but manufactured by others, included in sales of manufactures to Bell Companies on Exhibit No. 31004............................	4095	3686
D-49—Statement as to Graybar Electric, sales and estimated net profits on Western Electric manufactures, 1926-1928.................	4096	3687
D-50—Statement as to Graybar Electric, earnings for years 1926, 1927, and 1928...........	4097	3687
D-51—Statement as to Graybar Electric, statement of assets and liabilities, 1926-1928........	4098	3688
D-52—Statement showing A. T. & T. loans to Western Electric, 1918-1930..................	4099	3690
D-53—Balance sheet at September 30, 1930, Teletype Corporation.........................	4101	3693

	Original	Print
D-54—Statement re purchase of Teletype Corporation by Western Electric	4102	3693
D-55—Condensed summary of results for 1931, compared with 1930, Teletype Corporation	4103	3694
D-56—Analysis of average investment in operations, Bell business, 1916-1930	4104	3696
D-57—Statement showing average investment non-Bell business, 1916-1930, inclusive	4105	3696
D-61—Analysis of profits on business other than with Bell Telephone Companies from 1881 to 1927, inclusive, Western Electric Co.	4106	3697
D-62—Opening balance sheet, May 31, 1930, W. E. C. O. Corporation	4107	3698
D-63—Statement re assets, W. E. C. O.	4108	3699
D-64—Statement showing average investment compiled from consolidated balance sheets at December 31 of Western Electric Co. and subsidiaries, 1915 to 1930	4109	3700
D-65—Explanatory sheet re D-64	4110	3701
D-66—Statement showing net profits on investments (combined) as reported	4111	3702
D-68—Statement showing consolidated earnings of Western Electric and subsidiaries, 1916-1930	4112	3702A
D-69—Statement showing patents sold to and licenses purchased from A. T. & T. by Western Electric, Inc., and accounting disposition, 1916-1930	4113	3703
D-70—Agreement between Western Electric and Stromberg-Carlson, dated August 13, 1923	4114	3704
D-71—Agreement between Kellogg Switchboard and Western Electric, dated June 2, 1914	4120	3709
D-72—Description of Western Electric costs	4127	3716
D-73—Statement as to Western Electric, Investment in Products Company	4133	3723
D-74—Condensed summary of results for years 1927-1930, inclusive, E. R. P. I.	4134	3724
D-75—Analysis of principal items appearing on Products Company report No. 1 for years 1927, 1928, 1929 and 1930, under operations, E. R. P. I.	4134	3725
D-77—Analysis of capital stock structures since commencement of business to December 31, 1930, Western Electric	4143	3731
D-78—Analysis of 1925 cost of sales, Western Electric	4146	3735
D-79—Analysis of 1930 cost of sales, Western Electric	4147	3737
D-80—Statement showing relation of manufacturing department surplus to standard shop output, 1921-1930	4148	3738

	Original	Print
D-81—Statement showing standard and current cost of copper bar and lead purchased by manufacturing department, 1918-1931....	4149	3738
D-82—Letter, dated May 26, 1927, signed by Edgar S. Bloom, president, to H. L. Gary, Kansas City, Mo., re memorandum of agreement between International Telephones Sales & Engineering Corporation and E. R. P. I....................................	4150	3738
D-83—Statement showing approximate purchases from certain suppliers, 1916-1930..........	4151	3739
D-84—Statement showing rented area leased July 1, 1929, and after at manufacturing locations	4152	3740
D-85—Statement showing additions to pension fund in 1931..................................	4153	3740
D-86—Statement showing depreciation expense included in cost of plant made, 1916-1931, inclusive	4154	3741
D-87—Statement showing total 1929 average investment, Bell and non-Bell business with percentage apportioned on basis of standard cost of sales...........................	4155	3741
D-88—Statement showing total 1929 expenses and operating interest, Bell and non-Bell business with percentage apportioned on basis of standard cost of sales..................	4156	3742
D-89—Resolutions of board of directors authorizing extraordinary depreciation...........	4157	3742
D-90—Statement showing extraordinary depreciation on plant, 1924, 1925, and 1926........	4158	3743
D-92—Pamphlet, "The Telephone Company as a Citizen of Your Community", an address by F. O. Hale, April 2, 1931..............	4185	3750
D-93—Statement of total expense on radio to December 31, 1931..........................	4187	3751
D-94—Statement as to department of development and research, expense of development work for year 1920................................	4188	3751
D-95—Statement as to department of development and research, comparison of principal expenditures with budget, December 31, 1921....................................	4189	3752
D-96—Statement as to department of development and research, comparison of expenditures with budget, for year ending December 31, 1922	4190	3752
D-97—Statement showing number of employees of Western Electric Company, Inc., 1916-1930.	4191	3752

	Original	Print
D-98—Bill of sale, A. T. & T. to Illinois Bell Telephone Co., dated December 31, 1927 (form D-26D (1))	4192	3753
D-99—Statement as to A. T. & T., prices charged licensee companies for instruments based on average current cost to A. T. & T. less 20%	4193	3753
D-100—Statement as to A. T. & T., analysis of reserve for depreciation of telephone instruments, years 1923-1927	4194	3754

[fol. 3237] **EXHIBIT A-196**

Employees' Stock Plan

1. The regular schedules of payments for A. T. & T. Co. stock under the Employees' Stock Plan through deductions from pay, provide that payments will be completed as follows:

(a) For subscriptions at $130, each month up to December, 1932.

(b) For subscriptions at $150 with deductions of $4.00 per month, each month beginning with September, 1932.

(c) For subscriptions at $150 with deductions of $3.00 per month, each month beginning with July, 1933.

2. The price in each case is made of two items,—amounts deducted from pay, and interest on the amounts deducted, as follows:

(a) $130 rate: $115.75 deductions and $14.25 interest.

(b) $150 rate with deductions of $4.00 per month: $137.11 deductions and $12.89 interest.

(c) $150 rate with deductions of $3.00 per month: $133.77 deductions and $16.23 interest.

3. When a subscription is cancelled by an employee at any time, the entire amount deducted from pay up to that time is refunded, and also interest on the amounts deducted, but at a slightly smaller rate per annum.

4. When a subscription is cancelled by an employee after all schedule deductions have been made, which can be done by filing a request for cancellation with the immediate supervisor on or before the last day of the month of final deduction, the cash refund value of a one share subscription would be as follows:

(a) $130 rate: $115.75 deductions, $11.47 interest, total $127.22.

(b) $150 rate with deductions of $4.00 per month: $137.11 deductions, $10.05 interest, total $147.16.

(c) $150 rate with deductions of $3.00 per month: $133.77 deductions, $12.79 interest, total $146.56.

5. When A. T. & T. Co. stock can be purchased outside the Plan (through the Bell Telephone Securities Co. or an investment house) at a price which is less than the total refund value stated in paragraph 4 for the subscription involved, it is to the immediate financial advantage of an employee who is about to complete payments on a subscription under the Plan, to cancel such subscription and use the amount refunded to buy through the other channel.

6. However, stock bought under the Plan has one privilege not attaching to other stock; the dividends received from it may be used in purchasing additional stock under the conditions set out in the Plan. The future value and importance of this privilege will necessarily vary in the minds of different individuals. Each one will have to arrive at a personal decision on this point, but everyone will wish to give consideration to it in reaching a conclusion as to whether they will cancel their contract and purchase stock at the market price outside of the Plan or complete their subscriptions and receive stock under the Plan.

7. Neither this Company nor the A. T. & T. Co. is suggesting how employees should treat their existing subscriptions under the Plan. The facts and figures have been set up to help you arrive at your decision. Figures are given on the basis of subscriptions upon which all schedule deductions have been completed, to indicate the price at which a purchase outside the Plan might be advantageous, but it is not intended to suggest that subscriptions be continued to that point if an employee feels at any time that the price at which stock can be bought outside the Plan justifies the use of the accumulated credits under the Plan for the outside purchase. No employee's standing in the Company is affected in any manner by action taken regarding subscriptions under the Plan.

8. If you want more information or help, your immediate supervisor will give it, or will obtain it for you. Forms upon which to request the treatment you wish, both in cancelling subscriptions under the Plan and in purchasing through the Bell Telephone Securities Co. may be obtained from your immediate supervisor.

(Here follows pages 3238, 3239, 3240 and Exhibits A-198, 199, 200, 201—pages 3241-3244)

EXHIBIT A-197

STOCK

OF THE

AMERICAN TELEPHONE
AND
TELEGRAPH COMPANY

May be purchased under either a
cash or a monthly payment plan

BELL TELEPHONE SECURITIES COMPANY
INCORPORATED
195 BROADWAY NEW YORK, N. Y.

Terms of Purchase

APPLICATION

Application must be made on the blank attached hereto and payments must be made through the *local Bell Telephone business office*.

Applications shall be limited to the number of shares that the Securities Company may from time to time determine.

(*Over*)

Exchange/Section
Division ____________
Department ____________
Taken by ____________

PRICE

The price per share is the price at which the last sale is made on the New York Stock Exchange on the business day immediately following the day on which the application is received plus a small amount equal to brokerage charges.

CASH PLAN

Stock must be paid for in full and payment of the approximate amount of the purchase price must accompany the application.

MONTHLY PAYMENT PLAN

The first payment, which must accompany the application, shall be not less than $50.00 per share and subsequent monthly payments shall be $10.00 or any multiple thereof per share. The applicant's account will be charged with the cost of the stock at the price at which the application is accepted and will be credited with installment payments made by the applicant and, at the time of final payment, with an amount equivalent to the dividends to which the shares have been entitled. Interest on monthly unpaid balances at the rate of 6% per annum will be charged to the applicant's account at the time of final payment, monthly installment payments received on or before the 5th of a month being treated as paid on the first day of the month and those received after the 5th of the month as paid on the first day of the following month. Any rights which may attach to the shares being paid for will be sold by the Company and each applicant's account credited with the proceeds of such rights at the average price received by the Company for the rights attaching to all the shares of all applicants.

The applicant will, upon written request, be granted one extension of monthly payments of not exceeding two months, provided at least $90.00 per share shall have been paid. The applicant may at any time take up any or all of the shares applied for by a payment of the balance due.

At any time prior to the final payment, the applicant may elect by written notice to have his agreement cancelled as to any or all shares applied for, in which case an appropriate adjustment for interest and dividends applicable to the shares cancelled will be made and his account will be credited for the shares cancelled at the purchase price, but in case this is higher than the last sale price on the New York Stock Exchange on the date of cancellation the difference will be charged to the applicant's account. In case of cancellation as to all shares, the account will be closed and settlement made forthwith. In case of cancellation as to part of the shares, settlement will be made with respect to the shares cancelled.

The Securities Company reserves the right to reject any application under either plan, or to accept it for a lesser number of shares; to withdraw this offer at any time without notice; and to cancel the application, with refund under the above terms, in case of an unadjusted difference with the applicant or if a monthly payment is not received within one month after it is due.

BELL TELEPHONE SECURITIES COMPANY

Dated, New York City, July 1, 1931

TS 301
(3-32)

APPLICATION FOR STOCK OF AMERICAN TELEPHONE AND TELEGRAPH COMPANY

To Bell Telephone Securities Company: Dated______________, 193__

I hereby apply for shares of the stock of the American Telephone and Telegraph Company, in accordance with the terms of your offer of July 1, 1931 as follows:

☐ SHARES PLAN "A" CASH PLAN—Approximate payment in full to accompany the application; difference between this payment and cost of stock to be refunded or collected before delivery of certificate.

☐ SHARES PLAN "B" MONTHLY PAYMENT PLAN—First payment of not less than $50 per share to accompany application; subsequent monthly installments to be $10 or any multiple thereof per share, a total of $______ monthly; an adjustment for dividends and interest charges to be made in connection with final payment.

It is understood that you may reject this application or accept it for a lesser number of shares, and that having accepted it, you will advise me promptly of the price.

Total amount of payment made on account of this application $______________

____
Signature of applicant (give first or middle name in full; if a woman, indicate whether "Miss" or "Mrs.")

Applicant also please Print name in this space______________________________

Applicant's Address to which Stock Certificate and Notices shall be mailed:

____
Street and Number City or Town State

Applicant's Occupation______________________________ Applicant's Telephone Number______________

Date of Acceptance______________ Number of Shares______________ Price per Share $______________

3240

[fol. 3241]

EXHIBIT A-198

American Telephone and Telegraph Company

Statement of (a) License Contract, Revenues and (b) Costs Incurred in Rendering License Contract Services; also Additional Items which should be Considered on the Assumption that Amer[illegible]d Telegraph Compa a Contracting Party Entitled to Make a Fair Contract with Associated Companies and a Fair Profit Therefrom

	1923	1924	1925	1926	1927	1928	1929	[illegible]	[illegible]931	Total 192 1931 Inclu
A. License Contract Revenues received from Associated Companies and Bell Telephone Company of Canada	$24,309,368	$26,784,492	$30,197,214	$29,850,303	$32,454,652	$17,622,365	$14,455,588	$15,02[illegible]	[illegible]8,361	$205,418,
B. Costs Incurred in Rendering License Contract Services (Exhibit A-170) less amounts which have been allocated to Long Lines Department (American Company)	20,596,272	23,481,754	26,556,167	27,530,643	28,286,823	20,368,791	21,438,847	26,250,577	25,340,405	219,850,
C. (A) less (B) Above	3,713,096	3,302,738	3,641,047	2,319,660	4,167,829	2,746,426*	6,983,259*	11,224,687*	10,622,044*	14,432,
D. Deduct additional amounts as follows:										
(1) Amount by which Pension Accruals for General Department of American Company during 1923-1926, inclusive, exceed actual disbursements for Pensions (Exhibits A-178 and A-177)	76,716	96,825	117,091	134,955	....	....	....	....	....	425,5
(2) Fair allowance for telephone instruments (Exhibit A-) less costs already included in Item B above (the costs shown on Exhibit A-170)	2,332,636	2,719,135	2,957,830	2,871,368	2,454,998	....	....	....	....	13,335,9
Total	$2,409,352	$2,815,960	$3,074,921	$3,006,323	$2,454,998	....	....	....	....	$13,761,5
E. Net Balance—License Revenues less Costs and Deductions shown above	$1,303,744	$486,778	$566,126	$686,663*	$1,712,831	$2,746,426*	$6,983,259*	$11,224,687*	$10,622,044*	$28,193,6

Additional Items to be Considered in Connection with Above "Net Balance" (Item E):

(a) Liability of American Company to Associated Companies under guarantee to protect and save harmless these companies from all actions and suits charging infringement of patents (Section 2—License Contract). During the period 1923—1931, inclusive, the American Company transferred from its Surplus to a "Reserve for Contingencies" the amounts here shown against this item aggregating $30,395,800. A controlling purpose in creating this Reserve was to provide financial protection against this infringement liability.

1923	1924	1925	1926	1927	1928	1929	1930	1931	Total
$3,000,000	$3,000,000	$6,000,000	$4,000,000	$3,000,000*	$3,000,000*	$3,000,000*	$3,000,000*	$2,395,800*	$30,395,800

*Portion of total amount of $14,395,800 credited to "Reserve for Contingencies" in 1927.

(b) Acquisition for benefit of Associated Companies of rights under General Electric Co. and Radio Corp. of America patents by surrender of rights in radio field worth upwards of $10,000,000. (See testimony of Dr. F. B. Jewett, pages 2107-2122, inclusive, of Transcript.)

(c) An allowance sufficient to yield a fair return, plus profit, on the value of all property used in rendering license contract services, including value of the Development and Research and other General Department organizations of the Company, less costs already included in Exhibit A-167 and Item D(2) above.

(d) In all computations involving "Average cost of funds used in the business" these average costs give effect to the inclusion with capital funds paid into the business all Surplus of the Company, whether appropriated or unappropriated, on the basis of no capital charge cost to the Company. This method of procedure has reduced materially the percentage rate for "cost of funds" wherever that rate was used in determining costs.

* Red Figures.

EXHIBIT A-198

American Telephone and Telegraph Company

ent of (a) License Contract Revenues and (b) Costs Incurred in Rendering License Contract Services; also Additional Items which should be Considered on the Assumption that American Telephone and Telegraph Company is a Contracting Party Entitled to Make a Fair Contract with Associated Companies and a Fair Profit Therefrom

	1923	1924	1925	1926	1927	1928	1929	1930	1931	Total 1923–1931 Inclusive
ense Contract Revenues received from Associated Companies and Bell Telephone Company of Canada	$24,309,368	$26,784,492	$30,197,214	$29,850,303	$32,454,652	$17,622,365	$14,455,588	$15,025,890	$14,718,361	$205,418,233
sts Incurred in Rendering License Contract Services (Exhibit A-170) less ounts which have been allocated to Long Lines Department (American Com- y)	20,596,272	23,481,754	26,556,167	27,530,643	28,286,823	20,368,791	21,438,847	26,250,577	25,340,405	219,850,279
less (B) Above	3,713,096	3,302,738	3,641,047	2,319,660	4,167,829	2,746,426*	6,983,259*	11,224,687*	10,622,044*	14,432,046*
duct additional amounts as follows:										
Amount by which Pension Accruals for General Department of American Company during 1923–1926, inclusive, exceed actual disbursements for Pensions (Exhibits A-178 and A-177)	76,716	96,825	117,091	134,955	....	....	....	....	....	425,587
Fair allowance for telephone instruments (Exhibit A-) less costs already included in Item B above (the costs shown on Exhibit A-170)	2,332,636	2,719,135	2,957,830	2,871,368	2,454,998	....	....	....	....	13,335,967
Total	$2,409,352	$2,815,960	$3,074,921	$3,006,323	$2,454,998	....	....	....	....	$13,761,554
Balance—License Revenues less Costs and Deductions shown above	$1,303,744	$486,778	$566,126	$686,663*	$1,712,831	$2,746,426*	$6,983,259*	$11,224,687*	$10,622,044*	$28,193,600*

Additional Items to be Considered in Connection with Above "Net Balance" (Item E):

(a) Liability of American Company to Associated Companies under guarantee to protect and save harmless these companies from all actions and suits charging infringement of patents (Section 2—License Contract). During the period 1923—1931, inclusive, the American Company transferred from its Surplus to a "Reserve for Contingencies" the amounts here shown against this item aggregating $30,395,800. A controlling purpose in creating this Reserve was to provide financial protection against this infringement liability.

1923	1924	1925	1926	[illegible]27	1928	1929	1930	1931	Total
$3,000,000	$3,000,000	$6,000,000	$4,000,000	$3,[illegible]0,000*	$3,000,000*	$3,000,000*	$3,000,000*	$2,395,800*	$30,395,800

*Portion of total amount of $14,395,800 credited to "Reserve for Contingencies" in 1927.

(b) Acquisition for benefit of Associated Companies of rights under General Electric Co. and Radio Corp. of America patents by surrender of rights in radio field worth upwards of $10,000,000. (See testimony of Dr. F. B. Jewett, pages 2107-2122, inclusive, of Transcript.)

(c) An allowance sufficient to yield a fair return, plus profit, on the value of all property used in rendering license contract services, including value of the Development and Research and other General Department organizations of the Company, less costs already included in Exhibit A-167 and Item D(2) above.

(d) In all computations involving "Average cost of funds used in the business" these average costs give effect to the inclusion with capital funds paid into the business all Surplus of the Company, whether appropriated or unappropriated, on the basis of no capital charge cost to the Company. This method of procedure has reduced materially the percentage rate for "cost of funds" wherever that rate was used in determining costs.

* Red Figures.

Exhibit A-199

American Telephone and Telegraph Company

Statement of (a) License Contract Revenues and (b) Costs Incurred in Rendering License Contract Services; also Additional Items which Should be Considered on the Assumption that American Telephone and Telegraph Company may not Obtain any Profit from its Relations with Associated Companies and that Sums which it may Charge to Them for Services are Restricted to the Cost Thereof, But Where the American Company Furnishes Property in Connection with Such Services it is also Entitled to a Fair Return upon the Value Thereof.

	1923	1924	1925	1926	1927	1928	1929	1930	1931
A. License Contract Revenues received from Associated Companies and Bell Telephone Company of Canada	$24,309,368	$26,784,492	$30,197,214	$29,850,303	$32,454,652	$17,622,365	$14,455,588	$15,025,890	$14,718,36
B. Costs Incurred in Rendering License Contract Services (Exhibit A-170) less amounts which have been allocated to Long Lines Department (American Company)	20,596,272	23,481,754	26,556,167	27,530,643	28,286,823	20,368,791	21,438,847	26,250,577	25,340,40
C. (A) less (B) above	3,713,096	3,302,738	3,641,047	2,319,660	4,167,829	2,746,426*	6,983,259*	11,224,687*	10,622,04
D. Deduct additional amounts as follows:									
(1) Amount by which Pension Accruals for General Department of American Company during 1923–1926, inclusive, exceed actual disbursements for Pensions (Exhibits A-178 and A-177)	76,716	96,825	117,091	134,955	....	....	....	....	....
(2) Fair allowance for telephone instruments (Exhibit A-) less costs already included in Item B above (the costs shown on Exhibit A-170)	2,332,636	2,719,135	2,957,830	2,871,368	2,454,998	....	....	....	....
Total	2,409,352	2,815,960	3,074,921	3,006,323	2,454,998	....	....	....	....
E. Net Balance—License Revenues less Costs and Deductions shown above	$1,303,744	$486,778	$566,126	$686,663*	$1,712,831	$2,746,426*	$6,983,259*	$11,224,687*	$10,622,04

(Each of the seven lines above is identical with the lines A to E on Sheet 1)

Additional Items to be Considered in Connection with Above "Net Balance" (Item E):

(a) Liability of American Company to Associated Companies under guarantee to protect and save harmless these companies from all actions and suits charging infringement of patents (Section 2—License Contract). During the period 1923—1931, inclusive, the American Company transferred from its Surplus to a "Reserve for Contingencies" the amounts here shown against this item aggregating $30,395,800. A controlling purpose in creating this Reserve was to provide financial protection against this infringement liability.

1923	1924	1925	1926	1927	1928	1929	1930	1931	Total
$3,000,000	$3,000,000	$6,000,000	$4,000,000	$3,000,000*	$3,000,000*	$3,000,000*	$3,000,000*	$2,395,800*	$30,395,800

*Portion of total amount of $14,395,800 credited to "Reserve for Contingencies" in 1927.
(Same as on Sheet 1)

(b) Fair return and amortization charges upon the value of approximately 11,000 patents and patent rights, including patent acquired from General Electric Company and Radio Corporation of America at cost of over $10,000,000 for benefit of Associated Companies, and other patents acquired by purchase at cost of over $6,200,000 together with patents taken out by employees less amounts included in Exhibit A-160 for patents purchased and enumerated at pages 2661-2667 of minutes.

(c) An allowance equal to the difference between a fair return and the amount computed by using "Average cost of funds used in business" (ranging from 6.25 per cent to 6.93 per cent during period—Exhibit A-164) on the following items of property of the American Company used in the telephone business of the Bell System:

1. Working capital (measured by the average amount of funds held available for the use of the business (Exhibit A-169) ranging from about $70,000,000 to $300,000,000 per annum throughout period, 1923-1931, inclusive).
2. Physical Property of the General Department of the American Company used in the business (Exhibit A-170) ranging from about $1,000,000 to $12,000,000 per annum throughout period, 1923—1931, inclusive.

(d) In all computations involving "Average cost of funds used in the business" these average costs give effect to the inclusion with capital funds paid into the business all Surplus of the Company, whether appropriated or unappropriated, on the basis of no capital charge cost to the Company. This method of procedure has reduced materially the percentage rate for "cost of funds" wherever that rate was used in determining costs. (Same as on Sheet 1)

(e) It may be pertinent to consider deductions from the above "Net Balanee" (Item E) for:

	1923	1924	1925	1926	1927	1928	1929	1930	1931
1. Cost (net) of "Temporary Financing" the annual amounts included in Exhibit A-170 for the period 1923–1931, inclusive, no part of which was allocated to Chicago Area in Exhibit A-170 are as follows	$1,535,913	$2,260,603	$2,606,279	$2,095,365	$1,839,609	$1,051,430	$2,452,536	$1,137,450	$1,709,528
2. A reasonable portion only of the royalties received by the American Company for the use of its patents in "non-telephone" fields. The total of all royalties and license fees received by the Company annually during the period 1923–1931, inclusive, are as follows	$97,477	$113,536	$212,516	$260,981	$540,427	$505,893	$1,233,101	$1,129,655	$1,135,555

* Red figures.

Exhibit A-199

American Telephone and Telegraph Company

Statement of (a) License Contract Revenues and (b) Costs Incurred in Rendering License Contract Services; also Additional Items which Should be Considered on the Assumption that American Telephone and Telegraph Company may not Obtain any Profit from its Relations with Associated Companies and that Sums which it may Charge to Them for Services are Restricted to the Cost Thereof, But Where the American Company Furnishes Property in Connection with Such Services it is also Entitled to a Fair Return upon the Value Thereof.

	1923	1924	1925	1926	1927	1928	1929	1930	1931	Total 1923-1931 Inclusive
Revenues received from Associated Companies and Bell Tele- Canada	$24,309,368	$26,784,492	$30,197,214	$29,850,303	$32,454,652	$17,622,365	$14,455,588	$15,025,890	$14,718,361	$205,418,233
Rendering License Contract Services (Exhibit A-170) less been allocated to Long Lines Department (American Com-	20,596,272	23,481,754	26,556,167	27,530,643	28,286,823	20,368,791	21,438,847	26,250,577	25,340,405	219,850,279
	3,713,096	3,302,738	3,641,047	2,319,660	4,167,829	2,746,426*	6,983,259*	11,224,687*	10,622,044*	14,432,046*
amounts as follows:										
ch Pension Accruals for General Department of American g 1923–1926, inclusive, exceed actual disbursements for ts A-178 and A-177)	76,716	96,825	117,091	134,955	....	....	....	....	....	425,587
r telephone instruments (Exhibit A-) less costs already B above (the costs shown on Exhibit A-170)	2,332,636	2,719,135	2,957,830	2,871,368	2,454,998	....	....	....	....	13,335,967
	2,409,352	2,815,960	3,074,921	3,006,323	2,454,998	....	....	....	....	13,761,554
Revenues less Costs and Deductions shown above	$1,303,744	$486,778	$566,126	$686,663*	$1,712,831	$2,746,426*	$6,983,259*	$11,224,687*	$10,622,044*	$28,193,600*

(Each of the seven lines above is identical with the lines A to E on Sheet 1)

Additional Items to be Considered in Connection with Above "Net Balance" (Item E):

(a) Liability of American Company to Associated Companies under guarantee to protect and save harmless these companies from all actions and suits charging infringement of patents (Section 2—License Contract). During the period 1923—1931, inclusive, the American Company transferred from its Surplus to a "Reserve for Contingencies" the amounts here shown against this item aggregating $30,395,800. A controlling purpose in creating this Reserve was to provide financial protection against this infringement liability.

1923	1924	1925	1926	1927	1928	1929	1930	1931	Total
$3,000,000	$3,000,000	$6,000,000	$4,000,000	$3,000,000*	$3,000,000*	$3,000,000*	$3,000,000*	$2,395,800*	$30,395,800.

*Portion of total amount of $14,395,800 credited to "Reserve for Contingencies" in 1927.
(Same as on Sheet 1)

(b) Fair return and amortization charges upon the value of approximately 11,000 patents and patent rights, including patent acquired from General Electric Company and Radio Corporation of America at cost of over $10,000,000 for benefit of Associated Companies, and other patents acquired by purchase at cost of over $6,200,000 together with patents taken out by employees less amounts included in Exhibit A-160 for patents purchased and enumerated at pages 2661-2667 of minutes.

(c) An allowance equal to the difference between a fair return and the amount computed by using "Average cost of funds used in business" (ranging from 6.25 per cent to 6.93 per cent during period—Exhibit A-164) on the following items of property of the American Company used in the telephone business of the Bell System:

1. Working capital (measured by the average amount of funds held available for the use of the business (Exhibit A-169) ranging from about $70,000,000 to $300,000,000 per annum throughout period, 1923-1931, inclusive).
2. Physical Property of the General Department of the American Company used in the business (Exhibit A-170) ranging from about $1,000,000 to $12,000,000 per annum throughout period, 1923—1931, inclusive.

(d) In all computations involving "Average cost of funds used in the business" these average costs give effect to the inclusion with capital funds paid into the business all Surplus of the Company, whether appropriated or unappropriated, on the basis of no capital charge cost to the Company. This method of procedure has reduced materially the percentage rate for "cost of funds" wherever that rate was used in determining costs. (Same as on Sheet 1)

(e) It may be pertinent to consider deductions from the above "Net Balance" (Item E) for:

	1923	1924	1925	1926	1927	1928	1929	1930	1931	Total
ary Financing" the annual amounts included in Exhibit 3–1931, inclusive, no part of which was allocated to Chicago re as follows	$1,535,913	$2,260,603	$2,606,279	$2,095,365	$1,839,609	$1,051,430	$2,452,536	$1,137,450	$1,709,528	$16,688,713
ly of the royalties received by the American Company in "non-telephone" fields. The total of all royalties and the Company annually during the period 1923–1931,	$97,477	$113,536	$212,516	$260,981	$540,427	$505,893	$1,233,101	$1,129,655	$1,135,555	$5,229,141

[fol. 3243]

Exhibit A-200

American Telephone and Telegraph Company

Statement of (a) License Contract Revenues from Chicago Area and (b) Costs Incurred in Rendering License Contract Services to that Area; also Additional Items which should be Considered on the Assumption that American Telephone and Telegraph Company is a Contracting Party Entitled to Make a Fair Contract with Associated Companies and a Fair Profit Therefrom

	1923	1924	1925	1926	1927	1928	1929	1930	19
A. License Contract Revenues received from Chicago Area	$1,724,251	$1,860,438	$1,987,534	$1,934,970	$2,085,720	$1,104,894	$931,296	$968,222	$9
B. Costs Incurred in Rendering License Contract Services to Chicago Area (Exhibit A-170)	1,212,380	1,294,786	1,467,682	1,532,021	1,600,738	1,137,727	1,091,694	1,396,505	1,2
C. (A) less (B) above	511,871	565,652	519,852	402,949	484,982	32,833*	160,398*	428,283*	3
D. Deduct additional amounts as follows:									
(1) Portion allocated to Chicago Area of amount by which Pension Accruals for General Department of American Company during 1923–1926, inclusive, exceed actual disbursements for Pensions (Exhibits A-178 and A-177)	5,063	6,197	7,377	8,502	....	....	....	....	....
(2) Fair allowance for telephone instruments in Chicago Area (Exhibit A-163) less costs already included in Item B above (the costs shown on Exhibit A-170)	145,625	171,477	180,952	172,674	154,474	....	....	....	....
Total	150,688	177,674	188,329	181,176	154,474	....	....	....	....
E. Net Balance—License Revenues less Costs and Deductions shown above—Chicago Area	$361,183	$387,978	$331,523	$221,773	$330,508	$32,833*	$160,398*	$428,283*	$3

Additional Items to be Considered in Connection with Above "Net Balance" (Item E):

Note: The Chicago Area constitutes approximately 6% of the Bell System and allowances made in respect to these items should be allocated accordingly.

(a) Liability of American Company to Associated Companies under guarantee to protect and save harmless these companies from all actions and suits charging infringement of patents (Section 2—License Contract). During the period 1923–1931, inclusive, the American Company transferred from its Surplus to a "Reserve for Contingencies" the amounts here shown against this item aggregating $30,395,800. A controlling purpose in creating this Reserve was to provide financial protection against this infringement liability.

1923	1924	1925	1926	1927	1928	1929	1930	1931	Total
$3,000,000	$3,000,000	$6,000,000	$4,000,000	$3,000,000*	$3,000,000*	$3,000,000*	$3,000,000*	$2,395,800*	$30,395,800

*Portion of total amount of $14,395,800 credited to "Reserve for Contingencies" in 1927.

(b) Acquisition for benefit of Associated Companies of rights under General Electric Co. and Radio Corp. of America patents by surrender of rights in radio field worth upwards of $10,000,000. (See testimony of Dr. F. B. Jewett, pages 2107-2122, inclusive, of minutes).

(c) An allowance sufficient to yield a fair return, plus profit, on the value of all property used in rendering license contract services including value of the Development and Research and other General Department organizations of the Company, less costs already included in Exhibit A-167 and Item D(2) above.

(d) In all computations involving "Average cost of funds used in the business" these average costs give effect to the inclusion with capital funds paid into the business all Surplus of the Company, whether appropriated or unappropriated, on the basis of no capital charge cost to the Company. This method of procedure has reduced materially the percentage rate for "cost of funds" wherever that rate was used in determining costs.

* Red Figures.

Exhibit A-200

American Telephone and Telegraph Company

Statement of (a) License Contract Revenues from Chicago Area and (b) Costs Incurred in Rendering License Contract Services to that Area; also Additional Items which should be Considered on the Assumption that American Telephone and Telegraph Company is a Contracting Party Entitled to Make a Fair Contract with Associated Companies and a Fair Profit Therefrom

	1923	1924	1925	1926	1927	1928	1929	1930	1931	Total 1923–1931 Inclusive
venues received from Chicago Area	$1,724,251	$1,860,438	$1,987,534	$1,934,970	$2,085,720	$1,104,894	$931,296	$968,222	$931,652	$13,528,977
ndering License Contract Services to Chicago Area (Ex-	1,212,380	1,294,786	1,467,682	1,532,021	1,600,738	1,137,727	1,091,694	1,396,505	1,284,878	12,018,411
	511,871	565,652	519,852	402,949	484,982	32,833*	160,398*	428,283*	353,226*	1,510,566
ounts as follows:										
d to Chicago Area of amount by which Pension Accruals for ment of American Company during 1923–1926, inclusive, bursements for Pensions (Exhibits A-178 and A-177)	5,063	6,197	7,377	8,502	....	....	....	....	....	27,139
for telephone instruments in Chicago Area (Exhibit A-163) ly included in Item B above (the costs shown on Exhibit	145,625	171,477	180,952	172,674	154,474	....	....	....	....	825,202
	150,688	177,674	188,329	181,176	154,474	....	....	....	....	852,341
e Revenues less Costs and Deductions shown above—Chicago	$361,183	$387,978	$331,523	$221,773	$330,508	$32,833*	$160,398*	$428,283*	$353,226*	$658,225

Additional Items to be Considered in Connection with Above "Net Balance" (Item E):

Note: The Chicago Area constitutes approximately 6% of the Bell System and allowances made in respect to these items should be allocated accordingly.

(a) Liability of American Company to Associated Companies under guarantee to protect and save harmless these companies from all actions and suits charging infringement of patents (Section 2—License Contract). During the period 1923–1931, inclusive, the American Company transferred from its Surplus to a "Reserve for Contingencies" the amounts here shown against this item aggregating $30,395,800. A controlling purpose in creating this Reserve was to provide financial protection against this infringement liability.

1923	1924	1925	1926	1927	1928	1929	1930	1931	Total
$3,000,000	$3,000,000	$6,000,000	$4,000,000	$3,000,000*	$3,000,000*	$3,000,000*	$3,000,000*	$2,395,800*	$30,395,800

*Portion of total amount of $14,395,800 credited to "Reserve for Contingencies" in 1927.

(b) Acquisition for benefit of Associated Companies of rights under General Electric Co. and Radio Corp. of America patents by surrender of rights in radio field worth upwards of $10,000,000. (See testimony of Dr. F. B. Jewett, pages 2107-2122, inclusive, of minutes).

(c) An allowance sufficient to yield a fair return, plus profit, on the value of all property used in rendering license contract services including value of the Development and Research and other General Department organizations of the Company, less costs already included in Exhibit A-167 and Item D(2) above.

(d) In all computations involving "Average cost of funds used in the business" these average costs give effect to the inclusion with capital funds paid into the business all Surplus of the Company, whether appropriated or unappropriated, on the basis of no capital charge cost to the Company. This method of procedure has reduced materially the percentage rate for "cost of funds" wherever that rate was used in determining costs.

* Red Figures.

Exhibit A-201

American Telephone and Telegraph Company

Statement of (a) License Contract Revenues from Chicago Area and (b) Costs Incurred in Rendering License Contract Services to that Area; also Additional Items which should be Considered on the Assumption that American Telephone and Telegraph Company May Not Obtain any Profit from Its Relations with Associated Companies and that Sums which It May Charge to Them for Services are Restricted to the Cost Thereof, but Where the American Company Furnishes Property in Connection with Such Services it is also Entitled to a Fair Return upon the Value Thereof.

	1923	1924	1925	1926	1927	1928	1929	1930	1931
A. License Contract Revenues received from Chicago Area	$1,724,251	$1,860,438	$1,987,534	$1,934,970	$2,085,720	$1,104,894	$931,296	$968,222	$931,652
B. Costs Incurred in Rendering License Contract Services to Chicago Area (Exhibit A-170)	1,212,380	1,294,786	1,467,682	1,532,021	1,600,738	1,137,727	1,091,694	1,396,505	1,284,878
C. (A) less (B) above	511,871	565,652	519,852	402,949	484,982	32,833*	160,398*	428,283*	353,226*
D. Deduct additional amounts as follows:									
(1) Portion allocated to Chicago Area of amount by which Pension Accruals for General Department of American Company during 1923–1926, inclusive, exceed actual disbursements for Pensions (Exhibits A-178 and A-177)	5,063	6,197	7,377	8,502					
(2) Fair allowance for telephone instruments in Chicago Area (Exhibit A-163) less costs already included in Item B above (the costs shown on Exhibit A-170)	145,625	171,477	180,952	172,674	154,474				
Total	150,688	177,674	188,329	181,176	154,474				
E. Net Balance—License Revenues less Costs and Deductions shown above—Chicago Area	$361,183	$387,978	$331,523	$221,773	$330,508	$32,833*	$160,398*	$428,283*	$353,226*

(Each of the seven lines above is identical with the lines A to E on Sheet 1.)

Additional Items to be Considered in Connection with Above "Net Balance" (Item E):

Note: The Chicago Area constitutes approximately 6% of the Bell System and allowances made in respect of these items should be allocated accordingly.

(a) Liability of American Company to Associated Companies under guarantee to protect and save harmless these companies from all actions and suits charging infringement of patents (Section 2—License Contract). During the period 1923–1931, inclusive, the American Company transferred from its Surplus to a "Reserve for Contingencies" the amounts here shown against this item aggregating $30,395,800. A controlling purpose in creating this Reserve was to provide financial protection against this infringement liability.

1923	1924	1925	1926	1927	1928	1929	1930	1931	Total
$3,000,000	$3,000,000	$6,000,000	$4,000,000	$3,000,000*	$3,000,000*	$3,000,000*	$3,000,000*	$2,395,800*	$30,395,800

*Portion of total amount of $14,395,800 credited to "Reserve for Contingencies" in 1927. (Same as on Sheet 1)

(b) Fair return and amortization charges upon the value of approximately 11,000 patents and patent rights, including patents acquired from General Electric Company and Radio Corporation of America at cost of over $10,000,000 for benefit of Associated Companies, and other patents acquired by purchase at cost of over $6,200,000 together with patents taken out by employees less amounts included in Exhibit A-160 for patents purchased and enumerated at pages 2661-2667 of minutes.

(c) An allowance equal to the difference between a fair return and the amount computed by using "Average cost of funds used in business" (ranging from 6.25 per cent to 6.93 per cent during period—Exhibit A-164) on the following items of property of the American Company used in the telephone business of the Bell System:

1. Working capital (measured by the average amount of funds held available for the use of the business (Exhibit 169) ranging from about $70,000,000 to $300,000,000 per annum throughout period, 1923–1931, inclusive).
2. Physical Property of the General Department of the American Company used in the business (Exhibit A-170) ranging from about $1,000,000 to $12,000,000 per annum throughout period, 1923–1931, inclusive.

(d) In all computations involving "Average cost of funds used in the business" these average costs give effect to the inclusion with capital funds paid into the business all Surplus of the Company, whether appropriated or unappropriated, on the basis of no capital charge cost to the Company. This method of procedure has reduced materially the percentage rate for "cost of funds" wherever that rate was used in determining costs. (Same as on Sheet 1.)

(e) It may be pertinent to consider deductions from the above "Net Balance" (Item E) for:

	1923	1924	1925	1926	1927	1928	1929	1930	1931
1. A reasonable portion only of the royalties received by the American Company for the use of its patents in "non-telephone" fields. The total of all royalties and license fees received by the Company annually during the period 1923–1931, inclusive, are as follows	$97,477	$113,536	$212,516	$260,981	$540,427	$505,893	$1,233,101	$1,129,655	$1,135,555

* Red figures.

EXHIBIT A-201

American Telephone and Telegraph Company

Statement of (a) License Contract Revenues from Chicago Area and (b) Costs Incurred in Rendering License Contract Services to that Area; also Additional Items which should be Considered on the Assumption that American Telephone and Telegraph Company May Not Obtain any Profit from Its Relations with Associated Companies and that Sums which It May Charge to Them for Services are Restricted to the Cost Thereof, but Where the American Company Furnishes Property in Connection with Such Services it is also Entitled to a Fair Return upon the Value Thereof.

	1923	1924	1925	1926	1927	1928	1929	1930	1931	Total 1923–1931 Inclusive
ense Contract Revenues received from Chicago Area	$1,724,251	$1,860,438	$1,987,534	$1,934,970	$2,085,720	$1,104,894	$931,296	$968,222	$931,652	$13,528,977
s Incurred in Rendering License Contract Services to Chicago Area (Ex- it A-170)	1,212,380	1,294,786	1,467,682	1,532,021	1,600,738	1,137,727	1,091,694	1,396,505	1,284,878	12,018,411
) less (B) above	511,871	565,652	519,852	402,949	484,982	32,833*	160,398*	428,283*	353,226*	1,510,566
duct additional amounts as follows:										
Portion allocated to Chicago Area of amount by which Pension Accruals for General Department of American Company during 1923–1926, inclusive, exceed actual disbursements for Pensions (Exhibits A-178 and A-177)	5,063	6,197	7,377	8,502	....	....	....	....	....	27,139
Fair allowance for telephone instruments in Chicago Area (Exhibit A-163) less costs already included in Item B above (the costs shown on Exhibit A-170)	145,625	171,477	180,952	172,674	154,474	....	....	....	....	825,202
Total	150,688	177,674	188,329	181,176	154,474	....	....	....	....	852,341
t Balance—License Revenues less Costs and Deductions shown above—icago Area	$361,183	$387,978	$331,523	$221,773	$330,508	$32,833*	$160,398*	$428,283*	$353,226*	$658,225

(Each of the seven lines above is identical with the lines A to E on Sheet 1.)

Additional Items to be Considered in Connection with Above "Net Balance" (Item E):

Note: The Chicago Area constitutes approximately 6% of the Bell System and allowances made in respect of these items should be allocated accordingly.

(a) Liability of American Company to Associated Companies under guarantee to protect and save harmless these companies from all actions and suits charging infringement of patents (Section 2—License Contract). During the period 1923–1931, inclusive, the American Company transferred from its Surplus to a "Reserve for Contingencies" the amounts here shown against this item aggregating $30,395,800. A controlling purpose in creating this Reserve was to provide financial protection against this infringement liability.

1923	1924	1925	1926	1927	1928	1929	1930	1931	Total
$3,000,000	$3,000,000	$6,000,000	$4,000,000	$3,000,000*	$3,000,000*	$3,000,000*	$3,000,000*	$2,395,800*	$30,395,800

*Portion of total amount of $14,395,800 credited to "Reserve for Contingencies" in 1927. (Same as on Sheet 1)

(b) Fair return and amortization charges upon the value of approximately 11,000 patents and patent rights, including patents acquired from General Electric Company and Radio Corporation of America at cost of over $10,000,000 for benefit of Associated Companies, and other patents acquired by purchase at cost of over $6,200,000 together with patents taken out by employees less amounts included in Exhibit A-160 for patents purchased and enumerated at pages 2661-2667 of minutes.

(c) An allowance equal to the difference between a fair return and the amount computed by using "Average cost of funds used in business" (ranging from 6.25 per cent to 6.93 per cent during period—Exhibit A-164) on the following items of property of the American Company used in the telephone business of the Bell System:

1. Working capital (measured by the average amount of funds held available for the use of the business (Exhibit 169) ranging from about $70,000,000 to $300,000,000 per annum throughout period, 1923–1931, inclusive).
2. Physical Property of the General Department of the American Company used in the business (Exhibit A-170) ranging from about $1,000,000 to $12,000,000 per annum throughout period, 1923–1931, inclusive.

(d) In all computations involving "Average cost of funds used in the business" these average costs give effect to the inclusion with capital funds paid into the business all Surplus of the Company, whether appropriated or unappropriated, on the basis of no capital charge cost to the Company. This method of procedure has reduced materially the percentage rate for "cost of funds" wherever that rate was used in determining costs. (Same as on Sheet 1.)

(e) It may be pertinent to consider deductions from the above "Net Balance" (Item E) for:

	1923	1924	1925	1926	1927	1928	1929	1930	1931	Total
onable portion only of the royalties received by the American Company e use of its patents in "non-telephone" fields. The total of all royalties icense fees received by the Company annually during the period 1923–1931, ive, are as follows	$97,477	$113,536	$212,516	$260,981	$540,427	$505,893	$1,233,101	$1,129,655	$1,135,555	$5,229,141

* Red figures.

[fol. 3245]

EXHIBIT A-202

American Telephone and Telegraph Company

Instrument Credit—Bell System

	1923	1924	1925	1926	1927
1. Average Current Cost	$36,712,948	$42,095,239	$46,392,461	$48,421,792	$46,937,162
2. Actual Depreciation (8% of Item 1)	2,937,036	3,367,619	3,711,397	3,873,743	3,754,973
3. Current Cost less 8% Depreciation (Item 1 less Item 2)	33,775,912	38,727,620	42,681,064	44,548,049	43,182,189
4. Depreciation Expense—7% of Current Cost (Item 1)	2,569,906	2,946,667	3,247,472	3,389,525	3,285,601
5. Return on Current Cost less 8% Depreciation (8% of Item 3)	2,702,073	3,098,210	3,414,485	3,563,844	3,454,575
6. Total, Items 4 and 5	5,271,979	6,044,877	6,661,957	6,953,369	6,740,176
7. Margin for Additional Instruments (6% of Item 6)	316,319	362,693	399,717	417,202	404,411
8. Instrument Repairs	1,086,422	1,328,873	1,613,737	2,033,810	2,066,815
9. Total, Items 6, 7 and 8	6,674,720	7,736,443	8,675,411	9,404,381	9,211,402

(Here follow pages 1, 2 and 3 of Exhibit A-203, side folios 3246, 3247 and 3248)

Exhibit A-203

Associated Operating Companies

Comparison of Actual Charges to Account 608, "Depreciation of Plant and Equipment," With Amounts Based on Chicago Depreciation Rates

(Omitting Charges for Station Installations, Interior Block Wires and Exchange Aerial Wire)

	1923			1924			1925.		
	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)
New England Tel. & Tel. Co.	$5,787,340	$6,173,549	.94	$6,794,925	$7,098,730	.96	$8,082,879	$8,673,599	.93
Southern New England Tel. Co.	1,391,395	1,357,969	1.02	1,501,494	1,479,294	1.02	1,707,844	1,694,446	1.01
New York Tel. Co.	15,976,295	15,942,049	1.00	19,635,413	19,203,205	1.02	24,004,067	23,894,961	1.00
Bell Tel. Co. of Pennsylvania	5,881,387	6,405,099	.91	7,227,318	7,603,731	.95	8,705,496	9,384,191	.93
Ches. & Pot. Tel. Co.	740,835	694,847	1.07	739,331	715,905	1.03	812,628	805,502	1.01
Ches. & Pot. Tel. Co. of Balto. City	1,059,977	1,166,828	.91	1,232,086	1,303,525	.95	1,408,449	1,523,026	.92
Ches. & Pot. Tel. Co. of Virginia	692,279	761,008	.91	743,779	784,801	.95	809,082	866,152	.93
Ches. & Pot. Tel. Co. of West Va.	557,730	569,817	.98	616,598	601,240	1.03	694,218	684,710	1.01
Southern Bell Tel. & Tel. Co.	4,586,168	4,823,047	.95	5,227,119	5,233,989	1.00	6,204,585	6,345,277	.98
Ohio Bell Tel. Co.	3,918,091	3,957,653	.99	4,162,465	4,079,087	1.02	4,536,506	4,393,619	1.03
Cincinnati & Suburban Bell Tel. Co.	946,427	828,258	1.14	880,672	884,846	1.00	1,035,107	1,032,406	1.00
Michigan Bell Tel. Co.	2,844,322	2,868,576	.99	3,349,276	3,338,964	1.00	3,848,673	3,822,060	1.01
Indiana Bell Tel. Co.	1,357,205	1,596,850	.85	1,731,633	1,641,519	1.05	1,776,886	1,717,406	1.03
Wisconsin Tel. Co.	1,232,707	1,409,469	.87	1,391,256	1,526,314	.91	1,582,916	1,770,028	.89
Northwestern Bell Tel. Co.	3,552,749	3,830,336	.93	3,733,939	3,818,464	.98	3,876,713	4,013,941	.97
Southwestern Bell Tel. Co.	5,627,814	6,209,645	.91	6,124,393	6,498,532	.94	6,714,918	7,012,032	.96
Mountain States Tel. & Tel. Co.	2,369,343	2,534,940	.93	2,448,960	2,478,419	.99	2,644,744	2,628,994	1.01
Pacific System Excl. So. Cal.	5,858,788	5,944,624	.99	6,587,711	6,654,214	.99	7,704,528	7,748,590	.99
Southern California Tel. Co.	1,933,315	2,082,315	.93	2,610,746	2,659,397	.98	3,311,331	3,352,113	.99
Associated Operating Companies Less Illinois Co.	66,264,167	69,156,879	.96	76,739,114	77,604,176	.99	89,461,570	91,363,053	.98

Interior Block Wires and Exchange Aerial Wire)

	1923			1924			1925		
	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A)to(B)
New England Tel. & Tel. Co.	$5,787,340	$6,173,549	.94	$6,794,925	$7,098,730	.96	$8,082,879	$8,673,599	.93
Southern New England Tel. Co.	1,391,395	1,357,969	1.02	1,501,494	1,479,294	1.02	1,707,844	1,694,446	1.01
New York Tel. Co.	15,976,295	15,942,049	1.00	19,635,413	19,203,205	1.02	24,001,067	23,894,961	1.00
Bell Tel. Co. of Pennsylvania	5,831,387	6,405,099	.91	7,227,318	7,603,731	.95	8,705,496	9,384,191	.93
Ches. & Pot. Tel. Co.	740,835	694,847	1.07	739,331	715,905	1.03	812,628	805,502	1.01
Ches. & Pot. Tel. Co. of Balto. City	1,059,977	1,166,828	.91	1,232,086	1,303,525	.95	1,408,449	1,523,026	.92
Ches. & Pot. Tel. Co. of Virginia	692,279	761,008	.91	743,779	784,801	.95	809,082	866,152	.93
Ches. & Pot. Tel. Co. of West Va.	557,730	569,817	.98	616,598	601,240	1.03	694,218	684,710	1.01
Southern Bell Tel. & Tel. Co.	4,586,168	4,823,047	.95	5,227,119	5,233,989	1.00	6,204,585	6,345,277	.98
Ohio Bell Tel. Co.	3,918,091	3,957,653	.99	4,162,465	4,079,087	1.02	4,536,506	4,393,619	1.03
Cincinnati & Suburban Bell Tel. Co.	946,427	828,258	1.14	880,672	884,846	1.00	1,035,107	1,032,406	1.00
Michigan Bell Tel. Co.	2,844,322	2,868,576	.99	3,349,276	3,338,964	1.00	3,848,673	3,822,060	1.01
Indiana Bell Tel. Co.	1,357,205	1,596,850	.85	1,731,633	1,641,519	1.05	1,776,886	1,717,406	1.03
Wisconsin Tel. Co.	1,232,707	1,409,469	.87	1,391,256	1,526,314	.91	1,582,916	1,770,028	.89
Northwestern Bell Tel. Co.	3,552,749	3,830,336	.93	3,733,939	3,818,464	.98	3,876,713	4,013,941	.97
Southwestern Bell Tel. Co.	5,627,814	6,209,645	.91	6,124,393	6,498,532	.94	6,714,918	7,012,032	.96
Mountain States Tel. & Tel. Co.	2,369,343	2,534,940	.93	2,448,960	2,478,419	.99	2,644,744	2,628,994	1.01
Pacific System Excl. So. Cal.	5,858,788	5,944,624	.99	6,587,711	6,654,214	.99	7,704,528	7,748,590	.99
Southern California Tel. Co.	1,933,315	2,082,315	.93	2,610,746	2,659,397	.98	3,314,331	3,352,113	.99
Associated Operating Companies Less Illinois Co.	66,264,167	69,156,879	.96	76,739,114	77,604,176	.99	89,461,570	91,363,053	.98

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[fol. 3247]

EXHIBIT A-203

Associated Operating Companies

Comparison of Actual Charges to Account 608, "Depreciation of Plant and Equipment," With Amounts Based on Chicago Depreciation Rates

(Omitting Charges for Station Installations, Interior Block Wires and Exchange Aerial Wire)

	1926			1927			1928		
	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)	Actual Charges to Account 608 (B)	Depreciation Expense at Chicago Rates (A)	Ratio (A)to(B)
New England Tel. & Tel. Co.	$8,591,896	$9,874,190	.87	$9,206,924	$10,521,344	.88	$9,758,004	$10,325,762	.95
Southern New England Tel. Co.	1,895,541	1,898,654	1.00	2,027,046	2,079,113	.97	2,258,429	2,219,719	1.02
New York Tel. Co.	26,813,078	26,797,326	1.00	29,370,123	29,283,324	1.00	27,093,631	26,017,414	1.04
New Jersey Bell Tel. Co.	....	....	....	....	....	....	6,113,028	6,059,130	1.01
Bell Tel. Co. of Pennsylvania	9,794,920	10,739,538	.91	10,537,266	11,404,322	.92	10,157,478	10,414,403	.98
Ches. & Pot. Tel. Co.	894,498	914,507	.98	998,473	1,017,897	.98	1,096,095	1,133,811	.97
Ches. & Pot. Tel. Co. of Balto. City	1,568,539	1,699,930	.92	1,732,786	1,856,790	.93	1,873,483	1,888,235	.99
Ches. & Pot. Tel. Co. of Virginia	873,269	929,873	.94	939,527	1,007,573	.93	1,011,098	998,758	1.01
Ches. & Pot. Tel. Co. of West Va.	793,314	796,314	1.00	845,892	838,576	1.01	923,361	853,365	1.08
Southern Bell Tel. & Tel. Co.	7,183,595	7,324,495	.98	8,135,436	8,405,791	.97	8,893,464	8,464,626	1.05
Ohio Bell Tel. Co.	5,056,648	4,863,562	1.04	5,574,680	5,407,218	1.03	6,280,400	5,673,082	1.11
Cincinnati & Suburban Bell Tel. Co.	1,155,946	1,111,863	1.04	1,235,031	1,196,368	1.03	1,344,965	1,304,789	1.03
Michigan Bell Tel. Co.	4,544,959	4,617,669	.98	5,316,672	5,248,478	1.01	6,399,549	5,852,596	1.09
Indiana Bell Tel. Co.	1,822,753	1,766,993	1.03	1,828,164	1,776,478	1.03	1,915,992	1,762,511	1.09
Wisconsin Tel. Co.	1,735,560	1,931,302	.90	1,865,833	2,074,066	.90	2,122,322	2,246,639	.94
Northwestern Bell Tel. Co.	3,999,168	4,179,707	.96	4,337,808	4,407,761	.98	4,598,135	4,445,623	1.03
Southwestern Bell Tel. Co.	8,061,057	8,550,492	.94	10,655,115	11,024,459	.97	13,311,230	11,612,369	1.15
Mountain States Tel. & Tel. Co.	2,772,361	2,818,272	.98	2,918,087	2,963,193	.98	3,187,258	2,971,455	1.07
Pacific System Excl. So. Cal.	8,107,103	8,883,824	.91	8,853,655	9,746,259	.91	9,799,998	10,248,823	.96
Southern California Tel. Co.	3,492,729	3,989,638	.88	4,289,148	4,116,831	1.04	4,479,127	3,897,290	1.12
Associated Operating Companies Less Illinois Co.	99,156,934	103,688,149	.96	110,667,666	114,375,841	.97	122,617,047	118,480,400	1.03

EXHIBIT A-203

Associated Operating Companies

Comparison of Actual Charges to Account 608, "Depreciation of Plant and Equipment," With Amounts Based on Chicago Depreciation Rates

(Omitting Charges for Station Installations, Interior Block Wires and Exchange Aerial Wire)

	1926			1927			1928		
	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)	Actual Charges to Account 608 (B)	Depreciation Expense at Chicago Rates (A)	Ratio (A) to (B)
New England Tel. & Tel. Co.	$8,591,896	$9,874,190	.87	$9,206,924	$10,521,344	.88	$9,758,004	$10,325,762	.95
Southern New England Tel. Co.	1,895,541	1,898,654	1.00	2,027,046	2,079,113	.97	2,258,429	2,219,719	1.02
New York Tel. Co.	26,813,078	26,797,326	1.00	29,370,123	29,283,324	1.00	27,093,631	26,017,414	1.04
New Jersey Bell Tel. Co.	....	....	....	....	....	....	6,113,028	6,059,130	1.01
Bell Tel. Co. of Pennsylvania	9,794,920	10,739,538	.91	10,537,266	11,404,322	.92	10,157,478	10,414,403	.98
Ches. & Pot. Tel. Co.	894,498	914,507	.98	998,473	1,017,897	.98	1,096,095	1,133,811	.97
Ches. & Pot. Tel. Co. of Balto. City	1,568,539	1,699,930	.92	1,732,786	1,856,790	.93	1,873,483	1,888,235	.99
Ches. & Pot. Tel. Co. of Virginia	873,269	929,873	.94	939,527	1,007,573	.93	1,011,098	998,758	1.01
Ches. & Pot. Tel. Co. of West Va.	793,314	796,314	1.00	845,892	838,576	1.01	923,361	853,365	1.08
Southern Bell Tel. & Tel. Co.	7,183,595	7,324,495	.98	8,135,436	8,405,791	.97	8,893,464	8,464,626	1.05
Ohio Bell Tel. Co.	5,056,648	4,863,562	1.04	5,574,680	5,407,218	1.03	6,280,400	5,673,082	1.11
Cincinnati & Suburban Bell Tel. Co.	1,155,946	1,111,863	1.04	1,235,031	1,196,368	1.03	1,344,965	1,304,789	1.03
Michigan Bell Tel. Co.	4,544,959	4,617,669	.98	5,316,672	5,248,478	1.01	6,399,549	5,852,596	1.09
Indiana Bell Tel. Co.	1,822,753	1,766,993	1.03	1,828,164	1,776,478	1.03	1,915,992	1,762,511	1.09
Wisconsin Tel. Co.	1,735,560	1,931,302	.90	1,865,833	2,074,066	.90	2,122,322	2,246,639	.94
Northwestern Bell Tel. Co.	3,999,168	4,179,707	.96	4,337,808	4,407,761	.98	4,598,135	4,445,623	1.03
Southwestern Bell Tel. Co.	8,061,057	8,550,492	.94	10,655,115	11,024,459	.97	13,311,230	11,612,369	1.15
Mountain States Tel. & Tel. Co.	2,772,361	2,818,272	.98	2,918,087	2,963,193	.98	3,187,258	2,971,455	1.07
Pacific System Excl. So. Cal.	8,107,103	8,883,824	.91	8,853,655	9,746,259	.91	9,799,998	10,248,823	.96
Southern California Tel. Co.	3,492,729	3,989,638	.88	4,289,148	4,116,831	1.04	4,479,127	3,897,290	1.12
Associated Operating Companies Less Illinois Co.	99,156,934	103,688,149	.96	110,667,666	114,375,841	.97	122,617,047	118,480,400	1.03

[fol. 3248]

EXHIBIT A-203

Associated Operating Companies

Comparison of Actual Charges to Account 608, "Depreciation of Plant and Equipment," With Amounts Based on Chicago Depreciation Rates

(Omitting Charges for Station Installations, Interior Block Wires and Exchange Aerial Wire)

	1929			1930			1931		
	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)	Actual Charges to Account 608 (B)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)
New England Tel. & Tel. Co.	$10,435,971	$10,886,588	.96	$11,135,457	$11,834,966	.94	$11,811,243	$12,622,868	.94
Southern New England Tel. Co.	2,477,388	2,384,402	1.04	2,725,580	2,740,073	.99	2,929,204	2,969,756	.99
New York Tel. Co.	28,652,469	27,936,916	1.03	31,044,389	30,664,672	1.01	32,962,742	32,547,369	1.01
New Jersey Bell Tel. Co.	6,722,533	6,717,668	1.00	7,271,346	7,481,284	.97	7,915,298	8,082,274	.98
Bell Tel. Co. of Pennsylvania	11,575,721	11,095,821	1.04	12,648,036	12,514,498	1.01	13,454,709	13,254,681	1.02
Ches. & Pot. Tel. Co.	1,200,812	1,199,514	1.00	1,283,400	1,307,701	.98	1,346,125	1,368,267	.98
Ches. & Pot. Tel. Co. of Balto. City	2,077,534	1,975,121	1.05	2,179,127	2,126,286	1.02	2,271,171	2,223,346	1.02
Ches. & Pot. Tel. Co. of Virginia	1,112,588	1,074,876	1.04	1,234,463	1,237,815	1.00	1,311,644	1,323,760	.99
Ches. & Pot. Tel. Co. of West Va.	978,048	917,563	1.07	1,037,274	1,014,347	1.02	1,066,527	1,039,269	1.03
Southern Bell Tel. & Tel. Co.	10,203,100	9,166,827	1.11	10,888,935	10,305,525	1.06	11,170,128	10,587,967	1.05
Ohio Bell Tel. Co.	7,669,752	6,216,878	1.23	8,436,461	7,128,982	1.18	8,793,777	7,307,672	1.20
Cincinnati & Suburban Bell Tel. Co.	1,505,726	1,409,811	1.07	1,611,024	1,522,184	1.06	1,747,084	1,703,711	1.03
Michigan Bell Tel. Co.	7,581,165	6,591,428	1.15	8,565,149	7,613,953	1.12	8,702,483	7,920,800	1.10
Indiana Bell Tel. Co.	2,095,189	1,768,177	1.18	2,250,932	2,042,106	1.10	2,253,296	2,124,520	1.06
Wisconsin Tel. Co.	2,299,146	2,446,176	.94	2,641,358	2,926,513	.90	3,028,122	3,197,114	.95
Northwestern Bell Tel. Co.	4,814,312	4,833,736	1.00	5,211,572	5,416,882	.96	5,519,047	5,740,828	.96
Southwestern Bell Tel. Co.	14,137,395	12,416,053	1.14	15,259,177	14,088,025	1.08	16,052,165	14,719,653	1.09
Mountain States Tel. & Tel. Co.	3,588,007	3,369,177	1.06	3,808,792	3,844,675	.99	3,934,124	4,064,018	.97
Pacific System Excl. So. Cal.	10,946,257	11,350,875	.96	11,405,494	11,227,213	1.02	11,843,062	11,724,292	1.01
Southern California Tel. Co.	4,681,939	4,126,155	1.13	7,324,340	6,699,644	1.09	7,558,134	7,175,258	1.05

	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)	Actual Charges to Account 608 (B)	Depreciation Expense at Chicago Rates (A)	Ratio (A)to(B)
New England Tel. & Tel. Co.	$8,591,896	$9,874,190	.87	$9,206,924	$10,521,344	.88	$9,758,004	$10,325,762	.95
Southern New England Tel. Co.	1,895,541	1,898,654	1.00	2,027,046	2,079,113	.97	2,258,429	2,219,719	1.02
New York Tel. Co.	26,813,078	26,797,326	1.00	29,370,123	29,283,324	1.00	27,093,631	26,017,414	1.04
New Jersey Bell Tel. Co.	....	....	....	....	....	....	6,113,028	6,059,130	1.01
Bell Tel. Co. of Pennsylvania	9,794,920	10,739,538	.91	10,537,266	11,404,322	.92	10,157,478	10,414,403	.98
Ches. & Pot. Tel. Co.	894,498	914,507	.98	998,473	1,017,897	.98	1,096,095	1,133,811	.97
Ches. & Pot. Tel. Co. of Balto. City	1,568,539	1,699,930	.92	1,732,786	1,856,790	.93	1,873,483	1,888,235	.99
Ches. & Pot. Tel. Co. of Virginia	873,269	929,873	.94	939,527	1,007,573	.93	1,011,098	998,758	1.01
Ches. & Pot. Tel. Co. of West Va.	793,314	796,314	1.00	845,892	838,576	1.01	923,361	853,365	1.08
Southern Bell Tel. & Tel. Co.	7,183,595	7,324,495	.98	8,135,436	8,405,791	.97	8,893,464	8,464,626	1.05
Ohio Bell Tel. Co.	5,056,648	4,863,562	1.04	5,574,680	5,407,218	1.03	6,280,400	5,673,082	1.11
Cincinnati & Suburban Bell Tel. Co.	1,155,946	1,111,863	1.04	1,235,031	1,196,368	1.03	1,344,965	1,304,789	1.03
Michigan Bell Tel. Co.	4,544,959	4,617,669	.98	5,316,672	5,248,478	1.01	6,399,549	5,852,596	1.09
Indiana Bell Tel. Co.	1,822,753	1,766,993	1.03	1,828,164	1,776,478	1.03	1,915,992	1,762,511	1.09
Wisconsin Tel. Co.	1,735,560	1,931,302	.90	1,865,833	2,074,066	.90	2,122,322	2,246,639	.94
Northwestern Bell Tel. Co.	3,999,168	4,179,707	.96	4,337,808	4,407,761	.98	4,598,135	4,445,623	1.03
Southwestern Bell Tel. Co.	8,061,057	8,550,492	.94	10,655,115	11,024,459	.97	13,311,230	11,612,369	1.15
Mountain States Tel. & Tel. Co.	2,772,361	2,818,272	.98	2,918,087	2,963,193	.98	3,187,258	2,971,455	1.07
Pacific System Excl. So. Cal.	8,107,103	8,883,824	.91	8,853,655	9,746,259	.91	9,799,998	10,248,823	.96
Southern California Tel. Co.	3,492,729	3,989,638	.88	4,289,148	4,116,831	1.04	4,479,127	3,897,290	1.12
Associated Operating Companies Less Illinois Co.	99,156,934	103,688,149	.96	110,667,666	114,375,841	.97	122,617,047	118,480,400	1.03

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[fol. 3248]

Exhibit A-203

Associated Operating Companies

Comparison of Actual Charges to Account 608, "Depreciation of Plant and Equipment," With Amounts Based on Chicago Depreciation Rates

(Omitting Charges for Station Installations, Interior Block Wires and Exchange Aerial Wire)

	1929			1930			1931		
	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)	Actual Charges to Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)	Actual Charges to Account 608 (B)	Depreciation Expense at Chicago Rates (B)	Ratio (A)to(B)
New England Tel. & Tel. Co.	$10,435,971	$10,886,588	.96	$11,135,457	$11,834,966	.94	$11,811,243	$12,622,868	.94
Southern New England Tel. Co.	2,477,388	2,384,402	1.04	2,725,580	2,740,073	.99	2,929,204	2,969,756	.99
New York Tel. Co.	28,652,469	27,936,916	1.03	31,044,389	30,664,672	1.01	32,962,742	32,547,369	1.01
New Jersey Bell Tel. Co.	6,722,533	6,717,668	1.00	7,271,346	7,481,284	.97	7,915,298	8,082,274	.98
Bell Tel. Co. of Pennsylvania	11,575,721	11,095,821	1.04	12,648,036	12,514,498	1.01	13,454,709	13,254,681	1.02
Ches. & Pot. Tel. Co.	1,200,812	1,199,514	1.00	1,283,400	1,307,701	.98	1,346,125	1,368,267	.98
Ches. & Pot. Tel. Co. of Balto. City	2,077,534	1,975,121	1.05	2,179,127	2,126,286	1.02	2,271,171	2,223,346	1.02
Ches. & Pot. Tel. Co. of Virginia	1,112,588	1,074,876	1.04	1,234,463	1,237,815	1.00	1,31[illegible]44	1,323,760	.99
Ches. & Pot. Tel. Co. of West Va.	978,048	917,563	1.07	1,037,274	1,014,347	1.02	1,066,527	1,039,269	1.03
Southern Bell Tel. & Tel. Co.	10,203,100	9,166,327	1.11	10,888,935	10,305,525	1.06	11,170,128	10,587,967	1.05
Ohio Bell Tel. Co.	7,669,752	6,216,878	1.23	8,430,461	7,128,982	1.18	8,793,777	7,307,672	1.20
Cincinnati & Suburban Bell Tel. Co.	1,505,726	1,409,811	1.07	1,611,024	1,522,184	1.06	1,747,084	1,703,711	1.03
Michigan Bell Tel. Co.	7,581,165	6,591,428	1.15	8,565,149	7,613,953	1.12	8,702,483	7,920,800	1.10
Indiana Bell Tel. Co.	2,095,189	1,768,177	1.18	2,250,932	2,042,106	1.10	2,253,296	2,124,520	1.06
Wisconsin Tel. Co.	2,299,146	2,446,176	.94	2,641,358	2,926,513	.90	3,028,122	3,197,114	.95
Northwestern Bell Tel. Co.	4,814,312	4,833,736	1.00	5,211,572	5,416,882	.96	5,519,047	5,740,828	.96
Southwestern Bell Tel. Co.	14,137,395	12,416,053	1.14	15,259,177	14,088,025	1.08	16,052,165	14,719,653	1.09
Mountain States Tel. & Tel. Co.	3,588,007	3,369,177	1.06	3,808,792	3,844,675	.99	3,934,124	4,064,018	.97
Pacific System Excl. So. Cal.	10,946,257	11,350,875	.96	11,405,494	11,227,213	1.02	11,843,062	11,724,292	1.01
Southern California Tel. Co.	4,681,939	4,126,155	1.13	7,324,340	6,699,644	1.09	7,558,134	7,175,258	1.05
Associated Operating Companies Less Illinois Co.	134,755,052	127,883,762	1.05	147,962,306	143,737,344	1.03	155,670,085	151,697,423	1.03

[fol. 3249]

Associated Operating Companies

Comparison of Actual Charges to Account 608, "Depreciation of Plant and Equipment", with Amounts based on Chicago Depreciation Rates.

(Omitting Charges for Station Installations, Interior Block Wires, and Exchange Aerial Wire)

	1923–1931		
	Actual Charges To Account 608 (A)	Depreciation Expense at Chicago Rates (B)	Ratio (A) to (B)
New England Tel. & Tel. Co..	$81,604,639	$88,011,596	.93
Southern New England Tel. Co.................	18,913,921	18,823,426	1.00
New York Tel. Co.........	235,549,207	232,287,236	1.01
New Jersey Bell Tel. Co......	28,022,205	28,340,356	.99
Bell Tel. Co. of Pennsylvania.	89,932,331	92,816,284	.97
Ches. & Pot. Tel. Co.........	9,112,197	9,157,951	1.00
Ches. & Pot. Tel. Co. of Balto. City.....................	15,403,152	15,763,087	.98
Ches. & Pot. Tel. Co. of Virginia.....................	8,727,729	8,981,616	.97
Ches. & Pot. Tel. Co. of West Va.....................	7,512,962	7,315,201	1.03
Southern Bell Tel. & Tel. Co..	72,492,530	70,657,544	1.03
Ohio Bell Tel. Co...........	54,428,780	49,027,753	1.11
Cincinnati & Suburban Bell Tel. Co.................	11,461,982	10,994,236	1.04
Michigan Bell Tel. Co.......	51,152,248	47,874,524	1.07
Indiana Bell Tel. Co.........	17,032,050	16,196,560	1.05
Wisconsin Tel. Co...........	17,899,220	19,527,621	.92
Northwestern Bell Tel. Co...	39,643,443	40,687,278	.97
Southwestern Bell Tel. Co....	95,943,264	92,131,260	1.04
Mountain States Tel. & Tel. Co..................	27,671,676	27,673,143	1.00
Pacific System Excl. So. Cal..	81,106,596	83,528,714	.97
Southern California Tel. Co..	39,683,809	38,188,641	1.04
Associated Operating Companies, Less Illinois Co..	1,003,293,941	997,987,027	1.01

[fol. 3250]

Associated Operating Companies

Amounts Included in Charges to Account 608 for Station Installations, Interior Block Wires, and Exchange Aerial Wire

	1923	1924	1925	1926	1927	1928	1929	1930	1931
New England Tel. & Tel. Co.									
Station Installations									
Interior Block Wires									
Exchange Aerial Wire	1,067,000	1,166,000	1,283,000	1,397,000	1,305,000	1,255,000	199,000	222,000	256,000
Total	1,067,000	1,166,000	1,283,000	1,397,000	1,305,000	1,255,000	199,000	222,000	256,000
Southern New England Tel. Co.									
Station Installations				25,386	70,483	94,331			
Interior Block Wires									
Exchange Aerial Wire	225,528	216,961	229,398	239,403	238,998	228,595	146,318	142,457	141,031
Total	225,528	216,961	229,398	264,789	309,481	322,926	146,318	142,457	141,031
New York Tel. Co.									
Station Installations	112,180	151,381	168,876	181,452	192,900	179,858			
Interior Block Wires	118,302	130,151	148,880	163,612	165,930	157,646	5,146	6,071	6,157
Exchange Aerial Wire	943,665	1,028,031	1,123,459	1,207,558	1,249,247	894,911	258,342	253,364	259,722
Total	1,174,147	1,309,563	1,441,215	1,552,622	1,608,077	1,232,415	263,488	259,435	265,879
New Jersey Bell Tel. Co.									
Station Installations						18,642			
Interior Block Wires									
Exchange Aerial Wire						552,829	180,904	262,575	204,299
Total						571,471	180,904	262,575	204,299
Bell Tel. Co. of Pennsylvania									
Station Installations									
Interior Block Wires	51,474	54,254	58,435	59,481					
Exchange Aerial Wire	916,568	987,077	964,133	945,973	842,277	756,342	254,071	297,501	299,000
Total	968,042	1,041,331	1,022,568	1,005,454	842,277	756,342	254,071	297,501	299,000

Chesapeake & Potomac Tel. Co.									
Station Installations		2,495	2,634	2,772	2,944	3,082			
Interior Block Wires		1,052	1,068	1,069	1,068	986			
Exchange Aerial Wire	26,879	26,566	28,031	27,845	26,775	25,966	252	182	105
Total	26,879	30,113	31,733	31,685	30,787	30,034	252	182	105
Chesapeake & Potomac Tel. Co. of Balto City									
Station Installations	3,188	3,542	3,766	3,948	4,041	4,056			
Interior Block Wires	2,151	2,209	2,096	1,942	1,893	1,741			
Exchange Aerial Wire	175,188	190,187	199,913	203,610	206,175	200,524	129,875	131,632	135,591
Total	180,527	195,938	205,775	209,500	212,109	206,321	129,875	131,632	135,591
Chesapeake & Potomac Tel. Co. of Virginia									
Station Installations	1,841	1,958	2,036	2,061	2,094	2,162			
Interior Block Wires	450	437	432	437	461	480			
Exchange Aerial Wire	93,353	95,407	98,097	99,268	98,807	98,410	59,144	61,990	65,626
Total	95,644	97,802	100,565	101,766	101,362	101,052	59,144	61,990	65,626
Chesapeake & Potomac Tel. Co. of W. Va.									
Station Installations	1,705	1,780	1,824	1,870	1,936	1,994			
Interior Block Wires	485	505	512	513	533	560			
Exchange Aerial Wire	87,123	93,122	97,836	98,437	99,485	101,452	60,104	61,984	64,140
Total	89,313	95,407	100,172	100,820	101,954	104,006	60,104	61,984	64,140
Southern Bell Tel. & Tel. Co.									
Station Installations				4,501	18,731	19,850			
Interior Block Wires				705	2,949	2,969			
Exchange Aerial Wire	530,908	525,434	558,340	555,878	468,355	495,085	369,242	392,812	400,752
Total	530,908	525,434	558,340	561,084	490,035	517,904	369,242	392,812	400,752

[fol. 3251]

Associated Operating Companies

Amounts Included in Charges to Account 608 for Station Installations, Interior Block Wires, and Exchange Aerial Wire

	1923	1924	1925	1926	1927	1928	1929	1930	1931
Ohio Bell Tel. Co.									
Station Installations	...	...	...	...	...	...	...	...	...
Interior Block Wires	...	...	...	...	...	...	...	...	...
Exchange Aerial Wire	543,818	540,143	519,083	479,838	449,528	431,286	149,924	182,083	189,103
Total	543,818	540,143	519,083	479,838	449,528	431,286	149,924	182,083	189,103
Cincinnati & Suburban Bell Tel. Co.									
Station Installations	...	...	...	...	...	...	...	...	...
Interior Block Wires	...	...	...	...	...	...	...	...	...
Exchange Aerial Wire	91,158	74,611	73,630	72,633	68,989	67,157	59,147	55,675	52,104
Total	91,158	74,611	73,630	72,633	68,989	67,157	59,147	55,675	52,104
Michigan Bell Tel. Co.									
Station Installations	...	11,792	25,071	...	21,019	22,324	...	...	...
Interior Block Wires	...	...	...	...	...	...	...	...	...
Exchange Aerial Wire	250,121	320,265	303,255	259,431	271,721	354,585	143,714	168,891	159,124
Total	250,121	332,057	328,326	259,431	292,740	376,909	143,714	168,891	159,124
Indiana Bell Tel. Co.									
Station Installations	8,044	10,038	10,148	10,327	6,814	7,026	...	...	...
Interior Block Wires	751	966	1,024	1,024	...	...	...	...	...
Exchange Aerial Wire	133,635	154,175	144,544	140,681	121,366	120,482	65,695	73,781	71,603
Total	142,430	165,179	155,716	152,032	128,180	127,508	65,695	73,781	71,603
Wisconsin Telephone Co.									
Station Installations	10,058	11,728	13,001	13,884	14,631	15,493	...	...	...
Interior Block Wires	244	263	275	279	285	291	...	...	...
Exchange Aerial Wire	213,362	237,905	260,066	272,200	281,050	287,736	98,418	102,150	66,743
Total	223,664	249,896	273,342	286,363	295,966	303,520	98,418	102,150	66,743

Northwestern Bell Tel. Co.									
Station Installations					9,176	9,416			
Interior Block Wires					799	836			
Exchange Aerial Wire	329,450	339,885	353,637	349,119	180,023	178,764	195,391	177,531	178,353
Total	329,450	339,885	353,637	349,119	189,998	189,016	195,391	177,531	178,353
Southwestern Bell Tel. Co.									
Station Installations	43,179	46,178	48,178	53,665	68,210	24,722			
Interior Block Wires	2,181	2,254	2,394	2,728	3,186	1,203			
Exchange Aerial Wire	449,526	477,925	528,810	553,550	663,589	734,673	291,185	356,671	358,452
Total	494,886	526,357	579,382	609,943	734,985	760,598	291,185	356,671	358,452
Mountain States Tel. & Tel. Co.									
Station Installations									
Interior Block Wires									
Exchange Aerial Wire	264,116	272,653	280,474	293,873	296,823	272,773	152,773	155,950	157,288
Total	264,116	272,653	280,474	293,873	296,823	272,773	152,773	155,950	157,288
Pacific System Excl. So. Cal.									
Station Installations		23,388	24,886	26,812	29,472	31,410	33,156		
Interior Block Wires		2,093	2,248	2,441	2,865	3,263	3,819		
Exchange Aerial Wire	626,562	415,808	450,788	565,244	611,108	651,429	682,968	332,706	356,438
Total	626,562	441,289	477,922	594,497	643,445	686,102	719,943	332,706	356,438
Southern California Tel. Co.									
Station Installations		11,097	11,836	12,647	12,899	13,630	14,426		
Interior Block Wires		438	519	635	924	1,340	1,662		
Exchange Aerial Wire	156,135	98,719	109,714	135,889	79,329	81,503	82,673	162,552	167,366
Total	156,135	110,254	122,069	149,171	93,152	96,473	98,761	162,552	167,366

[fol. 3252] **Exhibit A-205**

Copy

Western Electric Company, Incorporated, and Illinois Bell Telephone Company

Standard Supply Contract, Dated June 2, 1930

[fol. 3253] Memorandum of Agreement dated June 2, 1930, between Western Electric Company, Incorporated, a corporation of the State of New York, hereinafter called the Electric Company, and Illinois Bell Telephone Company, a corporation of the State of Illinois, hereinafter called the Telephone Company. Witnesseth: That in consideration of the covenants and agreements herein contained, it is agreed by and between the parties hereto as follows:

Article I

Scope

1. Manufacture and Purchase of Materials:

The Electric Company will manufacture or purchase materials which the Telephone Company may reasonably require for its business and which it may order from the Electric Company; provided, however, that nothing herein contained obligates the Telephone Company to purchase any materials from the Electric Company.

2. Delivery of Materials:

The Electric Company will deliver said materials to the Telephone Company upon its written orders, in such quantities, in such manner, and at such times as the Telephone Company may reasonably designate.

[fol. 3254] 3. Inspection of Materials.

The Electric Company, as authorized by the Telephone Company, will make technical and engineering inspections of materials not of its own manufacture furnished by it to the Telephone Company.

4. Equipment Specifications and Installations.

The Electric Company will prepare such equipment specifications and perform such installations of materials as the Telephone Company may reasonably require for its business and may order from the Electric Company.

5. Distributing Storerooms.

The Electric Company will maintain distributing storerooms as at present established or at such points as from time to time may be agreed upon, for the distribution of materials to the Telephone Company.

6. Stocks of Materials.

(a) The Electric Company will exercise due diligence in maintaining at all times, at its distributing storerooms, reasonable stocks of materials, except apparatus which must be specially assembled for each job (such as central office switchboards) and other materials which are customarily shipped direct, such as poles and directories.

"Reasonable stocks" means such quantities as the Telephone Company may reasonably require for its business, giving due consideration to variations in demand, seasonal requirements, conditions of the market and length of time required to transport materials from the sources of supply to the Electric Company's distributing storerooms.

(b) The Electric Company will carry such special stocks of materials as the Telephone Company may authorize.

[fol. 3255] "Special stocks" means all stocks authorized by the Telephone Company other than or in excess of reasonable stocks.

7. Returned Materials.

The Electric Company will receive and classify any materials which the Telephone Company may return from time to time, delivered f. o. b. the Electric Company's distributing storerooms or other points designated by the Electric Company.

Such materials when received at the Electric Company's distributing storerooms shall be divided into classes: "A", "B", and "C" as defined below. Such classification shall be based on visual inspection by experienced storeroom employees and be subject to the approval of the Telephone Company. Such visual inspection is the only inspection contemplated in the rates of remuneration specified in paragraph 4 Article II of this Agreement. Any electrical or mechanical inspection required by the Telephone Company on materials classified "C" by visual inspection, shall be considered as part of the repair work and performed under the terms of paragraph 6 (b) Article II of this Agreement.

Class "A".—Surplus used returned materials not presently required by the Telephone Company for its own use, for which the Electric Company has allowance prices and which can be repaired and sold by the Electric Company to other Bell System Companies shall be classified "A." The Electric Company will purchase such materials from the Telephone Company.

Class "B".—Returned materials which have no value except as junk shall be classified "B". Such materials shall, at the option of the Telephone Company, be shipped to the Electric Company's reclamation plants, or sold by the Electric Company. If advantageous for their eco- [fol. 3256] nomical disposition such materials shall be dismantled by the Electric Company at its distributing storerooms.

Class "C".—All other returned materials shall be classified "C". The Electric Company will credit the Telephone Company for, store, insure and carry the investment in such materials until reissued to the Telephone Company on its orders, or otherwise disposed of with its approval.

For insurance purposes, Class "C" materials shall be valued at fifty per cent (50%) of current value new and shall be insured by the Electric Company in accordance with its current insurance practice.

8. Transportation Charges.

The Electric Company as authorized by the Telephone Company and in so far as practicable will pay for the account of the Telephone Company such of the following transportation charges as under the Electric Company's prices and terms should be borne by the Telephone Company:

(a) On shipments of materials made hereunder to the Telephone Company.

(b) On shipments of materials returned from the Telephone Company to the Electric Company's distributing storerooms or other points designated by it.

(c) On shipments of Class "B" returned materials from the Electric Company's distributing storerooms to its reclamation plants or other points of disposition designated by the Electric Company.

The Electric Company will adjust claims with carriers arising out of shipments hereunder.

[fol. 3257] 9. Repairs to Materials.

The Electric Company will maintain repair shops as at present established or at such points as from time to time may be agreed upon and will make such repairs to returned materials as the Telephone Company may reasonably require.

10. Other Services.

The Electric Company will perform such other services as the Telephone Company may reasonably require from time to time.

Article II

Prices and Terms

1. General.

The Electric Company's prices and terms shall be as low as to its most favored customers for like materials and services under comparable conditions.

2. Materials, Equipment, Specifications and Installations.

The prices to be paid by the Telephone Company to the Electric Company for materials, equipment specifications and installations shall be those established from time to time by the Electric Company. Such prices in so far as practicable and any conditions affecting them not specifically provided for in this Article shall be included in the Electric Company's published price lists. Prices for materials shall include inspection provided for in paragraph 3 Article I of this Agreement.

[fol. 3258] 3. Carrying Special Stocks of Materials.

For carrying special stocks of materials the Telephone Company will pay the Electric Company monthly at the rate of eight per cent (8%) per annum on its average monthly investment in such stocks, beginning thirty (30) days after such materials have been placed in special stock.

4. Returned Materials.

Class "A" materials shall be credited to the Telephone Company at the Electric Company's allowance prices.

Class "B" materials which are shipped to the Electric Company's reclamation plants shall be credited to the Telephone Company at the Electric Company's allowance prices.

The allowance prices referred to above for Classes "A" and "B" materials shall be those established from time to time by the Electric Company. Such allowance prices in so far as practicable and any conditions affecting them not specifically provided for in this Article shall be included in the Electric Company's published price lists.

Class "B" materials which are not shipped to the Electric Company's reclamation plants shall be credited to the Telephone Company at the prices realized by the Electric Company from their sale, less remuneration for its services, other than dismantling, as follows:

Seven per cent (7%) of the amounts received by the Electric Company before deduction of transportation charges, where deliveries are made to the Electric Company's distributing storerooms.

One per cent (1%) of the amounts received by the Electric Company, before deduction of transportation charges, where deliveries are made direct to a destination designated by the Electric Company, other than its distributing storerooms.

[fol. 3259] In case Class "B" materials are dismantled by the Electric Company at its distributing storerooms, the Telephone Company will pay the Electric Company its costs of such dismantling, determined in accordance with paragraph 6 (b) of this Article.

Class "C" materials shall be credited to the Telephone Company at the Electric Company's current prices for corresponding new materials, except that major units of central office and multiple private branch exchange switchboards may be credited at valuations mutually agreed upon. When reissued all Class "C" materials shall be paid for by the Telephone Company at the prices at which credited.

The Telephone Company will pay the Electric Company for its services in connection with materials credited as Class "C" three and one-half per cent (3½%) of the amounts so credited and interest at a reasonable rate upon its investment in such materials; such interest to be billed monthly.

In case Class "C" materials are damaged or destroyed by fire, the Telephone Company will reimburse the Electric Company for the difference between the amounts recovered by the Electric Company on account of insurance carried and the amounts which were credited to the Telephone Company for such materials, and in addition, for any unbilled repairs to such materials.

5. Transportation Charges.

The Telephone Company will reimburse the Electric Company for transportation charges paid by it as provided for in paragraph 8 Article I of this Agreement.

[fol. 3260] 6. Repairs to Materials.

The Telephone Company will pay the Electric Company for repairs provided for in paragraph 9, Article I of this Agreement as follows:

(a) At established prices which shall be agreed upon from time to time in so far as practicable and in effect on date repairs are billed to the Telephone Company.

(b) For repairs not covered by established prices, at the Electric Company's costs thereof determined as follows:

Materials: At prices prescribed in paragraph 2 of this Article.

Direct Labor: At actual cost.

Indirect Labor, Local and General Expense: At rates applied to direct labor, which rates shall be agreed upon from time to time and shall be sufficient to cover such indirect labor and expense applicable to the operation of such distributing storeroom shops.

Interest on Investment: At a reasonable rate on the Electric Company's investment required to make such repairs.

7. Other Services.

The Telephone Company will pay the Electric Company for other services as provided for in paragraph 10, Article I of this Agreement as follows:

(a) At established prices which shall be agreed upon from time to time in so far as practicable.

(b) For such services not covered by established prices, [fol. 3261] at the Electric Company's costs thereof determined as follows:

Materials: At prices provided for in paragraph 2 of this Article.

Direct Labor: At actual cost.

Local and General Supervision: At twenty-five per cent (25%) of direct labor.

Expense Items: At actual cost.

Interest on Investment: At a reasonable rate on the Electric Company's investment required to perform such services.

8. Payment.

As of the first of every month the Electric Company will render monthly statements of account which shall be due and payable by the Telephone Company thirty days after date of such monthly statements. If payment is deferred, the account shall thereafter bear interest at a reasonable rate.

Article III

General Provisions.

1. Liability.

(a) The Electric Company shall be liable only for direct damages arising from failure to exercise reasonable care and diligence in performing its obligations hereunder.

(b) If any materials manufactured by the Electric Company shall prove to be defective or if any materials furnished by the Electric Company and inspected as provided for in paragraph 3 Article I of this Agreement shall prove to be not in accordance with the specifications, the Electric

Company, at the option of the Telephone Company, will ac- [fol. 3262] cept the return of such materials and allow full credit therefor or replace the same at its own expense f. o. b. destination of the original shipment to the Telephone Company.

(c) In case the Telephone Company shall decide to abandon or reduce the use of or purchase from others any materials not of Electric Company manufacture or materials of Electric Company manufacture not standardized by the American Telephone and Telegraph Company, theretofore customarily purchased from the Electric Company, it will give the Electric Company reasonable notice of such intention and will reimburse the Electric Company for any loss on account of any reasonable stocks thereof on hand and any reasonable commitments made by the Electric Company prior to the receipt of such notice in anticipation of the Telephone Company's orders.

2. Cancellation of Prior Agreement.

This Agreement as of the date it becomes effective supersedes the Agreement between the parties hereto dated January 1, 1924, entitled "Standard Supply Contract" and all Agreements supplementary thereto.

3. Term of Agreement.

This Agreement shall become effective on the second day of June 1930, and shall continue in force until terminated by mutual consent or by one year's notice in writing from either party to the other, or by the termination of the license from the American Telephone and Telegraph Company to the Telephone Company or to the Electric Company.

[fol. 3263] In witness whereof the parties hereto have caused this Agreement to be executed by their respective officers thereunto duly authorized and their corporate seals to be hereunto affixed the day and year first above written.

Western Electric Company, Incorporated, by (Signed) Edgar S. Bloom, President. Attest: (Signed) H. B. Gilmore, Secretary. (Seal.) Illinois Bell Telephone Company, by (Signed) W. R. Abbott, President. Attest: (Signed) A. R. Bone, Secretary. (Seal.)

[fol. 3264] EXHIBIT A-206

Copy

American Telephone and Telegraph Company, Executive Committee

December 5, 1928.

Resolved: That the President be authorized to offer to the several licensee companies under existing License Agreements to reduce, effective January 1, 1929, to one and one half per cent of their total gross earnings as defined in said License Agreements, the payments therein provided to be made by those companies to this Company; provided that this Company reserves the right to withdraw upon four months' notice in writing the reduction hereby authorized; and provided further that this action or any action pursuant hereto, shall not limit, impair, or in any way affect this Company's right under a like reservation that was made in connection with the reduction authorized by this Committee on November 16, 1927.

[fol. 3265] Copy

American Telephone and Telegraph Company

New York, December 11, 1928.

W. R. Abbott, President Illinois Bell Telephone Company,
Chicago, Illinois.

DEAR MR. ABBOTT: The Executive Committee of this Company has authorized a reduction in the payment of the Associated Companies under the License Contract to one and one-half per cent of the gross earnings, effective as of January 1, 1929, subject to the right of this Company to withdraw this reduction upon four months' notice in writing. A copy of the resolution adopted by the Executive Committee is enclosed herewith.

As soon as your company takes the action necessary to accept this reduction, I shall appreciate your sending me a certified copy of your resolution.

Sincerely yours, (Signed) Walter S. Gifford, President.

Enclosure.

[fol. 3266] Illinois Bell Telephone Company

Date: July 23, 1931.

I hereby certify that the following is a true copy of resolution duly adopted by the Board of Directors of the Illinois Bell Telephone Company at a meeting duly called and held on December 26, 1928, at which meeting a quorum was present.

Fred Brown, Assistant Secretary. (Seal of Illinois Bell Telephone Company.)

The President reported that the American Telephone and Telegraph Company has offered to reduce the license contract payments of this Company from two per cent (2%) of the gross earnings to one and one-half per cent (1½%), effective as of January 1, 1929, pursuant to the following resolution of the Executive Committee of the American Company:

"Resolved: That the President be authorized to offer to the several licensee companies under existing License Agreement to reduce, effective January 1, 1929, to one and one-half per cent of their total gross earnings as defined in said License Agreements, the payments therein provided to be made by those companies to this Company; provided that this Company reserves the right to withdraw upon four months' notice in writing the reduction hereby authorized; and provided further that this action or any action pursuant hereto shall not limit, impair, or in any way affect this Company's right under a like reservation that was made in connection with the reduction authorized by this Committee on November 16, 1927."

The President recommended that this offer be accepted, whereupon, upon motion, it was

Resolved: That this Company accept the offer of the American Telephone and Telegraph Company to reduce the payment of two per cent (2%) of the gross earnings, payable by this Company to the American Telephone and Telegraph Company, as provided in the existing license agreements, to one and one-half per cent (1½%) of such earnings, such reduction to be made effective as of January 1, 1929, subject to the qualifications stated in the resolution of the Executive Committee of the American Telephone and Telegraph Company offering such reduction.

[fol. 3267] Copy

Illinois Bell Telephone Company

Chicago, December 27, 1928.

Mr. W. S. Gifford, President American Telephone and Telegraph Company, New York, N. Y.

Dear Mr. Gifford: Referring to your letter of the 11th instant, enclosing a copy of the action of the Executive Committee of the American Telephone and Telegraph Company, offering a reduction in the payment under the license agreement, from two to one and a half per cent of the gross earnings, to be effective January 1, 1929, I enclose a certified copy of the resolution adopted by the Board of Directors of the Illinois Bell Telephone Company on the 26th instant accepting this offer.

Yours very truly, (Signed) W. R. Abbott, President.

[fol. 3268] Copy

American Telephone and Telegraph Company

New York, September 29, 1930.

Mr. F. O. Hale, President Illinois Bell Telephone Company, 212 West Washington Street, Chicago, Illinois.

Dear Mr. Hale: The Executive Committee of this Company has authorized me to execute the restatement of the license agreement with your Company and to arrange that payments thereunder be continued temporarily at one and one-half per cent (1½%) upon the same conditions that have applied heretofore under Mr. Gifford's letter to Mr. Abbott dated December 11, 1928. A certified copy of the Resolution adopted by the Executive Committee is enclosed herewith.

The provisions of the license agreement do not apply to the division of tolls and originating commissions for the Chicago area, and it is my understanding that these will continue to be governed by the arrangements heretofore made and now in effect between our two companies. Will you kindly confirm this understanding.

Under date of September 24, 1930 you sent me a certified copy of the Resolution adopted by your Board of Directors in this matter. An executed copy of the agreement is herewith returned for your files.

Very truly yours, (Signed) C. P. Cooper, Vice-President.

[fol. 3269] Copy

Illinois Bell Telephone Company

Chicago, October 10, 1930.

Mr. C. P. Cooper, Vice President American Telephone and Telegraph Company, 195 Broadway, New York City, N. Y.

Dear Mr. Cooper: Please accept my thanks for your letter of September 29th, forwarding a certified copy of the resolution adopted by the Executive Committee of your Company authorizing execution of the restatement of the license agreement, and returning an executed copy of the agreement for our files.

As stated in your letter, the provisions of this agreement do not apply to the division of tolls and originating commissions for the Chicago Area, and your understanding that these will continue to be governed by the arrangements heretofore made and now in effect between our two companies, is correct, and I hereby confirm that understanding.

Yours very truly, (Signed) F. O. Hale, President.

[fol. 3270] Agreement Between American Telephone and Telegraph Company and Illinois Bell Telephone Company, Covering Services, Licenses, and Privileges

September 25, 1930

[fol. 3271] This Agreement, dated this 25th day of September, 1930, between American Telephone and Telegraph Company, a corporation of the State of New York, hereinafter called the "Licensor," and Illinois Bell Telephone Company, a corporation of the State of Illinois, hereinafter called the "Licensee," Witnesseth: Whereas, the Licensee, formerly named the Chicago Telephone Company, as an

Associated Company of the Bell System has been and is now conducting a telephone business within the territory hereinafter defined under a certain license contract with the Licensor, particularly as evidenced by memorandum thereof, between the Licensor and the said Chicago Telephone Company, dated February 1, 1919, and supplements thereto, as modified by an indenture of sale, dated November 8, 1920, from the Central Union Telephone Company to said Chicago Telephone Company and as further modified by an agreement, dated March 26, 1929, between the Licensor and the Licensee; and

Whereas, the agreement of the parties hereto that telephones manufactured under the patents of the Licensor shall be purchased by the Licensee for use within said territory rather than furnished and repaired as theretofore by the Licensor makes it desirable to state and reaffirm in this instrument the license and service contract relations which continue in force between them;

Now, therefore, in consideration of the premises and of the covenants and agreements herein set forth the parties hereto agree as follows:

[fol. 3271a] 1. For the purposes of this agreement:

(a) The telephone business of the Licensee is the furnishing to the public for compensation of telephone service within the territory of the Licensee as hereinafter defined.

(b) An exchange means a system established to provide telephonic communication within a particular area usually within or embracing a city, town or village and environs. This system consists of one or more central offices together with the associated plant including circuits, equipment and telephones.

(c) The term "exchange service" applies to telephone service within an exchange area.

(d) The term "toll service" applies to telephone service between exchange aras.

2. The Licensee is licensed to use within its territory all telephones and all telephonic devices, apparatus, methods and systems needed for its business as defined herein which are covered by patents now or hereafter owned or controlled by the Licensor or which it may have the right to authorize the Associated Companies of the Bell System to

use; but no such telephones, telephonic devices, apparatus, methods or systems shall be disposed of by the Licensee without the consent of the Licensor except to those licensed by the Licensor to use them or to manufacturers licensed by the Licensor.

The Licensee shall be protected and saved harmless by the Licensor from all actions or suits charging infringement of patents arising from the use of any telephones or telephonic devices, apparatus, methods or systems which the Licensor may recommend.

All rights not specifically granted to the Licensee remain to the Licensor.

3. The Licensor will prosecute continuously fundamental work of research, investigation and experimentation in the development of the art and science of telephony and in the development of plans, methods, systems and ideas designed [fol. 3271b] to improve telephone service and to promote safety, economy and efficiency in the equipment, construction and operation of the telephone plants of the Associated Companies of the Bell System, and will direct development work by others for the production of materials and apparatus necessary for rendering the products of such work of the Licensor available for use by such Associated Companies.

The Licensee shall have the right to use and the Licensor will render available for use by the Associated Companies of the Bell System as and when completed and standardized all products of the Licensor's fundamental work of research, investigation and experimentation, and all inventions, discoveries and patents, and all methods and systems covered by patents needed for the said business of the Licensee, and all apparatus and appliances, methods and systems embodying such inventions, discoveries and patents, and to this end, if any patent rights held by others in any such invention or discovery are necessary to make such invention or discovery available for such use, the Licensor will, in case such invention or discovery relates to telephones, acquire the requisite patent rights therein, and, in case such invention or discovery relates to other than telephones, provide suitable arrangements for making the apparatus, appliances, methods and systems embodying such invention or discovery available for use as aforesaid; provided that each such acquisition or arrangement can, in the judgment of the Licensor, be consummated on reasonable terms.

4. The Licensor will make and maintain continuously in effect adequate arrangements whereby telephones and other telephonic devices and apparatus needed for the business of the Licensee may be manufactured under all patents now or hereafter owned or controlled by the Licensor, or under which it may have the right to grant licenses to others, and whereby the Licensee may purchase such telephones, telephonic devices and apparatus for use in its [fol. 3272] territory and subject to the provisions hereof, at prices which shall be reasonable and not higher than the lowest prices charged by the manufacturer from time to time to others under similar circumstances.

5. The Licensor will furnish to the Licensee

(a) Advice and assistance in general engineering, plant, traffic, operating, commercial, accounting (including the auditing of accounts), patent, legal, administrative and other matters pertaining to the efficient, economical and successful conduct of said business of the Licensee; such advice and assistance to be given by the Licensor through conferences with its specialists and the issuance to the Licensee of data and conclusions, including bulletins, books, circular letters, and standard specifications and drawings, and through the performance of specific work in cases of unusual magnitude and complexity where such work is necessary or desirable.

(b) Advice and assistance in any financing required to be done by the Licensee in the extension, development or improvement of its telephone system within its said territory and in the general matter of its finances; aid in securing funds on fair terms, as and when needed for new construction and other expenditures, but not, at any time, to a greater extent than the then condition of the finances and credit of the Licensor may permit; active assistance in the marketing of the Licensee's securities; and such other necessary financial support and assistance in the premises as will tend to serve the best interests of both companies.

(c) Active assistance, cooperation and support in connection with the adoption from time to time by the Licensee of such measures as will, in the judgment of the parties hereto, best protect and preserve the health and promote the well-being in employment of the employees of the Licensee and, in other ways, conserve the high quality of its service to the public through the maintenance of a stable, contented and efficient personnel.

[fol. 3273] 6. The Licensor will maintain continuously an organization of specialists trained in the various branches of the work required to be done by the Licensor in rendering the foregoing services, of such numbers and possessed of such technical knowledge and experience as will enable said work to be so done as to relieve the Licensee from the necessity of attempting to perform said work for itself.

7. The Licensor will maintain continuously or cause to be so maintained proper connections between the telephone system of the Licensee and the telephone systems of the other Associated Companies of the Bell System and between places within the territory of the Licensee which the latter is not authorized to connect.

8. The Licensee shall have the right

(a) To extend to the subscribers and other patrons of the Licensee and of its connecting companies within its said territory the privilege of using, upon payment of the regular tolls therefor, the connections herein provided between its telephone system and the telephone systems of the other Associated Companies of the Bell System for telephonic communication between such subscribers and other patrons and the subscribers and other patrons of such Associated Companies and of their connecting companies in their respective territories.

(b) For the betterment of the service throughout its said territory, to extend to its connecting companies within its said territory, on such terms and conditions as it may determine, the benefit of such engineering and other technical advice and information with respect to construction, maintenance, repair and operation of plant as the Licensee may receive from the Licensor.

The Licensee shall not directly or indirectly connect with the lines of the Licensor or its appointees any telephone facilities which in the judgment of the Licensor would unduly impair the quality of the service.

[fol. 3274] 9. The Licensee may enjoy any of the rights of way and similar franchises of the Licensor to construct and maintain lines, which the Licensor can permit it to use, when and so long as, in the judgment of the Licensor, it shall not interfere with the enjoyment thereof by the Licensor or its other licensees, and may, to the extent and under the conditions aforesaid, use the Licensor's overhead and underground facilities for supporting or carrying wires (both open and in cable) upon paying a pro rata share of the cost of constructing and maintaining them, computed in accordance with the then existing practices of the parties, or such other reasonable compensation as may be agreed upon. For trunk lines from the several exchange offices to points outside of the respective exchanges, the Licensor may enjoy all rights of the Licensee to construct and maintain lines which the Licensee can permit it to use, when and so long as, in the judgment of the Licensee, it shall not interfere with the enjoyment thereof by the Licensee or its other Licensees, and may, to the extent and under the conditions aforesaid, use the Licensee's overhead and underground facilities for supporting or carrying the Licensor's wires (both open and in cable) upon paying a pro rata share of the cost of constructing and maintaining them, computed in accordance with the then existing practices of the parties, or such other reasonable compensation as may be agreed upon. The Licensor reserves the right to use telephones on lines connecting places in the territory of the Licensee with other places in said territory which the Licensee is not authorized to connect hereunder or with places outside said territory, or connecting places outside said territory with each other. The Licensee will allow the Licensor to connect the wires of any such lines with its said lines in order to constitute thereby a through line, of which the Licensee's lines or any part of them can form a portion or link, in order to forward through communications or messages; will make or permit to be made con- [fol. 3275] venient switchboard or other connections for that purpose, and as compensation for such use of its lines and for making such connections will take a share of the through toll (terminal expenses being first deducted) pro rata according to distance, and will also allow any telephone exchange located outside the territory of the Licensee to be designated by the Licensor to connect with the

Licensee's lines for the purpose and substantially in the manner and upon the terms herein provided in respect of such trunk line connections. In respect of all communications or messages originating on its lines and which are to be routed or forwarded over any lines of the Licensor or its appointees, the Licensee shall require the patron or subscriber to bind himself to pay the tolls thereon and to make every communication or message subject to such contracts, stipulations, and limitations of liability as the Licensor may from time to time require, in such form as it may from time to time prescribe, and will hold the Licensor harmless from all loss or expense consequent upon the Licensee's failure so to do. Whenever the consent of a commission or other public tribunal to the use by the Licensor or the Licensee of the plant or other facilities of the other is required by law, no agreement made under and pursuant to the provisions of this paragraph shall be effective until such consent is obtained.

The Licensor may enter the offices and connect with the exchanges of the Licensee any lines to points without the territory of the Licensee or to points within said territory which the Licensee is not authorized to connect, in order to establish communication between patrons of such exchanges and parties at such points reached by said lines, and may there operate said lines with suitable appliances; the Licensee will permit its patrons to use such lines and by its own operators will handle such communications or messages to and from its patrons, or make the proper switchboard or other connections for direct communication [fol. 3276] as may be requested, and in such manner, not inconsistent with the proper conduct of its office, as the Licensor shall direct. But if the Licensor is not satisfied with the manner in which it is performed, it may establish its own offices and trunk and radiating lines for such purpose.

10. The Licensee will cause each of its exchanges to route, over the lines of the Licensor and of such parties as the Licensor may from time to time appoint, all communications to points outside the Licensee's territory, or to points within said territory which the Licensee is not authorized to connect, originating at such exchanges, on its lines, or at the exchanges or on the lines of its connecting companies within its territory, or coming on the wires or

within the control of the exchange, where the Licensor or its said appointee has wires and will accept the communications, so far as the Licensee can lawfully control the same and unless otherwise specially directed by its patrons, but the Licensee will not solicit such special directions or receive or pay tolls for transmission over other lines unless compellable by law so to do. Each such communication on which the charge is reversed shall be considered as originating at the station against which the charge is to be made.

The Licensee shall keep and furnish an account of each such communication, and shall collect and on demand pay over to the Licensor or its said appointees, respectively, the tolls for transmission beyond the exchange, according to such rates and rules as each shall establish, and shall exhibit its accounts and the tickets from which they are made, so far as may be proper to verify the same. The Licensee, in the handling of all business interchanged hereunder shall observe the Licensor's operating methods and rules from time to time established for the use of its lines and shall keep such records and furnish such reports with respect thereto as the Licensor may from time to time reasonably request.

Each exchange shall, if and when so requested by the Licensor, make proper switchboard or other connection be- [fol. 3277] tween the lines of the Licensor or its Licensees from points without such exchange and terminating in such exchange office, for the purpose thereby of making up a through line between points without such exchange. In respect of all the business referred to in this Article, the Licensee shall make no charge to its own subscriber or patron, but shall be entitled to the following compensation and none other: Upon communications originating at an exchange or toll station of the Licensee or of a connecting company of the Licensee within its territory and passing over the lines of the Licensor or its appointees, compensation based upon the average revenue per originating message in accordance with the schedule of commissions set forth in Appendix A hereto attached and made part hereof; said compensation to cover the use of the necessary switchboard and trunking and other toll terminal plant and facilities and all the facilities and services of an exchange furnished for and in connection with such communications whether to or from such exchange, except the exchange service facilities required to establish connection between an exchange station and the toll terminal plant, for the use of which excepted facilities the Licensee is compensated by its rates for exchange service in such exchange. In case an exchange shall be required to make a switchboard connection for the purpose of making up a through line between points without such exchange, the exchange shall receive, for making such connection, such compensation as may be agreed upon.

11. In consideration of the premises and for all benefits accruing to the Licensee hereunder, the Licensee shall pay to the Licensor a sum equal to two and one-half per cent. (2½%) of the total gross earnings of the Licensee, which shall be payable in monthly installments, as herein provided, and in accordance with the established practice of the parties hereto, and shall be computed as follows: Such total gross earnings shall be computed by adding the following accounts described and defined in the Uniform System [fol. 3278] of Accounts for Telephone Companies prescribed by the Interstate Commerce Commission: Account 500 Subscribers' Station Revenues, Account 501 Public Pay Station Revenues, Account 504 Private Exchange Lines, and Account 510 Message Tolls, and by deducting from the total thereof Account 304 Uncollectible Operating Revenues. To such gross earnings of the Licensee there shall be added an amount equal to the gross earnings, similarly computed, for each other telephone company operating in the territory of the Licensee in which the Licensee owns a majority either of the voting stock or of the entire capital stock; provided, however, that on application by the Licensee for the exclusion of all or any portion of such gross revenues of any such operating company the question shall be carefully considered and determined.

The amount of each installment of said sum equal to two and one-half per cent. (2½%) of the Licensee's total gross earnings due for each month shall be determined by such total gross earnings of the second preceding month, computed in the manner aforesaid, and a statement, over the signature of the proper accounting officer of the Licensee, of its total gross earnings for each calendar month, computed in the manner aforesaid, shall be sent to the Comptroller of the Licensor, or to such other officer of the Licensor as it may theretofore designate, on or before the twenty-fifth day of the next succeeding month and payment in New York funds shall be made on or before the tenth day of the month next following, that being the month for which such payment is due.

The Licensee will make such reports, giving such information regarding the operations of its exchanges and lines as the Licensor may from time to time reasonably request.

12. If the Licensee shall fail to pay any sums due hereunder for thirty days after the same shall become payable or shall violate any other term or condition of this agree- [fol. 3279] ment and shall fail to remedy or repair the same for sixty days after written notice thereof from the Licensor, the Licensor may, if it shall so elect, by written notice to Licensee, terminate the rights of the Licensee hereunder and may resort to any of its rights and remedies in law or in equity under the patent laws or otherwise, including the remedy by injunction against the Licensee or those claiming under it.

13. The contractual relations hereunder are personal to the Licensee, and any assignment or attempt to assign its rights hereunder or the lines established hereunder or any of them, by act of the party or operation of law, without the written consent of the Licensor, will be good ground for a cancellation hereof by the Licensor. Whenever the Licensor grants to others the rights for exchanges or any of its rights under Articles 9 and 10 hereof or for connecting lines or any other rights remaining to it, the stipulations hereof relating thereto shall be binding upon and inure to the benefit of such grantees, and the Licensor shall not be responsible for their acts or defaults. If the Licensor shall transfer to any party who shall agree to perform the stipulations hereof, its title to the patent rights under which telephones and apparatus are licensed herein, and its then existing rights hereunder, the provisions hereof shall inure to the benefit of and be binding upon such party in respect of all things done or to be done after such assignment, as if it were named a party hereto, and the Licensor shall no longer be responsible hereunder.

14. The rights of the Licensee hereunder shall be perpetual, unless determined as herein provided.

15. The territory of the Licensee hereunder is as follows, viz.:

The State of Illinois, excepting the Counties of Monroe and St. Clair and the Township of Venice, in the County of Madison; and the Counties of Lake and Porter, in the State of Indiana.

[fol. 3280] In witness whereof, the parties hereto have caused their respective corporate seals to be hereto affixed and these presents to be subscribed in their names and behalf by their respective officers thereto duly authorized.

American Telephone and Telegraph Company, by C. P. Cooper, Vice-President. Attest: A. A. Marsters, Secretary. (Corporate Seal.) C. M. B. Illinois Bell Telephone Company, by F. O. Hale, President. Attest: A. R. Bone, Secretary. (Corporate Seal.)

[fol. 3281] Appendix "A"

Average revenue per out message but not		Messages from offices where the toll operating is done by	
over	over	American Co. commission per out-message	Associated Co. commission per out message
	$.75	$.112	$.290
$.75	.80	.113	.295
.80	.85	.114	.300
.85	.90	.115	.305
.90	.95	.116	.310
.95	1.00	.117	.315
1.00	1.05	.118	.320
1.05	1.10	.118	.325
1.10	1.15	.119	.330
1.15	1.20	.119	.335
1.20	1.25	.120	.340
1.25	1.30	.120	.345
1.30	1.35	.121	.350
1.35	1.40	.121	.355
1.40	1.45	.122	.360
1.45	1.50	.122	.365
1.50	1.60	.123	.370
1.60	1.70	.124	.375
1.70	1.80	.125	.380
1.80	1.90	.126	.385

Appendix "A"—Continued

Average revenue per out message over	but not over	Messages from offices where the toll operating is done by American Co. commission per out-message	Associated Co. commission per out message
1.90	2.00	.127	.390
2.00	2.12½	.129	.400
2.12½	2.25	.129	.400
2.25	2.37½	.131	.410
2.37½	2.50	.131	.410
2.50	2.75	.132	.415
2.75	3.00	.133	.420
3.00	3.25	.134	.425
3.25	3.50	.135	.430
3.50	3.75	.136	.435
3.75	4.00	.137	.440
4.00	4.50	.138	.450
For each increase of .50 add		.001	.005

(Here follow side folios 3282 and 3283)

EXHIBIT A-207

Plan for
EMPLOYEES' PENSIONS DISABILITY BENEFITS and DEATH BENEFITS

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
(INCORPORATED)
AND
ASSOCIATED AND ALLIED COMPANIES

(EFFECTIVE JANUARY 1, 1913, WITH AMENDMENTS TO AND INCLUDING JULY 1, 1928)

3283
F.G. ETTER

Amendments to

PLAN FOR EMPLOYEES' PENSIONS DISABILITY BENEFITS AND DEATH BENEFITS

(Effective January 1, 1930)

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

[fol. 3284] Amendments to Plan for Employees' Pensions, Disability Benefits, and Death Benefits

(Effective January 1, 1930)

Summary of Amended Provisions

(This Summ[illegible]s paragraph 4 on page 3 of the Benefit Plan pa[illegible]covers only certain of the new provisions. F[illegible]atement of all provisions see the text of the a[illegible]n the following pages.)

Death Benefits:

If the employee leaves a wife who was living with him at the time of his death, a husband who was physically or mentally incapable of self-support and who was actually supported by the employee at the time of her death, or a child under the age of 18 years (or over that age if physically or mentally incapable of self-support) who was actually supported by the employee at the time of death, the amount to be awarded is the maximum specified in the schedules.

In all other cases the amounts to be awarded (within the limits indicated by the schedules) and the persons to whom the payments shall be made are subject to the discretion of the Benefit Committee.

Beneficiaries are limited to a wife (or husband), dependent children and other dependent relatives of the deceased.

The Death Benefit schedules are:

a) Accident Death Benefits:

Regardless of the employee's term of employment an Accident Death Benefit not to exceed the amount specified below may be paid in case of death by accident arising out of and in the course of employment:

Three years' pay, not to exceed $5,000; provided, however, that if a greater amount could have been paid under the Sickness Death Benefit schedule below had the employee died from sickness rather than from accident, the maximum of $5,000 is increased to the amount of the Sickness Death Benefit:

In addition to the Accident Death Benefit the necessary expenses of burial, not to exceed $250, will be paid.

[fol. 3285] b) Sickness Death Benefits:

If the deceased employee had a term of employment of two years or more, a Sickness Death Benefit not to exceed the maximum shown below may be paid:

Employee's term of employment	Maximum sickness death benefit
2 but less than 3 years	4 months' wages
3 “ “ “ 4 “	5 “ “
4 “ “ “ 5 “	6 “ “
5 “ “ “ 6 “	7 “ “
6 “ “ “ 7 “	8 “ “
7 “ “ “ 8 “	9 “ “
8 “ “ “ 9 “	10 “ “
9 “ “ “ 10 “	11 “ “
10 years or more	12 “ “

The minimum Sickness Death Benefit shall be $250.

Payments in Case of Death of Pensioners:

In the discretion of the Committee payments may be made to the wife (or husband), dependent children or other dependent relatives of the deceased. The maximum amount of such payments shall not exceed the amount which could have been paid under the Sickness Death Benefit schedule if the pensioner had died on his last day of active service.

Manner of Payment:

The payments described above will be made in monthly amounts, unless otherwise specified by the Committee, and will cease upon the death of the beneficiary.

Text of Amended Provisions

Entire Section 7 of the Plan is amended to read as follows:

Death Benefits:

(1) In the event of the death of any employee, occurring on or after January 1, 1930 and resulting from accidental injury, on or after January 1, 1913, arising out of and in

the course of employment by the Company, hereinafter referred to as death by accident, there may be paid (and, in the circumstances described in sub-paragraph 4 (a) of this Section, there shall be paid) an Accident Death Benefit, the maximum amount of which shall be three years' wages, as defined in Paragraph 8 of this Section, but which shall not exceed Five Thousand Dollars ($5,000); provided, however, that if the maximum Sickness Death Benefit which could have been paid under the provisions of the next succeeding [fol. 3286] paragraphs had said employee died from sickness rather than from accidental injury, is in excess of said limit of Five Thousand Dollars ($5,000), said limit shall be increased to the amount of said maximum Sickness Death Benefit. Payment of the Accident Death Benefit, subject to the conditions imposed in Paragraph 5 of this Section and Paragraph 29 of Section 8 and elsewhere in these Regulations, shall be made to the employee's beneficiaries as provided in Paragraph 4 of this Section. In addition to the Death Benefit the necessary expenses of the burial of the deceased employee, not exceeding Two Hundred and Fifty Dollars ($250), shall be paid.

(2) In the event of the death of any employee, occurring on or after January 1, 1930 and resulting from sickness as defined in Paragraph 1 of Section 6 of these Regulations, hereinafter referred to as death by sickness, if the employee's term of employment has been two years or more there may be paid (and, in the circumstances described in sub-paragraph 4 (a) of this Section, there shall be paid) a Sickness Death Benefit which shall not be in excess of the amount specified in the following schedule:

Employee's term of employment	Maximum sickness death benefit
2 but less than 3 years	4 months' wages
3 " " " 4 "	5 " "
4 " " " 5 "	6 " "
5 " " " 6 "	7 " "
6 " " " 7 "	8 " "
7 " " " 8 "	9 " "
8 " " " 9 "	10 " "
9 " " " 10 "	11 " "
10 years or more	12 " "

The minimum Sickness Death Benefit shall be $250.

Payment of the Sickness Death Benefit, subject to the conditions imposed in Paragraph 5 of this Section and elsewhere in these Regulations, shall be made to the employee's beneficiaries, as provided in Paragraph 4 of this Section.

(3) In the event of the death on or after January 1, 1930 of any person who at the time of death is receiving a pension under these Regulations the Committee in its discretion may authorize further payments to the wife (or husband) or dependent relatives of the pensioner the total amount of which shall not exceed the maximum amount which could have been paid as a Sickness Death Benefit under the terms of Paragraph 2 of this Section if the pensioner had died on his last day of active service.

(4) The persons who may be beneficiaries of the Accident or Sickness Death Benefit or of payments on the death of a pensioner hereunder are limited to the wife (or hus-
[fol. 3287] band) and the dependent children and other dependent relatives of the deceased. The amount to be paid in each case and the beneficiary or beneficiaries who shall receive the same, and the share which each shall receive, shall be determined by the Committee, subject to the following provisions and to the provisions of Paragraph 5 of this Section.

(a) In the event of death by accident the maximum Accident Death Benefit specified in Paragraph 1 of this Section, or in the event of death by sickness, the maximum Sickness Death Benefit specified in Paragraph 2 of this Section, shall be paid, subject to the provisions of sub-paragraph (c) of this Paragraph 4, to the wife of the deceased employee if living with him at the time of his death; to the husband of the deceased employee, if physically or mentally incapable of self-support and actually supported in whole or in part by the deceased employee at the time of her death; or to the child or children of the deceased employee under the age of eighteen years (or over that age if physically or mentally incapable of self-support) who were actually supported in whole or in part by the deceased employee at the time of death. If the employee leaves both wife (or husband) and a child or children, as here described, the Committee, in its discretion, may pay the Death Benefit to or for any one or more of such possible beneficiaries in such portions as it may determine.

(b) If there be no beneficiary of the deceased employee as described above in sub-paragraph (a), then, in the event of death by accident, an Accident Death Benefit in an amount not to exceed the amount specified in Paragraph 1 of this Section, or in the event of death by sickness, a Sickness Death Benefit in an amount not to exceed the amount specified in Paragraph 2 of this Section, may be paid to any other person or persons who may be beneficiaries, as defined in the first sentence of this Paragraph 4, and be receiving or entitled to receive support from the deceased employee at the time of his death.

Subject to the limitations expressed in this sub-paragraph (b) the Committee shall have full authority to determine to whom payments shall be made and the amount of the payments, taking into consideration the degree of dependency and such other facts as it may deem pertinent.

(c) If the employee shall have made written request and shown good cause therefor, the Committee may pay all or a [fol. 3288] portion of the Death Benefit to a person or persons included in sub-paragraph (b) above, and reduce, by the amount thus paid, the amount which is payable to the persons included in sub-paragraph (a), provided in the opinion of the Committee good cause for such action still exists at the time of the employee's death.

(d) Upon the death of an employee or pensioner, if there be no beneficiary qualified to receive an award under the provisions of this Section, or if the amount of such award authorized by the Committee be less than the maximum specified in Paragraph 1, 2 or 3 of this Section, as the case may be, the Committee may authorize such payments as may be required to defray the necessary expenses incident to the death of the employee or pensioner and the disability immediately preceding, together with, in the case of death by sickness, the necessary expenses, not exceeding Two Hundred and Fifty Dollars ($250), of his burial, provided, however, that the aggregate amount so paid shall not exceed the maximum benefits specified in said paragraphs.

(5) Unless otherwise specified by the Committee the Death Benefit at the death of an employee or the amount awarded at the death of a pensioner shall be paid in monthly sums equal to the monthly wages or monthly pen-

sion paid at the time of his death. In the discretion of the Committee, however, such sums and times of payments may be varied.

In the event of the death of a beneficiary who is receiving or is entitled to receive installment payments under this Section, such payments shall cease. In the discretion of the Committee, however, and within the amounts which the deceased beneficiary would have received if he had survived, the Committee may authorize payments in connection with the disability, death and burial of the deceased beneficiary under conditions similar to those described in sub-paragraph (d) of Paragraph 4 of this Section, or may authorize payments to some other person eligible as a beneficiary of the deceased employee or pensioner under the provisions of Paragraph 4.

Upon the death of an employee or pensioner, the Committee, without awaiting determination of the beneficiary or beneficiaries, if any, to whom the award will be made, may pay an amount equivalent to the wages, disability benefits or pension which the deceased was receiving, to the end of the payroll period in which the death occurs, and such payment may be made to the wife of the deceased, or to some other suitable person selected by the Committee. [fol. 3289] Such payment, if made, shall constitute a part of the award. In addition the Committee, in its discretion, may authorize payment before the final settlement, of a part of the award not exceeding Two Hundred and Fifty Dollars ($250), to meet urgent expenses incident to the death and the immediately preceding disability of the deceased. If any of the persons to whom an award may be payable cannot be found or cannot be conveniently communicated with or are incompetent to authorize use of any part thereof for the burial of the deceased and the payment of necessary expenses incident to his death and preceding disability, the Committee in its discretion may make such payments, as a part of the award, as in its judgment may be reasonable for the proper burial of the deceased and the payment of necessary expenses incident to his death and disability immediately preceding.

(6) A Death Benefit shall not be payable in the case of any person who dies after he has ceased to be an employee of the Company, unless such person became disabled by reason of accident or sickness while an employee and con-

tinued disabled, until death, to such a degree as to be unable to engage in any gainful occupation. In such cases a Death Benefit may be paid, in the discretion of the Committee, provided it has been furnished from time to time with such proof of continued disability as it may have required and provided it has been permitted to make, or have made by a physician, such examinations of the disabled person as it has deemed necessary in order to ascertain his condition. The amount of the Death Benefit, if any, shall not exceed the amount which could have been paid if the disabled person had died on the day he ceased to be an employee of the Company.

(7) All claims for Death Benefits, to be valid, must be made in writing within one year of the death on which the claim is based. In case notice in writing of the existence of a wife (or husband), child or other dependent relative of a deceased employee shall not be served on the Committee within one year after such employee's death, it shall be conclusive, in so far as these Regulations are concerned, that there are no such persons in existence.

(8) "Wages" for the purposes of this Section shall mean wages for full time service (not including overtime), computed at the employee's rate of pay at the date of death, provided, however, that if the employee normally serves the Company on less than a full time basis, benefits in case of death by sickness shall be computed on the basis of the time constituting the employee's normal service under his contract of hiring.

[fol. 3290] (9) All amounts payable under this Section shall be a charge to the operating expense accounts of the Company when and as paid.

Section 4, Paragraph 4, of the Plan is amended to read as follows:

Service pensions granted to employees shall continue from date of retirement to death of pensioner, but disability pensions shall continue for such period only as the Committee may determine in each case from time to time. Further payments, if any, which may be made to the wife or dependent relatives of a deceased pensioner are as provided and limited by Section 7 of these Regulations.

Section 8, Paragraph 19, of the Plan is amended to read as follows:

Disability benefits or pensions accrued but unpaid at the death of an employee or pensioner may, in the discretion of the Committee, be paid to the wife of the deceased person or to some other suitable person selected by the Committee, for use in payment of expenses incident to the death of the deceased person or the disability immediately preceding, or for the benefit of any one or more persons who were dependent upon him at the time of his death.

Do not consider death benefits as a substitute for individual life insurance.

[fol. 3291] Plan for Employees' Pensions, Disability Benefits, and Death Benefits

(Effective January 1, 1913, with Amendments to and Including July 1, 1928)

This pamphlet describes the "Plan for Employees' Pensions, Disability Benefits and Death Benefits" of the American Telephone and Telegraph Company and the word "Company" in the text of the Plan on pages 5 to 20 means said Company.

A similar Plan has been adopted by the Associated Operating Companies (in the United States) of the American Company and by the Western Electric Company, Incorporated, and agreements for interchange of benefit obligations have been made as provided in Section 9 of the Plan.

Summary of Benefits

A brief summary of benefits to which employees may become entitled is given below. The complete plan is contained in sections headed "Plans for Employees' Pensions, Disability Benefits and Death Benefits," pages 5 to 20.

1. Pensions:

1) Retirement on pension is provided for employees coming under the classes listed below. Employees in Class A may be retired on a service pension either at their own request or at the discretion of the Committee. Employees in Classes B and C may be retired on a service pension only

at the discretion of the Committee and with the approval of the President or Vice-President.

[fol. 3292] a.) Service Pensions:

Class A—Employees whose age is 60 years or more (females 55 or more) and whose term of employment has been 20 years or more.

Class B—Employees whose age is 55 to 59 years (females 50 to 54) and whose term of employment has been 25 years or more.

Class C—Employees whose age is less than 55 years (females less than 50) and whose term of employment has been 30 years or more.

b) Disability Pensions:

Class D—Any employee whose term of employment has been 15 years or more and who becomes totally disabled by reason of sickness may, at the discretion of the Committee and with the approval of the President or Vice-President, be granted a disability pension, which shall continue for such period only as the Committee may decide.

2) The amount of the annual pension in any of the above cases is 1% of the average annual pay for 10 years, multiplied by the number of years in the employee's term of employment.

Example: An employee whose term of employment at time of retirement has been thirty years and whose average pay for ten years has been $1,500 a year, will receive an annual pension equal to 30% of $1,500, or $450, payable in monthly amounts of $37.50.

Note.—The minimum pension will be $30 a month, but this is not to apply to disability pensions granted to employees of less than 20 years' service or to pensions granted to "part time" employees.

2. Accident Disability Benefits:

Total Disability—Full pay 13 weeks, half pay for remainder of disability. Maximum benefits to be $20 a week after six years of benefit payments.

Partial Disability—For first 13 weeks, 100% of loss in earning capacity; for remainder of disability, 50% of loss in earning capacity. Period of payments not to exceed six years in all.

[fol. 3293] 3. Sickness Disability Benefits:

These benefits begin on the eighth calendar day of absence on account of sickness and are as follows:

(a) For employees whose term of employment has been 10 years or more—Full pay 13 weeks; half pay 39 weeks.

(b) For employees whose term of employment has been 5 years or more, but less than 10 years—Full pay 13 weeks; half pay 13 weeks.

(c) For employees whose term of employment has been 2 years or more, but less than 5 years—Full pay 4 weeks; half pay 9 weeks.

Note.—Benefits are not provided in the Plan for sickness of employees of less than two years' service. In such cases such practice as the Company may establish from time to time will be followed.

4. Death Benefits:

These are payable only to wife (or husband) or dependent relatives of deceased employee and are:

(a) Sickness Death Benefits:

If employee's term of employment has been 10 years or more—One year's pay, not to exceed $2,000.

If employee's term of employment has been 5 years or more, but less than 10 years—Six months' pay, not to exceed $2,000.

(b) Accident Death Benefits:

Three years' pay, not to exceed $5,000, and the necessary expenses of burial, not to exceed $150.

Applications for Benefits

Applications for benefits shall follow the approved instructions of the Company. In default of such instructions applicants should promptly communicate with the Secretary of the Employees' Benefit Committee, to whom should also be addressed other communications with reference to the Plan.

[fol. 3294] Retirement Age

By action of the Directors of the Company a rule has been adopted which requires that on July 1, 1930, every officer or other employee who at that time is 65 years of age or over, shall retire from active service, and that thereafter every officer or other employee becoming 65 years of age shall retire at the end of the month in which that age is reached. Provision is made, however, that by specific action of the Directors the operation of this rule may be delayed from year to year with respect to any employee who is performing such services for the Company that continuation in active employment is deemed for the best interests of the service. Pensions will be voted to those persons retired by the operation of this rule who are eligible to pensions under the Plan at the date of retirement.

Employees' Record of Service

Each employee on entering the service of the Company will be given a copy of this pamphlet and, at that time or at such later time as is the practice of the Company, will be required to furnish for the files of the Committee, on a form supplied for that purpose, information regarding his previous service and the name of his beneficiary in case of death.

Leave of Absence, Lay-off, and Transfers

Attention is called to the provisions in regard to absences from the service contained in Paragraphs 5, 6 and 7 of Section 8 of the Plan. In order that all employees may be treated fairly, the Company has established routines which must be observed if the continuity of the employee's service is to be preserved in case of transfer from one Company to another and in case of any absence from the service without pay. Failure on the part of the employee to inform himself of these routines and to observe them may result in loss of credit for previous service. Employees may obtain information regarding the routines from their immediate superiors or from the Secretary of the Employees' Benefit Committee.

[fol. 3295] Plan for Employees' Pensions, Disability Benefits, and Death Benefits

(Effective January 1, 1913, with Amendments to and Including July 1, 1928)

Section 1. Undertaking:

The American Telephone and Telegraph Company undertakes, in accordance with these Regulations, to provide for the payment of definite amounts to its employees when they are disabled by accident or sickness or when they are retired from service, or, in the event of death, to their dependent relatives.

Section 2. Definitions:

1) In these Regulations the word "Plan" shall mean the Plan for Employees' Pensions, Disability Benefits and Death Benefits, as set forth in these Regulations.

2) The word "Company" shall mean the American Telephone and Telegraph Company, a New York corporation, or its successors.

3) The words "President" and "Board of Directors" or "Board" shall mean the President and Board of Directors respectively of the Company.

4) The word "Committee" shall mean the persons appointed by the Board to administer the Plan.

5) The word "Employees" shall mean those persons who receive a regular and stated compensation from the Company other than a pension or retainer.

6) The expression "term of employment" shall mean period of continuous employment in the service of the Company, or of the Company and one or more Associated or Allied Companies with which agreements have been or shall be made for interchange of benefit obligations as provided in Section 9 of these Regulations, or in the service of any Bell Company predecessor of any of the above Companies. Service in companies subsidiary to, allied with or predecessors of an Associated or Allied Company will be considered, in determining "term of employment," as service in the Associated or Allied Company, in all cases authorized by

appropriate action on the part of the Associated or Allied Company and approved by the Committee of the American Telephone and Telegraph Company.

[fol. 3296] Section 3. Committee:

1) There shall be a Committee of five (5) appointed by the Board to serve during its pleasure, which Committee shall be called the Employees' Benefit Committee. This Committee shall be charged with the administration of the Plan.

2) The Committee shall have the specific powers elsewhere herein granted to it and shall have such other powers as may be necessary in order to enable it to administer the Plan.

3) It shall determine conclusively for all parties all questions arising in the administration of the Plan.

4) It shall be empowered to authorize disbursements according to these Regulations.

5) It shall adopt such By-Laws and rules of procedure as it may find necessary, subject to the approval of the President.

6) It shall be empowered to employ a Secretary and such other assistants as may be required in the administration of the Plan.

7) The expenses of the Committee in administering the Plan shall be borne by the Company.

Section 4. Pensions:

1) On and after January 1, 1913:

a) All male employees who have reached the age of sixty years and whose term of employment has been twenty or more years and all female employees who have reached the age of fifty-five years and whose term of employment has been twenty or more years may, at their own request, or at the discretion of the Committee, be retired from active service and become eligible to pensions, which pensions are designated "service pensions."

b) Any employee whose term of employment has been thirty years or more, or any male employee who has reached the age of fifty-five and whose term of employment has been twenty-five or more years, or any female employee who has reached the age of fifty years and whose term of employment has been twenty-five or more years may, at the discretion of the Committee and with the approval of the President or of a Vice-President designated by the President, be retired from active service and granted a pension, which pension is also designated a "service pension."

c) At the discretion of the Committee and with the approval of the President or of a Vice-President designated by the President, any employee who has become totally disabled as a result of sickness or of injury, other than by accidental injury arising out of and in the course of employ- [fol. 3297] ment by the Company, and whose term of employment has been fifteen years or more, may be retired from active service and granted a pension, which pension is designated a "disability pension." If a disability pesion is granted it shall be for such period as the Committee may determine, and if at any time during such period the employee recovers sufficiently to resume active service, the pension may be discontinued by action of the Committee. If the employee re-enters the service of the Company at the time such pension is discontinued he shall thereupon be eligible to benefits under these Regulations, and the period of absence on pension shall be considered as a leave of absence and not as a break in the continuity of the employee's service.

2) The annual pension allowance for each employee retired with a pension on account of age, length of service or disability shall be as follows:

For each year of his term of employment, one per centum (1%) of the average annual pay during the ten years next preceding retirement, provided, however, that the Committee may, at its discretion, base such pension upon the average annual pay of the ten consecutive years of service during which the retired employee was paid the highest rate of wages. The minimum pension shall be Thirty Dollars ($30) per month, provided, however, that at the discretion of the Committee the pension allowance may be less than Thirty Dollars ($30) per month, but not less than the allowance computed as aforesaid, in the case of pensions granted under Paragraph 1 (c) of this Section to employees of less than twenty years' service, and in cases in which, in the opinion of the Committee, the days or hours constituting the employee's normal service have not been adequate to constitute full time service, during the number of years required to establish eligibility to pension in the class under which the employee is retired.

3) Pensions shall be payable monthly or at such shorter periods as the Committee may determine in each case.

4) Service pensions granted to employees shall continue from date of retirement to death of pensioner, but disability pensions shall continue for such period only as the Committee may determine in each case from time to time. Pensions granted under any of the conditions described in these Regulations may, in the discretion of the Committee, be continued to dependent relatives for a period which shall not extend beyond the end of the twelfth calendar month [fol. 3298] following the death of the pensioner, provided, however, that the total amount paid to all such dependent relatives shall not exceed Two Thousand Dollars ($2,000) in any one case.

5) Regular employment under a salary with this Company or with any company with which arrangements for interchange of benefit obligations, as described in Section 9 of these Regulations, have been made directly or indirectly, shall suspend the right of a retired employee to pension payments during the period he continues in such employment.

6) The Committee shall furnish quarterly to the President a list of all employees qualified to receive pensions.

7) The Committee shall notify all employees of their eligibility to retire on service pensions at their own request, as they become eligible.

8) In order to meet its obligations to pay service pensions (defined in Paragraphs 1 (a) and 1 (b) of this Section) granted to take effect under the Plan, the Company, effective January 1, 1927, established a trust fund to be known as the "Pension Fund." It undertakes to maintain this Fund by periodic charges to operating expenses and payments to the Fund in such amounts that when an employee becomes eligible under the Plan to receive a service pension, there will be available in the Pension Fund an amount sufficint to provide for him a pension in the amount

stated in the Plan. It has also made adequate provision in the Pension Fund for the payment of all service pensions granted under the Plan to take effect prior to January 1, 1927. The Pension Fund shall be held by a trustee or trustees for service pension purposes only and shall be disbursed as directed by the Company from time to time. In case of termination of the Plan, or in case of revocation or other termination of said trust, the Company undertakes to preserve the integrity of the Pension Fund as a trust fund to be applied solely to service pension purposes in the manner which in its judgment will enable it to meet its service pension obligations most effectively. All service pensions granted to take effect under the Plan shall be paid from the Pension Fund.

9) All disability Pensions (defined in Paragraph 1 (c) of this Section) and all payments to dependent relatives of deceased penisoners (defined in Paragraph 4 of this Section) shall be a charge to the operating expense accounts of the Company when and as paid.

Section 5. Accident Disability Benefits:

1) All employees of the Company on January 1, 1913, and thereafter shall be qualified to receive payments under these Regulations on account of physical disability to work [fol. 3299] by reason of accidental injury (not including the accidental injuries specified in Paragraphs 14 and 15 of Section 8 of these Regulations) arising out of and in the course of employment by the Company. Such payments are hereinafter referred to as Accident Disability Benefits.

2) Accident Disability Benefits shall be as follows:

a) Total Disability—Full pay for any period of total disability during the first thirteen weeks of disability, and half pay for any period of total disability after the first thirteen weeks of disability, provided, however, that after the expiration of six years of disability payments, the benefits shall not exceed Twenty Dollars ($20) a week.

b) Partial Disability—For any period of partial disability during the first thirteen weeks of disability, 100% of the difference between full pay at time of injury and wages which, in the judgment of the Committee, the employee is capable of earning; for any period of partial disability after the first thirteen weeks of disability, 50% of difference between full pay at time of injury and wages which, in the judgment of the Committee, employee is capable of earning, provided, however, that no payments for partial disability shall be made after the expiration of six years of disability payments.

"Full pay" and "half pay" for the purposes of this paragraph shall be based on the number of hours per week commonly regarded as constituting full time service, not including overtime, and shall be computed at the employee's rate of pay at the time the disability began.

3) If after a period of total disability the disability becomes partial or after a period of partial disability the disability becomes total, the amount of the benefits shall be changed accordingly.

4) In ascertaining the period during which Accident Disability Benefits shall be paid, the period of disability shall be taken as commencing upon the first day on which, because of disability, a full day's wages is not paid. Successive periods of disability from accident shall be counted together if from the same accident and separately if from different accidents.

5) Accidental injuries shall be considered as arising out of and in the course of employment only where the injury has resulted solely from accident during and in direct connection with the performance of duties to which the employee is assigned in the service of the Company, or which he is directed to perform by proper authority, or in voluntarily protecting the Company's property or interests, and [fol. 3300] there must be a clear and well established history of the cause and circumstances of injury accidentally inflicted, and they must be sufficient to produce the alleged injury, and there must be satisfactory evidence that such injury renders the employee unable to perform his duty in the service of the Company.

6) In case of accidental injury to any employee arising out of and in the course of employment by the Company, resulting in permanent loss of a bodily member or loss of

its use, special benefits, in lieu of all other benefits on account of such injury, may be awarded by the Committee, provided, however, that such special benefits shall not exceed the payment hereinafter authorized to be paid in case of death from accidental injury, except by specific authority from the Board.

7) In case of accidental injury to any employee arising out of and in the course of employment by the Company, the necessary expenses for "first aid" shall, on approval of the Committee, be paid by the Company. In addition the Company will pay for necessary surgical treatment, but no employee shall have authority to contract any bills against the Company or the Committee and nothing herein shall be held to mean or imply that the Company will be responsible for such bills as an employee may contract or his surgeon may charge. Bills for surgical treatment must be itemized before they will be considered by the Committee. The decision as to whether in any case surgical treatment was necessary and as to what constitutes surgical treatment shall rest with the Committee. At its discretion the Committee may authorize payment of other expenses necessary for the proper care and treatment of the employee, during such period as the Committee may determine.

8) All Accident Disability Benefits and related expenses shall be a charge to the operating expense accounts of the Company when and as paid.

Section 6. Sickness Disability Benefits:

1) All employees of the Company on January 1, 1913, or thereafter shall, after a term of employment of 2 years, be qualified to receive payments under these Regulations on account of physical disability to work by reason of sickness. Such payments are hereinafter referred to as Sickness Disability Benefits. Such payments shall terminate when disability ceases and shall in no case extend beyond the periods hereinafter mentioned. For the purposes of these Regulations, sickness shall include injury other than accidental injury arising out of and in the course of employment by the Company. This Section is subject, however, to the exceptions stated in Paragraph 14 of Section 8 of these Regulations.

[fol. 3301] 2) Sickness Disability Benefits shall be as follows:

a) If term of employment has been 10 years or more—full pay 13 weeks; half pay 39 weeks.

b) If term of employment has been 5 to 10 years—full pay 13 weeks; half pay 13 weeks.

c) If term of employment has been 2 to 5 years—full pay 4 weeks; half pay 9 weeks.

"Full pay" and "half pay" for the purposes of this paragraph shall be based on the number of hours per week constituting the employee's normal service under his contract of hiring, not including overtime, and shall be computed at the employee's rate of pay at the time the disability began, provided, however, that the benefits shall at no time exceed the pay which the employee would receive, based on his rate of pay and the general schedule of hours per week constituting a full week's service at the time the disability began.

3) Sickness disability benefits shall begin on the eighth calendar day of absence on account of disability, provided, however, that if an employee has received sickness disability benefits for any period and is again absent on account of sickenss within two weeks after the termination of such period, any benefits on account of such further sickness shall begin on the first day of absence instead of on the eighth day.

4) Successive periods of sickness disability shall be counted together as one period in computing the period during which the employee shall be entitled to benefits, except that any sickness occurring after an employee has been continuously engaged in the performance of duty for thirteen weeks shall be considered as a new sickness and not as part of any disability which preceded such period of thirteen weeks.

5) Employees shall not be entitled to receive sickness disability benefits for time for which any wages are paid them by the Company.

6) All Sickness Disability Benefits shall be a charge to the operating expense accounts of the Company when and as paid.

Section 7. Death Benefits:

1) In the event of the death of any employee, resulting from accidental injury on or after January 1, 1913, arising out of and in the course of employment by the Company, there shall be payable to the employee's beneficiaries, as provided in Paragraph 3 of this Section (subject, however, to the conditions elsewhere imposed in these Regulations) a Death Benefit which shall equal three years' wages, as hereinafter in this Section defined, but which shall in no case exceed Five Thousand Dollars ($5,000). In addition to the Death Benefit, the necessary expenses of the burial [fol. 3302] of the deceased employee, not exceeding One Hundred and Fifty Dollars ($150), shall be paid.

2) In the event of the death of any employee, on or after January 1, 1913, resulting from sickness as defined in Paragraph 1 of Section 6 of these Regulations, if the employee's term of employment has been five years or more there shall be payable to the employee's benficiaries, as provided in Paragraph 3 of this Section (subject, however, to the conditions elsewhere imposed in these Regulations), a Death Benefit, the amount of which shall be:

a) If employee's term of employment has been 5 to 10 years, six months' wages as hereinafter in this Section defined.

b) If employee's term of employment has been 10 years or more, one year's wages as hereinafter in this Section defined.

c) The maximum Death Benefit in any such case shall be Two Thousand Dollars ($2,000).

3) The Death Benefit, in case of an employee's death by either accident or sickness, shall be paid only to the wife (or husband) or dependent relatives of the employee and such payment shall be made in the following order; provided, however, that upon written application of an employee, and good cause shown, the Committee may authorize a change in such order of payment, but no persons other than the beneficiaries herein designated shall receive payment on account of such benefit:

First. To the wife (or husband) of the employee.

Second. If there be no wife (or husband) of such employee living at the employee's death, then to such child or children of the employee, and such issue of any deceased child, as were dependent upon such deceased employee for their support at the time of his or her death, in equal shares, such issue of said deceased child, if any, to take equally among them the share said deceased child would have taken if living and dependent.

Third. If there be no children or issue of deceased children dependent upon the employee as aforesaid, then among such other relatives, if any, as were dependent upon the deceased employee for support at the time of his death, and in such proportions as the Committee may decide. If any of such other relatives were only partially dependent upon the deceased employee for support, the death benefit payable to such partially dependent relatives shall be such part of the total death benefits as may be determined by the Committee to be proportionate to the degree of dependence, provided, however, that any relative to whose support the deceased employee was, at the time of his death, regularly contributing an amount equal to 20% or more of his wages, such contribution being necessary for the [fol. 3303] support of such relative, shall be considered to have been wholly dependent upon the deceased employee.

Fourth. If there be no such relative dependent as aforesaid living at such employee's death, the benefit shall lapse, but so much thereof as may be required to defray the necessary expenses incident to the death of the employee and the disability immediately preceding, together with the necessary expenses, not exceeding, however, One Hundred and Fifty Dollars ($150) of his burial, shall be paid by the Company if authorized by the Committee. In case notice in writing of the existence of such wife, husband, child, issue of a child, or dependent relative shall not be served on the Committee within one year after such employee's death, it shall be treated as conclusive that there are no such persons in existence.

4) All claims for death benefits, to be valid, must be made in writing within one year from the date of the death on which the claim is based.

5) Claims for death benefits will be payable within thirty days after the required evidence of their validity is furnished.

6) A part of a death benefit, not exceeding Two Hundred Dollars ($200), may be paid before the final settlement, to meet urgent expenses incident to the death and preceding disability of an employee, to be deducted from the total amount upon final payment.

7) If any of the persons to whom the death benefit is payable are incompetent to give authority for such payments or cannot be found, or are in a foreign country, or for other reasons cannot be conveniently communicated with, the Committee may make such payments, as a part of the death benefit, as in its judgment may be reasonable, for the proper burial of the deceased employee and the payment of necessary expenses incident to his death and disability immediately preceding.

8) If an employee dies during disability from accident or sickness, the death benefit which may be payable shall not be subject to deduction of previous payments of disability benefits.

9) Death benefits shall not be payable in the case of any person who dies after he has ceased to be an employee of the Company, unless such person became disabled by reason of accident or sickness while an employee and continued disabled, until death, to such a degree as to be unable to engage in any gainful occupation. In such cases Death Benefits shall be payable provided the employee has not been pensioned, and provided the Committee has been furnished, from time to time, such proof of continued disability as it may require, and provided the Committee has been permitted to make or have made, by a physician, such examination of the disabled person as it may deem necessary in order to ascertain his condition.

[fol. 3304] 10) "Wages" for the purposes of this Section shall mean wages for full time service (not including overtime), computed at the employee's rate of pay at the date of death, provided, however, that if the employee normally serves the Company on less than a full time basis, benefits in case of death from sickness shall be computed [illegible] of the time constituting the employee's normal service under his contract of hiring.

11) All Death Benefits and related expenses shall be a charge to the operating expense accounts of the Company when and as paid.

Section 8. General Provisions:

1) Neither the action of the Board of Directors in establishing this plan for employees' pensions, disability benefits and death benefits, nor any action hereafter taken by the Board or the Committee shall be construed as giving to any officer, agent or employee a right to be retained in the service of the Company or any right or claim to any pension or other benefit or allowance after discharge from the service of the Company, unless the right to such pension or benefit has accrued prior to such discharge. No employee shall have any right to a service pension by reason of service less than that specified in Paragraphs 1 (a) and 1 (b) of Section 4 of these Regulations, nor shall any employee have any right in the Pension Fund unless a service ~~pension~~ authorized by the Committee under the Plan has not been paid. No employee shall have any right against the Company to any benefit under the Plan except for the amount to which the employee has theretofore become entitled and which the Committee has directed be paid to that employee under the Plan.

2) Assignment of pensions or other benefits under these Regulations will not be permitted or recognized.

3) Pensions or disability benefits may be suspended or terminated, in the discretion of the Committee and the President, with the approval of the Board of Directors, in cases of conduct prejudicial to the interests of the Company.

4) In all questions relating to the term of employment and rates of pay of employees, the decision of the Committee, based upon these Regulations and upon the records of the Company, shall be final, provided, however, that as to service prior to June 1, 1914, the Committee shall have discretion to base its decisions upon the general intent of these Regulations and upon such information as may be obtainable from any source. As to service on or after June 1, 1914, this discretion shall not exist and the Committee shall base its decisions strictly upon the facts in the case as shown by the records of the Company.

5) Any absence from the service without pay, other than [fol. 3305] absence during a period of disability benefits, or leave of absence or temporary lay-off as defined in Para-

graphs 6 and 7 of this Section, shall be considered as a break in the continuity of service unless the Board of Directors specifically authorizes the Committee to consider such absence as a leave of absence, and if any person is re-employed after such a break in the continuity of his service, his term of employment shall be reckoned from the date of such re-employment.

6) Leave of absence shall not constitute a break in the continuity of service, but in the case of any such absence prior to June 1, 1914, which was of more than six months' duration, the period of absence shall be deducted in computing term of employment. On and after June 1, 1914, leave of absence, for the purposes of these Regulations, shall mean leave formally granted in conformity with the rules of the Company, as adopted from time to time, and, except in the case of leave granted by the Board of Directors as provided in Paragraph 5 of this Section and leave on account of continued disability following the expiration of a period of disability benefits, such leave must be obtained at or before the time the absence begins. Leave of absence for any period in excess of one month shall not be effective unless approved in writing by the Committee, and in any case in which such approval is given, the Committee shall indicate whether or not the period of absence is to be deducted in computing term of employment and whether during the absence the employee shall be eligible to benefits under these Regulations. Absence following the expiration of a period of disability benefits shall be considered as a break in the continuity of service unless the employee is granted a leave of absence, provided, however, that in its discretion, the Committee may consider any such absence as a leave of absence, if satisfactory evidence is furnished that the disability was continuous during the entire period of absence.

7) Temporary lay-off on account of reduction of force shall not be considered as a break in the continuity of service, but when the period of absence from such cause exceeds six months in any twelve consecutive months, the entire period of the absence shall be deducted in computing term of employment, and all subsequent periods of lay-off shall be so deducted until the employee shall have been continuously engaged in the performance of duty for a period

of twelve consecutive months. On and after June 1, 1914, a period of lay-off shall not be considered as temporary unless the employee is re-employed within such period as the rules of the Company, as adopted from time to time, may require, not in any case exceeding two years. If the employee is not thus re-employed, the continuity of his service shall be deemed to have been broken. No benefits under these Regulations shall be payable during a period of lay-off.

[fol. 3306] 8) Every employee who shall be absent from duty on account of sickness or injury must at once notify his immediate superior, and the employee shall not be entitled to benefits for time previous to such notice, unless delay shall be shown to have been unavoidable and satisfactory evidence of disability is furnished.

9) All claims for disability benefits, to be valid, must be made within sixty days from the date of accident or from the first day of absence on account of sickness.

10) Disabled employees wishing to leave home shall obtain from the Committee written approval of absence for a specified time and furnish it satisfactory proof of disability while absent, otherwise no benefits shall be paid for such period of absence.

11) It shall be the duty of disabled employees, when their condition and location do not prevent, to call on the Committee or the Committee's representative at such times as the Committee may require.

12) A disabled employee shall not be entitled to benefits if he declines to permit the Committee to make or have made by a physician, from time to time, such examination as the Committee may deem necessary in order to ascertain the employee's condition, or if he fails to give proper information respecting his condition, or if he prevents the necessary examination by absenting himself from home without arranging with the Committee, or giving satisfactory reasons for not doing so and furnishing the necessary evidence, or if he fails to comply with notice to meet the Committee, at its offices or elsewhere, when his condition and location permit of his doing so.

13) Disabled employees must take proper care of themselves and have proper treatment. Benefits will be dis-

continued to employees who refuse or neglect to follow the recommendations of the Committee.

14) In case of disability or death directly or indirectly due to intoxication or to the use of alcoholic liquors as a beverage or to the use of stimulants or narcotics or to unlawful acts or immoralities or to fighting, unless in self-defense against unprovoked assaults, or to other encounter, such as wrestling or scuffling, or to injury received in any brawl or in any liquor saloon, gambling house or other disreputable resort, or to the wilful intent of the employee to injure himself or another, or to venereal disease, no right to benefits under these Regulations shall exist except at the discretion of the Committee.

15) Death or disability resulting from infection of a cut, abrasion, scratch, puncture, or other wound not immediately disabling and not reported at the time of the occurrence causing the injury, or from sunstroke or frostbite, shall not be classed as due to accident, except at the discretion of the Committee.

[fol. 3307] 16) Payments under the Plan shall be made in conformity with the financial methods of the Company and on orders of or bills prepared by the Committee or such other persons as may be designated by the Committee.

17) Disability benefits will ordinarily be paid at the same intervals of time as would govern the payment of wages to the employee if he were in the performance of duty, but at the discretion of the Committee benefits on account of continued disability may be paid monthly and on account of disability for short periods when the amounts are ascertained.

18) In case of any grave injury or chronic sickness, if the employee requests that a lump sum be paid in full settlement of all claims under the Plan and against the Company on account of such injury or sickness, the Committee may, in its discretion, make full and final settlement with the employee by commuting the benefit payments into a single lump sum payment, which payment shall be the present value computed on a fair basis, of the benefits to which the employee would become entitled during such

period as his disability may reasonably be expected to continue.

19) Disability benefits remaining unpaid at the death of an employee shall be payable to the person or persons entitled to receive the death benefit, and in like proportions.

20) Benefits payable to an employee unable to execute a proper receipt may be paid to a relative or other proper person, selected by the Committee, to use for the benefit of the employee and the receipt of such person shall be a sufficient discharge.

21) After an employee has received the maximum Sickness Disability Benefits herein provided for an employee of his term of employment, he shall not be eligible to further benefits on account of sickness until he shall have performed his duties as an employee of the Company for a continuous period of thirteen weeks. If an employee who has received Sickness Disability Benefits shall subsequently become disabled by reason of accidental injury arising out of and in the course of employment by the Company, or if an employee who has received Accident Disability Benefits shall subsequently become disabled by reason of sickness, the period during which benefits are payable on account of such subsequent disability shall not be affected by the preceding period of disability.

22) Benefits shall not be payable for both accident and sickness at the same time to the same person.

23) Granting a pension to an employee or retiring him from employment without a pension during a period of disability benefits shall not terminate or decrease his disability benefits. [fol. 3308] Granting a pension during a period of disability benefits, however, shall not entitle the employee to any payments on account of the pension, while the disability benefits continue, unless the amount of the pension is greater than the amount of the disability benefits, in which case only such amount shall be paid on account of the pension as may be necessary to make the total amount paid to such employee on account of the disability benefits and the pension equal to the amount he would have received if the pension alone had been paid.

24) "Rate of Pay" as used in these Regulations shall mean the time rate at which the employee is entitled to receive payment for services under the contract of hiring, provided, however, that if the employee's compensation is ordinarily computed on other than a time basis, the employee's average compensation (not including compensation for overtime) for so much of the preceding three months as he has been in the service of the Company, may be taken as determining the rate of pay, provided the rate thus computed is not less than the employee's time rate.

25) If an employee of this Company is an employee also of one or more other companies which have adopted plans for employees' pensions, disability benefits and death benefits, similar to that herein described and which have entered into arrangements with this Company, directly or indirectly, for an interchange of the benefit obligations to which the companies may be subject under such plans, any pension, disability benefits or death benefit to which such employee or his beneficiaries may become entitled under the plans shall be computed on the basis of the total combined pay which the employee is receiving from all such companies and, except in the case of injury or death due to accident arising out of and in the course of employment by any of such companies, shall be pro-rated among the companies on the basis of the pay the employee was receiving from each company, and this Company shall only pay its share thus determined. Any maximum or minimum amounts fixed by these Regulations for pensions, disability benefits or death benefits shall apply to the total amount payable by all companies and not to the portion payable by this Company.

26) In case of accident resulting in injury to or death of an employee which entitles such employee or his beneficiaries to benefits under these Regulations, he or they may elect to accept such benefits or to prosecute such claims at law as he or they may have against the Company. If election is made to accept the benefits, such election shall be in writing and shall release the Company from all claims and demands which the employee or his beneficiaries may have against it, otherwise than under these Regulations, on account of such accident. If any persons other than the beneficiaries under these Regulations might

[fol. 3309] legally assert claims against the Company on account of the death of the employee, no part of the death benefit under these Regulations shall be due or payable until there have also been delivered to the Committee good and sufficient releases of all claims, arising from or growing out of the death of the employee, which such other persons might legally assert against the Company. The Committee, in its discretion, may require that the elections and releases above described shall release any other company, connected with the accident, with which arrangements have been made, directly or indirectly, for interchange of benefit obligations, as described in Section 9 of these Regulations. The right of the employee to accident disability benefits under these Regulations shall lapse if election to accept such benefits, as above provided, is not made within sixty days after injury, or within such greater time as the Committee shall, by resolution duly entered on its records, fix for the making of such election.

27) Should claim other than under these Regulations be presented or suit brought against the Company or against any other company with which arrangements have been made, directly or indirectly, for interchange of benefit obligations, as described in Section 9 of these Regulations, for damages on account of injury or death of an employee, nothing shall be payable under these Regulations on account of such injury or death except as provided in Paragraph 28 of this Section; provided, however, that the Committee may, in its discretion and upon such terms as it may prescribe, waive this provision if such claims be withdrawn or if such suit be discontinued.

28) In case any judgment is recovered against the Company or any settlement is made of any claim or suit on account of the injury or death of an employee, and the amount which would otherwise have been payable under these Regulations is greater than the amount paid on account of such judgment or settlement, the difference between the two amounts may, in the discretion of the Committee, be distributed to the beneficiaries who would have received benefits under these Regulations, except that no party to any such suit against the Company shall be entitled to any portion thereof.

29) In case any benefit or pension shall be payable under the laws now in force or hereafter enacted of any State or Country to any employee of the Company or his beneficiaries under such laws, the excess only, if any, of the amount prescribed in these Regulations above the amount of such benefit or pension prescribed by law shall be the benefit or pension payable under these Regulations. In those cases where because of differences in the beneficiaries, or differences in the time or methods of payment, or otherwise, whether there is such excess or not is not ascertainable by mere comparison but adjustments are necessary, the Committee in its discretion is authorized to deter- [fol. 3310] mine whether or not in fact any such excess exists, and in case of such excess, to make the adjustments necessary to carry out in a fair and equitable manner the spirit of the provision for the payment of such excess.

30) The Committee shall publish annually to the employees a report of the operations under the Plan.

Section 9. Interchange of Benefit Obligations:

Agreement may be made by this Company with any Associated or Allied Company for an interchange with that Company of the benefit obligations to which such Company may be subject under a plan for employees' pensions, disability benefits and death benefits similar to that herein adopted. The general provisions of such agreement will be:

a) That as long as such agreement remains in force the Plan of such Associated or Allied Company shall be maintained so as to conform to the Plan of this Company.

b) That advance provision for the payment of service pensions shall be made by such Associated or Allied Company in such amounts as may be necessary to provide for and fulfill all requirements of the Plan as in effect from time to time.

c) That an employee's term of employment, as hereinbefore defined, shall include employment not only in this Company, but also in any other Company with which reciprocal agreements under this Plan shall have been made by this Company.

d) That in case of consolidation or merger with another Company having a similar employees' benefit plan, the Pension Funds of the Companies consolidated or merged shall be combined.

Section 10. Changes in Plan:

The Committee, with the consent of the President and subject to the approval of the Board of Directors, may from time to time make changes in the Plan set forth in these Regulations, but such changes shall not affect the rights of any employee, without his consent, to any benefit or pension to which he may have previously become entitled hereunder.

[fol. 3311] Retain this pamphlet for reference. In the event of sickness, accident or any other case requiring attention, report facts at once to your immediate superior.

[fol. 3312] Exhibit A-208

Plan for Employees' Pensions, Disability Benefits, and Death Benefits

American Telephone & Telegraph Co. and Associated Companies

Bell System

Illinois Bell Telephone Company, American Telephone and Telegraph Company, and Associated and Allied Companies

(Effective January 1, 1913, with Amendments to and Including July 1, 1928)

[fol. 3313] Plan for Employees' Pensions, Disability Benefits, and Death Benefits

(Effective January 1, 1913, with Amendments to and Including July 1, 1928)

This pamphlet describes the "Plan for Employees' Pensions, Disability Benefits, and Death Benefits" of the Illinois Bell Telephone Company, and the word "Company" in the text of the Plan on pages 5 to 20 means said Company.

A similar Plan has been adopted by the American Telephone and Telegraph Company, its other Associated Operating Companies (in the United States) and by the Western Electric Company, Incorporated, and agreements for interchange of benefit obligations have been made as provided in Section 9 of the Plan.

Summary of Benefits

A brief summary of benefits to which employees may become entitled is given below. The complete plan is contained in sections headed "Plan for Employees' Pensions, Disability Benefits and Death Benefits," pages 5 to 20.

1. Pensions:

1) Retirement on pension is provided for employees coming under the classes listed below. Employees in Class A may be retired on a service pension either at their own request or at the discretion of the Committee. Employees in Classes B and C may be retired on a service pension only at the discretion of the Committee and with the approval of the President or Vice-President.

[fol. 3314] a) Service Pensions:

Class A—Employees whose age is 60 years or more (females 55 or more) and whose term of employment has been 20 years or more.

Class B—Employees whose age is 55 to 59 years (females 50 to 54) and whose term of employment has been 25 years or more.

Class C—Employees whose age is less than 55 years (females less than 50) and whose term of employment has been 30 years or more.

b) Disability Pensions:

Class D—Any employee whose term of employment has been 15 years or more and who becomes totally disabled by reason of sickness may, at the discretion of the Committee and with the approval of the President or Vice-President, be granted a disability pension, which shall continue for such period only as the Committee may decide.

2) The amount of the annual pension in any of the above cases is 1% of the average annual pay for 10 years, multi-

plied by the number of years in the employee's term of employment.

Example: An employee whose term of employment at time of retirement has been thirty years and whose average pay for ten years has been $1,500 a year, will receive an annual pension equal to 30% of $1,500, or $450, payable in monthly amounts of $37.50.

Note.—The minimum pension will be $30 a month, but this is not to apply to disability pensions granted to employees of less than 20 years' service or to pensions granted to "part time" employees.

2. Accident Disability Benefits:

Total Disability—Full pay 13 weeks, half pay for remainder of disability. Maximum benefits to be $20 a week after six years of benefit payments.

Partial Disability—For first 13 weeks, 100% of loss in earning capacity; for remainder of disability, 50% of loss in earning capacity. Period of payments not to exceed six years in all.

[fol. 3315] 3. Sickness Disability Benefits:

These benefits begin on the eighth calendar day of absence on account of sickness and are as follows:

(a) For employees whose term of employment has been 10 years or more—Full pay 13 weeks; half pay 39 weeks.

(b) For employees whose term of employment has been 5 years or more, but less than 10 years—Full pay 13 weeks; half pay 13 weeks.

(c) For employees whose term of employment has been 2 years or more, but less than 5 years—Full pay 4 weeks; half pay 9 weeks.

Note.—Benefits are not provided in the Plan for sickness of employees of less than two years' service. In such cases such practice as the Company may establish from time to time will be followed.

4. Death Benefits:

These are payable only to wife (or husband) or dependent relatives of deceased employee and are:

(a) Sickness Death Benefits:

If employee's term of employment has been 10 years or more—One year's pay, not to exceed $2,000.

If employee's term of employment has been 5 years or more, but less than 10 years—Six months' pay, not to exceed $2,000.

(b) Accident Death Benefits:

Three years' pay, not to exceed $5,000, and the necessary expenses of burial, not to exceed $150.

Applications for Benefits

Applications for benefits shall follow the approved instructions of the Company. In default of such instructions applicants should promptly communicate with the Secretary of the Employees' Benefit Committee, to whom should also be addressed other communications with reference to the Plan.

[fol. 3316]

Retirement Age

By action of the Directors of the Company a rule has been adopted which requires that on July 1, 1930, every officer or other employee who at that time is 65 years of age or over, shall retire from active service, and that thereafter every officer or other employee becoming 65 years of age shall retire at the end of the month in which that age is reached. Provision is made, however, that by specific action of the Directors the operation of this rule may be delayed from year to year with respect to any employee who is performing such services for the Company that continuation in active employment is deemed for the best interests of the service. Pensions will be voted to those persons retired by the operation of this rule who are eligible to pensions under the Plan at the date of retirement.

The above rule will supersede as of July 1, 1930, the existing rule providing for retirement at 70 years of age.

Employees' Record of Service

Each employee on entering the service of the Company will be given a copy of this pamphlet and, at that time or at such later time as is the practice of the Company, will be required to furnish for the files of the Committee, on a form supplied for that purpose, information regarding his previous service and the name of his beneficiary in case of death.

Leave of Absence, Lay-off, and Transfers

Attention is called to the provisions in regard to absences from the service contained in Paragraphs 5, 6 and 7 of Section 8 of the Plan. In order that all employees may be treated fairly, the Company has established routines which must be observed if the continuity of the employee's service is to be preserved in case of transfer from one Company to another and in case of any absence from the service without pay. Failure on the part of the employee to inform himself of these routines and to observe them may result in loss of credit for previous service. Employees may obtain information regarding the routines from their immediate superiors or from the Secretary of the Employees' Benefit Committee.

[fol. 3317] Plan for Employees' Pensions, Disability Benefits, and Death Benefits

(Effective January 1, 1913, with Amendments to and Including July 1, 1928)

Section 1. Undertaking:

The Company undertakes, in accordance with these Regulations, to provide for the payment of definite amounts to its employees when they are disabled by accident or sickness or when they are retired from service, or, in the event of death, to their dependent relatives.

Section 2. Definitions:

1) In these Regulations the word "Plan" shall mean the Plan for Employees' Pensions, Disability Benefits and Death Benefits, as set forth in these Regulations.

2) The word "Company" shall mean the Company or Companies named on the first page or its or their successors.

3 The words "President" and "Board of Directors" or "Board" shall mean the President and Board of Directors respectively of the Company.

4) The word "Committee" shall mean the persons appointed by the Board to administer the Plan.

5) The word "Employees" shall mean those persons who receive a regular and stated compensation from the Company other than a pension or retainer.

6) The expression "term of employment" shall mean period of continuous employment in the service of the Company, or of the Company, the American Telephone and Telegraph Company, the Associated and Allied Companies with which agreements have been made by the American Company for interchange of benefit obligations and any Bell Company predecessor of any of said companies, or in the service of any one or more of said companies. Service in companies subsidiary to, allied with or predecessors of any one of the aforementioned companies will be considered, in determining "term of employment," as service in such aforementioned company, in all cases authorized by appropriate action on the part of such company and approved by the Employees' Benefit Committee of the American Company.

[fol. 3318] Section 3. Committee:

1) There shall be a Committee of five (5) appointed by the Board to serve during its pleasure, which Committee shall be called the Employees' Benefit Committee. This Committee shall be charged with the administration of the Plan.

2) The Committee shall have the specific powers elsewhere herein granted to it and shall have such other powers as may be necessary in order to enable it to administer the Plan.

3) It shall determine conclusively for all parties all questions arising in the administration of the Plan.

4) It shall be empowered to authorize disbursements according to these Regulations.

5) It shall adopt such By-Laws and rules of procedure as it may find necessary, with the approval of the President and subject to the provisions of Section 9 of these Regulations.

6) It shall be empowered to employ a Secretary and such other assistants as may be required in the administration of the Plan.

7) The expenses of the Committee in administering the Plan shall be borne by the Company.

Section 4. Pensions:

1) On and after January 1, 1913:

a) All male employees who have reached the age of sixty years and whose term of employment has been twenty or more years and all female employees who have reached the age of fifty-five years and whose term of employment has been twenty or more years may, at their own request, or at the discretion of the Committee, be retired from active service and become eligible to pensions, which pensions are designated "service pensions."

b) Any employee whose term of employment has been thirty years or more, or any male employee who has reached the age of fifty-five and whose term of employment has been twenty-five or more years, or any female employee who has reached the age of fifty years and whose term of employment has been twenty-five or more years may, at the discretion of the Committee and with the approval of the President or of a Vice-President designated by the President, be retired from active service and granted a pension, which pension is also designated a "service pension."

c) At the discretion of the Committee and with the approval of the President or of a Vice-President designated by the President, any employee who has become totally disabled as a result of sickness or of injury, other than by [fol. 3319] accidental injury arising out of and in the course of employment by the Company, and whose term of employment has been fifteen years or more, may be retired from active service and granted a pension, which pension is designated a "disability pension." If a disability pension is granted it shall be for such period as the Committee may determine, and if at any time during such period the employee recovers sufficiently to resume active service, the pension may be discontinued by action of the Committee. If the employee re-enters the service of the Company at the time such pension is discontinued he shall thereupon be eligible to benefits under these Regulations, and the period of absence on pension shall be considered as a leave of absence and not as a break in the continuity of the employee's service.

2) The annual pension allowance for each employee retired with a pension on account of age, length of service or disability shall be as follows:

For each year of his term of employment, one per centum (1%) of the average annual pay during the ten years next preceding retirement, provided, however, that the Committee may, at its discretion, base such pension upon the average annual pay of the ten consecutive years of service during which the retired employee was paid the highest rate of wages. The minimum pension shall be Thirty Dollars ($30) per month, provided, however, that at the discretion of the Committee the pension allowance may be less than Thirty Dollars ($30) per month, but not less than the allowance computed as aforesaid, in the case of pensions granted under Paragraph 1 (c) of this Section to employees of less than twenty years' service, and in cases in which, in the opinion of the Committee, the days or hours constituting the employee's normal service have not been adequate to constitute full time service, during the number of years required to establish eligibility to pension in the class under which the employee is retired.

3) Pensions shall be payable monthly or at such shorter periods as the Committee may determine in each case.

4) Service pensions granted to employees shall continue from date of retirement to death of pensioner, but disability pensions shall continue for such period only as the Committee may determine in each case from time to time. Pensions granted under any of the conditions described in these Regulations may, in the discretion of the Committee, be continued to dependent relatives for a period which shall not extend beyond the end of the twelfth calendar

[fol. 3320] month following the death of the pensioner, provided, however, that the total amount paid to all such dependent relatives shall not exceed Two Thousand Dollars ($2,000) in any one case.

5) Regular employment under a salary with this Company or with any company with which arrangements for interchange of benefit obligations, as described in Section 9 of these Regulations, have been made directly or indirectly, shall suspend the right of a retired employee to pension payments during the period he continues in such employment.

6) The Committee shall furnish quarterly to the President a list of all employees qualified to receive pensions.

7) The Committee shall notify all employees of their eligibility to retire on service pensions at their own request, as they become eligible.

8) In order to meet its obligations to pay service pensions (defined in Paragraphs 1 (a) and 1 (b) of this Section) granted to take effect under the Plan, the Company, effective January 1, 1927, established a trust fund to be known as the "Pension Fund." It undertakes to maintain this Fund by periodic charges to operating expenses and payments to the Fund in such amounts that when an employee becomes eligible under the Plan to receive a service pension, there will be available in the Pension Fund an amount sufficient to provide for him a pension in the amount stated in the Plan. It has also made adequate provision in the Pension Fund for the payment of all service pensions granted under the Plan to take effect prior to January 1, 1927. The Pension Fund shall be held by a trustee or trustees for service pension purposes only and shall be disbursed as directed by the Company from time to time. In case of termination of the Plan, or in case of revocation or other termination of said trust, the Company undertakes to preserve the integrity of the Pension Fund as a trust fund to be applied solely to service pension purposes in the manner which in its judgment will enable it to meet its service pension obligations most effectively. All service pensions granted to take effect under the Plan shall be paid from the Pension Fund.

9) All Disability Pensions (defined in Paragraph 1 (c) of this Section) and all payments to dependent relatives of deceased pensioners (defined in Paragraph 4 of this Section) shall be a charge to the operating expense accounts of the Company when and as paid.

Section 5. Accident Disability Benefits:

1) All employees of the Company on January 1, 1913, and thereafter shall be qualified to receive payments under [fol. 3321] these Regulations on account of physical disability to work by reason of accidental injury (not including the accidental injuries specified in Paragraphs 14 and 15 of Section 8 of these Regulations) arising out of and in the course of employment by the Company. Such payments are hereinafter referred to as Accident Disability Benefits.

2) Accident Disability Benefits shall be as follows:

a) Total Disability—Full pay for any period of total disability during the first thirteen weeks of disability, and half pay for any period of total disability after the first thirteen weeks of disability, provided, however, that after the expiration of six years of disability payments, the benefits shall not exceed Twenty Dollars ($20) a week.

b) Partial Disability—For any period of partial disability during the first thirteen weeks of disability, 100% of the difference between full pay at time of injury and wages which, in the judgment of the Committee, the employee is capable of earning; for any period of partial disability after the first thirteen weeks of disability, 50% of difference between full pay at time of injury and wages which, in the judgment of the Committee, employee is capable of earning, provided, however, that no payments for partial disability shall be made after the expiration of six years of disability payments.

"Full pay" and "half pay" for the purposes of this paragraph shall be based on the number of hours per week commonly regarded as constituting full time service, not including overtime, and shall be computed at the employee's rate of pay at the time the disability began.

3) If after a period of total disability the disability becomes partial or after a period of partial disability the

disability becomes total, the amount of the benefits shall be changed accordingly.

4) In ascertaining the period during which Accident Disability Benefits shall be paid, the period of disability shall be taken as commencing upon the first day on which, because of disability, a full day's wages is not paid. Successive periods of disability from accident shall be counted together if from the same accident and separately if from different accidents.

5) Accidental injuries shall be considered as arising out of and in the course of employment only where the injury has resulted solely from accident during and in direct connection with the performance of duties to which the employee is assigned in the service of the Company, or which he is directed to perform by proper authority, or in voluntarily protecting the Company's property or interests, and [fol. 3322] there must be a clear and well established history of the cause and circumstances of injury accidentally inflicted, and they must be sufficient to produce the alleged injury, and there must be satisfactory evidence that such injury renders the employee unable to perform his duty in the service of the Company.

6) In case of accidental injury to any employee arising out of and in the course of employment by the Company, resulting in permanent loss of a bodily member or loss of its use, special benefits, in lieu of all other benefits on account of such injury, may be awarded by the Committee, provided, however, that such special benefits shall not exceed the payment hereinafter authorized to be paid in case of death from accidental injury, except by specific authority from the Board.

7) In case of accidental injury to any employee arising out of and in the course of employment by the Company, the necessary expenses for "first aid" shall, on approval of the Committee, be paid by the Company. In addition the Company will pay for necessary surgical treatment, but no employee shall have authority to contract any bills against the Company or the Committee and nothing herein shall be held to mean or imply that the Company will be responsible for such bills as an employee may contract or his surgeon may charge. Bills for surgical treatment

must be itemized before they will be considered by the Committee. The decision as to whether in any case surgical treatment was necessary and as to what constitutes surgical treatment shall rest with the Committee. At its discretion the Committee may authorize payment of other expenses necessary for the proper care and treatment of the employee, during such period as the Committee may determine.

8) All Accident Disability Benefits and related expenses shall be a charge to the operating expense accounts of the Company when and as paid.

Section 6. Sickness Disability Benefits:

1) All employees of the Company on January 1, 1913, or thereafter shall, after a term of employment of 2 years, be qualified to receive payments under these Regulations on account of physical disability to work by reason of sickness. Such payments are hereinafter referred to as Sickness Disability Benefits. Such payments shall terminate when disability ceases and shall in no case extend beyond the periods hereinafter mentioned. For the purposes of these Regulations, sickness shall include injury other than accidental injury arising out of and in the course of employment by the Company. This Section is subject, however, to the exceptions stated in Paragraph 14 of Section 8 of these Regulations.

[fol. 3323] 2) Sickness Disability Benefits shall be as follows:

a) If term of employment has been 10 years or more—full pay 13 weeks; half pay 39 weeks.

b) If term of employment has been 5 to 10 years—full pay 13 weeks; half pay 13 weeks.

c) If term of employment has been 2 to 5 years—full pay 4 weeks; half pay 9 weeks.

"Full pay" and "half pay" for the purposes of this paragraph shall be based on the number of hours per week constituting the employee's normal service under his contract of hiring, not including overtime, and shall be computed at the employee's rate of pay at the time the disability began, provided, however, that the benefits shall at no time exceed the pay which the employee would receive, based on his rate of pay and the general schedule of hours per week constituting a full week's service at the time the disability began.

3) Sickness disability benefits shall begin on the eighth calendar day of absence on account of disability, provided, however, that if an employee has received sickness disability benefits for any period and is again absent on account of sickness within two weeks after the termination of such period, any benefits on account of such further sickness shall begin on the first day of absence instead of on the eighth day.

4) Successive periods of sickness disability shall be counted together as one period in computing the period during which the employee shall be entitled to benefits, except that any sickness occurring after an employee has been continuously engaged in the performance of duty for thirteen weeks shall be considered as a new sickness and not as part of any disability which preceded such period of thirteen weeks.

5) Employees shall not be entitled to receive sickness disability benefits for time for which any wages are paid them by the Company.

6) All Sickness Disability Benefits shall be a charge to the operating expense accounts of the Company when and as paid.

Section 7. Death Benefits:

1) In the event of the death of any employee, resulting from accidental injury on or after January 1, 1913, arising out of and in the course of employment by the Company, there shall be payable to the employee's beneficiaries, as provided in Paragraph 3 of this Section (subject, however, to the conditions elsewhere imposed in these Regulations) a Death Benefit which shall equal three years' wages, as hereinafter in this Section defined, but which shall in no case exceed Five Thousand Dollars ($5,000). In addition [fol. 3324] to the Death Benefit, the necessary expenses of the burial of the deceased employee, not exceeding One Hundred and Fifty Dollars ($150), shall be paid.

2) In the event of the death of any employee, on or after January 1, 1913, resulting from sickness as defined in Paragraph 1 of Section 6 of these Regulations, if the employee's term of employment has been five years or more there shall be payable to the employee's beneficiaries, as provided in Paragraph 3 of this Section (subject, however, to the conditions elsewhere imposed in these Regulations), a Death Benefit, the amount of which shall be:

a) If employee's term of employment has been 5 to 10 years, six months' wages as hereinafter in this Section defined.

b) If employee's term of employment has been 10 years or more, one year's wages as hereinafter in this Section defined.

c) The maximum Death Benefit in any such case shall be Two Thousand Dollars ($2,000).

3) The Death Benefit, in case of an employee's death by either accident or sickness, shall be paid only to the wife (or husband) or dependent relatives of the employee and such payment shall be made in the following order; provided, however, that upon written application of an employee, and good cause shown, the Committee may authorize a change in such order of payment, but no persons other than the beneficiaries herein designated shall receive payment on account of such benefit:

First. To the wife (or husband) of the employee.

Second. If there be no wife (or husband) of such employee living at the employee's death, then to such child or children of the employee, and such issue of any deceased child, as were dependent upon such deceased employee for their support at the time of his or her death, in equal shares, such issue of said deceased child, if any, to take equally among them the share said deceased child would have taken if living and dependent.

Third. If there be no children or issue of deceased children dependent upon the employee as aforesaid, then among such other relatives, if any, as were dependent upon the deceased employee for support at the time of his death, and in such proportions as the Committee may decide. If any of such other relatives were only partially dependent upon the deceased employee for support, the death benefit payable to such partially dependent relatives shall be such part of the total death benefits as may be determined by the Committee to be proportionate to the degree of dependence, provided, however, that any relative to whose support the deceased employee was, at the time of his death, regularly contributing an amount equal to 20% or more of his wages, such contribution being necessary for the sup-[fol. 3325] port of such relative, shall be considered to have been wholly dependent upon the deceased employee.

Fourth. If there be no such relative dependent as aforesaid living at such employee's death, the benefit shall lapse, but so much thereof as may be required to defray the necessary expenses incident to the death of the employee and the disability immediately preceding, together with the necessary expenses, not exceeding, however, One Hundred and Fifty Dollars ($150) of his burial, shall be paid by the Company if authorized by the Committee. In case notice in writing of the existence of such wife, husband, child, issue of a child, or dependent relative shall not be served on the Committee within one year after such employee's death, it shall be treated as conclusive that there are no such persons in existence.

4) All claims for death benefits, to be valid, must be made in writing within one year from the date of the death on which the claim is based.

5) Claims for death benefits will be payable within thirty days after the required evidence of their validity is furnished.

6) A part of a death benefit, not exceeding Two Hundred Dollars ($200), may be paid before the final settlement, to meet urgent expenses incident to the death and preceding disability of an employee, to be deducted from the total amount upon final payment.

7) If any of the persons to whom the death benefit is payable are incompetent to give authority for such payments or cannot be found, or are in a foreign country, or for other reasons cannot be conveniently communicated with, the Committee may make such payments, as a part of the death benefit, as in its judgment may be reasonable, for the proper burial of the deceased employee and the pay-

ment of necessary expenses incident to his death and disability immediately preceding.

8) If an employee dies during disability from accident or sickness, the death benefit which may be payable shall not be subject to deduction of previous payments of disability benefits.

9) Death benefits shall not be payable in the case of any person who dies after he has ceased to be an employee of the Company, unless such person became disabled by reason of accident or sickness while an employee and continued disabled, until death, to such a degree as to be unable to engage in any gainful occupation. In such cases Death Benefits shall be payable provided the employee has not been pensioned, and provided the Committee has been furnished, from time to time, such proof of continued disability as it may require, and provided the Committee has been permitted to make or have made, by a physician, such examination of the disabled person as it may deem necessary in order to ascertain his condition.

[fol. 3326] 10) "Wages" for the purposes of this Section shall mean wages for full time service (not including overtime), computed at the employee's rate of pay at the date of death, provided, however, that if the employee normally serves the Company on less than a full time basis, benefits in case of death from sickness shall be computed on the basis of the time constituting the employee's normal service under his contract of hiring.

11) All Death Benefits and related expenses shall be a charge to the operating expense accounts of the Company when and as paid.

Section 8. General Provisions:

1) Neither the action of the Board of Directors in establishing this plan for employees' pensions, disability benefits and death benefits, nor any action hereafter taken by the Board or the Committee shall be construed as giving to any officer, agent or employee a right to be retained in the service of the Company or any right or claim to any pension or other benefit or allowance after discharge from the service of the Company, unless the right to such pension or benefit has accrued prior to such discharge. No em-

ployee shall have any right to a service pension by reason of service less than that specified in Paragraphs 1 (a) and 1 (b) of Section 4 of these Regulations, nor shall any employee have any right in the Pension Fund unless a service pension authorized by the Committee under the Plan has not been paid. No employee shall have any right against the Company to any benefit under the Plan except for the amount to which the employee has theretofore become entitled and which the Committee has directed be paid to that employee under the Plan.

2) Assignment of pensions or other benefits under these Regulations will not be permitted or recognized.

3) Pensions or disability benefits may be suspended or terminated, in the discretion of the Committee and the President, with the approval of the Board of Directors, in cases of conduct prejudicial to the interests of the Company.

4) In all questions relating to the term of employment and rates of pay of employees, the decision of the Committee, based upon these Regulations and upon the records of the Company, shall be final, provided, however, that as to service prior to June 1, 1914, the Committee shall have discretion to base its decisions upon the general intent of these Regulations and upon such information as may be obtainable from any source. As to service on or after June 1, 1914, this discretion shall not exist and the Committee shall base its decisions strictly upon the facts in the case as shown by the records of the Company.

5) Any absence from the service without pay, other than [fol. 3327] absence during a period of disability benefits, or leave of absence or temporary lay-off as defined in Paragraphs 6 and 7 of this Section, shall be considered as a break in the continuity of service unless the Board of Directors specifically authorizes the Committee to consider such absence as a leave of absence, and if any person is re-employed after such a break in the continuity of his service, his term of employment shall be reckoned from the date of such re-employment.

6) Leave of absence shall not constitute a break in the continuity of service, but in the case of any such absence

prior to June 1, 1914, which was of more than six months' duration, the period of absence shall be deducted in computing term of employment. On and after June 1, 1914, leave of absence, for the purposes of these Regulations, shall mean leave formally granted in conformity with the rules of the Company, as adopted from time to time, and, except in the case of leave granted by the Board of Directors as provided in Paragraph 5 of this Section and leave on account of continued disability following the expiration of a period of disability benefits, such leave must be obtained at or before the time the absence begins. Leave of absence for any period in excess of one month shall not be effective unless approved in writing by the Committee, and in any case in which such approval is given, the Committee shall indicate whether or not the period of absence is to be deducted in computing term of employment and whether during the absence the employee shall be eligible to benefits under these Regulations. Absence following the expiration of a period of disability benefits shall be considered as a break in the continuity of service unless the employee is granted a leave of absence, provided, however, that in its discretion, the Committee may consider any such absence as a leave of absence, if satisfactory evidence is furnished that the disability was continuous during the entire period of absence.

7) Temporary lay-off on account of reduction of force shall not be considered as a break in the continuity of service, but when the period of absence from such cause exceeds six months in any twelve consecutive months, the entire period of the absence shall be deducted in computing term of employment, and all subsequent periods of lay-off shall be so deducted until the employee shall have been continuously engaged in the performance of duty for a period of twelve consecutive months. On and after June 1, 1914, a period of lay-off shall not be considered as temporary unless the employee is re-employed within such period as the rules of the Company, as adopted from time to time, may require, not in any case exceeding two years. If the employee is not thus re-employed, the continuity of his service shall be deemed to have been broken. No benefits under these Regulations shall be payable during a period of lay-off.

[fol. 3328] 8) Every employee who shall be absent from duty on account of sickness or injury must at once notify his immediate superior, and the employee shall not be entitled to benefits for time previous to such notice, unless delay shall be shown to have been unavoidable and satisfactory evidence of disability is furnished.

9) All claims for disability benefits, to be valid, must be made within sixty days from the date of accident or from the first day of absence on account of sickness.

10) Disabled employees wishing to leave home shall obtain from the Committee written approval of absence for a specified time and furnish it satisfactory proof of disability while absent, otherwise no benefits shall be paid for such period of absence.

11) It shall be the duty of disabled employees, when their condition and location do not prevent, to call on the Committee or the Committee's representative at such times as the Committee may require.

12) A disabled employee shall not be entitled to benefits if he declines to permit the Committee to make or have made by a physician, from time to time, such examination as the Committee may deem necessary in order to ascertain the employee's condition, or if he fails to give proper information respecting his condition, or if he prevents the necessary examination by absenting himself from home without arranging with the Committee, or giving satisfactory reasons for not doing so and furnishing the necessary evidence, or if he fails to comply with notice to meet the Committee, at its offices or elsewhere, when his condition and location permit of his doing so.

13) Disabled employees must take proper care of themselves and have proper treatment. Benefits will be discontinued to employees who refuse or neglect to follow the recommendations of the Committee.

14) In case of disability or death directly or indirectly due to intoxication or to the use of alcoholic liquors as a beverage or to the use of stimulants or narcotics or to unlawful acts or immoralities or to fighting, unless in self-

defense against unprovoked assaults, or to other encounter, such as wrestling or scuffling, or to injury received in any brawl or in any liquor saloon, gambling house or other disreputable resort, or to the wilful intent of the employee to injure himself or another, or to venereal disease, no right to benefits under these Regulations shall exist except at the discretion of the Committee.

15) Death or disability resulting from infection of a cut, abrasion, scratch, puncture, or other wound not immediately disabling and not reported at the time of the occurrence causing the injury, or from sunstroke or frostbite, shall not be classed as due to accident, except at the discretion of the Committee.

[fol. 3329] 16) Payments under the Plan shall be made in conformity with the financial methods of the Company and on orders of or bills prepared by the Committee or such other persons as may be designated by the Committee.

17) Disability benefits will ordinarily be paid at the same intervals of time as would govern the payment of wages to the employee if he were in the performance of duty, but at the discretion of the Committee benefits on account of continued disability may be paid monthly and on account of disability for short periods when the amounts are ascertained.

18) In case of any grave injury or chronic sickness, if the employee requests that a lump sum be paid in full settlement of all claims under the Plan and against the Company on account of such injury or sickness, the Committee may, in its discretion, make full and final settlement with the employee by commuting the benefit payments into a single lump sum payment, which payment shall be the present value computed on a fair basis, of the benefits to which the employee would become entitled during such period as his disability may reasonably be expected to continue.

19) Disability benefits remaining unpaid at the death of an employee shall be payable to the person or persons entitled to receive the death benefit, and in like proportions.

20) Benefits payable to an employee unable to execute a proper receipt may be paid to a relative or other proper

person, selected by the Committee, to use for the benefit of the employee and the receipt of such person shall be a sufficient discharge.

21) After an employee has received the maximum Sickness Disability Benefits herein provided for an employee of his term of employment, he shall not be eligible to further benefits on account of sickness until he shall have performed his duties as an employee of the Company for a continuous period of thirteen weeks. If an employee who has received Sickness Disability Benefits shall subsequently become disabled by reason of accidental injury arising out of and in the course of employment by the Company, or if an employee who has received Accidental Disability Benefits shall subsequently become disabled by reason of sickness, the period during which benefits are payable on account of such subsequent disability shall not be affected by the preceding period of disability.

22) Benefits shall not be payable for both accident and sickness at the same time to the same person.

23) Granting a pension to an employee or retiring him from employment without a pension during a period of disability benefits shall not terminate or decrease his disability benefits. Granting a pension during a period of dis- [fol. 3330] ability benefits, however, shall not entitle the employee to any payments on account of the pension, while the disability benefits continue, unless the amount of the pension is greater than the amount of the disability benefits, in which case only such amount shall be paid on account of the pension as may be necessary to make the total amount paid to such employee on account of the disability benefits and the pension equal to the amount he would have received if the pension alone had been paid.

24) "Rate of Pay" as used in these Regulations shall mean the time rate at which the employee is entitled to receive payment for services under the contract of hiring, provided, however, that if the employee's compensation is ordinarily computed on other than a time basis, the employee's average compensation (not including compensation for overtime) for so much of the preceding three months as he has been in the service of the Company, may be taken as determining the rate of pay, provided the rate thus computed is not less than the employee's time rate.

25) If an employee of this Company is an employee also of one or more other companies which have adopted plans for employees' pensions, disability benefits and death benefits, similar to that herein described and which have entered into arrangements with this Company, directly or indirectly, for an interchange of the benefit obligations to which the companies may be subject under such plans, any pension, disability benefits or death benefit to which such employee or his beneficiaries may become entitled under the plans shall be computed on the basis of the total combined pay which the employee is receiving from all such companies and, except in the case of injury or death due to accident arising out of and in the course of employment by any of such companies, shall be pro-rated among the companies on the basis of the pay the employee was receiving from each company, and this Company shall only pay its share thus determined. Any maximum or minimum amounts fixed by these Regulations for pensions, disability benefits or death benefits shall apply to the total amount payable by all companies and not to the portion payable by this Company.

26) In case of accident resulting in injury to or death of an employee which entitles such employee or his beneficiaries to benefits under these Regulations, he or they may elect to accept such benefits or to prosecute such claims at law as he or they may have against the Company. If election is made to accept the benefits, such election shall be in writing and shall release the Company from all claims and demands which the employee or his beneficiaries may have against it, otherwise than under these Regulations, on account of such accident. If any persons other than the beneficiaries under these Regulations might legally assert [fol. 3331] claims against the Company on account of the death of the employee, no part of the death benefit under these Regulations shall be due or payable until there have also been delivered to the Committee good and sufficient releases of all claims, arising from or growing out of the death of the employee, which such other persons might legally assert against the Company. The Committee, in its discretion, may require that the elections and releases above described shall release any other company, connected with the accident, with which arrangements have been made, directly or indirectly, for interchange of benefit obligations,

as described in Section 9 of these Regulations. The right of the employee to accident disability benefits under these Regulations shall lapse if election to accept such benefits, as above provided, is not made within sixty days after injury, or within such greater time as the Committee shall, by resolution duly entered on its records, fix for the making of such election.

27) Should claim other than under these Regulations be presented or suit brought against the Company or against any other company with which arrangements have been made, directly or indirectly, for interchange of benefit obligations, as described in Section 9 of these Regulations, for damages on account of injury or death of an employee, nothing shall be payable under these Regulations on account of such injury or death except as provided in Paragraph 28 of this Section; provided, however, that the Committee may, in its discretion and upon such terms as it may prescribe, waive this provision if such claims be withdrawn or if such suit be discontinued.

28) In case any judgment is recovered against the Company or any settlement is made of any claim or suit on account of the injury or death of an employee, and the amount which would otherwise have been payable under these Regulations is greater than the amount paid on account of such judgment or settlement, the difference between the two amounts may, in the discretion of the Committee, be distributed to the beneficiaries who would have received benefits under these Regulations, except that no party to any such suit against the Company shall be entitled to any portion thereof.

29) In case any benefit or pension shall be payable under the laws now in force or hereafter enacted of any State or Country to any employee of the Company or his beneficiaries under such laws, the excess only, if any, of the amount prescribed in these Regulations above the amount of such benefit or pension prescribed by law shall be the benefit or pension payable under these Regulations. In those cases where because of differences in the beneficiaries, or differences in the time or methods of payment, or otherwise, whether there is such excess or not is not ascertainable by mere comparison but adjustments are necessary, the Committee in its discretion is authorized to determine

[fol. 3332] whether or not in fact any such excess exists, and in case of such excess, to make the adjustments necessary to carry out in a fair and equitable manner the spirit of the provision for the payment of such excess.

30) The Committee shall publish annually to the employees a report of the operations under the Plan.

Section 9. Interchange of Benefit Obligations:

(This Section makes provision for agreements between the American Telephone and Telegraph Company and its Associated and Allied Companies for an interchange of the benefit obligations to which such companies may be subject under their Plans for Employees' Pensions, Disability Benefits and Death Benefits.

Under the provisions of such agreements:

a) Such benefit plans will be maintained on a uniform basis by all of the companies.

b) An employee's term of employment, as defined in the Plans will be computed by each of such companies on the basis of employment not only in its own service but also in the service of any other company, party to such an agreement.

c) In cases of consolidations of such companies their Pension Funds will likewise be consolidated.)

Section 10. Changes in Plan:

The Committee, subject to the provisions of Section 9, with the consent of the President and subject to the approval of the Board of Directors, may from time to time make changes in the Plan set forth in these Regulations, but such changes shall not affect the rights of any employee, without his consent, to any benefit or pension to which he may have previously become entitled hereunder.

[fol. 3333] Retain this pamphlet for reference. In the event of sickness, accident or any other case requiring attention report facts at once to your immediate superior.

[fol. 3334] EXHIBIT A-209

Amendments to Plan for Employees' Pensions, Disability Benefits, and Death Benefits

(Effective January 1, 1930)

Illinois Bell Telephone Company

[fol. 3335] Amendments to Plan for Employees' Pensions, Disability Benefits, and Death Benefits

(Effective January 1, 1930)

Summary of Amended Provisions

(This Summary supersedes paragraph 4 on page 3 of the Benefit Plan pamphlet, and covers only certain of the new provisions. For an exact statement of all provisions see the text of the amendments in the following pages.)

Death Benefits:

If the employee leaves a wife who was living with him at the time of his death, a husband who was physically or mentally incapable of self-support and who was actually supported by the employee at the time of her death, or a child under the age of 18 years (or over that age if physically or mentally incapable of self-support) who was actually supported by the employee at the time of death, the amount to be awarded is the maximum specified in the schedules.

In all other cases the amounts to be awarded (within the limits indicated by the schedules) and the persons to whom the payments shall be made are subject to the discretion of the Benefit Committee.

Beneficiaries are limited to a wife (or husband), dependent children and other dependent relatives of the deceased.

The Death Benefit schedules are:

a) Accident Death Benefits:

Regardless of the employee's term of employment an Accident Death Benefit not to exceed the amount specified below may be paid in case of death by accident arising out of and in the course of employment:

Three years' pay, not to exceed $5,000; provided, however, that if a greater amount could have been paid under the Sickness Death Benefit schedule below had the employee died from sickness rather than from accident, the maximum of $5,000 is increased to the amount of the Sickness Death Benefit.

In addition to the Accident Death Benefit the necessary expenses of burial, not to exceed $250, will be paid.

[fol. 3336] b) Sickness Death Benefits:

If the deceased employee had a term of employment of two years of more, a Sickness Death Benefit not to exceed the maximum shown below may be paid:

Employee's term of employment	Maximum sickness death benefit
2 but less than 3 years	4 months' wages
3 " " " 4 "	5 " "
4 " " " 5 "	6 " "
5 " " " 6 "	7 " "
6 " " " 7 "	8 " "
7 " " " 8 "	9 " "
8 " " " 9 "	10 " "
9 " " " 10 "	11 " "
10 years or more	12 " "

The minimum Sickness Death Benefit shall be $250.

Payments in Case of Death of Pensioners:

In the discretion of the Committee payments may be made to the wife (or husband), dependent children or other dependent relatives of the deceased. The maximum amount of such payments shall not exceed the amount which could have been paid under the Sickness Death Benefit schedule if the pensioner had died on his last day of active service.

Manner of Payment:

The payments described above will be made in monthly amounts, unless otherwise specified by the Committee, and will cease upon the death of the beneficiary.

Text of Amended Provisions

Entire Section 7 of the Plan is amended to read as follows:

Death Benefits:

(1) In the event of the death of any employee, occurring on or after January 1, 1930 and resulting from accidental

injury, on or after January 1, 1913, arising out of and in the course of employment by the Company, hereinafter referred to as death by accident, there may be paid (and, in the circumstances described in sub-paragraph 4 (a) of this Section, there shall be paid) an Accident Death Benefit, the maximum amount of which shall be three years' wages, as defined in Paragraph 8 of this Section, but which shall not exceed Five Thousand Dollars ($5,000); provided, however, that if the maximum Sickness Death Benefit which could have been paid under the provisions of the next suc- [fol. 3337] ceeding paragraphs had said employee died from sickness rather than from accidental injury, is in excess of said limit of Five Thousand Dollars ($5,000), said limit shall be increased to the amount of said miximum Sickness Death Benefit. Payment of the Accident Death Benefit, subject to the conditions imposed in Paragraph 5 of this Section and Paragraph 29 of Section 8 and elsewhere in these Regulations, shall be made to the employee's beneficiaries as provided in Paragraph 4 of this Section. In addition to the Death Benefit the necessary expenses of the burial of the deceased employee, not exceeding Two Hundred and Fifty Dollars ($250), shall be paid.

(2) In the event of the death of any employee, occurring on or after January 1, 1930 and resulting from sickness as defined in Paragraph 1 of Section 6 of these Regulations, hereinafter referred to as death by sickness, if the employee's term of employment has been two years or more there may be paid (and, in the circumstances described in sub-paragraph 4 (a) of this Section, there shall be paid) a Sickness Death Benefit which shall not be in excess of the amount specified in the following schedule:

Employee's term of employment	Maximum sickness death benefit
2 but less than 3 years	4 months' wages
3 " " " 4 "	5 " "
4 " " " 5 "	6 " "
5 " " " 6 "	7 " "
6 " " " 7 "	8 " "
7 " " " 8 "	9 " "
8 " " " 9 "	10 " "
9 " " " 10 "	11 " "
10 years or more	12 " "

The minimum Sickness Death Benefit shall be $250.

Payment of the Sickness Death Benefit, subject to the conditions imposed in Paragraph 5 of this Section and elsewhere in these Regulations, shall be made to the employee's beneficiaries, as provided in Paragraph 4 of this Section.

(3) In the event of the death on or after January 1, 1930 of any person who at the time of death is receiving a pension under these Regulations, the Committee in its discretion may authorize further payments to the wife (or husband) or dependent relatives of the pensioner the total amount of which shall not exceed the maximum amount which could have been paid as a Sickness Death Benefit under the terms of Paragraph 2 of this Section if the pensioner had died on his last day of active service.

(4) The persons who may be beneficiaries of the Accident or Sickness Death Benefit or of payments on the death of a pensioner hereunder are limited to the wife (or husband) and the dependent children and other dependent relatives of the deceased. The amount to be paid in each case and the beneficiary or beneficiaries who shall receive the same, and the share which each shall receive, shall be determined by the Committee, subject to the following provisions and to the provisions of Paragraph 5 of this Section.

(a) In the event of death by accident the maximum Accident Death Benefit specified in Paragraph 1 of this Section, or in the event of death by sickness, the maximum Sickness Death Benefit specified in Paragraph 2 of this Section, shall be paid, subject to the provisions of subparagraph (c) of this Paragraph 4, to the wife of the deceased employee if living with him at the time of his death; to the husband of the deceased employee, if physically or mentally incapable of self-support and actually supported in whole or in part by the deceased employee at the time of her death; or to the child or children of the deceased employee under the age of eighteen years (or over that age if physically or mentally incapable of self-support) who were actually supported in whole or in part by the deceased employee at the time of death. If the employee leaves both wife (or husband) and a child or children, as here described, the Committee, in its discretion, may pay the Death Benefit to or for any one or more of such possible beneficiaries in such portions as it may determine.

(b) If there be no beneficiary of the deceased employee as described above in sub-paragraph (a), then, in the event of death by accident, an Accident Death Benefit in an amou[illegible]ot to exceed the amount specified in Paragraph 1 of [illegible] or in the event of death by sickness, a Sicknes[illegible]efit in an amount not to exceed the amount spec[illegible]graph 2 of this Section, may be paid to any [illegible] or persons who may be beneficiaries, as define[illegible]t sentence of this paragraph 4, and be receiving or [illegible]ed to receive support from the deceased employee at the time of his death.

Subject to the limitations expressed in this sub-paragraph (b) the Committee shall have full authority to determine to whom payments shall be made and the amount of the payments, taking into consideration the degree of dependency and such other facts as it may deem pertinent.

(c) If the employee shall have made written request and shown good cause therefor, the Committee may pay all or [fol. 3339] a portion of the Death Benefit to a person or persons included in sub-paragraph (b) above, and reduce, by the amount thus paid, the amount which is payable to the persons included in sub-paragraph (a), provided in the opinion of the Committee good cause for such action still exists at the time of the employee's death.

(d) Upon the death of an employee or pensioner, if there be no beneficiary qualified to receive an award under the provisions of this Section, or, if the amount of such award authorized by the Committee be less than the maximum specified in Paragraph 1, 2 or 3 of this Section, as the case may be, the Committee may authorize such payments as may be required to defray the necessary expenses incident to the death of the employee or pensioner and the disability immediately preceding, together with, in the case of death by sickness, the necessary expenses, not exceeding Two Hundred and Fifty Dollars ($250), of his burial; provided, however, that the aggregate amount so paid shall not exceed the maximum benefits specified in said paragraphs.

(5) Unless otherwise specified by the Committee the Death Benefit at the death of an employee or the amount awarded at the death of a pensioner shall be paid in monthly sums equal to the monthly wages or monthly pension paid at the time of his death. In the discretion of the Commit-

tee, however, such sums and times of payments may be varied.

In the event of the death of a beneficiary who is receiving or is entitled to receive installment payments under this Section, such payments shall cease. In the discretion of the Committee, however, and within the amounts which the deceased beneficiary would have received if he had survived, the Committee may authorize payments in connection with the disability, death and burial of the deceased beneficiary under conditions similar to those described in sub-paragraph (d) of Paragraph 4 of this Section, or may authorize payments to some other person eligible as a beneficiary of the deceased employee or pensioner under the provisions of Paragraph 4.

Upon the death of an employee or pensioner, the Committee, without awaiting determination of the beneficiary or beneficiaries, if any, to whom the award will be made, may pay an amount equivalent to the wages, disability benefits or pension which the deceased was receiving, to the end of the payroll period in which the death occurs, and such payment may be made to the wife of the deceased, or to some other suitable person selected by the Committee. Such [fol. 3340] payment, if made, shall constitute a part of the award. In addition the Committee, in its discretion, may authorize payment, before the final settlement, of a part of the award not exceeding Two Hundred and Fifty Dollars ($250), to meet urgent expenses incident to the death and the immediately preceding disability of the deceased. If any of the persons to whom an award may be payable cannot be found or cannot be conveniently communicated with or are incompetent to authorize use of any part thereof for the burial of the deceased and the payment of necessary expenses incident to his death and preceding disability, the Committee in its discretion may make such payments, as a part of the award, as in its judgment may be reasonable for the proper burial of the deceased and the payment of necessary expenses incident to his death and disability immediately preceding.

(6) A Death Benefit shall not be payable in the case of any person who dies after he has ceased to be an employee of the Company, unless such person became disabled by reason of accident or sickness while an employee and continued disabled, until death, to such a degree as to be unable

to engage in any gainful occupation. In such cases a Death Benefit may be paid, in the discretion of the Committee, provided it has been furnished from time to time with such proof of continued disability as it may have required and provided it has been permitted to make, or have made by a physician, such examinations of the disabled person as it has deemed necessary in order to ascertain his condition. The amount of the Death Benefit, if any, shall not exceed the amount which could have been paid if the disabled person had died on the day he ceased to be an employee of the Company.

(7) All claims for Death Benefits, to be valid, must be made in writing within one year of the death on which the claim is based. In case notice in writing of the existence of a wife (or husband), child or other dependent relative of a deceased employee shall not be served on the Committee within one year after such employee's death, it shall be conclusive, in so far as these Regulations are concerned, that there are no such persons in existence.

(8) "Wages" for the purposes of this Section shall mean wages for full time service (not including overtime), computed at the employee's rate of pay at the date of death, provided, however, that if the employee normally serves the Company on less than a full time basis, benefits in case of death by sickness shall be computed on the basis of the time constituting the employee's normal service under his contract of hiring.

[fol. 3341] (9) All amounts payable under this Section shall be a charge to the operating expense accounts of the Company when and as paid.

Section 4, Paragraph 4, of the Plan is amended to read as follows:

Service pensions granted to employees shall continue from date of retirement to death of pensioner, but disability pensions shall continue for such period only as the Committee may determine in each case from time to time. Further payments, if any, which may be made to the wife or dependent relatives of a deceased pensioner are as provided and limited by Section 7 of these Regulations.

Section 8, Paragraph 19, of the Plan is amended to read as follows:

Disability benefits or pensions accrued but unpaid at the death of an employee or pensioner may, in the discretion of the Committee, be paid to the wife of the deceased person or to some other suitable person selected by the Committee, for use in payment of expenses incident to the death of the deceased person or the disability immediately preceding, or for the benefit of any one or more persons who were dependent upon him at the time of his death.

Do not consider death benefits as a substitute for individual life insurance.

[fol. 3342]

Exhibit A-211

Illinois Bell Telephone Company

Revenue, Expense and Net Income Statement (with Taxes adjusted to latest view for 1932)

Three Months Ended March 31, 1932

Exchange Revenues	$16,391,279
Toll Revenues	4,629,074
Miscellaneous Operating Revenues	310,790
Telephone Operating Revenues	$21,331,143
Less: Licensee Revenue—Dr.	312,395
Total Telephone Operating Revenues	$21,018,748
Traffic Expenses	$4,428,454
Commercial Expenses	2,230,098
General and Miscellaneous Expenses	996,095
Current Maintenance	3,665,772
Depreciation	3,461,484
Taxes Assignable to Operations	2,680,484
Other Operation Expenses	501,385
Total Telephone Operating Expenses	$17,963,772
Net Earnings from Telephone Operations	$3,054,976
Interest Deductions	802,880
Balance Net Profits from Telephone Operations after Interest Deductions	$2,252,096
Dividends	3,000,000
Deficit from Telephone Operations after Interest and Dividends	$747,904
Net Non-Operating Revenues (from other than telephone operations)	727,201
Net Deficit after including Net Non-Operating Revenues	$20,703

[fol. 3343]

Exhibit A-212

Indiana Bell Telephone Company

Representative Weighted Plant

Central Office Telephone Equipment—Account 221

Material Cost Year 1913

Item	Unit	Quantity	Unit Cost	Material Cost
1. 49 Jack 20 Per Strip	Ea	3,208	.200	802.00
2. 1016 Switchboard Cable	Ft	4,774	.168	802.03
3. 114-M Relay	Ea	535	1.350	722.25
4. 25-A Repeating Coil	"	68	4.250	289.00
5. 1168-A Protector	"	690	.445	307.05
6. #1-7 Panel 3 Position Section	"	1	130.000	130.00
7. 38 Terminal Strip	"	207	.800	165.60
8. 110 Plug	"	298	.500	223.50
Total Material	....	.....	....	3,441.43
Labor and Incidental Cost Percent—41.50	....	.....	....	1,428.19
Total Cost in Place	....	.....	....	4,869.62

[fol. 3344]

Indiana Bell Telephone Company

Representative Weighted Plant

Central Office Telephone Equipment—Account 221

Material Cost Year 1914

Item	Unit	Quantity	Unit Cost	Material Cost
1. 49 Jack 20 Per Strip	Ea	3,208	.180	577.44
2. 1016 Switchboard Cable	Ft	4,774	.145	692.23
3. 114-M Relay	Ea	535	1.100	588.50
4. 25-A Repeating Coil	"	68	4.250	289.00
5. 1168-A Protector	"	690	.445	307.05
6. #1-7 Panel 3 Position Section	"	1	130.000	130.00
7. 38 Terminal Strip	"	207	.650	134.55
8. 110 Plug	"	298	.500	149.00
Total Material	....	.....	....	2,867.77
Labor and Incidental Cost Percent—41.50	....	.....	....	1,190.12
Total Cost in Place	....	.....	....	4,057.89

[fol. 3345]

Indiana Bell Telephone Company

Representative Weighted Plant

Central Office Telephone Equipment—Account 221

Material Cost Year 1915

Item	Unit	Quantity	Unit Cost	Material Cost
1. 49 Jack 20 Per Strip	Ea	3,208	.180	577.44
2. 1016 Switchboard Cable	Ft	4,774	.145	692.23
3. 114-M Relay	Ea	535	1.100	588.50
4. 25-A Repeating Coil	"	68	4.250	289.00
5. 1168-A Protector	"	690	.445	307.05

Item	Unit	Quantity	Unit Cost	Material Cost
6. #1–7 Panel 3 Position Section	"	1	130.000	130.00
7. 38 Terminal Strip	"	207	.650	134.55
8. 110 Plug	"	298	.500	149.00
Total Material	....	.....	......	2,867.77
Labor and Incidental Cost Percent—45.15	....	.....	......	1,294.80
Total Cost in Place	....	.....	......	4,162.57

[fol. 3346]

Indiana Bell Telephone Company

Representative Weighted Plant

Central Office Telephone Equipment—Account 221

Material Cost Year 1916

Item	Unit	Quantity	Unit Cost	Material Cost
1. 49 Jack 20 Per Strip	Ea	3,208	.180	577.44
2. 1016 Switchboard Cable	Ft	4,774	.145	692.23
3. 114–M Relay	Ea	535	1.100	588.50
4. 25–A Repeating Coil	"	68	4.250	289.00
5. 1168–A Protector	"	690	.445	307.05
6. #1–7 Panel 3 Position Section	"	1	130.000	130.00
7. 38 Terminal Strip	"	207	.650	134.55
8. 110 Plug	"	298	.500	149.00
Total Material	....	.....	......	2,867.77
Labor and Incidental Cost Percent—51.34	....	.....	......	1,472.31
Total Cost in Place	....	.....	......	4,340.08

[fol. 3347]

Indiana Bell Telephone Company

Representative Weighted Plant

Central Office Telephone Equipment—Account 221

Material Cost Year 1917

Item	Unit	Quantity	Unit Cost	Material Cost
1. 49 Jack 20 Per Strip	Ea	3,028	.240	769.92
2. 1016 Switchboard Cable	Ft	4,774	.253	1,207.82
3. 114–M Relay	Ea	535	1.500	802.50
4. 25–A Repeating Coil	"	68	5.310	361.08
5. 1168–A Protector	"	690	.563	388.47
6. #1–7 Panel 3 Position Section	"	1	167.500	167.50
7. 38 Terminal Strip	"	207	.870	180.09
8. 110 Plug	"	298	.620	184.76
Total Material	....	.....	......	4,062.14
Labor and Incidental Cost Percent—48.08	....	.....	......	1,953.08
Total Cost in Place	....	.....	......	6,015.22

[fol. 3348]

Indiana Bell Telephone Company

Representative Weighted Plant

Central Office Telephone Equipment—Account 221

Material Cost Year 1918

Item	Unit	Quantity	Unit Cost	Material Cost
1. 49 Jack 20 Per Strip	Ea	3,208	.250	802.00
2. 1016 Switchboard Cable	Ft	4,774	.275	1,312.85
3. 114–M Relay	Ea	535	1.500	802.50
4. 25–A Repeating Coil	"	68	6.000	408.00
5. 1168–A Protector	"	690	.595	410.55
6. #1–7 Panel 3 Position Section	"	1	180.000	180.00
7. 38 Terminal Strip	"	207	.950	196.65
8. 110 Plug	"	298	.700	208.60
Total Material	....	.....	....	4,321.15
Labor and Incidental Cost Percent—53.81	....	.....	....	2,325.21
Total Cost in Place	....	.....	....	6,646.36

[fol. 3349]

Indiana Bell Telephone Company

Representative Weighted Plant

Central Office Telephone Equipment—Account 221

Material Cost Year 1919

Item	Unit	Quantity	Unit Cost	Material Cost
1. 49 Jack 20 Per Strip	Ea	3,208	.260	834.08
2. 1016 Switchboard Cable	Ft	4,774	.275	1,312.85
3. 114–M Relay	Ea	535	.570	839.95
4. 25–A Repeating Coil	"	68	6.600	448.80
5. 1168–A Protector	"	690	.595	410.55
6. #1–7 Panel 3 Position Section	"	1	195.000	195.00
7. 38 Terminal Strip	"	207	1.050	217.35
8. 110 Plug	"	298	.710	211.58
Total Material	....	.....	....	4,470.16
Labor and Incidental Cost Percent—60.22	....	.....	....	2,691.93
Total Cost in Place	....	.....	....	7,162.09

[fol. 3350]

Indiana Bell Telephone Company

Representative Weighted Plant

Central Office Telephone Equipment—Account 221

Material Cost Year 1920

Item	Unit	Quantity	Unit Cost	Material Cost
1. 49 Jack 20 Per Strip	Ea	3,208	.310	994.48
2. 1016 Switchboard Cable	Ft	4,774	.367	1,752.06
3. 114–M Relay	Ea	535	1.820	973.70
4. 25–A Repeating Coil	"	68	7.380	501.84
5. 1168–A Protector	"	690	.690	476.10

Item	Unit	Quantity	Unit Cost	Material Cost
6. #1-7 Panel 3 Position Section....	"	1	330.000	330.00
7. 38 Terminal Strip..............	"	207	1.300	269.10
8. 110 Plug.....................	"	298	.820	244.36
Total Material...........	....	.....	....	5,541.64
Labor and Incidental Cost Percent—53.80......................	....	.....	....	2,981.40
Total Cost in Place.........	....	.....	....	8,523.04

[fol. 3351]

Indiana Bell Telephone Company

Representative Weighted Plant

Central Office Telephone Equipment—Account 221

Material Cost Year 1921

Item	Unit	Quantity	Unit Cost	Material Cost
1. 49 Jack 20 Per Strip..........	Ea	3,208	.320	1,026.56
2. 1016 Switchboard Cable.........	Ft	4,774	.400	1,909.60
3. 114-M Relay.................	Ea	535	2.000	1,070.00
4. 25-A Repeating Coil...........	"	68	7.550	513.40
5. 1168-A Protector..............	"	690	.743	512.67
6. #1-7 Panel 3 Position Section....	"	1	420.000	420.00
7. 38 Terminal Strip..............	"	207	1.450	300.15
8. 110 Plug.....................	"	298	.900	268.20
Total Material...........	....	.....	....	6,020.58
Labor and Incidental Cost Percent—52.49......................	....	.....	....	3,160.20
Total Cost in Place.........	....	.....	....	9,180.78

[fol. 3352]

Indiana Bell Telephone Company

Representative Weighted Plant

Central Office Telephone Equipment—Account 221

Material Cost Year 1922

Item	Unit	Quantity	Unit Cost	Material Cost
1. 49 Jack 20 Per Strip...........	Ea	3,208	.290	930.32
2. 1016 Switchboard Cable.........	Ft	4,774	.370	1,766.38
3. 114-M Relay.................	Ea	535	2.000	1,070.00
4. 25-A Repeating Coil...........	"	68	7.310	497.08
5. 1168-A Protector..............	"	690	.736	507.84
6. #1-7 Panel 3 Position Section...	"	1	420.000	420.00
7. 38 Terminal Strip..............	"	207	1.400	289.80
8. 110 Plug.....................	"	298	.880	262.24
Total Material...........	....	.....	....	5,743.66
Labor and Incidental Cost Percent—52.49......................	....	.....	....	3,014.85
Total Cost in Place.........	....	.....	....	8,758.51

[fol. 3353]

Indiana Bell Telephone Company

Representative Weighted Plant

Central Office Telephone Equipment—Account 221

Material Cost Year Nov. 1922

Item	Unit	Quantity	Unit Cost	Material Cost
1. 49 Jack 20 Per Strip	Ea	3,208	.270	866.16
2. 1016 Switchboard Cable	Ft	4,774	.340	1,623.16
4. 114-M Relay	Ea	535	2.000	1,070.00
3. 25-A Repeating Coil	"	68	6.780	461.04
5. 1168-A Protector	"	690	.720	496.80
6. #1-7 Panel 3 Position Section	"	1	420.000	420.00
7. 38 Terminal Strip	"	207	1.250	258.75
8. 110 Plug	"	298	.850	253.30
Total Material	....	.....	....	5,449.21
Labor and Incidental Cost Percent—52.49	....	.....	....	2,860.29
Total Cost in Place	....	.....	....	8,309.05

(Here follows Exhibit A-213, side folio 3354)

EXHIBIT A-213

(NAME OF COMPANY)

TIMATE LEDGER
UTSIDE PLANT

DATE OF ESTIMATE	PREPARED BY	DATE APPROVED	COMMENCED	COMPLETED	PREL. COMP. NOTICE	FINAL PRINTS	FINAL REPORT SUB.	FINAL REPORT ACCEPT.	CLASS OF WORK	LOCATION	DIVISION	STATE
									Exchange Pole Lines	La Fayette	Chgo	Ill.

MONTH	MATERIAL	SUPPLY EX.	LABOR	OVERHEAD EXPENSE	STABLE & GARAGE	SUNDRY DISBURSEMENTS		TOTAL	CUMULATIVE TOTAL	TRANSFERRED TO PLANT	BALANCE ACCT. 104	INT MONTH
APPROPRIATION			299 25	19 25		2478 50			2797 00			
						2793 50		2793 50	2793 50	2793 50	-0-	
TOTAL						2793 50			2793 50			
DIFF.												

DETAIL OF MATERIAL ADDED (CONSTRUCTION) ~~OR DETAIL OF UNITS DISPLACED (RECOVERIES)~~

KIND OF MATERIAL	35' B Pole		35' A A Pole		40' A Pole		8" Anchor											
ESTIMATED	114	1995 00	4	100 00	15	375 00	1	8 50										
ACTUAL	QTY.	COST	QTY.	COST	QTY.	COST	QTY.	COST	QTY.	COST	QTY.	COST	QTY.	COST	QTY.	COST	QTY.	COST
MONTH: Jan 23	57	2251 50	2	109 00	7½	408 75	½	4 25										
TOTAL	57	2251 60	2	109 00	7½	408 75	½	4 25										

DETAIL OF L

KIND OF MATERIAL						EXEMPT MATERIAL	MISCELLANEOUS MATERIAL	CLASS:	CLASS:
ESTIMATED									

EXHIBIT A-213

(NAME OF COMPANY)

3354 (1)

~~ED	PREL. COMP. NOTICE	FINAL PRINTS	FINAL REPORT SUB.	FINAL REPORT ACCEPT.	CLASS OF WORK	LOCATION	DIVISION	STATE
					Exchange Pole Lines	La Fayette	Chgo	Ill

ESTIMATE NO. 22150 FORM S.R. 200

FIELD CODE 1C ACCT. NO. 241

LABOR	OVERHEAD EXPENSE	STABLE & GARAGE	SUNDRY DISBURSEMENTS		TOTAL	CUMULATIVE TOTAL	TRANSFERRED TO PLANT	BALANCE ACCT. 104	INT. DUR. CONST. MONTHLY CHG.	INT. DUR. CONST. CUM. TOTAL	RETIREMENTS PLANT DISPLACED	RETIREMENTS SALVAGE
29925	1925		247850			279700						
			279350		279350	279350	279350	-0-				
			279350			279350						

DETAIL OF MATERIAL ADDED (CONSTRUCTION) ~~OR DETAIL OF UNITS DISPLACED (RETIRED)~~

a Pole	40' a Pole		8" Anchor	
10000	15	37500	1	850
COST	QTY.	COST	QTY.	COST
10900	7½	40875	½	425
10900	7½	40875	½	425

EXEMPT MATERIAL | MISCELLANEOUS MATERIAL

DETAIL OF LABOR

CLASS: | CLASS: | CLASS: | CLASS: | CLASS:

											MATERIAL	MATERIAL				
ESTIMATED																
ACTUAL	QTY.	COST	QTY.	COST	QTY.	COST	QTY.	COST	QTY.	COST	COST	COST	HRS.	COST	HRS.	COST
MONTH: Jan 23												20 00				
TOTAL												20 00				

							MATERIAL	MATERIAL										
COST	QTY.	COST	QTY.	COST	QTY.	COST	COST	COST	HRS.	COST	HRS.	COST	HRS.	COST	HRS.	COST	HRS.	COST
								20 00										
								20 00										

[fol. 3355]

EXHIBIT A–214

Comparative Table Showing Effect of Weighting Increase Factors

Method No.	1	2		3		4			
	Appraisal Method								
Basis of Mat'l Weighting	Based on a fixed proportion of mat'ls. typical of the plant as a whole	Based on mat'l. of 10 specific estimates each year using only those items appearing in appraisal set-up		Based on all the mat'l. installed under 10 specific estimates each year		Based on all the mat'l. installed on both specific and routine estimates			
Basis of Labor Weighting	Based on a fixed gang make-up typical of company's practice	Same as under Method No. 1		Based on gang make-up peculiar to each year		Same as under Method No. 3			
Years	1914–1923	1914–1923		1914–1923		1920–1923			
	Total gross add. June 30, 1923 level	Total gross add. June 30, 1923 level	% of Appraisal Method	Total gross add. June 30, 1923 level	% of Appraisal Method	Total gross add. June 30, 1923 level		% of Appraisal Method	Max. Yearly Variation
						Appr. Meth.	Meth. #4		
Account 241	$1,427,274	$1,435,877	100.60	$1,441,259	100.98	$537,017	$535,444	99.71	.79
" 242	2,520,150	2,513,874	99.75	2,500,788	99.23	742,458	743,504	100.14	1.67
" 245	12,622,514	12,505,818	99.08	12,678,651	100.44	4,236,491	4,217,112	99.54	.91
Total	$16,569,938	$16,455,569	99.31	$16,620,698	100.31	$5,515,966	$5,496,060	99.64	

[fol. 3356]

Exhibit A-215

Illinois Bell Telephone Company, Chicago Exchange

Percent Increase in Material Costs June 30, 1923 over Previous Periods, Account 241—Exchange Pole Lines

Item	Year 1921			Year 1922			Jan.-June 1923		
	Quantity	Actual Cost	Cost at Level of June 30, 1923	Quantity	Actual Cost	Cost at Level of June 30, 1923	Quantity	Actual Cost	Cost at Level of June 30, 1923
Pole—25-A	1	9.88	14.02	8	121.70	84.12	1	9.46	14.02
25-B	5	47.70	42.10	3	85.56	25.26	1	7.74	8.42
25-C	1	5.28	6.20	7	40.18	43.40	9	51.66	55.80
30-AA	1	19.60	22.41	2	39.39	44.82	1	20.59	22.41
30-A	17	298.84	333.88	29	524.09	569.56	13	210.65	255.32
30-B	112	1,487.68	1,570.24	167	2,258.31	2,341.34	121	1,496.08	1,696.42
30-C	3	28.62	25.26	3	38.43	25.26	1	7.69	8.42
35-AA	11	281.41	289.63	49	1,176.15	1,290.17	39	944.12	1,026.87
35-A	41	830.43	918.81	112	2,223.87	2,509.92	52	1,058.53	1,165.32
35-B	326	6,189.70	6,177.70	830	15,227.24	15,728.50	515	10,430.81	9,759.25
35-C							1	13.76	14.02
40-AA	7	232.61	211.75	13	395.87	393.25	22	586.84	665.50
40-A	33	882.02	868.89	94	2,217.79	2,475.02	54½	1,517.08	1,434.99
40-B	52	1,117.93	1,165.32	92	1,860.98	2,061.72	60	1,261.49	1,344.60
45-AA	4	162.44	148.08	8	252.36	296.16	10	323.23	370.20
45-A	26	799.37	786.50	24	633.94	726.00	17	450.02	514.25
45-B	5	172.15	139.65	25	620.25	698.25	12	278.72	335.16
50-A				5	162.50	185.10	(4)	(130.60)	(148.08)
50-B	1	33.23	30.25	1	30.73	30.25	2	52.84	60.50
55-A							3	112.91	130.47
55-B				2	65.00	74.04	2	54.54	74.04
60-A				1	55.36	50.57			
60-B				4	171.34	173.96	1	40.29	43.49
65-A				1	55.13	62.60	(1)	(55.13)	(62.60)
Sub-Total		$12,598.89	$12,750.69		$28,257.17	$29,889.27		$18,743.32	$18,788.79

Pole Yard Charges*		2,859.95	2,052.86		4,153.80	4,812.17		3,186.36	3,025.00
Guard Arms	1,525	1,034.34	1,055.30	6,299	4,168.17	4,358.91	3,222	1,947.04	2,229.62
Crossarms— 6 Pin	6	10.80	3.28						
" 10 "	48	55.94	48.96	33	50.91	33.66	15	18.73	15.30
Bierce Anchor— 8″	292	194.34	186.18	951	645.11	640.59	412½	267.84	277.86
" " 12″				10	13.42	13.60	9	12.31	12.24
Everstick "				2	.89	.86			
Guy Rods—5/8" x 8′	273	266.46	171.88	897	562.55	564.75	297	168.08	186.99
" " 3/4" x 9′	30	42.70	30.60	75	70.27	76.50	114	110.48	116.28
" " 1" x 10′				51	170.98	99.96			
" " 1/2" x 10′				13	21.40	7.50	11	19.58	6.34
Strand—6M	27,000	442.80	374.22	33,480	451.98	464.03	21,830	296.89	302.56
Sub-Total		$17,506.22	$16,673.97		$38,566.65	$40,961.80		$24,770.63	$24,960.98
Supply Expense *		1,838.15	1,333.92		3,586.70	3,399.83		1,981.65	1,996.88
Total Material Cost		$19,344.37	$18,007.89		$42,153.35	$44,361.63		$26,752.28	$26,957.86
Percent Increase June 30, 1923 over previous periods			(6.91)			5.24			.77

* Computed at same percentage as in Plaintiff's Exhibit No. 1.
( )—decrease.

[fol. 3357]

EXHIBIT A-216

Western Electric Company

Pension Fund Transactions

Year	Balance Beginning of Year	Credits for Pension Accruals Interest and Appropriations	Charges for Pensions Paid	Balance at End of Year
1906	$ 0	$ 561,090	$ 2,412	$ 558,678
1907	558,678	22,162	4,180	576,660
1908	576,660	21,958	7,341	591,277
1909	591,277	23,343	17,126	597,494
1910	597,494	175,249	33,202	739,541
1911	739,541	79,006	31,658	786,889
1912	786,889	246,723	33,612	1,000,000
1913	1,000,000	34,887	34,887	1,000,000
1914	1,000,000	37,620	37,620	1,000,000
1915	1,000,000	44,258	44,258	1,000,000
1916	1,000,000	40,326	40,326	1,000,000
1917	1,000,000	535,785	35,785	1,500,000
1918	1,500,000	135,063	35,063	1,600,000
1919	1,600,000	45,128	45,128	1,600,000
1920	1,600,000	51,302	51,302	1,600,000
1921	1,600,000	62,807	62,807	1,600,000
1922	1,600,000	467,217	67,217	2,000,000
1923	2,000,000	72,260	72,260	2,000,000
1924	2,000,000	2,074,670	74,670	4,000,000
1925	4,000,000	3,576,605	76,605	7,500,000
1926	7,500,000	5,069,139	69,139	12,500,000
1927	12,500,000	4,984,500	86,349	17,398,151
1928	17,398,151	2,924,719	101,148	20,221,722
1929	20,221,722	5,193,790	119,563	25,295,949
1930	25,295,949	5,499,359	147,207	30,648,101

(Here follows Exhibit A-217, side folio 3358)

EXHIBIT A-217

WESTERN ELECTRIC COMPANY, INC.

NET PROFITS PER EXHIBITS A 77 AND A 79 ADJUSTED TO ACTUARIAL BASIS FOR PENSION FUND ACCRUALS BELL AND NON-BELL BUSINESS (DOLLARS IN THOUSANDS)

		Provision for Pension Fund by Western Electric Company, Inc.			
Year	Net profits per Exhibits A 77 and A 79	Total additions to fund	Deduct additions charged against non-operating income	Additions charged against operating income	Pension accruals per actuarial computations
1916	$ 3,870	40	-	40	431
1917	5,800	536	500	36	626
1918	6,034	135	100	35	692
1919	5,376	45	-	45	705
1920	7,290	51	-	51	1,095
1921	8,474	63	-	63	1,414
1922	8,034	467	400	67	1,595
1923	9,115	72	-	72	2,072
1924	13,245	2,075	-	2,075	2,284
1925	15,580	4,977	-	4,977	1,804
1926	14,247	5,069	-	5,069	1,969
1927	18,165	4,985	-	4,985	2,114
1928	19,876	2,925	464(a)	2,461	2,212
1929	23,761	5,194	1,168(a)	4,026	3,948
1930	12,934	5,499	1,467(a)	4,032	4,032

EXHIBIT A-217

WESTERN ELECTRIC COMPANY, INC.

NET PROFITS PER EXHIBITS A 77 AND A 79 ADJUSTED TO ACTUARIAL BASIS FOR PENSION FUND ACCRUALS BELL AND NON-BELL BUSINESS (DOLLARS IN THOUSANDS)

Provision for Pension Fund by Western Electric Company, Inc.					
Total additions to fund	Deduct additions charged against non-operating income	Additions charged against operating income	Pension accruals per actuarial computations	Adjustment to profits	Net profits as adjusted for pension accruals
40	-	40	431	391*	3,479
536	500	36	626	590*	5,210
135	100	35	692	657*	5,377
45	-	45	705	660*	4,716
51	-	51	1,095	1,044*	6,246
63	-	63	1,414	1,351*	7,123
467	400	67	1,595	1,528*	6,506
72	-	72	2,072	2,000*	7,115
2,075	-	2,075	2,284	209*	13,036
4,977**	-	4,977	1,804	3,173	18,753
5,069	-	5,069	1,969	3,100	17,347
4,985	-	4,985	2,114	2,871	21,036
2,925	-464(a)	2,461	2,212	249	20,125
5,194	1,168(a)	4,026	3,948	78	23,839
5,499	1,467(a)	4,032	4,032	-	12,934

1929	23,761 ✓	5,194 ✓	1,168(a) ✓	4,026 ✓	3,948 ✓
1930	12,934 ✓	5,499 ✓	1,467(a) ✓	4,032 ✓	4,032 ✓
	171 801 ✓	32 133 ✓	4099 ✓	28.034 ✓	26 993 ✓

* Red figures

** Inclues $1,400,000.00 Pension Fund under agreement with Graybar Electric Co. Inc.

(a) Interest on fund charged to interest deductions

1923 - 30	126,923 ✓	30,796 ✓	3099 ✓	27.697 ✓	20,435 ✓

923 and 1929 Pension Agt in correct

5,194	1,168(a)	4,026	3,948	78 X	23,839
5,499	1,467(a)	4,032	4,032	-	12,934
32 133	4099	28.034	26 993	1041	172 842

,000.00 Pension Fund under agreement with Graybar Electric Co. Inc.
nd charged to interest deductions

30,796	3099	27,697	20,435	7262	134,185

[fol. 3359]

EXHIBIT A–219

Illinois Bell Telephone Company

Interest and Dividends of Entire Company Applicable to Chicago Division, Chicago Division Intrastate, and Chicago Exchange Intrastate

Year Ended December 31, 1923

	Entire Company		Chicago Division		Chicago Division Intrastate		Chicago Exchange Intrastate	
	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends
Capital stock (including premiums)	$60,045,511	4,803,408	39,521,355	3,161,555	37,758,703	3,020,550	36,102,758	2,688,080
Capital stock installments	2,485,375	198,830	1,635,849	130,868	1,562,890	125,031	1,494,348	119,548
Funded debt (less unamortized debt discount and expense)	41,268,751	2,205,249	27,162,679	1,451,473	25,951,224	1,386,737	24,813,107	1,325,921
Miscellaneous interest bearing obligations:								
Advances from A. T. & T. Co	411,394	24,190	270,775	15,921	258,698	15,211	247,353	14,544
Western Electric Co. (Class "C" Material stock)	2,983	179	1,963	118	1,875	113	1,793	108
Subscribers' deposits	2,350	141	1,547	99	1,478	89	1,413	85
Total Funds, Interest and Dividends	$104,216,364	$7,231,997	$68,594,168	$4,760,028	$65,534,868	$4,547,731	$62,660,772	$4,348,286

[fol. 3360]

Exhibit 219—Continued

Exhibit A-219

Illinois Bell Telephone Company

Interest and Dividends of Entire Company Applicable to Chicago Division, Chicago Division Intrastate, and Chicago Exchange Intrastate

Year Ended December 31, 1924

	Entire Company		Chicago Division		Chicago Division Intrastate		Chicago Exchange Intrastate	
	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends
Capital stock (including premiums)	$67,584,814	$5,401,752	$44,788,532	$3,582,928	$42,683,471	$3,414,530	$40,740,096	$3,259,067
Capital stock installments	1,982,612	158,609	1,315,047	105,204	1,253,240	100,259	1,196,180	95,695
Funded debt (less unamortized debt discount and expense)	45,790,073	2,614,126	30,372,098	1,733,924	28,944,609	1,652,430	27,626,764	1,577,194
Miscellaneous interest bearing obligations:								
Western Electric Company (Class "C" material stock)	12,917	775	8,567	514	8,164	490	7,795	468
Subscribers' deposits	4,950	297	3,283	197	3,129	188	2,986	179
Special assessments	383	23	254	15	242	14	231	14
Commercial Telephone & Telegraph Company	11,616	697	7,705	462	7,343	440	7,009	420
Miscellaneous	17	1	11	1	11	1	10	1
Total. Funds, Interest, and Didends	$115,327,379	$8,176,280	$76,495,497	$5,423,245	$72,900,209	$5,168,352	$69,561,069	$4,933,038

[fol. 3361]

Illinois Bell Telephone Company

Interest and Dividends of Entire Company Applicable to Chicago Division, Chicago Division Intrastate, and Chicago Exchange Intrastate

Year Ended December 31, 1925

	Entire Company		Chicago Division		Chicago Division Intrastate		Chicago Exchange Intrastate	
	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends
Capital stock (including premiums)...........	$70,002,933	$5,600,000	$46,572,951	$3,725,680	$44,127,871	$3,530,082	$42,015,788	$3,361,122
Capital stock installments...............	2,735,700	218,856	1,820,061	145,605	1,724,508	137,961	1,641,968	131,357
Funded debt (less unamortized debt discount and expense)...	45,585,369	2,597,570	30,327,946	1,728,163	28,735,729	1,637,434	27,360,357	1,559,063
Miscellaneous interest bearing obligations:								
Advances from A. T. & T. Co.............	1,983,044	116,603	1,319,319	77,576	1,250,055	73,503	1,190,224	69,985
Western Electric Co. (Class "C" material stock).............	3,083	185	2,051	123	1,943	116	1,850	111
Subscribers' deposits..	10,983	659	7,307	438	6,924	415	6,592	395
Special assessments...	8,183	491	5,444	327	5,158	310	4,911	295
City of Chicago, interest on revenue due city during Federal Control..........	89,520	4,476	59,558	2,978	56,431	2,822	53,730	2,687
Total Funds, Interest, and Dividends.........	$120,418,815	$8,538,840	$80,114,637	$5,680,890	$75,908,619	$5,382,643	$72,275,420	$5,125,015

[fol. 3362]

Exhibit 219—Continued

Illinois Bell Telephone Company

Interest and Dividends of Entire Company Applicable to Chicago Division, Chicago Division Intrastate, and Chicago Exchange Intrastate

Year Ended December 31, 1926

	Entire Company		Chicago Division		Chicago Division Intrastate		Chicago Exchange Intrastate	
	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends
Capital stock (including premiums)	$80,003,433	$6,400,000	$53,207,083	$4,256,385	$50,168,959	$4,013,345	$47,638,962	$3,810,954
Capital stock installments	....	....	....	....	....	....	....	....
Funded debt (less unamortized debt discount and expense)	45,470,617	2,532,754	30,240,689	1,717,686	28,513,94[illegible]	1,619,606	27,078,001	1,537,930
Miscellaneous interest bearing obligations:								
Advances from A. T. & T. Co.	7,511,837	441,696	4,995,822	293,755	4,710,560	276,982	4,473,009	263,014
Western Electric Company (Class "C" material stock)	386,217	23,173	256,857	15,411	242,190	14,531	229,977	13,798
Subscribers' deposits	17,667	1,060	11,750	705	11,079	665	10,520	631
Special assessments	8,833	530	5,875	352	5,539	332	5,260	315
Miscellaneous	300	18	200	12	189	11	178	11
Total Funds, Interest, and Dividends	$133,398,904	$9,449,231	$88,718,276	$6,284,306	$83,652,462	$5,925,472	$79,433,907	$5,626,653

[fol. 3363]

Illinois Bell Telephone Company

Interest and Dividends of Entire Company Applicable to Chicago Division, Chicago Division Intrastate, and Chicago Exchange Intrastate

Year Ended December 31, 1927

	Entire Company		Chicago Division		Chicago Division Intrastate		Chicago Exchange Intrastate	
	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends
Capital stock (including premiums)	$87,503,647	$7,000,000	$57,761,157	$4,620,700	$54,260,831	$4,340,685	$51,289,019	$4,102,951
Capital stock installments	12,540,350	1,003,228	8,277,885	662,231	7,776,245	622,100	7,350,348	588,028
Funded debt (less unamortized debt discount and expense)	45,557,812	2,581,808	30,072,712	1,704,252	28,250,306	1,600,974	26,703,065	1,513,290
Miscellaneous interest bearing obligations:								
Advances from A. T. & T. Co.	811,803	47,734	535,871	31,509	503,397	29,599	475,826	27,978
Western Electric Co. (Class "C" material stock)	478,067	28,684	315,572	18,934	296,448	17,787	280,212	16,812
Various Banks, demand notes, Bankers Trust Company	2,055	113	1,357	74	1,275	70	1,205	67
Subscribers' deposits	146,383	8,783	96,627	5,798	90,771	5,447	85,800	5,148
Special assessments	8,833	530	5,831	350	5,478	329	5,178	311
Miscellaneous	1,067	64	704	42	661	39	625	37
Total Funds, Interest, and Dividends	$147,050,017	$10,670,944	$97,067,716	$7,043,890	$91,185,412	$6,617,030	$86,191,278	$6,254,622

[fol. 3364]

Exhibit 219—Continued

Illinois Bell Telephone Company

Interest and Dividends of Entire Company Applicable to Chicago Division, Chicago Division Intrastate, and Chicago Exchange Intrastate

Year Ended December 31, 1928

	Entire Company		Chicago Division		Chicago Division Intrastate		Chicago Exchange Intrastate	
	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends
Capital stock (including premiums)	$110,004,168	$8,800,000	$72,718,255	$5,817,240	$67,758,870	$5,420,504	$63,677,922	$5,094,041
Capital stock installments	....	....	....	....	....	....	....	....
Funded debt (less unamortized debt discount and expense)	45,788,958	2,588,288	30,268,791	1,710,987	28,204,460	1,594,298	26,505,775	1,498,277
Miscellaneous interest bearing obligations:								
Advances from A. T. & T. Co.	5,321,803	312,922	3,517,978	206,857	3,278,052	192,749	3,080,623	181,141
Western Electric Company (Class "C" material stock)	585,300	35,118	386,913	23,215	360,526	21,632	338,812	20,329
Various banks, demand notes, Bankers Trust Company	1,825,491	100,402	1,206,741	66,371	1,124,441	61,845	1,056,719	58,120
Subscribers' deposits	190,617	11,437	126,007	7,561	117,413	7,045	110,342	6,620
Special assessments	8,833	530	5,839	350	5,441	326	5,113	306
Advances from Bell Realty Trust	40,238	2,366	26,599	1,564	24,785	1,457	23,292	1,370
Miscellaneous	1,633	98	1,080	65	1,006	61	945	57
Total Funds, Interest, and Dividends	$163,767,041	$11,851,161	$108,258,203	$7,834,210	$100,874,994	$7,299,917	$94,799,543	$6,860,261

Illinois Bell Telephone Company

Interest and Dividends of Entire Company Applicable to Chicago Division, Chicago Division Intrastate, and Chicago Exchange Intrastate

Year Ended December 31, 1929

	Entire Company		Chicago Division		Chicago Division Intrastate		Chicago Exchange Intrastate	
	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends
Capital stock (including premiums)	$110,004,168	$8,800,000	$72,026,329	$5,761,888	$66,408,275	$5,312,461	$61,921,035	$4,953,495
Capital stock installments	10,000,513	800,041	6,547,936	523,835	6,037,197	482,976	5,629,261	450,341
Funded debt (less unamortized debt discount and expense)	45,705,016	2,575,613	29,925,817	1,686,409	27,591,603	1,554,869	25,727,225	1,449,806
Miscellaneous interest bearing obligations:								
Advances from A. T. & T. Co.	7,747,364	455,545	5,072,664	298,273	4,676,996	275,008	4,360,969	256,425
Western Electric Co. (Class "C" Material Stock)	1,082,033	64,922	708,472	42,508	653,211	39,192	609,073	36,544
Various banks, demand notes, Bankers Trust Co.	5,529,764	304,137	3,620,668	109,137	3,338,256	183,604	3,112,685	171,198
Subscribers' deposits	276,167	16,570	180,823	10,849	166,719	10,003	155,454	9,327
Special assessments	8,833	530	5,783	347	5,332	320	4,972	298
Central Union Telephone Company advances	6,100	122	3,994	80	3,683	74	3,434	69
Advances from Bell Realty Trust	186,327	10,956	121,999	7,173	112,483	6,613	104,882	6,166
City of Chicago	316,667	19,000	207,341	12,440	191,168	11,469	178,251	10,695
Internal Revenue Department (additional income tax)	820,450	49,227	537,198	32,232	405,297	29,718	461,829	27,710
Miscellaneous	7,583	455	4,965	298	4,578	275	4,268	256
Total Funds, Interest, and Dividends	$181,690,985	$13,097,118	$118,963,989	$8,575,469	$109,684,798	$7,906,582	$102,273,341	$7,372,330

[fol. 3366]

EXHIBIT 219—Continued

Illinois Bell Telephone Company

Interest and Dividends of Entire Company Applicable to Chicago Division, Chicago Division Intrastate, and Chicago Exchange Intrastate

Year Ended December 31, 1930

	Entire Company		Chicago Division		Chicago Division Intrastate		Chicago Exchange Intrastate	
	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends	Funds used in business	Interest and dividends
Capital stock (including premiums)	$130,004,168	$10,400,000	$84,059,395	$6,724,536	$76,855,505	$6,148,243	$71,215,119	$5,697,027
Capital stock installments	14,998,912	1,199,913	9,698,146	775,852	8,867,015	709,362	8,216,270	657,302
Funded debt (less unamortized debt discount and expense)	45,771,193	2,572,476	29,595,196	1,663,337	27,058,888	1,520,789	25,073,050	1,409,179
Miscellaneous interest bearing obligations:								
Advances from A. T. & T. Co.	12,228	719	7,906	465	7,228	425	6,698	394
Western Electric Co. (Class "C" material stock)	1,230,750	73,845	795,791	47,747	727,592	43,655	674,194	40,451
Various banks, demand notes, Bankers Trust Company	6,850,345	376,769	4,429,365	243,615	4,049,768	222,737	3,752,558	206,391
Subscribers' deposits	294,800	17,668	190,615	11,437	174,279	10,457	161,489	9,689
Special assessments	8,833	530	5,711	343	5,222	314	4,838	291
Central Union Telephone Company advances	23,150	463	14,969	299	13,686	273	12,682	253
Advances from Bell Realty Trust	360,561	20,613	226,669	13,328	207,243	12,186	192,034	11,292
City of Chicago	2,389,800	143,388	1,545,821	92,713	1,412,796	84,768	1,309,111	78,546
Internal Revenue Department (additional income tax)	*200,733	*12,044	*129,792	*7,787	*118,669	*7,120	*109,960	*6,597
Miscellaneous	650	39	420	25	384	23	356	21
Total Funds, Interest, and Dividends	$201,734,657	$14,794,399	$130,439,612	$9,565,910	$119,260,937	$8,746,112	$110,508,439	$8,104,239

* Red figures.

[fol. 3367] EXHIBIT A-220

Official letter of transmittal stamped and returned as receipt Sept. 9, 1925.

Advice No. 108

September 5, 1925.

Illinois Commerce Commission, Section Rates and Tariffs,
Springfield, Illinois.

GENTLEMEN: Desiring to give you a more complete Toll Rate Schedule, we have prepared and are forwarding you herewith Ill. C. C. No. 2, Sheets 1 to 32 inclusive, Schedule of Toll Rates, which cancels and replaces I. P. U. C. No. 1, Schedule of Toll Rates. Schedule Ill. C. C. No. 2 makes no change in our toll rate schedule or practices. The Master Rate Machine with Set of Rate Charts referred to in the new schedule is the same machine as you now have for use in connection with the I. P. U. C. No. 1 schedule and we have, therefore, not furnished you another machine.

As stated above, this new schedule makes no change in our toll rate schedule or practices and we would respectfully request your Honorable Commission to accept it, to be effective as of September 10, 1925.

Kindly acknowledge receipt by returning the extra copy of this letter attached hereto for that purpose.

Yours truly,

—— ——, General Commercial Superintendent.

[fol. 3368] EXHIBIT A-221

Ill. C. C. No. 2. Original Sheet No. 2, Cancelling I. P. U. C. No. 1

Illinois Bell Telephone Company

Schedule of Toll Rates

Instructions

The Toll Tariffs consist of the following:

1. Instructions containing the classifications of service.

2. Table of Standard Rates and tables for converting the Initial Station-to-Station Day Rates, shown in the Tariffs, to the rates for other classes of service.

3. List of Special Toll Rates.

4. A United States Government Survey Map of the State of Illinois and a Mileage Scale thereto.

5. "List of Stations" containing all stations in the State of Illinois.

6. A Master Rate Machine with Set of Rate Charts; a mechanical apparatus by means of which rate information is condensed and rate quoting facilitated.

General

The service covered by these tariffs consists in furnishing for the use of patrons facilities, other than exchange facilities, intended for use in telephonic communication between the points listed. The exchange facilities used in connection with this service are the facilities required to establish connection between an exchange station and the toll board, or between an exchange station and the toll trunks, when such trunks are employed to effect connection with the toll board, and the use of such facilities is covered by the charges for exchange service.

Classification of Toll Service

The following classes of toll service are furnished:

Station-to-Station Service:

A Station-to-Station Call is one on which the person originating the call does not specify a particular person to be reached at the called station but gives only the number of the telephone station desired or the name or address under which the telephone is listed.

Note.—A call which would otherwise be a Station-to-Station Call is classed as a Person-to-Person Call, if request is made to reverse the charges.

Person-to-Person Service:

A Person-to-Person Call is one on which the person originating the call specifies a particular person (or an extension station) to be reached at the called place. Under certain conditions a partial charge (known as a "Report Charge") is made where it is impossible to establish communication on a Person-to-Person Call.

Collect Call Service:

A Collect Call is a Person-to-Person Call, the charges for which are to be reversed.

Appointment Call Service:

An Appointment Call is a Person-to-Person Call on which the person originating the call wishes arrangements made in advance with the called station to talk at a specified time.

Messenger Call Service:

A Messenger Call is a Person-to-Person Call involving paid messenger service or requiring the use of a telephone not connected with the Bell System to bring the called party to a Bell Telephone.

Report Charges:

A Report Charge shall be made on Person-to-Person, Collect, Messenger and Appointment Calls, which cannot be completed for the following reasons:

1. If the called party is not available at the called telephone and a report to this effect is given the calling telephone within one hour from the time the call is filed (or within one hour beyond the delay reported to the calling telephone, when traffic to the called place is being accepted subject to delay).

2. If the called party refuses to talk.

3. If, when the call is ready for completion, the calling party refuses to talk or is not available at the calling telephone or no answer can be obtained from the calling telephone, provided this report is obtained within one hour from the time the call is filed (or within one hour beyond the delay reported to the calling telephone, when traffic to the called place is being accepted subject to delay).

4. If, on a collect call, the called telephone or called party refuses to accept the charge for the message.

Issued September 5, 1925.
Effective September 10, 1925.
By A. R. Bone, General Commercial Superintendent, 212 W. Washington St., Chicago, Ill.

[fol. 3369]

EXHIBIT A-227

Western Electric Company, Incorporated

General Accounting Department

Analysis of Profits on Business Other than with Bell Telephone Companies from 1881 to 1927 Inclusive

1. Interest and Dividends received on Foreign Business 1881 to 1925, Inclusive		$24,563,000(R)A
2. Profit on Sale of International Western Electric Company, Incorporated at September 30, 1925		6,586,000(S)
3. Net Profit on Sales to Foreign Customers for Export 1881 to 1927, Inclusive		4,367,000
4. Net Profits on Sales to Other Domestic Customers 1881 to 1925, Inclusive and to the Graybar Electric Company, Inc., during 1926 and 1927		18,885,000(S)
5. Royalties received on Vitaphone, Permalloy, Phonograph and Submarine Cable Business from 1914 to 1926, Inclusive	$2,127,000	
Less Specific Development and General Expenses Applicable to this Business	4,666,000	
		(2,539,000)
6. Net Profit on Sales of Vitaphone, Permalloy and Phonograph Equipment during 1926 and 1927		591,000
7. Income during 1926 from Investment of Profits from Foreign and Domestic Business other than with Bell Telephone Companies		1,107,000
8. Revaluation to Increase the Stock of the Electrical Research Products, Inc., on Books of Western Electric Company, Incorporated, due to:		
(a) The Electrical Research Products Inc., writing up value of Stock of its Subsidiary Companies (Northern Electric Company and Graybar Electric Company, Inc.) from Cost to Book Value	$4,680,000	
(b) Undistributed Current Earnings of Electrical Research Products Inc., the year 1927	5,258,000(U)	
		9,938,000
Total		63,498,000(V)

R Includes special dividend received in 1925 amounting to $9,700,000.
S After providing for Pension Liability to employees of International Western Electric Company, Incorporated and Graybar Electric Company, Inc.
U Actual earnings for 1927, $5,504,000.
V Reclassified.

Manufacturing Profits	$10,468
Other	53,030
	63,498

(Here follows Exhibit A-228, side folio 3370.)

[fol. 3370]

Exhibit A-228

Analysis of Profits on Business Other Than With Bell Telephone Companies from 1881 to 1927, Inclusive

(Dollars in Thousands)

	a	b	c	d	e	f	g	h
	Interest and Dividends Received on Foreign Business 1881 to 1925	Profit on Sale of International Western Electric Company, Inc., at Sept. 30, 1925	Net Profit on Sales to Foreign Customers for Export 1881 to 1927 Inclusive	Net Profit on Sales to Other Domestic Customers 1881 to 1925 Inclusive and to Graybar Electric Company, Inc. during 1926 and 1927	Royalties Received on Vitaphone, Permalloy Phonograph and Submarine Cable Business from 1914 to 1926 Inclusive	Specific Development and General Expense Applicable to Vitaphone, Permalloy, Phonograph and Submarine Cable Business	Net Profit on Sales of Vitaphone, Permalloy and Phonograph Equipment during 1926 and 1927	Income durin from Invest of Profit from Foreig Domestic Bu other than Bell Teleph Compani
July 1, 1881 to Nov. 30, 1890	$229	......	$118	$370	......	......	......	......
1891 to 1895	612	......	147	428	......	......	......	......
1896 to 1900	532	......	363	(146)	......	......	......	......
1901 to 1905	1,566	......	439	(1,401)	......	......	......	......
1906	724	......	118	(196)	......	......	......	......
1907	548	......	86	(73)	......	......	......	......
1908	767	......	3	(816)	......	......	......	......
1909	537	......	60	(215)	......	......	......	......
1910	724	......	81	52	......	......	......	......
1911	(181)	......	64	(80)	......	......	......	......
1912	53	......	92	534	......	......	......	......
1913	(164)	......	103	874	......	......	......	......
1914	111	......	13	84	......	......	......	......
1915	141	......	77	404	......	......	......	......
1916	607	......	(16)	1,371	......	......	......	......
1917	1,006	......	288	3,053	......	30	......	......
1918	126	......	153	3,437	......	31	......	......
1919	47	......	215	2,491	......	65	......	......
1920	832	......	(163)	2,588	......	126	......	......
1921	1,721	......	403	(3,067)	......	225	......	......
1922	1,613	......	269	1,403	......	469	......	......
1923	957	......	289	2,634	......	537	......	......
1924	1,261	......	174	2,196	......	702	......	......
1925	10,194	6,255	158	1,020	291	1,160	......	......
1926	......	......	393	934	1,836	1,321	367	1,107
1927	......	331	440	1,006	......	......	224	......
	24,563	6,586	4,367	18,885	2,127	4,666	591	1,107

Exhibit A-228

Analysis of Profits on Business Other Than With Bell Telephone Companies from 1881 to 1927, Inclusive

(Dollars in Thousands)

c	d	e	f	g	h	i	j	k	
Net Profit on Sales to reign Customers for Export 1881 to 1927 Inclusive	Net Profit on Sales to Other Domestic Customers 1881 to 1925 Inclusive and to Graybar Electric Company, Inc. during 1926 and 1927	Royalties Received on Vitaphone, Permalloy Phonograph and Submarine Cable Business from 1914 to 1926 Inclusive	Specific Development and General Expense Applicable to Vitaphone, Permalloy, Phonograph and Submarine Cable Business	Net Profit on Sales of Vitaphone, Permalloy and Phonograph Equipment during 1926 and 1927	Income during 1926 from Investment of Profits from Foreign and Domestic Business other than with Bell Telephone Companies	Revaluation to Increase the Stock of the Electrical Research Products Inc. on Books of Western Electric Co., Inc. Due to the Electrical Research Products Inc. Writing Up Value of Stock of Its Subsidiary Companies (Northern Electric Co., Ltd. and Graybar Electric Co., Inc.) from Cost to Book Value	Revaluation to Increase the Stock of the Electrical Research Products Inc. on Books of Western Electric Co., Inc. Due to Undistributed Current Earnings of Electrical Research Products Inc. for the Year 1927	Total (a to e) − f + (g to j)	
$118	$370	......	......	......	......	......	......	$717	1
147	428	......	......	......	......	......	......	1,187	2
363	(146)	......	......	......	......	......	......	749	3
439	(1,401)	......	......	......	......	......	......	604	4
118	(196)	......	......	......	......	......	......	646	5
86	(73)	......	......	......	......	......	......	561	6
3	(816)	......	......	......	......	......	......	(46)	7
60	(215)	......	......	......	......	......	......	382	8
81	52	......	......	......	......	......	......	857	9
64	(80)	......	......	......	......	......	......	(197)	10
92	534	......	......	......	......	......	......	679	11
103	874	......	......	......	......	......	......	813	12
13	84	......	......	......	......	......	......	208	13
77	404	......	......	......	......	......	......	622	14
(16)	1,371	......	......	......	......	......	......	1,962	15
288	3,053	......	30	......	......	......	......	4,317	16
153	3,437	......	31	......	......	......	......	3,685	17
215	2,491	......	65	......	......	......	......	2,688	18
(163)	2,588	......	126	......	......	......	......	3,131	19
403	(3,067)	......	225	......	......	......	......	(1,168)	20
269	1,403	......	469	......	......	......	......	2,816	21
289	2,634	......	537	......	......	......	......	3,343	22
174	2,196	......	702	......	......	......	......	2,929	23
158	1,020	291	1,160	......	......	......	......	16,758	24
393	934	1,836	1,321	367	1,107	......	......	3,316	25
440	1,006	......	......	224	......	4,680	5,258	11,939	26
4,367	18,885	2,127	4,666	591	1,107	4,680	5,258	63,498	27

[fol. 3371]

EXHIBIT A-229

Statement Showing Analysis of Profits on Business Other Than With Bell Customers. (See Statement 1.)

(Expressed in Thousands of Dollars)

	a	b	c	d	e	f	
		Net Profits on Sales to					
Years	Total	Other Domestic Customers (Including Government) (R)	Foreign Customers for Export (R)	Interest & Dividends and Other Income Received on Investment in Foreign Business (R)	Miscellaneous Foreign Customers	Miscellaneous Other Domestic Customers	
July 1, 1881 to November 30, 1890	$717	$370	$118	$229	$	$	1
1891 to 1895	1,187	428	147	612			2
1896 to 1900	749	(146)	363	532			3
1901 to 1905	604	(1,401)	439	1,566			4
1906	646	(196)	118	724			5
1907	561	(73)	86	548			6
1908	(46)	(816)	3	767			7
1909	382	(215)	60	537			8
1910	857	52	81	724			9
1911	(197)	(80)	64	(181)			10
1912	679	534	92	53			11
1913	813	874	103	(164)			12
1914	208	84	13	111			13
1915	622	404	77	141			14
1916	1,962	1,371	(16)	607			15
1917	4,347	3,053	288	1,006			16
1918	3,716	3,437	153	126			17
1919	2,753	2,491	215	47			18
1920	3,257	2,588	(163)	832			19
1921	(943)	(3,067)	403	1,721			20
1922	3,285	1,403	269	1,613			21
1923	3,880	2,634	289	957			22
1924	3,631	2,196	174	1,261			23
1925	16,481	(126)	158	10,194 (U)	6,255 (X)		24
1926	1,588	934	393	261 (V)			25
1927	11,759	634	440	3,194 (W)	331 (Y)	7,160 (Z)	26
	63,498 (S)	17,367	4,367	28,018	6,586	7,160	27

EXHIBIT A-229—Continued

[fol. 3372]

R Information compiled from Historical Charts 1881 to 1925; for years 1926 and 1927, from annual reports.

S Reclassified as follows:

	Total	Other Domestic Business	Foreign Business
Manufacturing Profits	$10,468	$6,101	$4,367
Other Income	53,030	18,426	34,604
	63,498	24,527	38,971

U Includes special dividend received from International Western Electric Company, Incorporated, from undistributed earnings at September 30, 1925 amounting to $9,700.

V Dividend received from Northern Electric Company.

W Analyzed as follows:

Revaluation of Northern Electric Company Stock at December 31, 1927	$2,880
Settlement of A. F. Adams Account	29
Other	285
	3,194

X Profit from sale of International Western Electric Company, Incorporated after deducting Federal Income Tax and setting aside reserve for Pension Fund in agreement with International Standard Electric Company.

Y Excess in Pension Fund Reserve for International Western Electric Company, Incorporated set up in 1925 and credited to Western Electric Company, Incorporated surplus in 1927.

Z Analyzed as follows:

Revaluation of Graybar Electric Companey, Inc. at Decmber 31, 1927	$1,800
Excess in Pension Fund Reserve for Graybar Electric Company, Inc. credited to Western Electric Company, Incorporated surplus in 1927	372
Net Profits on sales of Vitaphone, Permalloy and Phonograph	367
Net Profits in 1927 on business with Electrical Research Products Inc.	224
Interest received on investments in Government Securities	201
Interest received on certificates of deposits	300
Interest received on investment in Kansas City Telephone Company Bonds	236
Interest received on investment in Pacific Telephone and Telegraph Company Notes	149

Portion of 1927 earnings of Electrical Research Products Inc. taken into Western Electric Company, Incorporated surplus	5,258	
Development expense on special commercial products	1,146	
Interest received on Graybar Electric Company, Inc. Notes	40	
Royalties received on Vitaphone, Phonograph, etc.	1,836	
	11,929	
Less:		
Specific Development Expense	1,001	
General Expense and Federal Taxes applicable to royalties and income from investments.		
General Expense	320	
Federal Tax	109	
Specific Development Expense Applicable to.		
Vitaphone, phonograph permalloy and submarine cable 1914 to 1925 less royalties received	3,054	
Other	285	
	4,769	
Net Total		$7,160

[fol. 3373]

Exhibit A-230

Electrical Research Products Inc.

General Auditing Department.

Monthly Report No. 1

Condensed Summary of Results for Years 1927 to 1930, Inclusive

(Dollars in Thousands)

	a Dec. 31, 1930	b Dec. 31, 1929	c Dec. 31, 1928	d Dec. 31, 1927	
Assets and Liabilities					
1. Plant	$854	$690	$203	$45	1
2. Investments	10,170	19,675	10,597	12,761	2
3. Merchandise	6,992	6,941	4,501	1,203	3
4. Deferred Receivables	....	3,905	4,729	3,000	4
5. Notes Receivable	1,069	18,701	2,720	1,082	5
6. Accounts Receivable	9,336	13,661	8,609	502	6
7. Cash	1,168	1,176	278	337	7
8. Total Assets	29,589	64,749	31,637	18,930	8
9. Capital (750,000 Shares no Par)	5,000	5,000	5,000	1,000	9
10. Current Liabilities—Western Electric Co., Inc.	940	3,256	3,804	317	10
11. Other	1,161	1,818	4,168	886	11
12. Notes Payable—Western Elec-Co., Inc.	11,200	43,200	12,800	14,200	12
13. Pension Fund Trustee	458	238	76	8	13
14. Notes Receivable Discounted	......	1,500	....	....	14
15. Reserves for Depreciation of Plant	838	519	107	18	15
16. Depreciation on Receivables.	1,891	2,176	1,760	1,000	16
17. Contingencies	2,819	1,771	....	....	17
18. Employees' Benefit Fund	....	....	....	5	18
19. Surplus and Undivided Profits	5,282	5,271	3,922	1,496	19
20. Total Liabilities	29,589	64,749	31,637	18,930	20

	e 1930	f 1929	g 1928	h 1927	
21. Operating Revenue	$28,438	$46,523	$17,257	$3,695	21
22. Profits from Operations	8,543	14,385	6,796	1,534	22
23. Profits from Investments	5.142	2,011	4,279	6,282	23
24. Total Gross Income	13,685	16,396	11,075	7,816	24
25. General Expense	5,785	3,549	1,488	571	25
26. Engineering Expense	1,871	3,050	1,366	880	26
27. Reserves	0	640	325	767	27
28. Federal Taxes	0	678	358	94	28
29. Total Expenses	7,656	7,917	3,537	2,312	29
30. Net Earnings Available for Interest and Dividends	6,029	8,479	7,538	5,504	30
31. Interest Deductions	1,518	1,880	674	0	31
32. Net Income Available for Dividends	4,511	6,599	6,864	5,504	32

33. Dividends ($6.00 per Share 1930, $7.00 per Share 1929, $1.25 per Share 1928, $5.00 per Share 1927)	4,500	5,250	938	3,750(A)	33
34. Undivided Profits	11	1,349	5,926	1,754	34
35. Average Investment	37,319	45,309	19,293	43,868	35
36. % Return on Investment	16.2	18.7	39.1	12.6	36
37. Net Income per Share of Stock	$6.01	$8.80	$9.15	$7.34	37

		1930	1929
Contingent Liabilities to:	Chatham & Phenix Bank—New York	$3,875,000	....
	National City Bank—New York	300,000	....
	First National Bank—Boston	44,000	....
	Bankers Trust Company—New York	....	975,937
		4,219,000	975,937

A Excludes special dividend of $45,000,000.

[fol. 3374]

EXHIBIT A-231

Electrical Research Products Inc.

Statement of Loans by Western Electric Company, Incorporated to Electrical Research Products Inc.

Date of Borrowing	1927 Amount	Date of Repayment	1927 Amount	1928 Amount	1929 Amount	1930 Amount	Balance due at 12/31/30
12/31	$14,200,000	6/29		$500,000			
		8/23		400,000			
		12/31		3,000,000			
		10/1			$700,000		
		10/2			300,000		
		11/25			400,000		
		1/10				$800,000	
		5/12				400,000	
		5/31				7,700,000	
Total	$14,200,000			$3,900,000	$1,400,000	$8,900,000	
	1928						
8/11	$100,000	8/23		$100,000			
9/11	200,000	5/31				$200,000	
10/11	300,000	5/31				300,000	
11/30	300,000	5/31				300,000	
12/11	500,000	5/31				500,000	
12/22	300,000	5/31				300,000	
12/31	900,000	5/31				900,000	
Total	$2,600,000			$100,000		$2,500,000	

[fol. 3375]

Date of Borrowing	1929 Amount	Date of Repayment	1927 Amount	1928 Amount	1929 Amount	1930 Amount	Balance due at 12/31/30
1/22	$500,000	5/31	...	...	...	$500,000	...
1/31	1,000,000	5/31	...	...	...	1,000,000	...
2/11	1,000,000	5/31	...	...	...	1,000,000	...
2/23	400,000	5/31	...	...	...	400,000	...
8/26	15,000,000	5/6	...	...	...	5,000,000	...
		5/13	...	...	...	3,000,000	...
		3/20	...	...	...	1,000,000	...
		7/2	...	...	...	1,000,000	...
		9/23	...	...	...	5,000,000	...
2/28	500,000	5/28	...	...	...	500,000	...
3/11	600,000	7/31	...	...	...	600,000	...
3/22	900,000	7/31	...	...	...	400,000	...
		8/11	...	...	...	500,000	...
3/30	300,000	7/24	...	...	...	300,000	...
4/30	500,000	8/11	...	...	...	500,000	...
5/22	700,000	5/31	...	...	...	700,000	...
5/31	600,000	9/5	...	...	...	[illegible]	...
		10/30	...	...	...	[illegible]	...
6/11	700,000	10/30	...	...	...	[illegible]	...
		11/11	...	...	...	[illegible]	...
6/22	600,000	11/22	...	...	...	[illegible]	...
		11/29	...	...	...	[illegible]	...
7/11	700,000	11/29	...	...	...	[illegible]	$500,000
7/22	600,000	...	...	...	...	[illegible]	600,000
7/31	300,000	...	...	...	...	...	300,000
11/30	500,000	...	...	...	...	...	500,000
12/11	200,000	...	...	...	...	...	200,000
12/23	700,000	...	...	...	...	...	700,000
12/30	1,300,000	...	...	...	...	...	1,300,[illegible]
12/31	4,200,000	...	...	...	...	...	4,200,000
Total	31,800,000	...	...	...	...	23,500,000	8,300,000

EXHIBIT A-231—Continued

[fol. 3376]

Date of Borrowing	1930 Amount	Date of Repayment	1927 Amount	1928 Amount	1929 Amount	1930 Amount	Balance due at 12/31/30
1/22	$500,000						$500,000
1/31	100,000						100,000
2/11	100,000						100,000
6/39	300,000						300,000
9/30	300,000						300,000
12/31	1,600,000						1,600,000
Total	2,900,000						2,900,000
Grand Total	51,500,000			$4,000,000	$1,400,000	$34,900,000	$11,200,000
Balance End of Year			$14,200,000	$12,800,000	$43,200,000	$11,200,000	

[fol. 3377]

Exhibit A-235

Analysis of Principal Items Appearing on Products Company Number 1 Report for the Year 1927 Under Operations

(Dollars in Thousands)

1. Operating Revenue of is made up of the following:		$3,695
Description	Amount	
Equipment License Fees	$1,855	
Service Fees	312	
Income from Royalties	1,274	
Miscellaneous Sales	254	
	3,695	
2. Operating Cost		1,963
Equipment	1,282	
Direct Labor	143	
Contract Labor and Material	97	
Direct Expense	206	
Operating Administration and Merchandising Expense	235	
	1,963	
3. Royalties Distributed to Others		254
4. Gross Profit from Operations		1,478
5. Interest Received Credited to Operations		56
6. Profits from Operations		1,534
7. Profits from Investments of is made up of the following:		6,282

Description		Amount
(a) Income from Sundry Investments		$2,114
Represents Dividends Received from the following:		
1. Graybar Electric Co., Inc.	$1,800	
2. Northern Electric Co., Ltd.	314	
	2,114	

EXHIBIT A-235—Continued

Description		Amount		
(b) Interest			1,246	
(c) Sale of Option		2,673		
(d) Miscellaneous Income			249	
			6,282	
8. Total Gross Income				7,816
[fol. 3378] 9. General Expense				$571
is made up of:				
Salaries			226	
Traveling			18	
State and Local Taxes			2	
Incorporation Expense			50	
Telephone and Telegraph			6	
Rent and House Service			10	
Employees: Benefits			10	
Foreign Taxes on Royalties Received			22	
W. E. Co. Services			150	
Other			77	
			571	
10. Engineering Expense				880
Analyzed as follows:				
B. T. L. Billing		$705		
Patent Expense				
Broadway	$36			
London	70			
		106		
Other	69			
		880		
11. Federal Income Tax				94
12. Reserves				767
13. Total Expenses				2,312
14. Net Earnings Available for Interest and Dividends				5,504
15. Interest Deductions				0
16. Net Income Available for Dividends				5,504
17. Dividends				3,750
18. Undivided Profits				1,754

[fol. 3379]

Analysis of Principal Items Appearing on Products Company Number 1 Report for the Year 1928 Under Operations

(Dollars in Thousands)

Description			Amount
1. Operating Revenue of			$17,257
is made up from the following:			
Description		Amount	
Equipment License Fees		$13,889	
Service Fees		946	
Income from Royalties		1,525	
Replacement License Fees		296	
Export Sales		475	
Miscellaneous Sales		126	
		17,257	
2. Operating Cost			10,200
Equipment		7,434	
Direct Labor		576	
Contract Labor and Material		729	
Direct Expense		670	
Operating Administration and Supervision		452	
Merchandising and Warehouse Expense		339	
		10,200	
3. Royalties Distributed to Others			400
4. Gross Profit from Operations			6,657
5. Interest Received Credited to Operations			139
6. Profits from Operations			6,796
7. Profits from Investments of			4,279
is made up from the following:			
Description		Amount	
(a) Income from Sundry Investments		$2,271	
Represents Dividends Received from the following:			
1. Graybar Electric Co., Inc.	$2,010		
2. Northern Electric Co., Ltd.	261		
	2,271		

Exhibit A-235—Continued

Description		Amount	
(b) Interest		100	
(c) Accrued Discount on Sale of Option		120	
(d) Income from Sundry Investments		1,788	
1. Revaluation of German War Claim	1,717		
2. Settlement of Berlin Mark Account	71		
	1,788	4,279	
8. Total Gross Income			11,075
[fol. 3380] 9. General Expense			$1,488
Is made up of:			
Salaries		$507	
Travelling		43	
State and Local Taxes		18	
Legal Services		204	
Telephone and Telegraph		40	
Rent and House Service		33	
Foreign Taxes on Royalties Received		84	
W. E. Co. Services		189	
Employees' Benefits		10	
Other		360	
		1488	
10. Engineering Expense			1,366
Analyzed as follows:			
B. T. L. Billing		880	
Royalties Paid		316	
Patent Expense:			
Broadway	$51		
London	96		
		147	
Experimental Work and Supplies		16	
Other		7	
		1,366	
11. Federal Income Tax			358
12. Reserves			325
13. Total Expense			3,537

Description	Amount
14. Net Earnings Available for Interest and Dividends	7,538
15. Interest Deductions	674
16. Net Income Available for Dividends	6,864
17. Dividends	938
18. Undivided Profits	5,926

[fol. 3381]

Analysis of Principal Items Appearing on Products Company

Number 1 Report for the Year 1929 Under Operations

(Dollars in Thousands)

Description	Amount	
1. Operating Revenue of is made up from the following:		$46,523
Equipment License Fees	$29,233	
Service Fees	3,372	
Income from Royalties	2,896	
Replacement License Fees	1,032	
Export Sales	9,896	
Educational License Fees	6	
Miscellaneous Sales	88	
	46,523	
2. Operating Cost		32,063
Equipment	22,823	
Direct Labor	2,076	
Contract Labor and Material	1,894	
Direct Expense	2,759	
Operating Administration and Supervision	1,310	
Merchandising and Warehouse Expense	1,201	
	32,063	
3. Royalties Distributed to Others		1,372
4. Gross Profit from Operations		13,088

EXHIBIT A-235—Continued

Description			Amount
5. Interest Received Credited to Operations			1,297
6. Profits from Operations			14,385
7. Profits from Investments of is made up from the following:			2,011
Description		Amount	
(a) Income from Sundry Investments		$1,760	
Represents Dividends Received from the following:			
1. Graybar Electric Co., Inc.	$1,501		
2. Northern Electric Co., Lt.	259		
	1,760		
(b) Interest		8	
(c) Accrued Discount on Sale of Option		207	
(d) Miscellaneous Income		36	
		2,011	
8. Total Gross Income			16,396
[fol. 3382] 9. General Expense			$3,549
Is made up of:			
Salaries		$1,553	
Traveling		160	
State and Local Taxes		48	
Legal Services		92	
Telephone and Telegraph		119	
Rent and House Service		145	
Foreign Taxes on Royalties Received		63	
W. E. Co. Services		279	
Employees' Benefits		51	
Branch Office		178	
Other		861	
		3,549	
10. Engineering Expense			3,050
Analyzed as follows:			
B. T. L. Billing		1,204	
Royalties Paid		809	

Description	Amount		
Patent Expense:			
Broadway	$159		
London	302	461	
Experimental Work and Supplies		187	
Engineering Expense on Submarine Cables		389	
		3,050	
11. Federal Income Tax			678
12. Reserves			640
13. Total Expenses			7,917
14. Net Earnings Available for Interest and Dividends			8,479
15. Interest Deductions			1,880
16. Net Income Available for Dividends			6,599
17. Dividends			5,250
18. Undivided Profits			1,349

[fol. 3383]

Analysis of Principal Items Appearing on Products Company Number 1 Report for the Year 1930 Under Operations

(Dollars in Thousands)

1. Operating Revenue of $28,438
is made up from the following:

Description	Amount
Equipment License Fees	$11,117
Service Fees	5,526
Income from Royalties	4,024
Replacement License Fees	1,839
Export Sales	5,490
Educational License Fees	413
Miscellaneous Sales	29
	28,438

EXHIBIT A-235—Continued

Description	Amount	
2. Operating Cost		19,109
Equipment	11,231	
Direct Labor	2,424	
Contract Labor and Material	517	
Direct Expense	2,905	
Operating Administration and Supervision	902	
Merchandising and Warehouse Expense	1,130	
	19.109	
3. Royalties distributed to others		1,442
4. Gross profit from Operations		7,887
5. Interest received credited to Operations		656
6. Profits from Operations		8,543
7. Profits from Investments of		5,142

is made up from the following:

Description		Amount
(a) Income from Sundry Investments		3,848
Represents Dividends Received from the following:		
1. Graybar Electric Co., Inc.	$309	
2. Northern Electric Co., Ltd.	163	
3. Foreign Subsidiaries	3,376	
	3,848	
(b) Interest		491
(c) Revaluation of N. E. Co., Ltd. Stock		843
(d) Revaluation of German War Claim		(40)
		5,142

8. Total Gross Income 13,685

[fol. 3384]

9. General Expense $5,785
is made up of:

Description		Amount	
Salaries		$2,558	
Traveling		433	
State and Local Taxes		99	
Legal Services		99	
Telephone and Telegraph (57th St.)		110	
Rent and House Service		238	
Foreign Taxes on Royalties and Dividends Received		785	
W. E. Co. Services		235	
Employees' Benefits		125	
Branch Office		307	
Other		796	
		5,785	
10. Engineering Expense			1,871
Analyzed as follows:			
B. T. L. Billing		1,003	
Royalties paid		305	
Patent Expense:			
Broadway	$304		
London	34		
		338	
Changes in Design		99	
Experimental Work and Supplies		185	
Other		70	
		2,000	
Deduct Billing to Foreign Subsidiaries		(129)	
		1,871	
11. Total Expenses			7,656
12. Net Earnings Available for Interest and Dividends			6,029
13. Interest Deductions			1,518
14. Net Income Available for Dividends			4,511
15. Dividends			4,500
16. Undivided Profits			11

[fol. 3385]

Exhibit A-236

Number of Employees of Western Electric Company, Inc. 1916–1930

	Number of Employees at January 1	Additions During Year (Approximate)	Separations During Year (Approximate)	Number of Employees at December 31
1916	17,135	Not Available	Not Available	26,878
1917	26,878	Not Available	Not Available	30,737
1918	30,737	Not Available	Not Available	26,126
1919	26,126	19,611	18,153	27,584
1920	27,584	44,000	31,934	39,650
1921	39,650	44,422	38,829	45,243
1922	45,243	46,211	40,292	51,162
1923	51,162	68,602	55,956	63,808
1924	63,808	33,410	48,061	49,157
1925	43,922*	15,802	20,264	39,460
1926	39,460	29,121	23,471	45,110
1927	45,110	14,787	19,332	40,565
1928	40,565	31,813	16,054	56,324
1929	56,324	65,416	36,892	84,848
1930	84,848	17,253	37,848	64,253

* Excludes Supply and Engineering Departments.

[fol. 3386]

Exhibit A-237

Central Office Equipment

	Large Multiple	Small Multiple	Panel Lines	Step-by-Step Lines
Inside Section:				
Cords	x	x	x	x
Plugs	x	x	x	x
Lamps	x	x	x	x
Keys	x	x	x	x
Jacks	x	x	x	x
Designation Strips	x	x	x	x
Jack Spaces	x	x	x	x
Relays	x	x	x	x
Resistances	x	x	x	x
Repeating Coils	x	x	x	x
Retardation Coils	x	x	x	x
Condensers	x	x	x	x
Induction Coils	x	x	x	x
Number Plates	x	x	x	x
Terminal Strips	x	x	x	x
Switchboard Cable	x	x	x	x
Switchboard Wire	x	x	x	x
Message Registers	x	..	..	..
Test Strips	..	..	x	x
Dials	..	..	x	x
Outside Section:				
Distributing Frame	x	x	x	x
Protectors	x	x	x	x
Terminal Strips	x	x	x	x
Relay Racks	x	x	x	x
Coil Racks	x	..	x	x
Fuse Boards	x	x	x	x
Message Register Racks	x	..	x	x
Cable Racks	x	x	x	x
Switchboard Cable	x	x	x	x
Switchboard Wire	x	x	x	x
Jumper Wire	x	x	x	x
Power Plant	x	x	x	x
Line Finders	..	..	x	x
Selectors	..	..	x	x
Connectors	..	..	..	x
Senders	..	..	x	..

(Here follow photos, side folios 3387-3396)

⑤

EXHIBIT A-238

INDIANA BELL TELEPHONE COMPANY

Muncie - Indiana - Per Cent Relation

	1916-1920			1912-1921			1913-1920			
	Cost of Reproduction	Condition Per Cent	Present Condition	Conversion Per Cents	Cost of Reproduction	Present Condition	Conversion Per Cents	Cost of Reproduction	Present Condition	Conversion Per Cent
Account 211	8 000 00	100	8 000 00		8 000 00	8 000 00		8 000 00	8 000 00	
207	11 491 68	100	11 491 68		10 034 31	10 03[illegible] 31		10 712 04	10 71[illegible] [illegible]	
241	198 818 65	[illegible]9	157 96[illegible] 73	87.36	173 568 [illegible]	137 [illegible] 26	95.17	189 215 71	[illegible] [illegible]8[illegible] 41	135.44
242	163 447 42	89	145 46[illegible] 20	86.19	140 875 33	12[illegible] [illegible] 04	90.72	148 279 50	13[illegible] 96[illegible] 75	112.81
243	84 878 51	90	76 [illegible] 66	87.52	74 285 [illegible]	66 [illegible] 11	92.75	78 724 8[illegible]	70 [illegible] 34	110.78
244	62 001 44	9[illegible]	55 [illegible]00 30	89.92	55 751 69	50 [illegible] 53	96.07	59 564 78	53 [illegible] 31	123.37
245	65 078 13	[illegible]	6[illegible] 1[illegible] 44	87.47	56 123 84	53 [illegible]08 41	91.42	[illegible] 494 43	55 [illegible] 76	111.45
231	39 814 34	[illegible]	36 23[illegible] 05	97.27	38 727 41	35 741 94	102.95	40 988 86	37 [illegible] 87	126.02
232	19 958 40	[illegible]	1[illegible] 96[illegible] 64	82.19	16 403 51	[illegible] 9[illegible]3 24	88.75	17 713 08	15 [illegible] [illegible]	140.62
233	360 11	[illegible]	327 70	86.12	310 13	[illegible]	87.57	322 55	293 [illegible]	96.87
234	15 323 91	[illegible]	14 098 00	90.42	13 855 88	12 747 41	96.26	14 750 50	13 [illegible]70 [illegible]	137.93
235	1 964 84	[illegible]	1 748 71	94.07	848 3[illegible]	[illegible]	79.83	1 961 50	1 [illegible]45 74	142.89
212	22 000 00	75	16 500 00		22 000 00	16 500 00		22 000 00	16 500 00	
221	119 560 00	[illegible]0	107 604 00	87.11	104 148 72	9[illegible] [illegible]33 84	94.46	112 936 38	101 6[illegible] 74	134.57
222	3 737 16	90	3 365 24	89.60	3 350 29	3 [illegible]15 [illegible]	94.28	3 517 89	3 1[illegible] 02	107.49
Sub Total	816 436 59		712 231 33	88.[illegible]0	72[illegible] [illegible]84 [illegible]	62[illegible] [illegible] 58	94.09	768 18[illegible] [illegible]	669 8[illegible] 35	1[illegible].11
Overhead Construction Cost including omissions from inventory engineering general and miscellaneous taxes and interest during construction	162 520 81		141 [illegible]23 13	88.[illegible]0	143 166 95	124 893 96	94.09	152 727 65	133 [illegible]34 [illegible]	[illegible]
261	7 197 30	85	6 117 92	76.46	5 503 51	4 677 99	84.57	6 087 7[illegible]	5 174 18	75.30
263	730 38	60	[illegible]2 13	75.80	553 63	47[illegible] 12	82.39	601 76	5[illegible]7 [illegible]	103.63
264	5 054 22	69	3 487 41	105.14	5 314 [illegible]	3 666 66	99.82	5 045 [illegible]	[illegible]	68.04
265	2 180 35	77	1 678 87	76.89	1 676 [illegible]7	1 290 88	85.15	1 856 57	1 [illegible]9 36	124.96
Material and Supplies	21 492 03	100	21 492 [illegible]		21 492 13	21 492 03		21 497 03	21 492 03	

EXHIBIT A-238

3387

INDIANA BELL TELEPHONE COMPANY

Muncie - Indiana = Per Cent Relation - Certain Periods are to Certain Other Periods - Total Plant

1912 - 1921			1913 - 1922			Nov - 1922			1913		
~~Conversion~~ Per Cents	Cost of Reproduction	~~Present Condition~~	~~Conversion~~ Per Cents	Cost of Reproduction	~~Present Condition~~	~~Conversion~~ Per Cent	Cost of Reproduction	~~Present Condition~~	~~Conversion~~ Per Cent	Cost of Reproduction	~~Present Condition~~
×	×		✓ ×	× ×		✓ ×	×		×	×	
	8 000 00 10 034 31	[illegible] 10 034 31		8 000 00 10 712 04	8 000 00 10 712 [illegible]		8 000 00 14 043 [illegible]	[illegible]		8 000 00 7 634 55	8 000 00 7 634 55
87.36	173 565 [illegible]	[illegible]	95.17	189 715 71	[illegible]	135.44	[illegible]	[illegible]	[illegible]	[illegible] 575 66	[illegible]
86.19	140 875 33	[illegible]	90.72	[illegible]	[illegible] 75	112.81	[illegible] 33	[illegible]	[illegible]	[illegible] 343 77	[illegible]
87.52	74 [illegible] 67	[illegible] 11	92.75	78 724 [illegible]	[illegible] 34	110.78	99 [illegible]	[illegible]	6334	53 762 [illegible]	[illegible] 41
89.92	55 751 69	[illegible] 53	96.07	59 564 78	[illegible]	123.37	76 491 18	[illegible]	[illegible]	44 560 43	[illegible] 39
87.47	[illegible]	53 [illegible] 41	91.42	[illegible] 494 [illegible]	[illegible] 76	111.45	[illegible] 55	[illegible]	[illegible]	42 070 95	[illegible]
97.27	38 727 [illegible]	[illegible] 194	102.75	46 988 [illegible]	[illegible]	126.02	50 174 [illegible]	[illegible] 57	[illegible]	31 986 84	[illegible] 03
82.19	[illegible] 403 51	[illegible]	88.75	7 713 [illegible]	[illegible]	140.62	[illegible] 50	23 [illegible] 55 08	[illegible]	[illegible] 67 65	[illegible]
86.12	310 13	[illegible]	89.57	322 [illegible]	[illegible]	96.87	348 34	[illegible] 44	[illegible]	214 66	[illegible]
90.42	13 855 98	[illegible] 747 [illegible]	76.26	14 750 [illegible]	[illegible]	137.93	[illegible]	[illegible] 37	[illegible]	[illegible] 387 60	[illegible] 34
94.07	848 37	[illegible]	79.83	961 50	[illegible]	142.89	[illegible] 56	[illegible] 73	[illegible]	481 [illegible]	[illegible]
	22 000 00	6 500 00		22 000 00	6 500 00		22 000 00	6 500 00		22 000 00	6 500 00
87.11	104 1[illegible]8 77	9[illegible] 33 84	94.46	117 936 38	101 [illegible] 74	134.57	160 891 39	44 707 78	[illegible]	71 742 [illegible]	70 867 [illegible]
89.60	3 350 29	3 315 [illegible]	94.08	3 517 [illegible]	[illegible]	107.49	4 049 [illegible]	3 617 30	[illegible]	[illegible] 710 44	[illegible] 39 [illegible]
[illegible]	720 384 [illegible]	628 [illegible] 58	[illegible]	763 18[illegible]	669 [illegible] 55	[illegible]	1 013 793 31	881 501 [illegible]	[illegible]	[illegible]	[illegible] 96 [illegible]
[illegible]	143 166 95	124 893 96	[illegible]	152 727 [illegible]	[illegible]	[illegible]	[illegible]	175 [illegible] 04	[illegible]	164 [illegible] 78	[illegible] 30
76.46	5 503 [illegible]	4 677 79	84.57	[illegible]	517 [illegible]	75.30	[illegible] 859 [illegible]	[illegible]	[illegible]	3 [illegible] 80	[illegible] 98
75.80	533 [illegible]	[illegible]	82.39	[illegible] 76	[illegible]	[illegible]	764 [illegible]	[illegible]	[illegible]	358 32	[illegible] 16
105.14	[illegible]	[illegible]	99.82	5 045 [illegible]	[illegible]	[illegible]	3 437 39	[illegible]	[illegible]	5 919 50	[illegible]
76.27	474 [illegible] 7	[illegible] 90 33	85.15	556 57	[illegible] 956	124.96	[illegible]	[illegible] 97 9[illegible]	4276	937 32	7 788
	21 4[illegible] 13	[illegible]		21 497 03	[illegible]		21 4[illegible]	[illegible] 53		21 497 03	21 497 03

Total	1015 412 28		887 237 14		597 79 [illegible]	984 651 [illegible]		955 997 64	835 150 [illegible]		255 [illegible]
Per Cent Relation Certain Concerns ave to 1913	157 91 %				135 70 %			143 64 %			188 24
Per Cent Relation Certain Periods ave to 1916-1920	100.00 %				88 42 %			94 15 %			123 11 %

784 65	955 997 64	835 15[illegible]	[illegible] 15 [illegible] 775 77	664 055 71	537 550 71
70	143 64 70		188 24 70	100.00%	
010	94 15 10		123 1[illegible] 70	65.40%	

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EXHIBIT A-239

STATEMENT 5

INDIANA BELL TELEPHONE COMPANY

Muncie INDIANA EXCHANGE

	APPRAISAL		PERCENT AV. 1913-1922	AVERAGE COST 1913 [redacted]-1922		
	5 YR. AVE R.C.N.	1916-1920 PRES. COND.	5 YR. AV. 1916-1920	COST OF REPRODUCTION	CONDITION PERCENT	PRESENT CONDITION
A - LAND						
A-1 ACCT. 207	11491.68	11491.68	[redacted]	10,712.04	100	10,712.04
A-2 " 211	8000.00	8000.00	100.00	8,000.00	100	8,000.00
B - DISTRIBUTION SYSTEM						
B-1 ACCT. 241	198818.65	157066.73	95.17	189 215 71	79	149 480.41
B-2 " 242	163447.42	145468.20	90.72	148 279.50	89	131,968.75
B-3 " 243	84878.51	76390.66	92.75	78 724 82	90	70,852.34
B-4 " 244	62001.44	55801.30	96.07	59 564 78	90	53 608.31
B-5 " 245	65078.18	61173.44	91.42	59 494.43	94	55924.76
B-6 " 231	39814.34	36221.05	102.95	48,988.86	91	37 299.86
B-7 " 232	19958.40	16964.64	88.75	17,713.08	85	15,056 12
B-8 " 233	360.11	327.70	89.57	322.55	91	293.52
B-9 " 234	15223.91	14098.00	96.26	14,750.80	92	13,576.73
B-10 " 235	1964.84	1748.71	99.83	1961.50	89	1745.74
C - EXCHANGE BLDG.						
C-1 ACCT. 212	22000.00	16500.00	100.00	22,000.00	75	16,500.00
D - CENTRAL OFFICE EQUIPMENT						
D-1 ACCT. 221	119560.00	107604.00	94.46	112 936.38	90	101,642.74
D-2 " 222	3739.16	3365.24	94.08	3,517 80	90	3,166.02
SUB TOTAL	816436.59	712231.35	94.09	768 182.25		669,821.34
OVERHEADS -	163320.81	141608.13		152,727.65		133,234.38
E - GENERAL EQUIPMENT						
E-1 ACCT. 261	7197.90	6118.22	84.57	6087.26	85	5 174.18
[redacted]			[redacted]			
E-2 [redacted] " 263	730.38	628.13	82.39	601.76	86	517.52
E-3 [redacted] " 264	5054.22	3489.41	99.82	5,045.12	69	3,481.13
E-4 [redacted] " 265	2180.35	1678.87	85.15 [redacted]	1,856.57	77	1,429.56
MATERIAL AND SUPPLIES	21492.03	21492.03	100.00	21492 03	100	21492 03
TOTAL	1015412.28	887239.14		955992 64		835,150.14
NET ADDITIONS FROM 11-1-19 TO 7-31-23				102 785.10		116,777.29
TOTAL PLANT Net Additions				1,058,777.74		956,927.43

From 11-1-19 to 7-31-23
Total Plant

3112B
3388

STATEMENT D

EXHIBIT A-240

INDIANA BELL TELEPHONE COMPANY

Muncie INDIANA EXCHANGE

	Appraisal		Percent Av. Nov-1922	Current Costs - November 1922		
	5 Yr. Ave. R.C.N.	1916-1920 Pres. Cond.	5 Yr. Av. 1916-1920	Cost of Reproduction	Condition Percent	Present Condition
A - LAND						
A-1 Acct. 207	11491.68	11491.68		14043.11	100	14,043.11
A-2 " 211	8000.00	8000.00	100.00	8000.00	100	8,000.00
B - DISTRIBUTION SYSTEM						
B-1 Acct. 241	198818.65	157066.73	135.44	269,279.91	79	212,731.18
B-2 " 242	163447.42	145468.20	112.81	184,355.03	89	164,102.68
B-3 " 243	84878.51	76390.66	116.78	99,121.12	90	89,209.01
B-4 " 244	62001.44	55801.30	123.37	76,491.15	90	6884206
B-5 " 245	65078.13	61173.44	111.45	72,529.58	94	68177.80
B-6 " 231	39814.34	36231.05	126.02	50,174.03	91	45,658.37
B-7 " 232	19758.40	16964.64	140.62	28,065.50	85	23,855.68
B-8 " 233	360.11	327.70	96.87	348.84	91	317.44
B-9 " 234	15323.91	14098.00	137.93	21,136.27	92	1944537
B-10 " 235	1964.24	1748.71	142.89	2,807.56	89	2498.73
C - EXCHANGE BLDG.						
C-1 Acct. 212	22000.00	16500.00	100.00	22,000.00	75	16,500.00
D - CENTRAL OFFICE EQUIPMENT						
D-1 Acct. 221	119560.00	107604.00	134.57	160,891.89	90	144,802.70
D-2 " 222	3739.16	3365.24	107.49	4,019.22	90	3,617.30
Sub Total	816436.59	712231.35	124.11	1,013,293.31		881,801.43
Overheads -	162320.81	141603.13		201,456.36		175,743.64
E - GENERAL EQUIPMENT						
E-1 Acct. 261	7197.90	6118.22	95.30	6,859.60	85	5,830.66
[redacted]						
E-2 [redacted] " 263	730.38	628.13	104.63	764.20	86	657.21
E-3 [redacted] " 264	5054.22	3487.41	68.04	3,438.89	69	2,372.83
E-4 [redacted] " 265	2180.35	1678.87	124.96	2,724.56	77	2,097.92
Material and Supplies	21492.03	21492.03	100.00	21,492.03	100	21,492.03
Total	1015412.28	887239.14		1,250,028.95		1,089,995.72
Net Additions From 1-1-19 To 10-31-22				45,672.28		59,368.75
Total Plant				3 1,295,701.25		1,149,364.47

3112B

3390

P 1

EXHIBIT A-233

WESTERN ELECTRIC COMPANY, INCORPORATED

[illegible] OF CAPITAL STOCK [illegible] SINCE COMMENCEMENT OF [illegible] TO [illegible] 31, 1930.

Date of Issuance and December 31 of Each Year	Description of Changes and Issuance of Capital Stock Structure	a Common Stock Issued No. of Shares	b Par Value	c For Cash	d From Surplus	e Value	f Preferred Stock Issued No. of Shares	g Par Value	h For Cash	i From Surplus	j Value	k Grand Total Number of Shares and Value at End of Each Year Common Stock No. of Shares	l Value	m Preferred Stock No. of Shares	n Value	o Balance in Surplus Account in Years then Ended	p Total Capital and Surplus- End of Each Year	
Feb. 25 to May 18, 1882	Original Stock Issue	8,800	$100	$ 880,000	$	$ 880,000						8,800	$ 880,000		$	$ 68,009	$ 948,009	1
July 30, 1883		1,200	100	120,000		120,000												2
Dec. 31, 1883												10,000	1,000,000			218,486	1,218,486	3
Dec. 31, 1884												10,000	1,000,000			280,808	1,280,808	4
Dec. 31, 1885												10,000	1,000,000			222,097	1,222,097	5
Dec. 31, 1886												10,000	1,000,000			347,878	1,347,878	6
Dec. 31, 1887												10,000	1,000,000			663,580	1,663,580	7
Dec. 31, 1888												10,000	1,000,000			832,563	1,832,563	8
Dec. 31, 1889												10,000	1,000,000			990,487	1,990,487	9
Oct. 26, 1890		1,250	100	125,000		125,000												10
Nov. 5, 1890		5,000	100		500,000	500,000												11
Nov. 28, 1890		1,250	100	125,000		125,000												12
Dec. 31, 1890												17,500	1,750,000			804,287	2,554,287	13
Dec. 31, 1891												17,500	1,750,000			1,112,608	2,862,608	14
Dec. 31, 1892												17,500	1,750,000			1,505,688	3,255,688	15
Dec. 31, 1893												17,500	1,750,000			1,718,810	3,468,810	16
Apr. 27, 1894		2,500	100		250,000	250,000												17
Dec. 31, 1894												20,000	2,000,000			1,768,818	3,768,818	18
Mar. 18, 1895		10,000	100		1,000,000	1,000,000												19
Dec. 31, 1895												30,000	3,000,000			1,166,229	4,166,229	20
Dec. 31, 1896												30,000	3,000,000			1,657,100	4,657,100	21
Dec. 31, 1897												30,000	3,000,000			2,867,480	5,867,480	22
Jan. 31, 1898		5,000	100		500,000	500,000												23
Dec. 31, 1898												35,000	3,500,000			3,068,887	6,568,887	24
Aug. 25, 1899		15,000	100		1,500,000	1,500,000												25
Sept. 20, 1899		10,000	100	1,000,000		1,000,000												26
Dec. 31, 1899												60,000	6,000,000			3,967,480	9,967,480	27
Sept. 1, 1900		10,000	100	1,000,000		1,000,000												28
Dec. 31, 1900												70,000	7,000,000			7,081,084	14,081,084	29
Mar. 1, 1901		10,000	100		1,000,000	1,000,000												30
Dec. 31, 1901												80,000	8,000,000			8,511,584	16,511,584	31
Mar. 10, 1902		20,000	100		2,000,000	2,000,000												32
Dec. 31, 1902												100,000	10,000,000			9,130,459	19,130,459	33
Mar. 10, 1903		20,000	100		2,000,000	2,000,000												34
Dec. 31, 1903												120,000	12,000,000			9,008,757	21,008,757	35
Dec. 31, 1904												120,000	12,000,000			10,668,818	22,668,818	36
Dec. 31, 1905												120,000	12,000,000			15,016,087	27,016,087	37
Mar. 21, 1906		30,000	100	3,000,000		3,000,000												38
Dec. 31, 1906												150,000	15,000,000			20,181,987	35,181,987	39
Dec. 31, 1907												150,000	15,000,000			18,781,811	33,781,811	40
Dec. 31, 1908												150,000	15,000,000			16,044,668	31,044,668	41
Dec. 31, 1909												150,000	15,000,000			17,486,783	32,486,783	42
Dec. 31, 1910												150,000	15,000,000			19,121,062	34,121,062	43
Dec. 31, 1911												150,000	15,000,000			20,101,884	35,101,884	44
Dec. 31, 1912												150,000	15,000,000			21,166,754	36,166,754	45
Dec. 31, 1913												150,000	15,000,000			22,040,459	37,040,459	46
Dec. 31, 1914												150,000	15,000,000			24,011,419	39,011,419	47
Nov. 18, 1915	Capital Stock Structure of the Western Electric Company, Incorporated of Illinois - - - - - - - - - -	150,000	100	6,250,000	8,750,000	15,000,000	0	0	0	0	0	150,000	15,000,000			24,011,419	39,011,419	48
	Common Stock was retired and 6% Preferred Stock was issued share for share and - - - - - - - - - - -	(150,000)	100	(6,250,000)	(8,750,000)	(15,000,000)	150,000	100	6,250,000	8,750,000	15,000,000			150,000	15,000,000			49
	See Common Stock Issued - - - - - - - - - - - - - - -	150,000 No Par			(Y)	(Y)												50

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P-2

ANALYSIS OF CAPITAL STOCK STRUCTURE SINCE COMMENCEMENT OF BUSINESS TO DECEMBER 31, 1930.

Date of Issuance and December 31 of Each Year	Description of Changes and Increases of Capital Stock Structure	a Common Stock Issued No. of Shares	b Par Value	c Par Cash	d From Surplus	e Book Value	f Preferred Stock Issued No. of Shares	g Par Value	h Par Cash	i From Surplus	j Book Value	k Grand Total Number of Shares and Value at End of Each Year Common Stock No. of Shares	l Book Value	m Preferred Stock No. of Shares	n Book Value	o Balance in Surplus Account in Years Then Used	p Total Capital and Surplus End of Each Year	
Dec. 31, 1915	After the Sale of the Western Electric Company, Incorporated of Illinois to the Western Electric Company of New York the Capital Structure was - -	150,000	No Par	$ -	$ (V)	$ (V)	150,000	100	$ 6,250,000	$ 8,750,000	$ 15,000,000	150,000	$25,229,062	150,000	$15,000,000	$ (U)	$ 40,229,062	1
Dec. 31, 1916												150,000	25,485,648	150,000	15,000,000	(U)	40,485,648	2
June 30, 1917	Issued 6% Preferred Stock - - - - - - - - - - - - -						150,000	100	15,000,000		15,000,000							3
Dec. 31, 1917												150,000	23,754,564	300,000	30,000,000	(U)	53,754,564	4
Dec. 31, 1918												150,000	25,965,686	300,000	30,000,000	(U)	55,965,686	5
Dec. 31, 1919												150,000	27,004,894	300,000	30,000,000	(U)	57,004,894	6
Mar. 9, 1920	Preferred Stock was retired at $100 and Common Stock no par was issued at $100 - - - - -	300,000	No Par	21,250,000	8,750,000	30,000,000	(300,000)	(100)	(21,250,000)	(8,750,000)	(30,000,000)	-		0	0			7
	Excess of Price of Preferred Stock Retired Offset the additional Cost on Common Stock - - - - - - -				6,000,000	6,000,000				(6,000,000)	(6,000,000)							8
Dec. 31, 1920	Capital Structure after Changes - - - - - - - - -	300,000	No Par	21,250,000	14,750,000	36,000,000	0	-	0	0	0	300,000	37,349,485(W)	0	0	(U)	37,349,485	9
Dec. 31, 1921												300,000	40,773,480			(U)	40,773,480	10
Apr. to Sept. 1922	Preferred Stock was Issued for Redemption of 7% Bonds - - - - - - - - - - - - - - - - - - - (X)						244,796	100		24,479,600	24,479,600							11
Dec. 30, 1922	Issued for Funds to Redeem Outstanding 5% Mortgage Bonds - - - - - - - - - - - - - - - -	150,000	No Par	15,000,000		15,000,000												12
Dec. 31, 1922												450,000	74,931,836	244,796	24,479,600	(U)	99,411,436	13
Dec. 31, 1923												450,000	77,123,767	244,796	24,479,600	(U)	101,603,367	14
Dec. 31, 1924												450,000	80,388,128	244,796	24,479,600	(U)	104,867,728	15
Sept. 15, 1925	7% Preferred Stock was Retired - - - - - - - - - - (X)						(244,796)			(24,479,600)				0	0			16
Sept. 28, 1925	Capitalization of the Company was Changed as stated in Note Y Resulting in an Adjustment of Surplus Amounting to - - - - - - - - - - - - - - - - - -				1,800,000	1,800,000												17
	Stock Dividend Issued Without Changing Capitalization - - - - - - - - - - - - - - - - -	300,000	No Par		(Note Y)													18
Dec. 31, 1925	Capital Structure After Change in Capitalization - -	750,000	No Par	36,250,000	16,550,000	52,800,000	0		0	0	0	750,000	52,800,000(Y)	0	0	48,634,966	101,434,966	19
Dec. 31, 1926												750,000	52,800,000	0	0	55,896,421	108,696,421	20
May 25, 1927	Common Stock was Split 5 Shares for One - - - - - -	3,750,000	No Par	0	0	0												21
Dec. 31, 1927	Capital Structure after Split-up and Transfer of Surplus -				22,200,000	22,200,000						3,750,000	75,000,000	0	0	12,997,786	87,997,786	22
Dec. 31, 1928	Common Stock Issued no par at $40 Per Share (Ratio 1 to 15) - - - - - - - - - - - - - - - - -	250,000		10,000,000		10,000,000												23
	Also Transfer of Surplus - - - - - - - - - - - - - -				15,000,000	15,000,000						4,000,000	100,000,000	0	0	10,785,986	110,785,986	24
May 31, 1929	Common Stock Issued no par at $40 Per Share (Ratio 1 to 8)- - - - - - - - - - - - - - - - - -	500,000		20,000,000		20,000,000												25
Dec. 2, 1929	Common Stock Issued no par at $40 Per Share (Ratio 1 to 6)- - - - - - - - - - - - - - - - - -	750,000		30,000,000		30,000,000												26
Dec. 31, 1929												5,250,000	150,000,000	0	0	14,686,945	164,686,945	27
Mar. 31, 1930	Common Stock Issued no par at $40 Per Share (Ratio 1 to 7)- - - - - - - - - - - - - - - - - -	750,000	-	30,000,000		30,000,000												28
Dec. 31, 1930												6,000,000	180,000,000	0	0	6,951,704	186,951,704	29
	Capital Structure at December 31, 1930- - - - - - -	6,000,000		126,250,000	53,750,000	180,000,000												

U Surplus in these years was considered in value of common stock.

V Capital structure was changed as follows:
150,000 shares preferred par $100 - $15,000,000
150,000 shares common no par - 25,229,062
Valued as follows:

Surplus December 31, 1914 -		$24,011,619
Dividends paid 1915 -		1,409,700
		22,601,919
Earnings 1915 -		2,627,143
Value of common stock and surplus 1915- - - - - - - - - - - - - - - -		25,229,062

W Capital structure was changed as follows:

Common stock and surplus 1919 -		27,004,894
300,000 shares issued at $100 amounted to - - - - - - - - -	$30,000,000	
Premium paid on preferred stock retired - - - - - - - - - -	(6,000,000)	
Premium on 9 shares sold at $110 per share - - - - - - - -	90	
Earnings for 1920 -	[illegible]	[illegible]
		37,349,485

X From April to September 1922, 244,796 shares of 7% preferred stock were issued in conversion of bonds at $100 per share - - - - - - - - - - - - - - 24,479,600
These shares were retired on September 15, 1925 at $110 per share - - - - 26,927,560
Balance charged to surplus- - - - - - - - - - - - - - - 2,447,960

Y On September 28, 1925 the Board of Directors authorized the change in the capital of the Company to be $52,800,000 represented by 450,000 shares of common stock no par value and further deemed it advisable that said capital shall be represented by 750,000 shares of common stock no par and declared a stock dividend of 300,000 shares. The statement representing the Company's capital was changed so as to state that such capital shall be at least equal to the sum of the aggregate par value of all issued shares having par value plus $5.00 in respect to every issued share without par. The revaluation was determined as follows:

Value of common stock and surplus at December 31, 1924 - - - - - - - - - - - - - - - - -	$80,388,128
Represented by 450,000 shares was valued as follows:	
Earnings for Year 1925 -	7,434,[illegible]
Premium Paid on 7% Preferred Stock Retired -	(2,447,960)
Special Dividend Received from International Western Electric Company, Incorporated- -	9,750,000
Profit from Sale of International Western Electric Company, Incorporated - - - - - -	[illegible]
Total Capital and Surplus at December 31, 1925 - - - - - - - - - - - - - - -	101,434,966
Stated Capital as set up per Board of Directors- (*)	52,800,000
Balance in Surplus Account at December 31, 1925- - - - - - - - - - - - - -	48,634,966
* Stated capital represented the following:	
750,000 shares of common stock at $5.00 per share- - - - - - - - - - - - - - - - - -	3,750,000
490,500 shares of preferred stock at $100 per share - - - - - - - - - - - - - - - - -	49,050,000
	52,800,000

Issued ___

WESTERN ELECTRIC COMPANY, INCORPORATED
STATEMENT OF SURPLUS AND UNDIVIDED EARNINGS FOR YEARS 1916 TO 1930

a	b	c	d	e	f	g	h	
			Dividends Paid					
Year Ending Dec. 31st	Total Earnings	Interest Paid on Bonds, Borrowings and Bond Discount	Common Stock	Preferred Stock	Balance Carried to Common Stock and Surplus (b - (c to e)	Adjustments to Capital Stock and Surplus (Analyzed on Attached Statement)	Capital and Surplus at End of Each Year (A)	
1915 - - - - -	$	$	$	$	$	$	$25,229,032	1
1916 - - - - -	3,204,710	880,094	1,200,000	900,000	224,616	0	25,453,648	2
1917 - - - - -	4,161,560	1,309,844	1,200 000	1,350,000	301,716	0	25,755,364	3
1918 - - - - -	5,050,849	1,540,528	1,500,000	1,800,000	210,321	0	25,965,585	4
1919 - - - - -	5,652,089	1,263,180	1,500,000	1,800,000	1,088,909	0	27,054,594	5
1920 - - - - -	8,277,414	4,037,645	3,000,000	345,000	894,769	30,000,090(B)	57,949,453	6
1921 - - - - -	10,166,337	5,642,340	3,500,000	0	623,997	0	58,773,450	7
1922 - - - - -	9,235,890	3,904,097	3,500,000	686,857	1,144,936	15,013,438(C)	74,931,826	8
1923 - - - - -	10,079,471	1,159,958	5,000,000	1,727,572	2,191,941	0	77,123,767	9
1924 - - - - -	14,505,857	4,378,927	5,000,000	1,727,572	3,399,358	0	80,523,125	10
1925 - - - - -	16,073,981	1,790,679	5,625,000	1,233,980	7,424,322	(39,012,864)(D)	48,934,583	11
1926 - - - - -	16,431,933	1,857,895	7,500,000	0	7,074,038	0	56,008,621	12
1927 - - - - -	19,339,174	1,982,757	7,500,000	0	9,856,417	(52,877,252)(E)	12,987,786	13
1928 - - - - -	22,023,282	2,315,393	11,250,000	0	8,457,889	(10,661,721)(F)	10,783,954	14
1929 - - - - -	31,555,774	4,560,528	23,500,000	0	3,495,246	277,745(G)	14,556,945	15
1930 - - - - -	20,297,612	4,672,773	23,250,000	0	(7,625,161)	0(H)	6,931,784	16
Grand Total	196,055,933	41,496,636	104,025,000	11,570,981	36,963,314	(57,260,564)		17

A	For the Years 1916 to 1924 Inclusive, Capital and Surplus was stated as the book value of Outstanding Capital Stock. In 1925 Surplus Account was set up.	
B	Represents:	
	200,000 shares of Common Stock issued at $180 per share	$36,000,000
	Less: Premium paid on the Redemption of 300,000 shares of Preferred Stock par $100 at $120 per share	6,000,000
		30,000,000
	Plus: Premium of $10 a share on 9 shares of Common Stock not subscribed to and sold to American Telephone and Telegraph Company at $190	90
	Net adjustment 1920	30,000,090
C	Represents:	
	150,000 shares of Common Stock Issued at $100 per share	15,000,000
	Premium on Sale of 1,413 shares of Preferred Stock	13,438
	Net adjustment 1922	15,013,438
D	Represents:	
	Special Dividend received from International Western Electric Company, Incorporated	9,700,000
	Profit resulting from Sale of International Western Electric Company, Incorporated	6,255,096
		15,955,096
	Less: Premium paid of $10 per share on Redemption of 246,796 shares of Preferred Stock	2,467,960
	Stated Capital set up per Board of Directors	52,500,000
		54,967,960
	Net adjustment 1925	39,012,864
E	Represents:	
	Reserve for Contingencies transferred to Surplus	6,824,710
	Reserve against Bell Laboratories Notes transferred to Surplus	1,056,302
	Adjustment for International Standard Electric Corporation Pension Reserve transferred to Surplus	330,154
	Adjustment for Graybar Electric Company, Inc. Pension Reserve transferred to Surplus	373,152
	Receipt of Special Dividend for Electrical Research Products Inc.	48,750,000
		57,334,318
	Less: Revaluation of the holdings in Electrical Research Products Inc.	38,811,570
	Distribution of Special Dividend received from Electrical Research Products Inc. - Rate of $13.00 a share	48,750,000
	Special Surplus Adjustment	150,000
	Transfer of Surplus to Common Stock	22,500,000
		110,211,570
	Net adjustment 1927	52,877,252
F	Represents:	
	Final adjustment to Graybar Pension Fund	325,831
	Adjustment for Electrical Research Products Inc. Pension Fund	12,448
	Revaluation of holdings in Electrical Research Products Inc.	4,000,000
	Funds received from the issue of 250,000 shares of Common Stock at $40 per share	10,000,000
		14,338,279
	Less: Transfer of Surplus to Common Stock	25,000,000
	Net adjustment 1928	10,661,721

epresents:

Final adjustment of International Western Electric Company, Incorporated Pension Fund - - - - - - - - - - - -	$ 277,748
Funds Received from the issue of 500,000 Common Stock at $40 per share - - - - - - - - - - - - - - - - - -	30,000,000
Funds Received from the issue of 750,000 shares Common Stock at $40 per share - - - - - - - - - - - - - - - -	30,000,000
	60,277,748
Less: Transfer of Funds received for issues of Common Stock -	60,000,000
Net adjustment 1929 -	277,748

H There was an in and out transfer of Surplus for the issue of 750,000 shares of Common Stock at $40 per share amounting to $30,000,000.

March 23, 1931.

EXHIBIT A-241 A-241 STATEMENT D

INDIANA BELL TELEPHONE COMPANY

Indianapolis INDIANA EXCHANGE

	APPRAISAL		PERCENT AV. Nov 1922	Current Cost November 1922		
	5 YR. AVE. R.C.N.	1916-1920 PRES. COND.	5 YR. AV. 1916-1920	COST OF REPRODUCTION	CONDITION PERCENT	PRESENT CONDITION
A - LAND						
A-1 ACCT. 207	231103.06	131103.06		154,576.24	100	154,576.24
A-2 " 211	159436.00	159436.00	100.00	159,436.00	100	159,436.00
B - DISTRIBUTION SYSTEM						
B-1 ACCT. 241	1078908.07	812445.67	135.44	1,461,273.09	75+	1,100,376.42
B-2 " 242	1984240.81	1588012.96	112.81	2,238,647.68	80+	1,791,437.42
B-3 " 243	532259.18	373346.57	116.78	621,572.27	70+	435,994.12
B-4 " 244	931085.56	837977.01	123.37	1,148,680.26	90	1,033,812.24
B-5 " 245	2014198.33	1812778.50	111.45	2,244,824.04	90	2,020,341.64
B-6 " 231	658222.52	591537.52	126.02	829,492.07	90-	745,455.58
B-7 " 232	197933.15	177981.30	140.62	278,333.60	90-	250,277.30
B-8 " 233	14261.02	9982.71	96.87	13,814.65	70	9670.25
B-9 " 234	348875.16	319346.18	137.93	481,203.51	91+	440,474.19
B-10 " 235	14678.28	13210.46	142.89	20,973.79	90	18,876.43
C - EXCHANGE BLDG.						
C-1 ACCT. 212	876537.00	728835.45	100.00	876,537.00	83+	728,835.45
D - CENTRAL OFFICE EQUIPMENT						
D-1 ACCT. 221	2715215.78	2474454.81	134.57	3,653,865.88	91+	3,329,573.8[illegible]
D-2 " 222	84169.81	75735.81	107.49	90,474.13	90-	81,408.42
SUB TOTAL	11741323.73	10106184.01	121.57	14,273,704.16		12,300,845.5
OVERHEADS -	3103143.19	2670988.14	121.57	3,772,491.18		3,247,120.25
E - GENERAL EQUIPMENT						
E-1 ACCT. 261	65538.43	58984.59	95.30	62,458.12	90	56,212.31
E-2 " 262	1064.26	851.41	124.96	1329.90	80	1063.92
E-3 " 263	383.51	287.63	104.63	401.27	75	300.95
E-4 " 264	56515.45	48038.13	68.04	38,453.11	85	32,685.14
E-5 " 265	25182.15	21404.23	124.96	31,467.61	85	26,747.48
MATERIAL AND SUPPLIES	215523.73	215523.73	100.00	215,523.73	100	215,523.73
TOTAL	15208674.45	13122262.47		18,395,829.08		15,880,499.35
NET ADDITIONS FROM 1/1/21 TO 10/31/22				1,420,043.31		1,715,109.65
TOTAL PLANT				19,815,872.39		17,595,609.00

STATEMENT E/

EXHIBIT A-242

INDIANA BELL TELEPHONE COMPANY

Indianapolis INDIANA EXCHANGE

	APPRAISAL		PERCENT AV. 1913-1922	AVERAGE COST 1913 [redacted]-1922		
	5 YR. AVE. R.C.N.	1916-1920 PRES. COND.	5 YR. AV. 1916-1920	COST OF REPRODUCTION	CONDITION PERCENT	PRESENT CONDITION
A - LAND						
A-1 ACCT. 207	131103.06	131103.06	[redacted]	121,337.99	100	121,337.99
A-2 " 211	159436.00	159436.00	100.00	159,436.00	100	159,436.00
B - DISTRIBUTION SYSTEM						
B-1 ACCT. 241	1078908.07	812445.67	95.17	1,026,796.81	75+	773,204.54
B-2 " 242	1984440.81	1588012.96	90.72	1,800,284.70	80+	1,440,645.36
B-3 " 243	532259.18	373346.57	92.75	493,670.33	70+	346,278.94
B-4 " 244	931085.56	837977.01	96.07	894,493.90	90	805,044.51
B-5 " 245	2014198.33	1812778.50	91.42	1,841,380.11	90	1,657,242.10
B-6 " 231	658222.52	591537.52	102.95	677,640.03	90-	608,987.88
B-7 " 232	197933.15	177981.30	88.75	175,665.67	90-	157,958.40
B-8 " 233	14261.02	9982.71	89.57	12,773.60	70	8,941.51
B-9 " 234	348875.16	319346.18	96.26	335,827.23	91+	307,407.63
B-10 " 235	14678.28	13210.46	99.83	14,653.33	90	13,188.00
C - EXCHANGE BLDG.						
C-1 ACCT. 212	876537.00	728835.45	100.00	876,537.00	83+	728,835.45
D - CENTRAL OFFICE EQUIPMENT						
D-1 ACCT. 221	2715215.78	2474454.81	94.46	2,564,797.83	91+	2,337,370.01
D-2 " 222	84164.81	75735.81	94.08	79,186.96	90-	71,257.25
SUB TOTAL	11741333.73	10106184.01	94.32	11,074,526.65		9,537,175.57
OVERHEADS	3103143.19	2670988.14	94.32	2,926,834.66		2,519,276.01
E - GENERAL EQUIPMENT						
E-1 ACCT. 261	65538.48	58984.59	84.57	55,425.85	90	49,883.27
E-2 " 262	1064.26	851.41	85.15 [redacted]	906.77	80	724.98
E-3 " 263	383.31	287.63	82.39	315.97	75	236.98
E-4 " 264	56515.48	48338.13	99.82	56,413.72	85	47,951.66
E-5 " 265	25182.15	21404.83	85.15 [redacted]	21,447.60	85	18,226.21
MATERIAL AND SUPPLIES	215523.73	215523.73	100.00	215,523.73	100	215,523.73
TOTAL	15208674.15	13122262.47		14,351,439.35		12,388,998.41
NET ADDITIONS FROM 1/1/14 TO 7/31/23				1,837,288.53		2,178,176.20
TOTAL PLANT				16,188,727.88		14,567,174.61

Net additions
from 1-1-14 to 7-31-23.
Total Plant

[fol. 3397]

Exhibit A-243

Illinois Bell Telephone Company

Chicago Exchange

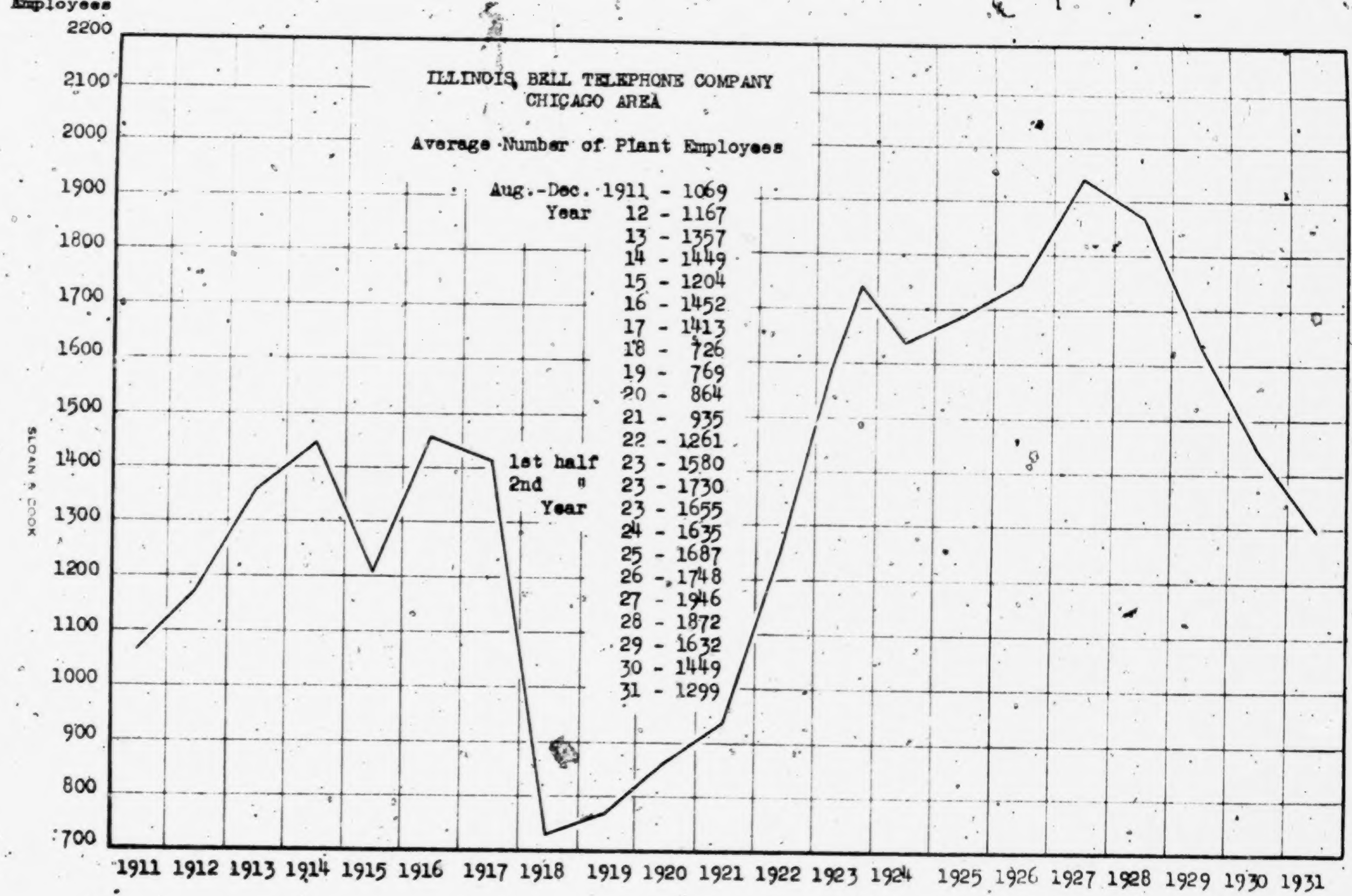
Comparison Between "Company Experience" and Plaintiff's Exhibit No. 1
1921–1923

J. G. Wray Exhibit X–6, Page 1, Corrected for Errors in Material Cost Trend

	Total Gross Additions June 30, 1923, Level		% of Appraisal Method	
	Appraisal Method	"Company Experience"	Corrected for Mat'l Cost Trend Errors	J. G. Wray Exhibit X–6 Page 1
	Year 1921			
Account 241—Exchange Pole Lines	$81,843	$74,478	91.00	90.63
Account 242—Exchange Aerial Cable	101,883	92,330	90.62	88.43
Account 245—Exchange Underground Cable	700,338	676,786	96.64	94.92
Total	$884,064	$843,594	95.42	93.77
	Year 1922			
Account 241—Exchange Pole Lines	$220,997	$207,316	93.81	92.38
Account 242—Exchange Aerial Cable	284,925	274,390	96.30	94.65
Account 245—Exchange Underground Cable	1,594,642	1,552,313	97.35	95.82
Total	$2,100,564	$2,034,019	96.83	95.30
	Jan.–June 1923			
Account 241—Exchange Pole Lines	$121,143	$123,483	101.93	98.30
Account 242—Exchange Aerial Cable	194,054	192,132	99.01	96.73
Account 245—Exchange Underground Cable	1,007,139	996,892	98.98	100.21
Total	$1,322,336	$1,312,507	99.26	99.52
Total	$4,306,964	$4,190,120	97.28	96.28

(Here follows Exhibit A-244, side folio 3398)

EXHIBIT A-244



ILLINOIS BELL TELEPHONE COMPANY
CHICAGO AREA

Average Number of Plant Employees

Aug.-Dec.	1911	1069
Year	12	1167
	13	1357
	14	1449
	15	1204
	16	1452
	17	1413
	18	726
	19	769
	20	864
	21	935
	22	1261
1st half	23	1580
2nd "	23	1730
Year	23	1655
	24	1635
	25	1687
	26	1748
	27	1946
	28	1872
	29	1632
	30	1449
	31	1299

[fol. 3399]

EXHIBIT A-245

Comparison of Labor Cost Trends as Determined from Productive Hourly Rates and as Used in Appraisals (Based on Average Wage Rates)

Account	Prod. Hourly Rate 1st 6 Mo. 1923 at 6/30/23 Level*	Plant Sup. & Tool Exp. at 8.3%	Truck Exp. per Hr.	Total Cost per Hr.	Average Prod. Hourly Rate Year 1929	Plant Sup. & Tool Exp. at 13.15%	Truck Exp. per Hr.	Total Cost per Hr.	Per Cent Increase Year 1929 Over 6/30/23	Per Cent Increase per Appraisals
241 Exch. Pole Lines......	$.9079	$.0754	$.1387	$1.1220	$1.1630	$.1529	$.2011	$1.5170	35.20	12.47
242 Exch. Aerial Cable....	.7737	.0642	.0466	.8845	1.0882	.1431	.0662	1.2975	46.69	28.41
245 (5C) Exch. U. G. Cable	.7631	.0633	.0395	.8659	1.0882	.1431	.0438	1.2751	47.26	36.22
245 (35C) Exch. Bldg. Cable	.9298	.0772	.0092	1.0162	1.1662	.1534	.0102	1.3298	30.86	30.81
245 (5C and 35C) Total Exch. U. G. Cable	.8315	.0690	.0274	.9279	1.1247	.1479	.0220	1.2946	39.52	35.01

Account	Prod. Hourly Rate 1st 6 Mo. 1923 at 6/30/23 Level*	Plant Sup. & Tool Exp. at 8.3%	Truck Exp. per Hr.	Total Cost per Hr.	Average Prod. Hourly Rate Year 1931	Plant Sup. & Tool Exp. at 12.50%	Truck Exp. per Hr.	Total Cost per Hr.	Per Cent Increase Year 1931 Over 6/30/23	Per Cent Increase per Appraisals
241 Exch. Pole Lines......	$.9079	$.0754	$.1387	$1.1220	$1.3534	$.1692	$.1936	$1.7162	52.96	15.79
242 Exch. Aerial Cable....	.7737	.0642	.0466	.8845	1.3278	.1660	.0683	1.5021	76.61	33.17
245 (5C) Exch. U. G. Cable.	.7631	.0633	.0395	.8659	1.3265	.1658	.0438	1.5361	77.40	41.37
245 (35C) Exch. Bldg. Cable	.9298	.0772	.0092	1.0162	1.3964	.1746	.0084	1.5794	55.42	36.20
245 (5C and 35C) Total Exch. U. G. Cable..	.8315	.0690	.0274	.9279	1.3612	.1702	.0261	1.5575	67.85	40.17

* As determined by J. G. Wray & Co.

EXHIBIT A-245—Continued

[fol. 3400]

Comparison of Labor Cost Trends as Determined from Productive Hourly Rates and as Used in Appraisals (Based on Average Wage Rates)

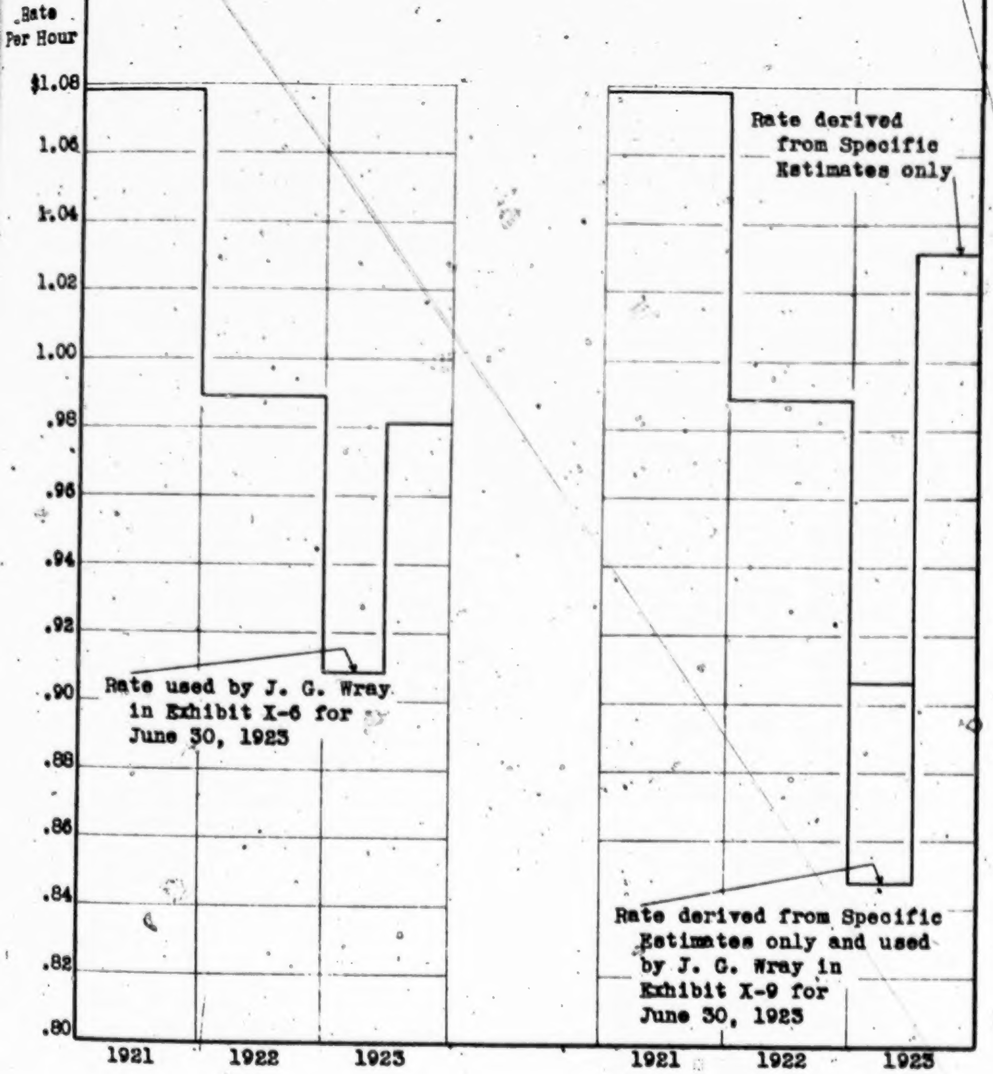
Account	Average Prod. Hourly Rate Year 1929	Plant Sup. & Tool Exp. at 13.15%	Truck Exp. per Hr.	Total Cost per Hr.	Average Prod. Hourly Rate Year 1931	Plant Sup. & Tool Exp. at 12.50%	Truck Exp. per Hr.	Total Cost per Hr.	Per Cent Increase Year 1931 Over 6/30/23	Per Cent Increase per Appraisals
241 Exch. Pole Lines	$1.1630	$.1529	$.2011	$1.5170	$1.3534	$.1692	$.1936	$1.7162	13.13	3.0
242 Exch. Aerial Cable	1.0882	.1431	.0662	1.2975	1.3278	.1660	.0683	1.5621	20.39	3.8
245 (5C) Exch. U. G. Cable	1.0882	.1431	.0438	1.2751	1.3265	.1658	.0438	1.5361	20.47	3.8
245 (35C) Exch. Bldg. Cable	1.1662	.1534	.0102	1.3298	1.3964	.1746	.0084	1.5794	18.77	4.2
245 (5C and 35C) Total Exch. U. G. Cable	1.1247	.1479	.0220	1.2946	1.3612	.1702	.0261	1.5575	20.31	3.8

(Here follows Exhibit A-246, side folio 3401)

EXHIBIT A-246

ILLINOIS BELL TELEPHONE COMPANY
CHICAGO AREA

Productive Hourly Rates for Exchange Pole Line Labor as derived from analysis of Specific and Routine Estimates.



Rate used by J. G. Wray in Exhibit X-6 for June 30, 1923

Rate derived from Specific Estimates only

Rate derived from Specific Estimates only and used by J. G. Wray in Exhibit X-9 for June 30, 1923

SLOAN & COOK

[fol. 3402]

EXHIBIT A–247

Illinois Bell Telephone Company

Chicago Exchange

Index of Labor Costs

Aerial Construction Gang

	Based on Trends Used in Exhibits A–2 to A–10	Based on Productive Hourly Rate for Class A Labor
6–30–1923	100.0	100.0
12–31–1923	102.7	110.5
12–31–1924	104.7	106.1
12–31–1925	105.0	107.6
12–31–1926	107.2	124.1
12–31–1927	110.9	126.6
12–31–1928	109.0	132.7
12–31–1929	112.5	141.0
12–31–1930	115.8	149.1
12–31–1931	115.8	166.4

Above indexes indicate what $100 of labor as of June 30, 1923 would cost at each succeeding Dec. 31 when converted by each of the two methods shown.

June 30, 1923 rate, used as 100, is the productive hourly rate for first six months of 1923 increased to June 30, 1923 level in same manner as used by J. G. Wray & Company.

(Here follow charts, side folios 3403 and 3404)

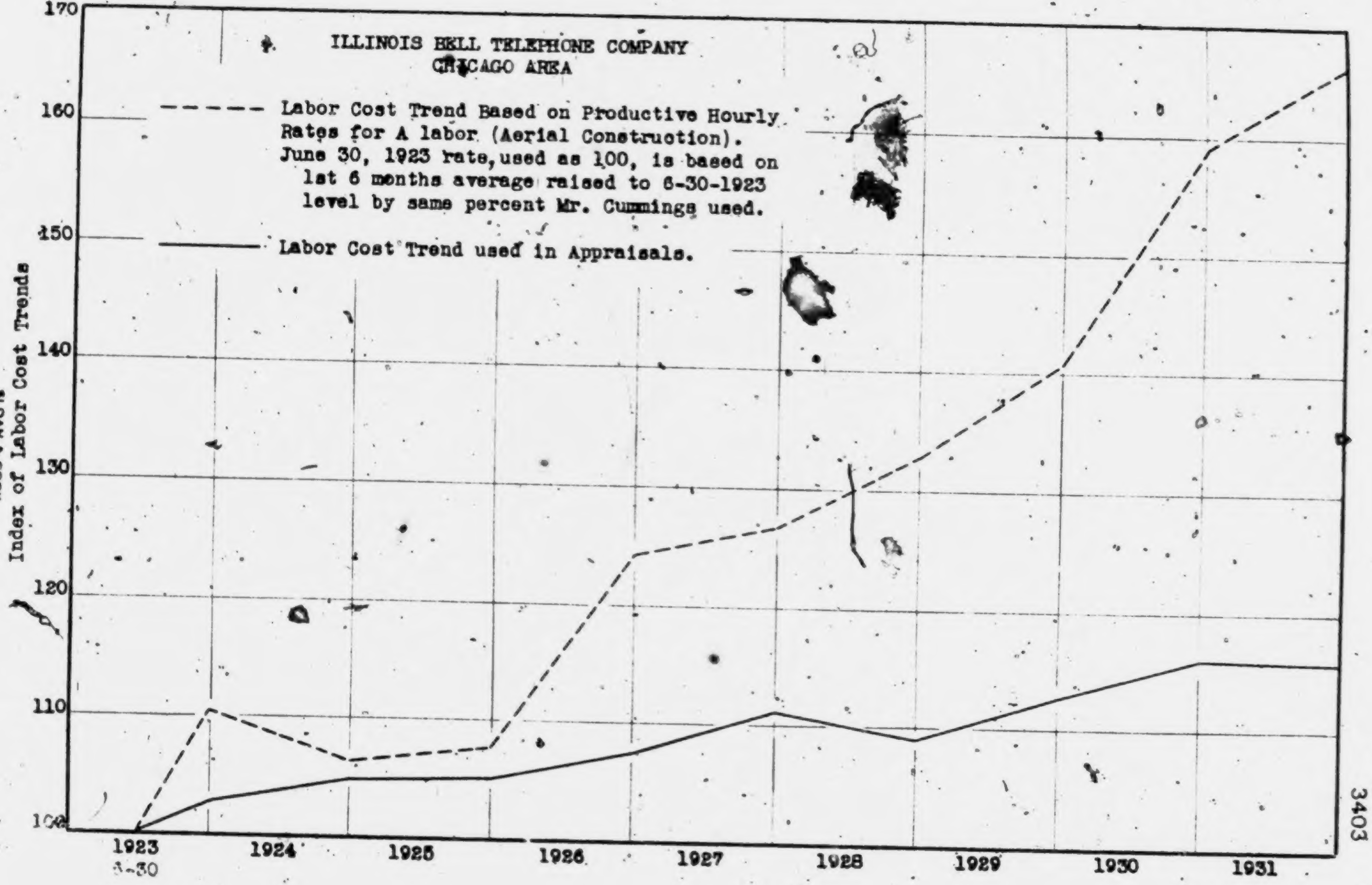
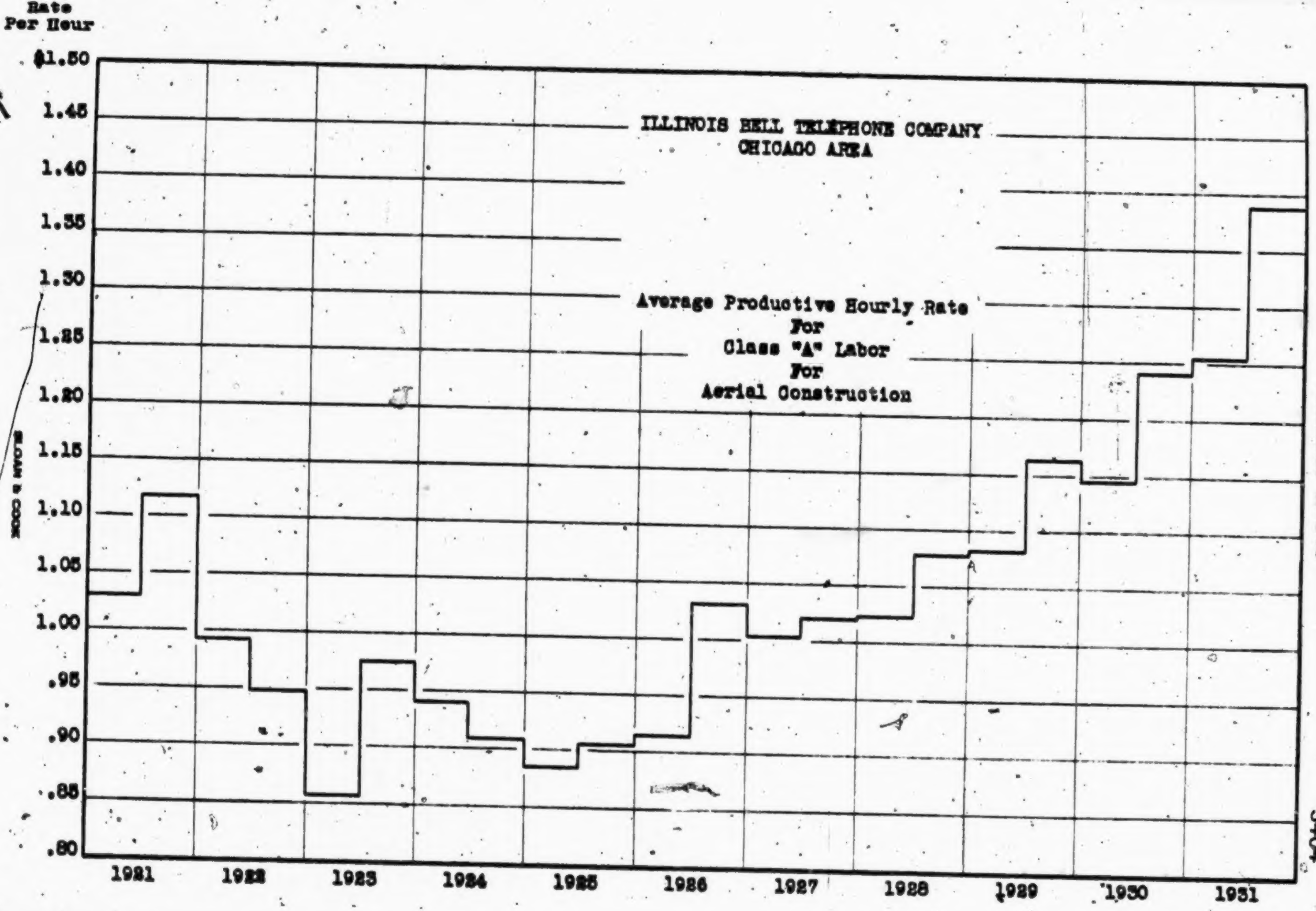

ILLINOIS BELL TELEPHONE COMPANY
CHICAGO AREA
Labor Cost Trend Based on Productive Hourly Rates for A labor (Aerial Construction). June 30, 1923 rate, used as 100, is based on 1st 6 months average raised to 6-30-1923 level by same percent Mr. Cummings used.
Labor Cost Trend used in Appraisals.
Index of Labor Cost Trends
170
160
150
140
130
120
110
100
1923
6-30
1924
1925
1926
1927
1928
1929
1930
1931
SLOAN & COOK

EXHIBIT A-248


ILLINOIS BELL TELEPHONE COMPANY
CHICAGO AREA

Average Productive Hourly Rate
For
Class "A" Labor
For
Aerial Construction

[fol. 3405]

Exhibit A-249

Illinois Bell Telephone Company

Chicago Exchange

Comparison Between "Company Experience" and Plaintiff's Exhibit No. 1, 1921–1923

J. G. Wray Exhibit X-6, Page 1, Corrected for Errors in Material Cost Trend and Productive Hourly Rate

	Total Gross Additions June 30, 1923, Level		% of Appraisal Method	
	Appraisal Method	"Company Experience"	As Corrected	J. G. Wray Exhibit X-6 Page 1
Year 1921				
Account 241—Exchange Pole Lines	$81,843	$75,976	92.83	90.63
Account 242—Exchange Aerial Cable	101,883	92,984	91.27	88.43
Account 245—Exchange Underground Cable	700,338	679,553	97.03	94.92
Total	$884,064	$848,513	95.98	93.77
Year 1922				
Account 241—Exchange Pole Lines	$220,997	$211,732	95.81	92.38
Account 242—Exchange Aerial Cable	284,925	276,892	97.18	94.65
Account 245—Exchange Underground Cable	1,594,642	1,558,251	97.72	95.82
Total	$2,100,564	$2,046,875	97.44	95.30
Jan.-June 1923				
Account 241—Exchange Pole Lines	$121,143	$125,539	103.63	98.30
Account 242—Exchange Aerial Cable	194,054	193,293	99.61	96.73
Account 245—Exchange Underground Cable	1,007,139	1,000,538	99.34	100.21
Total	$1,322,336	$1,319,370	99.78	99.52
Total	$4,306,964	$4,214,758	97.86	96.28

[fol. 3406]

Exhibit A-250

Illinois Bell Telephone Company,

Chicago Area

Apportionment of Book Costs to Specific and Routine Construction

Account		Book Cost Dec. 31, 1930	Work Done Under		Book Cost	
			Spec.	Routine	Specific	Routine
207–01	Right of Way-Exch.	$393,745	2.0	98.0	$7,875	$385,870
207–02	" " " -Toll	784	2.0	98.0	16	768
		$394,529			$7,891	$386,638
221	Cent. Off. Tel. Eqpt.	57,357,857	93.5	6.5	53,629,596	3,728,261
222	Other Eqpt. of C. O.	1,653,715	32.2	67.8	532,496	1,121,219
		$59,011,572			$54,162,092	$4,849,480
231	Station Apparatus	17,037,912	4.0	96.0	681,516	16,356,396
232	" Installations	9,305,545	1.1	98.9	102,361	9,203,184
233	Interior Block Wires	164,057	....	100.0	....	164,057
234	Prvt. Br. Exchanges	10,949,197	33.9	66.1	3,711,778	7,237,419
235	Booths & Spl. Fittings	1,066,528	.1	99.9	1,067	1,065,461
		$38,523,239			$4,496,722	$34,026,517

241	Exch. Pole Lines	3,201,481	9.5	90.5	304,141	2,897,340
232	" Aerial Cable	5,969,274	17.9	82.1	1,068,500	4,900,774
243	" " Wire	3,870,616	....	100.0	....	3,870,616
244	" U.G. Conduit	17,303,744	79.5	20.5	13,756,476	3,547,268
245	" " Cable	35,862,398	68.7	31.3	24,637,467	11,224,931
246	" Subm. "	13,249	97.7	2.3	12,944	305
		$66,220,762			$39,779,528	$26,441,234
251	Toll Pole Lines	43,799	56.8	43.2	24,878	18,921
252	" Aerial Cable	23,753	95.1	4.9	22,589	1,164
253	" " Wire	71,063	57.2	42.8	40,648	30,415
254	" U.G. Conduit	517,458	96.1	3.9	497,277	20,181
255	" " Cable	4,896,819	96.1	3.9	4,705,843	190,976
256	" Subm. "	6,470	90.8	9.2	5,875	595
		$5,559,362			$5,297,110	$262,252
270	Miscellaneous	48,808	87.8	12.2	42,853	5,955
	Total	$169,758,272	61.1	38.9	$103,972,076	$65,972,076
	Total excluding all Station Eqpt.	$131,235,033	75.7	24.3	$99,289,474	$31,945,559
	Total including all Station Eqpt. under "Specific"	$169,758,272	81.2	18.8	$137,812,713	$31,945,559
	Total excluding all Station Eqpt. & Exch. Aer. Wire	$127,364,417	78.0	22.0	$99,289,474	$28,074,943
	Total including all Station Eqpt. & Exch. Aer. Wire under "Specific"	$169,758,272	83.5	16.5	$141,683,329	$28,074,943
	Total including Station Apparatus and Other Equipt. of C. O. under "Specific"	$169,758,272	71.43	28.57	$121,263,811	$48,494,461

[fol. 3407].

Exhibit A–251

Illinois Bell Telephone Company,

Chicago Exchange

Comparison between "Company Experience"
On Its Larger Construction Projects
and Plaintiff's Exhibit No. 1
1921–1923

J. G. Wray Exhibit X–9, Page 1, Corrected for Errors in Material Cost Trend, Productive Hourly Rate, and Specific Estimate Performance

	Total Gross Additions June 30, 1923 Level		% of Appraisal Method		
	Appraisal Method	"Company Experience"	Corrected for Mat'l and Labor	J. G. Wray Exhibit X–9 Page 1	J. G. Wray Exhibit X–9A* Page 1
	Year 1921				
Account 241—Exchange Pole Lines	$81,843	$75,575	92.34	80.09	85.18
Account 242—Exchange Aerial Cable	101,883	89,364	87.71	84.98	84.98
Account 245—Exchange Underground Cable	700,338	678,356	96.86	91.77	91.77
Total	$884,064	$843,295	95.39	89.90	90.38
	Year 1922				
Account 241—Exchange Pole Lines	$220,997	$210,563	95.28	80.79	86.42
Account 242—Exchange Aerial Cable	284,925	266,940	93.69	91.10	91.10
Account 245—Exchange Underground Cable	1,594,642	1,545,005	96.89	92.20	92.20
Total	$2,100,564	$2,022,508	96.28	90.85	91.44
	Jan.–June 1923				
Account 241—Exchange Pole Lines	$121,143	$124,755	102.98	84.96	91.31
Account 242—Exchange Aerial Cable	194,054	186,651	96.19	93.39	93.39
Account 245—Exchange Underground Cable	1,007,139	991,079	98.41	95.93	95.93
Total	$1,322,336	$1,302,485	98.50	94.55	95.13
Total	$4,306,964	$4,168,288	96.78	91.79	92.36

* Corrected Exhibit X–9.

[fol. 3408]

Exhibit A-252

Illinois Bell Telephone Company, Chicago Exchange

Account 242—Exchange Aerial Cable

Table Showing Comparison Between Construction Charges by Estimate Groups, as Shown in J. G. Wray Exhibit X-8, Page 11, and Total [illegible]ruction Charges to Same Estimates when Completed.

	% of Total Estimates by Groups		Cumulati[illegible] Estimates[illegible]	
Group	J. G. Wray Exhibit X-8 Page 11	Corrected to Include All Charges after Completion of Same Estimates*	J. G. Wray Exhibit X-8 Page 11	[illegible] Inc[illegible] Charges [illegible] Completion [illegible] Same Estimates*
Less than $0	1.94	......	1.94	......
$0— 24.99	12.62	......	14.56	......
25.00— 49.99	3.88	3.03	18.44	3.03
50.00 99.99	3.88	3.03	22.32	6.06
100.00— 199.99	14.56	8.08	36.88	14.14
200.00— 349.99	8.74	6.06	45.62	20.20
350.00 599.99	7.77	13.13	53.39	33.33
600.00— 999.99	9.71	13.13	63.10	46.46
1000.00—1999.99	10.68	19.19	73.78	65.65
2000.00—3999.99	16.50	23.24	90.28	88.89
4000.00—7500.00	4.86	6.06	95.14	94.95
Over 7500.00	4.86	5.05	100.00	100.00
Total	100.00	100.00		
Average cost of each estimate	$1511.15	$2036.16		

* Excludes 4 estimates used by J. G. Wray which include amounts of an adjusting character only or which were later reversed.

[fol. 3409]

Illinois Bell Telephone Company, Chicago Exchange

Account 242—Exchange Aerial Cable

Table Showing Comparison Between Construction Charges by Estimate Groups, as Shown in J. G. Wray Exhibit X-8, Page 11, and Total Construction Charges to Same Estimates when Completed.

	% of Total Estimates by Groups		Cumulative % of Total Estimates by Groups	
Group	J. G. Wray Exhibit X-8 Page 20	Corrected to Include All Charges after Completion of Same Estimates*	J. G. Wray Exhibit X-8 Page 20	Corrected to Include All Charges after Completion of Same Estimates*
Less than $0	(.41)	......	(.41)	......
$0— 24.99	.11	......	(.30)	......
25.00— 49.99	.10	.07	(.20)	.07
50.00— 99.99	.17	.11	(.03)	.18
100.00— 199.99	1.48	.59	1.45	.77
200.00— 349.99	1.56	.80	3.01	1.57

( )—Red.

* Excludes 4 estimates used by J. G. Wray which include amounts of an adjusting character only or which were later reversed.

Group	% of Total Charges by Groups		Cumulative % of Total Charges by Groups	
	J. G. Wray Exhibit X-8 Page 11	Corrected to Include All Charges after Completion of Same Estimates*	J. G. Wray Exhibit X-8 Page 11	Corrected to Include All Charges after Completion of Same Estimates*
350.00— 599.99...	2.50	3.24	5.51	4.81
600.00— 999.99...	4.49	4.58	10.00	9.39
1000.00—1999.99...	10.40	12.57	20.40	21.96
2000.00—3999.99...	33.53	34.88	53.93	56.84
4000.00—7500.00...	17.74	18.47	71.67	75.31
Over—7500.00...	28.33	24.69	100.00	100.00
Total..........	100.00	100.00		
Average cost of each estimate...........	$1511.15	$2036.16		

Of the total charges to these estimates when completed, only 25.12% are for estimates showing charges to this account for less than $2500 in amount.

[fol. 3410]

Illinois Bell Telephone Company, Chicago Exchange

Account 245 (5-C) Exchange Underground Cable

Table Showing Comparison Between Construction Charges by Estimate Groups, as Shown in J. G. Wray Exhibit X-8, Page 20, and Total Construction Charges to Same Estimates when Completed.

Group	% of Total Estimates by Groups		Cumulative % of Total Estimates by Groups	
	J. G. Wray Exhibit X-8 Page 20	Corrected to Include All Charges after Completion of Same Estimates*	J. G. Wray Exhibit X-8 Page 20	Corrected to Include All Charges after. Completion of Same Estimates*
Less than $0......	2.01	......	2.01	......
$0— 34.....	6.83	.41	8.84	.41
35— 99.....	3.61	.92	12.45	1.23
100— 199.....	5.22	.82	17.67	2.05
200— 349.....	3.61	3.29	21.28	5.34
350— 599.....	6.83	4.12	28.11	9.46
600— 999.....	6.03	6.17	34.14	15.63
1000— 1599.....	7.63	7.00	41.77	22.63
1600— 2499.....	7.63	8.23	49.40	30.86
2500— 3999.....	8.03	9.47	57.43	40.33
4000— 6499.....	9.64	10.29	67.07	50.62
6500— 9999.....	7.23	11.93	74.30	62.55
10000—15999.....	10.84	15.23	85.14	77.78
16000—25000.....	10.44	13.99	95.58	91.77
Over 25000.....	4.42	8.23	100.00	100.00
Total..........	100.00	100.00		
Average cost of each estimate...........	$7249	$12079		

* Excludes 6 estimates used by J. G. Wray which include amounts of an adjusting character only or which were later reversed.

[fol.3411] Illinois Bell Telephone Company, Chicago Exchange

Account 245 (5-C) Exchange Underground Cable

Table Showing Comparison Between Construction Charges by Estimate Groups, as Shown in J. G. Wray Exhibit X-8, Page 20, and Total Construction Charges to Same Estimates when Completed.

Group	% of Total Charges by Groups		Cumulative % of Total Charges by Groups	
	J. G. Wray Exhibit X-8 Page 20	Corrected to Include All Charges after Completion of Same Estimates*	J. G. Wray Exhibit X-8 Page 20	Corrected to Include All Charges after Completion of Same Estimates*
Less than $0	(.07)	......	(.07)	......
$0— 34	.02	......	(.05)	......
35— 99	.04	.01	(.01)	.01
100— 199	.11	.01	.10	.02
200— 349	.17	.07	.27	.09
350— 599	.44	.17	.71	.26
600— 999	.66	.43	1.37	.69
1000— 1599	1.39	.77	2.76	1.46
1600— 2499	2.17	1.41	4.93	2.87
2500— 3999	3.49	2.50	8.42	5.37
4000— 6499	7.17	4.44	15.59	9.81
6500— 9999	7.92	7.73	23.51	17.54
10000—15999	19.71	16.26	43.22	33.80
16000—25000	28.23	22.25	71.45	56.05
Over 25000	28.55	43.95	100.00	100.00
Total	100.00	100.00		
Average cost of each estimate	$7249	$12079		

( )—Red.

* Excludes 6 estimates used by J. G. Wray, which include amounts of an adjusting character only, or which were later reversed.

[fol. 3412] Illinois Bell Telephone Company, Chicago Exchange

Account 242—Exchange Aerial Cable

Table Showing Comparison Between Construction Charges by Estimate Groups, as Shown in J. G. Wray Exhibit X-11, Page 6, and Total Construction Charges to Same Estimates when Completed.

Group	% of Total Estimates by Groups		Cumulative % of Total Estimates by Groups	
	J. G. Wray Exhibit X-11 Page 6	Corrected to Include All Charges after Completion of Same Estimates*	J. G. Wray Exhibit X-11 Page 6	Corrected to Include All Charges after Completion of Same Estimates*
Less than $0	12.91	......	12.91	......
$0— 99	19.35	6.90	32.26	6.90
100— 499	12.91	17.24	45.17	24.14
500—1099	19.35	13.79	64.52	37.93
1100—2499	19.35	24.14	83.87	62.07
2500—4999	9.68	20.69	93.55	82.76
Over—5000	6.45	17.24	100.00	100.00
Total	100.00	100.00		
Average cost of each estimate	$1480	$2805		

* Excludes 2 estimates used by J. G. Wray which included charges adjusting in character, or charges which were later reversed ($3 and $4 respectively).

[fol. 3413]

Illinois Bell Telephone Company, Chicago Exchange

Account 242—Exchange Aerial Cable

Table Showing Comparison Between Construction Charges by Estimate Groups, as Shown in J. G. Wray Exhibit X-11, Page 6, and Total Construction Charges to Same Estimates when Completed.

Group	% of Total Charges by Groups		Cumulative % of Total Charges by Groups	
	J. G. Wray Exhibit X-11 Page 6	Corrected to Include All Charges after Completion of Same Estimates*	J. G. Wray Exhibit X-11 Page 6	Corrected to Include All Charges after Completion of Same Estimates
Less than— $0......	(2.17)	......	(2.17)	......
$0— 99......	.44	.15	(1.73)	.15
100— 499......	2.05	1.42	.32	1.57
500—1099......	10.81	4.23	11.13	5.80
1100—2499......	21.17	13.69	32.30	19.49
2500—4999......	22.46	22.94	54.76	42.43
Over—5000......	45.24	57.57	100.00	100.00
Total..........	100.00	100.00		
Average cost of each estimate...........	$1480	$2805		

( )—Red.

* Excludes 2 estimates used by J. G. Wray which included charges adjusting in character, or charges which were later reversed ($3 and $4 respectively).

[fol. 3414]

Illinois Bell Telephone Company, Chicago Exchange

Account 245 (15C) Exchange Underground Cable

Table Showing Comparison Between Construction Charges by Estimate Groups, as Shown in J. G. Wray Exhibit X-11, Page 8, and Total Construction Charges to Same Estimates when Completed.

Group	% of Total Charges by Groups		Cumulative % of Total Charges by Groups	
	J. G. Wray Exhibit X-11 Page 8	Corrected to Include All Charges after Completion of Same Estimates*	J. G. Wray Exhibit X-11 Page 8	Corrected to Include All Charges after Completion of Same Estimates*
Less than $0.....	13.01	......	13.01	......
$0— 19.....	9.76	.94	22.77	.94
20— 99.....	7.32	......	30.09	.94
100— 299.....	9.76	5.66	39.85	6.60
300— 799.....	4.88	1.89	44.73	8.49
800— 1499.....	6.50	6.60	51.23	15.09
1500— 2999.....	5.69	4.72	56.92	19.81
3000— 4999.....	8.94	10.38	65.86	30.19
5000— 9999.....	6.50	12.26	72.36	42.45
10000—14999.....	12.20	18.87	84.56	61.32
15000—24999.....	11.38	23.58	95.94	84.90
5000—50000.....	3.25	10.38	99.19	95.28
Over 50000.....	.81	4.72	100.00	100.00
Total..........	100.00	100.00		
Average cost of each estimate...........	$6932	$34894		

* Excludes 15 estimates used by J. G. Wray, which include amounts of an adjusting character only, or which were later reversed. J. G. Wray also lists the same estimate number twice in two different instances on this page.

[fol. 3415]

Illinois Bell Telephone Company, Chicago Exchange

Account 245 (15C) Exchange Underground Cable

Table Showing Comparison Between Construction Charges by Estimate Groups, as Shown in J. G. Wray Exhibit X-11, Page 8, and Total Construction Charges to Same Estimates when Completed.

	% of Total Charges by Groups		Cumulative % of Total Charges by Groups	
Group	J. G. Wray Exhibit X-11 Page 8	Corrected to Include All Charges after Completion of Same Estimates*	J. G. Wray Exhibit X-11 Page 8	Corrected to Include All Charges after Completion of Same Estimates*
Less than $0	(1.61)	......	(1.61)	......
From $0— 19	.01	......	(1.60)	......
20— 99	.05	......	(1.55)	......
100— 299	.28	.03	(1.27)	.03
300— 799	.33	.04	(.94)	.07
800— 1499	1.01	.21	.07	.28
1500— 2999	1.93	.28	2.00	.56
3000— 4999	5.11	1.20	7.11	1.76
5000— 9999	7.26	2.51	14.37	4.27
10000—14999	21.35	6.66	35.72	10.93
15000—24999	32.25	12.99	67.97	23.92
25000—50000	16.48	10.13	84.45	34.05
Over 50000	15.55	65.95	100.00	100.00
Total	100.00	100.00		
Average cost of each estimate	$6932	$34894		

Total cost of above estimates, less than $2500 in amount, constitute .49% of the total charges to all of the above estimates.

( )—Red.

* Excludes 15 estimates used by J. G. Wray, which include amounts of an adjusting character only, or which were later reversed.

[fol. 3416]

EXHIBIT A-254

Some Associations Recommending Standard Cost System

National Paper Box Association.
Printing Ink Cost Bureau.
National Machine Tool Builder's Association.
National Battery Manufacturer's Association.
National Commercial Fixtures Manufacturer's Association.
The Silk Association of America.
National Electrical Manufacturer's Association.
National Association of Wire Manufacturers.

[fol. 3417]

Some Companies Using Standard Cost System

Gillette Safety Razor Company	
French Battery Company	Madison, Wisc.
American Chain Company	Bridgeport, Conn.
International Silver Company	Meriden, Conn.
Manning Bowman Company	" "
Seneca Falls Machinery Company	Seneca Falls, N. Y.
American Rolling Mills Company	Middletown, Ohio.
National Carbon Company	Cleveland, Ohio
Norton Company (Artificial Abrasives)	Worcester, Mass.

J. & P. Coats Company	Pawtucket, R. I.
Rockbestos Company (Electrical Wire and Cable)	New Haven, Conn.
E. H. Clapp Rubber Company	
Real Silk Hosiery Company	Indiana
Wait & Bond (Cigars)	Newark, N. J.
National Cash Register Company	Dayton, Ohio
U. S. Radio & Television Company	New York City
F. C. Huyck & Sons	Albany, N. Y.
Sprague Specialty Company	North Adams, Mass.
American Thread Company	New York, N. Y.
Duplan Silk Corporation	" " "
Behr-Manning Corporation	Troy, N. Y.
Stevens & Thompson Paper Company	Hoosick Falls, N. Y.
Union Bag & Paper Company	New York City
Dutchess Mfg. Company (Clothing)	Poughkeepsie, N. Y.
S. K. F. Industries (Ballbearings)	New York City
General Electric Company	Schenectady, N. Y.
Westinghouse Elec. & Mfg. Company	
U. S. Rubber Company	
Kelvinator Company (Refrigerators)	Detroit & Grand Rapids, Mich.
Stromberg-Carlson	Rochester, N. Y.
Robbins & Meyers Inc. (Electrical Eqpt.)	Springfield, Ohio
Arrow, Hart & Hageman (Electrical Devices)	Hartford, Conn.
Jeffrey Manufacturing Company (Conveying Machinery)	Columbus, Ohio
Robeson-Rochester Corporation	Rochester, N. Y.
Trumbull Elec. Mfg. Company	Connecticut
Allis-Chalmers Company (Misc. Machinery)	Milwaukee, Wisc.
Edison G. E. Appliance Company (Household Elec. Appliances)	Chicago
Belden Manufacturing Company (Elec. Wires & Cables)	"
Stewart-Warner Speedometer Corp	"
Kendall Company (Bauer & Black Div.) (Hospital Supplies)	"
Liquid Carbonic Company	"
Fairbanks-Morse Company	"
Kellogg Company	Battle Creek, Mich.
Wahl Company (Pencils, Pens and Metal Products)	Chicago
General Cable Company	Rome, N. Y.
Benjamin Elec. Mfg. Company	Des Plaines, Ill.
Curtis Lighting, Incorporated	Chicago
L. C. Smith Typewriter Company	Syracuse, N. Y.
American Electric Company	Chicago

[fol. 3418]

Maytag Washing Machine Company	Newton, Ia.
Oliver Farm Equipment Company	
Victor Adding Machine Company	
Pyle National Company (Railway Supplies)	Chicago
Kohler Company	Kohler, Wisc.
Chrysler Motor Company	
Link-Belt Company (Conveying Machinery)	Chicago
Hurley Machine Company	"
Payson Manufacturing Company	"
Mercury Manufacturing Company	"
H. W. Caldwell Co. (Mining Machinery)	"
Chain Belt Company	Milwaukee, Wisc.
Webster Manufacturing Company	Chicago
Oxford Miami Paper Company	
Westco Chippewa Pump Company	Davenport, Iowa
Frank Foundries Corporation	Moline, Ill.
Sacks-Barlow Foundry, Incorporated	Newark, N. J.
Everlastic, Incorporated	Chelsea, Mass.

Hollingsworth & Vose Company (Paper)	
American Writing Paper Company, Incorp	
Mohawk Carpet Mills, Inc	Amsterdam, N. Y.
Pequanoc Rubber Co	Butler, N. J.
Perfection Stove Co	Cleveland, Ohio
Herman Behr and Co. (Abrasives)	Brooklyn, N. Y.
Barber Greene Co	Aurora, Ill.
Bassick Company (Lubricating Systems)	Bridgeport, Conn.
Bausch & Lomb Optical Company	Rochester, N. Y.
Noe Equl Textile Mills	Reading, Pa.
Cincinnati Planer Co	Cincinnati, Ohio
J. C. Hartz Co	New Haven, Conn.
Bigelow-Sanford Carpet Co	New York City
Harris-Potter-Seyboldt Co. (Printing Presses)	Cleveland, Ohio
The Bigelow Company (Boilers)	New Haven, Conn.
American Safety Razor Corporation	New York City
Irving Pitt Mfg. Co	Kansas City, Mo.
Cincinnati Milling Machine Co. (Grinding Machines)	Cincinnati, Ohio
Motor Wheel Corporation	
Automatic Electric Co	Chicago, Ill.
Colorado Fuel and Iron Co	Pueblo, Colo.
Western Clock Co	La Salle, Ill.
Macbeth Evans Glass Co	Charleroi, Pa.
L. L. Brown Paper Co	Adams, Mass.
Lehn & Fink, Inc.	Bloomfield, N. J.
Minneapolis-Moline Power Imp. Co	Minneapolis, Minn.
Gulf Oil Corp	Pittsburgh, Pa.
Pacific Clay Products	Los Angeles, Calif.
Inland Manufacturing Co	Dayton, Ohio
Singer Sewing Machine Co	
Corona Typewriter Company	
B. F. Goodrich Rubber Co	Akron, Ohio
Goodyear Tire and Rubber Co	" "
Pennsylvania Rubber Co	Jeanette, Pa.
Corduroy Tire Co	Grand Rapids, Mich.

[fol. 3419]

EXHIBIT A-255

Extracts from Reports to Stockholders of the Western Electric Co., Inc., 1914, 1917, 1918 and 1919 Which Comment on Results of Foreign Business

1914:

"It will be impossible until after the close of the European war to report the effect of the war during this year upon our foreign investments. We expect, however, a loss of profits and some loss of property, on account of which we may later have to make revaluations."

1917:

"There is no return from foreign investments included in the profits of the company for 1917. As to some, information is entirely lacking, and as to others, it is incomplete. It is our belief, however, that, as a whole, a conservative valuation of them would require no addition to reserves, the earnings of some of them being apparently sufficient to offset the possible losses of others."

1918:

"No return from foreign investments has been included in our earnings for 1918 (our information thereon being incomplete). It is believed, however, that the earnings of some of the foreign allied companies in which we are interested were sufficient to offset losses on others, so that no net loss was sustained on the whole.

"The Antwerp factory which had been in the hands of the Germans throughout the war came again under our control in November, 1918. Although the buildings were not much damaged, it is necessary to replace large amounts of machinery and material which had been taken away by the enemy. This rehabilitation is now in progress and it is expected operations will be resumed there within a few months.

For the purpose of handling our export business to the best advantage, it has been found advisable to segregate it from the domestic business directly conducted by this Company. Accordingly, a subsidiary corporation, the International Western Electric Company, Incorporated, was organized during the year and has been operating since June 1st with satisfactory results."

1919:

"No earnings from the foreign business are included this year in the above figures of your company's earnings.

The export and foreign business of your company is conducted through the International Western Electric Company, Incorporated, all of whose issued capital stock—55,000 shares of preferred having a par value of $100 per share and 100,000 shares of common without par value—is owned or controlled by your company.

The International Company owns interests in numerous affiliated companies established in England, France, Belgium, Norway, Switzerland, Austria, Hungary, Russia, Italy, Australia, South Africa, Canada, Argentine, China and Japan and operating in those and other foreign countries. Its proportion of ownership in such companies varies from 100% in some cases down to 10%.

[fol. 3420] The sales of the International Company and its principal foreign affiliated companies, excluding intercompany sales, were in 1919 approximately $32,500,000 an increase of about 33% over the previous year.

The largest foreign factories are at London, Antwerp, Paris, Montreal and Tokyo. All of these factories except that at Antwerp were actively and successfully operated throughout the war. The task of rehabilitating the Antwerp factory, taken again into our possession when the Germans evacuated the city in November, 1918, has progressed satisfactorily throughout the year in spite of many difficulties and at the end of the year it was operating at about 60% of its normal capacity. It has a large volume of business on its books and prospects of rapidly increasing productivity.

This condition is generally true of the affiliated foreign factories. Practically all of them are running at full capacity and their outlook is for continuing heavy orders for a long time to come.

The cost of restoring the Antwerp factory and of its partial operation through the year while being rehabilitated, the losses realized on certian contracts taken before the war and carried out at the higher costs of labor and material since prevailing, together with the heavy reserves provided at all the European factories to meet possible eventual losses due to the falling rate of exchange, have largely offset the 1919 profits of the International Company in other fields and on its export business.

A careful study has been made of the book value under present conditions of the International Company's investments in its foreign associated and allied companies as compared with the valuations at which they are carried on the books of the International Company. This study indicates that even if all accounts and investments in Germany, Austria, Hungary and Russia (having together a pre-war value of about $3,000,000) were taken as of no value whatsoever and if the prevailing exchange rates were applied to all current and temporary accounts receivable from other foreign countries, there would be remaining a valuation for all foreign investments of approximately $15,500,000 as compared with the total of only $15,000,000 shown on the International Company's books.

On the latter valuation the International Company has a surplus at December 31, 1919, of $1,133,439. It has not, however, paid to your company the dividends accrued on its preferred stock, which total to December 31, 1919, $613,860, and it is proposed to defer the payment of these accrued dividends until the situation is clearer as to pre-war accounts and exchange. The current earnings of the International Company justify its paying current dividends at the rate of 7% per annum on its preferred stock, which will begin with the quarter ending March 31, 1920."

[fol. 3421] EXHIBIT A-256

Average Notes Payable of Electrical Research Products, Inc., to Western Electric Co., Inc., 1927 to 1930 Inclusive

1927	$0
1928	14,043,000
1929	32,982,000
1930	25,591,000

[fol. 3422]

EXHIBIT A-257

Earnings of the Western Electric Company on Bell Business, Expressed in Percentages of Sales and in Percentage of (a) Average Investment and (b) Average Investment Less Amount of Depreciation Reserve Account, 1916 to 1932 Inclusive and 1923 to 1932 Inclusive (with Adjustments for Certain Items Listed on Page 2 of this Exhibit)

(Dollars in Thousands)

	Sales	Earnings	Per Cent Earnings to Sales (b÷a)	Average Investment	Per Cent Earnings to Average Investment (b÷d)	Average Investment Less Amount of Deprec. Reserve Account	Per Cent Earnings to Average Investment Less Amount of Deprec. Reserve Account (b÷f)
1916-1932................	$3,258,182	$152,367	4.7	$2,498,364	6.1	$1,930,535	7.9
1923-1932................	2,486,453	120,397	4.8	1,898,111	6.3	1,451,045	8.3

The purpose of this Exhibit is to show the effect on earnings of the Western Electric Company on its Bell business if certain controverted points set out on the following sheets were taken into consideration. None of these adjustments are conceded, except items 6 and 7 shown on Page 2.

[fol. 3423]

Adjustments

(Dollars in Thousands)

	1916 to 1932	1923 to 1932
Earnings as shown on A194 Col. B	$145,307	$113,179
Adjustments:		
1. Effect of writing extraordinary reserve on plant off of cost value	3,147+	3,147+
2. Profit on Sale of Automatic Electric Option	3,002+	2,429+
3. Effect of Crediting to Bell Business Net Royalties Received (Exhibit A82)	2,243+	762+
4. Effect of charging cost of patents to cost of operations	2,208−	2−
5. Effect of Sale of Eng. Dept. plant to Bell Telephone Lab	565+	565+
6. Effect of Substituting Federal Taxes paid for accruals	191+	197+
7. Adjusting 1924 overcharges of Pension Fund appropriation	120+	120+
Total Adjustments	7,060+	7,218+
Adjusted Earnings	152,367	120,397
Average Cumulative Investment as shown on A194, Col. D	2,553,073	1,952,820
Cumulative Effect of Writing off of cost values extraordinary reserve on plant—made 1924–1927 incl., aggregating $8,233,000	54,709−	54,709−
Adjusted Average Cumulative Investment	2,498,364	1,898,111
Average Cumulative Investment less Amount of Depreciation Reserve Account as shown on A194, Col. F	1,918,641	1,439,151
Cumulative Effect on Depreciation Reserve of Writing off of cost value extraordinary reserve on plant—made 1924–1927 incl., aggregating $8,233,000	11,894+	11,894+
Adjusted Average Cumulative Investment less Amount of Depreciation Reserve Account	1,930,535	1,451,045

[fol. 3424] Explanation of Adjustments

1. Effect of writing extraordinary reserve on plant off of cost value:

In the years 1924, 1925, 1926 and 1927 the Western Electric Company set up an extraordinary reserve against plant to cover the expected reduction in costs over the ten-year period from 1931 to 1940. The Company's position in this respect is that it was correct to charge this added cost in the years of great activity rather than to defer such costs to years when the activity would be considerably reduced. Also, it is the Company's position that as and when the anticipated reductions in prices are manifested during the period from 1931 to 1940, the amount of this reserve will be deducted from the face value of the plant accounts. This exhibit reflects the effect on profits and on the average investment of the Western Electric Company of writing off from the face of the plant accounts the amount of these reserves in the years when they were made upon the books.

2. Effect of the profit on the sale of option to purchase control of Automatic Electric Company:

In 1927 the Electrical Research Products Inc. obtained $4,000,000 from the sale of an option to purchase the stock of the International Telephone Sales and Engineering Corporation which controlled the stock of the Automatic Electric Company. This exhibit gives effect to the inclusion as a part of earnings on Bell business of the proper portion of the sales price ascertained on the basis of purchases by the Western Electric Company of step-by-step equipment from the Automatic Electric Company during the period 1919 to 1932, inclusive.

3. Effect of crediting to Bell business net royalties received:

Exhibit A-82 shows the total amount of royalties received by the Western Electric Company and all of its subsidiaries less expenses applicable to such royalties. The amount of net royalties received, as shown by this statement for the period 1916 to 1931, was $2,243,000. No net royalties are included in this exhibit for 1932 as in the Company's opinion development and other expenses applicable thereto will be equal to or exceed the royalties to be received for the current year. This exhibit shows the effect of crediting the net amount of these royalties to Bell business of the Western Electric Company during this period.

4. Effect of charging cost of patents to cost of operations:

During the period 1916 to 1927 the Western Electric Company charged the cost of patents purchased to surplus. The cost of such patents was not included in the cost of sales as shown in Exhibits A-77 to A-80, inclusive. This exhibit gives effect to including the cost of such patents as a part of the cost of sales, as has been the Company's practice since 1927 and which it considers proper for all years involved.

[fol. 3425] **5. Effect of the sale of engineering department plant of the Western Electric Company to the Bell Telephone Laboratories:**

As of January 1, 1925, the plant of the Engineering Department of the Western Electric Company was sold to the Bell Telephone Laboratories. As a result of this sale, development charges to the Western Electric Company from the Bell Telephone Laboratories since January 1, 1925, were larger than would have been incurred by the Western Electric Company if the sale had not been effected, on account of depreciation charges and interest on investment. This exhibit gives effect to reducing such development costs to what they would have been had this plant not been sold to the Bell Telephone Laboratories.

6. Effect of substituting Federal taxes paid for Federal taxes accrued:

The cost of sales, as shown in Exhibits A-77 to A-80, inclusive, include in each year the accrual set up for the payment of federal taxes. This exhibit gives effect to the difference between the accruals as set up in the normal course of business and the amount which, at a later date, was actually paid to the Government for that year.

7. Adjusting the overcharge of pension fund appropriation in 1924:

In 1924 $2,000,000 was appropriated by the Western Electric Company from earnings, for pension fund. In Exhibits A-77 to A-80, inclusive, this amount was considered as chargeable entirely to Bell business and was so handled in profit reports of the Western Electric Company covering operations for the year 1924. This exhibit gives effect to the fact, as testified by Mr. Gregory, that we now believe a certain portion of this appropriation should have been assessed against the non-Bell business.

[fol. 3426]

EXHIBIT A–258

Western Electric Co., Inc.

Relation of Gross Additions to Depreciation Reserve to Cost of Furniture and Fixtures at Dec. 31 of Each Year, 1916 to 1932 and Average for the Periods 1916 to 1932 and 1923 to 1932.

(Dollars in Thousands)

	Cost at Dec. 31	Gross Additions to Depreciation Reserve	% of Cost
1916	1,821	377	20.7
1917	2,242	480	21.4
1918	2,728	530	19.4
1919	2,869	299	10.4
1920	3,807	1,053	27.7
1921	4,739	1,111	23.4
1922	5,519	900	16.3
1923	6,859	1,407	20.5
1924	7,876	1,431	18.2
1925	6,613	838	12.7
1926	7,232	923	12.8
1927	7,888	978	12.4
1928	8,440	1,389	16.5
1929	11,116	3,396	30.5
1930	12,398	1,908	15.4
1931	12,472	658	5.3
1932 (4 Months x 3)	12,442	204	1.6
Average 1916 to 1932 Incl.	6,886	1,052	15.3
Average 1923 to 1932 Incl.	9,334	1,313	14.1

The testimony shows that the practice of the company is to maintain a reserve of 100%. This exhibit shows the amounts charged to cost of sales as a result of this practice related to the cost of plant at December 31 of each year 1916 to 1932 and for the periods 1916 to 1932 and 1923 to 1932.

[fol. 3427] **Exhibit A–259**

Western Electric Company, Inc.

Relation of Gross Additions to Depreciation Reserve to Cost of Small Tools at December 31st of Each Year, 1916 to 1932 and Average for the Periods 1916 to 1932 and 1923 to 1932 Inclusive

(Dollars in Thousands)

	Cost at Dec. 31	Gross Additions [illegible] Depreciation Reserve	% of Cost
1916	2,856	657	23.0
1917	3,987	1,120	28.1
1918	5,010	1,137	22.7
1919	5,893	1,130	19.2
1920	7,687	1,937	25.2
1921	9,507	1,912	20.1
1922	9,791	1,029	10.5
1923	10,979	1,346	12.3
1924	11,876	1,532	12.9
1925	11,995	1,638	13.7
1926	12,460	1,298	10.4
1927	12,681	1,435	11.3
1928	12,339	2,018	16.4
1929	14,120	4,381	31.0
1930	16,517	3,713	22.5
1931	18,293	1,832	10.0
1932 (4 Months x 3)	18,779	954	5.1
Average 1916 to 1932 Inclusive	10,869	1,710	15.7
Average 1923 to 1932 Inclusive	14,004	2,015	14.4

The testimony shows that the practice of the Company is to maintain a reserve of 100%.

This exhibit shows the amounts charged to cost of sales as a result of this practice related to the Cost of Plant at December 31, of each year 1916 to 1932 and for the periods 1916 to 1932 inclusive and 1923 to 1932, inclusive.

[fol. 3428] **Exhibit A-260**

American Telephone and Telegraph Company

High and Low Selling Prices, Earnings Per Share Per Year and Percentage of Such Earnings Upon Market Price of Stock

Years		Price	Dollars per Share Earned Annually	Percentages of Earnings Upon Market Prices of Stock	Average Percentage
1921	High..........	$119-1/2	$12.46	10.43	11.72
	Low..........	95-3/4		13.01	
1922	High..........	128-1/4	13.05	10.18	10.79
	Low..........	114-1/2		11.40	
1923	High..........	128-3/4	12.62	9.80	10.19-1/2
	Low..........	119-1/8		10.59	
1924	High..........	134-3/4	11.92	8.85	9.34-1/2
	Low..........	121-1/8		9.84	
1925	High..........	145	13.59	9.37	9.88-1/2
	Low..........	130-5/8		10.40	
1926	High..........	151	14.26	9.44	9.82-1/2
	Low..........	139-5/8		10.21	
1927	High..........	185-1/2	13.70	7.39	8.28-1/2
	Low..........	149-1/4		9.18	
1928	High..........	211	14.64	6.94	7.72-1/2
	Low..........	172		8.51	

Note.—Annual earnings shown above do not include undistributed profits of Western Electric Company nor dividend of $48,000,000, paid by that company in 1927.

[fol. 3429] **Exhibit A-261**

December 16, 1930.

Mr. E. Ehrlich:

In recent years the trend in modern industries has shown a marked increased in substitution of machine for manual operations, and toward the substitution of special machinery designed for a particular operation or product for standard machinery, thereby materially increasing the factor of obsolescence to be covered by depreciation rates.

During 1928, a study was made by the Plant Engineers in the Engineer of Manufacture's Department of the Western Electric Company, Incorporated, as to the proper rate of depreciation to be used on machinery. Their study covered machinery with a face value of $3,674,000, or approximately 14% of the total machinery cost. Conclusions reached are considered by the Engineers as properly applicable to the whole class of machinery. The results of their studies are shown in Appendix A, attached.

The engineers, in estimating the serviceable life of machinery, took into consideration factors for wear and tear and obsolescence. They found that the rate of depreciation should be increased to take care of the decreased life resulting from the obsolescence factor, and recommended that the previous rate in use, of 7½%, be increased to 10% per annum. This rate of 10% on machinery is in line with the practice laid down in the Standard Accounting and Cost System for the Electrical Manufacturing Industry where the rates of 7½% to 12½% are recommended.

As a result of the above studies, the depreciation rate on machinery was changed from 7½% to 10%, effective January 1, 1928. As of December 31, 1928, the following journal entry was made on the books of the Company, adjusting the depreciation for the years 1924 to 1927 from 7½%, as depreciated on the books, to 10% per annum:

Dr. 107	Profit and Loss	$2,000,000
Cr. 117	Reserve for Depreciation of Plant	$2,000,000

At a meeting of the Board of Directors held on February 13, 1929, the following resolution was adopted:

"Whereas, there has been a material increase in the past five years in the factor of obsolescence in the machinery of the Manufacturing Department through the improvement made in methods and equipment; and

"Whereas, the depreciation charged against cost during these years was not sufficient to cover this increased obsolescence,

"Now, therefore, be it resolved, That the officers be and they are hereby authorized to set aside as depreciation reserve on plant, $2,000,000, in addition to the depreciation charged at regular rates."

The above figure of $2,000,000 was arrived at as follows:

	Total	1927	1926	1925	1924
Actual depreciation written off on machinery, computed at 7-1/2% of cost value.	$6,092,295	$1,639,614	$1,521,826	$1,595,341	$1,335,514
Additional amount necessary to depreciate machinery 10% of cost value, 1/3 of line above	2,030,764	546,538	507,275	531,780	445,171

[fol. 3430] As the Federal Income Tax Returns for the years 1924 through 1927 are not finally audited, claim is made for additional depreciation on machinery in these years aggregating $2,030,764.

J. Burgess.

State of New York,
County of New York, ss:

John Burgess being duly sworn, deposes and says the above is a true and accurate copy of original memorandum prepared by deponent and delivered to Mr. E. Ehrlich on or about December 16, 1930.

John Burgess, Chief Corporation Accountant, W. E. Co., Inc.

Subscribed and sworn to before me this 16th day of June, 1932. George F. Knapp, Notary Public, New York County # 159. New York County Register's #3K72. Commission expires March 30th, 1933.

[fol. 3431]

Exhibit A-263

Illinois Bell Telephone Company, Chicago Area

Method Used in Computing Annual Rate of Depreciation for Station Apparatus

Average overall life determined from turnover studies	18 Years
Average service life " " " "	4.5 Years
Average number of service lives (18 ÷ 4.5)	4
Average salvage obtained from reused apparatus	92%
Average salvage obtained from junked apparatus	5%

Determination of Average Salvage per Service Life

Salvage at end of First Service Life of 4.5 Years	92%
" " " " Second " " " " "	92
" " " " Third " " " " "	92
" " " " Fourth " " " " "	5
Total salvage during 18 year overall life	281%
Average salvage per service life (281 ÷ 4)	70%

Computation of Annual Rate of Depreciation

Average service life (life on one place)	4.5 Years
Average salvage per service life	70%
Average loss per service life	30%
Annual rate of depreciation (30% ÷ 4.5 years)	6.7%

Investment Loss

Loss at end of each first three service lives	8%
Loss at end of overall life	95%

[fol. 3432] Example of Depreciation Accounting for Station Apparatus

(Assumed Cost of Station $10.00)

	Depreciation Reserve Entries			
	Credits	Debits	Net Credits	Balance
First Service Life				
Depreciation Accruals (6.7% of $10.00 for 4.5 Yrs.)	$3.00			
Charge to Reserve upon removal of apparatus		$10.00		
Salvage credit to Reserve upon reuse (92%)	9.20			
	$12.20	$10.00	$2.20	$2.20
Second Service Life				
Depreciation Accruals	$3.00			
Charge to Reserve		$10.00		
Salvage credit to Reserve	9.20			
	$12.20	$10.00	$2.20	$4.40
Third Service Life				
Depreciaion Accruals	$3.00			
Charge to Reserve		$10.00		
Salvage credits to Reserve	9.20			
	$12.20	$10.00	$2.20	$6.60
Fourth Service Life				
Depreciation Accruals	$3.00			
Charge to Reserve		$10.00		
Salvage credit to Reserve (junk at 5%)	.50			
	$3.50	$10.00	$6.50	$.10

[fol. 3433]

Exhibit A-264

Illinois Bell Telephone Company, Chicago Area

Central Office Telephone Equipment

Actual Net Salvage from Retired Offices and Estimated Net Salvage for Surviving Offices Compared With 1919 Average Net Salvage Estimate

Offices in Service Jan. 1, 1919	Est. Average Net Salvage of Offices in Service 1-1-1919 (Used in 1919 Depr. Rates)	Jan. 1, 1919 Offices Retired to Jan. 1, 1932		Offices Surviving Jan. 1, 1932 which were Included in 1919 Est. Av. Net Salvage of 20%	
		Year of Retirement	Net Salvage % Realized	Est. Year of Retirement	Estimated Net Salv. %
Austin				1937	
Belmont				1938	
Beverly				1940	
Calumet				1933	
Canal				1932	
Central		1923	28.4%		
Chesterfield		1930	3.0		

Offices in Service Jan. 1, 1919	Est. Average Net Salvage of Offices in Service 1-1-1919 (Used in 1919 Dept. Rates)	Jan. 1, 1919 Offices Retired to Jan. 1, 1932		Offices Surviving Jan. 1, 1932 which were Included in 1919 Est. Av. Net Salvage of 20%	
		Year of Retirement	Net Salvage % Realized	Est. Year of Retirement	Estimated Net Salv. %
Delaware	......	1931	5.3	....	......
Douglas	......	....	......	1937	......
Edgewater	......	....	......	1940	......
Humboldt	......	....	......	1933	......
Hyde Park	......	....	......	1934	......
Irving	......	....	......	1942	......
Kedzie	......	....	......	1936	......
Kildare	......	....	......	1943	......
Lafayette	......	....	......	1936	......
Lakeview	......	....	......	1935	......
Lawndale	......	....	......	1936	......
Lincoln	......	....	......	1933	......
Main	......	1928	11.7	....	......
Monroe	......	....	......	1932	......
Morrell Park	......	....	......	1940	......
Oakland	......	....	......	1937	......
Prospect	......	....	......	1939	......
Pullman	......	....	......	1939	......
Randolph	......	1928	4.8	....	......
Rogers Park	......	....	......	1935	......
So. Chicago	......	....	......	1938	......
Stewart	......	....	......	1941	......
Tandem	......	1931	1.0	....	......
Toll	......	1929	22.4	....	......
Wabash	......	1929	7.5	....	......
Wentworth	......	....	......	1934	......
West	......	....	......	1932	......
Yards	......	....	......	1934	......
Average Net Salvage	20%	....	13.6%	....	10.4%

(Here follows Exhibit A-265, side folio 3434)

[fol. 3434]

EXHIBIT A-265

Comparison of Depreciation Rates, City of New York and City of Chicago

Individual Class Rates for Each City Applied to Chicago Investment at End of Each Year

Class of Plant	1929					1930					1931				
	Chicago Investment	New York City		Chicago		Chicago Investment	New York City		Chicago		Chicago Investment	New York City		Chicago	
		Rate	Amount	Rate	Amount		Rate	Amount	Rate	Amount		Rate	Amount	Rate	Amount
Buildings	$13,344,977	2.8	$373,659	2.7	$360,314	$14,721,615	2.8	$412,205	2.8	$412,205	$14,699,599	2.7	$396,889	2.7	$396,889
Manual Central Office Tel. Eqpt	37,964,437	7.1	2,695,475	7.4	....	40,104,401	7.1	2,847,412	7.5	....	39,187,914	7.1	2,782,342	7.5	....
	....	....	....	6.7	3,681,665	....	......	....	6.8	3,900,334	....	......	....	6.8	4,085,179
Dial Central Office Tel. Eqpt	16,985,792	6.0	1,019,148	5.3	....	17,253,456	6.0	1,035,207	5.3	....	20,888,252	6.0	1,253,295	5.3	....
Other Eqpt. of Central Offices	1,742,347	7.0	121,964	6.7	116,737	1,653,715	7.0	115,760	7.2	119,067	1,578,308	7.0	110,482	7.2	113,638
Station Apparatus	17,447,768	7.0	1,221,344	6.7	1,169,000	17,037,912	7.0	1,192,654	6.8	1,158,578	16,589,115	7.0	1,161,238	6.8	1,128,060
Private Branch Exchanges	10,417,327	8.3	864,638	7.1	739,630	10,949,197	8.3	908,783	7.3	799,291	10,901,134	8.3	904,794	7.3	795,783
Booths & Special Fittings	766,617	2.7	20,699	4.3	32,965	1,066,527	2.7	28,796	4.0	42,661	1,331,143	2.7	35,941	4.0	53,246
Exchange Pole Lines	3,128,005	8.7	272,136	4.8	150,144	3,201,481	8.7	278,529	4.8	153,671	3,253,549	8.7	283,059	4.8	156,170
Exchange Aerial Cable	5,750,720	5.0	287,536	5.0	287,536	5,969,274	5.0	298,464	5.6	334,279	6,008,043	5.0	300,402	5.6	336,450
Exchange Underground Conduit	16,308,248	2.4	391,398	2.3	375,090	17,303,744	2.4	415,290	2.3	397,986	17,966,330	2.4	431,192	2.3	413,226
Exchange Underground Cable	33,993,241	3.8	1,291,743	3.6	1,223,757	35,862,398	3.8	1,362,771	3.4	1,219,322	36,425,140	3.8	1,384,155	3.5	1,274,880
Exchange Submarine Cable	13,779	7.0	965	5.0	689	13,249	7.0	927	5.0	662	54,544	7.0	3,818	5.0	2,727
Toll Pole Lines	40,891	6.7	2,740	5.3	2,167	43,799	6.7	2,935	5.3	2,321	41,365	6.7	2,771	5.3	2,192
Toll Aerial Cable	23,357	2.5	584	3.8	888	23,753	2.5	594	4.1	974	23,775	2.5	594	4.1	975
Toll Aerial Wire	66,683	7.2	4,801	3.9	2,601	71,063	7.2	5,117	5.0	3,553	36,893	7.2	2,656	5.0	1,845
Toll Underground Conduit	443,332	2.0	8,867	2.0	8,867	517,458	2.0	10,349	2.0	10,349	517,458	2.0	10,349	2.0	10,349
Toll Underground Cable	4,090,846	2.4	98,180	3.4	139,089	4,896,819	2.4	117,524	3.1	151,801	5,018,155	2.4	120,436	3.1	155,563
Toll Submarine Cable	6,846	7.0	479	5.0	342	6,470	7.0	453	5.0	324	6,470	7.0	453	5.0	324
Office Furniture & Fixtures	1,674,512	7.0	117,216	6.1	102,145	1,816,065	7.0	127,125	6.7	121,676	1,880,787	7.0	131,655	6.7	126,013
Total	$164,209,725	5.36	$8,793,572	5.11	$8,393,626	$172,512,398	5.31	$9,160,895	5.12	$8,829,054	$176,407,974	5.28	$9,316,521	5.13	$9,053,509

(Here follows, Exhibit A-266, side folio 3435).

EXHIBIT A-266

A-266

AT THE TOP OF THE HILL

A LONE figure in overalls surveys the fields of his labor. Freshly planted rows point their even lines around a gently rising hill. Seemingly the world and its people are far away. But this man is not alone!

His home is at the top of the distant hill. And in his home is a telephone. Eighty-five million miles of wire lead to it. His call is a command to one or more of several hundred thousand employees. Day or night he may call, through the Bell System, any one of nearly twenty million other telephones in this country and an additional twelve million abroad.

And yet, like you, he pays but a small sum for a service that is frequently priceless in value. The presence of the telephone, ready for instant use, costs only a few cents a day. With your telephone, you are never alone. It is an investment in companionship, convenience, and security. Through it you can project your personality to the faraway places of the earth, or bring familiar voices to the friendliness of your fireside.

Undoubtedly a great factor in the continued progress and improvement of telephone service is the intangible but real spirit of service that has become a tradition in the telephone business. This spirit expresses itself daily and in any emergency. And behind the army engaged in giving service is the pioneering help of a regiment of five thousand scientists and technical men, engaged in the sole task of working for improvement. This group devotes itself exclusively to seeking ways and means of making your telephone service constantly better and better.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

[fol. 3436]

Exhibit A-267

Illinois Bell Telephone Company, Chicago Exchange

Comparison of Depreciation and Amortization of Landed Capital Based on Book Cost and Reproduction Cost New

Year	Account 608—Depreciation of Plant and Equipment			Account 340—Amortization of Landed Capital			Total (Accounts 608 and 340)		
	Based on Book Cost	Based on Reproduction Cost New	Difference	Based on Difference	Based on Reproduction Cost New	Differenee	Based on Book Cost	Based on Reproduction Cost New	Difference
1923	$4,480,954	$5,964,184	$1,483,230	$12,565	$21,230	$8,665	$4,493,519	$5,985,414	$1,491,895
1924	4,709,950	6,743,338	2,033,388	13,767	23,578	9,811	4,723,717	6,766,916	2,043,199
1925	5,385,712	7,231,638	1,845,926	14,770	26,076	11,306	5,400,482	7,257,714	1,857,232
1926	6,203,023	7,762,868	1,559,845	15,726	28,172	12,446	6,218,749	7,791,040	1,572,291
1927	6,839,392	8,226,455	1,387,063	16,565	30,510	13,945	6,855,957	8,256,965	1,401,008
1928	7,641,460	8,716,859	1,075,399	11,881	21,613	9,732	7,653,341	8,738,472	1,085,131
1929	8,120,382	9,000,904	880,522	12,666	22,703	10,037	8,133,048	9,023,607	890,559
1930	8,769,886	9,638,809	868,923	11,883	21,019	9,136	8,781,769	9,659,828	878,059
1931	9,146,268	10,101,534	955,266	12,500	21,887	9,387	9,158,768	10,123,421	964,653

(Here follow Exhibits A-268 and A-269, side folios 3437 and 3438)

[fol. 3437]

Exhibit A-268

Illinois Bell Telephone Company

Comparison of Rates of Return for Chicago Area With all Associated Operating Companies Including Long Lines

	1923	1924	1925	1926	1927	1928
Associated Operating Companies Including Long Lines:						
(a) Average Fixed Capital:						
All Companies—Exhibit X-302	$1,678,800,389	$1,933,324,730	$2,225,576,546	$2,497,494,976	$2,692,004,293	$2,936,520,852
Long Lines—Exhibit X-301	110,714,716	127,264,004	141,222,313	156,209,287	187,995,375	222,655,921
Total—All Companies Including Long Lines	1,789,515,105	2,060,588,734	2,366,798,859	2,653,704,263	2,879,999,668	3,159,176,773
(b) Balance Available for Return:						
All Companies—Exhibit X-302	88,102,052	98,689,312	127,356,155	154,808,887	161,698,045	185,267,326
Long Lines—Exhibit X-301	18,556,460	19,006,222	23,144,230	23,329,752	23,949,211	29,724,686
Total—All Companies Including Long Lines	106,658,512	117,695,534	150,500,385	178,138,639	185,647,256	214,992,012
(c) Per Cent of Return—(b) ÷ (a)	5.960%	5.712%	6.359%	6.713%	6.446%	6.805%
Illinois Bell Telephone Company—Chicago Area:						
(a) Average Fixed Capital—Exhibit X-328	$92,811,249	$105,513,839	$118,740,547	$133,704,654	$148,212,139	$162,449,631
(b) Balance Available for Return (under present rates)—Exhibit X-328	5,920,818	6,902,264	7,429,687	7,803,441	7,904,217	8,728,893
(c) Per Cent of Return (under present rates)—(b) ÷ (a)	#6.379%	6.542%	6.257%	5.836%	5.333%	5.373%
(d) Estimated Reduction under Rates in Suit—Exhibit A-49	1,557,240	1,566,820	1,600,486	1,668,254	1,695,730	1,734,110
(e) Balance Available for Return (under rates in suit)—(b) − (d)	4,363,578	5,335,444	5,829,201	6,135,187	6,208,487	6,994,783
(f) Per Cent of Return (under rates in suit)—(e) ÷ (a)	#4.702%	5.057%	4.909%	4.589%	4.189%	4.306%
(g) Per Cent "Estimated reduction under rates in suit" of "Balance Available for Return (under present rates)"—(d) ÷ (b)	26.30%	22.70%	21.54%	21.38%	21.45%	19.87%

* Year 1931 not shown on X-301. Amounts were computed from Company's records on the same basis used in X-301.

# These items represent the return on the entire business of the Chicago Exchange which is comparable to the return shown for Associated Oper panies including Long Lines. For return on total intrastate business of the Chicago Exchange see next sheet.

Note.—Average Fixed Capital represents the average book cost of Plant in Service and General Equipment and does not include Construction Work or Materials and Supplies.

[fol. 3438]

Exhibit A-269

Illinois Bell Telephone Company, Chicago Area

Total Intrastate Rate of Return

	1923	1924	1925	1926	1927	1928
(A) Average Fixed Capital—X-328	$88,663,316	$100,540,215	$112,486,829	$126,061,831	$139,205,005	$151,459,710
(B) Balance Available for Return (under present rates)—X-328	5,347,533	6,230,178	6,650,718	6,887,012	6,877,089	7,601,567
(C) Per Cent of Return (under present rates)—(B) ÷ (A)	6.031%	6.197%	5.912%	5.463%	4.940%	5.019%
(D) Estimated Reduction under Rates in Suit—Exhibit A49	1,541,668	1,550,995	1,582,561	1,650,570	1,677,077	1,713,301
(E) Balance Available for Return (under rates in suit) (B) − (D)	3,805,865	4,679,183	5,068,157	5,236,442	5,200,012	5,888,266
(F) Per Cent of Return (under rates in suit)—(E) ÷ (A)	4.292%	4.654%	4.506%	4.154%	3.736%	3.888%
(G) Per Cent "Estimated Reduction Under Rates in Suit" of "Balance Available for Return (under present rates)" (D) ÷ (B)	28.83%	24.89%	23.80%	23.97%	24.39%	22.54%

Note.—Average Fixed Capital represents the average book cost of Plant in Service and General Equipment and does not include Construction Work or Materials and Supplies.

Exhibit A-268

Illinois Bell Telephone Company

Comparison of Rates of Return for Chicago Area With all Associated Operating Companies Including Long Lines

	1923	1924	1925	1926	1927	1928	1929	1930	1931
	$1,678,800,389	$1,933,324,730	$2,225,576,546	$2,497,494,976	$2,692,004,293	$2,936,520,852	$3,191,558,333	$3,484,060,236	$3,696,091,208
	110,714,716	127,264,004	141,222,313	156,209,287	187,995,375	222,655,921	277,026,858	362,501,503	406,023,768*
	1,789,515,105	2,060,588,734	2,366,798,859	2,653,704,263	2,879,999,668	3,159,176,773	3,468,585,191	3,846,561,739	4,102,114,976
	88,102,052	98,689,312	127,356,155	154,808,887	161,698,045	185,267,326	202,796,612	199,709,520	202,045,817
	18,556,460	19,006,222	23,144,230	23,329,752	23,949,211	29,724,686	34,626,494	29,202,361	26,501,240*
	106,658,512	117,695,534	150,500,385	178,138,639	185,647,256	214,992,012	237,423,106	228,911,881	228,547,057
	5.960%	5.712%	6.359%	6.713%	6.446%	6.805%	6.845%	5.951%	5.571%
	$92,811,249	$105,513,839	$118,740,547	$133,704,654	$148,212,139	$162,449,631	$176,024,193	$186,971,863	$193,354,389
—Exhibit X-328	5,920,818	6,902,264	7,429,687	7,803,441	7,904,217	8,728,893	11,091,055	11,044,656	10,268,587
a)	*6.379%	6.542%	6.257%	5.836%	5.333%	5.373%	6.301%	5.907%	5.311%
A-49	1,557,240	1,566,820	1,600,486	1,668,254	1,695,730	1,734,110	1,762,436	1,666,374	1,450,864
—(b) – (d)	4,363,578	5,335,444	5,829,201	6,135,187	6,208,487	6,994,783	9,328,619	9,378,282	8,817,723
)	*4.702%	5.057%	4.909%	4.589%	4.189%	4.306%	5.300%	5.016%	4.560%
of "Balance Avail-).	26.30%	22.70%	21.54%	21.38%	21.45%	19.87%	15.89%	15.09%	14.13%

t shown on X-301. Amounts were computed from Company's records on the same basis used in X-301.
represent the return on the entire business of the Chicago Exchange which is comparable to the return shown for Associated Operating Com-
ng Lines. For return on total intrastate business of the Chicago Exchange see next sheet.
ge Fixed Capital represents the average book cost of Plant in Service and General Equipment and does not include Construction Work in Progress
pplies.

Exhibit A-269

Illinois Bell Telephone Company, Chicago Area

Total Intrastate Rate of Return

	1923	1924	1925	1926	1927	1928	1929	1930	1931
	$88,663,316	$100,540,215	$112,486,829	$126,061,831	$139,205,005	$151,459,710	$162,493,935	$170,958,739	$175,710,631
328	5,347,533	6,230,178	6,650,718	6,887,012	6,877,089	7,601,567	9,490,091	9,152,490	8,494,616
	6.031%	6.197%	5.912%	5.463%	4.940%	5.019%	5.840%	5.354%	4.834%
	1,541,668	1,550,995	1,582,561	1,650,570	1,677,077	1,713,301	1,740,582	1,645,878	1,433,744
(D)	3,805,865	4,679,183	5,068,157	5,236,442	5,200,012	5,888,266	7,749,509	7,506,612	7,060,872
	4.292%	4.654%	4.506%	4.154%	3.736%	3.888%	4.769%	4.391%	4.018%
"Balance Available	28.83%	24.89%	23.80%	23.97%	24.39%	22.54%	18.34%	17.98%	16.88%

Fixed Capital represents the average book cost of Plant in Service and General Equipment and does not include Construction Work in Progress
plies.

[fol. 3439] EXHIBIT A-269-A

Trust Agreement

Pension Fund

Illinois Bell Telephone Company and Bankers Trust Company, Trustee

Dated December 31, 1927

[fol. 3440] This agreement, dated as of the thirty-first day of December, 1927, by and between Illinois Bell Telephone Company, a corporation organized under the laws of the State of Illinois (hereinafter called the "Company"), party of the first part, and Bankers Trust Company, a corporation organized under the laws of the State of New York and having its principal place of business in the City of New York, in said State (hereinafter called the "Trustee"), party of the second part, witnesseth:

Whereas, the American Telephone and Telegraph Company (hereinafter called the "American Company"), entered into an agreement, dated as of December 31, 1927, with the Trustee, providing for the establishment of a trust fund as a Pension Fund, a copy of which agreement is attached hereto and marked "A"; and

Whereas, Section 18 of said agreement is as follows:

"18. Any Associated Company of the Bell System, so-called, or any subsidiary or affiliated or connecting company, which has established a plan providing for the payment of service pensions to its employees, may, upon the execution and delivery to the Trustee of an instrument, substantially in the form hereto attached and marked "A", and upon the approval in writing of the Company, make payments to the Trustee for the purpose of establishing a trust fund to meet its service pension obligations under such plan, and thereupon such trust fund shall be held by the Trustee for said purpose, and subject to the same provisions and conditions as are herein set forth with respect to the Pension Fund. Wherever in this instrument, except in the first and last sentences of this paragraph, the name of the American Telephone and Telegraph Company or the designation "the Company" appears, the name of such other company shall be construed as substituted with respect to the trust fund established by it. Separate accounts and records shall be kept by the Trustee for each [fol. 3441] such trust fund; and payments directed by any such corporation shall be made only from the trust fund established by it. Unless specific instructions are given to the Trustee in writing by any such company as to the manner of investing and reinvesting its trust fund, investment thereof shall be made in the manner provided in this instrument for the investment of the Pension Fund of the American Telephone and Telegraph Company, and all or any part of the trust fund of any such company may be invested in the bonds or notes, whether secured or unsecured, of the company, of the American Telephone and Telegraph Company or of any other Associated or subsidiary company of the Bell System;"

and

Whereas, the Company is an Associated Company of the Bell System, or a subsidiary or affiliated or connecting company, and has established a plan providing for the payment of service pensions to its employees, entitled "Plan for Employees' Pensions, Disability Benefits and Death Benefits", which became effective January 1, 1913, a copy of which, including all modifications thereof, is attached hereto (which Plan, together with all modifications heretofore or hereafter made and all substitutions therefor, is hereinafter designated as "the Plan"); and

Whereas, the Company, with the approval of said American Telephone and Telegraph Company, which approval is indorsed hereon, for the purpose of establishing a trust fund as a Pension Fund to meet its service pension obligations under the Plan, has paid to the Trustee the sum of Seven Hundred Thirty-eight Thousand Five Hundred Fourteen and 95/100 Dollars ($738,514.95), the receipt of which is hereby acknowledged, and may hereafter from time to time make further payments to the Trustee for said purpose (said payment and all additions thereto and accumulations thereon being hereinafter referred to as the "Pension Fund");

Now, therefore, in consideration of the premises, it is agreed between the parties hereto that the Pension Fund shall be held, managed and disposed of by the Trustee sub-

[fol. 3442] ject to the terms and conditions of said contract between the American Company and the Trustee, and subject particularly to the provisions of said Section 18; and that the provisions of said contract shall in all respects be applicable to the Pension Fund, except that the name of this Company shall be substituted with respect to the Pension Fund for the name or designation of the American Company wherever, other than in the first and last sentences of said Section 18, the name or designation of the American Company appears in said contract.

In witness whereof, the parties hereto have caused their respective corporate names to be hereunto subscribed by their respective Presidents or Vice Presidents, and their respective corporate seals to be hereunto affixed, duly attested by their respective Secretaries or Assistant Secretaries, the 30th day of December, 1927.

Illinois Bell Telephone Company, by W. R. Abbott, President. Attest: E. G. Drew, Secretary. Bank-[fol. 3443] ers Trust Company, by H. F. Wilson, Jr., Vice-President. Attest: C. W. Campbell, Assistant Secretary.

Approved.

American Telephone and Telegraph Company, by Walter S. Gifford, President.

Attest: A. A. Marsters, Secretary.

[fol. 3444]

EXHIBIT A-271

Earnings of the Western Electric Company on Bell Business Expressed in Percentages of Sales and in Percentage of (a) Average Investment and (b) Average Investment Less Amount of Depreciation Reserve Account Compared with 88 Manufacturing Companies, 1925 to 1930 Inclusive.

(Dollars in Thousands)

	a	b	c	d	e	f	g
	Sales	Earnings	Per Cent Earnings to Sales (b ÷ a)	Average Investment	Per Cent Earnings to Average Investment (b ÷ d)	Average Investment Less Amount of Deprec. Reserve Account	Per Cent Earnings to Average Investment Less Amount of Deprec. Reserve Accoutn (b ÷ f)
Western Electric Company Bell Business........	$1,693,987	$92,012	5.4	$1,127,152	8.2	$843,860	10.91
88 Manufacturing Companies....	....	4,886,694	..	40,128,000	12.2	33,706,000	14.52

[fols. 3445 & 3446] EXTRACTS FROM EXHIBIT DEPOSITION
EXHIBIT NO. 1

Article testified to by Dr. Jewett from Bell System Technical Journal, January, 1930

Telephone Communication System of the United States*

By Bancroft Gherardi and F. B. Jewett

* Presented by Dr. F. B. Jewett before the World Engineering Congress, Tokio, Japan, October, 1929.

This paper presents the results which have been obtained up to the present time in developing telephone communication in the United States of America, this development having been worked out in a form to meet the particular conditions which present themselves in that country. The paper first deals with a brief description of the general structure and organization of the telephone communication system giving the organization of the Bell System which handles the greater part of the telephone service of the country and the reasons for and advantages of this organization. In this connection some figures are presented with respect to the technical personnel who are continuously engaged in studies to develop the art and to provide new methods and facilities for improving the service.

Local service, that is the service within the limits of a single telephone exchange area, is next discussed. Figures are given with respect to the volumes of telephone calls handled in the Bell System, the speed with which the connections for these calls are completed and the operating force required. Reference is also made to the standards of transmission given and the various problems encountered in meeting these standards. Figures are given with respect to station growth, to the increased efficiency of station apparatus and to the improvement in types of instruments. Various types of private branch exchanges provided to meet the needs of customers using a large amount of telephone service are discussed. The cable plant is considered mainly from the construction standpoint and typical illustrations are given of some of the construction practices.

[*Words and figures enclosed in brackets erased in copy.]

The various types of central office switching systems in common use are described, including magneto, common battery and dial systems, the latter including both the step-by-step and panel systems which are being provided in increasing amounts in the Bell System. The subject of buildings to house these various equipments as well as the op-
[fol. 3447] erating forces and headquarters staffs in many cases is briefly discussed, also standardized layouts and floor plans. The problem of giving telephone service in the rural communities, which is a very important one in the telephone development in the United States, is also briefly treated.

The toll service is considered, first with respect to the shorter haul toll business and the problems involved and then with respect to the long distance toll service. Figures are given showing the speed of service and the amount of traffic handled. For the short distance toll service, two important methods of handling the business are described, namely, manual straightforward tandem and dial tandem.

The long distance service, which has developed most rapidly in recent years, is described in some detail in the paper. Among the important features of this service is noted the recently developed method of completing toll calls with sufficient speed so that on most of the calls the calling subscriber remains at the telephone. The various types of toll circuits are described including open wire circuits operated both at voice frequencies and by carrier systems and long toll cable circuits. The operation of these long circuits requires a large number of repeaters in tandem and the design and maintenance problems which this arrangement requires are pointed out in the paper.

Information is given with respect to international telephone connections in North America, between North America and Europe and other international connections. In covering this subject some of the important items relating to the operation of the transatlantic radio channels are given and reference made to the projected transatlantic telephone cable.

Various forms of special services closely allied with the message telephone service are described. These include telegraph service, telephone circuits provided for private use, foreign exchange service, telephone networks for program transmission to radio broadcasting stations, electrical transmission of pictures, telephony in connection with aircraft operation, ship to shore telephony, telephony to mobile stations such as railroad trains, telephone services of railroads and other public utilities, telephone public address systems and television. Reference is also made to some of the by-products of the telephone development work which include improvements in submarine cable telegraphy brought about by the discovery of the alloys known as "permalloy and perminvar," the development work in the reproduction of sound and in the talking motion pictures.

In concluding, the paper points out that careful studies of the future development of the telephone industry indicate a somewhat accelerated rate of development of the services required to meet the demands of the customers and [fol. 3448] a continuing very rapid technical development of telephone plant and systems to provide the necessary facilities.

In treating such a large subject in a paper of this kind it has been necessary to deal with technical problems in rather general terms and as an attachment to the paper references are made to numerous articles in the technical press for the more technical information.

General

The purpose of this paper is to give a general description of the telephone communication system of the United States of America, outlining briefly some of the more important engineering problems involved and indicating the service results obtained. At the beginning of this paper it seems important to give a brief description of the general structure and organization of the telephone communication system.

The commercial telephone system of the United States is entirely owned and operated by corporations, partnerships, and individuals. A group of 24 closely associated Bell Telephone Operating Companies owns and operates 14.8 million telephones and the telephone lines used for toll service within their territories. In addition there are in the country about 4.7 million telephones owned by several thousand independent telephone companies which have operating agreements with the Bell Companies providing for the interconnection of lines, thus permitting the operation of 19.5 million telephones as a single system. There are in addition about 140,000 telephones in the country not connected with the Bell System.

The 24 Bell Operating Companies cover the entire area of the United States and are responsible for all Bell Tele- [fol. 3449] phone operations within their respective areas. A number of the larger companies are subdivided into autonomous operating units, there being at the present time a total of 34 such units in the country. In many cases the area within corporate limits or within the limits of an operating unit is identical with that of a major political subdivision of the United States (a State) and this simplifies the application of governmental regulation. A typical organization of a Bell Operating Company is indicated in Fig. 1.

[fol. 3450] In order to facilitate the best possible handling of the long distance service between points in different operating companies and to avoid the problems which would arise from divided responsibility, the long distance business involving territories of two or more Associated Companies is handled throughout the country by the Long Lines Department of the American Telephone and Telegraph Company. These operations are, of course, in the closest cooperation with the operations of the Associated Companies without duplication of construction or of operating effort.

An important feature of the Bell Telephone System is the general departments maintained by the American Telephone and Telegraph Company, including the Bell Telephone Laboratories. These departments, constituting about 7,500 engineers, scientists, business experts and assistants, are continuously engaged in studies to develop the art and to provide methods and facilities for improving the service. They also provide consulting advice to the operating companies on all phases of the telephone business and render to them a large variety of services. One of these services is making available to all the companies rights under all patents necessary for the fullest and most economical development of the business. It is the intention, in general, that work which can best be done once for all the entire telephone system rather than individually by the several operating companies shall be done by these general departments and that the specific solution of the telephone problems in each area shall be the responsibility of the operating company involved, who, however, are free

- Board of Directors . . . President
  - Accounting . . . . . General Auditor
  - Financial . . . . Treasurer
  - Operation . . . . Vice President
    - Chief Engineer . . . .
      - Building and Equipment Engineer
      - Plant Extension Engineer
      - Outside Plant Engineer
      - Transmission Engineer
      - Costs and Inventory Engineer
    - General Commercial Manager . .
    - General Traffic Manager . . . . . .
    - General Plant Manager
      - General Supervisor of Methods and Results
      - General Employment Supervisor
      - General Supervisors—Other Functions
      - Staff Engineers
      - Division Superintendents
  - Personnel . . Assistant to President
  - Legal . . . . General Counsel
  - Secretary

Fig. 1—Organization of typical Bell Telephone Operating Company.

at all times to get the advice and assistance of the general staff. In all of the work of the general staff close contact [fol. 3451] is maintained with the various operating telephone companies of the Bell System. The experiences of these companies are studied and analyzed to make available for all the companies the valuable results to be derived in this way, and the advantages to be obtained by comparing the experiences of different companies under similar conditions.

The organization of the American Telephone and Telegraph Company and the Bell Telephone Laboratories is indicated in Fig. 2.

Another very important feature of the Bell System is the very close relation between operating and manufacturing branches of the work through the ownership by the American Telephone and Telegraph Company of the Western Electric Company, Inc., and arrangements between that company and the operating companies for the supply of telephone apparatus and materials. This permits the manufacture of apparatus and the purchase of materials from outside suppliers to be done on the basis of the large quantities required for the entire Bell System resulting in great economies.

The organization of the Bell Telephone System is such as to result in close cooperation between the companies dealing with different branches of telephone work. This brings about the conditions necessary for universal service, for the development of the art along orderly and non-conflicting lines, and for the standardization of all apparatus, communication systems and operating methods to the extent that such standardization is helpful.

New types of telephone plant, operating methods, methods of maintenance and business methods are standardized [fol. 3452] by the general departments of the American Telephone and Telegraph Company, and are adopted and placed in use by all of the Associated Operating Companies to the extent that they apply to their local conditions. Special arrangements are, of course, made available to meet special requirements. The specification for all standardized apparatus and materials are prepared by the Bell [fol. 3453] Telephone Laboratories, and the Western Electric Company is enabled to concentrate on the task of purchasing and manufacturing standardized supplies, ma-

- Board of Directors
  - President
    - Personnel .... Vice President
      - Assistant Vice President
        - Benefit and Medical Work
      - Assistant Vice President
        - Employee Relations
      - Assistant Vice President
        - Special Employm't and Training
    - Operation and Engineering .... Vice President and Chief Engineer
      - Commercial Engineer
      - Assistant Vice President
        - Plant Operation Engineer
        - General Operating Results
        - Traffic Engineer
      - Plant Engineer
    - Legal .... Vice President and General Counsel
      - Attorney
      - Tax Attorney
      - Patent Attorney
      - General Solicitor
    - Development and Research
      - Vice President
      - Assistant Vice President
        - Transmission Development Engineer
        - Outside Plant Development Engineer
        - Research Engineer
        - Equipment Development Engineer
        - Electrical Interference Engineer
        - Technical Representative in Europe
      - Bell Telephone Laboratories
        - Chairman of Board
        - President
        - Vice President
          - Director of Research
          - Director of Apparatus Development
          - Director of Systems Development
          - General Patent Attorney
          - Director of Publication
          - Personnel Director
    - Accounts, Finance and Business .... Vice President
      - Comptroller
      - Treasurer
      - Assistant Vice President
        - General Policies and Contracts
      - Assistant Vice President
        - General Service Bureau
    - Information .... Vice President
      - Advertising Manager
      - Assistant Vice President
        - Publicity
    - Secretary

Fig. 2—Organization of the general departments of the American Telephone and Telegraph Company, including Bell Telephone Laboratories.

terials and apparatus in accordance with these standard specifications. Standardization also has great operating advantages in minimizing stocks of materials and providing interchangeability both of materials and working forces and is very important in making possible the operation of the entire interconnected network as a single system with uniform grades of service.

As has been stated by Mr. Gifford, President of the American Telephone and Telegraph Company, "The ideal and aim today of the American Telephone and Telegraph Company and its Associated Companies is a telephone service for the nation, free, so far as humanly possible, from imperfections, errors, or delays, and enabling at all times any one anywhere to pick up a telephone and talk to any one else anywhere else, clearly, quickly and at a reasonable cost." With this aim in view, continuous effort is made further to improve and to extend the service within the nation and also the telephonic connections to other nations. It is recognized also that changes in business and social conditions bring about repeated changes in the services desired by the people of the nation and in the character and appearance of facilities furnished to them. These facts, in addition to the onward march of the application of science, form an important basis for the continued study by the general staff of the development of all phases of the telephone system.

A few figures relative to the size and growth of the Bell System are helpful in an understanding of the more specific telephone problems which are discussed below. Such figures are included in the statistical summary appended to [fol. 3454] this paper and include data regarding telephone messages, numbers of telephones, miles of wire and amount of telephone plant.

In accordance with the general organization of the Bell System, the engineering problems involved in the design, construction and maintenance of the plant of each operating telephone company are the responsibility of the engineering department of that company. General studies of methods of improvement of service and the development of new apparatus and systems of communication, together with consulting engineering advice, are provided by the general departments.

For the provision of new plant to meet additional demands for service, in the case of the more important items, often one year, and sometimes more, is required between the completion of detailed engineering plans and completion of construction. Furthermore, to obtain maximum economy it is necessary that much of the new construction provide for expected increases in demands for service for a number of years to come. This applies particularly to telephone buildings and to runs of underground conduit and to a lesser extent to cables, pole lines and many other very important parts of the telephone plant. The engineering of the additions to the Bell Telephone System, now aggregating over 500 million dollars a year is, therefore, necessarily based on careful forecasts of the amount and type of business to be expected for a number of years in the future and good engineering judgment must be applied in determining the types, quantities and design of plant. These must take into account not only the expected amount of service required but also expected future changes in the character and standards of service demanded and in the apparatus and materials expected to become available. In [fol. 3455] view of the capital expended in extensions and the large amount of plant already in service, the engineering work involved is considerable. There are now approximately 10,000 engineers engaged in the work of the Bell System of which approximately 6,300 are in the operating companies, 2,200 in the headquarters departments and 1,500 in the Western Electric Company. These figures apply to men doing work of engineering grade, and inclusion of assistants of all kinds, stenographical, clerical, laboratory, etc., would more than double these figures.

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Toll Service

Service between telephones which are not in the same local exchange area is called "Toll Service." With the exception of less than one per cent of the telephones which are not connected to the Bell System, toll service is offered in the United States between any two telephones in the country and to a very large extent the toll plant is adequate to provide good service between any two of these telephones.

An outstanding feature of the last few years has been the rapid growth of the toll service. This is indicated in the appended ~~statistical~~ summary which shows that during the last five years the completed toll messages have increased by 67 per cent. During this same period the number of telephones in service have increased by about 28 per cent. These figures show that in spite of the continued increase in the number of telephones in service, the number of toll messages per telephone have increased by about 30 per cent for this period.

One important cause of the rapid increase in toll usage has been the material improvements in toll service.

Figure 26 shows the increase in the speed of toll service since 1920 expressed in terms of the average time required from the placing of a call to the response of the called party, or until the operator gives a ~~definite report~~ regarding the call. The service is sufficiently fast so that on 95 per cent of the calls, the subscriber stays at the telephone. This makes possible still more rapid service and simplified operation.

[fol. 3456] There have also been very great improvements during this period in the clearness of speech transmission. The maximum permissible transmission loss between two subscribers on a toll connection has been materially reduced. The toll plant and subscriber plant are now so designed that most of the messages are handled with a maximum transmission equivalent for the longest subscriber lines of 20 to 25 decibels overall referred to the standard transmission reference system.

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During the past three years an important change has been generally applied in the methods of handling long distance service. Formerly the toll operator first receiving the call recorded the necessary information on a ticket and forwarded this ticket to another operator provided with facilities for completing calls to the particular part of the country involved in each case. An increase in speed has been brought about by providing the operators with arrangements both for recording calls and for completing calls to all points so as to avoid, in a large proportion of the cases, the necessity for transmitting the information to a second operator.

By means of this change in method and other improvements, the average speed of service for all long distance messages has been decreased from 6.9 minutes in 1925 to 2.6 minutes in 1928. Also in 1928, 90.7 per cent of the calls made by the customers resulted in completed messages.

In placing a long distance call, the telephone subscriber in the United States may give simply the telephone number and city desired. This has some advantages in speed of service. At present, 50 per cent of the long distance messages are handled in this way and this per cent is increas- [fol. 3457] ing. About 15 per cent of the messages are handled in this same way, the called telephone number, however, being supplied by the operator. In addition, the telephone system offers, for a somewhat greater charge, what is called a "particular person" service. This means that the subscriber may, if he wishes, ask to talk with a specified person at a distant point, giving such information as he can regarding how that person may be located. The telephone operator then undertakes to complete this message by locating the desired party, following him up to points other than that designated, if necessary, and if the calling subscriber wishes. The percentage of messages handled on this basis increases with the length of haul.

When a subscriber wishes he may transmit to the telephone company in advance information regarding a number of calls which he wishes to have completed in sequence, beginning immediately or at a specified time. These sequence calls, as they are termed, are used particularly in connection with selling by long distance telephone. At the present time at the New York long distance office, for example, about five per cent of the business is in the form of sequence calls, some of the sequence lists including as many as 1,000 calls.

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A striking feature of the long distance service is the more rapid growth of very long haul business than business of moderate length. Figures 32, 33 and 34, for example, show respectively the growth in messages for the last five years between New York and Boston, 370 kilometers, New York and Chicago, 1,380 kilometers, and the transcontinental business between New York and Chicago at one end and Los Angeles and San Francisco at the other end, an average of 4,700 kilometers. It will be noted that while the toll business as a whole has increased as noted above, 67 per cent in this period, the New York-Boston business has increased 62 per cent, the New York-Chicago business 194 per cent and the transcontinental busi- [fol. 3458] ness 430 per cent.

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To handle the toll business of the United States has required completing a network of toll telephone lines completely covering the country. This network is shown in a general way in Fig. 35. It consists at the present time of about 14 million kilometers of wire on about 300,000 kilometers of toll route. The toll circuits are partly open wire, supported on insulators and are partly in cable. Both the open wire and cable circuits are, in general, phantomed, giving three independent circuits for each two pairs of wires, and in addition on the open wire is superposed a considerable amount of carrier-current telephone circuits.

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The number of circuits which it is practicable to provide by means of open wire lines has during the past decade been very greatly increased by the extensive use of carrier telephone for superposing on the telephone circuits additional channels of communication carried by currents above the voice range of frequencies. These systems now form a network covering the entire country and in some areas a large proportion of the circuit growth on open wire lines is taken care of by carrier systems. The systems range in length from a minimum of 75 kilometers to a maximum of 3,800 kilometers.

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The long haul carrier systems give very satisfactory service and form a part of some of the longest circuits in the country. For example, the direct circuits between New York and Los Angeles, California, 5,100 kilometers in [fol. 3459] length, are made up of cable circuits from New York to Pittsburgh connected permanently to a Pittsburgh-St. Louis carrier system, and a St. Louis-Los Angeles carrier system. These two carrier systems connected together total 4,550 kilometers in length with 13 intermediate repeaters. Similarly the New York-San Francisco circuits are in cable from New York to Chicago and there permanently connected to the Chicago-Sacramento carrier system 3,800 kilometers long with 10 intermediate repeaters.

The short haul carrier system is similar in its general characteristics but is simplified and provides a single carrier circuit for each pair of wires. In the case of both systems, single side-band carrier suppression circuits are used.

In Fig. 37 showing the standard arrangement of open wires on pole lines are indicated the carrier telephone channels and also the carrier telegraph channels which can be superposed on these circuits without mutual interference, after the installation of suitable transpositions which have been designed to neutralize the mutual induction between the circuits. It is noted that with this arrangement it is possible to obtain from 40 wires 54 telephone circuits. Also 80 telegraph circuits are obtained, used for special contract service as described later in this paper.

On a number of the open wire toll routes carrying very long circuits, it has become important to provide arrangements for using a larger number of long haul carrier telephone systems, thus obtaining a larger number of circuits. Whereas a number of arrangements using the standard spacing of wires have been tried out, it is found extremely difficult to continue the use of phantoms and to so transpose the wires as to provide adequate freedom of interference between the higher frequency carrier channels if these are used on all pairs. The difficulty of doing this is evident in considering that in order to avoid overhearing [fol. 3460] it is necessary that the power transfer between different circuits should not exceed one part in a million even though they are parallel to each other for long distances.

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Long circuits in toll cables have some extremely interesting electrical characteristics. Figure 44 shows the net transmission characteristic over a range of frequencies of [fol. 3461] a New York-Chicago toll cable circuit 1,380 kilometers in length. It will be seen that the voice frequencies are transmitted with nearly the same net efficiency over a sufficiently wide band to give a high grade of telephone transmission. The net characteristic indicated, however, is obtained by almost wholly neutralizing with telephone repeaters the very large transmission loss in the circuit. The New York-Chicago circuit, for example, would have an attenuation loss at 1,000 cycles of about 470 db., which means that without amplification the ratio of output power at one end to input power at the other end of the circuit would be 10^{-47}. The combined gain of the 19 telephone repeaters in the circuit is about 461 db., giving about 9 db. net equivalent. Under these conditions, it is evident that a careful regulation of the circuit is essential. For example, variations in the temperature of a circuit in the course of a day could make as much as 30 db. or 1,000 fold difference in the electric power received at the end of the circuit. To prevent such variations affecting the net equivalent the long circuits are all provided with automatic regulators which adjust the gains of the telephone repeaters to compensate for the effect of temperature variations on the equivalent of the circuit.

The effects of transmission delay are also very interesting and important. Voice waves travel considerably more slowly over cable circuits than they do over open wire circuits. For example, the velocity is about 30,000 kilometers per second for "long distance" type cable circuits as compared to nearly 300,000 kilometers per second for non-loaded open wire circuits.

One important result of delaying the speech waves is the "echo" effect. The transmitted currents are in part reflected at the distant terminal due to variations in the impedance of the receiving circuit. If the reflected currents transmitted back to the other end are delayed enough they may be heard by the talker as echoes of his voice. They [fol. 3462] may be again reflected at the sending end of the circuit and returned to the listener as an echo following the directly transmitted speech. The effects of these echoes are largely eliminatd by devices known as "echo suppressors" by means of which the transmission of voice waves in one direction over the circuit causes interruption of the path over which the echo currents are transmitted in the opposite direction. However, the effectiveness of echo suppressors is limited by the necessity that they shall not be operated by noise currents of extraneous origin as this would interrupt conversations. The echoes, therefore, are an important factor to be taken into account in determining the type of toll cable circuit to be provided to meet the transmission limitations imposed on the long distance circuits.

In cable circuits introducing considerable transmission delay, the fact that the delay is not exactly the same for waves of different frequencies is also important, tending to give rise to what have been sometimes referred to as "transient" effects. In loaded cable circuits the waves of higher frequency are delayed more than those of lower frequency because of the fact that the loading is applied in lumps. The coils and condensers in the repeaters and auxiliary apparatus, on the other hand, tend to delay the waves of lower frequency. The result is that the waves of intermediate frequency arrive first, followed by the waves of higher and lower frequency. Devices known as "phase compensators" can be used to reduce the effects, particularly those caused by the line. To improve the situation at the low end of the frequency scale special attention has been given to the design of the repeaters and auxiliary apparatus.

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Still another effect of the transmission delay is to somewhat slow up and perhaps otherwise interfere with conversations due to the delay which is added to the ordinary [fol. 3463] time elapsing between question and answer. For example, if a cable circuit is 5,000 kilometers long and the voice waves travel 30,000 kilometers per second, the time required for the waves to travel from one end of the circuit to the other is ⅙ second and to make a complete round trip, ⅓ second. This ⅓ second delay is evidently added to the ordinary time which elapses between question and answer. In the United States cable connections somewhat longer than 5,000 kilometers will be used in the future, while for international connections, of course, very much longer distances than this will be involved. In the United States considerable study is, therefore, being given to the effects of transmission delay and to methods of avoiding difficulties on the very long connections including the development of cable circuits of higher speed.

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Telephone communication was established between the United States and Cuba in 1921 by the placing of three telephone cables between Key West and Havana. Each of these cables furnishes one telephone circuit and a maximum of four telegraph circuits. The requirements for the cables were exacting since a length of about 190 kilometers is combined with a depth of water having a maximum of 1,860 meters. Each cable consists of a central conductor magnetically loaded with a wrapping of fine iron wire and insulated with gutta percha compound. A metallic return path for the telephone currents is furnished by heavy copper [fol. 3464] tape wrapped outside of the insulation and, therefore, in contact with the surrounding water. Three of the telegraph circuits in each cable are obtained by using "carrier currents" at frequencies slightly above the voice range. The fourth is obtained by using frequencies below the voice range.

Connections to Europe:

In 1915 the Bell System experiments on radio reached the point where telephone messages were transmitted by radio from the United States and were successfully received by engineers sent for the purpose to Paris and to the Hawaiian Islands. While the Great War delayed technical and commercial development, in 1923 the Bell Companies were able to carry out a successful demonstration of radio-telephone transmission from a group of telephone officials in New York to a group of people interested in communication assembled for the purpose in London. The success of these experiments led to cooperation with the British Post Office and the establishment in 1927 of telephone service between New York and London. This service has now been extended to include the greater part of the telephones of North America and Europe.

As indicated in Fig. 53 there now exist one long-wave and one short-wave telephone circuit between the two continents. A second short wave circuit will be placed in service about June 1 of this year and a third in December. By the end of 1933 it is expected that there will be in service between New York and London a group of six circuits consisting of three short-wave radio circuits, two long-wave radio circuits, and one cable circuit. Our best information indicates that the short-wave circuits will be suitable for service at least 60 per cent of the time, and the long-wave, 90 per cent, and the cable, 100 per cent.

[fol. 3465] Since the beginning of 1929, the average number of messages handled per week has been 275. For this period the average number of messages per day, omitting Saturday and Sunday, has been 44. Eighty-nine messages were handled on Christmas Day, 1928.

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Service over the transatlantic facilities is carried on from 6.30 in the morning to 10.00 at night in New York, corresponding to 11.30 in the morning and 3.00 A. M. London. During the winter months the long waves give nearly continuous service over this period. Under summer conditions considerable difficulty is frequently experienced in maintaining the long waves during the afternoon period in New York, corresponding to the evening period in London. At these times, however, the short waves are usually effective.

The projected transatlantic telephone cable will use new magnetic loading materials and new insulating compounds for submarine cables recently developed by the Bell Telephone Laboratories. It will have at least one intermediate repeater point at Newfoundland. A circuit of this kind, differing radically from radio circuit in its characteristics will add both to the message capacity and to the reliability of the transatlantic service.

[fol. 3466]. Connections to South America:

Figure 53 indicates a short-wave radiotelephone circuit from New York to South America which, it is expected, will be in service early in 1930. The South American transmitting and receiving stations, which will be in the vicinity of Buenos Aires, will be owned and operated by the companies who operate the local telephone service in Buenos Aires and the wire lines extending to other points in South America.

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Telegraph Circuits:

While the Bell System handles practically no commercial telegraph message business, it plays an important part in meeting the communication needs of the United States by furnishing a large mileage of telegraph circuits for the private use of individuals and institutions, and for the use of governmental departments. Over two million kilometers of such circuits are now in use. One-third of this amount [fol. 3467] is used by newspapers and press associations. The greater part of the remainder is used by commercial, financial and other organizations. Between New York and Chicago, a distance of approximately 1,400 kilometers, there are slightly over 300 such circuits now in operation.

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The greater part of such telegraph circuits have in the past been operated by hand-speed Morse telegraph. At the present time, however, nearly a third of the mileage is operated with telegraph printers and this method of operation is rapidly increasing. Two speeds of service employing printers are offered, one operating at 40 words per minute and the other operating at 60 words per minute. At the present time, in view of the use to which this service is put, no demand has arisen for multiplex operation, but this method of operation is possible and will be used if it should become desirable.

The telegraph circuits were originally all obtained as a by-product of the telephone business by compositing or otherwise superposing them on the telephone wires, using direct current for the telegraph circuits. At the present time approximately two thirds are obtained in this way. The remaining third are obtained by "carrier current" methods. The carrier current system of open-wire lines uses frequencies above the voice range and provides ten duplex telegraph circuits on each pair of wires. The carrier current system used on cable circuits employs frequencies within the voice range, the currents being transmitted over an ordinary telephone four-wire cable circuit. This system gives twelve duplex telegraph circuits on each such circuit.

* * * * * * *

Radio broadcasting has resulted in the development of networks of telephone circuits for transmitting programs from studios or other places at which they are picked up to the radio station or system of stations [illegible] which they are broadcast. By such telephone wir[illegible] cere- [fol. 3468] monies of the Presidential [illegible] on March 4, 1929, were simultaneously trans[illegible] radio stations located all over the United Stat[illegible]

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A commercial service for the electrical transmission of pictures between the cities of New York, Chicago and San Francisco was inaugurated in April, 1925. The eight cities now connected to this service and the routes of the lines used in connecting them are shown in Fig. 56. In addition, a portable transmitter is provided which may be moved to any desired point. At present this is located in the City of Washington, D. C.

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The Western Union and Postal Telegraph Companies now have a service in which they will accept telegraph messages for "facsimile" transmission over this picture system between those cities which the system reaches. This service has not yet been offered long enough to show how much it will be used.

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Radiotelephony is being used from shore stations to coastal boats in a number of cases in the United States, but not connected to the commercial telephone system. These include particularly certain boats of the U. S. Coast Guard Service. A careful study, including tests, has been made of telephone service to tugboats operating in New York harbor for the purpose of controlling and thus making more efficient the operation of such craft. So far, it is not clear that this service will be commercially justified.

Telephony to Other Mobile Stations:

Consideration has been given to telephone connections for types of mobile stations other than ships and airplanes. Communication with moving trains can technically be carried out with facilities now available. Active studies are [fol. 3469] under way to determine the practicability of providing such service at a cost which would be attractive commercially and with apparatus which can be limited to a reasonable space on the train.

Telephone Services of Railroads and Other Public Utilities:

The operation of railway systems requires a large amount of communication service. The dispatching of trains was, until recent years, carried out largely by the use of telegraph. This has been rapidly changed until at the present time on over 60 per cent of the total railway mileage the train dispatching is by telephone. The railroads' telephone service to stations in the Bell System is through P.B.X.'s leased to them by the telephone companies. In addition to this, the railroads frequently own private telephone circuits extending along their rights of way which connect to and are switched through these same P.B.X.'s.

Similar arrangements are provided for meeting the special communication needs of electric power companies, oil pipe-line companies and other utilities.

* * * * * * *

Furthermore, by using the public address system with suitable long distance telephone circuits, it is possible to convey the proceedings of such occasions simultaneously to audiences in all parts of the country. The local distribution of such proceedings is, however, now done largely by radio broadcast rather than by use of the public address system.

* * * * * * *

Television:

The possibility of transmitting pictures of a scene over electrical circuits at so high a speed that the effect is given of seeing at a distance has naturally interested telephone people for a considerable while. However, the large amount of detail which is taken in by the human eye and [fol. 3470] the resulting broad band of frequencies required to transmit this detail as well as the necessary complexity of the terminal apparatus has, so far, prevented the development of a practical service of this kind.

In 1927 the Bell engineers demonstrated to a large number of interested people a television circuit which extended from New York to Washington, a distance of about 440 kilometers.

[fol. 3471] EXTRACTS FROM EXHIBIT DEPOSITION

EXHIBIT #4

Agreement Testified to by Witness Jewett, Entered Into on December 30, 1926

This agreement, made this 30th day of December, 1926, between Western Electric Company, Incorporated, a corporation of the State of New York (hereinafter called the Seller), and Electrical Research Products, Inc., a corporation of the State of Delaware (hereinafter called the Buyer):

* * * * * * *

Whereas, it is mutually desired by the parties hereto that the Buyer shall, subject to certain reservations hereinafter set forth, purchase the business of the Seller which is distinct from its Bell System business, Graybar business, International business and Canadian business, as herein defined, and it is also mutually desired that the Buyer shall purchase certain property, effects, assets, rights, licenses and good-will of the Seller and shall in consideration thereof and the payment by the Seller of the sum of One million dollars ($1,000,000) in cash, issue to the Seller all of the shares of stock of the Buyer which it is authorized to issue;

* * * * * * *

Article II

Section 1. Assets to be Sold

The Seller agrees to pay to the Buyer the sum of One million dollars ($1,000,000) in cash and to sell, assign, transfer and deliver to the Buyer, and the Buyer agrees to purchase and accept from the Seller, at the times
[fol. 3472]

and in the manner and for the consideration herein expressed, all of the following property of the Seller:

(a) One hundred fifty thousand (150,000) shares of the capital stock of Graybar Electric Company, Inc.

(b) Twenty-six thousand, one hundred sixty (26,160) shares of the capital stock of Northern Electric Company, Limited.

(c) One hundred (100) shares of the capital stock of Western Electric Company, Limited of Canada.

(d) One hundred (100) shares of Western Electric Company, Limited of London.

(e) All accounts receivable which are owing on the date of sale by Western Electric Company, Limited of Canada to the Seller.

(f) All accounts receivable which are owing on the date of sale by Western Electric Company, Limited of London to the Seller.

(g) Bonds and certificates of indebtedness of the United States of the aggregate face value of Thirty million dollars ($30,000,000) subject to outstanding agreements by the Seller to re-sell said securities or any part thereof at rates or on bases fixed at the time the same were purchased by the Seller, which re-sale agreements are assumed by the Buyer.

(h) All accounts receivable outstanding on the date of sale which relate solely to the business herein agreed to be transferred.

[fol. 3473] (i) All interest accrued and unpaid to the date of sale on items (e), (f), (g) and (h) above listed.

(j) All royalties accrued and unpaid to the date of sale under contracts to be assigned by the Seller to the Buyer as hereinafter provided, less such part of said royalties as the Seller is obligated to pay to others.

(k) Apparatus, material and equipment which on the date of sale is under lease or loan by the Seller in the course of that part of the Seller's business to be transferred hereunder to the Buyer.

(l) Claim against Russia on account of deposits in banks, stock interest in and receivables from N. C. Heisler & Company, and accounts receivable owing to the Seller (as assignee of International Western Electric Company, Incorporated and its subsidiaries) from Russian customers.

(m) Claim against Germany for losses and damages in Belgium growing out of the World War.

(n) The Seller's business (as distinguished from its property) existing on the date of sale which is separate and distinct from the business herein reserved to the Seller.

(o) All right, title and interest which the Seller has the right so to transfer, in and to all contracts, good-will, patents, trade-marks and trade-names of the Seller (except the trade-mark or trade-name "Western Electric") in so far as but only to the extent that the same respectively pertain to the business and property herein agreed to be transferred, and subject to all the reservations, terms, conditions [fol. 3474] and limitations in this agreement contained. Among said contracts so to be transferred are included specifically, but not by way of limitation, the contracts listed in "Schedule A" attached hereto and made a part hereof.

• • • • • • •

The Seller hereby agrees, subject to all the provisions of this agreement, that it will, upon request of the Buyer, assign and transfer to the Buyer (so far as and to the extent that the Seller shall have the right so to do) all rights of the Seller pertaining to the field of business herein agreed to be transferred to the Buyer in, to and under all patents which the Seller may hereafter acquire relating or applicable to the said field of business.

• • • • • • •

"SCHEDULE A"

(1) Contract dated February 4, 1926 between The Telegraph Construction and Maintenance Company Limited and Western Electric Company, Incorporated, relating to continuously loaded submarine telegraph cables;

(2) Contract dated January 19, 1926 between Western Electric Company, Incorporated and Felton & Guilleaume Carlswerk Aktien Gesellschaft, relating to continuously loaded submarine telegraph cables;

[fol. 3475] (3) Contract dated April 20, 1926 between Western Electric Company, Incorporated and The Vitaphone Corporation, relating to electrical recording and reproduction of sound and the synchronization thereof with the taking or reproduction of motion pictures;

(4) Contract dated March 18, 1925 between Western Electric Company, Incorporated and Victor Talking Machine Company, relating to apparatus for the electrical recording of sound;

(5) Contract dated May 1, 1925 between Victor Talking Machine Company and International Western Electric Company, Incorporated (and duly assigned by the latter to Western Electric Company, Incorporated) relating to apparatus for the electrical recording of sound;

(6) Contract dated June 26, 1925, between Western Electric Company, Incorporated and Victor Talking Machine Company, relating to acoustic reproducing and amplifying apparatus for reproducing sound by mechanical means;

(7) Contract dated July 19, 1926 between Western Electric Company, Incorporated and Victor Talking Machine Company, relating to acoustic reproducing and amplifying apparatus for reproducing sound by mechanical means;

(8) Contract dated May 1, 1925 between The Gramophone Company, Limited and International Western Electric Company, Incorporated (and duly assigned by the latter to Western Electric Company, Incorporated), relating to the electrical recording of sound;

[fol. 3476] (9) Contract dated January 19, 1926 between Western Electric Company, Incorporated and The Gramophone Company, Limited, relating to acoustic reproducing and amplifying apparatus for reproducing sound by mechanical means;

(10) Contract dated February 26, 1925 between Western Electric Company, Incorporated and Columbia Phonograph

Company, Incorporated, relating to apparatus for the electrical recording of sound;

(11) Contract dated April 22, 1925 between Columbia Graphophone Company, Limiited and International Western Electric Company, Incorporated (and duly assigned by the latte to Western Electric Company, Incorporated) relating to apparatus for the electrical recording of sound.

[fol. 3477] In addition to the above portions of the contract quoted in full, the remaining portions of the contract in brief are as follows:

Article I

Section 1 defines "Bell System Business" as all business of every description of the seller directly or indirectly with the companies comprising the Bell System, as the same is now or hereafter conducted. Section 2 defines Bell System. Section 3 defines "Graybar Business" to be all business of every description of the seller directly or indirectly with or for Graybar Electric Company, Inc., as the same is now or may hereafter be conducted. Section 4 defines "International Business" as all business of every description of the seller directly or indirectly with or for the International Telephone and Telegraph Company or International Standard Electric Corporation, as the same is now or may hereafter be conducted. Section 5 defines "Canadian Business" as all business now or at any time hereafter transacted by the seller in or with firms or corporations domiciled in Canada or Newfoundland. Section 6 defines "Patents" to include all rights in respect of inventions, whether for the United States or other countries. Section 7 provides that where any property assigned to the buyer under the terms hereof is inseparable from property to be retained by seller under the terms hereof, the seller retains legal title for the benefit of buyer and seller. Section 8 provides that where patents covered by the contract are applicable to the fields of business of the buyer and that reserved to the seller, the party holding [fol. 3478] legal title thereto grants to the other party exclusive licenses for the field of business of such other party; and for action to be brought by such party.

Article II

Section 1 printed in full above. Section 2 provides that where contracts are to be assigned attempts will be made to secure consent of other parties, and, if not, buyer shall be entitled to the profits therefrom. Section 3. Seller specifically reserves to itself all its Bell System business, Graybar business, International business and Canadian business, and all business with the following customers: (a) such companies now or hereafter designated or known as Bell Connecting Companies as the seller may from time to time exclude from the provisions of its contract with Graybar; (b) companies other than Bell System and Bell Connecting Companies operating public communication service with which seller may at any time during the term of the contract enter into continuing contracts to supply its manufactures; (c) United States Government; (d) manufacturers who may from time to time purchase seller's apparatus for incorporation in apparatus manufactured by such other manufacturers for sale either to the seller only or to the seller and other customers; and (e) employees of the seller and its subsidiaries and employees of companies comprising the Bell System. Section 4. As and when the existing obligations of seller with reference to its Graybar, International or Canadian business are terminated, the seller shall transfer to buyer such parts of such businesses as seller may elect to sell at a price to be mutually agreed upon or determined by arbitration. Section 5. Seller specifically reserves right to [fol. 3479] make sales direct to customers in special cases deemed by it desirable but shall pa*id* to buyer profit that latter would have derived in case it had made such sale. Section 6. Agreement subject to all contracts and obligations of seller and seller reserves rights necessary to enable it to carry out said contracts except in so far as they are transferred to buyer. Section 7. Seller reserves the right to modify its existing contractual relations with respect to the business reserved and to either enlarge or restrict the character and extent of same; and upon such enlargement or restriction seller shall pay to buyer or buyer to seller such compensation therefor as may be mutually agreed upon or determined by arbitration. Section 8. Buyer agrees to carry out the obligations of seller in connection with contracts, business or other assets transferred to buyer. Section 9 provides for reimbursement for taxes to seller in those cases paid on investments transferred to buyer.

Article III

Section 1 quoted in full above. Section 2 provides that the buyer shall, subject to the provisions of this article, assign to seller all rights pertaining to the field reserved to the seller, to all patents which buyer may hereafter acquire relating to such field of business. Section 3. Patents acquired by either party subject to any conditions shall be subject to transfer to the other party only upon the assumption by the other party of all conditions, obligations and restrictions, and royalties. Section 4. Each party agrees to exchange information with the other relat- [fol. 3480] ing to inventions, apparatus, systems, materials and processes applicable to the field of the other party. Section 5. Each party agrees to furnish to the other, upon request, all services, apparatus, material and merchandise relating to other respective fields which they may be in a position to perform; all services to be paid for at cost and all apparatus at prices and terms as favorable as those to other customers. Section 6. Seller reserves and buyer agrees to assign to the seller any and all patents which it may hereafter acquire and all right, title and interest for businesses and fields similar to or of the same character as the seller's Bell System business or Graybar business. Section 8. Buyer agrees that it will first obtain the approval of the seller before granting licenses or rights to others for methods or processes of manufacture.

Article IV

Section 1. Buyer agrees to issue and deliver to seller certificates representing 750,000 shares of stock without par value in consideration of the cash payment provided for in the contract and the business, property, effects, assets, rights, licenses and good will to be transferred to the buyer. Section 2. Documents of transfer provided for. Section 3. Arbitration provided for. Section 4. The date of the sale of the business covered by this agreement shall be January 1, 1927. Section 5. Construction of contract to be in accordance with the laws of the State of New York.

[fol. 3481] **Deposition Exhibit No. 5**

Chart, Testified to by Witness Blair-Smith, Which Shows the Number of Employees as of January 1 of Each Year of the Treasury Department of the A. T. & T. Co.

12/23/31.

American Tel. & Tel. Co.

Treasury Department

Number of Employees as of January 1st of Each Year

	1923	1924	1925	1926	1927	1928	1929	1930	1931
1 General Statistical			3	4	7	8	11	14	14
2 Methods 3 Results	12	20	9	10	12	15	19	28	26
4 Office Service			14	13	15	16	16	18	20
5 Mail & Files	12	14	21	18	19	18	23	25	27
6 Stenographic	7	13	18	20	20	20	26	33	35
Total Adm	31	47	65	65	73	77	95	118	122
7 Transfer Bureau	52	36	51	37	43	42	57	101	84
8 Stock Record "	104	81	86	76	77	80	100	106	126
9 Empl. Stock "	9	6	3	..	..	..	..	..	15
10 Boston Office	55	55	20	19	19	18	17	22	22
Total	220	178	160	132	139	140	174	229	247
11 Securities Records Section				6	6	7	7	7	8
12 Cashier's Section	12	13	12	13	13	12	12	17	19
13 Dividend & Coupon Section	49	37	27	25	24	19	19	17	17
14 Bell Securities Section	..	..	5	6	7	7	7	17	19
Total	61	50	44	50	50	45	45	58	63
Grand Total	312	275	269	247	262	262	314	405	432

These totals do not include the Treasurer.

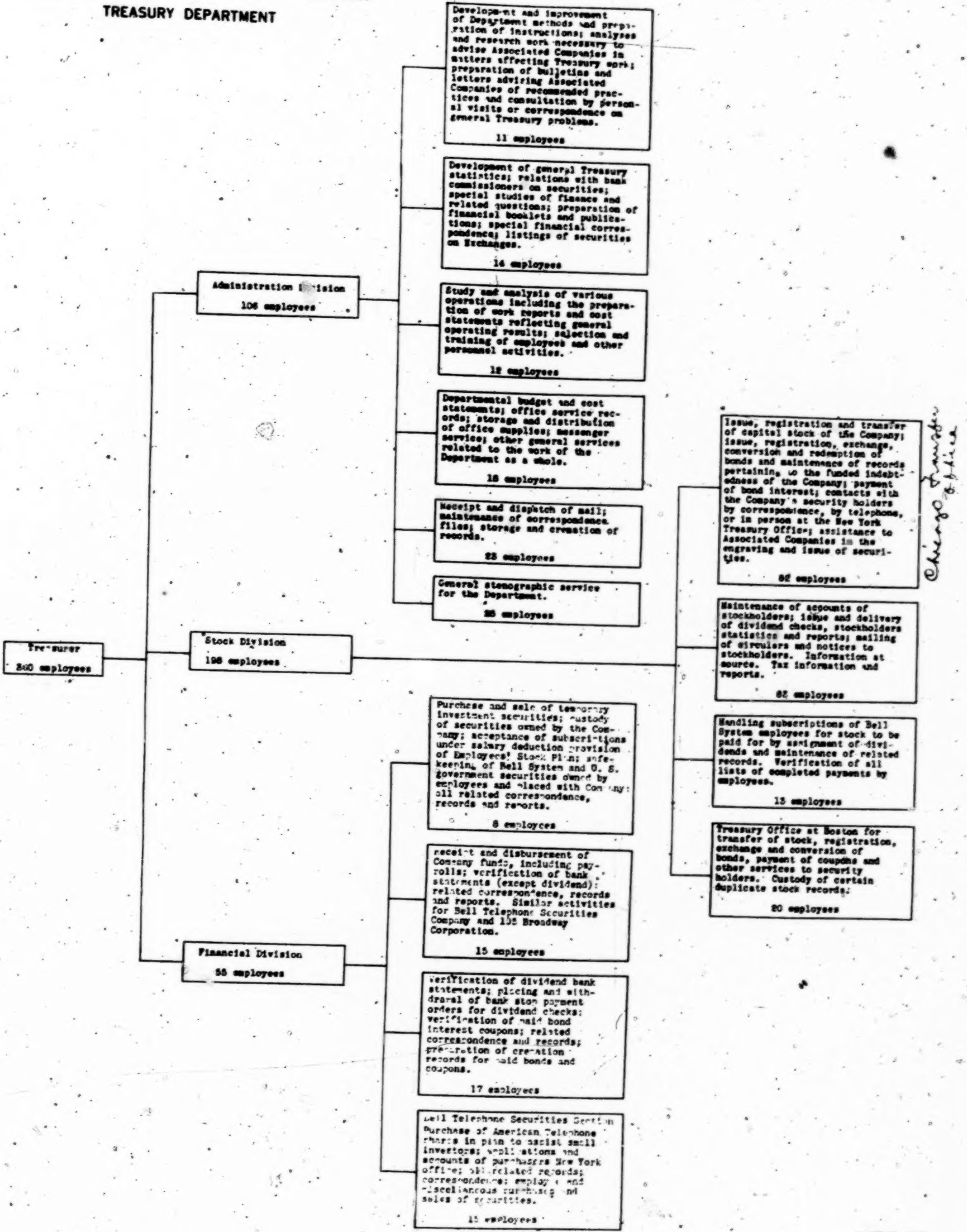
Dec. 23, 1931.

(Here follows Deposition Exhibit No. 6, side folios 3482)

DEFENDANT'S EXHIBIT 6

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

TREASURY DEPARTMENT



- Treasurer
  800 employees
  - Administration Division
    106 employees
    - Development and improvement of Department methods and preparation of instructions; analyses and research work necessary to advise Associated Companies in matters affecting Treasury work; preparation of bulletins and letters advising Associated Companies of recommended practices and consultation by personal visits or correspondence on general Treasury problems.
      11 employees
    - Development of general Treasury statistics; relations with bank commissioners on securities; special studies of finance and related questions; preparation of financial booklets and publications; special financial correspondence; listings of securities on Exchanges.
      14 employees
    - Study and analysis of various operations including the preparation of work reports and cost statements reflecting general operating results; selection and training of employees and other personnel activities.
      12 employees
    - Departmental budget and cost statements; office service records; storage and distribution of office supplies; messenger service; other general services related to the work of the Department as a whole.
      18 employees
    - Receipt and dispatch of mail; maintenance of correspondence files; storage and cremation of records.
      23 employees
    - General stenographic service for the Department.
      28 employees
  - Stock Division
    198 employees
    - Issue, registration and transfer of capital stock of the Company; issue, registration, exchange, conversion and redemption of bonds and maintenance of records pertaining to the funded indebtedness of the Company; payment of bond interest; contacts with the Company's security holders by correspondence, by telephone, or in person at the New York Treasury Office; assistance to Associated Companies in the engraving and issue of securities.
      82 employees
      Chicago Transfer Office
    - Maintenance of accounts of stockholders; issue and delivery of dividend checks, stockholders statistics and reports; mailing of circulars and notices to stockholders. Information at source. Tax information and reports.
      82 employees
    - Handling subscriptions of Bell System employees for stock to be paid for by assignment of dividends and maintenance of related records. Verification of all lists of completed payments by employees.
      13 employees
    - Treasury Office at Boston for transfer of stock, registration, exchange and conversion of bonds, payment of coupons and other services to security holders. Custody of certain duplicate stock records.
      20 employees
  - Financial Division
    55 employees
    - Purchase and sale of temporary investment securities; custody of securities owned by the Company; acceptance of subscriptions under salary deduction provision of Employees' Stock Plan; safekeeping of Bell System and U. S. government securities owned by employees and placed with Company: all related correspondence, records and reports.
      8 employees
    - Receipt and disbursement of Company funds, including payrolls; verification of bank statements (except dividend); related correspondence, records and reports. Similar activities for Bell Telephone Securities Company and 195 Broadway Corporation.
      15 employees
    - Verification of dividend bank statements; placing and withdrawal of bank stop payment orders for dividend checks; verification of paid bond interest coupons; related correspondence and records; preparation of cremation records for paid bonds and coupons.
      17 employees
    - Bell Telephone Securities Section
      Purchase of American Telephone shares in plan to assist small investors; applications and accounts of purchasers New York office; all related records; correspondence; employees and miscellaneous purchases and sales of securities.
      15 employees

AUGUST 25, 1951

[fol. 3483] **Deposition Exhibit #7**

Document Testified to by Witness Blair-Smith, Consisting of Several Typewritten Pages, Dated April 30, 1931

Treasury Department

April 30, 1931.

Mr. H. Blair-Smith, Treasurer:

Attached are two statements marked "Exhibit A" and "Exhibit B" which distribute the expenses of the Treasury Department on two estimated bases between those chargeable to license contract and to other activities for the years 1923 to 1930.

The distribution of expenses (called Basis 1) shown in Exhibit A is based on charging security issue and 1930 bond conversion expenses to other activities of the Department, whereas the distribution (called Basis 2) shown on Exhibit B includes these expenses in license contract activities. The security issue and bond conversion expenses will be referred to hereafter in this memorandum as security issue expenses and will be understood to include such expenses as have been developed as being assignable to this classification in past reviews of departmental expenses, plus estimated indirect security issue expenses of the Administration Division.

A summary of these two estimates, which shows the effect of switching the security issue expenses of the department from one classification to the other, is given below:

Distribution of Treasury Department Expenses

Year	Total Expenses	Charged to License Contract Basis 1	% of Total	Security Issue Expenses	Charged to License Contract Basis 2	% of Total
1923	$954,861	$85,363.28	8.94	$74,255.17	$159,618.45	16.72
1924	1,258,097	123,204.82	9.79	389,093.71	512,298.53	40.72
1925	944,914	116,199.24	12.30	55,773.22	171,972.46	18.20
1926	1,381,752	127,102.47	9.20	444,595.79	571,698.26	41.37
1927	1,103,130	194,147.11	17.60	80,575.81	274,722.92	24.90
1928	1,648,226	193,428.92	11.74	588,071.13	781,554.05	47.42
1929	1,591,063	191,898.90	12.06	404,129.94	596,028.84	37.40
1930	2,499,674	337,044.00	13.48	979,305.64	1,316,349.64	52.66
	$11,381,717	$1,368,442.74	12.02	$3,015,800.41	$4,384,243.15	38.52

[fol. 3484] Allocation of Financial Division Expenses

With security issue costs left out of consideration, the expenses of the Financial Division chargeable to license contract activities are involved chiefly in the following:

a) The handling of temporary investments.

b) The paying of salaries and the performance of cash book and banking work for that part of General Department operations which are devoted to license contract services.

c) The making of advances to Associated Companies and the handling of their notes.

d) The handling of General Department employee stock subscriptions under the Employees' Stock Plan.

The distribution of Financial Division expenses between license contract and other activities has been based chiefly on an estimate furnished by the Comptroller's Department that 85% of the employees of the General Department were performing license contract services during the period in question. First, the estimated expenses of the Coupon and Dividend Sections and of the Bell Securities Section included in Financial Division expenses were eliminated for each year, since no part of the work of these sections was considered chargeable to license contract activities, and then 85% of the remaining annual expenses, were charged to license contract activities.

The following table shows how the expenses of the Financial Division have been distributed:

Distribution of Financial Division Expenses

Year	Total Expenses Excluding Security Issues	Expenses of Sections Eliminated	Balance to be Allocated	Expenses Charged to License Contract—85%	% of Total Expenses
1923......	$90,759	$37,635	$53,124	$45,155.40	49.75
1924......	123,066	47,110	75,956	64,562.40	52.46
1925......	139,397	56,267	83,130	70,658.50	50.69
1926......	139,451	56,200	83,251	70,763.35	50.74
1927......	147,160	43,896	103,264	87,774.40	59.65
1928......	150,587	45,457	105,130	89,360.50	59.34
1929......	156,639	45,077	111,562	94,827.70	60.54
1930......	182,907	52,846	130,061	110,551.85	60.44
	$1,129,966	$384,488	$745,478	$633,654.10	56.08

[fol. 3485] Allocation of Stock Division Expenses

With security issue costs left out of consideration, the expenses of the Stock Division chargeable to license contract activities are involved chiefly in the following:

a) The issuing of stock to employees under the Employees' Stock Plan.

b) The handling of subscriptions payable by the assignment of dividends in the Employees' Stock Bureau (1930 only).

It was decided that all of the expenses connected with the above work were chargeable to license contract activities except that proportion which could be estimated as applying to employees not working for Associated Companies or not otherwise concerned in license contract service. Accordingly, a deduction of 17.06% was made from the total estimated cost of this work based on leaving out of consideration employees of the following companies as indicated:

Western Electric Company	100%
Bell Telephone Securities Company	100%
195-205 Broadway Corporations	100%
Electrical Research Products Co.	100%
Bell Telephone Laboratories	70%
American Telephone and Telegraph Company—General Department	15%

Actual figures not being available with respect to the cost of issuing stock under the Employees' Stock Plan, the expenses of this work were estimated on a base rate of 67½¢ per certificate so issued. Then 17.06% was deducted from the total estimated cost of issuing certificates under the Employees' Stock Plan each year to determine the amount to be charged to license contract activities. The statement attached, marked "Exhibit C", indicates how the 17.06% was determined, how the estimated cost per certificate was built up, and how the cost of issuing certificates under the Employees' Stock Plan was calculated.

Similarly, to determine the proportion of the Employees' Stock Bureau expenses of 1930 to be charged against license contract activities, 17.06% was deducted from the total estimated expense of $80,000, and the balance was charged to license contract services in that year. The remaining normal expenses of the Stock Division were charged to other activities.

The following table shows how the expenses of the Stock Division have been distributed:

[fol. 3486] Distribution of Stock Division Expenses

Year	Total Expenses Excluding Security Issues	Expense to be Allocated	Expenses Charged to License Contract—82.94%	% of Total Expenses
1923	$697,854	$23,314.50	$19,336.73	2.77
1924	635,205	39,179.03	32,495.18	5.12
1925	581,636	9,997.43	8,291.70	1.43
1926	604,555	15,661.35	12,989.70	2.15
1927	624,091	44,863.88	37,210.05	5.96
1928	640,571	47,613.15	39,490.20	6.16
1929	720,548	31,112.10	25,804.57	3.58
1930	972,654	155,149.78	128,678.43	13.23
	$5,477,114	$366,891.22	$304,296.26	5.56

Allocation of Administration Division Expenses

With security issue costs left out of consideration, the expenses of the Administration Division chargeable to license contract activities are involved chiefly in the following:

a) Executive, administrative, and methods work allocated to the Financial and Stock Divisions, and in turn allocated to license contract activities.

b) Methods and development work in behalf of Associated Companies.

c) Cost of Bell System Treasurers' Conference (1927 only).

The following table shows how the expenses of the Administration Division have been distributed:

Distribution of Administration Division Expenses

Year	Total Expenses Excluding Direct Security Issues	Expenses Charged to License Contract	% of Total Expenses
1923	$110,748	$20,871.15	18.85
1924	133,308	26,147.24	19.61
1925	202,381	37,249.04	18.40
1926	232,529	43,349.42	18.64
1927	302,538	69,162.66	19.89
1928	323,839	64,632.22	19.96
1929	372,896	71,266.63	19.11
1930	439,183	97,814.02	22.27
	$2,117,422	$430,492.38	19.91

[fol. 3487] There being no clear-cut accounting lines between the various types of Administration Division work, allocation of expenses between license contract and other activities had to be accomplished on an estimated basis. The percentages used in this allocation were determined on the basis of the eight year period as a whole and then these percentages were applied to the expenses of the Administration Division for each year.

First, the expenses were divided on an estimated basis between the various components of the Administration Division, and this was done as follows:

	Administration Expenses
Executive	25%
Methods and Results	25
General Statistical	12
Office Service	10
Mail and Files	11
Stenographic	17
	100%

This division having been made, it was necessary to allocate a portion of each one of these components according to what appeared to be chargeable to the Financial Division, to the Stock Division, to Associated Companies, to security issue work, and to purely non-license activities. The manner in which this allocation was made is indicated in the statement attached, marked "Exhibit D."

The amount of Administration Division expense allocated to each of the other divisions was then further subdivided to determine the proportion pertaining to their license contract activities. For the Financial Division, license contract was charged with the proportion that (a) the amount of Financial Division expenses charged to license contract in 1930 bore to (b) the combined total of the normal expenses of the Division for 1930, including those of the Coupon and Dividend Section and the Bell Securities Section. For the Stock Division, the distribution was made in the proportion in which the expenses of that Division were divided between "License Contract" and "Other", security issue expenses having been previously deducted. These apportionments are shown on the statement attached, marked "Exhibit E".

Allocation of Security Issue Expense for Basis 2

In determining the direct security issue and bond conversion expenses of the Department there was considered only that proportion of the Department's total expense which had been estimated from year to year to be in excess of the normal amount the Department would have ex- [fol. 3488] pended for its current work. In other words no allowance was made for the time spent directly on security issue work by permanent employees except in so far as it was found necessary to replace these members of the Department with temporary employees; nor was allowance made for crowding security issue activities to some extent into the regular space occupied by the Department. An estimate was made, however, of the amount of time spent by the Administration Division upon the preparation of methods and plans for security issues and for actual participation of staff employees in security issue work, and this has been added to the security issue cost in Basis 2, as indicated in the following table:

Allocation of Security Issue Expenses

Year	Direct Security Issue Expense	Expenses of Adm. Div. Charged to Security Issue	Total Security Issue Expense Charged to License Contract—Basis 2
1923	$55,500.00	$18,755.17	$74,255.17
1924	366,518.00	22,575.71	389,093.71
1925	21,500.00	34,273.22	55,773.22
1926	405,217.00	39,378.79	444,595.79
1927	29,341.00	51,234.81	80,575.81
1928	533,229.00	54,842.13	588,071.13
1929	340,980.00	63,149.94	404,129.94
1930	904,930.00	74,375.64	979,305.64
	$2,657,215.00	$358,585.41	$3,015,800.41

(Signed) C. S. Van Cise, Assistant Treasurer.

CVC:LM.

(Here follow Exhibits A and B, side folios 3489 and 3490)

[fol. 3489]

EXHIBIT "A"

American Telephone and Telegraph Company

(Excluding Long Lines Department)

Apportionment of Departmental Expenses Between (a) Those Related to the Furnishing of License Contract Services and (b) Those Comprising Other Expenses of the Company—Years 1923 to 1930

Treasury Department

Year	Total Departmental Expense (1)	Specifically Allocated		Amount not Specifically Allocated (Apportioned on Basis of Study)					Total			
		License Contract (2)	Other (3)	Total (4)	License Contract		Other		License Contract		Other	
					Amount (5)	% of (4) (6)	Amount (7)	% of (4) (8)	Amount (9)	% of (1) (10)	Amount (11)	% of (1) (12)
1923	$954,861.40		S.I. $55,500.00	$899,361.40	A. $20,871.15 F. 45,155.40 S. 19,336.73 $85,363.28	9.49	S.I.I. $18,755.17 B. 795,242.95 813,998.12	90.51	$85,363.28	8.94	$869,498.12	91.06
1924	1,258,096.79		S.I. 366,518.00	891,578.79	A. $26,147.24 F. 64,562.40 S. 32,495.18 $123,204.82	13.82	S.I.I. $22,575.71 B. 745,798.26 $768,373.97	86.18	123,204.82	9.79	1,134,891.97	90.21
1925	944,914.08		S.I. 21,500.00	923,414.08	A. $37,249.04 F. 70,658.50 S. 8,291.70 $116,199.24	12.58	S.I.I. $34,273.22 B. 772,941.62 807,214.84	87.42	116,199.24	12.30	828,714.84	87.70
1926	1,381,751.46		S.I. 405,217.00	976,534.46	A. $43,349.42 F. 70,763.35 S. 12,989.70 $127,102.47	13.02	S.I.I. $39,378.79 B. 810,053.20 $849,431.99	86.98	127,102.47	9.20	1,254,648.99	90.80
1927	1,103,129.94		S.I. 29,341.00	1,073,788.94	A. $69,162.66* F. 87,774.40 S. 37,210.05 $194,147.11	18.08	S.I.I. $51,234.81 B. 828,407.02 $879,641.83	81.92	194,147.11	17.60	908,982.83	82.40
1928	1,648,225.86		S.I. 533,229.00	1,114,996.86	A. $64,632.22 F. 89,360.50 S. 39,490.20 $193,482.92	17.35	S.I.I. $54,842.13 B. 866,671.81 921,513.94	82.65	193,482.92	11.74	1,454,742.94	88.26
1929	1,591,062.78		S.I. $33,177.00 B.I. 307,803.00 $340,980.00	1,250,082.78	A. $71,266.63 F. 94,827.70 S. 25,804.57 $191,898.90	15.35	S.I.I. $63,149.94 B. 995,033.94 1,058,183.88	84.65	191,898.90	12.06	1,399,163.88	87.94
1930	2,499,673.64		B.C. $269,105.00 S.I. 635,825.00 $904,930.00	1,594,743.64	A. $97,814.02 F. 110,551.85 S. 128,678.13 $337,044.00	21.13	S.I.I. $74,375.64 B. 1,183,324.00 $1,257,699.64	78.87	337,044.00	13.48	2,162,629.64	86.52
	$11,381,715.95		$2,657,215.00	$8,724,500.95	$1,368,442.74	15.69	$7,356,058.21	84.31	$1,368,442.74	12.02	$10,013,273.21	87.98

Notes:

* Includes $8,983.60, Cost of Bell System Treasurers' Conference.

S.I. Stock Issue
B.I. Bond Issue
B.C. Bond Conversion
A. Administration Division
F. Financial Division
S. Stock Division
S.I.I. Stock Issue Indirect
B. Balance

[fol. 3490]

EXHIBIT "B"

American Telephone and Telegraph Company

(Excluding Long Lines Department)

Apportionment of Departmental Expenses Between (a) Those Related to the Furnishing of License Contract Services and (b) Those Comprising Other Expenses of the Company—Years 1923 to 1930

Treasury Department

		Specifically Allocated		Amount not Specifically Allocated (Apportioned on Basis of Study)					Total			
					License Contract		Other		License Contract		Other	
Year	Total Departmental Expense (1)	License Contract (2)	Other (3)	Total (4)	Amount (5)	% of (4) (6)	Amount (7)	% of (4) (8)	Amount (9)	% of (1) (10)	Amount (11)	% of (1) (12)
1923	$954,861.40	S.I. $55,500.00		$889,361.40	A. $20,871.15 F. 45,155.40 S. 19,336.73 S.I.I. 18,755.17							
					$104,118.45	11.58	B. $795,242.95	88.42	$159,618.45	16.72	$795,242.95	83.28
1924	1,258,096.79	S.I. 366,518.00		891,578.79	A. $26,147.24 F. 64,562.40 S. 32,495.18 S.I.I. 22,575.71							
					$145,780.53	16.35	B. 745,798.26	83.65	512,298.53	40.72	745,798.26	59.28
1925	944,914.08	S.I. 21,500.00		923,414.08	A. $37,249.04 F. 70,658.50 S. 8,291.70 S.I.I. 34,273.22							
					$150,472.46	16.29	B. 772,941.62	83.71	171,972.46	18.20	772,941.62	81.80
1926	1,381,751.46	S.I. 405,217.00		976,534.46	A. $43,349.42 F. 70,763.35 S. 12,989.70 S.I.I. 39,378.79							
					$166,481.26	17.05	B. 810,053.20	82.95	571,698.26	41.37	810,053.20	58.63
1927	1,103,129.94	S.I. 29,341.00		1,073,788.94	A. $69,162.66 F. 87,774.40 S. 37,210.05 S.I.I. 51,234.81							
					$245,381.92	22.85	B. 823,407.02	77.15	274,722.92	24.91	828,407.02	75.09
1928	1,648,225.86	S.I. 533,229.00		1,114,996.86	A. $64,632.22 F. 89,360.50 S. 39,490.20 S.I.I. 54,842.13							
					$248,325.05	22.27	B. 866,671.81	77.73	781,554.05	47.42	866,671.81	52.58
1929	1,591,062.78	S.I. $33,177.00 B.I. 307,803.00 $340,980.00		1,250,082.78	A. $71,266.63 F. 94,827.70 S. 25,804.57 S.I.I. 63,149.94							
					$255,048.34	20.40	B. 995,033.94	79.60	596,028.84	37.46	995,033.94	62.54
1930	2,499,673.64	B.C. $269,105.00 S.I. 635,825.00		1,594,743.64	A. $97,814.02 F. 110,551.85 S. 128,678.12							

1930......	2,499,673.64	B.C.$269,105.00 S.I. 635,825.00 904,930.00		1,594,743.64	A. $97,814.02 F. 110,551.85 S. 128,678.13 S.I.I. 74,375.64 $411,419.64	25.30	B.1,183,324.00	74.20	1,316,349.64	52.66	1,183,324.00	47.34
	$11,381,715.95	$2,657,215.00		$8,724,500.95	$1,727,028.15	19.80	$6,997,472.80	80.20	$4,384,243.15	38.52	$6,997,472.80	61.48

Notes: * Includes $8,983.60, Cost of Bell System Treasurers' Conference.

S.I. Stock Issue
B.I. Bond Issue
B.C. Bond Conversion
A. Administration Division
F. Financial Division
S. Stock Division
S.I.I. Stock Issue Indirect
B. Balance

[fol. 3491]

Exhibit "C"

American Telephone and Telegraph Company

Treasury Department

Certificates Issued to Employees of Companies to be Eliminated

Total Employee Stock Certificates Issued in 1930	A. T. & T. Co. Gen'l. Dept.	195 B'way Corp.	Bell Lab.	Western Electric	Bell Sec.	Electrical Research	Total	% of Total
	15%	100%	70%	100%	100%	100%		
111,333	231	70	1,160	17,537	....	....	18,998	17.06

Estimated Cost of Issuing One Certificate of A. T. & T. Co. Stock Under the Employees' Stock Plan

Labor Cost of preparing register and certificate; forwarding certificate to Registrar and Stock Division overhead and supervision	$.22
Form of Certificate	.105
Other stationery, forms, and postage used throughout Bell System in connection with Employees' Stock Plan	.19
Registration	.115
Listing on New York, Boston and Philadelphia Stock Exchanges (average of 3 shares a certificate)	.045
Total Cost used as a Base Rate a certificate	$.675

Tax 5c a share.

Cost of Issuing Certificates Under the Employees' Stock Plan

Year	Total Certificates Issued	Estimated Total Cost of Issuing Certificates at $.675 each	Deductions, not Charged to License Contract 17.06%	Expenses Charged to License Contrac 82.94%
1923	34,540	$23,314.50	$3,977.77	$19,336.73
1924	58,043	39,179.03	6,683.85	32,495.18
1925	14,811	9,997.43	1,705.73	8,291.70
1926	23,202	15,661.35	2,671.65	12,989.70
1927	66,465	44,863.88	7,653.83	37,210.05
1928	70,538	47,613.15	8,122.95	39,490.20
1929	46,092	31,112.10	5,307.53	25,804.57
1930	111,333	75,149.78	12,823.65	62,326.13
Total	425,024	$286,891.22	$48,946.96	$237,944.26

Date issued: April 17, 1931.

[fol. 3492]

Statement No. 4

American Telephone and Telegraph Company

Treasury Department

Analysis of Administration Division Expense

	Cost in % of Total (1)	% Chargeable to Stock Div. (2)	% Factor (3) (1) x (2)	% Chargeable to Fin. Div. (4)	% Factor (5) (1) x (4)	% Chargeable to "Other" (6)	% Factor (7) (1) x (6)	Total of Per Cents (8)	Total of % Factors (9) (1) x (8)
Executive	25	25	6.25	50	12.50	25	6.25	100	25.00
Methods and Results	25	20	5.00	10	2.50	70	17.50	100	25.00
Office Service Staff	10	55	5.50	15	1.50	30	3.00	100	10.00
General Statistical	12	10	1.20	10	1.20	80	9.60	100	12.00
Mail and Files	11	65	7.15	15	1.65	20	2.20	100	11.00
Stenographic	17	45	7.65	10	1.70	45	7.65	100	17.00
Total of Factors	100	..	32.75	..	21.05	..	46.20	...	100.00

Analysis of "Other" Shown Above

	Security Issue			Associated Companies			Departmental Administration		
	% of "Other" (1)	Factor (2)	% of Total Admin. Div. (3) (1) x (2)	% of "Other" (4)	Factor (5)	% of Total Admin. Div. (6) (4) x (5)	% of "Other" (7)	Factor (8)	% of Total Admin. Div. (9) (7) x (8)
Executive	30	6.25	1.875	40	6.25	2.500	30	6.25	1.875
Methods and Results	50	17.50	8.750	25	17.50	4.375	25	17.50	4.375
Office Service Staff	15	3.00	.450	..	3.00	.....	85	3.00	2.550
General Statistical	20	9.60	1.920	10	9.60	.960	70	9.60	6.720
Mail and Files	40	2.20	.880	..	2.20	.....	60	2.20	1.320
Stenographic	40	7.65	3.060	..	7.65	.....	60	7.65	4.590
Total of Factors	..	46.20*	16.935	..	46.20*	7.835	..	46.20*	21.430

Chargeable to	% of Total Factors
Security Issue	16.935
Associated Companies	7.835
Departmental Administration	21.43
	46.20*

(Here follows side folio 3493)

[fol. 3493]

Exhibit "E"

American Telephone and Telegraph Company

Treasury Department

Analysis of Administration Division Expenses

		Allocated to Fin. Div. 21.05%		Allocated to Stock Div. 32.75%			Allocated to			Total to License Contract	
					Proportion Charged to License Contract						
Year (1)	Total Administration Division Normal Expenses (2)	Total Amount (3)	Proportion Charged to License Contract 48% (4)	Total Amount (5)	Amount (6)	% (7)	Security Issue 16.935% (8)	License Contract 7.835% (9)	Other 21.43% (10)	Basis 1 (11) (4+6+9)	Basis 2 (12) (11+8)
1923	$110,748*	$23,312.45	$11,189	$36,269.97	$1,005.04	2.77	$18,755.17	$8,677.11	$23,733.30	$20,971.15	$39,626.32
1924	133,308	28,061.33	13,469	43,658.37	2,233.56	5.12	22,575.71	10,444.68	28,567.91	26,147.24	48,722.95
1925	202,381	42,601.20	20,448	66,279.78	944.49	1.43	34,273.22	15,856.55	43,370.25	37,249.04	71,522.26
1926	232,529	48,947.35	23,495	76,153.25	1,635.77	2.15	39,378.79	18,218.65	49,830.96	43,349.42	82,728.21
1927	302,538	63,684.25	30,568	99,081.20	5,907.21	5.96	51,234.81	32,687.45	64,833.89	69,162.66	111,414.41
1928	323,839	68,168.11	32,721	106,057.27	6,538.43	6.17	54,842.13	25,372.79	69,398.70	64,632.22	119,474.35
1929	372,896	78,494.61	37,677	122,123.44	4,373.23	3.58	63,149.94	29,216.40	79,011.61	71,266.63	134,416.57
1930	439,183	92,448.02	44,375	143,832.43	19,029.03	13.23	74,375.64	34,409.99	94,116.92	97,814.02	172,189.66
Total	$2,117,422	$445,717.32	$213,942	$693,455.71	$41,666.76	6.01	$358,585.41	$174,883.62	$453,763.54	$430,492.38	$780,094.73

Note: *Includes $8,983.60, Cost of Bell System Treasurers' Conference.

[fol. 3494] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 8

Issue of October, 1930, Bell Telephone Quarterly: Article Contained on Page 250 Thereof Written by Witness Blair-Smith. 1930 Stock Offer of The American Telephone and Telegraph Company

In a circular letter dated April 16, 1930, the American Telephone and Telegraph Company announced an offer to stockholders of record at the close of business on May 23, 1930, of additional shares of stock at par, $100, in the proportion of one new share for each six shares then held. Rights to subscribe expired on August 1, 1930. The terms of the offer were similar to those of the offer in 1928. The issue, as usual, was not underwritten.

Debenture Bonds of 1939 Largely Converted

The terms of the offer provided a period of approximately five weeks, longer than usual, between the announcement date and the record date for subscription rights. This longer period was provided so that holders of the Ten-Year Convertible 4½% Gold Debenture Bonds (offered for subscription to the stockholders in 1929) who might desire to convert their bonds into stock in time to receive subscription rights, might have ample opportunity to act. Between the announcement date and the record date more than $132,000,000 principal amount of the convertible bonds, or sixty percent of the issue, were converted into an equal amount of stock which was entitled to subscription rights.

Purpose of the Issue

The purpose of the issue, as stated by President Gifford, was to provide funds for new construction needed by the Bell System to care for additional business resulting from the constantly greater use of telephone service.

The amount of stock offered was $257,940,700 at par, [fol. 3495] being about 39 percent more than in the 1928 issue. Stockholders receiving rights numbered 508,764. The average amount offered was approximately $500 per stockholder. * * *

Table I

Comparative Statistics of the 1930 and 1928 Stock Issues (1930 Figures Partly Estimated)

	1930 Stock Issue	1928 Stock Issue	Increase 1930 over 1928
Par value of stock offered	$257,940,700	$185,863,000	38.8%
Stockholders on record date	508,764	432,004	17.8%
Market value of a share on closing date for subscriptions	$209⅝	$176	$33⅝

* * * * * * *

Local Contacts with Subscribers

Stockholders throughout the country were aided as before in the purchase and sale of rights by the Bell Telephone Securities Company which offered its facilities at about 3,000 of the business offices of the Associated Companies. * * *

In addition to arranging rights purchase and sale transactions, the Associated Companies again received subscriptions at their business offices for forwarding to the American Company and more than 52,000 subscriptions were thus handled.

The following table gives certain data concerning the number of rights purchase and sale transactions and subscriptions arranged by the Associated Companies for their patrons.

[fol. 3496]

Table III

1930 Stock Issue Transactions Handled Locally by Associated Companies for their Patrons

Associated Companies	Purchases and Sales of Rights Number of Transactions	Purchases and Sales of Rights In Percent of Stockholders Resident in the Territory	Subscriptions Filed Number of Transactions	Subscriptions Filed In Percent of Stockholders Resident in the Territory
New England Tel. & Tel. Co	1,857	1.7%	1,718	1.5%
Southern New England Tel. Co	771	5.1	389	2.6
New York Tel. Co	12,616	12.9	6,743	6.9
New Jersey Bell Tel. Co	3,352	11.4	1,660	5.6
Bell Tel. Co. of Penn	10,745	23.4	5,164	11.2
Chesapeake and Potomac Tel. Co	4,614	23.0	2,397	11.9
Southern Bell Tel. & Tel. Co	3,703	20.5	1,656	9.1
Michigan Bell Tel. Co	3,505	41.8	1,198	14.3
Indiana Bell Tel. Co	1,084	37.3	255	8.8
Wisconsin Tel. Co	4,108	46.0	1,693	18.9
Illinois Bell Tel. Co	16,310	33.3	7,662	15.6
Northwestern Bell Tel. Co	5,691	44.5	2,528	19.7
Southwestern Bell Tel. Co	10,650	47.4	5,236	23.3
Mountain States Tel. & Tel. Co	3,639	36.1	2,163	21.5
Pacific Tel. & Tel. Co	16,563	41.1	12,395	30.8
Total	99,208	20.1%	52,857	10.7%

Conclusion

More stockholders participated in the issue than in any previous offering by the American Telephone and Telegraph Company; the amount of the offer was larger than any heretofore made and the percentage of rights unused was the smallest.

The employees throughout the country engaged in the work showed great interest in rendering their best service and the work was done expeditiously and efficiently. Stockholders in many sections generously commended the services rendered them. The wholehearted co-operation of all made the issue a most successful one in all of its aspects.

[fol. 3497] DEPOSITION EXHIBIT #9

Article contained on pp. 316-327 of Bell Telephone Quarterly, Entitled "1929 Convertible Bond Offer of A. T. & T.", Written and Testified to by Witness Blair-Smith.

The American Telephone and Telegraph Company offered to its 455,000 stockholders of record on May 10, 1929, $219,112,700 of Ten-Year Convertible $4\frac{1}{2}\%$ Gold Debenture Bonds due July 1, 1939, in the proportion of $100 principal amount of bonds for each six shares then held. The bonds were offered for subscription at face value and payment in full was due July 1, 1929. The offer was not underwritten.

The principal amount of the issue, $219,112,700, represents the largest financing ever undertaken by the Bell System, and is believed to be the largest ever offered to stockholders for subscription by any corporation; the 1928 stock offer of the American Company amounting to about $185,000,000 doubtless having previously held the record. If all of the bonds should be converted into stock at $180 per share during 1930 under Option (a), the Company would receive an additional $175,000,000 or a grand total of nearly $400,000,000.

The purpose of the offering was to provide funds for the payment of approximately $75,000,000 Collateral Trust Four Per Cent. Bonds of the Company maturing July 1, 1929, and for new construction which is required by the Bell System to care for additional business resulting from the continuously increasing use of telephone service. In the current year more than $550,000,000 will be spent on plant additions, betterments and replacements. This is the largest program in the history of the Bell System and similar large expenditures are planned for the years to follow.

[fol. 3498] Terms of the Issue

The bonds are convertible into stock of the Company during the period January 1, 1930 to December 31, 1937 at the conversion price of not more than $180 per share for the year 1930, $190 per share for the years 1931 and 1932 and $200 per share for the remainder of the period, provided, however, that bonds called for redemption on any date within the conversion period may be surrendered for stock not later than their redemption date. The conversion prices are subject to reduction upon the issue from time to time of additional stock by the Company in accordance with the terms of the indenture. In converting, the bondholder may take (a) one share of stock for each $100 principal amount of bonds surrendered, on payment in cash of the difference between the conversion price then in effect and

$100, or (b) he may take as many shares of stock as the principal amount of bonds surrendered is a multiple of the conversion price then in effect, and if there is a remainder the bondholder may take one additional share on payment in cash of the difference between the current conversion price and such remainder. When the bonds are selling at a market price above their principal amount it will usually be advantageous to the bondholder to convert under Option (a).

Results of the Issue

In recent months, the general investing public has shown a slackened interest in bonds except those with stock privilege features. Convertible bonds have proven quite attractive, however, and this fact contributed to the marked success of the convertible bond offering of the American Company. A total of 165,000 subscriptions was received, exceeding that for any previous Bell System bond issue. In addition there were many subscriptions filed by banks and brokers for individual investors which cannot be identified as such and are accordingly excluded from the count. [fol. 3499] Only one-half of one percent of the rights was allowed to lapse. These are satisfactory results, especially when it is considered that of the 455,000 stockholders entitled to subscribe, relatively few had had previous experience with convertible bond offers.

Due to the changing conditions in the securities market, which had their effect on American Telephone stock and thus on the rights, the price of the latter exhibited rather marked variations during the subscription period. The day of the announcement of the issue, April 30, rights sold as high as $7⅞. During May the general price trend was downward and a low of $3 was reached on several days at the end of the month. June witnessed a reversal in trend, the price rising to a high of $8 on June 29, with a final price on the New York Stock Exchange of $7⅞.

As has always been the case when the American Company offers securities to stockholders, the bulk of the subscription payments is received at the very end of the period. Banks and brokers especially, making payment for their own and for their clients' accounts, observe this practice in order to save interest. Of a total of $218,000,000 received, only $35,000,000 had reached the Company and been deposited by June 27, four doys before the expiration date. On July 1 alone, over $106,000,000 was received and deposited.

To add to that day's volume of business the Treasurer's Office issued checks for $60,000,000 in payment of Collateral Trust Four Per Cent. Bonds maturing then and presented on or before July 1 and also $2,730,000 in payment of bond coupons due July 1. That part of the proceeds of the convertible bonds not required for immediate use was invested in short term securities of unquestionable safety, principally government and municipal obligations.

A résumé of the results of the bond issue is set forth in the following table:

[fol. 3500]

Table I

Statistics on the 1929 Convertible Bond Issue

Principal amount of bonds offered	$219,112,700
Approximate amount of bonds subscribed	$218,000,000
Percent subscribed	99½%
Number of stockholders of record	455,160
Approximate number of subscriptions	165,000
Subscriptions in percent of stockholders	36%
Average principal amount offered, per stockholder	$481
Average principal amount per subscription	$1,314

Aid Given Stockholders

In accordance with the Company's policy of endeavoring to offer special assistance to those of its stockholders who seemed most likely to require it, individually addressed letters were sent on May 22 to 8,000 individuals entitled to subscribe who had failed to exercise their rights to the 1928 stock issue. The communication explained that the 1929 rights had value and that they should either be used in subscription or be sold for cash by July 1. These stockholders had, of course, already been sent the circular of April 30 announcing and giving full details of the terms of the offer and also the circular of the Bell Telephone Securities Company which accompanied the warrants mailed on May 20 to all stockholders. The latter communication included a list of simplified questions and answers about the issue and an order form to facilitate the purchase or sale of rights through the Bell Telephone Securities Company.

As in the case of the 1928 stock issue, the Associated Companies were furnished with the names and addresses of those of the 8,000 stockholders who lived in their territory, and attempts were made to reach these individuals personally before the close of the subscription period. In cases where a telephone communication was insufficient, a fuller explanation was given in a personal interview by a Company representative. These stockholders were, with few exceptions, of limited means and the ones who could least afford to sacrifice the value of their rights.

[fol. 3501] Through these varied means, the interests of thousands of stockholders were protected, and as had been the previous experience, many of them expressed their appreciation for the assistance received.

Other Assistance Rendered

Over 385,000 stockholders or 85 percent of the total stock list received fractional warrants, some with and some without full warrants, and all of these fractional warrants had to be pieced out in order that they might be utilized in subscription, or which could be sold. In order to facilitate these transactions for the stockholders residing in all parts of the country, the Bell Telephone Securities Company as in the past offered its facilities for the purchase or sale of rights and the filing of subscriptions both at its home office and through most of the business offices of the Associated Companies.

Transactions in rights in the field averaged about 7½ rights, while subscriptions filed averaged about $425. An idea of the extent to which these facilities were utilized may be gained by the fact that of a total of 154,000 transactions for the purchase and sale of rights effected through the Securities Company, 103,000 were handled through the field. The latter figure compares with about 76,000 transactions so handled in the field during the 1928 stock issue and represents more than a one-third increase in activity. In addition over 31,000 completed subscription transactions were handled through the Associated Companies. The stockholders in the western states, as was the case last year, were the ones who availed themselves most largely of the facilities offered through the Associated Companies.

The following table gives data on rights purchases and sales and subscriptions filed through the Associated Companies rendering aid during the bond issue.

[fol. 3502] Table II

1929 Bond Issue Transactions Handled Locally by Associated Companies for Their Patrons

Associated Companies	Purchases and Sales of Rights		Subscriptions Filed	
	Number of Transactions	In Percent of Stockholders Resident in the Territory	Number of Transactions	In Percent of Stockholders Resident in the Territory
New England Tel. & Tel. Co.	3,072	3.0	1,106	1.1
Southern New England Tel. Co.	800	5.7	165	1.2
New York Tel. Co.	12,011	14.2	3,629	4.3
New Jersey Bell Tel. Co.	3,188	12.2	818	3.1
Bell Tel. Co. of Penn.	11,642	27.3	3,365	7.9
Chesapeake and Potomac Tel. Co.	5,112	27.6	1,366	7.4
Southern Bell Tel. & Tel. Co.	4,119	25.3	971	6.0
Michigan Bell Tel. Co.	3,039	43.9	622	9.0
Indiana Bell Tel. Co.	960	38.8	135	5.5
Wisconsin Tel. Co.	4,456	49.9	1,208	14.5
Illinois Bell Tel Co.	15,234	34.9	4,607	10.6
Northwestern Bell Tel. Co.	5,891	49.3	1,566	13.1
Southwestern Bell Tel. Co.	11,892	55.8	3,363	15.8
Mountain States Tel. & Tel. Co.	4,290	45.6	1,358	14.4
Pacific Tel. & Tel. Co.	17,541	48.6	7,491	20.8
Total	102,947	23.1	31,770	7.1

Thus in all parts of the country the Bell System facilities aided stockholders, and especially small stockholders, in handling their rights. In addition through the New York and Boston offices of the American Company, the Securities Company handled a total of 51,000 transactions in rights as against 45,000 of such transactions in 1928, the majority of these being handled by mail. These transactions averaged in size 8⅓ rights.

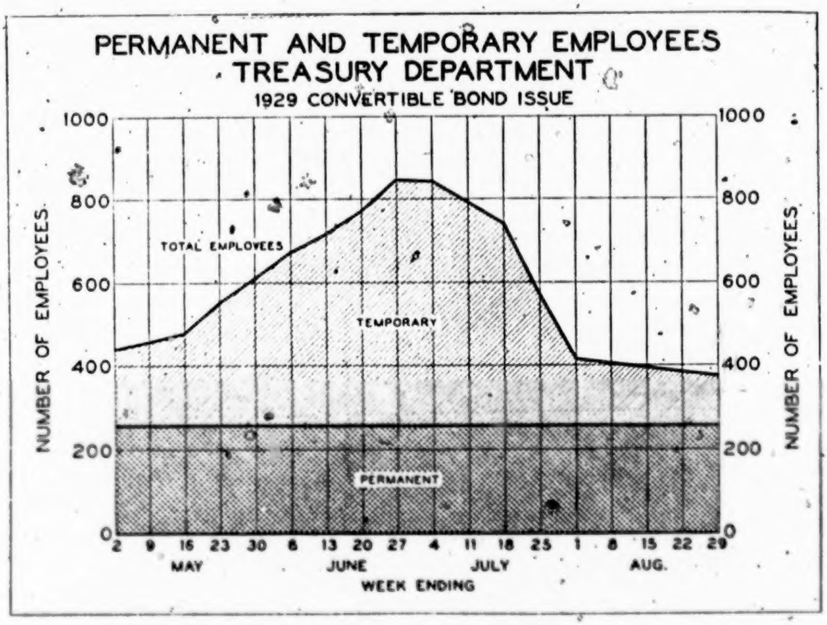
Organization and Personnel

As is the case of stock offers, this convertible bond issue was handled by the Treasury Department. Although its permanent personnel is experienced in conducting stock issues, there were many problems of a different nature to [fol. 3503] solve as for example, that of production in various phases of the work, the estimation of personnel requirements and the handling and delivery of bearer securities. Stock issue methods were used as much as possible, but there were some operations for which no recent precedent existed and which required the development of entirely new practices.

The bonds were issued in the form of temporary bearer certificates with the first two semi-annual interest coupons attached, these temporary bonds being exchangeable on and after October 1, 1930 for the definitive bonds with all subsequent coupons attached. This plan of issuance was decided upon as more practical and economical than that of issuing temporary interim receipts and then, prior to the date of the first interest payment, exchanging them for the engraved bonds with all coupons attached. As it seemed probable in the light of past experience that numbers of bondholders would convert their bonds before October 1, 1930, the number of pieces of the definitive bonds to be produced, authenticated and exchanged should be substantially reduced and the saving to the Company effected by this plan should be of substantial size.

To assist the permanent empolyees of the Treasury Department in handling the bond issue work, a force of about 600 temporary employees was utilized, this peak being reached, of course, near the close of the subscription period. The number of temporary employees in the 1928 stock issue, however, exceeded this total by about 125.

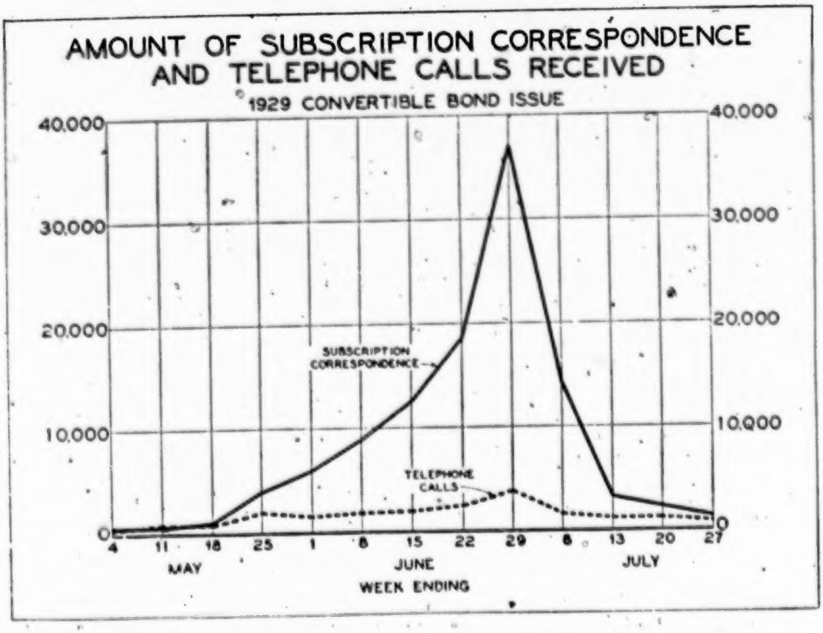
The quality of the temporary personnel was high. Although the bond issue began during a period when it was not possible to obtain as high a percentage of men from the colleges at the beginning of the issue as was done last year, nevertheless, as time passed and more students, recent graduates, and instructors became free for summer employment, numbers of them were added to the organization. A total of 189 men from 76 colleges and universities were [fol. 3504] engaged. These men were of the type which proved very adaptable to their new conditions. In addition, more than a score of permanent employees from other parts of the Bell System filled positions of responsibility.



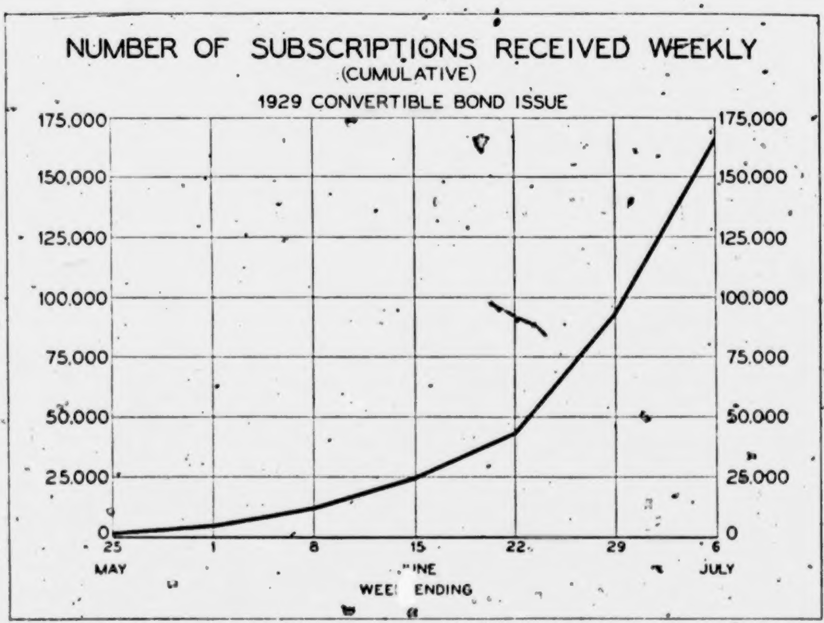
With such an increase in the work and in the personnel of the Treasury Department, available quarters at 195 Broadway were quite inadequate. Consequently, the entire sixth floor of the New York Federal Reserve Bank Building, containing 33,000 square feet of additional office space, was engaged, and 560 employees, the bulk of the bond issue organization, were moved there. While this division in the Treasury Department forces was not an ideal arrangement, automobile messenger service at frequent intervals proved satisfactory in linking the whole organization together. The accompanying illustrations show various sections of the bond issue organization in the process of handling their work.

The data on the volume of mail give one an idea of the size of the undertaking. About a million and a quarter pieces of bond issue mail were sent and received, and at [fol. 3505] the same time, of course, the regular Treasury Department correspondence was handled, and the regular July dividend checks to over 455,000 stockholders were prepared for release.

Although the bond issue correspondence was somewhat less in volume than was last year's stock issue correspondence, it was of a more difficult nature to answer, due to the lack of knowledlge of large numbers of stockholders concerning this type of financing. The chart below shows the amount of subscription correspondence and telephone calls received by weeks. Of a total of over 100,000 incoming letters, about 35,000, those representing incomplete and irregular subscriptions, were referred to the special organization handling the correspondence work. Of the latter total almost one-half required the preparation of special replies.



As indicated by the chart on the next page, the subscriptions did not flow in evenly over the entire period but rose to a sharp peak at the close. For example, the number of [fol. 3506] subscriptions received through the middle of June represented less than one-sixth of the ultimate total. The work involved in correspondence and in the rights purchase and sales transactions also, experienced marked peak loads, and on July 1 the operation of delivering the temporary bonds to the subscribers began.



This problem of delivering the bonds was one of the most important confronting the Treasury Department on which no help could be had from past stock issue experience. In order to fill the subscription allotments 307,600 $100 pieces, 39,700 $500 pieces, and 167,350 $1,000 pieces, or a total of 514,650 pieces were required. When it is considered that these bonds are in bearer form, an idea may be gained of the great responsibility placed upon each employee engaged in bond delivery work. It is a credit to all concerned that these bonds went through all the necessary steps of the routine from receipt at the vaults to de- [fol. 3507] livery to the post office without the loss so far as is now known of a single piece by the Treasury organization.

Needless to say, in order to achieve this result, extreme care and frequent verifications were necessary. The bonds were delivered to the main vault, located not far from the 195 Broadway offices, where complete count was made by designated officials. Great care was exercised in their subsequent transfer to the secondary vaults for counter delivery at 195 Broadway, and for the mailing unit located in the Federal Reserve Bank Building. Upon their receipt there and again prior to their dispatch to subscribers either by mail or by delivery at the counter, additional verifications were effected. In mailing, special precautions were taken in order that the bonds be allotted in the correct amount and in the correct denominations. To insure such accuracy each subscription was handled by two persons: the first man counting the bonds and recording the allotments to the individual subscribers, and the second man verifying the allotments and enclosing the bonds in envelopes. After final verification, the 130,000 specially manufactured envelopes needed for mailing the bonds had to be sealed by hand, an operation which required fifty gallons of mucilage.

The affixing of the postage to such a quantity of registered mail was accomplished in a unique and unusually efficient manner through the use of newly developed postage meter machines. These machines, which were the first of their kind to be put in practical operation, were specially adapted for the use of the American Company on this work, being so adjustable as to imprint on the envelopes varying amounts of registered postage according to the different weights of the individual pieces of mail involved. Besides being speedier than the old method of affixing stamps by hand, these machines eliminated the problem of maintaining a supply of registered mail stamps in varying amounts and accounting for their use, since the meters attached to [fol. 3508] the machines automatically recorded this. In all, over $24,000 meter postage was imprinted.

The convertible bond issue, the largest piece of Bell System financing, was in all respects a success. The financial press spoke well of the issue, a substantial interest was manifested by bankers and brokers, and a wide-spread distribution of the bonds was obtained which has broadened the investment interest in the business. The stockholders were aware or were made aware of the value of their rights to such an extent that only a negligible percentage was allowed to lapse, and many pleasant public relations contacts were established in all parts of the country through Bell System employees. Sincere appreciation is due these employees, both permanent and temporary, who contributed to the success of the issue by their loyal and effective work.

H. Blair-Smith.

[fol. 3509] **Deposition Exhibit # 10**

Article Contained on pp. 253-265, Bell Telephone Quarterly, October 1928, Entitled "1928 Stock Offers of A. T. & T. Co." Written and Testified to by Witness Blair-Smith

In order to provided the Bell System with funds needed for new plant construction, the American Telephone and Telegraph Company offered its stockholders of June 1, 1928, additional stock at par, $100, in the proportion of one new share for each six shares then held. The terms of this offer were the same as for the preceding offer in 1926, except that the rate of interest allowed on subscription payments during the installment period was five percent instead of six. The subscription privilege expired on August 1, 1928.

Largest Bell System Financing

The par value of this offer was $185,863,000, exceeding by some $30,000,000 the amount of its predecessor. It constituted the largest piece of financing ever undertaken by the Bell System. Its size, however, was not large in relation to the total capital obligations of the Bell System already outstanding, nor did it represent a large average investment per stockholder.

Over 430,000 stockholders were entitled to subscribe under the offer, a number greater by 250,000 than the next largest stock list of an American corporation. If these stockholders and their families had been living together in one community, they would have formed a city larger than Detroit. One can picture the difficulties of making a stock offer in a city as large as Detroit involving one member of every family living there, not alone its bankers and its business men, but every element in its population as well, including many of its sick, aged and infirm. Even with this concentration of stockholders within the confines of one city, where they could be quickly reached by mail, by [fol. 3510] telephone, or by personal visit, it would have been practically impossible to make them all understand the offer and utilize their rights before its close.

265,000 Subscriptions Received

The 265,000 subscriptions to this issue were for more than 99½ percent of the stock. This result, which bettered the record of the previous issue, did not come by accident; it was due to the local facilities provided to help stockholders as heretofore and to additional efforts made to reach those who were thought most likely to need assistance.

Assistance to Stockholders

It was explained to stockholders in the announcement circular of May 16 covering the offer that information and assistance could be obtained from local Bell Telephone business offices; and to make this service effective provision was again made by the Bell Telephone Securities Company so that most of these offices could accept small orders to buy and sell rights and also receive subscriptions for transmittal to the American Company. Along with the subscription warrants mailed later, there were sent a brief letter of explanation from the President of the Bell Telephone Securities Company, a series of questions and answers about the offer and an order blank for convenient use in requesting the purchase or sale of rights. Then with July dividend checks a final notice was enclosed reminding stockholders once more of the expiration date.

In 1926, when similar measures were taken, over 20,000 stockholders allowed their rights to lapse. For the most part they were owners of fractional warrants only, but as a result 1 percent of the issue remained unsubscribed. It appeared that such of these who were still stockholders would be the ones that could be singled out as most likely [fol. 3511] to suffer financial loss through nonuse of their rights. A list of them contained the names of some 15,000 people, distributed throughout the country, and under date of July 11 they were all mailed individually addressed letters urging them not to sacrifice their rights.

In a desire to offer personal assistance to their patrons wherever it seemed most needed, Associated Companies secured the names and addresses of these people living in their states and tried to reach them before the close of the subscription period. Employees doing this work reported that about half the interviews could be concluded satisfactorily by telephone. For others the telephone call was followed by a personal interview to insure complete understanding of the value of the rights or in some cases the motive in bringing the matter to their attention. Unfortunately, some stockholders for various reasons could not be reached in time.

It was chiefly ~~by~~ means of this follow-up work, special letters from the American Company and personal calls from Associated Companies, that the percentage of unused rights was cut in two as compared with the 1926 record. Rights worth many thousands of dollars were thus exercised or sold for others to exercise which would have become valueless if allowed to lapse. In most cases the money saved for stockholders was money they could ill afford to lose. For instance, one stockholder was visited who was blind and partially deaf and whose wife was an invalid. They were in needy circumstances and were ignorant of the value of the warrants they had thrown away. The rights were found, however, in a pile of old papers and a check for the proceeds was later delivered. In another typical case, a poor woman holding 4 shares of stock said that she had received a letter from the American Company wanting to know if she cared to buy any more stock. Having no money to spare she said she did not answer the letter and had thrown all the papers out. They were finally [fol. 3512] located in a waste barrel and she received a check for $46.70 as the proceeds.

Most of those who were approached expressed surprise and gratitude at the interest which the Bell System was taking in their financial welfare; they had not believed a large corporation would go to the trouble of communicating with small stockholders to assist them in this manner. It was discovered that at least 4,000 stockholders would doubtless have let their rights lapse, even after receiving the special letters above referred to and other communications, if they had not been interviewed by employees.

Transactions Through Associated Companies

Counting all contacts which Associated Companies had with stockholders in the purchase and sale of rights and the receipt of subscriptions through their business offices, they handled some 125,000 transactions. While this represents but 21 per cent of the estimated total stock issue transactions through all channels, including banks and brokers,

Table I

1928 Stock Issue Transactions Handled Locally by Associated Companies for Their Patrons

Territorial Classification	Purchases and Sales of Rights		Subscriptions Filed	
	Number of Transactions	In Percent of Stockholders	Number of Transactions	In Percent of Stockholders
New England Group	2,932	2.6	2,376	2.1
Eastern Group	22,999	14.5	15.079	9.5
Central Group	15,621	24.5	9,724	15.3
Southern Group	2,614	16.7	1.619	10.3
Northwestern Group	4,219	35.2	2,394	20.0
Southwestern Group	9,857	46.9	6,316	30.1
Mountain Group	3,331	34.9	2,408	25.2
Pacific Group	13,273	39.0	10,392	30[illegible]
Total	74,846	17.3	50.308	11.6

[fol. 3513] it nevertheless exceeded by 49 percent the number which Associated Companies handled in 1926. Thus it is evident that the local facilities they offered to their patrons were more widely used as these facilities became better known. Also, as shown in Table I giving the territorial distribution of these transactions in comparison with the distribution of stockholders, it was found especially welcome in the states west of the Mississippi where a large proportion of the stockholders have bought stock through the Direct Sales Plan of the Bell Telephone Securities Company.

370,000 Fractional Warrants Issued

The importance of rendering every practicable service to stockholders in effecting rights transactions may be appreciated when one realizes that over one-half of the total warrants originally issued were for fractions of shares and had to be matched up in order to be utilized in subscriptions. In other words, 370,000 stockholders received fractional share warrants and had to acquire or sell rights if they were not to permit these warrants to lapse. If but 10 percent neglected to do this, more than 100,000 rights would have been left unexercised from this cause alone.

It is estimated that the Bell Telephone Securities Company, in taking care of 119,000 purchases and sales of rights for investors in 1928 through the New York and Boston offices of the American Company and through the local offices of Associated Companies, handled 34.6 percent of the total non-speculative transactions in rights, as compared with 31.7 percent in 1926 and 19.4 percent in 1924. Of course, these orders were handled by it not for purposes of profit nor in competition with brokers, but merely as a convenience to stockholders and others desiring to subscribe for stock. In fact, the average Security Company transaction, which was for 4¾ rights only, was much below the size of order brokers can profitably handle and quite [fol. 3514] a number of banks took advantage of the Bell System facilities to complete small transactions in rights for their customers. Therefore, in addition to expediting the whole stock issue procedure and greatly assisting stockholders, the completion of small rights transactions through the Securities Company represented a service to the financial community generally.

Rights Prices

On May 17, 1928, rights reached a high of $16⅛, which exceeded all prices for American Telephone stock rights since the issue of 1901. Rights later dropped to $11⅜, coincident with a general decline in the price level of securities during the subscription period, and were selling for $11¾ at the close of the offer. The average market price was twice that of the previous issue.

Subscription Results

Preliminary estimates were exceeded when subscriptions reached a record total of 265,000. This was about 40,000 more subscriptions than were received in 1926 and the percentage of stockholders subscribing was also found to be larger. As shown in Table II giving comparative statistics for the 1928 and 1926 issues, by far the greater part, or about 78 percent, of the subscriptions were made by payment in full as compared with 76 percent in 1926 and 73 percent in 1924. However, in both 1928 and 1926 the same percentage (83.8 percent) of the shares was subscribed under the single payment plan. Just as heretofore, the larger subscribers selected the single payment plan, the average subscription being for 7½ shares as compared with 5 shares under the installment plan. The average of approximately 7 shares for total subscriptions was somewhat higher than in 1926 when it was 6¾ shares.

Over $166,000,000 of payments were received as of the [fol. 3515] subscription due date, August 1, 1928. The larger payments, however, those made by banks and brokers for their own account and for their clients, were not made until the very end of the period, so that $48,000,000 was taken in and deposited on the final day alone. As only a small proportion of the total funds received was needed for immediate expenditure the balance has been invested in the highest grade short term securities, such as Unitel States Government bonds and certificates of indebtedness and tax anticipation notes of selected municipalities. These obligations were chosen with dates of maturity or of repurchase by strong institutions coinciding with dates when the [fol. 3516] funds will be required by the Bell System. It is not the policy of the Company to loan in the call money market..

Table II

Comparative Statistics of the 1928 and 1926 Stock Issues
(1928 Figures Partly Estimated)

	1928	1926	Increase of 1928 Over 1926
Par value of stock offered	$185,863,000	$154,127,500	20.6%
Par value of stock subscribed	185,158,600	152,554,400	21.4%
Percent of Total stock subscribed under single payment plan	83.8%	83.8%	0
Number of stockholders on the record date	432,004	371,347	16.3%
Number of subscriptions under single payment plan	206,000	173,265	18.9%
Percent of Total subscriptions	77.8%	76.4%	1.4%
Number of subscriptions under installment plan	59,000	53,535	9.5%
Percent of Total subscriptions	22.2%	23.6%	−1.4%
Total subscriptions	265,000	226,800	16.7%
Number of subscriptions by stockholders	252,000	213,800	17.9%
Number of subscriptions by others	13,000	13,000	0%
Average shares offered per stockholder	4.30	4.15	.15
Average shares per single payment subscription	7.53	7.38	.15
Average shares per installment subscription	5.09	4.61	.48
Average shares per Total subscription	6.99	6.73	.26

The usual statistical analysis of subscriptions has been completed only for those paid in full. Chart No. 1 shows full paid subscriptions classified as to size of subscriptions with the unshaded portion at the top of the column representing the number of new stockholders gained in each group. It also compares the results with the 1926 issue. The larger proportion of total subscribers in the lowest group indicates the great interest of small holders in the offer. In addition around three-quarters of the 10,000 new stockholders added through full paid subscriptions fell in this group.

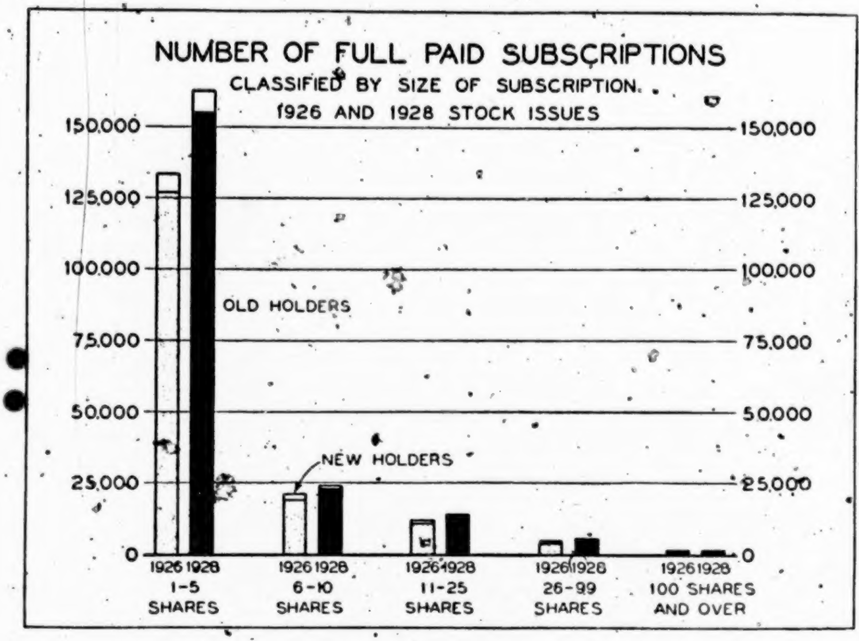


Chart No. 1.

The small amount of stock unsubscribed is now available for sale as may be determined by the Directors of the Company. Such shares in the past have, at some appropriate time, been sold at the current market price and the proceeds placed in the Company's treasury for the equal benefit of all stockholders.

Stock Issue Organization

To the Treasury Department of the American Company, an important aspect of the stock issue was the organization and production problem it represented. Some idea of the volume of clerical work involved may be realized from the fact that more than 1,500,000 pieces of mail, incoming and outgoing, were handled within a few weeks by the Treasury Department in connection with the stock issue, not including the 430,000 dividend checks mailed in July or any of the regular cor[illegible] handled during the period.

Chart No. 2 showing the v[illegible]scriptions received weekly gives a suggestion [illegible]ak which the subscription work reached at the [illegible] period, when over 70,000 subscriptions were in pro[illegible]ing reviewed and recorded. Chart No. 3 showing the number of employees [fol. 3517] engaged in the Treasury Department indicates how the temporary forces were increased and decreased to meet the situation. During the subscription period the total personnel of the Department rose to approximately 1,000 employees, of whom more than 700 were temporarily engaged for the occasion.

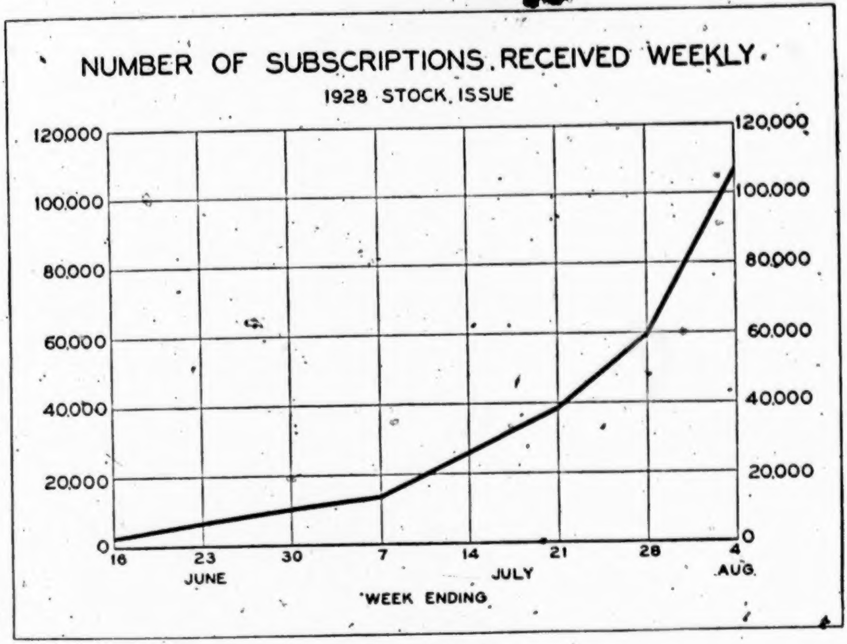


Chart No. 2.

As in the case of other recent stock issues, many people were available for summer employment from the colleges and universities and it was found possible to obtain an exceptionally high grade of temporary personnel. Among 294 men so employed there were representatives from 115 educational institutions throughout the entire country. Also, as in the past, a number of experienced supervisory employees was secured from other parts of the Bell System to fill responsible positions in the stock issue organization and their services were found indispensable.

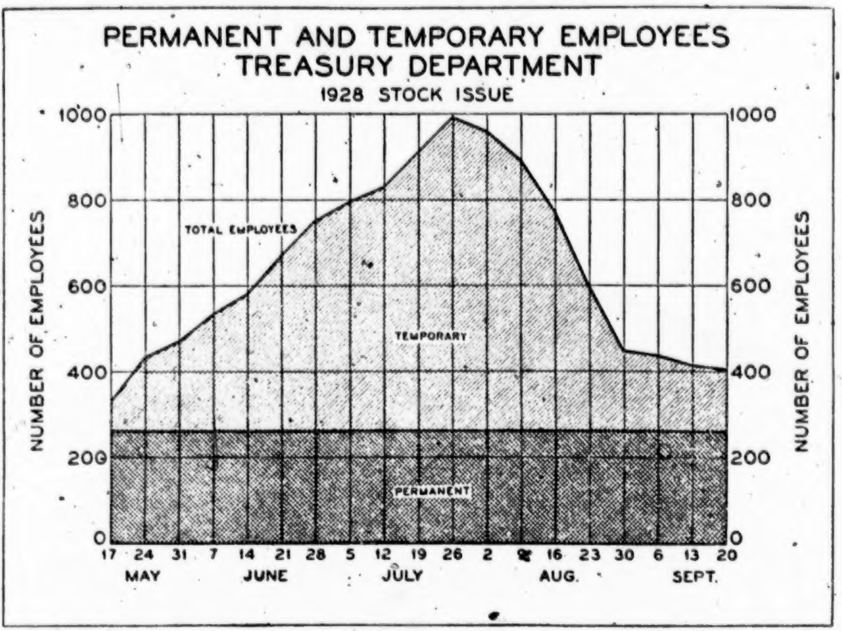


Chart No. 3.

The training of temporary employees for their stock [fol. 3518] issue jobs has always presented some difficulty, not only because the work lasts for such a short period, but also because nothing can be done before the announcement date. This time a new step was inaugurated in the form of a one-day school, which most of the new employees were required to attend. This school was conducted in the manner of informal conferences and the purpose was to give the new employees an over-all picture of the stock issue undertaking, which they could not ordinarily obtain once they had reported to their individual sections. Actual training in the details of stock issue work, of course, followed as heretofore after they had received their individual assignments. This experiment proved distinctly worth while in the opportunity it afforded of introducing these people to Bell System ideals and in the effect it had in strengthening morale for the strenuous work in hand.

The general plan of organization for the stock issue [fol. 3519] work was substantially the same as that established for the 1926 issue. The principal change was made in connection with the handling of incomplete and irregular subscriptions requiring correspondence, which is recognized as one of the most difficult tasks associated with a stock issue. In 1928 approximately 29,000 letters were received requiring individual answers, not including several thousand more which were handled by the use of printed forms. The organization for this work was divided into six sections, each performing similar functions for an alphabetical subdivision of the stockholders' list, and each provided with its own dictators, stenographers, control records, and correspondence files. This form of organization facilitated the matching up of cases in process, permitted a closer supervision, and resulted in better service to stockholders.

The accompanying illustrations show the office arrange- [fol. 3520] ment for several of the important organizational divisions of the Treasury Department handling stock issue work. With the increasing size of the temporary organization from issue to issue requiring office quarters, the procurement of suitable space has been progressively difficult. Estimates of the temporary floor space needed for the 1928 issue called for 38,000 square feet. Since this amount of space was many times greater than any space to be spared in the 195-205 Broadway building, for the first time almost the entire stock issue force had to be housed at another location. Fortunately, four and one-half floors reserved for central office growth in the large 104 Broad Street building of the New York Telephone Company were found available and the stock issue organization began moving in during early June. These quarters proved to be admirably suited to the work and offset handicaps which had been anticipated in handling the issue with such a division in the Treasury forces.

Financial writers have referred to this offer of additional stock as the most successful in the Bell System's history. So it has seemed in every respect; in the large number of subscriptions received, in the small amount of stock left unsubscribed and in the many thousands of pleasant contacts with stockholders. The nation-wide ownership of American Telephone and Telegraph Company stock made the offer in some respects a great cooperative undertaking between Bell System employees and their investment partners in the business. The results achieved seem to measure up to the best traditions of Bell System service and no doubt are a source of gratification to the thousands of employees throughout the country who were involved.

H. Blair-Smith.

[fol. 3521] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 11

"Article Contained on pp. 253-269, Bell Tel. Quarterly, Issue of October 1926, Entitled '1926 Stock Issue of A. T. & T. Co.', Written and Testified to by Witness Blair-Smith"

The twenty-third offer of additional stock to stockholders for subscription by the American Telephone and Telegraph Company and its predecessor was made on May 19, 1926, the par value of the amount offered being $154,127,600. The terms of the new offer were substantially the same as for the previous issue in 1924, but this time the ratio was in the proportion of one new share for six old shares instead of one for five. As stated by the President in announcing it, the purpose of the new issue is to provide the Bell System with funds for new construction needed to care for additional business resulting from the constantly greater use of telephone service * * *

[fol. 3522]

Table I

Comparative Statistics of the 1924 and 1926 Stock Issues
(1926 Figures Partly Estimated)

	1924	1926	Increase of 1926 over 1924
Par value of stock offered	$151,157,500	$154,127,600	2%
Par value of stock subscribed	149,174,800	152,520,000	2%
Par value subscribed under single payment plan	122,427,000	127,873,200	4%
Per cent of Total	82.1%	83.8%	1.7%
Market value of a share on the closing date for subscriptions	$125⅜	$143⅛	$17¾
Par value of stock offered	$151,157,500	$154,127,600	2%
Par value of stock subscribed	149,174,800	152,520,000	2%
Par value subscribed under single payment plan	122,427,000	127,873,200	4%
Per cent of Total	82.1%	83.8%	1.7%
Market value of a share on the closing date for subscriptions	$125⅜	$143⅛	$17¾
Number of stockholders on the record date	316,096	371,347	17%
Number of subscriptions under single payment plan	140,010	173,268	24%
Per cent of Total subscriptions	72.8%	76.4%	3.6%
Number of subscriptions under installment plan	52,221	53,432	2%
Per cent of total subscriptions	27.2%	23.6%	−3.6%
Total subscriptions	192,231	226,700	18%

Local Contacts With Subscribers

In 1924 for the first time provision was made by the Bell Telephone Securities Company for it to buy or sell subscription rights as desired by stockholders, over the counter and by mail in New York and Boston and through the Associated Companies at the local commercial offices in those states where the Direct Sales Plan was in effect. The Associated Companies report that the arrangement as it affected them proved valuable in the contacts it gave them with their patrons and the services furnished were so generally appreciated that similar arrangements were made in 1926 and in addition a plan was adopted under which local offices received subscriptions and transmitted them to the American Company. As evidence that the assistance thus extended was most welcome over 34,000 subscriptions were forwarded through Associated Companies operating under this plan and in addition 50,000 transactions in the purchase and sale of rights were taken care of locally.

[fol. 3523]

Table II

1926 Stock Issue Transactions Handled Locally by Associated Companies for Their Patrons

Territorial Classification	Purchases and Sales of Rights		Subscriptions Filed	
	Number of Transactions	In Per Cent of Security Plan Stockholders	Number of Transactions	In Per Cent of Security Plan Stockholders
New England Group	2,024	194.4	1,458	140.1
Eastern Group	14,591	67.6	9,976	46.2
Central Group	10,600	49.6	6,814	31.9
Southern Group	1,851	34.4	1,167	21.7
Northwestern Group	3,102	50.0	2,069	33.4
Southwestern Group	6,800	62.3	4,703	43.1
Mountain Group	2,476	56.6	1,788	40.9
Pacific Group	8,453	81.7	6,140	59.3
Total	49,897	61.4	34,115	42.0

Note.—Security Plan Stockholders are those who have purchased shares through the Direct Sales Plan provided by the Bell Telephone Securities Company.

With the steady growth in the number of stockholders, the volume of additional work involved in an offer of stock has increased to a point where it is not possible to keep in the department during normal times a sufficient number of trained supervisory employees to fill all the added supervisory positions, and so it has been found not only necessary but possible to secure some such assistance from other parts of the Bell System. During the recent issue, fourteen employees were so obtained and they furnished invaluable assistance.

A very large number of Bell System employees took an active part in handling various phases of the stock issue work and, as in the case of all important System undertak- [fol. 3524] ings, the employees, individually and collectively, contributed in great measure to its successful accomplishment. The manner in which the immense amount of detail associated with the stock issue was handled by everyone concerned was most gratifying, and it stands as another of the many instances where loyal support and untiring effort have achieved the desired results.

[fol. 3525] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #12

Article Contained on pp. 262-269, Bell Tel. Quarterly, Issue of October 1924, Entitled "The 1924 Stock Issue of A. T. & T. Co.", Written and Testified to by Witness Blair-Smith

The American Telephone and Telegraph Company on May 20, 1924, offered for subscription new stock to its stockholders of record on June 10, 1924, in the proportion of one share for each five shares then held. Thus determined, the stockholders had the right to subscribe for 1,511,575 shares of a par value of $151,157,500.

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It would be inappropriate to close this article without a word of commendation of the spirit which manifested itself in the employees throughout the Bell System to make this issue a success in every way. This they did as is shown by the statistical figures given, and by many enthusiastic letters received with subscriptions from patrons and stockholders.

[fol. 3526] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #17

Article Written and Testified to by Witness Morsack, Appearing in Bell Telephone Quarterly of April, 1924, P. 100, "Accounting in the Long Lines Department"

Accounting for Special Contract Service

Although the Long Lines Department has no exchange service, and consequently none of the problems of exchange service accounting, we have a large development of what is known as special contract service, covering the use of our facilities for telephone or telegraph service between contract points for those users who, on account of the volume of their business, desire service between the same points either continuously or at stated periods. All of the accounting in connection with this service, including the rendering of bills against the subscribers, is handled by the Long Lines Accounting Department.

Special Contract Service is furnished at about 650 points in the United States, Canada and Cuba. The service furnished under these contracts plays a large part in the daily life of the nation, distributing price quotations to the stock and produce markets throughout the country, affording direct communication between the factories and selling offices of great industries, and carrying a large portion of the news which appears in the daily papers from Coast to Coast.

During 1923 we rendered 13,000 bills covering this service. Special care is necessary in preparing these bills because of the frequent changes in service, caused by the rearrangement of circuits requested by customers, as well as credits for unavoidable interruptions due to storms and additional charges for overtime and temporary service. [fol. 3527] Collections for this service are made by six Long Lines commercial offices, located at Boston, New York, Philadelphia, Atlanta, Cleveland and Chicago. A modified stub-accounting system has been adopted for the subscribers' accounts, the Accounting Department copy of the subscriber's bill showing the payments made and the unpaid balances, record of payment being obtained from the detailed collection reports sent in by the commercial offices.

[fol. 3528] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #18

Pp. 565-66 of Article Appearing in July, 1928, Bell System Technical Journal Entitled "Carrier Systems on Long Distance Telephone Lines", by H. A. Affel, C. S. Demarest, and C. W. Green.

Carrier Telephone Growth in Bell System

Whereas the use of the early types of systems was justified in competition with the alternative of additional wire stringing only for distances exceeding 250 to 300 miles, the new system proves economical for distances considerably less. This fact has naturally stimulated the application of carrier telephony in the Bell System. This is shown by Figure 1, which indicates the growth of these systems in terms of channel mileage afforded by their use. It will be noted that the rate of growth of the systems has increased greatly in the last two or three years, a result of the availability of the improved system.

At the end of 1927 there were in operation about 130,000 channel miles. By the end of 1928 the figure is expected to be about 230,000. This figure does not, of course, represent a very large proportion of the total toll mileage of the Bell System, which includes many circuits less than 100 miles in length. It is sufficient, however, to indicate that the carrier telephone systems are a substantial factor in the provision for the growth of the longer haul facilities, where they naturally provide the greatest economies. Their use is, of course, restricted to sections of the country in [fol. 3529] which open-wire construction is chiefly employed.* They have contributed toward lowering the cost of service and in making possible the toll rate reductions which have been put into effect within the past year or so.

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*In localities having very heavy traffic requirements such as in the East, extensive use is made of toll cables.

[fol. 3530] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #19

Pp. 80-91 of Bell Telephone Quarterly of April, 1931, Entitled "Milestones, Guideposts, and Footprints", by R. T. Barrett

Many improvements in methods and in operation and supervision have raised the standard of efficiency to a higher level. This uniformity is reflected not only in the quality of local service, but also in that of toll service. On calls of the latter type, two or more sets of operators, often in widely separated territories, are involved in making the necessary connections, and if there were not a uniform standard of accuracy and efficiency, the best efforts of one group might be seriously offset by poor traffic results on the part of the other.

There has been a marked improvement in toll service during the five-year period under consideration. This improvement has included not only an increase in the percentage of toll calls completed, but an even more significant increase in speed of completion.

During 1925, the present practice of having the customer remain at his telephone while a toll connection is being completed was not generally in use and there is no record for that year of calls so handled. During 1930, toll calls completed while the calling party remained at his telephone constituted 82 per cent of the total calls.

Facilities for long distance and toll service have been greatly increased, an outstanding illustration being progress in extending the Bell System's toll cable network. Since the beginning of 1926 approximately 15,000 miles of toll cable, providing more than forty-two billion conductor feet of wire, have been constructed and put in service throughout the system. Seventy-five per cent of the cities [fol. 3531] of 50,000 or more inhabitants are now connected with the network of toll cables that are practically storm proof.

Long Distance Rate Reductions

There began in the latter part of 1926 a series of reductions in long distance rates which, taken in connection with the improvements in this type of service above outlined, as well as others, strikingly illustrate the progress made toward more efficient and more extensive telephone service at a lower cost to the telephone user. The first of these reductions, made late in 1926, effected an estimated total annual saving to users of the service of about $3,000,000. In December, 1927, a further reduction was made, for a total annual saving estimated at $1,500,000. On February 1, 1929, another reduction became effective, for an annual estimated saving to the telephone users of $5,000,000. On January 1, 1930, long distance rates were further reduced, for an estimated saving of more than $5,000,000 a year. These four reductions represent, at the present time, a saving to the public of about $20,000,000 a year.

[fol. 3532] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #20

Pp. 92-102, Bell Telephone Quarterly of April 1931, by W. L. Dusenberry, Entitled "Teletypewriter Service and its Present-Day Uses."

While it is true that from time to time many concerns have been engaged in the manufacture of teletypewriter apparatus, it finally boiled down to the point where there were only five main manufacturing concerns and two of these were foreign corporations: Siemans Halske in Germany; Creed in England; Morkrum, Kleinschmidt, and the Western Electric in the United States. Then Morkrum-Kleinschmidt companies combined under that name; and later, for purposes of manufacturing economy, the Western Electric contracted with them to manufacture the teletypewriter apparatus for the Bell System and discontinued production itself. This left one organization in the American field. Soon afterwards, Morkrum-Kleinschmidt became the Teletype Corporation, which the Western Electric recently purchased.

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Stock brokerage houses are the largest users of this type of service. Daily they set teletypewriters operating between all principal cities in the United States and radiating to many smaller municipalities, so that 160 cities are so connected.

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The airways of the United States, which as recently as ten or twelve years ago were totally unprotected and generally even uncharted, are now provided with the most ef- [fol. 3533] ficient guides and safeguards science has been able to develop. From a single air route operating from Washington to New York at that time, we now find about 30,000 miles of regularly operated airway. Half of it is lighted for night flying; and all the principal routes are protected by the best land line communication system available, the teletypewriter. The Airways Division of the Department of Commerce of the United States Government has put its stamp of approval on this communication medium; and, as a result, large airway operating units like Transcontinental & Western Air, Inc., "The Ludington Line," Eastern Air Transport, Inc., and others, have seen fit to specify this service as a protection to their passenger traffic.

[fol. 3534] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #21

Pp. 114-131, Bell Telephone Quarterly Issue of April, 1925, by J. O. Perrine, Entitled "The Development of the Transmission Circuit and Communication"

Although the use of loading dates only from 1900, there were in 1911, 85,000 miles of loaded open wire circuits and over 170,000 miles of loaded underground cable circuits. A great share of this latter mileage was in the inter-office trunk cables. To "load" these circuits, 125,000 loading coils were necessary.

By 1924, the use of loading coils had greatly increased when there were 200,000 miles of loaded open wire circuits, both toll and long distance, together with 135,000 miles of loaded underground toll circuits. However, the most extensive application of loading to cables is found in inter-office trunk cables where the mileage of loaded circuits is 500,000. On December 31, 1923, 777,000 loading coils were in use, with 990,000 on December 31, 1924, and the estimated number for December 31, 1925, is 1,240,000. Something over 60% of the loading coils in the Bell System are used in the plants of the Associated operating companies.

More Channels Without More Wires

The third phase of the transmission circuit problem, that of obtaining more communication channels without more wires, has always been a fascinating one. In fact, so fascinating that one may readily lose sight of the matter of costs. To the engineer, however, the economics of this [fol. 3535] problem, like all the previously mentioned problems, had to be considered as carefully as the technique, for it avails nothing if it is not possible to accomplish by the new method the same or better results than were obtainable with the old at no greater cost. Obviously, if more circuits are obtained without more wires, additional terminal apparatus must be provided. Immediately an economic balance must be sought between this additional cost and the saving accruing from less cost for wire distribution plant. This terminal apparatus has been developed which in many cases makes it economical to send more than one message either by telegraph or by telephone over a single open wire circuit. Cable circuits at the present time also carry several telegraph messages, but these are accompanied by only a single telephone message.

Compositing Telephone and Telegraph

First came the bridge polar duplex system which gave as many as four telegraph messages and one telephone message over a single pair of wires. In this system each of the two wires of the metallic telephone circuit is used with a ground return circuit and provides one or two telegraph messages. This compositing of telegraph and telephone messages is used on 635,000 miles of circuit, approximately one-third of which is in the plants of the associated operating companies, the balance being in the plant of the Long Lines Department of the American Telephone and Telegraph Company.

The "Phantom" Circuit

The second answer to the problem of more communication channels without more wires came in the so-called "phantom" circuit. The "phantoming" of existing circuits calls for one pair of wires to be used jointly as one wire together with another pair of wires used jointly as the other wire, to form a third circuit and so three telephone conversations are carried by four wires. This method was originally suggested about 1884, but did not come into gen- [fol. 3536] eral use until 1904. During the first years of its development, the phantom system was applied only to open wire lines. When such a line entered a city where underground cable prevailed, the phantom or third circuit had to be carried on a separate pair of wires in the cable. In some cases where there were short lengths of cable involved, this practice was not always necessary. With the development of quadded cable which utilizes four wires in a cable as a discrete group, it was possible, about 1910, to apply the phantom method to cables. On January 1, 1924, there were 410,000 miles of open wire phantom circuits and 360,000 miles of quadded cable phantom circuits.

[fol. 3537] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #22

Pp. 141-149 Bell Telephone Technical Journal, Issue of January, 1930, by A. B. Clark, Entitled "Wire Line Systems for National Broadcasting"

The interconnecting of radio broadcasting stations by special telephone lines for the simultaneous broadcasting of radio programs began on a commercial basis in 1923. Today well over 30,000 miles of program transmission circuits are in use in the United States and transcontinental broadcosts by means of such wire lines are a daily occurrence.

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At the present time wire telephone systems are employed almost exclusively for this national distribution of broadcasts. It is the purpose of this paper to discuss the wire networks which are now being provided in the United States by the Bell Telephone System.

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From the technical standpoint, program transmission circuits are, of course, very different from message telephone circuits. In the first place, message telephone circuits must be arranged so that to and fro conversations can take place practically instantaneously. Program transmission circuits on the contrary are single-direction transmission circuits. They are, therefore, not complicated by problems of electrical echo, singing and the like, which are ever present with long message telephone cir-[fol. 3538] cuits. However, although free from the problems of two-way working, the design and operation problems of two-way working, the design and operation problems of program transmission circuits are by no means easy as compared with those of message telephone circuits. On the contrary, in many respects, these problems are considerably more difficult, the reason being that the requirement as to approach to absolute fidelity of reproduction is much more severe than for message telephone circuits.

[fol. 3539] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #24

Pp. 181-194 of July, 1929, Bell Telephone Quarterly, by R. B. Parker, Entitled, "Telephone Tyepwriters and Auxiliary Arrangements"

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Telephone Tyepwriter Exchange Service

The Bell System provides equipment and circuits and gives a service which permits subscribers to handle their own messages, telephone or telegraph, in their own way. Telephone typewriter instruments have to a large degree the flexibility of telephone instruments and can be interconnected through suitable switchboards in the same manner. It is, therefore, quite feasible to provide a large number of subscribers in their business offices with these instruments and to furnish wire interconnections between these subscribers as they may indicate their desires. The service need not be confined to a single city but any subscriber in New York may be connected to any subscriber similarly equipped in some other city, the time required to complete this connection being of the same order as that required to complete a telephone connection between the same two points. A service of this character is analogous to present telephone service in that the subscriber would, in general, provide his own telephone typewriter operator and on the completion of the desired connection to the called subscriber would handle his messages in any way that he saw fit.

An experimental service of this character has been established between switchboards and stations installed in telephone company offices in New York, Boston and Chicago and some adjacent cities. The circuit layout for this [fol. 3540] installation is shown in diagrammatic form in Fig. 16 and Fig. 17 shows the switchboard installed in New York. All information concerning calls is handled by telephone typewriter instruments and it has been found that a direct connection between a station in New York and a station in Chicago can be made in a very short time, while connections between Boston and Chicago or the reverse requiring one switch at New York also adds but little to the time required.

[fol. 3541] Extracts from Exhibit Deposition Exhibit No. 25

[fol. 3541] Bell Telephone Quarterly, October, 1924

Telephone Development of Important Cities—January 1, 1923

Country and City for Exchange Area	Estimated Population (City or Exchange Area)	Number of Telephones	Telephones per 100 population
New York	5,884,000	1,072,632	18.2
Chicago	2,858,000	638,650	22.3

[fol. 3542] Extracts from Exhibit Deposition Exhibit No. 26.

Article Appearing in Bell Telephone Quarterly, Issue of January, 1925, Entitled "The Work of the Bell Telephone Securities Company", by D. F. Houston, Appearing on pp. 37-41

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'It has been observed within the last year that editors of investment columns in magazines and newspapers have been giving an increasing amount of space to the merits of American Company stock and have been recommending it to their readers as a safe and conservative investment.

One editor has said very aptly that to buy stock in the American Telephone and Telegraph Company is to share in the general growth and expansion of the entire United States. Another editor on the Pacific Coast quoted a statement from F. W. Wolf of the Pacific Telephone and Telegraph Company, in which the latter said:

> "Every subscriber a shareholder" is an extraordinary slogan—it is received at first as a blatant boast; then it becomes a high ideal; and finally it appears to be a splendid possibility. The Bell System, throughout the entire country, is carrying on a work of a very great significance in the redistribution of the shares of the parent American Telephone and Telegraph Company. And California, as expected, has been quick to realize her splendid opportunity. In less than six months more than two and a quarter million dollars has been converted into certificates of the 'universal investment stock' by 2,000 persons who never before had owned a share, and the demand is steadily increasing.
>
> "And what 'high pressure' stock-selling methods were employed? Not a cent paid in commissions; not a reward offered of any kind; just an army of telephone employees, themselves stockholders so imbued with a sense of loyalty that they wanted to bring others into the Bell family."

The work of the Bell Telephone Securities Company in bringing about a wider distribution of the stock of the American Company conduces to the financial strength and economical financing not only of that Company. but also of the whole Bell System.

[fol. 3543] DEPOSITION EXHIBIT No. 27

Article in the Bell Telephone Quarterly, Issue of January, 1928, Entitled "An Economic Review and Outlook", by F. E. Richter, Appearing on Pages 27-41

An Economic Review and Outlook

The business developments of the year 1927 have afforded a sharp contrast with those of 1926. The earlier year, as was noted in the January, 1927, issue of this Quarterly, was "characterized by an exceptional degree of stability of business operations, especially considering the high level of business activity" during that year. In the course of the year 1927, while the volume of trade and industry, with some notable exceptions, remained on a generally high level, a marked business recession occurred. Whereas, therefore, as was indicated a year ago, "1926 established more than its share of new high records," 1927 did not, and it was more interesting for having furnished a number of economic paradoxes.

Some Paradoxes

Thus, for example, two of the outstanding records of the year, namely, the high prices reached by industrial stock averages and the enormous volume of stock transactions on the New York Stock Exchange, were attained in the face of the business recession and of declining business profits. Easy money conditions were presumably the most potent single factor in bringing this about; and lower money rates occurred in spite of a net loss of gold by export and earmarkings, from the banking reserves of this country. Sterling exchange not only rose above par for the first time in more than a dozen years, but went to the gold export point, at the very time of the year, the autumn, when sterling naturally declines because of foreign purchases of our crops. Average wholesale commodity prices, which, according to orthodox pre-war conditions, should move in the same direction as, but slightly later than industrial activity, were weak throughout the first half of the year, when industrial activity was being maintained at levels little different from those of 1926, and then began to strengthen and turn definitely upward in the second half [fol. 3544] of the year, when business recession was more clearly in progress. Bituminous coal prices were weak during the greater part of a year which witnessed a major coal strike. Wage levels remained firm or rose slightly, in the face of almost steadily increasing unemployment from April on. The review of the events of 1927 which follows will indicate the reasons for some of these paradoxes.

If one must yield to the easy temptation to characterize by a single epithet, the year 1927, in its domestic industrial aspects, might best be described as one of declining profit margins and decreasing profits, brought about both by keenness of competition and by a gradual slackening in the volume of output as the year wore on. The keen competition made itself evident from the opening of the year. Nevertheless, during the first quarter there was little effort made in any line to curtail output, and in some industries production was notably increased above the levels both of the preceding quarter and of the first quarter of 1926. The outstanding examples of this, to be sure, were in the bituminous coal and cotton textile industries, where special factors were operating. In the case of the former the imminence of a strike on April 1st naturally led to a high level of production in preparation therefor; in the case of the latter, the huge cotton crop of 1926 and the lowest cotton prices in more than five years gave a great impetus to cotton manufacturing.

The year 1926 having closed with inventories generally not at all burdensome, the high level of production in the first quarter of 1927 would perhaps have been of less serious import if it had represented something nearer a capacity rate than it did. But because consumers and buyers generally were fully aware of the amount of slack capacity and of the eagerness of manufacturers to maintain and increase the rate of output and to compete strongly for customers, price weaknesses followed and forced curtailment. For the fifth consecutive year, then, came the phenomenon of a [fol. 3545] rather sharp decline in business from the first to the second quarter of the year. The recession, however, did not cease with the second quarter as had been the case in 1924, 1925 and 1926, but for the first time since 1923 continued on for the rest of the year. Toward the end of 1927, especially, general retail trade, as well as automobile sales, seemed clearly to give evidence of the effects of increasing industrial unemployment and decreasing wage earners' purchasing power. Meanwhile the number of business failures had with remarkable consistency kept well above those of 1926.

There were during the year two outstanding favorable factors, later supplemented by a third. These two were the maintenance of a volume of construction activity fully equal to that of 1926 (though the distribution between various classes of building was different), and an almost uninterrupted decline in money rates. The third factor was such an upward movement in prices for agricultural products and live stock in the second half of the year and such favorable crop weather in the autumn as assured an income for our agricultural population fully equal to and probably somewhat greater than that which was received in the 1926-1927 crop year. The balance to be struck from these conflicting forces, in endeavoring to assay the probabilities for 1928, will perhaps be more certain after a more detailed review of some of the developments of the year 1927.

Banking and Finance

It would be easy to compile quite a list of contrasts between the years 1926 and 1927. This list would include not merely industrial, financial, and other economic developments, but changes in the current of economic thought and in the expressions of these changes in business and financial policies. In few fields has the contrast between the two years been greater than in banking and finance. The year 1926 witnessed interest rates pretty consistently above those of the preceding year, month by month, in spite of [fol. 3546] gold imports and a gain in federal reserve system gold holdings. These higher interest rates, to be sure, were due in no small part to the cumulative effects of the high level of business activity during the second half of 1925 and the whole of 1926. Federal reserve system rediscount rates were maintained at 4% throughout the system over the whole year 1926, except at the New York Bank, and even there the 4% rate obtained during most of the year. As was noted in the article a year ago, "federal reserve open market policy, like the discount rate policy, was one of relative inertness all year." A different picture was presented in 1927: Gold imports in the first half of the year and declining business activity (resulting in smaller demands for credit and for currency) soon brought about easing money rates; and then from mid-summer on the federal reserve system adopted a positive policy directed to maintaining money easy. Increased security purchases by the federal reserve banks were soon followed by a decline in the discount rate of each of the twelve banks, from 4% to 3½%. Easy money prevailed despite substantial gold exports and earmarkings of gold for foreign account, which resulted by the end of the year in a net loss for the year of gold to the banking system of the country. This net loss was fully neutralized by federal reserve system purchases of United States Government securities. By December the total amount of credit being extended by the federal reserve system was in excess of that extended a year previous, in spite of the fact that the volume of business activity, relative to "normal," and the needs of business (other than seasonal) for credit and currency were continuing to decline. This change in policy of the federal reserve system was prompted by international considerations, of which more will be said later. It came about in spite of a bull market in stocks which in some ways eclipsed even the extraordinary markets of the preceding two and a half years and it seemed to indicate that federal reserve authorities were rather less concerned than at times they had been [fol. 3547] over what some persons had thought of as "speculative excesses."

In the allied field of finance, the year set up a number of landmarks. Not only did average prices of both industrial and railroad stocks reach new high record levels; bond prices also rose to the highest levels (and bond yields fell to the lowest levels) in more than a decade. In December the 1st Liberty 3½s advanced to a price which made their yield to their first call date, 1932, less than 3%, the first time that any of the war bonds had sold on such a basis except when very close to maturity. As a result of the favorable bond market, the year witnessed an unusually large, probably a record, volume of refunding financing, in order that borrowers might reduce fixed charges by the substitution of low-coupon bonds for higher-coupon bonds, short-term debt, and preferred stocks. The outstanding example of this was afforded by the calling of the 2nd Liberty bonds on the very first date on which such a call was possible; but meanwhile domestic corporations and foreign borrowers had issued hundreds of millions of dollars of new bonds to the same end. Partly because of this large volume of refunding financing, the total volume of new security issues in the United States, domestic and foreign (not including those of the federal government), rose to the enormous total of more than $9,000,000,000, exceeding by the best part of two billion dollars the previous high record total of 1926. To the huge 1927 total; security issues for foreign account contributed about $1,600,000,000. This also constituted a new high record. Notable increases over 1926 occurred in loans to Canada, the Far East, and Europe.

Some of the details of the remarkable record in new security offerings during 1927 may be of interest. Domestic railroads did the largest volume of financing by stock issues since before the war; even so, such financing represented only about 20% of all domestic railroad security issues dur- [fol. 3548] ing the year. The volume of real estate financing, as a result largely of the decline in certain types of residential building, was a marked exception to the general trend and declined by about 9% from the 1926 total. The volume of long-term financing by domestic states and municipalities was not only in excess of the aggregate for 1926, but probably slightly exceeded the record figure attained in 1924. Industrial and public utility financing broke all previous records, the former amounting to more than $3,000,000,000, and the latter to just about $3,000,000,000. A large volume of merger financing was included in both of these huge totals. Indeed, the current of mergers and consolidations, fed by the desire to overcome the tendency of profits to decline, ran strong during 1927. The rising prices in the security markets greatly facilitated the movement.

International Economic Factors

This seems an appropriate place to indicate the principal developments in international finance which had an important bearing on the situation in this country. In England the year was devoted to efforts, not altogether successful, to recover the ground lost during the damaging coal strike of 1926. To this end it was highly necessary that industry should enjoy the stimulus of as easy money as possible and as light taxes as possible. The latter also required that money be easy in order that Government borrowing operations should be carried on as cheaply as possible. At the same time, money must not be so easy as to cause gold to be drawn out of the country, for the Bank of England's reserve was none too large, and prospective currency reform measures, both in England and in India, made it highly desirable that this reserve be not merely kept intact but increased. Unusually large visible import balances carried over into 1927 and helped to keep sterling at a discount. The Bank of England, however, was losing a relatively little gold until demand for a large amount came from [fol. 3549] an unexpected quarter. Since the summer of

1926 the Poincaré government in France had been strengthening the position of the franc, and in the spring of 1927 decided to call upon the Bank of England for a substantial quantity of gold, and did so. To make a long story short, this and other factors led to a conference of the heads of the central banks of England, France and Germany, respectively, and of the Federal Reserve Bank of New York. Following that conference, the major drain on the Bank of England ceased and measures were taken to bring an easing of money in this country as a result of which, as indicated earlier in the article, pressure has been taken off sterling to such an extent that early in December sterling went to the gold export point and some gold left New York for London.

Meanwhile, France, in the process of the rehabilitation of the franc, and other countries (partly from the proceeds of loans) had accumulated substantial balances over here which were either held as bank balances or were converted into investments or exchanged for ear-marked gold. (Some of the countries which stabilized their currencies in 1927 drew gold from New York to build up domestic reserves.) The developments of the year in this regard, therefore, carried much further the process which had been going on for some years of strengthening the position of New York as one of the two great financial centers of the world, and making the status of the dollar as an instrument of international exchange more nearly comparable with that held by the pound sterling. Most of the countries of the world that have stabilized their currencies since the war have not gone onto a pure gold standard, but onto a gold exchange standard; and in such cases dollar exchange is at least one of the foreign exchanges on which these standards are based. In short, our large holdings of gold are increasingly serving not only as our own banking reserves, but as partial reserves for some of the most important of the foreign banking systems. In this there is inherent no element of danger but simply an element of increased responsibility for main- [fol. 3550] taining elasticity and flexibility in the operation of our banking system.

The immediate short-run interest in German developments during 1927 centers in the fact that, partly as a result of substantial borrowings in this country, Germany, incidental to a definite increase in business activity, greatly increased the volume of her imports and built up a rather large "adverse" import balance in her foreign trade. Especially notable increases took place in her purchases of American copper and cotton. As the year wore on, increasing attention was paid to the large volume of German borrowings, to the rapidly growing import balance, and, particularly after the submittal of a memorandum on the subject by the Agent General for Reparations, to the mounting expenditures of German political units. These factors derived the greater significance from the fact that beginning next autumn Germany enters the first year in which the maximum payments under the Dawes plan schedule come into effect; and speculation has therefore been rife as to whether, in view of this year's developments, next year must perforce witness the putting into effect of such financial controls as will make for distinct restraints on industrial activity. Indeed, a recession in German business occurred in the latter part of 1927.

For Europe as a whole, as for the United States, the year 1927 has presented a picture in which one of the outstanding features has been the presence and effects of increasingly keen competition, with wholesale commodity prices declining, as in the United States. This has been due in part to the natural evolution connected with recovery from war conditions, in part to the specific effects of the escape of Great Britain from the strike of 1926, in part to the general stabilization of more and more European currencies, and in part to the progress made in installing "rationalization" measures looking to and bringing about greater efficiency in industrial processes. The growing competition has been strikingly reflected in notable efforts [fol. 3551] at cartelization of various key industries of international character. Even this move has by no means solved all the difficulties. It seems certain that during the year 1928 these tendencies will continue in equal, if not in increasing, force. It is difficult to be very enthusiastic as to the probable net progress to be made by European business in the new year.

Meanwhile, it is interesting to note—without attaching undue significance to the fact—that the value of our exports to the whole world, of manufactures ready for consumption, failed during 1927 to continue at previous rates the year-by-year growth which had been characteristic of this class of exports from the second half of 1922 on. The total value of our exports to Europe was during the first ten months of 1927 about 3% greater than in the corresponding months of 1926, representing a slightly lower proportion of our total exports to all continents than in the earlier year.

Domestic Industry; Labor; Agriculture

To return to the further consideration of certain domestic economic factors. It has already been noted that there has been under way in 1927 the most prolonged recession in business that has occurred since 1923. The recession, however, has been of moderate dimensions. By some it has been attributed largely to the stoppage of production by the Ford Motor Company, which in the spring ceased to manufacture Model T and began the long period of factory changes in preparation for the new Model A. There have certainly been other factors than this which played roles of some importance in bringing about the decline. There was in the first place the bituminous coal strike, which threw scores of thousands of workers out of employment for a number of months. Chiefly as a result of the coal strike, railroad traffic began in the second quarter of the year to show declines from the level of the year previous. [fol. 3552] This and the steady progress being made in increasing operating efficiency led the railroads to go even further in curtailing their purchases of equipment than they had gone in 1926. The disastrous spring floods in the Mississippi Valley adversely affected business in that region and elsewhere. The total volume of new construction in the United States in 1927 held up to the level of 1926 as far as dollar value went, but again, as in 1926, there was an increased proportion of construction by public bodies and by public utilities and a decreasing proportion of residential building, with the net effect of using less labor per dollar unit of construction. The oil industry definitely reduced its drilling operations as production continued to mount, and again a certain amount of labor was thrown out of employment. The heavy industries generally, with the outstanding exception of agricultural machinery, restricted operations and therefore curtailed employment. Steady progress in the more effective use of labor, both in industry and in agriculture, helped to add to the labor surplus.

The cumulative effect of these factors was the greatest amount of unemployment for some years, which in turn, as has been said, seemed by the end of the year to be having a definite effect on the volume of retail trade. Wage levels, however, remained firm throughout the year, and indeed the wage rate advances, including those on the railroad systems of the country, doubtless exceeded the wage rate decreases, both in number and in amount. It was clear that, for whatever reasons in any particular case, employers were seeking to use other means than wage reductions to cut expenses, in the face of declining profits. The most important wage reductions were in certain coal fields and, in the closing months of the year, in the New England cotton textile industry. It is almost needless to add that the year was characterized by an unusually small number of strikes and other major labor disputes.

The picture presented by agricultural conditions in 1927 has, as is frequently the case, been a mixed one, not only as between the volumes of various crops but as between price [fol. 3553] movements and the profitableness of operations in various regions of the country. The net result, as has previously been indicated, is apparently that our agricultural population will receive from the marketings of the current crop and live stock year an income fully equal to or greater than that received a year previous. A cotton crop nearly a third smaller than that of 1926 is bringing prices which should make cotton farmers' gross income slightly larger in 1927 than in 1926. The income of spring wheat growers and of cattle raisers will this year be distinctly above that of a year ago. Hog raisers, on the other hand, have suffered from a combination of relatively high corn prices and decidedly low hog prices. The tobacco crop is distinctly below that of a year ago in volume, as is the winter wheat crop, and some of the important fruit crops are drastically below those of 1926. On the whole, the territory between the Mississippi River and the Rocky Mountains has fared much the best of any region of the country in the gross and net money income from crops and live stock. Almost every important product of this region has been favored either by a large volume of production or by high prices, or even in some vases by both.

Commodity Prices

On the subject of wholesale commodity prices, the year brought forth its full share of discussion. The business recession naturally somewhat intensified the weakness in non-agricultural prices which had developed in 1926. The level of non-agricultural prices as a whole apparently declined to the lowest level since the war. Such important raw materials as coal and oil, iron and steel, silk and rubber, copper, lead and zinc, all suffered from the failure of production to be adjusted promptly to consumption. The price decline during the first six months of the year only increased the desire of consumers to buy ahead as little as possible. In certain industries there was a competition among sellers for even the small orders of buyers such as [fol. 3554] might be held far more characteristic of a sharp recession or of a real depression than of the mild recession from a level of activity well above normal that was occurring. The keenness of competition was by no means restricted to raw materials, but particularly as the year wore on and unemployment grew, spread increasingly (and characteristically) through the distributive trades.

The discussions of prices centered chiefly around the two customary focal points. On the one hand, much was said and written on the old and related subjects of volume versus price, the high cost of small orders, and the importance of proper cost accounting. Various raw material and semi-raw material "institutes" (trade associations) launched programs for the compilation by, and distribution among their members of accurate cost statistics. On the other hand, the broader question of the general commodity price level, its long-time trend and its relation to banking policies, came in for a lot of attention—the more so because of the sharp contrast between declining commodity prices and rising stock prices, and because of the large gold exports in the latter part of the year.

The question whether federal reserve policy was inflationary or deflationary in character still remained unsettled as the year ended!

The Outlook

The picture presented in the foregoing pages has naturally been a general one with most of the details lacking.

It is seldom true that movements in either direction proceed uniformly in all industries. Uniformity was certainly lacking in 1927. Cotton goods manufacture reached new high levels in 1927; construction activity was maintained at about the level of 1926; marked improvement occurred in the hide and leather industry; some improvement took place in woolen and worsted goods; the silk and rayon industries made their customary new high production records in spite of weakness in raw silk prices; the agricultural machinery industry was active and prosperous; there were [fol. 3555] record outputs of automobile tires, of cement, of petroleum, gasoline, and probably of lead; and there were record sales of ordinary commercial life insurance, in spite of the fact that World War veterans took out, by conversion or reinstatement, more than a billion dollars' worth of United States Government Life Insurance. Recessions in output were moderate in the case of copper, zinc, lumber, iron and steel, and anthracite coal, and more serious in the case of bituminous coal, automobiles, paper, glass, certain house furnishings, and railroad equipment. Whatever the directions or extent of the movement of activity during 1927, the year nevertheless ends for most industries with inventories still moderate and under control.

If at the end of 1926 there was any danger—and there was little—from certain real estate situations and from the installment situation, the developments of 1927 have lessened the chances of difficulties arising in these two fields. Progress has been made during 1927 in international financial stabilization, as well as in the working out of international understandings on certain elements of financial policy. Domestic credit has been easy throughout the year and gives promise of being easy in 1928. Generally speaking, the position of our agricultural population has been improved during the year just closing. It is fair to say that a little progress at any rate has been made by the oil industry in dealing with some of its problems of internal organization. The curtailment that has taken place in certain industries has probably paved the way for a more than seasonal increase in activity at least during the first half of 1928. There are no shortages of raw or semi-finished materials, of labor, transportation or communication facilities, or credit, to stand in the way of any upward movement of business activity that may reasonably be expected to take place. At least a moderate upturn early in 1928 seems probable.

The main question for 1928 seems to be that of determining how long such an upward movement can be sustained [fol. 3556] and how soon it is likely to be followed by a downturn. There is nothing to indicate that 1928 will be a boom year. Neither the domestic nor the international situation warrants any such expectation. The curtailment in activity during 1927 has not in general been drastic, and therefore no shortages or deferred demands have arisen, except perhaps for one single commodity—Ford automobiles—which cannot be fully met in short order. Shortages, actual or prospective, are the raw principal materials of so-called business booms. Lacking these, it seems probable that 1928 will no more than duplicate on the average the record of activity of 1927. If this much is achieved, it will still be an "active" year. Perhaps it will not be sufficiently so to solve two of the major problems of 1927, that of unemployment and that of narrowing profits. In any case, political events, either at home or abroad, are likely to be minor rather than decisive factors affecting the year's economic developments in the United States.

Only casual reference has so far been made to one of the spectacular developments of 1927, namely, the large gold exports in the second half of the year. That no more was said was due to the fact that the gold movement has had little or no bearing or effect on the domestic business situation. For this, federal reserve policy, both in action and in the attitude taken in federal reserve system publications, has been largely responsible. Many persons look for further substantial gold exports in 1928. Whether or not they take place, the prospect of them need not be a cause for anxiety as to our credit structure or our domestic price level. In an article written for the July, 1924, issue of this Quarterly, the writer remarked that "so far as the present outlook indicates * * * the United States could, at any time within the next decade at least, export $500,000,000 of gold without having to make any but the slightest impression on the credit structure of the country." In spite of the growth in the volume of trade and industry since that was written, and in spite of the tremendous up-surge in [fol. 3557] security prices and real estate prices over the last three years, the writer still subscribes to the statement, for the same reason that led to its expression in 1924. That reason is that intelligent federal reserve policy can prevent such a gold movement from constituting a shock to American finance and industry.

F. E. Richter.

[fol. 3558] DEPOSITION EXHIBIT No. 28

Pp. 32-42, Bell Telephone Quarterly, Issue of January, 1923, Entitled "The Budget Plan of the Bell System", by C. A. Heiss

The Budget Plan of the Bell System

The pages of history tell us of many ways by which mankind has sought to foresee and appraise the future. Soothsayers and astrologers, sibyls and oracles, all were held in high esteem in the life of their times. The bases for prophecies were many and varied; the position of the stars, the bones of lambs, nature's marking on stones, and many other things quite as irrelevant were all used. Great significance was attached to the interpretation of dreams, and we have a familiar example in the story of Joseph, who, from Pharaoh's dream of seven lean kine devouring seven fat kine, was able to anticipate the seven years of famine and, from the abundance of seven fat years, laid by stores for the lean years which followed.

With the advance of knowledge and lessons from experience, men have discarded these methods of appraising the future. They have learned that guesses, auguries, or "hunches" are unreliable guides and that the best assurance toward a prosperous future lies in careful planning for it—by studying what has happened in the past and, in the light of experience, surveying the problems and possibilities of the future so far as they may reasonably be foreseen. The wisdom of this course is universally recognized; by following it Governments hope to realize a partial solution of their present-day fiscal problems; modern business enterprises find in it a more scientific and safe way of directing their affairs, and even the twentieth century housewife finds it an excellent way to insure an abundance of [fol. 3559] "pin money" and to promote domestic happiness. Manifestly, other things being equal, the greater success and satisfaction will be realized by those who intelligently follow this program of planning carefully their future course.

Modern business in particular, when conducted on a large scale, has, by experience, come to realize the value of recording, classifying and analyzing its problems, performance and potentialities in order to learn, if possible, what it may expect for the years which are to come. To this end carefully adapted methods of accounting and statistics have been developed to record the past and point to the future. By analysis of these the executive finds an indispensable aid in forming his judgments and directing intelligently his undertakings.

The Bell System with its immense problem—continually increasing in complexity—of performing a national telephone service for more than one hundred and ten million people, has not failed to appreciate the importance of utilizing this valuable and logical aid in conducting its affairs. For many years it has prepared a Budget Plan, or what is more familiarly known as the "Provisional Estimate." From simple beginnings, this Budget Plan has been developed along with the growth of the business, until it has become one of the indispensable adjuncts to successful administration and operation of the national system. In fact, without it, the administration of an organization so large and complex as the Bell System would be exceedingly difficult, if not impossible.

The Need for a Budget Plan

The Budget Plan or "Provisional Estimate" in the Bell System is a complete statistical summary of construction, operating and financial facts, both as they are presented by a pertinent period of past performance and as they may be forecast for a reasonable future period. It begins with [fol. 3560] an analysis of past experience and, in the light of that, searches the future and makes orderly preparation to move upon it. Those who administer the business have available a comprehensive picture of the growing and changing character of the business for the purpose of reaching well balanced judgments as to the lines of development necessary to meet the public needs and as to the best administrative policies and practices to be followed.

In the past, this Budget has been confined principally to a survey of the situation for one year in advance, set up in comparison with the realized performance of the present and past. However, the continually increasing demand for telephone service; the greater dependence upon the telephone as a means of simplifying and expediting the conduct of business and social life; the more highly technical character of the facilities required; and the increasing complexity of the entire undertaking, all require from those who furnish this service an ever increasing foresight. The most careful planning for future years is now essential. It demands, moreover, (to meet successfully this evolution in business and social life) the wise provision of great quantities of additional and improved facilities, many of which require several years for engineering, manufacture and installation; the preparation of the most economical programs for obtaining and expending the large amounts of money required; and the solution of numerous and complex construction, operating and management problems.

A few facts may be cited to illustrate this expansion in the Bell Telephone System and the size of its problems. At the end of 1900, there were 37,000 employees, 800,000 company owned stations, a plant investment of $180,000,000, and net plant additions for that year of $35,000,000. At the close of 1921, there were 224,000 employees, nearly 9,000,000 company owned stations, a plant investment of $1,550,000,000 and net plant additions for the year of $180,000,000. [fol. 3561] (It is interesting to note that the net additions to plant in the Bell System for 1921 alone were as large as the entire telephone plant investment in 1900, accumulated during the 25 years after the telephone was invented.)

The future does not promise any slackening in the demand for additional service. New facilities must be added, equipment must be replaced, in brief the telephone structure must keep pace with our national development. Obviously, the many complicated problems presented by this widespread telephone structure, with its rapid growth, require most careful study of what has happened and most comprehensive analysis of the needs and possibilities of the future. To meet this situation, and to obtain a better appreciation of the effects of general industrial and economic conditions upon the demand for telephone service and the requirements involved in these demands, it is necessary to look further into the future than we have in the past so that the task of rendering telephone service may be better visualized, and its problems anticipated and provided for intelligently in advance. To this end, the Bell System, during the past year, has substituted for its one-year plan a five-year Budget, by means of which it aims to obtain as comprehensive a picture as possible of the task ahead of it for at least that period. This five-year program, stepped up annually by adding one year and by correcting for previously unforeseen situations, provides a continuous and dynamic forecast of the problem before the Bell System.

The Character of the Budget Plan

This fundamental and continuous five-year Budget Plan aims to provide data which is truly comprehensive and well balanced from all points of view. The facts brought together are intended to show why and how certain things should be done, and what may be expected, particularly in [fol. 3562] development, capital costs, revenues, expenses and net return, as the result of the action proposed. Accordingly, past performance is tabulated and the reasonable assumptions for the future are set up in comparison. In the preparation of this picture, practically every department of the company is in some way or another concerned.

As a preliminary step the Executives must make available a tentative program of general policies in respect of the business and its future development, so that the several departments may have a basis upon which to proceed in bringing together the material for that part of the picture for which they are immediately responsible.

The Statistician must give his picture of economic and financial conditions, as these may be anticipated, with their probable effect on development; he must analyze business and labor conditions and the probable trend of interest rates and the money market. The telephone business, it is true, continues to increase with remarkable evenness year by year, in spite of wars, business depressions, and other disturbing factors, and, in general, is by no means as much affected by external influences as manufacturing, mercantile, and other business; nevertheless, economic influences cannot be disregarded and no estimate of the future of the telephone problem will be fully significant which does not incorporate the result of careful study of economic factors such as the increase in national wealth, the tides of immigration, the increase or decrease in population, distribution of income, and housing conditions.

The Commercial forces must estimate as carefully as possible the increase in population in the territory to be served, the growth of cities and other communities, the extent to which these changes will influence the increase in stations, and the prospective use of telephone facilities by [fol. 3563] patrons. Possible new forms of service must be studied and their effect on the business ascertained; estimates must be made of the probable revenues which may be expected from each class of service which is or may be offered.

The Traffic forces must survey the requirements for handling the service demanded, in the way of both equipment and personnel. Related labor supply and costs must be studied. Various methods of handling traffic must be considered to find the most efficient and economical practices and types of equipment. All of these must be resolved into expected capital expenditures and operating costs for the period.

The Engineering and Plant forces must consider the traffic and service requirements as forecast for the future, and determine the amount of additional facilities required, the types of plant best adapted to meet efficiently and economically the demands for service as they are foreseen. They must also give consideration to spare facilities, and their fundamental plans must be such as to lay the foundation for meeting still greater service demands in the future in an orderly step by step progression along sound and carefully worked out economic lines. Replacement and rebuilding of plant and equipment must be considered and proper provision made for the maintenance of the property. All of these and many other factors must be resolved into plant, labor and material requirements, capital expenditures and operating expenses.

The Accounting forces must provide from their records data as to past performance of every phase of the business. They must also estimate and summarize future requirements as to taxes, fixed charges, dividends, and general and miscellaneous expenditures. Items of revenue must be estimated and tabulated.

In fact, every function of the business must outline its program of activities for the period, justify their value to the business and appraise the cost and results thereof, and [fol. 3564] all of these judgments and estimates brought together, co-ordinated and summarized, comprise, for the Executives, a Provisional Estimate of the task and its probable results immediately ahead of the Bell Telephone System. The picture is by no means complete, for many unforeseen situations and contingencies will arise to modify the work as planned and the results expected. Estimates also are sometimes influenced by hope of accomplishment rather than by an analysis of the cold facts, but nevertheless a valuable fund of data has been made available.

The Use Made of the Budget Plan

This fund of information regarding the future of the business enables the administrative and executive officials to consider the soundness and wisdom of their policies and programs for the future. They must review the possibilities in respect of general business conditions, price changes, labor conditions and wages, the demands for service, the requirements for plant additions, improvements and replacements, the requirements for maintenance, operating and general expenses, depreciation, and taxes. They must give due consideration to unforeseen contingencies and make due allowance for estimates of the future based on scanty data. They must eliminate the non-essential in the plans as proposed. The adequacy of the present rate structures must be studied, the revenues expected from new developments must be carefully scrutinized, and a conservative appraisal made of the possibilities of increased revenues. The prospects of obtaining the new capital required must be considered and the probable cost thereof ascertained.

In brief, those who administer the business must obtain a full knowledge of what is involved in their responsibility for furnishing adequate and efficient telephone service for the future, whether their policies and the programs as proposed by the several functions can be executed, or whether [fol. 3565] they should be revised, modified or discarded.

However, beyond this they must satisfy themselves that the program which is finally adopted will yield a proper and reasonable amount of net earnings on the investment required, otherwise that program, no matter how splendidly planned, must fail, for investors will not long supply the additional capital required unless they are assured of the protection of their investment and an adequate return thereon.

In meeting these two major responsibilities, namely, adequate and efficient telephone service to the public and an adequate return to those who invest their labor and money in the business, the data provided by the Budget Plan furnishes the executives with a continuing basis for action. With its aid they can lay plans for the future and arrange for the conduct of operations in an orderly and economical manner from every viewpoint. A few of the advantages made possible may be mentioned.

From the viewpoint of future material requirements, when one stops to consider that the purchases of equipment and construction and other materials required by the Bell System now exceed $150,000,000 annually and that these for the most part are highly fabricated and specially manufactured for its purposes, it becomes evident that construction and service programs must be anticipated and requirements furnished to the suppliers at least several years in advance, in order that equipment and supplies may be manufactured and delivered under normal schedules. Time should also be available for reasonable foresight as to price changes, to enable a more liberal purchasing of materials during periods when prices are at relatively favorable levels. The supply of raw materials now used may become limited and it may be necessary to find new sources or substitutes if delay and inconvenience are to be avoided. Deliveries of material can be scheduled and made available by the supplier in an orderly manner so that no delay will result when work on a project is started. At the same time, the manufacture and delivery of equipment can proceed in [fol. 3566] such a way as to limit to the minimum the preliminary non-earning period of capital tied up therein.

From the viewpoint of construction and maintenance work for the future, large and important developments and projects can be studied and possible alternative plans considered to find the best and most economical way to meet the desired result. Switchboards and installations must be engineered, and construction activities co-ordinated. Replacement and maintenance programs may be prepared. The necessary workmen can be trained in advance so as to be skilled and experienced in their work. The general demand for and supply of available labor can be analyzed and a continuous program of work arranged so that skilled labor may be continually employed. In brief plans may be made to conduct the necessary operations year after year on an even keel without undesirable changes in working forces and labor turnover.

From the viewpoint of operation, there is afforded an opportunity to study increased service demands, and if these require that methods of handling traffic be revised, or that new and better facilities be provided or new methods designed to meet the requirements, this can be done. The necessary operators may be trained and the source of supply analyzed to ascertain whether the needs of the System can be met or whether other methods of handling the traffic must be employed. Anticipated operating expenses of every type may be scrutinized and plans laid to ensure the latest and most economical methods.

From the viewpoint of revenues which are required to make possible the success of any program adopted, the Budget Plan provides an opportunity to plan carefully in advance for rate schedules which will be adequate and consistent with the quality of service rendered, yet reasonable in cost and adapted to develop traffic. New sources of revenue may be arranged by more effective and intensive [fol. 3567] uses of the service. Rate situations may be systematically studied and equitably adjusted so that expensive rate litigation may become necessary only as a last resort.

From the viewpoint of supervision, the data so made available affords an excellent means of checking actual performance. If the estimates take full account of all of the conditions under which the proposed work must be done, and its actual performance presents higher costs or other unfavorable conditions, an opportunity is afforded to check whether the work was done efficiently and economically, or whether it is properly organized and supervised; in brief, whether the desired result is being obtained at the lowest possible cost.

Finally, one of the major functions performed by the Budget Plan is to lay a sound foundation for financing. After the entire program for the immediate future has been summarized, checked and revised to a sound basis, consistent with the expected demands for service and conservative as to cost, the problem presented is that of financing the undertaking. All proposed activities must be resolved finally to capital costs and net earnings. If net earnings are not adequate to yield a proper return, one of two courses of action must obviously be taken—either more revenues must be made available or the program must be modified. The large army of investors in Bell System stocks and bonds—numbering upwards of half million—must realize as much on their funds in this business as from other forms of investment, otherwise their funds will be withheld. The Budget makes it possible to so plan the future of the business as to retain these investors and to interest others, while rendering service at a reasonable price.

The capital cost of any program approved must be obtained by new investments from those who are already investors and by developing new sources of capital, and to [fol. 3568] this end, the Budget permits a continuous forwardlooking financial program in respect of the large amounts of new capital required. During the past few years, these capital requirements have averaged upwards of $100,000,000 annually. To make available at the minimum cost to the Bell System, these immense amounts of new capital and to have funds on hand as needed is indeed a task of no small proportions. Consideration must be given to the best form of security to be issued—whether stocks, bonds or notes—and the most favorable time for issuing these must be determined. The conditions of the investment money market and the trend of and possible changes in interest rates must be critically considered. New sources of capital must be tapped and confidence must be established and maintained in the securities issued. The foundation must also be laid for future issues, since the business is a continuing one and the demand for telephone service shows no signs of slackening. But the task of financing can be carried to successful completion only if net earnings are and continue to be such as attract and hold capital in the business, and in this connection, the

Budget Plan appraises anticipated earnings and gives a basis for making every possible effort by sound planning and economies to make them adequate now and for the future.

The American Telephone and Telegraph Company and its Associated Companies comprising the Bell System have as their responsibility to society the task of furnishing a national telephone service. In performing this task the development of a well organized and intelligent force of men and women has been necessary and an investment aggregating over two billion dollars is now involved. The size of this undertaking has not come about by the personal desire of any one individual or group of individuals in the Bell System that the organization and structure which provides this essential service should be the largest of its kind, or that an enormous volume of service should be rendered [fol. 3569] as a business venture; rather, this structure has been made necessary by and created out of the demands of society that it be supplied with this indispensable instrument in the conduct of its business and social life. For the same reason, the business will assume even greater proportions, more complex service and operating problems will be encountered and much additional capital must be obtained.

This responsibility for the future can and will be met, but to that end a careful study of past performance is required, and careful and logical planning for the future must be in evidence, to assure that development and growth will proceed in an orderly, economical and stable manner. On this account, a continuous scientific Budget Plan, which lives and grows with the business and is always adapted to the needs of the time is indispensable.

[fol. 3570] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT NO. 29

Telephone Development of Large Cities, January 1, 1930

Country and City (or Exchange Area)	Estimated Population (City or Exchange Area)	Number of Telephones	Telephones per 100 Population
New York	6,898,600	1,811,410	26.3
Chicago	3,360,000	987,891	29.4

[fol. 3571] **EXTRACTS FROM EXHIBIT—DEPOSITION EXHIBIT #30**

Pp. 150-163, Bell Telephone Quarterly, Issue of July, 1931, Entitled "Some Auxiliary Services and Facilities of the Bell System", by R. S. Coe

Western Electric Facilities

Of the facilities outside of the telephone service developed by Bell System engineers and made available through the Western Electric Company and its subsidiary, Electrical Research Products, Inc., the most famous is the talking motion picture equipment which has revolutionized the movie industry. Another is the new service for measuring noise which is described elsewhere in this issue of the Bell Telephone Quarterly.

The Public Address System enables speakers to address large audiences indoors or outside without straining their voices. It is used at race-tracks, stadiums, convention halls, overflow meetings, newspaper bulletin boards, etc., and for increasing the audibility of music at amusement parks and ball-rooms. There is also a Music Reproducer which magnifies the sound of photograph records for use in restaurants and other places of amusement.

The Western Electric Hard-of-Hearing System is a device with headsets installed in movie houses, churches and other auditoriums to enable those with defective hearing to enjoy the talkies, church services, speeches, music, etc. The volume of sound delivered is controlled individually by each user.

There is also an Electrical Stethoscope which magnifies the sound of heart-beats, thereby facilitating diagnosis in cases of heart-disease.

[fol. 3572] More directly related to telephone communication are the two-way radio telephone systems which the Western Electric Company manufactures for use between ship and shore and between aircraft in flight and ground stations. The Marine Radio Telephone Equipment is particularly useful for harbor craft such as tug-boats, ferry-boats, lighters, municipal fireboats and pilot-boats. It is also of value for fishing-craft.

The Aviation Communication Equipment is of two types: a low frequency system for receiving radio beacon signals and weather reports, and a two-way high frequency radio telephone system which permits the plane to keep in constant touch with other planes and with ground stations. It is an invaluable aid to safe flying, as landing instructions and weather reports can be received en route.

The Western Electric Company manufactures a wide range of radio telephone equipment and has provided a majority of the large broadcasting stations in the United States.

It has likewise applied its telephone developments in the field of electrical recording to the making of electrical transcriptions for radio use, and it supplies broadcasting stations with the equipment to put on these so-called "spot broadcasting" programs, which are used by advertisers who desire to reach the territory covered by an individual station or a group of such stations.

The Western Electric Company also manufactures for [fol. 3537] the use of railroads, oil companies, mines and others, switchboard and other telephone apparatus and communication equipment. In addition, it provides the high speed submarine telegraph cables used in trans-Atlantic and trans-Pacific wire communication.

A Unifying Objective

All these various services and devices that the Bell System has developed, whether they are directly a part of the telephone service or by-products of it, have been worked out by Bell engineers for the service of the public. They are the products of the large numbers of highly trained specialists who are constantly planning how to make the telephone service more useful and how to develop new phases of service. Diverse as are the results of this research it has a unifying objective: to increase human knowledge of electrical communication and to turn the forces of nature to the service of mankind. Much has been achieved and more will certainly be accomplished in the future. Nothing has been said, for example, of Television because it is still in the experimental stage and Bell System engineers are unwilling to predict what its future sphere of service may be.

Richard Storrs Coe.

[fol. 3574] Extracts from Exhibit Deposition Exhibit # 31

Pp. 2-12 Bell Telephone Quarterly, Issue of April 1922, Entitled "The Radio Telephone Situation", by A. H. Griswold

The Patent Situation

At the same time development by others of radio and allied equipment was taking place and, as might be expected, it was not long before it was found that the patent situation was considerably involved and that the public would be unable to obtain the full benefits of radio unless some arrangement could be made between the holders of the patent rights which would permit of unhampered development. Accordingly, at the request of the United States Government, the General Electric Company and the American Telephone and Telegraph Company entered into a cross-license patent agreement, effective as of July 1, 1920. In general, by this agreement the American Telephone and Telegraph Company received licenses in the field of commercial and public service radio telephony, while the General Electric Company received licenses in the field of amateur radio telephony at all radio telegraphy.

Following the execution of the principal agreement between the American Telephone — Telegraph Company and the General Electric Company an extension agreement was entered into whereby the General Electric Company may extend to the Radio Corporation of America any of the licenses which the General Electric Company received under the principal agreement, and likewise the American Telephone and Telegraph Company may extend to the [fol. 3575] Western Electric Company, any of the licenses which the American Telephone and Telegraph Company received under the principal agreement. Subsequently, the Westinghouse Electric and Manufacturing Company, who also had been at work in the radio field, entered into the agreement in the same patent license fields as the General Electric Company and Radio Corporation of America.

Prior to all this, the Radio Corporation of America had been formed, had taken over the interests of the Marconi Company in the United States, and had entered into an agreement with the General Electric Company whereby it acquired rights to use and sell all radio equipment which the General Electric Company was licensed to manufacture.

The situation today, therefore, is as follows:

In general, radio telephone equipment for commercial or public service uses is provided by the American Telephone and Telegraph Company or through its manufacturer, the Western Electric Company. Amateur radio telephone equipment, radio telephone broadcasting receiving sets, and radio telegraph equipment are manufactured by the General Electric Company and Westinghouse Company and are sold through the Radio Corporation. The underlying principle throughout this cross-licensing agreement is to insure and make available to the public the complete development of radio.

Radio Telephony a Supplement To and Not a Substitute For Wire Service

The interest of the Bell System in radio lies in whatever application it may have to the possible future development of telephone services. In the Bell System or any other system based on sound economic principles, the fundamental consideration in any communication problem is the provision of the type of facilities which will give the best and most economical service to meet the particular set of conditions involved. In this there is made no distinction between wires and radio, as the premise is the proper type [fol. 3576] of communication and the conclusion may be wires or radio. However, it happens that the inherent features of radio telephony are such that it has no economic or service application in the United States, or in any other place where conditions are similar, except as a supplement or auxiliary, in certain instances, to the wire service, but in no case a substitute therefor.

The real applications of radio are in communications across wide stretches of water, in ship to ship, in ship to shore, in airships to land, in possibly some other types of mobile stations, in some forms of broadcasting where the same communication is given simultaneously to a large number of people, and in remote cases where, due to geographical or other conditions, it is impossible or impracticable to place wire lines. All of these applications will be recognized as supplements to the regular wire service and not substitutes for them. For the regular telephone services both local and long distance, for which wires are now so extensively employed in the United States, the limitations of radio are such that it cannot be used.

Radio Telephony Can Never Replace Universal Wire Service

The general telephone communication goal in the United States is universal service. This is merely a brief way of saying that any person, anywhere, at any time, can quickly, reliably and at a reasonable cost, talk with any other person anywhere else in the United States, and for this talk these two persons will have available facilities for their personal, private and uninterrupted use. Radio does not meet these requirements. It provides unguided transmission, sending out its message broadcast to anyone within range properly equipped to receive it, while wires, although they came first in scientific development, really represent the refinement of the art and provide guided transmission directed only to [fol. 3577] the person for whom intended. Scientifically it is actually more remarkable that we are able to guide messages by means of wires than to send them out broadcast by radio.

The number of communications which can be transmitted simultaneously by radio is narrowly limited.

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The words of the Secretary of Commerce, Mr. Hoover, at the recent Radio Conference in Washington are interesting and to the point:

> "I think it will be agreed at the outset that the use of the radio telephone for communication between single individuals as in the case of the ordinary telephone is a perfectly hopeless notion."

Some Present Applications of Radio Telephony

Let us then consider some of the applications of radio telephony which in the present state of the art can now be foreseen. Between moving vehicles, ships, ships and shore, airships and ground, and similar classes of services radio telephony has an application. All of these are possible fields, and as time goes on, it may be expected that they will be developed into useful auxiliaries to the wire service. Recently interesting and successful experiments on ship to shore transmission were conducted with the United States Steamship America, operating by radio in connection with our Deal Beach radio station and thence over-land wires to New York and other points. These tests showed that ship to shore service is possible but whether or not it is established as a commercial service must necessarily depend upon its value, which must be great enough to make the service self-sustaining.

Transoceanic wireless telephony is, of course, possible, as was demonstrated by us in 1915. However, the present costs are very great and before it can be generally employed, the commercial value, as in the case of ship to shore, will have to be determined and assured. A factor operating [fol. 3578] seriously against such service is the great difference in time between countries located widely apart.

Broadcasting

One of the most interesting applications of radio telephony is that of broadcasting, which is not intercommunication but a one-way service. It is in this field that radio, by virtue of its inherent nature, seems to have great possibilities. At the present time broadcasting is being done by various departments of the Government, by certain manufacturers or agents of radio apparatus, by experimenters, by newspapers, and until recently by amateurs. The existing broadcasting transmitting stations are operating in the particular interest of the owners of such stations and are not providing broadcasting transmitting service for the use of the public in general. The American Telephone and Telegraph Company controls the important patents on radio telephone broadcasting transmitting equipment for general public use and consequently is being besieged with requests to sell radio telephone broadcasting equipment or to provide radio telephone broadcasting service. We are selling the broadcasting equipment and so many of these requests have been received that it has become apparent that if everyone who desires his own broadcasting equipment should purchase it, there will soon be so many broadcasting stations all operating on the same or a comparatively few number of wave lengths that real service from any of them will be impossible. Accordingly, we are now establishing in New York on the Walker-Lispenard Building a broadcasting station of the latest and best type known to the art. It is not planned that we put on any program ourselves but [fol. 3579] rather provide the facilities over which others may broadcast at specified rates. We could doubtless provide and broadcast a splendid program, but by such a procedure we would be inviting the public to purchase receiving equipment in order to hear our program and we would be committed to the indefinite continuance of a service for which no revenues would be received. By providing facilities for the use of others it rests with those who broadcast to furnish a class of program to which the general public will desire to listen. It is thought that in this manner the true attitude of the public toward broadcasting may be determined, as it is realized that at present the public is in a more or less optimistic state of mind, and that broadcasting must be placed on a much more sound basis if it is to remain as a valuable service.

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The Bell System and Radio

While we have important exclusive rights protected by patents, our interest in the extension of our field of service overshadows any interest in any patent or group of patents. Above all, we do not want to obstruct the work or play of scientists and amateurs. Progress follows experiment and use. In this new art we should experiment and encourage the experiments of others but without prejudice to later enforcement of our rights if and when such enforcement becomes necessary to the efficiency of a public service.

The question of most interest in the Bell System is naturally—"What do we propose to do with radio?" We propose to keep in mind our main purpose which is to furnish to the people of the United States as wide a range of communication facilities as possible. It may mean service with ships, railway trains and airplanes. It may mean a transatlantic service, but promises cannot now be made. It may mean broadcasting, the future of which can- [fol. 3580] not be determined as yet. It should be remembered that radio telephony, with its scope definitely limited by natural conditions, has only reached an elementary stage, even in its possible fields. Bearing in mind our fundamental policy of providing the best and most economical type of facilities to meet any given set of conditions, we shall continue our work of developing whatever possibilities there are for radio in the field of telephone communications.

[fol. 3581] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 32

Pp. 13-22 Bell Telephone Quarterly, Issue of April, 1922, Entitled "The Work of the Bell Telephone Securities Company", by D. F. Houston

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This wider distribution of Bell System securities will add to the number of those who have safe investments. Customers who became shareholders, will take an interest in the Bell Telephone Companies and will acquire an understanding of their problems and needs. It will also lay broader financial foundations for the Bell System, and will aid it to secure, at a lower cost, the money needed for extensions of the service.

[fol. 3582] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 34

Pp. 238-252 Bell Telephone Quarterly, Issue of October 1926, Entitled "Some Problems of Statistics and Economic Research in the Bell System", by C. A. Heiss

Problems Related to Analysis of Current Operations

The first of these main classifications concerns statistical problems related to the study and analysis of current performance and results throughout the business, to the end that high standards of efficiency and economy will be maintained in all operations. The types of statistical problems which fall under this classification may perhaps be grouped under three heads, which correspond to three of the four general objectives of the telephone business mentioned by Mr. Gherardi at the opening session of the Conference; namely, first, to give satisfactory service to the public, second, to render this service at the lowest possible cost, and third, to produce a fair return upon the value of the property. Accordingly, I shall mention examples of problems under each of these heads. * * *

Budget Problems

Of foremost importance among these problems are two to which I have already referred, namely, the forecasting of future economic and financial conditions insofar as these may be anticipated, and the statistical measurement of the probable effect of these conditions upon various elements of the telephone business. In addition, statistical estimates must be made of the population growth in the territory to be served, not only as to amount of growth but also as to the economic characteristics of the new population. [fol. 3583] These population studies must then be resolved into estimates of the future number of telephone subscribers and the future demand of these subscribers for telephone service, measured both in terms of number of telephone calls of each of the various classes of service and in terms of revenues. On the basis of these estimates of service requirements, a construction program must be developed to provide not only for necessary replacement of present plant, but also for the additional facilities which will be required. Estimates must also be prepared as to costs of handling increased traffic and costs for the maintenance of plant. These and many other related factors must then be resolved into specifications of material and labor requirements, capital expenditures and operating expenses. In fact, every function of the business must develop a statistical program of its activities for the Budget period. The result is a statistical forecast of each of the major items of revenue and expense, and these when properly coordinated and combined furnish a comprehensive picture of expected net earnings and the probable net capital requirements which must be provided through a properly coordinated financial program.

[fol. 3584] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 35

Pp. 23-33, Bell Telephone Quarterly, Issue of January, 1926, Entitled "1925-1926; an Economic Review and Outlook", by F. E. Richter

The second quarter of the year saw the tide turn in two outstanding industries—automotive and construction—and in the stock market; and by the end of the third quarter, the flood tide was running strong for industry as a whole.

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Present day students of business conditions in this country will turn their attention to some of the events of the second half year as affording the key to the current and immediately future significance of the year. As every one knows, the outstanding events of the second half of 1925 were the spurt in construction activity, a remarkable increase in automobile sales and output (following announcements in the summer of many new models, many price cuts, and plans for facilitating buying on time), and an astounding bull market in stocks; absolute new high records being established in all three of these fields of activity. For each of these developments easy money has by some been given the lion's share of the credit (or blame). It would be idle to deny the part played by a surplus of available credit in helping to bring about the great speculative building and stock market operations and the financing necessary to make possible large volumes of installment buying, not only of automobiles but of many other commodities, from houses to clothes. Banking statistics clearly reflect the assistance given to the bull market by a greatly enlarged volume of loans on stocks and bonds. But neither commercial nor savings bank statistics by any means reflect equally clearly the greatly increased volume of business activity in 1925 over 1924, or reflect what might be expected to be the effect of enormous building activity and a great [fol. 3585] growth of installment buying. The truth of the matter seems to be that along with a large volume of spending there has gone also a large volume of saving and investment, and that to credit either the solid, constructive achievements or any excesses of 1925 almost entirely to a super-abundance of bank credit is to overlook an important fundamental factor in our present economic situation.

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Trade, Banking, Finance

Domestic trade, as has been suggested, was maintained at a high elevel during 1925. To this, the increased purchasing power of the farmers doubtless contributed much. The widespread habit of installment buying also did much to increase the volume of sales of many sorts of commodities. Underneath it all, however, was the high standard of economic welfare, the large spending power of the country as a whole. All-inclusive indexes of retail trade are not available, but there can be no doubt of the extraordinarily large volume of consumer buying which went on in 1925. In the field of foreign trade, increases were registered in 1925 in both exports and imports, though there was a much larger increase in the latter than in the former. The great industrial activity of the year called for large imports of crude materials. Largely due to extraordinary imports of rubber and silk at relatively high prices, the Continent of Asia, for the first time in our history for a whole calendar year, has apparently supplied imports of a greater value than did any other continent. The maintenance of a volume of exports to Europe which accounted for more than 50% of the total of all our exports was doubtless assisted by the large volume of European securities floated in this country. The value of exports of finished manufactures continued the steady growth which it has maintained ever [fol. 3586] since 1921, in the face of changing conditions both here and abroad. The year witnessed a substantial net export of gold.

Aside from the great increase in loans on stocks and bonds, accompanying the bull market in stocks, developments in banking in 1925 were interesting principally for the absence of anything of spectacular character. The gold exports were almost without effect on our credit structure and, as has been said, the great volume of business activity hardly seems to be adequately reflected in the fairly moderate increase in outstanding bank credit, though it is fully reflected in a great increase in the volume of credit turnover as measured by statistics of check clearings. The most interesting thing that did not happen was any rise in the rediscount rate of the Federal Reserve Bank of New York above the 3½% rate, established in February. Elsewhere in the reserve system the rediscount rates were made uniform at 4%. At no time during the second half of the year did the investment policy of the Federal Reserve Bank of New York indicate that a rate increase by that institution was forthcoming. At their first weekly meeting of 1926, however, the directors of the bank raised the rate to 4%.

In the allied field of finance, the year 1925 witnessed not only a high record volume of transactions on the New York Stock Exchange and high record average prices for industrial stocks, but a record volume of new security offerings for account of domestic corporations, and a volume of foreign financing that was somewhat in excess even of the large total of 1924. During the greater part of the year little difficulty was found in distributing new securities, either bonds or stocks. It is interesting to note that in only one calendar quarter since 1920 (the third quarter of 1922) has bond financing failed to represent at least 50% of the [fol. 3587] total volume of financing by corporations. This extraordinary situation obtained through 1925. General security market and credit conditions were doubtless responsible for the year being characterized by a large number of mergers and consolidations not only in the industrial field, but also among public utilities; while among the railroads various consolidations, mergers or purchases were submitted to the Interstate Commerce Commission for its approval under the Transportation Act of 1920. As Secretary Mellon indicated in the passage from his report, quoted earlier in this article, corporate profits generally have run high during 1925, at least in aggregate volume, though there has been a certain amount of complaint about unit profits being a bit low. Partly because of the large volume of traffic and partly because of increased operating efficiency, the railroads have made a better showing than they have for some years and have therefore shared with other corporations in the general prosperity. The business failure record in 1925 was rather less favorable than might perhaps have been expected in a year whose general characteristics were those which have been outlined in the preceding paragraphs.

[fol. 3588] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 36

Pp. 9-20, Bell Telephone Quarterly, Issue of January, 1927, Entitled "1926-1927; an Economic Review and Outlook", by F. E. Richter.

Financial Condition

Of money and of financial conditions generally in 1926, we have yet to speak. Short-term money rates of all kinds ruled at almost all times during 1926 at levels above those for the corresponding periods of 1925. The final month of the year was the outstanding exception to this general statement, for money in December, 1926, tended to be somewhat easier than in December, 1925, in spite of the fact that in the meanwhile the volume of all bank credit extended by the commercial banks of the country had very greatly increased. Receding business and prices and the generally liquid condition of most industries, added to the fact that investors had apparently taken off the banks' hands, and paid for out of savings, not only some investments but also a substantial volume of security loans, doubtless were among the principal factors which brought about the year-end ease. Although, subject to seasonal fluctuations, the tendency of money rates has been slightly upward during the year, there has at no time been the slightest danger or apprehension of a credit stringency. The character of the money market is perhaps epitomized by reference to the fact that 1926 has been the only full calendar year since the formation of the federal reserve system in which not a single federal reserve bank, except the New York institution, made any changes in any of its discount rates throughout the year. The federal reserve open-market policy, like the discount rate policy, was one of relative inertness all year. Perhaps the most interesting result of federal reserve policy was the fact that for the [fol. 3589] first time since 1922 the system added moderately to its gold reserves during the year by paying out federal reserve notes in response to demands for currency, thereby reversing the process which had been pursued for four years. During the latter part of the year the federal reserve ratio for the system as a whole was above that of a year previous.

The securities markets reflected credit ease, the large volume of savings available for investment, and the prosperous conditions and profitable operations of business. Industrial stock price averages rose to the highest figures on record, and railroad stock price averages went above any figures registered since before the war. High grade bond prices rose and yields declined during the greater part of the year, and at the close, high grade corporate bonds generally were selling on the lowest yield bases at least since our entry into the war, if not since the war began. This came about in spite of a record volume of offerings of new securities to finance the large construction and expansion programs which were put through during the year, and in spite of the fact also that both the federal reserve banks and the reporting member banks of the federal reserve system disposed of securities on balance. As against these latter influences were the circumstances that the Federal Government in the course of the year reduced its interest-bearing debt by over one billion dollars, and that the net effect of our loans abroad and foreigners' payments to us on account of interest, principal, and repurchase of their own securities may have been a balance of payments actually in our favor, and quite certainly was a balance more favorable to us than in 1925.

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[fol. 3590]

The Prospect

The year 1925 ended with business and profits rising to new high levels. The aggregate volumes of both business and profits in 1926 have doubtless exceeded even the favorable records of 1925. The year is ending, however, with business and profits declining, not rising, as they were twelve months ago, and the number of business failures is apparently increasing in more than usual seasonal proportions. The new year will open with at least the following important factors in its favor; abundant and relatively easy money; a high volume of general purchasing power, apart from certain agricultural districts; few conditions of unwieldy inventories; benefits accruing from the advances made during 1926 in operating efficiency in the use both of labor and of plant and equipment; the healthy financial condition of the railroads and the high prices of their stocks, which will enable them to raise money easily for construction or expansion programs, if they so desire; and a gradual, if slight, improvement in European conditions. Unfavorable or neutral factors include the following: the current tendency for profits to decline and failures to increase, and the certainty that keen competition in 1927 will tend further to narrow profit margins; clear signs of overbuilding in certain parts of the country and in certain types of edifices; the probability that the automobile industry, despite its ever-growing capacity, will not be able to duplicate its volume record of 1926, much less exceed it; the softness of commodity prices, diminishing business men's confidence, and tending to induce curtailment, apart from its effect on the profits of those who produce the commodities; in particular, the unsatisfactory prices of some of the leading agricultural commodities; the posibility of a serious bituminous coal strike beginning on April 1st; and the probability that such stabili- [fol. 3591] zation measures as are taken in Europe during 1927 will tend to have immediately depressing influences rather than otherwise, and not improve European purchasing power, except as this is stimulated by foreign borrowing.

A serious business recession in 1927 seems quite unlikely, but the balance of probabilities deduced from the foregoing would seem to lead to the conclusion that during the first part of 1927 at any rate business will fail to maintain the high record of activity set in the last two years.

[fol. 3592] Extracts from Deposition Exhibit 37

Bell System Technical Journal, Issue of October 1925, Entitled "Journal Engineering Problems of Bell System", by H. P. Charlesworth, American Telephone & Telegraph Company

Engineering Cost Studies

Owing to the complexity of the problem of suitable advance planning for the growth in the telephone plant as already discussed, it is evident that in the study of plans for specific projects, selection must generally be made between a choice of arrangements, more than one of which might satisfactorily meet the requirements of the service. It is usually necessary, therefore, that two or more practical plans or programs for construction must be compared so that the most advantageous plan may be selected. An important factor in the selection of all of these cases is a study of the relative economies of the different plans; that is to say, a comparative cost study and as these studies form such an important part of our engineering work, I believe it will be of interest to devote a few moments to a description of the important considerations generally involved.

[fol. 3593] These engineering cost studies require analysis and consideration of the cost and resulting annual charges for different amounts and types of plant included under each plan. The annual charges comprise items of expense incident to ownership of plant and those that are incurred each year after its installation to keep it in operation and in serviceable condition. As a general thing, in these cost comparisons, another interesting factor is also present; namely, most of the plans which are compared call for expenditures to be made at different periods. For example, one plan might call for erecting a new building at a new location immediately; whereas under the other plan being considered, the necessary additional space required could be secured by adding to an existing building and deferring the complete new project for possibly five or ten years. The relative economy of the plans, therefore, cannot be determined directly by a detailed comparison of the expenditures involved or resulting annual charges, but it is necessary in order to give a fair comparison to express the relative costs of the different plans in terms of present worth, or equivalent annuities which give figures for the total expense in which accurate allowance is made for the variation of expenditures with respect to time.

[fol. 3594] These engineering cost comparisons may be considered as composed of four parts or operations; namely, the premises or known factors and assumptions; the formulation or set-up of the problem; the solution or mathematical calculations and finally the interpretation of the results. The determination of the premises and formulation of a given problem is, of course, a matter specific to that problem, and here the engineer must exercise sound judgment, for unless the assumptions upon which the work is based are reliable the study itself is of little value. The mathematical calculations are, of course, a definite thing. However, the interpretation of the results must always be a matter of engineering judgment and full weight must be given to those factors which by their nature cannot be evaluated in the cost comparison.

A cost study is a fundamentally important tool in assisting the engineer to reach a decision as to the most desirable plan or program, but as indicated it cannot be used to replace the exercise of judgment on his part. The solution of an engineering problem is, in general, not a matter that can be demonstrated mathematically as can, for example, the proposition, that the square of the hypotenuse of a right triangle is equal to the sum of the squares of the two sides. An engineering study rather requires in addition to all of the definite facts that can be brought to bear on the question the exercise of sound judgment on the part of the engineer in weighing the results of the cost study with all related business or other factors bearing on the problem.

Some factors involved in these engineering studies are often of a character which do not permit of expression as a direct charge against a given plan, but must be considered on a broader basis such as the difference in quality or dependability of the service, etc. Also it is important to keep [fol. 3595] in mind, for example, that, other things being equal, a plan requiring large investments has disadvantages as compared with one requiring a smaller investment so that even though the plan involving a larger investment may prove in from the cost study by a small margin, it may be desirable to adopt the alternative plan so as to avoid tying up considerable amounts of fixed capital. Another question to be kept in mind in interpreting cost studies is whether the more expensive type of plant, usually a higher type of plant, can be adopted satisfactorily at a later date or whether the decision to be made at the present time precludes its adoption later. In the former case it is often wise to go further in deferring fixed capital expenditures than in the latter case. Finally, throughout all of his work the engineer must have foremost in his mind the fact that the telephone system exists for the purpose of furnishing service to the public and the results of his engineering effort should insure a service which is satisfactory from the subscriber's viewpoint.

It is evident from what has been said, I believe, that these engineering cost studies are of great benefit in working out the proper procedure in our engineering work, and I assume they are equally helpful in the engineering of any kind of growing plant. Anything that can reasonably be done, therefore, to give the student an appreciation of the nature, scope, and application of the economic considerations of these engineering problems and to develop his faculties of judgment, imagination, team play, and other related qualities, will doubtless prove of great value to the student in his later engineering work.

[fol. 3596] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 38

Pp. 542-560 Bell System Technical Journal, Issue of October, 1925, Entitled "Engineering Planning for Manufacture", by G. A. Pennock

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The General Manufacturing Department of the Western Electric Company provides the Bell System with telephone equipment which involves the production of over 13,000 separate and distinct forms of apparatus, in the construction of which there are used over 110,000 different kinds of parts made from 18,000 different kinds, sizes, and shapes of raw material. A number of these parts are produced in very small quantities.

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Planning for the Future

As the manufacturing unit of the Bell System, the Western Electric Company in planning its production has had to bear in mind, first, that the facilities shall be adequate to turn out the tremendous volume of apparatus and equipment required from year to year; second, that the System's supply of equipment must be planned to eliminate, so far as is humanly possible, any interruptions; and third, that the System must get its equipment at the lowest possible cost.

Briefly, our program for providing buildings and equipment for the future is based on a five-year forecast of business made by each Associate Company and summarized by the American Telephone and Telegraph Company.

It takes approximately two years to erect and equip new buildings; consequently, capacity studies on floor space are made two years or more in advance and tool and ma- [fol. 3597] chine equipment studies are made one year or more in advance, as this equipment can usually be provided in one year.

Tools

The annual demand for the product is the most important factor in determining the kind of tool, fixture, and gauge equipment to be provided.

Our most intricate engineering problems arise in connection with punch press tools as there is almost no limit to the variety of operations that can be performed on this type of machine.

If the demand for a part made on a punch press is small, it is often found more economical to build simple tools which will blank out, perforate and form in separate operations, rather than to build more elaborate tools at a higher cost which will combine two or more operations into one.

The effect of quantity on the design of tools may best be shown by a concrete case.

[fol. 3597½]

The Effect of Annual Demand on Choice of Manufacturing Method

Yearly Req.	Material	Type of Machine	Type of Tool	Tool Cost	Cost per M	Tool Cost per M Parts	Saving per Year
5,000	5/8" Brass Rod	Hand Screw Machine	General use Tools	....	$10.00	....	....
30,000	1/15" Sheet	Punch Press	1 at a time Tandem Perforating and Blanking	$150.00	2.30	$5.00	$231.00
500,000	" "	" "	3 at a time Tandem Perforating Perforating and Blanking	400.00	1.72	.80	290.00
3,000,000	" "	" "	7 at a time Tandem Perforating and Blanking	600.00	1.52	.20	600.00

Fig. 5

Take, for illustration, the case of a simple brass washer ⅝″ in diameter, 1/16″ thick and having a ¼″ hole. As shown in Fig. 5, with a requirement of 5,000 a year, the washer would be made from rod stock in a hand screw machine using general use tools at a cost of $10.00 a thousand; for 30,000 a year it would be made from sheet stock in a punch press using a one-at-a-time tool, at a cost of $2.30 a thousand; for 500,000 a year a three-at-a-time tool would be used at a cost of $1.72 a thousand; for 3,000,000 a year a seven-at-a-time tool would be used at a cost of $1.52 a thousand.

In each one of these steps, as shown in the columns at the right, the additional tool investment, necessitated by the more advanced method, would be liquidated in one year by the decreased manufacturing cost.

[fol. 3598] Deposition Exhibit #39

Pp. 1-14 Bell System Technical Journal, Issue of January, 1925, Entitled, "Engineering Cost Studies", by F. L. Rhodes[1]

Introduction

The subject assigned to me in the "Notes Regarding the Program of the Conference" is "The Theoretical Principles of Economic Studies and Their Possible Application in Undergraduate Courses." With your permission, I shall digress somewhat from a literal consideration of this title. I shall not undertake to derive formulæ, to set up equations and to obtain maxima and minima from them. The mathematics can readily be obtained from available sources. On the other hand, I shall attempt to outline the field for economic studies in engineering work, using illustrations drawn from telephone engineering practice.

What is an engineering cost study? When you or I reach a decision to purchase a certain pair of shoes, making a selection from an assortment ranging in price from (say) \$5 to \$15, we have performed, consciously or unconsciously, some of the reasoning of an engineeri[illegible]ly. Among the factors influencing our decision[illegible] probable length of service life of different pairs, [illegible]e ability to extend this by an expenditure, to b[illegible]e future time, for maintenance as represented [illegible]les and heels, which, perhaps, can be applied eco[illegible]y to a moderately costly pair but not so to the cheapest.

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[1] Notes of a Talk given at the Bell System Educational Conference, August, 1924.

These two elements, depreciation and current maintenance, are factors entering into engineering cost studies but they are not all of the factors. Whether we have the necessary capital in hand, or are obliged to hire or otherwise raise it, the annual cost of the capital must be taken into consideration, and treatment of the matter of depreciation is incomplete without consideration of salvage value and cost of removal.

Thus, unless we pursue our investigation into details that are not ordinarily considered when buying shoes, it is [fol. 3599] evident that our homely illustration, while serving to center our attention on certain important subjects to be taken up in this paper, falls short in respect of others that can not be neglected in engineering cost studies. Broadly speaking, engineering cost studies deal with the comparative annual costs of alternative projects. Frequently they also involve comparisons of expenditures to be made at different times in the future. They are of value to industrial executives in assisting them to arrive at decisions where several courses of action are open, but they are not the sole guides in arriving at decisions. No hard and fact formulæ can take the place of judgment based on experience. Formulæ of this nature are properly used as guides to assist judgment.

The necessity for guidance from studies of this kind arises not frequently in a growing plant/ The telephone plant always has been, and so far as we can anticipate, will continue to be a rapidly growing thing.

This means that whenever an addition is to be made, the question arises, how much capacity for growth is it most economical to provide for? As an illustration of this, consider with me the problem that arises when it becomes necessary to place somewhere an underground cable. Obviously it would be uneconomical to construct an underground conduit of one duct for this cable and next year or the year after to dig up the street and lay another duct for a second cable and so on in piecemeal, hand-to-mouth fashion.

On the other hand, it would not be economical to estimate the number of cables that would be required in a hundred years, even if we could foresee the needs so far ahead with any degree of certainty, and to place at the outset sufficient ducts to care for all the cables required along that route in the next century, for in that event, the carrying charges on the idle ducts would prove much more expensive, in the long run, than would additions made at infrequent intermediate times. Somewhere between one year and one hundred years is the most economical period for which to provide duct capacity in advance. The determination of this period, based on suitable construction costs, the expected rate of growth in cable requirements, and other factors is one of the useful results obtained from an engineering cost study.

Under our organization, practically all types of plant and equipment are developed by the Central Staff. These are standardized in a range of sizes sufficient to meet all the needs of the business.

The choice of standards and sizes to meet specific situa-
[fol. 3600] tions arising in the field is made by the proper officials of the associated operating companies.

If a piece of apparatus or equipment, correctly designed within itself, is installed in the wrong place, or if a wrong size is selected, loss will result.

Questions of where to place plant and what size to employ, and when to replace existing plant constantly confront the operating engineers in the field. In the telephone business every major construction project is described in what we term an "estimate" which is nothing more or less than a detailed design for the project, embodied in drawings and specifications, accompanied by a carefully prepared estimate of its cost. These estimates originate in the Plant Departments of the Associated Companies and are really the bids of the construction forces for performing the work. These estimates pass through the hands of the Chief Engineer of the Associated Company for his scrutiny and approval before they proceed to the higher officials of that company for final authorization. The Chief Engineer considers these estimates in their relation to the general plans of the Company with reference to the growth of the business and the plant. For many years the chief of the Department of which I am a member, Vice President General John J. Carty, occupied the post of Chief Engineer of the New York Telephone Company, the largest associated company of the Bell System. I have heard him say that when, while occupying that position, an estimate for some specific piece of work came before him for review, he asked himself three questions regarding it:

1. Why do it at all?
2. Why do it now?
3. Why do it this way?

Rigorous proof sufficient to answer these three questions will justify the endorsement of any engineering project, and, furthermore, each question generally involves an engineering cost study.

Fundamental Plans

Of all the engineering cost studies that are made in connection with the telephone industry, none is more far-reaching in its effect than those involved in what we term our "fundamental plans." In order to give a fair idea of the importance of the work done under our fundamental plans, it will be necessary to describe briefly what a fundamental plan is.

[fol. 3601] In completed form a fundamental plan shows what the general lay-out of the telephone plant in a city is expected to be at some definite time, usually from 15 to 20 years in the future. It shows:

(a) The number of central office districts that will be required to provide the telephone service most economically, and the boundaries of these central office districts.

(b) The number of subscribers' lines to be served by each central office.

(c) The proper location for the central office in each district to enable the service to be given most economically with regard to costs of cable plant, land, buildings and other factors.

(d) The proper streets and alleys in which to build underground conduits in order to result in a comprehensive, consistent and economical distributing system reaching every city block to be served by underground cable.

(e) The most economical number of ducts to provide in each conduit run as it is built.

These are all very definite problems that confront the executives of our Associated Companies when plant extensions are required. Our experience has shown that our fundamental plans reduce guessing to a minimum by utilizing the experience of years in studying questions of telephone growth in order to make careful forecasts on the best possible engineering basis. A few words as to how fundamental plans are made may not be out of place.

The basis of the fundamental plan is what we term a commercial survey, which is a forecast of the future community showing the probable amount, distribution and character of the population and the probable market for various classes of telephone service.

Before making this forecast, it is important to know what are the present conditions as to population and use of the telephone service. To ascertain these facts a census of the community from a telephone point of view is made. Present telephone users are classified into:

Residence Telephones.
Business Telephones in Residence Areas.
Telephones in Business Section.

In analyzing Residence telephones all families are divided among those occupying:

(a) Private Residences.
(b) Two-family Houses.
[fol. 3602] (c) Apartments.
(d) Lodging Houses.

In each class, subdivisions are made according to the rent paid as it has been found that a close relation exists between rent and the class of telephone service used. Business telephones are divided into 20 or 30 different classes. An important factor in the forecast is the future population of the city, both as a whole and by sections.

This involves, in each particular problem, not only study of the past growth of the city in question, but also careful and detailed comparisons with the growth history of other cities where conditions have been such that the experience in those places is useful in making the prediction for the city being studied.

Having arrived at forecasts, for certain future dates, as to the number of telephone users to be provided for, where they will be located, what charatcer of service they will require, what time of day they will call, and how frequently, and where they will call, it becomes a definite, although intricate engineering problem to determine the most economical number, size and location of buildings and switchboards and the location and size of conduit runs. All of the promising combinations of future offices and districts as indicated by experience and the geographical characteristics of the city, are laid out on working maps and the annual costs are figured. The arrangement which gives the lowest equated annual costs over the period of time for which the study is made is, in general, the one which is adopted. Fundamental plans are reviewed every few years, particularly when some major plant addition, for example, the opening of a new central office, comes up for consideration. In this way we are constantly looking ahead and following a coordinated plan; but this plan is not a rigid, fixed thing. It is modified as frequently as may be necessary to meet the constantly changing requirements. In work of this kind, future expenditures must be given greater or less weight accordingly as they are required to be made in the near future or at some more distant time. This is taken into account by equating future expenditures in terms of their present worth; that is, the sum in hand, at the present time, which, at compound interest, will be just sufficient to provide for the future expenditures when they are required.

Transmission Standards and Studies

An interesting and typical annual cost problem which arises in connection with fundamental plans is that of ob- [fol. 3603] taining a proper cost balance between the circuits employed for subscribers' loops and those employed in interoffice trunk lines. The larger the wire, the better will be the talk. But it will also be more expensive. The first step in solving this problem is to decide how good the transmission must be to afford satisfactory service to the telephone using public. Our present standards are a matter of growth; the accumulated results of long and extensive experience. They are live, working standards constantly being intelligently scrutinized and, when necessary, modified. A discussion of the values of the standards employed would unduly prolong this paper. Therefore, let it suffice, at this time, to state that the telephone offices in a large city, including its environs, may be divided into metropolitan offices and suburban offices; that is, the central busines offices separated from the suburban residential offices. Between subscribers in different districts suitable standards of transmission are decided upon.

Before describing this study further, reference must be made to the practical necessity for the standardization of construction materials. Subscribers' loops run in length from a few hundred feet to 3, 4 or 5 miles. If we tried theoretically to make all talks exactly equal in loudness, we should have as many different sizes of wire in our cables as there are different lengths of loops. To reduce the complexity, our cable conductors are of certain standard sizes, which experience has shown are sufficiently close together to meet the needs of the business. These standard sizes, in American Wire Gauge, are Nos. 24, 22, 19, 16, 13 and 10; the three latter not being used in subscribers' loops.

Having adopted standards of transmission and standards of cable conductor sizes, our problem is to obtain the standards of transmission with the standards of cable conductors in the most economical manner.

The method of doing this, in brief, is to figure out the annual costs which would be incurred in doing it a number of different ways and to select the way that gives the lowest annual cost. In this kind of a study, which we call a "loop and trunk" study, it has been convenient to designate the subscribers' loops by their maximum circuit resistance. Adopting this form of designation, it may be assumed, first, that all of the subscribers' loops will have an average transmitting and receiving efficiency as good or better than a 350-ohm loop; as a second assumption, that they will be as good or better than a 400-ohm loop; and, as third and fourth assumptions, 450 and 500 ohm loops, respectively. In assuming, for example, a 350-ohm loop in No. 24-gauge [fol. 3604] cable, it is, of course, necessary that all subscribers having loops longer than the amount of No. 24-gauge cable represented by this resistance shall be put in No. 22-gauge or No. 19-gauge cable as may be required.

The transmission losses, both transmitting and receiving, are then computed for the assumed loops. The transmission losses in central office apparatus are constant and known. Subtracting the losses in the offices and in the substation loops for each assumed grade of loop from the transmission standards, leaves the amount of transmission loss which can be allowed in the interoffice trunks corresponding to each limiting grade of subscribers' loop. On the basis of this allowable tranmission loss in the trunks and knowing the distances between central offices, we are enabled to fix the size of conductor required in the trunks.

Knowing the grade of loops and trunks required for each of the above assumptions, we can then compute the total annual charge of giving service according to that assumption. If the assumptions have been wisely chosen it will usually work out that the first assumption, that is, a very high grade of subscribers' loop, will not be as economical as some others, due to the relatively high cost of the subscribers' loops taken as a whole. Neither will the last assumption, that is, a very low grade of subscribers' loop, be the most economical, on account of the relatively high cost of the trunks. Somewhere between, however, there will be some assumption which will show the smallest total annual charge.

To find more precisely the most economical arrangement, the various values are plotted with the assumptions as to subscribers' loops forming one set of ordinates and the total annual cost forming the other. The point on the curve representing the lowest annual cost then indicates the proper grade of subscribers' loops to employ. In the case of the longer interoffice trunks, loading is, of course, employed. In the design of toll lines and toll switching trunks generally similar cost balancing methods are employed.

In many cases, the problem can be solved by the determination of what we term "the warranted annual charge" of transmission which may be defined as the annual cost of improving the talking efficiency of the circuit in the cheapest way by a definite small amount. By means of studies of this kind, we obtain a plant closely approximating a balanced cost condition. That is, in such a plant, a dollar can be spent in improving transmission efficiency, no more effectively in one part than in another.

[fol. 3605] Other Applications of Engineering Cost Studies

From what has already been said, it should not be inferred that the sole application of engineering cost studies is in connection with the problems arising in the operating field. The question whether or not a more efficient piece of apparatus at a higher cost is warranted enters into most of our development problems. The economies of the case lie at the root of our development work in all portions of the plant.

At this point I should like to call attention to the fact that our development work covers not only what are termed "transmission" matters, but also very important problems in switchboards, outside plant and other phases of the business.

The service which we provide is a communication service, which involves important problems affecting the means for connecting and disconnecting the parties as well as those other important problems, to which your attention has been particularly directed, relating to the loudness and quality of the transmitted speech.

In cable design, particularly in the case of intercity cables and interoffice trunk cables, the average separation between wires in the cable affects the electrostatic capacity of the circuits and there is a definite capacity which represents the most economical degree of concentration of the wires in the cross-section of the cable. The spacing and inductance of loading coils presents another problem in balanced costs. Even in the case of wooden poles we make use of economic cost studies.

The length of life of a pole depends upon a variety of factors, the most important of which are the character of the timber; whether or not a preservative treatment is employed and, if so, the nature of the treatment; the local climatic and soil conditions and the original size of the pole.

The strength of a pole varies with the cube of the diameter of the sound wood at the weakest section. If the original size of the pole is only slightly more than the critical size at which replacement should be made, the life of the pole will be very short, as decay will reduce the size at the ground line to the critical size within a few years. On the other hand, a pole of huge size at the ground line would have a very long life before rotting sufficiently to require replacement, but the first cost of so stout a pole might readly be so great that its annual cost would exceed that of a smaller and cheaper pole. In our specifications for poles we have constantly to bear in mind that the elimi- [fol. 3606] nation of poles containing timber defects of one kind or an another means that we are adding something to the first cost of our poles and the criterion must always be whether or not the elimination of these defects will sufficiently prolong the life of the poles to warrant the increased first cost.

There have now been placed before you several examples of problems occurring in the telephone industry in the solution of which engineering cost studies may be advantageously employed, and, probably, enough has been said to make clear the importance of this form of economic analysis.

Factors Entering into Annual Costs and Their Evaluation

Let us now consider together the principal factors entering into annual cost, and how, in the course of our work, we evaluate them.

The several factors are these:

1. Cost of money.
2. Taxes.
3. Insurance.
4. Depreciation.
5. Current Maintenance.
6. Administration.
7. Operating Costs.

Cost of Money.—The operating companies of the Bell System obtain the new money that they use in extensions to their plants from the sale of their capital stock and securities—bonds and notes. Such a return must be paid the investor, by the Company, as will induce a constant flow of new capital into the business. This steady influx of new capital is required because the System can not decline to expand. It is obligated to meet the increasing needs of the public it serves. Its need for new capital is a direct result of public demand for the service it renders. The rates for service which public utilities may charge are regulated by the commissions, but neither the commissions nor the utilities can fix the worth of money. Public utilities must pay the cost of money just as they must pay the cost of labor, poles and other material. No investor can be forced to invest. If the rate is below what money is worth in the general money market, he will keep out. Utility companies must bring their offerings to a general money market and submit them, in open competition, with [fol. 3607] the offerings of undertakings of every kind requiring capital. There are two ways of getting new money:

1. From investors willing to lend. These are the bond and note holders.

2. From investors willing to become partners in ownership. These are the stockholders.

Not only do stockholders expect a higher return than bond and note holders, but if the stockholders' earnings are insufficient, the bond investor will take his money to some safer market. Taking into account the ratio which must be prudently maintained between funded debt and stock, a proper figure should be obtained as representing the average annual cost of money. This figure should not be confused with the figure that represents a fair rate of return including margin for surplus and contingencies.

Taxes.—Taxes are levied by various governmental bodies, municipal, county, state and federal, on many different bases. In some specific plant problems, taxes have to be computed to meet the conditions of the case at hand but, in general, it is sufficient to employ a percentage charge for taxes based upon the average experience.

Insurance.—In the case of buildings, and equipment contained in buildings, an annual cost item to cover insurance should be included.

Depreciation.—Depreciation may be defined as the using up of property in service from all causes. These causes include:

(a) Wear and tear, not covered by current repairs.
(b) Obsolescence.
(c) Inadequacy.
(d) Public Requirements.
(e) Extraordinary Casualties.

All telephone property, except land, is subject to deterioration, and the continued consumption of the investment is a part of the cost of the service which must be provided for by charges against earnings. Only a small portion of the plant actually wears out in service. Instances of this are the rotting of poles and the rusting of iron wire, a relatively small amount of which is used in the plant.

On the other hand, it has been the history of the telephone business that enormous amounts of plant have been taken out of service through no defect in their physical condition but either because they had become obsolete through the development of some more economical or efficient type of equipment, or because they had become inadequate to serve the growing needs of the business.

[fol. 3608] An example of obsolesence is the replacement of antiquated methods of distribution by more modern types. Examples of inadequacy are the replacement of open wires by cable, and the replacement of small cables by larger ones. Examples of public requirement are the abandonment of pole lines and their replacement by underground construction due to road improvements, and the rebuilding of sections of underground conduit due to changes in the grade of streets or to the construction of transit subways. Examples of extraordinary casualties are fires, sleet storms and tornadoes.

The annual charge for depreciation is an amount which, if entered in operating expenses each year during the service life of a unit of plant, would, at the end of that service life, yield a sum equal to the total depreciation of that unit; that is, its first cost in place less the net salvage obtained at its removal. The consumption of capital is a necessary part of the cost of furnishing service and must be provided for by charges against earnings during the life of the property. In arriving at this depreciation charge the best thing we can do is to take our experience of years and look over the whole situation and apply our judgment to it. The value of this judgment depends on the experience, knowledge, ability and integrity of the people who exercise it.

The amount of this charge should be determined for each broad class of plant and it depends upon the average service life and the net salvage value. Net salvage value is gross salvage value minus cost of removal, and takes into consideration both value for reuse and junk value. For instance, the net salvage value of station apparatus is relatively high because a large part of the equipment can be reused in another location. In other cases, such as iron wire, the net salvage value may be a minus quantity, as there is little or nothing to offset the cost of removal.

Current Maintenance.—Current maintenance charges comprise the cost of repairs, rearrangements and changes necessary to keep the plant in an efficient operating condition during its service life. In cost studies, current maintenance charges should be derived from experience and expressed, generally, on a unit of plant basis, as, for example, per pole, per mile of wire, per foot of cable, or per station, according to the kind of plant being considered. Generally speaking, they bear no direct relation to first cost of plant as other annual charges do.

For this reason, when comparing the annual costs of two or more plant units of different sizes or types, an in-[fol. 3609] correct result would be obtained if maintenance charges were expressed as a percentage of the first cost.

However, for comparative cost studies of average plant, maintained under average conditions, it is sometimes within the precision of the study to employ figures expressed as a percentage of the first cost, provided the figures were derived from the cost of maintaining average plant where average conditions were known to obtain.

Administration.—In certain cost studies, a small allowance is ~~usually~~ made to cover that portion of the salaries and expenses of the general officials of the Company which is fairly chargeable to the administration of the plant.

Operating Costs.—In certain classes of engineering cost studies, comparisons may involve the situation where one type of plant costs initially more than an alternative type, but permits savings to be made in the daily operating labor which may or may not offset the additional first cost. In such cases, to obtain a true comparison, the operating labor costs under each plan must be combined with the total annual charges which are applied to the first costs of the respective plant quantities.

Present Worths

Engineering cost studies frequently involve a balance between plant installed at the present time and plant installed at some future time. An example of this would be the comparison of a pole whose life was to be extended by attaching it to a stub after (say) 15 years, with a stouter and more expensive pole installed at present or with a pole to which preservative treatment was applied prior to its installation.

In such cases it is not sufficient to compare annual costs which are to be incurred at different times without reducing them to a basis upon which they can properly be compared. If a given amount is required to be expended at some future time, it obviously requires a smaller sum at present in hand to meet this obligation if the fixed time is far distant than if it is in the immediate future.

Let us picture ourselves at the end of the year 1924. If an annual charge of $1,000 is to be paid each year for the 5 years beginning January 1, 1925 and ending December 31, 1929, there will be required, to provide for these five $1,000 payments, the sum of $4,100, in hand, assuming that interest is compounded annually at 7 per cent. On the other hand, if these five annual payments of $1,000 each instead [fol. 3610] of beginning in 1925 were to begin ten years later, that is, if they were to run from January 1, 1935 to the end of 1939, we should require, in hand, $2,084, that is, only about half as much.

To compare, upon a fair basis, expenditures that have to be made at different times, it is customary, as has been done in the preceding example, to reduce these different expenditures to their "Present Worths," or the equivalent in equated or accumulated annual charges.

Summary

From all that has been said, it becomes evident that, whenever a specific addition is made to a growing plant, we are, to a greater or less extent, committing ourselves to a definite programme for relieving, reinforcing or replacing it at some future time in order most economically to provide for the requirements of growth.

The underlying thought, which can not be overemphasized, is so to plan the plant that, as far as practicable, it will serve for its full life, and require no wholesale changes involving the abandonment of substantial portions of the installation. While the design should be based upon the best estimates of future growth that are obtainable, it must be recognized that the most carefully designed plant layouts employing the best possible estimates of growth, may not always meet the ultimate requirements of flexibility. The chances of a comprehensive plan not fitting in with future development can, however, be reduced to a minimum by thoughtful initial planning.

Generally speaking, our distributing plant layout, once it is established, can not readily nor economically be materially changed. Consequently, if it is not sufficiently flexible in the fundamentals of its design to meet reasonable future possibilities, it may affect adversely the carrying out of proper and economical relief measures, or may require abnormally early reconstruction or replacement. It is very desirable, therefore, always to keep in mind, in any plant layout work, the progressive relief steps which are likely to be required to meet the changing conditions affecting the service requirements. Whenever plant is moved, or taken out of service, property loss is realized. Certain expenditures for these purposes represent the most economical way of conducting the business. But it is of the utmost importance that they should always be incurred along the line of maximum economy, which means that behind every [fol. 3611] plant addition must be engineering cost studies to assist in furnishing the answers to the three questions:

Why do it at all?
Why do it now?
Why do it this way?

But it must always be borne in mind that these studies do not and can not, in themselves, constitute the sole criterion for determining what should be done. They are, at the best, only an aid, guide and check to be utilized, within their limitations, in arriving at conclusions that must, in the last analysis, rest upon seasoned judgment and experience.

Nevertheless, so great do we find the importance of these engineering cost studies in our work, and so great must be their importance in the engineering of any other kind of growing plant, that the question might be raised whether, in courses of engineering instruction, a few hours at least could not advantageously be devoted to acquainting the student with the nature and importance of these economic problems.

[fol. 3612] EXTRACTS FROM EXHIBIT—DEPOSITION EXHIBIT No. 40

Annual Report of Directors to Stockholders of A. T. & T. for Year Ending December 31, 1920

The license contract is as old as the Bell System. The original contract has been continuously in force with only such modifications as have been necessary from time to time to adjust it to the development of the business.

According to the terms of this contract, the American Telephone and Telegraph Company provides for each of the licensee associated companies:

1. Telephone transmitters and receivers, with induction coils, including a surplus supply to cover current demands;

2. Rights under all patents owned or controlled by the American Telephone and Telegraph Company covering the use of telephonic devices, apparatus, methods and systems;

3. The right to use all standardized new and improved apparatus and methods developed through research and experimental work;

4. A guarantee of freedom from royalties, damages and expenses, on account of patents, arising out of recommended uses of apparatus, methods and systems;

5. An organization to prosecute continuously the fundamental work of research and investigation to the end that safety, economy and efficiency in the business may be promoted;

6. Advice and assistance in general engineering, plant, traffic, operating, commercial, accounting, patent, legal, administrative and other matters involved in the efficient, economical and successful conduct of the business;

7. Advice and assistance in the financing necessary in order to develop and enlarge its plant;

[fol. 3613] 8. Assistance, cooperation and support in promoting the health and welfare of employees, including the Plan for Employees' Pensions, Disability Benefits and Death Benefits, with a provision for guaranteeing the integrity of the funds provided by the associated companies for this purpose;

9. The right to extend to its connecting companies, for the general betterment of the service, the benefits of such engineering and other technical advice and information as the licensee may have received from the American Telephone and Telegraph Company.

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The important consideration is that this license contract is the backbone of the System. It establishes the relationships which have made a nation-wide service not only possible but a thing accomplished and well accomplished. It is what has given to the United States the cheapest, best and most widely utilized telephone service in the world. It is what has made the standards of the Bell System in instruments, apparatus and methods standard the world over.

It furnishes the only way in which this can be accomplished under existing state laws.

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Return on Investment

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In fixing the amount of return for rate-making purposes, the amount of capitalization or the rate of dividend to be paid upon it cannot properly or justly be taken as a basis; because that would penalize the company with conservative capitalization—which is for the benefit of the public because some portion of the surplus always works for the public without capital costs—and would put a premium upon stock-watering where the reverse is the case. The [fol. 3614] value of the property is the only legal basis as well as the only fair basis upon which to figure a return.

Rates for service to be fair must produce a fair return upon the value of the property.

A most important factor in fixing what may be a fair return is the market value of money at the time. Under present conditions a fair return would be not less than 8% or 10%. The assets of the associated companies so far exceed their capital that 8% on their investment as a whole, would produce enough to pay 10% dividends with a fair margin. No one of the associated companies pays more than 8% dividends.

It is clear therefore that this Company is entitled to considerably higher earnings without being subject to the criticism of earning more than a fair return.

Legal

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The activities of the Department of Development and Research are constantly enlarging the responsibilities of the patent division of the Legal Department. During the past year, the patent holdings of the Bell System have been increased by rights under more than a thousand patents and applications for patents, an increase of approximately twenty per cent. It now owns or controls, or is licensed under, more than six thousand letters patent of the United States and applications therefor. The larger proportion of this increase is represented by inventions made by our own engineers. Rights acquired during the year under other inventions have been acquired largely in exchange for rights granted under our own inventions.

[fol. 3615] A patent suit, based upon a claim against this Company for royalties, has been decided in favor of the Company. An appeal from this decision is pending.

In the course of these developments, numerous interferences in the Patent Office arose, and many others were to be expected. In such case the relative patent rights of each company were involved in so much doubt that neither company was free to proceed in the proper development of its own special field with the certainty that it would not infringe upon the rights of the other.

The experience of the great war so emphasized the vital military importance of world-wide electrical communications that the Navy authorities urged upon the General Electric Company and upon this Company that some arrangement be adopted, by an exchange of licenses or otherwise, whereby this difficulty with respect to patent rights might be remedied, thereby making it possible for the Army and the Navy and the public to obtain the benefit of numerous new radio improvements of extraordinary importance which could not be obtained from apparatus built under the patents of either company alone. * * * That corporation at the present time has a number of high-power radio telegraph stations engaged in long-distance radio telegraphy between the United States and foreign countries, and is erecting or providing for the erection of new and most powerful stations for this service in this and in foreign countries, with the end in view of providing to the American public adequate international and world-wide radio telegraph service. It is believed that by our participation in the Radio Corporation, and by the exchange of licenses above referred to, progress in improving the present unsatisfactory position of the United States in international communications will be greatly accelerated.

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[fol. 3616] At the close of the year, upwards of 2,500 research and development projects were in hand, all these calculated to improve the service which the associated companies are rendering to the public or to make it more economical.

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Not only has attention been given to fundamental improvements in transmission and in apparatus and materials, but minute care and study have been devoted to improvements in the thousands of diversified parts which are required for the most effective and economical operation of the Bell System. In the magnituude of its operations, the number of its personnel, and in the size and equipment of its laboratories, this research and development organization far exceeds that maintained by the telephone and telegraph administration of any government or by any other corporation engaged in similar or related work.

During the year, the department has actively continued its work in developing the radio art. Two experimental radio telephone transmitting and receiving stations have been erected on the Atlantic coast, one near Asbury Park in New Jersey, and the other near Plymouth in Massachusetts. By means of these stations, radio telephone communication has been maintained with two ships experimentally equipped, plying from Boston to southern ports on the Atlantic coast.

Radio telephone communication has been established from Santa Catalina Island, about thirty miles out in the

Pacific Ocean, to the mainland near Los Angeles, and at that point making junction with the local and long-distance wires of the Bell System throughout the United States.

During the International Communications Conference held in December, a demonstration was given at New York [fol. 3617] for the benefit of the members of the conference, at which time the steamship Gloucester on the Atlantic Coast communicated by radio telephone through the New Jersey station, and thence by wire across the North American continent to San Francisco and to Los Angeles, and thence by radio telephone to Santa Catalina Island, in the Pacific Ocean. This demonstration was successful, and the conversation between the ship in the Atlantic and the island in the Pacific was clearly heard at New York by members of the conference.

This achievement well exemplifies the special field of radio telephony, which is particularly adapted to use between ship and shore; between ship and ship; between airplanes in flight; between airplanes and ships; and from airplanes to the ground. For such purposes, wires cannot be used. In the case of Catalina Island, a cable would carry the traffic from the island to the shore more economically and satisfactorily, but owing to conditions growing out of the war, it was impossible to have the cable manufactured as soon as required, so that the radio telephone was installed.

For all such uses, when so-called static disturbances are absent, and when other and interfering stations are not operating, good transmission by the radio telephone can be obtained; but for the above mentioned reasons, and for other causes, radio telephone service is not so dependable and economical as that supplied by wires.

P. 24:

Furthermore, it should be noted that the facilities of the ether for the simultaneous sending of numerous telephone messages are so limited that the ether itself can carry but a small part of the enormous volume of the telephone traffic required by the entire world. The right of way, therefore, must be given to ships, to aircraft, to radio compass [fol. 3618] stations, and to all other radio stations so situated that wires cannot be employed.

In order to reduce the interference in the ether and to provide the maximum opportunity for communication for mobile and other stations which cannot use wires, the International Communications Conference has proposed a regulation to limit the use of international radio telephony to cases where telephonic communication by any other means is impossible. While this proposed regulation rests on a sound basis and represents the consensus of opinion of the best radio experts in the world, it is, nevertheless, expected as time goes on that a large use of radio telephony will develop in its own special fields. It will play an important part in establishing telephone communication with otherwise inaccessible places and will make it possible for aircraft in flight and ships at sea to connect with the wires of the Bell System and thus hold conversation with any of its subscribers wherever located throughout the United States. The activities of a section of our development staff, therefore, are being devoted exclusively to wireless telephony.

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P. 25:

With this in mind, representations were made to the International Communications Conference asking for the allocation of suitable wave lengths for transoceanic telephony. Owing to the limited number of wave lengths available for this purpose, and owing to the fact that the radio telephone requires from six to ten times as many wave lengths as are required for telegraphy, the desired number of wave lengths could not be obtained. It is hoped, nevertheless, that, without encroaching unduly upon the limited facilities available for telegraphy, the necessary wave lengths for experimental purposes may be allotted.

[fol. 3619] For issuing storm warnings to mariners at sea, for broadcasting weather reports and frost warnings to agriculturalists, and for other similar purposes where it is desired to send information broadcast to be picked up simultaneously by any number of receiving stations, the radio telephone has special fields of future usefulness. For these purposes, and for the purpose of sending out calls for help from a ship or aircraft in distress, the fact that the telephone conversation or message can be heard by all who have proper receiving stations, is a decided advantage.

On the contrary, however, when the telephone message is intended to be received by only one station, this lack of privacy is a defect, and in the case of radio telegraphy used for press dispatches where it is not intended that the news should be sent broadcast, but rather only to the subscribers of press associations which furnish news exclusively to their subscribers, the advantage of some method of secret communication is a substantial one.

P. 25:

[fol. 3620] In the transmission of news, speed is an essential factor, and while it is not impossible at the present time to encipher news dispatches by ordinary methods so that only subscribers who have the key can understand them, the time required for enciphering and deciphering makes these methods objectionable. Accordingly, the Department of Development and Research has worked on the problem of applying to radio telegraphy the quick cipher or secret method of wire telegraphy which our engineers developed and which was so successfully used upon wires by the Signal Corps during the war. This method has been mentioned in a previous annual report. It is a secret means of telegraph communication, and while the message may be heard at all radio stations, it can be interpreted only by those who have been provided with the cipher key and our automatic cipher apparatus. This instantaneously enciphers the message at the sending end, and deciphers it at the receiving end, where it appears immediately in printed page form in plain language ready for use.

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P. 26:

The problem of attaining privacy in radio telephone transmission is peculiar and difficult. Nevertheless, in the solution of this probem we have also made important progress. Our engineers have carried on conversation by radio telephony according to a method which they devised whereby ordinary receiving stations can hear nothing but unintelligible sounds; yet at all stations equipped with the necessary special apparatus and in possession of the requisite operating information, the spoken words can be heard and understood. Our development in this direction is being continued.

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[fol. 3621] P. 26:

Great attention has been given to devising new methods for increasing the carrying power of the toll line plant of the Bell System in respect to the number of telephone and telegraph messages which may be transmitted over one circuit. The multiplex telephone and telegraph system which was developed by our engineers and referred to in the annual report of 1918 has been still further advanced and has been applied on a substantial scale to our plant, with satisfactory results. Our development work in printing-telegraph systems has demonstrated that the printing-telegraph machine has such an important place in the telegraph art that our work upon such apparatus is being continued and has resulted during the year in improvements of great value.

P. 36:

Bell System Income Statement

For Year Ending December 31, 1920

(Duplications Excluded)

Exchange Revenues	$301,282,599	
Toll Revenues	141,883,485	
Miscellaneous Revenues	6,276,031	
Total Operating Revenues		$449,442,115
Depreciation	65,731,071	
Current Maintenance	69,665,080	
Traffic Expenses	145,848,181	
Commercial Expenses	45,075,272	
General and Miscellaneous Expenses	20,500,013	
Total Operating Expenses		346,819,617
Net Operating Revenues		$102,622,498
Uncollectible Revenues	1,208,798	
Taxes	27,841,334	29,050,132
Operating Income		$73,572,366
Non-operating Revenues, Net		11,692,610
Total Gross Income		$85,264,976
Rent and Miscellaneous Deductions	5,755,808	
Interest Deductions	31,724,103	37,479,911
Balance Net Income		$47,785,065
Deduct Dividends		39,999,579
Surplus Earnings		$7,785,486

P. 37:

[fol. 3622] **Bell System Balance Sheets, 1919 and 1920**

(Duplications Excluded)

Assets:	Dec. 31, 1919	Dec. 31, 1920
Telephone Plant	$1,215,944,184	$1,363,826,327
Supplies, Tools, etc	38,035,034	47,442,043
Receivables	84,409,519	66,351,159
Cash	72,879,842	41,399,285
Stocks and Bonds	118,806,351	115,230,719
Total	$1,530,074,930	$1,634,249,533

Liabilities:		
Capital Stock	512,121,868	511,493,407
Mortgage Bonds	191,163,060	213,571,750
Collateral Trust Bonds	165,369,900	164,396,100
Convertible Bonds and Notes	63,983,700	80,495,900
Debentures	35,686,100	37,330,325
Three and Five Year Gold Notes	90,000,000	90,000,000
Bills Payable	1,774,207	10,130,141
Accounts Payable	72,158,014	73,429,492
Total Outstanding Obligations	$1,132,256,849	$1,180,847,115
Employees' Benefit Fund	9,244,081	9,363,215
Surplus and Reserves	388,574,000	444,039,203
Total	$1,530,074,930	$1,634,249,533

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[fol. 3623]

Capital Stock

* * * * * * *

The book cost of the assets underlying the capital stock of the American Telephone and Telegraph Company, including its interest in the assets of its associated companies, amounts to more than $200 for each share of stock.

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P. 46:

American Telephone and Telegraph Company

Statement of Earnings and Expenses for the Year 1920

	1920
Earnings:	
Dividends	$34,800,465.51
Interest	12,969,756.16
Telephone Operating Revenues	56,030,624.92
Miscellaneous Revenues	146,141.49
Total	$103,946,988.08
Expenses	33,260,083.98
Net Earnings	$70,686,904.10
Deduct Interest	18,865,688.44
Balance	$51,821,215.66
Deduct Dividends	35,376,792.88
Balance	$16,444,422.78
Appropriated for Contingencies	8,000,000.00
Balance, added to Surplus	$8,444,422.78

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C. A. Heiss, Comptroller.

P. 47:

[fol. 3624] American Telephone and Telegraph Company

Balance Sheet, December 31, 1919 and 1920

* * * * * * *

Liabilities

	Dec. 31, 1919	Dec. 31, 1920
Capital Stock	$441,981,200.00	$442,825,400.00
4% Collateral Trust Bonds, 1929	78,000,000.00	78,000,000.00
5% Collateral Trust Bonds, 1946	77,434,900.00	76,461,100.00
5% Western T. and T. Co. Bonds, 1932	9,985,000.00	9,985,000.00
4% Convertible Bonds, 1936	2,589,000.00	2,589,000.00
4½% Convertible Bonds, 1933	13,027,500.00	12,198,200.00
6% Convertible Bonds, 1925	48,367,200.00	48,195,700.00
6% 3-Year Gold Notes, 1922	50,000,000.00	50,000,000.00
6% 5-Year Gold Notes, 1924	40,000,000.00	40,000,000.00
Dividend Payable January 15th	8,839,612.00	8,852,072.00
Interest and Taxes Accrued not Due	6,408,390.08	6,773,978.36
Current Accounts Payable:		
Compensation Due Associated Companies from United States Government	7,858,620.83	....
Other Current Accounts Payable	6,363,800.72	7,422,682.29
Employees' Benefit Fund	2,000,000.00	2,000,000.00
Reserve for Depreciation and Contingencies	47,262,123.43	57,915,152.06
Surplus (Including Capital Stock premiums and excluding Debt Discount and Expense)	86,663,741.54	96,649,961.44
	$926,781,088.60	$939,868,246.15

C. A. Heiss, Comptroller.

[fol. 3625] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 41

Annual Report of Directors to Stockholders of A. T. & T. for Year Ending December 31, 1921

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P. 6.

The security for the Company's debts represented by its bonds and other like obligations is in its earning power and in the property behind these securities. Therefore, new money put into the Company by the shareholders and invested in earning property strengthens its outstanding bonds and other like obligations becaues it incrases both the earnings and the property back of them.

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P. 10:

To induce the investment of the sums that are necessary to provide for the growth of the public utilities of the

United States, investors must have a dependable assurance that these investments are as desirable as other investments offered to them after the differences in the circumstances and conditions surrounding the investments have been equated. The laws of demand and supply apply to money seeking investment, just as they apply [illegible] everything else, and when differing hazards and other varying conditions are taken into account, they tend to equalize the return upon all investments.

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[fol. 3626] Financial Results

P. 12:

In previous reports to stockholders, the statement has several times been made that an actual appraisal conservatively made of the telephone properties of the Bell System companies would show values greatly in excess of the amount at which these properties are carried on the books. An example of what we believe to be fairly typical of all Bell System property, is an appraisal completed recently by engineers of a Public Utility Commission covering approximately one-half of the property of one of the Associated Companies. In this case the Commission, after taking into consideration the average prices for labor and material during the past ten years, arrive at a reproduction cost of the property 23 per cent in excess of the cost value of the property as carried upon the books of the company. A consideration of unit prices based on average prices for labor and material during the past five years, led to a figure 37 per cent in excess of the book figures, while unit prices based on prices for labor and material during 1919, resulted in a figure 76 per cent in excess of book figures.

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P. 19:

[fol. 3627] Our practical experience with radio communication serves still further to emphasize what has been pointed out in previous reports—that the practical field for radio telephony lies in connection with those situations where it is impracticable to employ wires, as in the case of communications between moving vehicles, from ship to ship, and from ship to shore, from airship to ground, and similar classes of service. All of these possible fields for the extension of our service are being carefully explored, and it is expected that as time goes on they may be developed into useful auxiliaries to the wire service. Over great bodies of water and between points difficult of access, where wire service is impracticable to establish or maintain, the radio telephone offers a promising means of communication.

P. 20:

Our scientific staff has however continued during the year its extensive work in the field of radio communication. The Bell System has available all the important inventions with reference to commercial wireless telephony and expects to make use of them in every way possible for the extension, betterment, and cheapening of the service as ways of doing so develop. Our engineering and commerical organizations are actively engaged in developing whatever possibilities there are in this field.

A field in which the radio telephone has possibilities is in the furnishing of broadcasting service, a one way service which consists in sending out by radio telephone from a central station, news, music, speeches, and the like, which under favorable atmospheric conditions may be received by all who have receiving stations within the area served, and care to listen. The number of wave lengths available for [fol. 3628] this radio telephone service is limited, but we are preparing to furnish this broadcasting service to such an extent as may meet the commercial demands of the public, subject to that limitation.

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Western Electric Company, Incorporated

P. 28, 29:

* * * Its compensations have been fixed on the basis of reasonable but steady return on investment rather than that of the high but fluctuating profit on the sales of an uncontrolled manufacturer. No public utility has paid less proportionately in profits to the manufacturers of its equipment and such profits as have been paid, through our stock ownership, remain in the Bell System for the advancement of the utility. Volume of sales and profits therefrom, the goal of most manufacturers, were of secondary importance,

while the needs of the service became the predominant factor in working out the solution of the problems which confronted the Bell System. The telephone users have been materially benefited by this arrangement.

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Bell System Statistics and Financial Data

P. 35:

The capital stock, bonds and notes payable of the Bell System outstanding in the hands of the public at the close of the year 1921 were $1,301,326,508, a net increase of approximately $193,900,000 over similar obligations outstanding at the end of 1920. The book cost of the net assets devoted to earning a return on these outstanding securities amounts to over $1,807,000,000, while the actual value thereof is considerably in excess of this figure.

[fol. 3629] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 42

Annual Report of the Directors to the Stockholders of the A. T. & T. Co. for Year Ending December 31, 1922

P. 12, 13:

Conservative financial and business policies have been followed during the entire history of your Company. Adequate provision has been made for depreciation, and the funds taken from earnings for this purpose have been invested in the business, so that the investment of its stockholders and creditors has at all times been kept unimpaired. In the aggregate more than $40,000,000 in excess of par has been paid into the treasury in cash in respect of stock outstanding. At no time have all of the earnings been paid out in dividends, but during its entire history a portion thereof has annually been retained in the business and invested in property.

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P. 18:

The use of cable, whether underground or overhead, though absolutely necessary, has presented most formidable scientific problems. When first introduced, less than half a mile of cable in a circuit was enough to seriously interfere with conversation between city and suburbs. By our continued efforts, the range of possible use of cable was gradually increased until by 1920 conversation was possible through 2,000 miles of cable. The work of the past year has developed methods which will make conversation scientifically possible through 3,000 miles of cable equal in all respects to a conversation from one room to another in the same building.

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P. 19:

[fol. 3630] In certain sections of this country, less than a year of radio broadcasting has shown how interference destroys its value even as a source of entertainment, and in connection with international intercommunication, there are all of the difficulties arising from lack of centralized control of the complete medium of communication. It is in the expectation that ultimately by national and international control interference will be obviated, and that by co-operation other problems having international aspects may be at least partially solved, that we are continuing our studies. Experiments in wireless telephony as an additional agency of intercommunication are, therefore, under present conditions, more of scientific than of commercial value.

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P. 20:

As in the past, the greater value of the Development and Research Department is in the continual study of all of the mechanisms and materials going into the plant of the Bell System and the Improvements resulting in greater economies in construction, maintenance and operation, in protection of the plant and in better service. In this report we can only mention an occasional conspicuous scientific contribution which seems to have a large possibility either in extension or improvement of the service.

P. 29:

[fol. 3631]

Bell System Income Statement

For Years Ending December 31, 1921, and 1922

(Duplication Excluded)

	1921	1922
Exchange Revenues	$343,133,098	$374,718,580
Toll Revenues	146,459,202	163,097,837
Miscellaneous Revenues	7,495,933	9,012,656
Total Operating Revenues	$497,088,233	$546,829,073
Depreciation	$70,858,073	$80,081,280
Current Maintenance	73,061,099	79,817,856
Traffic Expenses	148,372,962	152,948,539
Commercial Expenses	47,831,650	49,650,397
General and Miscellaneous Expenses	23,563,499	25,853,826
Total Operating Expenses	$363,687,283	$388,351,898
Net Operating Revenues	$133,400,950	$158,477,175
Uncollectible Revenues	$1,843,962	$3,081,821
Taxes	34,512,479	41,215,441
Operating Income	$97,044,509	$114,179,913
Non-operating Revenues—Net	13,651,814	17,209,311
Total Gross Income	$110,696,323	$131,389,224
Rent and Miscellaneous Deductions	$6,497,642	$6,897,106
Interest Deductions	36,773,998	37,869,366
Total Deductions	$43,271,640	$44,766,472
Net Income	$67,424,683	$86,622,752
Deduct Dividends	47,848,394	60,305,204
Balance	$19,576,289	$26,317,548

P. 29, 30:

[fol. 3632] Bell System Earnings and Expenses

The consolidated Bell System income statement from which all intercompany duplications have been eliminated, appears above. This income statement represents the telephone business of the System as a whole, i. e., the business of the American Telephone and Telegraph Company and its Associated Companies, including the Bell Telephone Securities Company, in its relation to the public. It does not include data for connecting, independent, or sublicense companies, or The Bell Telephone Company of Canada, the Western Electric Company, Incorporated, and the 195 or 205 Broadway Corporations, except as interest and dividends from these companies are included in non-operating revenues. (The financial statements of the American Telephone and Telegraph Company are shown on pages 42 and 43.)

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P. 31, 32:

Capital stock, bonds and notes payable of the Bell System outstanding in the hands of the public at the close of the year 1922 amounted to $1,483,466,673, a net increase of approximately $182,140,165 over similar obligations outstanding at the end of 1921. The book cost of the net assets devoted to earning a return on these outstanding securities amounts to over $2,065,700,000, while the actual value therefore is considerably in excess of this figure.

[fol. 3633] Bell System Balance Sheets, 1921 and 1922

(Duplications Excluded)

Assets:	Dec. 31, 1921	Dec. 31, 1922
Telephone Plant	$1,543,865,545	$1,729,219,520
Supplies, Tools, etc.	47,944,435	50,744,200
Stocks and Bonds	126,202,014	146,834,400
Receivables	72,720,690	87,681,728
Temporary Cash Investments	52,133,110	100,539,281
Cash	57,644,707	47,503,842
Total	$1,902,510,501	$2,162,522,971
Liabilities:		
Capital Stock (including Installments)		
Common:		
American Tel. & Tel. Co.	$551,385,213	$715,083,854
Associated Companies	59,174,493	61,535,743
Preferred:		
Associated Companies	21,656,547	60,387,747
Total Capital Stock	$632,216,253	$837,007,344
Funded Debt:		
Mortgage Bonds		
Associated Companies	302,753,415	360,072,390
Collateral Trust Bonds		
American Tel. & Tel. Co.	163,502,500	162,750,500
Convertible Bonds and Notes		
American Tel. & Tel. Co.	47,647,400	23,851,300
Associated Companies	26,738,400	25,180,100
Debentures and Notes		
American Tel. & Tel. Co.	89,500,000	40,000,000
Associated Companies	36,598,875	34,178,875
Total Funded Debt	$666,740,590	$646,033,165
Bills Payable		
Associated Companies	2,369,665	426,164
Total Capital Liabilities	$1,301,326,508	$1,483,466,673
Accounts Payable	39,478,986	38,116,351
Accrued Liabilities Not Due	46,095,881	58,702,050
Employees' Benefit Funds	9,485,910	18,655,184
Surplus and Reserves	506,123,216	563,582,713
Total	$1,902,510,501	$2,162,522,971

P. 42:

[fol. 3634]

American Telephone and Telegraph Company

Statement of Earnings and Expenses for the Years 1921 and 1922

	1921	1922
Earnings:		
Dividends	$38,580,672.59	$44,972,928.91
Interest	13,803,052.70	12,281,954.46
Telephone Operating Revenues	58,268,539.17	65,324,889.89
Miscellaneous Revenues	90,507.92	227,946.41
Total	$110,742,772.38	$122,807,719.67
Expenses (Including provisions for depreciation and all taxes)	37,218,959.61	41,139,279.67
Net Earnings	$73,523,812.77	$81,668,440.00
Deduct Interest	19,521,109.05	15,498,011.88
Balance	$54,002,703.72	$66,170,428.12
Deduct Dividends	42,674,403.00	52,971,251.93
Balance	$11,328,703.72	$13,199,176.19
Appropriated for Contingencies	3,000,000.00	5,000,000.00
Balance for Surplus	$8,328,300.72	$8,199,176.19

C. A. Heiss, Comptroller.

P. 43:

[fol. 3635]

American Telephone and Telegraph Company

Balance Sheet December 31. 1921 and 1922

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Liabilities

	December 31, 1921	Dec. 31, 1922
Capital stock:		
Capital Stock	$548,185,300.00	$699,347,400.00
Capital Stock Installments	3,199,913.09	15,736,454.22
Total Capital Stock	$551,385,213.09	$715,083,854.22
Funded Debt:		
4% Collateral Trust Bonds 1929	78,000,000.00	$78,000,000.00
5% Collateral Trust Bonds 1946	75,567,500.00	74,783,500.00
5% Western T. & T. Co. Bonds 1932	9,985,000.00	9,970,000.00
4% Convertible Bonds 1936	2,589,000.00	2,589,000.00
4½% Convertible Bonds 1933	11,020,300.00	7,191,800.00
6% Convertible Bonds 1925	34,038,100.00	14,070,500.00
6% 3-Year Gold Notes 1922	49,500,000.00	....
6% 5-Year Gold Notes 1924	40,000,000.00	40,000,000.00
Total Funded Debt	$300,699,900.00	$226,604,800.00
Total Capital Liabilities	$852,085,113.09	$941,688,654.22
Dividend Payable January 15th	$12,299,206.50	$15,719,753.25
Accounts Payable	5,081,733.33	6,465,453.16
Interest and Taxes Accrued, Not due	6,709,478.17	7,630,585.97
Reserve for Employees' Benefit Fund	2,000,000.00	5,000,000.00
Reserve for Depreciation and Contingencies	63,550,463.13	68,514,833.29
Surplus Appropriated for Dividends payable April 16 and July 16, 1923	....	31,471,956.00
Surplus Unappropriated (Including Capital Stock Premiums)	108,604,668.74	87,440,606.49
	$1,050,330,662.96	$1,163,931,842.38

C. A. Heiss, Comptroller.

[fol. 3636] EXTRACTS FROM EXHIBIT DEPOSITION. EXHIBIT No. 43

Annual Report of Directors to Stockholders of A. T. & T. for Year Ending December 31, 1923

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P. 5, 6:

Since the beginning of telephone service forty-six years ago, the purpose has been to create and maintain a service available in any part of the country to furnish telephone communication with any other part of the country. The Bell Telephone System embraces all of the agencies through which that is accomplished.

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P. 6:

With the exception of its interest in The Bell Telephone Company of Canada and in the Florida-Cuba telephone cables, and its indirect interest in the sales of the Western Electric Company's foreign subsidiaries, your Company has no direct or indirect financial interests abroad. It has been and is the Company's policy to concentrate its efforts and resources upon the development and perfection of telephone service in this country, including connections with foreign services as improvement in the art may make such connections available; but that policy has not contemplated making them available by investment abroad or by any other programme which would withdraw any of our resources either in men or money from this country. We maintain the most friendly relations with those abroad who are responsible for the operation of telephone services in order that the general progress of the art of telephony may be promoted.

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P. 10, 11:

Since the end of 1920, the relation between funded debt and capital stock of your Company which has always been maintained on a sound basis has been materially strength-[fol. 3637] ened. On December 31, 1920, the funded debt aggregated $317,429,000, or 42 per cent of the total capital obligations, while capital stock aggregated $442,825,400. With the issuance of the debentures of November 1, 1923, and giving effect to the retirement of $40,000,000 six per cent notes, due February 1, 1924, the funded debt will aggregate approximately $279,000,000, or less than 28 per cent of total capital obligations, with capital stock (including installments) outstanding in the amount of about $753,500,000. As compared with capital obligations outstanding on December 31, 1920, funded debt will have decreased $38,000,000, whereas capital stock has increased $311,000,000.

The net assets of the Company conservatively stated as of December 31, 1923—after deducting current liabilities—were $1,274,239,000, and these exceeded by $211,000,000 the total capital obligations—stock and debt—outstanding.

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P. 19, 20:

In order that we might keep in intimate touch with the practical development of radio broadcasting and furnish advice to our Associated Companies with respect thereto, we have been operating a broadcasting station in New York City since November, 1922. In connection with the operation of this station, we have offered the use of its facilities on a toll basis to those who desire to broadcast, subject to reasonable rules and regulations. While the operation of this station is still on an experimental basis, experience to date indicates that there is a demand, on the part of those who desire to broadcast, for a service of this character on a high plane.

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P. 21, 22:

Experiments have been continued on transatlantic radio telephony, following the successful tests which were noted in the last report. Since that time, with even better results [fol. 3638] speech has been transmitted to England during test periods at weekly intervals throughout the year. Measurements indicate that, under most favorable conditions, a small amount of power such as is used in an amateur set will transmit speech so as to be heard sporadically in England. Atmospheric conditions, however, often change so greatly within only a few hours that ten thousand times as much power would not give audible speech. Engineers are actively engaged on the difficult problems presented by this extreme variability of radio telephone transmission over such distances. Much more scientific investigation and development work must yet be done before definite statements can be made concerning the prospects of dependable, day-by-day transoceanic telephone service.

In a previous report it was stated that our engineers had devised a method whereby privacy in radio transmission could be obtained. This method was applied to the radio system in operation between Catalina Island and the mainland, and operated satisfactorily in commercial service.

In the general field of radio, work has been actively prosecuted during the year, with a view to the development of this branch of the art for use in those situations in which, with due regard to its possibilities and to its limitations, radio transmission may be employed.

The programme of extending toll cable to the west has been continued and the cable at the end of the year is completed from the principal points on the Atlantic seaboard to Cleveland, and will be extended to Chicago within the next two years.

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P. 30:

Bell System Earnings and Expenses

The income statement on the opposite page, from which all intercompany duplications have been excluded, represents the business of the Bell System as a whole in its relation to the public. It consolidates the accounts of the [fol. 3639] American Telephone and Telegraph Company and the 25 Associated Companies, but does not include data for connecting companies or for such companies as The Bell Telephone Company of Canada and the Western Electric Company, except as interest and dividends from these companies are included in non-operating revenues.

[fol. 3640] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 44

Annual Report of the Directors of the American Telephone & Telegraph Company for the Year Ending December 31, 1924

P. 5:

The delay usually attendant upon the consideration of a proceeding for an increase in telephone rates occasionally creates a period in the history of an Associated Company during which its earnings do not adequately meet its full dividend requirements. During such period, the companies usually continue their dividends at their regular rates in the expectation that their earnings will soon return to a normal basis and that ultimately the sums taken from surplus to make up these dividends will be restored. Such an expectation is reasonable. The capitalization of our Associated Companies is so conservative that a fair return upon the value of their property always affords earnings in excess of dividend requirements. This fact also justifies our confidence that the few cases where rate adjustments are now pending will be satisfactorily concluded in due course.

During 1924 there were four of our Associated Companies which paid dividends in part out of accumulated surplus. Other Associated Companies did not distribute in dividends their entire earnings, so that as a whole our Associated Companies more than earned their dividends in 1924, and made additions to surplus.

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P. 11:

* * * It is impossible at present to predict the date of telephone conversation with Great Britain or even to predict, on the basis of present conditions, that it will be a practical and commercial possibility, taking into consideration other difficulties as well as technical difficulties. Any [fol. 3641] other applications of wireless telephony to telephone service, except in minor instances where wire connection is impossible, appear even more remote.

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P. 16, 17:

An exact knowledge of the nature and characteristics of human speech is of fundamental importance in telephone engineering. For a number of years past we have been carrying on a more comprehensive and precise investigation of speech than has ever before been attempted. The results of this work have already been of the greatest importance in the economic design of our telephone apparatus and circuits, as well as in the solution of the special problems of telephone quality which arise in radio broadcasting and in the use of telephone wires in connection therewith. As an incident of this development interesting from a humanitarian standpoint has been the cooperative work by our scientists and members of the medical profession, which has made available apparatus of great value in the study and amelioration of defects in human hearing and speech and for other medical purposes which involve sound in the diagnosis or treatment of disease.

An efficient method has been developed for electrically transmitting photographs, drawings, hand-writing, finger prints, etc., over telephone circuits. The first public demonstration of this method was made on May 19, 1924, when pictures were transmitted from Cleveland to New York City in the presence of representatives of newspapers, press associations and others. During the National Republican Convention pictures of interest in connection therewith were taken and transmitted from Cleveland to New York, and during the National Democratic Convention similar pictures were taken and transmitted from New York to Chicago. These pictures were widely published in news- [fol. 3642] papers and magazines. Since the demonstrations just referred to the process has been much improved. The received pictures now differ very little from ordinary photographic prints and are therefore well adapted to newspaper reproduction and for other purposes.

While it is still too early to forecast accurately the commercial future of this picture transmission development it seems probable that it may result in a considerable service which will utilize our circuits at times when they are not required for regular telephone service.

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P. 18:

Further developments in the use of our wire lines for connecting radio stations have permitted practically nationwide broadcasting of important public events. As many as twenty-seven separate broadcasting stations, stretching from the Atlantic seaboard to the Pacific, have been connected together for the broadcasting of speeches of national interest.

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P. 19:

The methods of handling our research and development activities have changed from time to time in the past and have evolved as the magnitude and scope of this work have grown. For some time it has been apparent that a further change would shortly be required in order adequately to meet the problems likely to confront the Bell System in the future.

P. 27a:

[fol. 3643] Bell System Income Statement

For the Years Ending December 31, 1923 and 1924

(Inter-Company Duplications Excluded)

	1923	1924
Exchange Revenues	$412,009,426	$454,326,217
Toll Revenues	178,427,051	190,317,904
Miscellaneous Revenues	11,153,311	12,944,728
Total Operating Revenues	$601,589,788	$657,588,849
Depreciation	87,484,693	99,693,110
Current Maintenance	91,154,988	101,596,928
Traffic Expenses	170,993,441	177,898,385
Commercial Expenses	53,406,861	58,852,751
General and Miscellaneous Expenses	26,036,076	28,573,101
Total Operating Expenses	$429,076,059	$466,614,275
Net Operating Revenues	$172,513,729	$190,974,574
Uncollectible Revenues	3,436,422	4,129,904
Taxes	45,648,727	50,497,688
Operating Income	$123,428,580	$136,346,982
Non-Operating Revenues—Net	21,526,309	20,313,964
Total Gross Income	$144,954,889	$156,660,946
Rent and Miscellaneous Deductions	7,578,970	7,884,327
Interest and Deductions	37,751,447	41,531,071
Total Deductions	$45,330,417	$49,415,398
Net Income	99,624,472	$107,245,548
Deduct Dividends	72,428,617	82,602,906
Balance	$27,195,855	$24,642,642

P. 28:

[fol. 3644] After meeting all expenses and paying a return on the capital used in the business, there remain earnings of $24,642,642. Provisions have been made by appropriations of Surplus to cover the contingency of possible refunds of charges for service in the event of adverse decisions in rate investigations now pending before commissions or courts. The surplus earnings, together with funds made available through charges to expenses for depreciation, have been invested in the telephone business and thus have reduced the amount of new capital which it would otherwise have been necessary to obtain from the public.

P. 29:

[fol. 3645] Bell System Balance Sheets, 1923 and 1924

(Inter-Company Duplications Excluded)

Assets:	Dec. 31, 1923	Dec. 31, 1924
Telephone Plant	$1,978,947,543	$2,266,923,466
Supplies, Tools, etc	59,761,345	63,448,453
Stocks and Bonds	150,059,850	155,710,162
Receivables	87,000,576	86,092,322
Temporary Cash Investments	[illegible],961,698	46,911,404
Cash	[illegible],317,313	45,108,738
Total	$2,400,048,325	$2,664,194,546
Liabilities:		
Capital Stock (Including Installments)		
Common		
American Tel. & Tel. Co	753,501,507	917,344,372
Associated Companies	63,094,513	72,195,543
Preferred		
Associated Companies	74,938,547	104,032,947
Total Capital Stock	$891,534,567	$1,093,572,862
Funded Debt:		
Mortgage Bonds		
Associated Companies	442,514,459	480,534,197
Collateral Trust Bonds		
American Tel. & Tel. Co	161,925,500	161,134,000
Associated Companies		414,400
Convertible Bonds and Notes		
American Tel. & Tel. Co	17,407,600	11,424,400
Associated Companies	222,000	81,000
Debentures and Notes		
American Tel. & Tel. Co	130,443,400	98,998,600
Associated Companies	147,575	146,000
Total Funded Debt	$752,660,534	752,732,597
Bills Payable:		
Associated Companies	248,294	365,318
Total Capital Liabilities	$1,644,443,395	$1,846,670,777
Accounts Payable	50,890,971	48,768,560
Accrued Liabilities Not Due	62,307,904	65,604,527
Employees' Benefit Funds	20,552,875	24,313,090
Surplus and Reserves	621,853,180	678,837,592
Total	$2,400,048,325	$2,664,194,546

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[fol. 3646] American Telephone and Telegraph Company

Statement of Earnings and Expenses for the Years 1923 and 1924

Earnings:	1923	1924
Dividends	$54,078,663.11	$63,559,326.46
Interest	12,998,157.47	14,570,870.66
Telephone Operating Revenues	71,840,735.27	75,513,105.51
Miscellaneous Revenues	373,405.65	439,533.40
Total	$139,290,961.50	$154,082,836.03
Expenses (Including provision for depreciation and all taxes)	43,901,043.47	46,463,473.21

	1923	1924
Net Earnings	95,389,918.03	107,619,362.82
Deduct Interest	13,697,736.66	16,573,041.41
Net Income	$81,692,181.37	$91,046,321.41
Deduct Dividends	63,274,388.10	70,918,227.27
Balance	$18,417,793.27	$20,128,094.14
Carried to Reserve for Contingencies	3,000,000.00	3,000,000.00
Carried to Surplus	15,417,793.27	17,128,094.14
Total	$18,417,793.27	$20,128,094.14

C. A. Heiss, Comptroller.

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[fol. 3647] American Telephone and Telegraph Company

Balance Sheet, December 31, 1923 and 1924

Assets

	December 31, 1923	December 31, 1924
Stocks of Associated Companies	$756,463,932.11	$896,499,180.98
Bonds and Notes of, and Net Advances to, Associated Companies	178,147,274.02	211,837,870.94
Stocks, Bonds and Notes of, and Advances to Other Companies	102,211,723.47	95,334,922.09
Long Lines Plant and Equipment	125,671,228.42	140,557,941.86
Telephones	33,275,285.85	37,122,591.66
Real Estate	12,096,745.41	12,124,4[illegible]4.88
Office Furniture and Fixtures	956,088.11	1,094,478.14
Accounts Receivable	10,443,626.03	13,295,581.25
Temporary Cash Investments	62,218,588.55	46,748,297.25
Cash	25,217,740.10	23,531,892.27
	$1,306,702,232.07	$1,478,147,221.32

Liabilities

Capital Stock:		
Capital Stock	$735,519,200.00	$888,478,100.00
Capital Stock Installments	17,982,306.96	28,866,271.70
Total Capital Stock	753,501,506.96	917,344,371.70
Funded Debt:		
4% Collateral Trust Bonds, '29	78,000,000.00	78,000,000.00
5% Collateral Trust Bonds '46	73,979,500.00	73,205,000.00
5% Western T. & T. Co. Bonds '32	9,970,000.00	9,969,000.00
5½% Debenture Bonds, 1943	100,000,000.00	99,023,600.00
4% Convertible Bonds, 1936	2,589,000.00	2,589,000.00
4½% Convertible Bonds, '33	5,200,700.00	3,543,400.00
6% Convertible Bonds, 1925	9,617,900.00	5,292,000.00
6% 5-year Gold Notes, 1924	30,468,400.00	....
Total Funded Debt	$309,825,500.00	$271,622,000.00
Total Capital Liabilities	1,063,327,006.96	$1,188,966,371.70
Dividend Payable January 15th	16,539,124.50	19,988,734.50
Accounts Payable	7,754,816.30	24,307,660.13
Interest and Taxes Accrued Not due	8,168,929.43	8,664,664.62
Reserve for Employees' Benefit Fund	6,000,000.00	7,000,000.00
Reserve for Depreciation and Contingencies	75,985,328.99	81,975,454.92
Surplus Appropriated for Dividend payable April 15, 1925	....	19,990,757.25
Surplus (Including Capital Stock Premiums	128,927,025.89	127,253,578.20
	[illegible],306,702,232.07	$1,478,147,221.32

C. A. Heiss, Comptroller

[fol. 3648] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #45

Annual Report of the American Telephone and Telegraph Company for the Year 1925

The gross revenue of the Bell System was $761,200,000. Net earnings were 6½ per cent on the amount invested in plant and other assets. Earnings available for contingencies and surplus amounted to 1⅓ per cent on the investment—less than a cent a day a telephone, a necessary but relatively small margin of safety.

* * * * * * *

The par value, including installments, of the stock of the Bell System outstanding in the hands of the public at the end of the year was $1,144,618,690, of which $949,170,350 was American Telephone and Telegraph Company's stock—the balance being common and preferred stocks of Associated Companies held by the public. The entire debt of the Bell System was $891,008,995, less than one-third of the total assets. Of the debt only $502,219,065 is represented by mortgage bonds. The financial structure of the Bell System is, therefore, sound—an important factor in enabling it to obtain funds, needed from time to time for extensions to its plant, on a satisfactory basis.

* * * * * * *

Telephone Service

The population of the country grows at the rate of from one to two per cent a year. It has been estimated that general business increases somewhat faster than population—approximately three or four per cent a year. The telephone business—due to higher standards of living and the constant trend toward economy of time, not only in [fol. 3649] business but in all activities—increases at an even more rapid rate than general business.

Because of the nature of the telephone business, its continued growth makes it increasingly difficult even to maintain present standards of service. At the same time, conditions of modern business and domestic life constantly demand ever better and faster service.

Telephone service is not a commodity or physical product comparable to that furnished by other industries, or even other utilities. The business of a telephone company is, in many respects, unique. It furnishes and makes available a service—a service which requires the interconnection of the users. There must be two parties to every telephone conversation. Furthermore, a telephone company can make its service satisfactory only with the cooperation of the users.

The problem of furnishing the service increases with the number of telephones which can be connected, and it is obvious, when one considers the nature of the business, that many factors entering into the cost of furnishing the service would increase greatly if it were not for new economies.

The task, for instance, of interconnecting, or being ready at all times to interconnect, any two of ten telephone subscribers, is relatively simple. The plant needed, however, and the complexity of operation required, to be able to connect any one of ten thousand subscribers with any other one, are relatively very much greater. Thus, in metropolitan centers, due to the large growth, there are increasing complications in furnishing telephone service. To the prospective subscriber it would, perhaps, appear that all that is necessary is to put a telephone instrument in his home or office. What is actually necessary is, not only to [fol. 3650] install the instrument in his home or office, but to provide also the complicated plant which will make it possible for his telephone to be connected with any one of hundreds of thousands of other telephones, as well as for any one of those hundreds of thousands of telephones to be connected with his telephone.

Each new telephone, therefore, means increased investment in plant, which is only in part represented by either the telephone instrument or the line running to the particular central office to which it is connected. Not only does this tend to a more than proportionate increase in the plant, but it also means increased complexity of operation. Telephone costs have been kept at the present relatively low point, in spite of this unique character of the business, only by constant development and invention of new types of apparatus, and new and better methods of operation.

During the past year the cable between New York and Chicago was completed, and further extensions of toll cable plant are under way.

* * * * * * *

From our research and development have come such noteworthy achievements as transcontinental telephony, the extension of telephone service to great distances in storm- [fol. 3651] proof cable, the multitude of intricate mechanisms which have made possible the rapid interconnection of millions of telephones, and the scientific work which has resulted in the beginnings of transoceanic radio telephony.

While these and other noteworthy accomplishments have made possible the tremendous expansion of telephony, they are but a fraction of the total research and development results which your Company is continuously contributing toward a better, a greater, and a more economical telephone service. Each great scientific advance that has been made in the development of telephony has marked out new possibilities for improvement in the service. To render serviceable the results of these scientific advances requires a great many detailed studies that ramify into all parts of the telephone service. In consequence, a very large part of the activities of research and development is devoted to the improvement and simplification of innumerable technical details, all of which must be worked out if the service is to be improved. At the present time there are more than a thousand of these detail research and development problems in process of solution. Since the introduction of improperly developed means and methods would be disastrous in a service so intricate as that of the Bell System, each of these developments requires painstaking care.

* * * * * * *

Further work with a view to better adapting the regular telephone plant to extended use in connection with radio broadcasting stations has been carried on. Every other phase of radio transmission which might have application in the extension of the telephone facilities has also been actively considered.

[fol. 3652] Results of Economies

The results of the Bell System's continued efforts for improvement and more economical methods, are apparent in the cost of telephone service to the public. Compared with ten years ago, telephone rates are, on the average, only 33 per cent higher. This is in spite of the fact that wages and material costs have advanced much more than 33 per cent—in fact, wages have advanced much more than the cost of living which is estimated to have increased 75 per cent. This means that if wages and material costs had not changed from pre-war levels, it would have been possible to make an actual reduction in telephone rates of 20 per cent without reducing the present rate of net earnings. The Bell System companies do not need, nor do they seek to earn, more than a reasonable return on their properties—in 1925 the Bell System as a whole earned 6½ per cent on investment in plant and other assets, and substantially less on the real value of its property. It always has been, and still is the policy of the companies comprising the Bell System, after earning a reasonable return, to have all possible reductions in costs benefit the telephone subscriber. Obviously, the change in the value of the dollar; the increasing size of the business, requiring increased plant at present-day prices; the replacement of used-up plant, which was built originally at lower prices, by plant built at present-day prices; higher taxes; and the present wage level, have made rate adjustments upward necessary, but to an extent much less than the increase in prices generally. These rate adjustments have been largely completed.

[fol. 3653] American Telephone and Telegraph Company

Statement of Earnings and Expenses for the Year Ending December 31, 1925

Earnings:	
Dividends	$75,395,527.38
Dividends on stocks owned.	
Interest	17,967,081.76
Interest on notes and advances, on bonds owned, and on temporary cash investments and bank deposits.	
Telephone Operating Revenues	86,534,623.51
Revenues under contracts for furnishing instruments and services, and revenues from the operation of the long-distance lines.	
Miscellaneous Revenues	561,680.05
Total	$180,458,912.70
Expenses	51,422,579.05
Salaries and expenses incurred in conducting the business, including expenses of operating the long-distance lines; provision for depreciation; rents, taxes and miscellaneous expense items.	

Net Earnings	$129,036,333.65
Deduct Interest	21,631,287.50
Interest on bonds, debentures and other indebtedness.	
Net Income	$107,405,046.15
Deduct Dividends	81,044,425.93
Dividends at the rate of $9.00 per share per annum on capital stock.	
Balance	$26,360,620.22
Carried to Reserve for Contingencies	$6,000,000.00
Carried to Surplus	$20,360,620.22
Average number of shares of capital stock outstanding during year	9,111,814
Net earnings per share available for dividends, 1925 (after interest charges)	$11.79

C. H. HEISS, Comptroller

[fols. 3654 & 3655] Bell System Financial Statements

The Bell System Balance Sheet and Income Statement which follow consolidate the acounts of the American Telephone and Telegraph Company and its twenty-five associated operating telephone companies, all inter-company duplications being excluded from the combined figures. The accounts of the Western Electric Company, Incorporated, The Bell Telephone Company of Canada and of subsidiary and connecting companies in which either the American Telephone and Telegraph Company or its associated telephone companies have investments are not consolidated. The investments in these companies are included in the accompanying Balance Sheet under the item Investments, and dividends and interest received from them are included in the Income Statement under Non-Operating Revenues.

Bell System Balance Sheet, December 31, 1925

(Inter-Company Duplications Excluded)

Assets

Telephone Plant	$2,524,905,590
Plant and equipment used in furnishing telephone service; comprised of land and buildings, rights of way, poles, wire, cable, underground conduit, switchboards, telephones, etc. Increase during year $257,982,124	
General Equipment, Tools and Supplies	69,334,607
Materials and supplies, office furniture and fixtures, automobiles, tools, etc. Increase during year $5,886,154.	
Investments	163,728,250

Investments in stocks and bonds of, and advances to, subsidiary and connecting companies and in miscellaneous property. These investments include stocks of the Western Electric Company, Inc., The Bell Telephone Company of Canada, etc. Increase during year $8,018,088.		
Receivables		84,220,909
Current accounts receivable from telephone subscribers and amounts receivable from connecting companies and others.		
Temporary Cash Investments		47,277,423
Funds, mainly those of the American Telephone and Telegraph Co., temporarily invested and held available for conversion into cash as needed by Associated Companies for extensions to their properties.		
Cash		48,537,040
Funds on hand and in banks to meet current needs.		
Total Assets		$2,938,003,819

Note.—All items of intangible assets carried in the accounts of Bell System companies are excluded from the Bell System Balance Sheet through a corresponding reduction in the Surplus and Reserves.

[fol. 3656]

Bell System Financial Statements

Bell System Balance Sheet, December 31, 1925, Continued

(Inter-Company Duplications Excluded)

Liabilities

Capital Stock (Including Installments)		$1,144,618,690
Par value of capital stock outstanding in hands of public, including installment payments of $27,756,200 on stock not yet issued. Increase during year $51,045,828.		
Common		
American Telephone & Telegraph Co.	$921,597,500	
Associated Companies	89,462,843	
Preferred		
Associated Companies	105,802,147	
Installments		
American Telephone & Telegraph Co.	27,572,850	
Associated Companies	183,350	
Funded Debt		890,336,995
Face value of funded indebtedness outstanding in hands of public. Increase during year $137,604,398.		
Mortgage Bonds		
Associated Companies	$502,219,065	
Collateral Trust Bonds		
American Telephone & Telegraph Co.	160,332,900	
Associated Companies	414,330	
Debenture Bonds and Notes		
American Telephone & Telegraph Co.	227,224,700*	
Associated Companies	146,000	
Bills Payable		672,000

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* Includes $4,488,400 "Convertible Bonds" in respect of which the conversion privilege has expired.

Short-term obligations payable within one year from date of issue.	
Accounts Payable	48,310,063
Current bills for supplies, services, etc.	
Accrued Liabilities Not Due	75,374,497
Taxes, interest, rents, etc., applicable to the year 1925, not due and payable until a later date.	
Employees' Benefit Funds	30,441,438
Provision for accident and sickness disability benefits, pensions and death benefits under the Employees' Benefit Plan. Increase during year $6,128,348.	
Surplus and Reserves	748,250,136
Reserves for depreciation and contingencies, and accumulated surplus of the American Telephone and Telegraph Company and its 25 associated companies invested in the telephone business. Increase during year $69,412,544.	
Total Liabilities	$2,938,603,819

[fol. 3657]

Bell System Financial Statements

Bell System Income Statement

For Year Ending December 31, 1925

(Inter-Company Duplications Excluded)

Exchange Revenues	$506,026,224
Revenues from local exchange service.	
Toll Revenues	219,913,020
Revenues from long-distance and local toll service.	
Miscellaneous Revenues	15,360,463
Revenues derived from directory advertising and miscellaneous sources.	
Total Operating Revenues	$741,299,709
Current Maintenance	$111,442,827
Cost of inspection, repairs and rearrangements required to keep the telephone plant and equipment in good operating condition, representing 4.8 per cent of the cost of the average plant in service during the year.	
Depreciation	115,471,470
Expense resulting from the loss of investment when telephone property is retired from service, based on rates of depreciation for the different classes of property which spread the loss from property consumed in telephone operations uniformly over its service life. Provision during 1925 for this loss represented 5 per cent of the cost of the average plant in service.	
Traffic Expenses	185,928,193
Expenses incurred in the handling of telephone calls of which about 85 per cent represents operators' wages.	
Commercial Expenses	64,130,638
Expenses incurred in business relations with subscribers; keeping subscribers' accounts, rendering bills for service, making collections, directories, advertising, pay station commissions, etc.	
General and Miscellaneous Expenses	30,602,197

Expenses of the Executive, Accounting, Financial and Legal Departments, insurance premiums, sickness, accident and death benefits, pensions and other items of general expense incurred in operating the properties.		
Total Operating Expenses		$507,575,325
Net Operating Revenues		$233,724,384
Uncollectible Revenues		$4,651,579
Revenues earned which, based on experience, cannot be collected.		
Taxes		58,186,816
Federal, state and local taxes applicable to the year's operations.		
Operating Income (Carried forward)		$170,885,989

[fol. 3658]

Operating Income (Brought forward)		$170,885,989
Non-Operating Revenues—Net		19,919,667
Dividends and interest received from investments in the Western Electric Company, Inc., The Bell Telephone Company of Canada, and in subsidiary and connecting companies; interest on bank balances and temporary cash investments, minor rent revenues and other miscellaneous non-operating income.		
Total Gross Income		$190,805,656
Rent and Miscellaneous Deductions		$8,362,061
Mainly rentals paid for the use of buildings, poles, conduits and other facilities.		
Net Earnings available for Interest, Dividends and Appropriations of Income		$182,443,595
Interest Deductions		$45,940,664
Interest charges on funded debt and other debt obligations, including amortization of debt discount.		
Net Income		$136,502,931
Dividends		$93,242,657
To holders of common stock of		
American Telephone and Telegraph Co.	$81,044,426	
Associated Companies	5,236,657	
To holders of preferred stock of		
Associated Companies	6,961,574	
Miscellaneous Appropriations of Income		$5,345,580
Amounts appropriated to Employees' Benefit Reserves for sickness and accident disability and for pensions to employees and death benefits to their dependents.		
Balance		$37,914,694

Average Monthly Revenues and Expenses Per Telephone in Bell System for Year Ending December 31, 1925

Total Revenues from all sources	$5.49
Total Expenses including Taxes	4.17

Net Earnings available for Interest, Dividends, Appropriations of Income, Contingencies and Surplus		$1.32
Interest	$0.33	
Dividends	.67	
Appropriations of Income	.04	1.04
Balance for Contingencies and Surplus		$0.28

[fol. 3659] Total Plant per Telephone, December 31st

P. 28:

1910	$157.16
1911	154.81
1912	156.72
1913	153.10
1914	153.04

[fol. 3660] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 46

Annual Report of the American Telephone and Telegraph Company for the Year 1926

P. 6, 8:

An additional transcontinental telephone line was completed to the Pacific Coast in 1926, making a total of three such lines now in operation. The first of these lines, opened in 1915, terminates at San Francisco, and the second, built in 1923, extends through the southwest to Los Angeles. The new line, 2,240 miles in length, traverses the northern part of the country west of Chicago and terminates at Seattle. This line was built to take care of the increasing long-distance telephone business to and from this section of the country. It affords a more direct route and will make it possible to give better and faster long-distance telephone service to the Pacific northwest. It also adds to the dependability of the transcontinental service, for it is unlikely that any storm would interrupt service on all three lines at once.

The toll cable between New York and Chicago which was completed in 1925 has been extended to St. Louis, and further extensions of toll cable plant are under way. This use of long cables in place of open wires further ensures the dependability of long-distance service. Today over 60 per cent of toll and long-distance telephone calls are handled through cables.

* * * * * * *

During 1926 an adjustment in long-distance rates was made by the American Telephone and Telegraph Company amounting to a reduction of about $3,000,000 annually.

In 1915 the American Telephone and Telegraph Company for the first time transmitted by wireless spoken words across the Atlantic to Paris and across our continent and out into the Pacific as far as Hawaii. This experiment led [fol. 3661] to further developments and on January 7, 1927, regular commercial transoceanic radio telephone service was inaugurated between New York and London, a most important step forward in the art of telephone communication, the ultimate results of which no one can foresee.

The service for the transmission of pictures by wire inaugurated in 1925 has been extended to Boston, Cleveland, St. Louis, Atlanta and Los Angeles, so that this service is now commercially available between these cities in addition to New York, Chicago and San Francisco.

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P. 18:
[fol. 3662]

American Telephone and Telegraph Company

Balance Sheet, December 31, 1926

Assets

Stocks of Associated Companies	$1,173,871,373.89
Investment at cost, in stocks of Associated Telephone Companies. Increase during year $146,422,744.	
Stocks of Other Companies	79,900,323.46
Investment, at cost, in stocks of affiliated and subsidiary companies other than Associated Companies. Decrease during year $528,523.	
Bonds and Notes of, and Advances to, Associated Companies	217,684,077.65
Temporary financing of Associated Companies for the extension of their telephone properties, including also $1,561,000 investment in bonds. Decrease during year $16,776,252.	
Bonds and Notes of, and Advances to, Other Companies	9,695,800.00
Loans and advances to affiliated and subsidiary companies. Decrease during year $11,880,366.	
Long Lines Plant and Equipment	183,447,052.83
Increase during year $29,015,941.	
Telephones	44,985,330.70
Increase during year $3,755,854.	
Office Furniture and Fixtures	1,042,363.11
Accounts Receivable	13,736,632.80
Temporary Cash Investments	91,949,960.73

Funds temporarily invested in municipal, state and U. S. Government short-term obligations in anticipation of financial requirements of Associated Companies for the extension of their properties.	
Cash	24,789,173.30
Total Assets	$1,841,102,088.47

P. 19:
[fol. 3663]

Liabilities

Capital Stock	$1,064,327,800.00
Par value of capital stock outstanding. Increase during year $142,730,300.	
Capital Stock Installments	48,468,879.37
Installments paid on stock subscribed for but not yet issued.	
Funded Debt	385,190,400.00
Face value of debt obligations in the form of bonds and debentures. Decrease during year $2,502,200.	
Dividend Payable January 15, 1927	23,947,359.75
Accounts Payable	8,905,731.95
Interest and Taxes Accrued, Not Due	12,166,977.85
Reserve for Employees' Benefit Fund	7,000,000.00
Reserves for Depreciation and Contingencies	102,099,037.16
Increase during year $10,837,703.	
Surplus (Including Capital Stock Premiums)	188,995,902.39
Total accumulated surplus, including $44,885,063 received in excess of par value for capital stock. Increase during year $29,846,338. Includes $23,947,376 appropriated for regular dividend, already declared, payable April 15, 1927.	
Total Liabilities	$1,841,102,088.47

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C. A. Heiss, Comptroller.

[fol. 3664]

American Telephone and Telegraph Company

Statement of Earnings and Expenses for the Year Ending December 31, 1926

Earnings:		
Dividends		$91,963,934.51
Dividends on stocks owned.		
Interest		14,155,209.42
Interest on notes and advances, on bonds owned, and on temporary cash investments and bank deposits.		
Telephone Operating Revenues		91,323,925.27
Revenues under contracts for furnishing instruments and services, and revenues from operation of the long-distance lines.		
Miscellaneous Revenues		467,896.62
Total		$197,910,965.82
Expenses		58,979,578.97
Net Earnings		$138,931,386.85
Deduct interest		21,940,986.18
Net Income		$116,990,400.67
Deduct Dividends		86,496,345.50
Balance		$30,494,055.17

Carried to Reserve for Contingencies	$4,000,000.00
Carried to Surplus	26,494,055.17
Average number of shares of capital stock outstanding during year	9,790,262
Net earnings per share available for dividends, 1926 (after interest charges)	$11.95

C. A. Heiss, Comptroller.

P. 24:.
[fol. 3665]

Bell System Balance Sheet, December 31, 1926 (Inter-Company Duplications Excluded)

Assets

Telephone Plant	$2,783,023,059
Increase during year $258,117,469.	
General Equipment, Tools and Supplies	73,841,666
Increase during year $4,507,059.	
Investments	168,708,432
Investments in stocks and bonds of, and advances to, subsidiary and connecting companies and in miscellaneous property. These investments include stocks of Western Electric Company, Inc., The Bell Telephone Company of Canada, etc. Increase during year $4,580,182.	
Receivables	91,150,292
Temporary Cash Investments	93,224,121
Cash	46,688,540
Total Assets	$3,256,636,110

NOTE.—All items of intangible assets carried in the accounts of Bell System companies are excluded from the Bell System Balance Sheet through a corresponding reduction in the Surplus and Reserves.

P. 25:
[fol. 3666]

Liabilities

Capital Stock (Including Installments)		$1,312,881,184
Par value of capital stock outstanding in hand of public including installment payments of $49,178,244 on stock not yet issued. Increase during year $168,262,494.		
Common Stock:		
American Telephone and Telegraph Co.	$1,064,327,800	
Associated Companies	89,715,293	
Preferred Stock:		
Associated Companies	109,659,847	
Installments:		
American Telephone and Telegraph Co.	48,468,879	
Associated Companies	709,365	
Funded Debt		921,523,000
Face value of funded indebtedness outstanding in hands of public. Increase during year $31,186,005.		
Mortgage Bonds	$536,158,270	
Collateral Trust Bonds:		
American Telephone and Telegraph Co.	159,535,900	
Associated Companies	414,330	
Debenture Bonds:		
American Telephone and Telegraph Co.	225,414,500	

Bills Payable	863,075
Short-term obligations payable within one year from date of issue.	
Accounts Payable	57,043,236
Current bills for supplies, services, etc.	
Accrued Liabilities Not Due	88,823,683
Employees' Benefit Funds	35,519,438
Provision for accident and sickness disability benefits, pensions and death benefits under the Employees' Benefit Plan. Increase during year $5,078,000.	
Surplus and Reserves	839,982,494
Increase during year $91,732,385.	
Total Liabilities	$3,256,636,110

P. 27:

[fol. 3667]

Bell System Financial Statements

Bell System Income Statement for Year Ending December 31, 1926 (Inter-Company Duplications Excluded)

Exchange Revenues		$557,489,795
Toll Revenues		248,086,768
Miscellaneous Revenues		17,640,172
Total Operating Revenues		$823,216,735
Current Maintenance		$125,798,424
Depreciation Expense		127,605,695
Traffic Expenses		197,653,650
Commercial Expenses		71,362,726
General and Miscellanous Expenses		32,419,840
Total Operating Expenses		$554,840,335
Net Operating Revenues		268,376,400
Uncollectible Revenues		$5,289,008
Taxes		69,688,202
Operating Income (Carried forward)		$193,399,190

P. 27:

[fol. 3668] Operating Income (Brought forward)		$193,399,190
Non-Operating Revenues—Net		21,329,492
Total Gross Income		$214,728,682
Rents and Miscellaneous Deductions		9,858,333
Net Earnings available for Interest, Dividends and Appropriations of Income.		$204,870,349
Interest Deductions		49,809,330
Net Income		$155,061,019
Dividends		100,614,437
To holders of common stock of American Telephone and Telegraph Co.	$86,496,346	
Associated Companies	6,941,370	
To Holders of preferred stock of Associated Companies	7,176,721	
Miscellaneous Appropriations of Income		5,048,000
Balance		$49,398,582

Average Monthly Revenues and Expenses per Telephone in Bell System for Year Ending December 31, 1926

Total Revenues from all sources		$5.69
Total Expenses including Taxes		4.31
Net Earnings available for Interest, Dividends, Appropriations of Income, Contingencies and Surplus		$1.38
Interest	$0.34	
Dividends	.68	
Appropriations of income	.03	
		1.05
Balance for Contingencies and Surplus		$0.33

[fols. 3669] Extracts from Exhibit Deposition Exhibit No. 47

Annual Report of the American Telephone and Telegraph Company for the Year 1927

P. 8:

The gross operating revenues of the Bell System for 1927 were $894,699,000 or an increase of 8.7 per cent over the previous year. At the same time the average investment in plant devoted to furnishing service increased 10 per cent. The net earnings available for interest and dividends, exclusive of the $47,938,865 special and non-recurring dividend from the Western Electric Company, Inc., were at the rate of 6.4 per cent of the amount invested in plant and other assets. This compares with the rate of net earnings of 6.6 per cent in 1926.

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P. 10:

The transatlantic service, which was inaugurated in January, 1927, between New York City and London subscribers, was extended during the succeeding two months to all of the United States and England, Scotland and Wales. In March this service to Great Britain was made available to Cuba and in October to five cities in Canada. Early in 1928 transatlantic service began to be extended to various cities of continental Europe.

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P. 11:

The extension of toll cables during the year has further insured the dependability of long-distance service and provided for a large number of circuits to take care of increased traffic. The toll cable between New York and Cleveland via Albany and Buffalo, which was started in 1926, was completed, and the cable on the southern route was extended from Washington to Richmond and Petersburg. More than one-half of the total number of Bell-owned tele- [fol. 3670] phones in the country are served from exchanges having direct connection with the toll cable network.

There has been a marked increase in the use of carrier current systems by which a number of independent telephone conversations are simultaneously carried by a single pair of wires. During the year 65,000 miles of carrier circuits were added to the System, including new and improved types. It is planned during the present year to place in service over 100,000 additional miles of carrier circuit.

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P. 14:

[fol. 3671] American Telephone and Telegraph Company

Balance Sheet, December 31, 1927

Assets

Stocks of Associated Companies	$1,347,823,005.80
Investment, at cost, in stocks of associated telephone companies. Increase during year $173,951,632.	
Stocks of Other Companies	80,342,690.38
Investment, at cost, in stocks of affiliated and subsidiary companies other than Associated Companies. Increase during year $442,367.	
Bonds and Notes of, and Advances to, Associated Companies	202,449,711.82
Temporary financing of Associated Companies for the extension of their telephone properties, including also $1,341,000 investment in bonds. Decrease during year $15,234,366.	
Notes of, and Advances to, Other Companies	9,075,000.00
Loans and advances to affiliated and subsidiary companies. Decrease during year $620,800.	
Long Lines Plant and Equipment	215,248,143.77
Increase during year $31,801,091.	
Office Furniture and Fixtures	1,202,905.02
Accounts Receivable	14,270,713.48
Temporary Cash Investments	58,463,853.57
Funds temporarily invested in municipal, state and U. S. Government short-term obligations in anticipation of financial requirements.	
Cash	20,814,033.59
Total assets	$1,949,690,057.43

P. 15:

[fol. 3672]

Liabilities

Capital Stock Par value of capital stock outstanding. Increase during year $39,087,800.		$1,103,415,600.00
Capital Stock Installments Installments paid on stock subscribed for but not yet issued.		38,873,600.49
Funded Debt —Decrease during year $1,092,500.		384,097,900.00
Bills Payable Note sold to Trustee of Pension Fund.		624,269.48
Dividend Payable January 16, 1928		24,826,783.50
Accounts Payable		5,719,145.21
Interest and Taxes Accrued, Not due		13,236,526.01
Reserve for Employees' Benefit Fund Provision for accident and sickness disability benefits, pensions and death benefits.		6,902,030.21
Reserves for Depreciation and Contingencies Decrease during year $2,540,816.		99,558,220.68
Surplus (including Capital Stock Premiums) Total accumulated surplus, including $49,177,778 received in excess of par value for capital stock. Increase during year, $83,440,079, comprising:		272,435,981.85
Net Income carried to Surplus	$31,234,976	
Special and non-recurring dividend from Western Electric Company, Inc.	47,938,865	
Premiums on capital stock issued during year	4,292,715	
Less Miscellaneous Deductions (net)	26,477	
Total liabilities		$1,949,690,057.43

P. 16:

[fol. 3673] American Telephone and Telegraph Company

Statement of Earnings and Expenses for the year ending December 31, 1927

Earnings:	
Dividends Dividends on stocks owned, except special and non-recurring dividend of $47,938,865 from Western Electric Co., Inc.	$99,956,734.63
Interest Interest on notes and advances, on bonds owned, and on temporary cash investments and bank deposits.	15,998,396.45
Telephone Operating Revenues Revenues under contracts for furnishing instruments and services, and revenues from operation of the long-distance lines.	99,866,791.04
Miscellaneous Revenues	702,902.28
Total	$216,524,824.40
Expenses	66,140,929.57
Net Earnings	$150,383,894.83
Deduct Interest	21,768,984.71

Net Income	$128,614,910.12
Deduct Dividends	97,379,934.00
Balance Net Income carried to Surplus	$31,234,976.12
Add special dividend from Western Elec. Co., Inc. Non-recurring dividend paid during year representing profits accumulated over a period of years in activities apart from its business with Bell System telephone companies.	47,938,865.00
Total carried to Surplus	$79,173,841.12
Average number of shares of capital stock outstanding during year	10,932,420
Net earnings per share available for dividends (after interest charges and excluding special Western Electric dividend)	$11.76

P. 20:

[fol. 3674] Bell System Balance Sheet, December 31, 1927

(Inter-Company Duplications Excluded)

Assets

Telephone Plant Increase during year $230,962,061.	$3,013,985,120
General Equipment, Tools and Supplies Increase during year $2,553,574.	76,395,240
Investments Increase during year $1,236,491.	169,944,923
Receivables	94,537,207
Temporary Cash Investments	58,463,854
Cash	44,140,967
Total Assets	$3,457,467,311

Notes—All items of intangible assets carried in the accounts of Bell System companies are excluded from the Bell System Balance Sheet through a corresponding reduction in the Surplus.

P. 21:

[fol. 3675] Liabilities

Capital Stock (including Installments) Par value of capital stock outstanding in hands of public, including installment payments of $38,896,500 on stock not yet issued. Increase during year $39,058,656.		$1,351,939,840
Common Stock		
American Telephone and Telegraph Co.	$1,103,415,600	
Associated Companies	99,024,793	
Preferred Stock		
Associated Companies	110,602,947	
Installments		
American Telephone and Telegraph Co.	38,873,600	
Associated Companies	22,900	
Funded Debt Face value of funded indebtedness outstanding in hands of public. Decrease during year $1,733,300.		919,789,700
Mortgage Bonds		
Associated Companies	535,631,470	

Collateral Trust Bonds		
American Telephone and Telegraph Co.	158,746,400	
Associated Companies	414,330	
Debenture Bonds		
American Telephone and Telegraph Co.	224,997,500	
Bills Payable		7,046,158
Notes sold to Trustee of Pension Fund and other short-term obligations payable within one year.		
Accounts Payable		63,597,120
Current bills for supplies, services, etc.		
Accrued Liabilities Not Due		91,115,456
Employees' Benefit Funds		35,103,647
Provisions for accident and sickness disability benefits, pensions and death benefits.		
Surplus and Reserves		988,875,390
Increase during year $148,892,896.		
The item Surplus and Reserves is comprised of:		
Reserves for Depreciation of Plant and Equipment	$600,663,640	
Reserves for Contingencies	91,258,481	
Surplus (including Capital Stock Premiums)	296,953,269	
Total liabilities		$3,457,467,311

P. 22:

[fol. 3676] Bell System Financial Statements

Bell System Income Statement for Year Ending December 31, 1927 (Inter-Company Duplications Excluded)

Exchange Revenues	$604,266,112
Toll Revenues	271,174,270
Miscellaneous Revenues	19,258,791
Total Operating Revenues	$894,699,173
Current Maintenance	$139,456,582
Depreciation Expense	141,758,926
Traffic Expenses	203,049,940
Commercial Expenses	79,412,964
General and Miscellaneous Expenses	43,017,342
Total Operating Expenses	$606,695,754
Net Operating Revenues	$288,003,419
Uncollectible Revenues	$5,711,964
Taxes	76,012,254
Operating Income (Carried forward)	$206,279,201

P. 23:

[fol. 3677] Operating Income (Brought Forward)		$206,279,201
Non-Operating Revenues—Net		21,887,749
Total Gross Income		$228,166,950
Rents and Miscellaneous Deductions		$11,596,350
Interest Deductions		50,511,448
Total Deductions		$62,107,798
Net Income		$166,059,152
Dividends		$112,401,125
Dividends—		
To holders of common stock of American Telephone and Telegraph Co.	$97,379,934	
Associated Companies	7,714,927	
To holders of preferred stock of Associated Companies	7,306,264	
Balance Net Income carried to Surplus		$53,658,027
Add special non-recurring dividend from Western Electric Company, Inc		47,938,865
Total carried to surplus		$101,596,892

P. 25:

[fol. 3678] Composition of Capital Obligations in the Hands of the Public, December 31, 1927

Common Stock, Amer. Tel. & Tel. Co	50%
Common Stock, Associated Cos	4%
Preferred Stock, Associated Cos	5%
Funded Debt, Amer. Tel. & Tel. Co	17%
Mortgage Debt, Associated Cos	24%
Total	100%

[fol. 3679] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #48

Annual Report of the American Telephone and Telegraph Company for the Year 1928

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P. 1:

The Bell System revenues from [illegible] service increased $40,000,000 or 6.6 per cen[illegible] previous year, and revenues from toll and long-di[illegible]vice increased $38,000,000 or 14.1 per cent. The in[illegible]e in total operating revenues was $80,700,000 or 9 per cent. Due in part to additional expenditures for better service, total expenses increased 8.8 per cent and the investment in plant and other assets increased 10.7 per cent. The total plant and other assets at the end of the year amounted to $3,827,000,000. The net earnings for the year of $242,700,000 were at the rate of 6.6 per cent on the cost of plant and other assets.

P. 2:

In accordance with the policy of the Company to pay reasonable and regular dividends only, and for part of the new capital needed to offer additional capital stock to the stockholders on favorable terms, quarterly dividends of $2.25 a share were paid during the year, and an offer at par of $185,863,000 of stock of this Company was made to stockholders of record June 1, 1928. More than 264,000 subscriptions were received for this new stock. The money from this issue is being used by the Associated Companies of the Bell System and the Long Lines Department of the American Telephone and Telegraph Company for plant and equipment.

P. 3:

With the exception of a few places where rates are clearly inadequate, and in spite of the tendency for the cost of furnishing local service to increase as the extent of the service increases, the continuing technical advances in the telephone art and improvements in operation methods should enable the System to provide ever increasing service in local areas without further increase in rates. [fol. 3680] Through the increased number of telephones with which a subscriber may communicate and through improved service, the cost of telephone service is actually becoming less and less in that the telephone user is buying more and better service for the same money.

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P. 6:

Long-distance Service

The most striking development in the telephone business in the United States during 1928 has been the increased use of the telephone for long-distance calls. While this use has been undoubtedly stimulated by general business activity and the rate reductions made in 1926 and 1927, the increased speed and improved quality of service have been the largest contributing factors.

The total number of messages handled over the long-distance lines of the American Telephone and Telegraph Company was 18 per cent in excess of those handled in the previous year. For the longer distances, such as between the Atlantic and Pacific Coasts, the increase has been 100 per cent. The country is becoming "long-distance minded" and is acquiring a new telephone habit.

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P. 8:

At the same time that the number of long-distance telephone messages has been increasing, the other services furnished through the use of the long-distance plant have been steadily growing. Chain broadcasting on a national scale, which has become such an important factor in the life of the nation, is making extensive use of telephone wires for the inter-connection of broadcasting stations located throughout the country.

Press associations, manufacturing enterprises, commercial and banking houses, are making more and more use of [fol. 3681] net-works of circuits leased for their own exclusive use between widely separated points. The majority of these circuits are operated as telegraph or typewriter circuits, although many are for telephone use.

In eight of the principal cities, offices are maintained for the transmission of pictures by wire, and during 1928 arrangements were made with the telegraph companies by which facsimile telegrams and messages are sent over this telephoto system.

Transatlantic Service

The volume of transatlantic telephone business continues to increase and has at times overloaded the radio-telephone facilities. A short-wave channel is now in use supplementing the long-wave channel.

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P. 9, 10:

Television was first demonstrated in the Bell Telephone Laboratories in 1927. In 1928 further progress was made and a new transmitting device which is capable of putting upon the television circuit outdoor scenes was developed. Work on television with the idea that it might ultimately be supplemental to the telephone is being continued.

The Bell Telephone Laboratories have the scientific knowledge that would enable them to set up circuits which could carry instantaneously the human voice and the human sight around the world, but how to make this economically practical is yet to be discovered. Progress will undoubtedly be made by a gradual extension of the present limits.

Contracts With the Telegraph Companies

In 1928 the American Telephone and Telegraph Company made contracts for the use of plant with the Western Union Telegraph Company and the Postal Telegraph-Cable [fol. 3682] Company intended to further the development of electrical communications. These contracts should ultimately result in eliminating to a large extent the duplication of parallel pole lines and wire circuits, since by the use of proper apparatus it is possible to telephone and telegraph simultaneously over telephone toll and long distance wires.

The telegraph companies also may lease apparatus developed in the Bell Telephone Laboratories by which under certain conditions a greatly increased number of messages may be sent simultaneously over a single pair of telegraph wires. By these arrangements many of the advantages that would accrue from the consolidation of all electrical communications will be obtained and at the same time the complete independence of the telephone and telegraph companies will be maintained.

Electrical Research Products, Incorporated

The developments and inventions of the Bell Telephone Laboratories to meet the needs of the Bell System have resulted in valuable contributions to the progress of electrical science outside the strictly telephone field. To make these developments and inventions available in such other fields Electrical Research Products was organized in December, 1926, as a wholly-owned subsidiary of the Western Electric Company. Thus the non-telephone activities are given the special attention that they demand without conflict with the telephone work of the Bell System.

P. 14:

[fol. 3683] American Telephone and Telegraph Company

Balance Sheet, December 31, 1928

Assets

Investments:	
Stocks of Associated Companies	$1,498,895,557.01
Investment, at cost, in stocks of associated telephone companies. Increase during year $151,072,551.	
Stocks of Other Companies	91,663,691.36
Investment, at cost, in stocks of affiliated and subsidiary companies other than Associated Companies. Increase during year $11,321,001.	
Bonds and Notes of, and Advances to, Associated Companies	190,210,873.07
Temporary financing of Associated Companies for the extension of their telephone properties, including also $1,167,000 investment in bonds of Home Long Distance Telephone Co. (San Francisco). Decrease during year $12,238,839.	
Notes of, and Advances to, Other Companies	8,550,000.00
Loans and advances to affiliated and subsidiary companies, comprising the Bell Telephone Laboratories, Inc., $1,300,000, the Bell Telephone Securities Company, $2,300,000 and the 205 Broadway Corporation, $4,950,000. Decrease during year $525,000.	
Plant and Equipment:	
Long Lines Plant and Equipment	262,233,248.19
Increase during year $46,985,104.	
General Equipment	1,285,059.33
Current assets:	
Accounts Receivable	16,913,064.98
Temporary Cash Investments	1[illegible]2,880,924.01
Funds temporarily invested in municipal, state and U. S. Government short-term obligations in anticipation of financial requirements.	
Cash	20,695,267.43
Total assets	$2,213,327,685.38

P. 15:
[fol. 3684]

Liabilities

Capital Stock:		
Stock Issued and Outstanding		$1,289,691,400.00
Total par value of shares outstanding. Increase during year $186,275,800.		
Installments		57,870,062.99
Installments paid on stock subscribed for but not yet issued.		
Long-Term Debt:		
Bonds and Debentures		380,196,000.00
Decrease during year $3,901,900.		
Notes		8,409,911.58
Notes sold to Trustee of Pension Fund.		
Current Liabilities:		
Dividend Payable January 15, 1929		28,991,317.50
Accounts Payable		10,806,868.22
Interest and Taxes Accrued, not due		15,337,308.14
Surplus and Reserves:		
Reserves for Depreciation and Contingencies		106,619,402.10
Increase during year $7,061,181.		
Surplus (Including Capital Stock Premiums)		317,405,414.85
Accumulated surplus, including $55,027,713 received in excess of par value for capital stock.		
Increase during year, $44,969,433, comprising:		
Net Income carried to Surplus	$39,349,051	
Premiums on capital stock issued during year	5,849,935	
Less Miscellaneous Deductions (net)	229,553	
Total liabilities		$2,213,327,685.38

C. A. Heiss, Comptroller.

P. 16:
[fol. 3685]

American Telephone and Telegraph Company

Statement of Earnings and Expenses for the Year Ending December 31, 1928

Earnings:	
Dividends	$119,176,197.08
Dividends on stocks owned.	
Interest	15,420,239.12
Interest on notes and advances, on bonds owned, and on temporary cash investments and bank deposits.	
Telephone Operating Revenues	100,583,826.46
Revenues from operating of the long-distance lines and revenues from services furnished under contracts with the Associated Companies.	
Miscellaneous Revenues	601,715.36
Total	$235,781,978.02
Expenses	70,513,928.70
Net Earnings	$165,268,049.32
Deduct Interest	22,097,557.99
Net Income	$143,170,491.33
Deduct Dividends	103,821,439.95
Balance, Net income Carried to Surplus	$ 39,349,051.38

Average number of shares of capital stock outstanding during year	11,823,745
Net earnings per share available for dividends (after interest charges)	$12.11

C. A. Heiss, Comptroller.

P. 19:

[fol. 3686] The number of stockholders of this Company has increased from 7,535 in 1900 to 454,596 at the end of 1928. During 1928 the increase was 31,016.

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P. 20:

Bell System Balance Sheet, December 31, 1928

(Inter-Company Duplications Excluded)

Assets

Telephone Plant	$3,275,686,848
Increase during year $261,701,728.	
General Equipment, Tools and Supplies	87,874,623
Increase during year $11,479,383.	
Investments	182,167,491
Investments in stocks and bonds of, and advances to, subsidiary and connecting companies, and in miscellaneous property. These investments include stocks of Western Electric Company, Inc., The Bell Telephone Company of Canada, etc. Increase during year $12,222,568.	
Accounts Receivable	107,915,673
Temporary Cash Investments	126,268,518
Cash	46,770,431
Total assets	$3,826,683,584

NOTE.—All items of intangible assets carried in the accounts of Bell System companies are excluded from the Bell System Balance Sheet through a corresponding reduction in the Surplus.

P. 21:

[fol. 3687]

Liabilities

Capital Stock (Including Installments)		$1,564,644,118
Par value of capital stock outstanding in hands of public, including installments payments of $57,876,578 on stock not yet issued. Increase during year $212,704,278.		
Common Stock		
American Telephone and Telegraph Co.	$1,289,691,400	
Associated Companies	106,260,793	
Preferred Stock		
Associated Companies	110,815,347	
Installments		
American Telephone and Telegraph Co.	57,870,063	
Associated Companies	6,515	
Long-Term Debt		964,783,700

Face value of funded obligations outstanding in hands of public. Increase during year $38,223,714.		
Mortgage Bonds		
Associated Companies	$531,290,140	
Collateral Trust Bonds		
American Telephone and Telegraph Co.	154,806,500	
Associated Companies	414,330	
Debenture Bonds		
American Telephone and Telegraph Co.	224,868,500	
Notes		
American Telephone and Telegraph Co.	8,409,912	
Associated Companies	44,994,318	
Bills Payable		377,700
Short-Term obligations payable within one year.		
Accounts Payable		78,043,486
Current Bills for supplies, services, etc.		
Accrued Liabilities Not Due		101,099,388
Reserves for Depreciation of Plant and Equipment		650,621,336
Increase during year $2,057,528.		
Reserves for Contingencies		93,316,009
Increase during year $2,057,528.		
Surplus (Including Capital Stock Premiums).		
Accumulated surplus, including amounts received in excess of par value for capital stock. Increase during year $76,844,578.		
Total liabilities		$3,826,683,584

P. 22:
[fol. 3688]

Bell System Financial Statements

Bell System Income Statement for Year Ending December 31, 1928

(Inter Company Duplications Excluded)

Exchange Revenues	$644,209,046
Toll Revenues	309,334,350
Miscellaneous Revenues	21,883,427
Total Operating Revenues	$975,426,823
Current Maintenance	$154,455,282
Depreciation Expense	153,875,717
Traffic Expenses	212,046,089
Commercial Expenses	88,802,497
General and Miscellaneous Expenses	50,880,236
Total Operating Expenses	$660,059,821
Net Operating Revenues	$315,367,002
Uncollectible Revenues	$6,189,656
Taxes	81,259,679
Operating Income (Carried Forward)	$227,917,667

P. 23:

Operating Income (Brought Forward)		$227,917,667
Non-Operating Revenues—Net		27,621,433
Total Gross Income		$255,539,100
Rents and Miscellaneous Deductions		$12,816,666
Net Earnings		$242,722,434
Interest Deductions		$51,634,795
Net Income		$191,087,639
Dividends		$119,348,612
To holders of common stock of		
American Telephone and Telegraph Co.	$103,821,440	
Associated Companies	8,204,916	
To holders of preferred stock of		
Associated Companies	7,322,256	
Balance		$71,739,027

[fol. 3689] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 49

Annual Report of the American Telephone and Telegraph Company for the Year 1929

Report of the Board of Directors to the Stockholders for the Year 1929

P. 1:

To provide for growth and to improve service, $588,000,000 was spent on construction of new telephone plant and $45,000,000 on constructio nof new manufacturing facilities. * * *

P. 4:

In part because long-distance calls are not subject in the same degree to this tendency of increasing costs, and largely because of developments in the art which have lessened the cost it has been possible to make substantial reductions in long-distance rates. These reductions are more obvious in that they are measured in dollars. In the case of exchange rates changes favorable to the user are in fact taking place although they are not so obvious in that for the most part they are measured by improved, more extensive and more valuable service for the same money.

P. 5:

During the year two additional short-wave transatlanic radio telephone channels were put in operation. The transatlantic telephone service is now being furnished over one long-wave and three short-wave radio telephone channels. Work is going forward on the new transatlantic telephone cable which will supplement the present radio channels and add a connecting link that is not subject to the inherent uncertainties of radio. Early in 1930 it is expected to inaugurate telephone service by short-wave radio with the Argentine, and plans are under way for the establishment of a short-wave telephone station on the Pacific Coast for radio telephone communication with Hawaii and other points in the Pacific.

[fol. 3690] In December, ship-to-shore service was inaugurated to and from the steamship Leviathan and it is expected that in due course this service will be extended to other steamships.

P. 6:

Marked progress has been made during the year in the development of telephone communication with airplanes. A large number of trials and demonstrations have shown that satisfactory two-way telephony is possible between airplane and any telephone connected in or with the Bell System. In several of the tests commercially satisfactory communication was maintained between an airplane here and telephone stations in Europe. This involved radio transmission from the airplane to the Bell telephone wire system in the United States, the transatlantic radio and the regular telephone wire system in Europe. The successful demonstrations of our development of two-way plane-to-ground telephony have caused several of the larger air transport companies and several of the Government departments to request us to equip a considerable number of planes and ground stations with apparatus. This equipment of airplanes with telephones for navigational purposes will add greatly to the safety and efficiency of transportation by air. Ultimately it is expected that telephone service will be established between airplanes and any telephone anywhere that is connected with the Bell System.

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P. 7:

The striking increase in the use of the telephone for long-distance calls, so noticeable in 1928, has continued during the past year, reflecting the public's response to the steadily increasing speed and quality of service and the reductions in charges for the service. While the use of long-distance has been increasing so rapidly, the telephone user, stimulated in part by the telephone companies' efforts, is equipping ~~his~~ office and particularly his residence with more telephones, with a view to greater convenience and utility.

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[fol. 3691] The fundamental physical conditions which underlie efficient telephone and telegraph operation are such that large expansion either in volume of service given or in range of distance covered cannot be made economically—frequently cannot be made at all—merely by an enlarged use of existing instrumentalities.

For example, the commercial necessity for very long circuits in storm-proof cable and the need for a higher grade of transmission over such circuits, have required an entirely new adaptation of physical princip*al*s many of which are themselves new and therefore applicable only in the hands of those who are highly trained. Due to the fact that the telephone plant is a complex interconnected structure, all parts of which must function harmoniously, on every connection if satisfactory results are to be assured, the introduction of new and improved facilities in one part of the plant frequently requires modification of existing plant which would otherwise be satisfactory.

P. 8:

During the past year, in addition to completing a large number of important developments connected with central office and outside plant equipment, noteworthy progress has been made in extending the range, improving the quality of transmission and cheapening the cost of the long-distance plant, particularly that part involved in the longer distances. Initial designs of commercial two-way radio telephone equipment for use in airplane-to-ground and ship-to-shore service were completed and put in production. On the transatlantic telephone cable project the final development work, both on the cable itself and on the very intricate terminal apparatus required, has progressed and is rapidly nearing the point where final manufacturing specifications can be prepared.

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P. 9:

[fol. 3692] The Western Electric recording system is being used, under licenses granted by Electrical Research Products, by the majority of the motion picture producers; it is installed in about 70 studios and used for the production of about 90 per cent of the talking pictures being made today. Electrical Research Products has installed Western Electric reproducing apparatus in 3,300 theatres in the United States and in 1,100 theatres abroad. These installations are inspected and maintained by Electrical Research Products, in order that there may be continuity and reliability of operation.

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P. 10:

In 1929 the Bell System revenues from local exchange service increased $47,000,000 or 7.3 per cent over the previous year, and revenues from toll and long-distance service increased $45,000,000 or 14.5 per cent. The increase in total operating revenues was $95,000,000 or 9.8 per cent. Due in part to additional expenditures for better service, the total expenses increased 11 per cent and investment in plant and other assets increased 10.5 per cent. The total plant and other assets at the end of the year amounted to $4,228,000,000. The net earnings for the year were at the rate of 6.8 per cent on the cost of plant and other assets.

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P. 11:

The number of stockholders of the Company increased from 454,596 at the end of 1928 to 469,801 at the end of 1929. The average number of shares held per stockholder is now 28. No single individual holds as much as one per cent of the total capital stock. Of the total number of stockholders about 90,000 are Bell System employees.

P. 14:

[fol. 3693] American Telephone and Telegraph Company

Balance Sheet, December 31, 1929

Assets

Investments:	
Stock of Associated Companies	$1,589,327,375.20
Investment at cost, in stocks of associated telephone companies. Increase during year $90,431,818.	
Stock of Other Companies	138,158,952.98
Investment, at cost, in stocks of affiliated and subsidiary companies other than Associated Companies. Increase during year $46,495,262.	
Bonds and Notes of, and Advances to, Associated Companies	305,783,932.88
Temporary financing of Associated Companies for the extension of their telephone properties, including also $1,388,000 investment in bonds of these companies. Increase during year $115,573,060.	
Notes of, and Advances to, other Companies	32,499,000.00
Loans and advances to affiliated and subsidiary companies, comprising the Western Electric Co., Inc., $16,499,000; Bell Telephone Securities Company, $9,350,000; 205 Broadway Corporation, $4,850,000, and Bell Telephone Laboratories, Inc., $1,800,000. Increase during year $23,949,000.	
Plant and Equipment:	
Long Lines Plant and Equipment	349,533,182.86
Increase during year $87,299,935.	
General Equipment	1,399,036.86
Current Assets:	
Accounts Receivable	18,934,933.31
Temporary Cash Investments	20,591,188.85
Funds temporarily invested in municipal, state and United States Government short-term obligations in anticipation of financial requirements.	
Cash	20,795,947.88
Total assets	$2,477,023,550.88

P. 15:

[fol. 3694] Liabilities

Capital Stock:	
Stock Issued and Outstanding	$1,322,339,800.00
Total par value of shares outstanding. Increase during year $32,648,400.	
Installments	72,155,611.96
Installments paid on stock subscribed for but not yet issued.	
Long-term Debt:	
Bonds and Debentures	521,445,700.00
Face value of debt obligations in the form of bonds and debentures. Increase during year $141,249,700.	
Notes	9,872,603.48

Notes sold to Trustee of Pension Fund.	
Current Liabilities:	
Dividend Payable January 15, 1930	29,752,456.50
Accounts Payable	19,048,670.68
Interest and Taxes Accrued, Not due	17,373,768.32
Surplus and Reserves:	
Reserves for Depreciation and Contingencies Increase during year $8,033,002.	114,652,403.79
Surplus (Including Capital Stock Premiums) Accumulated surplus, including $69,335,422 received in excess of par value for capital stock. Increase during year, $52,977,121, comprising: Net Income carried to Surplus.. $49,810,987 Miscellaneous Additions (net).. 3,166,134	370,382,586.15
Total liabilities	$2,477,023,550.88

C. A. Heiss, Comptroller.

P. 16:

[fol. 3695] American Telephone and Telegraph Company

Statement of Earnings and Expenses for the Year Ending December 31, 1929

Dividends	$140,911,590.50
Interest	21,563,034.70
Telephone Operating Revenues	111,890,241.42
Miscellaneous Revenues	1,331,040.59
Total	$275,695,907.21
Expenses	81,873,035.18
Net Earnings	$193,822,872.03
Deduct Interest	27,633,114.31
Net Income	$166,189,757.72
Deduct Dividends	116,378,771.00
Balance Net Income carried to Surplus	$49,810,986.72
Average number of shares of capital stock outstanding during year	13,113,746
Net earnings per share available for dividends (after interest charges)	$12.67

C. A. Heiss, Comptroller.

P. 20:

[fol. 3696] Bell System Balance Sheet, December 31, 1929

(Inter-Company Duplications Extended)

Assets

Telephone Plant Increase during year $395,412,841.	$3,671,099,689
General Equipment, Tools and Supplies Increase during year $22,999,965.	110,874,388
Investments Investments in stocks and bonds of, and advances to, subsidiary and connecting companies, and in miscellaneous property. These investments include stocks of Western Electric Company, Inc., The Bell Telephone Company of Canada, etc. Increase during year $50,761,104.	232,928,595

Accounts Receivable		142,665,648
Temporary Cash Investments		22,086,502
Cash		48,775,266
Total Assets		$4,228,430,088

NOTE.—All items of intangible assets carried in the accounts of Bell System companies are excluded from the Bell System Balance Sheet through a corresponding reduction in the Surplus.

P. 21:

[fol. 3697]

Liabilities

Capital Stock (Including Installments)		$1,611,862,252
Par value of capital stock outstanding in hands of public, including also installment payments on stock not yet issued. Increase during year $47,218,134.		
Common Stock:		
American Telephone and Telegraph Co.	$1,322,339,800	
Associated Companies	106,339,943	
Common Stock Installments:		
American Telephone and Telegraph Co.	72,155,612	
Associated Companies	202,450	
Preferred Stock:		
Associated Companies	110,824,447	
Long-Term Debt		$1,148,539,684
Face value of funded obligations outstanding in hands of public. Increase during year $183,755,984.		
Mortgage Bonds:		
Associated Companies	559,445,579	
Collateral Trust Bonds:		
American Telephone and Telegraph Co.	79,371,000	
Associated Companies	414,330	
Debenture Bonds:		
American Telephone and Telegraph Co.	222,711,500	
Convertible Bonds:		
American Telephone and Telegraph Co.	218,952,200	
Notes:		
American Telephone and Telegraph Co.	9,872,603	
Associated Companies	57,772,472	
Bills Payable		553,200
Accounts Payable		93,352,580
Accrued Liabilities Not Due		117,594,722
Reserves for Depreciation of Plant and Equipment		699,034,674
Increase during year $48,413,338.		
Reserve for Contingencies		81,628,149
Provision for contingencies. Decrease during year $11,687,860.		
Surplus (Including Capital Stock Premiums)		475,864,827
Accumulated surplus, including amounts received in excess of par value for capital stock. Increase during year $102,066,980.		
Total Liabilities		$4,228,430,088

P. 22:

[fol. 3698]

Bell System Financial Statements

Bell System Income Statement for Year Ending December 31, 1929 (Inter-Company Duplications Excluded)

Exchange Revenues		$691,358,926
Toll Revenues		354,285,899
Miscellaneous Revenues		25,149,674
Total Operating Revenues		$1,070,794,499
Current Maintenance		179,698,948
Depreciation Expense		164,376,990
Traffic Expenses		228,066,039
Commercial Expenses		102,166,689
General and Miscellaneous Expenses		58,674,901
Total Operating Expenses		$732,983,567
Net Operating Revenues		$337,810,932
Uncollectible Revenues		7,161,202
Taxes		83,467,947
Operating Income (Carried forward)		$247,181,783

P. 23:

[fol. 3699] Operating Income (Brought Forward)		$247,181,783
Non-Operating Revenues—Net		43,965,939
Total Gross Income		$291,147,722
Rents and Miscellaneous Deductions		$14,461,058
Net Earnings		$276,686,664
Interest Deductions		$50,581,792
Net Income		$217,104,872
Dividends		$132,223,835
To holders of preferred stock of Associated Companies	$7,326,523	
To holders of common stock of Associated Companies	8,518,541	
American Telephone and Telegraph Company	116,378,771	
Balance		$84,881,037

P. 27:

[fol. 3700] During 1929 plant construction, i. e., expenditures for additions, betterments, and replacements to the Bell System telephone plant, amounted to $588,000,000, an increase of $159,300,000 over the year 1928.

As indicated in the chart above, the forecast for the year 1930 is approximately $700,000,000, an average expenditure of nearly $2,000,000 a day.

[fol. 3701] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 50

Annual Report of the American Telephone and Telegraph Company for the Year 1930

P. 1.

There was a net gain in the number of telephones installed of 122,500 which compares with 821,400 in 1929. The total number of local telephone conversations was two per cent and the total number of toll and long-distance conversations was one per cent above 1929.

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The net earnings were $267,874,000, which is $8,800,000 less than in 1929 and at the rate of 5.8 per cent on the cost of plant and other assets.

The number of stockholders of the American Telephone and Telegraph Company at the end of 1930 was 567,694, an increase of 97,983 for the year.

P. 2:

During the year 2,579,407 shares of stock of this Company were offered to stockholders of record May 23rd and 2,061,897 shares were issued in exchange for convertible bonds. This resulted in an average number of shares outstanding of 15,856,696 as compared with 13,113,746 in 1929. The earnings of the Company per average share outstanding were $10.44 compared with $12.67 in 1929.

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P. 6:

In January, 1927, the United States had telephone connection only with Canada, Cuba and the Mexican border. Today practically any telephone in the United States can be connected with any one of 32,200,000 out of 35,300,000 telephones in the world.

The only countries with more than 100,000 telephones (there are 1,780,000 in New York City) to which the Bell [fol. 3702] System is not now connected, are

Japan	940,000 telephones.
Russia	370,000 “
Brazil	170,000 “
New Zealand	165,000 “
China	155,000 “
Union of South Africa	110,000 “

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P. 7:

Telephone calls across the Atlantic in the four years since such service was started have increased six-fold. In addition to the original long-wave radio telephone channel there are now three short-wave channels. The experimental lengths of the proposed transatlantic telephone cable which have been built and tested confirm the work of the Bell Telephone Laboratories, where the new alloys and insulation necessary for such a cable were developed and where the design of the cable was made.

* * * * * * *

Present-day radio broadcast service uses interconnecting telephone networks. The circuits in these networks have to be specially designed, constructed, maintained and operated in order to give good results over the wide range of frequencies used in broadcasting. Research in the past year has made great progress in designing new cable circuits which can handle the broadcasting as well as do the specially cared-for open wire lines, and at the same time provide additional insurance against storm damage.

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P. 9:

Scientific progress in television was marked by a demonstration of simultaneous two-way television and speech over wires. It was impressive in showing what it is possible to do in the present state of the art in eliminating distance in sight and sound. The equipment, however, remains necessarily complicated and expensive, requiring [fol. 3703] expert attention and large units of apparatus. The commercial possibilities of television are still uncertain.

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P. 10:

Electrical Research Products, Inc., a wholly-owned subsidiary of the Western Electric Company, continues to hold its position of leadership in the manufacture of recording and reproducing apparatus for the talking motion picture industry. It has installed Western Electric reproducing systems in 5,000 theatres in the United States and in 2,600 theatres in foreign countries, and through its service organization maintains these equipments at a high standard of operating efficiency.

Financial

In January 1930 the American Telephone and Telegraph Company sold $150,000,000 Thirty-Five Year 5% Gold Debentures dated February 1, 1930.

On April 16 the Company offered its stockholders of record May 23, one share at par for each six shares of stock held. The subscriptions to this offer provided $241,895,832 for the Company's treasury during 1930, and will provide an additional amount of approximately $16,000,000 during 1931.

The conversion privilege of the Ten-Year Convertible Gold Debenture Bonds dated July 1, 1929, became effective on January 1, 1930. From January 1 to May 23, 1930, the bonds at face value could be exchanged for stock at $180 a share, and thereafter until December 31, 1930, at $166.88 per share. By the end of the year $206,189,700 of face value of bonds had been converted into stock by about 130,000 bondholders, yielding the Company cash premiums of $164,855,341. Only $12,923,000 face value of these bonds remained unconverted at the close of the year. During 1931 the conversion price, subject to adjustment as stated in the indenture, is $175.46 per share.

[fol. 3704] On September 30, 1930 the American Telephone and Telegraph Company bought the Teletype Corporation by exchanging 150,000 shares of its own stock for the 150,000 shares of Teletype Corporation stock. The shares of Teletype Corporation stock have been sold to the Western Electric Company.

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P. 11:

During the last ten years the capital obligations of the Bell System in the hands of the public have about trebled. They were $1,107,417,000 on December 31, 1920 and $3,271,619,000 on December 31, 1930. During that period the bonds and other debt decreased from 54 to 34 per cent of total capital obligations, while the number of stockholders increased more than 300 per cent.

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P. 14:

[fol. 3705] **American Telephone and Telegraph Company**

Balance Sheet, December 31, 1930

Assets

Investments:	
Stocks of Associated Companies	$1,778,062,693.71
Investment, at cost, in stocks of associated telephone companies. Increase for the year $188,735,318.	
Stocks of Other Companies	168,692,888.28
Investment, at cost, in stocks of affiliated and subsidiary companies other than Associated Companies. Increase for the year $30,533,935.	
Bonds and Notes of, and Advances to, Associated Companies	320,628,939.64
Temporary financing of Associated Companies for the extension of their telephone properties, including also $755,000 investment in bonds of these companies. Increase for the year $14,845,007.	
Notes of, and Advances to, Other Companies	50,995,500.00
Loans and advances to affiliated and subsidiary companies, other than Associated Companies. Increase for the year $18,496,500.	
Plant and Equipment:	
Long Lines Plant and Equipment	435,311,016.49
Increase for the year $85,777,834.	
General Equipment	1,557,021.42
Current Assets:	
Accounts Receivable	18,820,368.60
Temporary Investments	351,803,743.03
Funds temporarily invested in municipal, state and United States Government short-term obligations and special bank deposits in anticipation of financial requirements.	
Cash	37,054,020.11
Total Assets	$3,162,926,191.28

P. 15:
[fol. 3706]

Liabilities

Capital Stock:	
Stock Issued and Outstanding	$1,795,651,200.00
Total par value of shares outstanding. Increase for the year $473,311,400.	
Installments	111,463,036.18

Installments paid on stock subscribed for but not yet issued. Increase for the year $39,307,424.		
Premiums		259,131,602.75
Amount received in excess of par value of capital stock. Increase for the year $189,796,181.		
Long-Term Debt:		
Bonds and Debentures		462,615,700.00
Decrease for the year $58,830,000.		
Notes		11,545,213.59
Notes sold to Trustee of Pension Fund.		
Current Liabilities:		
Dividend Payable January 15, 1931		[illegible],401,814.50
Accounts Payable		23,910,052.98
Interest and Taxes Accrued, Not Due		13,027,007.85
Surplus and Reserves:		
Reserve for Depreciation		58,146,649.09
Increase for the year $8,158,689.		
Reserve for Contingencies		64,664,444.18
Surplus		322,369,470.16
Increase for the year $21,322,356, comprising:		
Net Income carried to Surplus	$26,306,634	
Sundry Deductions (net) principally tax on new capital issues and discount and expense on bonds issued less premium on bonds retired	4,984,278	
Total Liabilities		$3,162,926,191.28

P. 16:

[fol. 3707] American Telephone and Telegraph Company

Statement of Earnings and Expenses for the Year Ending December 31, 1930

Earnings:	
Dividends	$148,178,885.75
Dividends on stocks owned. As a whole these dividends were earned with a margin of about $10,000,000.	
Interest	28,026,861.17
Interest on notes and advances, on bonds owned, on temporary investments and bank deposits, and on other accounts.	
Telephone Operating Revenues	114,560,865.75
Revenues from operation of the long-distance lines and payments from the Associated Companies for services furnished them under the License contracts.	
Miscellaneous Revenues	1,248,258.40
Total	$292,014,871.07
Expenses	94,034,385.13
Net Earnings	$197,980,485.94
Deduct Interest	32,435,778.78
Net Income	$165,544,707.16
Deduct Dividends	139,238,073.39
Balance for Surplus	$26,306,633.77
Average number of shares of capital stock outstanding during year	15,856,696
Net earnings per share available for dividends (after interest charges)	10.44

P. 19:

[fol. 3708] **American Telephone and Telegraph Company**

Net Earnings per Share Available for Dividends

	Net Earnings Per Share	Dividends Paid		Net Earnings Per Share	Dividends Paid
1911..........	$10.01	$8.00	1921..........	$11.10	$8.75
1912..........	9.86	8.00	1922..........	11.14	9.00
1913..........	9.59	8.00	1923..........	11.35	9.00
1914..........	9.38	8.00	1924..........	11.31	9.00
1915..........	9.52	8.00	1925..........	11.79	9.00
1916..........	9.77	8.00	1926..........	11.95	9.00
1917..........	9.48	8.00	1927..........	11.76	9.00
1918..........	9.97	8.00	1928..........	12.11	9.00
1919..........	10.05	8.00	1929..........	12.67	9.00
1920..........	11.72	8.00	1930..........	10.44	9.00

P. 20:

[fol. 3709] Bell System Balance Sheet, December 31, 1930

(Inter-Company Duplications Excluded)

Assets

Telephone Plant	$4,043,421,739
Increase for the year $372,322,050.	
General Equipment, Tools and Supplies....................	102,727,264
Decrease for the year $8,147,124.	
Investments	283,752,088
Investments in stocks and bonds of, and advances to, subsidiary and connecting companies, and in miscellaneous property. These investments include stocks of Western Electric Company, Inc., The Bell Telephone Company of Canada, etc. Increase for the year $50,823,493.	
Accounts Receivable	151,178,536
Temporary Investments	354,774,712
Cash	64,341,462
Total assets	$5,000,195,801

NOTE.—All items of intangible assets carried in the accounts of Bell System companies are excluded from the Bell System Balance Sheet through a corresponding reduction in the Surplus.

P. 22:

[fol. 3710] **Bell System Financial Statements**

Bell System Income Statement for the Year Ending December 31, 1930
(Inter-Company Duplications Excluded)

Exchange Revenues	$728,709,193
Toll Revenues	348,541,203
Miscellaneous Revenues	26,689,409
Total Operating Revenues....................................	$1,103,939,805
Current Maintenance	$191,056,987
Depreciation Expense	182,400,230
Traffic Expenses	225,291,129

Commercial Expenses	106,347,376
General and Miscellaneous Expenses	67,653,358
Total Operating Expenses	$772,749,080
Net Operating Revenues	$331,190,725
Uncollectible Revenues	$9,056,624
Taxes	86,291,070
Operating Income (Carried Forward)	$235,843,031

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* Does not include special dividend from Western Electric Company, Inc.

P. 23:

[fol. 3711]

Operating Income (Brought Forward)		$235,843,031
Non-Operating Revenues—Net		47,626,208
Total Gross Income		$283,469,239
Rents and Miscellaneous Deductions		$15,594,814
Net Earnings		$267,874,425
Interest Deductions		$66,228,520
Net Income		$201,645,905
Dividends		$156,625,142
To holders of preferred stock of Associated Companies	$7,318,469	
To holders of common stock of Associated Companies	10,068,600	
American Telephone and Telegraph Co.	139,238,073	
Balance		$45,020,763

P. 24:

[fol. 3712]

Bell System Statistics

Security Issues Outstanding December 31, 1930 (Inter-Company Holdings Excluded)

	Par Value
Common Stock (American Telephone and Telegraph Company) (a)	$1,907,114,236
Common Stock (Associated Companies):	
New England Telephone and Telegraph Company	$47,349,300
Southern New England Telephone Company	26,662,600
Cincinnati and Suburban Bell Telephone Company	19,319,250
Mountain States Telephone and Telegraph Company	13,062,200
Pacific Telephone and Telegraph Company	29,910,100
Illinois Bell Telephone Company	1,272,900
Other Associated Companies	14,593
Total Common Stock, Associated Companies	$137,590,943
Preferred Stock (Associated Companies):	
New York Telephone Company 6½%	$25,000,000
Bell Telephone Company of Pennsylvania 6½%	20,000,000
Diamond State Telephone Company 6½%	500,000
Chesapeake and Potomac Tel. Co. of Baltimore City 7%	3,000,000
Ohio Bell Telephone Company 7% (b)	12,359,747
Wisconsin Telephone Company 7%	4,947,000

Northwestern Bell Telephone Company 6½%	4,798,000
Southwestern Bell Telephone Company 7%	21,785,500
Pacific Telephone and Telegraph Company 6%	17,957,300
Total Preferred Stock, Associated Companies	$110,347,547
Bonds and Notes (American Telephone and Telegraph Company (c):	Face Value
Collateral Trust 5s, 1932 (Western Tel. & Tel. Co.)	$9,488,500
Collateral Trust 5s, 1946	67,896,000
Debenture 5s, 1960	120,908,700
Debenture 5s, 1965	149,965,000
Debenture 5½s, 1943	96,481,200
Convertible 4s, 1936 (d)	2,589,000
Convertible 4½s, 1933 (d) (e)	1,870,800
Convertible 4½s, 1939	12,923,000
Notes (sold to Trustee of Pension Fund)	11,545,214
Total Bonds and Notes, American Tel. and Tel. Co.	$473,667,414
Bonds and Notes (Associated Companies) (c):	
New England Telephone and Telegraph Company:	
Debenture 5s, 1932 (f)	$10,000,000
First Mortgage Series A 5s, 1952	35,000,000
First Mortgage Series B 4½s, 1961	40,000,000
Southern New England Telephone Company:	
Debenture 5s, 1970	10,000,000
New York Telephone Company:	
First and General Mortgage 4½s, 1939	61,070,180
Refunding Mortgage Series A 6s, 1941	49,659,000
Debenture 6s, 1949 (f)	19,707,300
Bell Telephone Company of Pennsylvania:	
First Mtge. 5s, 1943 (Central District Telephone Co.)	9,093,500
First and Refunding Mortgage 5s, 1948	35,000,000
First and Refunding Mortgage 5s, 1960	50,000,000
Southern Bell Telephone and Telegraph Company:	
First & Gen. Mtge. 5s, 1937 (Cumberland Tel. & Tel. Co.)	14,969,000
First Mortgage 5s, 1941	47,536,500
Ohio Bell Telephone Company:	
Consolidated 5s, 1944 (Ohio State Telephone Co.)	4,947,000
Illinois Bell Telephone Company:	
First and Refunding Mortgage 5s, 1956	48,976,200
Southwestern Bell Telephone Company:	
First and Refunding Mortgage 5s, 1954	49,238,600
Pacific Telephone and Telegraph Company:	
First Mortgage and Collateral Trust 5s, 1937	27,971,000
First & Ref. Mtg. 5s, 1947 (Southern California Tel. Co.)	5,780,000
Refunding Mortgage 5s, 1952	24,044,000
Minor Bond Issues (21 in number)	22,258,230
Notes (principally notes sold to Trustee of Pension Funds)	72,146,082
Real Estate Mortgages	4,528,217
Total Bonds and Notes, Associated Companies	$641,924,809

(a) Includes installments.
(b) Called for redemption January 1, 1931.
(c) Includes issues assumed or guaranteed.
(d) Conversion privilege expired.
(e) Called for redemption March 1, 1931.
(f) Now secured by mortgage.
* Decreases in italics.

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P. 27:
[fol. 3713]

Plant Investment

Year	Total at End of Year	Increase Over Previous Year
1915	$880,068,520	$32,863,717
1916	946,293,248	66,224,728
1917	1,064,892,710	118,599,462
1918	1,142,498,152	77,605,442
1919	1,215,944,184	73,446,032
1920	1,363,826,327	147,882,143
1921	1,543,865,545	180,039,218
1922	1,729,219,520	185,353,975
1923	1,978,947,543	249,728,023
1924	2,266,923,466	287,975,923
1925	2,524,905,590	257,982,124
1926	2,783,023,059	258,117,469
1927	3,013,985,120	230,962,061
1928	3,275,686,848	261,701,728
1929	3,671,099,689	395,412,841
1930	4,043,421,739	372,322,050

[fol. 3714] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT # 50-A

Annual Report of the Directors of American Telephone and Telegraph Company to the Stockholders for the year ending December 31, 1918

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P. 24, 25:

Prior to the war demonstrations of the successful operation of our radio telephone system had been made and been reported upon. Immediately at the outbreak of the war we were called upon by the Signal Corps of the Army to advise them as to what could be done in successfully operating wireless telephone systems between an airplane and the ground, and between two airplanes. The fundamental work on radio communication which we had already done enabled us to assure the Signal Corps that we could successfully accomplish the desired result. Similar requests were received from the Navy Department with reference to the equipment of their hydro-aeroplanes for telephone service, and the equipment of submarine chasers with radio telephone service. Instantaneous communication between a number of submarine chasers operating together was an essential feature of some of the most promising methods of submarine location, and this requirement could only be met by a satisfactory radio telephone system. Building upon our previous fundamental radio work, we were enabled within nine months from the starting of the work to complete the development work, and to arrange for quantity production of the radio telephone equipment desired for both airplanes and submarine chasers. This achievement was due to the skill of our engineers, and would have been impossible without it. We were enabled to accomplish within a few months, important results which had been [fol. 3715] needed since the beginning of the war, but which had not been obtained either by our Allies or our enemies.

While most of our radio efforts were directed to telephony, we were called upon by both the Army and the Navy for considerable assistance in the production of radio telegraph equipment, especially apparatus for the reception and amplification of signals, and the development of small portable sets for field use.

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P. 28, 29:

Heretofore, the best telephone methods known to the art provided only one telephone conversation at a time over a single pair of wires. A number of years ago we developed the "phantom circuit" arrangement by means of which three telephone circuits are obtained from two pairs of wires, an important improvement of which we have made extensive use. Now by our new multiplex method, we are enabled to obtain five telephone circuits over one pair of wires, that is, ten simultaneous telephone conversations from the two pairs of wires which formerly could be used for only three simultaneous telephone conversations. This represents an increase of more than threefold in the telephonic capacity of the wires, as compared with the best previous state of the art, and a fivefold increase under conditions where the "phantom circuit" is not employed.

In telegraphy as well as in telephony, sensational results have been attained by the new system. By combining two telegraph wires into a metallic circuit of the type used for telephone working and by applying our new apparatus and methods to this metallic circuit, we have enormously increased the capacity of the wires for telegraph messages. As applied to high speed printer systems we can do eight times as much as is now done, and as compared with the [fol. 2716] ordinary duplex telegraph circuit in general use we can do ten times as much. These increased results are attained without in any way impairing the quality of telegraph working.

The nature of these developments is such that if desired wires may be used partly for telephone and partly for telegraph. A pair of wires is available either for five simultaneous telephone conversations or for forty simultaneous telegraph messages, or partly for one and partly for the other..

From the nature of the apparatus and methods employed, the system is not practically advantageous on short lines, either telephone or telegraph. On long lines its application will be extended immediately, but its introduction must necessarily be gradual on account of the nature of the apparatus required, and the rearrangement and adaptation of the lines themselves, and their associated apparatus to the new methods of working. Our studies show, however, that this system of multiplex telephony and telegraphy will have great usefulness on long open wire lines. It is not too much to characterize this new system as marking an epoch in the development of long distance telephone and telegraphy.

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P. 41:

The extraordinary rapidity of the increase in wages and in cost of material, as noted elsewhere, could not be met by the economies in operation. To provide revenue against them a campaign of readjustment of rates had been started during 1917 which was well under way when the properties were taken over. In some cases, rates had been increased and put in effect, in some authorized, and in some favorably considered, while others were under consideration—the total increase deemed necessary to meet the abnormal increase in expenses being something under 10 per cent. The necessity of continuing this campaign and its effect upon our estimates was fully set forth and included in our estimates for the last five months of 1918 and for the year 1919, of which the experts in economics made studies and analyses and submitted them to the Postmaster General.

[fol. 3717] EXTRACTS FROM EXHIBIT DEPOSITION EX. 50-B

Annual Report of the Directors of American Telephone and Telegraph Company to the Stockholders for the year ending December 31, 1919

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P. 17:

Toll Cables.—During 1919 the extension of the toll cable system from Philadelphia to Harrisburg was completed. Taken in combination with the cables already working between Boston and Washington, this gives a through toll cable route from the important points on the eastern seaboard to as far west as Harrisburg.

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P. 24:

Cables in long-distance lines have always greatly limited the distance through which speech may be transmitted, but as the increase in the number of long-distance wires has made necessary the employment of increased lengths of long-distance cable, the technical difficulties presented in the transmission of speech through such circuits have seemed at times to be almost insurmountable.

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P. 26:

It has been necessary not only to produce apparatus which would operate efficiently and economically, but also to perfect all of the details necessary to make this entirely new apparatus function properly in relation to the existing apparatus, the present buildings, the practice of the public, etc. That is, after its completion as an efficient mechanism it was necessary to make all of the adaptations so that its introduction would be economical and without disturbances to the public. This has been accomplished.

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P. 40:

[fol. 3718] Bell Telephone System in United States

Statement of Revenues and Expenses August 1, 1919, to December 31, 1919 (Duplications Excluded)

	Five months ending *December 31, 1919
Exchange Revenues	$112,429,046
Toll Revenues	53,473,831
Miscellaneous Revenues	2,067,035
Total Operating Revenues	$167,969,912
Depreciation	$27,306,134
Current Maintenance	25,420,188
Traffic Expenses	48,462,131
Commercial Expenses	15,820,469
General and Miscellaneous Expenses	7,101,306
Total Operating Expenses	$124,110,228
Net Operating Revenues	43,859,684
Uncollectible Revenues	518,044
Taxes	10,471,628
Operating Income	$32,870,012
Non-operating Revenues—Net	4,978,488
Total Gross Income	$37,848,500
Rent and Miscellaneous Deductions	2,112,944
Interest Deductions	12,182,817
Total Deductions	$14,295,761
Balance Net Income	23,552,739
Deduct Dividends	16,583,542
Surplus Earnings	$6,969,197

P. 41:

[fol. 3719]

Bell Telephone System in United States

Combined Balance Sheets 1918 and 1919 (Duplications Excluded)

	Dec. 31, 1918	Dec. 31, 1919
Assets:		
Telephone Plant	$1,142,498,152	$1,215,944,184
Supplies, Tools, etc.	122,953,290	38,035,034
Receivables		84,409,519
Cash		72,879,842
Stocks and Bonds	115,054,876	118,806,351
Total	$1,380,506,318	$1,530,074,930
Liabilities:		
Capital Stock	513,017,040	512,121,868
Funded Debts	430,992,459	546,202,760
Bills Payable	47,064,765	1,774,207
Accounts Payable	38,196,095	72,158,014
Total outstanding obligations	$1,029,270,359	$1,132,256,849
Employees' Benefit Fund	9,244,000	9,244,081
Surplus and Reserves	341,991,959	688,574,000
	$1,380,506,318	$1,530,074,930

P. 63:

[fol. 3720]

American Telephone and Telegraph Company

Statement of Earnings and Expenses for the Years 1918 and 1919

	1918	1919
Earnings (See Note):		
Dividends	$19,527,451.00	$16,461,674.20
Interest and other Revenues	18,022,220.18	19,953,436.96
Telephone Traffic (Net)	4,726,095.86	5,955,048.13
Compensation—Account Govt. Contract	18,780,395.66	28,132,522.89
Total	$61,056,162.70	$70,502,682.19
Expenses	6,763,145.98	10,259,294.65
Net Earnings	$54,293,016.72	$60,243,387.53
Deduct Interest	10,391,694.89	15,847,596.26
Balance	$43,901,321.83	$44,395,791.27
Deduct Dividends	35,229,698.96	35,356,334.46
Balance	$8,671,622.87	$9,039,456.81
Carried to Reserves	$5,000,000.00	$5,000,000.00
Carried to Surplus	3,671,622.87	4,039,456.81
Total	$8,671,622.87	$9,039,456.81

NOTE—Comparison of detailed items of earnings for 1918 and 1919 is not significant, as explained on page 45 of this report.

P. 65:

[fol. 3721] Liabilities

	Dec. 31, 1918	Dec. 31, 1919
Capital Stock	$441,947,100.00	$441,981,200.00
Capital Stock Installments	238.00	
4% Collateral Trust Bonds, 1929	78,000,000.00	78,000,000.00
5% Collateral Trust Bonds, 1946	78,333,900.00	77,434,900.00
5% Western T. and T. Co. Bonds 1932	9,985,000.00	9,985,000.00
4% Convertible Bonds. 1936	2,589,000.00	2,589,000.00
4½% Convertible Bonds, 1933	13,073,500.00	13,027,500.00
6% Convertible Bonds, 1925	48,353,624.00	48,367,200.00
6% 3-Year Gold Notes, 1922		50,000,000.00
6% 5-Year Gold Notes, 1924		40,000,000.00
Notes Payable to Bankers	4,000,000.00	
Dividend Payable January 15th	8,838,942.00	8,839,612.00
Interest and Taxes Accrued not Due	4,775,914.15	6,408,390.08
Current Accounts Payable:		
Compensation Due Associated companies when collected from United States Government		7,858,620.83
Other Current Accounts Payable	1,944,742.06	6,363,800.72
Employees' Benefit Fund	2,000,000.00	2,000,000.00
Reserve for Depreciation and Contingencies	43,900,076.83	47,262,123.43
Surplus (Including Capital Stock Premiums and excluding Debt Discount and Expense)	83,414,697.43	86,663,741.54
	$821,156,734.47	$926,781,088.60

Note—Associated and other Bell System Companies' notes endorsed by this Company (amounting to $53,900,000 on December 31, 1918, and to $9,303,000 on December 31, 1919) are not included in either Assets or Liabilities.

[fol. 3722] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #54

Bell Telephone System in United States, Condensed Summary of Reports for December, 1919.

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

Assets and liabilities:

		(a) At end of month
1	Intangible Capital	27,996,804
2	Physical Property	1,253,979,218
3	Investments	118,265,075
4	Cash and Deposits	72,879,842
5	Receivables, etc.	*102,055,043
6	Total Assets	1,575,175,982

7	Capital Stock	512,121,868
8	Funded Debt	546,202,760
9	Advances from System Corporations	0
10	Bills payable	1,774,207
11	Other Payables, etc.	82,243,425
12	Reserves for Depreciation	276,304,281
13	Surplus	*156,529,441
14	Total Liabilities	1,575,175,982

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[fol. 3723]

		g 12 Mos. this year
23	Net Telephone Earnings	63,944,105
24	Sundry Net Earnings	12,422,992
25	Total Net Earnings	76,367,097
26	Deduct Interest	27,745,830
27	Balance Net Profits	48,621,267
28	Deduct Dividends (Paid and Accrued)	39,839,927
29	Undivided Profits	8,781,340
30	Annual Dividend Rate a) 7.8% Total Plant per Station:	
	At end of Month	158.18
	At Dec. 31 last	159.82

		l 12 Mos. this year
	Averages:	
31	Average Plant in Service	1,157,816,000
32	Average Number of Company Stations	7,413,786
33	Average Capital Obligations	1,026,948,600
34	Average Capital Stock	512,527,100
35	Av. Mo. Tel. Rev. per Station—Gross	4,218
36	—Net	719

		q 12 Mos. This Year	
	Percentages (Annual Basis):	Rep.	Adj.
37	Total Telephone Revenues to Average Plant in Service	32.4	32.4%
38	Operation Expenses to Telephone Revenues	44.3	44.3%
39	Telephone Expenses to Telephone Revenues	83.0	82.7%
40	Current Maintenance to Average Plant in Service	4.9	4.9%
41	Depreciation to Average Plant in Service (includes 261)	5.6	5.5%
42	Net Telephone Earnings to Average Plant in Service	5.5	5.6%
43	Total Net Earnings to Average Capital Obligations	7.4	7.5%
44	Balance Net Profits to Average Capital Stock	9.5	9.7%

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(Back of page:)

*Includes $9,483,715 the difference between (a) Telephone Earnings from Property and (b) Compensation during Federal Control plus interest from August 1, 1919, resulting in corresponding increase in Surplus.

a) Dividends paid to Average Capital Stock for Year 1919. CR 51.

[fol. 3724] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #55

Bell Telephone System in United States Condensed Summary of Reports for December, 1920

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

Assets and liabilities:

		(a) At end of month
1	Intangible Capital	27,919,601
2	Physical Property	1,411,268,370
3	Investments	114,712,783
4	Cash and Deposits	41,399,285
5	Receivables, etc.	85,076,542
6	Total Assets	1,680,376,581
7	Capital Stock	511,493,407
8	Funded Debt	585,794,075
9	Advances from System Corporations	0
10	Bills Payable	10,130,141
11	Other Payables, etc.	83,674,581
12	Reserves for Depreciation	309,556,404
13	Surplus	179,727,973
14	Total Liabilities	1,680,376,581

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[fol. 3725]

		g 12 Mos. this Year
23	Net Telephone Earnings	65,778,036
24	Sundry Net Earnings	13,731,132
25	Total Net Earnings	79,509,168
26	Deduct Interest	31,724,103
27	Balance Net Profits	47,785,065
28	Deduct Dividends (Paid and Accrued)	39,999,579
29	Undivided Profits	*7,785,486
30	Annual Dividend Rate 7.8 (a)% Total Plant per Station:	
	At end of Month	164.76
	At Dec. 31 last	158.18

		1 12 Mos. This Year
	Averages:	
31	Average Plant in Service	1,253,028,200
32	Average Number of Company Stations	8,000,447
33	Average Capital Obligations	1,076,204,000
34	Average Capital Stock	511,585,400
35	Av. Mo. Tel. Rev. per Station—Gross	4,629
36	—Net	685

		q 12 Mos. This Year
	Percentages (Annual Basis):	
37	Total Telephone Revenues to Average Plant in Service	35.5%
38	Operation Expenses to Telephone Revenues	48.3%
39	Telephone Expenses to Telephone Revenues	85.2%
40	Current Maintenance to Average Plant in Service	5.6%
41	Depreciation to Average Plant in Service (includes 261)	5.3%
42	Net Telephone Earnings to Average Plant in Service	5.2%
43	Total Net Earnings to Average Capital Obligations	7.4%
44	Balance Net Profits to Average Capital Stock	9.3%

* * * * * * *

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(a) Dividends paid to Average Capital Stock for year 1920.

(*) Includes revenues held in reserve pending rate decisions as follows:

	Month	Period
Central Union Tel. Co	$6,725	$71,841
Southwestern Bell Tel. Co	20,031	241,422
Mountain States T. and T. Co	0	135,000
	$26,756	$448,263

C. R. 51

[fol. 3726] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #56

Bell Telephone System in United States Condensed Summary of Reports for December, 1921

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

Assets and Liabilities:

		(a) At end of month
1	Intangible Capital	24,740,742
2	Physical Property	1,591,809,980
3	Investments	140,177,833
4	Cash and Deposits	87,937,784
5	Receivables, etc.	96,233,829
6	Total Assets	1,940,900,168
7	Capital Stock	632,216,253
8	Funded Debt	666,740,590
9	Advances from System Corporations	0
10	Bills Payable	2,369,665
11	Other Payables, etc.	95,958,182
12	Reserves for Depreciation	350,642,044
13	Surplus	192,973,434
14	Total Liabilities	1,940,900,168

[fol. 3727]

		g 12 Mos. This Year
23	Net Telephone Earnings	88,429,768
24	Sundry Net Earnings	15,768,913
25	Total Net Earnings	104,198,681
26	Deduct Interest	36,773,998
27	Balance Net Profits	67,424,683
28	Deduct Dividends (Paid and Accrued)	47,848,394
29	Undivided Profits	*19,576,289
30	Annual Dividend Rate (a) 8.6% Total Plant per Station:	
	At end of Month	174.32
	At Dec. 31 last	164.76

		l 12 Mos. This Year
	Averages:	
31	Average Plant in Service	1,392,224,300
32	Average Number of Company Stations	8,551,829
33	Average Capital Obligations	*1,187,959,900
34	Average Capital Stock	†554,625,700
35	Av. Mo. Tel. Rev. per Station—Gross	4,783
36	—Net	862

		q 12 Mos. This Year
	Percentages (Annual Basis):	
37	Total Telephone Revenues to Average Plant in Service	35.3%
38	Operation Expenses to Telephone Revenues	45.5%

39	Telephone Expenses to Telephone Revenues	82.0%
40	Current Maintenance to Average Plant in Service	5.3%
41	Depreciation to Average Plant in Service (includes 261)	5.2%
42	Net Telephone Earnings to Average Plant in Service	6.4%
43	Total Net Earnings to Average Capital Obligations	8.8%
44	Balance Net Profits to Average Capital Stock	12.2%

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12/21 CR\51

(a) Rate per annum of Dividends paid for 12 months to Average Capital Stock.
* Includes revenues held in reserve pending rate decisions as follows:

Southwestern Bell Tel. Co.	$293,429
Ohio Bell Tel. Co.	155,750
Total	$449,179

* Includes Capital Stock Installments.
† Excludes " " "

CR 51

[fol. 3728] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #57

Bell Telephone System in United States Condensed Summary of Reports for December, 1922

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Assets and Liabilities:	(a) At end of month
1	Intangible Capital	24,625,479
2	Physical Property	1,779,963,720
3	Investments	216,407,380
4	Cash and Deposits	77,290,044
5	Receivables, etc.	105,177,825
6	Total Assets	2,203,464,448
7	Capital Stock	837,007,344
8	Funded Debt	646,033,165
9	Advances from System Corporation	0
10	Bills Payable	426,164
11	Other Payables, etc.	116,390,407
12	Reserves for Depreciation	395,297,455
13	Surplus	208,309,913
14	Total Liabilities	2,203,464,448

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[fol. 3729]

		g. 12 Mos. this Year.
23	Net Telephone Earnings	104,920,828
24	Sundry Net Earnings	19,571,290
25	Total Net Earnings	124,492,118
26	Deduct Interest	37,869,366
27	Balance Net Profits	86,622,752
28	Deduct Dividends (Paid and Accrued)	60,305,204
29	Undivided Profits	*26,317,548
30	Annual Dividend Rate a) 8.8% Total Plant per Station	
	At end of Month	182.77
	At Dec. 31 last	174.32

	Averages.	l. 12 Mos. This Year
31	Average Plant in Service (Excludes Gen'l Equipment)	1,558,206,200
32	Average Number of Company Stations	9,132,746
33	Average Capital Obligations	1,371,280,400
34	Average Capital Stock	687,012,000
35	Av. Mo. Tel. Rev. per Station—Gross	4,919
36	—Net	957

	Percentages. (Annual Basis)	q. 12 Mos. This Year
37	Total Telephone Revenues to Average Plant in Service	34.6%
38	Operation Expenses to Telephone Revenues	43.1%
39	Telephone Expenses to Telephone Revenues	80.5%
40	Current Maintenance to Average Plant in Service	5.2%
41	Depreciation to Average Plant in Service (includes 261)	5.2%
42	Net Telephone Earnings to Average Plant in Service	6.7%
43	Total Net Earnings to Average Capital Obligations	9.1%
44	Balance Net Profits to Average Capital Stock	12.6%

* * * * * * * *

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(a) Rate per annum of Dividends paid for year 1922 to Average Capital Stock.

* Includes revenues held in reserve pending rate decisions as follows:

Michigan State Tel. Co.	$629,329
Ohio Bell Telephone Company	155,197
Southern Bell Tel. and Tel. Co.	167,203
Cumberland Tel. and Tel. Co.	411,000
Southwestern Bell Tel. Co.	335,877
	$1,698,606

✱ Includes Capital Stock Installments.

† Excludes Capital Stock Installments.

[fol. 3730] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #58

Bell Telephone System in United States

Condensed Summary of Reports for December 1923

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

Assets and Liabilities:	(a) At end of month
1 Intangible Capital	25,640,294
2 Physical Property	2,038,708,888
3 Investments	194,354,224
4 Cash and Deposits	78,895,327
5 Receivables, etc.	106,387,393
6 Total Assets	2,443,986,126
7 Capital Stock	891,534,567
8 Funded Debt	752,660,534
9 Advances from System Corporations	0
10 Bills Payable	248,294
11 Other Payables, etc.	134,351,642
12 Reserves for Depreciation	443,130,438
13 Surplus	222,060,651
14 Total Liabilities	2,443,986,126

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[fol. 3731]

	g. 12 Mos. This Year.
23 Net Telephone Earnings	113,381,052
24 Sundry Net Earnings	23,994,867
25 Total Net Earnings	137,375,919
26 Deduct Interest	37,751,447
27 Balance Net Profits	99,624,472
28 Deduct Dividends (Paid and Accrued)*	72,428,617
29 Undivided Profits	27,195,855
30 Annual Div. Rate-Com. a) 8.7% Pref. a) 6.7%	Total Plant per Station
End of Month	191.16
Dec. 31 last	182.77

	Averages.	l. 12 Mos. This Year
31	Average Plant in Service (Excludes Gen'l† Equipment)	1,759,186,100
32	Average Number of Company Stations	9,919,378
33	Average Capital Obligations	1,554,794,400
34	Average Capital Stock (Common)	781,099,600
35	Av. Mo. Tel. Rev. per Station—Gross	4,974
36	—Net	953

	Percentages. (Annual Basis):	q. 12 Mos. This Year
37	Total Telephone Revenues to Average Plant in Service	33.7%
38	Operation Expenses to Telephone Revenues	42.8%
39	Telephone Expenses to Telephone Revenues	80.8%
40	Current Maintenance to Average Plant in Service	5.2%
41	Depreciation to Average Plant in Service (Includes 261)	5.0%
42	Net Telephone Earnings to Average Plant in Service	6.4%
43	Total Net Earnings to Average Capital Obligations	8.8%
44	Bal. Net Prof. (after Pref. Dividend) to Ave. Com. Stock	12.2%

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CR 51 Dec. '23

Capital Stock	*a* At end of month	*b* Increase over last month	*c* Increase over Dec. 31 last	*d* % Increase over Dec. 31
Common	816,596,020	2,914,262	39,976,423	5.1
Preferred	74,938,547	512,100	14,550,800	24.1

* Deduct Dividends (Paid and Accrued)

	e This Month.	*f* Increase over last Month	*g.* 12 Mos. this Year	*h* Increase over same Period last Year	*i* % In-Increase
Common	5,891,374	11,191	67,761,113	10,333,625	18.0
Preferred	416,090	3,047	4,667,504	1,789,788	62.2

(a) Rate per annum of Dividends paid for year 1923 to Average Common and Preferred Capital Stock.

† Includes revenues held in reserve pending rate decisions as follows:

[fol. 3732]

C. R. 51 Dec. 1923

Southern Bell Tel. and Tel. Co.	$238,919
Cumberland Tel. and Tel. Co.	178,000
Ohio Bell Telephone Company	22,705
Michigan State Telephone Company	1,337,219
Indiana Bell Telephone Company	200,000

Illinois Bell Telephone Company	460,298
Southwestern Bell Tel. Co.	127,698
	2,564,893
American Tel. and Tel. Co.-General Reserve for Contingencies	3,000,000
Transferred to Employees' Benefit Fund—	
Southern New England Tel. Co.	100,000
Southwestern Bell Tel. Co.	292,500
	$5,957,339

† Includes Capital Stock Installments,

‡ Excludes Capital Stock Installments

CR 51

[fol. 3733] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #59

Bell Telephone System in United States

Condensed Summary of Reports for December 1924

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

Assets and Liabilities:

		(a) At end of month
1	Intangible Capital	25,866,192
2	Physical Property	2,330,371,919
3	Investments	197,982,036
4	Cash and Deposits	48,608,738
5	Receivables, etc.	109,458,177
6	Total Assets	2,712,287,062
7	Capital Stock	1,093,572,862
8	Funded Debt	752,732,597
9	Advances from System Corporations	0
10	Bills Payable	365,318
11	Other Payables, etc.	139,170,459
12	Reserves for Depreciation	485,662,088
13	Surplus	240,783,738
14	Total Liabilities	2,712,287,062

[fol. 3734]

		g 12 Mos. This Year
24	Net Telephone Earnings	127,923,874
25	Sundry Net Earnings	20,852,745
26	Total	148,776,619
27	Deduct Interest	41,531,071
28	Balance Net Profits	107,245,548
29	Deduct Dividends (Paid and Accrued)*	82,602,906
30	Undivided Profits	**24,642,642
31	Annual Div. Rate-Com. a) 8.8% Pref. a) 7.7%	Total Plant per Station
	End of Month	202.68
	Dec. 31 last	191.16

	Averages;	l 12 Mos. This Year
32	Average Plant in Service (Excludes Gen'l Equipment)	2,026,402,600
33	Average Number of Company Stations	10,760,436
34	Average Capital Obligations	†1,745,264,500
35	Average Capital Stock (Common)	‡868,575,900
36	Av. Mo. Tel. Rev. per Station—Gross	5,091
37	—Net	991

	Percentages. (Annual Basis):	q 12 Mos. This Year
38	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	32.0%
39	Operation Expenses to Telephone Revenues	42.1%
40	Telephone Expenses to Telephone Revenues	80.5%
41	Current Maintenance to Average Plant in Service	5.1%
42	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	5.0%
43	Net Telephone Earnings to Average Plant in Service	6.3%
44	Total Net Earnings to Average Capital Obligations	8.5%
45	Bal. Net Prof. (after Pref. Dividend) to Ave. Com. Stock	11.6%

(Back of page:)

Capital Stock	a At end of Month	b Increase over last Month	c Increase over Dec. 31 last	d % Increase over Dec. 31
Common	989,539,915	10,176,652	172,943,895	21.2
Preferred	104,032,947	236,800	29,094,400	38.8

* Deduct Dividends (Paid and Accrued)

	e This Month	f Increase over last Month	g 12 Mos. This Year	h Incr. over same Period Last Year	i % Increase
Common	6,789,669	34,303	76,150,687	8,389,574	12.4
Preferred	570,809	***925	6,452,219	1,784,715	38.2

*** Figures in Red.

CR-51 Dec. 1924

(a) Rate per annum of Dividends paid for year 1924 to Average Common and Preferred Capital Stock.

** Includes revenues held in reserve pending rate decisions as follows:

[fol. 3735] Illinois Bell Tel. Co.	$1,788,585
Transferred to Reserve for Contingencies A. T. and T. Co.-General	3,000,000
Transferred to Employees' Benefit Fund—	
Southern New England Tel. Co.	100,000
Ches. and Pot. Tel. Co.	107,049
Cinn. and Subn. Bell Tel. Co.	150,000
Wisconsin Tel. Co.	189,070
Southwestern Bell Tel. Co.	593,550
	1,139,669
	$5,928,254

† Includes Capital Stock Installments.
‡ Excludes Capital Stock Installments.

[fol. 3736] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #60

Bell Telephone System in United States

Condensed Summary of Reports for December 1925.

	Assets and Liabilities:	(a) At end of Month
1	Intangible Capital	15,851,866
2	Physical Property	2,594,240,197
3	Investments	186,624,812
4	Cash and Deposits	50,037,040
5	Receivables, etc.	128,541,430
6	Total Assets	2,975,295,345
7	Capital Stock	1,144,618,690
8	Funded Debt	890,336,995
9	Advances from System Corporations	0
10	Bills Payable	672,000
11	Other Payables, etc.	154,355,688
12	Reserves for Depreciation	530,071,026
13	Surplus	255,240,946
41	Total Liabilities	2,975,295,345

	Earnings and Expenses:	12 Mos. This Year.
24	Net Telephone Earnings	162,365,898
25	Sundry Net Earnings	20,077,697
26	Total Net Earnings	182,443,595
27	Deduct Interest	45,940,664
28	Balance Net Profits	136,502,931
29	Deduct (Paid &)—Preferred	6,961,574
30	Dividends (Accrued)—Common	86,281,083
31	Total Dividends	93,242,657
32	Undivided Profits	43,260,274
33	Annual Div. Rate-Com. (a) 8.7% Pref. (a) 6.6% Total Plant per Station	
	End of Month	210.86
	Dec. 31 last	202.68

	Averages (Excludes Gen'l Equipment)	12 Mos. This Year
34	Average Plant in Service	2,321,767,400
35	Average Number of Company Stations	11,556,479
36	Average Capital Obligations	*1,963,186,300
37	Average Capital Stock (Common)	✱986,418,000
38	Av. Mo. Tel. Rev. per Station—Gross	5,345
39	—Net	1,171

	Percentages (Annual Basis):	12 Mos. This Year
40	Total Tel. Rev. (Except Adv. & Dir) to Av. Plant in Service	31.5%
41	Operations Expenses to Telephone Revenues	39.5%
42	Telephone Expenses to Telephone Revenues	78.1%
43	Current Maintenance to Average Plant in Service	4.8%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix)	5.0%
45	Net Telephone Earnings to Average Plant in Service	7.0%
46	Total Net Earnings to Average Capital Obligations	9.3%
47	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock	13.1%

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

[fol. 3737]

Capital Stock	(a) At end of Month	(b) Increase over Last Month	(c) Increase over Dec. 31 Last	(d) % Increase over Dec. 31
Preferred	105,802,147	21,400	1,769,200	1.7
Common	1,011,060,343	11,304,250	50,386,700	5.2
Installments	27,756,200	1,130,574	***1,110,072	***3.8
Total Capital Stock	1,144,618,690	12,456,224	51,045,828	4.7

(a) Rate per annum of Dividends paid for year 1925 to Average Common and Preferred Capital Stock.

* Includes Capital Stock Installments.

✱ Excludes Capital Stock Installments.

° Connecting Company stations have been adjusted for natural growth.

*** Red figures.

[fol. 3738] Extracts from Exhibit Deposition Exhibit #61

Bell Telephone System in United States

Condensed Summary of Reports for December, 1926

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Assets and Liabilities	(a) At End of Month
1	Intangible Capital	17,407,344
2	Physical Property	2,856,864,725
3	Investments	148,306,145
4	Cash and Deposits and Temporary Investments	139,912,661
5	Receivables, etc	135,309,492
6	Total Assets	3,297,800,367
7	Capital Stock	1,312,881,184
8	Funded Debt	921,523,000
9	Advances from System Corporations	0
10	Bills Payable	863,075
11	Other Payables, etc	181,558,793
12	Reserves for Depreciation	576,215,584
13	Surplus	304,758,731
14	Total Liabilities	3,297,800,367

[fol. 3739]

		g. 12 Mos. This Year
24	Net Telephone Earnings	183,254,108
25	Sundry Net Earnings	21,616,241
26	Total Net Earnings	204,870,349
27	Deduct Interest	49,809,330
28	Balance Net Profits	155,061,019
29	Deduct (Paid &)—Preferred	7,176,721
30	Dividends (Accrued)—Common	93,437,716
31	Total Dividends	100,614,437
32	Undivided Profits	54,446,582
33	Annual Div. Rate-Com. (a) 8.8%; Pref. (a) 6.6%; Total Plant per Station—End of Month	218.27
	Dec. 31 last	210.86

	Averages:	1. 12 Mos. This Year
34	Average Plant in Service (Excludes Gen'l Equipment)...	2,589,184,700
35	Average Number of Company Stations..............	12,356,053
36	Average Capital Obligations..........................	*2,127,407,200
37	Average Capital Stock (Common)......................	⁎1,066,189,800
38	Av. Mo. Tel. Rev. per Station—Gross..................	5,552
39	—Net..................	1,236

	Percentages (Annual Basis)	q. 12 Mos. This Year
40	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service..............................	31.3%
41	Operation Expenses to Telephone Revenues............	38.4%
42	Telephone Expenses to Telephone Revenues............	77.7%
43	Current Maintenance to Average Plant in Service......	4.9%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)..............................	5.0%
45	Net Telephone Earnings to Average Plant in Service....	7.1%
46	Total Net Earnings to Average Capital Obligations.....	9.6%
47	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock.	13.9%

[fol. 3740]

Dec. 1926.

Capital Stock	(a) At End of Month	(b) Increase Over Last Month	(c) Increase Over Dec. 31 Last	(d) % Increase Over Dec. 31
Preferred............	109,659,847	60,200	3,857,700	3.6
Common............	1,154,043,093	6,908,650	142,982,750	14.1
Installments.........	49,178,244	2,479,477	21,422,044	77.2
Total Capital Stock	1,312,881,184	9,448,327	168,262,494	14.7

(a) Rate per annum of Dividends paid for year 1926 to Average Common and Preferred Capital Stock.

* Includes Capital Stock Installments.

⁎ Excludes Capital Stock Installments.

[fol. 3741] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #62

Bell Telephone System in United States

Condensed Summary of Reports for December, 1927

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Assets and Liabilities	(a) At End of Month
1	Intangible Capital	17,299,810
2	Physical Property	3,090,380,360
3	Investments	149,306,331
4	Cash and Deposits and Temporary Investments	102,604,821
5	Receivables, etc	137,867,160
6	Total Assets	3,497,458,482
7	Capital Stock	1,351,939,840
8	Funded Debt	919,789,700
9	Advances from System Corporations	0
10	Bills Payable	7,046,158
11	Other Payables, etc	189,986,484
12	Reserves for Depreciation	600,663,640
13	Surplus	428,032,660
14	Total Liabilities	3,497,458,482

[fol. 3742]

		g. 12 Mos. This Year
24	Net Telephone Earnings	194,461,151
25	Sundry Net Earnings	22,109,449
26	Total Net Earnings	216,570,600
27	Deduct Interest	50,511,448
28	Balance Net Profits	166,059,152
	Deduct Dividends (Paid & Accrued):	
29	Preferred	7,306,264
30	Common	105,094,861
31	Total Dividends	112,401,125
32	Undivided Profits	53,658,027
33	Annual Div. Rate-Com. (a) 8.8% Pref. (a) 6.6%	
	Total Plant per Station End of Month	220.82
	Dec. 31 Last	216.57

		l. 12 Mos. This Year
	Averages:	
34	Average Plant in Service (Excludes Gen'l Equipment)	2,847,490,500
35	Average Number of Company Stations	13,265,762
36	Average Capital Obligations	2,257,991,400
37	Average Capital Stock (Common)	1,188,151,500
38	Av. Mo. Tel. Rev. per Station—Gross	5,620
39	—Net	1,222

	Percentages (Annual Basis):	q. 12 Mos. This Year
40	Total Tel. Rev. (except Adv. & Dir.) to Av. Plant in Service	30.9%
41	Operation Expenses to Telephone Revenues	38.2%
42	Telephone Expenses to Telephone Revenues	78.3%
43	Current Maintenance to Average Plant in Service	4.9%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	5.0%
45	Net Telephone Earnings to Average Plant in Service	6.8%
46	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock	13.4%

[fol. 3743]

CR 51 Dec. 1927

Capital Stock	(a) At End of Month	(b) Increase Over Last Month	(c) Increase Over Dec. 31 Last	(d) % Increase Over Dec. 31
Preferred	110,602,947	10,000	943,100	.9
Common	1,202,440,393	903,300	48,397,300	4.2
Installments	38,896,500	1,317,616	10,281,744**	20.9**
Total Capiral Stock	1,351,939,840	2,230,916	39,058,656	3.0

(a) Rate per annum of Dividends paid for year 1927 to Average Common and Preferred Capital Stock.

* Includes Capital Stock Installments.
# Excludes Capital Stock Installments.
** Red Figures.

[fol. 3744] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #63 CR 51

Bell Telephone System in United States

Condensed Summary of Reports for December, 1928

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Assets and Liabilities:	(a) At End of Month
1	Intangible Capital	16,378,827
2	Physical Property	3,363,561,471
3	Investments	164,539,174
4	Cash and Deposits and Temporary Investments	173,038,949
5	Receivables, etc	147,163,994
6	Total Assets	3,864,682,415
7	Capital Stock	1,564,644,118
8	Funded Debt	912,126,470
9	Advances from System Corporations	0
10	Bills Payable	53,034,930
11	Other Payables, etc	180,032,244
12	Reserves for Depreciation	650,621,336
13	Surplus	504,223,317
14	Total Liabilities	3,864,682,415

[fol. 3745]

		g. 12 Mos. This Year
24	Net Telephone Earnings	214,829,243
25	Sundry Net Earnings	27,893,191
26	Total Net Earnings	242,722,434
27	Deduct Interest	51,634,795
28	Balance Net Profits	191,087,639
29	Deduct Dividends	
	Dividends (Paid & Accrued)	
29	Preferrred	7,322,256
30	Common	112,026,356
31	Total Dividends	119,348,612
32	*Undivided Profits*	71,739,027
33	Annual Div. Rate: Com. (a) 8.7%; Pref. (a) 6.6%; Total Plant per Station End of Month	226.85
	Dec. 31 last	220.82

	Averages:	l. 12 Mos. This Year
34	Average Plant in Service (Excludes Gen'l Equipment)	3070,917,209
35	Average Number of Company Stations	14,010,957
36	Average Capital Obligations	2371,779,400
37	Average Capital Stock (Common)	1281,817,200
38	Av. Mo. Tel. Rev. per Station—Gross	5,802
39	—Net	1,278

	Percentages (Annual Basis):	q. 12 mos. This Year
40	Total Tel. Rev (Except Adv. & Dir to Av. Plant in service.	31.2%
41	Operation Expenses to Telephone Revenues	37.9%
42	Telephone Expenses to Telephone Revenues	78.0%
43	Current Maintenance to Average Plant in Service	5.0%
44	Depreciation to Average Plant in Service (Incl. Office Furn. & Fix)	5.0%
45	Net Telephone Earnings to Average Plant in Service	7.0%
46	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock	14.3%

[fol. 3746]

CR 51 Dec 1928

Capital Stock	(a) At End of Month	(b) Increase Over Last Month	(c) Increase Over Dec. 31 Last	(d) % Increase Over Dec. 31
Preferred	$110,815,347	4,000	212,400	2
Common	1,395,952,193	8,215,200	193,511,800	16.1
Installments	57,876,578	5,448,478	18,980,078	48.8
Total Capital Stock	1,564,644,118	13,667,678	212,704,278	15.7

(a) Rate per annum of Dividends paid for year 1928 to Average Common and Preferred Capital Stock.

* Includes Capital Stock Installments.
# Excludes Capital Stock Installments.

[fol. 3747]

CR 51

EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #64

Bell Telephone System in United States

Condensed Summary of Reports for December 1929

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Assets and Liabilities:	(a) At End of Month
1	Intangible Capital	15,198,389
2	Physical Property	3,781,974,077
3	Investments	216,022,944
4	Cash and Deposits and Temporary Investments	70,861,768
5	Receivables, etc.	180,270,159
6	Total Assets	4,264,327,337
7	Capital Stock	1,611,862,252
8	Funded Debt	1,081,602,609
9	Advances from System Corporations	0
10	Bills Payable	67,490,275
11	Other Payables, etc.	211,955,681
12	Reserves for Depreciation	699,034,674
13	Surplus	592,381,846
14	Total Liabilities	4,264,327,337

[fol. 3748]

		g. 12 Mos. This Year
24	Net Telephone Earnings	232,336,762
25	Sundry Net Earnings	44,349,902
26	Total Net Earnings	276,686,664
27	Deduct Interest	59,581,792
28	Balance Net Profits	217,104,872
	Deduct Dividends (Paid & Accrued)	
29	Preferred	7,326,523
30	Common	124,897,312
31	Total Dividends	132,223,835
32	Undivided Profits	84,881,037
33	Annual Div. Rate: Com. (a), 8.8%; Pref. (a), 6.6%; Total Plant per Station:	
	End of Month	239.69
	Dec. 31 Last	226.85

	Averages:	l. 12 Mos. This Year
34	Average Plant in Service (Excludes Gen'l Equipment)	3,367,858,900
35	Average Number of Company Stations	14,892,252
36	Average Capital Obligations	2,629,504,000
37	Average Capital Stock (Common)	1,416,296,900
38	Av. Mo. Tel. Rev. per Station—Gross	5,992
39	—Net	1,300
	Percentages (Annual Basis):	
40	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	31.22%
41	Operation Expenses to Telephone Revenues	38.25%
42	Telephone Expenses to Telephone Revenues	78.30%
43	Current Maintenance to Average Plant in Service	5.34%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	4.87%
45	Net Telephone Earnings to Average Plant in Service	6.90%
46	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock	14.81%

[fol. 3749]

CR 51 Dec. 1929

Capital Stock	(a) At End of Month	(b) Increase Over Last Month	(c) Increase Over Dec. 31 Last	(d) % Increase Over Dec. 31
Preferred	110,824,447	0	9,100	0
Common	1,428,679,743	1,038,400	32,727,550	2.3
Installments	72,358,062	3,602,009	14,481,484	25.0
Total Capital Stock	1,611,862,252	4,640,409	47,218,134	3.0

(a) Rate per annum of Dividends paid for year 1929 to Average Common and Preferred Capital Stock.

¢ Includes Capital Stock Installments.

✱ Excludes Capital Stock Installments.

(Here follow side folios 3750, 3751, 3752, and 3753)

FORM S. N. 186 L
This Copy for
Mr.................

DEFENDANT'S EXHIBIT 65

MONTHLY REPORT No. 1.

Rep. 2.65

BELL TELEPHONE SYSTEM IN UNITED STATES
Name of Company

CONDENSED SUMMARY OF REPORTS FOR DECEMBER, 1930.

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	ASSETS AND LIABILITIES.	a At end of Month	b Increase over last Month	c Increase over Dec. 31 last	d % Increase over Dec. 31	
1	Intangible Capital	13 325 904	[illegible]	1 972 475	12 3	1
2	Physical Property	4 146 149 003	18 213 233	364 174 926	9 6	2
3	Investments	267 437 010	[illegible]	51 414 066	23 8	3
4	Cash and Deposits and Temporary Investments	419 116 174	10 583 437	348 254 406	491 5	4
5	Receivables, etc.	187 831 799	[illegible]	7 561 640	4 2	5
6	Total Assets	5 033 859 890	20 209 320	769 532 553	18 0	6
7	Capital Stock†	2 155 052 726	14 966 849	543 190 474	33 7	7
8	Funded Debt	1 032 563 927	561 025	149 038 482	4 5	8
9	Advances from System Corporations	0	0	0	0	9
10	Bills Payable	84 003 296	8 138 783	16 513 021	24 5	10
11	Other Payables, etc.	205 187 484	1 278 001	6 768 197	3 2	11
12	Reserves for Depreciation	740 005 875	1 387 712	40 971 201	5 9	12
13	Surplus	817 046 583	[illegible]	224 864 736	37 9	13
14	Total Liabilities	5 033 859 890	20 209 320	769 532 553	18 0	14

	EARNINGS AND EXPENSES.	e This Month	f Increase over last Month	g 12 Mos. This Year	h Inc. over Same Period last Year	i % Increase	
15	Exchange Revenues	61 742 825	752 514	728 709 193	37 350 267	5 4	15
16	Toll Revenues	28 415 705	1 036 601	348 541 203	[illegible]	[illegible]	16
17	Miscellaneous Operating Revenues	2 123 577	[illegible]	26 689 409	1 539 735	6 1	17
18	Total Telephone Revenues	92 282 107	1 679 709	1C3 939 805	33 145 306	3 1	18
19	Operation Expenses	36 228 632	2 097 323	422 682 535	13 295 975	3 2	19
20	Current Maintenance	17 660 368	1 974 200	191 056 987	11 358 039	6 3	20
21	Depreciation	15 977 955	197 744	183 460 996	18 140 677	11 0	21
22	Taxes	6 084 818	[illegible]	86 690 401	2 838 491	3 [illegible]	22
23	Total Telephone Expenses	75 951 773	3 425 669	884 090 919	45 633 182	5 4	23
24	Net Telephone Earnings	16 330 334	[illegible]	219 848 866	[illegible]	5 4	24
25	Sundry Net Earnings	4 517 698	491 121	48 025 539	3 675 637	8 3	25
26	Total Net Earnings	20 848 032	[illegible]	267 874 425	[illegible]	[illegible]	26
27	Deduct Interest	5 533 392	124 560	66 228 520	6 646 728	11 [illegible]	27
28	Balance Net Profits	15 314 640	[illegible]	201 645 905	[illegible]	[illegible]	28
29	Deduct Dividends (Paid & Accrued)—Preferred	602 756	[illegible]	7 318 469	[illegible]		29
30	—Common	13 606 324	[illegible]	149 306 673	24 409 261	19 5	30
31	Total Dividends	14 209 080	[illegible]	156 625 142	24 401 307	18 5	31
32	Undivided Profits	1 105 560	[illegible]	45 020 763	[illegible]	[illegible]	32

33 Annual Div. Rate-Com. 8.73 % Pref. [illegible] % Total Plant per Station—End of Month 259.47 Dec. 31 last [illegible] 33

	AVERAGES.	j This Month	k Last Month	l 12 Mos. This Year	m Same Period last Year	n % Increase l over m	
34	Average Plant in Service (Excludes Gen'l Equipment)	3922 139 300	3899 096 300	3759 797 100	3367 658 900	11 6	34
35	Average Number of Company Stations	15 586 679	15 589 382	15 516 165	14 892 252	4 2	35
36	Average Capital Obligations ∮	3260 348 100	3244 234 600	3055 601 200	2629 504 000	16 2	36
37	Average Capital Stock (Common) #	1931 656 100	1927 911 900	1709 668 600	1416 396 900	20 7	37
38	Av. Mo. Tel. Rev. per Station—Gross	5 921	5 812	5 929	5 992	[illegible]	38
39	--Net	1 048	1 160	1 181	1 209		39

	PERCENTAGES. (Annual Basis)	o This Month	p Last Month	q 12 Mos. This Year	r Same Period last Year	
40	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	27.70 %	27.35 %	25.51 %	31.22 %	40
41	Operation Expenses to Telephone Revenues	39.26 %	37.67 %	38.31 %	38.25 %	41
42	Telephone Expenses to Telephone Revenues	82.30 %	80.05 %	80.09 %	75.30 %	42
43	Current Maintenance to Average Plant in Service	5.40 %	4.83 %	5.08 %	5.34 %	43
44	Depreciation to Average Plant in Service (Inth. Office Fur. & Fix.)	4.84 %	4.81 %	4.84 %	4.87 %	44
45	Net Telephone Earnings to Average Plant in Service	5.00 %	5.56 %	5.55 %	6.90 %	45
46	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock	9.14 %	10.01 %	11.47 %	14.81 %	46

	STATIONS.	s Total at end of Month	t Per 100 Population	u Net Gain this Month	v Net Gain since Dec. 31 last	Per Cent Net Gain w Expected	x Realized	
47	Company Stations	15 583 101	12 57	[illegible]	•267 131	3 62	1 74	47
48	Connecting Stations (Incl. Service, Private Line & Subscribing)	4 515 200	xxx xx	[redacted]	[illegible]	xxx xx	[illegible]	48
49	Total	20 098 301	16 42	[illegible]	1 447	xxx xx		49

Date issued January 30, 1931.

Should be issued not later than 20th

† Over

PRINTED IN U.S.A.

C.R 51
Dec 1930

† Capital Stock	a At end of Month	b Increase over last Month	c Increase over Dec. 31 last	d % Increase over Dec. 31
Preferred	110 347 547	[redacted]	[redacted]	[redacted]
Common	1 933 242 143	3 168 200	504 562 400	35 3
Installments	~~111 463 036~~	~~13 310 349~~	~~39 104 974~~	~~54 0~~
Total Capital Stock	2 155 052 726	14 966 849	543 190 474	33 7

a) Rate per annum of Dividends paid for year 1930 to Average Common and Preferred Capital Stock.

† Includes Capital Stock Installments.

Excludes Capital Stock Installments.

* Includes 123.199 stations of Lehigh Tel. Co. and several connecting companies of the Pacific Tel. and Tel. Co. and New England Tel. and Tel. Co. merged in April, June and July.

DEFENDANT'S EXHIBIT 66

FORM S. N. 152 H.
This Copy for
Mr. ....

ASSOCIATED OPERATING COMPANIES

MONTHLY REPORT No.

(Excludes American Tel.and Tel.Co., Long Lines.)
Name of Company.

CONDENSED SUMMARY OF REPORTS FOR DECEMBER, 1919

(The figures on this report are arranged for comparison with previous years and are not in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	ASSETS AND LIABILITIES	a At end of Month	b Increase over last Month	c Increase over Dec. 31 last	d % Increase over Dec. 31	
1	Intangible Capital	27 996 804		1 058 683	3 9	1
2	Physical Property	1 147 638 227		66 020 468	6.1	2
3	Investments	52 417 236		7 869 394	17 7	3
4	Cash and Deposits	13 754 648		[redacted]	1[redacted]	4
5	Receivables, etc.	77 316 388		18 620 601	31 7	5
6	**Total Assets**	1 319 123 303		91 633 018	7 5	6
7	Capital Stock	[illegible] 11[illegible] 728		3 [illegible] [illegible]	[illegible]	7
8	Funded Debt	247 [illegible] 250		26 761 725	12 [illegible]	8
9	Advances from System Corporations	[illegible] [illegible] 17[illegible]		57 [illegible] [illegible]	[illegible]	9
10	Bills Payable	1 774 207		[redacted]	[redacted]	10
11	Other Payables, etc.	80 421 893		2 964 949	3 8	11
12	Reserves for Depreciation	251 054 173		37 331 995	17 5	12
13	Surplus	57 429 911		5 214 475	10 0	13
14	**Total Liabilities**	1 319 123 303		91 638 018	7 5	14

	EARNINGS AND EXPENSES.	e This Month	f Increase over last Month	g 12 Mos. this Year	h Incr. over same Period last Year	i % Increase	
15	Exchange Revenues			257 524 372	35 482 741	16 0	15
16	Toll Revenues			87 681 921	15 871 546	22 1	16
17	**Total Telephone Revenues**			345 206 293	51 354 287	17 5	17
18	Operation Expenses			167 300 690	29 016 765	21 0	18
19	Current Maintenance			50 892 291	8 453 543	19 9	19
20	Depreciation			58 721 578	9 925 680	20 3	20
21	Taxes			21 798 643	2 103 222	10 7	21
22	**Total Telephone Expenses**			298 713 102	49 499 210	19 9	22
23	**Net Telephone Earnings**			46 493 191	1 855 077	4 2	23
24	Sundry Net Earnings			5 646 661	758 675	15 5	24
25	Total Net Earnings			52 139 852	2 613 752	5 3	25
26	Deduct Interest			21 226 448	2 136 299	11 2	26
27	Balance Net Profits			30 913 404	477 453	1 6	27
28	Deduct Dividends (Paid and Accrued)*			34 426 791	1 997 462	6 2	28
29	Undivided Profits			[redacted]	[redacted]	x x	29

30 **Annual Div. Rate-Com.** 6.5 %~~Pref.~~ % **Total Plant per Station**—End of Month 144.69 Dec. 31 last 146.79 30

	AVERAGES.	j This Month	k Last Month	l 12 Mos. This Year	m Same Period last Year	n % Increase over m	
31	Average Plant in Service (Excludes Gen'l Equipment)			1064 049 700	998 682 600	6 5	31
32	Average Number of Company Stations			7 413 440	7 138 912	3 8	32
33	Average Capital Obligations			900 016 700	857 376 800	5 0	33
34	Average Capital Stock (~~Common~~)			528 583 000	499 688 600	5 8	34
35	Av. Mo. Tel. Rev. per Station—Gross			3 880	3 430	13 1	35
36	—Net			523	521	4	36

	PERCENTAGES. (Annual Basis)	o This Month	p Last Month	q 12 Mos. This Year	r Same Period last Year	
37	Total Telephone Revenues to Average Plant in Service	%	%	32.4 %	29.4 %	37
38	Operation Expenses to Telephone Revenues	%	%	48.5 %	47.1 %	38
39	Telephone Expenses to Telephone Revenues	%	%	86.5 %	84.8 %	39
40	Current Maintenance to Average Plant in Service	%	%	4.9 %	4.3 %	40
41	Depreciation to Average Plant in Service (Includes 201)	%	%	5.6 %	5.0 %	41
42	Net Telephone Earnings to Average Plant in Service	%	%	4.4 %	4.5 %	42
43	Total Net Earnings to Average Capital Obligations	%	%	5.8 %	5.8 %	43
44	Bal Net Prof (~~after Pref. Dividend~~) to Ave. ~~Com.~~ Capital Stock	%	%	5.8 %	6.1 %	44

	STATIONS.	s Total at end of Month	t Per 100 Population	u Net Gain this Month	v Net Gain since Dec. 31 last	w Per Cent Expected	x Net Gain Realized	
45	Company Stations	7 686 891	7 1	76 063	538 511	4 2	7 5	45
46	Connecting Stations (Including Service and Private Line)	4 033 601	3 8	5 061	189 998		4 9	46
47	Total	11 720 492	10 9	81 124	728 509		6 6	47
48	Subscribing Stations	74 927	1	[redacted]	1 253	xxxx	1.7	48
49	Independent Stations (Estimated) (Not Including Subscribing)	872 727	8	[redacted]	[redacted]	xxxx	[redacted]	49

Date issued 19
Should be issued not later than 20th.

* Over

....
General Auditor.

† Capital Stock	a. At end of Month	b Increase over last Month	c Increase over Dec. 31 last	d % Increase over Dec. 31
Common	496 148 728		3 536 050	7
Preferred	36 000 000		0	0

* Deduct Dividends (Paid and Accrued)	This Month	f Increase over last Month	g . . . . Mos. this Year	h Incr. over same Period last Year	i % Increase
Common					
Preferred					

CR 51A 12/19

Associated Operating Companies

(Excludes American Tel. and Tel. Co., Long Lines)

Condensed Summary of Reports for December, 1920

	Assets and Liabilities:	(a) At End of Month
1	Intangible Capital	27,919,601
2	Physical Property	1,288,044,589
3	Investments	54,203,547
4	Cash and Deposits	14,636,337
5	Receivables, Etc.	89,164,232
6	Total Assets	1,473,968,306
7	Capital Stock	570,660,192
8	Funded Debt	304,319,675
9	Advances from System Corporations	178,085,815
10	Bills Payable	10,130,141
11	Other Payables, etc.	66,888,771
12	Reserves for Depreciation	281,744,199
13	Surplus	62,139,513
14	Total Liabilities	1,473,968,306

		g. 12 Mos. This Year
23	Net Telephone Earnings	43,361,357
24	Sundry Net Earnings	7,431,943
25	Total Net Earnings	50,793,300
26	Deduct Interest	25,158,987
27	Balance Net Profits	25,634,313
28	Deduct Dividends (Paid and Accrued)*	35,397,626
29	Undivided Profits	9,763,313
30	Annual Div. Rate: Com. 6.6%; Total Plant per Station:	
	End of Month	150.26
	Dec. 31 Last	144.69

	Averages:	l. 12 Mos. This Year
31	Average Plant in Service (Excludes Gen'l Equipment)	1,147,830,100
32	Average Number of Company Stations	8,000,118
33	Average Capital Obligations	982,946,100
34	Average Capital Stock	544,677,100
35	Av. Mo. Tel. Rev. per Station—Gross	4.248
36	—Net	452

	Percentages (Annual Basis):	q. 12 Mos. This Year
37	Total Telephone Revenues to Average Plant in Service	35.5%
38	Operation Expenses to Telephone Revenues	52.7%
39	Telephone Expenses to Telephone Revenues	89.4%
40	Current Maintenance to Average Plant in Service	5.6%
41	Depreciation to Average Plant in Service (Includes 261)	5.3%
42	Net Telephone Earnings to Average Plant in Service	3.8%
43	Total Net Earnings to Average Capital Obligations	5.2%
44	Bal. Net Prof. to Ave. Capital Stock	4.7%

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

[fol. 3754A] CR 51a 12,20

Capital Stock	(a) At End of Month	(b) Increase Over Last Month	(c) Over Dec. 31 Last	(d) Increase Over Dec. 31
Common	534,556,592	....	38,407,864	7.7
Preferred	36,103,600	....	103,600	3

[fol. 3755] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #68

Associated Operating Companies

(Excludes American Tel. and Tel. Co.—Long Lines)

Condensed Summary of Reports for December 1921

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Assets and Liabilities:	(a) At End of Month
1	Intangible Capital	24,740,742
2	Physical Property	1,453,955,125
3	Investments	73,299,100
4	Cash and Deposits	28,697,990
5	Receivables, etc	106,455,881
6	Total Assets	1,687,148,838
7	Capital Stock	668,935,197
8	Funded Debt	402,253,068
9	Advances from System Corporations	147,854,090
10	Bills Payable	989,665
11	Other Payables, etc	77,101,247
12	Reserves for Depreciation	320,065,668
13	Surplus	69,949,903
14	Total Liabilities	1,687,148,838

	Earnings and Expenses:	g. 12 Mos. This Year
23	Net Telephone Earnings	67,791,436
24	Sundry Net Earnings	10,169,226
25	Total Net Earnings	77,960,662
26	Deduct Interest	31,046,265
27	Balance Net Profits	46,914,397
28	Deduct Dividends (Paid and Accrued)	39,515,268
29	Undivided Profits	7,399,129
30	Annual dividend rate (a) 6.7%; Total Plant per Station—	
	At end of Month	159.35
	At Dec. 31 last	150.26

	Averages:	l 12 Mos. This Year
31	Average Plant in Service	1,273,243,400
32	Average Number of Company Stations	8,551,501
33	Average Capital Obligations	1,119,088,000
34	Average Capital Stock	588,777,500
35	Av. Mo. Tel. Rev. per Station—Gross	4,429
36	—Net	661

	Percentages (Annual Basis):	q 12 Mos. This Year
37	Total Telephone Revenues to Average Plant in Service	35.7%
38	Operation Expenses to Telephone Revenues	49.2%
39	Telephone Expenses to Telephone Revenues	85.1%
40	Current Maintenance to Average Plant in Service	5.3%
41	Depreciation to Average Plant in Service (includes 261)	5.2%
42	Net Telephone Earnings to Average Plant in Service	5.3%
43	Total Net Earnings to Average Capital Obligations	7.0%
44	Balance Net Profits to Average Capital Stock	8.0%

[fol. 3756]

CR 51 A

(a) Rate per annum of Dividends paid to Average Capital Stock for Year 1921.

[fol. 3757]

CR 51 A

EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #69

Associated Operating Companies

(Excludes American Tel. and Tel. Co., Long Lines)

Condensed Summary of Reports for December 1922

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Assets and Liabilities:	(a) At end of Month
1	Intangible Capital	24,625,479
2	Physical Property	1,629,166,129
3	Investments	68,566,452
4	Cash and Deposits	24,009,095
5	Receivables, etc	102,513,561
6	Total Assets	1,848,880,716
7	Capital Stock	765,619,097
8	Funded Debt	456,998,444
9	Advances from System Corporations	101,235,737
10	Bills Payable	426,164
11	Other Payables, etc	89,697,475
12	Reserves for Depreciation	361,756,465
13	Surplus	73,147,334
14	Total Liabilities	1,848,880,716

	Earnings and Expenses:	(g) 12 Mos. This Year
23	Net Telephone Earnings	80,928,063
24	Sundry Net Earnings	12,548,746
25	Total Net Earnings	93,476,809
26	Deduct Interest	33,214,939
27	Balance Net Profits	60,261,870
28	Deduct Dividends (Paid and Accrued)	47,983,291
29	Undivided Profits	*12,278,579
30	Annual Dividend Rate, (a) 6.8% Total Plant per Station—	
	At end of Month	$167.36
	At Dec. 31 last	159.35

	Averages:	(l) 12 Mos. This Year
31	Average Plant in Service (Excludes Gen'l Equipment)	1,421,664,000
32	Average Number of Company Stations	9,132,420
33	Average Capital Obligations	*1,270,664,500
34	Average Capital Stock	¢705,135,400
35	Av. Mo. Tel. Rev. per Station—Gross	4,542
36	—Net	738

	Percentages (Annual Basis):	(q) 12 Mos. This Year
37	Total Telephone Revenues to Average Plant in Service	35.0%
38	Operation Expenses to Telephone Revenues	47.0%
39	Telephone Expenses to Telephone Revenues	83.7%
40	Current Maintenance to Average Plant in Service	5.2%
41	Depreciation to Average Plant in Service (Includes 261)	5.3%
42	Net Telephone Earnings to Average Plant in Service	5.7%
43	Total Net Earnings to Average Capital Obligations	7.4%
44	Balance Net Profits to Average Capital Stock	8.5%

[fol. 3758] CR 51A 12/22

a) Rate per annum of Dividends paid for year 1922 to Average Capital Stock.

*Includes revenues held in reserve pending rate decisions as follows:

Michigan State Tel. Co	$629,329
Ohio Bell Tel. Co	155,197
Southern Bell T. and T. Co	167,203
Cumberland Tel. and Tel. Co	411,000
Southwestern Bell Tel. Co	335,877
	$1,698,606

*Includes Capital Stock Installments.

¢Excludes Capital Stock Installments.

[fol. 3759] CR 51A Dec. 1924

EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT *70

Associated Operating Companies

(Excludes American Tel. and Tel. Co., Long Lines)

Condensed Summary of Reports for December 1923.

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Assets and Liabilities:	(a) At end of Month
1	Intangible Capital	$25,640,294
2	Physical Property	1,866,704,382
3	Investments	52,568,548
4	Cash and Deposits	35,925,265
5	Receivables, etc.	105,309,934
6	Total Assets	2,086,148,423
7	Capital Stock	874,798,017
8	Funded Debt	449,949,934
9	Advances from System Corporations	173,395,065
10	Bills Payable	248,294
11	Other Payables, etc.	104,777,473
12	Reserves for Depreciation	405,118,574
13	Surplus	77,861,066
14	Total Liabilities	2,086,148,423

		(g) 12 Mos. This Year
23	Net Telephone Earnings	86,236,025
24	Sundry Net Earnings	12,946,470
25	Total Net Earnings	99,182,495
26	Deduct Interest	33,392,755
27	Balance Net Profits	65,789,740
28	Deduct Dividends (Paid and Accrued)*	57,003,931
29	Undivided Profits	=8,785,809
30	Annual Div. Rate: Com. (a) 7.1%; Pref. (a) 6.5%; Total Plant per Station:	
	End of Month	175,19
	Dec. 31 last	167.36

	Averages:	(l) 12 Mos. This Year
31	Average Plant in Service (Excludes Gen'l Equipment)	1,608,583,800
32	Average Number of Company Stations	9,919,054
33	Average Capital Obligations	¢1,411,249,200
34	Average Capital Stock (Common)	*687,829,200
35	Av. Mo. Tel. Rev. per Station—Gross	4,596
36	—Net	724

	Percentages (Annual Basis):	(q) 12 Mos. This Year
37	Total Telephone Revenues to Average Plant in Service	34.0%
38	Operation Expenses to Telephone Revenues	46.9%
39	Telephone Expenses to Telephone Revenues	84.2%
40	Current Maintenance to Average Plant in Service	5.3%
41	Depreciation to Average Plant in Service (Includes 261)	5.1%
42	Net Telephone Earnings to Average Plant in Service	5.4%
43	Total Net Earnings to Average Capital Obligations	7.0%
44	Bal. Net Prof. (after Pref. Dividend) to Ave. Com. Stock	8.3%

[fol. 3760]

CR 51A Dec. 1923

Capital Stock	(a) At End of Month	(b) Increase over last Month	(c) Increase over Dec. 31 last.	(d) Increase over Dec. 31
Common	738,397,470	14,421,200	95,447,320	14.8
Preferred	136,400,547	2,017,000	13,731,600	11.2

* Deduct Dividends (Paid and Accrued):

	(e) This Month	(f) Increase over last Month	(g) 12 Mos. this Year	(h) Increase over same period last Year	(i) % Increase
Common	4,354,810	124,999	48,571,781	7,116,342	17.2
Preferred	729,885	2,700	8,432,150	1,904,298	29.2

(a) Rate per annum of Dividends paid for year 1923.

= Includes revenues held in reserve pending rate decisions as follows:

Southern Bell Tel. and Tel. Co.	$238,919
Cumberland Tel. and Tel. Co.	178,000
Ohio Bell Telephone Company	22,705

Michigan State Telephone Company	1,337,219
Indiana Bell Telephone Company	200,000
Illinois Bell Telephone Company	460,298
Southwestern Bell Telephone Company	127,698
	2,564,839
Transferred to Employees' Benefit Fund:	
Southern New England Tel. Company	100,000
Southwestern Bell Telephone Company	292,500
	$2,957,339

* Includes Capital Stock Installments.

** Excludes Capital Stock Installments.

[fol. 3761] C. R. 51A Dec. 1924

EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #71

Associated Operating Companies

(Excludes American Tel. and Tel. Co., Long Lines)

Condensed Summary of Reports for December, 1924

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Assets and Liabilities:	(a) At End of Month
1	Intangible Capital	25,866,191
2	Physical Property	2,139,466,453
3	Investments	57,444,499
4	Cash and Deposits	21,207,102
5	Receivables, etc.	132,902,625
6	Total Assets	2,376,886,870
7	Capital Stock	1,046,598,947
8	Funded Debt	486,094,697
9	Advances from System Corporations	206,698,237
10	Bills Payable	365,317
11	Other Payables, etc.	108,613,296
12	Reserves for Depreciation	443,659,830
13	Surplus	84,856,546
14	Total Liabilities	2,376,886,870

		(g) 12 Mos. This Year
24	Net Telephone Earnings	98,720,559
25	Sundry-Net Earnings	11,942,455
26	Total Net Earnings	110,663,014
27	Deduct Interest	37,170,405
28	Balance Net Profits	73,492,609
29	Deduct Dividends (Paid and Accrued)*	68,831,147
30	Undivided Profits	**4,661,462

31 Annual Div. Rate Com., (a) 7.3%; Pref. (a) 6.5%; Total Plant per Station—

End of Month	186.22
December 31 last	175.19

	Averages:	(l) 12 Mos. This Year
32	Average Plant in Service (Excludes Gen'l Equipment)	1,855,663,800
33	Average Number of Company Stations	10,760,121
34	Average Capital Obligations	*1,623,452,700
35	Average Capital Stock (Common)	¢787,458,200
36	Av. Mo. Tel. Rev. per Station—Gross	4,732
	—Net	765

	Percentages (Annual Basis):	(q) 12 Mos. This Year
38	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	32.5%
39	Operation Expenses to Telephone Revenues	46.3%
40	Telephone Expenses to Telephone Revenues	83.8%
41	Current Maintenance to Average Plant in Service	5.1%
42	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	5.0%
43	Net Telephone Earnings to Average Plant in Service	5.3%
44	Total Net Earnings to Average Capital Obligations	6.8%
45	Bal. Net Prof. (after Pref. Dividend) to Ave. Com. Stock	7.9%

[fol. 3762]

CR 51A Dec. 1924

Capital Stock	(a) At end of Month	(b) Increase over last month	(c) Increase over Dec. 31, last	(d) % Increase over Dec. 31
Common	862,206,200	37,000,000	123,808,730	16.8
Preferred	184,392,747	70,700	47,992,200	35.2

* Deduct Dividends (Paid and Accrued)

	(e) This Month	(f) Increase over last month	(g) 12 Mos. this Year	(h) Incr. over same period last year	(i) % Increase
Common	7,082,210	2,217,833	57,796,437	9,224,656	19.0
Preferred	987,494	***937	11,034,710	2,602,560	30.9

(a) Rate per annum of Dividends paid for year 1924 to Average Common and Preferred Capital Stock.

** Includes:

Revenues held in reserve pending rate decision— Illinois Bell Tel. Co.		$1,788,585
Transferred to Employees' Benefit Fund:		
Southern New England Tel. Co.	$100,000	
Chesapeake and Potomac Tel. Co.	107,049	
Cinn. and Subn. Bell Tel. Co.	150,000	
Wisconsin Telephone Company	189,070	
Southwestern Bell Tel. Co.	593,550	
		1,139,669
Grand Total		$2,928,254

* Includes Capital Stock Installments.
¢ Excludes Capital Stock Installments.
***Red Figures.

[fol. 3763]

CR 51A

EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #72

Associated Operating Companies

(Excludes American Tel. and Tel. Co., Long Lines Dept.)

Condensed Summary of Reports for December 1925

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Assets and Liabilities:	(a) At End of Month
1	Intangible Capital	15,851,866
2	Physical Property	2,397,536,299
3	Investments	55,944,704
4	Cash and Deposits	23,170,996
5	Receivables, etc.	130,835,814
6	Total Assets	2,623,339,679
7	Capital Stock	1,184,839,997
8	Funded Debt	504,568,895
9	Advances from System Corporations	233,046,522
10	Bills Payable	672,000
11	Other Payables, etc.	119,318,932
12	Reserves for Depreciation	484,783,901
13	Surplus	96,109,432
14	Total Liabilities	2,623,339,679

	Earnings and Expenses:	g 12 Mos. This Year
24	Net Telephone Earnings	126,657,601
25	Sundry Net Earnings	10,099,471
26	Total Net Earnings	136,757,072
27	Deduct Interest	39,440,986
28	Balance Net Profits	97,316,086
29	Deduct Dividends (Paid and Accrued)—	
30	Preferred	11,897,002
	Common	68,519,430
31	Total Dividends	80,416,432
32	Undivided Profits	16,899,654

33 Annual Div. Rate: Com., (a) 7.4%; Pref., (a) 6.4%; Total Plant per Station—

	End of Month	194.26
	Dec. 31, last	186.22

	Averages:	l 12 Mos. This Year
34	Average Plant in Service (Excludes Gen'l Equipment)	2,133,656,400
35	Average Number of Company Stations	11,556,173
36	Average Capital Obligations	*1,816,831,500
37	Average Capital Stock (Common)	#925,062,600
38	Av. Mo. Tel. Rev. per Station—Gross	4,961
	—Net	913

	Percentages (Annual Basis):	q 12 Mos. This Year
40	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	31.8%
41	Operation Expenses to Telephone Revenues	43.8%
42	Telephone Expenses to Telephone Revenues	81.6%
43	Current Maintenance to Average Plant in Service	4.9%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	5.0%
45	Net Telephone Earnings to Average Plant in Service	5.9%
46	Total Net Earnings to Average Capital Obligations	7.5%
47	Bal. Net. Prof. (after Pref. Dividend) to Av. Com. Stock	9.2%

[fol. 3764]

CR 51A Dec. 1925

Capital Stock	(a) At End of Month	(b) Increase over last Month	(c) Increase over Dec. 31 last	(d) %Increase over. Dec. 31
Preferred	185,344,247	3,900	951,500	.5
Common	999,312,400	37,859,750	137,106,200	15.9
Installments	183,350	7,314,475**	183,350	x
Total Capital Stock.	1,184,839,997	30,549,175	138,241,050	13.2

(a) Rate per annum of Dividends paid for year 1925 to Average Common and Preferred Capital Stock.

* Includes Capital Stock Installments.
# Excludes Capital Stock Installments.
¢ Connecting Stations have been adjusted for natural growth.
** Red figures.

[fol. 3765]

CR 51 A

Extracts from Exhibit Deposition Exhibit #73

Associated Operating Companies

(Excludes American Tel. and Tel. Co., Long Lines Dept.)

Condensed Summary of Reports for December 1926.

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Assets and Liabilities:	(a) At end of Month
1	Intangible Capital	17,407,344
2	Physical Property	2,627,389,976
3	Investments	69,676,465
4	Cash and Deposits	21,899,367
5	Receivables, etc	131,997,174
6	Total Assets	2,868,370,326
7	Capital Stock	1,331,879,812
8	Funded Debt	538,133,600
9	Advances from System Corporations	217,523,078
10	Bills Payable	863,075
11	Other Payables, etc	140,063,531
12	Reserves for Depreciation	524,390,081
13	Surplus	115,517,149
14	Total Liabilities	2,868,370,326

	Earnings and Expenses:	g 12 Mos. This Year
24	Net Telephone Earnings	150,489,304
25	Sundry Net Earnings	8,979,851
26	Total Net Earnings	159,469,155
27	Deduct Interest	38,609,633
28	Balance Net Profits	120,859,522
	Deduct Dividends (Paid & Accrued)—	
29	Preferred	12,103,216
30	Common	84,803,779
31	Total Dividends	96;906,995
32	Undivided Profits	23,952,527
33	Annual Div. Rate-Com. (a) 7.7% Pref. (a) 6.4% Total Plant per Station—	
	End of Month	200.96
	Dec. 31 last	194.96

	Averages:	l 12 Mos. This Year
34	Average Plant in Service (Excludes Gen'l Equipment)	2,394,713,000
35	Average Number of Company Stations	12,355,747
36	Average Capital Obligations	*1,993,864,500
37	Average Capital Stock (Common)	#1,100,879,800
38	Av. Mo. Tel. Rev. per Station—Gross	5,172
39	—Net	1,015

	Percentages (Annual Basis):	q 12 Mos. This Year
40	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	31.5%
41	Operation Expenses to Telephone Revenues	41.8%
42	Telephone Expenses to Telephone Revenues	80.4%
43	Current Maintenance to Average Plant in Service	4.9%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	4.9%
45	Net Telephone Earnings to Average Plant in Service	6.3%
46	Total Net Earnings to Average Capital Obligations	8.0%
47	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock	9.9%

[fol. 3766]

R 51 A

Capital Stock	(a) At End of Month	(b) Increase Over Last Month	(c) Increase Over Dec. 31 Last	(d) % Increase Over Dec. 31
Preferred	189,182,347	59,500	3,838,100	2.1
Common	1,141,988,100	13,500,000	142,675,700	14.3
Installments	709,365	27,707	526,015	x
Total Capital Stock	1,331,879,812	13,937,207	147,039,815	12.4

(a) Rate per annum of Dividends paid for year 1926 to Average Common and Preferred Capital Stock.

* Includes Capital Stock Installments.

# Excludes Capital Stock Installments.

CR 51 A

[fol. 3767]

EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #74

Associated Operating Companies

(Excludes American Tel. and Tel. Co., Long Lines Dept.)

Condensed Summary of Reports for December 1927

		(a) At End of Month
	Assets and Liabilities:	
1	Intangible Capital	17,299,811
2	Physical Property	2,873,929,310
3	Investments	68,960,222
4	Cash and Deposits	23,326,933
5	Receivables, etc	134,752,217
6	Total Assets	3,118,268,493
7	Capital Stocks	1,515,387,147
8	Funded Debt	537,386,800
9	Advances from System Corporations	202,687,019
10	Bills Payable	6,421,889
11	Other Payables, etc	149,680,003
12	Reserves for Depreciation	565,774,463
13	Surplus	140,931,172
14	Total Liabilities	3,118,268,493

		(g) 12 Mos. This Year
	Earnings and Expenses:	
24	Net Telephone Earnings	160,549,619
25	Sundry Net Earnings	9,414,212
26	Total Net Earnings	169,963,831
27	Deduct Interest	41,773,071
28	Balance Net Profits	128,190,760
	Deduct Dividends (Paid & Accrued)	
29	Preferred	12,232,410
30	Common	93,535,299
31	Total Dividends	105,767,709
32	Undivided Profits	22,423,051
33	Annual Div. Rate. Com. (a) 7.8% Pref. (a) 6.4% Total	
	Plant per Station—	
	End of Month	205.58
	Dec. 31 last	199.26

		(l) 12 Mos. This Year
	Averages:	
34	Average Plant in Service (Excludes Gen'l Equipment)	2,619,193,700
35	Average Number of Company Stations	13,265,697
36	Average Capital Obligations	2,145,043,500
37	Average Capital Stock (Common)	1,203,913,600
38	Av. Mo. Tel. Rev. per Station—Gross	5,244
39	—Net	1,009

	Percentages (Annual Basis):	(q) 12 Mos. This Year
40	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	31.3%
41	Operation Expenses to Telephone Revenues	41.6%
42	Telephone Expenses to Telephone Revenues	80.[illegible]%
43	Current Maintenance to Average Plant in Service	4.9%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	4.9%
45	Net Telephone Earnings to Average Plant in Service	6.1%
46	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock	9.6%

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

[fol. 3768] C R 51 A

Capital Stock	(a) At End of Month	(b) Increase over Last Month	(c) Increase Over Dec. 31 Last	(d) % Increase Over Dec. 31
Preferred	190,125,447	10,000	943,100	.5
Common	1,325,238,800	83,000,000	183,250,700	16.0
Installments	22,900	10,510	686,465**	x
Total Capital Stock	1,515,387,147	83,020,510	183,507,335	13.8

(a) Rate per annum of Dividends paid for year 1927 to Average Common and Preferred Capital Stock.

Includes Capital Stock Installments.

¢ Excludes Capital Stock Installments.

[fol. 3769] CR 51A

EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #75

Associated Operating Companies

(Excludes American Tel. and Tel. Co., Long Lines Dept.)

Condensed Summary of Reports for December, 1928

	Assets and Liabilities:	(a) At End of Month
1	Intangible Capital	16,378,827
2	Physical Property	3,100,043,913
3	Investments	72,872,576
4	Cash and Dsposits and Temporary Investments	29,462,758
5	Receivables, etc.	143,074,867
6	Total Assets	3,361,832,941
7	Capital Stock	1,660,216,712
8	Funded Debt	533,618,470
9	Advances from System Corporations	189,618,872
10	Bills Payable	44,625,018
11	Other Payables, etc.	139,350,297
12	Reserves for Depreciation	608,667,129
13	Surplus	185,736,443
14	Total Liabilities	3,361,832,941

	Earnings and Expenses:	(g) 12 Mos. This Year
24	Net Telephone Earnings	184,577,988
25	Sundry Net Earnings	9,637,064
26	Total Net Earnings	194,215,052
27	Deduct Interest	40,127,942
28	Balance Net Profits	154,087,110
29	Deduct Dividends (Paid and Accrued)—	
	Preferred	12,243,464
	Common	109,453,671
31	Total Dividends	121,697,135
32	Undivided Profits	32,389,975
33	Annual Div. Rate: Com., (a) 7.9%; Pref., (a) 6.4%; Total Plant per Station—	
	End of Month	209.34
	Dec. 31 last	205.58

	Averages:	1 12 Mos. This Year
34	Average Plant in Service (Excludes Gen'l Equipment)	2,853,893,600
35	Average Number of Company Stations	14,010,872
36	Average Capital Obligations	#2,314,342,700
37	Average Capital Stock (Common)	¢1,391,772,500
38	Av. Mo. Tel. Rev. per Station—Gross	5,357
39	—Net	1,098

	Percentages (Annual Basis):	q 12 Mos. This Year
40	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	31.0%
41	Operation Expenses to Telephone Revenues	39.5%
42	Telephone Expenses to Telephone Revenues	79.5%
43	Current Maintenance to Average Plant in Service	5.0%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	5.0%
45	Net Telephone Earnings to Average Plant in Service	6.5%
46	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock	10.2%

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interestate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

[fol. 3770]

CR 51 Dec. 1928

	(a) At End of Month	(b) Increase over last Month	(c) Increase over Dec. 31 last	(d) % Increase over Dec. 31
Preferred	190,247,047	4,000	121,600	.1
Common	1,469,963,150	50,501,000	144,724,350	10.9
Installments	6,515	***2,405	***16,385	***71.6
Total Capital Stock	1,660,216,712	50,502,595	144,829,565	9.6

(a) Rate per annum of dividends paid for year 1928 to Average Common and Preferred Capital Stock.

Includes Capital Stock Installments.

¢ Excludes Capital Stock Installments.

*** Red figures.

[fol. 3771]

CR 51A

EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #76

Associated Operating Companies

(Excludes American Tel. and Tel. Co., Long Lines Dept.)

Condensed Summary of Reports for December, 1929

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Assets and Liabilities:	(a) At End of Month
1	Intangible Capital	15,198,389
2	Physical Property	3,431,041,856
3	Investments	77,861,084
4	Cash and Deposits and Temporary Investments	29,474,631
5	Receivables, etc.	150,018,362
6	Total Assets	3,703,594,322
7	Capital Stock	1,750,200,297
8	Funded Debt	561,955,909
9	Advances from System Corporations	304,395,933
10	Bills Payable	57,617,672
11	Other Payables, etc.	160,742,660
12	Reserves for Depreciation	649,046,715
13	Surplus	219,635,136
14	Total Liabilities	3,703,594,322

	Earnings and Expenses:	g 12 Mos. This Year
24	Net Telephone Earnings	202,149,729
25	Sundry Net Earnings	10,138,978
26	Total Net Earnings	212,288,707
27	Deduct Interest	47,094,310
28	Balance Net Profits	165,194,397
	Deduct Dividends (Paid and Accrued)—	
29	Preferred	12,246,315
30	Common	117,878,032
31	Total Dividends	130,124,347
32	Undivided Profits	35,070,050
33	Annual Div. Rate: Com., (a) 7.9%; Pref., (a) 6.4%; Total Plant per Station—	
	End of Month	217.75
	Dec. 31 last	209.34

	Averages:	l 12 Mos. This Year
34	Average Plant in Service (Excludes Gen'l Equipment)	3,099,527,900
35	Average Number of Company Stations	14,892,177
36	Average Capital Obligations	2,530,243,200
37	Average Capital Stock (Common)	1,497,903,900
38	Av. Mo. Tel. Rev. per Station—Gross	5,505
39	—Net	1,131

	Percentages (Annual Basis)	12 Mos. This Year
40	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	31.12%
41	Operation Expenses to Telephone Revenues	39.41%
42	Telephone Expenses to Telephone Revenues	79.45%
43	Current Maintenance to Average Plant in Service	5.34%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	4.83%
45	Net Telephone Earnings to Average Plant in Service	6.52%
46	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock	10.21%

[fol. 3772]

CR 51A

Capital Stock	(a) At End of Month	(b) Increase over last Month	(c) Increase over Dec. 31 last	(d) %Increase over Dec. 31
Preferred	190,256,147	0	9,100	0
Common	1,539,890,050	24,860,400	69,926,900	4.8
Installments	20,054,100	55,875	20,047,585	x
Total Capital Stock	1,750,200,297	24,916,275	89,983,585	5.4

(a) Rate per annum of Dividends paid for Year 1929 to Average Common and Preferred Capital Stock.

¢ Includes Capital Stock Installments.

# Excludes Capital Stock Installments.

[fol. 3773]

CR 51A

EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #77

Associated Operating Companies

(Excludes American Tel. and Tel. Co., Long Lines Dept.)

Condensed Summary of Reports for December, 1930

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Assets and Liabilities:	(a) At End of Month
1	Intangible Capital	13,325,904
2	Physical Property	3,709,280,965
3	Investments	91,243,102
4	Cash and Deposits and Temporary Investments	30,258,411
5	Receivables, etc.	154,205,679
6	Total Assets	3,998,314,061
7	Capital Stock	1,968,141,347
8	Funded Debt	571,196,727
9	Advances from System Corporations	319,873,940
10	Bills Payable	72,458,082
11	Other Payables, etc.	150,200,852
12	Reserves for Depreciation	681,859,226
13	Surplus	234,583,887
14	Total Liabilities	3,998,314,061

	Earnings and Expenses:	g 12 Mos. This Year
24	Net Telephone Earnings	199,067,989
25	Sundry Net Earnings	12,221,932
26	Total Net Earnings	211,289,921
27	Deduct Interest	51,666,774
28	Balance Net Profits	159,623,147
	Deduct Dividends (Paid & Accrued)	
29	Preferred	12,246,439
30	Common	128,662,579
31	Total Dividends	140,909,018
32	Undivided Profits	18,714,129
33	Annual Div. Rate-Com. (a) 7.58% Pref. (a) 6.44% Total Plant per Station—	
	End of Month	232.29
	Dec. 31 last	217.75

	Averages	l 12 Mos. This Year
34	Average Plant in Service (Excludes Gen'l Equipment)	3,407,192,400
35	Average Number of Company Stations	15,516,088
36	Average Capital Obligations	¢2,811,682,300
37	Average Capital Stock (Common)	#1,696,920,900
38	Av. Mo. Tel. Rev. per Station —Gross	5,471
39	—Net	1,069

	Percentages (Annual Basis):	q 12 Mos. This Year
40	Total Tel. Rev. (Except Adv. & Dir) to Av. Plant in Service	29.29%
41	Operation Expenses to Telephone Revenues	38.94%
42	Telephone Expenses to Telephone Revenues	80.46%
43	Current Maintenance to Average Plant in Service	5.16%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix	4.81%
45	Net Telephone Earnings to Average Plant in Service	5.84%
46	Bal. Net Prof. (after pref. Dividend) to Av. Com. Stock	8.68%

[fol. 3774]

CR 51 A

Capital Stock	(a) At End of Month	(b) Increase Over Last Month	(c) Increase Over Dec. 31 Last	(d) Increase Over Dec. 31
Preferred	190,256,147	0	0	0
Common	1,777,885,200	30,400	237,995,150	15.5
Installments	0	**900	**20,054,100	**100.0
Total Capital Stock	1,968,141,347	29,500	217,941,050	12.5

a) Rate per annum of Dividends paid for year 1930 to Average Common and Preferred Capital Stock.

¢ Includes Capital Stock Installments.

Excludes Capital Stock Installments.

* Includes 123,199 stations of Lehigh Tel. Co. and several connecting companies of the Pacific Tel. and Tel. Co. and New England Tel. and Tel. Co. merged in April, June and July.

[fol. 3775] Dep. Ex. 104

$125,000,000

(Total Issue)

American Telephone and Telegraph Company Thirty-Five Year Sinking Fund 5% Gold Debentures

Dated January 1, 1925. Due January 1, 1960

Issued under Indenture dated January 1, 1925, Central Union Trust Company of New York, Trustee

Interest payable January 1 and July 1 in New York or Boston

Redeemable in whole or in part at the option of the Company at 110% and accrued interest on any interest date on or prior to July 1, 1956; thereafter at 100% and accrued interest.

A Sinking Fund of $1,250,000 annually is to be set aside in equal semi-annual installments beginning July 1, 1925, such Fund to be used in purchasing Debentures of this issue if obtainable at not exceeding 102½% and accrued interest; otherwise, to be used for capital expenditures.

Coupon Debentures in denominations of $1,000, $500 and $100, registerable as to principal. Registered Debentures in denominations of $1,000, $5,000 and $10,000. Coupon Debentures and registered Debentures, and the several denominations, interchangeable

H. B. Thayer, Esq., President of the American Telephone and Telegraph Company, has summarized as follows his letter to us stating the particulars in regard to this issue:

Assets.—The total assets of the American Telephone and Telegraph Company on September 30, 1924, were carried on its books at more than $1,463,000,000, based upon valuations which are distinctly conservative. All the property of the Company is free from lien, except that stocks and bonds having a book value of about $257,000,000 have been pledged under Indentures securing Collateral Trust Bonds.

Equity.—Since the end of 1920, the relation between funded debt and capital stock of the American Telephone and Telegraph Company has changed materially, due chiefly to the sale to stockholders of large amounts of capital stock. After giving effect to the present issue of Debentures, the Company's funded debt will have increased less than $81,000,000 since December 31, 1920, whereas capital stock (including installments) has increased by over $457,000,000. Funded debt, giving effect to this financing, will be less than $400,000,000, while capital stock amounts to more than $900,000,000. Thus, funded debt will comprise only about 30% of the Company's total capital liabilities (as compared with 42% on December 31, 1920) and will amount to little more than 25% of the book value of the Company's total assets.

Earnings.—

Year ended December 31	Net Earnings Available for Interest	Interest	Net Income	Number of Times Interest was Earned
1914	$40,557,977	$8,223,163	$32,334,814	4.9
1915	41,117,487	6,498,850	34,618,637	6.3
1916	44,743,376	6,730,099	38,013,277	6.6
1917	48,940,466	10,469,360	38,471,106	4.7
1918	54,293,017	10,391,695	43,901,322	5.2
1919	60,243,387	15,847,596	44,395,791	3.8
1920	70,686,904	18,865,688	51,821,216	3.7
1921	73,523,813	19,521,109	54,002,704	3.8
1922	81,668,440	15,498,012	66,170,428	5.3
1923	95,389,918	13,697,737	81,692,181	6.9

During this ten-year period, net earnings available for interest averaged more than 4½ times interest charges, and in each one of these years they have exceeded 3½ times interest charges. It is estimated that for the year 1924 net earnings available for interest were in excess of $105,000,000, which is more than six times the estimated interest charges during 1924 and more than five times the annual interest charges on the Company's total funded debt to be outstanding after the issue of these Debentures, without regard to the earnings which will be derived immediately from the investment of the proceeds of this issue.

Divided Record.—Dividends on the capital stock of the Company and of its predecessor have been paid at the rate of at least $7.50 per share in each of the past 43 years. For approximately 15 years, ended in 1921, the rate was $8 per share annually; since then, $9 per share per annum has been paid.

Provisions.—In the Indenture under which these Debentures are to be issued, the Company will covenant that it will not mortgage any of its telephone lines or plant unless it shall secure these Debentures by stocks or bonds of its telephone operating companies, and that it will not pledge (with certain exceptions and limitations with respect to its outstanding Collateral Trust Bonds) any stocks or bonds of its telephone operating companies unless it shall either secure these Debentures as above stated, or ratably with any other obligations secured by such pledge. In either case, the Company shall keep so pledged stocks or bonds of a value which shall be equal at all times to 133⅓% of the principal of the debt secured thereby. Any such collateral so to be pledged shall be similar in character to that required for the security of the Company's 30-Year Collateral Trust 5% Bonds of 1946. The provisions for valuation and substitution of stocks and bonds so pledged shall be similar to the corresponding provisions in respect of the collateral securing the above-mentioned 5% Bonds of 1946.

Purpose of Issue.—The proceeds of these Debentures will be used to provide the Bell Telephone System with funds for additions and betterments and for other capital expenditures, it being the intention of the American Telephone and Telegraph Company to utilize the greater part of these proceeds in making loans to its Associated Companies or in acquiring their securities.

The above debentures are offered for subscription, subject to the conditions stated below, at 95% and accrued interest, to yield over 5.30%.

Subscription books will be opened at the office of J. P. Morgan & Co. at 10 o'clock A. M., Thursday, January 8, 1925, and will be closed in their discretion. The right is reserved to reject any and all applications, and also, in any case, to award a smaller amount than applied for.

All subscriptions received are to be subject to the issue of the Debentures as planned, and to approval by counsel of the form and validity of the documents and proceedings.

The amounts due on allotments will be payable at the office of J. P. Morgan & Co., in New York funds to their order, and the date of payment (on or about January 22, 1925) will be stated in the notices of allotment. Temporary Debentures or J. P. Morgan & Co. Interim Receipts, exchangeable for definitive Debentures when received from the Company, will be delivered.

J. P. Morgan & Co. Kuhn, Loeb & Co. Kidder Peabody & Co. First National Bank, New York. The National City Company. Bankers Trust Company, New York. Guaranty Company of New York. Harris, Forbes & Co. Lee, Higginson & Co.

New York, January 8, 1925.

[fol. 3776] American Telephone and Telegraph Company

Telephone and Telegraph Building

195 Broadway

H. B. Thayer, President

New York, January 7, 1925.

Messrs. J. P. Morgan & Co., 23 Wall Street, New York, N. Y.

Dear Sirs: With reference to the issue of $125,000,000 Thirty-Five Year Sinking Fund 5% Gold Debentures of the American Telephone and Telegraph Company, I beg to give you the following information regarding the business of the Company ~~and this~~ issue of Debentures:

The proceeds of these Debentures will be used to provide the Bell Telephone System with funds for additions and betterments and for other capital expenditures. The American Telephone and Telegraph Company is the parent Company of the Bell System and, among other functions, serves as a financing agency for the System. In this capacity, it makes loans to its Associated Companies or acquires their securities, and the greater part of the proceeds of this issue will be so utilized.

The total assets of the American Telephone and Telegraph Company on September 30, 1924, were carried on its books at more than $1,463,000,000. Stocks and bonds of associated and affiliated companies, carried at valuations which are distinctly conservative, amount to more than

$954,000,000, and the Company's long distance telephone plant, telephone instruments and real estate have a book cost of over $186,000,000. All the property of the Company is free from lien, except that stocks and bonds having a book value of about $257,000,000 have been pledged under Indentures securing Collateral Trust Bonds, which are now outstanding in the amount of approximately $161,000,000.

Since the end of 1920, the relation between funded debt and capital stock of the American Telephone and Telegraph Company has changed materially, due chiefly to the sale to stockholders of large amounts of capital stock. The most recent sale, that of June, 1924, was of $150,000,000 stock at par, believed to be the largest operation of its kind ever carried out, and resulting in 193,000 subscriptions averaging about 7.7 shares each. After giving effect to the present issue of Debentures, the Company's funded debt will have increased less than $81,000,000 since December 31, 1920, whereas capital stock (including installments) has increased by over $457,000,000. Funded debt, giving effect to this financing, will be less than $400,000,000, while capital stock amounts to more than $900,000,000. Thus, funded debt will comprise only about 30% of the Company's total capital liabilities (as compared with 42% on December 31, 1920) and will amount to little more than 25% of the book value of the Company's total assets.

The net earnings of the American Telephone and Telegraph Company available for interest, its interest charges, and its net income during the past ten years, have been as follows:

Year Ended December 31	Net Earnings Available for Interest	Interest	Net Income	Number of Times Interest was Earned
1914	$40,557,977	$ 8,223,163	$32,334,814	4.9
1915	41,117,487	6,498,850	34,618,637	6.3
1916	44,743,376	6,730,099	38,013,277	6.6
1917	48,940,466	10,469,360	38,471,106	4.7
1918	54,293,017	10,391,695	43,901,322	5.2
1919	60,243,387	15,847,596	44,395,791	3.8
1920	70,686,904	18,865,688	51,821,216	3.7
1921	73,523,813	19,521,109	54,002,704	3.8
1922	81,668,440	15,598,012	66,170,428	5.3
1923	95,389,918	13,697,737	81,692,181	6.9

During this ten-year period, net earnings available for interest averaged more than 4½ times interest charges, and in each one of these years they have exceeded 3½ times interest charges. It is estimated that for the year 1924 net earnings available for interest were in excess of $105,000,000, which is more than six times the estimated interest charges during 1924 and more than five times the annual interest charges on the Company's total funded debt to be outstanding after the issue of these Debentures, without regard to the earnings which will be derived immediately from the investment of the proceeds of this issue.

Dividends on the capital stock of the Company and of its predecessor have been paid at the rate of at least $7.50 per share in each of the past 43 years. For approximately 15 years, ended in 1921, the dividend rate was $8 per share annually; since then, $9 per share per annum has been paid. During this entire period, net income in each year has been larger than dividend payments, leaving a balance annually for surplus.

The American Telephone and Telegraph Company owns directly or indirectly more than 90% of the voting stock of its 25 associated operating companies, and nearly all the voting stock of the Western Electric Company, Incorporated, which is the manufacturing, supply and warehousing organization for the Bell Telephone System. It also owns and operates directly the long-distance telephone plant which, with more than 1,300,000 miles of toll wire, joins together the systems of the local telephone companies [fol. 3777] and makes a nation-wide service possible. Under contract with its Associated Companies, it furnishes and maintains the telephone instruments used by them and performs for these companies important services in the fields of research and development work, as well as providing assistance and advice along engineering, operating, financial, accounting, and other lines, all of which services are essential to the operation and continued success of the Bell System. The Company owns, controls or is licensed under more than 7,500 U. S. letters patent and applications covering every phase of the telephone business. The Company's statement of assets does not include any valuation of these patents.

The Bell Telephone System, which furnishes telephone service throughout the United States, comprised at the end of December, 1924, more than 15,850,000 telephone stations, of which more than 11,200,000 were owned by the Associated Companies of the System and the remainder by their connecting companies. The business of the System continues to grow steadily (about 800,000 stations having been added in 1924) in response to the urgent demands of the public for increased telephone service. It is a business dependent on no single industry, community or class of population. The service provided is nation-wide, reaching all industries and all classes. It is an essential service, worth much more to the subscriber than it costs him, and it has become indispensable to the economic and social life of the nation.

The business and financial policy of the Bell Telephone System has always been conservative. High standards of plant construction and maintenance have been adhered to, and adequate provision has been made from current revenues for depreciation and obsolescence. The capital structure of the System is conservative. The capital stock and obligations outstanding in the hands of the public on September 30, 1924, amounted to approximately $1,832,000,000, of which capital stock (and installments) comprised over $1,073,000,000, or more than 58%. The book value of the net assets devoted to earning interest and dividends amounted, on the same date, to over $2,517,000,000, or more than 137% of the total capital liabilities of the System on which interest and dividends are paid. The excess of net assets over total capital liabilities (including stock), about $684,000,000, represents the combined surplus and reserves of the American Telephone and Telegraph Company and of its Associated Companies, accumulated over a long period of years and invested in the properties of the Companies. This is a factor which contributes in a very large measure to the great financial strength of the Bell Telephone System.

The Thirty-Five Year Sinking Fund 5% Gold Debentures of the American Telephone and Telegraph Company are to be issued under an indenture with Central Union Trust Company of New York, as Trustee, in which Indenture the Company will covenant that it will not mortgage any of its telephone lines or plant unless it shall secure these Debentures by pledge, with the Trustee under the Indenture under which these Debentures are issued, of stocks or bonds of its telephone operating companies, and that it will not pledge (with certain exceptions and limitations set forth in the Indenture with respect to its outstanding Collateral Trust Bonds) any stocks or bonds of its telephone operating companies unless it shall either secure these Debentures by pledge with the Trustee as above stated, or secure them ratably with the other obligations secured by such pledge. In either case, the Company shall keep so pledged stocks or bonds of a value which shall be equal at all times to 133⅓% of the principal of the debt secured thereby. Any such collateral required so to be pledged shall be similar in character to that required for the security of the Company's 30-Year Collateral Trust 5% Bonds of 1946. The provisions for valuation and substitution of stocks and bonds so plelged shall be similar to the corresponding provisions in respect of the collateral securing the Company's above-mentioned 5% Bonds of 1946.

The Indenture will provide for sinking fund payments to a Trustee at the rate of $1,250,000 annually, payable in equal semi-annual installments beginning July 1, 1925, such payments to be used in purchasing Debentures of this issue if obtainable at not exceeding 102½% and accrued interest; otherwise to be used for capital expenditures against which no debt obligations of the Company may be issued.

The Debentures are to be limited to the present issue of $125,000,000. They are to be dated January 1, 1925, are to mature January 1, 1960, and are to bear interest at the rate of 5% per annum, payable semi-annually January 1 and July 1 in each year, at the office or agency of the Company in New York City or in Boston at the option of the holder. The Debentures are to be issued in coupon form, registerable as to principal, in denominations of $1,000, $500 and $100, and in fully registered form in denominations of $1,000, $5,000 and $10,000, the coupon Debentures and the registered Debentures and the several denominations of each to be interchangeable. They may be redeemed at the option of the Company, in whole or in part, upon sixty days' notice, on any interest date at the following prices with accrued interest: If on or prior to July 1, 1956, at 110%, and if subsequent to July 1, 1956, at par.

Application for the listing of these Debentures on the New York Stock Exchange will be made by the Company in due course.

Yours very truly, H. B. Thayer, President.

[fol. 3778] American Telephone and Telegraph Company

Balance Sheet—September 30, 1924

Assets

Stocks of Associated Companies	$846,983,531
Bonds and Notes of and Net Advances to Associated Companies	200,764,026
Stocks and Notes of and Advances to Other Companies	100,886,983
Telephone Plant and Equipment	171,451,399
Real Estate, Furniture and Fixtures	15,490,689
Bills and Accounts Receivable	10,990,877
Cash and Temporary Investments	116,689,876
Total	$1,463,257,381

Liabilities

Capital Stock (Including Installments)	$900,095,485
4% Collateral Trust Bonds 1929	$ 78,000,000
5% Collateral Trust Bonds 1932 (Western Tel. and Tel. Co.)	9,969,000
5% Collateral Trust Bonds 1946	73,205,000
5½% Debenture Bonds 1943	99,507,400
6% Convertible Bonds 1925	5,951,100
4½% Convertible Bonds 1933	3,723,200
4% Convertible Bonds 1936	2,589,000
Total Funded Debt	$272,944,700
Dividend Payable*	$19,831,268
Accounts Payable and Accrued Liabilities Not Due	42,642,924
Reserve for Employees' Benefit Fund	5,940,182
Reserve for Depreciation and Contingencies	79,152,148
Surplus (Including Capital Stock Premiums)	142,650,674
Total	$1,463,257,381

*Paid October 15, 1924.

Bell System Balance Sheet—September 30, 1924

(All Inter-Company Duplications Excluded)

Assets

Telephone Plant	$2,187,545,350
Supplies, Tools, etc.	65,022,583
Stocks and Bonds	150,980,175
Receivables	93,715,286
Cash and Temporary Cash Investments	137,375,491
Total	$2,634,638,885

Liabilities

Capital Stock (Including Installments)	
Common—	
American Tel. and Tel. Company	$900,095,485
Associated Companies	72,671,143
Preferred	
Associated Companies	100,607,747
Total Capital Stock	$1,073,374,375
Funded Debt	
Mortgage Bonds (Associated Companies)	161,537,200
Collateral Trust Bonds	161,537,200
Convertible Bonds and Notes	12,344,100
Debentures and Notes	99,628,400
Total Funded Debt	$759,204,174
Bills Payable	180,217
Total Capital Liabilities	$1,832,758,766
Accounts Payable	47,684,220
Accrued Liabilities Not Due	69,702,707
Reserve for Employees' Benefit Fund	20,460,137
Surplus and Reserves	664,033,055
Total	$2,634,638,885

[fol. 3779] Dep. Ex. 105

$100,000,000

(Total Issue)

American Telephone and Telegraph Company

Twenty-year sinking fund 5½% gold debenture bonds

Dated November 1, 1923. Due November 1, 1943

Issued under Indenture dated November 1, 1923, Bankers Trust Company, New York, Trustee

Interest payable May 1, and November 1 in New York or Boston

Redeemable in whole or in part at the option of the Company at 110% and accrued interest on any interest date on or prior to May 1, 1941; thereafter at 100 and accrued interest.

A Sinking Fund of $1,000,000 annually is to be set aside in semi-annual installments beginning May 1, 1924, such Fund to be used in purchasing Debentures of this issue if obtainable at not exceeding 105% and accrued interest; otherwise, to be used for capital expenditures.

Coupon Debentures in Denominations of $1,000, $500 and $100, registerable as to principal. Registered Debentures in denominations of $1,000, $5,000 and $10,000. Coupon Debentures and registered Debentures, and the several denominations, interchangeable

H. B. Thayer, Esq., President of the American Telephone and Telegraph Company, has summarized as follows his letter to us stating the particulars in regard to this issue:

Purpose of issue.—The proceeds of these Debentures are to be used to retire $40,000,000 Five-Year 6% Notes, due February 1, 1924, and to provide the Bell Telephone System with funds for additions and betterments and for other capital expenditures. This is the first issue of long term obligations made by the American Telephone and Telegraph Company since 1916, and, in effect, replaces $90,000,000 of short-term 6% notes (including $50,000,000 of Three-Year Notes paid last year), thereby effecting a saving of $450,000 annually in interest charges.

Equity.—Since the end of 1920, the relation between funded debt and capital stock of the American Telephone and Telegraph Company has changed materially owing to the large amount of capital stock issued. On December 31, 1920, the Company's funded debt aggregated $317,429,000, or 42% of its total capital liabilities, while the capital stock aggregated $442,825,400. After giving effect to the issuance of these Debentures and to the retirement of $40,000,000 6% Notes due February 1, 1924, the funded debt will aggregate approximately $280,000,000, or less than 28% of total capital liabilities, with capital stock (including installments) outstanding in the amount of over $747,000,000. Thus funded debt, even after giving effect to this financing, will have decreased by $37,000,000, whereas capital stock has increased by over $300,000,000.

Earnings.—The net earnings of the American Telephone and Telegraph Company available for interest, its interest charges and net income during the past ten years have been as follows:

Year ended December 31	Net earnings Available for Interest	Interest	Net Income	Number of Times Interest was Earned
1913	$40,576,746	$7,656,656	$32,920,090	5.3
1914	40,557,977	8,223,163	32,334,814	4.9
1915	41,117,487	6,498,850	34,618,637	6.3
1916	44,743,376	6,730,099	38,013,277	6.6
1917	48,940,466	10,469,360	38,471,106	4.7
1918	54,293,017	10,391,695	43,901,322	5.2
1919	60,243,387	15,847,596	44,395,791	3.8
1920	70,686,904	18,865,688	51,821,216	3.7
1921	73,523,813	19,521,109	54,002,704	3.8
1922	81,668,440	15,498,012	66,170,428	5.3

During this ten-year period, the Company's net earnings averaged more than 4½ times interest charges, and in each one of these years they have been more than 3½ times interest charges. For the year 1923, it is estimated that net earnings available for interest will be about $95,000,000, or nearly seven times the annual interest charges on the Company's funded debt to be outstanding after these Debentures have been issued and the $40,000,000 Notes due February 1, 1924, have been retired.

Dividend record.—Dividends on the capital stock of the Company and of its predecessor have been paid at the rate of at least $7.50 per share in each of the past 42 years. For approximately 15 years, ended in 1921, the rate was $8 per share annually, and since that year the dividend rate has been $9 per share annually.

Provisions.—In the Indenture under which these Debentures are to be issued, the Company will covenant that it will not mortgage any of its telephone lines or plant unless it shall secure these Debentures by stocks or bonds of its telephone operating companies, and that it will not pledge (with certain exceptions and limitations with respect to its outstanding Collateral Trust Bonds) any stocks or bonds of its telephone operating companies unless it shall either secure these Debentures as above stated, or ratably with any other obligations secured by such pledge. In either case, the Company shall keep so pledged stocks or bonds of a value which shall be equal at all times to 133⅓% of the principal of the debt secured thereby. Any such collateral so to be pledged shall be similar in character to that required for the security of the Company's 30-Year Collateral Trust 5% Bonds of 1946. The provisions for valuation and substitution of stocks and bonds so pledged shall be similar to the corresponding provisions in respect to the collateral securing the above-mentioned 5% Bonds of 1946.

Assets.—The total assets of the American Telephone and Telegraph Company are carried on its books at more than $1,223,000,000. Stocks and bonds of, and advances to, associated and affiliated companies, at valuations which are distinctly conservative, amount to more than $980,000,000 less than $262,000,000 of which are pledged. The Company's long distance telephone plant, including nearly 1,200,000 miles of toll wire, telephone instruments and real estate, have a book cost of over $164,000,000, and are free from lien.

The above debentures are offered for subscription, subject to issue as planned and approval of legality by counsel, at 98½% and interest, to yield 5⅝%.

Subscription books will be opened at the office of J. P. Morgan & Co. at 10 o'clock A. M., Monday, November 5,

1923. The right is reserved to reject any and all applications, and also, in any case, to award a smaller amount than applied for. The amount due on allotments will be payable at the office of J. P. Morgan & Co., in New York funds, on November 15, 1923, against delivery of J. P. Morgan & Co. Interim Receipts, exchangeable for definitive Debentures when received from the Company.

The American Telephone and Telegraph Company Five-Year 6% Notes, due February 1, 1924, with final coupon attached, will be accepted in payment of allotments on the date specified, at 100.24406 and accrued interest, equivalent to a 4¾% interest basis from such date to February 1, 1924.

J. P. Morgan & Co. Kuhn, Loeb Co. Kidder, Peabody & Co. First National Bank, New York. The National City Company. Bankers Trust Company, New York. Guaranty Company of New York. Harris, Forbes & Co. Lee, Higginson & Co.

New York, November 3, 1923.

[fol. 3780] American Telephone and Telegraph Company

Telephone and Telegraph Building

195 Broadway

H. B. Thayer, President

New York, November 2, 1923.

Messrs. J. P. Morgan and Co., 23 Wall Street, New York, N. Y.

Dear Sirs: In connection with the $100,000,000 Twenty-Year Sinking Fund 5½% Gold Debenture Bonds, of the American Telephone and Telegraph Company, I beg to give you the following information regarding the business of the Company and this issue of Debentures:

The proceeds of these Debentures are to be used to retire $40,000,000 of Five-Year 6% Notes due February 1, 1924, and to provide the Bell Telephone System with funds for additions and betterments and for other capital expenditures. This is the first issue of long-term obligations made by the American Telephone and Telegraph Company since 1916, and, in effect, replaces $90,000,000 of short-term 6% notes (including $50,000,000 of Three-Year Notes paid last year) with Twenty-Year 5½% Debentures, thereby effecting a saving of $450,000 annually in interest charges.

The Debentures are to be issued under an Indenture with Bankers Trust Company, New York City, as Trustee, in which Indenture the Company will covenant that it will not mortgage any of its telephone lines or plant unless it shall secure these Debentures by pledge with the Trustee under the Indenture under which these Debentures are issued of stocks or bonds of its telephone operating companies, and that it will not pledge (with certain exceptions and limitations set forth in the Indenture with respect to its outstanding Collateral Trust Bonds) any stocks or bonds of its telephone operating companies unless it shall either secure these Debentures by pledge with the Trustee as above stated, or secure them ratably with the other obligations secured by such pledge. In either case, the Company shall keep so pledged stocks or bonds of a value which shall be equal at all times to 133⅓% of the principal of the debt secured thereby. Any such collateral required so to be pledged shall be similar in character to that required for the security of the Company's 30-Year Collateral Trust 5% Bonds of 1946 (now secured by stocks of New England Telephone and Telegraph Company, New York Telephone Company, Southern Bell Telephone and Telegraph Company, Northwestern Bell Telephone Company and The Pacific Telephone and Telegraph Company). The provisions for valuation and substitution of stocks and bonds so pledged shall be similar to the corresponding provisions in respect of the collateral securing the Company's above-mentioned 5% Bonds of 1946.

The Indenture will provide for sinking fund payments to a trustee at the rate of $1,000,000 annually, payable in equal semi-annual installments beginning May 1, 1924, such payments to be used in purchasing Debentures of this issue if obtainable at not exceeding 105% and accrued interest; otherwise to be used for capital expenditures against which no obligations of the Company may be issued.

The total assets of the American Telephone and Telegraph Company are carried on its books at more than $1,223,000,000. Stocks and bonds of, and advances to, associated and affiliated companies, of valuations which are distinctly conservative, amount to more than $980,000,000, less than $262,000,000 of which are pledged under indentures securing collateral trust bonds. The Company's long distance lines, telephone instruments and real estate, have a book cost of over $164,000,000, and are free from lien.

Since the end of 1920, the relation between funded debt and capital stock of the American Telephone and Telegraph Company has changed materially, due to the issuance of large amounts of capital stock during 1921 and 1922. On December 31, 1920, the Company's funded debt amounted to $317,429,000, or 42% of its total capital liabilities, and capital stock was outstanding in the amount of $442,825,400. After giving effect to the issuance of these Debentures and to the retirement of $40,000,000 6% Notes, due February 1, 1924, funded debt will be approximately $280,000,000, or less than 28% of total capital liabilities, with capital stock (including installments) outstanding in the amount of over $747,000,000. Thus funded debt, even after giving effect to this financing, will have decreased by $37,000,000, whereas capital stock has increased by over $300,000,000.

The net earnings of the American Telephone and Telegraph Company available for interest, its interest charges and net income during the past ten years have been as follows:

Year ended December 31	Net earnings available for interest	Interest	Net income	Number of times interest was earned
1913	$40,576,746	$7,656,656	$32,920,090	5.3
1914	40,557,977	8,223,163	32,334,814	4.9
1915	41,117,487	6,498,850	34,618,637	6.3
1916	44,743,376	6,730,099	38,013,277	6.6
1917	48,940,466	10,469,360	38,471,106	4.7
1918	54,293,017	10,391,695	43,901,322	5.2
1919	60,243,387	15,847,596	44,395,791	3.8
1920	70,686,904	18,865,688	51,821,216	3.7
1921	73,523,813	19,521,109	54,002,704	3.8
1922	81,668,440	15,498,012	66,170,428	5.3

During this ten-year period, net earnings available for interest averaged more than 4½ times interest charges, and in each one of these years they have been more than 3½ times interest charges. For the year 1923, it is estimated that net earnings available for interest will be about $95,000,000, or nearly seven times the annual interest charges on the Company's funded debt to be outstanding after these [fol. 3781] Debentures have been issued and the $40,000,000 Notes due February 1, 1924, have been retired. It should be noted that the earnings statements of the Company do not include its equity in the undivided surplus earnings of its Associated Companies.

Dividends on the capital stock of the Company and of its predecessor have been paid at the rate of at least $7.50 per share in each of the past 42 years. For approximately fifteen years, ended in 1921, the rate was $8 per share annually; since then, $9 per share per annum has been paid. During this entire period, net income in each year has been sufficient to meet the dividend paid and leave a balance for surplus.

The American Telephone and Telegraph Company is the parent Company of the Bell Telephone System, owning directly or indirectly about 90% of the voting stock of its 25 associated operating companies, and nearly all the voting stock of Western Electric Company, Incorporated, which serves as the manufacturing, supply and warehousing organization of the Bell System. The American Telephone and Telegraph Company is more than a holding company in the ordinary sense; it is the central organization in the Bell System, owning and operating the long-distance telephone plant including nearly 1,200,000 miles of toll wire, which link together the properties of the local operating companies and make possible a telephone service reaching every part of the United States. Under contract with its Associated Companies, it furnishes and maintains the telephone instruments used by them and performs for these companies certain other services in the fields of research, engineering, operation, finance, accounting, etc., all essential for their operation and continued success. The Company owns, controls or is licensed under about 7,000 United States patents and applications, covering every phase of telephone business, which assure the Bell System's continued predominance in the field of telephony. Finally, the Company serves as a financing agency for the Bell System, obtaining through the sale of its own bonds and stock, the proceeds of which are loaned to its Associated Companies or used to acquire their securities, much of the capital necessary to finance the extension and development of the telephone service throughout the country.

The Bell Telephone System, at the end of September, 1923, comprised over 14,700,000 telephone stations of which more than 10,000,000 were owned by the Associated Companies and the remainder by their connecting companies. More than 800,000 stations will be added to the System during the current year. The telephone business has grown steadily, in times of depression as well as in times of prosperity, in response to a continuous increase in demand by the public for service, as well as to the increase in population. The System depends upon no single industry, community or class of population for its business; a service is provided for millions of homes, and for every phase of the nation's industry. The steady demand for the extension of this service is proof that it is essential and worth much more to the subscriber than it costs him. There is no public utility and there are few business enterprises that can face the future with more confidence than the companies comprising the Bell System, of which the American Telephone and Telegraph Company is the parent Company.

The Bell Telephone System has followed conservative financial policies during its entire history. Full maintenance of the property, adequate provision from current earnings for depreciation and obsolescence, dividend payments at all times less than the actual profits earned, the investment in property of all surplus earnings and unexpended reserves, and the issue of capital stock at par or at a premium either directly or through convertible bonds, have all contributed to the maintenance of a high credit standing which has made possible financing at reasonable rates.

The capital obligations are conservative. The capital stock and obligations of the Bell System outstanding in the hands of the public at September 30, 1923, were approximately $1,563,000,000. Of this total over $883,000,000, or more than 56%, was represented by capital stock. Over $747,000,000 of this latter amount was capital stock of the American Telephone and Telegraph Company; the remainder being common and preferred stocks of the Associated Companies, much of which is held locally by telephone subscribers and employees. The book cost of the net assets used in the business and devoted to earning interest and dividends on these outstanding securities, amounts to over $2,193,000,000, or more than 140% of the aggregate amount of securities on which interest and dividends must be paid. The difference between net assets and total capital obligations, about $630,000,000, represents the combined surplus and reserves of the American Telephone and Telegraph Company and of the Associated Companies, which contribute in a very large measure to the great financial strength of the Bell System. The accumulated surplus and reserves of the System are invested in the properties of the companies, and to that extent it is unnecessary to obtain new capital for the business. Consequently, even with a relatively low rate of earnings on the telephone property used in the service of the public, it is possible to meet the interest and dividend requirements of the System, with the margin of surplus earnings necessary to give confidence and to attract new investments of capital.

The Twenty-Year Sinking Fund 5½% Gold Debentures are to be limited to the present issue of $100,000,000 Bonds. They are to be dated November 1, 1923, are to mature November 1, 1943, and are to bear interest at the rate of 5½% per annum, payable semi-annually May 1 and November 1 in each year, at the office or agency of the Company in New York City or in Boston, at the option of the holder. The Debentures are to be issued in coupon form, registerable as to principal, in denominations of $1,000, $500 and $100, and in fully registered form in denominations of $1,000, $5,000 and $10,000, the coupon Debentures and the registered Debentures and the several denominations of each to be interchangeable. The Debentures may be redeemed at the option of the Company, in whole or in part, upon sixty days' notice, on any interest date at the following prices with accrued interest: If on or prior to May 1, 1941, at 110%, and if subsequent to May 1, 1941, at par.

Application for the listing of these Debentures on the New York Stock Exchange will be made by the Company in due course.

Yours very truly,

H. B. Thayer, President.

[fol. 3782] American Telephone and Telegraph Company

Balance Sheet—September 30, 1923

Assets

Stocks of Associated Companies	$742,534,829
Bonds and Notes of and Advances to Associated Companies	154,391,704
Stocks and Notes of and Advances to other Companies	84,028,084
Telephone Plant and Equipment	149,768,905
Real Estate, Furniture, and Fixtures	14,865,822
Bills and Accounts Receivable	11,468,344
Cash and Temporary Cash Investments	66,098,495
Total	$1,223,156,183

Liabilities

Capital Stock and Installments	$747,864,238
4% Collateral Trust Bonds 1929	78,000,000
5% Collateral Trust Bonds 1932 (Western Tel. & Tel. Co.)	9,970,000
5% Collateral Trust Bonds 1946	74,034,500
6% Convertible Bonds 1925	10,677,700
4½% Convertible Bonds 1933	6,433,300
4% Convertible Bonds 1936	2,589,000
6% Five Year Gold Notes 1924	38,183,500
Total Funded Debt	$219,888,000
Dividend Payable*	16,437,584
Accounts Payable and Accrued Liabilities Not Due	29,267,011
Reserve for Employees' Benefit Fund	4,953,743
Reserve for Depreciation and Contingencies	71,481,390
Surplus (including Capital Stock Premiums)	133,264,217
Total	$1,223,156,183

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* Paid October 15, 1923.

Bell System Balance Sheet September 30, 1923

(All inter-company duplications excluded)

Assets

Telephone Plant	$1,903,340,346
Supplies, Tools, etc.	57,573,574
Stocks and Bonds	150,293,329
Receivables	106,837,326
Cash and Temporary Cash Investments	82,341,836
Total	$2,300,386,411

Liabilities

Capital Stock (including Installments)	
Common	
American Tel. & Tel. Co.	$747,864,238
Associated Companies	62,479,633
Preferred	
Associated Companies	73,091,147
Total Capital Stock	$883,435,018
Funded Debt	
Mortgage Bonds—(Associated Companies)	$408,505,225
Collateral Trust Bonds	161,980,500
Convertible Bonds and Notes	19,925,000
Debentures and Notes	71,870,800
Total Funded Debt	$662,281,525
Bills Payable	17,330,387
Total Capital Liabilities	$1,563,046,930
Accounts Payable	39,877,955
Accrued Liabilities Not Due	66,921,224
Reserve for Employees' Benefit Fund	18,515,569
Surplus and Reserves	612,024,733
Total	$2,300,386,411

[fol. 3783] **Dep. Ex. 106**

$150,000,000

American Telephone and Telegraph Company

Thirty-five Year 5% Gold Debentures

Dated February 1, 1930. Due February 1, 1965

Issued under Indenture dated February 1, 1930, The First National Bank of the City of New York, Trustee

Interest payable February 1 and August 1 in New York City

Redeemable, at the option of the Company, as a whole but not in part, upon 60 days' notice, on any interest date, at the following prices and accrued interest: on or prior to August 1, 1961, at 110%; thereafter, at 100%

Coupon Debentures in denominations of $1,000, $500 and $100, registerable as to principal. Registered Debentures in denominations of $1,000, $5,000 and $10,000. Coupon Debentures and registered Debentures, and the several denominations, interchangeable

Walter S. Gifford, Esq., President of the American Telephone and Telegraph Company, has furnished us with the following statement regarding this issue:

Purpose of issue.—This issue of Debentures will provide funds required by the Bell System for additions and betterments and for other capital expenditures.

Assets and equity.—The assets of the American Telephone and Telegraph Company on September 30, 1929, after deducting current liabilities, were carried on its books at more than $2,378,000,000. Investments (at cost) in its associated and affiliated companies amounted to $2,015,000,000 and in its telephone plant and equipment to $324,000,000. All the property of the Company is free from lien, except certain stocks and bonds pledged to secure approximately $80,000,000 Collateral Trust Bonds. After giving effect to the issue of these Debentures, the Company's long term debt will be less than $670,000,000, whereas capital stock (including paid-up portions of stock payable in installments) will be in excess of $1,400,000,000 par value.

Thus funded debt will comprise less than one-third of the Company's total capital liabilities.

Earnings.—The net earnings of the American Telephone and Telegraph Company available for interest, its interest charges and its net income during the five years ended December 31, 1928 were as follows:

Years Ended December 31	Net Earnings Available for Interest	Interest Charges	Net Income	Number of Times Interest was Earned
1924	$107,619,362	$16,573,041	$ 91,046,321	6.4
1925	129,036,334	21,631,288	107,405,046	5.9
1926	138,931,387	21,940,986	116,990,401	6.3
1927	*150,383,895	21,768,985	128,614,910	6.9
1928	165,268,049	22,097,558	143,170,491	7.4

*Does not include special non-recurring dividend of $47,938,865 received from Western Electric Company, Inc.

During this five-year period, net earnings available for interest averaged more than 6½ times interest charges. It is estimated that for the year 1929 net earnings available for interest were in excess of $193,000,000, or more than 7 times the estimated interest charges during that year.

Dividend record.—Dividends on the capital stock of the Company and of its predecessor have been paid at the rate of at least $7.50 per share in each of the past 48 years. Since 1921 the annual rate has been $9 per share.

Provisions of Indenture.—In the Indenture under which these Debentures are to be issued, the Company is to covenant that it will not mortgage any of its telephone lines or plant unless it shall secure these Debentures by stocks or bonds of its telephone operating companies, and that it will not pledge (with certain exceptions and limitations to be set forth in said Indenture) any stocks or bonds of its telephone operating companies unless it shall either secure these Debentures by pledge of securities as above stated, or secure them ratably with any other obligations secured by such pledge. In either case, the Company shall keep so pledged stocks or bonds of a value which shall be equal at all times to 133⅓% of the principal of the debt secured thereby. Any such collateral so to be pledged shall be similar in character to that required for the security of the Company's 30-Year 5% Collateral Trust Gold Bonds due 1946. The provisions for valuation and substitution of stocks and bonds so pledged shall be similar to the corresponding provisions in respect of the collateral securing the above-mentioned 5% Bonds due 1946.

The above debentures are offered for subscription, subject to the conditions stated below, at 99½%, less an amount equal to interest at the rate of 5% on face amount from date of payment to February 1, 1930.

Subscription books will be opened at the office of J. P. Morgan & Co. at 10 o'clock A. M., Monday, January 13, 1930, and will be closed in their discretion. The right is reserved to reject any and all applications, and also, in any case, to award a smaller amount than applied for. All subscriptions will be received subject to the due issue of the Debentures as planned, and to approval by counsel of the form and validity of the related documents and proceedings.

The amounts due on allotments will be payable at the office of J. P. Morgan & Co., in New York funds to their order, and the date of payment (on or about January 28, 1930) will be stated in the notices of allotment. Temporary Debentures, exchangeable for definitive Debentures when received, are to be delivered.

J. P. Morgan & Co. Kuhn, Loeb & Co. Kidder, Peabody & Co. First National Bank. The National City Company. Bankers Company of New York. Guaranty Company of New York. Harris, Forbes & Co. Lee, Higginson & Co.

New York, January 13, 1930.

[fol. 3784] DEPOSITION EXHIBIT #108

Tabulation Prepared and Testified to by Witness Uhrig

Jan. 1932.

Issue of November 1, 1923:

$100,000,000—20 yr.	5½% Gold Debentures
Sold to Public	98.50
Total Discount and Expensive	$5,313,701.51

Issue of January 1, 1925:

$125,000,000—35 yr.	5% Gold Debentures
Sold to Public	95.00
Total Discount and Expense	$10,865,085.57

Issue of February 1, 1930:

$150,000,000—35 yr.	5% Gold Debentures
Sold to Public	99.50
Total Discount and Expense	$5,525,527.76

[fol. 3785] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 110

Bell Telephone Securities

Reference Tables and Descriptions For the Use of Investors, Investment Houses and Bankers, with a Brief Introductory Statement of the Organization and Financing of the American Telephone and Telegraph Company and Associated Companies

1931

Bell Telephone Securities Company, Incorporated

195 Broadway, New York

April 15, 1931

[fol. 3786] Prefatory Note

This pamphlet contains information about the Bell Telephone System, the greater part of which has appeared in past annual reports and statements to the stockholders of the American Telephone and Telegraph Company and its Associated Companies. The financial data are substantially as published in such annual reports and statements, except that certain consolidations and regroupings have been made in order to present the figures in such form that comparisons may be made over a series of years.

The information is complete through December 31, 1930, except in cases where later dates are indicated for certain special items. It is presented in this condensed form for the convenience of investors, investment houses and bankers.

The Bell Telephone Securities Company was organized by the American Telephone and Telegraph Company to advise intending investors and to facilitate their transactions in Bell Telephone securities. The A. T. & T. Co. owns all the stock of the Securities Company.

Holders of telephone securities and telephone subscribers generally are invited to avail themselves of the facilities of this Company.

Bell Telephone Securities Company.

195 Broadway, New York, April 15, 1931.

Part I

Organization and Financing of the Bell System

The American Telephone and Telegraph Company owns directly or indirectly more than nine-tenths of the voting stock of the twenty-four companies associated with it in the Bell System. These companies operate telephone properties throughout the United States. The A. T. & T. Co. also owns and operates the long-distance lines which con- [fol. 3787] nect the network of wires of these different operating companies. This combination, known as the Bell System, forms an inter-communicating system of 15,682,000 telephones with which are connected the lines of 7,163 other companies and 29,281 rural lines. Altogether there are in the Bell System and connected with it, 20,098,000 telephones scattered over all parts of the United States, so that, practically speaking, and within the range of these facilities, any one anywhere can at any time pick up a telephone and talk to any one else, anywhere, quickly and economically, whether they are on Bell-owned lines or on the lines of connecting companies, it being the aim of the management to effect a single, uniform, nation-wide service. Telephone service is also provided to Canada, Cuba and Mexico by means of wires, and by radio telephone to most of the countries of Europe, to certain countries in South America, and to Australia, so that 91 per cent. of the world's telephones can now be reached from any Bell System telephone.

The business of the Bell System has both stability and growth. Its stability depends upon no single section or industry. The interests that it serves are as diversified and as widespread as the country itself. The growth of the System is based not only upon the growth of the population in the country but also upon the increase in the telephone habit, so that the use of the telephone is increasing more rapidly than the growth of the population. During the last ten years the population of the United States increased approximately 15 per cent., while the number of telephones in and connected with the Bell System increased nearly 60 per cent., and the number of telephone calls per day 97 per cent. In order to meet this growing demand, the construction expenditures of the Bell System during the last five years have been more than $2,300,000,000.

Another indication of the growth of the telephon industry in the United States is the increase in the plant investment of the Bell System from about $181,000,000 in 1900 [fol. 3788] to more than $4,043,000,000 in 1930. During no year has there been a cessation in the public's demand for more telephone facilities. During each of the last nine years net additions to telephone plant have been in excess of the total amount of telephone plant in the Bell System in 1900. The need for additions to telephone facilities on a substantial scale promises to continue in the future.

The property of the Bell System, consisting of buildings, switchboards, pole lines, cables and the thousand-and-one things that go to make up the telephone plant, is maintained at a high standard of operating efficiency and proper and adequate charges are made currently for depreciation expense in order to provide against the loss of investment when property is retired from service.

A continuous and growing demand for its service and the immense and growing physical plant are two fundamental elements in the security of the investment in the Bell System. Two other elements, equally if not more important, are the organization of the System and its financial policy.

Organization of the Bell System

The organization of the Bell System has grown out of American conditions, and parallels in many respects that of the nation.

Regional operating companies, covering one or more states, are responsible for telephone service within their territories. In this way community needs and requirements are best met and, so far as practical, responsibility for operation is localized. The territories of the operating companies are shown on the map on page 22.

[fol. 3789] These territorial operating companies are linked together for nation-wide service by long-distance lines constructed and owned by the A. T. & T. Co.

The unified operation and co-ordination essential for nation-wide telephone service are provided by the service and financial relationship of the A. T. & T. Co. to each of these regional operating companies.

The A. T. & T.'s financial interest in the Western Electric Company, Inc., insures an adequate supply of the highest grade of the necessary intricate telephone apparatus at reasonable prices, as well as full consideration of service needs in its manufacture.

Progress in the extent, quality and economy of telephone service is the especial duty of the general staffs of the A. T. & T. Co. and its Bell Telephone Laboratories, comprising scientists and men skilled in all phases of telephone operation and management. These staffs are available at all times for advice and assistance to the operating companies, and are engaged constantly in devising new methods of operation, and in the invention, development and testing of new types of equipment.

This form of organization is adapted to care for the constant increase in size of the System and to permit of effective management; to respond to the local requirements of the different sections of the country; to insure uniform methods of operation required in handling inter-regional business; to secure all possible economies in the cost of equipment, in maintenance and in methods of operation; and to continue to promote improved service through new developments in the art of telephony. The organization is, in a sense, unique and distinctively American in character.

Financial Policy

The policy of the A. T. & T. Co. set forth in a recent Annual Report follows:

"The very nature of the telephoen business necessitates [fol. 3790] a single inter-connected system. Such a system is provided by the American Telephone and Telegraph Company and it Associated and Connecting Companies.

The American Telephone and Telegraph Company accepts its responsibility for a nation-wide telephone service as a public trust. Its duty is to provide the American public with adequate, dependable and satisfactory telephone service at a reasonable cost. To attain this end, it is the policy of the Company to pay only reasonable regular dividends and, for part of the new capital needed, to offer from time to time new stock to its stockholders on favorable terms, for it believes this method of financing will provide the money needed for the business cheaply and with more certainty in good times and bad than any other.

The safety of principal and regular dividends have been the compelling motives that have led to the wide-spread ownership of the stock of the Company * * *. This nation-wide ownership of the American Telephone and Telegraph Company means ownership of the Bell System, for, taking the associated operating telephone companies as a group, the American Telephone and Telegraph Company owns 93 per cent of their common stock, and in the case of the Western Electric Company, Inc., it owns 98⅓ [fol. 3791] per cent of the stock. Dividends paid to the American Telephone and Telegraph Company by these companies, together with profits earned from its long-distance lines, are used for the payment of the regular dividends to the American Telephone and Telegraph Company stockholders and the protection of their investment. There is, in effect, one profit paid by the System and that profit is not and should not be large. The aim of the management—

Net Earnings Per Share of A. T. & T. Stock Available for Dividends

Year	Net Earnings per Share	Dividends paid per Share
1922	$11.14	$9.00
1923	11.35	9.00
1924	11.31	9.00
1925	11.79	9.00
1926	11.95	9.00
1927	11.76*	9.00
1928	12.11	9.00
1929	12.67	9.00
1930	10.44	9.00

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*Does not include special and non-incurring dividend from the Western Electric Co., Inc.

and it is the only aim that will protect in the long run the safety of the investment of the hundreds of thousands of stockholders—is to continue to furnish the best possible telephone service at the least cost to the public. Extra or special dividends are entirely inconsistent with this aim and would be unsound. Earnings must, of course, be sufficient to permit the best possible telephone service at all times and to provide a reasonable payment to stockholders with an adequate margin to insure financial safety. Earnings in excess of these requirements will either be spent for the enlargement and improvement of the service furnished, or the rates charged for the service reduced. This is fundamental in the policy of the management."

The organization is set up to guarantee progress and the policy is designed to deserve that public support without which even the best service cannot provide safety for investments and stability to a company.

Bell System Bonds

At the end of 1930 the funded debt of the A. T. & T. Co. was less than 15 per cent. of its net assets, while for the Bell System as a whole, as indicated by the chart on page 10, the funded debt was less than 22 per cent. The mortgage debt of the System was under 14 per cent. of the book value of the physical property. For the past five years net earnings of the A. T. & T. Co. available for interest (after making adequate provision for depreciation and Federal taxes) have averaged more than 6½ times interest charges. For the same period the Bell System as a whole has earned its interest charges (also after making adequate provision for depreciation and Federal taxes) more than 4 times.

Numerous Bell System bond issues have been declared legal for savings bank investments in the states having the largest amounts of savings deposits. Bell System bonds have a ready market; they are bought and sold daily on [fol. 3792]⁴ the stock exchanges in the large cities of the United States and to some extent abroad.

* * * * * * * *

A. T. and T. Stock

* * * * * * *

The total par value of A. T. & T. stock outstanding on December 31, 1930, was $1,795,651,200, for which the Company had received $2,054,782,802, the difference representing capital stock premiums which have gone into the Company's properties as part of the equity behind all the stock.

More than 100,000 of the stockholders are Bell System employees. In addition, more than 300,000 employees of Bell System companies and their subsidiaries are now purchasing stock in installments under the Employees' Stock Plan.

A. T. & T. Earnings and Dividends

The earnings of the A. T. & T. Co. come mainly from dividends on stocks of the Associated Companies and the Western Electric Company, interest on funds advanced to them, interest on temporary investments, payments by the Associated Companies for services, and revenues from the operations of its long-distance lines. During the past 31 years the net earnings available for dividends have averaged more than $10 a share per year.

For more than 49 years the A. T. & T. Co. and its predecessor have paid dividends to the public of not less than $7.50 a share per year. For approximately 15 years ending in 1921 payments were $8 a share. Since then, dividends have been at the rate of $9 a share, payable quarterly on January, April, July and October 15th, to stockholders of record at a date which is usually the 20th day of the preceding month.

[fol. 3793] Year after year the earnings of the A. T. & T. Co. remaining after the payment of dividends to stockholders and the capital stock premiums received have been kept in the business and invested in new telephone property which has increased the usefulness and earning capacity of the entire Bell System.

The high market rating of A. T. & T. stock and the high standing of Bell System securities in general are the result of the stability of the telephone industry, the record of earnings and the conservative financial policy of the management.

* * * * * * *

Part II

Financial Statements and Statistics of the A. T. & T. Co. and the Bell System

The tables and charts in this section show the growth and financial structure of the American Telephone and Telegraph Company and its Associated Companies, comprising the Bell System, which own and operate the Bell telephone exchanges and toll lines in the United States. (See map, page 22.) The condensed balance sheets of the Bell System are consolidations of the figures reported by the component corporations, with intercorporate duplications eliminated; likewise, the income statements of the System show the results of operation after excluding duplications on account of intercompany transactions. The accounts of the Western Electric Company, Inc., The Bell Telephone Company of Canada, and of subsidiary and connecting companies, investments in which are held by the A. T. & T. or its Associated Companies, are not included in these financial statements; however, the investments in these companies are included in the item "Investments" in the System balance sheet, while dividends and interest received from them appear on the System income statement as part of "Non-Operating Revenues—Net." Balance sheets and income [fol. 3794] statements of the Bell System follow those of the A. T. & T. Co.

The A. T. & T. Co. has supplied most of the capital for the development of the Bell System and the growth of the Associated Companies. Accordingly, its capital obligations represent more than 70 per cent. of the total capital obligations of the System. The composition of assets of the A. T. & T. Co. is notably different, however, from that of the System as a whole. In the case of the parent company, 73 per cent. of the total assets consists of securities of and advances to Associated and other Companies, these advances being furnished to the Companies to provide the necessary funds for extensions and improvements in the intervals between their permanent financing. On the other hand, in the case of the System as a whole, telephone plant accounts for nearly 81 per cent. of all assets.

The great preponderance of fixed plant in the assets of the Bell System indicates the fundamental difference which exists between the telephone industry and many other types of business. The Bell System is engaged in furnishing telephone service and has no manufactured product to sell, no items of merchandise to dispose of, and no investment in materials in process of manufacture. In short, the telephone business does not call for a considerable volume of working capital. That the cash and temporary investments of the System fluctuate from year to year is due entirely to the fact that advance financing necessary to cover new construction has been accomplished at varying times, thus bringing about a variation in the cash reserves on hand at the close of different years.

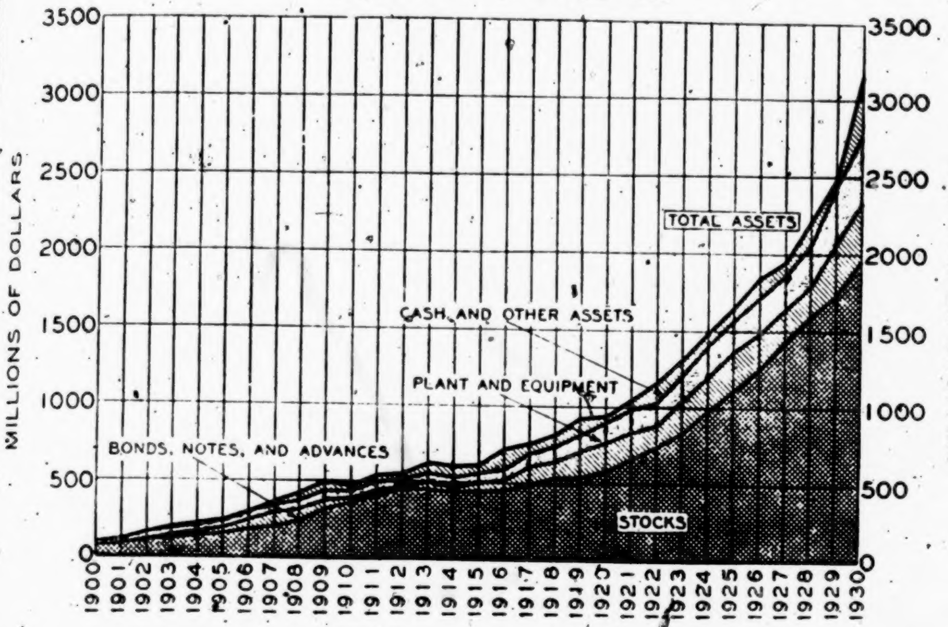
(Here follows side folio 3795.)

DEFENDANT'S EXHIBIT 110

Charts

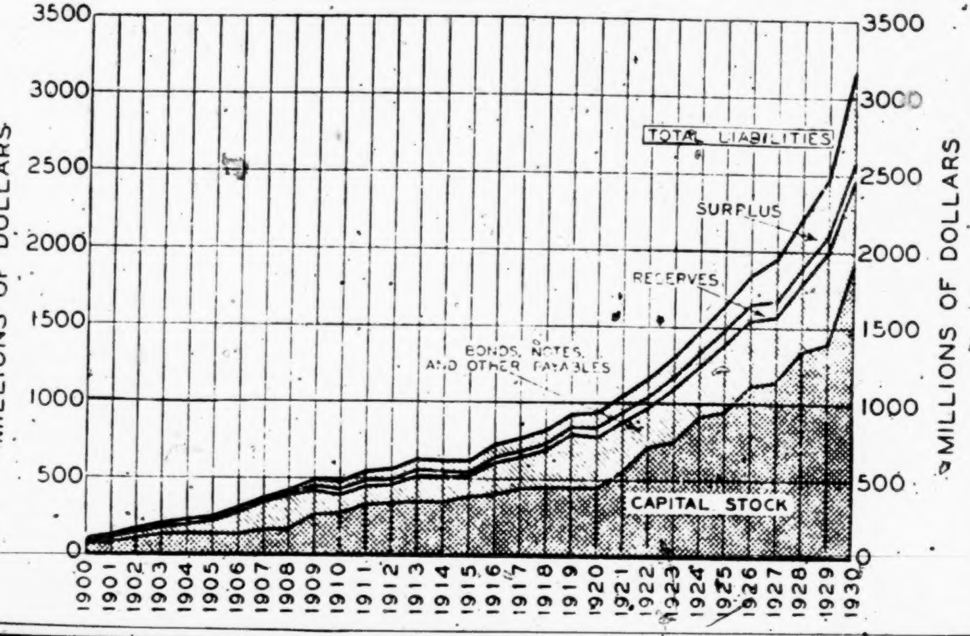
GROWTH AND COMPOSITION OF ASSETS

AMERICAN TEL. & TEL. CO.



GROWTH AND COMPOSITION OF LIABILITIES

AMERICAN TEL. & TEL. CO.

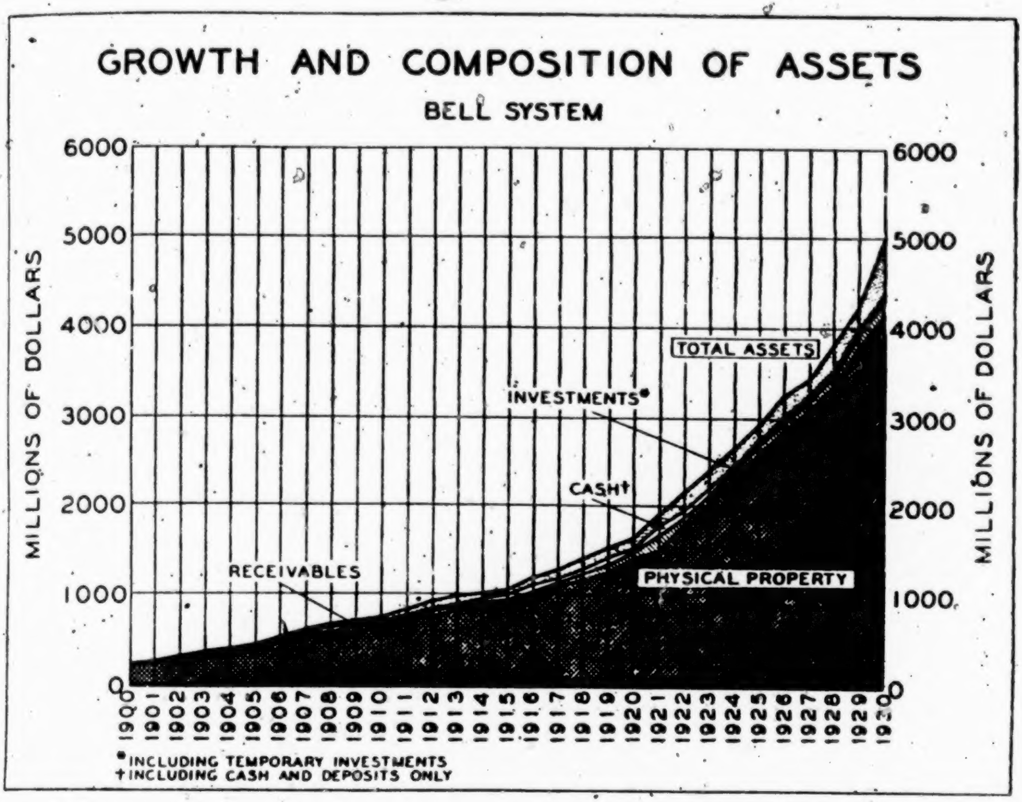


[fol. 3796] The statements below show the assets and liabilities and earnings of the A. T. & T. Co. The Company's surplus shows growth commensurate with other items on its balance sheet. In the last thirty years, surplus, reserved and capital stock premiums have grown from $20,000,000 to $704,000,000. These amounts have been regularly invested directly or indirectly in productive plants of the Bell System. The surplus has not been capitalized by stock issues. The earnings of the parent company are derived mainly from two sources: (1) dividends and interest received on account of its investment in and advances to the Associated and other Companies and (2) telephone revenues.

(Here follows side folio 3797)

DEFENDANT'S EXHIBIT #110

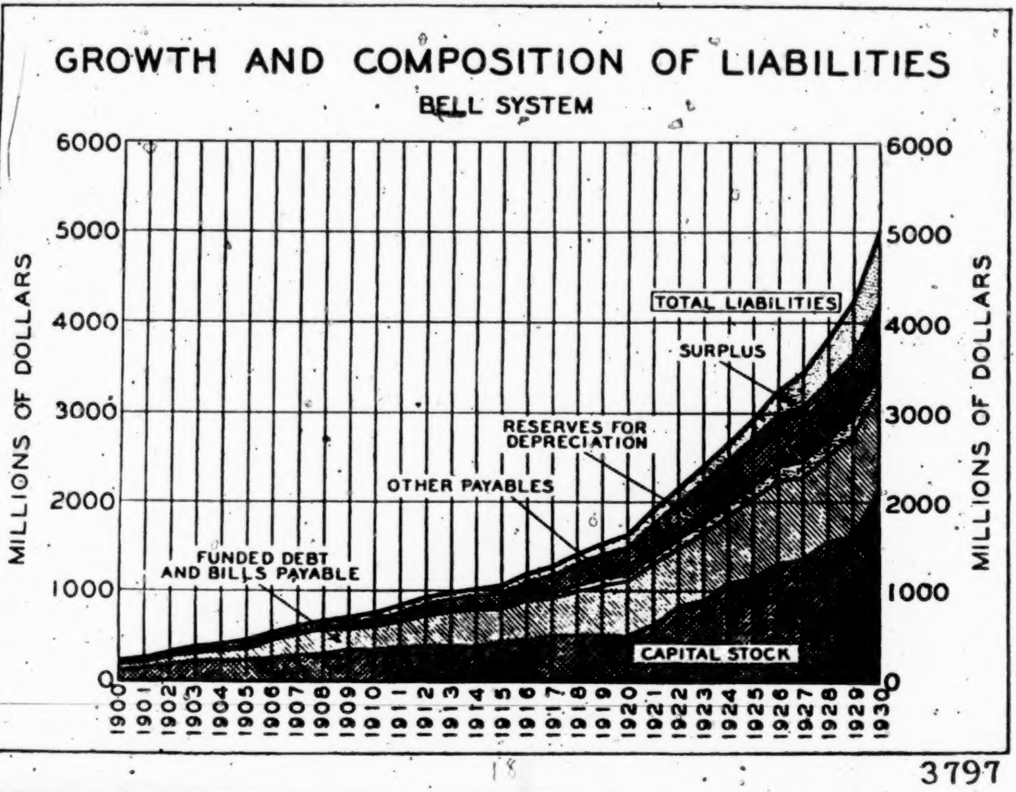
Charts



GROWTH AND COMPOSITION OF ASSETS

BELL SYSTEM

*INCLUDING TEMPORARY INVESTMENTS
†INCLUDING CASH AND DEPOSITS ONLY



GROWTH AND COMPOSITION OF LIABILITIES

BELL SYSTEM

P. 17:

[fol. 3798] Bell System Statistics

	[illegible]c. 31, 1930.
Number of Telephones:	
Bell Companies:	
Telephones (Manual Service)	10,705,118
Telephones (Dial Service)	4,976,941
Total Bell Companies	15,682,059
Bell Connecting Companies and Lines*	4,416,000
Total	20,098,059
Number of Connecting Companies	7,163
Number of Connecting Rural Lines	29,281

[fol. 3799] EXTRACTS FROM EXHIBIT, DEPOSITION EXHIBIT No. 111

Publication, Bell Telephone Securities, dated April 15, 1930

* * * * * * *

P. 7:

Earnings must, of course, be sufficient to permit the best possible telephone service at all times and to provide a reasonable payment to stockholders with an adequate margin to insure financial safety. Earnings in excess of these requirements will either ~~be~~ spent for the enlargement and improvement of the service furnished, or the rates charged for the service reduced. This is fundamental in the policy of the management.

* * * * * * *

P. 7: Bell System Bonds

At the end of 1929 the funded debt of the American Company was less than 22% of its net assets. For the Bell System as a whole, the funded debt was less than 27% of its net assets, while the mortgage debt of the System was under 15% of the book value of the physical property. For the past five years net earnings of the American Company available for interest (after making adequate provision for depreciation and Federal taxes) have averaged more than 6½ times interest charges. For the same period the Bell System as a whole has earned its interest charges (also after making adequate provision for depreciation and Federal taxes) more than 4 times.

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*Partly estimated.

Numerous Bell System bond issues have been declared legal for savings bank investments in the states having the largest amounts of savings deposits. Bell System bonds have a ready market; they are bought and sold daily on the stock exchanges in the large cities of the United States and to some extent abroad.

P. 8:

[fol. 3800] American Telephone Company Earnings and Dividends

The earnings of the American Telephone and Telegraph Company come mainly from dividends, interest on funds advanced to the Associated Companies, interest on temporary investments, payments by the Companies for services, and revenues from the operations of its long distance lines. The net earnings of the American Company available for dividends have, during the past 30 years, averaged more than $10 a share per year.

P. 9:

For more than 48 years the American Company and its predecessor have paid dividends to the public or not less than $7.50 a share per year. For approximately 15 years ending with the first quarter of 1921, payments were $8 a share. Beginning with July, 1921, payment, dividends have been at the rate of $9 a share, payable quarterly on January, April, July and October 15th, to stockholders of record at a date which is usually the 20th day of the preceding month.

Year after year not only the cornings of the American Company remaining after the payment of dividends to the stockholders but also the capital stock premiums received have been kept in the business as surplus and reserves. These have been invested in new telephone property which has increased the usefulness and earning capacity of the entire Bell System.

The high market rating of American Telephone stock and the high standing of Bell System securities in general are the result of the stability of the telephone industry, the record of earnings and the conservative financial policy of the Bell System.

[fol. 3801] A comparison of the Bell System balance sheets on page 15 with the balance sheets of the American Telephone and Telegraph Company on page 21 shows that the parent company has supplied most of the capital for the development of the System and the growth of the Associated Companies. This is reflected both in the capital liability items of the two balance sheets and in the composition of the assets. Of total System capital liabilities of $2,760,000,000 outstanding in the hands of the public on December 31, 1929, more than $1,925,000,000 or about 70%, represented capital liabilities of the American Telephone and Telegraph Company. Of $1,611,862,252 capital stock of Bell System corporations outstanding with the public, $1,394,495,412 represented capital stock (including installments) of the parent company; the remainder comprising stocks of other Bell System companies. The long term debt of the System as a whole, outstanding in the hands of the public, amounted to $1,148,539,684, consisting of $530,907,303 American Telephone and Telegraph Company obligations and $617,632,381 Associated Company obligations.

The composition of the assets of the System as a whole is notably different from that of the assets of the American Telephone and Telegraph Company. Telephone plant carried on the books on December 31, 1929, at $3,671,099,689 accounted for nearly 87% of all the System's assets; while in the case of the parent company the item of plant is a relatively minor one among the assets, and $2,065,769,261, or nearly 84%, of the total assets of the Company consists of investments in the securities of, and advances to, Associated Companies of the Bell System and other Companies. This comparison again clearly indicates the role that the parent company has played in financing the growth of the Bell System.

[fol. 3802] **Bell System Telephones, Central Offices and Wire Mileage**

Years Ending December 31st	Number of Telephones		
	Bell Companies	Bell Connecting Companies and Lines	Total
1900	835,911	20,000	855,911
1901	1,061,112	47,961	1,109,073
1902	1,317,178	84,021	1,401,199
1903	1,563,941	120,936	1,684,877
1904	1,838,034	167,213	2,005,247
1905	2,284,587	246,337	2,530,924
1906	2,773,547	297,218	3,070,765
1907	3,012,511	826,489	3,839,000
1908	3,176,394	1,188,235	4,346,629
1909	3,522,079	1,620,613	5,142,692
1910	3,933,056	1,949,663	5,882,719
1911	4,351,837	2,280,788	6,632,625
1912	4,803,803	2,652,271	7,456,074
1913	5,254,808	2,878,209	8,133,017
1914	5,584,853	3,073,759	8,658,612
1915	5,584,853	3,074,759	8,658,612
1916	6,545,490	3,348,120	9,893,610
1917	7,081,530	3,508,046	10,539,576
1918	7,201,757	3,864,242	11,065,999
1919	7,739,159	4,056,588	11,795,747
1920	8,333,979	4,267,956	12,601,935
1921	8,914,155	4,466,064	13,380,219
1922	9,514,813	4,535,752	14,050,565
1923	10,406,155	4,593,946	15,000,101
1924	11,242,318	4,664,232	15,906,550
1925	12,035,224	4,685,000	16,720,224
1926	12,816,252	4,758,000	17,574,252
1927	13,726,056	4,639,430	18,365,486
1928	14,524,648	4,672,387	19,197,035
1929	15,414,005	4,682,849	20,096,854

NOTE—There are throughout the United States 7,785 telephone companies and in addition 30,096 rural telephone lines operated mainly on a co-operative basis which have arrangements with the associated Bell companies for the interchange of toll traffic. Data for these connecting companies and connecting rural lines are excluded in all except the columns, "Bell-Connecting Companies and Lines" and "Total Number of Telephones."

[fol. 3803] A study of the capital structure as given in the balance sheets and charts makes clear the major changes in the Company's financial setup during recent years. There has been an increase in the ratio of capital stock (including installments) to total capitalization from 58% at the end of 1920 to 72% at the end of 1929.

[fol. 3804] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT NO. 112

Publication, Bell Telephone Securities, Issue of 1929, Dated April 15th

Financial Policy

The policy of the Company was set forth in the Annual Report for 1927 in these words:

"The very nature of the telephone business necessitates a single inter-connected system. Such a system is provided by the American Telephone and Telegraph Company and its Associated and Connecting Companies.

The American Telephone and Telegraph Company accepts its responsibility for a nation-wide telephone service as a public trust. Its duty is to provide the American public with adequate, dependable and satisfactory telephone service at a reasonable cost. To attain this end, it is the policy of the Company to pay only reasonable regular dividends and, for part of the new capital needed, to offer from time to time new stock to its stockholders on favorable terms, for it believes this method of financing will provide the money needed for the business cheaply and with more certainty in good times and bad than any other.

The safety of principal and regular dividends have been the compelling motives that have led to the widespread ownership of the stock of the Company. * * * This nation-wide ownership of the American Telephone and Telegraph Company means ownership of the Bell System, for, taking the associated operating telephone companies as a group, the American Telephone and Telegraph Company owns 93 per cent. of their common stock, and in the case of the Western Electric Company, Inc., it owns 98⅓ per cent. of the stock. Dividends paid to the American Telephone and Telegraph Company by these companies, together with profits earned from its long-distance lines, are used for the payment of the regular dividends to the American Telephone and Telegraph Company stockholders and the protection of their investment. There is, in effect, one profit paid by the System and that profit is not and should not be large. The aim of the management—and it is the only aim that will protect in the long run the safety of the investment of the hundreds of thousands of stockholders—is to continue to furnish the best possible telephone service at the least cost to the public. Extra or special dividends are entirely inconsistent with this aim and would be unsound. Earnings must, of course, be sufficient to permit the best possible telephone service at all times and to provide a reasonable payment to stockholders with an adequate margin to insure financial safety. Earnings in excess of these requirements will either be spent for the enlargement and improvement of the service furnished, or the rates charged for the service reduced. This is fundamental in the policy of the management."

[fol. 3805] The organization is set up to guarantee progress and the policy is designed to deserve that public support without which even the best service cannot provide safety for investments and stability to a company.

* * * * * * *

Year after year not only the earnings of the American Company remaining after the payment of dividends to the stockholders but also the capital stock premiums received have been kept in the business. Furthermore, as the principal stockholder of the Associated Companies, the American Company has a substantial equity in the accumulated surpluses of these companies. These surpluses, together with the reserves of the American Company, are retained in the business, and are invested in telephone property, thereby increasing the usefulness and earning capacity of the entire Bell System.

Bell System Bonds

At the end of 1928 the funded debt of the American Company was less than 18% of its net assets. For the Bell System as a whole, the funded debt was less than 26.5% of its net assets, while the mortgage debt of the System was under 16.5% of the book value of the physical property. For the past five years net earnings of the American Company available for interest (after making adequate provision for depreciation and Federal taxes) have averaged more than 6½ times interest charges. For the same period the Bell System as a whole has earned its interest charges (also after making adequate provision for depreciation and Federal taxes) over 4 times.

Numerous Bell System bond issues have been declared legal for savings bank investments in the states having the largest amounts of savings deposits. Bell System bonds, as well as American Telephone stock, have a ready market; [fol. 3806] they are bought and sold daily on the stock exchanges in the large cities of the United States and to some extent abroad.

The high market rating of American Telephone stock and the high standing of Bell System securities in general are the result of the stability of the telephone industry, the record of earnings, and the conservative financial policy of the Bell System.

* * * * * * *

Of total System capital liabilities of nearly $2,530,000,000 outstanding in the hands of the public on December 31, 1928, over $1,735,000,000 or 68% represented capital liabilities of the American Telephone and Telegraph Company. Of $1,564,644,118 capital stock of Bell System corporations outstanding with the public, $1,347,561,463 represented capital stock (including installments) of the parent company; the remainder comprising stocks of other Bell System companies. The long term debt of the System as a whole outstanding in the hands of the public, amounted to $964,783,700, consisting of $388,084,912 American Telephone and Telegraph Company obligations and $576,698,788 of Associated Company obligations.

The composition of the assets of the System as a whole is notably different from that of the assets of the American Telephone and Telegraph Company. Telephone plant carried on the books on December 31, 1928, at $3,275,686,848 accounted for 85% of all the System's assets; while in the case of the parent company the item of plant is a minor one among the assets, and $1,789,320,121, or 80%, of the total assets of the Company consists of investments in the securities of, and advances to, Associated Companies of the Bell System and other Companies. This comparison again clearly indicates the role that the parent company has [fol. 3807] played in financing the growth of the Bell System.

* * * * * * *

A study of the capital structure as given in the balance sheets and charts makes clear the major changes in the Company's financial setup during recent years. There has been an increase in the ratio of capital stock (including installments) to total capitalization from 58% at the end of 1920 to 77% at the end of 1928.

* * * * * * *

The Company's surplus shows growth commensurate with other items on its balance sheet. In the 28-year period surplus and reserves have grown from $20,000,000 to nearly $425,000,000. These have been regularly reinvested directly or indirectly in productive plant of the Bell System. Surplus has not been capitalized by stock issues.

[fol. 3808] EXTRACTS FROM EXHIBITS DEPOSITION EXHIBIT NO. 113

Publication, Bell Telephone Securities, Issue of April 15, 1928

* * * Of total System capital liabilities of nearly $2,280,000,000 outstanding in the hands of the public on December 31, 1927, over $1,525,000,000 or 67%, represented capital liabilities of the American Telephone and Telegraph Company. Of $1,351,939,840 capital stock of System corporations outstanding with the public, $1,142,289,200 represented capital stock (including installments) of the parent company; the remainder comprising stocks of other Bell System companies. The funded debt of the System as a whole, outstanding in the hands of the public, amounted to $919,789,700, consisting of $383,743,900 American Telephone and Telegraph Company obligations and $536,045,800 of Associated Company bonds.

The composition of the assets of the Ssytem as a whole is notably different from that of the assets of the American Telephone and Telegraph Company. Telephone plant carried on the books on December 31, 1927, at $3,013,985,120 accounted for 87% of all the System's assets; while in the case of the parent company the item of plant is a minor one among the assets, and $1,639,690,408, or 84% of the total assets of the Company consists of investments in the securities of, and advances to, Associated Companies of the Bell System and other Companies. This comparison again clearly indicates the role that the parent company has played in financing the growth of the Bell System.

[fol. 3809] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT NO. 114

Bell Telephone Securities, April 15, 1927

The American Telephone and Telegraph Company employs hundreds of experienced engineers, scientific investigators, and specialists, who constitute a general staff. Through its activities wasteful duplication of effort is avoided, and the problems of each Associated Company, involving as they do the efficient and economical expenditure of vast sums of money and the operation of a large and intricate plant, are solved and the results made available to all companies.

Millions of dollars are spent each year in scientific and other forms of research looking to the improvement and development of efficient telephone service. Inventions of a highly refined and intricate character have marked the progress of the telephone industry, and have had to find their place in art or industry made up of many interdependent operations and services. Each new scientific conception, no matter how novel and important, has had to be adapted to the present highly organized system to make it serviceable. It has been and is the work of the general staff to give effective expression to all of the improvements in the telephone art suggested by invention and research, to cope with the managerial problems that arise, and thereby to increase the value and availability of the telephone service.

Some of its members therefore are working on problems of improving and perfecting subways and cables, telephone apparatus, switchboards and buildings and the development of radio telephony; others devote their time to the problems connected with the handling of telephone calls; and still other groups are engaged on problems of finance, accounting, and law, and in the carrying forward of a great [fol. 3810] number of other necessary functions. Thus it is possible for the Bell System to give the best, the most economical and the most comprehensive telephone service in the world.

The strength and the conservative financial structure of the System become evident when it is pointed out that on December 31, 1926, surplus and reserves of the Bell System were equal to more than 37% of total capital obligations, and that the mortgage debt of the System on the same date was less than 18% and total funded debt less than 30% of net assets.

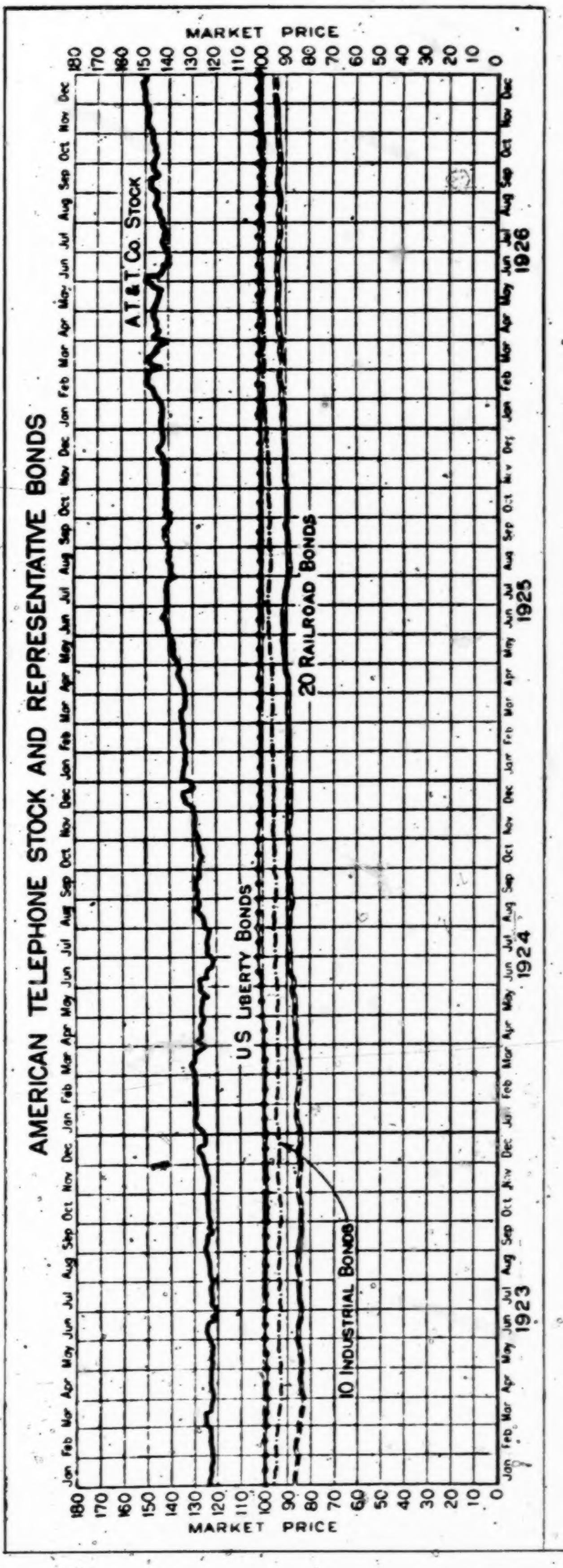
Year after year not only the earnings of the American Company remaining after the payment of dividends to the stockholders but also the capital stock premiums received have been kept in the business. Furthermore, as the principal stockholder of the Associated Companies, the American Company has a substantial equity in the accumulated surpluses of these companies. These surpluses, together with the surplus and reserves of the American Company are retained in the business, as has been said, and are invested in telephone property, thereby increasing the usefulness and earning capacity of the entire Bell System.

This record of earnings, of dividends, and of financial policy reflects the stability of the telephone industry, and accounts for the high market rating of American Company stock, and the high standing of Bell System bonds.

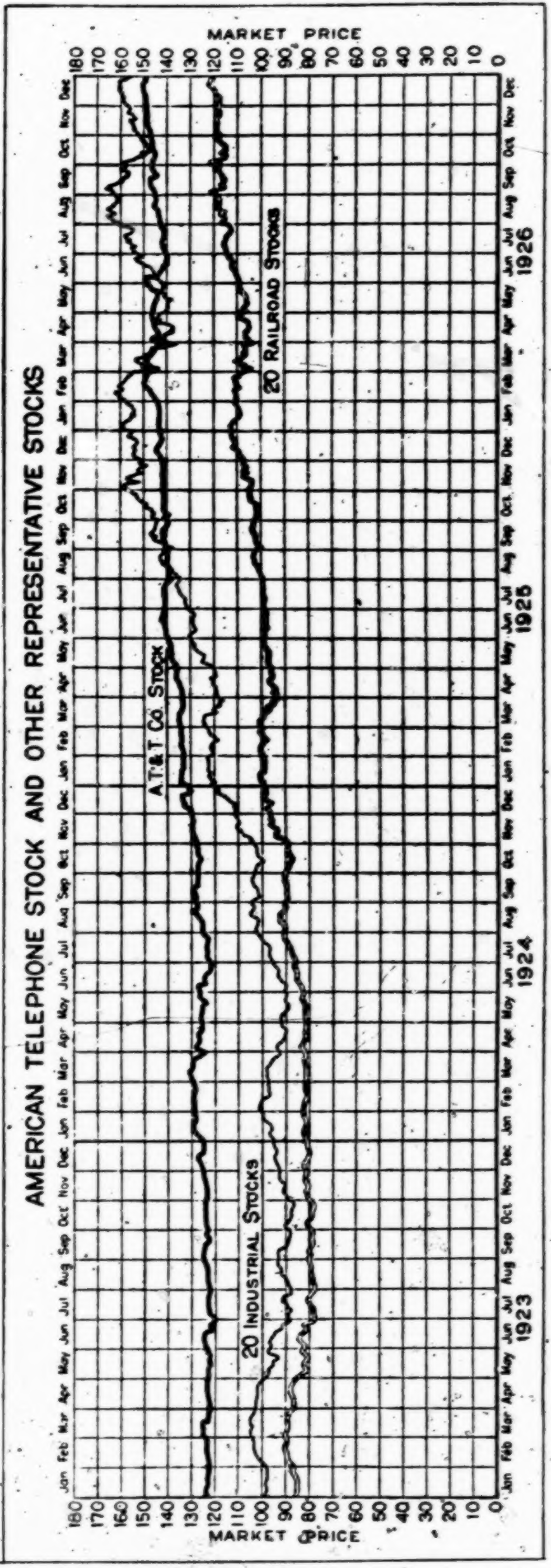
(Here follows Side Folio 3811)

DEFENDANT'S EXHIBIT 114

P112



AMERICAN TELEPHONE STOCK AND REPRESENTATIVE BONDS



AMERICAN TELEPHONE STOCK AND OTHER REPRESENTATIVE STOCKS

P. 13 *****Of total System capital liabilities of over $2,235,000,000 outstanding in the hands of the public on December 31, 1926, nearly $1,498,000,000, or 67% represented capital liabilities of the American Telephone and Telegraph Company.

[fol. 3812] Of $1,312,881,184 capital stock of System corporations outstanding with the public, $1,112,796,679 represented capital stock (including installments) of the parent company; the remainder being common, preferred, or capital stock of other Bell System Companies. The funded debt of the System as a whole, outstanding in the hands of the public, amounted to $921,523,000, consisting of $384,950,400 American Telephone and Telegraph Company obligations and $536,572,600 of Associated Company bonds.

The composition of the assets of the System as a whole is notably different from that of the assets of the American Telephone and Telegraph Company. Telephone plant carried on the books on December 31, 1926, at $2,783,023,059 accounted for 85% of all the System's assets; while in the case of the parent company the item of plant is a minor one among the assets, and $1,481,131,575 or 80% of the total assets of the Company consists of investments in the securities of, and advances to, Associated Companies of the Bell System and other Companies. This comparison again clearly indicates the role that the parent company has played in financing the growth of the Bell System.

[fol. 3813] Extracts from Exhibit Deposition Exhibit No. 115

Bell Telephone Securities, May 1, 1926

This strength and the conservative financial structure of the System are reflected in the charts on this page. These show that on December 31, 1925, surplus and reserves of the Bell System were equal to nearly 37% of total capital obligations, and that the mortgage debt of the System on the same date was less than 18% and funded debt less than 32% of net assets.

* * * The American Telephone and Telegraph Company's capital stock on December 31, 1925, amounted to over $921,000,000, outstanding in the hands of the public. In addition, about $195,000,000 in stock of other Bell System companies was held by the public on that date, making a total of $1,116,000,000 in Bell System stock oustanding in the hands of the public besides installments paid on new stock. The funded debt of the System as a whole, outstanding in the hands of the public, amounted to over $890,000,000 consisting of $387,000,000 American Telephone and Telegraph Company obligations and $503,000,000 of Associated Company bonds and notes.

A study of the tables will also make clear the major movements in the Company's financing operations during recent years. Since 1921, there has been an increase in the ratio of capital stock (including installments) to total capitalization. This ratio rose from less than 65% at the end of 1921 to nearly 71% at the end of 1925.

[fol. 3814] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 116

Bell Telephone Securities, May 21, 1925

The American Telephone and Telegraph Company's capital stock on December 31, 1924, amounted to over $888,000,000, outstanding in the hands of the public. In addition, about $176,000,000 in stock of other Bell System companies was held by the public on that date, making a total of $1,064,000,000 in Bell System stock outstanding in the hands of the public. The funded interest-bearing obligations of the Associated Companies, however, are not so largely held by the American Telephone and Telegraph Company. The funded debt of the System as a whole, outstanding in the hands of the public, amounted to nearly $753,000,000, consisting of $272,000,000 American Telephone and Telegraph Company obligations and $481,000,000 of Associated Company bonds and notes.

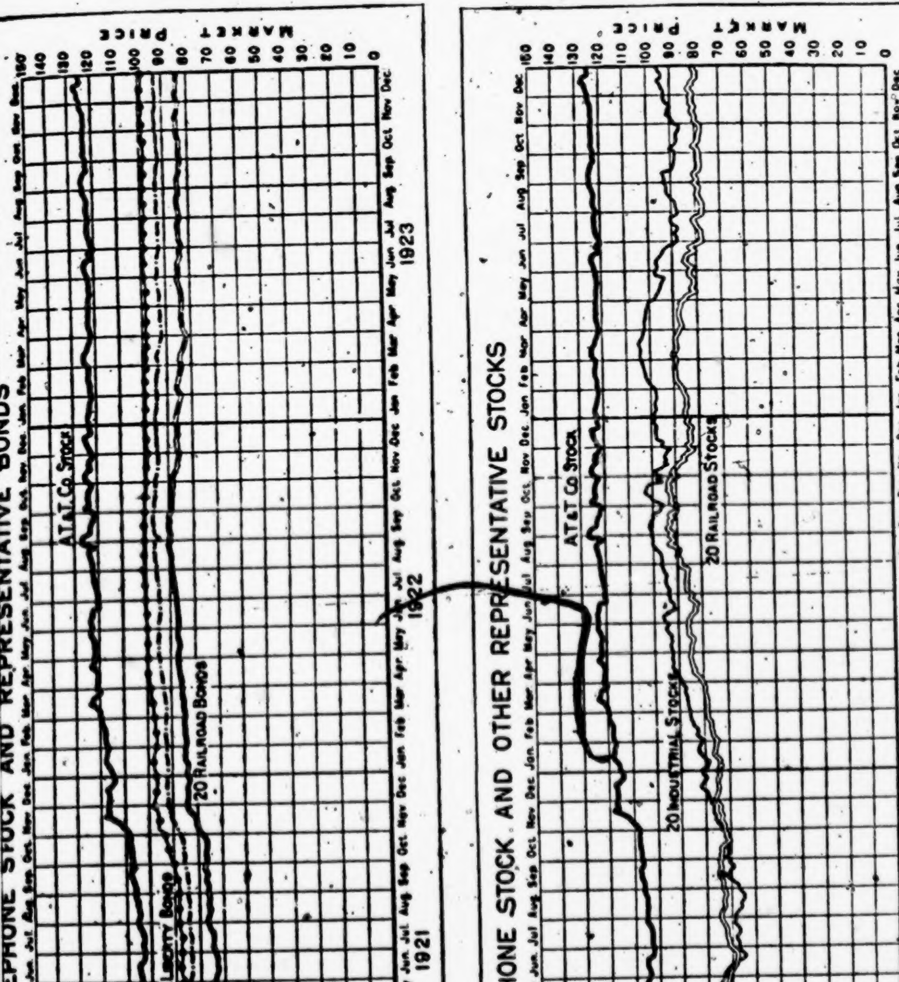
* * * * * * *

A study of the tables will also make clear the major movements in the Company's financing operations since 1914. Since 1921, there has been an increase in the ratio of capital stock (including installments) to total capitalization. This ratio rose from less than 65% at the end of 1921 to more than 77% at the end of 1924. Even after the issue of $125,000,000 Debenture 5's in January, 1925, the ratio was nearly 70%.

Permanent financing is undertaken by the individual Associated Companies only when conditions are favorable and, in the meantime, the necessary funds for extensions and improvements are furnished to them by the American Company. Net advances to Associated Companies are, therefore, an important item in the parent company's assets. They are naturally subject to considerable fluctuation from year to year.

(Here follows side folio 3815)

DEFENDENTANT'S DEPOSITION EXHIBIT #117



AMERICAN TELEPHONE STOCK AND REPRESENTATIVE BONDS

AMERICAN TELEPHONE STOCK AND OTHER REPRESENTATIVE STOCKS

STRENGTH AND STEADINESS OF MARKET PRICE HAVE CHARACTERIZED AMERICAN TELEPHONE STOCK

7047

[fol. 3816] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 117

Bell Telephone Securities, May 1, 1924

* * * The American Telephone and Telegraph Company's capital stock on December 31, 1923, amounted to over $735,000,000, outstanding in the hands of the public. In addition, about $138,000,000 in stock of other Bell companies was held by the public on that date, making a total of $873,000,000 in Bell System stock outstanding in the hands of the public. The funded interest-bearing obligations of the Associated Companies, however, are not so largely held by the American Telephone and Telegraph Company. The funded debt of the System as a whole, outstanding in the hands of the public, amounted to nearly $753,000,000, consisting of $310,000,000 American Telephone and Telegraph Company obligations and $443,000,000 of Associated Company bonds and notes.

A study of the tables will also make clear the major movements in the Company's financing operations since 1914. During 1922, there was a marked change in the ratio of capital stock (including installments) to total capitalization. This ratio rose from less than 65% at the end of 1921 to more than 75% at the end of 1922. At the close of 1922, the ratio was still above 70%, despite the issue of $100,000,000 Debenture 5½s.

[fol. 3817] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 118

Bell Telephone Securities, May 1, 1923

The American Telephone and Telegraph Company has kept and is keeping at the forefront in the development of radio telephony and by its own inventions and by the acquisition of licenses and patents it has a clear field in the application of radio to the telephone service of the Bell System. However, there are definite physical limitations to the use of radio and the hope cannot be extended that it will be substantially helpful to intercommunication by telephone between the many millions of its subscribers. But it may be expected that for certain services where wires cannot be provided, such as communication with ships at sea, radio may be successfully employed and thereby broaden the scope of the service of the Bell System.

How the System is Financed

The American Telephone and Telegraph Company has made available the greater part of the capital which has been used to buy materials and pay for labor to build the properties of the Bell System.

The American Company, therefore, while operating the long distance lines throughout the country and performing various important services for the twenty-five Associated Companies, is also the principal financing agency of the Bell System, investing the proceeds arising from the sale of its own securities in the stocks, bonds, and notes of these operating companies. The American Telephone and Telegraph Company at present owns, directly or indirectly, about 90 per cent. of the voting stock of Associated Companies.

[fol. 3818] In order to raise necessary capital the American Company has issued its own bonds, stocks and notes, which have been bought by the investing public. Some of the Associated Companies have also made public sales of their stocks, bonds and notes, in addition to those which are owned by the American Company. Bell System securities now in the hands of the public are, therefore, American Telephone and Telegraph Company Capital Stock, Bonds and Notes, and the Bonds and Notes and some Stock of certain Associated Companies.

• • • • • • •

Taking into account these capital stock premiums, the surplus earnings and other company funds invested in the business, and the accumulated surpluses of the associated and controlled Companies, it is now conservatively estimated that the equity represented by the stock of the American Company equals approximately $190 per share.

• • • • • • •

The American Telephone and Telegraph Company's capital stock on December 31, 1922, amounted to nearly $700,000,000, outstanding in the hands of the public. In addition, about $122,000,000 in stock of other Bell System Companies was held by the public on that date, making a total of $822,000,000 in Bell System stock outstanding in the hands of the public. The funded interest-bearing obligations of the Associated Companies, however, are not so largely held by the American Telephone and Telegraph Company. The funded debt of the System as a whole, outstanding in the hands of the public, amounted to about $646,000,000, consisting of $227,000,000 American Telephone and Telegraph Company obligations and $419,000,-[fol. 3819] 000 of Associated Company bonds and notes.

The matter of inventories, such as supplies, tools and so forth, is not a comparatively large item in the balance sheets of the System. Nor does this item represent inventories in the ordinary commercial sense. The supplies are not carried for sale, nor are they transferred to other businesses, but, on the contrary, they are rapidly used in current operations or incorporated into plant.

It may be noted that net working assets of the Bell System, determined according to the usual procedure of corporate analysis, show a considerable fluctuation from year to year. This fluctation is due merely to the fact that the advance financing necessary to cover new construction has been accomplished earlier in the year on some occasions and later in the year on others, with a consequent variation in the cash reserves on hand.

To cover actual operations, Bell Telephone Companies require comparatively little net working capital. Heavy liquid assets such as are considered advantageous for ordinary commercial undertakings have no place in the telephone business.

This condition is due to the fundamental difference which exists between the telephone industry and ordinary commercial undertakings. The Bell System is engaged in furnishing telephone service. It has no manufactured product to sell and no items of merchandise to dispose of, whereas a manufacturing or trading concern ordinarily requires a heavy investment in raw materials, semi-finished and finished parts, and completed units, all of which call for a considerable volume of working capital.

[fol. 3820] Another aspect of the situation is that the telephone industry is stablized to a high degree and is not subject to the severe ups and downs of speculative business. The steadiness in the growth of each class of telephone revenues is evident in the table on page 18.

• • • • • • • •

A study of the tables will also make clear the major movements in the Company's financing operations. The year 1909, for instance, was notable for the fact that within a period of ten months convertible bonds of the Company amounting to $101,000,000 were exchanged for its common stock at the rate of $133.73 per share. During 1922, there was a marked change in the ratio of capital stock (including installments) to total capitalization. This ratio rose from less than 65% at the end of 1921 to more than 75% at the end of 1922.

[fol. 3821] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 119

Bell Telephone Securities, May 1, 1922

American Telephone and Telegraph Company Capital Stock

American Telephone stock, practically speaking, is the stock of the telephone industry of the nation. It is all of one class. The par value of each share is $100.

The total par value of American Telephone Stock outstanding on March 31, 1922, was approximately	$562,000,000
For this stock the company has received over	601,000,000
Thus the excess received over par value, known as capital stock premiums, is about	$39,000,000

Taking into account these capital stock premiums and the accumulated surpluses of its Associated Companies, it is now conservatively estimated that the equity represented by the stock of the American Company equals approximately $200 per share in actual money invested, without making any allowance for possible revaluations of physical plant on the basis of present price levels.

• • • • • • •

The American Telephone and Telegraph Company is the parent company and, as has been pointed out, supplies much of the capital for the development of the Associated

Companies, thereby becoming a large holder of their stocks and other securities. This is reflected in the capital liability items of the two balance sheets. The American Telephone and Telegraph Company's capital stock on December 31, 1921, amounted to about $548,000,000, outstanding in the hands of the public. In addition, about $84,000,000 in stock of other Bell System companies was held by the public on that date, making a total of $632,000,000 in Bell System stock outstanding in the hands of the public. The funded interest-bearing obligations of the Associated Companies, [fol. 3822] however, are not so largely held by the American *Telephone* and Telegraph Company. The funded debt of the System as a whole, outstanding in the hands of the public, amounted to nearly $667,000,000 consisting of $301,000,000 American Telephone and Telegraph Company obligations and $366,000,000 of Associated Company bonds and notes.

* * * * * * *

American Telephone and Telegraph Company

Statement of Net Earnings

Years Ending December 31st

Years	Balance	Appropriated for Contingencies	Balance Added to Surplus
1900	$1,407,457	$937,258	$470,199
1901	2,348,262	1,377,651	970,611
1902	1,250,868	522,247	728,621
1903	1,945,514	728,140	1,217,374
1904	1,476,584	586,149	890,435
1905	3,167,683	1,743,295	1,424,388
1906	2,775,704	1,773,737	1,001,967
1907	5,325,744	3,500,000	1,825,744
1908	5,662,551	3,000,000	2,662,551
1909	6,059,113	3,000,000	3,059,113
1910	6,079,071	3,000,000	3,079,071
1911	5,563,815	2,800,000	2,763,815
1912	6,047,357	2,800,000	3,247,357
1913	5,466,053	2,500,000	2,966,053
1914	4,762,139	2,500,000	2,262,139
1915	5,518,047	2,500,000	3,018,047
1916	6,891,090	2,500,000	4,391,090
1917	5,989,492	2,500,000	3,489,492
1918	8,671,623	5,000,000	3,671,623
1919	9,039,457	5,000,000	4,039,457

(Here follow side folios 3823-3835)

Def Ex 132
p.1

DEFENDANT'S EXHIBIT 132

PROVISIONAL ESTIMATE
FOR THE YEAR 1929

WITH

FORECAST FOR 1930-1933

BY THE

....(COMPANY)...

DATE ISSUED ....192.....

Defs Ex 132
Jan. 1932

Def 4132

P. 2

GENERAL NOTES

The Provisional Estimate and Four-Year Forecast should present the company's best estimates of expected growth and results of operation. It consists of estimates of expected station and plant growth, earnings and expenses, which are necessary to formulate specific construction and operating programs for the ensuing year, and to permit detailed analyses and coordination of proposed activities and expected results. It furnishes a basis for determining the financial and material requirements for the year covered by the Provisional Estimate, and for the general approximation of such requirements for the succeeding four years. Prepared annually, it aids in developing a somewhat comprehensive continuous program in respect of revenues, expenditures and property growth, including a program for rate changes when necessary.

The following matters should be given consideration in connection with the preparation of the 1929 Provisional Estimate and Four-Year Forecast:

1. The 1929-1933 Provisional Estimate and Forecast should be prepared on the basis of rates which are in effect at the time the Estimate is submitted, taking into consideration, however, rates which have already been approved to become effective at a definite future date. The estimates should not include the probable effect of expected rate changes and no provision has been made on the Provisional Estimate forms for indicating any such changes.

2. All important contemplated purchases and sales of plant included in the Estimate should be described in the letter of transmittal, which should state the assumptions made as to the date effective, number of stations, purchase or sale price and amounts of revenues and expenses involved. In this connection transactions between Associated Companies or between Associated Companies and Long Lines Department should be included only when agreed upon by both Companies involved so that the effect of a given transaction will be reflected correspondingly in the Estimates of both companies. The letter of transmittal should also state the pertinent facts as to other important contemplated purchases and sales of plant not included in the Provisional Estimate.

3. The letter transmitting the Provisional Estimate should contain a somewhat detailed discussion of the consideration given and assumptions made in respect of the several factors listed below in the preparation of the various statements:

   a) General Business Conditions.

   b) Estimated Line and Station Growth. Include statement covering general character of proposed sales activities, (exclusive of sales effort in connection with offered business) and indicate the net amount by which net line and station gain are expected to be increased by such activities over and above the amounts which might be expected without such activities; also indicate the corresponding effect of sales activities during 1928.

   c) Changes in Wage Rates and Material Costs.

   d) Plant Additions, Betterments and Improvements, including lists of major projects in the five-year period involving land, buildings and central office equipment (with cutover dates and number of lines) and major toll projects. For each project listed, show the gross construction in total for the five-year period and the amount of such construction for 1929. Also list by major projects (with brief description of each project) the amounts included in or excluded from the gross construction to cover payments to or reimbursements from other Associated Companies or Long Lines Department in connection with the construction of facilities to be jointly owned, such for example, as joint cable projects, etc. An analysis of the cable program is called for on the reverse of Statement G, Sheet 1.

   e) Proposed Financing for year 1929.

   f) Revenues and Expenses:

      1. Rate and Revenue Program.
      2. Estimated calling rate.
      3. Estimated toll usage.
      4. Directory and other miscellaneous revenues.
      5. Traffic expenses.
      6. Commercial expenses.
      7. Current maintenance expenses.
      8. General, miscellaneous and other expenses. (Includes provision for service pension accruals).
      9. Depreciation.
      10. Taxes. State amount of Federal Income Tax included in each of years 1928-1933.

4. The Provisional Estimate should reach New York not later than November 15th. The compilation of complete figures for the year 1928 will necessitate the use of estimates for the latter months of the year. These estimates should be made at the latest practicable date in order that the totals for the year may be as nearly accurate as possible.

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Printed in U. S. A.

FORM S. N. 311-P
PROVISIONAL ESTIMATE 1929
STATEMENT A

SUMMARY OF PROVISIONAL ESTIMATE AND FORECAST
(COMPARED WITH RESULTS OF 1924-1928, INCL.)

Name of Company ....

		Actual Results					PROV. EST.	Forecast				
	COMPANY STATIONS	1924	1925	1926	1927	1928†	1929	1930	1931	1932	1933	
1	Total Inward Station Movement*											1
2	Total Outward Station Movement*											2
3	Net Station Gain*											3
4	% Gain to Total Stations Jan. 1st											4
5	% Outward Sta. Movement to Total Stas. Jan. 1st											5
6	Net Sta. Gain by Purchases, Sales and Transfers							XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX	6
7	Total Stations at End of Year											7
8	Average Number of Stations											8
9	% Increase over Previous Year											9
10	% Operated from Dial System C. O.											10
	PLANT											
11	Gross Construction (Incl. C. W. in P.)*											11
12	Net Additions (Incl. C. W. in P.)*											12
13	Per Station Gained (Incl. C. W. in P.)*											13
14	Net Add. to Plant by Purchases, Sales and Trans.							XXXXXXX	XXXXXXX	XXXXXXX	XXXXXXX	14
15	Total Plant at End of Year (Incl. C. W. in P.)											15
16	% Increase Over End of Previous Year											16
17	Total Plant at End of Year Per Station											17
18	Average Plant in Service (Excludes Gen'l Equip.)											18
19	Average Plant in Service Per Average Station											19
	REV. AND EXP. (Under Existing Rates for 1929-1933)‡											
20	Exchange Revenues											20
21	Toll Revenues											21
22	Miscellaneous Operating Revenues											22
23	**Total Telephone Revenues**											23
24	Traffic Expenses											24
25	Commercial Expenses											25
26	Gen. and Misc. Expenses											26
27	Other Oper. Expenses											27
28	Current Maintenance											28
29	Depreciation											29
30	Taxes											30
31	**Total Telephone Expenses**											31
32	**Net Telephone Earnings**											32
33	Depreciation ($\frac{340, 608}{609}$) % to Av. Plant in Serv. ($\frac{\text{incl.}}{261}$)††											33
34	Reserve for Depreciation ($\frac{102}{103}$)—End of Year											34
35	% to Total Plant in Service and Gen'l Equip. ($\frac{\text{excl.}}{211}$)											35

* Excluding Purchases, Sales and Transfers.
‡ Average per Station—Annual Basis.
†† Depreciation % on line 33 corresponds with that shown on Mo. Report No. 1.

† Last ....Months Estimated.
Show money value and number of stations to nearest thousand, omitting last three digits.
Per station figures should be given in dollars and cents.
Show percentages two figures to right of decimal.

3826

Date Issued ....

A

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FORM S. H. 312-P
DIVISIONAL ESTIMATE 1929

SUPPLEMENTAL STATION AND PLANT DATA

Name of Company ....

STATEMENT B

	Actual Results					PROV. EST.	Forecast				
	1924	1925	1926	1927	1928†	1929	1930	1931	1932	1933	
1 Total Changes of Address[1]											1
2 Net Residence Station Gain*[1]											2
3 Net Business Station Gain*[1]											3
4 Net Gain in Exchange Circuits to Co. Stations*[1]											4
5 No. of Exch. Circuits to Co. & Serv. Stations, Dec. 31[1]											5
6 Total Panel Lines in Service, Dec. 31[1]											6
7 Total Step-by-Step Lines in Service, Dec. 31[1]											7
8 No. Stations Operated from Panel C. O., Dec. 31[1]											8
9 No. Stations Operated from S. by S. C. O., Dec. 31[1]											9
10 Av. Stations Operated from Dial System C. O.[1]											10
11 Average Daily Calling Rate per Station—Local											11
12 Toll Usage — Total messages A-B[1]											12
13 Toll Usage — Total messages—Toll Board[1]											13
14 Original Cost of Plant Removed or Abandoned[1]											14
15 Cost of Removal[1]											15
16 Salvage[1]											16
17 Net Extraordinary Repairs[1]											17
18 Total (14 + 15 + 17 − 16)[1]											18
19 Total Net Charges to Reserves (102,103)[1]							xxxxxxx	xxxxxxx	xxxxxxx	xxxxxxx	19
20 Deprc'n (**) % to Av. Plant in Serv. & Gen'l Equip. (Except Land)											20
21 Total Plant in Serv. & Gen'l Equip. (Except Land), Dec. 31[1]											21

1929 MAJOR ITEMS BY MONTHS

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total		
22 Total Inward Station Movement*															22
23 Total Outward Station Movement*															23
24 Net Station Gain*															24
25 Net Station Gain by Purchases, Sales & Trans.															25
26 Average No. of Stations[1]													xxx	xxx	26
27 Toll Usage (Total Messages Incl. A-B.)[1]															27
28 Gross Construction‡[1]*															28
29 Net Additions‡[1]*															29
30 Average Plant in Service (Excludes Gen'l Equip.)[1]													xxx	xxx	30

* Excluding Purchases, Sales and Transfers.
** Accounts 340, 608, 609 and Dep'n charged to Accounts 701 to 704
‡ Includes Construction Work in Progress.

† Last .... Months Estimated.
[1] "000" omitted.
Show percentages two figures to right of decimal—Annual basis.

Ref 4,132
P. 5

3827

Date Issued ....

B

3446F

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ESTIMATED PLANT &

GEN'L EQUIP. EXPENDITURES, 1929

(Including Construction Work in Progress)

Name of Company ....

FORM S. M. 313-P

PROVISIONAL ESTIMATE 1929

STATEMENT C-1

	"000" Omitted	GROSS CONSTRUCTION										
		Under Specific Estimates (a)		Under Routine Estimates (including gross wiring gain) (b)		Total (c)		Original Cost of Plant Removed or Abandoned (including gross wiring loss) (d)		Net Additions (e)		
1	**Total Right of Way (207)**											1
2	Land (211)											2
3	Buildings (212)											3
4	**Total Land and Buildings (210)**											4
5	Manual Offices (221-01)											5
6	Panel Offices (221-02)											6
7	Step-by-Step Offices (221-03)											7
8	Other Equipment (222)											8
9	**Total Central Office Equipment (220)**											9
10	**Total Station Equipment (230)**											10
11	Pole Lines (241)											11
12	Aerial Cable (242)											12
13	Aerial Wire (243)											13
14	Underground Conduit (244)											14
15	Underground and Submarine Cable (245-6)											15
16	**Total Exchange Lines**											16
17	Pole Lines (251)											17
18	Aerial Cable (252)											18
19	Aerial Wire (253)											19
20	Underground Conduit (254)											20
21	Underground and Submarine Cable (255-6)											21
22	**Total Toll Lines**											22
23	Interest During Construction (268)			xxxxxx	xxx							23
24	Undistributed Construction Expenditures (270)											24
25	**Total Plant**											25
26	General Equipment (260)	xxxxxx	xxx	xxxxxx	xxx							26

	"000" Omitted	Station Equipment (f)		Exchange Aerial Wire (g)		
27	Gross Wiring Gain in Column (b)					27
28	Gross Wiring Loss in Column (d)					28
29	Net Wiring Loss in Column (e)					29

Ref Ex. 132

J.B.

3828

Date Issued ....

C-1

3416

Printed in U. S. A.

ESTIMATED PLANT &
GEN'L EQUIP. EXPENDITURES, 1930 to 1933
(Including Construction Work in Progress)

Name of Company

FORM S. M. 312-P
PROVISIONAL ESTIMATE 1925

STATEMENT-C-2

	"000" Omitted	1930			1931			1932			1933			
		Gross Construction (a)	Orig. Cost of Plant Removed or Abandoned (incl. gross wiring loss) (b)	Net Additions (c)	Gross Construction (a)	Orig. Cost of Plant Removed or Abandoned (incl. gross wiring loss) (b)	Net Additions (c)	Gross Construction (a)	Orig. Cost of Plant Removed or Abandoned (incl. gross wiring loss) (b)	Net Additions (c)	Gross Construction (a)	Orig. Cost of Plant Removed or Abandoned (incl. gross wiring loss) (b)	Net Additions (c)	
1	**Total Right of Way (207)**													1
2	Land (211)													2
3	Buildings (212)													3
4	**Total Land and Buildings (210)**													4
5	Manual Offices (221-01)													5
6	Panel Offices (221-02)													6
7	Step-by-Step Offices (221-03)													7
8	Other Equipment (222)													8
9	**Total C. O. Equipment (220)**													9
10	**Total Station Equipment (230)**													10
11	**Total Exchange Lines (241-6)**													11
12	Pole Lines (251)													12
13	Aerial Cable (252)													13
14	Aerial Wire (253)													14
15	Underground Conduit (254)													15
16	U.G. & Submarine Cable (255-6)													16
17	**Total Toll Lines**													17
18	Interest During Construction (268)													18
19	Undistr. Constr. Expenditures (270)													19
20	**Total Plant**													20
21	General Equipment (260)													21

	"000" Omitted	1930		1931		1932		1933		
		Station Equipment (d)	Exchange Aerial Wire (e)	Station Equipment (d)	Exchange Aerial Wire (e)	Station Equipment (d)	Exchange Aerial Wire (e)	Station Equipment (d)	Exchange Aerial Wire (e)	
22	Gross Wiring Gain in Column (a)									22
23	Gross Wiring Loss in Column (b)									23
24	Net Wiring Loss in Column (c)									24

3829

Date Issued

Sep 4/32
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C-2

For P. 8 of Deposition Exhibit 132, Statement E Sheet-1 of Provisional Estimate for year 1929, See Form of Defendant's Exhibit X-354, P. 45.

34461

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ESTIMATED EARNINGS AND EXPENSES
UNDER EXISTING RATES
1929—BY MONTHS

FORM S. H. 315-P
PROVISIONAL ESTIMATE 1929

STATEMENT E
SHEET 2

(Name of Company)

	EARNINGS & EXPENSES (Under Existing Rates)	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total	
1	Exchange Revenues . . .														1
2	Toll Revenues														2
3	Misc. Oper'g Rev.														3
4	**Total Tel. Revenues**														4
5	Traffic Expenses														5
6	Commercial Expenses . .														6
7	Gen'l & Misc. Exp														7
8	Other Oper. Expenses . .														8
9	**Total Operation Exp.** . . .														9
10	Superv. of Maint'ce . . .														10
11	Ordinary Repairs														11
12	Rearr. and Changes . . .														12
13	Sta. Removals & Chgs.														13
14	**Total Current Maint'ce.**														14
15	Depreciation														15
16	Taxes														16
17	**Total Tel. Expenses**														17
18	**Net Telephone Earnings**														18
19	Sundry Net Earnings.														19
20	**Total Net Earnings**														20
21	Deduct Interest														21
22	**Balance Net Profits**														22
23	Deduct Div. (Preferred)														23
24	(Common)														24
25	**Total Dividends**														25
26	**Undivided Profits**														26
27	Lic. Rev. Dr. (included in Line 8)														27
28	*Net Tel. Earn. to Aver. Plt. in Serv.	%	%	%	%	%	%	%	%	%	%	%	%	%	28
29	Int. pd. A.T.&T.Co. (included in Line 21)														29

Show money value to nearest thousand dollars, omitting last three digits.
* Show percentages two figures to right of decimals—Annual Basis.

3831

Date Issued...

Def 5-13
6.9

E-2

For P. 10 of Deposition Exhibit 132, Statement F,
of Provisional Estimate for year 1929, -
See form of Defendant's Exhibit X-354, p. 48.

FOR[illegible] 417-P
PROVISIONAL ESTIMATE 1929
STATEMENT G
SHEET 1

Ref 24,132
p. 11

(Name of Company)

ESTIMATED QUANTITIES OF NEW MATERIAL REQUIRED TO BE DELIVERED IN 1929-1933 FOR CONSTRUCTION AND MAINTENANCE

	SWITCHBOARDS	1929		1930		1931		1932		1933		
1	Manual, Large Mult. Sections (excludes D. S. "A.")											1
2	Manual, Small Mult. C. O. Sections (excludes D. S. "A.")											2
3	Manual, Small Mult. P. B. X. Sections (excluding No. 700)											3
4	Manual, Non-Mult. Sections, No. 505 Type											4
5	Manual, Non-Mult. Sections, No. 551 Type											5
6	Manual, Non-Mult. Sections, Total other types (excluding No. 700)											6
7	Panel—No. of Lines, Total											7
8	Panel—No. of Frames, Total											8
9	Step-by-Step—No. of Lines, Total											9
10	No. 700—P. B. X.—No. of New Exchanges					xxxx	xxx	xxxx	xxx	xxxx	xxx	10
11	No. 700—P. B. X.—No. of Sections											11
12	No. 700—P. B. X.—No. of Lines Equipped—Total											12
13	No. 740—P. B. X.—No. of New Exchanges											13

	REPEATERS AND CARRIER CURRENT EQUIPMENT	1929		1930		1931		1932		1933		
14	Telephone Repeaters No. 21, 22 and 44 Types											14
15	Telegraph Repeaters, Metallic											15
16	Telegraph Repeaters, Differential Duplex											16
17	Telegraph Repeaters, Single Line					xxxx	xxx	xxxx	xxx	xxxx	xxx	17
18	Telegraph Repeaters, One Way Polar					xxxx	xxx	xxxx	xxx	xxxx	xxx	18
19	Carrier Telephone Systems, Type "C"											19
20	Carrier Telephone Systems, Type "D"											20
21	Carrier Telegraph Systems, Type "B"											21
22	Carrier Telegraph Systems, "Voice Frequency"											22

	LOADING COILS	1929		1930		1931		1932		1933		
23	Side and Phantom Loading Coils											23
24	Non-phantom Loading Coils											24
25	Carrier Loading Coils											25
26	Loading Coil Cases											26

	CABLE TERMINALS	1929		1930		1931		1932		1933		
27	"C" Type											27
28	No. 14 Type											28

LEAD COVERED CABLE EXPRESSED IN MILLIONS OF CONDUCTOR FEET

		1929		1930		1931 Total	1932 Total	1933 Total	
	PAIRED CONDUCTORS (Non-Quadded)	In Quadded Cable	Total	In Quadded Cable	Total				
29	No. 16 and larger								29
30	No. 19								30
31	No. 22								31
32	No. 24								32
	QUADDED CONDUCTORS								
33	No. 16 and larger								33
34	No. 19 and smaller								34
35	Total (Lines 29 to 34)*								35
36	Toll Aer. Cable Linear Ft. (Include Cond. Ft. in Lines 29 to 35)	xxxx xxx		xxxx xxx					36

* Give Analysis on Reverse.

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3833

Date Issued

CABLE PROGRAM

In order to indicate the general nature of the cable program for 1929, show an approximate subdivision of the total conductor feet of cable to be delivered in 1929, as given on Statement G. under the following general classifications:

Class	*No. of Conductor Feet*
1. Toll Cable* (Total of Lines 29, 33 & 34)	
2. Interoffice Trunk Cable	
3. Cutover Cable, i. e., subscribers' cable primarily intended for cutting areas from one central office to another or required in connection with cutting new central offices into service	
4. Cable required for extending, relieving and replacing the underground and aerial feeder and distributing cable system not included in Item No. 3	
5. Cable required for rehabilitation of purchased plant	
Total (Should agree with Statement G, Sheet 1, line 35, 1929)	

* List below, each major toll project, giving approximate mileage of cable sheath and conductor feet subdivided by gauges.

FORM S.H. 317-P
PROVISIONAL ESTIMATE 1929

STATEMENT G
SHEET 2

[illegible] 4 22
1,12

....
(Name of Company)

ESTIMATED QUANTITIES OF NEW MATERIAL REQUIRED TO BE DELIVERED IN 1929-33 FOR CONSTRUCTION AND MAINTENANCE

STATION APPARATUS

		1929	1930	1931	1932	1933	
1	Subscriber Sets, Bell Boxes						1
2	Subscriber Sets, Wall Type						2
3	Desk Stands						3
4	Hand Telephone Sets						4
5	Coin Collectors No. 50 Type						5
6	Coin Collectors No. 7 Type						6

ESTIMATE OF POLE REQUIREMENTS

		1929			1930			1931	1932	1933	
		Treated	Non-treated	Total	Treated	Non-treated	Total				
7	Western Cedar										7
8	Eastern Cedar										8
9	Chestnut										9
10	Creosoted Pine		xx xxx			xx xxx					10
11											11
12											12
13											13
14											14
15											15
16											16
17	To be purchased locally (incl. above)	xxx xxx	xx xxx		xxx xxx	xx xxx					17

LINE MATERIAL

		1929	1930	
18	Bare Copper Wire (lbs.)			18
19	Galvanized Iron Wire (lbs.)			19
20	Strand (Thousands of feet)			20
21	Insulated Wire (Drop, Bridle and Inside) (Thousands of conductor feet)			21
22	Conduit, Clay (duct ft.)			22
23	Conduit, Wood (duct ft.)			23
24	Crossarms, Fir			24
25	Crossarms, Pine			25

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[fol. 3836] **DEPOSITION EXHIBIT #134**

Extimated Benefits to the American Telephone and Telegraph Company from Consolidated Income Tax Returns During the Years 1918 to 1930, Inclusive (Based on Final Settlement Data for Years 1918 to 1923 and on Returns as Filed for Other Years)

Year	Amount
1918	$196,286.17
1919	343,926.87
1920	346,827.89
1921	617,982.52*
1922	50,984.97
1923	14,673.11
1924	58,445.02*
1925	19,330.92*
1926	
1927	319.78
1928	76.49*
1929	
1930	
Total	$257,183.84

Notes

(1) Companies having "deficits" failed to pay dividends to American Company.

(2) No consideration given in above figures to cost to American Company of preparing Consolidated Return and handling settlement matters with Bureau.

* Red figures.

[fol. 3837] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 139

American Telephone and Telegraph Company

Published Market Prices of Principal Bell System Securities

(From this exhibit there has been taken in this extract information concerning Preferred stocks only)

Stocks	Range for 1921 High	Range for 1921 Low	Week Ending Dec. 31, 1921 Yield
Michigan State Telephone Company Pref. (6% Cum.)			....
Pacific Tel. & Tel. Co. Preferred 6%	87-½	80	6.70
Southwestern Bell Tel. Co. Preferred 7%	100	100	7.00
Radio Corporation of America Preferred (7%)	2-7/8	1-5/8	....

[fol. 3836]

DEPOSITION EXHIBIT #134

Extimated Benefits to the American Telephone and Telegraph Company from Consolidated Income Tax Returns During the Years 1918 to 1930, Inclusive (Based on Final Settlement Data for Years 1918 to 1923 and on Returns as Filed for Other Years)

Year	Amount
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1925	19,330.92*
1926	
1927	319.78
1928	76.49*
1929	
1930	
Total	$257,183.84

Notes

(1) Companies having "deficits" failed to pay dividends to American Company.

(2) No consideration given in above figures to cost to American Company of preparing Consolidated Return and handling settlement matters with Bureau.

* Red figures.

[fol. 3837] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 139

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(From this exhibit there has been taken in this extract information concerning Preferred stocks only)

Stocks	Range for 1921 High	Range for 1921 Low	Week Ending Dec. 31, 1921 Yield
Michigan State Telephone Company Pref. (6% Cum.)			....
Pacific Tel. & Tel. Co. Preferred 6%	87-½	80.	6.70
Southwestern Bell Tel. Co. Preferred 7%	100	100	7.00
Radio Corporation of America Preferred (7%)	2-7/8	1-5/8	....

	Range for 1922		Week Ending Dec. 31, 1922
Chesapeake and Potomac Tel. Co. Preferred 7%	110-½	105	6.36
Michigan State Telephone Company Pref. (6% Cum.)	•	•	....
New York Telephone Company Preferred 6½%	112-¾	106	5.87
Ohio Bell Telephone Company Preferred 7%	105-½	96-¼	....
Pacific Tel. and Tel. Co. Preferred 6%	92-½	86-5/8	....
Southwestern Bell Tel. Co. Preferred 7%	100	100	....
Western Electric Company, Inc. Preferred 7%	113-¾	107	6.19
Wisconsin Telephone Company Preferred 7%	•	•	....
Radio Corporation of America Preferred (7%)	3-¾	2-7/8	....

[fol. 3838]

	Range for 1923		Week Ending Dec. 31, 1923
Stocks	High	Low	Yield
Chesapeake and Potomac Tel. Co. Preferred 7%	110-¾	108-¼	6.33
New York Telephone Company Preferred 6-½%	112	107-½	5.90
Pacific Tel. and Tel. Co. Preferred 6%	95	91-½	6.42
Southwestern Bell Tel. Co. Preferred 7%	106-½	101	6.76
Western Electric Company, Inc. Preferred 7%	117	111-1/8	....
Wisconsin Telephone Company Preferred 7%	•	•	....

	Range for 1924		Week Ending Dec. 31, 1924
Bell Tel. Co. of Pennsylvania Preferred 6-½%	109-½	104	6.05
Chesapeake & Potomac Tel. Co. of Baltimore City, Preferred 7%	112	109-1/8	6.30
New York Telephone Company Preferred 6-½%	112-¾	109	5.88
Ohio Bell Telephone Company Preferred 7%	108-½	102	6.51
Pacific Tel. and Tel. Co. Preferred 6%	95	88-½	6.42
Southwestern Bell Tel. Co. Preferred 7%	108-¾	103	6.56
Western Electric Company, Inc. Preferred 7%	117	111-5/8	6.06
Wisconsin Telephone Company Preferred 7%	•	•	....

[fol. 3839]

	Range for 1925		Week Ending Dec. 31, 1925
Stocks	High	Low	Yield
Bell Tel. Co. of Pennsylvania Preferred 6-½%	112	107-¾	....
Chesapeake & Potomac Tel. Co. of Baltimore City, Preferred 7%	114-¼	110-1/8	6.25
New York Telephone Company Preferred 6-½%	114	110-½	5.88
Ohio Bell Telephone Company Preferred 7%	110	106-¼	6.36
Pacific Tel. and Tel. Co. Preferred 6%	104	92-5/8	5.77
Southwestern Bell Tel. Co. Preferred 7%	115-½	107-½	....
Wisconsin Telephone Company Preferred 7%	•	•	....

	Range for 1926		Week Ending Dec. 31, 1926
New York Telephone Company Preferred 6-½%	116-½	110-½	5.68
Bell Tel. Co. of Pennsylvania Preferred 6-½%	113-3/8	109-½	....
Chesapeake & Potomac Tel. Co. of Baltimore City, Preferred 7%	116	110-½	6.06
Ohio Bell Telephone Company Preferred 7%	115	109	6.35
Wisconsin Telephone Company Preferred 7%	•	•	....
Northwestern Bell Tel. Co., Preferred 6-½%	•	•	....
Southwestern Bell Tel. Co. Preferred 7%	116-½	112-½	....
Pacific Tel. and Tel. Co. Preferred 6%	107-1/8	99-7/8	....

fol. 3840]

Stocks	Range for 1927 High	Low	Week Ending Dec. 31, 1927 Yield
New York Telephone Company Preferred 6–½%	115–5/8	112–¾	5.73
Bell Tel. Co. of Pennsylvania Preferred 6–½%	117–½	112–½	5.62
Chesapeake & Potomac Tel. Co. of Baltimore City Preferred 7%	118–¼	115	5.91
Ohio Bell Telephone Company Preferred 7%	114	106–½	6.31
Wisconsin Telephone Company Preferred 7%	*	*	....
Northwestern Bell Tel. Co. Preferred 6–½%	*	*	....
Southwestern Bell Tel. Co. Preferred 7%	120	114–½	5.94
Pacific Tel. and Tel. Co. Preferred 6%	116	102	5.29

	Range for 1928		Week Ending Dec. 31, 1928
New York Telephone Company Preferred 6½%	115–¾	111–¾	5.73
Bell Tel. Co. of Pennsylvania Preferred 6–½%	118–¼	114–¾	5.61
Chesapeake & Potomac Tel. Co. of Baltimore City, Preferred 7%	117–¾	113	6.13
Ohio Bell Telephone Company Preferred 7%	115	109–¼	6.22
Wisconsin Telephone Company Preferred 7%	*	*	....
Northwestern Bell Tel. Co. Preferred 6–½%	*	*	....
Southwestern Bell Tel. Co. Preferred 7%	121–½	117–1/8	5.91
Pacific Tel. and Tel. Co. Preferred 6%	125	113–½	....

[fol. 3841]

Stocks	Range for 1929 High	Low	Week Ending Dec. 31, 1929 Yield
New York Telephone Company Preferred 6–½%	114–7/8	111	5.68
Bell Tel. Co. of Pennsylvania Preferred 6–½%	118	110	5.68
Chesapeake & Potomac Tel. Co. of Baltimore City, Preferred 7%	117–½	112	6.09
Ohio Bell Telephone Company Preferred 7%	117	109–½	6.31
Wisconsin Telephone Company Preferred 7%	*	*	....
Northwestern Bell Tel. Co. Preferred 6–½%	*	*	....
Southwestern Bell Tel. Co. Preferred 7%	121–½	113	6.02
Pacific Tel. and Tel. Co. Preferred 6%	139–1/8	114–¾	....

	Range for 1930		Week Ending Dec. 31, 1930
New York Telephone Company Preferred 6–½%	117–½	112	5.70
Bell Tel. Co. of Pennsylvania Preferred 6–½%	118	113–½	5.65
Chesapeake & Potomac Tel. Co. of Baltimore City, Preferred 7%	119–5/8	113–5/8	6.00
Ohio Bell Telephone Company Preferred 7%	115	105–¾	....
Wisconsin Telephone Company Preferred 7%	*	*	....
Northwestern Bell Tel. Co. Preferred 6–½%	*	*	....
Southwestern Bell Tel. Co. Preferred 7%	123	116–½	5.98
Pacific Tel. and Tel. Co. Preferred 6%	144	119	....

(Here follows Dep: Ex. 142, side folios 3842 and 3843)

Dep. Ex. 142

American Telephone and Telegraph Company

Long Lines Department

	1919 (Last 5 Mos.)	1920	1921	1922	1923	1924	1925
Message Toll Service:							
Gross Revenue	14,647,712.41	39,453,081.34	38,716,692.79	44,918,136.28	49,603,412.29	50,530,000.96	55,815,867.97
Long Lines Share	10,848,354.25	29,317,465.09	28,437,120.53	33,027,378.34	36,129,600.23	36,355,116.39	40,859,653.26
Special Contract Service Revenue:							
Telephone:							
Full Talking Service:							
Gross Revenue		1,109,723.09	1,062,963.42	1,201,807.33	1,368,801.49	1,575,651.09	1,925,826.89
Long Lines Share		890,091.84	918,552.04	1,025,814.91	1,155,752.37	1,306,868.55	1,626,670.13
Short Period Talking Service furnished Patrons other than the Press:							
Gross Revenue		208,298.43	297,980.03	312,040.25	308,257.27	259,707.36	263,921.14
Long Lines Share		168,224.44	230,169.40	242,706.07	237,640.52	198,882.33	209,647.91
Short Period Talking Service and Public News Telephone Service furnished to the Press:							
Gross Revenue		110,914.73	184,765.20	193,907.09	180,861.84	179,077.22	175,476.59
Long Lines Share		17,956.34	18,012.15	15,801.28	5,814.74	22,861.14	27,236.40
Program Transmission Service and Public Address System Use:							
Gross Revenue						210,219.72	286,774.91
Long Lines Share						205,318.60	248,164.93
Total Telephone Special Contract Service:							
Long Lines Share	454,260.12*	1,076,272.62	1,166,733.59	1,284,322.26	1,399,207.63	1,733,930.62	2,111,719.37
Telegraph:							
Telephone Typewriter Service furnished Patrons other than the Press:							
Gross Revenue		72,827.20	133,447.96	143,685.15	208,651.77	281,684.51	363,301.52
Long Lines Share		68,851.07	123,848.96	136,020.09	195,912.98	255,110.64	328,786.17
Telephone Typewriter Service furnished the Press:							
Gross Revenue		109,745.93	252,934.69	287,234.13	313,491.06	450,223.37	680,483.89
Long Lines Share		101,366.27	227,746.27	242,956.30	248,165.61	329,645.00	500,831.76
Morse Service furnished Patrons other than the Press:							
Gross Revenue		8,761,462.44	8,718,604.94	9,149,898.27	9,812,775.14	9,570,550.13	10,948,592.71
Long Lines Share		6,519,702.86	6,638,824.90	6,927,456.62	7,374,693.45	6,899,319.16	8,136,143.53
Morse Service furnished the Press:							
Gross Revenue		734,767.42	1,344,281.02	1,699,061.47	1,923,889.07	2,086,003.43	2,171,622.54
Long Lines Share		371,055.94	659,103.13	884,553.32	973,358.29	1,149,057.04	1,246,432.80
Telegrams handled for Associated Companies:							
Long Lines Share		4,474.15	6,727.26	5,642.06	8,354.34	9,302.40	11,051.41
Total Telegraph Special Contract Service:							
Long Lines Share	2,527,761.49**	7,065,460.29	7,656,250.52	8,196,628.39	8,800,484.67	8,642,434.24	10,223,245.67
Telephoto Service:							
Gross Revenue	591,812.78						16,637.90
Long Lines Share	3,427,891.61						12,039.54

* Gross
** Gross

[fol. 3843]

	1926	1927	1928	1929	1930
Message Toll Service:					
Gross Revenue	57,333,630.83	62,028,511.62	77,409,583.99	94,420,607.83	95,019,083.96
Long Lines Share	43,206,941.27	46,678,035.11	58,769,659.18	68,703,269.73	68,601,594.29
Special Contract Service Revenue:					
Telephone:					
Full Talking Service:					
Gross Revenue	2,229,087.45	2,515,822.47	2,979,645.07	3,754,518.82	4,075,165.07
Long Lines Share	2,051,626.34	2,300,950.67	2,653,653.84	3,448,515.74	3,617,633.46
Short Period Talking Service furnished Patrons other than the Press:					
Gross Revenue	267,249.06	303,827.66	313,867.03	362,382.57	377,483.12
Long Lines Share	214,096.12	235,329.47	235,719.29	275,058.92	268,852.19
Short Period Talking Service and Public News Telephone Service furnished to the Press:					
Gross Revenue	178,745.43	147,114.74	133,927.63	113,281.19	110,157.99
Long Lines Share	36,527.59	14,281.97	19,066.43	12,805.74	1,717.89
Program Transmission Service and Public Address System Use:					
Gross Revenue	463,158.80	1,462,819.88	2,498,210.40	3,509,414.88	4,410,904.73
Long Lines Share	443,425.41	1,269,711.72	2,032,126.75	2,837,973.12	3,442,701.97
Total Telephone Special Contract Service:					
Long Lines Share	2,745,675.46	3,760,273.83	4,940,566.31	6,574,353.52	7,330,905.51
Telegraph:					
Telephone Typewriter Service furnished Patrons other than the Press:					
Gross Revenue	560,761.57	719,141.06	1,448,514.05	3,640,274.58	5,547,193.01
Long Lines Share	511,642.12	647,918.35	1,321,202.45	3,179,909.79	4,679,075.69
Telephone Typewriter Service furnished the Press:					
Gross Revenue	1,082,216.24	1,717,829.92	3,016,553.92	3,630,044.99	4,213,855.27
Long Lines Share	840,796.08	1,326,899.73	2,196,512.26	2,540,241.72	2,895,994.32
Morse Service furnished Patrons other than the Press:					
Gross Revenue	11,605,236.77	11,925,231.88	13,105,796.29	13,953,746.11	12,396,020.85
Long Lines Share	9,626,037.25	10,164,045.16	11,122,899.07	11,620,823.17	10,226,336.19
Morse Service furnished the Press:					
Gross Revenue	2,042,505.60	1,776,107.83	1,331,076.44	1,015,580.27	778,781.75
Long Lines Share	1,253,477.92	1,121,494.91	887,958.40	662,396.54	510,548.35
Telegrams handled for Associated Companies:					
Long Lines Share	29,316.42	23,780.21	27,197.12	21,885.79	21,716.03
Total Telegraph Special Contract Service:					
Long Lines Share	12,261,269.79	13,284,138.36	15,555,769.30	18,025,257.01	18,333,670.58
Telephoto Service:					
Gross Revenue	47,605.40	121,648.20	130,092.39	134,855.79	89,197.29
Long Lines Share	15,815.92	83,740.96	77,081.01	59,533.32	35,452.37

[fol. 8344]

Defn. Ex. 145

$50,000,000

Illinois Bell Telephone Company

First and Refunding Mortgage 5% Gold Bonds, Series A

Dated June 1, 1923. Due June 1, 1956

Interest payable June 1 and December 1 in Chicago or in New York City

Coupon Bonds in denominations of $1,000, $500 and $100, registerable as to principal. Registered Bonds in denominations of $1,000, $5,000 and $10,000. Coupon Bonds and registered Bonds, and the several denominations, interchangeable

Redeemable, at the option of the Company, in whole but not in part, upon 60 days' notice, on June 1, 1929, or on any interest date thereafter, at the following prices with accrued interest; if on or prior to December 1, 1952, at 105%, and if subsequent to December 1, 1952, at par

First Trust and Savings Bank, Chicago, Trustee

W. R. Abbott, Esq., President of Illinois Bell Telephone Company, has summarized as follows his letter to us stating the particulars in regard to this issue:

Illinois Bell Telephone Company does all of the telephone business in the City of Chicago and owns and operates a comprehensive system of exchanges and toll lines serving, with its connecting companies, practically the entire State of Illinois

These Bonds are to be secured by a first mortgage on all the real estate, buildings and telephone plant of the Company in the State of Illinois, with the exception of certain property recently acquired from the Southwestern Bell Telephone Company at a cost of approximately $843,000.

Upon the satisfaction forthwith of the existing bonded debt, including the $19,004,000 First Mortgage 5% Bonds due December 1, 1923 (issued under the name of Chicago Telephone Company), and the retirement of $15,530,179 three-year 5% unsecured notes of the Company, from the proceeds of these Bonds, the $50,000,000 Series A Bonds will constitute the Company's sole funded debt. In comparison therewith, the book cost of the real estate, buildings and telephone plant of the Company was approximately $133,000,000 on March 31, 1923, and the total assets amounted to over $143,000,000, which figures will be substantially increased by the balance of the proceeds of this issue to be utilized for additions and betterments. The present value of the Company's property is greatly in excess of its book cost.

The situation with respect to the Company's franchises is generally satisfactory. A franchise for the City of Chicago was granted in 1889. In 1907, a new franchise was granted for a 22-year period, expiring in 1929, and there is no reason to believe that it will not be renewed on a satisfactory basis. The existing franchise contains a provision giving the City the right, at the expiration of this franchise, upon giving twelve months' previous notice, to purchase the property of the Company located within the City, paying therefor in cash the cost of duplication at that date less depreciation, but without allowance for earning power or franchise value. On March 31, 1923, the book cost of the physical property of the Company located within the City of Chicago was in excess of $92,000,000, which cost is much less than the present value of the property.

The income account of the Illinois Bell Telephone Company for the past ten years has been as follows, earnings prior to December 1, 1920 not including earnings from the properties then purchased from the Central Union Telephone Company:

Year Ended December 31	Gross Revenues	Net Earnings Available for Interest	Interest Charges	Net Income
1913	$15,551,536	$3,605,968	$969,414	$2,636,554
1914	16,512,418	3,523,671	953,075	2,570,596
1915	17,711,855	4,122,569	959,521	3,163,048
1916	19,769,568	4,395,750	981,165	3,414,585
1917	21,651,494	3,541,569	1,093,571	2,447,998
1918	*	4,314,084	1,079,189	3,234,895
1919	*	4,031,842	998,663	3,033,179
1920	33,361,416	2,697,843	1,271,383	1,426,460
1921	44,748,392	7,668,279	2,042,327	5,625,952
1922	48,169,798	8,425,665	2,072,036	6,353,629

*Property under Federal control during portion of year.

During the past ten years the Company's net earnings available for interest have averaged over three times the interest charges and in one of these years they have been less than twice such interest charges. During each of the years 1921 and 1922, net earnings available for interest amounted to more than three times the annual interest requirements of $2,500,000 on these Bonds. Adequate charges have been made annually against earnings for depreciation and obsolescence.

The Company has outstanding $60,000,000 par value of capital stock (to be increased presently to $70,000,000), more than 98% of which is owned by the American Telephone and Telegraph Company. Dividends on this stock, as outstanding from time to time, have been paid in every year since 1881 at the rate of at least 8% per annum, which is the present rate.

The Mortgage will provide for sinking fund payments to a trustee at the rate of $250,000 semi-annually, beginning December 1, 1923, such payments to be used in purchasing Series A Bonds, if obtainable at not exceeding par and accrued interest, otherwise to be used for capital expenditures with respect to property to be covered by the Mortgage, and against which expenditures no Bonds under the Mortgage will be issuable as long as any Series A Bonds are outstanding.

The issue of the Series A Bonds has been authorized by the Illinois Commerce Commission.

The above bonds are offered for subscription, subject to due authorization and to issue as planned and to approval of legality by counsel, at 95¼% and interest, to yield over 5.30 per cent.

Subscription books will be opened at the office of J. P. Morgan & Co., at 10 o'clock A. M., Friday, June 15, 1923. The right is reserved to reject any and all applications, and also, in any case, to award a smaller amount than applied for. The amount due on allotments will be payable at the office of J. P. Morgan & Co., in New York funds, the date of payment to be specified in the notices of allotment, against delivery of temporary Bonds, exchangeable for definitive Bonds when received from the Company.

Chicago Telephone Company First Mortgage 5% Bonds, due December 1, 1923, with final coupon attached, will be accepted in payment at 100% and accrued interest to date of payment.

J. P. Morgan & Co. Kuhn, Loeb & Co. First National Bank, New York. The National City Company. Bankers Trust Company, New York. Guaranty Company of New York. Harris, Forbes & Co. Lee, Higginson & Co.

Dated June 15, 1923.

[fol. 3845] Illinois Bell Telephone Company

Chicago, Ill., June 14, 1923.

Messrs. J. P. Morgan & Co., 23 Wall Street, New York, N. Y.

Dear Sirs: With reference to the proposed issue of $50,000,000 First and Refunding Mortgage 5% Gold Bonds, Series A, of Illinois Bell Telephone Company, I beg to give you the following information regarding the business of the Company and this issue of Bonds:

The Illinois Bell Telephone Company was organized in 1881 under the laws of the State of Illinois, under the name of Chicago Telephone Company. Its name was changed in 1920, when the Company acquired all the property of the Central Union Telephone Company located within the State of Illinois. The Company does all of the telephone business in the City of Chicago and owns and operates a comprehensive system of exchanges and toll lines serving, with its connecting companies, practically the entire State of Illinois with the exception of a small territory in and around East St. Louis. In addition, it serves a small part of the State of Indiana. It connects for interchange of traffic with all other companies of the Bell System throughout the United States and with telephone systems in Canada and Cuba. On March 31, 1923, there were 925,888 telephone stations directly owned by the Company and 352,115 stations operated by local connecting companies under agreements with this Company for the interchange of business. The population served is estimated at 6,850,000.

Upon the satisfaction forthwith of the underlying debt as stated below, and the retirement of $15,530,179 three-year 5% unsecured notes of the Company, from the proceeds of the sale of these Bonds, the $50,000,000 Series A Bonds will constitute the sole funded debt of the Company. In comparison therewith, the book cost of the Company's real estate, buildings and telephone plant was approximately $133,000,000 on March 31, 1923; and the total assets amounted to over $143,000,000, which figures will be substantially increased by the balance of the proceeds of this issue to be utilized for additions and betterments. The present value of the Company's property is greatly in excess of its book cost.

The gross revenues, net earnings (after deducting operating expenses, Federal and other taxes, rentals and miscellaneous income charges), interest charges and net income of the Illinois Bell Telephone Company during the past ten years have been as follows:

Year Ended December 31	Gross Revenues	Net Earnings Available for Interest	Interest Charges	Net Income
1913	$15,551,536	$3,605,968	$969,414	$2,636,554
1914	16,512,418	3,523,671	953,075	2,570,596
1915	17,711,855	4,122,569	959,521	3,163,048
1916	19,769,568	4,395,750	981,165	3,414,585
1917	21,651,494	3,541,569	1,093,571	2,447,998
1918	*	4,314,084	1,079,189	3,234,895
1919	*	4,031,842	998,663	3,033,179
1920	33,361,416	2,697,843	1,271,383	1,426,460
1921	44,748,392	7,668,279	2,042,327	5,625,952
1922	48,169,798	8,425,665	2,072,036	6,353,629

Earnings prior to December 1, 1920 do not include earnings from the properties then purchased from the Central Union Telephone Company. During the past ten years the Company's net earnings available for interest have averaged over three times the interest charges and in no one of these years have they been less than twice such interest charges. During each of the years 1921 and 1922 net earnings available for interest amounted to more than three times the annual interest requirements of $2,500,000 on these Bonds. Adequate charges have been made annually against earnings for depreciation and obsolescence.

The Company has outstanding $60,000,000 par value of capital stock (to be increased under the Company's offer of May 29, 1923 to $70,000,000) more than 98% of which is owned by the American Telephone and Telegraph Company. Dividends on the stock of the Company, as outstanding from

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*Property under Federal control during portion of year.

time to time, have been paid in every year since 1881 at the rate of at least 8% per annum, which is the present rate.

The situation with respect to the Company's franchises is generally satisfactory. In the greater number of municipalities in Illinois the Company is operating under franchises which have been granted for an unlimited period. A franchise for the City of Chicago was granted in 1889. In 1907, a new franchise was granted for a 22-year period, [fol. 3846] expiring in 1929, and there is no reason to believe that, at its expiration, it will not be renewed on a satisfactory basis. The existing franchise contains a provision giving the City the right, at the expiration of this franchise, upon giving twelve months' previous notice, to purchase the property of the Company located within the limits of the City, paying therefor in cash the cost of duplication at that date less depreciation, but without allowance for earning power or franchise value. On March 31, 1923, the book cost of the physical property of the Company located within the City of Chicago was in excess of $92,000,000, which cost is much less than the present value of the property.

The Bonds are to be issued under a First and Refunding Mortgage to be dated June 1, 1923, to First Trust and Savings Bank, Chicago, as Trustee, covering all the real estate, buildings and telephone plant of the Company in the State of Illinois, now owned or hereafter acquired, with the exception of certain property, formerly constituting a part of the Kinloch telephone system, recently acquired from the Southwestern Bell Telephone Company at a cost of approximately $843,000. Arrangements have been made to satisfy the mortgage securing $19,004,000 First Mortgage 5% Bonds due December 1, 1923 (issued under the name of Chicago Telephone Company) and two small mortgages aggregating $320,000 due within the next four years, so that the First and Refunding Mortgage will be a first lien on the property covered by the Mortgage.

The amount of bonds authorized to be issued under the First and Refunding Mortgage will be limited so that the amount thereof at any time outstanding (when added to the outstanding amount of any obligations which may hereafter become underlying bonds, under the terms of the Mortgage, through the purchase of property subject to debt) shall not exceed twice the amount of the then outstanding capital stock. Subject to the above limitation in amount, bonds will be issuable for the acquisition of additional property necessary or useful in connection with the business of the Company (including stocks, bonds and securities of other corporations) and for betterments; but if at any time the amount of outstanding bonds secured by this Mortgage, when added to the prior bonded debt (if any) of the Company, shall exceed the amount of the then outstanding capital stock, additional bonds will be issuable for not exceeding 75% of the expenditures for such additional property and betterments. The issue of bonds in respect of stock and other securities will be limited so that not more than one-third of the security under the Mortgage shall consist of stock and unsecured obligations of other corporations.

The Mortgage is further to provide that so long as the Series A Bonds are outstanding, no bonds will be issuable, except for refunding, unless the net earnings of the Company available for interest charges during any twelve consecutive months out of fifteen months immediately preceding the proposed issue, shall have been not less than one and three-fourths times the interest during such period on the Company's outstanding bonded debt, as defined in the Mortgage, plus the amount of interest for twelve months on the bonds proposed to be issued. The bonds issuable under the Mortgage may be of several series and may vary as to interest rates, maturity dates, sinking fund and other provisions as may be determined by the Company from time to time.

The Series A Bonds, limited to the above-mentioned principal amount of $50,000,000, will be dated June 1, 1923, and will mature June 1, 1956. They will bear interest from June 1, 1923, at the rate of 5% per annum, payable semi-annually on June 1, and December 1. Principal and interest will be payable at the office or agency of the Company in Chicago, Illinois or, at the option of the holder, in New York City. The Bonds will be in coupon form, registerable as to principal, in denominations of $1,000, $500 and $100, and in fully registered form in denominations of $1,000, $5,000 and $10,000. The Coupon Bonds and registered Bonds and the several denominations will be interchangeable. The Bonds may be rendeemed at the option of the Company, in whole but not in part, upon 60 days' notice, on June 1, 1929, or on any interest date thereafter, at the following prices with accrued interest: if on or prior to December 1, 1952, at 105%, and if subsequent to December 1, 1952, at par.

The Mortgage will provide for sinking fund payments to a trustee at the rate of $250,000 semi-annually, beginning December 1, 1923, such payments to be used in purchasing Series A Bonds, if obtainable at not exceeding par and accrued interest, otherwise to be used for capital expenditures with respect to property to be covered by the lien of the Mortgage. If Bonds are purchased for the full amount of the sinking fund payments, not less than $16,000,000 principal amount of the Series A Bonds will be retired by maturity, while the portion of the sinking fund not used in the purchase of such Bonds will be invested in property against which no Bonds under this Mortgage will be issuable as long as any Series A Bonds are outstanding.

Application will be made to list the Bonds on the New York and on the Chicago Stock Exchanges.

The issue of the Series A Bonds has been authorized by the Illinois Commerce Commission

Yours very truly, W. R Abbott, President.

[fol. 3847] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #146

Monthly Report No. 1

American Telephone and Telegraph Company

Long Lines Department

Condensed Summary of Reports for December 1919

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Earnings and Expenses:	12 Mos. This Year
23	Net Telephone Earnings	11,802,577
24	Sundry Net Earnings	720,495
25	Total Net Earnings	12,523,072
26	Deduct Interest	43,855
27	Balance Net Profits	12,479,217
28	Deduct Dividends (Paid and Accrued)	
29	Undivided Profits	

30 Annual Dividend Rate, —%; Total Plant per Station: At End of Month, —; at Dec. 31 last, —.

	Averages:	l 12 Mos. This Year
31	Average Plant in Service	72,492,359
32	Average Number of Company Stations	347
33	Average Capital Obligations	73,233,468
34	Average Capital Stock	
35	Av. Mo. Tel. Rev. per Station—Gross	
36	—Net	

	Percentages (Annual Basis):	q 12 Mos. This Year
37	Total Telephone Revenues to Average Plant in Service	43.29%
38	Operation Expenses to Telephone Revenues	29.84%
39	Telephone Expenses to Telephone Revenues	62.39%
40	Current Maintenance to Average Plant in Service	5.86%
41	Depreciation to Average Plant in Service (Includes 261)	5.60
42	Net Telephone Earnings to Average Plant in Service	16.28%
43	Total Net Earnings to Average Capital Obligations	
44	Balance Net Profits to Average Capital stock	

[fol. 3848] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #149

Monthly Report 1

American Telephone and Telegraph Company

Long Lines Department

Condensed Summary of Reports for December 1920

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Earnings and Expenses:	g 12 Mos. This Year
23	Net Telephone Earnings	14,715,118
24	Sundry Net Earnings	488,782
25	Total Net Earnings	15,203,900
26	Deduct Interest	49,136
27	Balance Net Profits	15,154,764
28	Deduct Dividends (Paid and Accrued)	
29	Undivided Profits	

30 Annual Dividend Rate, —%; Total Plant per Station: At End of Month, —; at Dec. 31 last, —.

	Averages:	l 12 Mos. This Year
31	Average Plant in Service	80,123,645
32	Average Number of Company Stations	329
33	Average Capital Obligations	75,090,891
34	Average Capital Stock	
35	Av. Mo. Tel. Rev. per Station—Gross	
	—Net	

	Percentages (Annual Basis):	q 12 Mos. This Year
37	Total Telephone Revenues to Average Plant in Service	47.60%
38	Operation Expenses to Telephone Revenues	33.07%
39	Telephone Expenses to Telephone Revenues	61.42%
40	Current Maintenance to Average Plant in Service	6.69%
41	Depreciation to Average Plant in Service (Includes 261)	4.43%
42	Net Telephone Earnings to Average Plant in Service	18.37%
43	Total Net Earnings to Average Capital Obligations	
44	Balance Net Profits to Average Capital Stock	

[fol. 3849] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #152

Monthly Report No. 1

American Telephone and Telegraph Company

Long Lines Department

Condensed Summary of Reports for December 1921

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Earnings and Expenses:	g 12 Mos. This Year
23	Net Telephone Earnings	14,159,630
24	Sundry Net Earnings	648,778
25	Total Net Earnings	14,808,408
26	Deduct Interest	18,912
27	Balance Net Profits	14,789,496
28	Deduct Dividends (Paid and Accrued)	
29	Undivided Profits	

30 Annual Dividend Rate, —%; Total Plant per Station: At End of Month, —; at Dec. 31 last, —.

	Averages:	l 12 Mos. This Year
31	Average Plant in Service (Excludes Gen'l Equipment)	88,127,267
32	Average Number of Company Stations	328
33	Average Capital Obligations	84,660,979
34	Average Capital Stock	
35	Av. Mo. Tel. Rev. per Station—Gross	
36	—Net	

	Percentages (Annual Basis):	q 12 Mos. This Year
37	Total Telephone Revenues to Average Plant in Service	43.19%
38	Operation Expenses to Telephone Revenues	32.23%
39	Telephone Expenses to Telephone Revenues	62.80%
40	Current Maintenance to Average Plant in Service	5.89%
41	Depreciation to Average Plant in Service (Includes 261)	4.20
42	Net Telephone Earnings to Average Plant in Service	16.07%
43	Total Net Earnings to Average Capital Obligations	
44	Balance Net Profits to Average Capital Stock	

[fol. 3850] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #155

Monthly Report No. 1

American Telephone and Telegraph Company

Long Lines Department

Condensed Summary of Reports for December 1922

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

		g 12 Mos. This Year
	Earnings and Expenses:	
23	Net Telephone Earnings	16,971,835
24	Sundry Net Earnings	395,693
25	Total Net Earnings	17,367,528
26	Deduct Interest	26,699
27	Balance Net Profits	17,340,829
28	Deduct Dividends (Paid and Accrued)	....
29	Undivided Profits	....
30	Annual Dividend Rate, —%; Total Plant per Station; At End of Month, —; at Dec. 31 last, —.	

		l 12 Mos. This Year
	Averages:	
31	Average Plant in Service (Excludes Gen'l Equipment)	98,653,730
32	Average Number of Company stations	326
33	Average Capital Obligations	69,850,075
34	Average Capital Stock	....
35	Av. Mo. Tel. Rev. per Station—Gross	....
36	—Net	....

		q 12 Mos. This Year
	Percentages (Annual Basis):	
37	Total Telephone Revenues to Average Plant in Service	44.05%
38	Operation Expenses to Telephone Revenues	30.33%
39	Telephone Expenses to Telephone Revenues	60.94%
40	Current Maintenance to Average Plant in Service	5.52%
41	Depreciation to Average Plant in Service (Includes 261)	4.24%
42	Net Telephone Earnings to Average Plant in Service	17.20%
43	Total Net Earnings to Average Capital Obligations	....
44	Balance Net Profits to Average Capital Stock	....

[fol. 3851] **EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #158**

Monthly Report No. 1

American Telephone and Telegraph Company

Long Lines Department

Condensed Summary of Reports for December 1923

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Earnings and Expenses:	12 Mos. This Year
23	Net Telephone Earnings	17,751,881
24	Sundry Net Earnings	365.795
25	Total Net Earnings	18,117,676
26	Deduct Interest	56,674
27	Balance Net Profits	18,061,002
28	Deduct Dividends (Paid and Accrued)*	....
29	Undivided Profits	....

30 Annual Dividend Rate —Com. —%; Pref. —%; Total Plant per Station: At End of Month, —; at Dec. 31 last, —.

	Averages:	12 Mos. This Year
31	Average Plant in Service (Excludes Gen'l Equipment)	107,936,381
32	Average Number of Company Stations	324
33	Average Capital Obligations	96,438,691
34	Average Capital Stock (Common)	....
35	Av. Mo. Tel. Rev. per Station—Gross	....
36	—Net	....

	Percentages (Annual Basis):	12 Mos. This Year
37	Total Telephone Revenues to Average Plant in Service	43.77%
38	Operation Expenses to Telephone Revenues	30.91%
39	Telephone Expenses to Telephone Revenues	62.42%
40	Current Maintenance to Average Plant in Service	5.85%
41	Depreciation to Average Plant in Service (Includes 261)	4.26%
42	Net Telephone Earnings to Average Plant in Service	16.45%
43	Total Net Earnings to Average Capital Obligations	....
44	Bal. Net Prof. (after Pref. Dividend) to Ave. Com. Stock	....

[fol. 3852] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT 161

Monthly Report No. 1

American Telephone and Telegraph Company

Long Lines Department

Condensed Summary of Reports for December 1924

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Earnings and Expenses:	g 12 Mos. This Year
24	Net Telephone Earnings	18,287,831
25	Sundry Net Earnings	256,636
26	Total Net Earnings	18,544,467
27	Deduct Interest	29,544
28	Balance Net Profits	18,514,923
29	Deduct Dividends (Paid and Accrued)*	
30	Undivided Profits	

31 Annual Div. Rate Com.—%; Pref.—%; Total Plant per Station: At End of Month, —; at Dec. 31 last, —.

	Averages:	l 12 Mos. This Year
32	Average Plant in Service (Excludes Gen'l. Equipment)	124,235,019
33	Average Number of Company Stations	315
34	Average Capital Obligations	112,059,370
35	Average Capital Stock (Common)	
36	Av. Mo. Tel. Rev. per Station—Gross	
37	—Net	

	Percentages (Annual Basis):	q 12 Mos. This Year
38	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	39.10%
39	Operation Expenses to Telephone Revenues	29.20%
40	Telephone Expenses to Telephone Revenues	62.35%
41	Current Maintenance to Average Plant in Service	4.85%
42	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	4.40%
43	Net Telephone Earnings to Average Plant in Service	14.72%
44	Total Net Earnings to Average Capital Obligations	
45	Bal. Net Prof. (after Pref. Dividend) to Ave. Com. Stock	

[fol. 3853] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #164

Monthly Report No. 1

American Telephone and Telegraph Company

Long Lines Department

Condensed Summary of Reports for December, 1925

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Earnings and Expenses:	12 Mos. This Year
24	Net Telephone Earnings	22,248,554
25	Sundry Net Earnings	353,975
26	Total Net Earnings	22,602,529
27	Deduct Interest	49,738
28	Balance Net Profits	22,552,791
	Deduct Dividends (Paid & Accrued):	
29	Preferred	....
30	Common	....
31	Total Dividends	
32	Undivided Profits	....
33	Annual Div. Rate-Com. —%; Pref. —%; Total Plant per Station: End of Month, —; Dec. 31 last, —.	

	Averages:	12 Mos. This Year
34	Average Plant in Service (Excludes Gen'l Equipment)	138,333,760
35	Average Number of Company Stations	305
36	Average Capital Obligations	124,515,612
37	Average Capital Stock (Common)	....
38	Av. Mo. Tel. Rev. per Station—Gross	....
39	—Net	....

	Percentages (Annual Basis):	12 Mos. This Year
40	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	40.13%
41	Operation Expenses to Telephone Revenues	26.63%
42	Telephone Expenses to Telephone Revenues	59.92%
43	Current Maintenance to Average Plant in Service	4.66%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	4.99%
45	Net Telephone Earnings to Average Plant in Service	16.08%
46	Total Net Earnings to Average Capital Obligations	....
47	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock	....

[fol. 3854] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #167

Monthly Report No. 1

American Telephone and Telegraph Company

Long Lines Department

Condensed Summary of Reports for December, 1926

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

		g 12 Mos. This Year
	Earnings and Expenses:	
24	Net Telephone Earnings	22,040,981
25	Sundry Net Earnings	562,089
26	Total Net Earnings	22,603,070
27	Deduct Interest	45,042
28	Balance Net Profits	22,558,028
	Deduct Dividends (Paid & Accrued):	
29	Preferred	
30	Common	
31	Total Dividends	
32	Undivided Profits	
33	Annual Div. Rate-Com. —%; Pref. —%; Total Plant per Station: End of Month, —; Dec. 31, last, —	

		l 12 Mos. This Year
	Averages:	
34	Average Plant in Service (Excludes Gen'l Equipment)	152,567,363
35	Average Number of Company Stations	305
36	Average Total Assets	174,128,377
37	Average Capital Stock (Common)	
38	Av. Mo. Tel. Rev. per Station—Gross	
39	—Net	

		q 12 Mos. This Year
	Percentages (Annual Basis):	
40	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	39.94%
41	Operation Expenses to Telephone Revenues	29.05%
42	Telephone Expenses to Telephone Revenues	63.83%
43	Current Maintenance to Average Plant in Service	4.96%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	5.11%
45	Net Telephone Earnings to Average Plant in Service	14.45%
46	Total Net Earnings to Average Total Assets	12.98%
47	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock	

[fol. 3855] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #170

Monthly Report No. 1

American Telephone and Telegraph Company

Long Lines Department

Condensed Summary of Reports for December, 1927

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Earnings and Expenses:	g 12 Mos. This Year
24	Net Telephone Earnings	22,567,295
25	Sundry Net Earnings	599,668
26	Total Net Earnings	23,166,963
27	Deduct Interest	43,378
28	Balance Net Profits	23,123,585
	Deduct Dividends (Paid & Accrued):	
29	Preferred	
30	Common	
31	Total Dividends	
32	Undivided Profits	
33	Annual Div. Rate-Com. —%; Pref. —%; Total Plant per Station: End of Month, —; Dec. 31, last, —.	

	Averages:	l 12 Mos. This Year
34	Average Plant in Service (Excludes Gen'l Equipment)	183,464,703
35	Average Number of Company Stations	65
36	Average Capital Obligations	
37	Average Capital Stock (Common)	
38	Av. Mo. Tel. Rev. per Station—Gross	
39	—Net	

	Percentages (Annual Basis):	q 12 Mos. This Year
40	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	36.74%
41	Operation Expenses to Telephone Revenues	31.31%
42	Telephone Expenses to Telephone Revenues	66.52%
43	Current Maintenance to Average Plant in Service	4.68%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	5.20%
45	Net Telephone Earnings to Average Plant in Service	12.30%
46	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock	

[fol. 3856] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #173

Monthly Report No. 1

American Telephone and Telegraph Company

Long Lines Department

Condensed Summary of Reports for December 1928

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

	Earnings and Expenses:	12 Mos. This Year
24	Net Telephone Earnings	29,126,342
25	Sundry Net Earnings	627,425
26	Total Net Earnings	29,753,767
27	Deduct Interest	41,383
28	Balance Net Profits	29,712,384
	Deduct Dividends (Paid & Accrued):	
29	Preferred	
30	Common	
31	Total Dividends	
32	Undivided Profits	
33	Annual Div. Rate Com. —%; Pref. —%; Total Plant per Station: End of Month, —; Dec. 31 last, —.	

	Averages:	12 Mos. This Year
34	Average Plant in Service (Excludes Gen'l Equipment)	217,023,334
35	Average Number of Company Stations	85
36	Average Capital Obligations	
37	Average Capital Stock (Common)	
38	Av. Mo. Tel. Rev. per Station—Gross	
39	—Net	

	Percentages (Annual Basis):	12 Mos. This Year
40	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	38.23%
41	Operation Expenses to Telephone Revenues	29.60%
42	Telephone Expenses to Telephone Revenues	64.89%
43	Current Maintenance to Average Plant in Service	5.16%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	5.27%
45	Net Telephone Earnings to Average Plant in Service	13.42%
46	Bal. Net Prof. (After Pref. Dividend) to Av. Com. Stock	

[fol. 3857] **EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #176**

Monthly Report No. 1

American Telephone and Telegraph Company

Long Lines Department

Condensed Summary of Reports for December 1929

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

		g 12 Mos. This Year
	Earnings and Expenses:	
24	Net Telephone Earnings	32,273,298
25	Sundry Net Earnings	1,198,056
26	Total Net Earnings	33,471,354
27	Deduct Interest	518,129
28	Balance Net Profits	32,953,225
	Deduct Dividends (Paid & Accrued):	
29	Preferred	
30	Common	
31	Total Dividends	
32	Undivided Profits	
33	Annual Div. Rate Com. —%; Pref. —%; Total Plant per Station: End of Month, —; Dec. 31 last, —.	

		l 12 Mos. This Year
	Averages:	
34	Average Plant in Service (Excludes Gen'l Equipment)	268,328,189
35	Average Number of Company Stations	77
36	Average Capital Obligations	
37	Average Capital Stock (Common)	
38	Av. Mo. Tel. Rev. per Station—Gross	
39	—Net	

		q 12 Mos. This Year
	Percentages (Annual Basis):	
40	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	36.23%
41	Operation Expenses to Telephone Revenues	29.76%
42	Telephone Expenses to Telephone Revenues	66.88%
43	Current Maintenance to Average Plant in Service	5.29%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	5.22%
45	Net Telephone Earnings to Average Plant in Service	12.03%
46	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock	

[fol. 3858] **EXTRACTS FROM EXHIBIT DEPOSITION EXHIB[illegible] 179**

Monthly Report No. 1

American Telephone and Telegraph Company

Long Lines Department

Condensed Summary of Reports for December 1930

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission. They should therefore not be used or quoted as official figures of the Company.)

		g 12 Mos. This Year
	Earnings and Expenses:	
24	Net Telephone Earnings	29,115,662
25	Sundry Net Earnings	1,812,367
26	Total Net Earnings	30,928,029
27	Deduct Interest	38,853
28	Balance Net Profits	30,966,882
	Deduct Dividends (Paid & Accrued):	
29	Preferred	....
30	Common	....
31	Total Dividends	....
32	Undivided Profits	....
33	Annual Div. Rate Com. —%; Pref. —%; Total Plant per Station: End of Month, —; Dec. 31 last, —.	

		l 12 Mos. This Year
	Averages:	
34	Average Plant in Service (Excludes Gen'l Equipment)	352,601,683
35	Average Number of Company Stations	77
36	Average Capital Obligations	....
37	Average Capital Stock (Common)	....
38	Av. Mo. Tel. Rev. per Station—Gross	....
39	—Net	....

		q 12 Mos. This Year
	Percentages (Annual Basis):	
40	Total Tel. Rev. (Except Adv. & Dir.) to Av. Plant in Service	28.23%
41	Operation Expenses to Telephone Revenues	33.48%
42	Telephone Expenses to Telephone Revenues	70.75%
43	Current Maintenance to Average Plant in Service	4.30%
44	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	5.11%
45	Net Telephone Earnings to Average Plant in Service	8.26%
46	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock	....

[fol. 3859] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 188

Western Electric News, May, 1930

Many of the outstanding peculiarities of Western Electric methods of operation are natural consequences of its close affiliation with the A. T. & T. Company and its associated operating telephone companies. Such affiliation between organizations engaged in different stages of the industrial process is what the economist calls vertical integration. Examples of vertical integration in other fields are:

(a) Steel companies which own coal mines, ore lands, boats to carry ore on the lakes, and coke ovens as well as steel mills of various types.

(b) Oil producing, refining and marketing combinations.

(c) Chain stores which purchase direct from factories or even themselves own factories, in the first case combining the functions of retailer and wholesaler and in the second case, the functions of retailer, wholesaler and manufacturer.

(d) Copper mining and refining companies which also own wire drawing plants, brass works, and other fabricating units.

The question as to whether such integration is or is not desirable from the general economic standpoint is illuminated by the experience of the Western Electric Company. As we know from our daily contacts, the identity of the interests of the Western Electric Company with those of our chief customers makes unnecessary much risk-taking and much expenditure of money and energy that inevitably [fol. 3860] occur when each successive step from raw material to service rendered yields a profit for a different set of stockholders. As a natural result of these savings, Western Electric prices to Bell Telephone Companies are distinctly lower than the prices of other telephone manufacturers to non-Bell telephone companies. Or, putting it another way, the margin between cost of raw material and essential labor and the selling price of the product is relatively small.

Specific ways in which integration results in real savings are as follows:

1. Sales effort in the ordinary sense is dispensed with. In a sense, Western Electric products are sold before they are manufactured. Representatives of the telephone companies know that the designs have been worked out by the Bell Laboratories and approved by the general departments of the A. T. & T. Company as the best for the purpose. Where material of several designs is produced, the Western Electric representative has no object in urging one over the other and is free to pool his technical knowledge with that of the telephone company's representative.

P. 56:

2. Continuity in engineering and production schedules is secured by cooperation with the telephone companies. If the preliminary lineup calls for peaks and valleys during the next year or two, arrangements are made with the telephone companies to rearrange the dates of enough projects to smooth out the schedule. As a result, the plant investment required by the Western Electric Company is low in relation to sales volume.

3. Profit above a fair rate of return on investment is eliminated.

4. Losses due to production of items which later prove unacceptable to the ultimate consumer are minimized.

5. Opportunities within the system are provided for all types of employees. A man who starts in one company may be transferred to another company or to another de- [fol. 3861] partment which requires a distinctly different type of personal qualifications.

In addition to integrating public utility operation and equipment manufacturing, the Western Electric Company also exemplifies integration of manufacturing and acting as purchasing agent. An important advantage of this sort of integration as exemplified by the Western Electric Company is that, as purchasing agent, the company can obtain better prices and terms than if it were not known that we may, as an alternative, manufacture ourselves. Our own familiarity, moreover, with manufacturing processes enables us to discuss more effectively with outside producers what is really a fair price.

Space does not permit full discussion of the third way in which the Western Electric Company can serve the economist as a specimen; namely, the advantages of research work.

It is an accepted operating principle of the Bell System and other progressive organizations that every item of equipment and every method is subject to improvement. Research of the engineering type is fairly common in these days. In the Bell System and several other leading concerns, however, this work has been extended to underlying physical, chemical and mathematical problems with a definite realization that it is worth while to conquer the unknown in connection with the broad field in which particular investigations have been made, even though the particular study may not have an immediate dollars and cents value. In the Western Electric Company, the spirit of research has also been carried into methods of manufacture, sources and proper prices of raw materials and supplies and all methods of operation.

[fol. 3862]

Deposition Exhibit #189

2/9/32.

Patents & Patent Applications Costing $1,000 or More Purchased by the Western Electric Company, Inc., 1909 to 1930.

Year Purchased	Purchased from	Amount Paid
1909	....	....
1910	....	....
1911	Lorimer Lundquist	650,000
1912	Stromberg Carlson Telephone Mfg. Co.	175,000
1913	American Automatic Co.	75,000
1913	Clement International Engineering Corp.	65,000
1916	J. W. Lattig	1,000
1916	North Electric Co.	350,000
1916	G. Deakin	3,500
1917	Automatic Construction Co.	5,000
1917	C. L. Goodrum	1,000
1917	F. O. Richey	1,000
1917	DeForrest Tel. & Tel. Co.	250,000
1918	F. B. Cook	25,000
1918	Thomas H. Phillips Co.	30,000
1918	Olsson and Pleijel	25,000
1919	F. S. Hurd	5,000
1920	F. D. Pearne	10,000
1921	A. E. Lundell	1,000
1921	C. D. Babcock & J. Neilson	7,500
1921	J. L. Wright	1,490
1925	W. S. Webster	1,000

Year Purchased	Purchased from	Amount Paid
1925	Myron F. Hill	1,000
1928	Edwin G. Gaynor	5,000
1929	Charlotte Aldendorff	48,000
1929	Else Hecht	2,000
1929	James W. Shope	20,000
1930	Thomas H. Berkland	1,200
1930	Trowbridge & Duryea	4,700
1930	Fred H. Strom	11,000
	Total	$1,775,390

[fol. 3863]

Deposition Exhibit #190

2/9/32.

Document Testified to by Witness Folk, Entitled "Licenses Costing $1,000 or More, Paid by Western Electric to Others Than A. T. & T., 1909–1930"

Year Purchased	Purchased from	Amount Paid
1909		
1910		
1911		
1912	North Electric Co.	$375,000
1914	Kellogg Switchboard & Supply Co.	250,000
1916	E. R. Parker	27,290
1916	F. C. Brown	5,000
1916	Automatic Electric Co.	1,560,000
1916	Stromberg-Carlson Telephone Mfg. Co.	75,000
1916	Sumter Telephone Supply Co.	1,000
1917	Automatic Electric Co.	190,000
1917	Herzog-Tel. Systems Co.	29,000
1918	Automatic Electric Co.	200,000
1919	Automatic Electric Co.	50,000
1919	Corwin Telephone Co.	3,500
1920	General Railway Signal Co.	15,000
1920	Hall Switch and Signal Co.	55,000
1921	Hubert S. Turner	3,500
1923	Madsenell Corp.	10,000
1924	Frank E. Miller	1,000
1925	Thomson Electric Welding Co. and Thomson Spot Welder Co.	6,000
1926	Harold H. Brown	25,000
1926	Frank E. Miller Radio Corp.	10,000
1926	Cutler Hammer Mfg. Co.	15,000
1927	B. F. Goodrich	30,000
1928	Manhattan Electrical Supply Co.	1,000
1929	American Hardware Corp.	3,000
1929	Dubilier Condenser Corp.	100,000
1929	Manhattan Electrical Supply Co.	5,000
1929	Radio Patents Corp.	7,500
1929	Robert T. Romine	1,500
1930	Herbert M. Friendly	550,000
1930	General Electric Co.	5,000
1930	General Electric Co.	1,500
1930	Hazeltine Corp.	10,000
1930	A. D. Pettee	1,500
1930	Radio Corp. of America	2,000
1930	Radio Corp. of America	2,500
1930	Russell Mfg. Co.	1,000
	Total	$3,627,790

[fol. 3864] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT 3774
No. 191

Document Testified to by Witness Folk, Entitled, "Federal Trade Commission, Radio Industry"

REPORT

OF THE

FEDERAL TRADE COMMISSION

ON THE

RADIO INDUSTRY

IN RESPONSE TO HOUSE RESOLUTION 548
SIXTY-SEVENTH CONGRESS
FOURTH SESSION

DECEMBER 1, 1923

WASHINGTON
GOVERNMENT PRINTING OFFICE
1924

3475

FEDERAL TRADE COMMISSION.

HUSTON THOMPSON, *Chairman.*
VERNON W. VAN FLEET.
NELSON B. GASKILL.
VICTOR MURDOCK.
JOHN F. NUGENT.
OTIS B. JOHNSON, *Secretary.*

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The commission desires to mention as contributing to the preparation of this report Mr. H. L. Anderson, Assistant Chief Examiner, and Mr. Joseph L. Klein, of the legal investigating division.

LETTER OF SUBMITTAL.

FEDERAL TRADE COMMISSION,
Washington, December 1, 1923.

THE SPEAKER OF THE HOUSE OF REPRESENTATIVES.

SIR: There is submitted herewith a report by the Federal Trade Commission setting forth certain facts with respect to the radio industry. The report contains the results of the investigation made pursuant to House Resolution 548, Sixty-seventh Congress, fourth session.

An attempt has been made to collate the data with respect to the various phases of the inquiry as outlined by Congress in the resolution. In Chapter I the facts concerning the development of the industry are presented, which includes the organization of the Radio Corporation of America, the most important factor in the industry. In Chapter II the agreements between the various companies respecting the hundreds of patents covering radio devices and apparatus are discussed, which agreements are set out in full in the Appendix. In Chapter III is discussed the various traffic agreements respecting international radio communication and which are also set out in full in the Appendix. Chapter IV is devoted to a discussion of the practices relative to the manufacture, sale, and use of radio apparatus and parts. This naturally includes an outline of the sales policy of the Radio Corporation and the facts as to its sale of vacuum tubes, which product has been termed the heart of radio.

The commission desires to call attention to certain facts disclosed by the investigation which may be summarized as follows:

The Marconi Wireless Telegraph Co. of America was the first company in America formed for the purpose of engaging in the transmission of messages by wireless. It was organized November 22, 1899, with a capitalization of $10,000,000, of which about 25 per cent was owned by the Marconi's Wireless Telegraph Co. (Ltd.), a British corporation.

In the United States and Territories this concern had the exclusive right to use and exploit the patents controlled by the British Marconi Co., among which were the important Fleming tube patents. The Marconi Co. erected high-power wireless stations at New Brunswick, N. J., Belmar, N. J., Marion, Mass., Chatham, Mass., Bolinas, Calif., Marshall, Calif., Kahuku, Hawaii and Kokohead, Hawaii. In the ship-to-shore communication business it practically had a monopoly when it was taken over by the Radio Corporation in 1919. Some of the wireless apparatus used was manufactured at its plant at Aldene, N. J., where it also manufactured radio parts, which it sold to amateurs and experimenters in radio, while the equipment for its high-power stations was purchased from the British Marconi Co.

There were only two other companies in the United States engaged in the operation of a radio communication service—the United Fruit Co. and the Federal Telegraph Co. The United Fruit Co., which operates a fleet of vessels in connection with its tropical fruit business between the United States, the West Indies, Central and South America, obtained a few radio patents and a license from the Marconi Co. under certain of its patents. Its vessels were equipped with wireless apparatus and stations were erected in Boston, Mass., New Orleans, La., and a few points in Central America from which a commercial service was maintained. The Federal Telegraph Co. of California was organized in 1911 and operated a ship-to-ship and ship-to-shore service on the Pacific coast.

Prior to the war, broadcasting for entertainment purposes had not been developed and the radio apparatus required in receiving and transmitting sets were sold to the concerns engaged in the communication field, the United States Government, and amateurs and experimenters in the radio art. The principal manufacturers of apparatus and parts were the Marconi Co. of America, Federal Telegraph Co., De Forest Radio Telephone & Telegraph Co., and the Wireless Specialty Apparatus Co., a subsidiary of the United Fruit Co. None of these concerns manufactured what is now termed the modern vacuum tube and which is considered so essential by the industry. Only the Marconi and De Forest companies manufactured vacuum tubes, which because of certain defects were not considered of much importance. The De Forest Co. manufactured tubes for only a short time, since it was infringing the Fleming tube patents of the Marconi Co. The device then used for rectifying purposes was the crystal. Crystals and crystal receiving sets, efficient for short communication, were manufactured chiefly by the Wireless Speciality Apparatus Co. The Federal Telegraph Co. manufactured the Poulsen arc, which is used in high-power stations, for its own use and sale to ship owners and the Government. The three important manufacturers of electrical apparatus—the General Electric Co., the Western Electric Co., and the Westinghouse Electric & Manufacturing Co.—prior to the war did not sell radio apparatus, although they had done considerable research and development work. Some of the apparatus manufactured, however, was adapted for both radio and general electrical purposes.

THE RADIO CORPORATION OF AMERICA.

Although engaged primarily in the manufacture of electrical machinery and apparatus, the subject of radio was of interest to the General Electric Co., since many of its patents were also adapted to the radio art. Among its developments is the Alexanderson alternator, which is a machine for generating high-frequency current, useful especially in long-distance communication. The first of these machines was installed in 1917 at the New Brunswick, N. J., station of the Marconi Co. Shortly thereafter the British Marconi Co. commenced negotiations for the exclusive rights to the machine, but because of the war negotiations were suspended. After the signing of the armistice, negotiations were resumed but were practically concluded after a conference in April, 1919, between Rear

Admiral Bullard, Director of Communications of the Navy, Commander S. C. Hooper, of Bureau of Engineering of the Navy Department, and officials of the General Electric Co. The officials of the Navy Department suggested that an American radio corporation be formed to which the rights in this machine be sold and thus enable it to compete with British interests. A contract was proposed which provided for the organization of a company in such a manner that the control thereof would remain with American citizens. At a conference in May, 1919, with officials of the General Electric Co., Secretary Daniels stated (1) that he was in favor of Government ownership of radio, which he intended to urge upon Congress, and (2) that he doubted his power to execute such a contract except with the consent of Congress. No such authority was granted, so the contract never became effective. The General Electric Co., therefore, began negotiations for the purchase of the British Marconi Co.'s holdings in the Marconi Wireless Telegraph Co. of America with a view of organizing a new company to carry on the radio business.

The Radio Corporation of America was caused to be organized by the General Electric Co., October 17, 1919. Its original capital stock was $1,000, but at the first meeting of the stockholders was increased to $25,000,000. On December 31, 1922, there was outstanding 3,955,974 shares preferred stock, par value $5 per share, and 5,734,000 shares common stock, no par value. Of this amount the General Electric Co. owns 1,875,000 shares common and 620,800 shares preferred; the Westinghouse Electric & Manufacturing Co., 1,000,000 shares common and 1,000,000 shares preferred; and the United Fruit Co., 160,000 shares common and 200,000 shares preferred. The remainder is held largely by the former stockholders of the American Marconi Co. The companies mentioned are represented on the board of directors.

On November 20, 1919, the Radio Corporation entered into an agreement with the Marconi Wireless Telegraph Co. of America, whereby the Radio Corporation issued to the Marconi Co. 2,000,000 shares of its preferred stock in exchange for the physical properties, patents, licenses, and good will of the Marconi Co.

CROSS-LICENSE AGREEMENTS.

The Radio Corporation has entered into agreements with the various companies which own or control practically all patents covering radio devices considered of importance to the art. The number of patents involved approximates 2,000. Agreements of this character have been entered into with the General Electric Co., Marconi's Wireless Telegraph Co. (Ltd.), American Telephone & Telegraph Co. and its subsidiary, the Western Electric Co., the United Fruit Co. and its subsidiary, the Wireless Specialty Apparatus Co., The International Radio Telegraph Co., the Westinghouse Electric & Manufacturing Co., and the Radio Engineering Co. of New York. With certain minor limitations, the Radio Corporation under these agreements has secured an exclusive divisible right to sell and use the radio devices covered by the patents involved or by patents which these companies may acquire before the termination of the agreements. The agreements with the American Telephone & Telegraph Co. and the Western Electric Co. are to terminate in 1930, while the remainder are to terminate in 1945. Provision is made for the mutual exchange of information relating to radio, and, in most instances, the Radio Corporation has granted to the other company a license under its patents to make and use devices in the particular field in which the other company is interested.

The Radio Corporation, under these agreements, is made the selling company for practically all radio devices to be sold the public under the hundreds of patents involved. The General Electric Co. and the Westinghouse Electric & Manufacturing Co. are to manufacture and to sell to the Radio Corporation only these devices and apparatus, the Radio Corporation agreeing that 60 per cent of its annual requirements would be purchased from the General Electric Co. and 40 per cent from the Westinghouse Co. Until the expiration of the Fleming patents in 1922, the Radio Corporation had an absolute monopoly in the sale of vacuum tubes. On the expiration of these patents the De Forest Radio Telephone & Telegraph Co., which had retained a right to manufacture and sell, commenced the sale of such tubes to the general public. In the sale of receiving sets the Radio Corporation has competition from 17 concerns licensed under the Armstrong patents, although their sale of sets for use in conjunction with tubes is being contested in the courts at the present time. It is contended that their sale and use under the present patent situation constitutes an infringement of the tube patents of the Radio Corporation, which if upheld by the courts will prevent all competition in the sale of complete sets, since the Western Electric Co. is manufacturing and selling only transmitting apparatus for commercial purposes.

SHIP-TO-SHORE COMMUNICATION.

In communication by radio between ships at sea and the shore, the Radio Corporation is the dominant factor. Its chief competitors are the Independent Wireless Telegraph Co., Ship Owners Radio Service Co., Wireless Co. of Port Arthur, the Gulf Radio Service operating on the Atlantic coast and the Federal Telegraph Co. and the Kilbourne & Clark Manufacturing Co. operating on the Pacific coast. The question as to the right to use tubes, the patents to which are under the control of the Radio Corporation, in apparatus furnished the ships and land stations is also involved in litigation, suit having been instituted by the Radio Corporation against the Independent Wireless Telegraph Co. on this ground. The United States District Court for the Southern District of New York recently dismissed this bill for lack of parties since the De Forest Co., the owner of the patents involved and which had retained a personal license to make and sell, was a party to the proceeding in name only. If the contention of the Radio Corporation should finally prevail, competition from the other ship-to-shore service companies will be eliminated until there is a change in the patent situation. The Tropical Radio Telegraph Co., a subsidiary of the United Fruit Co., is also engaged in a ship-to-shore service in the Caribbean Sea, but is affiliated with the Radio Corporation.

INTERNATIONAL COMMUNICATION.

The Radio Corporation is the only concern now engaged in transmitting and receiving radio messages between the United States and foreign countries and contends that in order to function properly it must of necessity secure a monopoly in this field. The company has secured a virtual monopoly and controls all the high-power stations with the exception of those owned by the Government. In addition, it has entered into traffic agreements with the various foreign Governments and radio companies, the majority of these agreements providing that all messages intended for the United States shall be transmitted only through the facilities owned by the Radio Corporation of America. Agreements of this character have been made with Marconi's Wireless Telegraph Co. (Ltd.), covering the British possessions, and the Governments of Norway, Germany, France, Poland, Sweden, and the Netherlands. An agreement of a similar character between the Marconi Co. and the Japanese Government was assumed by the Radio Corporation when it purchased the assets of the Marconi Wireless Telegraph Co. of America and traffic by radio between the countries was established. In 1921 the Radio Corporation entered into an agreement with Marconi's Wireless Telegraph Co. (Ltd.), a British concern, the Compagnie Générale de Télégraphie sans Fil, a French concern, and the Gesellschaft Fuer Drahtlose Télégraphie m. b. H., a German concern, respecting radio traffic from South American countries which agreement was afterwards extended to include Central American countries. Steps have been taken to establish service between Brazil, Argentina, Colombia, Venezuela, and the United States. This agreement was made subject to the rights of the United Fruit Co. in Cuba, Colombia, the Panama Canal Zone, and Central America, and its agreement with the Radio Corporation whereby it agreed not to establish or operate stations for wireless communication outside the allotted territory.

The Federal Telegraph Co. of California, which is engaged in a ship-to-shore communication service on the Pacific coast, in 1921 entered into a partnership agreement with the Chinese Government providing for the erection of stations in China and the establishment of a transoceanic service. This agreement was assumed by the Federal Telegraph Co. of Delaware, which was organized by the Federal Telegraph Co. of California and the Radio Corporation. An agreement between the various companies holding concessions in China was also proposed. The agreement was apparently not executed and the correspondence with the Navy Department shows that the department would oppose any agreements of this character unless they were first approved by the respective Governments. In a letter to the Secretary of State dated December 16, 1921, Mr. Denby, Secretary of the Navy, emphasizes the importance of maintaining competition in radio communication to and from China. The possibility of a monopoly in other fields than that of service is also pointed out, as is shown by the following excerpt from the letter:

> The Navy Department fears that any commitment on the part of the Government to an arrangement favorable to a monopoly by a single commercial company, though limited to a particular service, would but lend a means toward extending monopoly to other services such as development and distribution of apparatus in general, and this is considered absolutely undesirable, particularly in the field of supply and service to ships.

At the present time the Radio Corporation has in operation communication circuits with Great Britain, Norway, France, Germany, Poland, Italy, and Japan. It is expected that the station in Sweden will be completed and ready for operation within the next six months and that the station near Buenos Aires, in the Argentine, will be completed in the near future.

Because of the provisions in these various agreements providing for service through the facilities of the Radio Corporation exclusively, it is not believed that it will be possible for any other company in the United States to conduct an efficient transoceanic service. In fact, a group of newspaper publishers in the United States who sought to erect a station for the receipt of radio messages, after conducting experiments in this country, eventually built such a station at Dartmouth, Nova Scotia. This station is now being operated, its service being supplemented by virtue of an arrangement with the British Post Office. The following are members of the association operating this service:

The Chicago Tribune, New York Times, New York World, New York Herald, New York Tribune, Philadelphia Public Ledger, United Press Association of America, International News Service, and Universal Service.

The association is not exclusive and business for other newspapers is conducted at a charge of 1 cent per word.

SALE OF APPARATUS.

The refusal to sell or lease apparatus to competitors for international communication purposes is included in the well-defined policy of the Radio Corporation of America. It also affixes to the apparatus sold a license notice, the object of which is to restrict the purchaser's use of the device to amateur and experimental purposes. In supplying ships with apparatus, devices, and appliances, the ship owners are required to execute an agreement which provides that the apparatus or appliances furnished by the Radio Corporation are licensed only for use on board ships and aircraft in communications destined to or originating on such ships or aircraft.

The Radio Corporation distributes its products chiefly through wholesale concerns handling electrical supplies. In order for a distributor to handle these goods it must furnish evidence that it has the facilities for conducting a wholesale business and give an initial order amounting to not less than $25,000. Independent manufacturers of sets are not sold vacuum tubes and other patented devices for resale in connection with sets manufactured by them. This was a hardship, particularly when there was a shortage of tubes, as the dealers were unwilling to furnish them with tubes. The investigation shows that the shortage in tubes was confined to three of the six types manufactured and prevailed during 1922 and first few months of 1923. There was a marked increase in the demand for tubes as the industry developed, as is shown by the orders received by the Radio Corporation, which were as follows: 1921, 112,500; 1922, 1,583,021; and for the first nine months of 1923, 2,931,262 tubes. Although the officials of the Radio Corporation admit that they do not carry dealers who confine their orders to tubes exclusively, there is little evidence that the Radio Corporation required dealers to handle their goods exclusively or favored such dealers in the supply of tubes, as compared with dealers who also handled apparatus manufactured by others.

The De Forest Radio Telephone & Telegraph Co., which is now engaged in the manufacture and sale of a modern vacuum tube, also affixes to its product notices with respect to use similar to those used by the Radio Corporation. This company has recently adopted the policy of making the distributors of its products, agents.

The commission submits no conclusions in this report as to whether the facts disclosed constitute a violation of the antitrust laws, as the House resolution under which the report was prepared called only for the facts and data "as in the opinion of the commission may aid the House of Representatives in determining whether * * * the antitrust statutes of the United States have been, or now are, being violated * * *; and such other facts as in the opinion of the commission may aid the House in determining what further legislation may be advisable."

By direction of the commission.

VERNON W. VAN FLEET,
Acting Chairman.

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RADIO INDUSTRY.

CHAPTER I.

DEVELOPMENT OF INDUSTRY.

Section 1. Cause of inquiry.

At the last session of Congress some time was spent in considering legislation with reference to the radio industry. In considering House bill 13773, there was developed some evidence indicating that the radio art was being restricted by the acquisition of the basic patents on radio by closely affiliated interests. It was also charged that because of agreements between the manufacturers and distributors of radio apparatus, competition was eliminated, the sale of apparatus was restricted, and that the resale price of instruments and radio parts was maintained. The main cause of these complaints was no doubt the inability of manufacturers of receiving sets and dealers to obtain an adequate supply of vacuum tubes. With respect to the transmission of messages by radio, it was contended that exclusive rights had been granted certain parties which resulted in the elimination of competition in service in the localities covered by such contracts.

House bill 13773 was an act to amend the 1912 law[1] regulating radio communication. The bill passed the House of Representatives but was not reported out by the Committee on Interstate Commerce of the Senate, to which it was referred. The main objects of the bill were to give to the Secretary of Commerce the authority to classify and license radio stations, assign bands of wave lengths, and to prescribe regulations applicable to all licensed stations. However, the following provision of the bill is significant:

> The Secretary of Commerce is hereby authorized to refuse a station license to any person, company or corporation, or any subsidiary thereof, which, in the judgment of the Secretary, is monopolizing or seeking to monopolize radio communication, directly or indirectly, through the control of the manufacture or sale of radio apparatus or by any other means. The granting of a license shall not estop the United States from prosecuting such person, company or corporation for a violation of the law against monopolies or restraint of trade.

It was the opinion of the House Committee on the Merchant Marine and Fisheries, which drafted the bill mentioned above, that more detailed information should be secured with respect to other phases of the general subject of radio, so that it could determine whether unlawful agreements or practices were being used and, if necessary, additional legislation recommended. It was with this object in view that the resolution was introduced in Congress under which this investigation was made by the commission. The resolution is as follows:

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[1] U. S. Comp. Stats., secs. 10100–10109.

> *Resolved*, That the Federal Trade Commission be, and it is hereby, requested to investigate and to report to the House of Representatives at the convening of the Sixty-eighth Congress, or as soon thereafter as practicable, the facts relating to (*a*) the ownership of patents covering radio apparatus used in interstate and/or foreign commerce and to all assignments or other contracts concerning such patents; (*b*) contracts, leases, or agreements in whatsoever form the same may be, or practices, the purpose, tendency, or effect of which is to control or restrict the manufacture, sale, resale, or use within the United States of such radio apparatus or to control or fix the price therefor; (*c*) contracts, leases, or agreements in whatsoever form the same may be, or practices, the purpose, tendency, or effect of which is to give exclusive rights or special privileges in the reception and transmission in interstate and/or foreign commerce of messages by radio; and (*d*) such other facts, as in the opinion of the commission, may aid the House of Representatives in determining whether, in the foregoing respects or otherwise on this or related subjects, the antitrust statutes of the United States have been or now are being violated by any person, company or corporation subject to the jurisdiction of the United States; and (*e*) such other facts as in the opinion of the commission may aid the House in determining what further legislation may be advisable.[2]

Section 2. Scope of investigation.

The attention of the Federal Trade Commission was first directed to the radio industry and particularly to the activities of the Radio Corporation of America and its associated companies by the filing of an application for a complaint with the commission in 1922. The charge in the application was that the General Electric Co. and others had set up the Radio Corporation as a bogus independent, and by the use of tying contracts and price discrimination in the sale of its products was attempting to acquire a monopoly in the manufacture and sale of radio apparatus. The importance of the radio industry and the public interest in the question of a monopoly therein were then apparent, so that the commission of its own initiative secured the facts regarding the reported combination in the radio field. This included information as to the interchange of patent licenses and agreements between the General Electric Co., Westinghouse Electric & Manufacturing Co., Western Electric Co. (Inc.), American Telephone & Telegraph Co., Wireless Specialty Apparatus Co., United Fruit Co., and the Radio Corporation of America.

The investigation as outlined above was practically complete when the request of Congress was made—March 3, 1923. It was apparently the intention of Congress that complete facts as to the entire industry should be secured, so that it was necessary to widen the scope of the previous investigation. The investigation centers around the Radio Corporation of America, which constitutes the most important factor in the industry, and in view of this fact a special effort was made to secure complete data with respect to its patents, contracts, leases, and practices.

While making the investigation the commission received several complaints as to conditions existent in the industry, especially as to the manufacture and sale of vacuum tubes. Some of the complaints of this character were that the Radio Corporation was curtailing its output of tubes for the purpose of hindering the manufacture and sale of radio apparatus, such as receiving sets, by its competitors;

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[2] H. Res. 548, Sixty-seventh Cong., fourth session.

that its sale of tubes was being limited to dealers handling its other apparatus; and, that dealers selling tubes below the customary price were not sold any more goods. Particular attention was given all complaints of this nature as well as other statements made by the competitors of the Radio Corporation in both the communication and sale of apparatus fields. Many of these parties were interviewed and in addition a questionnaire was sent to 75 manufacturers of receiving sets who were requested to furnish facts with respect to sales and their experience in the business.

Statements were secured from the officials and experts of the leading companies as well as Government officials familiar with the industry, although no attempt has been made to analyze the technical questions presented, for example, the conflicting claims with respect to the patents owned by the various companies prior to the formation of the Radio Corporation of America. The information secured from these sources relate particularly to the effect of the contracts, leases, and other agreements involved and the manner in which they had been carried out.

Section 3. Status prior to war.

In 1895 G. Marconi discovered a system which greatly increased the distance over which one could transmit and detect electric waves. This system became known as the Marconi System of Wireless Telegraphy. It was patented in 1896 in Great Britain and other countries, and for the exploitation thereof and other patents useful in radio Marconi's Wireless Telegraph Co. (Ltd.) was organized in Great Britain July 29, 1897.

The first company to be formed in the United States for the purpose of engaging in the radio business was the Marconi Co. of America, which was organized under the laws of the State of New Jersey on November 22, 1899. It was capitalized for $10,000,000. divided into 2,000,000 shares of the par value of $5 each, of which the Marconi's Wireless Telegraph Co. (Ltd.) owned 447,340 shares. It had the sole right to use and exploit the Marconi patents and those of Lodge, Pupin, Edison, Fleming, Weagant, Shoemaker, Fessenden, Butcher, Gray, Dunwoody, Franklin, and patents owned by the National Electric Signaling Co. of Pittsburgh, Pa., in the United States and its territories. Until 1912 the Marconi Co. of America did not operate any high-power stations for the transmission of commercial transoceanic messages. Its principal business was supplying ships with radio service. For this purpose it had erected and operated about 60 land stations for communicating with ships at sea including a high-power station at Cape Cod capable of transmitting messages to ships at sea at a distance of 2,000 miles. As part of this service it rented radio apparatus to the ships using its service and on December 31, 1915, owned and operated the wireless apparatus on over 400 ships of the mercantile marine. This apparatus it manufactured in its plant located at Aldene, N. J., where it also manufactured a number of component parts, used in assembling radio sets, which it sold to amateurs and experimenters in radio.

In 1913 the company completed its high-power station at New Brunswick, N. J., for the transmission of transoceanic radio messages and began the construction of other high-power stations along the Atlantic and Pacific coasts. As will hereafter be more fully explained (see p. 26), it is claimed that for efficient transoceanic communication purposes a device known as a three-element tube is required. Under its Fleming patent the Marconi Co. could manufacture a two-element tube, but the third element was covered by a patent controlled by the American Telephone & Telegraph Co. In order, therefore, to enable it to conduct its transoceanic business, a supply of such tubes was obtained from the Western Electric Co., the manufacturing subsidiary of the American Telephone & Telegraph Co. It began the transmission of messages from stations on the Pacific coast, but from the time it operated its stations on the Atlantic coast until they were taken over by the Government during the war, it did not transmit any commercial messages across the Atlantic Ocean.

Subsequent to the formation of the Marconi Co. of America, the Telefunken Co., a German-controlled concern, erected a high-power station at Sayville, Long Island, while a French company had erected for it by the German company a high-power station at Tuckerton, N. J. These three companies were the only ones operating high-power stations for transoceanic communication purposes at the time. Reliable commercial transoceanic radio communication had not yet been established, due to the lack of apparatus which would enable messages to be transmitted continuously and efficiently across the Atlantic, so that the cable companies with their 17 cables retained the greater portion of the trans-Atlantic business. All these cables originated in the United States and most of them terminated in Great Britain and France. For a long time radio apparatus and systems were used chiefly for wireless communication between ships at sea and between ships and the shore and in this branch of the industry the Marconi Co. of America had a practical monopoly. There were at the time only two other companies in the United States operating a similar service, the United Fruit Co. and Federal Telegraph Co. The United Fruit Co., which is engaged in the production, transportation, and distribution of tropical fruit, and in connection therewith owns and operates a fleet of vessels, obtained a few patents on radio devices and a license from the Marconi Co. of America under its patents. It erected land stations at New Orleans, La., Boston, Mass., and at a few points in Central America, installed apparatus on board its ships and maintained a wireless system to points on the Caribbean Sea. As its system became more efficient it opened its stations to the public for the transmission of commercial messages within the territory served by it. The Federal Telegraph Co. of California was organized under the laws of that State, in 1911, for the purpose among others of operating a wireless telegraph system. It operated a ship-to-shore and a ship-to-ship radio service on the Pacific coast.

Broadcasting for entertainment purposes had not yet been developed and the radio apparatus, devices, and component parts required in the construction of receiving and transmitting sets were sold to the small number of concerns engaged in the radio communication field, the United States Government, amateurs in radio telegraphy, and experimenters in the radio art. There were a number of concerns engaged in the manufacture and sale of such apparatus, devices, and parts, the principal ones being the Marconi Co. of America, De Forest Radio Telephone & Telegraph Co., Wireless Specialty Apparatus Co., a subsidiary of the United Fruit Co., and Federal Telegraph Co. None of these was able to manufacture the modern vacuum tube. The Marconi Co., under its Fleming patent No. 803684, was manufacturing a vacuum tube which was used principally as a detector in radio receiving sets. This tube performed more efficiently than the so-called crystal detector which was used for the same purposes. The crystal was the device used in the receiving sets on board ships and by radio amateurs and was only efficient for short distance communication. Crystals and crystal-receiving sets were manufactured by a few concerns, but principally by the Wireless Specialty Apparatus Co., which controlled the patents thereon. The Wireless Specialty Apparatus Co. is a corporation organized under the laws of the State of New York. The controlling stock interest was obtained by the United Fruit Co., and the Wireless Co., thereafter, in addition to selling radio devices to the Government and amateurs, manufactured under its patents and those owned by the United Fruit Co. a large amount of the radio apparatus required by the fruit company for its wireless systems.

The De Forest Radio Telephone & Telegraph Co. is a corporation organized under the laws of the State of Delaware. It owned a number of patents on radio devices, among which were the important Audion Patents No. 841386, issued January 15, 1907, No. 841387, issued January 15, 1907, and No. 879532, issued February 18, 1908. These patents cover vacuum tubes and under them the De Forest Co. for a time manufactured tubes but was restrained by the United States court in a suit brought by the Marconi Co. of America in which it claimed that the Audion patents infringed its Fleming detector tube Patent No. 803864 (236 Fed. 942). Later the De Forest Co. assigned its patents to the American Telephone & Telegraph Co., retaining a personal nontransferable right in said patents to itself, to manufacture and sell. It confined its business to the manufacture and sale of various component parts used by amateurs and experimenters in assembling radio sets. The Federal Telegraph Co. manufactured the Poulsen arc under certain patent rights, and sold them to the United States Government and to shipowners.

None of the companies who later became associated with the Radio Corporation, except the Wireless Specialty Apparatus Co., was engaged in the manufacture and sale of radio apparatus to the general public. The Westinghouse Electric & Manufacturing Co., though it had done considerable research work in the field of radio, had not yet developed any invention under which it was able to manufacture and sell radio apparatus or devices. The Western Electric Co., which is the manufacturing and sales company for the American Telephone & Telegraph Co., owned or was licensed under various patents covering inventions useful both in radio and in wire telephony. Under these patents it manufactured and sold apparatus principally to the parent company, to the United States Government, and to a very limited extent to amateurs. The General Electric Co., although it had done considerable development work in the radio field and owned some useful inventions, was not engaged in the manufacture and sale of radio devices and parts to the general public. It did, however, manufacture and sell electrical apparatus which was adaptable for radio purposes and which was also useful for other general electrical purposes.

Section 4. Progress during war period.

There were, prior to the entrance of the United States into the World War, a number of inventions covered by patents, which could have been utilized in the manufacture of a large portion of the modern radio apparatus, and also numerous inventions covering various systems which could have been employed in rendering a more efficient transoceanic radio communication service. These patents were, however, controlled by opposing interests who refused to license one another. During the World War the necessity for efficient radio apparatus and devices for naval and military purposes became of increasing importance. As a result of Government appeal, the concerns mentioned in the preceding section, together with a large number of other manufacturers, disregarding patent rights, engaged in the manufacture of radio apparatus and devices for the Government, upon the Government's guarantee to protect them against all infringement suits. As a result during this period, vacuum tubes which were the most essential devices required, were manufactured by the Westinghouse Electric & Manufacturing Co., General Electric Co., Western Electric Co., the Marconi Co. of America, De Forest Radio Telephone & Telegraph Co., Moorhead Laboratories, Audio Tron Manufacturing Co., and Elman B. Myers.

The Marconi Co. of America from the time of its inception until its high-power stations were taken over by the Government had never been able to give a reliable trans-Atlantic radio service. The inability of that company to give a reliable service was caused by faulty apparatus at both ends—that is, at the transmitting station and at the receiving station. It had equipped its high-power stations on the Atlantic coast with the spark type of transmitting apparatus, which furnished damp or noncontinuous waves. This equipment did not generate sufficient power to transmit radio messages continuously and with any degree of reliability across the Atlantic Ocean. Due to the patent situation, it could not employ a high order of amplification, such as is obtained with the three electrode vacuum-tube amplifiers, and since it did not employ continuous wave generators it could not use the highly efficient receiving system known as the heterodyne. Although the Marconi Co. controlled the two electrode vacuum tubes embodied in the Fleming patent, the device of real efficiency known as the three-electrode vacuum tube was covered by the De Forest patents controlled by the American Telephone & Telegraph Co. For this purpose a machine of much greater power was required and the efforts of a great many of the engineers were directed to inventing a machine capable of producing a sufficient amount of power whereby the distance could be bridged.

The General Electric Co., through its engineers, had for a period of years been endeavoring to build a machine capable of supplying the necessary amount of energy. In 1915 Doctor Alexanderson, an engineer in the employ of that company, succeeded in perfecting such a machine, now known as the Alexanderson alternator. The value of this machine was recognized by the British Marconi Co., which in that year sent Mr. Marconi and Mr. Stedman, its agent and counsel, respectively, to the United States with a view of making arrangements with the General Electric Co. whereby the Marconi companies could secure the exclusive rights in this machine. A tentative arrangement was made whereby the Marconi companies were to purchase a number of these machines. Before the arrangements were concluded Mr. Marconi returned to Italy, having been called to service by his Government, and negotiations were suspended with the understanding that nothing would be done by either party which would interfere with the execution of a definite contract as soon as business returned to normalcy.

In 1917 the understanding between the companies was canceled and the General Electric Co. negotiated with the American Marconi Co. for the installation of a 50-kilowatt machine at its New Brunswick high-power station. Such a machine was installed at the expense of the General Electric Co. for the purpose of demonstrating the Alexanderson machine and also various other devices in connection therewith. This machine was in operation when the New Brunswick station was taken over by the Navy Department. As a result of the success obtained with this machine the Navy Department suggested to the American Marconi Co. that it install a 200-kilowatt machine, which was then being completed by the General Electric Co. This the Marconi Co. refused to do, and the General Electric Co. installed the larger machine at the New Brunswick station at its own expense. In addition, it made radical changes in the aerial and remodeled the entire system heretofore used by the Marconi Co. The system installed at the New Brunswick station carried the bulk of the radio traffic between this country and Europe from June, 1918, to March 1, 1920, when it was returned to the owner. It was the first high-power station on the Atlantic coast which transmitted radio messages continuously and reliably.

On or about March, 1919, the British Marconi Co. again sent its representatives to the United States to negotiate with the General Electric Co. for the exclusive right of the Alexanderson machine and its accessories. They offered to buy a number of machines with accessories and devices beginning with 14 for the American Marconi Co. and 10 for the British Marconi Co., at $127,000 each. The General Electric Co. was unwilling to sell the rights to the machine outright and insisted upon a royalty for the rights. The negotiations continued and were practically concluded when on April 5, 1919, officers of the General Electric Co. were visited by Rear Admiral Wm. H. G. Bullard, Director of Communications of the Navy, and Commander S. C. Hooper, of the Bureau of Engineering of the Navy Department.

At the conference which took place, Admiral Bullard stated in substance that the New Brunswick station, equipped with an Alexanderson alternator and its accessories, had been demonstrated to be capable of rendering reliable transoceanic radio service; that it was without doubt the best system in existence, and that if the General Electric Co. should sell these devices to the Marconi interests the result would be to make it possible for foreign interests to maintain a monopoly of world-wide communication for an indefinite future period. He asked the officers of the company, as patriotic American citizens, not to make it impossible to establish an American radio communication company, powerful enough to meet competition of foreign radio interests, by allowing the rights to the Alexanderson machine and its accessories to be controlled by foreign countries.

The officers of the General Electric Co. called Admiral Bullard's attention to the fact that its business was to develop electrical apparatus and to sell to its regular trade, and that the only customers for the devices in question were the Marconi companies. They explained to Admiral Bullard the status of the pending negotiations and pointed out that if these negotiations were terminated the company would have no other outlet whereby it could realize on the investment and developments which the company had made. A discussion was had as to the formation of a new radio company which would have the support of the General Electric Co., and which would therefore be in a position to make the inventions of apparatus available for American communication.

It was pointed out that the most important radio company was the Marconi Co. of America, and that by a patent license from the British Marconi Co. its operations were limited to the United States. It was also shown that the British company owned considerable stock in the American company, and that through such influence radio communication to and from the United States would be largely dominated by the British company. Following these conferences with Admiral Bullard and Commander Hooper, the General Electric Co. ceased negotiations with the British Marconi Co., and proceeded to work out with the officials of the Navy Department a proposed contract under which a new company controlled wholly by American citizens might be formed.

A proposed contract was worked out with the Navy Department which never became effective. The proposed contract contained a stipulation providing that the new company should be so constituted that control thereof should always remain in the hands of American citizens. Secretary Daniels, at the time of the negotiations, was in Europe and the execution of it was delayed until his return. On May 23, 1919, Secretary Daniels requested the officers of the General Electric Co. to meet him in Washington and discuss the contract. The Secretary stated (1) that he was in favor of Government ownership of radio; (2) he doubted his power to execute such a contract because at best it would be an exercise of a war power to project a peace program, which he did not desire to do except with the consent of Congress; (3) that if Congress did not approve of the program of Government ownership of radio, and did authorize the Navy to deal with the matter, a contract such as had been worked out would be acceptable. Congress not having authorized the Secretary of the Navy to deal with the matter, the proposed contract was never executed, and the General Electric Co. proceeded to make arrangements with a view of forming a new company which would take over its inventions.

Certain officials of the War Department were not in accord with the officials of the Navy Department, who desired to officially sanction such a company. Maj. Gen. George L. Squier is authority for the statement that he did not believe the War Department would have taken the same stand in the matter. He also pointed out the uselessness of the Radio Corporation as a selling agent for radio apparatus when the General Electric and Westinghouse companies already had efficient sales organizations.

The first step taken by the General Electric Co. in anticipation of the formation of the new radio company was to negotiate for the purchase of the block of stock owned by the British Marconi Co. in the American Marconi Co. After due notice to the Secretary of the Navy of its intention, the General Electric Co. undertook negotiations with the American interests in the American Marconi Co. An agreement was made, contingent on the General Electric Co. being able to purchase the British interests, whereby the new radio company was to acquire the property, patents, good will, and business of the American Marconi Co. and to pay therefor, with its preferred stock at par, to the extent of the value of the tangible property actually turned over, and pay for the patents, good will and business with the common stock of no par value. The General Electric Co. also agreed to contribute something over $3,000,000 to the new enterprise, for which it was to take preferred stock of the new company at par, and the General Electric Co. would turn in its patents and those developed during the next 25 years in the radio field, for common stock of no par value.

There was in existence at this time a machine for generating the current required in the transmission of electro magnetic waves, called the Poulsen arc. The patents to this machine were owned by the Federal Telegraph Co. of California. During the war the Navy Department secured the rights to the arc patents to keep them from being purchased by the British Marconi Co. at a time when the development of the Alexanderson alternator was not complete. Commander Loftin, of the Bureau of Engineering, has stated that the Poulsen arc was practically as efficient as the Alexanderson alternator, and that the purpose of getting the General Electric Co. to refuse to part with its rights in the Alexanderson machine to the British interests was to prevent the British company from securing a machine which would enable it to compete with the arc and to cause an American radio company to be formed financially able to compete with the long-established radio business of the British Marconi Co.

On October 6, 1914, letters patent were issued to Edwin H. Armstrong for a wireless receiving system now generally known as the feed-back. This invention was considered an important step in rendering receiving sets more efficient. Licenses were obtained from him by 20 concerns, a number of which proceeded to manufacture receiving sets involving this invention. (For form of license agreement see Appendix, Exhibit Y.) The following concerns obtained such licenses:

Marconi Co. of America (only for use in one or two stations owned by this company): International Radio Telegraph Co.; A. H. Grebe & Co. (Inc.); Chicago Radio Laboratory; Clapp-Eastham Co.; Cutting & Washington (Inc.); Adams-Morgan Co.; Precision Equipment Co.; Jones Radio Co.; Mignon Manufacturing & Export Co.; Tri-City Electric Manufacturing Co.; Klitzen Radio Manufacturing Co.; The Radio Shop; Ord Radio Laboratories; Pennsylvania Wireless Manufacturing Co.; C. D. Tuska Co.; Radio Craft Co.; The Colin B. Kennedy Co.; Eastern Radio Co.; Chelsea Radio Co.

The sets involving the feed-back system work most efficiently when used conjointly with the modern vacuum tube. So long as these tubes were being manufactured, in violation, as is claimed, of patent rights, these licensees were able to sell their sets. But at the close of the war a majority of the concerns who had been engaged in the manufacture of radio apparatus, notwithstanding they were infringing on patent rights, stopped manufacturing tubes. Broadcasting had not yet been developed as a commercial proposition and the radio industry was still confined to the manufacture and sale of the component parts, required and used in assembling radio sets, and the sets manufactured by the Armstrong licensees which were sold principally to amateurs and experimenters.

During this period a number of ships of the United States merchant marine were supplied by the Navy Department with radio apparatus, and it was necessary to have some companies who would supply these ships with radio service. As a result, a number of companies came into existence. The more important of these companies were the Ship Owners Radio Service Co., the Independent Wireless Telegraph Co., and the International Radio Telegraph Co., all of which operated on the Atlantic coast, and the Kilbourne & Clark Manufacturing Co., which operated such a service on the Pacific coast.

Section 5. Formation of the Radio Corporation of America.

On October 17, 1919, the General Electric Co. caused to be organized under the laws of the State of Delaware the company now known as the Radio Corporation of America, with a capital of 5,000,000 shares of preferred stock at the par value of $5 a share, and 5,000,000 shares of common stock without nominal or par value. The nature of the business or objects or purposes proposed to be transacted, promoted, or carried out, as set forth in the certificate of incorporation, are:

(a) To send and receive signals, messages and communications;

(b) To create, install and operate a system of communication which may be international;

(c) To improve and prosecute the art and business of electric communication.

(d) To radiate, receive and utilize electro-magnetic waves;

(e) To create, manufacture, purchase or otherwise acquire; to hold, own, mortgage, pledge, sell or otherwise dispose of; to invest, trade and deal in goods and merchandise, interests, rights, patent rights, patents, copyrights and other real and personal property of every description in any of the States, districts, Territories or colonies of the United States, and in any and all foreign countries, in accordance with the law thereof;

(f) To acquire the goodwill, franchise, rights, patents, patent rights, copyrights and property, and to take over all or any part of the assets and/or all liabilities of any person, firm, association or corporation, and to pay for the same in cash, property, shares or obligations of the Corporation;

(g) To borrow money by means of obligations issued or through commercial instruments and, in the manner permitted by law, and to secure the payment of any such obligations by mortgage or pledge or agreement as to all or any part of the property, real or personal, of the Corporation, and to provide that any such obligations shall be convertible into or exchangeable for stock of the Corporation upon such terms permitted by law as the Board of Directors shall determine;

(h) To subscribe to, acquire and to hold, own and dispose of securities and obligations of any other corporation, and to issue in exchange therefor the stock or obligations of the Corporation;

To guarantee the payment of dividends upon any shares of the capital stock of, or the performance of any contract by, any other corporation or associa-

> tion in which the Corporation shall have an interest, and to endorse or otherwise guarantee the payment of the principal or interest of any obligations of any such other corporation or association;
>
> (i) To have one or more offices, and to carry on its operations, and transact and conduct its business in the State of Delaware, other States, the District of Columbia, the Territories and colonies of the United States, and in foreign countries, and have one or more offices out of the State of Delaware; and, without restriction or limit as to amount to purchase or otherwise acquire, hold, own, lease, mortgage, sell, convey, or otherwise dispose of, real and personal property of every class and description out of the State of Delaware and in any of the States (including the State of Delaware), district, Territories and colonies of the United States, and in any and all foreign countries, subject always to the laws of such State, district, Territory, colony or foreign country;
>
> (j) To make and carry out contracts of every kind for every lawful purpose without limit as to amount with any person, firm, association or corporation;
>
> (k) To carry on all or any of its operations or business without restrictions or limit as to amount, but the powers herein stated shall not include power to construct, maintain or operate railroads, railways, telegraph or telephone lines except outside the State of Delaware.

The provision suggested by Admiral Bullard for retaining control of the Radio Corporation of America in the hands of American citizens was embodied in the fundamental laws of the Radio Corporation in the following terms:

> No person shall be eligible for election as a director or officer of the corporation who is not at the time of such election a citizen of the United States.
>
> The corporation may by contract or otherwise permit such participation in the administration of its affairs by the Government of the United States as the board of directors deem advisable.

The above provision in the fundamental laws of the corporation was carried out in the by-laws by the adoption of Article IX, which is as follows:

> The corporation may, if the board so decide, issue share certificates representing not more than 20 per cent of the total shares of the corporation at the time outstanding (including such issue) in special form which may be owned or held by and the shares represented by which may be voted by foreigners without restriction. These certificates will be a special series known as "foreign share certificates," and each such certificate shall bear the words "foreign share certificate" upon its face. The board may, under such restrictions as it may from time to time adopt, provide for the interchange of "foreign share certificates" and other share certificates, but the aggregate issue of "foreign share certificates" at any time outstanding shall not exceed the percentage above provided. Holders of "foreign share certificates" shall have in all respects the same corporate status and corporate rights as holders of other share certificates. The voting rights represented by share certificates (other than foreign share certificates) shall be transferable only to loyal citizens of the United States and/or corporations formed under the laws of the United States or formed under the laws of one of the States of the United States free from foreign control or domination and not in any foreign interest, and each such certificate shall bear a legend to that effect upon its face.
>
> At any special or annual meeting of shareholders of the corporation any director or the Secretary of the Navy of the United States may by notice in writing filed at the meeting challenge the right of any named shareholder (except foreign share-certificate holders) to vote on the ground that the ownership of the shares held by such shareholder is not then in citizens of the United States or in a corporation formed under the laws of the United States or formed under the laws of some one of the States of the United States. In the event that said shares the vote of which is thus challenged, together with other shares challenged at the same meeting and for the same cause, together with the total amount of shares represented by foreign share certificates then issued and outstanding, amount in the aggregate to more than 20 per cent of the total shares of the corporation at the time outstanding, the

meeting shall proceed to record the votes of the other shareholders not challenged and (provisionally) to record the votes of the challenged shares. If it then appear that the result of the voting would not be changed or altered by the receipt of all the challenged votes, then such challenge shall be disregarded. If the contrary appear, the meeting shall not proceed further, but shall adjourn for a period fixed by the chairman. The board of directors shall thereafter meet and promptly investigate the challenges by such method and in so far as they deem expedient, with or without taking evidence and with or without according an opportunity for cross-examination, but according to the person or persons who represented the challenged shares at such shareholders' meeting an opportunity to make a statement in regard to the challenge, and to the Secretary of the Navy of the United States or his agent (but only if he as such agent be present at such meeting) an opportunity to make a statement in regard to the challenge. At the adjourned date of such meeting the board of directors shall report their opinion. If they then report that the majority of those directors present taking part in their deliberation as to the challenge or challenges are of opinion that such challenges or any of them were well founded, such challenged votes as to which their opinion in favor of the challenge applies shall be rejected. Otherwise the challenges shall be deemed ineffective and the votes received. No director shall be personally liable to any shareholder for any action taken by him in the course of such investigation or because of the rejection of any challenged vote or the failure to support any challenge.

If at any shareholders' meeting the Secretary of the Navy of the United States in his official capacity shall challenge the vote of any shareholder (whether or not he be a citizen of the United States and whether or not it be a corporation formed under the laws of the United States or formed under the laws of one of the States of the United States) on the ground that such shareholder holds or votes such shares (other than shares represented by foreign share certificates) wholly or partly in the interest of any foreigner or any foreign nation, such challenge shall be acted on and decided by the board in the same manner as herein provided for other challenges, and the board may decline to receive the vote of shares so challenged.

There were originally only 10 shares of stock which were issued to three dummy stockholders, who immediately after the issuance thereof transferred the same to the General Electric Co. After the first meeting of the stockholders, which took place shortly after the organization of the corporation, the number of shares of common stock was increased to 7,500,000 shares. In 1922 there was outstanding on the books of the corporation 5,734,000 shares of common stock and 3,955,974 shares of preferred stock distributed as follows:

Name.	Common.	Preferred.
General Electric Co	1,876,000	620,800
Westinghouse Electric & Manufacturing Co	1,000,000	1,000,000
American Telephone & Telegraph Co		400,000
United Fruit Co	160,000	200,000

The balance of stock issued, 2,698,194 shares common and 1,735,174 preferred, is held mostly by a group of the former stockholders of the Marconi Co. of America, not more than 20 per cent of whom are aliens.

Representation on the board of directors was had by the abovementioned principal stockholders as follows: Representing the General Electric Co. are Owen D. Young, Gordon Abbott, Albert G. Davis, and Edward Rice, all officers of the General Electric Co. The Westinghouse Electric & Manufacturing Co. were represented by Guy E. Tripp and Edwin M. Herr; the American Telephone &

Telegraph Co., by Walter J. Gifford and Frederick A. Stevenson; the United Fruit Co., by [illegible]orge F. Davis; and the International Radio-Telegraph Co. by Arthur E. Brown.

The 400,000 shares of preferred stock above noted as being owned by the American Telephone & Telegraph Co., is a portion of the original amount, purchased by it fro[illegible]o Corporation in August, 1920. On that date it purcha[illegible]res of common and 500,000 shares of preferred stock a[illegible]yment therefor $2,500,000 7 per cent debentures of the [illegible]Bell Telephone & Telegraph Co. Between February[illegible]l January 18, 1923, it disposed of the above-mentioned[illegible] June 2, 1922; W. J. Gifford and Frederick A. Stevenson, [illegible]g the American Telephone and Telegraph Co. on the board [illegible]directors of the said Radio Corporation, resigned. The reason for the sale of this stock and the resignation of the directors, as given by N. T. Guernsey, vice president and general counsel of the American Telephone & Telegraph Co., was that "brokers were advertising this stock ownership to induce the public to invest in the stock, which tended to create a moral obligation on this company's part which it did not wish to assume."

The present directors are:

Owen D. Young, chairman.
Gordon Abbott.
Arthur E. Brown.
Albert G. Davis.
George S. Davis.
Harry P. Davis.
John W. Griggs.
James G. Harbord.
Edward W. Hardin.
Edwin M. Herr.
Edward J. Nally.
Edwin W. Rice, jr.
James R. Sheffield.
Guy E. Tripp.

Its officers are:

James G. Harbord, president.
Edward J. Nally, managing director of international relations.
David Sarnoff, vice president and general manager.
William Brown, vice president and general attorney.
John W. Elwood, secretary.
George S. DeSousa, treasurer.
Charles J. Ross, comptroller.
Lewis MacConnach, assistant secretary.
Marion H. Payne, assistant treasurer.

On November 20, 1919, the Radio Corporation entered into an agreement with the Marconi Wireless Co. of America whereby, in consideration of the issuance by the Radio Corporation to the Marconi Co. of America of 2,000,000 shares of preferred stock of the Radio Corporation in payment for the tangible assets of the Marconi Co. and the issuance by the Radio Corporation of 2,000,000 shares of its common stock to the Marconi Co. in consideration for the patents and good will of the Marconi Co., the Marconi Co. transferred to the Radio Corporation all its tangible physical assets, among which were included all the high-power stations on the Atlantic and Pacific coasts, and including all the stock of the Wireless Press (Inc.), a New York corporation, Marconi Cable Telegraph Co., a New York corporation, Marconi Cable Telegraph Co. of New Jersey, Marconi Cable Telegraph Co. of Massachusetts, Marconi Cable Telegraph Co., an Illinois corporation, and three-eighths of the stock of the Pan American Wireless Telegraph & Telephone Co., a Delaware corporation. On the same date it entered into a contract with the General Electric Co. whereby in addition to securing rights under the patents owned or controlled by the General Electric

Co., the General Electric Co. agreed to manufacture exclusively for the Radio Corporation and the Radio Corporation agreed to purchase from the General Electric Co. exclusively all radio apparatus and devices required by it. As a result of the above agreements the Radio Corporation obtained control of practically every privately owned high-power station in the United States, together with a number of important radio patents.

The balance sheet for the Radio Corporation of America, as of December 31, 1922, is as follows:

ASSETS.

Plant and equipment—Comprising high-power stations in operation with the necessary equipment, together with ship stations and sundry machinery, tools, and furniture			$12, 711, 348. 15
Patents, patent rights, contracts, and good will			16, 735, 232. 60
Stocks of subsidiary and associated companies			1, 173, 507. 72
Deferred charges			1, 028, 906. 14
Installation work for foreign customers			639, 705. 95
Current assets:			
Cash at banks and on hand		$946, 888. 82	
Accounts and notes receivable		2, 445, 925. 85	
Inventories—			
Merchandise	$3, 909, 401. 09		
Ship, shore and high-power apparatus	1, 131, 811. 85		
		5, 041, 212. 94	
Investments at cost (market value Dec. 31, 1922, $242,924)		252, 880. 00	
Total current assets			8, 686, 907. 61
			40, 975, 608. 17

LIABILITIES AND CAPITAL.

Capital stock:		
3,955,974 shares 7 per cent preferred, $5 par value	$19, 779, 870. 00	
5,734,000 shares common (no par value)	13, 660, 163. 56	
Total capital stock		$33, 440, 033. 56
Current liabilities		2, 688, 941. 53
Advance collections from foreign customers		895, 600. 49
Deferred liability (balance payment Tuckerton station)		390, 000. 00
Reserves:		
For amortization of patents after writing off the patents expired	$2, 045, 375. 84	
For depreciation and obsolescence of plant	1, 347, 705. 27	
Other reserves	167, 951. 48	
		3, 561, 032. 59
		40, 975, 608. 17

Contingent liability, $37,800.

Section 6. Formation of The International Radio Telegraph Co.

In the preceding section the manner in which the General Electric Co. prepared to enter the radio field in the manufacture of apparatus and in the conduct of a radio communication business is set forth. That company and the Westinghouse Electric & Manufacturing Co. have always been regarded as competitors in the sale of general electrical apparatus. While the General Electric Co. was intrenching itself in the radio field, the Westinghouse Electric & Manufacturing Co. was also making arrangements to place itself upon a footing which would enable it to compete with its rival. Prior to the war it had done considerable development work in the radio art. As it proceeded with the developments it found that the various patents controlled by the International Radio Telegraph Co. were of importance in the art, and it considered that the ownership of rights in these patents would prove of value in the prospective development, and, in addition, serve to place the Westinghouse Co. in a strong strategic position as regards its chief competitor, the General Electric Co., and especially since it had knowledge that the General Electric Co. was endeavoring to purchase these patents.

Accordingly, on May 22, 1920, the Westinghouse Co. entered into a contract with the International Radio Telegraph Co. and its stockholders (see Appendix, Exhibit L), which provided for the formation of a new company to be known as The International Radio Telegraph Co., to take over the patents in question, among which were the Fessenden heterodyne patents and certain other assets of the International Co. Subsequently, it entered into a contract with The International Radio Telegraph Co. (see Appendix, Exhibit N) similar to that entered into between the Radio Corporation and the General Electric Co. (see Appendix, Exhibit C), whereby the Westinghouse Co. obtained the rights to manufacture, use, and sell apparatus covered by these patents for all purposes, except that it was licensed thereunder to sell apparatus for public radio communication purposes only to The International Radio Telegraph Co. The Westinghouse Co., through its control of The International Radio Telegraph Co., contemplated exploiting the rights of radio communication under these patents. On August 5, 1920, The International Radio Telegraph Co. entered into an agreement with the United States Government whereby it secured nonexclusive licenses under all radio patents owned by the Government, a list of which patents is shown in the Appendix as Exhibit A–8. On October 5, 1920, the Westinghouse Co. purchased the Armstrong and Pupin patents, which it found were very useful in receiving apparatus and the rights to which it believed were absolutely essential in order for it to obtain the benefit of the features covered by many of the patents obtained from the International Radio Telegraph Co.

Up to the time of the formation of The International Radio Telegraph Co., broadcasting for entertainment purposes or, in other words, the use of radio for telephonic purposes, were still in an experimental stage. Late in 1920 the Westinghouse Co. erected a broadcasting station at East Pittsburgh, and although the apparatus which it then had was crude, it was enabled to demonstrate to those interested in the radio industry that ~~if~~ proper transmitting and receiving apparatus could be designed and developed, unhampered by patent restraints, broadcasting would become a great public utility, and in anticipation of the probability of the patent situation being cleared up, proceeded with the development. During the year 1921 it developed four types of sets for receiving purposes, all of which required for their efficient operation the use of vacuum tubes and a few other devices the patents to which were controlled by the Radio Corporation of America, the American Telephone & Telegraph Co., and the General Electric Co. Because of the control of these patents by the latter companies the Westinghouse Co. was unable to sell its sets to the general public. Subsequently, on June 30, 1921, the Westinghouse Co. caused The International Radio Telegraph Co. to sell its patents and assets to the Radio Corporation of America, and on the same date the Westinghouse Co. entered into an agreement with the Radio Corporation (see Exhibit S-1) wherein it agreed to manufacture radio apparatus exclusively for the Radio Corporation of America.

It appears that before the Radio Corporation executed the cross-licensing agreements discussed in Chapter II it, in all cases, submitted them to the officials of the Navy Department except the cross-licensing agreement entered into between it and the Westinghouse Electric & Manufacturing Co. Some of the officials of the Navy Department had hoped that the Westinghouse Co. through its subsidiary, The International Radio Telegraph Co., would be able to find some way to compete with the Radio Corporation both in the sale of equipment and the conduct of a transoceanic radio communication business.

Section 7. Conflict of patents.

Commanders Hooper and Loftin, and a number of independent manufacturers of radio apparatus, are of the opinion that the development of the radio industry, both in the manufacture of radio apparatus and in the operation of reliable commercial transoceanic systems, was retarded while the numerous broad and fundamental radio patents were owned and controlled by opposing interests. There are, however, conflicting claims with reference to the importance of many of the patents owned by the various companies, and as to the necessity for any one company acquiring rights in all of the vast number of patents pertaining to radio then in existence. While, of course, the officials of the Radio Corporation and its associated companies claimed that practically all of the patents were necessary before it could render the efficient kind of service required by the public, there are others who claim that it could very well have gotten along without a number of patents which it did acquire, and that it acquired those patents for the express purpose of monopolizing the entire industry. Because of the newness of the art and the small number of radio patents which have been adjudicated, no attempt has been made to analyze the vast number of patents which were the subject of cross-licensing agreements between the Radio Corporation and the companies now associated with it, from which it could be determined whether or not the Radio Corporation acquired in addition to essential patents a number that were in fact competitive. An effort was made to obtain expert testimony on this point, and the opinions of the following are of interest: Maj. E. H. Armstrong, the inventor of the Armstrong regenerative circuit or feedback system and one of the most noted inventors in radio, on being asked whether "prior to the crossing of licenses by the owners of various patents, could each owner thereof manufacture a complete radio device which could be sold in competition with similar devices manufactured by the other?" replied that "it was absolutely impossible to manufacture any kind of workable apparatus without using practically all the inventions which were then known."

Maj. E. H. Armstrong is employed in an advisory capacity to the Radio Corporation of America and also owns a number of shares of stock therein.

Commander E. H. Loftin, formerly of the radio division, Bureau of Engineering, now connected with the Judge Advocate's office of the Navy, has made a study of the patents which were the subjects of cross-licensing agreements between the Radio Corporation and its affiliated companies for the purpose of ascertaining their relationship to the radio activities of the Government, this study being so comprehensive that it covered a study for commercial purposes. He was asked the following question:

> Q. In the absence of these cross-licensing agreements, could any of the companies, under the patents owned by them, have engaged in the manufacture and sale of radio devices and apparatus in competition with each other, or would any of them be in a position to manufacture and sell radio apparatus and give rights under certain of their patents to enable other concerns to operate communicating systems?

In answer thereto he stated:

> No successful transoceanic systems, capable of competing in service to the public with cables. Successful receiving apparatus for radio broadcasting could have been manufactured by the telephone company after the expiration of the Fleming patent; but no one could have built the transmitters to supply the broadcasting without the combination of the patents.

He was also asked:

> Can you point out any specific patents which each of the companies owned, under which each could have manufactured similar devices?

In answer thereto he stated:

> The very soul of radio, for both the commercial operations of commercial systems and the amateur, is the three-electrode vacuum tube, and no company which can not supply equipment which is designed to be used with this tube can hope to be a success.

It is claimed that the situation was cleared up by the Radio Corporation and the General Electric Co. by the cross-licensing agreements with each other and with the American Telephone & Telegraph Co., Western Electric Co., Wireless Specialty Apparatus Co., United Fruit Co., and Westinghouse Electric & Manufacturing Co., all of which agreements will be discussed in Chapter II of this report.

As bearing on this conflict in the patent situation it is pertinent to set out a number of the chief patents and applications for patents pending at the time, by whom each was owned, their importance, and their relationship to one another. However, it should be understood that it is intended merely to state the claims of some experts in the radio art, without passing on the merits, as to the validity or scope of the patents, their importance, and whether or not the full enjoyment of the specific use of each patent described is dependent on its being used conjointly with other patents.

For a long time damped or noncontinuous waves were used in the radio art, but during the war continuous waves came into general use. The officials of the Navy Department and others claimed that the most efficient long distance radio systems are those that employ continuous waves. The best type of sets for transmitting and receiving continuous waves employ the modern vacuum tube, a regenerative system, grid leaks, negative bias grids and some form of heterodyne. For receiving systems used in broadcasting the heterodyne method is not necessary.

Of all the devices mentioned as necessary for use conjointly in the construction of a receiving set, the most essential is the modern vacuum tube, which has been termed by many the "heart" or "soul" of radio. Prior to the year 1914 a number of the improvements which have since made vacuum tubes so essential had not yet been developed. The tubes then known were covered by the Fleming Patent No. 803684, issued November 7, 1905, originally owned by the Marconi Co. of America and the De Forest Patents No. 841386, issued January 15, 1907, No. 841387, issued January 15, 1907, and No. 879532, issued February 18, 1908. The last-mentioned patents were originally owned by the De Forest Radio Telephone & Telegraph Co., which in 1917 assigned them to the American Telephone & Telegraph Co., except for a personal nontransferable right to manufacture and sell reserved by the De Forest Co.

Under its Fleming patent the Marconi Co. could manufacture a two-element tube—that is, an evacuated vessel containing a filament and a plate—these two elements being connected in a circuit with a microphone in such a manner that high frequency waves compressed upon the circuit otherwise inaudible in the telephone receiver would be rendered audible by the rectifying action of the tube. The patent on this tube covered its use for radio purposes only. The three-element tube, which is in use to-day, was partly covered by the De Forest patents. It consists of the two elements employed in the construction of the tube under the Fleming patent, and, in addition thereto, a third electrode, known as a "grid," which is a zigzag or perforated plate, placed in between the filament and plate involved in the Fleming tube. This third element, together with a certain circuit arrangement of wires, enables the device to be used not merely to rectify (detect) electric oscillations, but to relay or repeat them on a magnified scale, so that when employed with the proper instrument, such as a telephone, a considerable increase in detecting power occurs. For a short time the De Forest Radio Telephone & Telegraph Co. manufactured a three-element tube under its patents. The Marconi Co. of America brought suit against the De Forest Radio Telephone & Telegraph Co. in the United States District Court, alleging that the vacuum tube manufactured by the De Forest Co. under its patents infringed on the Fleming tube patent. An injunction was granted restraining the De Forest Co. from manufacturing tubes under its patents (reported in 236 Fed. Rep. 942), the court holding that the Fleming patent dominated the use of a vacuum tube either as a detector, repeater, amplifier, or oscillator. As a result of this decision the De Forest Co. ceased manufacturing vacuum tubes in their improved form and the Marconi Co. was limited to the manufacture of the two-element tube, which was incapable of performing all the functions of the modern vacuum tube.

A tube manufactured under a combination of the Fleming and De Forest patents is still not the modern vacuum tube. The tubes manufactured thereunder did not acquire a special importance at first, because they were unstable, erratic, and could not be operated at voltages above 20–40 volts, had a power output of only one one-hundredth of a watt, and had a life of only about 100 hours. De Forest had supposed that a certain amount of gas in the tube was essential to its operation. This theory was found to be incorrect and one of the improvements which was of far-reaching importance as affecting all the characteristics of the tube was directed toward obviating the deleterious effects of gas. It was necessary to find a neans of creating in the tube as high a vacuum as possible. This vas brought about by the invention of Dr. Irving Langmuir, whose pplication for a patent on pure electron discharge tubes, No. 84242, iled March 14, 1916 (renewal of application filed October 13, 1913), s owned by the General Electric Co. A similar improvement was nade by Arnold of the Western Electric Co., who, on November 2, 915, filed application No. 59210 for a similar patent. Both appliations were involved in interferences in the Patent Office. The interference was declared in 1916, and a finding was made by the Patent Office in favor of the Langmuir application, from which finding an appeal was taken by the Western Electric Co. to the board of examiners in chief, which appeal is still pending. It seems therefore that the best known form of vacuum tube could not be manufactured by the Marconi Co. of America unless it had rights in the De Forest patents, and in the patents on pure electron discharge tubes. The American Telephone & Telegraph Co. could not manufacture such tubes for radio purposes unless it acquired rights in the Fleming patent and cleared up the interferences of the Arnold application with the Langmuir application on pure electron discharge tubes, while the General Electric Co. could not manufacture, sell, or use such tubes for radio purposes unless it acquired rights in the Fleming, De Forest, and Arnold inventions.

In addition to the patents already mentioned as necessary in the construction of the modern vacuum tube there are a number of construction or detail patents which are considered important by the ndustry. Among these are the Langmuir reissue Patent No. 15278, ssued January 31, 1923, owned by the General Electric Co., which ontains claims for supporting one electrode by another; the Nicholon Patent No. 1307510, owned by the American Telephone & Telegraph Co., which claims a construction in which an arbor supports pair of grids, a pair of plates, and a filament; the De Forest Patent, No. 1201273, issued October 16, 1916, owned by American Telephone & Telegraph Co., which claimed a plurality of plates, and a plurality of grids; and the Babcock Patent, No. 1341006, owned by the American Telephone & Telegraph Co., claimed to cover a central electrode nd cylindrical grid and plate.

There are patents covering the character of filament used in vacuum ubes. There are two types of filament now generally used—one nown as Wehnelt type and the other tungsten. The American elephone & Telegraph Co. uses the Wehnelt type, to which it owns he patents. The General Electric Co. owns the Coolidge Patent, o. 1082933, issued December 30, 1913, and the Just & Hanaman atent, No. 1008502, issued February 27, 1912, both covering tungsten laments, while the Radio Corporation owned the Fleming Patent, o. 954619, issued April 12, 1910, which covered broad claims to the se of tungsten filament in the use of vacuum tubes. It is claimed hat in certain types of tubes only the tungsten filament can be uccessfully employed.

Practically all the radio apparatus now used in the art involves the use of vacuum tubes. When used in combination with certain circuit arrangements and conjointly with other apparatus, they are made to perform a number of very important functions. For example, in transmitting apparatus, the tubes, by certain circuit arrangements are made to serve as oscillation generators to produce the "carrier wave." They also serve as modulators to impress upon the generated wave, the speech, or other signal characteristics; and as repeaters or amplifiers to impress the modulations of feeble telephone currents upon more powerful current from which these modulations are impressed upon the "carrier wave." They also may be used as rectifiers by which alternating currents such as are commonly supplied for power purposes may be converted into direct currents which are necessary to supply the energy in the plate circuit of the tubes, such as those employed as oscillation generators, amplifiers, and repeaters.

The most important and fundamental circuit arrangement necessary for use in combination with a vacuum tube, in order to make the tube perform certain important functions, is covered by the Armstrong Patent, No. 1113149, issued October 6, 1914, now known as the Armstrong regenerative or feed-back circuit. The validity and scope of this patent has been adjudicated as dominating the vacuum tube oscillator, as well as the regenerative circuit used in most of radio receiving sets of to-day. This patent was controlled by the Westinghouse Electric and Manufacturing Co. subject to the rights of the licensees mentioned on page 17. Other patents covering important circuit arrangements claimed to be essential in connection with vacuum tubes are the Lowenstein Patents, No. 1231764, issued July 3, 1917, and De Forest Patent No. 1377405, issued May 10, 1921, both owned by the American Telephone & Telegraph Co. The Lowenstein patent broadly covers the use of a negative potential in the grid circuit to bias the grid to the point where it most effectively operates, while the De Forest patent covers the "grid leak." The General Electric Co. owned Langmuir Patent No. 1282439, issued October 22, 1918. This patent covers a grid condenser with the grid leak which has the function of making the grid negative to the right degree. It is claimed that this patent controlled the use of grid leaks and was in conflict with De Forest Patent No. 1377405, hereinbefore mentioned.

The ownership of the various patents pertaining to the manufacture of vacuum tubes and the use of various circuits in connection therewith, being in the control of different concerns prevented any one of them from manufacturing or using tubes in their most improved form for radio purposes. The claims as to conflict of patents pertaining to this device can be seen, at a glance, from the following list:

IMPORTANT PATENTS AND METHODS OF APPLYING PATENTED INVENTIONS REQUIRED IN THE CONSTRUCTION AND OPERATION OF VACUUM TUBES.

De Forest Vacuum Tube (American Telephone & Telegraph Co.) overlapping Fleming Vacuum Tube (Radio Corporation).

Arnold High Vacuum (American Telephone & Telegraph Co.), interference with Langmuir High Vacuum (General Electric Co.).

Colpitts Grid Modulator (American Telephone & Telegraph Co.), interference with Alexanderson Application (General Electric Co.).

Hartley Plate Modulator (American Telephone & Telegraph Co.), interference with White Plate Modulator (General Electric Co.).

De Forest Oscillator (American Telephone & Telegraph Co.), interference with Langmuir Oscillator (General Electric Co.) and Armstrong Oscillator (Westinghouse Electric Manufacturing Co.).

The Navy Department considered this situation to be serious as ending to retard the development and growth of the entire radio ndustry, and on January 5, 1920, A. J. Hepburn, acting chief of the Bureau of Steam Engineering, addressed the following letter to the General Electric Co.:

> GENTLEMEN: Referring to numerous recent conferences in connection with he radio patent situation and particularly that phase involving vacuum tubes, he bureau has constantly held the point of view that all interests will be best served through some agreement between the several holders of permanent patents whereby the market can be freely supplied with tubes, and has endeavored to point out with concrete examples for practical consideration.
>
> In this connection, the bureau wishes to invite your attention to the recent endency of the merchant marine to adopt continuous wave apparatus in their ship installations, the bureau itself having arranged for equipping many vessels of the Shipping Board with such sets. Such installations will create a demand for vacuum tubes in receivers, and this bureau believes it particularly desirable, especially from a point of view of safety at sea, that all ships be able o procure without difficulty vacuum tubes, these being the only satisfactory detectors for receiving continuous waves.
>
> To-day ships are cruising on the high seas with only continuous wave transmitting equipment except for short ranges when interrupted continuous waves are used. Due to the peculiar patent conditions which have prevented the marketing of tubes to the public, such vessels are not able to communicate with greatest efficiency except with the shore and, therefore, in case of distress it inevitably follows that the lives of crews and passengers are imperiled beyond reasonable necessity.
>
> In the past the reasons for desiring some arrangement have been largely because of monetary considerations. Now, the situation has become such that t is a public necessity that such arrangement be made without further delay, and this letter may be considered as an appeal, for the good of the public, for a remedy to the situation.
>
> It is hoped this additional information will have its weight in bringing about a speedy understanding in the patent situation, which the bureau considers so desirable.
>
> A similar letter is being addressed to the American Telephone & Telegraph Co., New York City.

Radio telephony became commercially practicable by the use of he modern vacuum tubes. In connection therewith it was necessary to use the inventions covered by Fessenden Patents Nos. 706747, 727330, and 753863 which were owned by the International Radio Telegraph Company. These patents covered the method and apparatus for radio telephony which involved the generation of continuous waves and modifying or changing the character of such waves without interrupting their continuity.

The Alexanderson alternator, patents to which were owned by the General Electric Co., was the most efficient machine for generating high frequency alternating currents of the kind required in the transmission of continuous waves for transoceanic radio communication purposes. It could not be used for the efficient transmission of speech over long distances, because there was no known practical and efficient means for modulating the high power current which it produced. The vacuum tube solved this difficulty in two ways: (1) By using the tube as an oscillation generator in connection with appropriate circuits it could be used to generate the high frequency current required for radio transmission; (2) through its use as a modulator with intermediate apparatus the high frequency currents produced by the Alexanderson generator as well as such current produced by the vacuum tube could be modulated so as to permit the transmission of speech, music and similar sounds.

As soon as it became practicable to produce vacuum tubes capable of handling considerable power, the development of radio telephony was very rapid. The same transmitting apparatus developed for radio telephony was useful for continuous wave radio telegraphy, the wave being modulated by means of a telegraph key to transmit dots and dashes, instead of being modulated by a microphone to transmit speech.

The modern radio telephone transmitting or broadcasting station involved, in addition to the vacuum tube, oscillator and vacuum tube modulator, special speech input equipment, involving special types of microphone and vacuum tube repeaters or amplifiers, filters, and power equipment for furnishing the electrical energy in the desired form for the respective parts of the system.

The patents and applications for patents covering the inventions and methods required in the construction of transmitting apparatus and their use in connection with various circuits are as follows:

1. Grid modulation is covered by Colpitts's reissue Patent No. 14380, issued October 23, 1917, owned by American Telephone & Telegraph Co., and was in interference with Alexanderson application owned by the General Electric Co. This interference resulted in part of the claims being awarded to Colpitts and part to Alexanderson, so that it was necessary to use both patents in order to practice grid modulation.

2. Plate modulation is covered by Heising Patents Nos. 1137315, 1442146, and 1244147, all owned by the American Telephone & Telegraph Co. The General Electric Co. had an application serial No. 46769, filed August 23, 1915, covering a type of plate modulation called the constant potential method. This patent has not been issued, it being involved in a series of interferences now pending involving the Hartley application, serial No. 237033, filed May 28, 1918, and De Forest application, serial No. 48949, filed September 3, 1919, both owned by the American Telephone & Telegraph Co.

3. The magnetic modulation is covered by Alexanderson Patents No. 1206643 and No. 1320959 owned by General Electric Co. A Fessenden patent owned by the Westinghouse Electric & Manufacturing Co. is claimed to dominate the Alexanderson patents on magnetic modulation.

4. Suppression of carrier waves is covered by De Forest reissue Patent No. 14959, issued October 19, 1920, owned by American Telephone & Telegraph Co. As to suppression of carrier where the carrier is an undamped wave there were three interferences. Interference No. 44079, involving Alexanderson application serial No. 244839, owned by General Electric Co., Carson application serial No. 64524, now Patent No. 1449382, issued March 27, 1923, and Arnold application serial No. 64502 now Patent No. 1449392, issued March 27, 1923, both owned by the American Telephone & Telegraph Co. Interference No. 44080 involves the above applications of Carson and Arnold with application of White serial No. 274288, owned by General Electric Co. Interference No. 44081 involves the applica-

tions of Carson and Arnold. In these interferences Alexanderson was awarded broad claims to the suppression of the carrier where the sustained wave is modulated by a wave of different frequency. Alexanderson did not disclose a signal wave as the modulating wave, and hence was unable to obtain claims specific to this feature. Claims were awarded to Carson somewhat more limited than those awarded to Alexanderson, Carson's claims covering broadly the suppression of an undamped carrier wave component when modulated in accordance with a signal wave. As these Carson claims cover the only practical use to which the general idea may be applied, it is claimed by the patent attorney for the American Telephone & Telegraph Co. that the elimination of the carrier wave can not be practiced without employing both the General Electric and American Telephone & Telegraph Co.'s patents.

5. Vacuum tubes as oscillators are covered by numerous patents. The Marconi Co. of America (Radio Corporation) owns Vreeland Patents No. 829934 and No. 829447. For generating high frequency oscillations a number of applications for patents are pending which are involved in interferences. Langmuir application serial No. 797987, dated October 29, 1913, is owned by General Electric Co.; De Forest application serial No. 825954, dated March 20, 1914, is owned by American Telephone & Telegraph Co., Meisner application serial No. 825188, dated March 16, 1914, owned by American Telephone & Telegraph Co.; and Armstrong application serial No. 807388, dated December 16, 1913, is owned by Westinghouse Electric & Manufacturing Co.

6. The best known practical form of oscillation circuit is covered by Hartley Patent No. 1356763, issued October 26, 1920, owned by American Telephone & Telegraph Co. Armstrong Patent No. 1113149, issued October 6, 1914, owned by Westinghouse Electric & Manufacturing Co., has been construed by the courts to cover the feed-back circuit broadly and under such construction dominates the vacuum tube oscillator. Kendall Patent No. 1446752, issued February 27, 1923, owned by American Telephone & Telegraph Co. contains broad claims to a method of producing high frequency as harmonics of a fundamental frequency by the use of distorting tubes. Alexanderson Patent No. 1174793, issued March 7, 1916, owned by General Electric Co., contains basic claims underlying the broad idea of the Kendall patent. It is claimed that it is difficult to design a system of this type which would not employ both the Kendall and Alexanderson patents.

7. Filters are covered by Campbell Patents Nos. 1227113, and 1227114, issued May 22, 1917, owned by American Telephone & Telegraph Co., which broadly cover band filters for selective purposes. Tuned circuits were covered by Stone Patents No. 767976 and 767984, owned by American Telephone and Telegraph Co., and Marconi Patent No. 763772, owned by the Marconi Co., all of which have expired.

8. Power supply is covered by De Forest Patent No. 1201272, issued October 17, 1916, owned by American Telephone & Telegraph Co. It covers filters in the generator lead supplying the plate current. There are a number of applications for patents pending covering power rectifiers. The matter of heating the filament in the vac-

uum tube by alternating currents is covered by a pending interference between an application for a patent owned by the General Electric Co., and one owned by the American Telephone & Telegraph Co. The Stone Patents No. 967983 and No. 767993, issued October 16, 1904, owned by American Telephone & Telegraph Co., contain broad claims to the use of sustained oscillations for wireless telephony. Fessenden Patents No. 753863, issued March 8, 1904, and No. 793650, issued July 4, 1905, owned by the Westinghouse Electric & Manufacturing Co. contain broad claims to the subject matter covered by the Stone patents, and are claimed to be in conflict.

In radio receiving apparatus the following are some of the important inventions which Commander Loftin and other experts claim were necessary patents, and which were controlled by different concerns:

1. Vacuum tubes as detectors and amplifiers were covered by the Fleming and De Forest patents and Langmuir and Arnold applications on power electron discharge tubes, the control of which was in the Marconi Co. of America, American Telephone & Telegraph Co., and General Electric Co., as hereinbefore described.

2. Crystal detectors, which are employed for short distances, were covered by patents Nos. 904222, 963173, 933263, 1137714, 1225852, and 1257526, all owned by the Wireless Specialty Apparatus Co., a subsidiary of the United Fruit Co. It also owned patent No. 1213250, under which it claimed to dominate the De Forest tube patents for detecting purposes.

3. Simple detecting tube circuits are covered by the Fleming and De Forest tube patents heretofore discussed. The homodyne detecting circuits are covered by the LeBlanc Patent No. 857079, issued June 18, 1907, owned by the Westinghouse Co., and the Kendall Patent No. 1330471, issued February 10, 1920, owned by the American Telephone & Telegraph Co. The heterodyne detecting circuit is covered by Fessenden Patents No. 1050441 and No. 1050728, issued January 14, 1913, owned by Westinghouse Electric & Manufacturing Co. Vreeland patents owned by Radio Corporation covered the most practical forms of heterodyne circuit. A Vreeland application covering this method was owned by the Radio Corporation and was in interference with the Lee & Hogan patent owned by the Westinghouse Co., and which was allowed priority on claims taken from the Lee & Hogan patent.

4. Double method of detection is involved in interference No. 48358, including a Hammond application serial No. 175134, filed June 16, 1907, now owned by Radio Corporation; the Heising application No. 81980, filed March 3, 1916, owned by American Telephone & Telegraph Co., and a Levy application No. 249572, filed August 12, 1918, owned by American Telephone & Telegraph Co. There is also pending an Alexanderson application serial No. 92156, filed April 19, 1916, owned by General Electric Co., which contains disclosures of this feature.

The patents hereinabove described are only a few of the inventions covered by patents useful in the radio art. There are hundreds of such patents, lists of which are in the Appendix to this report shown as Exhibits A–1 to A–8, inclusive. Only a few of such patents have been mentioned in this section which are claimed to be broad and fundamental. A large number of the patents listed in the Appendix cover details and improvements, which it is claimed the owners of the broad patents had to use before they could manufacture under their patents. Of the vast number of patents useful in radio only a few have been adjudicated in the courts. Those already adjudicated are the Fleming Patent No. 803684, Armstrong Patent No. 1113149; Fessenden Patents No. 1054041 and No. 1030728; Coolidge Patent No. 1080933, and De Forest Patents No. 841387 and No. 879532.

As was heretofore stated, it is not intended that the foregoing statement with reference to the patent situation shall be construed as an attempt to pass on the question of the necessity of combining the patents described or whether or not it was necessary to combine the whole or any part of them. There is, as has been stated, a conflict of opinion especially as to whether or not the Radio Corporation in this general pooling of patents did not acquire a number of competitive patents. The evidence so far obtained concerning the necessity for the pooling of the patents owned or controlled by the United Fruit Co. and the Wireless Specialty Apparatus Co. seems to indicate that those patents were practically of no great benefit to the Radio Corporation and that it could very well have conducted its business most efficiently without entering into cross-licensing agreements with those two companies. The Radio Corporation justifies such cross-licensing agreement on the fact that the Wireless Specialty Apparatus Co. owned a patent which it claimed was in conflict with the Fleming tube patent and that by means of this agreement it rid itself of a lawsuit which the United Fruit Co. had against the Marconi Co. ~~of America and which the~~ Radio Corporation assumed when it took over the assets of the Marconi Co. Most of the experts interviewed concerning the necessity of the Wireless Specialty Apparatus Co. patents indicated that those patents had practically no bearing, or would have practically no bearing, on the activities of the Radio Corporation of America.

Section 8. Present status of industry.

The first two years after the Radio Corporation was formed its operations may be classified as follows: Supplying radio apparatus to ships and maintaining communication service between such ships and between such ships and the shore; a transoceanic radio communication service; and the sale of component parts used by amateurs and experimenters in radio in assembling radio sets. In the early part of 1922 it began the sale of complete radio sets manufactured for it by the Westinghouse Electric & Manufacturing Co. and the General Electric Co.

In the ship-to-ship and ship-to-shore radio business great strides have been made. Whereas it had formerly been necessary before being able to communicate by radio from the shore with a ship to wait until the ship came within a comparatively close distance to the shore, it is now possible to communicate with a ship though it is thousands of miles distant from the shore. In this phase of the radio industry, the Radio Corporation is the dominant factor, although it has competition. An important adjunct of this business is the maintenance of shore stations for communication with such ships. The Radio Corporation has a number of such stations both on the Atlantic and Pacific coasts. The Independent Wireless Telegraph

Co. maintains such stations on the Atlantic coast while the Ship Owners Radio Service Co. maintains no stations whatever. The Federal Telegraph Co. maintains stations on the Pacific coast, as does the Kilbourne & Clark Manufacturing Co., a subsidiary of the Ship Owners Radio Service Co.

Since 1919 the Emergency Fleet Corporation has been under contract with the Radio Corporation of America, Independent Wireless Telegraph Co., and the Ship Owners Radio Service Co. (Inc.), wherein those companies render a ship-to-shore service for the ships operated by the Fleet Corporation. These contracts have been renewed from year to year, the ones entered into in 1923 expiring on December 31 of that year. It is the intention of the Emergency Fleet Corporation to continue such contracts with the three companies above mentioned. On November 10, 1923, the Radio Corporation furnished the radio service on 122 ships of the Emergency Fleet, the Ship Owners Radio Service (Inc.) furnished service on 156 of the Emergency Fleet's ships, and the Independent Wireless Telegraph Co. furnished radio service on 123 ships. The Ship Owners Radio Service Co. (Inc.), not having shore stations of its own, uses the shore stations of the other companies. Radio apparatus on the majority of the ships was supplied by the Navy Department and consists principally of the Poulsen arc type of apparatus.

In this business it is necessary for the companies to supply the ships with vacuum tubes to be used in connection with the apparatus furnished by each company to the ships, and also in the land stations operated by them in connection with their service. The Radio Corporation has a monopoly in the sale and use of such tubes. It has recently brought suit against the Independent Wireless Telegraph Co. claiming that the use of such tubes by it in connection with apparatus on board ships and in land stations controlled by the Independent Wireless Telegraph Co. is an infringement of its patent rights. The tubes used by the Independent Wireless Co. are the same generally sold by the Radio Corporation to the public, but which tubes have affixed to them a notice to the effect that the tube is licensed to be used for amateur and experimental purposes only. Should the Radio Corporation prevail in this suit, all the ship-to-shore service companies now competing with it will be hampered in their business or forced to go out of business. The Tropical Radio Telegraph Co., a subsidiary of the United Fruit Co., also maintains ship-to-shore service in the Caribbean Sea, but this company is affiliated with the Radio Corporation of America.

In the field of transoceanic radio communication the Radio Corporation of America has a virtual monopoly. With the exception of high-power stations controlled by the United States Government, and a station at Miami, Fla., owned by the United Fruit Co., which is affiliated with the Radio Corporation of America, the Radio Corporation is the only one in the United States now engaged in transmitting and receiving radio messages between the United States and foreign countries. Under the various traffic agreements between it and foreign governments and radio companies, which will be discussed in Chap. III, it is doubtful if any company seeking to conduct a similar business in the United States could exist, by virtue of the provisions in the majority of these contracts obligating the foreign companies to transmit all messages intended for the United

States only through the facilities owned by the Radio Corporation of America. (See also p. 52.)

The Radio Corporation now operates six high-power transmitting stations located one each at New Brunswick, N. J., and Marion, Mass., and two each at Tuckerton, N. J., and Rocky Point, Long Island, and one important multiplex receiving station located at Riverhead, Long Island. All of these stations are connected by wire with a central station located at 64 Broad Street, New York City, from which point the transmitting and receiving apparatus located in the above-mentioned stations are directly controlled. Until very recently all messages desired to be sent by radio to European countries had to be forwarded to the New York office of the Radio Corporation. Under a recent traffic arrangement with the Postal Telegraph Co., a copy of which is shown in the Appendix as Exhibit KK, such messages can be left at any office of the Postal Telegraph Co. for transmission to such countries with which the Radio Corporation has connections.

The Radio Corporation now has direct radio communication between this country and Great Britain, Germany, France, Poland, Italy, and Norway, and very shortly will have connections with Holland and Sweden, and also with Brazil and the Argentine. On the Pacific coast it operates high-power stations at Bolinas, Calif., and Hawaii, from which it transmits radio messages to Japan. It has concessions in China, where it has started the erection of a high-power station which will soon be in direct communication with the California stations of the Radio Corporation.

From its stations on the Atlantic coast the Radio Corporation is handling approximately 30 per cent of the entire volume of cable and radio messages annually sent between the United States and European countries and approximately 50 per cent of the volume of such messages sent between the Pacific coast and the Far East is being handled from its Pacific coast stations.

For a time the rates charged by the Radio Corporation were lower than those charged by the cable companies, but in 1923 the cable companies reduced their rates to the level of those charged by the Radio Corporation.

The following is a comparison of the rates charged for transoceanic messages by the cable and radio companies from the time radio communication was inaugurated: In 1914 the Marconi Co. of America opened its first commercial radio circuit in competition with the Pacific Commercial Cable Co. between Hawaii and the United States. The rate charged by the Marconi Co. was 25 cents a word as compared with the rate by cable of 35 cents per word. The Marconi Co. also offered in addition a night and week-end lettergram. Later the cable company reduced its tariff to that of the Marconi Co., although it has never installed a lettergram service. In 1916 radio service was extended to Japan also in competition with the Commercial Pacific Cable Co., which for some years had enjoyed a monopoly. The cable rate at that time between San Francisco and Japan was $1.21 per word, while the rate offered by the Marconi Co. was 80 cents a word with a deferred service at one-half this rate. Some time later the cable company reduced its regular rate to 96 cents per word and the Marconi Co. to 72 cents per word.

On March 1, 1920, the Radio Corporation transmitted the first commercial messages to Great Britain. The cable rates between New York and Great Britain had for more than 30 years remained unchanged at 25 cents per word for ordinary traffic. The rate charged by the Radio Corporation at the opening of this service was 17 cents per word, and on January 1, 1921, increased to 18 cents per word. On April 15, 1923, the radio rate was increased to 20 cents per word, and on April 20, 1923, competitive cable companies reduced their rates to Great Britain to 20 cents per word. On March 1, 1920, a direct service was established with Norway. The cable rate between Norway and the United States had been 35 cents per word, while that established by the Radio Corporation for its service was made 24 cents per word. On August 1, 1920, service [illegible] established between the United States and Germany. At the time the cable rate was 36 cents per word the Radio Corporation established its service at the same rate. Later, the cable rate was reduced to 30 cents per word and the radio rate to 25 cents per word. On December 14, 1920, service was established with France, the cable rate for many years had been 25 cents per word, while the radio rate was established at 20 cents per word. The radio rate was increased to 22 cents per word on April 15, 1920, and on April 20, 1923, the cable companies reduced their service to the same rate.

Communication between the United States and Italy was established on August 10, 1923. The cable rate had long been 31 cents per word while the radio rate was established at 26 cents per word. On October 4, 1923, direct service was established with Poland. The cable rate for many years had been more than 30 cents per word while the radio rate was established at 25 cents per word.

The lower rates charged by the Radio Corporation has resulted in a large increase in its traffic. The American Marconi Co. had never operated a commercial transoceanic service across the Atlantic. In the Pacific Ocean territory, however, it transmitted the following number of paid words: 1914, 93,000; 1915, 509,000; 1916, 770,000; 1917, 1,150,000. From 1917 until 1920 operations were suspended upon the stations being taken over by the Government. Operations were resumed by the Radio Corporation, successors to the American Marconi Co., on March 1, 1920, and total number of paid words transmitted in both Atlantic and Pacific Ocean territories being as follows: 1920, 7,000,000; 1921, 18,000,000; 1922, 23,000,000.

The demand for radio apparatus for broadcasting purposes did not develop until the fall of 1921. Prior to that time the only demand for apparatus was from amateurs and experimenters who purchased the various component parts necessary to make a receiving and transmitting set and who in the main assembled these sets themselves. Because it was impossible to secure vacuum tubes the majority of the amateurs used the crystal, and with it could receive messages only at comparatively short distances. To supply the demands of these amateurs there were, as indicated, a number of concerns who were manufacturing the parts and in addition the Armstrong licensees who for a short time prior to the formation of the Radio Corporation manufactured and sold sets complete with the exception of vacuum tubes. The tubes used in these sets were being manufactured by the Moorhead Laboratories and by the Audio Tron Sales Co. under temporary licenses from the owners of the patents. There are no statistics available which would show the volume of business done in radio supplies prior to the formation of the Radio Corporation, but since the formation thereof the available statistics indicate that an enormous amount of business is now being done in the radio industry. The Radio Dealer, a publication devoted to the radio industry, gives the total amount paid by the public for radio apparatus for the year 1922 as $100,000,000. This, of course, is exclusive of the amount purchased by the United States Government. This amount includes revenue derived from sale of patented apparatus such as sets, tubes, and parts, and unpatented articles such as batteries, of which the last item alone amounted to approximately $10,000,000. Of the total amount purchased by the public the Radio Corporation of America sold approximately 20 per cent, the balance being distributed among hundreds of other manufacturers. According to the annual report of the directors of the Radio Corporation, its gross sales of radio apparatus, devices, and appliances, including vacuum tubes, for the year 1922, amounted to $11,286,489.41. These figures are its sales at wholesale price and adding 40 per cent (discount allowed to its distributors) to that amount, shows that its sales for that year amounted to approximately $20,000,000 at retail, or 20 per cent of the total amount paid by the public for radio apparatus.

A summary of operations of the Radio Corporation of America for the year ending December 31, 1922, with comparative figures for the year ending December 31, 1921, is as follows:

Item.	Year ended—	
	Dec. 31, 1922.	Dec. 31, 1921.
Gross income from operations:		
Gross sales	$11,286,489.41	$1,468,919.95
From transoceanic communication	2,914,283.11	2,138,625.86
From marine service	630,084.24	553,298.71
	14,830,856.76	4,160,844.52
Deduct:		
General operating and administration expenses, depreciation, and cost of sales	12,126,464.71	3,762,231.48
	2,704,392.05	398,613.04
Other income	270,187.72	28,186.55
Net income for year	2,974,579.77	426,799.59
Applied as follows:		
Reserve for amortization of patents	2,480,576.25	426,799.59
Reserve for Federal income tax	270,000.00	
Proportion of organization expense written off	224,003.52	
	2,974,579.77	426,799.59

The General Electric Co. and the Westinghouse Electric & Manufacturing Co. manufacture all the complete sets involving vacuum tubes that are sold by the Radio Corporation of America. The Department of Commerce has estimated that there are now close to 2,000,000 sets in the hands of the public being utilized for the reception of broadcasted entertainment. Of these sets the Radio Corporation has sold only a small portion. In addition to the Radio Corporation there are to-day over 200 concerns engaged in the manufacture and sale of complete sets, minus tubes, and about 5,000 concerns manufacturing various devices and parts useful in radio. Replies received in answer to a questionnaire sent to a number of manufacturers of radio apparatus indicate that their business has increased in the first half of 1923 anywhere from 25 to 100 per cent over the business done for the same period in 1922.

In the sale of vacuum tubes the Radio Corporation of America had an absolute monopoly until about November 7, 1922, on which date the Fleming patent, which it owned, expired. It, of course, always had and still has competition in the sale of such tubes from those manufacturing them without patent right. But on the expiration of the Fleming patent the De Forest Radio Telephone & Telegraph Co., which had retained a right to manufacture such tubes under its De Forest Audion patents, commenced the manufacture of tubes similar to those of the Radio Corporation, and since then has been selling them to the general public in competition with the Radio Corporation. The De Forest Audion patents expire in 1924 and 1925 and apparently upon the expiration thereof any concern having the facilities will be in a position to manufacture the modern vacuum tube.

Although there is at present competition in the sale of receiving sets, complete except for tubes, particularly the competition of the Armstrong licensees, it is uncertain how long it will continue. The Radio Corporation claims that the manufacture and sale of a receiving set to be used conjointly with the vacuum tubes manufactured by it is an infringement on its tube patents. It has brought suit against A. H. Grebe & Co., one of the Armstrong licensees, to restrain it from selling such sets (see Appendix, Exhibit UU). Should the Radio Corporation prevail in this suit, it is claimed that competition in the sale of complete radio sets for broadcasting purposes will be eliminated until, at least, such time as the tube patents expire. The Western Electric Co. is practically the only concern which has the right under the patent situation and is manufacturing and selling transmitting apparatus for commercial broadcasting purposes. As showing the increase in the broadcasting field, it is worthy of note that whereas in 1921 there were practically only two broadcasting stations which sent out any form of entertainment, there are to-day 562 such stations located all over the United States. The Radio Corporation, Westinghouse Electric & Manufacturing Co., General Electric Co., and American Telephone & Telegraph Co. maintain the largest of such stations, operating them at an annual expenditure of thousands of dollars. A few of the smaller manufacturers of radio apparatus also operate such stations. They receive no revenue therefrom except such as may result from creating a public demand for receiving sets. A large majority of the other broadcasting stations are operated by private concerns such as department stores and newspapers for the benefit of such advertising as might accrue therefrom.

CHAPTER II.

CONTROL OF PATENTS.

Section 1. Introduction.

The main purpose of this chapter is to show the ownership of the patents and the manner in which the Radio Corporation has acquired control of practically all radio patents through the various agreements to which it is a party. Some of the important patents controlled by the large companies will be mentioned, although no attempt will be made to discuss the claims for these patents or their relation to each other. The restrictions as to the manufacture and sale of products under these patents, and the provisions of the contracts in relation thereto, will also be set forth.

In Exhibit A of the Appendix to this report will be found a list of practically all the United States patents covering radio apparatus, including those owned by the Government. The statement is arranged by companies, and in addition to the number of the patent, the date of issuance, the name of the inventor, and the title of the patent are given. There is also included a list of the applications made by some of these companies for patents on radio devices now pending in the United States Patent Office. This statement shows that the Radio Corporation of America now has title to 277 different patents bearing on radio apparatus, etc., and in addition has 65 applications for patents pending. It also has acquired the patent rights by license agreements to the patents owned or controlled by the General Electric Co., American Telephone & Telegraph Co., Westinghouse Electric & Manufacturing Co., Wireless Specialty Apparatus Co. (a subsidiary of the United Fruit Co.), and the Radio Engineering Co. of New York (the Hammond patents). The number of patents owned or controlled by these various companies are as follows: General Electric Co., patents, 114; applications pending, 110; American Telephone & Telegraph Co., patents, 337; Westinghouse Electric & Manufacturing Co., patents, 146; applications pending, 16; Wireless Specialty Apparatus Co., patents, 68; applications pending, 4; Radio Engineering Co. of New York, patents, 144; the United States Government, patents, 127 (including those licensed from the Federal Company); and the Federal Telegraph Company, 19 patents.

Section 2. Radio Corporation of America.

A list of the patents owned by the Radio Corporation is shown in Exhibit A-1 of the Appendix, and does not include the patents licensed from the other companies. The latter, which are covered by the various license and cross-license agreements with the Radio Corporation, are listed under the company retaining title to the patents. This order is maintained so that it may be possible to follow the transfer of the rights under these various agreements.

Most of the patents now owned by the Radio Corporation were secured through the purchase of the assets of the Marconi Wireless Telegraph Co. of America. The various agreements leading up to and including this transfer of properties will be discussed in t following section, which deals with the General Electric Co. T patents owned by the Radio Corporation itself include the in portant Fleming patents on electron receiving tubes, the Vreelar patents on tube oscillators, the tungsten electron filament pater and the Weagant patents relative to static elimination.

The Radio Corporation of America was caused to be organiz by the General Electric Co. on October 17, 1919. It will be note from examining the various agreements set out in the Appendix, ai which are discussed in this chapter, that they were all consummate wi[illegible]in the two years following, with the exception of the agreemer whereby the rights to the Hammond patents were acquired. Tl majority of the agreements are to run until 1945. With certai minor limitations, the Radio Corporation under these agreemen secured an exclusive divisible right to sell and use the radio devic covered by the patents involved or by any patents which the othe companies may acquire during the life of the agreement. It in tur grants to the other companies the right to make devices under a of its patents, applications for patents, etc., which it then owne or controlled or which it should acquire during the term of tl agreement. Provision is also made in these agreements for mutu interchange of information obtained relative to radio devices an that in the event the Radio Corporation is taken over by any superior authority, except in time of war or public danger, the right transferred and given thereunder shall revert to the company ownin the patent.

The provision in the agreement between the Radio Corporatio and the General Electric Co. with respect to the patent rights transferred in the event that the Radio Corporation is taken over by th Government is as follows:

> Inasmuch as the General Company is not willing to turn over its patent patent rights and licenses for any definite sum of money, but is willing t transfer such patents, patent rights and licenses only for a considerable interest in the profits to be derived from the use by the Radio Corporation c such patents, patent rights and licenses, it is therefore understood and agree that in the event of the taking over of the Radio Corporation by any superio authority all right, title and interest of the Radio Corporation in any patent patent right or license herein granted or agreed to be granted by the Genera Company to the Radio Corporation shall cease and shall be reassigned and shal revert to the General Company as of the date of such taking over except t the extent provided below. If instead of taking over the Radio Corporatio the Government takes over its radio stations in any field and/or territory, except in and for time of war or public danger, the same result shall follow s far as concerns that field and/or territory. But this action shall in no wa affect the rights of Marconi's Wireless Telegraph Company, Limited, or o Shielton, Limited, as set forth in the "Radio Corporation and British Marcon Company Principal Agreement"; such rights shall be reserved from any suc reassignment by the Radio Corporation for the benefit of Marconi's Wireles Telegraph Company, Limited.

Section 3. The General Electric Co.

The patents owned by the General Electric Co. are listed in th Appendix. (See Exhibit A–2.) This company, being a large manufacturer of electrical machinery and apparatus, much of which ca also be used for radio purposes, early became interested in the development of the art. Some of the important patents owned by thi concern are the Langmuir grid leak patents, the Alexanderson alter nator patents, the broad Coolidge patents covering tungsten filament, and the several multiple antenna patents.

It appears that in 1919 the General Electric Co., in anticipation of the formation of the Radio Corporation of America, negotiated with the Marconi's Wireless Telegraph Co. (Ltd.), a corporation of Great Britain, for the purpose of purchasing the stock owned by it in the American Marconi Co. Negotiations were also had with the Thomson-Houston Co., a British corporation, with reference to the purchase of certain patent rights under which the Marconi Wireless Telegraph Co. of America was licensed. Furthermore, negotiations were entered into by the General Electric Co. with the American Marconi Co. for the purchase of all its tangible assets and patent rights.

On October 17, 1919, the negotiations between the General Electric Co. and the British Marconi Co. (Ltd.), British Thomson-Houston Co., and American Marconi Co. had reached such a stage that the General Electric Co. addressed a letter to the Radio Corporation, reciting that in anticipation of the formation of the Radio Corporation it had formulated plans by which the Radio Corporation could obtain an advantageous agreement with the Marconi's Wireless Telegraph Co. (Ltd.) for the purchase of their interests in the American Marconi Co. and an agreement for the conduct of an international radio business, also an agreement with the Marconi Wireless Co. of America for the purchase of certain of its assets; that in order to bring about these agreements it had expended certain sums of money to an amount in excess of $2,000,000 in the purchase of the holdings of the stock of the British Marconi Co. in the American Marconi Co., and proposed to the Radio Corporation that in consideration for the procuring of said agreements and the purchase of the aforementioned stock and the payment of the sum of $385,000 in cash to the Radio Corporation that the Radio Corporation issue to the General Electric Co. 135,174 shares of its preferred stock and 2,000,000 shares of its common stock.

This proposal was accepted by the board of directors of the Radio Corporation on October 22, 1919, as a result of which, on October 22, 1919, the General Electric Co. and the Marconi Wireless Telegraph Co. of America executed a written agreement, set forth in the Appendix (see Exhibit B-1), wherein the Marconi Co. of America agreed to urge upon its stockholders to consent and approve the execution by the Marconi Co. of a certain agreement termed the Marconi-Radio agreement (see Exhibit B-2), and as soon as said consent was obtained the Marconi Co. would formally execute and deliver said agreement simultaneously with the execution and delivery thereof by the Radio Corporation. The consideration for this agreement was stated as being (*a*) that the General Electric Co. agrees to cause the Radio Corporation to execute and deliver said agreement as soon as the Marconi Co. secures consent or approval of its stockholders and (*b*) the mutual releases as to damages for infringing upon patents owned by each.

On November 20, 1919, the agreement between the Radio Corporation of America and Marconi Wireless Telegraph Co. of America (see Appendix, Exhibit B-2) was executed and delivered. This contract set forth that in consideration of the issuance by the Radio

Corporation to the Marconi Co. of 2,000,000 shares of preferred stock of the Radio Corporation, in payment for the tangible assets of the Marconi Co., and the issuance by the Radio Corporation of 2,000,000 shares of its common stock to the Marconi Co. in consideration for the patents and good will of the Marconi Co., the Marconi Co. transferred to the Radio Corporation (1) all its tangible physical assets; (2) all its patents, patent rights, licenses, and good will, with the understanding that in the event of the taking over of the Radio Corporation by any superior authority, all right, title, and interest in the Radio Corporation in any patent, patent right, or license herein granted to the Marconi Co. by the Radio Corporation shall cease and shall be reassigned and shall revert to the Marconi Co. as of the date of such taking; (3) that the Marconi Co. should continue its organization only until such time as was necessary to conclude certain proceedings which the Marconi Co. had instituted for infringement of its patent rights, and that when requested by the Radio Corporation it would take the proper steps to have its corporate entity dissolved. (The Marconi Co. was accordingly dissolved on August 2, 1920.) The Radio Corporation was to advance to the Marconi Co. such sums as are considered reasonable by counsel to prosecute these claims as well as for the defense of any patent suits.

On November 20, 1919, the General Electric Co. also entered into an agreement with the Radio Corporation (see Exhibit C). Under this agreement the General Electric Co. granted to the Radio Corporation of America an exclusive divisible license to use and sell, but not to make, except where and if the General Co. is not in a position to supply the desired device for radio purposes, under all its patents, applications for patents, inventions, rights, or licenses under or in connection with patents which the General Co. then owned or controlled or which it might thereafter acquire during the term of the agreement, which was to terminate in 1945. The Radio Corporation granted to the General Electric Co. the exclusive divisible right to make and sell devices to the Radio Corporation only, as well as the exclusive divisible right to make, use, and sell devices other than radio devices, under all its patents and applications for patents, inventions, right or licenses under or in connection with patents, which the Radio Corporation then owned or controlled, or which it should thereafter acquire during the term of the agreement, and that the General Electric Co. could use for its own communication or for other purposes or convenience or to save expense, but not for profit, devices under all said patents. The General Co. agreed that it would not sell or dispose of any radio devices whatever covered by said patents for use in the United States, except to the United States Government and to the Radio Corporation, and the Radio Corporation agreed to purchase from the General Electric Co. only all radio devices covered by said patents which the General Co. was from time to time in a position to supply with reasonable business promptness for use in, or which was used in, the business and operation of the Radio Corporation. There was also a provision that the Radio Corporation should not lease, sell, or dispose of devices bought from the General Electric Co. where the General Electric Co. would not be free under its patent rights to sell such devices, and the General Electric Co. agreed that where a device manufactured under said patents is adapted both for radio and other purposes that it could sell such devices only for the purpose not connected with the radio art, it being understood that the rights of the Radio Corporation were limited to radio purposes and the rights of the General Co. in the sale of said devices were limited to other than radio purposes. The Radio Corporation was bound in the sale of its devices to use such precaution by contract of sale, restricted notices of license, as were necessary to prevent its customers from acquiring the licenses to use said devices for purposes to which the Radio Corporation had no right to grant such licenses, and the General Co. agreed to observe similar precaution in selling apparatus and devices especially adapted to radio work but capable for other uses. Provision was also made for the cross-licensing under future letters patent and for the mutual interchange of information concerning patents, inventions, and the patent situation in the radio field.

This agreement of November 20, 1919, also included the inventions, patents, and rights of the International General Electric Co.; the Australian General Electric Co., China General Edison Co. (Inc.), Compania General Electric de Brazil, South African General Electric Co. (Ltd.), Cia General Electric Sudamericana (Inc.), and the Mexican General Electric Co.

As previously stated, many of the devices under the patents owned by the General Electric Co. covered articles for other than radio purposes. This fact is recognized by the following provision in the agreement:

> 1. Radio purposes is defined as the transmission or reception of communications—telegraphic, telephonic, or other—by what are known as electromagnetic waves, but not by wire.
>
> 2. Radio devices are defined as comprising:
>
> (*a*) Devices useful only in radio purposes.
>
> (*b*) Devices especially adapted to radio purposes but capable of other uses such, for example, as the Alexanderson alternator with accessories or the pliotron, except where the same are sold licensed only for uses other than radio uses, in which case the same are not to be regarded as radio devices hereunder.
>
> 3. The expression "devices" shall include apparatus, devices, systems, connections, and methods.

After the agreement discussed above was consummated, certain of the rights acquired were extended to other companies. An agreement of this character, which will be mentioned here, is that between the Radio Corporation and the Marconi's Wireless Telegraph Co. (Ltd.), dated November 21, 1919. This provides for (*a*) an interchange of licenses in all the patents owned and controlled by both companies pertaining to radio and (*b*) the maintenance of special research facilities for the diligent prosecution of the research for the improvement of the art and for the free exchange of information and future patents relating to radio. The agreement terminates in 1945 and is set forth in full in the Appendix (see Exhibit DD). Certain rights involved in the Radio-General Electric main agreement were also extended to the American Telephone & Telegraph Co. (see Appendix, Exhibit E), the Wireless Specialty Apparatus Co. (see Appendix, Exhibit I), and the Westinghouse Electric & Manufacturing Co. (see Appendix, Exhibit S–1). The agreements transferring such rights are also discussed in this chapter (see pp. 44, 46, 47).

Section 4. The American Telephone & Telegraph Co.

A list of the patents owned by the American Telephone & Telegraph Co. and its subsidiary, the Western Electric Co., is given in the Appendix (see Exhibit A–3). The parent company in the maintenance and development of its telephonic system and the Western Electric Co. in its manufacture of telephonic apparatus owned and were licensed under various radio patents. This fact should be borne in mind in studying the contracts entered into by these companies.

In Chapter I (see p. 13) the importance of the De Forest patents, which covered some of the important features of the vacuum tube now in use and which were owned by the American Telephone & Telegraph Co. has been mentioned. It was also claimed that there was an interference between the Langmuir patents of the General Electric Co., the rights to which the Radio Corporation had acquired under the agreement of November 20, 1919, and the Arnold patents of the Western Electric Co., a subsidiary of the American Telephone & Telegraph Co. Apparently, with the view of eliminating these differences, the General Electric Co. on July 1, 1920, entered into an agreement with the American Telephone & Telegraph Co. (see Appendix, Exhibit D), which was extended to include the Radio Corporation and the Western Electric Co. on the same date (see Appendix, Exhibit E). With respect to the objects of these agreements the following language may be noted:

> Whereas each party is in possession of information, patents, and inventions applicable to, and has research organizations engaged in investigations bearing upon not only its own business but also the business of the other party; and
>
> Whereas various patents or applications for patents of the parties are involved in interference with each other in the United States Patent Office; and
>
> Whereas the restrictions upon each party imposed by the patent rights of the other and the uncertainties arising out of interferences have tended to, and if permitted to continue will hamper and delay progress in the development and production of wire and wireless telephone and telegraph apparatus and systems; and
>
> Whereas the effective and prompt development of the arts in question can be secured only by the free and frank cooperation and exchange of information between the parties, which can not well take place if the improvements and knowledge resulting from one party's cooperation with the other party may without its consent be made available in its field to the use of others.

This agreement was to extend for a period of 10 years and gave to each other the use of patents and patent rights owned by all parties. The scope of licenses granted was to use methods and processes and to make, use, lease, sell, or otherwise dispose of, apparatus, machines, devices, appliances, and systems embodying the inventions of the several patents in the field in which the licenses are granted. It was provided, however, that no rights were granted to either party to manufacture or to have manufactured under any patents licensed, apparatus of the character at the time manufactured by the other party, except in factories owned or operated by one of the other parties thereto or by their controlled companies. Each reserved the right to manufacture for and sell to the United States Government and for its own use. The telephone company retained under its own patents and obtained by virtue of the agreement, rights in patents of the General Electric Co. and the Radio Corporation of America, relative to the manufacture, use and sale of apparatus and devices in so far as the same are adapted for use in commercial wire telephony. It secured the exclusive right to manufacture and sell broadcasting transmitting apparatus and a nonexclusive right to manufacture and sell receiving apparatus for direct use only in connection with such apparatus. The General Electric Co. retained for itself, under its own [illegible]ents, and secured from the telephone company under the agreement, the exclusive right to make, use, lease, and sell wireless telephonic apparatus and systems for communication by and between airplanes, ships, and other automotive vehicles except railways, and for all amateur purposes, with the exception as noted above. It also obtained nonexclusive licenses to establish and maintain stations for transmitting or broadcasting news, music, and entertainment. All parties agreed to use reasonable endeavors to settle without litigation interferences now pending or which might arise involving inventions within the scope of the agreement. Also, that neither party shall acquire from the other rights to or under United States patents or inventions, or rights to use secret processes applicable to the fields of the other party of such limited character that the other party does not receive licenses thereunder of the scope and within the respective fields, unless the party purposing to acquire such rights shall first have given the other party an opportunity to be represented in the negotiations and thereby to obtain rights for its field. Provision was also made as to the exchange of information with reference to devices, apparatus, systems or methods applicable to the use of the other party. With respect to litigation the following clause is noted:

> Each party shall have the exclusive right to bring suits for infringement in the fields in which its licenses are herein expressed as exclusive (and the General Co. may bring such suits for infringement in the field of transoceanic wire and wireless telephony), joining in any such suit the patent owner or the party which has acquired from the patent owner the right to sue thereunder.
>
> Neither party shall bring suit for infringement of patents against the other party, or against the distributors and jobbing houses owned by or affiliated with either party, because of sales by such party, or by its (or its controlled companies) distributors or jobbing houses, of devices made, in the United States of America, by others than the parties hereto, it being agreed that the remedy in case of any such infringement shall be only by suit against the manufacturer of those devices.

On the same date of the above agreement the parties, including the Radio Corporation of America and the Western Electric Co., agreed that if the Government should take over either company, the agreement should terminate. This agreement will also be found in the Appendix (see Exhibit F).

In section 6 of this chapter is mentioned the patents of the Westinghouse Electric & Manufacturing Co., including the important Armstrong and Pupin patents, and the agreement by which the Radio Corporation and the General Electric Co. were given certain rights therein. The rights to these patents in the telephone field were extended to the American Telephone & Telegraph Co. by agreement under date of June 30, 1921, the telephone company having agreed to pay one-third of the purchase price of the Armstrong and Pupin patents. The agreement is set forth in full in the Appendix (see Exhibit T).

Section 5. The United Fruit Co.

The patents owned by the United Fruit Co. and its subsidiary, the Wireless Specialty Apparatus Co., are listed in the Appendix (see Exhibit A-4). The most important of these were the Pickard patents to crystal sets and a patent to a loop antenna, which were owned by the Wireless Specialty Apparatus Co.

As pointed out in Chapter I (see p. 33), it was claimed by the Radio Corporation that the Pickard patents covered broad basic principles employed in the apparatus used by the Radio Corporation. This claim was eliminated by an agreement between the Radio Corporation of America, the General Electric Co., and the Wireless Specialty Apparatus Co., dated March 7, 1921. The agreement is set forth in the Appendix (see Exhibit H) and expires on January 1, 1945. Under this agreement the Wireless Co. granted to the other companies under all its patents having to do with communication by wireless or by wire, or with apparatus or devices for use in connection therewith, which it then owned or might acquire, an assignable license to make, use, and sell, which license is exclusive, except (*a*) the Wireless Co. reserved the right to make, use, and sell under its own patents, and (*b*) the right to grant licenses to the United Fruit Co. or its subsidiaries. The Wireless Co., by virtue of this agreement, acquired from the other companies rights under their patents having to do with wireless communication or with apparatus or devices for use in connection therewith which they then owned or might acquire, a nonexclusive license to manufacture and sell apparatus of the following types, viz, wave meters, radio compasses, goniometers, ship sets, and receiving sets, transmitting sets up to 5-kilowatt power input and parts and accessories therefor, such license, however, being limited to include only manufacture and sale to the United Fruit Co. and its subsidiaries and the United States Government.

On the same date the Radio Corporation granted to the United Fruit Co. a license to use the inventions covered by any and all its patents having to do with wireless communication. This was limited, however, to include only uses of the patents for certain purposes. The agreement also included certain restrictions with respect to wireless communication, which will be mentioned in Chapter III (see p. 56). Provision was made for the exchange of information with reference to inventions pertaining to wireless communication, or apparatus or devices therefor, and an exchange of licenses under patents thereafter obtained. It was also provided that the Radio Corporation would give a patent guarantee to the United Fruit Co. with all apparatus sold to it or its subsidiaries.

The granting by the Radio Corporation of licenses under all patents to the United Fruit Co. and the Wireless Specialty Co., as mentioned above, was agreed to by the American Telephone & Telegraph Co. and the Western Electric Co. on March 9, 1921 (see Appendix, Exhibit K).

Section 6. The Westinghouse Electric & Manufacturing Co.

The patents owned by the Westinghouse Electric & Manufacturing Co. are listed in the Appendix (see Exhibit A-5). This list includes the important heterodyne patents of Fessenden purchased from The

International Radio Telegraph Co. and the Armstrong and Pupin patents, among which was the Armstrong regenerative circuit. The importance of these patents and their relation to patents already controlled by the Radio Corporation has been mentioned in Chapter I (see pp. 17, 28). The Westinghouse Co. had prior to the war done considerable development work in the radio field and was engaged in the manufacture of certain radio apparatus. Its acquisition of additional patents in this connection is therefore of interest.

On May 22, 1920, the Westinghouse Co. entered into a contract with the International Radio Telegraph Co. and its stockholders, which provided for the formation of a new company, The International Radio Telegraph Co., to take over certain patents, which included the Fessenden patents, and other assets of the old International Co. This agreement is set forth in the Appendix (see Exhibit L). Stock in the new concern to the amount of $2,500,000 was subscribed for by the Westinghouse Co., as is shown by the agreement dated June 21, 1920 (see Appendix, Exhibit M). There was also a license agreement between the two companies under the patents owned by the International Co. (see Appendix, Exhibit N). Under this agreement the Westinghouse Co. was given the right to manufacture, use, and sell apparatus covered by these patents for all purposes except that apparatus for public commercial radio communication purposes could be sold only to The International Radio Telegraph Co.

On October 5, 1920, the Westinghouse Co. secured an option to purchase from Edwin H. Armstrong and Michael I. Pupin 4 patents and 16 applications for patents relating to radio. This agreement is set forth in the Appendix (see Exhibit Q). The patents involved are stated in the agreement and were taken over subject to the licenses granted certain parties, commonly referred to as the Armstrong licensees, to manufacture radio apparatus.

In 1921 the Radio Corporation began negotiations for certain rights under the patents controlled by the Westinghouse Co. Under the agreement of the Westinghouse Co. with the International Radio Telegraph Co. of May 22, 1920, the Westinghouse Co. could only manufacture for the International Co., while under the agreement of November 20, 1919, the General Electric Co. could only manufacture for the Radio Corporation, and it, in turn, could only purchase from the General Electric Co. It was necessary therefore to modify the agreement of May 22, 1920, before the Westinghouse Co. could act in the matter, which was done by agreement on June 30, 1921 (see Appendix, Exhibit S–1). On the following day The International Radio Telegraph Co. transferred to the Radio Corporation its patent rights and licenses under patents, together with certain of its assets including the right to receive and retain for its own use the sum of $2,200,000 from the Westinghouse Co. It was specifically provided that the assignment did not include patents, patent rights or licenses in Canada, United Kingdom of Great Britain and Ireland, and Japan, or any of the stock of the company. The agreement is set forth in the Appendix (see Exhibit P). Under separate agreement entered into on June 30, 1921, the American Telephone & Telegraph Co. agreed to pay one-third and the Radio Corporation two-thirds of the purchase price of the Armstrong and Pupin patents (see Appendix, Exhibit T). The Westinghouse Co., the Radio Corporation, and the General Electric Co. then entered into an agreement which provided for a mutual exchange of licenses under all patents pertaining to radio then owned or which might thereafter be acquired. This agreement was dated June 30, 1921, and terminates January 1, 1945 (see Appendix, Exhibit S–1). Provision was also made for the mutual interchange of information with respect to the subject of radio. Probably the most important provision was that bearing on the percentage of goods to be purchased by the Radio Corporation from the General Electric and Westinghouse companies. This provision, in part, is as follows:

> It was the purpose and intent of the General Company in entering into Agreement A to retain the exclusive manufacturing rights under its patents for radio purposes, and to acquire similar exclusive manufacturing rights under the patents of the Radio Corporation. This purpose was accomplished by granting to the Radio Corporation (except in case of failure of the General Company to supply) no manufacturing rights whatever, but merely the exclusive rights for sale and use, as specified, of devices purchased of the General Company, and by acquiring from the Radio Corporation the exclusive manufacturing rights, specified under its patents.
>
> The Westinghouse Company, in its dealings with the International Company, evidenced by Agreement D, was actuated by a similar motive and acted in a similar manner.
>
> The present situation is such that the Radio Corporation thus finds itself obliged to purchase of the General Company everything which is made under the patents of the General Company or of the Radio Corporation, and of the Westinghouse Company everything which is made under the patents of the Westinghouse Company and of the International Company. It develops that if the Radio Corporation is to give the efficient service which it desires to give, important devices which the Radio Corporation desires to purchase must be manufactured under the patents of the two groups.
>
> In the situation thus created the manufacturing companies have agreed that the licenses are extended as hereinafter specified to enable the Westinghouse Company to manufacture for the Radio Corporation under patents of the General Company and of the Radio Corporation, and to enable the General Company to manufacture for the Radio Corporation under the patents of the Westinghouse Company and of the International Company, to such an extent that the Radio Corporation in the manner and to the extent herein provided may purchase from time to time from the General Company sixty per cent and from the Westinghouse Company forty per cent of all radio devices covered by patents, rights under which are granted or agreed to be granted in either Agreement A or Agreement D (provided, however, that the right of the Radio Corporation to use or dispose of said devices arises from the grants of Agreement A and/or D) which either the General Company or the Westinghouse Company is from time to time in a position to supply with reasonable business promptness for use in, or which are or shall be used in, the business and operation of the Radio Corporation and its future licensees and customers and its existing licensees. To this end the Radio Corporation agrees that of the orders which it shall place with the two manufacturing companies during the portion of the calendar year 1921 following the date of execution of this agreement and in each calendar year thereafter for the life of said agreements A and D, it will in placing orders with the manufacturing companies for such patented apparatus as it is licensed to purchase only from the Manufacturing Companies order sixty per cent in selling price to the Radio Corporation in each said period of the General Company, and forty per cent in such selling price in each said period of the Westinghouse Company. Where an order is canceled by agreement of the parties concerned, the amount of the cancellation is to be allowed for by proper adjustment of the orders in the period in which the cancellation becomes effective. Any unavoidable excess of orders placed with one company in any such period is to be adjusted by giving to the other company more orders in the next period, except in so far as such excess is due to the failure of the other manufacturing company to supply devices of good quality and with reasonable business promptness.

As a result of the Radio-General Electric-Westinghouse agreement, there was also an agreement between the American Telephone & Telegraph Co., the Western Electric Co., and the Westinghouse Co., which provided for an exchange of licenses. This gave to the telephone company and its subsidiary, the Western Electric Co., rights under the Armstrong and Pupin patents. The contract is to expire July 1, 1930, and is set forth in the Appendix (see Exhibit T).

The option which the Westinghouse Co. held with respect to the purchase of the Armstrong and Pupin patents was exercised August 24, 1922. The agreements covering this phase of the matter are listed in the Appendix as Exhibits V, W, and AA, and include title to the Turner and Bolitho patents.

Section 7. The Radio Engineering Co. of New York.

The most recent transaction involving the transfer of patent rights relating to radio devices is the license of the so-called Hammond patents to the Radio Corporation of America. A list of the patents involved is included in the Appendix (see Exhibit A–6). By this agreement, which is dated March 14, 1923, the Radio Corporation was granted an assignable and divisible license to make, use, sell, and lease under certain of the patents owned by the Radio Engineering Co. At the request of the Radio Corporation, such request not to be made for two years from date of contract, the Radio Engineering Co. is to assign the entire right, title, and interest to these patents. With respect to the other patents owned by the Radio Engineering Co., title was to be retained pending negotiations with the United States Government for a nonexclusive license for governmental purposes only.

The Radio Corporation is specifically given the right to bring suits for infringement of any of its license rights, including the right to recover damages, but may join as parties the Radio Engineering Co. without cost to them.

Section 8. The De Forest Radio, Telephone & Telegraph Co.

Under the list of patents of the American Telephone & Telegraph Co. it will be noted that several De Forest patents are included (see Appendix, Exhibit A–3). Among these were certain important patents relating to the vacuum tube, the importance of which has been mentioned in Chapter I (see p. 13). The De Forest Co. maintains a personal nontransferable right to manufacture and sell under these patents. The company also owns certain other patents covering radio apparatus which are listed in the Appendix as Exhibit A–7.

Section 9. The Armstrong licensees.

In section 6 of this chapter (see p. 47) reference has been made to the purchase of the Armstrong and Pupin patents by the Westinghouse Electric & Manufacturing Co., these being purchased subject to the licenses granted certain parties to manufacture radio apparatus under the patents involved. These patents are listed in the agreement with the Westinghouse Co., which is set forth in the Appendix as Exhibit Q. The concerns, commonly referred to in the trade as the Armstrong licensees, who can manufacture apparatus under these patents are as follows:

Crosley Manufacturing Co., 232 Alfred Street, Cincinnati, Ohio (controls Precision Equipment Co.); Clapp-Eastham Co., 133 Main Street, Cambridge, Mass.; Adams-Morgan Co., 12 Alvine Avenue, Upper Montclair, N. J.; A. H. Grebe & Co., Richmond Hill, N. Y.; Jones Radio Co., Lytton Building, Chicago, Ill.; Chelsea Radio Co., 79 Spruce Street, Chelsea, Mass.; Colin B. Kennedy Co., St. Louis, Mo.; Klitzen Radio Manufacturing Co., Racine, Wis.; Chicago Radio Laboratory (Inc.), Chicago, Ill.; Cutting & Washington Co., New York City; Mignon Manufacturing & Joint Co., Buffalo, N. Y.; The Radio Shop, Altadena, Calif.; Oard Radio Laboratory, Oxnard, Calif.; Pennsylvania Radio Laboratory, Philadelphia, Pa.; Radio-Craft Co. (Inc.), Jersey City, N. J. (controlled by De Forest); C. D. Tuska Co., Hartford, Conn.; Tri-City Electric Manufacturing Co.

The license agreement with the Radio-Craft Co. (Inc.), which is set forth in the Appendix as Exhibit Y, is typical of the agreements with the other 16 concerns. The licensee is granted a nonexclusive, nontransferable license to manufacture and sell apparatus (*a*) to radio amateurs for use in amateur radio stations, and (*b*) to radio experimenters and scientific schools, for use in experimental and scientific school radio stations. These agreements are to remain in force to the end of the term of Letters Patent No. 1113149, which issued October 6, 1914, and any reissue or extension of said letters patent.

Under this agreement, which involves the important Armstrong regenerative circuit patents, these concerns are manufacturing and selling complete receiving sets, with the exception of vacuum tubes. Their right to sell such apparatus for use with tubes made by the Radio Corporation is involved in a proceeding now pending in the courts and which is discussed in Chapter IV (see p. 92). Whether these licensees are to continue as active competitors of the Radio Corporation depends on the result of this proceeding and the suit against the same parties in which is involved their right to sell apparatus for use in conjunction with apparatus made under the Langmuir, Lowenstein, and Mathes patents (see Appendix, Exhibits UU and VV).

Section 10. The United States Government.

In Exhibit A-8 of the Appendix is shown a list of the patents owned by the Government, including those under which it has licenses from the Federal Telegraph Co. of California. During the war the Government purchased all the patents owned by the Federal Co., among which was the patent covering the Poulsen arc. After the close of the war it resold these patents to the Federal Co. and retained for the Government a nontransferable license to manufacture and use.

The majority of the patents listed are now owned by the Federal Telegraph Co. subject to the Government license.

P. 130:

[fol. 3919] **EXHIBIT D**

License Agreement—General Electric Co. and American Telephone & Telegraph Co.

Agreement made this first day of July, 1920, between the General Electric Company, a New York corporation (herein called the General Company), and the American Telephone & Telegraph Company, a New York corporation, herein called the Telephone Company.

* * * * * * *

P. 133:

2. Wireless telegraphy.—(a) The General Company grants to the Telephone Company nonexclusive licenses in the field of wireless telegraphy for its own communication or for purposes of convenience or to save expense in connection with its commercial operation of wire telegraph and [fol. 3920] wire and wireless telephone systems, but not for profit or for transmission of messages for the public.

* * * * * * *

P. 134:

(c) The General Company grants to the Telephone Company licenses (exclusive, except that the General Company reserves exclusive rights for the uses and to the extent specified in foregoing subdivision b) in the field of trans-oceanic wireless telephony, such licenses being limited, so far as concerns service for the public or for others than the Telephone Company, to rendering such service through only the General Company's systems for trans-oceanic communication. But if and so long as the General Company is not prepared to and does not remain in a position to and does not supply such service, the Telephone Company may establish wireless stations for rendering such service, after giving the General Company reasonable notice and opportunity to do so, and shall have the right to continue to render such service through all such stations established by it except in so far as the General Company shall elect to cooperate in rendering such service, or any portion thereof, in which event the General Company shall take over those stations, or such of them as it shall elect, at the then cost of reproduction less depreciation. While the transoceanic service is being rendered through the General Company's stations, the advertising and the division of rates shall be as provided in foregoing subdivision b of this section 4.

(d) The Telephone Company grants to the General Company: (1) Exclusive licenses to make, use, lease and sell wireless telephone apparatus and systems for communication by and between airplanes, airships, ships and other automotive devices, except railway vehicles. The General Company is granted non-exclusive licenses to establish transmitting and receiving stations for communication with the foregoing, but is given no right to connect with any public service telephone system. The Telephone Company is licensed, but is under no obligation, to establish or maintain means by which such wireless telephone communication may be had with and through the Telephone Company's telephone system, and the Telephone Company is under no obligation to permit such communication. If, however, the Telephone Company shall establish, maintain or permit such wireless telephone communication through stations of third parties, other than the United States Government, it shall do the same with respect to the General Company's stations on at least as favorable terms, including distribution of tolls, and engineering requirements. In case, at any time, the General Company has established such a station as is referred to in this paragraph, and the Telephone Company shall elect to cooperate or render such wireless service in any substantial part of the same territory, it shall purchase the said station of the General Company at the then cost of reproduction less depreciation.

* * * * * * * *

P. 135:

(e) The General Company grants to the Telephone Company, (1) subject only to subdivisions (a), (b) and (c) and [fol. 3921] paragraph (1) of subdivision (d) of this section, exclusive licenses in the field of wireless telephony to make, use, lease and sell all wireless telephone apparatus connected to or operated as a part of a public service telephone communication system, whether wire or wireless.

(2) Subject to all of the foregoing, exclusive licenses in the field of wireless telephony to make, use and sell for all business, public service and commercial uses of such character as might be served by leased wires, as for example brokers' offices, business houses, manufacturing plant, gas and water companies, mining companies, etc.

* * * * * * *

(b) Subject to the foregoing, the General Company grants to the Telephone Company exclusive licenses in the field of wire telephony on land, and over cables not more than one hundred miles in length, and between the main body of the United States and Cuba; licenses are granted by each party to the other with reference to other transoceanic wire telephony, such licenses being of the character and subject to the limitations and provisions expressed in foregoing subdivisions (b) and (c) of section 4, with reference to transoceanic wireless telephony.

* * * * * * *

P. 139:

Exhibit E

Extension Agreement—General Electric Co., American Telephone & Telegraph Co., Radio Corporation of America, and Western Electric Co.

Whereas a license agreement was entered into between the General Electric Company, a New York corporation, herein called the General Company, and the American Telephone and Telegraph Company, a New York corporation, herein called the Telephone Company, dated July 1, 1920, and

Whereas the General Company desires to extend rights thereunder to the Radio Corporation of America, a Delaware corporation (herein called the Radio Company), pursuant to the provisions of an agreement of November 20, 1919, between the General and Radio Companies; and

Whereas the Telephone Company desires to extend rights thereunder to the Western Electric Company, Incorporated, a New York corporation (herein called the Western Company), pursuant to the provisions of an agreement of February 6, 1882, as modified by agreement of April 8, 1908, between the Telephone and Western Companies; and

Whereas the Radio and Western Companies, respectively, desire to obtain such rights, but in accordance with Subdivision (b) of Section 3, Article VI of said agreement of July 1, 1920, such rights may be extended only with the assent of both of the parties to said agreement.

[fol. 3922] Now, it is agreed as follows:

P. 140:

1. The General Company may extend to the Radio Company, and the Telephone Company may extend to the Western Company (pursuant to the above mentioned agreements of November 20, 1919, February 6, 1882, April 8, 1908 or otherwise), any of the said rights reserved and acquired by each, respectively, under this present agreement and under said agreement of July 1, 1920, whether or not expressed in said agreement of July 1, 1920 as personal or nonexclusive or nonassignable, except any right to terminate under the provisions of Article XIV of said agreement.

2. The Western Company hereby grants and agrees to grant to the General Company, under the present and future patents of the Western Company, rights of the same character and scope, and for the same fields and subject to the same limitations and conditions, as the rights granted to the General Company in and by said agreement of July 1, 1920: Provided, however, That all rights herein granted and agreed to be granted are subject to rights which the Western Company hereby reserves for itself and for the Telephone Company and their several successors in business of the same character and scope and for the same fields and subject to the same limitations and conditions as the rights reserved by the Telephone Company in and by said agreement of July 1, 1920. And the Western Company hereby assumes towards the General Company and the Telephone and Western Companies assume toward the Radio Company, to the extent that the General Company, under the provisions of Clause 1 hereof, extends or may hereafter extend its rights to the Radio Company, obligations similar to the obligations assumed by the Telephone Company toward the General Company in and by said agreement of July 1, 1920, except that the Western Company assumes no obligations as to operation of telephone or telegraph systems unless and until it shall engage in the commercial operation of such systems.

3. The Radio Company hereby grants and agrees to grant to the Telephone Company, under the present and future patents of the Radio Company, rights of the same character and scope, and for the same fields and subject to the same limitations and conditions, as the rights granted to the Telephone Company in and by said agreement of July 1, 1920; Provided, however, That all rights herein granted and agreed to be granted are subject to rights, which the Radio Company hereby reserves for itself and for the General Company and their several successors in business, of the same character and scope and for the same fields and subject to the same limitations and conditions as the rights reserved by the General Company in and by said agreement of July 1, 1920. And the Radio Company hereby assumes toward the Telephone Company (and the General and Radio Companies assume toward the Western Company, to the extent that the Telephone Company, under the provisions of Clause 1 hereof extends or may hereafter extend its right to the Western Company) obligations similar to the obligations assumed by the General Company toward the Telephone Company in and by said agreement of July 1, 1920, except that the Radio Company assumes no obligations as to manufacturing or selling articles or devices which it is not from time to time engaged in commercially manufacturing.

4. This agreement shall terminate at the same time that the said agreement of July 1, 1920, terminates.

* * * * * * *

P. 151:

[fol. 3923] **Exhibit K**

Consent to Agreement Between Radio Corporation of America and Wireless Specialty Apparatus Co. by American Telephone & Telegraph.

American Telephone & Telegraph Company

New York, March 9, 1921.

General Electric Company, 120 Broadway, New York, N. Y.

Gentlemen: As contemplated in Article VI, Section 3-b, of the license agreement dated July 1, 1920, the American Telephone and Telegraph Company and the Western Electric Company, Inc., hereby assent to the grant by you and the Radio Corporation of America of sublicenses to the United Fruit Company, the Tropical Radio Telegraph Company, and the Wireless Specialty Apparatus Company under the patent licenses acquired or to be acquired by you under said agreement of July 1, 1920, and also to the grant to steamship companies now or hereafter owned or controlled by said United Fruit Company, of sublicenses to use under the licenses so acquired or to be acquired by you. This assent is conditioned upon the grant, either directly or by mesne grants, to this company and to the Western Electric Company, Inc., by said United Fruit Company, said Tropical Radio Telegraph Company, and said Wireless Specialty Apparatus Company, of licenses (similar in scope to the licenses granted by the General Electric Company in said agreement, except for rights reserved for the Wireless Specialty Apparatus Company to make, use and sell) under all United States patents and rights to or under United States patents now or hereafter during the term of such sublicenses owned or controlled by the said United Fruit Company, said Tropical Radio Telegraph Company, and the said Wireless Specialty Apparatus Company, or either of them, to the extent to which said companies may have the right to grant such licenses.

American Telephone & Telegraph Company. (Sdg.) W. S. Gifford, Vice-President. Western Electric Company (Inc.). (Sdg.) C. G. Du Bois, Pres.

[fol. 3924] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT 192

Copies of Certain Contracts Between Southwestern Telegraph and Telephone Co. and American Bell or A. T. & T. and Southwestern T. & T., Resolutions of Directors, Etc.

Portion of Abstract of Record in City of Houston v. Southwestern Bell Telephone Co., 259 U. S. 318

Preliminary Contract Between American Bell Telephone Co. and Southwestern Telegraph and Telephone Co., Dated July 27, 1889 (Rec., Vol. II, 878)

The following is an exact copy of this exhibit:

This agreement made this twenty-seventh day of July 1889 by and between the American Bell Telephone Company, a corporation created under the laws of the Commonwealth of Massachusetts of the first part, and The Southwestern Telegraph and Telephone Company, a corporation created under the laws of the State of New York, of the second part. Witnesseth:

Whereas the second party has certain license contracts issued by said The American Bell Telephone Company (a schedule of which contracts is hereto annexed marked "A") and

Whereas said second party desires to surrender said several license contracts and to have certain other license contracts as hereinafter set forth, and the first party has agreed to accept such surrender and to enter into such other license contracts as hereinafter set forth.

Now, therefore, it is agreed as follows, that is to say:

1. Conditional upon said second party owning and controlling all and singular any plants, properties, franchises and rights of every name and nature built, acquired or used, under or by virtue of or for any use in conducting any business done or to be done under said license contracts so to be surrendered, or any of them, and standing in the name of said second party or any other name, or operated by said second party or by other parties, and all income and revenues therefrom and thereunder, and

Conditional upon said second party forthwith surrendering and giving up to said first party said several license contracts named in schedule A, and all and singular the [fol. 3925] rights of it, said second party, or of other parties in, to and under the same.

2. Said first party agrees that it will accept such surrender and that it will thereupon enter into the following described agreements with said second party, that is to say:

(a) license contract for exchange purposes—Form 109-D, hereto annexed marked "B,"

(b) license contract for extra-territorial connecting lines, Form 113-D, hereto annexed marked "C."

(c) license contract for the supply of telephones for private lines and other purposes, Form 116-C, hereto annexed marked "D."

But said second party shall assume and perform any and all contracts with subscribers made under said license contracts or any or either of them so to be surrendered and existing at the time of such surrender and shall hold all telephones furnished thereunder by said The American Bell Telephone Company (schedules of which said telephones are hereto annexed marked "E"), as the property of said The American Bell Telephone Company and each under the license contract for like purposes as that under which it was originally furnished, so to be made with it said second party and with like effect as if actually furnished thereunder, except that rental and royalty thereon shall begin at the date of such new license contracts.

3. Whereas it has been and is agreed that said first party in consideration of the premises shall be entitled to and have thirty hundredths (30-100) interest in all and singular the property, rights, business and property of said second party, as the same stood on July 1, 1889, to be paid as hereinafter specified, and that such interest shall not be required to contribute to the expense of developing the territory of said second party nor to the payment of liabilities incurred on account thereof before the first day of June 1891.

[fol. 3926] Now, therefore, for the accomplishment of said purpose and in consideration of the premises, the second party shall forthwith upon the execution of said license contracts furnish and pay to said The American Bell Telephone Company thirty hundredths (30-100) of its capital stock as the same shall stand fixed at the date of such payment, all such stock to be lawfully issued, full paid and not subject to any assessment or contribution.

[fol. 3927] 6. Said second party shall not borrow money for extension of its business nor for any other purpose without the consent of said The American Bell Telephone Company.

7. Said second party shall assume and pay any and all taxes, whether municipal, county, state or other, on, or on account of or by reason of the instrument leased or business done under said license contracts to whomsoever assessed, but this stipulation shall not be held to include the tax assessed by the State of Massachusetts on the corporate franchise of said The American Bell Telephone Company.

8. Said second party shall keep books and accounts of its business according to forms furnished by said The

American Bell Telephone Company, which books and accounts shall be open to inspection at all reasonable times by any authorized agent of said company, and shall make reports to it embodying such information as and in such form as it may from time to time desire.

9. Said The American Bell Telephone Company shall have two representatives on the Board of Directors and one representative on the Executive Committee of said second party.

[fol. 3928] **Form 109-D**

Contract for Exchanges Between American Bell Telephone Co. and Southwestern Telegraph & Telephone Co., Dated July 27, 1889 (Rec., Vol. II, 881)

Contract for Exchanges

This agreement, made this Twenty-seventh day of July A. D. 1889, by and between the American Bell Telephone Company, a corporation created under the laws of the State of Massachusetts, Lessor and Licensor, party of the first part, and The Southwestern Telegraph and Telephone Company, a corporation created under the laws of the State of New York, Lessee and Licensee, party of the second part, Witnesseth:

(1) Whereas, the Lessor owns the Letters Patent of the United States granted to Alexander Graham Bell, March 7, 1876, and January 30, 1877, numbered 174,465, 186,787 respectively, and owns or has the right to use, and may hereafter own or have the right to use, sundry other inventions, which are or may be embodied in electric speaking telephones, and desires to extend the use of telephones licensed by it in every manner in which the public may wish to use the same, and for that purpose to provide for the construction and use of the apparatus and lines necessary to be used in connection therewith; and whereas the Lessee desires to obtain the use of telephones under lease and [fol. 3929] license from the party of the first part to be used with the lines of telephonic district or exchanges systems established and owned by it in the territory hereinafter described under the provisions hereinafter set forth; now it is agreed as follows:

(2) The rights hereby granted shall be perpetual unless determined as hereinafter provided, and shall extend to all Exchanges established and owned by the Licensee, and wholly within the following described territory, namely: The States of Arkansas and Texas.

(3) For the purpose of this contract an "Exchange," or "a district or exchange system" means a system in which different stations on the same or different circuits, and either within any city or town, or within a radius of fifteen miles of a central office, are connected with such central office or branch offices, for the purpose of placing subscribers or other parties by such circuits in communication with such central or branch offices, or with each other, either directly or through the agents of the system. No office or line of an Exchange can be connected with any point outside of its territory, nor with any telegraph company's office or line, except by lines of the Licensor or parties specially designated by it for this purpose, nor, except in connection with such lines, can the lines of an Exchange be used for performing any part of the work of transmitting messages by telephone to points outside its territory, and no telegraph company, unless specially permitted by the Licensor, can be a subscriber or use the system to collect and deliver messages from and to its customers, nor shall any person use the same telephone in connection with different exchange systems.

(4) The Licensor, at its general office or factory, will deliver to the second party, as needed, electric speaking telephones, made and to be used under its patents, during the existence of the rights hereby granted and as herein set forth and permitted, and all telephones delivered to the [fol. 3930] second party during the continuance hereof shall be deemed to be furnished hereunder, unless otherwise specially designated by the Licensor. They will be of such character and pattern and bear such marks as the Lessor shall from time to time determine, but the second party may choose from among such standard patterns. Each of said telephones shall remain the property of the Licensor, and is hereby leased, and the use of it licensed under said patents and all others under which the Lessor has or may have a right to license, so far as applicable thereto, for the purposes herein declared for the term of one year from the day when rent and royalty begin to accrue on it as pro-

vided in Article 8, but the due payment thereof to the Licensor, and the due performance of the stipulations hereof during said year, by the second party and those using the telephone under it, shall ipso facto operate to renew the lease and license for another year, and so on until the expiration or other determination hereof; the second party is hereby licensed to use said telephones for any purpose, upon circuits exclusively composed of the lines of any such exchange system, and to use them in connection with the trunk lines reserved to the Licensor by Article 9, for the purposes and to the extent therein limited, during the term hereby created, upon condition and so long as the rental therefor shall be duly paid to the Licensor and as the provisions hereof are not violated, but not longer or otherwise; and it may grant said right to its customers by contracts as provided in Article 7.

The Lessor will not license any telephones to be used by others upon an exchange system within said territory while the rights of the second party hereunder exist, except telephone to be used on the lines of Exchanges having their central offices outside said territory by persons within said territory who are or may be subscribers to or customers of such Exchanges; but the second party shall, by general or special exchanges, supply (so far as it is authorized [fol. 3931] so to do by this contract) all reasonable demands of the public, and shall be diligent to increase the number of telephones used on its exchanges. All rights not hereby specifically granted remain to the Licensor.

(5) The Lessor will license to be used with such telephones, the inventions in call-bells, switches, switch-boards, and other apparatus needed for such telephone lines, which it can so license, upon such royalties as it may from time to time establish, not greater than those fixed for others under similar circumstances; but such call-bells, switches, switchboards and other apparatus shall be used only with telephones licensed by the Lessor, and the second party agrees not to use them otherwise nor to dispose of them to any one except those so licensed, or to the licensed manufacturers of the Lessor. The second party may enjoy any rights of way and similar franchises to maintain said lines which the Lessor can permit it to use, when and so long as, in the judgment of the Lessor, it shall not interfere with the Lessor's enjoyment thereof, and shall pay whatever

may be due to third persons, if anything, growing out of or in connection with such use by it.

For trunk lines from the several exchange offices to points outside of the respective exchange District and to telegraph offices, the Lessor may, without further compensation, enjoy all rights of the Licensee to erect and maintain lines, and may use its poles and fixtures, but shall pay a pro rata share of the cost of erecting and maintaining them.

(6) The Lessee admits the validity of all patents relating to telephony and telephonic appliances now or hereafter held by the Licensor or under which it may hold licenses exclusive in their character, and the validity of its title thereto, and will not dispute the same, nor make, use, or be interested in any telephones or telephonic lines or business not licensed by the Licensor or its assigns.

[fol. 3932] (7) The contract between the second party and these who are to use telephones under it, as herein provided, shall express in such form as the Lessor shall from time to time approve, that the telephone is the property of the Licensor; that it is leased and licensed by it only as herein expressed; that all use of it otherwise is an injury to and invasion of the rights of the Licensor as owner thereof and of the patent rights used therein and thereby, entitling it to all the remedies herein provided and to an injunction, and other legal redress, in a suit by it in its name and behalf. The second party shall require every person using said telephones for communications or messages sent or to be sent over other telephone or telegraph lines, to provide for payment of tolls thereon, and to make every such message subject to such stipulations, regulations, and conditions respecting the liability of such lines for errors and mistakes as the Licensor may from time to time require, and for that purpose will incorporate into its subscription contracts and message blanks such provisions and contracts, to be agreed to by the subscriber and customer, as the Licensor may from time to time approve, and will hold the Lessor harmless from all loss and expense consequent upon its failure so to do.

(8) The second party shall charge subscribers to its Exchanges such rental and royalty for the telephones as the Licensor may fix from time to time, for these and other

like exchanges, and also in addition a sum not exorbitant nor unusual for the use of call-bells, batteries, wires, and other appliances, and for services furnished or performed, and may collect both of said sums for a period not exceeding one year in advance. It will make such reports, giving such information regarding the operations of its Exchanges and the prices charged as the Licensor may from time to time request. It shall pay to the Licensor a rental and royalty at the rate per instrument of Seventy (70) per cent, of the telephone rental and royalty fixed as above [fol. 3933] (being a discount of Thirty (30) per cent) to commence on each telephone on the first day of the second calendar month after its shipment by the Licensor, to continue until the instrument shall be put into the possession of the Licensor, or proved to be destroyed, and to be paid in equal monthly payments in advance, at the Licensor's office, on the tenth day of each month up to the last day of the same month. Until otherwise fixed, the rates shall be as follows:

Battery transmitter, each instrument per year	$10.00
Magneto-telephone, each instrument " "	$10.00

Upon each instrument unlawfully detained from the Lessor the second party shall pay ten dollars per month until satisfactory proof of its destruction be furnished; shall pay five dollars for each lost or destroyed otherwise than by fire or inevitable accident, and shall pay the expenses of ordinary repairs; but said payments shall not confer any right to the instrument, nor to its use, nor satisfy any other breach of covenant, nor impair the right of the Licensor to obtain possession of any instrument or lines.

(9) The Licensor may enter the offices and connect with the exchange systems of the second party any lines to points without the territories of such Exchanges respectively, and to telegraph offices, in order to establish communication between customers of the Exchanges and telegraph companies or parties reached by said lines, and may there operate said lines with suitable appliances; the second party will permit and encourage its customers to use such lines, and by its own operators will receive and transmit such messages to and from its customers and subscribers, or make the proper switch-board or other connections for direct communication, as may be requested, and in such

manner, not inconsistent with the proper conduct of its office, as the Licensor shall direct. But if the Licensor is [fol. 3934] not satisfied with the manner in which it is performed, it may establish its own offices and trunk and radiating lines for this purpose. The second party will not, without special leave of the Licensor, so far as it can lawfully prevent it, permit the transmission over such connecting lines of general business messages, market quotations, or news for sale or publication, nor any communications in behalf of other parties than those who directly communicate by the telephone by themselves or their servants or agents personally present at the instruments, and no person engaged in the business of transmitting messages for other parties shall be authorized or knowingly allowed by the second party to transmit such messages over such lines. The second party will cause each of its Exchanges to turn over and deliver to the Licensor and such parties as it may from time to time appoint, exclusively, all messages for electrical transmission to points outside the territory of such Exchange collected by or coming on the wires or within the control of the Exchange, where the Licensor or such party has wires and will transmit the same so far as the second party can lawfully control the same, and unless otherwise specially directed by its customers; but will not solicit such special directions, nor receive and pay tolls for transmission over other lines, unless compellable by law so to do. It shall keep and furnish an account of each such message transmitted or received, and of connections made therefore and shall collect and on demand pay over to the Licensor or its said appointees, respectively, the tolls for transmission beyond the exchange system, according to such rates and rules as each shall establish, and shall exhibit its accounts and the tickets from which they are made, so far as may be proper to verify the same. Each Exchange shall, if and when so requested by the Licensor, make proper switch-board or other connection between the lines of the Licensor or its Licensees from points without its exchange district and terminating in such ex- [fol. 3935] change office, for the purpose thereby of making up a through line between points without such exchange district. In respect of all the business provided for by this section, the second party shall make no charge to its own subscriber or customer, but shall make the following charges and none others; the second party shall receive upon communications originating within an Exchange and passing over the lines of the Exchange and the extra-territorial lines by direct connection, fifteen per cent of the gross tolls on the extra-territorial line not to exceed five cents for any one message or communication occupying not more than five minutes; in case an Exchange shall be required to make a switch-board connection for the purpose of making up a through line between points without its exchange district, then the Exchange shall receive as compensation for making such connection, such share of the through toll (terminal expenses being first deducted) as may be agreed upon, not however a greater share thereof than ten miles is of the whole length of the through lines so made up, and not in any event to exceed five cents for any one communication occupying ~~not~~ more than five minutes; upon messages collected by an Exchange over its lines or otherwise and forwarded by telegraph, the Exchange shall receive fifty per cent of the commission paid to the Lessor by the telegraph company, and the whole of the compensation for messenger service paid by the telegraph company; for delivering tele-raph messages by telephone to subscribers, an*d* Exchange may have free use of the Lessor's line to the telegraph office, when such use does not interfere with the proper despatch of outgoing business, and may receive from the telegraph company the whole of such compensation as it and the telegraph company may agree upon; for messages delivered by messenger for the telegraph company, it may receive the whole compensation. The Licensor now appoints the Western Union Telegraph Company to perform all telegraphic transmission under this article.

[fol. 3936] (10) If the second party shall fail to pay any sums due hereunder for thirty days after the same shall become payable, or shall violate any other terms or conditions of this contract, or of a contract preliminary hereto between the same parties dated July 27th, 1889, and shall persist in such default, violation, or neglect, or fail to remedy or repair the same for sixty days after written notice thereof from the Licensor, or shall become bankrupt or insolvent, the Licensor may, if it shall so elect, by written notice to the second party (or those in charge of any of its offices), terminate all rights granted by the Licensor hereunder, and thereupon may by its agents sever the circuit on which any telephone is placed, and take possession of and remove the telephone, and for that purpose may enter the premises of the second party and all persons claiming under it; or it may collect, from any sublessee or subscriber, all sums then or thereafter due to it or to the second party for the use of any instruments, circuits, and appliances, or under any subscription contract; or it may, so long as it shall see fit, leave in the enjoyment and use of the telephones any subscriber or other person in actual possession, and collect from him such sums as may then and thereafter be or become due for the use of the telephone and exchange lines, appliances, and services, and for that purpose shall be entitled to and may take possession of all the lines, fixtures, apparatus, appliances, and premises of the second party used for carrying on its business, and occupy and operate the same in connection with said telephones and those of additional customers as exchange system, or connect such lines with offices of its own for that purpose; the Licensor shall have the like right upon and within three months after the termination of the rights of the second party hereunder by efflux of time or otherwise; and may enforce these provisions by an entry, without being deemed guilty of any trespass, or by legal process, including an injunction to prevent any interference with the Licensor (and [fol. 3937] others permitted by it) in the use of said telephones, lines, switch-boards, and appliances. The property as taken, and which does not belong to the Lessor or revert to it hereunder, may be returned within three months from the taking, in which case it shall pay to the second party a reasonable compensation for its use, or the Lessor may retain the same as its own property and shall pay therefor a reasonable price (not exceeding the actual cost) within four months after the taking, and shall account to the second party for all sums collected, which accrued before the Licensor became so entitled to possession, deducting all expenses incident thereto and all that may be due it. The Lessor also reserves all its right and remedies in law and in equity, under the patent laws or otherwise, including the remedy by injunction against the second party or those claiming under it, for the use of any of its patented inventions or instruments not justified by a subsisting license hereunder, or for the violation of any other of its rights.

These rights and remedies of the Lessor shall, in case of any default, if the Lessor shall so elect, apply only to the Exchange or Exchanges in which such default has occurred. The Lessor may also use the name of the second party to protect its interests and to enforce its rights hereunder, and the second party shall execute assignments in accordance herewith.

(11) This contract is personal to the second party herein named, and any assignment or attempt to assign it, or the rights granted or lines established hereunder or any or either of them, by act of the party or operation of law, without the written consent of the Licensor, will be violation hereof, and a good ground for a cancellation hereof by the Licensor; The party of the second part promises that it will keep and observe all the stipulations herein contained on its part to be kept and performed. Whenever the Licensor grants to others the rights for connecting lines or any other rights remaining to it, the stipulations [fol. 3938] hereof relating hereto shall be binding upon and enure to the benefit of such grantees, and the Licensor shall not be responsible for their acts or defaults. If the Licensor shall transfer to any party who shall agree to perform the stipulations hereof its title to the telephones hereby leased and the patent rights under which they are licensed, and its then existing interests hereunder, it is agreed that the provisions hereof enure to the benefit of and are binding upon such party in respect of all things done or to be done after such assignment, as if it were named a party hereto, and this said American Bell Telephone Company shall no longer be responsible hereunder.

The Licensee also agrees that it will not allow any telegraph company to use or to have any rights, or poles or other structures leased or put up by or belonging to or under the control of said Licensee without the written assent of the said American Bell Telephone Company.

Touching the lines which the first party may desire and direct to be built connecting the Exchanges of the second party with the Telegraph Offices of the Company or Companies which the first party may appoint to receive the telegraph messages to be turned over by said second party.

Whereas the first party has at the request of the second party in consideration of its undertaking hereinafter in this paragraph contained consented to increase the part to be paid the Exchange of the commission paid the first party by the Telegraph Company upon messages turned over from Twenty-five (25) per cent to Fifty (50) per cent thereof:

Now the second party in consideration thereof agrees that it will at its own cost and without charge or expense to said first party build, equip and maintain such lines and furnish all instruments necessary to be used for the operation thereof, except telephones to be used in the telegraph office, but that such lines when built shall become and remain the property of said first party.

[fol. 3939] Discount on telephones as given in surrendered contract (as per Exhibit A) to continue until June 1st, 1891.

*The following erasures viz.: eight (8) words on line 22, two (2) letters two (2) figures and one (1) word on line 23, ten (10) words and one (1) figure on line 56, one (1) word on line 170, four (4) words on line 217, all the words on lines 218 and 219, and six (6) words on line 220, and the following interlineations viz.: "fifty" on line 170 and "or of a contract preliminary hereto between the same parties dated July 27th 1889" on line 179, were made before signature by either party.

Signed in duplicate on the day first above written.

[Seal A. B. T. Co.]

The American Bell Telephone Co., (Sd.) by John E. Hudson, (Sd.) C. J. F., President. [Seal Sowestn. Co.] The Southwestern Telegraph and Telephone Co., (Sd.) by Levi Sprague, Prest. (Sd.) Chas. J. Glidden, Secy.

Contract for Extraterritorial Connecting Lines Between American Bell Telephone Co. and Southwestern Telegraph & Telephone Co., Dated July 27, 1889 (Rec., Vol. II, 889)

Form 113D

Contract for Extraterritorial Connecting Lines

This agreement, made this Twenty-seventh day of July, A. D. 1889, by and between the American Bell Telephone

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*This paragraph refers to interlineations in the printed form on which the original agreement was made.

[fol. 3940] Company, a corporation duly formed under the laws of Massachusetts, Lessor and Licensor, of the first part, and the Southwestern Telegraph and Telephone Company, a corporation created under the laws of the State of New York, lessee and Licensee, of the second part, witnesseth:

1. Said Licensee desires to obtain the right to use upon lines between telephonic exchange districts established or which may be established in the following described territory, viz.:

The State of Arkansas and Texas, telephones to be obtained from *from* the Lessor and under lease and license from it, under its two patents granted Alexander Graham Bell, No. 174,465, dated March 7, 1876, and 186,787, dated January 30, 1877, and under other patents which it may hereafter own or have the right to use, applicable thereto; and also to avail itself of and enjoy the right of connecting with the exchange systems established within said territory, as provided and stipulated in favor of the Lessor in its exchange contracts for these systems, (copies of which stipulations have been furnished to the Licensee, and the terms of which he is to conform to so far as they relate to business to be done hereunder) and of connecting with exchange systems which may hereafter be established in exchange districts in said territory, under contracts to be made by the Lessor therefor, to contain stipulations substantially like those in the Lessor's Standard Form 109 C, a copy of which has been furnished to the Lessee, and wishes to use, and allow others to use, said lines for personal communication between persons in different exchange districts in said territory; now it is agreed:

(2) Said second party shall by the establishment of such lines, so far as it is authorized so to do by this contract, satisfy all reasonable demands of the public therefor, and shall be diligent to increase the number of its said lines. [fol. 3941] The rights hereby granted to the Lessee shall be perpetual unless determined as hereinafter provided:

3. The Lessee may construct lines between exchanges in said territory, and may use such lines for telephonic personal communication between a customer in one such exchange district and a customer in another such exchange district, and not otherwise, except in connection with lines

mentioned in Article 6 hereof owned or specially licensed by the Lessor, and by it designated for that purpose, and then only as and for the purposes expressed in said Article 6. The Lessee shall not directly or indirectly connect its lines with any telephone or telegraph line or telephone exchange, except lines with which it has been by the Lessor specially authorized to connect; nor deliver messages to be forwarded to designation by telegraph to any telegraph company, except such as may be specially designated by the Lessor for that purpose, so far as it can lawfully control the same, or unless specially directed by a customer so to do (but it will not solicit such special direction nor receive and pay tolls over other lines unless compellable by law so to do). For the purpose of establishing telephonic personal communication between customers as aforesaid, the Lessee may have and exercise all the right to construct and operate telephone lines in said districts, and there maintain suitable offices and connect with exchange systems established or to be established, as aforesaid, which the Lessor has reserved and is or may be entitled to grant for extraterritorial connecting lines under licenses to exchanges made or to be made as aforesaid; but the Lessee shall connect with each local exchange and do its business so far as the same can, in the opinion of the Lessor, conveniently be so done, with the customers thereof through said exchange, unless the American Bell Telephone Company, or its successors, shall decide that the exchange fails to furnish proper facilities, for the purpose of this contract an exchange district means a territory, not to cover [fol. 3942] more than a single town or city, or a circle of fifteen miles radius measured from a central point, which the Licensor has included and covered or may hereafter include and cover in and by an exchange license.

4. The Licensor, at its general office or factory, will deliver to the Lessee, as called for, electric speaking telephones, made and to be used under its patents during the existence of the rights hereby granted and as herein set forth and permitted; and all telephones delivered to the Lessee during the continuance hereof shall be deemed to be furnished hereunder, unless otherwise specially designated by the Licensor. They will be of such character and pattern and bear such marks as the Lessor shall from time to time determine, but the Lessee may choose from among

such standard patterns. Each of said telephones shall remain the property of the Licensor, and is hereby leased, and the use of it is hereby licensed for the purposes herein declared for the term of one year from the day when rent and royalty begins to accrue on it, as herein provided; but the due payment thereof to the Licensor, and the due performance of the stipulations hereof during said year by the Lessee and those using the telephone under it, shall ipso facto operate to renew the lease and license for another year, and so on until the determination hereof. The licensee shall pay to the Licensor seventy (70) per cent of the telephone rental and royalty which shall be fixed from time to time by the Licensor (being a discount of Thirty (30) per cent), to commence on each instrument on the first day of the second calendar month after its shipment by the Licensor, to continue until the instrument shall be put into the possession of the Licensor, or proved to be destroyed, and to be paid in equal monthly payments in advance at the Licensor's office on the tenth day of each month up to the last day of the same month. Until otherwise fixed, the rates shall be as follows:

[fol. 3943] Battery transmitter, each instrument per year	$10.00
Magneto-telephone, each instrument per year	$10.00

Upon each instrument unlawfully detained from the Lessor, the Lessee shall pay five dollars per month until satisfactory proof of its destruction be furnished, and five dollars for each lost or destroyed otherwise than by fire or inevitable accident, and shall also bear the expense of ordinary repairs; but said payments shall not confer any right to the instrument, nor to its use, nor satisfy any other breach of covenant, nor impair the right of the Licensor to obtain possession of any instrument or lines.

5. The right and license hereby granted is the right and license to use said telephones to carry on personal communication, upon their own business, by and between customers, and their employes personally present at instruments in different exchange districts within the territory above described, over circuits composed exclusively of said authorized lines owned by the Lessee and the lines of the exchange licensed by the Licensor, and with which the

Licensee is authorized to connect as aforesaid, and between any such customer and a customer so using the telephone in a place with which the second party is not hereby authorized to connect, by means of such line of the Lessee, and other lines and instruments specially licensed by the Licensor therefor; but the telephones furnished hereunder are not to be used to connect parties in the same exchange district, nor the transmission of general business messages, market quotations, or news for sale or publication, in competition with the business of any telegraph company; and the Lessee, so far as it can lawfully and properly prevent it, will not permit the same to be so used. The term "general business messages" is defined to mean all communications in behalf of other parties than those who directly communicate by the telephone by themselves or their servants or agents personally present at the instruments, and no per- [fol. 3944] son engaged in the business of transmitting messages for other parties shall be authorized or knowingly allowed by the Lessee, its servants or agents, to transmit such messages through the telephone. The Lessor will not furnish or license telephones to any other party to establish such personal communication between persons in different exchange districts, both of which are within said territory, while the rights of the Lessee hereunder exist, except so far as the Lessor's existing contracts with the Western Union Telegraph Company, and with others, may require it so to do, or as it may see fit so to do under contracts hereafter to be made for private, club, social, and other lines substantially as defined in its Standard Form No. 116 B, but the Lessee shall furnish sufficient general lines for general customers, and special lines for individual or associated customers, between exchange districts throughout said territory, and for the purposes aforesaid, at prices which shall be reasonable under the circumstances hereunder.

6. The Lessor will license to be used with such telephones the inventions in call bells, switches, switch-board, and other apparatus needed for such telephone lines, which it can so license, upon such royalties as it may from time to time establish, not greater than these fixed for others under similar circumstances, but such call bells, switches, switch-boards, and other apparatus shall be used only with telephones licensed by the Lessor, and the Lessee agrees

not to use them otherwise, nor to dispose of them to any one except to those so licensed, or to the licensed manufacturers of the Lessor. The Licensee may enjoy any rights of way and similar franchises to maintain said lines which the Lessor can permit him to use, when and so long as, in the judgment of the Lessor, it shall not interfere with the enjoyment thereof by the Lessor or its other grantees, and shall pay whatever may be due to third persons, if anything, growing out of or in connection with such use by it. The Lessor reserves the right to use tele- [fol. 3945] phones on lines passing over the routes or any or either of them of the lines hereby licensed, and connecting, with each other or with said exchanges, places with which the Lessee is not hereby authorized to connect, for the purpose of establishing personal communication or transmitting messages between such places and between such places and said exchanges, and, to establish lines for that purpose, may enjoy any rights of the Lessee to erect and maintain lines, and may string its wires on the poles of the Lessee, paying therefor a pole rental of $4.00 per mile per annum for each wire. The Lessee will also allow the Lessor to connect the wires of any such line with its said lines in order to constitute thereby a through line, of which the Lessee's lines or any or either of them or any part of either of them can form a portion or link, in order to forward through messages, will make or permit to be made convenient switchboard or other connections for that purpose, and as compensation therefor will take a share of the through toll (terminal expenses being first deducted) pro rata according to distance, not greater than that customarily charged by it for like distance, and will also allow any telephone exchange to be designated by the Lessor to connect with its lines for the purpose and substantially in the manner described in said Standard Form 109 C. In respect of all communications originating on its lines and which are to be forwarded over any other lines, the Lessee shall require the customer or subscriber to bind himself by and make every message subject to such contracts, stipulations and limitations of liability of such other lines as the Licensor may from time to time require, in such form as it may from time to time prescribe, and will hold the Lessor harmless from all loss or expense consequent upon its failure so to do.

7. The Lessee admits the validity of all patents relating to telephony and telephonic appliances, now or hereafter held by the Licensor, or under which it may hold licenses [fol. 3946] exclusive in their character and the validity of its title thereto, and will not dispute the same nor make, use, or be interested in any telephones or telephonic lines or business not licensed by the Licensor or its assigns.

8. The Lessee will pay to the exchanges established, or which may hereafter be established, and with which it shall connect as aforesaid, such sums as such exchanges are or shall be entitled to receive under their exchange contracts, made or to be made, for making connections with extra-territorial lines. And the Lessee will also pay to the Lessor, in addition to said telephone rental and royalty, and in consideration of the further rights and privileges hereby granted, fifteen (15) per cent of the Lessee's gross receipts from subscriptions and tolls (which tolls shall not be less than at the rate of fifteen cents for the first ten miles or fraction thereof and five cents for each additional ten miles or fraction thereof for a communication occuping not more than five minutes), and from other sources, after deducting for terminal expenses such sums as it may have to pay to the terminal exchange not exceeding those chargeable under exchange contracts made or to be made by the Licensor as aforesaid. Said payments are to be made to the Lessor at its office on the tenth day of each month, upon all receipts up to the first day thereof. The Lessee shall keep full accounts of such receipts and payments, furnish copies thereof to the Licensor upon request, and exhibit its original accounts and vouchers so far as may be proper to verify the same.

9. The lines to be built hereunder shall be sufficient and suitable for the purposes contemplated hereby.

10. The Lessee may place the telephones furnished hereunder in its own offices, for use, by general customers, as herein stated and limited, or may place them under subleases and licenses in connection with its lines, on the premises of subscribers or special customers for such use. Such [fol. 3947] subleases and licenses shall, in such form as the Licensor shall from time to time approve, express the title of the Licensor to the Telephone and the patents, the extent of the license hereby granted, the purposes for which

the telephone may be used, that any other use of any telephone by any person, or non-payment of the rental and royalty to the Licensor, is an injury to and invasion of its rights as owner thereof and of the patent rights used therein and thereby, and entitling it to all rights and remedies in law and in equity, under the patent laws and as herein expressed otherwise, including the remedy by injunction against the person in possession thereof, and all others who have misused the same as aforesaid for any use not justified by a subsisting license, or for the violation of any other of its rights. It may also enforce against such sub-licenses all rights and pursue all remedies given by and under such sub-license, and may use the name of the Lessee for such purpose, or may require the Lessee, at his own expense, to enforce the terms of such contract.

11. If the Lessee shall fail to make any of the payments herein stipulated when due, or shall fail to keep any of the terms hereof, or of a contract preliminary hereto between the same parties dated July 27th, 1889, and such default shall continue during a period of sixty days after written notice thereof from the Lessor, or shall become bankrupt or insolvent, the Licensor may, if it shall so elect, by a written notice to the Lessee (or those in charge of any of its principal offices) terminate all rights granted by the Licensor hereunder, and by itself or those designated by it for the purpose, by due process of law or by actual entry, may and shall be entitled to repossess itself of the rights and privileges herein granted, and thereafter use and enjoy the same; and especially may take possession of and remove said telephones; or sever the wires to which they are connected, and connect its own wires to said severed wires, [fol. 3948] telephones, and apparatus, and use the same by itself and by those whom it may permit; or it may, so long as it shall see fit, leave in the enjoyment and use of the telephones any person in actual possession, and collect from him such sums as are or may become due for the use of the telephones, wires and appliances, used therewith, and for that purpose shall be entitled to and may take possession of all the lines, fixtures, apparatus, appliances and premises of the Lessee used for carrying on this business, and occupy and operate the same in connection with said telephones and other telephones connected or to be connected therewith, or connect such lines with offices of

its own for that purpose. The Licensor shall have the like right upon or within three months after the termination of the rights of the Licensee hereunder by efflux of time or otherwise; and may enforce this provision by an entry without being deemed guilty of any trespass, or by legal process, including an injunction to prevent any interference with the Licensor and others permitted by it in the use of said telephones, lines and apparatus. The property so taken and which does not belong to the Lessor or revert to it hereunder may be returned within three months from the taking, in which case the Lessor shall pay to the Lessee a reasonable compensation for the use thereof, or the Lessor may retain the same as its own property, and shall pay therefore a reasonable price, in no case exceeding the actual cost, within four months after the taking, and shall account to the Lessee for all sums collected which accrued before the Licensor became so entitled to possession, first deducting all expenses incident thereto, and all that may be due from the Lessee to it. The Lessor also reserves all its rights and remedies in law and in equity under the patent laws or otherwise, including the remedy by injunction against the Lessee or those claiming under it, for the use of any of its patented inventions or instruments not justified by a subsisting license hereunder, or for the violation [fol. 3949] of any other of its rights. The Lessor may also use the name of the Lessee to protect its interests and enforce its rights hereunder, and the Lessee shall execute assignments in accordance herewith.

12. This contract is personal to the Lessee herein named, and any assignment or attempt to assign the same or the lines established hereunder, or any or either of them, by act of the party or operation of law, without the written consent of the Licensor, shall be violation hereof, and good ground for a cancellation hereof by the Licensor; The party of the second party covenants that he will keep and observe all the stipulations herein contained on his part to be kept and performed. Whenever the Licensor grants to others the rights for exchange or any of its rights under Article 6 hereof or any other rights remaining to it, the stipulations hereof relating thereto shall be binding upon and enure to the benefit of such grantees, and the Licensor shall not be responsible for their acts or defaults. If the Licensor shall transfer to any party who shall agree to

perform the stipulations thereof, its title to the telephones hereby leased, and the patent rights under which they are licensed, and its then existing rights hereunder, it is agreed that the provisions hereof enure to the benefit of and are binding upon such party in respect of all things done or to be done after such assignment, as if it were named a party, and that said American Bell Telephone Company shall no longer be responsible hereunder. Words herein referring to the party of the second party shall be taken to be of such number and gender as may be required.

[fol. 3950] Contract Between American Bell Telephone Co. and Southwestern Telegraph & Telephone Co., Dated November 1, 1907, Cancelling Previous Contracts (Rec., Vol. II, 901)

Memorandum of an agreement, made this first day of November, 1907, by and between The American Bell Telephone Company, incorporated under the laws of Massachusetts, of the first part, and The Southwestern Telegraph and Telephone Company, incorporated under the laws of New York, of the second part,

Witnesseth:

Whereas, said Companies entered into certain contracts dated July 27, 1889, in Forms 109-D, 113-D, and 116-C, respectively, and also a contract preliminary thereto, bearing the same date, under which said The American Bell Telephone Company agreed to lease and license to said The Southwestern Telegraph and Telephone Company telephone instruments and to furnish to said Company certain other services and things, as expressed in said contracts and in certain contracts in Form 113-C, made subsequent to said date, and

Whereas said contracts have in certain respects become obsolete, and it is desired by the parties hereto to cancel the same and to make a new agreement in place thereof,

Now it is agreed:

That all contracts now existing between said Companies in Forms 109-D, 113-C, 113-D and 116-C, respectively, and said preliminary agreement, are hereby cancelled as of this date, but said The American Bell Telephone Company shall continue to furnish said The Southwestern Telegraph and Telephone Company telephone instruments, license their use, and the use of telephone appliances, so long as this agreement remains in force, under all patents now or hereafter owned or controlled by it, said The American Bell Telephone Company, and furnish other services and things [fol. 3951] as heretofore, and said The Southwestern Telegraph and Telephone Company shall pay to said The American Bell Telephone Company the same consideration in money which it has heretofore paid under the terms of the letter of said The American Bell Telephone Company, dated November 21, 1902.

Said The Southwestern Telegraph and Telephone Company shall assume and pay any and all taxes, whether municipal, county, state or other, assessed on or on account of or by reason of the telephone instruments furnished hereunder.

Cancellation of the 15% Commission under the Extra-territorial Contract Between American Bell Telephone Co. and Southwestern Telegraph & Telephone Co., Dated May 11, 1898 (Rec., Vol. II, 919)

Copy

The American Bell Telephone Company,
No. 125 Milk Street
P. O. Drawer 2

Boston, May 2, 1898.

Licensees of the American Bell Telephone Company:

Referring to the licenses for extra territorial connecting lines granted you by this Company, and to your agreement therein contained to pay this Company a portion or fraction [fol. 3952] of the gross receipts from business done on such lines, this Company proposes to release you and does hereby release you upon your acceptance hereof, from your obligation to make such payment from business done after April 30, 1898.

[fol. 3953] 4½% Modification of 1902 (Rec., Vol. II, 922)

Copy

[illegible] Telephone and Telegraph Company

November 29, 1902.

The [illegible]rn Telegraph & Telephone Company, Dallas, [illegible]

Gentlemen: Enclosed herewith is a communication from The American Bell Telephone Company offering to accept, in lieu of the payments now made by you under your contracts with that Company by way of rental upon telephone instruments, a percentage of the total gross earnings of your Company, as defined in the circular.

This plan has been submitted to officers of practically all of the operating companies throughout the United States and seems to meet with general approval. It involves a substantial reduction in the amounts paid by the operating companies.

While I believe that the plan and the details as set out in the enclosed letter are entirely clear, I take the liberty of calling attention to some of the clauses in the letter, that their intent and purpose may be readily understood.

The second clause, as to the way in which the gross earnings of a sub-licensee company is which a Bell operating company is interested shall be dealt with, applies only to a few cases throughout the country in which an operating company has acquired an interest in a sub-licensee com-[fol. 3954] pany. It is not impossible that other such cases may from time to time arise, and a rule should be established for dealing with them.

The methods of return and payment under this plan are assimilated as far as may be with those now in force.

The memorandum appended to the letter is for the sole purpose of securing uniformity of accounts and of methods of making up the gross earnings. The underlying principle on which the memorandum is based is, that the actual earnings of all telephones shall form part of the gross earnings, but that a telephone which is in fact free shall not be treated as if it contributed anything to the gross earnings.

It is only necessary to call attention to one provision of the memorandum, which is in the nature of a compromise.

It is easy to deal with the subjects-matter of clauses (a), (b), (d), (e), (f), (g), (h) and (i), for it is clear that the uses referred to in (a) and (b) involve the actual earnings, while those referred to in (d) to (i), inclusive, do not involve actual earnings of such a character as to be counted into the gross earnings.

The matter referred to in (c), however, are incapable of accurate analysis. In some such cases telephones are furnished to municipal or other public corporations for an actual value received, and in other cases there is no direct actual value received, although the importance and necessity of giving the corporation telephones for which no cash payment is made may be just as great as in the former case. In some cases the corporation has the right by law to exact free telephones as a condition of the grant of a franchise, in which case the telephone is leased for the actual value received; while in other cases the corporation has no such right, and therefore the furnishing of a telephone free or at a discount is a voluntary act on the part of the operating company, for which technically it cannot be said to receive [fol. 3955] real value. It seems clear, therefore, that it is better to adopt an arbitrary rule covering all cases in which telephones are supplied to municipal or other public corporations without payment or at a discount, and the plan adopted, as stated in the memorandum, is that in all such cases, whatever may be the circumstances or conditions, such telephones shall be counted as contributing to the gross earnings of the operating company at the rate of nine dollars a year unless a larger sum is actually received in cash.

This compromise meets with the approval of the operating companies to whom it has been submitted. The matter is of small moment, and it is dealt with only that there may be a uniform basis upon which the returns and payments shall be made by all companies.

It is believed that the advantages of the new plan over and above the reduction involved, will be apparent. It is fair and simple and will result in the elimination of a great amount of bookkeeping that is now necessary in order to determine the telephone rentals and rebates.

I will add that it is our expectation to relieve the operating companies from the obligations of keeping a record of each telephone instrument by its serial number as is required at present. This, however, will form the subject-matter of a subsequent communication.

For convenience, I enclose also a form of vote that would be a proper form by which to indicate your assent to the plan set out in the letter.

Very truly yours,

(Sd.) F. P. Fish, President.

Copy.

[fol. 3956] Copy

The American Bell Telephone Company

November 21, 1902.

The Southwestern Telegraph and Telephone Company, Dallas, Texas:

The American Bell Telephone Company hereby offers, until further notice, to substitute for the rental upon telephone instruments (magneto telephones and battery transmitters) payable by you under its license contracts held by you and circulars in modification thereof, four and one-half per cent (4½%) of the total gross earnings of your company, and of any sub-companies through which you may operate, from exchange, toll and private line business and from all other business done in your territory in the operation of which telephones are now or may hereafter be used, including your receipts from sub-licensees.

[fol. 3957] Said percentage will cover all instruments in use by you or under your authority in your territory, including instruments used on switchboards or for other operating purposes and those for which no consideration is received by you, and also will cover those in stock, which last are not to exceed three per cent (3%) of the total number charged to you. It is understood that you will use your best endeavors to limit the number of instruments to the needs of the service.

[fol. 3958] Copy

American Telephone and Telegraph Company

December 29, 1902.

The Southwestern Telegraph and Telephone Company, Dallas, Texas:

Referring to the letter of this company dated November 21, 1902, offering until further notice to substitute for the rental upon telephone instruments (magneto telephones and battery transmitters) payable by your company under its license contracts and circulars in modification thereof, four and one-half (4½%) per cent of the total gross earnings of your company computed as therein provided, and to the clause in said letter "This offer when accepted will not become binding until this company shall declare the plan effective and upon such declaration shall take effect as of January 1, 1902."

You are advised that said plan is hereby declared effective as of and from January one, nineteen hundred and two.

Our Treasurer will send to you at early date a request for the necessary information to enable him to determine the amount to be credited to your company for the year 1902 under the above offer.

[fol. 3959] Consent by Licensees given to American Bell Telephone Company to have Western Electric Company Sell Telephones and Transmitters to Independent Telephone Companies (Rec., Vol. II, 930)

Copy

Whereas it has been found desirable that The American Bell Telephone Company should have the power to authorize the Western Electric Company to sell telephones and Transmitters in the open market to all buyers, and

Whereas the exclusive right to use telephones for certain purposes granted to this Company by said The American Bell Telephone Company in its license contracts may be construed to prevent such sale.

Resolved: that the President be authorized to notify The American Bell Telephone Company that this Company agrees that said license contracts shall be so construed as not to prevent The American Bell Telephone Company from authorizing such sale.

Copy

The American Bell Telephone Company

Boston, October 3, 1907.

The Southwestern Telegraph and Telephone Company, Dallas, Texas.

Gentlemen: Referring to the vote of your Executive Committee passed September 17, 1907, touching the sale of telephones and transmitters in the open market to all buyers, I am authorized to accept for The American Bell Telephone Company the construction of a license contract [fol. 3960] expressed in said vote and to inform you that this Company will act in accordance therewith.

Yours very truly,

(Sd.) Theo. N. Vail, President.

Copy

American Telephone and Telegraph Company

October 9th, 1920.

The Southwestern Telegraph and Telephone Company, Dallas, Texas.

GENTLEMEN: Your system of lines and exchanges has heretofore been operated solely with instruments furnished by this Company. Even in the case of a sublicense, sublicensee has been required to use such instruments upon all lines connecting with your system. As the Western Electric Company is about to sell telephone instruments and appliances, it seems to us that this is an appropriate time to revise and extend somewhat rules which have heretofore been followed with regard to the telephone instruments to be used upon connecting lines. We suggest, therefore, that hereafter in making sublicenses and contracts for the interchange of business you do not limit yourself solely to those who use telephones furnished by us or sold by the Western Electric Company but that, in appropriate cases, you make such contracts with companies and individuals even when they use other telephones, provided first class instruments are used and the lines are maintained and operated at such a standard of efficiency as not to impair the quality of service furnished over the joint lines.

This connection with such companies and individuals should be limited to farmers' lines, so-called, or lines of a similar character, to lines operated by railroad, and to all exchanges located wholly within your territory and not con-[fol. 3961] nected with lines and exchanges in the territory of any other of our licensees.

It is important in making such contracts that great care be taken, in order that no system may be built up that will impair the value to the public of your own system or interfere with the system established by your neighbors.

Yours very truly,

(Sd.) Theo. N. Vail, President.

[fol. 3962] Opinion of General Counsel to American Company Interpreting the Language of the 4½% Modification of 1902 (Rec., Vol. II, 934)

Copy

Shreeve and Vacuum Tube Repeaters

The American Bell Telephone Company, 125 Milk Street

P. O. Drawer 2

Boston, March 28, 1916.

Southwestern Telegraph & Telephone Co. (N. Y.), St. Louis, Missouri, Mr. H. J. Pettengill, President.

Dear Sir: I enclose a copy of two resolutions adopted by the Executive Committee of the American Telephone and Telegraph Company on March 15, 1916, relative to furnishing to the associated companies Shreeve and vacuum [fol. 3963] tube repeaters. A copy of our General Counsel's opinion upon this matter is also enclosed, as perhaps of interest.

If your company's construction of the License contract as amended, agrees with that set forth in these resolutions, will you please ask your Board of Directors or Executive Committee to pass a resolution assenting to this construction?

At your convenience please advise me of your company's action.

Yours truly,

(Sd.) R. W. Devonshire, General Manager.

Resolved: That the officers of this Company be and they are hereby directed to advise each of the associated companies that the license contracts, as amended, existing between this Company and each of its associated companies do not, as construed by this Company, require this Company to furnish to the associated companies what are known as Shreeve and vacuum tube repeaters without a specific charge therefore in addition to the Four and One-half per cent (4½%) payments under said contracts.

Resolved further: That the officers of this Company be permitted to furnish said repeaters without specific charge therefor in addition to said four and one-half per cent (4½%) payment, to such of the associated companies as accept this construction of the said license contracts, upon the definite agreement by said companies that this Company shall at any time have the right to discontinue said practice and to make reasonable charges, in addition to said four and one-half per cent (4½%) payment, for all such repeaters thereafter furnished.

[fol. 3964] Copy

Memorandum for U. N. Bethell, Esq., Senior Vice-President

New York, February 17, 1916 (M. R.)

The Shreeve and Vacuum tube repeaters are devices for extending the radius for communication by telephone. When used in connection with telephonic communication, each of these decices accomplishes this purpose by reproducing in the relatively strong electric current passing through a second circuit the electrical undulations which characterize a much diminished current passing through the preceding circuit, the preceding circuit being connected with the second circuit through the repeater. The variations to be effected in the current in the second circuit are in each instance identical, this being accomplished in the case of the Shreeve repeater through mechanical means and in the case of the vacuum tube repeater through electrical means. So far as the question under consideration is concerned, it is unnecessary to make any distinction between the two classes of repeaters.

The question which is presented to me is whether these repeaters are telephones which the terms of the license contracts require this company to furnish to its associated companies as a part of the consideration for which the four and one-half per cent (4½%) payment is made. In my opinion, this question should be answered in the negative.

I think it clear that each of these repeaters is a telephone in the sense that if the Bell patents had not expired, it could not legally be manufactured and sold except by license under them. This, however, is not the question.

The license payment did not pay for everything which the licensor was bound to furnish under the contracts. It paid the rental for the telephones which were leased but [fol. 3965] did not pay for "the inventions and call bells, switches, switchboards and other apparatus needed for such telephones lines which it (the licensor) can so license."

Giving due weight to all of the provisions of these original contracts, it is my conclusion that by the telephones to be furnished under them were meant the instruments which were to be furnished to the subscribers for their use and for which the licensees were to charge subscribers such rentals and royalty as might be fixed from time to time by the licensor.

If there was any doubt under the original contracts, I think it is removed by the modification of these contracts by which four and one-half per cent (4½%) of the gross earnings was fixed as the measure of the payments under them. This modification was made by letter, sent to each of the licensee companies under date of November 21, 1902, and accepted by each of these companies. This letter contains the following language:

"The American Bell Telephone Company hereby offers, until further notice to substitute for the rental upon telephone instruments (magneto telephones and battery transmitters) payable by you under its license contracts held by you and circulars in modification thereof, four and one-half per cent (4½%) of the total gross earnings of your company."

What has been underscored definitely describes the telephone instruments which the associated companies are entitled to have furnished in consideration of this payment. They are magneto telephones and battery transmitters. This language had at the date of said letter, and has now, a well defined meaning which does not include repeaters. Moreover, no repeater available for commercial use had been developed at the time these letters were written.

[fol. 3966] The number of repeaters now in use is very small, and no charge is being made for them. I think it desirable that this practice be continued so long as there is no extension in their use, but it should be with the definite understanding that the Company is not under obligation to continue it, and that it is without prejudice to the right of the Company to require payment for the repeaters at any time that it may wish to do so.

Yours very truly,

(Sd.) N. T. Guernsey, General Counsel.

Copy

Southwestern Bell Telephone System

April 25, 1916.

The American Bell Telephone Company, Mr. R. W. Devonshire, General Manager, 125 Milk Street, Boston, Mass.

Dear Sir: I enclose herewith copy of a resolution passed by the Executive Committee of The Southwestern Telegraph and Telephone Company (New York) at a meeting held on April 25, 1916, relative to Shreeve and vacuum tube repeaters.

Yours truly, The Southwestern Telegraph and Telephone Company (N. Y.). (Sd.) J. P. Crowley, Secretary.

(Here follow side folios 3967 and 3968)

DEFENDANT'S EXHIBIT 193

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
(Excluding Long Lines Department)
APPORTIONMENT OF DEPARTMENTAL EXPENSES BETWEEN (a) THOSE RELATED TO THE FURNISHING OF
LICENSE CONTRACT SERVICES AND (b) THOSE COMPRISING OTHER EXPENSES OF THE COMPANY - YEARS 1923 TO

BENEFIT AND MEDICAL DEPARTMENT

Year	Total Departmental Expense (1)	Specifically Allocated		Amt. Not Specifically Allocated (Apportioned on Basis of				
		License Contract (2)	Other (3)	Total (4)	Licence Contract		Other	
					Amount (5)	% of (4) (6)	Amount (7)	% of (8
1923	$300,907.16							
(a) General Staff	43,587.00			$ 43,587	$ 34,870	80%	$ 8,717	2
(b) Benefit	24,424.00			24,424				
(c) Medical	60,002.00		4,200	55,802				
(d) Benefit Payments, etc.	172,894.00			172,894				
1924	245,875.70							
(a) General Staff	57,587.00			57,587	46,070	80	11,517	20
(b) Benefit	24,726.00			24,726				
(c) Medical	30,938.00			30,938				
(d) Benefit Payments, etc.	132,625.00			132,625				
1925	285,773.71							
(a) General Staff	102,089.00			102,089	81,671	80	20,418	20
(b) Benefit	15,040.00			15,040				
(c) Medical	37,711.00			37,711				
(d) Benefit Payments, etc.	130,934.00			130,934				
1926	330,517.34							
(a) General Staff	150,392.00			150,392	120,314	80	30,078	20
(b) Benefit	17,329.00			17,329				
(c) Medical	34,664.00			34,664				
(d) Benefit Payments, etc.	128,132.00			128,132				
1927	582,186.90							
(a) General Staff	166,368.00			166,368	133,094	80	33,274	20
(b) Benefit	20,579.00			20,579				
(c) Medical	38,857.00			38,857				
(d) Benefit Payments, Accruals, etc.	356,383.00			356,383				
1928	564,815.49							
(a) General Staff	180,559.00			180,559	144,447	80	36,112	20
(b) Benefit	20,913.00			20,913				
(c) Medical	38,209.00			38,209				
(d) Benefit Payments, Accruals, etc.	325,135.00			325,135				
1929	650,873.04							

DEFENDANT'S EXHIBIT 193

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
(Excluding Long Lines Department)
TIONMENT OF DEPARTMENTAL EXPENSES BETWEEN (a) THOSE RELATED TO THE FURNISHING OF
T SERVICES AND (b) THOSE COMPRISING OTHER EXPENSES OF THE COMPANY - YEARS 1923 TO 1930

Specifically Allocated		Amt. Not Specifically Allocated (Apportioned on Basis of Study)					Total			
License Contract (2)	Other (3)		Licence Contract		Other		License Contract		Other	
		Total (4)	Amount (5)	% of (4) (6)	Amount (7)	% of (4) (8)	Amount (9)	% of (1) (10)	Amount (11)	% of (1) (12)
		$ 43,587	$ 34,870	80%	$ 8,717	20				
		24,424								
	4,200	55,802								
		172,394								
		57,587	46,070	80	11,517	20				
		24,726								
		30,938								
		132,625								
		102,089	81,671	80	20,418	20				
		15,040								
		37,711								
		130,984								
		150,392	120,314	80	30,078	20				
		17,329								
		34,664								
		128,132								
		166,368	133,094	80	33,274	20				
		20,579								
		38,857								
		356,383								
		180,559	144,447	80	36,112	20				
		20,013								
		38,209								
		325,135								

(d) **Benefit** Payments, Accruals, etc.	325,135.00			325,135				
1929	650,873.04							
(a) General Staff	198,536.00			198,535	158,829	80	39,707	20
(b) Benefit	20,405.00			20,405				
(c) Medical	37,722.00			37,722				
(d) **Benefit** Payments, Accruals, etc.	394,210.00			394,210				
1930	708,605.38							
(a) General Staff	229,200.00			229,200	183,300	80	[illegible]	20
(b) Benefit	21,290.00			21,200				
(c) Medical	37,547.00			27,547				
(d) Benefit Payments, Accruals, etc.	420,568.00			420,568				

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
(Excluding Long Lines Department)
APPORTIONMENT OF DEPARTMENTAL EXPENSES BETWEEN (a) THOSE RELATED TO THE FURNISHING OF LICENSE CONTRACT SERVICES AND (b) THOSE COMPRISING OTHER EXPENSES OF THE COMPANY - YEARS 1923 TO 1930

PERSONNEL RELATIONS DEPARTMENT

Year	Total Departmental Expense (1)	Specifically Allocated: License Contract (2)	Specifically Allocated: Other (3)	Amt. Not Specifically Allocated (Apportioned on Basis of Study): Total (4)	License Contract: Amount (5)	License Contract: % of (4) (6)	Other: Amount (7)	Other: % of (4) (8)	Total: License Contract: Amount (9)	License Contract: % of (1) (10)	Other: Amount (11)	Other: % of (1) (12)
1923	301,834.34											
Administration				56,996	51,296	90%	5,700	10				
Personnel				131,946	118,751	90	13,195	10				
Public Relations				50,458	50,458	100	-	-				
Special Training				[illegible]	55,948	80	6,487	20				
TOTAL				301,835	276,453	91	25,382	9				
1924	269,589.29											
Administration				62,197	55,977	90	6,220	10				
Personnel				133,270	119,943	90	13,327	10				
Public Relations				14,223	14,223	100	-	-				
Special Training				59,899	47,919	80	11,980	20				
TOTAL				269,589	238,062	87	31,527	13				
1925	317,749.00											
Administration				62,263	56,037	90	6,226	10				
Personnel				156,435	140,791	90	15,644	10				
Public Relations				14,719	14,719	100	-	-				
Special Training				84,332	67,466	80	16,866	20				
TOTAL				317,749	279,013	88	38,736	12				
1926	377,443.34											
Administration				62,775	56,497	90	6,278	10				
Personnel				206,590	185,931	90	20,659	10				
Public Relations				15,391	15,391	100	-	-				
Special Training				92,687	74,150	80	18,537	20				
TOTAL				377,443	331,969	88	45,474	12				
1927	356,[illegible]											
Administration				[illegible]	[illegible]	[illegible]	[illegible]	10				
Personnel				[illegible]	[illegible]	[illegible]	[illegible]	10				
Public Relations				15,431	[illegible]	100	-	-				
Special Training				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				
TOTAL				[illegible]	[illegible]	[illegible]	[illegible]	12				
1928	359,603.35											
Administration				[illegible]	[illegible]	90	[illegible]	10				
Personnel				[illegible]	[illegible]	90	[illegible]	10				
Public Relations				[illegible]	[illegible]	100	-	-				
Special Training				77,560	62,048	80	15,512	20				
TOTAL				359,603	[illegible]	88	[illegible]	12				
1929	405,[illegible].13											
Administration				67,918	61,126	90	6,792	10				
Personnel				231,133	208,020	90	23,113	10				
Public Relations				17,363	17,363	100	-	-				
Special Training				89,109	71,287	80	17,822	20				
TOTAL				405,[illegible]	357,[illegible]	88	47,[illegible]	12				
1930	391,668.22											
Administration				[illegible]	[illegible]	90	[illegible]	10				
Personnel				[illegible]	180,205	90	[illegible]	10				
Public Relations				[illegible]	[illegible]	100	-	-				
Special Training				[illegible]	[illegible]	80	18,307	[illegible]				
TOTAL				391,668	[illegible]	88	46,596	12				

1930					
Administration	[illegible]	[illegible]			
Personnel	200,227	180,205	90	20,022	10
Public Relations	17,[illegible]	17,[illegible]	100	-	-
Special Training	[illegible]	[illegible]	80	18,307	20
TOTAL	391,668	345,072	88	46,596	12
1931					
Administration	68,884	61,996	90	6,888	10
Personnel	145,474	130,926	90	14,548	10
Public Relations	16,462	16,462	100	-	-
Special Training	77,112	61,690	80	15,422	20
TOTAL	307,932	271,074	88	36,858	12

[fol. 3969] DEPOSITION EXHIBIT #194

2/11/32.

Distribution of Provisional Estimate—1932

Name	Complete Sets	Statements					
		A	A-1	B	C	D	E
Mr. Gifford	x						
Mr. Gherardi	x						
Mr. Waterson	x						
Mr. Cooper*	x						
Mr. Heiss	x						
Mr. Saxton	x						
Mr. Hamilton	x						
Mr. Wlodeck	x						
Mr. Andrew	x						
Mr. Green	-	1	1	1	1	1	-
Mr. Wilkinson	-	5	5	5	4	-	7

*Returned for further use.

Index of Statements

A. Summary of Provisional Estimate and Forecast (Compared with Results of 1930-31).

A-1. Monthly Distribution of Provisional Estimate for First Four Months Year 1932.

B. Supplemental Data on Stations, Plant, Revenues and Expenses.

C. Estimated Plant and General Equipment Expenditures, 1932 to 1934 (Including Construction Work in Progress).

D. Estimate of Cash Requirements Year 19—.

E. Estimated Quantities of New Material Required to be delivered in 1932-33-34.

.00			325,135								
.04 .00 .00 .00 .00			198,536 20,405 37,722 394,210	158,829	80	39,707	20				
.38 00 00 00 00			229,200 21,200 27,547 420,568	183,300	80	[illegible]	20				

[fol. 3970]

Deposition Exhibit #195

Statement of Number of Employees of Bell System, Being A. T. & T. and Associated Companies and Western Electric, Bell Telephone Laboratories and 195 Broadway Corporation

American Telephone and Telegraph Company

Number of Employees

	Associated Companies	Long Lines Department	General Department	(a) Western Electric Co., Inc.	Bell Tel. Laboratories Inc.	(b) 195 Broadway Corp.
December 31, 1923..	259,760	10,382	1,837	63,808	.....	440
December 31, 1924..	268,054	9,605	1,992	49,157	.....	447
December 31, 1925..	281,104	9,894	2,097	39,460	3,468	443
December 31, 1926..	285,749	12,631	2,248	45,110	3,640	470
December 31, 1927..	293,393	13,228	2,290	41,138	3,881	476
December 31, 1928..	314,307	17,651	2,377	57,493	4,444	482
December 31, 1929..	338,875	22,593	2,577	37,254	5,628	496
December 31, 1930..	301,891	19,775	2,677	66,274	5,864	512
December 31, 1931..	270,796	15,431	2,539	(c)45,919	(c)5,472	487

(a) Includes Electrical Research Products Incorporated.
(b) Includes 205 Broadway Corporation prior to 1931.
(c) November 30, 1931.

[fol. 3971]

Deposition Exhibit #196

Statement Furnished by Mr. Folk Entitled "A. T. & T. Co., Patent Purchases ($1,000 or More) Other Than from Western Electric Company, 1909 to 1930, Inclusive"

Year	Purchased from	Amount
1909	None	
1910	None	
1911	A. C. Crehore	$5,000.00
	R. S. Donaldson	2,000.00
	Total	$7,000.00
1912	None	
1913	John Stone Stone	$2,500.00
	W. T. P. Hollingsworth	40,639.42
	Albert L. Register	11,000.00
	Peter Cooper Hewitt	100,000.00
	Total	$154,139.42
1914	John Abbott, Trustee	$2,500.00
	James B. Speed	2,612.60
	Total	$5,112.60
1915	Sydney Hand Browne	$5,000.00
1916	F. R. Parker (a)	$7,000.00
	George P. Mundy	2,000.00
	John A. McCoy	2,500.00
	Herzog Telephone Systems Co.	29,000.00
	Elwood Grissinger	500,000.00
	Total	$540,500.00

1917	A. L. Register		$2,000.00
	Oliver H. Tracy		15,000.00
	Total		$17,000.00
1918	Fritz Lowenstein		$150,000.00
	Oliver H. Tracy		10,000.00
	C. D. Ehret		5,000.00
	Total		$165,000.00
1919	Atlantic Communication Co.		$100,000.00
	Albert V. T. Day	(b)	18,000.00
	Vreeland Apparatus Co.	(c)	20,000.00
	Total		$138,000.00
1920	Albert V. T. Day	(b)	$18,000.00
	C. D. Ehret		5,000.00
	Vreeland Apparatus Co.	(c)	15,000.00
	Universal Machine Company		75,000.00
	John Stone Stone		7,500.00
	Total		$120,500.00

[fol. 3972]

1921	Albert V. T. Day	(b)	$18,000.00
	Bankers Trust Company of New York (Lucien Levy application)		20,000.00
	Vreeland Apparatus Company	(c)	15,000.00
	Loren S. Wells		1,000.00
	Total		$54,000.00
1922	Albert V. T. Day	(b)	$18,000.00
	J. B. Russell		50,000.00
	Major General George O. Squier		75,000.00
	Westinghouse Electric and Manufacturing Company	(d)	45,000.00
	Vreeland Apparatus Company	(c)	15,000.00
	Total		$203,000.00
1923.	Albert V. T. Day	(b)	$18,000.00
	Chisholm Development Company		7,500.00
	Daniel M. Therrell		5,000.00
	Radio Corporation of America		100,000.00
	Estate of Charles D. Lanning		5,000.00
	Vreeland Apparatus Company	(c)	15,000.00
	Westinghouse Electric and Manufacturing Company	(d)	28,333.33
	Total		$178,833.33
1924	Albert V. T. Day	(d)	$18,000.00
	Hugo Lieber		15,000.00
	David G. McCaa		10,000.00
	Marius Latour		100,000.00
	Vreeland Apparatus Company	(c)	15,000.00
	Clarence A. Anderson		12,000.00
	Westinghouse Electric and Manufacturing Company	(d)	8,333.33
	Johannes H. Cuntz		5,000.00
	Total		$183,333.33

1925	Albert V. T. Day	(b)	$18,000.00
	J. H. Cuntz		45,000.00
	Mihran M. Dolmage		30,000.00
	Vreeland Apparatus Company	(c)	15,000.00
	Westinghouse Electric and Manufacturing Company	(d)	8,333.33
	Allgemeine Elektricitats—Gesellschaft		1,193.75
	Total		$117,527.08
1926	Albert V. T. Day	(b)	$18,000.00
	Francis W. Dunmore		1,000.00
	Westinghouse Electric and Manufacturing Company	(d)	8,333.34
	Total		$27,333.34

[fol. 3973]

1927	Albert V. T. Day	(b)	$18,000.00
	Westinghouse Electric and Manufacturing Company	(d)	16,666.67
	G. W. Stewart		25,000.00
	Total		$59,666.67
1928	Albert V. T. Day	(b)	$18,000.00
	G. W. Stewart		25,000.00
	Westinghouse Electric and Manufacturing Company	(d)	13,333.34
	William M. Bruce, Jr.		1,000.00
	General Electric Company (Fessenden)		100,000.00
	Hazeltine Corporation		45,000.00
	Total		$202,333.34
1929	Radio Corporation of America		$10,000.00
	Westinghouse Electric and Manufacturing Company	(d)	10,833.34
	C. Lorenz Aktiengesellschaft		4,000.00
	Total		$24,833.34
1930	H. M. Friendly	(a)	$150,000.00
	Hazeltine Corporation		45,000.00
	Frank G. Beetem		6,000.00
	John Poole		1,000.00
	Radio Corporation of America		25,000.00
	Total		$227,000.00

(a) This Company's proportion of total payment of $34,290 made through Western Electric Company.

(b) Installment on total payment of $180,000.00.

(c) Installment on total payment of $110,000.00.

(d) Payment under Armstrong—Pupin patents.

(e) This Company's proportion of total payment of $700,000 to H. M. Friendly made through Western Electric Company.

Note.—Payments listed above are shown gross. No allowance is made for any reimbursements from Western Electric Company is respect of certain items.

1925 Total shown does not reflect *receipt* of $25,000 from Westinghouse Electric and Manufacturing Company for Russell Option under Armstrong patent (Credited patent expense).*

1928 Total shown does not include payment of $27,274 to Bell Telephone Company of Pa. (System Company) for Cunningham Solder-Wiping Machine Assignment.*

* Red.

[fol. 3974]

DEPOSITION EXHIBIT #197

Statement Referred to by Mr. Folk, Entitled "A. T. & T. Company, Patents Purchased from and Licenses Sold to Western Electric Company, Inc., by A. T. & T. Co. and Accounting Disposition, Years 1909 to 1930"

	Patents Purchased Annually Charged To		Licenses Sold Annually Credited To		
Year	General Expense	Total	General Expense	Other Income (Acct. 316)	Total
1909	$	$	$	$	$
1910					
1911	800	800	2,002		2,002
1912					
1913	(a)65,000	(a)65,000			
1914	(a)105,955	(a)105,955	9,585		9,585
1915	475	475			
1916		(b)			
1917	(a)279,630	(a)279,630	(c)33,448		(c)33,448
1918					
1919	32,925	32,925	5,300		5,300
1920	16,675	16,675	5,150		5,150
1921	12,416	12,416	13,325		13,325
1922	23,510	23,510	17,440		17,440
1923	1,163	1,163			
1924	(d)43,826	(d)43,826	7,675		7,675
1925	48,503	48,503	4,578	5,239	9,817
1926	51,804	51,804			
1927	94,326	94,326		33,489	(e)33,489
1928	73,913	73,913		16,250	(e)16,250
1929	85,568	85,568		11,775	(e)(f)11,775
1930	(g)71,026	(g)71,026		20,000	(e)20,000
	$1,007,515	$1,007,515	$98,503	$86,753	$185,256
1931			55,424		(e)55,424
			$153,927	$86,753	$240,680

For Notes, See Sheet 2.

[fol. 3975]

(a) Includes payments for De Forest patents:

1913	$ 65,000
1914	100,000
1917	250,000

(b) Does not include $7,000 paid through Western Electric Company to F. R. Parker.

(c) Includes $29,000 received from assignment to W. E. Co. of patents purchased from F. B. Herzog in 1916.

(d) Comprises 2 payments—

February, 1924	$43,501
October, 1924	325
	$43,826

(e) W. E. Co. accounts reflect these items in prior year by a reserve set up for licenses to be purchased from American Tel. and Tel. Co. in following year.

(f) Does not include $33,333.33 received from Western Electric Company representing that Company's proportion of total payment in 1928 of $100,000 made by American Telephone and Telegraph Company to General Electric Company on account of Fessenden patents.

(g) Does not include $150,000 paid through Western Electric Company to H. M. Friendly.

(Here follow side folios 3976–3979)

DEFENDANT'S EXHIBIT 198

Western Electric News
January 1929

The Bell System and Ourselves

Edgar S. Bloom, Our President, Traces the Development of the Telephone Art and Indicates the Growth of the Future

I HAVE been asked by the editors to write something about the place of the Western Electric Company in the Bell System. It has occurred to me that you might be interested in a survey of the beginnings and the up-building of the Bell System, which I gave to our guests from Baltimore and Chicago at a dinner in Chicago on November 16, 1928, following their visit to the Hawthorne Works. After some introductory remarks I spoke as follows:

I would like to carry you back fifty years and give you a brief picture of the plan followed in the development of telephone service in America, and the relation which the Western Electric Company bears to that development. There are two names which will always stand out in American telephone history, Alexander Graham Bell, the inventor of the telephone, and Theodore N. Vail, the organizer of the business, whose imagination pictured the future possibilities of the scientific toy of 1876 and visualized the business organization which would most effectively promote the widest and most useful development of telephone service in America.

Those of us who have been fortunate enough to have been associated with Mr. Vail will never cease to marvel at his vision and foresight; we love to pay tribute to him, to his imagination and to his wonderful ability which converted that imagination into a practical reality, serving today the business and social world as he, fifty years ago, conceived that it would.

Mr. Vail as general manager, became the business head of the Bell Telephone Company in June, 1878. Previous to that time he had been in the Railway Mail Service and resigned as General Superintendent of that service. Uncle Joe Cannon, who was so universally beloved by all Illinoisians, then a young member of Congress, who appreciated Mr. Vail's ability, was confounded by the news.

"Vail resigned his place," he exclaimed when they told him. "What for?" "Why he is going into that thing invented by Bell, the telephone that talks over a wire. He has invested some money in it and is going to make it his business." "Well," said Cannon, "that is too bad. I always liked Vail. Hubbard tried to sell me some of that stock. I am sorry he got hold of a nice fellow like Vail."

A Mr. Powell, who was then First Assistant Postmaster General, wrote Mr. Vail with much warmth regarding his resigning, as he expressed it—"To become superintendent or president of a company known as the Telephone Company," saying among other things:

"For T. N. V. to accept the superintendency of a Yankee notion in preference to the position he now holds is certainly laughable. I can scarce believe that a man of your sound judgment, one who holds an honorable and far more responsible position than any man under the postmaster general, with honor and respect attached to the same, should throw it up for a damned old Yankee notion (a piece of wire with two Texas steer horns attached to the ends, with an arrangement to make the concern blate like a calf) called a telephone. I feel confident that if you do make the change that in less than one year you will agree with me in saying that you made a mistake."

Referring to those early days of 50 years ago, Mr. Vail once said:—"At that time, few believed in the future of the telephone or its prospective value, and we had to interest people who, as a rule, had little money, but lots of imagination, enterprise and energy. When we started in, it was practically an unknown thing—an unknown field absolutely undeveloped. There was nothing in the world upon which to base an opinion. It was all imagination when the telephone first started."

At the start, Dr. Bell's fundamental patents on the telephone instruments covered practically the entire art of telephony. During the intervening years, every detail of the transmitter and receiver has been the subject of extended investigation and experimentation by the Research and Development Organizations of the Bell System, which has resulted in a large number of improvements. While many of these improvements were not patentable, there are at the present time 167 patents in effect covering various improvements, 60 patents are pending and 186 patents have expired, making a grand total of 413 patents to date covering various features of the transmitter and receiver. Since the invention of the telephone, there have already been in use 96 different types of transmitters and more than 64 different types of receivers, not including the present standard types now in use. These facts afford some indication of the vast amount of research and experimentation which has been involved in the development of our present day types of telephone instruments.

The development of the transmitter and receiver is merely an example of what has been going on during the past fifty years in the development of improved methods, materials and apparatus. It is this careful, patient, exhaustive work of research, investigation, experimentation, and development, undertaken in a small way at the inception of the business by a few engineers and scientists, which small group rapidly grew into a great organization, employing the best talent available

WHEN UNCLE JOE CANNON, at the time a young member of Congress, heard that Theodore N Vail had resigned as General Superintendent of Railway Mail Service, he exclaimed "What for?"

"Why, he is going into that thing invented by Bell, the telephone that talks over a wire. He has invested some money in it and is going to make it his business," he was told.

"Well," said Cannon, "that is too bad. I always liked Vail. Hubbard tried to sell me some of that stock. I am sorry he got hold of a nice fellow like Vail."

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and the most advanced methods, constantly pioneering and exploring; investigating things of great and large importance as well as those of minor and inconsiderable importance; which has resulted in the development of telephone service in America, to the high point of efficiency in which we find it today.

WHILE Dr. Bell's patents were of fundamental importance, the wonderful development of the telephone system in America is, in a large degree, due to Mr. Vail's vision as to the possibilities of the business as far back as 1878, and his clear conception of the plan which should be followed in the commercial development of the telephone system in America; or, as Mr. Vail expressed it over twenty years ago,

"The Bell System was founded on the broad lines of one system, one policy, universal service, on the idea that no aggregation of isolated, independent systems not under common control, however well built or equipped, could give the public the service that the interdependent, intercommunicating, universal system could give. This is no recent or new idea or theory; it is co-existent with the business. In fact the theory was evolved and developed before the business, and the business has been developed on that theory."

The development of this theory has resulted in:

1st—The formation of local companies throughout the United States in order to secure local interest and supervision, and to be certain that the use of the telephone would be developed to the greatest possible extent; these companies with their intimate knowledge of local conditions, considering and giving attention to the various needs of their respective communities, thus insure to those communities service and facilities to meet their particular conditions. In the early years there were many such companies, which later were merged and combined into larger companies, so that today there are seventeen so-called Bell System Associate or Operating Companies in the United States.

2nd—Construction and operation by the parent company of a system of long distance lines connecting the various local companies into a universal system, furnishing a comprehensive national service. In the early days there was, of course, no long distance service, but Mr. Vail was always a strong believer in the ultimate possibilities of such service. As early as 1879 he proposed a line between Boston and Providence, a distance of 41 miles. It was opposed by his associates as impracticable and was finally built by others. It proved to be a failure and as stated at the time, "They got nothing but noise out of the line." Later, through urging on the part of Mr. Vail, the line was taken over by the Bell Company, although at the time it was referred to as "Vail's folly." It had been built as a grounded circuit line, which seemed proper at the time. However, rapid strides were being made in the development of the telephone art, and it was suggested that the line be converted to a metallic circuit. This was done; the line worked successfully, and marked the beginning of long distance telephone service in America.

3rd—Formation of a general organization of the parent company over and above the local companies in order to secure uniformity in methods and apparatus and insure the development of a comprehensive system for giving a universal service. This general organization, with its broad view point would attend to the fundamental principles of the design of apparatus, application of new inventions, and all other questions of a fundamental nature, that could best be considered by one organization for the benefit of all.

> MORE than twenty years ago Theodore N. Vail said: "The Bell System was founded on the broad lines of one system, one policy, universal service, on the idea that no aggregation of isolated, independent systems not under common control, however well built or equipped, could give the public the service that the interdependent, intercommunicating, universal system could give. This is no recent or new idea or theory; it is co-existent with the business. In fact the theory was evolved and developed before the business, and the business has been developed on that theory."

IN the early days of the business, a number of widely scattered, manufacturing concerns were licensed under the Bell patents. It was soon realized that it would be impossible to secure that close co-operation between those scattered manufacturers, and the parent company engineers, so essential to the development of standardized apparatus adapted to the needs of a national telephone system. Furthermore, there was danger of outside interests securing control of devices essential to the development of the business along broad lines. In any manufacturing business, much valuable auxiliary apparatus is developed from suggestions that are made in the course of manufacture, and almost at the outset it was clearly apparent that the manufacturing should be controlled through ownership in order that the Bell System might have the unrestricted use of all improvements and devices developed in the course of manufacture, and in order to direct development along standard lines in the interests of the Bell Companies, as distinguished from the selfish commercial interests of the manufacturer.

The predecessor of the Western Electric Company—the Western Electric Manufacturing Company—was organized in 1872, four years before the invention of the telephone, and was engaged exclusively in the manufacture of telegraph apparatus. That company began the manufacture of telephone apparatus in 1878, when the Western Union Telegraph Company went into the telephone business, and soon became the largest manufacturer of telephone apparatus, selling to the licensee companies of the Bell Company, in competition with its licensed manufacturers. By 1881 the Western Electric Manufacturing Company had the largest and best equipped factory for producing the type of apparatus required by the Telephone industry, and had developed certain lines of patented telephone apparatus, notably a multiple switchboard. The American Bell had also developed certain patented lines of apparatus but more in the nature of call bells and it was clearly apparent that the best switchboard business and the best call bell business should be brought together in order that

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they might be developed in complete harmony. Accordingly, the Western Electric Company came into existence in 1882 as a reorganization of the Western Electric Manufacturing Company, and became the manufacturer of apparatus for the Bell System with the American Bell Company as the controlling stockholder.

This manufacturing arrangement made it possible to control the development of apparatus along standard lines through an intimate and harmonious working relationship between the engineers of the American and Western Electric Companies. Without such an arrangement every manufacturer and every telephone manager, if left to himself, would have started many different lines of development which would have resulted in many types and varieties of apparatus serving the same purpose, higher manufacturing costs and a wasteful, complicated situation from the standpoint of extensions, replacements and maintenance, and I hardly need suggest the great savings obtained through standardization, which makes possible the manufacture of a particular device in a large volume, as compared with manufacturing a multiplicity of types in much smaller quantities.

Happily, this has all been avoided. The American Company engineers, through close contact with the Associated Companies and continuous study of their operating problems, obtain the requirements of the business, and when they determine that a new device or improved type of apparatus is desirable the requirements are stated to the engineers of the Bell Telephone Laboratories, who endeavor to solve the problem of meeting those requirements with a practical piece of apparatus, satisfactory in design, workmanship and economy of use. When finally developed to meet these conditions, the American Company engineers recommend it as standard for use by the Telephone Companies of the Bell System.

DURING the year 1928 the Bell System will spend upwards of $125,000,000 for new construction, covering additions and betterments to meet the constantly increasing demands for additional service and for widening the scope and improving the quality of telephone service.

Throughout the Bell System, all new construction is carried on in accordance with a predetermined plan. Comprehensive studies are made, looking ahead twenty to thirty years, to determine the most economical plan for plant extensions to meet the estimated demands for service at the end of the period. This involves a complete detailed survey for each community, a study of the trend of population, the character of its business and residential areas, also, the probable future changes in the character of those areas. Many other facts are gathered, which have a bearing on the growth and character of the community and the probable future demands for telephone service. On the basis of these facts and the conclusions drawn therefrom, a broad, general plan is prepared, covering the most economical type and location of central offices, conduit and cable lines, etc., which will meet the probable demands for service twenty to thirty years hence. These plans, which are known to us as fundamental plans, are restudied and revised, from time to time, to meet changing conditions which have not been foreseen, and all new construction is carried on in accordance therewith.

In August of each year the Operating Telephone Companies begin gathering the facts on which to base their budgets for the following year. By late fall, while the budgets are not complete, preliminary figures are available from which important conclusions may be drawn as to major changes in requirements, by general classes of materials and apparatus, as compared with the current year. These preliminary figures are summarized by the general staff of the American Telephone and Telegraph Company and any substantial changes in requirements are immediately brought to the attention of the Western Electric Company, in order that we may have ample time in which to plan for such readjustment of our manufacturing capacity as may be necessary. Should our studies indicate that any important readjustment will be necessary, the preliminary figures are rechecked in the light of the latest information available, and final action is taken when we are satisfied as to the reliability of our conclusions.

The final budgets of the Operating Companies are completed in December for the following year. We are immediately furnished with summaries on the basis of which our manufacturing program is planned in detail for the coming year, in anticipation of definite orders to be received later. In fact much of our product is scheduled from one to three years ahead, on the basis of preliminary forecasts and estimates, although firm orders are not placed until a long time thereafter. I hardly need suggest that this tentative scheduling ahead is of tremendous assistance to us in planning a smooth, steady manufacturing program; enabling us to reduce to a minimum, peaks and valleys in our output.

Furthermore, through the engineers of the American Telephone and Telegraph Company and the managers of our thirty-two distributing houses, located throughout the United States, who are in constant close touch with the Associated Operating Companies of the Bell System, we are promptly advised in detail of any variation in actual results as compared with budget predictions.

> "WHY the need for the new plant in Baltimore?" asks Mr. Bloom in this article. And he answers his own question as follows: "I am reminded of one of the many stories of the small boy fishing on the Sabbath. This particular boy was fishing on Sunday afternoon and the minister, on his way to Sunday School, stopped and lectured him on the sinfulness of fishing on the Sabbath and, among other things, observed that it would undoubtedly lead to an association with fire and brimstone throughout eternity. The boy made no reply but kept on fishing and finally pulled in a good sized fish. He carefully removed the hook and, holding up the fish, said to the minister: "If that d——d fish had kept his mouth shut he would not have gotten into trouble."
>
> "The American people love to talk even though it costs money to do so and, on the basis of our experience of a great many years, the more they talk the more they want to talk—provided it is made easy to do so and provided a satisfactory talk may be depended upon."

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As a result of this close relationship, we are also fully informed at all times as to the tendencies which make for an increase or decrease in the demands upon us, and are thus enabled to maintain without radical or revolutionary changes, a close adjustment of our manufacturing capacity to the requirements of the Bell System.

WHY the need for the new plant at Baltimore? In answering this question I am reminded of one of the many stories of the small boy fishing on the Sabbath. This particular boy was fishing on Sunday afternoon, and the minister on his way to Sunday School, stopped and lectured him on the sinfulness of fishing on the Sabbath, and among other things, observed that it would undoubtedly lead to an association with fire and brimstone throughout eternity. The boy made no reply, but kept on fishing and finally pulled in a good sized fish. He carefully removed the hook and holding up the fish, said to the minister:—"If that d——d fish had kept his mouth shut he would not have gotten into trouble."

The American People love to talk even though it costs money to do so, and on the basis of our experience of a great many years, the more they talk the more they want to talk; provided, it is made easy to do so; and provided, a satisfactory talk may be depended upon.

The Baltimore plant is required primarily for the manufacture of telephone wire and cable to meet the increasing demands of the American public for long distance telephone service.

Most of you will recall the great sleet storm which swept the Atlantic seaboard at the time of the Taft inaugural, on March 4, 1909, paralyzing the communications systems and leaving Washington cut off from the rest of the world. At that time our long distance telephone service was carried on principally over open wire circuits, on pole lines, which on the main routes carried 60 to 100 wires. While these heavy open wire structures were subject to serious damage and service interruptions from sleet and wind storms, it had not been possible up to that time, in the then state of the art, to carry on telephone conversations through cable for long distances. However, the art of transmission had been developing rapidly and following that storm intensive work was begun by the engineers of the Bell System, covering research and development, and the preparation of plans for the construction of a storm proof system of cables to connect Washington with the principal cities of the Atlantic seaboard, from Baltimore to Boston. This project involving the expenditure of many millions of dollars was rapidly pushed to completion.

Later developments in the transmission art made it possible to carry on telephone conversations through cable for even greater distances, and the extension of cables westward from the Atlantic seaboard was undertaken. By 1925 the long distance telephone cable system had reached Chicago, and now extends west to Davenport, Iowa, southwest to St. Louis, Missouri, and south to Greensboro, North Carolina; and it is planned within the next two years, to extend the system westward to Omaha, Nebraska, and southward to Atlanta, Georgia.

These extensions of the long distance telephone cable system have been accompanied by marked improvements in the quality, dependability and speed of service. The improvement in the speed of service has been particularly marked; at the present time New York to Chicago calls, for example, are completed on the average in about four minutes, whereas, three years ago the average time of completion was about ten minutes. The public has been quick to respond to these improvements by an increased use of the service and substantial reductions in the rates during the past three years have further stimulated the use of the service. For example in 1925 the basic day toll rate between New York and San Francisco was $16.50; it is now $9.00 and we are handling about three times as many messages between New York and the Pacific coast as in 1925. In 1925 the New York to Chicago rate was $4.65, today it is $5.25 and we are handling nearly three times as many New York-Chicago messages as in 1925.

It is this heavy increase in the use of long distance service that is primarily responsible for the new Baltimore plant and the initial factory unit, which we hope to have in operation by the end of 1929, will be devoted principally to the manufacture of telephone cable for long distance use. From time to time, additional manufacturing capacity will be provided at the Point Breeze plant, as required to meet the demands of the Bell System for Western Electric products.

GOVERNMENT INSURANCE PRIVILEGE FOR VETERANS EXTENDED

Under a recent amendment by Congress of the World War Veterans' Act of 1924, the privilege of obtaining United States Government Life Insurance has been extended indefinitely to ex-service men.

This makes it possible for any veteran of the World War, even tho he carried no War Time (renewable-term) insurance while in the service to apply for any of the various forms of policies offered in an amount not to exceed $10,000. The only restriction is that those who converted any part of their War Time (renewable-term) insurance to one of the permanent forms and later surrendered it for its cash value are eligible to apply only for the difference between the amount of insurance so surrendered and the maximum of $10,000.

Application blanks and a folder giving information and rates for the various forms of policies can be obtained from the American Legion Post and our insurance counsellors will be glad to render any assistance necessary in applying for this insurance.

W. A. SCHNEDLER.

[fol. 3980]

Dep. Ex. 200

Article in Western Electric News, Issue of June, 1914, Entitled "The Engineering Department of the Western Electric Co.", by F. B. Jewett

Most of us know that the Engineering Department is an integral part of the Western Electric organization with duties and responsibilities in some way related to those of the other departments and to the other parts of the Bell System. Except, however, for those whose work brings them in more or less intimate contact with the engineers, there seems to be considerable uncertainty as to just how the Engineering Department's activities fit in with the work of the other departments.

The organization chart, even with the help of the defined duties of the Chief Engineer and his department, is not sufficient to entirely clear up the matter unless one is already somewhat acquainted with the details of the department's varied activities. At the same time the expressed duties of the Chief Engineer are a concise statement which defines that part of the Company's business for which the Engineering Department is responsible. These duties are as follows:

1. He has charge of the Engineering Department.

A. It conducts the Company's experimental and development work.

B. It prepares specifications and drawings for all central office telephone equipments.

C. It prepares inspection specifications for and inspects:

(a) Material manufactured by the Company.

(b) Material furnished but not manufactured by the Company.

D. It is responsible for the design of all apparatus manufactured by the Company.

E. It investigates all complaints with reference to quality of apparatus and determines the responsibility for defective material furnished by Company.

In a word, the Engineering Department is that part of our organization where the apparatus which the Company sells, or desires to sell, is designed and tested out before being turned over to the Shop to manufacture. But the work of the engineers does not end when a new design has been sent to the Manufacturing Department, as it is their further duty to make sure that the finished product meets the customer's requirements and the high standard of quality for which the Western Electirc Company is noted throughout the world. This means that the Engineering Department must inspect sufficient of the Shop output or of the material in Merchandise stock to make sure that through some oversight fundamental errors in structure or packing have not crept in.

From the development and design of apparatus to be manufactured by our Shop and the preparation of suitable manufacturing and inspection requirements, it is, of course, but a logical step to the design, specification and inspection of the vast amount of material which the Western Electric Company, in its capacity of Purchasing Agent for the Bell companies, buys from outside manufacturers and suppliers. Being a logical step, this work also falls to the lot of the Engineering Department.

To perform its assigned duties properly the Engineering Department must work in close co-operation with the Engineering Department of the American Telephone & Telegraph Company and with the Patent, Sales, Manufacturing and General Purchasing Departments of the Western Electric Company.

As the defined duties of the Chief Engineer indicate, all of the department's functions are under the general supervision of the Chief Engineer, Mr. Scribner. But while [fol. 3981] responsibility for the work and the general conduct of the department is lodged in the Chief Engineer, the problem of detailed supervision is, of course, too great for any single man to handle, and for purposes of administration the immediate direction of the department is assigned to two Assistant Chief Engineers reporting to Mr. Scribner. Each of these assistants is responsible for certain phases of the work. In turn each of the Assistant Chief Engineers has a limited number of subordinates in charge of branches reporting to him. At the present time nearly eleven hundred people are required to handle the work of the department.

Roughly, this work can be divided under the following general classifications:

1. Development, including both telephone and telegraph apparatus and systems.
2. Fundamental research.
3. Transmission.
4. Equipment engineering.
5. Inspection.
6. Clerical.

In the division of the work for purposes of supervision it has been found desirable to make one of the Assistant Chief Engineers, Mr. McQuarrie, responsible for the equipment engineering, the inspection, the clerical work and that part of the development work which pertains to automatic and semi-automatic telephone systems and to high speed and printing telegraph systems. To the other Assistant Chief Engineer, Mr. Jewett, has been assigned the responsibility of directing the department's work in fundamental research, in the development of transmission apparatus and the solution of transmission problems, and for that part of the development work connected with the design of general telephone apparatus, of the so-called manual systems and of the other types of apparatus which the Company makes and sells. He is also responsible for the chemical research work.

Reporting to Mr. McQuarrie are Mr. J. Danner, in charge of the Equipment Branch; Mr. A. F. Dixon, in charge of the Telegraph Development Branch; Mr. C. F. Baldwin, in charge of the Automatic Development Branch; Mr. A. H. Vorum, in charge of the Inspection Branch; Mr. J. W. Roberts, the Chief Clerk; and Messrs. J. H. Bell, H. P. Clausen, A. H. Dyson, P. M. Rainey, and R. Raymond, who form a Special Study Group. Those who report to Mr. Jewett are Mr. E. B. Craft, in charge of the Development Branch; Mr. J. W. Harris, in charge of the Chemical Research Branch; Mr. E. H. Colpitts, in charge of the Research Branch; and Mr. R. L. Jones, in charge of the Transmission Branch. With the exception of the equipment engineering work, all of which is at Hawthorne, and a part of the Inspection Branch, the Hawthorne Apparatus Division, and the major part of the Cable Division of the Development Branch which are also at Hawthorne, all of the engineering work is performed in New York.

In order that there may be a clear appreciation of the Engineering Department's place in the organization, it will be interesting to explain briefly the general scope of the work done in the above sub-divisions of the department. Before considering the functions of the various branches, however, let us first see where the Engineering Department's work originates.

As the principal business of the Western Electric Company is in manufacturing and supplying apparatus to the telephone companies of the Bell System, so, naturally, the principal work of the Engineering Department is concerned with problems relating directly to the needs of the Bell companies. These may be either development or research problems connected with new service requirements, the betterment of existing apparatus or systems, or they may be equipment engineering problems connected with the manufacture and installation of new central offices. Of the research, transmission and general development problems a large part reach the Engineering Department from the Engineering Department of the American Telephone & Telegraph Company and represent advances in the art of telephony brought about by the studies of field requirements which that central engineering department is making at all times. Another large portion of the problems arise directly from the work and developments in the Engineering Department itself, while a third portion arise from cost studies and the needs of the Purchasing Department in [fol. 3982] connection with the handling of outside supplies for the Bell companies.

Second only to the work on apparatus and problems for the Bell companies is the volume of work which the Engineering Department is called upon to do for the Sales Department in connection with the Company's general business in telephone and other apparatus. Associated with this is a vast amount of work for the Export Department and allied houses throughout the world.

Having seen where the problems originate, let us consider somewhat the work of one or two of the main subdivisions of the department. As an illustration, let us follow a new development through the Engineering Department, taking for example, the case of a problem involving new circuit, transmission and apparatus features arising from some need in the operating field. This sort of problem is usually presented to us by the Engineering Department of the American Telephone & Telegraph Company, although similar problems reach us from the Sales Department. In either case the service requirements have been studied and the Engineering Department is informed in a general, and wherever possible in a specific way, approximately what must be accomplished.

As the problem chosen involves circuits, it will probably go first to the Circuit Laboratory, where it will be studied and a tentative layout, to give the required operating features, made. This layout will be on the assumption that apparatus having certain desired characteristics can be developed. When this is completed the various other departments take up their work—the Apparatus Design Division if new mechanical apparatus is required, and the Physical Laboratory if cords, coils, etc., are needed. Somewhere in the course of the development the Chemical Laboratory is almost certain to be involved, either in connection with materials or finishes.

After a time, each branch will have completed its portion of the work and the result will be something which supposedly meets the requirements. With an assembly of preliminary apparatus, tests for operation are made and the Transmission Laboratory investigates the arrangement, to determine its efficiency in the talking circuit. If the arrangement passes these examinations, final models in finished form are made up and subjected to exhaustive electrical and mechanical tests in the Physical Laboratory.

When those responsible for the problem are satisfied that apparatus conforming to the models will probably be satisfactory, the matter is ready for discussion with the Shop, to make certain that the designed apparatus can be manufactured commercially and also to obtain cost figures for it. After this comes the final consideration with the American Telephone & Telegraph engineers or the Sales Department, and if at the end of the discussion the matter still appears favorable, manufacturing information is placed in the Shop and an equipment, built from tools and under normal Shop conditions, is made up and installed for service trial. This service trial is under the direct supervision of the American Telephone & Telegraph and Western Electric engineers and is designed, not only to make sure that no service conditions have been overlooked, but also to develop any points of mechanical weakness which may not have been discovered in the preliminary laboratory tests.

Finally, and after it has been shown with reasonable certainty that the commercial apparatus will be satisfactory, revised manufacturing information is given the Shop and the work of the Engineering Department is finished, so far as development is concerned. There yet remains, however, the work of the Inspection Branch, who must see to it that as finally sent out to the customers the apparatus is generally satisfactory in every respect.

The foregoing is a brief description of the way in which the development problems are handled, and exemplifies the care which is given to the design of the apparatus which the Company manufactures. If the problem had been one involving a new type of cable, special transmitting apparatus, or a high speed telegraph system, fewer departments might have been involved, but the general course of the work would have been the same.

The largest single sub-division of the Engineering Department is the Equipment Branch at Hawthorne. The primary function of this branch is to edit the orders for telephone central office equipments as they are received from the customers and prepare the information required by the Manufacturing Department for the construction and installation of the necessary apparatus. The problems of this branch consequently arise mainly on account of specific orders received from the various telephone companies. In addition to the regular editing work, this branch is responsible for the design of new type switch-board sections, as they may be made necessary by changed service requirements. In conjunction with the Engineering Departments of the American Telephone & Telegraph and Associated Companies, the Equipment Engineering Branch has also for some time been engaged on the problems of standardizing central office equipments. The great value of this standardizing work is becoming apparent in the simplification of requirements and the economies which result therefrom.

When describing the course of a development ~~problem~~ through the Engineering Department, mention was made of the Inspection Branch. The activities of this branch are not confined to the product of the factory at Hawthorne but are very largely concerned with the purchase of material manufactured by outside concerns, and in particular with [fol. 3983] the supply of pole line material and rubber insulated wire. In the performance of these duties, representatives of the Inspection Branch are scattered throughout the country and are responsible for seeing that the material purchased by the Company for its customers is in strict accordance with the specifications of the Engineering Department.

Most of the branches of the Engineering Department are, as their names indicate, engaged on specific phases of the engineering work—phases in which the art of telephony and telegraphy is being developed largely through the application of physical principles and engineering rules already known. There is one branch, however, whose functions are somewhat different from those of the other divisions, namely, the Research Branch.

Some years ago it became evident that while great advances were being made in the art of telephony, there was a certain class of problems which required a rather different treatment than was being accorded to most of th[illegible]k, and that for their solution it would be necessary t[illegible] men with a somewhat different training than tha[illegible] engineers engaged on specific developments. Th[illegible] was the formation of a Research Department for th[illegible] study of the fundamental phenomena underlying the a[illegible] speech transmission. This department aims not at the development of specific pieces of apparatus, but at the accumulation, by fundamental research, of the data needed by other branches of the Engineering Department in the performance of their duties. With this object in mind, the members of the Research Branch have been selected largely from men who have had advanced training in physics and physical research and who are particularly competent to make available for our use the results of the wonderful developments in physical science during the last few years.

In concluding this brief statement of the constitution and functions of the Engineering Department, it should be remarked that in the design and development of its apparatus, in the rigid engineering inspection of its product and the product of others which it sells, and in the far-sighted policy of fundamental research which it is pursuing, the Western Electric Company is in the very forefront of the manufacturing organizations of the world. In fact, it is very doubtful whether there is another large manufacturing organization, in any line whatever, which exercises as much engineering care and supervision in the development and manufacture of its product as does the Western Electric Company.

[fol. 3984] DEPOSITION EXHIBIT #201

Article in the Bell Telephone Quarterly, Issue of January, 1929, Pages 9 to 24, by H. S. Osborne

Standardization in the Bell System

In connection with a comprehensive study of industrial standardization, the National Industrial Conference Board recently requested a description of the processes of standardization in the Bell System and the results obtained.

Such a description, of course, bears upon the activities of all parts of the Bell System and therefore a statement was prepared through the co-operation of representatives of the various general departments of the American Telephone and Telegraph Company, the Bell Telephone Laboratories, and the Western Electric Company.

With the permission of the National Industrial Conference Board the substance of the paper thus prepared will be published in the Bell Telephone Quarterly. The first part is given below and the rest will follow in a later issue.

In view of the large number of people who assisted in the preparation of this statement it is hardly practicable to make specific acknowledgment to all contributors, but the undersigned, who acted as editor, wishes to acknowledge particularly the co-operation of Mr. S. P. Grace, Bell Telephone Laboratories; Mr. T. K. Stevenson and Mr. F. Clark, Western Electric Company; and Mr. F. L. Rhodes, Develop- [fol. 3985] ment and Research Department, American Telephone and Telegraph Company.

H. S. Osborne.

General Statement

The ideal and aim of the Bell System, as regards telephone service, is "A telephone service for the nation, so far as humanly possible free from imperfections, errors or delays, and enabling at all times anyone to pick up a telephone and talk to anyone else anywhere else, clearly, quickly and at a reasonable cost''.

In order that it may most effectively work toward this ideal, the Bell System has been organized to do practically everything connected with giving such a telephone service, from the purchase of raw materials to the actual rendering of the service. Through the various companies and departments which constitute the System it does fundamental research work, investigates operating problems and develops operating methods, designs new apparatus to take advantage of the results of the research work and investigations, manufactures the apparatus in quantity, installs it as needed to meet service requirements, and operates and gives service with the plant so provided, using the methods so developed.

With this organization it is, of course, obvious that with far-sighted management the Bell System should seek to make the greatest possible use of standards for its plant and practices, and should seek also to have the number of different standards as small as is consistent with meeting adequately the service requirements of the System, in order to obtain the advantages in both service and economy which result. Standardization is therefore one of the firm bases on which the Bell System is built and is to a large extent responsible for the results which have been obtained.

Standardization in the Bell System is more than a means of obtaining economy and efficiency. It is essential to the best service and the most rapid progress. Standards are [fol. 3986] developed as the result of the accumulated experience of the operating companies and of the work of several thousand people at headquarters whose entire time is devoted to improvements. The results of the analysis of the operating experience and of the general investigations, researches, developments and designs of the headquarters groups, crystallized in the form of operating practices, methods, types of apparatus and of communication systems, are made available at once to the operating telephone companies of the System throughout the country, with information regarding their desirable field of use. These types of apparatus, communication systems, methods and practices thereby become standards for the Bell System by virtue of the fact that they represent the outcome of adequate studies of the best way to meet a type of situation, and as such they are adopted by the operating companies and put into use to the extent that they are needed under the different conditions of different companies. In some cases the new standards as developed cover a new field of operating requirements or present the means for doing something which could not be done before. In many cases the new standards replace existing standards due to advances in the art, improvements in technique or changes in operating requirements. Standardization is therefore not a static thing but is dynamic, involving a continuous procession of new standards to meet new conditions or to meet old conditions better than was heretofore possible, and the consequent dropping of old standards.

In the Bell System the standardizing functions are distributed through various companies and departments.

[fol. 3987] The headquarters' forces, consisting of the general departments of the A. T. & T. Co. and the Bell Telephone Laboratories, are as noted above devoted to working out and standardizing improvements in telephone plants, methods, and operating practices covering the entire field of telephone work. This includes fundamental research work, the development, design and specification of apparatus and of systems of communication, the development of standard methods of test, construction and maintenance practices, methods of handling telephone traffic, business methods and provisions for safety and health.

The Western Electric Company, which manufactures, purchases, and distributes for the Bell System, is, of course, very much concerned with standarization. A great deal of its manufacturing work consists in the quantity production of standardized products, and this facilitates the use of standardized manufacturing processes. In the stocking and distribution of apparatus and materials, standardized methods have been highly developed. This is also true in the installation of central office equipment, which is largely carried out by the Western Electric Company.

The telephone plant throughout the country is operated by a group of 24 Associated Operating Companies. Through the close co-operation between these companies and the headquarters' forces, full advantage is taken of their field experience in the determination and standardization of the best methods and practices in all matters bearing on the quality of the telephone service, including the design, construction and operation of plant, business methods and provisions for safety and for the health of employees. [fol. 3988] To a large extent the standardizing work of the Bell System deals with matters peculiar to its own problems and is carried on within the System. The various parts of the Bell System are, however, taking very active part in cooperation with numerous national organizations engaged in standarizing work, in the development of standards which have a broader application than within the Bell System itself.

The various activities indicated in the foregoing are briefly discussed in the following pages.

Standardization in the Design of Telephone Plant

The nature of the telephone business is such that the telephone system offers a very good example of the advantages of standardization of plant and equipment. Telephone plant installed everywhere throughout the country must be such as to give satisfactory service when operated in connection with apparatus in any other part of the country. The plant of the telephone system is necessarily very complex in view of the complicated technical functions which it must successfully perform, the intricacy of the switching operations required for the rapid establishment of a connection between any two telephones in the country, and the complexity of the electrical transformations necessary to transmit and reproduce speech clearly between these telephones.

The complexity of the telephone plant and the number of types of apparatus and material which would be required would be very greatly multiplied if there were not a high degree of standardization for all parts of the telephone plant. In fact, it is not an exaggeration to say that the telephone service of today could not be given without this high degree of standardization.

As a result of standardization the telephone plant includes a very large number of identical units of apparatus. [fol. 3989] This, of course, has numerous advantages. The use of very large numbers of standard types of apparatus, circuits and equipment results in large economies in production. For example, about 1,500,000 receivers and 1,500,000 telephone transmitters, each of a single type, are produced in a year. Also, about 2,500,000 relays of the "E" type, differing only in the details of assembly of standard piece parts, are produced annually, and of these about 239,000 are of one code number and 232,000 of another code number, the relays of a given code number being identical. Without standardization these same quantities would be distributed between a large number of different types with correspondingly greater costs. The advantages of using in the telephone plant large numbers of identical pieces of apparatus, of course, extend beyond production and include able to manual and more favorable to dial operation.

In all standardization of apparatus, interchangeability has always been a prime consideration. This is important from the standpoint of dimensions; for example, transmitters are so designed as to fit into any mounting even though made a good many years apart. In a broader sense, considerations of interchangeability lead to the design of new standards in such a way as to fit into existing plant with the minimum possible change in the other items of the plant. This is of greater importance, for example, in the design of new circuits which must function properly with existing telephone plants both in the transmission of speech and in the operation of signals associated with the switching equipment.

In view of the large degree of standardization of the present telephone plant, the standardization work does not consist primarily in the simplification of present practices [fol. 3990] but to a large extent in the development of new standard apparatus or materials to replace or supplement existing standards.

These new standards may have their origin in the development of new operating requirements or conditions, which are continuously reviewed by the studies of the general departments of the A. T. & T. Company in co-operation with the operating companies. An illustration of this type of origin is given by dial switching equipment for very large cities, the development of which was undertaken as the result of fundamental studies showing that the conditions in large cities are becoming progressively less favorable to manual and more favorable to dial operation.

Or the new standards may develop into an invention or a group of inventions. An example of this is a group of inventions bearing on the increase in range of telephone transmission, which opened the way to the clear transmission of speech over very long cable circuits free from interruption by storm whereas previously the voice transmission was possible through cable only over relatively short distances. This is resulting in the rapid development of a nation-wide system of toll cables to a large extent replacing for new work the previous types of toll circuits.

Again the new standards may arise from the results of fundamental research work making possible new kinds of apparatus or developing new types of materials as illustrated by the development of permalloy, a new alloy having very extraordinary magnetic properties. This new material has been applied in the design of inductance coils and of relays which can thus be made with a relatively small amount of magnetic material giving lower cost or with improved operating characteristics.

[fol. 3991] In any of these cases standardization is the final step in the process of development which is carried out by the headquarters departments, including the general departments of the American Telephone and Telegraph Company and the Bell Telephone Laboratories. The development is based upon studies of the needs of the operating companies and investigations of the possibilities of new inventions, and it results in the complete specification of the new type of apparatus or system of communication designed to best meet the end in view.

The proposed new standards are not only carefully scrutinized as to design, but are given extensive laboratory tests, and most often, in addition, trials under actual service conditions, before being standardized. With satisfactory results from these trials the apparatus is standardized by the A. T. & T. Co. and general information regarding it and its field of use issued to all of the Associated Companies. The new standard is thereupon adopted by each Associated Company for use to the extent that conditions in its territory present a proper field for its use.

Concurrent with the standardization of the new type of apparatus, the Bell Telephone Laboratories provide to the Western Electric Company standard specifications covering the description and performance of the apparatus, including manufacturing tests and inspections. It is the purpose of these specifications to give adequate information to the manufacturer regarding the device and regarding the performance requirements which it must meet when completed, but not to specify in detail the process of manufacture. This is done by the manufacturing organization itself, which standardizes for each type of apparatus the methods to be followed in its production.

[fol. 3992] A great deal of attention has been given to the design of apparatus in such a way that a single piece part can be used in a large number of different apparatus units. By this means, engineering and production costs are greatly reduced through the reduction in the number of parts and the resulting large quantity production of as few standardized parts as possible.

One interesting example of this standardization of piece parts is in connection with keys, that is, hand operated switches. Keys are used in connection with telephone switchboards in large quantities and are required to perform a very wide variety of switching functions. This leads to the necessity for a large number of different types of keys. However, these keys have been so designed that certain parts are used interchangeably in many different types of keys. Because of this fact, production of such parts is very high and the keys themselves can be manufactured on an economical basis even though the demand for some particular combinations of parts may be small. A similar illustration is given in the design of relays, which are electrically operated switches.

A great deal has been accomplished in the standardization of the technical information about new apparatus standards. Drawings, for example, covering standardized equipment or apparatus are made up in the standard size and form. It has been found that 13 sizes are sufficient to meet the requirements of all but the most unusual situations.

Not only are the drawings standard in size and form, but it is found possible to use identically the same drawing in different parts of the organization, thus avoiding duplication of effort. Drawings covering the design of new apparatus made up by the Laboratories are sent to the Western Electric Company or other manufacturers involved and [fol. 3993] where applicable used by them for manufacture. These same drawings are furnished to the Associated Companies to inform them of the newly standardized apparatus and used by these companies in their technical work.

In connection with the standard drawings very large savings are made by the use of standard symbols representing pieces of telephone apparatus. These symbols — arranged in a drafting dictionary, known as the Circuit Convention Handbook, which is used by draftsmen and engineers in preparing circuit drawings. It contains conventional diagrams for all the standard types of apparatus now in use. Each of the conventions, of which there are thousands, is made up to indicate the essential functions of the piece of equipment as it affects the circuit, without showing the mechanics of the design of the apparatus involved. It also covers the abbreviations which are normally used on circuit drawings.

As an example of the effect of standardization in this particular, Figure 1 and 2 are of interest. Figure 1 is a draw-

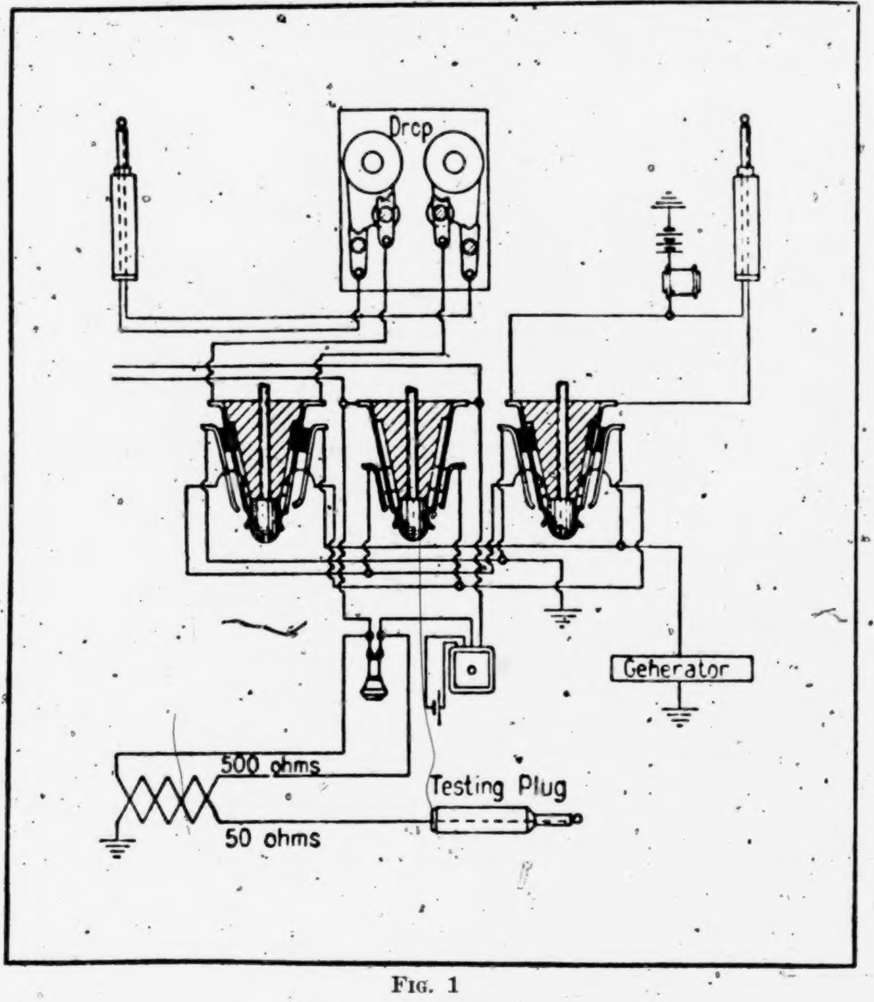


FIG. 1

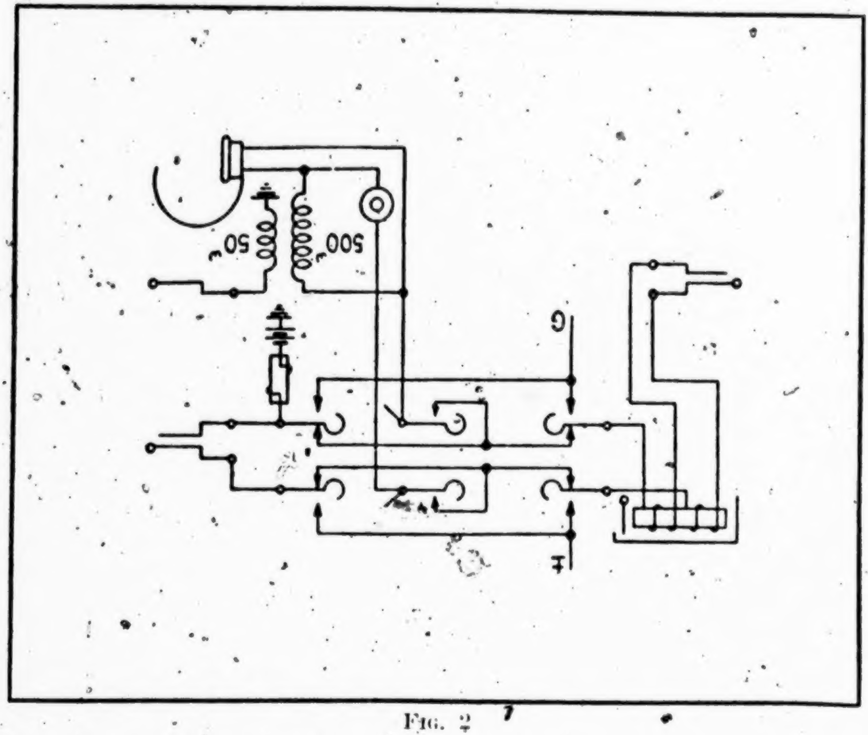


Fig. 2

ing of a simple cord circuit made in 1889. Figure 2 shows how the drawing of the same circuit would be made today. The great reduction in labor of drafting and much greater ease of interpretation of the drawing are evident.

Of the above conventions those which are in general use by all telephone manufacturers are in process of approval [fol. 3994] by the American Engineering Standards Committee as American standards, thus assuring uniformity of these conventions, not only within the Bell System but among telephone manufacturers outside the System as well.

The general plan outlined above for drawings is also used for the distribution of specifications for equipment design. Specifications prepared by the headquarters' forces are distributed to both the manufacturing and the operating branches of the organization. These specifica- [fol. 3995] tions are made uniform in style and size to facilitate their use and their filing.

Specific Examples of Standardization of Telephone Plant

It is, of course, impracticable within a limited space, to indicate all of the important items of standardization in the telephone plant. However, in addition to the illustrations used in connection with the foregoing general discussion, a few of the most outstanding results are briefly outlined below.

In local manual switchboard equipments, it is found possible to meet the widely varied demands of the Bell System with only five standard types of switchboard, three designed for common battery offices and two for magneto offices. This means that while the actual amounts of equipment required naturally vary with the size and local conditions of the office, the switchboard in each case can be made [fol. 3996] up of assemblies of standard units corresponding to one of these five standard types.

In dial equipment the standardization is still greater. Here again there must, of course, be differences in the amount of equipment in different offices and also differences in certain items of the equipment. Beyond this, however, there are in use in the Bell System essentially only two different types of dial machine equipment. One, the panel type, is designed to meet the requirements for the larger cities, each of which has a relatively large number of offices which must be interconnected by means of the dial equipment. The other type of equipment, the step-by-step, is designed for use in the smaller cities and towns where a single office or a relatively small number of offices is adequate to provide present and prospective telephone service.

Apart from the telephone hand set which is just beginning to come into use, there are made for general use for subscribers only one type of receiver and one type of transmitter, although a small number of additional types are made for a fraction of a percent of special cases. These instruments, combined with associated ringing and auxiliary equipment, form telephone sets, some of which are desk stands and some of which are wall sets. It is found, however, that the needs of the country can be supplied with only 23 types of sets, including both those for use with dial and those for use with manual switching equipments, and including the arrangements necessitated by diffeent types of service, as individual line, two party, four party, coin box, etc.

[fol. 3997] In the installation of telephone sets on subscribers' premises, numerous requests are received for wiring plans by which telephones may be switched from one line to another, special ringing arrangements may be provided, and extension stations may be associated with the line. The extent to which simplification in practice may be advantageous is illustrated by the results from a single operating company of a review some time ago of their wiring plans. In this one company it was found that whereas 540 different plans were in use, the requirements could be met by 28 standard plans, and of these 28, 16 took care of all but a few exceptional cases.

In the preservative treatment of poles, while a very large number of types of treatment have been experimented with, two types have been standardized for general use. One is an overall treatment for pine poles, which require treatment for the parts exposed to the air as well for the parts in the ground. The other is a single type of butt treatment for other woods such that preservative treatment of only the part of the pole which is in the ground is adequate.

With the exception of a few special cases, the requirements of the Bell System are met by two types of standard crossarms, one designed for poles carrying only telephone circuits and the other designed for poles carrying both telephone circuits and conductors of other wire using companies.

A large percentage of the conductors in the telephone system are in cables placed in underground conduit. It is found that approximately 90 percent of the conduit is properly covered by six different types of vitrified clay, differing only in the numbers of ducts which constitute the unit. [fol. 3998] There has been a high degree of standardization of the sizes of copper wire used for telephone conductors. 97 per cent of the open-wire (that is, wire strung on insulators) added to the plant at the present time is made up of three sizes, respectively, 104, 128 and 165 mils in diameter. Insulated wires in cables are also selected from a limited number of gauges. For example, long toll cables are made up practically entirely of two gauges, 16 and 19 B. & S. gauge. The cables for local distribution circuits are more than half of a single gauge, 24 B. & S., and about 95 percent are of one of three gauges, 24, 22 and 19 B. & S.

It has been possible to do a great deal in developing standards covering the best methods for the design and layout of telephone plant. A good example of this is given in the layout and arrangement of telephone apparatus in central offices. It is necessary each year to build about a hundred telephone buildings to house additional equipment. While the external appearance of the building is adapted in each case to the neighborhood in which it is placed, the dimensions and general arrangement can in most cases best be determined by using one of a limited number of standard arrangements. This makes possible the use of standard assembled equipment units, of standard detailed floor plans and equipment engineering specifications and leads to economy and speed of construction. It also insures that carefully worked out arrangements, designed to give best operating results and provide greatest flexibility for future growth, are used for all cases in which they are suitable.

[fol. 3999] Another example of this type of standardization is presented by toll circuits. If each toll circuit were designed individually to meet exactly the requirements as regards efficiency for good transmission in the particular case, the result would be that in general each small group of toll circuits between two points would differ in design from every other group of toll circuits between any other two points. This would result in tens of thousands of different kinds of toll facilities, each designed for a specific use only and would result in endless confusion and lack of practicability. Instead of following this plan, the types of toll circuit for new construction are limited to a very small number including only three types for open wire circuits and from four to six types for toll cable circuits. In the design of any given circuit choice is made from this limited number of types of facilities, selecting one which combined with suitable apparatus will give not less than the required transmission efficiency in the given case. This results in great advantages in simplicity of plant design and in the flexibility with which facilities can be transferred from one use to another as occasion requires.

Other specific examples can be given but the above are sufficient to indicate the very important part which standardization plans in the design of telephone plant.

[fol. 4000] Standardization of Raw Materials

The production of standard products naturally requires the standardization of the raw materials entering into those products. There have, therefore, been developed a series of specifications covering the standard requirements for raw materials purchased for the construction of telephone apparatus and also covering standard finishes for these materials as fabricated by the supplier.

An important example of the establishment of standards for raw material is the establishment of requirements for sheet brass of all tempers and thicknesses. This work has been extended to include nickel, silvers and bronze, covering altogether seven grades of metal. Work has recently been started on rod stock. All of this work is carried on co-operatively between Bell Laboratories, the Western Electric Company and the principal suppliers of raw material.

Standard requirements for materials, of course, depend upon the establishment of suitable standard methods of test to measure the quantities which are to be specified. The American Society for Testing Materials has done a very large amount of work in developing standard tests for materials and it has been the practice to adopt these standards of test whenever they serve the purpose. As the result, a large majority of the specifications for raw material contain reference to A. S. T. M. testing methods.

In addition, however, it has been necessary to take a very considerable amount of initiative in the development of standard testing methods. Wherever practicable this work has been done in co-operation with the A. S. T. M. and other interested organizations.

[fol. 4001] The question of hardness testing was given considerable study in connection with the work on brass and this has resulted in the adoption of standard tests for the Bell System which are now being studied by the A. S. T. M. Impact tests suitable for molded and sheet insulating materials have also been developed. Another interesting development is that of suitable tests for die castings, including tensile strength, elongation, hardness and impact strength. In developing standard methods of test for die castings, more than 55,000 specimens have been prepared to date and are being tested by the co-operating organizations.

Other standard methods of test developed through the Bell System which are of interest, are insulation resistance tests, high frequency tests and tests of insulating papers. In these tests and in others, the Bell System representatives have co-operated with the A. S. T. M. and they have adopted as standard the methods developed.

The discussion of raw materials is a natural place in which to mention the standardization of methods of sampling although this applies to completed products as well as to raw materials. In many cases it is practicable to make the tests for the check of quality on only a fraction of the material supplied. In order to insure uniform and satisfactory results, it is necessary to have standard methods of sampling, including the determination of the size of the sample lots to be tested and the interpretation of the results of those tests as applying to the material as a whole.

[fol. 4002] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT No. 202

Article in the Bell Telephone Quarterly, Issue of October, 1922, Pages 12 to 24, Inclusive, Entitled "Notes on Radio", by O. B. Blackwell

P. 22:

Broadcasting

A service for which radio, by its inherent nature, is particularly fitted, is that of broadcasting music, news, etc. to a large number of people who can listen to it by means of comparatively simple receiving sets. This type of system has become so thoroughly known as to require no explanation here. It is not a two-way service, and is not, therefore, of the same type as the usual telephone service. In this case the usual difficulties with radio of lack of secrecy and of spreading out over a large territory are the particular features fitting it for broadcasting economically over a wide area.

P. 23:

[fol. 4003] Telephone Service for Rural Communities

While, from the inherent nature of radio, it is entirely absurd to consider it for carrying on the usual telephone service in place of wire systems in districts which are well developed in population, we have attempted to determine whether it could be developed to give telephone service at a sufficiently low cost to find a field in very sparsely settled country districts.

In this connection, it should be pointed out that radio is purely a method of transmission of messages. In giving telephone service, it is necessary that we not only have means of transmitting our messages, but also means of connecting the transmitting channels together, so that any two subscribers may be permitted to talk. This is the function of the central office, and of the operators who are employed there. Radio in no way avoids the necessity for this switching function. * * *

P. 24:

From the discussion which we have given it may be evident why it is that the development engineer has viewed radio with somewhat conflicting emotions. In perhaps no other part of the communication art have there been developed more beautiful technical methods of apparatus, or is there presented to him a more intensely interesting group of technical problems. It has opened up possibilities of giving new fields of telephone service, and the results which it has yielded and promises to yield in these fields appeal greatly to his imagination, as they do to that of the gen- [fol. 4004] eral public. Yet in perhaps no other field has the development engineer dealt necessarily with factors inherently so variable, or so little under his control, or has the development work yielded so little in results of practical commercial importance, as compared to the large expenditures made. Furthermore we know that to put radio telephony into such shape that it can give those services for which it is fitted will require that we continue intensive development for many years.

P. 25:

We have in mind, however, that with the constantly increasing demands for all types of communications the radio field, limited though it is in scope, may be expected to grow to considerable proportions. Furthermore we are watching with large interest the apparently great appeal of radio telephone broadcasting to the general public. As already noted, the difficulties of radio for ordinary telephone work, that is, the spreading out over wide territory and non-secrecy are just the characteristics which are desirable in broadcasting. It may be that here there is a service in which radio telephony can assume considerable commercial importance, and much more than justify the large amount of development work which must be given to it.

[fol. 4005] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #204

Bell Telephone Quarterly, January, 1923

P. 8:

In a circuit using intermediate telephone repeaters, and some circuits have as many as eight repeaters operated in tandem, it is necessary that they be properly spaced, taking into consideration both the available repeater station locations and the electrical characteristics of the circuit facilities. The energy levels at each repeater must be carefully predetermined, as it is important that the energy delivered to and by each be kept within proper limits; that is, too much energy must not be sent out from one repeater or it will cause "cross talk" in adjacent circuits, and, on the other hand, the energy must not be allowed to drop off so far that its magnitude at the input of a repeater is only about the same as that of the noise which happens to exist on the circuit, as this condition will result in the noise being amplified to an objectionable degree along with the amplification of the speech currents.

The matter of proper arrangement of repeaters in a single circuit as described above is only one of the important features which must be taken into consideration in the design of a network of long distance circuits, but it serves to illustrate that the problem is very decidedly one of considering each circuit and also groups of circuits as a whole at the time the design work is done, and similar centralized control is of equal or greater importance in the every day maintenance and operation, if satisfactory service is to be secured.

Telegraph

P. 9:

Plant of the type provided by the Long Lines Department for the handling of long distance telephone service is utilized to furnish certain classes of telegraph service using simultaneously the same wires that are required for telephone purposes. Rapid as has been the growth of long [fol. 4006] distance telephone service, no less rapid has been the development of this telegraph service. There are now 525,000 miles of telegraph circuits in operation, and service under special contracts is furnished to banks, brokers, press associations, packers and other commercial organizations. These telegraph circuits are also used in the operation and maintenance of the plant and for handling official telegraph business.

Morse's original telegraph used two wires and was only capable of transmitting in one direction at a time. This transmission was slow and the incoming signals were recorded in dots and dashes by a tape recorder. Contrasted with this we may have today one pair of copper wires carrying simultaneously one and one-half telephone circuits, two telegraph circuits of the more common direct current type using ground return and as many as ten carrier current telegraph circuits. Furthermore, each of these twelve telegraph circuits may be operated in both directions simultaneously by the ordinary duplex telegraph methods and if desired, by the use of printing telegraph apparatus, each may be made to print from one to four messages in each direction. A complete arrangement of this latter type is not now in regular use, but in many cases a single pair of wires is carrying one and one-half telephone and twelve telegraph circuits. Printing telegraph apparatus is operated on a part of the telegraph circuits but most circuits are manually operated. The quadruplex system has not been found practicable for use in the Long Line plant.

Telegraph service was first furnished by the Long Lines Department on wires used for telegraph only. This was followed in turn by the simplex system, which furnished one telephone and one telegraph circuit simultaneously, the [fol. 4007] composite system which added a second telegraph circuit for each pair of wires, and finally by the carrier current system, which has brought the number of telegraph circuits per pair of wires, where suitable conditions exist, up to a practicable total of twelve.

As the telegraph systems now in use on the open wire lines are not suitable for use on long, small gauge, loaded, cable circuits, the recent extensive installation of this type of plant by the Long Lines Department has made desirable the use of still another telegraph system. This newly developed system is operated on the "metallic" basis, furnishing but one telegraph circuit per pair of wires, but these wires may also be used for telephone purposes. It is thought, however, that ample telegraph facilities will be available in the toll cables to meet all requirements along these routes for a long period, or until additional cables are needed for telephone purposes. Each of these circuits may be operated in both directions at the same time without interference to the telephone circuit carried on the same wires.

[fol. 4008] EXTRACTS FROM EXHIBIT DEPOSITION EXHIBIT #205

Bell Telephone Quarterly, October, 1928

By-products of Telephone Research

There may be either one of two motives behind scientific research. On the one hand, there is the motive of adding to human knowledge, in which case the research is customarily referred to as "pure," and as recompense for the labor and money involved comes the intellectual satisfaction of having successfully unraveled some puzzling secret of Nature. On theother hand, research may be carried on with the idea of adapting its results as quickly as possible to some practical and useful end, in which case it is customary to call it "applied"—hopefully anticipating a successful application.

Aside from the difference in attitude on the part of the sponsor of the program, pure and applied research are identical. There may, indeed, be no difference in attitude on the part of the research workers themselves. These two branches of scientific endeavor enter equally deeply into the secrets of the universe; they avail themselves of the same instrumental and other aids to investigation; and, indeed, in any given field they frequently overlap. They are, in fact, the same thing seen from different viewpoints.

P. 2:

Applied, like pure research, is ceaselessly adding to the store of human knowledge, and like pure research is likely to find practical application in diverse and unexpected ways. It usually yields its sponsor the information he sought. It frequently opens up additional possibilities of which he originally scarcely dreamed. An outstanding phenomenon in the progress of science is that advance in one field almost invariably makes advances possible in other [fol. 4009] fields. Out of devedopment in electricity came many applications of electrical science to chemistry; these advances in chemistry reacting in turn to increase our knowledge and applications of electricity. Countless illustrations from a wide diversity of fields could be cited. The purpose of this article is to illustrate the fecundity of science by describing some striking instances from telephone research.

The program of telephone research as supported by the American Telephone and Telegraph Company for the benefit of the operating companies of the Bell System is directed steadfastly toward the goal of better, more comprehensive and less costly service for the customer. Those who are responsible for directing this program of research look far into the future. They are concerned not only with the minor problems that arise from day to day but also with broad developmental tendencies which may find expression in the nation's telephone system only after the lapse of years or even decades. Herein lies an adequate explanation of the rapid advancement of the telephone art in America during its half century of life. The number of separate lines of research if they permitted of distinct enumeration would be well up in the hundreds and the number of problems which have been proposed and solved would total tens of thousands. The information gained by these researches is today combined in certain ways for direct application to the telephone art. In the years to come and when supplemented by new discoveries, it may be combined in quite different and more effective ways for the benefit of the telephone user. Most telephonic devices are like a child's building blocks, susceptible of combination in a variety of ways and many of the combinations seem, upon superficial examination, quite different from the telephone itself.

[fol. 4010] Somewhat over a year ago, an announcement was made that a commercial type of talking motion picture had been developed in the Bell Telephone Laboratories. This led many persons to wonder why a talking motion picture should result from investigations carried on to im- [fol. 4011] prove telephone service. The line of descent is simple and direct. It has involved the bringing into harmonious association of devices which are of use in telephony although not in the particular ways required by the new association.

P. 3:

Out of researches directed to the improvement of the familiar telephone transmitter and receiver came, on the one hand, various high quality transmitters. One of these is now employed in the public address system and is also in well-nigh universal use for "pickup" in radio broadcasting. On the other hand, there came the loud speaking receiver now generally known in many different forms. Out of researches underlying the telephone repeater—itself an amplifier—came a wide variety of amplifiers for speech and other uses, of capacities ranging from that of the tiny deaf set which can be carried in the pocket to that capable of projecting a speaker's words to an audience of 100,000 persons.

Such devices as improved or special forms of transmitters, receivers and speech amplifiers are, in the hands of the telephone engineer, so many building blocks and can be combined in various ways to meet various needs. One of these special combinations, perhaps as well known as any, is the public address system. Another takes the form of a perfected phonograph. These, in turn, have been merged by special adaptation to form part of the talking motion picture system.

The phonograph for talking motion pictures must employ large records capable of running for 15 minutes, a single sound record accompanying each reel of film. In the improved phonograph which has emanated from the Bell Laboratories have been incorporated studies along such diverse lines as mechanical vibrating systems, speech amplifiers and the transmission of telephonic currents through electric networks. It was necessary to perfect both the reproducing instrument and the method of cutting records.

The principles that guided the redesign of the phono- [fol. 4012] graph itself, strikingly display the unity that pervades nature. The exact statement of the flow of telephone current through an electric circuit leads to certain mathematical expressions that are similar to those expressing the flow of mechanical vibrations through such a sound transmitting device as the phonograph. The phonograph needle is not perfectly rigid but bends slightly sideways when tracing the undulating line of the record. It, in turn, drives the elastic diaphragm through an appropriate coupling mechanism. The column of air contained within the horn, to the small end of which the diaphragm is attached, is likewise an elastic member. All of these moving parts have mass or inertia, elasticity or springiness and their motion involves some friction. These quantities are analogous respectively to the inductance, capacity and resistance of electric circuits.

To every electric circuit there is therefore an analogous mechanical "circuit" possessing the same sound transmitting properties. Telephonic circuits have been the object of study in our laboratories, almost since Bell's invention of the telephone, and an extensive knowledge of their characteristics has been accumulated. Thus the simple telephone line will attenuate some frequencies more than others, with the result that the received sound, although intelligible, lacks the quality of the original one. It is possible, however, to so group and adjust the resistance, capacity and inductance (an expensive undertaking when carried out on a large scale) that except for a gradual lowering of volume level, the transmission will be perfect. The conclusion seemed warranted therefore, that a mechanical system might be built which would also transmit sound perfectly—a much-to-be-desired property with which to endow the phonograph. To learn its proportions, the first step was naturally to change the meaning of certain symbols in a collection of mathematical expressions with which telephone engineers were already familiar since they expressed [fol. 4013] the electrical behavior of certain very familiar circuits. Study of the modified equations then supplied guiding principles to be followed in developing the vibrating parts of the improved phonograph. Just as the improvement of telephone lines has involved the invention of many distinct electrical appliances, so the improvement of the phonograph has necessitated the invention of many new mechanical arrangements, each of which plays an analogous part to some electrical device and whose design has been facilitated by the understanding previously gained of the latter.

P. 5:

The method until recently in vogue of recording upon wax records was also susceptible of great improvement. It employed a large funnel-like concentrator to collect enough sound energy from the air to drive the cutting tool through the record. The result was at best quite an imperfect copy of the original sound. Here was found another opportunity to apply several telephone developments, among them the high quality condenser transmitter and the speech amplifier. Using a suitable amplifier, the current from a pick-up transmitter is now enlarged to such an extent that it operates a magnetically driven cutting tool. Records so engraved are vastly superior to the old style, and those now known in the phonograph trade as "electrically cut" are produced in this way.

Tracing the sequence of research and application, we temporarily left the story of talking motion pictures unfinished. It now requires but a moment to describe the erection and keying of its arch. Having on one hand a perfected public address system capable of filling any auditorium, and on the other a perfected phonograph and means for making high quality records, there remained but the two steps of associating the phonograph and public address system so that the former could operate the latter, and the [fol. 4014] synchronization of the phonograph record with the motion picture film. This involves synchronization with the camera during exposure of the film, and with the projector during subsequent display. Means for accomplishing both these were provided by supplementary developments.

P. 6:

The Telephone Laboratories and telephone research have also been called upon to perfect means for recording speech photographically upon a long strip of film like motion picture film. The purpose of the sound record upon the film is the same as that of the large phonograph disc, and during reproduction is run synchronously with the pictorial film. This form of talking movie, like its predecessor, is in use in public theatres.

Here we have several illustrations of the varied applications of which scientific developments permit. Without having been originally sought after, almost as though a field when once sowed should bear several rich yields, telephone research has given such by-products as the public address system, the "Audiphone" (aids to the hard-of-hearing), the orthophonic phonograph, the talking movies, the artificial larynx. To carry the simile further, each of these special devices or systems has required development and supplementary invention at the hands of the technical staff, much as a farmer's crop, the prey of various antagonistic influences, must be cultivated and cared for at the critical stages of its growth.

The development of the repeater also brought to hand means of magnifying sounds which are ordinarily below the level of hearing. The electric stethoscope followed and is proving of great value. The same principle is finding application in the amplifiers of radio receivers; and the Navy, quick to seize upon it, requested the development of a ship-announcing system whereby orders from one or more points are instantly announced over an entire ship.

P. 7:

[fol. 4015] One of the most picturesque by-product applications of telephone research is that which revolutionized the old and supposedly well-nigh perfected art of submarine ocean telegraphy. Searching for new magnetic materials that might have application to telephony, engineers of Bell Telephone Laboratories discovered a remarkable alloy to which they gave the name permalloy because of the extreme ease with which it can be magnetized. This material is finding important uses in the telephone plant—loading coils in particular might be mentioned—but we pass at once to its use in the submarine telegraph cable. Here it is applied as a tape wound around and continuously "loading" the copper conductor, thereby reducing attenuation of signals to such a point that a transatlantic permalloy cable handles about as much traffic as five cables of the old style.

Another illustration of what permalloy makes possible is found in the miniature receiver of the audiphone. This device, although so small that its diaphragm is scarcely half an inch in diameter, is just as efficient for the purpose as the standard telephone receiver; and instead of weighing about a pound, is so light that it rests within the ear of the user.

The developments resulting from telephone research cover a most diversified field. Some of them fall naturally in line as logical extensions of the service. Others are obviously and distinctly in the class we have designated as by-products. Separating these two, there is no hard and fast line of demarcation. Occasionally a particular development raises the natural question as to whether it is a by-product or an extension of service. Whichever way the decision goes, machinery is available for putting it to use. By-product developments of Bell Telephone Laboratories, not being made available to the public as a logical extension of [fol. 4016] telephone service, are made available through manufacture by the Western Electric Company and the commercial distributing and business arrangements of its subsidiary companies, Electrical Research Products and the Graybar Electric Company.

P. 8:

Regarding the transmission of pictures no question arises as to whether or not it should be classed as a by-product. It constitutes the transmission of a kind of intelligence which in its way is just as useful as a telephone conversation. The same may doubtless in time be said of television, although at present this is in a distinctly experimental stage. The genealogy of both shows a clear descent from telephone investigations, each system employs such telephonic principles as carrier current transmission used extensively in multiplexing our long lines, vacuum tube amplifier—an outgrowth of the repeater—and schemes for equalizing the picture circuit which have resulted from fundamental studies in telephone transmission.

The value of the research work of the Bell System when considered in relation to the System's primary activity of rendering telephone service is sufficient many times over to justify its cost. Improvements in such departments as lead cable and repeaters, as used on the longer telephone circuits, have enabled the Associated Companies to cut many millions of dollars from what an equivalent telephone plant would have cost had these improvements not been available. As seemingly minor an item as a new contact metal saves three millions a year.

Telephone research is, therefore, a business that yields the telephone-using public generous and frequent dividends in the form of bettered service. And, in the process of advancing the telephone art, more or less unpremedi-ated benefits are conferred upon other arts and industries.

P. 9:

[fol. 4017] In a complete appraisal of the value of the applied science program of the Bell System, recognition should be given to such side developments. To state their value in monetary terms would be extremely difficult. They are great, however, and are destined to increase in value as time passes, for of all growing things the seeds of scientific research are perhaps the most fruitful. The sunlight which stimulates them comes from the broadening horizon of human needs, and the more highly developed our industrial civilization becomes the more widespread is their applicability. For fecundity the principles of science are like the teeth from the fire-breathing dragon of old, but their influence is as constructive as that of the mythical monster and its progeny were supposed to be destructive..

[fol. 4018] Defendants' D Exhibits

(Introduced During Cross-examination of Plaintiff's Witnesses in Chief and Plaintiff's Rebuttal Witnesses)

[fol. 4019] Exhibit D-1

Per Cent Condition of Manual Central Offices, by Central Offices

Offices	Average %	Ratio of Total	Composite
Austin	94.90	4.16	3.95
Belmont	94.18	3.91	3.68
Beverly	93.87	1.84	1.73
Calumet	92.93	3.42	3.18
Canal	91.03	2.14	1.95
Dearborn	94.21	3.95	3.72
Delaware	89.67	1.35	1.21
Douglas	90.56	1.07	0.97
Edgewater	92.28	4.55	4.20
Humboldt	93.28	3.62	3.38
Hyde Park	93.10	6.15	5.73
Irving	94.96	4.15	3.94
Kedzie	93.21	4.03	3.76
Kildare	95.13	4.26	4.05
Lafayette	94.02	1.78	1.67
Lake View	92.18	6.27	5.78
Lawndale	93.88	3.92	3.68
Lincoln	94.60	3.10	2.93
Merrimac	96.25	2.05	1.97
Monroe	92.34	2.64	2.44
Newcastle	96.05	0.87	0.84
Oakland	91.11	3.56	3.24
Prospect	94.23	3.77	3.55

Offices	Average %	Ratio of Total	Composite
Pullman	94.51	1.60	1.51
Rogers Park	94.77	5.07	4.80
South Chicago	94.03	3.23	3.04
Stewart	94.35	5.16	4.87
Wentworth	92.24	2.97	2.74
West	90.87	2.22	2.02
Yards	92.45	2.18	2.02
Tandem	86.81	1.01	0.88
Total	.....	100.00%	
Composite per cent condition	.....	....	93.43%

[fol. 4020] EXTRACTS FROM EXHIBIT, DEF. D-2

Per Cent Condition of Manual Central Office Telephone Equipment

Account 221

Summary for Columet Office

	Component Parts:	Average %	Ratio of Total	Composite
1	A & B Section Frames	91.9	16.0%	14.70
2	Keys	84.7	1.3%	1.10
3	Cords	57.6	0.3%	0.17
4	Plugs	71.6	0.4%	0.29
5	Jacks	84.9	7.0%	5.94
6	Relays	97.2	17.0%	16.52
7	Message Registers, Condensers, Repeating Coils, & Resistances	99.0	9.0%	8.91
8	Cables (Local, Multiple, & Other)	91.7	19.0%	17.42
9	Frames, Racks, & Fuse Boards	96.5	12.0%	11.58
10	Jumpers, Terminals, & Protectors	93.8	9.0%	8.44
11	Test, Repair, & Traffic Desks	92.7	2.0%	1.85
12	Storage Batteries	58.5	2.0%	1.17
13	Power Machines	92.1	2.0%	1.84
14	Power Boards & Conduit Wiring	100.0	3.0%	3.00
	Totals	.....	100.0%	.....
	Per Cent Condition	.....	....	92.93%

[fol. 4021] EXTRACTS FROM EXHIBIT D-3

Illinois Bell Telephone Company

Instructions for the Inspection of Central Office Telephone Equipment

* * * * * * * * *

These instructions are intended to cover the inspection of manual central office telephone equipment for the purpose of listing observable defects in the various kinds of equipment so that a comparison can be made of the condition of the existing equipment with similar new equipment.

* * * * * * * *

(This extract is taken from total instructions comprising 14 pages.)

[fol. 4022] D7

Halsey, Stuart & Co., Inc.

Library

$25,000,000

International Telephone and Telegraph Corporation

Twenty Year 5½% Convertible Gold Debenture Bonds

Dated September 1, 1925. Due September 1, 1945

Interest payable March 1 and September 1 in New York

Convertible at the option of the holder on March 1, 1926, or at any time thereafter prior to September 1, 1935 (or, if called for earlier redemption, until and including such redemption date), into common stock of the International Telephone and Telegraph Corporation at the rate of $125 principal amount of bonds for $100 par value of stock

Redeemable, at the option of the Corporation, in whole but not in part, on any interest date upon 60 days' published notice, at the following prices with accrued interest: Prior to or on September 1, 1930, at 105%; thereafter until and including September 1, 1935, at 104%; thereafter until and including September 1, 1940, at 103%; thereafter until and including September 1, 1941, at 102%; thereafter until and including September 1, 1942, at 101%; thereafter until maturity at 100%.

Coupon Bonds in Denominations of $1,000 and $500, Registerable as to Principal and Interchangeable

The National City Bank of New York, Trustee

Sosthenes Behn, Esq., President of the Corporation, has summarized as follows his letter to us stating the particulars in regard to this issue:

Purpose of Issue.—These Twenty Year 5½% Convertible Gold Debenture Bonds are to be issued to the Western Electric Company, Inc., in part payment for the entire capital stock and certain notes payable of International Western Electric Company, Inc.

Provisions.—The Bonds will be the direct obligation of the International Telephone and Telegraph Corporation. They will be issued under an indenture in which the Corporation will agree that except purchase money mortgages and except pledges in the usual course of business for loans or indemnity for terms not exceeding one year, the Corporation will not mortgage or pledge any of its property without securing these Bonds ratably with the obligations secured by such mortgage or pledge.

Conversion Privilege.—The Bonds are to be convertible, at the option of the holder, on March 1, 1926, or at any time thereafter prior to September 1, 1935, into the common stock of the International Telephone and Telegraph Corporation at the rate of $125 principal amount of such Bonds for $100 par value of such stock (with adjustment for accrued interest and current dividend). This conversion privilege becomes operative March 1, 1926, by which time it is contemplated that the common stock outstanding will have been increased from the present amount of approximately 296,000 shares to approximately 400,000 shares of $100 par value, by the sale to stockholders of approximately 100,000 shares.

Earnings.—International Telephone and Telegraph Corporation owns over 97% of the common stock of the Cuban Telephone Company, over 97% of the common stock of the Porto Rico Telephone Company, and 50% (the other 50% being owned by the American Telephone and Telegraph

Company) of the stock of the Cuban-American Telephone and Telegraph Company. In 1924 a substantial interest in Compania Telefonica Nacional de Espana (National Telephone Company of Spain) was acquired. With this issue of Bonds and sums to be secured by sale of common stock, all of the capital stock of the International Western Electric Company, Inc., is being acquired. Combining (a) the net income of International Telephone and Telegraph Corporation and subsidiaries, after payment of all fixed charges, preferred dividends and dividends to minority interests in subsidiary companies, which deductions in 1924 amounted to $889,843, with (b) the net income of International Western Electric Company, Inc., (which has no funded debt) available for interest, excluding income from certain properties disposed of by it prior to the aforesaid purchase of its stock, the consolidated net income for the past four years is as follows:

Years ended Dec. 31	International Telephone and Telegraph Corp. net income	International Western Electric Co. net income	Consolidated net income
1921	$953,000	$3,017,000	$3,970,000
1922	1,108,000	2,831,000	3,939,000
1923	1,464,000	2,916,000	4,380,000
1924	1,930,000*	3,285,000	5,215,000

* Excluding certain non-recurrent profits.

The consolidated net income for the six months ended June 30, 1925, amounted to $2,612,000.

Such consolidated net income as stated above, in the four and a half years ended June 30, 1925, averaged over three times the maximum annual interest requirements of $1,375,000 on this issue of Bonds, and in 1924 was more than three and three-quarter times such Bond interest requirements.

The above bonds are offered for subscription, subject to the conditions stated below, at 99% and accured interest, to yield over 5.58%.

Subscription books will be opened at the office of J. P. Morgan & Co. at 10 o'clock A. M., Thusday, August 20, 1925, and will be closed in their discretion. The right is reserved to reject any and all applications, and also, in any case to award a smaller amount than applied for.

All subscriptions received are to be subject to the due authorization and issue of the Bonds as planned, and to approval by counsel of the form and validity of the documents and proceedings.

The amounts due on allotments will be payable at the office of J. P. Morgan & Co., in New York funds to their order, and the date of payment (on or about September 4, 1925) will be stated in the notice of allotment. Trust receipts of J. P. Morgan & Co., exchangeable for definitive Bonds when received, will be delivered.

J. P. Morgan & Co. First National Bank of New York. The National City Company. Bankers Trust Company, New York. Guaranty Company of New York. Edward B. Smith & Co. Dominick & Dominick.

New York, August 20, 1925.

[fol. 4023] International Telephone and Telegraph Corporation, 41 Broad Street, New York

August 19, 1925.

Messrs. J. P. Morgan & Co., 23 Wall Street, New York City.

Dear Sirs; Referring to the $25,000,000 Twenty-Year 5½% Convertible Gold Debenture Bonds which International Telephone and Telegraph Corporation is about to issue to the Western Electric Company, Inc., in part payment for the entire capital stock and certain notes payable of International Western Electric Company, Inc., I present the following statement regarding the business of the Corporation and this issue of Debenture Bonds.

International Telephone and Telegraph Corporation was incorporated in 1920 under the laws of the State of Maryland. The Corporation, though essentially a holding company, is through its subsidiaries and associated companies both an operator of telephone systems and a manufacturer of telephone equipment.

The Corporation owns over 97% of the common stock of the Cuban Telephone Company and over 97% of the common stock of the Porto Rico Telephone Company, these two companies serving practically the entire population of Cuba and Porto Rico. The Corporation owns also 50% (the other 50% being owned by the American Telephone and Telegraph Company) of the stock of the Cuban-American Telephone and Telegraph Company, forming the connecting link by telephone cable between Cuba and the United States and furnishing through telephone service between the Bell Telephone System and the Island of Cuba.

In 1924, International Telephone and Telegraph Corporation, in cooperation with leading Spanish bankers, organized the Compania Telefonica Nacional de Espana (National Telephone Company of Spain) which has an authorized capital of 300,000,000 pesetas (or about $43,000,000 at present exchange rates) of which preferred and common stock to the aggregate amount of 115,000,000 pesetas have been issued. Of the stock issued, substantially all of the preferred stock has been sold to investors, principally in Spain. The International Telephone and Telegraph Corporation besides retaining its financial interest will cooperate fully in the development of such Spanish Company, and under a contract with the Spanish Company will provide technical, financial and purchasing advice and assistance. The Spanish Company has already acquired, in addition to the telephone system taken over from the Government, a large part of the existing privately owned local and long distance systems and now operates approximately 95% of the long distance service and 85% of all local telephones in Spain. The construction and development program for the next ten-year period provides for a total of approximately 400,000 telephones in the Spanish system, or over four times the number now in service.

In April, 1925, International Telephone and Telegraph Corporation acquired a substantial interest in the Compagnie des Telephones Thomson-Houston, which company was recently organized in France to take over the manufacturing and sales activities of the telephone department of the Compagnie Francaise pour l'Exploitation des Procedes Thomson-Houston. By this acquisition an important interest was secured in a plant which for years has produced successfully various types of telephone apparatus and equipment and which has installed for the French Government a number of automatic telephone exchanges in several large cities.

The Twenty-Year 5½% Convertible Gold Debenture Bonds of the International Telephone and Telegraph Corporation are to be issued to Western Electric Company, Inc., in part payment (the balance being payable in cash derived from the sale of International Telephone and Telegraph Corporation common stock, the underwriting of which has been assured to the Corporation) for the entire capital stock and certain notes payable of International Western Electric Company, Inc. This last mentioned company carries on the foreign manufacturing and export operations developed since 1882 by the Western Electric Company, Inc., the principal manufacturer of telephone equipment in the United States. Through wholly owned subsidiaries it operates factories in Woolwich, England; Antwerp, Belgium; Paris, France; Barcelona, Spain; Milan, Italy; and Oslo, Norway. In addition it owns a substantial interest in companies with factories in Tokio, Japan, and Peking, China and holds minor interests in manufacturing plants in other foreign cities. International Western Electric Company, Inc., has been prosperous from its inception and during recent years has shown an increasing ratio of profit. Besides its manufacturing activities, it carries on an extensive business as a distributor of telephone equipment and other electrical supplies, and will have a fifteen year contract, dated September 30, 1925, to act as the exclusive distributor of Western Electric products in all countries except the United States, Canada and Newfoundland. International Western Electric Company, Inc. will have also an agreement under which are acquired rights to several groups of telephone patents which taken together are by far the most valuable in existence.

The growth of the business of International Telephone and Telegraph Corporation as well as that of International Western Electric Company, Inc., is indicated by the following statement. Combining (a) the net income of International Telephone and Telegraph Corporation and subsidiaries, after payment of all fixed charges, preferred dividends and dividends to minority interests in subsidiary companies, which deductions in 1924 amounted to $889,843, with (b) the net income of International Western Electric Company, Inc., (which has no funded debt) available for interest, [fol. 4024] excluding income from certain properties disposed of by it prior to the aforesaid purchase of its stock, the consolidated net income for the past four years is as follows:

Years Ended Dec. 31	Int. Tel. & Tel. Corp. Net Income	Int. Western Electric Co. Net Income	Consolidated Net Income
1921	$953,000	$3,017,000	$3,970,000
1922	1,108,000	2,831,000	3,939,000
1923	1,464,000	2,916,000	4,380,000
1924	1,930,000*	3,285,000	5,215,000

*Excluding certain non-recurrent profits.

The consolidated net income for the six months ended June 30, 1925, amounted to $2,612,000.

Such consolidated net income, as stated above, in the four and one-half years ended June 30, 1925, averaged over three times the maximum annual interest requirements of $1,375,000 on this issue of Bonds, and in 1924 was more than three and three-quarter times such Bond interest requirements.

Dividends at the rate of 6% per annum have been paid regularly on the common stock of International Telephone and Telegraph Corporation since organization in June, 1920.

The Bonds are to be issued under an indenture with The National City Bank of New York, Trustee, in which indenture the Corporation will covenant that except in the case of purchase money mortgages and of pledges in the usual course of business for loans or indemnity for terms not exceeding one year, the Corporation will not mortgage or pledge any of its property without securing these Bonds ratably with the obligations secured by such mortgage or pledge.

In the indenture, the Corporation will covenant also that if at any time subsequent to March 1, 1926, it shall offer to its stockholders the right to subscribe for any issue of its stock at less than $125 per share, or shall declare a dividend payable in stock, it will publish a notice, addressed to the holders of the Bonds, advising them of such offer or of such stock dividend, at least twenty days prior to the record date upon which the stockholders' right thereto will accrue, so that holders so desiring may convert their Bonds into stock in time to avail of such rights.

The Bonds are to be limited to the present issue of $25,000,000. They are to be dated September 1, 1925, are to mature September 1, 1945, and are to bear interest at the rate of 5½% per annum, payable semi-annually March 1 and September 1 in each year in New York City. The Bonds are to be convertible at the option of the holder on March 1, 1926, or at any time thereafter prior to September 1, 1935, (or, if called for earlier redemption until and including such redemption date) into the common stock of International Telephone and Telegraph Corporation at the rate of $125 principal amount of such Bonds for $100 par value of such stock (with adjustment for accrued interest and current dividend). This conversion privilege becomes operative March 1, 1926, by which time it is contemplated that the common stock outstanding will have been increased from the present amount of approximately 296,000 shares to approximately 400,000 shares of $100 par value by the sale to stockholders of approximately 100,000 shares (which sale stockholders have been asked to authorize at a special meeting to be held September 3, 1925, and the underwriting of which has been assured to the Corporation).

The Bonds are to be issued in coupon form in denominations of $1,000 and $500, registerable as to principal and interchangeable. The Bonds are to be redeemable, at the option of the Corporation, in whole but not in part, upon notice published sixty days previously as provided in the indenture, on any interest date, at the following prices with accrued interest:

Prior to or on September 1, 1930, at	105%
Thereafter until and including September 1, 1935, at	104%
Thereafter until and including September 1, 1940, at	103%
Thereafter until and including September 1, 1941, at	102%
Thereafter until and including September 1, 1942, at	101%
Thereafter until maturity at	100%

If so called for redemption prior to September 1, 1935, holders will retain the above described conversion privilege until and including the redemption date.

Application for the listing of these Bonds on the New York Stock Exchange will be made by the Corporation in due course.

Yours very truly, (Signed) Sosthenes Behn, President.

[fol. 4025] Def. Ex. D-8, ident.

Halsey, Stuart & Co., Inc.

Library

$40,000,000

New England Telephone and Telegraph Company

First Mortgage 4½% Gold Bonds, Series B

Dated May 1, 1926. Due May 1, 1961

Not Redeemable Before 1958

Interest Payable May 1 and November 1 in New York City or in Boston

Coupon Bonds in denominations of $1,000, $500 and $100, registerable as to principal. Registered Bonds in denominations of $1,000, $5,000 and $10,000. Coupon Bonds and registered Bonds, and the several denominations, interchangeable

Redeemable, at the Option of the Company, in Whole but not in Part, Upon ~~60 Days~~ Notice, on May 1, 1958, or on Any Interest Date Thereafter, at 100% and Accrued Interest

A legal Investment, in the Opinion of Counsel, for Savings Banks in Massachusetts, Rhode Island, Maine, Vermont and Connecticut

The First National Bank of Boston, Trustee

Matt B. Jones, Esq., President of the Company, has summarized as follows his letter to us stating the particulars in regard to this issue:

Property.—New England Telephone and Telegraph Company, with its subsidiary and connecting companies, provides telephone service throughout Maine, New Hampshire, Vermont, Massachusetts and Rhode Island and serves a population estimated at 6,500,000. The book cost of the Company's real estate, buildings and telephone plant, which cost is considerably less than their present value, was over $219,000,000 on March 31, 1926. Other assets amounted to over $21,000,000. After giving effect to this financing, total assets will be over $250,000,000, whereas the total funded debt, including this issue, will be only $86,820,000.

Security.—The First Mortgage covers as a first lien all the real estate and other property, other than securities, now owned or hereafter acquired by the Company in Maine, New Hampshire, Massachusetts and Rhode Island, subject only to a mortgage of $820,000 on a specific parcel of real estate.

Purpose of Issue.—The proceeds of the Series B Bonds, to the extent of about $27,000,000, will be used to repay advances obtained from the American Telephone and Telegraph Company for the extension and improvement of the Company's telephone system. The remainder of the proceeds will be used for the further extension and improvement of the Company's telephone system.

Earnings.

Years Ended Dec. 31	Gross Revenues	Net Earnings Available for Interest	Interest Charges*	Net Income
1921	$37,312,788	$6,998,844	$1,012,449	$5,986,395
1922	42,320,747	8,152,617	1,959,449	6,193,168
1923	45,027,835	5,841,497	2,647,294	3,194,203
1924	48,418,279	7,240,676	3,508,373	3,732,303
1925	55,064,421	8,677,208	4,755,988	3,921,220

*Including interest on advances from the American Telephone and Telegraph Company.

During this period of five years, net earnings available for interest have averaged over two and one-half times interest charges. The net earnings available for interest in 1925 were more than twice the annual interest requirements on the funded debt of the Company as it will be outstanding after the issue of these Bonds.

Substantial increases in rate schedules throughout the Company's territory became effective during the latter part of 1925 and have been clearly reflected in the Company's earnings for the first quarter of 1926. Net earnings for the quarter amounted to $3,232,146, and were at the rate of more than three times the interest requirements on the

Company's total funded debt, including the present issue of Bonds.

Equity.—The Company has outstanding capital stock (including installments) in the amount of $110,495,327, of which about 61% is owned by the American Telephone and Telegraph Company. Dividends on the stock as outstanding from time to time have been paid at the rate of not less than 6% per annum since 1898. The present dividend rate is 8% per annum.

The above bonds are offered for subscription, subject to issue as planned and to approval of legality by counsel, at 94½% and interest to yield over 4.80% to maturity.

Subscription books will be opened at the office of J. P. Morgan & Co., at 10 o'clock A. M., Thursday, May 13, and will be closed in their discretion. The right is reserved to reject any and all applications, and also, in any case, to award a smaller amount than applied for. The amounts due on allotments will be payable at the office of J. P. Morgan & Co., in New York funds to their order, and the date of payment (on or about May 26) will be stated in the notices of allotment. Temporary Bonds or Interim Receipts, exchangeable for definitive Bonds when received from the Company, will be delivered.

J. P. Morgan & Co. Kuhn, Loeb & Co. Kidder, Peabody & Co. First National Bank, New York. The National City Company, New York. Bankers Trust Company, New York. Guaranty Company of New York. Harris, Forbes & Co. Lee, Higginson & Co.

Dated May 13, 1926.

[fol. 4026] New England Telephone and Telegraph Company

Boston, Mass., May 12, 1926.

Messrs. J. P. Morgan & Co., 23 Wall Street, New York, N. Y.

Dear Sirs:

With reference to the proposed issue of $40,000,000 First Mortgage 4½% Gold Bonds, Series B, of New England Telephone and Telegraph Company, I give you the following information regarding the business of the Company and this issue of Bonds:

In opinion of counsel, these Bonds are a legal investment for Savings Banks in Massachusetts, Rhode Island, Maine, Vermont and Connecticut.

New England Telephone and Telegraph Company was organized in 1883 under the laws of the State of New York. With its subsidiary and connecting companies, it furnishes telephone service throughout the States of Maine, New Hampshire, Vermont, Massachusetts and Rhode Island. The population served is estimated at 6,500,000. New England Telephone and Telegraph Company is one of the Associated Companies of the Bell System and has connections for the interchange of toll traffic with all other Bell System companies in the United States and with telephone systems in Canada and in Cuba.

On March 31, 1926, the Company owned and operated 1,099,587 telephone stations and the book cost of its real estate, buildings and telephone plant, which cost is considerably less than their present value, was more than $219,000,000. Other assets, including accounts receivable, etc., amounted to over $21,000,000. After giving effect to this financing, the Company's assets will amount to about $250,000,000, whereas the total funded debt including the present issue of bonds will be only $86,820,000.

The proceeds of the Series B Bonds, to the extent of about $27,000,000, will be used to repay advances obtained from the American Telephone and Telegraph Company for the extension and improvement of the Company's telephone system. The remainder of the proceeds will be used for the further extension and improvement of the Company's telephone system.

The Company has outstanding capital stock (including instalments) in the amount of $110,495,327, of which about 61% is owned by the American Telephone and Telegraph Company. Dividends on the stock as outstanding from time to time have been paid at the rate of not less than 6% per annum since 1898. The present dividend rate is 8% per annum.

The gross revenues, net earnings (after deducting operating expenses, maintenance and depreciation, taxes, rentals and miscellaneous income charges), interest charges and net income of New England Telephone and Telegraph Company during the past five years have been as follows:

Years Ended Dec. 31	Gross Revenues	Net Earnings Available for Interest	Interest Charges*	Net Income
1921	$37,312,788	$6,998,844	$1,012,449	$5,986,395
1922	42,320,747	8,152,617	1,959,449	6,193,168
1923	45,027,835	5,841,497	2,647,294	3,194,203
1924	48,418,279	7,240,676	3,508,373	3,732,303
1925	55,064,421	8,677,208	4,755,988	3,921,220

*Including interest on advances from the American Telephone and Telegraph Company.

During this period of five years, net earnings available for interest have averaged over two and one-half times total interest charges. The net earnings available for interest in 1925, amounting to $8,677,208, were more than twice the annual interest requirements on the funded debt of the Company as it will be outstanding after the issue of these Bonds.

The decline in net earnings in 1923 was due to the New England telephone strike, which resulted in a loss of net earnings to the Company of about $2,500,000.

Substantial increases in rate schedules throughout the Company's territory became effective during the latter part of 1925. Earnings for the greater part of 1925 did not reflect the increased revenues arising from the changes in rate schedules.

The Company's earnings for the first quarter of 1926, however, show clearly the results of the above mentioned increases in rate schedules. Gross revenues for the quarter amounted to $15,256,341, and net earnings amounted to $3,232,146. Net earnings for the first quarter of 1926 were at the rate of more than three times the interest requirements on the Company's total funded debt, including the present issue of Bonds.

[fol. 4027] The Company's plant is maintained at a high standard of operating efficiency and adequate charges have been made, and are made currently, to provide for depreciation and obsolescence.

The Bonds will be issued under the First Mortgage dated June 1, 1922, to The First National Bank of Boston, Trustee. This Mortgage covers as a first lien all the real estate and other property, other than securities, now owned or hereafter acquired by the Company in the States of Maine, New Hampshire, Massachusetts and Rhode Island and also all shares (except directors' qualifying shares) of stocks of The New England Telephone and Telegraph Company of Massachusetts, Southern Massachusetts Telephone Company, Providence Telephone Company of Massachusetts, and The Massachusetts Telephone and Telegraph Company, subject only to a mortgage of $820,000 on a specific parcel of real estate acquired subject to such mortgage. The First Mortgage now secures $1,000,000 4% Debenture Bonds of 1900 due in 1930 and $10,000,000 5% Bonds of 1912 due in 1932 ratably with the $35,000,000 5% Bonds, Series A, outstanding and the $40,000,000 4½% Bonds, Series B, presently to be issued.

The amount of bonds authorized to be issued under the First Mortgage is limited so that the amount thereof at any time outstanding, when added to the then outstanding amount of the 4% Debenture Bonds of 1900, the 5% Bonds of 1912 and any underlying bonded debt as defined in the Mortgage, shall not exceed twice the amount of the then outstanding capital stock. Bonds are issuable under the Mortgage to refund the 4% Debenture Bonds of 1900, the 5% Bonds of 1912, any bonds issued under the First Mortgage and any underlying debt. Subject to the above limitation in amount, bonds are also issuable for the acquisition of additional property (including securities of other corporations) and for betterments. If at any time, however, the amount of outstanding bonds secured by this Mortgage, when added to the prior bonded debt (if any) of the Company, shall exceed the amount of the then outstanding capital stock, additional bonds will be issuable for not exceeding 75% of the expenditures for such additional property and betterments. The issue of bonds in respect of stock and other securities is limited so that not more than one-third of the security under the Mortgage shall consist of stock and unsecured obligations of other corporations.

The Mortgage further provides that so long as the Series A Bonds are outstanding, no bonds will be issuable, except for refunding, unless the net earnings of the Company available for interest charges during any twelve consecutive months out of fifteen months next preceding the proposed issue shall have been not less than one and one-half times the interest during such period on the Company's outstanding bonded debt as defined in the Mortgage, plus the amount of interest for twelve months on the bonds proposed to be issued. The bonds issuable under the Mortgage may be of several series and may vary as to interest rates, maturity dates, sinking fund and other provisions as may be determined by the Company from time to time.

The Series B Bonds, limited to the above-mentioned principal amount of $40,000,000, will be dated May 1, 1926 and will mature May 1, 1961. They will bear interest from May 1, 1926 at the rate of 4½% per annum, payable semiannually on May 1 and November 1. Principal and interest will be payable at the office or agency of the Company in New York City or, at the option of the holder, in Boston, Massachusetts. The Bonds will be in coupon form, registerable as to principal, in denominations of $1,000, $500, $100, and in fully registered form in denominations of $1,000, $5,000 and $10,000. The coupon Bonds and registered Bonds and the several denominations will be interchangeable. The bonds will be non-callable for 32 years, but may be redeemed at the option of the Company, in whole but not in part, upon 60 days' notice, on May 1, 1958, or on any interest date thereafter, at 100% and accrued interest.

Application will be made to list the Bonds on the New York and Boston Stock Exchanges.

Very truly yours, Matt B. Jones, President.

[fol. 4028]

DEFENDANT'S EXHIBIT D-12

Changes in Chicago Schedule Since October 1, 1923

Sheet No.	Effective	
9	May 1, 1924	Regulations—Ownership of facilities
8	June 1, 1924	New rates for switching apparatus and power equipment for Combination Manual and Mechanical Systems
10–11	June 1, 1924	Rates for Wiring Plans
12	June 1, 1924	Rates for Order Receiving Turrets
13	Oct. 1, 1924	Rates for hand and foot transmitter cut-outs
14	Sept. 1, 1925	Rates for Selector—Connectors
15	June 6, 1926	Extra Mileage charges in territory adjacent to Chicago exchange and not served by suburban exchanges
16	April 4, 1927	Hand set monthly rate $.50
2A	Sept. 1, 1927	Regulations covering deposits for establishing credit
17	Oct. 1, 1927	Time of day service
18	Dec. 1, 1927	Three slot coin-box equipment
Revised 2	Dec. 1, 1927	Revision in billing and collection practices (Rotation billing)
3A	Dec. 1, 1927	Revision in billing and collection practices (Rotation billing)
Revised 16	Feb. 16, 1928	Hand Telephone sets. Reduction of rate from $.50 to $.25
19	Sept. 15, 1928	Additional central office equipment for Night. Sunday and Holiday service in connection with Private Branch Exchange service
Revised 3A	Jan. 12, 1929	Revision in paragraph r lative to registers on measured service lines

[fol. 4029]

Sheet No.	Effective	
20	Jan. 12, 1929	Rates for subscribers' sets for outdoor use
21	July 1, 1929	Rates for Conference Equipment
22	Aug. 1, 1929	Rates for Busy Test Cabinets
23	Oct. 1, 1929	Rate reduction on dial stations equal to the number of trunks on Manual Private Branch Exchange Systems in Dial Central Office Areas
24	Dec. 25, 1929	Rates for New Cordless Private Branch Exchange Switchboard
25	Jan. 30, 1930	Rates for Dial Private Branch Exchange Systems having a capacity of 100 lines or less
26	Aug. 18, 1930	Rates for Key Station Dial Private Branch Exchange Systems
27	Jan. 1, 1931	Rates for Code Calling Systems
4A	Mar. 1, 1931	Rates for Residence Private Branch Exchange Trunks
28	Mar. 1, 1931	Revised Rates for Jack and Plug Equipment

[fol. 4030] EXTRACTS FROM EXHIBIT D-15

"An ordinance authorizing Chicago Telephone Company to construct, maintain and operate a line of telephone wires in the city of Chicago (Passed January 4, 1889. Accepted January 10, 1889)

* * * * * * *

§ 6. Compensation—service rates—use by city—rights reserved.—§§ 6. The said Chicago Telephone Company shall file with the comptroller of the city on the first days of January and July of each year, a statement of its gross receipts from the telephone business done by said company within the city of Chicago, for the six months next preceding such statement, which statement shall be sworn to by the president and secretary of said company, and, at the time of filing said statement, the said company shall pay into the city treasury three (3) per cent on such gross receipts, and said company, during the term for which this ordinance is granted, shall not increase to its present or future subscribers the rates for telephone service now established. And, provided, also, that with the acceptance hereinafter required there shall be filed by said company a schedule showing the rates charged by said company for telephone service at the date of the passage of this ordinance within the limits of the city of Chicago."

[fol. 4031] EXTRACTS FROM DEFENDANTS' EXHIBIT D-16

Ordinance Passed by City Council of City of Chicago November 6, 1907

An Ordinance Authorizing the Chicago Telephone Company to Construct, Maintain, and Operate a Line of Telephone Wires in the City of Chicago

* * * * * * * *

P. 1:

1. Grant-Term.—That permission and authority are hereby granted to Chicago Telephone Company, a corporation created and existing under and by virtue of the laws of Illinois, upon the terms and subject to the conditions of this ordinance, to construct, maintain, repair and operate in and under the public streets, alleys, and other public ways of the City of Chicago and under the Chicago River and its several branches, until January 8th, 1929, its system of wires, cables, electrical conductors, poles and conduits for the transmission of sound and signals only, by means of electricity.

[fol. 4032] #. 3. Compensation - Gross Receipts—Local Business.—The said Chicago Telephone Company shall file with the Comptroller of the City within sixty (60) days after the first day of January and of July in each and every year a statement in such form and detail as shall from time to time be prescribed by said Comptroller of all its gross receipts from all the business done by said Company within the City of Chicago for the next six (6) months next preceding said first day of January and of July, which statement shall be sworn to by the President and Secretary of said Company, and at the time of filing said statement the Company shall pay into the City Treasury three per cent. (3%) on all such gross receipts. All moneys received by said Chicago Telephone Company for service, communication and messages, from the exchanges, offices, stations or telephones of the said Company or of its lessees, subscribers or patrons, located within the City of Chicago to any exchanges, offices, stations or telephones now or hereafter owned, operated or leased by or to said Company outside the City of Chicago (commonly known and designated as 'toll' service, communication or messages), together with all moneys received by said Chicago Telephone Company, as its share of the gross receipts for service, communication and messages between the exchanges, offices, stations or telephones of the said Company, or of its lessees, subscribers or patrons located within the City of Chicago and any exchanges, offices, stations or telephones of any other company or person outside said City of Chicago (commonly known and designated as 'long distance' service, communication or messages), shall, for all the purposes of this ordinance, and particularly for the purpose of computing the compensation semi-annually due the City of Chicago hereunder, be deemed and treated as a part of the gross receipts from the business done by said Chicago Telephone Company within the City of Chicago.

* * * * * * *

6. Maximum Rates Fixed-Service and Equipment.—Said Chicago Telephone Company during the term of this ordinance shall furnish upon demand telephone service of any of the classes or kinds mentioned in this section, in the City of Chicago, without discrimination, at the same rates, to all persons, firms and corporations who shall elect to take or use any of such classes or kinds of service, and shall not charge its present or future lessees, subscribers or patrons within the City of Chicago rates for telephone [fol. 4033] service under yearly contracts payable monthly in excess of the following maximum rates:

Rates for Business Telephones

(a) Maximum rates for telephone service furnished for the use of subscribers and their employes in their business.

Flat Rate Service

For a single party line with the right to the unlimited use of the same, $125 per year.

Measured Rate Service

For a single party line, including twelve hundred outgoing conversations or messages over said line, $60 for each period of one year.

For the next twenty-four hundred outgoing conversations or messages, or any part thereof, during the year, 3 cents each.

For all outgoing conversations or messages in excess of thirty-six hundred over said line during the year, 2 cents each.

Every subscriber who will contract to use or pay for seventy-two hundred outgoing conversations or messages during the year at the above rates per message, shall be furnished at the same premises with a second single party line without extra charge, and every subscriber shall be furnished with an additional single party line at such premises, without extra charge, for each six thousand outgoing conversations or messages from such premises he will contract to use or pay for, in addition to said seventy-two hundred, during the year at the rate of 2 cents each.

A single party line or lines, including the right to transmit outgoing conversations or messages without limit, and without any charge per conversation or message, shall be furnished at the rate of one dollar ($1.00) per day each. Every subscriber to or lessee of such a line or lines shall not be charged at the rate of more than two (2) cents each for each and every outgoing conversation or message he may transmit by means of any other line or lines used in addition to or in connection with the line or lines last mentioned, and every subscriber to or lessee of such a line or lines shall be furnished with an additional single party line [fol. 4034] during any year without extra charge for each six thousand outgoing conversations or messages he will contract to use or pay for during the year, at the rate of two (2) cents for each message.

Subscribers to or lessees of single party lines at said rate of one dollar ($1.00) per day, shall, for the purposes of this section, be deemed subscribers to measured service.

Every subscriber to measured service shall also be furnished with as many single party lines at the same premises as he may demand, in addition to the first single party line of any kind he contracts for, without contracting to use or pay for any particular number of outgoing conversations or messages per quarter at the rate of six dollars ($6.00) per quarter for each line. The outgoing messages used over such additional line or lines shall be accounted and paid for as a part of the total messages from the subscriber's premises.

Every subscriber or lessee who is furnished with single party lines in addition to his first single party line under the above mentioned yearly guarantees, or at the above mentioned rate of six dollars ($6.00) per quarter, may use each or any or all of his lines wholly for incoming messages or wholly for outgoing messages, or for both, as he may elect.

Subscribers or lessees to measured service contracting for two or more single party lines at measured rates at the same premises shall be furnished, if they desire, without additional charge, private branch exchange switching apparatus, appliances and equipment, including an operator's telephone, but a charge of one dollar and fifty cents ($1.50) per quarter may be made for each terminal telephone connected with the private branch exchange switching apparatus upon the same premises.

In computing the amount due to the Company from any subscriber for the total number of outgoing conversations or messages transmitted during any year at message rates, by means of more than one single party line, from the same premises, the same rates per message transmitted shall be charged in such computation as would be charged if said total number of outgoing messages had been transmitted over one single party line. The Chicago Telephone Company shall make no charge to any lessee, subscriber or patron for any incoming conversation or message transmitted to such lessee, subscriber or patron over any line furnished [fol. 4035] under this ordinance, except for toll messages or long distance messages in cases where its lessees, subscribers or patrons consent at the time of receiving the same to pay therefor instead of the persons by whom such messages are sent.

Rates for Residence Telephones

(b) Maximum rates for telephone service furnished for the use of subscribers at their residences:

For a single party line, including all outgoing conversations or messages, $18 per quarter.

For a two-party line, including all outgoing conversations or messages, $14 per quarter.

Rates for Nickel Prepaid Service

(c) Nickel prepayment service shall be furnished by said Chicago Telephone Company by means of telephone instruments equipped with a coin box and slot or similar device for receiving five-cent pieces, and upon guarantees, not in excess of the following rates per message:

Nickel prepayment service, with outgoing messages, at 5 cents each, as follows:

One party line, at a guarantee of 20 cents per day, including four messages.

Two party line, at a guarantee of 12½ cents per day, including two and a half messages.

Two party line (for residences only) at a guarantee of 10 cents per day, including two messages.

Four party line (for residences only) at a guarantee of 5 cents per day, including one message.

When any lessee or subscriber, in making settlement with said Chicago Telephone Company at the time of collection under the guarantee above mentioned, shall pay any amount to make up a deficiency between the amount in the coin box or similar device used and the sum guaranteed, he shall be given at the time of making such deficiency payment a receipt, or some written or printed evidence showing the amount and date of such deficiency payment. At any succeeding collection or collections made within approximately sixty days after such deficiency payment, any amount found in the coin box for local messages in excess of the aomunt due under the guarantee of the subscriber or [fol. 4036] lessee shall be applied to the repayment of such deficiency payment.

It shall be the duty of the Chicago Telephone Company to make its collections from coin boxes approximately every thirty days or less.

The said Chicago Telephone Company is hereby expressly forbidden to furnish telephone service to more than four subscribers or lessees by means of a single circuit or line.

Said Chicago Telephone Company shall be obliged to furnish four-party line service only when at least two subscribers or lessees located within the limits of a single block desire such service.

(d) Public Telephone Service:

The charge for a single conversation or message from any telephone located within the City of Chicago, to any other telephone located within the City, shall not exceed 5 cents. Any charge in excess thereof shall be unlawful. Said Chicago Telephone Company is hereby expressly forbidden to authorize or permit any of its lessees, subscribers or patrons to whom it has furnished or hereafter furnishes a telephone instrument or instruments, line or lines, to charge any person more than the rate above prescribed without regard to how or where such telephone instrument or instruments, line or lines, may be installed.

Said Chicago Telephone Company shall insert a clause in every contract it makes with its lessees, subscribers or patrons, forbidding said lessee, subscriber or patron to charge more to any person than five cents for a single conversation or message transmitted from any telephone or telephones furnished or supplied to said lessee, subscriber or patron, under his contract, within the City of Chicago, to any other point within said City of Chicago.

(e) Neighborhood Exchange Service:

In addition to its telephone system extending throughout the city limits, said Chicago Telephone Company may maintain and establish local or neighborhood exchanges within its limits. Said Chicago Telephone Company shall not abolish any local or neighborhood exchange now established or maintained by it, without the consent of the City Council embodied in the form of an ordinance or resolution, and said Chicago Telephone Company, during the period of this grant, shall establish and maintain a local or neighborhood [fol. 4037] exchange in any suburban district within the city limits, if said district is North of Devon Avenue, West of Fortieth avenue, or South of 71st street, whenever the City Council shall by ordinance or resolution so direct, but said City Council shall not so direct unless there is a reasonable demand therefor in such district and unless it, or some officer of the city designated by it, shall have made a request upon said Chicago Telephone Company to establish and maintain such local or neighborhood exchange at least thirty days prior to the passage of such ordinance or resolution. Any subscriber in such an exchange may communicate with any telephone located within the city limits outside of the local or neighborhood exchange and served by any of the exchanges of the Company located within the City of Chicago by a message, for which a charge of not more than five cents may be made for each period of five minutes or a fraction thereof.

The rates for such local or neighborhood exchange service, including all outgoing local conversations or messages, under yearly contracts, shall not exceed the following:

	Business	Residence
One-party line	$4.00 per month	$3.00 per month
Two-party line	3.00 per month	2.00 per month
Four-party line	2.00 per month	1.50 per month

But said Chicago Telephone Company shall not make, impose or collect any extra charge, rate, price or toll for any message from any telephone within the City of Chicago served by the lines or system of the Chicago Telephone Company in the City of Chicago and not served by any neighborhood exchange to any other telephone located within the City of Chicago served by said system, or by one of said neighborhood or local exchanges. The Chicago Telephone Company shall not make, impose or collect any extra charge, rate, price or toll for any message from any telephone served by one of said neighborhood exchanges to any other telephone whatsoever located within the area or district lying within the boundaries or limits of said neighborhood exchange and served by any of the exchanges of said Chicago Telephone Company located within the City of Chicago. Any lessee or subscriber to both a line or lines served by a neighborhood or local exchange, and a line or lines connected with a private branch exchange switchboard upon the same premises served by any other exchange, shall have the right, without extra charge therefor, to have all the said lines connected into said private branch exchange switchboard.

(f) Toll Service:

[fol. 4038] Said Chicago Telephone Company shall not charge more than 10 cents for each conversation or message, up to three minutes in duration (and not more than 5 cents for each additional minute), transmitted from any telephone located within the City of Chicago to any other telephone which is located outside of the City of Chicago, but with fifteen (15) miles of the present city hall in said City of Chicago, or within one mile of the city limits and within the State of Illinois.

(g) Meters on Measured Service Lines:

The Chicago Telephone Company shall install in connection with each measured service line of its lessees and subscribers a meter which shall prove effective in actual use for accurately and correctly recording the number of outgoing messages or conversations over said line, and at any time that a practicable meter for use upon the premises of the lessee or subscriber in connection with such line shall be devised and prove effective in actual use for accurately and correctly recording outgoing messages or conversations, as aforesaid, the Company shall install the same in connection with each line of its lessees of and subscribers to measured service upon their premises.

If any queston shall arise as to whether any meter or meters hereinabove provided for shall reasonably protect the lessee or subscriber in the counting of outgoing messages, or as to whether or not a practicable meter for use upon the premises of the lessee or subscriber to a measured service line has been devised and proved effective in actual use for accurately and correctly recording outgoing messages or conversations, as aforesaid, such question or questions shall be submitted to the Chairman of the Finance Committee of the City Council, the Commissioner of Public Works and the Corporation Counsel, who shall together hear such facts as may be presented by the parties to the controversy, and they; or a majority of them, are hereby given the power to decide such question or questions, and to require said Chicago Telephone Company to make such changes in any meter or meters, or the method of operating the same, as they shall deem reasonably necessary to protect the lessees and subscribers of said Chicago Telephone lessees, subscribers, patrons or users unless a constallation by said company of a new meter or meters for use upon the premises of the lessees and subscribers, and to take any other action in the premises which they shall deem reasonably necessary to protect the lessees and subscribers of said company.

The Chicago Telephone Company shall not make any [fol. 4039] charge for a conversation or message to its telephone lessees, subscribers, patrons or users unless a conversation or message has been actually transmitted, except in cases herein expressly provided.

(h) Extension Telephones:

Said Chicago Telephone Company shall furnish to any of its lessees, subscribers or patrons upon demand, at least three extension telephones for each line used by the lessee, subscriber or patron and located in the same premises with the principal telephone of the lessee, subscriber or patron, at not exceeding fifty (50) cents per month for each extension telephone, including necessary wires and an appropriate signaling device, provided that the company shall not be compelled to furnish more than one extension telephone to each lessee, subscriber or patron served by a four-party line.

(i) Telephone Directory:

Said Chicago Telephone Company shall, at least three times during each year, print, publish, furnish and deliver to each of its lessees and subscribers in Chicago, free of charge, a directory containing in alphabetical order the names, addresses and telephone numbers of all its lessees and subscribers in Chicago who have not requested in due time that their names be omitted. Said Chicago Telephone Company shall also when requested at the times before mentioned furnish and deliver to each of its lessees and subscribers an additional directory for each extension telephone contracted or paid for by said lessee or subscriber. Said Telephone Company shall include and list in each of the said directories, at the request or with the consent of any of its lessees or subscribers, in connection with the address and telephone number of such lessee or subscriber, free of charge, the names, in their proper alphabetical order, of not more than three partners, officers, employes or members of the family of such lessee or subscriber for each single or two-party line, contracted for by such lessee or subscriber, and make one such free listing for each four-party line and for each neighborhood exchange telephone, and also one more of such names for each extension telephone used by the said lessee or subscriber, and, in addition thereto, as many more of said names of users on the same premises as said lessee or subscriber (unless said lessee or subscriber is the lessee of or subscriber to a flat rate single party line at $125 per year) may request, or consent to, upon payment to the Chicago Telephone Company of not more than $3.00 per annum for each additional name so included and listed.

[fol. 4040] (j) Private Lines and Extensions:

Said Chicago Telephone Company shall furnish upon demand to any of its lessees or subscribers a line or lines, connected with a switchboard, terminal or extension telephone or telephones, located outside of and beyond the premises of said lessee or subscriber, and with the switchboard, terminal or extension telephone or telephones located, upon the premises of said lessee or subscriber. So long as said terminal or extension telephone or telephones shall be located within one-half mile of said premises measured by the most direct street distance, said Company shall charge at the rate of not to exceed $5.00 per quarter year, and for each additional one-quarter mile, or fraction thereof, which said terminal or extension telephone or telephones is or are distant from said premises said Company may charge not to exceed the rate of $2.50 per quarter year.

Said Chicago Telephone Company shall also furnish private telephone lines or wires not connected with any switchboard and connecting any two points within the city limits which are not more than one mile part, measured by the most direct street distance, at the rate of $10.00 each per quarter year, and for each additional quarter mile, or fraction thereof, between said points, measured as aforesaid, said Chicago Telephone Company may charge not to exceed $2.50 per quarter year.

Said Chicago Telephone Company shall furnish terminal or extension telephones to be connected with any switchboard or wire hereinabove referred to at the rate of not to exceed $1.50 each per quarter year.

(k) Rates Defined:

All rates, prices or charges for telephone service, facilities or equipment herein prescribed, are maximum rates only, and nothing herein shall be construed as an admission of the City of Chicago that such maximum rates are reasonable or proper rates.

It is understood that reconstruction and additions must be done and made to the said Company's system in Chicago after the taking effect of this ordinance before the telephone service and equipment can be adjusted to all the service requirements subscribers may make of the Company under this ordinance. Such changes and additions shall be completed within eighteen months after this ordinance goes into effect.

* * * * * * *

[fol. 4041] 9. *Rate Agreements and Division of Territory Forbidden—Revocation of Privileges—Rights Assignable.*—The said Chicago Telephone Company shall not at any time enter into any agreement or combination with any other company heretofore existing or hereafter created concerning the price to be charged by said Chicago Telephone Company in the City of Chicago for telephone service or equipment, nor shall said Chicago Telephone Company make any transfer or division of territory, streets, avenues, alleys or public ways of the City, with any other company or corporation doing or proposing to do any kind of telephone business in said City of Chicago, and any violation of the provisions of this section shall authorize and entitle the City to repeal this ordinance, which repeal shall revoke all the rights and privileges hereby granted; provided that the rights and privileges granted to the Chicago Telephone Company under this ordinance may pass to any legal successor to said Company except a competitor in the telephone business by assignment, mortgage or otherwise, subject to all the terms and conditions of said ordinance, and said successor or successors shall file with the City Clerk its acceptance of said terms and conditions."

[fol. 4042] EXTRACTS FROM EXHIBIT No. D-16

Pamphlet—Proceedings of City Council—Chicago—Nov. 6, 1907

* * * Right to purchase Plant Reserved by City—Priced Fixed by Appraisers.

The City of Chicago shall have the right on the first day of January, 1919, or on the first day January, 1924, or within thirty (30) days after either of said dates, if it shall so elect, to terminate the grant of privileges of said Chicago Telephone Company conferred hereby, and on either of the said dates, or at the expiration of the term hereof, or within thirty (30) days after either of the times mentioned, to take over for municipal, state or federal operation the plant and system of the grantee, or its successor or successors, including the property hereinafter mentioned; provided that twelve (12) months' previous notice in writing shall have been given of the intention of the City to take over the telephone plant and system of the grantee, or its successor or successors, within the City of Chicago, including all appurtenances, appliances, equipment, lines, leaseholds, buildings, stores, furniture and fixtures, suitable to and used by it for the purposes of this grant, taking into consideration the then condition of the art, and in the event that the City Council shall so terminate this grant, or that said grant shall have expired, and the City Council shall take over the property of said company above mentioned, then the City shall pay therefor in cash the then cost of the duplication, taking into consideration the then condition of the art, less depreciation, of said telephone plant and system and other property aforesaid, together with, if the said grant shall not then have expired, five per cent (5%) thereon in addition as compensation for the compulsory sale, but there shall be no allowance for earning power, or for the value of the rights and privileges hereby granted, [fol. 4043] or for any franchise or license value.

In the event that the City shall desire to purchase the property of the Company within the City of Chicago, as aforesaid, the purchase price of said property shall be determined by appraisement as follows:

One appraiser shall be appointed by the City in such manner as the City Council shall direct; one shall be appointed by the Company and a third shall be appointed by the two so selected. Either party may appoint its appraiser at any time after the giving of the notice of intention to take over the telephone plant and system of the grantee, and serve written notice of such appointment upon the other party, and said other party within thirty (30) days after service of notice of such appointment shall appoint its appraiser and serve written notice of such appointment upon the other party; whereupon the two appraisers so appointed shall appoint a third appraiser.

In the event that the party first receiving the notice of the selection of an appraiser by the other party, shall refuse or fail to appoint an appraiser and give notice thereof as above provided, or in the event that the two appraisers first appointed shall fail to agree upon a third appraiser within thirty (30) days after the giving of notice of the appointment of the second appraiser, either party, upon giving a written notice of ten (10) days to be other party, may apply to the then Judges of the Appellate Court for the First District of Illinois, or a majority of the Judges of the said Appellate Court, for the appointment of an appraiser, and if the appraiser appointed by the Judges of the said Court, or by a majority of them, shall be the second appraiser, then the third appraiser shall be selected by the two appraisers, or if they fail to agree, by the said Judges of the said court, or a majority of them, in the manner hereinbefore provided, and any appraiser or appraisers appointed by said Judges, or a majority of them, shall have [fol. 4044] the same powers and duties as if regularly appointed in the manner as first hereinabove provided.

The appraisers shall determine what tangible property, real and personal, owned by the said Company and used for the purposes of this grant is reasonably required for its continued operation, taking into consideration the then condition of the art, and in determining the fair cash value of said property they shall not take into consideration its earning power, or the value of the rights or privileges hereby granted, or the value of any license or franchise, but shall allow for the property the then cost of duplication, taking into consideration the then condition of the art, less depreciation. In considering the cost of duplication of underground conduits, wires, cables, electrical conductors and any other underground construction located in any street, alley or other public way which was or were placed therein at a time when such street, alley or other public way was unpaved, the said appraisers shall not take into consideration the cost and expense of removing or replacing any paving, or part thereof, in such street, alley or other public way. An award in writing, signed by a majority of the appraisers, shall be valid and binding upon the parties.

Within ninety (90) days after the making of said written award by the said apraisers, or a majority of them, the Chicago Telephone Company shall cause to be duly made, executed and delivered proper bills of sale and deeds of the said telephone plant and system and tangible property covered by said award, and the City of Chicago, upon the delivery of said bills of sale and deeds, and the delivery of, or the transfer of control over, said telephone plant and system and tangible property, shall make payment in cash therefor, as hereinbefore provided.

If said award shall not have been made until after the date named in the written notice given by the City of its intention to take over the telephone plant and system of the [fol. 4045] grantee, or its successor or successors, as hereinbefore provided, such delay on the part of the said appraisers, or a majority of them, in making their award, shall not affect the right of the City of Chicago to take over the said telephone plant and system and tangible property of the Chicago Telephone Company.

Said City of Chicago shall pay the expenses and charges of the said appraisers for their services under a contract which shall be authorized by the City Council and entered into by each of said appraisers at the time of his appointment. Such contract shall not allow to each of said appraisers more than one hundred dollars per day as compensation, and shall bind them to complete their award within a stipulated time, or be subject to a specified reduction per day in compensation. Such contract shall also forbid any of the said appraisers from contracting for, or accepting any other or additional compensation for his or their services (from any person, firm or corporation) except that provided in said contract. The other terms of said contract shall be such as may meet the approval of the City Council. Provided, that the City of Chicago may deduct from the purchase price fixed by said award one-half of the total amount paid as the total expenses and charges of said appraisal.

The appraisers selected in the manner aforesaid, or a majority of them, shall have and may exercise at all times the right to make a complete examination of the records, books of account, vouchers, bills, contracts and documents of said Company, for the purpose of fully informing themsevles as to the actual cost, value and depreciation of the plant and system of said Company, including all appurtenances, appliances, equipment, lands, leaseholds, buildings, stores, furniture and fixtures and other property.

Any vacancy or vacancies occurring at any time in said Board of Appraisers by death, resignation, disqualification or inability to act, may be filled within fifteen days, by the party or body making the original appointment, and if not [fol. 4046] so filled, by the Judges of said court, or a majority of them, upon the application of either party hereto, provided five days' previous notice in writing of such application shall have been given to the other party.

The Chicago Telephone Company by the filing of the acceptance hereinbefore provided for shall be understood as granting and does hereby grant to the City of Chicago, and the said City of Chicago hereby reserves to itself the right to designate any person, firm or corporation having lawful authority to acquire, own and operate a telephone line or lines or a system in said City of Chicago (hereinafter called the "licensee") who or which shall have the right to purchase the plant, system, rights and property of said Chicago Telephone Company at the expiration of the term of this grant, or within thirty (30) days thereafter, in the same manner which the City hereunder has the right to purchase the same within such time, and any person, firm or corporation so designated by said City of Chicago as licensee twelve or more months prior to the expiration of this grant shall for all the purposes of this section stand in the position of said City of Chicago. The right of the licensee of said City of Chicago to acquire said telephone plant, system, rights and property by purchase under the provisions of this ordinance shall in no way be impaired or diminished by any lack of authority or power on the part of the City of Chicago itself to acquire the said telephone plant, system, rights and property for municipal or other use and operation.

Nothing in this section, however, shall have the effect, or be construed to have the effect of lessening or limiting the rights of the City of Chicago to alter, change or reduce the charges, rates, tolls or other compensation to be charged by said licensee in the operation of said plant and system, or of lessening or limiting any of the authority, power or right reserved by said City of Chicago to itself by this ordinance, or of changing, lessening or limiting any of the duties, obligations or restrictions imposed by this [fol. 4047] ordinance upon the grantee.

Nothing in this ordinance shall have the effect or be construed to have the effect of extending so far as the licensee is concerned, the term of this grant beyond January 7, 1929. Upon the purchase of said plant, system, rights and property under the provisions of this section either by the City of Chicago, or by any licensee of said City, all the rights of said Chicago Telephone Company, its licensee or assigns, in or to said plant, system, rights and property, or any part or parts thereof, or the operation thereof, or receipts therefrom, shall wholly cease and determine. If at the expiration of this grant the City shall not have elected to purchase the plant, system and other property of said Company hereinbefore mentioned, and shall not have designated any licensee, the failure on the part of the City to purchase or elect to purchase, or elect to designate a licensee, shall not be construed as an extension of this grant, or any of the rights and privileges hereby granted.

The authority, powers, privileges and rights by this section reserved by and granted to the City of Chicago to itself purchase the plant, system and property of said Chicago Telephone Company are so reserved and granted upon the understanding that they and each of them may be exercised only if at the time said City of Chicago seeks to exercise the same, or any of them, it shall possess the charter power so to do. But said Chicago Telephone Company by the acceptance of this ordinance shall be [illegible] precluded from in any manner attacking [illegible] the power of the City of Chicago to [illegible] authority, powers, privileges and rights hereby [illegible] granted, or any of them.

[fol. 4048] EXTRACTS FROM EXHIBIT D-18

"An ordinance fixing the maximum rates for telephone service in the city of Chicago which may be charged by the Chicago Telephone Company for a period of five years from and after the passage of this ordinance and its acceptance by the Chicago Telephone Company, and for other purposes appearing in the ordinance (passed by the city council of the city of Chicago, May 26, 1913, pages 625 to 638, inclusive, of the journal of the proceedings of said date

* * * * * * *

Section 2. Maximum Rates Fixed—Service and Equipment.—For a period of five years from and after the passage of this ordinance and its acceptance by the Chicago Telephone Company as hereinafter provided, said Chicago Telephone Company shall furnish upon demand telephone service of any of the classes or kinds mentioned in this section, in the City of Chicago, without discrimination, at the same rates, to all persons, firms and corporations who shall elect to take or use any of such classes or kinds of service, and shall not charge its present or future lessees, subscribers or patrons within the City of Chicago rates for telephone service, under yearly contracts payable monthly, in excess of the following maximum rates:

Measured Rate Service

(a) Maximum rates for telephone service furnished for the use of subscribers and their employes in their business:

For a single party line, including nine hundred and sixty outgoing conversations or messages over said line, $48 for each period of one year.

For the next two hundred and forty outgoing conversations or messages, or any part thereof, during the year, 5 cents each.

For the next twelve hundred outgoing conversations or messages, or any part thereof, during the year, 3 cents each.

For the next twelve hundred outgoing conversations or messages, or any part thereof, during the year, 2½ cents each.

For all outgoing conversations or messages in excess of thirty-six hundred over said line during the year, 2 cents each.

For a single party line, including twelve hundred [fol. 4049] outgoing conversations or messages over said line, $60 for each period of one year.

For the next twelve hundred outgoing conversations or messages, or any part thereof, during the year, 3 cents each.

For the next twelve hundred outgoing conversations or messages, or any part thereof, during the year 2½ cents each.

For all outgoing conversations or messages in excess of thirty-six hundred over said line during the year, 2 cents each.

(b) Maximum rates for telephone service furnished for the use of subscribers at their residences:

For a single party line, including eight hundred outgoing conversations or messages over said line, $40 for each period of one year.

For the next four hundred outgoing conversations or messages, or any part thereof, during the year, 4 cents each.

For the next twelve hundred outgoing conversations or messages, or any part thereof, during the year, 3 cents each.

For the next twelve hundred outgoing conversations or messages, or any part thereof, during the year, 2½ cents each.

For all outgoing conversations or messages in excess of thirty-six hundred over said line during the year, 2 cents each.

Every subscriber to measured service who will contract to use or pay for seventy-two hundred outgoing conversations or messages during the year at the above rates per message shall be furnished at the same premises with a second single party line without extra charge, and every subscriber shall be furnished with an additional single party line at such premises, without extra charge, for each six thousand outgoing conversations or messages from such premises he will contract to use or pay for, in addition to said seventy-two hundred, during the year at the rate of 2 cents each.

Every subscriber to measured service shall also be furnished with as many single party lines at the same premises as he may demand, in addition to the first single party line of any kind he contracts for, without contracting to use or pay for any particular number of outgoing conversations or messages per quarter at the rate of six dollars ($6.00) per quarter for each line. The outgoing messages used over such additional line or lines shall be accounted and paid for as a part of the total messages from the subscriber's premises.

[fol. 4050] Every subscriber or lessee who is furnished with single party lines in addition to his first single party line under the above mentioned yearly guarantees, or at the above mentioned rate of six dollars ($6.00) per quarter, may use each ~~or~~ any or all of his lines wholly for incoming messages or wholly for outgoing messages, or for both, as he may elect.

Subscribers or lessees to measured service contracting for two or more single party lines at measured rates at the same premises shall be furnished, if they desire, without additional charge, private branch exchange switching apparatus, appliances and equipment, including an operator's telephone, but a charge of one dollar and fifty cents ($1.50) per quarter may be made for each terminal telephone connected with the private branch exchange switching apparatus upon the same premises.

In computing the amount due to the Company from any subscriber for the total number of outgoing conversations or messages transmitted during any year at message rates, by means of more than one single party line, from the same premises, the same rates per message transmitted shall be charged in such computation as would be charged if said total number of outgoing messages had been transmitted over one single party line. The Chicago Telephone Company shall make no charge to any lessee, subscriber or patron for any incoming conversation or message transmitted to such lessee, subscriber or patron over any line furnished under this ordinance, except for toll messages or long distance messages in cases where its lessees, subscribers or patrons consent at the time of receiving the same to pay therefor instead of the persons by whom such messages are sent.

From and after the passage of this ordinance, and its acceptance by the Chicago Telephone Company as hereinafter provided, said Company shall not furnish with the right to transmit outgoing conversations or messages without limit and without any charge for conversation or message, a single party business line or lines at the rate of one dollar ($1.00) or at any other rate per day each: provided, however, that present subscribers to said class of service shall have the right to a continuance thereof at their present or any future location within the City at the rate and upon the conditions prescribed and fixed therefor in said ordinance of November 6, 1907, subject to the terms and conditions of said ordinance.

(c) Flat Rate Service:

For a single party line for the use of subscribers at their residences, including all outgoing conversations or messages, $18 per quarter.

For a two-party line for the use of subscribers at their [fol. 4051] residences, including all outgoing conversations or messages, $14 per quarter.

For a single party line for the use of subscribers and their employes in their business, including not to exceed five hundred (500) outgoing conversations or messages, in any one month, ten dollars and forty-two cents ($10.42) per month, and for all outgoing conversations or messages in excess of five hundred in any one month, 2 cents each; provided, however, that present subscribers to a single party business line, with the right to the unlimited use of the same at one hundred and twenty-five dollars ($125) per year, shall have the right to a continuance thereof at their present or any future location within the City, at the rate and upon the conditions prescribed and fixed for said class of service in said ordinance of November 6, 1907, and, provided further, that all persons applying for said last mentioned class of service upon the Company's regular form of application before this ordinance goes into effect shall be entitled to have said class of service at the rate and upon the conditions prescribed and fixed for said class of service in said ordinance of November 6, 1907.

If any present subscriber to a single party business line, with the right to the unlimited use of the same at one hundred and twenty-five dollars ($125) per year, be compelled, by fire or other cause beyond the control of such subscriber, to temporarily suspend business, involving the discontinuance of his telephone service, then upon the resumption of his business within six months after such discontinuance begins he shall have the right to be furnished, at his old or any new address, with the same class of service that was being furnished him at the time of the discontinuance of his business, towit, a single party business line with the right to the unlimited use of the same at one hundred and twenty-five dollars ($125) per year.

Rates for Nickel Coin Box Service

Nickel Prepayment or Nickel First Service

(d) Nickel first service, where the nickel must be deposited to call the operator, shall be furnished by said Chicago Telephone Company by means of telephone instruments equipped with a coin box and slot or similar device for receiving five-cent pieces, and upon guarantees, not in excess of the following rates per message:

Nickel first service, with outgoing messages for each of which a five-cent piece must be deposited in the coin box, slot or similar device for receiving five-cent pieces, as follows:

[fol. 4052] One-party line, at a guarantee of 20 cents per day, including four messages.

Two-party line, at a guarantee of 12½ cents per day, including two and one-half messages.

Two-party line (for residences only) at a guarantee of 10 cents per day, including two messages.

Four-party line (for residences only) at a guarantee of 5 cents per day, including one message.

Additional messages in excess of the guaranteed number per day in each of the foregoing nickel first classes, 4 cents each.

The Chicago Telephone Company, in making settlement with the lessee or subscriber, at the time of collection shall allow said lessee or subscriber 1 cent for each message in excess of the total guaranteed number of messages since the last preceding collection settlement.

The Chicago Telephone Company shall, as hereinafter provided, install with each nickel first telephone located in a residence a push button or other device which will enable the subscriber, in an emergency, to call the operator without the deposit of a nicket. After six months from the taking effect of this ordinance, said push button or other device shall be installed on all such residence telephones in connection with new installations, moves and changes; within eighteen months after the taking effect of this ordinance the said push button or other device shall be supplied to all nickel first residence users requesting it, and within two years after the taking effect of this ordinance all nickel first residence telephones shall be equipped with said push button or other device.

Where the Company's equipment and facilities will not permit of the installation of nickel first service, the Company shall temporarily install nickel last service, if so requested by the subscriber.

Nickel on Request or Nickel Last Service

(e) Nickel last service, where the nickel must be deposited in the coin box, slot or similar device for receiving five-cent pieces immediately upon the request of the operator, shall be furnished by said Chicago Telephone Company by means of telephone instruments equipped with a coin box and slot or similar device for receiving five-cent pieces, and upon guarantees, not in excess of the following rates per message:

Nickel last service, with outgoing messages, at 5 cents [fol. 4053] each, as follows:

One-party line, at a guarantee of 20 cents per day, including four messages.

Two-party line, at a guarantee of 12½ cents per day, including two and a half messages.

Two-party line (for residences only) at a guarantee of 10 cents per day, including two messages.

Four-party line (for residences only) at a guarantee of 5 cents per day, including one message.

Subscribers to nickel last service shall be entitled to nickel first rates as provided in subdivision (d) hereof within thirty (30) days after signing an application to the Company for change in service to nickel first, and the Company will change the equipment and service from nickel last to nickel first in such cases as soon as practicable; and within approximately thirty (30) days after the passage and acceptance by the Company of this ordinance the Company shall present to every nickel last subscriber an application blank, to be signed by every subscriber desiring nickel first service.

(f). When any lessee or subscriber, in making settlement with said Chicago Telephone Company at the time of collection under the nickel first and the nickel last guarantees above mentioned, shall pay any amount to make up a deficiency between the amount in the coin box or similar device used and the sum guaranteed, he shall be given at the time of making such deficiency payment a receipt or some written or printed evidence showing the amount and date of such deficiency payment. At any succeeding collection or collections made within approximately sixty (60) days after such deficinecy payment, any amount found in the coin box for local messages in excess of the amount due under the guarantee of the subscriber or lessee shall be applied to the repayment of such deficiency payment.

If at the time of any collection under the nickel first and nickel last guarantees above mentioned the Chicago Telephone Company shall collect from the coin box or similar device used, an amount which (together with the amount, if any, paid by the lessee or subscriber at the time such collection is made on account of slugs or other tokens found in the coin box or similar device used) shall exceed the amount guaranteed by the lessee or subscriber, he shall be given a receipt or some written or printed evidence at the time such collection is made showing the amount and date of such collection in excess of the amount guaranteed; and if at any succeeding collection or collections made within [fol. 4054] approximately sixty (60) days thereafter there shall be a deficiency between the amount in the coin box or similar device and the sum guaranteed, then the amount collected within approximately sixty (60) days preceding such deficiency collection or collections in excess of the amount guaranteed shall, so far as it will extend, be applied in payment or partial payment of such deficiency or deficiencies.

It shall be the duty of the Chicago Telephone Company to make its collections from coin boxes approximately every thirty (30) days or less.

The said Chicago Telephone Company is hereby expressly forbidden to furnish telephone service to more than four subscribers or lessees by means of a single circuit or line.

Said Chicago Telephone Company shall be obliged to furinsh four-party line service only when at least two subscribers or lessees located within the limits of a single block desire such service.

(g) Public Telephone Service:

The charge for a single conversation or message from any telephone located within the City of Chicago, to any other telephone located within the City, shall not exceed 5 cents. Any charge in excess thereof shall be unlawful. Said Chicago Telephone Company is hereby expressly forbidden to authorize or permit any of its lessees, subscribers or patrons to whom it has furnished or hereafter furnishes a telephone instrument or instruments, line or lines, to charge any person more than the rate above prescribed without regard to how or where such telephone instrument or instruments, line or lines, may be installed.

Said Chicago Telephone Company shall insert a clause in every contract it makes with its lessees, subscribers or patrons, forbidding said lessee, subscriber or patron to charge more to any person than five cents for a single conversation or message transmitted from any telephone or telephones furnished or supplied to said lessee, subscriber or patron, under his contract, within the City of Chicago, to any other point within said City of Chicago.

(h) Neighborhood Exchange Service:

In addition to its telephone system extending throughout the city limits, said Chicago Telephone Company may maintain and establish local or neighborhood exchanges within its limits. Said Chicago Telephone Company shall not abolish any local or neighborhood exchange now established or maintained by it, without the consent of the City Council embodied in the form of an ordinance or resolution, [fol. 4055] and said Chicago Telephone Company, during the period of the grant made in said ordinance of November 6, 1907, shall establish and maintain a local or neighborhood exchange in any suburban district within the city limits, if said district is North of Devon avenue, West of Fortieth avenue, or South of 71st street, whenever the City Council shall by ordinance or resolution so direct, but said City Council shall not so direct unless there is a reasosable demand therefor in such district and unless it, or some officer of the City designated by it, shall have made a request upon said Chicago Telephone Company to establish and maintain such local or neighborhood exchange at least thirty days prior to the passage of such ordinance or resolution. Any subscriber in such an exchange may communicate with any telephone located within the city limits outside of the local or neighborhood exchange and served by any of the exchanges of the Company located within the City of Chicago by a message, for which a charge of not more than five cents may be made for each period of five minutes or a fraction thereof.

The rates for such local or neighborhood exchange service, including all outgoing local conversations or messages, under yearly contracts, shall not exceed the following:

	Business Per Month	Residence Per Month
One party line	$4.00	$3.00
Two party line	3.00	2.00
Four party line	2.00	1.50

But said Chicago Telephone Company shall not make, impose or collect any extra charge, rate, price or toll for any message from any telephone within the City of Chicago served by the lines or system of the Chicago Telephone Company in the City of Chicago and not served by any neighborhood exchange to any other telephone located within the City of Chicago served by said system, or by one of said neighborhood or local exchanges. The Chicago Telephone Company shall not make, impose or collect any extra charge, rate, price or toll for any message from any telephone served by one of said neighborhood exchanges to any other telephone whatsoever located within the area or district lying within the boundaries or limits of said neighborhood exchange and served by any of the exchanges of said Chicago Telephone Company located within the City of Chicago. Any lessee or subscriber to both a line or lines served by a neighborhood or local exchange, and a line or lines connected with a private branch exchange switchboard upon the same premises served by any other exchange, shall have the right, without extra charge therefor, to have all the said lines connected into said private branch exchange switchboard.

[fol. 4056] (i) Toll Service:

Said Chicago Telephone Company shall not charge more than 10 cents for each conversation or message, up to three minute in duration (and not more than 5 cents for each additional minute), transmitted from any telephone located within the City of Chicago to any other telephone which is located outside of the City of Chicago, but within fifteen (15) miles of the present city hall in said City of Chicago, or within one mile of the city limits and within the State of Illinois. Provided, however, that said Chicago Telephone Company shall not charge more than 5 cents for each three minute conversation or message (and not more than 5 cents for each additional three minutes or fraction thereof) between Austin and Oak Park; between Rogers Park and Evanston; between Lawndale and Morton Park; between Longwood and Evergreen Park; between Mont Clare and River Grove, and between Mont Clare and Oak Park; and said Chicago Telephone Company shall have the right to apply the same rate between other contiguous places just within and just without the city limits when conditions, in its opinion, may justify the charge of said 5 cent rate.

(j) Meters on Measured Service Lines:

The Chicago Telephone Company shall install in connection with each measured service line of its lessees and subscribers a meter which shall prove effective in actual use for accurately and correctly recording the number of outgoing messages or conversations over said line. At the request of any subscriber to a single party measured service line not connected with a private branch exchange, or any subscriber to a single party line for the use of subscribers and their employes in their business, including not to exceed five hundred (500) outgoing conversations or messages in any one month, for ten dollars and forty-two cents ($10.42) per month, and for all outgoing conversations or messages in excess of five hundred in any one month, at 2 cents each, the Company shall install upon the premises of such subscriber a meter or meters which shall accurately and correctly record the number of outgoing messages or conversations over said line at a charge not to exceed three dollars ($3.00) for each meter, and if any subscriber shall at any time notify the Company in writing to remove any such meter the Company shall remove the same within ten (10) days thereafter and shall refund to such subscriber one dollar ($1.00) for each meter so removed, and at any time that a practicable meter for use upon the premises of the lessee or subscriber in connection with a single party measured service line connected with a private branch exchange shall be devised and prove effective in actual use [fol. 4057] for accurately and correctly recording outgoing messages or conversations over said line, the Company, at the request of any such lessee or subscriber, shall install such meter upon the premises of such lessee or subscriber in connection with each such line, at a charge not to exceed three dollars ($3.00) for each meter, and if any subscriber shall at any time notify the Company in writing to remove any such meter the Company shall remove the same within ten (10) days thereafter and shall refund to such subscriber one dollar ($1.00) for each meter so removed.

If any question shall arise as to whether any meter or meters hereinabove provided for shall reasonably protect the lessee or subscriber in the counting of outgoing messages, or as to whether or not a practicable meter for use upon the premises of the lessee or subscriber to a measured line has been devised and proved effective in actual use for accurately and correctly recording outgoing messages or conversations, as aforesaid, such question or questions shall be submitted to the Chairman of the Finance Committee of the City Council, the Commissioner of Public Works and the Corporation Council, who shall together hear such facts as may be presented by the parties to the controversy, and they, or a majority of them, are hereby given the power to decide such question or questions, and to require said Chicago Telephone Company to make such changes in any meter or meters, or the method of operating the same, as they shall deem reasonably necessary to protect the lessees and subscribers of said Chicago Telephone Company to measured service, and to require the installation by said Company of a new meter or meters for use upon the premises of the lessees and subscribers, and to take any other action in the premises which they shall deem reasonably necessary to protect the lessees and subscribers of said Company.

The Chicago Telephone Company shall not make any charge for a conversation or message to its telephone lessees, subscribers, patrons or users unless a conversation or message has been actually transmitted, except in cases herein expressly provided.

(k) Extension Telephones:

Said Chicago Telephone Company shall furnish to any of its lessees, subscribers or patrons upon demand, at least three extension telephones for each line used by the lessee, subscriber or patron and located in the same premises with the principal telephone of the lessee, subscriber or patron, at not exceeding fifty (50) cents per month for each extension telephone, including necessary wires and an approprite signaling device, provided that the Company shall not be compelled to furnish more than one extension telephone to each lessee, subscriber or patron served by a four-party line.

[fol. 4058] (l) Telephone Directory:

Said Chicago Telephone Company shall, at least three times during each year, print, publish, furnish and deliver to each of its lessees and subscribers in Chicago, free of charge, a directory containing in alphabetical order the names, addresses and telephone numbers of all its lessees and subscribers in Chicago who have not requested in due time that their names be omitted. Said Chicago Telephone Company shall also when requested at the times before mentioned furnish and deliver to each of its lessees and subscribers an additional directory for each extension telephone contracted or paid for by said lessee or subscriber. Said Telephone Company shall include and list in each of the said directories, at the request or with the consent of any of its lessees or subscribers, in connection with the address and telephone number of such lessee or subcriber, free of charge, the names, in their proper alphabetical order, of not more than three partners, officers, employes or members of the family of such lessee or subscriber for each single or two-party line, contracted for by such lessee or subscriber, and make one such free listing for each four-party line and for each neighborhood exchange telephone, and also one more of such names for each extension telephone used by the said lessee or subscriber, and, in addition thereto, as many more of said names of users on the same premises as ~~said lessee~~ or subscriber (unless said lessee or subscriber is the lessee of or suberiber to a flat rate single party line at $125 per year) may request, or consent to, upon payment to the Chicago Telephone Company of not more than $3.00 per annum for each additional name so included and listed.

The Chicago Telephone Company shall publish in every issue of its Chicago telephone directory all rates for local exchange service and all rules and regulations affecting the subscribers, and shall embody said rates, rules and regulations in a folder to be given to any lessee or subscriber on application at the offices of the company.

(m) Private Lines and Extensions:

Said Chicago Telephone Company shall furnish upon demand to any of its lessees or subscribers a line or lines, connected with a switchboard, terminal or extension telephone or telephones, located outside of and beyond the premises of said lessee or subscriber, and with the switchboard, terminal or extension telephone or telephones located upon the premises of said lessee or subscriber. So long as said terminal or extension telephone or telephones shall be located within one-half mile of said premises measured by the most direct street distance, said company shall charge at the rate of not to exceed $5.00 per quarter year, [fol. 4059] and for each additional one-quarter mile, or fraction thereof, which said terminal or extension telephone or telephones is or are distant from said premises said company may charge not to exceed the rate of $2.50 per quarter year.

Said Chicago Telephone Company shall ~~also furnish~~ furnish private telephone lines or wires not connected with any switchboard and connecting any two points within the city limits which are not more than one mile apart, measured by the most direct street distance, at the rate $10.00 each per quarter year, and for each additional quarter mile, or fraction thereof, between said points, measured as aforesaid, said Chicago Telephone Company may charge not to exceed $2.50 per quarter year.

Said Chicago Telephone Company shall furnish terminal or extension telephones to be connected with any switchboard or wire hereinabove referred to at the rate of not to exceed $1.50 each per quarter year.

(n) In all cases where the Chicago Telephone Company has furnished telephone service without change in line on the premises of the subscriber or in equipment or class of service continuously at one address and in the same name for one year or more, there shall be no charge made if the service is moved from said address to another address within the limits of the Chicago Exchange. Such removal, without charge, shall constitute an express extension of the subscriber's contract for a period of one year from the completion of the removal.

If a subscriber's telephone service has not been in service for one year in the same name without change in line on the premises of the subscriber, or in equipment or class of service, the following charges may be made:

1. For a change from one address to another, not to exceed five dollars ($5.00); provided, that in all cases where

there are a telephone and line which can be used without change at the new location, such charge shall not exceed one dollar ($1.00).

2. For change of location or change in style of instrument in the same premises on residence telephones, the charge shall be upon the basis of the actual cost to the company for doing the work, but not to exceed two dollars and fifty cents ($2.50).

3. For change of location or change in style of instru-[fol. 4060] ment in the same premises on other than residence telephones, the charge shall be upon the basis of the actual cost to the company for doing the work, but not to exceed five dollars ($5.00).

4. For the removal of a private branch exchange from one address to another, the charge shall be upon the basis of the actual cost to the company for doing the work.

(o) Whenever the Chicago Telephone Company has legally discontinued the service for any cause without the consent of the subscriber, it may charge not to exceed two dollars ($2.00) in each and every case of reinstatement.

(p) The Chicago Telephone Company, in addition to the classes of service and rates hereinbefore provided, is hereby authorized to supply special facilities and service at rates which are alike to all subscribers similarly situated for periods of less than one year; and to furnish appliances not a part of standard equipment, as may be arranged for between the company and its subscribers.

(q) The City Council of said City of Chicago may at any time amend sub-divisions (o) and (p) of this ordinance by striking out any portion thereof after public hearing by an appropriate committee of said City Council or other person or body designated by the City Council for that purpose and a finding that such portion of said sub-division is the cause of injury to the telephone service.

(r) Rates Defined:

All rates, prices or charges for telephone service, facilities or equipment herein prescribed, are maximum rates only, and nothing herein shall be construed as an admission of the City of Chicago that such maximum rates are reasonable or proper rates."

(Here follows side folio 4061)

EXHIBIT D-19

WESTERN ELECTRIC COMPANY, INCORPORATED

ANALYSIS OF THE COST OF SALES BY BELL AND NON-BELL CUSTOMERS
(Dollars in Thousands)

	Bell Customers											Non-Bell Cus					
						Expenses											
Year	Sales	Gross Profits	Current Cost of Sales Before Interest and Expenses	Additions to Employees' Benefit Fund	Additional Depreciation of Plant	Development	Merchandising	General	Federal Taxes	Interest Received	Total Cost	Sales	Gross Profits	Current Cost of Sales Before Interest and Expenses	Additions to Employees' Benefit Fund	Additional Depreciation of Plant	Development
1916	$ 73,915	$ 6,314	$ 67,601	$ 0	$ 0	$1,227	$ 1,287	$1,938	$ 38	$ (281)	$ 71,775	$33,072	$ 5,925	$27,147	$ 0	$ 0	$ 244
1917	104,682	7,792	96,890	0	0	1,662	1,508	2,274	192	(364)	102,157	45,658	8,738	36,920	0	0	337
1918	79,217	7,935	71,282	0	0	1,673	1,844	2,315	285	(603)	76,796	66,009	11,164	54,845	0	0	845
1919	80,361	9,881	70,480	0	0	2,220	2,241	3,040	539	(846)	77,674	58,361	9,914	48,447	0	0	724
1920	130,712	13,506	117,206	0	0	3,710	2,928	2,698	202	(867)	125,887	75,400	12,208	63,192	0	0	425
1921	142,888	20,150	122,738	0	0	4,854	1,804	3,026	316	(987)	131,747	46,880	5,576	41,304	0	0	445
1922	159,957	16,666	143,291	0	0	4,840	2,009	3,907	497	(949)	153,595	50,984	9,537	41,447	0	0	652
1923	188,159	22,483	165,676	0	0	5,497	3,690	6,565	769	(230)	181,967	67,018	12,624	54,394	0	0	1,008
1924	233,300	37,603	195,697	2,000	1,563	9,221	4,418	7,210	2,581	(348)	222,428	64,981	12,192	52,789	0	0	1,308
1925	226,700	41,591	185,109	2,383	1,966	6,967	4,449	7,342	2,588	(1,256)	210,448	71,029	13,103	57,926	1,617 U	302	2,777
1926	247,203	47,295	199,908	3,443	1,914	9,407	12,985	4,426	3,311	(752)	234,652	15,902	4,561	11, 41	223	188	1,080
1927	241,082	52,486	188,606	3,172	1,666	11,382	13,385	4,544	2,264	(792)	224,194	12,663	3,976	8,687	192	137	1,094
1928	267,908	47,996	219,912	236	1,821	8,872	16,252	3,589	2,566	(724)	250,624	20,123	6,293	13,830	13	169	1,489
1929	372,384	49,303	323,081	0	0	8,910	18,642	2,919	1,329	(869)	354,012	38,566	11,966	26,600	0	0	2,114
1930	338,830	48,058	290,772	0	0	12,344	19,494	4,489	1,087	(882)	327,148	22,648	5,557	17,091	0	0	1,772
Total	2,887,175	428,929	2,458,246	12,134	8,940	92,286	105,809	61,118	17,243	(9,968)	2,745,968	686,282	133,332	552,950	2,055	696	16,113

U Includes $1,400,000 Reserve for Graybar Electric Company, Inc. Pension Fund.

EXHIBIT D-19

WESTERN ELECTRIC COMPANY, INCORPORATED

ANALYSIS OF THE COST OF SALES BY BELL AND NON-BELL CUSTOMERS
(Dollars in Thousands)

ustomers								Non-Bell Customers									
Expenses											Expenses						
Development	Merchandising	General	Federal Taxes	Interest Received	Total Cost	Sales	Gross Profits	Current Cost of Sales Before Interest and Expenses	Additions to Employees' Benefit Fund	Additional Depreciation of Plant	Development	Merchandising	General	Federal Taxes	Interest Received	Total Cost	Year
$1,227	$ 1,287	$1,933	$ 38	$ (281)	$ 71,776	$33,072	$ 5,925	$27,147	$ 0	$ 0	$ 244	$2,975	$1,086	$ 30	$ (140)	$31,342	1916
1,662	1,508	2,274	192	(364)	103,157	45,658	8,738	36,920	0	0	337	3,453	1,499	250	(76)	42,383	1917
1,673	1,844	2,215	285	(603)	76,796	66,009	11,164	54,845	0	0	845	4,178	2,228	345	(45)	62,396	1918
2,220	2,341	3,040	239	(846)	77,674	55,361	9,914	45,447	0	0	724	4,614	1,681	238	(32)	52,672	1919
3,310	3,928	2,698	302	(887)	125,867	75,400	12,208	63,192	0	0	425	7,194	2,178	149	(173)	72,965	1920
4,854	1,804	3,026	216	(987)	121,747	46,880	5,576	41,304	0	0	445	6,244	1,739	25	(213)	49,544	1921
4,840	2,009	3,907	497	(949)	153,595	50,984	9,537	41,447	0	0	652	5,253	1,624	476	(140)	49,312	1922
6,497	3,690	6,166	769	(230)	191,967	67,018	12,624	54,394	0	0	1,008	6,179	2,226	398	(109)	64,096	1923
9,221	4,418	7,210	2,561	(245)	222,425	64,981	12,192	52,789	0	0	1,309	6,176	2,042	371	(76)	62,611	1924
6,967	4,449	7,342	2,588	(1,256)	210,448	71,029	13,103	57,926	1,617	202	2,777	6,636	2,230	508	(395)	71,701	1925
9,407	12,988	4,426	3,311	(752)	234,652	15,902	4,561	11, 41	233	188	1,080	954	280	94	(14)	14,206	1926
11,382	13,385	4,544	2,264	(792)	224,194	12,662	3,975	8,687	192	137	1,034	730	413	197	(5)	11,385	1927
8,872	15,252	3,589	[illegible],556	(724)	250,524	20,123	6,293	13,830	13	169	1,439	906	988	250	(8)	17,531	1928
8,910	18,642	2,919	1,329	(889)	355,012	38,566	11,966	26,600	0	0	2,114	1,493	1,221	763	(14)	32,177	1929
12,344	19,494	4,429	1,087	(882)	377,148	22,648	5,557	17,091	0	0	1,772	1,242	1,120	180	(6)	21,399	1930
93,386	105,889	61,118	17,243	(9,968)	2,745,968	686,293	133,333	552,960	2,055	696	16,113	58,846	32,730	3,944	(1,245)	655,720	Total

mpany, Inc. Pension Fund.

[fol. 4062]

Exhibit D-25

Western Electric Company

Pension Fund Transactions

Year	Balance Beginning of Year	Credits for Pension Accruals Interest and Appropriations	Charges for Pensions Paid	Balance at End of Year
1906	$..........	$561,090	$2,412	$558,678
1907	558,678	22,162	4,180	576,660
1908	576,660	21,958	7,341	591,277
1909	591,277	23,343	17,126	597,494
1910	597,494	175,249	33,202	739,541
1911	739,541	79,006	31,658	786,889
1912	786,889	246,723	33,612	1,000,000
1913	1,000,000	34,887	34,887	1,000,000
1914	1,000,000	37,620	37,620	1,000,000
1915	1,000,000	44,258	44,258	1,000,000
1916	1,000,000	40,326	40,326	1,000,000
1917	1,000,000	535,785	35,785	1,500,000
1918	1,500,000	135,063	35,063	1,600,000
1919	1,600,000	45,128	45,128	1,600,000
1920	1,600,000	51,302	51,302	1,600,000
1921	1,600,000	62,807	62,807	1,600,000
1922	1,600,000	467,217	67,217	2,000,000
1923	2,000,000	72,260	72,260	2,000,000
1924	2,000,000	2,074,670	74,670	4,000,000
1925	4,000,000	3,576,605	76,605	7,500,000
1926	7,500,000	5,069,139	69,139	12,500,000
1927	12,500,000	4,984,500	86,349	17,398,151
1928	17,398,151	2,924,719	101,148	20,221,722
1929	20,221,722	5,193,790	119,563	25,295,949
1930	25,295,949	5,499,359	147,207	30,648,101

[fol. 4063]

Exhibit D-26

Actuarial Computations of Required Pension Accruals, 1916–1930, and Minimum Fund Required

(Dollars in Thousands)

Year	Required Pension Accruals		Pensions Paid	Net Actuarial Addition (a—c)	Interest on Fund	Minimum Required Fund At End of Year
	Amount	Per Cent of Pay Roll				
1915	$....	...	$...	$....	$....	$1,000
1916	431	2.5	40	391	56	1,447
1917	626	2.5	36	590	81	2,118
1918	692	2.5	35	657	118	2,893
1919	705	2.5	45	660	161	3,714
1920	1,095	2.5	51	1,044	207	4,965
1921	1,414	2.5	63	1,351	277	6,593
1922	1,595	2.5	67	1,528	368	8,489
1923	2,072	2.5	72	2,000	473	10,962
1924	2,284	2.5	75	2,209	611	13,782
1925	1,804	2.5	77	1,727	768	16,277
1926	1,969	2.5	69	1,900	908	19,085
1927	2,114	2.6	86	2,028	1,064	22,177
1928	2,212	2.5	101	2,111	1,237	25,525
1929	3,948	3.0	120	3,828	1,423	30,776
1930	4,032	3.0	147	3,884	1,716	36,377

[fol. 4064]

Exhibit D-27

Western Electric Company, Inc.
Details of Journal Entry for Extraordinary Reserve Against Plant, December 31, 1927

	Hawthorne			Kearny			
	Buildings	Permanent Fixtures	Machinery	Buildings	Permanent Fixtures	Machinery	Total
Total extraordinary depreciation based on studies to revalue Plant to estimated cost levels for the ten years 1931–1940	$1,303,280	$565,283	$2,585,470	$2,186,995	$748,452	$843,821	$8,233,301
Less:							
Excess over normal depreciation on Hawthorne's books resulting from writing back at December 31, 1924, the excess war cost of gross additions written off in the years 1917 to 1920, inclusive	$340,382	$94,049	$163,614	$........	$........	$........	$598,045
Extraordinary depreciation written off to profit and loss at December 31, 1924, to revalue buildings, permanent fixtures, and machinery to estimated costs for the next ten years (J. E. 284)	....	....	314,810	732,463	156,334	173,742	1,377,349
Additional depreciation written off to profit and loss in 1924 for faster obsolescence on machinery (J. E. 284)	....	....	185,190	....	....	....	185,190
Extraordinary depreciation written off to profit and loss at December 31, 1925, to revalue buildings, permanent fixtures, and machinery to estimated costs for the next ten years (J. E. 280)	209,018	....	1,084,280	436,537	309,666	128,258	2,167,759
Extraordinary depreciation written off to current expenses at December 31, 1926, to revalue buildings, permanent fixtures, and machinery to estimated costs for the next ten years (J. E. 224)	284,442	164,146	227,318	771,188	354,306	300,455	2,101,855
Extraordinary depreciation to be written off at December 31, 1927	469,438	307,088	610,258	246,807	71,854	241,366	1,803,103
Total Extraordinary Depreciation written off	$1,303,280	$565,283	$2,585,470	$2,186,995	$748,452	$843,821	$8,233,301

[fol. 4065]

EXHIBIT D-28

Western Electric Company, Inc.

Extraordinary Reserve Against Plant to Bring Additions to Estimated Cost Level for 1931–1940

	Year	Additions	Actual Cost Index (S) (1914—100 %)	Estimated 10 Year Index 1931–40 (S)	Per Cent Excess	Amount of Excess
Hawthorne:			%	%		
Buildings..........	1917..	$739,000	153	149	2.6	$19,214
	1918..	529,000	166	149	10.2	53,958
	1919..	538,000	161	149	7.5	40,350
	1920..	1,747,000	207	149	28.0	489,160
	1921..	1,269,000	177	149	15.8	200,502
	1922..	520,000	156	149	4.5	23,400
	1923..	1,021,000	181	149	17.7	180,717
	1924..	499,000	188	149	20.7	103,293
	1925..	93,000	189	149	21.2	19,716
	1926..	134,000	184	149	19.0	25,460
	1927..	990,000	175	149	14.9	147,510
						$1,303,280
Permanent Fixtures	1918..	356,000	153	145	5.2	$18,512
	1919..	263,000	158	145	8.2	21,566
	1920..	485,000	177	145	18.1	87,785
	1921..	914,000	167	145	13.2	120,648
	1922..	340,000	146	145	.7	2,380
	1923..	665,000	164	145	11.6	77,140
	1924..	706,000	169	145	14.2	100,252
	1925..	164,000	175	145	17.1	28,044
	1926	82,000	178	145	18.5	15,170
	1927..	638,000	170	145	14.7	93,786
						$565,283
Machinery........	1919..	219,000	179	168	6.1	$13,359
	1920..	1,829,000	223	168	24.7	451,763
	1921..	2,661,000	200	168	16.0	425,760
	1922..	1,794,000	187	168	10.2	182,988
	1923..	1,796,000	200	168	16.0	287,360
	1924..	2,658,000	194	168	13.4	356,172
	1925..	835,000	203	168	17.2	143,620
	1926..	904,000	208	168	19.2	173,568
	1927...	3,443,000	200	168	16.0	550,880
						$2,585,470

(S) Indices furnished by Mr. Lincoln as follows:
Buildings and permanent fixtures 4-2-27.
Machinery 10-14-26, 10-19-26, 12-15-26.

[fol. 4066]

EXHIBIT D-28—Continued

Western Electric Company, Inc.

Extraordinary Reserve Against Plant to Bring Additions to Estimated Cost Level for 1931-1940

	Year	Additions	Actual Cost Index (S) (1914—100 %)	Estimated 10 Year Index 1931-40 (S)	Per Cent Excess	Amount of Excess
			%	%		
Kearny:						
Buildings	1923	$470,000	194	163	16.0	$75,200
	1924	4,135,000	206	163	20.9	864,215
	1925	3,061,000	204	163	20.1	615,261
	1926	1,271,000	210	163	22.4	284,704
	1927	1,879,000	200	163	18.5	347,615
						$2,186,995
Permanent Fixtures	1923	83,000	168	149	11.3	$9,379
	1924	902,000	178	149	16.3	147,026
	1925	2,108,000	179	149	16.8	354,144
	1926	831,000	184	149	19.0	157,890
	1927	537,000	175	149	14.9	80,013
						$748,452
Machinery	1917	...	...	...	...	$........
	1918	...	...	...	...	....
	1919	25,000	179	168	6.1	1,525
	1920	48,000	223	168	24.7	11,856
	1921	104,000	200	168	16.0	16,640
	1922	64,000	187	168	10.2	6,528
	1923	256,000	200	168	16.0	40,960
	1924	2,016,000	194	168	13.4	270,144
	1925	886,000	203	168	17.2	152,392
	1926	1,033,000	208	168	19.2	198,336
	1927	909,000	200	168	16.0	145,440
						$843,821

(S) Indices furnished by Mr. Lincoln as follows:
Buildings and permanent fixtures 4-2-27.
Machinery 10-14-26, 10-19-26, 12-15-26.
April 22, 1931.

[fol. 4067]

EXHIBIT D-29

B—Const. Cost Indices

W. E. Construction Cost Indices

As Prepared By Plant Engineering Department and General Statistical Department

1914–100

	Hawthorne Plant			Kearny Plant (N.Y Base=100)		
	Old G.S.D. Index	New Index Buildings Only	New Index Permanent Fixtures Only	Old G.S.D. Index	New Index Buildings Only	New Index Permanent Fixtures Only
1914.......	100	100	100	100	100	100
1915.......	103	111	101	...	...	...
1916.......	126	144	115	...	...	...
1917.......	152	153	140	...	...	...
1918.......	155	166	153	...	...	...
1919.......	162	161	158	...	...	...
1920.......	227	207	177	...	...	...
1921.......	199	177	167	...	...	...
1922.......	166	156	146	...	...	...
1923.......	196	181	164	214	194	168
1924.......	192	188	169	217	206	178
1925.......	187	189	175	207	204	179
1926.......	189*	184	178	213**	210	184
			Estimates			
1927.......	179	175	170	204	200	175
1928.......	173	170	165	193	190	170
1929.......	172	170	165	191	188	170
1930.......	171	168	165	185	184	170
1931.......	165	164	160	179	180	165
1932.......	162	160	157	176	176	161
1940.......	137	155	151	150	149	135
			Ten Year Moving Averages			
1926–35....	168	155	161	185	183	166
1927–36....	163	161	158	180	178	162
1928–37....	160	158	155	175	174	159
1929–38....	157	155	152	171	170	156
1930–39....	154	152	149	168	167	153
1931–40....	150	149	145	164	163	149

* Preliminary figure, as used in computations; final figure for year, 191.
** Preliminary figure, as used in computations; final figure for year, 214.

ARH:EA.
4/2/27.

[fol. 4068]

Components of Construction Costs Indices

As Prepared by Plant Engineering Department and General Statistical Department

1914=100

Hawthorne Plant

	Old G. S. D. Index		New Index, Buildings Only			New Index, Permanent Fixtures Only		
	Material	Labor	Material	Labor	Total	Material	Labor	Total
1914	100	100	100	100	100	100	100	100
1915	105	100	120	100	111	103	100	101
1916	149	103	177	102	144	125	101	115
1917	199	106	193	104	153	168	101	140
1918	200	112	202	121	166	185	110	153
1919	195	129	175	143	161	179	130	158
1920	252	202	223	187	207	186	166	177
1921	192	205	165	191	177	166	168	167
1922	174	159	153	159	156	146	144	146
1923	208	184	192	167	181	168	157	164
1924	194	189	186	191	188	163	175	169
1925	179	199	173	207	189	161	193	175
1926	178*	207*	157	217	184	159	203	178
1940 (Est.)	125	149	118	156	...	119	146	...

Kearny Plant

	Old G. S. D. Index		New Index, Buildings Only				New Index, Permanent Fixtures Only			
			Hawthorne Base		Kearny Base		Hawthorne Base		Kearny Base	
	Material	Labor	Material	Labor	Material	Labor	Material	Labor	Material	Labor
1923	223	208	197	190	186	219	160	163	160	189
1924	213	226	189	208	180	240	158	180	158	209
1925	194	231	183	214	175	246	154	183	154	213
1926	194*	243*	180	224	172	258	150	198	150	230
1940 (Est.)	135	175	...	...	120	186	...	...	112	166

(*)9 Mos.—12 Mos. Hawthorne Material 179, Labor 213.
" " Kearny " 195, " 244.

Western Electric Company, Inc., General Statistical Department.
Date Issued: April 5, 1927.
ARH:ACF.

[fol 4069]

Basis for Estimates of Deflation Indices for Plant Accounts

1914=100

Hawthorne

Buildings

	Old G. S. D.			New Bldgs. Only			New Permanent, Fixtures Only		
	Material	Labor	Comp.	Material	Labor	Comp.	Material	Labor	Comp.
1926	178	207	189*	157	217	184	159	203	178
Estimated Percentage of Price Decline	−30	−10	...	−25	−10	...	−25	−10	...
Estimate for 1940 without Adjustment for Increased Efficiency	125	186	150	118	195	155	119	183	147
Adjustment for Increased Efficiency of Labor	...	−20	...	...	−20	...	...	−20	...
1940	125	149	135	118	156	135	119	146	131

Kearny
(New York Base)

Buildings

	Old G. S. D.			New Bldgs. Only			New Permanent, Fixtures Only		
	Material	Labor	Comp.	Material	Labor	Comp.	Material	Labor	Comp.
1926	194	243	213*	172	258	210	150	230	184
Estimated Percentage of Price Decline	−30	−10	...	−30	−10	...	−25	−10	...
Estimated for 1940 without Adjustment for Increased Efficiency	135	219	169	120	232	169	112	207	153
Adjustment for Increased Efficiency of Labor	...	−20	...	...	−20	...	...	−20	...
1940	135	175	150	120	186	149	112	166	135

(*) 9 Mos. 1296.

Western Electric Company, Inc., General Statistical Department.
Date Issued: 4/6/27.
ARH:ACF.

[fol. 4070]

Index Numbers of Construction Costs

Year	Tuttle	Engineering News Record	American Appraisal United States	American Appraisal Central Western	American Appraisal N. Y. State and Northern N. J.	Aberthaw	A. T. & T.	General Statistical Department Hawthorne	General Statistical Department Kearny	General Statistical Department United States
					1913 Base					
1913	...	100	100	100	100	...	...	100	100	100
1914	...	89	98	99	98	...	...	85	...	96
1915	...	93	102	104	100	...	...	97	...	98
1916	...	147	120	125	118	...	...	119	...	115
1917	...	181	147	154	146	...	...	144	...	140
1918	...	189	171	175	168	...	...	147	...	155
1919	...	198	210	217	201	...	...	153	...	183
1920	...	251	264	275	260	...	...	214	...	238
1921	...	202	207	216	213	...	...	188	...	179
1922	...	175	188	194	187	...	...	157	...	176
1923	...	214	210	219	216	...	...	186	...	196
1924	...	215	206	217	212	...	...	181	205	196
1925	...	207	200	211(b)	206(b)	...	...	177	196	199
1926	...	208	201(a)	212(b)	207(b)	...	...	180	202	203

1914 Base

1914	100	100	100	100	100	100	100	100	100	100
1915	...	104	104	105	102	...	102	103	...	102
1916	...	165	122	126	120	...	121	126	...	120
1917	...	203	150	156	149	...	149	152	...	146
1918	...	212	174	177	171	...	166	155	...	161
1919	...	222	214	219	205	...	196	162	...	191
1920	228	282	269	278	265	...	251	227	...	248
1921	179	227	211	218	217	179	181	199	...	186
1922	170	197	192	196	191	170	176	166	...	183
1923	202	240	214	221	220	202	195	196	214	204
1924	202	242	216	219	216	198	193	192	217	204
1925	200	233	204	213(b)	210(b)	195	195	187	207	207
1926	205	234	205(a)	214(ab)	211(ab)	197	196	191	214	211

(a) Ten months.
(b) Per cent change from United States Index.

Western Electric Company, Inc., General Statistical Department.
Date Issued 1/19/27.
ARH:DK.

[fol. 4071] Notes on Index Numbers of Construction Costs

January 19, 1927

Tuttle.—On substantially the same basis as the Aberthaw index described below.

Engineering News Record index of construction.—Costs based upon the costs of steel (structural shapes, Pittsburgh base), cement (f. o. b. Chicago, exclusive of bags), lumber (Southern pine, New York base), and the average rates paid common labor in the building industry as obtained from the prevailing rates in 20 representative cities. From 1913 to 1920, inclusive, the rates paid common labor in the steel industry were used. The prices are weighted on the basis of the total production of steel, cement and lumber, and the total supply of common labor as follows: steel, 37.50 per cent; lumber, 17.10 per cent; cement, 7.14 per cent, and labor, 38 per cent.

American Appraisal Company.—Indices shown in the tabulation are based upon typical reinforced concrete factory buildings in leading cities. They are based on costs of excavation, walls, framing, floors, roof, and absolutely essential fixtures, such as stairways, stores, windows, and other items of a like nature. Actual quantities of materials and amounts of labor required were priced in detail on the basis of material costs, actual labor costs and reported labor efficiency prevailing in each city at each of the various dates. Indices for districts and the United States as a whole were equal-weighted averages of the indices for the cities.

Aberthaw Index of Building Costs.—Constructed by comparing actual cost of a reinforced concrete factory building erected by the Aberthaw Construction Company of Boston in 1914 with detailed estimates of what the same building would cost at various later dates, starting with 1/1/20. The major classes of items included: concrete, forms, reinforcements, excavation, sheeting, masonry, steel sash, doors, miscellaneous iron work, engineering plans and liability insurance. Costs as summarized for each class of items included labor, materials, plant, and overhead.

Labor costs were 33 per cent of the total in 1914, but are not segregated in the computations for later years. They are estimated to form 35-40 per cent of the total in May, 1921.

Costs for labor took into account labor efficiency, which varies widely in an inverse relation to activity in the building trades.

Material prices are those which the company would have paid.

A. T. & T. General Building Costs.—Index intended to show fluctuation of costs for all types of buildnigs. A composite of price trends for labor, weighted 40 per cent, and materials, weighted 60 per cent. Labor component is constructed from the hourly wages of the following trades with relative weights (in hours) as indicated:

Carpenters	50	Plasterers	15
Bricklayers	25	Plumbers	10
Cement Finishers	16	Structural Iron Workers	10
Electricians	10	Building Laborers	200
Painters	10		

[fol. 4072] Up to September, 1920, the labor component is based on New York City alone, but afterwards on 11 cities of the United States.

The materials index is Group 6, Building Materials, of the U. S. Bureau of Labor Statistics, index of wholesale prices, in which the weights are quantities sold in 1919 and therefore cover all types of buildings.

General Statistical Department.—

(a) Index for the United States as a whole is a composite of price trends for labor weighted 40 per cent and materials weighted 60 per cent. Labor component is the index of average union wage rate in the building trades published by the U. S. Bureau of Labor Statistics as of May 15th of each year, modified to show monthly deviations on the basis of average wage rates in the principal cities. The materials component is the building materials index compiled by the U. S. Bureau of Labor Statistics as described above for the A. T. & T. index.

(b) Index for Hawthorne is also a composite of labor, 40 per cent, and materials, 60 per cent, but applies to a typical Hawthorne brick-faced, steel-framed building rather than to buildings in general. The labor component is based on Chicago wage rates, with the following weighting:

Bricklayers	13
Carpenters	11
Electricians	7
Ironworkers	15
Laborers	36
Painters	5
Plasterers	5
Steamfitters	4
Plumbers	4
	100

The materials component is based on prices at Chicago or base points for the following items with the weights indicated:

Iron Pipe	7
Steel	35
Lime	1
Brick	6
Cement	4
Steel Billets	6
Sand	4
Terra Cotta	16
Plumbing	9
Lighting	8
Maple Lumber	4
	100

(c) Index for Kearny is constructed as for Chicago, except that New York wage rates and prices are used instead of Chicago wage rates and prices.

RWB:LK.
1/19/27.

[fol. 4073] Estimated Machinery Indices

On the Assumption of a 15 Per Cent Increase in the Efficiency of Productive Labor Used in the Manufacture of Machinery Made and Purchased

	15% Increase in Efficiency of Productive Labor
1926 Preliminary	208
1927	200
1928	188

	15% Increase in Efficiency of Productive Labor
1929	193
1930	187
1931	181
1932	178
1933	175
1934	172
1935	169
1936	166
1937	163
1938	160
1939	157
1940	154

10-year Moving Averages

1926–1935	185
1927–1936	181
1928–1937	177
1929–1938	174
1930–1939	171
1931–1940	168

Index of 170 for 1940 as estimated (10/22/26) was based on 185 for Productive Labor (Wt. 5), 174 for Other Labor (Wt. 3), 125 for Materials (Wt. 2).

Above figure was obtained by allowing 15 per cent decrease in productive labor cost, reducing the index from 185 to 157.

Western Electric Company, Inc., General Statistical Department.

Date issued 11/24/26.

ARH:LK.

[fol. 4074] Basis for Estimate of Deflation Indices for Plant Account

1914 = 100

Buildings

Hawthorne:	Materials	Labor	Composite
1926	178	207	189
Estimated per cent decline	-30%	-10%	...
Estimate for 1940 without adjustment for increased efficiency	125	186	150(a)
Adjustment for increased efficiency of labor	...	-20%	...
1940	125	149	135(b)

The above estimates are the bases for the series of estimates submitted October 22nd (a) and November 5, 1926 (b). It has been further assumed for the purpose of these estimates that the decline from 1930 to 1940 would be at a uniform annual rate. It is assumed that Kearny conditions will parallel those shown above for Hawthorne, with a gradual reduction of the difference between Hawthorne and Kearny.

Machinery

	Made					Combined 2/3 Made 1/3 Purchased
	Productive Labor (52)	Other Labor (26)	Material (22)	Total Costs	Purchased	
1926	223	210	161	206	212	208
Estimated per cent decline	-17%	-17%	-22% to -20%	...	...	...
1940	185	174	125-130	170	...	170

These estimates are the bases for the series of estimates submitted October 22nd. It has been further assumed for the purpose of these estimates that the decline from 1930 to 1940 would be at a uniform annual rate. As the indices for both "Made" and "Purchased" machinery are now moving somewhat together, and the components of both are essentially the same, it is estimated that the index for machinery purchased (and the combined index) will be the same as for machinery made.

Small Tools

	Productive Labor (70)	Other Labor (20)	Steel Bars (10)	Combined
1926	218	210	173	212
Estimated per cent decline	-15%	-15%	-20%	...
1940	185	179	138	180

The bases for the estimates for small tools submitted October 25th follow machinery estimates quite closely, except that the decline is not so extensive because of the larger proportion of skilled labor included in the case of small tools and the fact that most (90%) of these tools are made within our own shops.

R. W. B.:D. K.
11/15/26.

[fol. 4075]

Machinery

	Made	Purchased	Combined
1914	100	100	100
1915	10[illegible]	111	108
1916	116	121	120
1917	159	136	148
1918	165	153	161
1919	181	164	179
1920	234	214	223
1921	191	216	200
1922	183	206	187
1923	203	196	200
1924	199	187	194
1925	204	200	203
1926*	206	212	208

* Preliminary.

	Estimates
1927	200
1928	190
1929	195
1930	190
1931	185
1932	184
1933	183
1934	182
1935	180
1936	178
1937	176
1938	174
1939	172
1940	170

10-year Moving Averages

1926–35	190
1927–36	187
1928–37	184
1929–38	183
1930–39	180
1931–40	178

ARH:EA.
10/22/26.

[fol. 4076]

Machinery "Made" Index

	Productive (1) Labor (51.5)	Other (2) Labor (26.2)	Material (3) (22.3)	Composite
1914	100	100	100	100
1915	100	101	102	101
1916	110	101	146	116
1917	129	107	290	159
1918	153	125	239	165
1919	188	145	208	181
1920	235	171	306	234
1921	211	169	170	191
1922	195	162	179	183
1923	218	174	203	203
1924	223	186	160	199
1925	223	204	160	204
1926*	223	210	161	206

* Preliminary.

(1) Union Scale of Wages for Machinists in Chicago—Monthly Labor Review—September, 1924, p. 60.

(2) "Other" W. E. labor earnings index.

(3) #2 Foundry Iron—Chicago—"Metal Statistics."

Combination of Machinery "Made" and Purchased

1914=100

	Purchased			Made		
	Gross Additions Purchased A	Index B	Deflated Value A/B	Gross Additions A	Index B	Deflated Value A/B
1914	....	100	....	....	100	....
1915	....	111	....	....	101	....
1916	$285,076	121	$233,947	$116,072	116	$100,062
1917	542,323	136	398,767	739,872	159	465,328
1918	324,384	153	212,016	629,933	165	381,778
1919	87,178	164	53,157	579,754	181	320,306
1920	1,102,285	214	515,086	897,283	234	383,454
1921	1,045,784	216	484,159	1,786,958	191	935,580
1922	314,284	206	152,565	1,596,856	183	872,599
1923	1,106,307	196	564,442	1,273,484	203	627,332
1924	1,854,483	187	991,702	3,042,683	199	1,528,986
1925	456,080	200	228,040	920,047	204	451,003
1926*	....	212	....	....	206	....

	Gross Additions Made & Purchased	Deflated Value	Index
1916	$399,148	$334,009	120
1917	1,282,195	864,095	148
1918	954,317	593,794	161
1919	666,932	373,463	179
1920	1,999,568	898,540	223
1921	2,832,742	1,419,739	200
1922	1,911,140	1,025,164	187
1923	2,379,791	1,191,774	200
1924	4,897,166	2,520,688	194
1925	1,376,127	679,043	203
1926*	....	....	208(2-3 made, 1-3 pur.)

* Preliminary.

ARH:EA.
10/25/26.

[fol. 4077] Deflation Indices for Plant Accounts (1914 = 100%) for Years 1927-1931 Inclusive

October 19, 1926.

Mr. T. K. Stevenson:

As per request, herewith our estimates of plant cost indices for the five year period 1927-1931, inclusive. These are estimates for the actual years stated. Within the next day we shall furnish you the ten year moving average estimates for the same period.

	Buildings		Machinery Made and Purchased	Furniture and Fixtures	Small Tools
	Hawthorne	Kearny			
1927	180	205	200	145	205
1928	175	195	190	140	200
1929	175	195	195	145	200
1930	175	190	190	145	200
1931	170	185	185	140	195

HB.

E. E. Lincoln.

1926 Values of Cost Indices for W. E. Plant Investment

October 15, 1926.

Mr. T. K. Stevenson:

Herewith estimates of indices for the year 1926. These figures may be subject to a slight change when complete data for the year are available.

Please note that all indices given you in this connection have been reduced to the 1914 base. Indices on building furnished you last year were on the 1913 base.

E. E. Lincoln.

M. S.
Att.

[fol. 4078] 1926 Values of Cost Indices for W. E. Plant Investment (1914 = 100)

Buildings—Hawthorne	189
Kearny	213
Machinery—Combined Index	208
Small Tools	212
Furniture and Fixtures	149

RWB/MLW.

10/16/26

Deflation Indices for Plant Accounts

October 14, 1926.

Mr. T. K. Stevenson:

As per request, herewith our deflation indices for plant accounts. 1926 figures will be available shortly, if you desire them.

We have constructed a separate index for small tools, which we believe to be a little more accurate for the purpose than our machinery index.

It is our recommendation that no separate index be constructed for permanent fixtures, but that the building construction index be used for this purpose. Both Mr. Spurling and we agree that a permanent fixtures index would probably run a little lower on the average than our building index, but unless you consider the matter very urgent, we would scarcely be justified in going to the expense which would be necessary to develop a separate index for this purpose.

E. E. Lincoln.

M. S.
Att.

[fol. 4079] Deflation Indices for Plant Accounts, 1914 = 100

	Buildings		Machinery		
	Hawthorne	Kearny	Purchased	Made	Combined
1914....	100	...	100	100	100
1915....	103	...	111	101	108
1916....	126	...	121	116	120
1917....	152	...	136	159	148
1918....	155	...	153	165	161
1919....	162	...	164	181	179
1920....	227	...	214	234	223
1921....	199	...	216	191	200
1922....	166	...	206	183	187
1923....	196	...	196	203	200
1924....	192	217	187	199	194
1925....	187	207	200	204	203

	Furniture & Fixtures	Small Tools
1914....................	100	100
1915....................	100	101
1916....................	104	118

	Furniture & Fixtures	Small Tools
1917	114	139
1918	127	150
1919	146	173
1920	168	212
1921	152	186
1922	148	174
1923	149	205
1924	147	209
1925	147	212

Western Electric Company, Inc., General Statistical Department.

Date Issued—10/14/26.

ARH:MS.

(Here follow side folios 4080 and 4081).

Photo

Dfts Ex D-30

DEFENDANT'S EXHIBIT D-30

NET INCREASE IN PLANT DURING 15 YEAR PERIOD 1916 TO 1930 INCLUSIVE
(Dollars in Thousands)

	1915	1916		1917		1918		1919		1920		1921		1922	
	Cost at Dec. 31	Net Increase	Cost at Dec. 31	Net Increase	Cost at Dec. 31	Net Increase	Cost Dec. 31	Net Increase	Cost at Dec. 31	Net Increase	Cost at Dec. 31	Net Increase	Cost at Dec. 31	Net Increase	Cost at Dec. 31
Land - - - - - - - -	$1,217	$ (1)	$1,216	$ 3	$1,219	$ 1	$1,220	$ 230	$1,450	$ (7)	$1,443	$ 8	$ 1,451	$ 10	$ 1,461
Buildings - - - - - - -	6,632	255	6,887	743	7,630	293	7,923	601	8,524	1,892	10,416	1,267	11,683	517	12,200
Service Equipment - - -	3,442	88	3,530	532	4,062	337	4,399	331	4,730	586	5,316	905	6,221	376	6,597
Machinery - - - - - -	4,259	274	4,533	1,373	5,906	786	6,692	386	7,078	2,091	9,169	2,800	11,969	1,669	13,638
Small Tools - - - - - -	2,288	568	2,856	1,131	3,987	1,023	5,010	883	5,893	1,794	7,687	1,820	9,507	284	9,791
Furniture and Fixtures	1,596	225	1,821	421	2,242	486	2,728	141	2,869	938	3,807	932	4,739	780	5,519
Total - - - -	19,434	1,409	20,843	4,203	25,046	2,926	27,972	2,572	30,544	7,294	37,838	7,732	45,570	3,636	49,206

	1923		1924		1925		1926		1927		1928		1929		1930	
Land - - - - - - - - -	$ 660	$2,121	$ 14	$2,135	$ (43)	$2,092	$ 119	$2,211	$ 38	$2,249	$ 127	$2,376	$4,197	$ 6,573	$2,142	$ 8,715
Buildings - - - - - - -	1,682	13,882	5,238	19,120	1,003	20,123	1,302	21,425	2,535	23,960	2,576	26,536	8,347	34,883	14,228(B)	49,111
Service Equipment - -	850	7,447	1,685	9,132	1,618	10,750	788	11,538	1,063	12,601	1,093	13,694	4,953	18,647	(3,383)(B)	15,264
Machinery - - - - -	2,440	16,078	5,580	21,658	13	21,671	1,671	23,342	4,018	27,360	3,681	31,041	18,184	49,225	12,588	61,813
Small Tools - - - - - -	1,188	10,979	897	11,876	119	11,995	465	12,460	221	12,681	(342)	12,339	1,781	14,120	2,397	16,517
Furniture and Fixtures	1,340	6,859	1,017	7,876	(1,263)	6,613	619	7,232	656	7,888	552	8,440	2,676	11,116	1,282	12,398
Total - - - - -	8,160	57,366	14,431	71,797	1,447(A)	73,244	4,964	78,208	8,531	86,739	7,687	94,426	40,138	134,564	29,254	163,818

A The net increase for 1925 excluding reduction for plant sold to Bell Telephone Laboratories, Incorporated, Graybar Electric Company, Inc., and American Forest Products Company was:

Land -	$ 601
Buildings - - - - - - - - - - - - - - - - - -	2,626
Service Equipment - - - - - - - - - - - - -	2,254
Machinery - - - - - - - - - - - - - - - - -	1,726
Small Tools - - - - - - - - - - - - - - - - -	189
Furniture and Fixtures - - - - - - - - - -	371
Total - - - - - - - -	7,767

B In 1930, service equipment which is an integral part of buildings was transferred to the buildings account, resulting in a net credit for that year under service equipment.

DEFENDANT'S EXHIBIT D-31

DETAILS OF RESERVE FOR DEPRECIATION OF PLANT DURING 15 YEAR PERIOD 1916 TO 1930 INCLUSIVE SHOWING GROSS ADDITIONS TO RESERVE AND WRITE-OFFS (W)

(Dollars in Thousands)

	1915		1916						1917						1918					
	Reserve at Dec. 31	% of Cost	Gross Additions	% of Cost	Write Off	% of Cost	Reserve at Dec. 31	% of Cost	Gross Additions	% of Cost	Write Off	% of Cost	Reserve at Dec. 31	% of Cost	Gross Additions	% of Cost	Write Off	% of Cost	Reserve at Dec. 31	% of Cost
Buildings- - - - - -	$3,003	45.3	$ 256	3.7	[illegible]	.3	$3,241	47.1	$ 277	3.6	8	.1	$3,510	46.0	$ 290	3.7	$ 5	.1	$3,795	47.9
Service Equipment- -	2,105	61.2	157	4.4	46	1.3	2,216	62.8	214	5.3	62	1.6	2,368	58.3	218	5.0	24	.5	2,562	58.2
Machinery- - - - - -	3,020	70.9	385	8.5	219	4.8	3,186	70.3	631	10.7	53	.9	3,764	63.7	659	9.8	94	1.4	4,329	64.7
Small Tools- - - - -	2,280	99.7	687	23.0	81	2.8	2,886	100.0	1,120	28.1	(11)	(.3)	3,987	100.0	1,137	22.7	114	2.3	5,010	100.0
Furniture & Fixtures	1,580	99.0	377	20.7	136	7.5	1,821	100.0	480	21.4	60	2.7	2,241	100.0	530	19.4	43	1.6	2,728	100.0
Total - - - -	11,988	61.7	1,862	8.8	500	2.4	13,350	63.9	2,722(V)	10.9	172	.7	15,870(V)	63.4	2,834	10.1	280	1.0	18,424	65.9

	1919						1920						1921					
	Gross Additions	% of Cost	Write Off	% of Cost	Reserve at Dec. 31	% of Cost	Gross Additions	% of Cost	Write Off	% of Cost	Reserve at Dec. 31	% of Cost	Gross Additions	% of Cost	Write Off	% of Cost	Reserve at Dec. 31	% of Cost
Buildings- - - - - -	$ 293	3.4	$ 13	.2	$4,075	47.8	$ 309	3.0	$ 15	.1	$4,369	41.9	$ 358	3.1	$ 15	.1	$4,712	40.8
Service Equipment- -	210	4.4	(51)	(1.1)	2,823	59.7	263	4.9	25	.5	3,061	57.6	254	4.1	25	.4	3,290	52.9
Machinery- - - - - -	542	7.7	267	3.8	4,604	65.0	645	7.0	152	1.7	5,097	55.6	758	6.3	179	1.5	5,676	47.4
Small Tools- - - - -	1,130	19.2	247	4.2	5,893	100.0	1,937	25.2	143	1.9	7,687	100.0	1,912	20.1	92	1.0	9,507	100.0
Furniture & Fixtures	299	10.4	158	5.5	2,869	100.0	1,053	27.7	115	3.0	3,807	100.0	1,111	25.4	179	3.8	4,739	100.0
Total - - - -	2,474	8.1	634	2.1	20,264	66.6	4,207	11.1	450	1.2	24,021	63.8	4,393	9.6	490	1.1	27,924	61.3

	1922						1923						1924					
Buildings- - - - - -	$ 446	3.7	$ 44	.4	$5,114	41.9	$ 364	2.6	$ 18	.1	$5,460	39.8	$ 482	2.5	$ 55	.3	$5,887	30.8
Service Equipment- -	315	4.8	31	.5	3,574	54.2	302	4.1	20	.3	3,856	51.8	455	5.0	194	2.1	4,117	45.1
Machinery- - - - - -	890	6.5	133	1.0	6,433	47.2	1,308	8.1	231	1.4	7,510	46.7	2,065	9.5	239	1.1	9,336	43.1
Small Tools- - - - -	1,029	10.5	745	7.6	9,791	100.0	1,346	12.3	358	3.3	10,779	98.2	1,532	12.9	1,024	6.6	11,287	95.0
Furniture & Fixtures	900	16.3	120	2.2	5,519	100.0	1,407	20.5	127	1.9	6,799	99.1	1,431	16.2	526	6.7	7,704	97.6
Total - - - -	3,580	7.3	1,073	2.2	30,431	61.8	4,727	8.2	754	1.5	34,404	60.0	5,965	8.3	2,038	2.6	38,331	53.4

	1925						1926						1927					
Buildings- - - - - -	$ 541	2.7	$1,304	6.5	$5,124	25.5	$ 631	2.9	$ 101	.5	$5,653	26.4	$ 765	3.2	$ 330	1.4	$6,088	25.4
Service Equipment- -	555	5.2	727	6.8	3,945	36.7	514	4.5	163	1.4	4,297	37.2	576	4.6	106	.8	4,767	37.8
Machinery- - - - - -	1,880	8.7	1,055	4.9	10,161	46.9	1,734	7.4	919	3.9	10,976	47.0	1,891	6.9	517	1.9	12,350	48.1
Small Tools- - - - -	1,638	13.7	1,248	10.4	11,677	97.3	1,298	10.4	924	7.4	12,051	96.7	1,435	11.5	1,359	10.7	12,127	95.6
Furniture & Fixtures	838	12.7	2,009	30.4	6,533	98.8	923	12.8	346	4.8	7,110	98.3	978	12.4	334	4.2	7,754	98.3
Total - - - -	5,452	7.4	6,343(3)	8.7	37,440	51.1	5,100	6.5	2,453	3.1	40,087	51.3	5,645	6.8	2,646	3.1	43,086	49.7

	1928						1929						1930					
Buildings- - - - - -	$ 848	3.2	$ 304	1.1	$6,632	26.0	$ 909	2.6	$ 247	.7	$7,294	20.9	$1,487	3.0	$(2,109)(U)	(4.3)	$10,890	22.2
Service Equipment- -	609	4.4	324	2.4	5,052	36.9	669	3.6	406	2.2	5,315	28.5	640	4.2	2,386(U)	15.6	3,569	23.4
Machinery- - - - - -	4,745	15.5	969	3.1	16,126	52.0	3,439	7.0	972	2.0	18,593	37.8	5,388	8.7	784	1.3	23,197	37.5
Small Tools- - - - -	2,018	16.4	1,806	14.6	12,339	100.0	4,381	31.0	2,600	18.4	14,120	100.0	3,713	22.5	1,316	8.0	16,517	100.0
Furniture & Fixtures	1,389	16.5	703	8.3	8,440	100.0	3,396	30.5	720	6.5	11,116	100.0	1,908	15.4	626	5.0	12,398	100.0
Total - - - -	9,609	10.2	4,106	4.3	48,589	51.5	12,794	9.5	4,945	3.7	56,438	41.9	13,136	8.0	3,003	1.8	66,571	40.6

Above figures for the years 1924 to 1930 inclusive, exclude extraordinary reserve against plant built up as follows:

	1924	1925	1926	1927	Total
Buildings - - - - - - - - - - - -	$1,073	$ 646	$1,055	$ 716	$3,490
Service Equipment - - - - - - - - -	250	310	519	235	1,314
Machinery - - - - - - - - - - - -	837	1,212	528	852	3,429
Total - - - - - - -	2,160	2,168	2,102	1,803	8,233

3 The write-off for 1925 excluding reserve for depreciation of plant sold to Bell Telephone Laboratories, Incorporated, Graybar Electric Company, Inc., and American Forest Products Company was:

	Amount	Per Cent
Buildings - - - - - - - - - - -	$ 163	.8
Service Equipment - - - - - - -	175	1.6
Machinery - - - - - - - - - - -	334	1.5
Small Tools - - - - - - - - - -	1,179	9.8
Furniture and Fixtures - - - -	383	5.8
	2,234	3.1

U In 1930, service equipment which is an integral part of buildings was transferred to the building account, resulting in an increase in the reserve applicable to buildings with a corresponding decrease in service equipment reserve.

V Does not include reserve of $415,000 for excess war cost which was cancelled in following year.

W Write-offs represent retirements.

[fol. 4082]

Exhibit D-32

Statement of Hawthorne and Kearny Plant

Raised to 1927 Index

Hawthorne

	a	b	c	d	e	f	g	h	i	
	Buildings			Permanent Fixtures			Machinery			
	Face Value of Additions	Cost Index	1927 Level (175)	Face Value of Additions	Cost Index	1927 Level (170)	Face Value of Additions	Cost Index	1927 Level (200)	
Prior to 1914	$4,389	100	$7,681	$2,310	100	$3,927	$1,308	100	$2,616	1
1914	77	100	135	100	100	170	184	100	368	2
1915	50	111	79	75	101	126	158	108	293	3
1916	239	144	290	73	115	108	241	120	402	4
1917	744	153	851	528	140	641	642	148	868	5
1918	527	166	856	350	153	389	736	161	914	6
1919	533	161	579	261	158	281	231	179	258	7
1920	1,746	207	1,476	510	177	490	1,813	223	1,626	8
1921	1,270	177	1,256	916	167	932	2,750	200	2,750	9
1922	527	156	591	362	146	422	1,887	187	2,018	10
1923	1,012	181	987	659	164	683	1,480	200	1,480	11
1924	442	188	411	724	169	728	3,249	194	3,349	12
1925	202	189	187	204	175	198	1,317	203	1,298	13
1926	126	184	120	79	178	75	1,493	208	1,436	14
Increase	11,893	...	15,199	7,151	...	9,170	17,489	...	19,676	15
	......	...	3,306	......	...	2,019	......	...	2,187	16

Kearny

	a	b	c	d	e	f	g	h	i	
	......	...	(200)	......	...	(175)	......	...	(200)	
1923	470	194	485	119	168	124	757	200	757	17
1924	4,135	206	4,015	1,002	178	985	1,690	194	1,742	18
1925	3,061	204	3,001	2,108	179	2,061	907	203	894	19
1926	1,463	210	1,393	815	184	775	833	208	801	20
Increase	9,129		8,894	4,044		3,945	4,187		4,194	21
Net Change	......	...	235*	......	...	99*	......	...	7	22
	......	...	3,071	......	...	1,920	......	...	2,194	23

*=Decrease.

July 1, 1927.

[fol. 4083]

D-32 (2)

Study of Plant Valuations

(Expressed in Thousands of Dollars)

	a Total	b Grounds	c Buildings	d Permanent Fixtures	e Machinery	f Small Tool	g Patterns	h Furniture and Fixtures	
Total Face Value, Dec. 31, 1926	$78,208	$2,211	$21,425	$11,538	$23,342	$12,017	$444	$7,231	1
(Estimated) Dec. 31, 1927	90,918	2,211	25,684	12,701	28,416	13,160	547	8,199	2
Average	84.563	2,211	23,554	12.199	25,879	12.589	496	7,715	3
Adjustments:									
To cover appreciation in Value of Grounds to Appraised Value	1,201	1.201	......	......	......	......	......	......	4
Interest on Investment during construction (1 yr. at 6%)	2.140	......	1,413	727	......	......	......	......	5
Excessive Costs written off Face Value at Kearny	372	......	251	121	......	......	......	......	6
Deduct Norfolk Grounds	205*	205*	......	......	......	......	......	......	7
To Raise Plant to Replacement Cost	7.185	......	3,071	1,920	2.194	......	......	......	8
Average Revised Value	95,250	3.207	28,289	14,487	28,073	12,589	496	7,715	9
Observed Depreciation:									
Rates	......	......	5%	5%	10%	33 1-3%	33 1-3%	10%	10
Amount	10,098	......	1,414	744	2,807	4,195	165	772	11
Average Revised Fair Value	85.158	3,207	26,875	14,143	25,266	8,393	331	6.493	12
Adjustment for Difference Between Average Based on Investment:									
a. At Beginning and End of Year—Above $84.563									
b. On Monthly Balances. 83.444	1.119								
Revised Average Investment	84.039								

*=Decrease.

July 1, 1927

[fol. 4084] DEF'T'S EX. D-33, ID.

Explanation of Reserve Carried on the Western Electric Company Books as of December 31, 1926, Against Investment in the Stock of the Graybar Electric Company, Inc.

1. The permanent investment of the Western Electric Company as of 12|31|25 in the Supply Department was	$7,500,000
When this Department was sold to the Graybar Electric Company, a value was placed on the business as represented by the capital stock of	15,000,000
and an asset set up representing good will amounting to	7,500,000
This revaluation of the assets sold to the Graybar Electric Company was not, however, taken in the profits of the Western Electric Company, but was set up as a reserve against the capital stock of the Graybar Electric Company held by the Western Electric Company in the amount of this good will	7,500,000
2. Before selling certain assets of the Supply Department to the Graybar Electric Company, the following revaluations were made, the result of which revaluations was not taken in the profits of the Western Electric Company, but set up as a reserve against the Western Electric Company holdings in the capital stock of the Graybar Electric Company.	
(a) Plant	414,000
The Supply Department carried as of 12|31|25 plant on their books at	$897,000
with a depreciation reserve of	857,000
or a net value of	$40,000
Before selling this plant to the Graybar Electric Company it was revalued through the depreciation reserve and appeared on the books of the Graybar Electric Company as of 1|1|26, as follows:	
Cost	897,000
Depreciation reserve	443,000
Net value	454,000
The book profit resulting from this revaluation was set up as a reserve against the Graybar stock held by the Western Electric Company.	
(b) Investments	119,000
At 12|31|25 there was on the books of the Supply Department a reserve of 100% against receivables from the Habirshaw Cable and Wire Corporation. At date of sale these receivables were valued at $119,000.	

[fol. 4085]

(c) Merchandise inventories	$267,000
The merchandise inventory as shown by the books of the Supply Department as of 12|31|25 included merchandise which had been purchased from the Western Electric Company, which was valued at the Supply Department's cost; that is, Western Electric Company's selling prices. The gross profit to the Western Electric Company on the sale of such merchandise remaining on the Supply Department's inventories was considered as a reserve against the Western Electric Company's holdings in the Graybar Electric Company after the sale.	
Total reserve against stock of the Graybar Electric Company	$8,300,000

[fol. 4086]

EXHIBIT D-34

Statement of Assets and Liabilities of the Graybar Electric Company, Inc.

(Dollars in Thousands)

	After Close of Business 12/31/25 (1/1/26)	At 12/31/26	At 12/31/27	At 12/31/28	
Assets:					
Plant	$897	$1,167	$1,306	$1,344	1
Investments	241	655	644	667	2
Merchandise, Material and Supplies	4,490	4,423	3,917	4,482	3
Receivables	8,669	8,331	6,903	8,490	4
Cash	1,441	1,507	1,983	1,920	5
Good Will	7,500	7,500	7,500	3,000	6
Total Assets	23,238	23,583	22,253	19,903	7
Liabilities:					
Capital Stock	15,000(R)	15,000(R)	15,000(R)	9,000(S)	8
Surplus	0	1,283	1,223	3,729	9
Current Liabilities:					
Bills Payable, Pension Fund Trustee	0	0	174	451	10
Other Payables	6,035	4,488	4,663	6,123	11
Trade Acceptances and Bills Receivable Discounted	596	533	......	......	12
Taxes and Accruals not Due	1,164	1,471	......	......	13
Total Current Liabilities (10 to 13)	7,795	6,192	4,837	6,574	14
Reserve for Employees' Benefit Fund and Self-Insured Risks	0	134	135	4	15
Reserve for Depreciation on Plant and Equipment	443	974	1,058	596	16
Total Liabilities	23,238	23,583	22,253	19,903	17

(R) Capital—150,000 shares at $100.00 par value.

(S) Capital—Common Stock (30,000 shares at $100.00 par value)	$3,000,000
Preferred Stock (60,000 shares at " " ")	6,000,000
Total	$9,000,000

NOTE.—This Company was sold December 31, 1928, to the Graybar Management Corporation for $9,000,000. Graybar Management Corporation stockholders of common stock must be employes of Graybar Electric Company, Inc.

[fol. 4087]

DEF'T'S EX. D-35

Book Value and Depreciation Reserve on Plant on the Books of the Engineering Department of the Western Electric Company as of 12/31/24 Compared with the Book Value and Depreciation Reserve as Shown by the Books of the Bell Telephone Laboratories as of 1/1/25

	On the Books of the W. E. Co. 12/31/24	On the Books of the B. T. L. 1/1/25	Difference
Book Value:			
Permanent Plant	$2,629,170	$2,650,000	$20,830+
Machinery	1,510,857	1,510,857	0
Small Tools	68,178	68,178	0
Furniture & Fixtures	812,934	812,934	0
Plant in Process	209,906	209,906	0
Total	$5,231,045	$5,251,875	$20,830+
Depreciation Reserve:			
Permanent Plant	1,627,616	0	$1,627,616−
Machinery	679,885	679,885	0−
Small Tools	68,178	51,134	17,044−
Furniture & Fixtures	812,934	365,820	447,114
Plant in Process	0	0	0
Total	$3,188,613	$1,096839	$2,091,774−
Net Value:			
Permanent Plant	$1,001,554	$2,650,000	$1,648,446+
Machinery	830,972	830,972	0
Small Tools	0	17,044	17,044+
Furniture & Fixtures	0	447,114	447,114+
Plant in Process	209,906	209,906	0
Total	$2,042,452	$4,155,036	$2,112,604+

10/27/31.

NOTE.—Above is complete copy of statement (carbon copy) received from Mr. Meeson for examination in reply to Mr. Wray's letter of Dec. 18, 1931, to Mr. Gregory.

EEH B. 1-14-32.

[fol. 4088]

DEF'T'S EX. D-36, ID.

Explanation of Reserve on the Books of the Western Electric Company as of December 31, 1926, Against Demand Notes of the Bell Telephone Laboratories, Inc.

On December 31, 1924, plant on the books of the Engineering Department of the Western Electric Company was sold to the Bell Telephone Laboratories, Inc., for .... $4,155,036 arrived at as follows:

Permanent plant on the basis of an appraisal of this property as a going business by Horace S. Ely and Company	$2,650,000	
Machinery at Western Electric Company's depreciated book cost	830,972	
Small tools at 25% of the book cost to the Western Electric Company	17,044	
Furniture and fixtures at 55% of the book cost to the Western Electric Company	447,114	
Plant in process at book cost to the Western Electric Company	209,906	
Total		4,155,036
Depreciated book cost as shown by the books of the Western Electric Company at 12/31/24 was		2,042,432
Book profit on the sale of plant to the Bell Telephone Laboratories, Inc.		2,112,604

Since the capital stock of the Bell Telephone Laboratories, Inc., amounting to $100,000 was purchased 50% by the Western Electric Company and 50% by the A. T. & T. Co., the above book profit was credited as follows on the books of the Western Electric Company:

50% to the reserve against the notes of the Bell Telephone Laboratories, Inc.	1,056,302
50% to the reserve for contingencies	1,056,302
Total	$2,112,604

In 1927 both of these reserves were transferred to surplus.

[fol. 4089] EXHIBIT D-38

Classification of Customers

Classes A and B—Companies under Supply Contract.
- A—Associated Bell Companies.
- B—Non-Associated Contract Companies.

Class C—Non-Associated Non-Contract Telephone Companies.
- C-1—Connecting.
- C-2—Independent Non-Competing.
- C-3—Independent Competing.

Class D—Other Domestic Customers.

- D-4—Central Stations and Electric Railways.
- D-5—Industrial Plants and Other Large Users.
- D-6—Electrical Contractors and Dealers.
- D-61—Other Dealers.
- D-7—Steam Carriers.
- D-8—Miscellaneous.
- D-9—Government (Except Government Department New York).

Class E—Export. (Sales to International Western Electric Company, Incorporated, Delaware).

Class G—Government Sales. (Orders taken through Government Department, at New York).

ERPI.

[fol. 4090] Exhibit D-39

Conditions Under Which We Extend the Benefits of the Standard Supply Contract to Bell Connecting Companies

The conditions under which we extend the benefits of the Standard Supply Contract to Bell Connecting Companies are as follows:

1. The Licensee Telephone Company to which the Telephone Company desiring such benefits is a subsidiary or a sub-licensee, should request the Western Electric Company, in writing, to extend such benefits. The form of letter required together with the form of our acceptance is attached.

2. The Telephone Company for which such benefits are requested should be owned or controlled by the Licensee Company.

3. The Telephone Company for which such benefits are requested should have a sub-license agreement with the Licensee Company or the volume of purchases should be sufficiently large to justify the Western Electric Company handling the business on the low basis of prices enjoyed by the Licensee Companies, taking into consideration the fact that the account carries no credit risk.

4. The Licensee Company must guarantee payment of the account of the subsidiary or sub-licensee company.

It is the general intent of the Contract with the Licensee Companies that their purchases under it should be for their own use, and the same condition applies to subsidiary or sub-licensee Telephone Companies.

* Present Class B companies include two companies not owned or controlled by licensee companies, but which have license agreements with licensee companies.

[fol. 4091]

Def't's Ex. D-41, Id.

Schedule B

Analysis of Sales to Bell Customers, 1916 to 1930

(Dollars expressed in thousands)

	a	b	c	d	e
	Total Sales to Bell Customers (Schedule A)	Sales to Associated Companies	Sales to Western Union Telegraph Company	Sales to Non-Associated Companies (B Cas)	Sales to Employees
1916	$73,915	$66,074	$6,875	$966	(Sales
1917	104,682	94,174	9,337	1,171	to
1918	79,217	67,860	10,514	843	Emp.
1919	80,361	69,982	8,837	1,542	Inc. in
1920	130,712	113,517	14,076	3,119	Sales
1921	142,885	135,560	4,533	2,792	to
1922	159,957	158,614	......	1,343	Non-
1923	188,159	185,969	......	2,190	Assoc.
1924	233,300	229,352	......	3,948	Comp.
1925	226,700	221,534	......	5,166	Col.
1926	247,203	240,732	......	6,471	d.
1927	241,062	237,253	......	3,303	$506
1928	267,808	264,586	......	3,000	222
1929	372,384	366,902	......	5,339	143
1930	338,830	334,999	......	3,831	Inc. in
					Non-Bell)
Total	$2,887,175	$2,787,108	$54,172	$45,024	$871

[fol. 4092]

EXHIBIT D-42

Schedule C

Analysis of Sales to Non-Bell Customers, 1916 to 1930

(Dollars Expressed in Thousands)

	a	b	c	d	e	f	g	h	i
					Distributors				
	Total Sales to Non-Bell Customers (Schedule A)	Domestic Customers (of Supply Dept.)	Export and Foreign	U. S. Government	Graybar Elec. Co.	Int. Standard Elec. Co.	Northern Elec. Co.	Elec. Research Products	Other Customers (V)
1916	$33,072	$26,293	$6,779	$......	xx	......	......	xx	xx
1917	45,658	33,676	7,879	4,103	xx	......	......	xx	xx
1918	66,009	39,619	4,565	21,825	xx	......	......	xx	xx
1919	55,361	43,941	5,430	5,990	xx			xx	xx
1920	75,400	69,385	5,185	830	xx			xx	xx
1921	46,880	40,178	6,702		xx			xx	xx
1922	50,984	48,997	1,987	......	xx			xx	xx
1923	67,018	63,523	3,495	......	xx	(Included in Export and Foreign Customers Col. c.)		xx	xx
1924	64,981	60,708	4,273	......	xx			xx	xx
1925	71,029	67,585	3,444	......	xx			xx	xx
1926	15,902	......	......	......	$9,908	$2,48	$1,084	......	$2,462
1927	12,662	xx	......	......	6,817	1,953	1,373	$2,519	xx
1928	20,123	xx	......	......	7,186	1,780	1,846	9,311	xx
1929	38,566	xx	......	......	8,167	1,833	3,458	25,108	xx
1930	22,648	xx	......	......	7,054	1,272	2,986	10,518	818
Total	$686,293	$493,905	$49,739	$32,748	$39,132	$9,286	$10,747	$47,456	$3,280

(V) 1926 "Other Customers" includes Western Union Telegraph Company, Vitaphone Co., Victor Talking Machine Co., Inc., Columbia Phonograph Co., Inc., U. S. Government. 1930 "Other Customers" includes Aviation Companies and Employees.

[fol. 4093] **Exhibit D-46**

Basis of Valuation of Inventory

1. Primary Valuation:

a. Raw Materials. Figured costs.

b. Manufactured and semi-manufactured merchandise. Figured costs.

c. Not W. E. manufactures per W. E. specifications and other not W. E. manufactures. Actual cost.

Figured costs represent standard costs.

2. Reductions to arrive at net inventory valuation.

a. Raw Materials. Figured costs are reduced to actual cost or market value whichever is lower.

b. Manufactured and Semi-manufactured merchandise.

Figured costs are reduced to average actual costs if lower.

Deductions are made from the primary valuation of manufactured and semi-manufactured merchandise in arriving at net inventory valuation as follows:

Manufacturing development.
Vacation and enforced absences.
Disability benefits and accrued service pensions.
Overtime and minimum earnings allowance.
Cost and rearrangement of general moves.
Preliminary packing.
Errors in figuring and stock losses.

c. The valuation of raw materials and manufactured and semi-manufactured merchandise, except work in process is reduced as follows:

In poor physical condition. Items are individually reduced to scrap or salvage value or by the cost of repairing or converting.

In good physical condition. Items are reduced by the application of percentages to provide for losses which, based on experience, may be incurred on items before they are used or disposed of. The percentage to be applied in each case is governed by the number of months stock on hand over normal.

[fol. 4094] DEF'T'S EX. D-47

Statement Showing the Method of Arriving at Merchandise Inventories as Shown on the Stockholders' Reports as of December 31, 1915, and December 31, 1930

(Dollars in thousands)

	December 31, 1915	December 31, 1930
Inventory Valuation at Fixed Cost (a)	$20,031	$114,862
Adjustments to arrive at Net Inventory Valuation:		
1. Adjusting Raw Material Inventories and Raw Material Content in Process and Completed Inventories:		
(a) To cost	519	(4,551)
(b) To Market Value if lower than Cost	0	(1,720)
2. Reduction to Fair Market Value (except Special Stocks and Returned Material)	(2,310)	(5,088)
3. Reduction to Fair Market Value on Returned Material and Special Stocks (charged to Deferred Receivables)	(1,063)	(10,651)
4. Excluding [illegible] Labor Increment Lo[illegible]	(b)	(1,198)
5. Excluding [illegible] d Minimum Ea[illegible] nces	(b)	(586)
6. Excluding [illegible] ng Development, [illegible] nd Enforced Absenc[illegible] Disability Benefits and Accrued Service Pensions	(b)	(3,361)
7. Excluding Cost of Rearrangement and General Moves	(b)	(435)
8. Excluding Preliminary Packing, Reel and Spool Expense	0	(351)
9. Excluding Errors in Figuring and Stock Losses	(b)	(293)

	December 31, 1915	December 31, 1930
10. Adding Engineering Development Expense	203	(c)
Total Adjustments to arrive at Net Inventory Revaluation	(2,651)	(28,184)
Net Inventory Valuation	17,380	86,678

a. Figured costs represents for manufactured products, standard costs and for purchased supplies, invoiced costs.

b. In 1915, these items were either not incurred, or, if incurred, were not included in figured costs.

c. The practice of adding engineering development to inventories has been discontinued.

[fol. 4095] **Exhibit D-48**

Sales of Apparatus and Equipment Designed Entirely or in Part by Western Electric Company, Incorporated, but Manufactured by Others.

Included in Sales of Manufactures to Bell Companies on Exhibit #31004

1921 to 1930, Inclusive (A)

1921	$3,256,000
1922	2,903,000
1923	3,049,000
1924	13,339,000
1925	12,851,000
1926	14,138,000
1927	11,966,000
1928	10,224,000
1929	13,460,000
1930	17,066,000
Total	$102,252,000

A. Information prior to 1921 not available.

[fol. 4096] DEF'T'S EX. D-49, ID.

11/24/31.

Graybar Electric Co. Sales and Estimated Net Profits on Western Electric Manufactures, 1926-1928

(Dollars in Thousands)

	1926	1927	1928
Sales	$12,172	$9,020	$9,789
Gross Profits	2,748	2,345	2,428
Expenses	1,544	1,352	1,331
Net Profits	1,204	993	1,097
% Net Profits of Sales	9.9%	11.0%	11.2%

[fol. 4097] EXHIBIT D-50

Graybar Electric Company, Inc.

Earnings for the Years 1926, 1927 and 1928

(Dollars in Thousands)

	Year ended Dec. 31, 1926	Year ended Dec. 31, 1927	Year ended Dec. 31, 1928
Sales	$76,588	68,712	72,702
Gross profits	$11,797	10,898	11,515
Other income	123	131	152
Total	$11,920	11,029	11,667
General expense	$2,943	2,133	1,730
Distributing expense	7,177	6,844	7,067
Federal taxes	319	288	318
Reserve for employees' pensions	133	....	....
Total Expenses	$10,572	9,265	9,115

	Year ended Dec. 31, 1926	Year ended Dec. 31, 1927	Year ended Dec. 31, 1928
Net profits available for interest and dividends	$1,348	1,764	2,552
Interest deductions	65	24	41
Net profits available for dividends	$1,283	1,740	2,511
Dividends paid	......	1.800	2.010
Undivided profits	$1,283	(60)	150

Change in Surplus Account

Balance in surplus 1/1/26	$0
Undivided profits 1926	1,283
Balance 12/31/26	$1,283
Undivided profits 1927	(60)
Balance in surplus 12/31/27	$1,223
Undivided profits 1928	501
Reduction in capital stock (increase in surplus)	6,000
Goodwill retired	(4,500)
Revaluation of plant	505
Balance in surplus 12/31/28	$3,729

[fol. 4098]

Exhibit D-51

Graybar Electric Company, Inc.

Statement of Assets and Liabilities, 1926–1928

(Dollars in Thousands)

	After close of business Dec. 31, 1925 (1/1/26)	At Dec. 31, 1926	At Dec. 31, 1927	At Dec. 31, 1928
Assets:				
Plant	$897	1,167	1,306	1,344
Investments	241	655	644	667
Merchandise material and supplies	4,490	4,423	3,917	4,482
Receivables	8,669	8,331	6,903	8,490
Cash	1,441	1,507	1,983	1,920
Goodwill	7,500	7,500	7,500	3,000
Total Assets	$23,238	23,583	22,253	19,903

	After close of business Dec. 31, 1925 (1/1/26)	At Dec. 31, 1926	At Dec. 31, 1927	At Dec. 31, 1928
Liabilities:				
Capital stock	$15,000(R)	15,000(R)	15,000(R)	9,000(S)
Surplus	....	1,283	1,223	3,729
Current liabilities:				
Bills payable, Pension Fund Trustee	....	....	174	451
Other payables	6,035	4,488	4,663	6,123
Trade acceptances and bills receivable discounted	596	1,533	....	....
Taxes and accruals not due	1,164	1,171	....	....
Total Current Liabilities	$7,795	6,192	4,837	6,574
Reserve for Employees' ~~Benefit~~ Fund and Self-Insured Risks	....	134	135	4
Reserve for depreciation on plant and equipment	443	974	1,058	596
Total Liabilities	$23,238	23,583	22,253	19,903

(R) Capital: 150,000 shares at $100.00 par value.

(S) Capital:

Common stock (30,000 shares at $100.00 par value)	$3,000,000
Preferred stock (60,000 shares at $100.00 par value)	6,000,000
Total	$9,000,000

NOTE.—This Company was sold December 31, 1928, to the Graybar Management Corporation for $9,000,000. Graybar Management Corporation stockholders of common stock must be employees of Graybar Electric Company, Inc.

[fol. 4099]

Exhibit D-52

American Telephone and Telegraph Company

Loans to Western Electric Company, Incorporated, *Years 1918 to 1930

Year	Gross	Rate %	Advanced	Repaid	Average Outstanding During Year
1918					
1919					
1920					
1921					
1922	$2,000,000.00 (a)	4½%	Oct. 13, 1922	Sept. 25, 1923	$1,621,917.81
	2,000,000.00 (a)	4½%	Oct. 13, 1922	Sept. 29, 1923	
	1,000,000.00 (a)	4½%	Oct. 13, 1922	Oct. 13, 1923	
	5,000,000.00 (a)	4½%	Nov. 22, 1922	Oct. 13, 1923	
	2,000,000.00 (a)	4½%	Dec. 30, 1922	Oct. 13, 1923	
Total	12,000,000.00				1,621,917.81
1923	1,000,000.00 (b)	4¾%	Mar. 16, 1923	Oct. 20, 1923	17,305,555.56
	2,000,000.00 (b)	4¾%	Mar. 20, 1923	Oct. 20, 1923	
	2,000,000.00 (b)	4¾%	Mar. 26, 1923	Oct. 20, 1923	
	3,000,000.00	5 %	Apr. 20, 1923	Oct. 30, 1923	
	1,000,000.00	5 %	Apr. 26, 1923	Oct. 30, 1923	
	1,000,000.00	5 %	Apr. 26, 1923	Apr. 11, 1924	
	2,000,000.00	5 %	May 21, 1923	Apr. 11, 1924	
	2,000,000.00	5 %	Aug. 9, 1923	Apr. 11, 1924	
	1,000,000.00	5 %	Aug. 15, 1923	Apr. 11, 1924	
Total	15,000,000.00				17,305,555.56

Average principal on loans made prior to January 1, 1923, is included in this statement.

American Telephone and Telegraph Company

Loans to Western Electric Company, Incorporated, *Years 1918 to 1930

Year	Gross	Rate %	Advanced	Repaid	Average Outstanding During Year	
1924	3,000,000.00	4⅞%	Feb. 15, 1924	Apr. 11, 1924	6,011,111.11	Temporary investments at current banking rates.
	6,000,000.00	4⅞%	Feb. 13, 1924	Apr. 11, 1924		
	3,000,000.00	4⅞%	Feb. 20, 1924	Apr. 11, 1924		
	2,000,000.00	5 %	Mar. 11, 1924	Apr. 11, 1924		
	5,000,000.00	6 %	Apr. 21, 1924	Apr. 30, 1924		
	1,000,000.00	6 %	Apr. 25, 1924	Apr. 30, 1924		
	500,000.00	6 %	May 15, 1924	May 31, 1924		
	5,000,000.00	6 %	May 20, 1924	May 31, 1924		
	2,000,000.00(c)	4 %	June 26, 1924	Nov. 21, 1924		
	2,000,000.00	3½%	Aug. 21, 1924	Aug. 30, 1924		
	1,000,000.00	3½%	Aug. 20, 1924	Aug. 30, 1924		
	2,000,000.00	3½%	Aug. 25, 1924	Aug. 30, 1924		
	2,000,000.00	3½%	Aug. 29, 1924	Aug. 30, 1924		
	2,000,000.00	3½%	July 11, 1924	Nov. 21, 1924		
	2,000,000.00	3½%	Sept. 12, 1924	Nov. 21, 1924		
Total	38,500,000.00				6,011,111.11	
1925	15,000,000.00	3½%	Sept. 15, 1925	Sept. 30, 1925	625,000.00	Government obligations purchased Dec. 31, 1927, from Western Electric with resale agreement. Reflected in average for 1928.
1926						
1927	620,656.78 (d)	3.85%	Dec. 31, 1927	Jan. 31, 1928		
	217,116.38	3.95%	Dec. 31, 1927	Jan. 31, 1928		
	689,520.00	4.00%	Dec. 31, 1927	Jan. 31, 1928		
Total	1,527,293.16					

American Telephone and Telegraph Company

Loans to Western Electric Company, Incorporated, *Years 1918 to 1930

Year	Gross	Rate %	Advanced	Repaid	Average Outstanding During Year	
[fol. 4100]						
1928	1,013,324.29	3.80%	Apr. 6, 1928	May 11, 1928	801,906.87	Government obligations purchased from Western Electric Company with resale agreement. Average reflects those bought from Western Electric Co. in 1927.
	353,713.48	3.95%	Apr. 2, 1928	Apr. 30, 1928		
	682,768.18	4.00%	Apr. 2, 1928	Apr. 30, 1928		
	152,587.50	4.76%	Nov. 19, 1928	Dec. 31, 1928		
	1,010,743.06	4.80%	Nov. 2, 1928	Dec. 31, 1928		
	406,162.50	4.80%	Nov. 19, 1928	Dec. 31, 1928		
	506,722.22	4.83%	Nov. 2, 1928	Dec. 31, 1928		
	1,015,111.11	4.83%	Nov. 17, 1928	Dec. 31, 1928		
	456,900.00	4.83%	Nov. 19, 1928	Dec. 31, 1928		
	3,500,000.00	5⅜%	Dec. 6, 1928	Dec. 31, 1928	243,055.56	Temporary investments at current banking rates.
Total	9,098,032.34				1,044,962.43	
1929	66,000,000.00	5.88%	Various dates	During 1929 & 1930	22,388,860.50	Allotment.
	2,030,997.99	4¼%	Dec. 20, 1929	Jan. 14, 1930	62,058.35	Government obligations purchased from Western Electric Co. with resale agreement.
Total	68,030,997.99				22,450,918.85	
1930	34,000,000.00 (d)	5.88%	Various dates	During 1930	21,117,344.45	Allotment.
	30,000,000.00	4¼%	Sept. 30, 1930			Loaned in connection with purchase of Teletype Corporation.
Total	64,000,000.00				21,117,344.45	

(a) Rate changed to 4¾% effective April 2, 1923, and changed to 5% effective May 1, 1923.
(b) Rate changed to 5% effective July 15, 1923.
(c) Rate reduced to 3½% on July 26, 1924, and to 3% on October 1, 1924.
(d) Excludes government obligations purchased outright (no resale agreement):

1927	$6,094,122.38
1930	1,043,042.45

[fol. 4101] Def't's Ex. D-53, Id.

Teletype Corporation

Balance Sheet at September 30, 1930

Assets

Plant	$3,296,000
Investments in associated companies	188,000
Merchandise	1,703,000
Patents	416,000
Notes receivable	1,500,000
Accounts receivable	433,000
Marketable securities	797,000
Cash	758,000
	$9,091,000

Liabilities

Capital:	
Preferred stock	$1,398,000
Common stock	1,500,000
Mortgages on property	79,000
Other current liabilities	604,000
Reserve for depreciation of plant	555,000
Reserve for depreciation of patents	198,000
Undivided profits	1,318,000
Surplus	3,439,000
	$9,091,000

[fol. 4102] Def't's Ex. D-54, Id.

1. The purchase of the Teletype Corporation was effective October 1, 1930 and negotiations for that purchase had been carried on for some three months prior. Western Electric Company determined the price it was willing to pay on the basis of the following facts and estimates:

a. The sales of the Teletype corporation for 1929 were $11,136,000 and were estimated at $10,800,000 for 1930.

b. The purchases of the Bell System increased from $459,000 in 1926, $1,236,000 in 1927, to $3,900,000 in 1929. In March, 1930, it was estimated that the volume of such purchases would be $4,000,000 in 1931, $5,100,000 in 1932, $6,100,000 in 1933 and $7,700,000 in 1934.

c. The total sales of the Teletype Corporation were: 1926, $2,400,000; 1927, $3,200,000; 1928, $5,046,000; 1929, $11,136,000.

d. The earnings of the Teletype Corporation for 1929 were $3,827,000 and were estimated at that time at $3,900,000 for 1930.

e. The purchase was made with the expectation that the Western Electric Company would be able to earn a satisfactory return on the purchase price. The earnings of the Teletype Corporation for the years 1929 and 1930 indicated a return of between 12% and 13%.

2. The Teletype Plant occupies six and one-half acres of land on Wrightwood Avenue, Chicago. It consists of thirteen buildings comprising 280,000 square feet of floor space.

[fol. 4103]

EXHIBIT D-55

Teletype Corporation

Condensed Summary of Results for the Year 1931 Compared with 1930

(Dollars in Thousands)

		a	b	c	d	
	Assets and Liabilities:	Dec. 31, 1931	Dec. 31, 1930	Inc. of Dec. 31, 1931, Over Dec. 31, 1930	% Inc.	
1.	Plant (Gross)	$4,140	$3,946	194	4.9	1
2.	Goodwill	23,813	23,813	0	0	2
3.	Investments in Associated Companies	262	188	74	39.4	3
4.	Patents	423	421	2	.5	4
5.	Merchandise	1,699	1,871	(172)	(9.2)	5
6.	Notes Receivable	1	0	1	....	6
7.	Accounts Receivable	344	306	38	12.4	7
8.	Marketable Securities	677	785	(108)	(13.8)	8
9.	Cash	455	334	121	36.2	9
10.	Total assets	31,814	31,664	150	.5	10
11.	Common Stock	1,500	1,500	0	0	11
12.	Current Liabilities	279	512	(233)	(45.5)	12
13.	Reserve for Depreciation of Plant	1,871	1,554	317	20.4	13
14.	Reserve for Depreciation of Patents	244	207	37	17.9	14
15.	Surplus	4,107	4,078	29	.7	15
16.	Capital Surplus	23,813	23,813	0	0	16
17.	Total liabilities	31,814	31,664	150	.5	17

	e	f	g	h	
	1931	1930	Inc. of 1931 Over 1930	% Inc.	
18. Sales	$3,029	$9,540	(6,511)	(68.2)	18
19. Gross Profits	938	4,134	(3,196)	(77.3)	19
20. Other Income	(20)	115	(135)	(117.4)	20
21. Total	918	4,249	(3,331)	(78.4)	21
Expenses:					
22. Research and Patent Amortization	191	231	(40)	(17.3)	22
23. Administrative, Selling and Other Expense	501	1,029	(528)	(51.3)	23
24. Federal Taxes	47	342	(295)	(86.3)	24
25. Total expenses	739	1,602	(863)	(53.9)	25
26. Net Earnings	179	2,647	(2,468)	(93.2)	26
27. Interest Deductions	0	6	(6)	(100.0)	27
28. Net Earnings Available for Dividends	179	2,641	(2,462)	(93.2)	28
29. Dividend Requirements	150	1,873	(1,723)	(92.0)	29
30. Undivided Profits	29	768	(739)	(96.2)	30

	i	j	
Percentages: Relation to Sales of:	1931	1930	
31. Gross Profits	31.0	43.3	31
Expenses:			
32. Research and Patent Amortization	6.3	2.4	32
33. Administrative, Selling and Other Expense	16.5	10.8	33
34. Federal Taxes	1.6	3.6	34
35. Total Expenses	24.4	16.8	35
36. Net Profits on Sales	6.6	26.5	36
37. Earnings Per Share of Common Stock (Annual Basis)	$1.19	$17.12	37

Date Issued:—— —, 1932.

[fol. 4104]

Exhibit D-56

Analysis of Average Investment in Operations, Bell Business, Years 1916-1930, Inclusive

(Dollars in Thousands)

Years	Plant	Merchandise	Receivables	Cash	Total Assets	Current Payables	Average Investment
1916	$16,282	$19,873	$11,527	$3,602	$51,284	$5,172	$46,112
1917	19,719	33,647	16,049	4,219	73,634	7,450	66,184
1918	21,525	34,883	15,562	3,619	75,589	4,904	70,685
1919	23,721	31,174	16,004	3,518	74,417	4,478	69,939
1920	29,996	47,908	22,755	5,550	106,209	7,295	98,914
1921	39,007	55,831	28,231	9,756	132,825	7,495	125,330
1922	44,476	48,001	29,242	11,573	133,292	10,203	123,089
1923	49,468	57,462	30,688	7,774	145,392	13,888	131,504
1924	58,190	70,914	39,561	8,671	177,336	18,848	158,488
1925	63,750	57,127	36,053	24,680	181,610	18,525	163,085
1926	68,783	56,214	42,841	4,387	172,225	11,970	160,255
1927	75,769	60,108	36,418	6,041	178,336	10,965	167,371
1928	80,705	51,614	36,665	6,923	175,907	14,529	161,378
1929	95,046	74,386	50,215	8,817	228,464	23,957	204,507
1930	139,988	91,962	49,799	9,429	291,178	20,622	270,556
Total	826,425	791,104	461,610	118,559	2,197,698	180,301	2,017,397

[fol. 4105]

Exhibit D-57

Copy

Gregory Exhibit No. 6

Ch'rman Hopple

No. 3307, Ohio Bell Case

Average Investment, Non-Bell Business, Years 1916-1930, Inclusive

(Dollars in Thousands)

	Plant	Merchandise	Receivables	Cash	Total Assets	Current Payables	Average Investment
1916	$4,196	$4,291	$5,221	$1,581	$15,289	$2,306	$12,983
1917	3,810	7,019	6,288	2,580	19,697	2,923	16,774
1918	5,389	10,941	8,685	1,489	26,504	3,399	23,105
1919	5,856	11,437	8,304	1,440	27,037	4,118	22,919
1920	5,037	12,814	11,795	2,101	31,747	5,190	26,557
1921	5,241	12,529	11,347	2,337	31,454	4,273	27,181
1922	4,738	6,771	8,301	2,087	21,897	4,643	17,254
1923	5,595	7,829	9,828	2,082	25,334	6,067	19,267
1924	6,434	9,480	9,388	1,723	27,025	6,593	20,432
1925	7,821	8,120	9,177	3,006	28,124	6,740	21,384
1926	7,283	3,868	2,077	246	13,474	1,107	12,367
1927	6,559	3,349	1,412	293	11,613	427	11,186
1928	10,455	2,804	2,410	474	16,143	941	15,202
1929	14,907	8,457	4,542	937	28,843	2,424	26,419
1930	11,085	5,580	2,918	684	20,267	1,469	18,798
Total	104,406	115,289	101,693	23,060	344,448	52,620	291,828

[fol. 4106]

EXHIBIT D-61

Western Electric Company, Incorporated, General Accounting Department

Analysis of Profits on Business Other Than with Bell Telephone Companies from 1881 to 1927, Inclusive

1. Interest and Dividends received on Foreign Business 1881 to 1925 Inclusive		$24,563,000	(R)
2. Profit on Sale of International Western Electric Company, Incorporated at September 30, 1925		6,586,000	(S)
3. Net Profit on Sales to Foreign Customers for Export 1881 to 1927 Inclusive		4,367,000	
4. Net Profits on Sales to Other Domestic Customers 1881 to 1925 Inclusive and to the Graybar Electric Company, Inc., during 1926 and 1927		18,885,000	(S)
5. Royalties received on Vitaphone, Permalloy, Phonograph and Submarine Cable Business from 1914 to 1926 Inclusive	$2,127,000		
Less Specific Development and General Expenses Applicable to this Business	4,666,000	(2,539,000)	
6. Net Profit on Sales of Vitaphone, Permalloy and Phonograph Equipment during 1926 and 1927		591,000	
7. Income during 1926 from Investment of Profits from Foreign and Domestic Business other than with Bell Telephone Companies		1,107,000	
8. Revaluation to Increase the Stock of the Electrical Research Products Inc., on Books of Western Electric Company, Incorporated, due to:			
(a) The Electrical Research Products Inc., writing up value of Stock of its Subsidiary Companies (Northern Electric Company and Graybar Electric Company, Inc.) from Cost to Book Value	$4,680,000		
(b) Undistributed Current Earnings of Electrical Research Products Inc., for the year 1927	5,258,000(U)	9,938,000	
Total		63,498,000	(V)

R. Includes special dividend received in 1925 amounting to $9,700,000.

S. After providing for Pension Liability to employees of International Western Electric Company, Incorporated and Graybar Electric Company, Inc.

U Actual earnings for 1927, $5,504,000.

V. Reclassified:

Manufacturing Profits	$10,468
Other	53,030
	63,498

[fol. 4107] **Def't's Ex. D-62**

Weco Corporation

Opening Balance Sheet, May 31, 1930

Assets:	
Notes receivable	$13,800,000.00
Cash	39,869.41
	$13,839,869.41
Liabilities:	
Capital	$1,000,000.00
Surplus	12,839,869.41
	$13,839,869.41

The Weco Corporation issued 100,000 shares of capital stock without par value to the Western Electric Company, Inc., receiving therefor on May 31, 1930, the following consideration:

Cash	$39,869.41
Demand promissory notes of E R P I bearing interest at 6% per annum endorsed by Western Electric Co., Inc., to Weco Corporation	$13,800,000.00
	$13,839,869.41

The Electrical Research Products, Inc., sold on June 1, 1930, the assets listed on the following sheet in exchange for the assets received by Weco Corporation from Western Electric Co., Inc.

[fol. 4108] DEF'T'S EX. D-63

Weco Corporation

Assets sold by E R P I to Weco:		
(a) 39,240 shares of Northern Electric Co., Ltd., Common Stock		$6,387,418.00
(b) 46,000 shares of Graybar Electric Co., Inc., Preferred Stock		4,600,000.00
(c) German war claim		1,258,785.58
(d) New Zealand war claim		200,000.00
(e) Deferred receivables		2,000,000.00
(f) N. C. Heisler open account		1.00
(g) N. C. Heisler stock account		93,846.16
(h) 100 shares of Western Electric Company, Limited (of Canada) capital stock		10,000.00
(i) Western Electric Company, Limited (Canada) open account		26,246.64
(k) Cash in Petrograd banks		1.00
(l) Accrued dividends:		
April and May, 1931:		
Northern Electric Co., Ltd.	$65,400.00	
Graybar Electric Co., Inc.	53,667.00	
Estimated additional dividend, Graybar Electric Co., Inc.	90,000.00	
		209,067.00
		$14,785,365.38
Less reserves against above assets:		
German war claim		$607,553.17
100% reserve against items (d, f, g, h, i and k)		330,094.80
Tax on Northern Electric Co., Ltd., accrued dividend		7,848.00
		$945,495.97
		$13,839,869.41

(Here follows side folio 4109)

EXHIBIT D-64

Average Investment compiled from Consolidated Balance Sheets at Dec 31, of Western Electric Co and Subsidiaries 1915 to 1930 (Dollars in thousands)

Def Ex D 64

Assets	1915	1916	1917	1918	1919	1920	1921	1922	1923	192
Plant	26840	28545	32762	37065	40554	48486	59065	63476	71354	8817
Investments (Stock & Advances)	14735	5580	3126	2179	2117	1830	3664	3790	4251	468
Merchandise	22989	38255	51508	53673	55681	83232	70801	60565	77037	7778
Receivables	18457	23980	30472	29141	37843	57803	48366	44519	53809	5540
Marketable Securities	0	0	0	3959	2421	1253	833	164	168	1
Cash	6414	6617	6937	7077	6824	4966	14780	13282	13924	1146
War Damages	0	0	0	0	1635	504	594	573	343	28
Patents (Net)	22	0	0	0	0	580	438	410	274	16
Trustee Employees Bond Purchase Plan	0	0	0	0	0	1067	405	0	0	0
Goodwill (Teletype Co)	0	0		0	0	0	0	0	0	0
Total Assets	89457	102977	124805	133094	146605	199639	198946	186779	221160	23818
Liabilities										
Capital Stock & Surplus	27603 ✓	28760 ✓	30067 ✓	30486 ✓	33895 ✓	51111 ✓	62123 ✓	79907 ✓	87944 ✓	8985
Preferred Stock	15000	15000	30000	30000	30000	0	0	24679	24679	24679
Funded Debt	16402	16457	16422	16380	16337	44270	44843	1171	36068	3615
Notes Payable										
Trustee's Pension Fund	0	0	0	0	0	0	0	0	0	0
Other	16	5515	16610	12772	15711	43916	27614	12030	183	271
Other Current Liabilities	6742	15472	10783	11317	17395	17564	17844	21635	26628	2761
Reserve for Depreciating Plant	15461	17117	20445	23712	26220	28367	33237	36253	40277	4758
" for Employees' Ben. & Pen. Funds	1676	1671	1581	1734	1802	1807	1839	2062	2282	2
" for Self Insured Risks		0	0	0	0	0	0	0	0	0
" for Contingencies	5607	3521	4960	6643	5162	5978	7261	7219	5675	544
Bills Receivable, Trade Accept. Discounted	0	0	0	0	0	1628	525	716	712	59
Mortgages on Property	0	0	0	0	0	0	1650	1650	1650	165
Total Liabilities	89457	102977	124805	133094	146605	199639	198946	186779	221160	23818

Computation of Average Investment

1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	Total
40584	48418	59066	63476	71354	88170	86185	92248	101425	108615	152226	189528	[illegible]
2117	1830	3664	3790	4251	4485	3419	4621	4206	11178	10151	12028	[illegible]
55181	83232	70801	60565	77037	77782	63147	68643	60585	68492	111205	101519	[illegible]
37843	52803	48366	44519	53809	55440	47601	49986	50420	61246	107223	66852	[illegible]
2421	1253	833	166	168	15[illegible]	10261	30386	4259	5874	672	1625	[illegible]
6824	9960	14780	13282	13932	11413	23382	9383	7913	12878	16671	11319	[illegible]
1635	504	594	573	243	254	0	0	0	0	0	0	[illegible]
0	580	438	419	272	165	0	0	0	0	0	292	[illegible]
0	1607	404	0	0	0	0	0	0	0	0	0	[illegible]
0	0	0	0	0	0	0	0	0	0	0	23813	[illegible]
146605	199639	198946	186670	221106	238180	233995	255267	228817	268328	399235	406996	3432162 ✓
33895 ✓	56111 ✓	62123 ✓	79907 ✓	82942 ✓	89852 ✓	106084 ✓	114738 ✓	88876	114096	171708	193615	1310867
30000	0	0	24699	24679	24674	0	0	0	0	0	0	194037
16237	44270	44843	7171	36068	36152	35933	35841	35705	35674	25552	35486	[illegible]
0	0	0	0	0	0	0	0	4900	21062	26465	32530	84957
15711	43916	27609	12030	183	2712	810	795	1073	1213	[illegible]	32451	209882
17390	17562	17824	21035	26628	27614	28337	29065	25178	32856	46877	25801	360451
26220	28367	33232	36253	40277	47586	46027	51964	51572	62689	11767	84767	663481
1812	1807	1839	2862	2282	11[illegible]	10491	15762	15193	630	868	441	[illegible]
0	0	0	0	0	0	0	134	246	125	139	184	[illegible]
5162	5978	7261	7219	5675	5447	6313	6970	0	0	1445	1526	73177
0	1628	525	716	728	594	0	0	0	0	1500	0	5743
0	0	1650	1650	1650	1650	0	0	0	0	145	198	10171
146605	199639	198946	186670	221106	238180	233995	255267	228887	268328	399235	406996	3432162 ✓
146605	199639	198946	186670	221106	238180	233995	255267	228867	268328	399235	406996	3432162 ✓
17390	17562	17824	21035	26628	27614	28337	29065	25178	32856	46877	25801	360451
129215	182077	181122	165635	194478	210566	205658	226202	203709	235462	352358	381195	3071651

Total Liabilities	87427	107924	124800		132894	[illegible]	[illegible]	171990	[illegible]	[illegible]	[illegible]
Computation of Average Investment											
Consolidated Gross Assets	87457	107922	124805		133094	146605	191639	198900	186673	201176	238188
Consolidated Current Liabilities	6742	15472	10763		11317	17390	17567	17674	21035	26678	27614
Net Consolidated Investment	80715	87450	114077		121777	129215	182077	181122	165635	174478	210566
Previous Year Net Av. Investment	-	80715	87450		114077	121777	129215	182077	181122	165635	194498
Total	-	168165	201477	-	235779	250992	311292	363199	346757	[illegible]	405064
Average Total Consolidated Investment	-	84083	100736	-	117889	125496	155646	181600	173378	150067	202532
Western Electric Co Gross Assets	78754	90408	112668		118456	128489	158553	179801	168194	201433	212421
Western Electric Co Current Payable	6491	12334	9194		9710	14217	14565	15587	18615	22717	22277
Net Western Electric Co Investment	72263	78074	103474		108746	114272	174020	166214	147577	178721	190149
Average Western Electric Co Investment		75319	90774		106110	111507	144146	170117	157897	164159	184435
Subsidiaries Average over W.E. Co Investment		8764	9962		11791	13907	11509	11483	15581	15917	18097
Average W.E. Co Investment (Based 3 periods)		71561	84961		101992	100765	137063	166654	149451	157592	191669
Total Combined Average		80325	99123		113782	[illegible]	148563	178137	164932	173509	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
33094	146605	171639	198[illegible]	186673	201176	238180		[illegible]	255267	228667	263[illegible]	399235	406994	3432162
11317	17390	17567	17674	21035	26648	27614		28337	29065	25178	32856	46877	25801	260481
21777	1[illegible]9215	182077	181122	165635	174478	210566		215658	226202	202709	235462	352358	381195	3371651
14077	121777	129212	183077	181022	165[illegible]	194498		210566	205658	226212	203709	235462	350356	2690486
35773	250992	311292	363121	246757	260123	405064		416224	431860	429911	437191	587840	733553	5601[illegible]
17[illegible]5	125470	155046	181620	173378	180167	202537		[illegible]2112	215930	214355	219595	293920	366776	2840726
18456	128469	158553	179801	168194	201433	212421		216204	235392	213733	251731	373392	379307	3148560
9710	14217	14365	15587	18615	22717	22277		21460	22474	19704	27925	40077	20[illegible]1	296471
18746	124272	174020	166213	147577	178721	176147		194724	212318	194129	223796	333315	358401	2552289
06110	111507	144146	170117	157897	164159	184435		172437	203524	203170	208909	278555	345558	2636707
11791	13907	11500	11483	15481	15917	18097		15675	13409	11716	10686	15266	20918	203819
01992	100763	137063	166624	149451	157592	191669		193661	207800	204757	209250	255395	353614	2651403
13782	114[illegible]	148563	178127	144932	172523	[illegible]1766		203326	221319	246542	219326	200169	274[illegible]3	[illegible]

[fol. 4110]

Exhibit D-65

Where total assets on following summary disagree with total assets on each year's summary sheet, difference is explained on sheets filed under 1929 and 1930 tabs, or represents elimination of Goodwill of Graybar Co. (offsetting reduction in capital and surplus) or reserve for depreciation on patents excluded from liabilities and deducted from assets or some similar adjustment.

(Here follow side folios 4111 and 4112)

EXHIBIT D-66

Ohle

Net Profit on Investment (Combined) as Rep.

	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926
W E Co Net Prof. on Investment before Int. & Taxes	3205	4162 ✓	5051	7052 ✓	8277	10116	9236	10080	14506	16074	16432
Undistributed Earnings of Subsidiaries											
W E Co Ltd of Canada	CA10401 21	CA10451 429	CA10302	CA10401 14	CA10302	CA10302	CA10302	–	–	(2)	1
Int W E Co.	–	–	1137	638	240	962 ✓	682 ✓	604	2933	–	–
Int wholly owned subsidiaries	CA10401-3 362 ✓	287		CA10410-1 (615)				907	(841)	–	–
Tokyo (CA10435)	59% 201	57.4 181	59 (28)	59 73	55 219	55 148	55 127	55 (589)	55 136	–	–
Northern Electric (10870) (10361)	212	106	(223)	236	39	(225)	57	257	247	222	301
MDJ RR (10881)	26	40	7	(11)	(44)	32 ✓	11	50	11	26	27
395 Hudson St Corp		–	–	–	–	7	–	–	–	–	–
Electrical Discount Corp	–		–	–	–	–	–	(2)	2	3	3
Graybar E Co	–	–	–	–	–		–				1283
Electrical Research Products	–	–	–	–	–	–	–	–	–	–	–
E R P in foreign subs	–	–	–	–	–	–	–	–	–	–	–
Weco Corp	–	–			–	–	–	–	–	–	–
Teletype Corp	–		–		–	–	–	–	–	–	–
Totals	4127	5265	5944	[illegible]	8731	11142	10123	11304	17296	16393	17147

Profits on Investment (Combined) as Refs +d

Ex 66

4111

1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	Total
5051	5052✓	8727	10116	9236	10080	14506	16074	16432	19331	22023	31556	20298	196,057
110107	CR10401 14	CR12707	CR11707	CR12107	–	–	②	1	–	㊱	–	–	.
1137	638	240	96✓	68✓	604	2933	–	–	–	–	–	–	7723
	CR10101 (615)				907	(841)	–	–	–	–	–	–	
4 ㉘	59 73	55 219	55 148	55 127	55 (589)	55 136	–	–	–	–	–	–	818
(223)	236	29	(225)	57	251	247	222	301	231	257	378	89	2886
7	⑪	(44)	3✓	11	50	11	26	27	㉒	6	㊲	61	183
–	–	–	7	–	–	–	–	–	–	①	–	②	5
–	–	–		–	②	2	3	3	–	③	–	–	2
–	–	–		–				1283	(60)	501	–	–	1724
–	–	–	–	–	–	–	–	–	5504	5926	1349	11	12790
–	–	–	–		–		–	–	–	㉟	2130	(58)	2037
	–	–	–		–	–	–	–	–	–	–	768	768
–	–	–	–		–	–	–	–	–	–	–	(550)	(550)
5944	5945	8731	11420	10143	11304	19294	16393	17647	24942	28031	35876	20118	229,594

DEFENDANT'S EXHIBIT D-68

Consolidated Earnings of W. E. Co. and [illegible]

1916 - 1930

Def Ex D68

	Total 1916-30 [illegible]	
Total Combined Net Profits of W.E. Co & [illegible] as shown in position 1 (sheet attached)		223,394
Automatic deficit charged against 1917 profits [illegible] earnings and also against W. E. Co of Canada 1918 earnings	✓	138
Interest applicable to 1914 & 1915 included in 1917 combined earnings	✓	382
Loss of W. E. Co. Ltd of Canada in 1928 also charged ERP Inc earnings	✓	36
Loss of Teletype Corp after dividends for 3 mos 1930 taken as loss by W. E. Co in setting up reserve for impairment of Tele[illegible] securities	✓	550
Undistributed profits of Northern Elec Co Ltd to May 31 1930 included in 1930 ERP Inc earnings as a profit on sale of N. E. Co	✓	845
Profit in 1930 on sale of land between W. E. Co & N.Y.R.R	✓	137
Portion of profit on sale of Intl W. E. Co applicable to 1916-25	✓	5,116
1925 ~~[illegible]~~ [illegible] earnings [illegible] at [illegible] 8,145 [illegible]		3,696
Elimination of intercompany gross profits included in line 1 remaining on inventories		1750
Portion of credit to surplus upon cancelling Res. for Contingencies applicable to 1916-29 earnings		912
Offsetting interest accrued on Berlin notes, included in line 1, not collected 1930		205
Appropriation for E B D of N.Y.R.R not deducted from line 1 (1924)		(20)
Charge to earnings 1929 special surplus adjustment		(157)
Adjustment of [illegible] to Pension Fund		699
Adjustment in ERP Inc		18
Revaluation of Italian [illegible] Receivables (1925)		119
Total Consolidated Earnings 1916-30		231.083

[fol. 4113]

EXHIBIT D-69

Patents Sold to and Licenses Purchased from A. T. & T. Co. by Western Electric Co., Inc., and Accounting Disposition 1916 to 1930 (U)

	Patents Sold					Licenses Purchased Annually Charged to		
		Accounting Disposition						
	Special Assignment Credited to Reserve for Contingencies	Annual Assignments Credited to						
		General Expense	Development Expense	Other Income	Total	Reserve for Contingencies	Development Expense	Total
1916	$	$	$	$	$		$	$
1917	250,000	29,630			279,630	4,448		4,448
1918								
1919	22,000	10,925			32,925	5,300		5,300
1920			16,675		16,675	5,150		5,150
1921			12,416		12,416		13,325	13,325
1922			23,510		23,510		17,440	17,440
1923			1,163		1,163			
1924			43,501		43,501		7,675	7,675
1925			48,503		48,503		9,817	9,817
1926			51,804		51,804		33,489	33,489
1927			94,326		94,326		16,250	16,250
1928			73,913		73,913		11,775	11,775
1929				85,568	85,568		20,000	20,000
1930				71,026	71,026		55,424	55,424
	272,000	40,555	365,811	156,594	834,960	14,898	185,195	200,093

(U) Amounts received from A. T. & T. Co. for assignment of patents, and licenses paid to A. T. & T. Co. represent:

(a) In the case of patents purchased from outside sources, the actual amount paid for such patents.

(b) In the case of all other patents, the cost of taking out the patent, meaning thereby time spent by the respective patent departments plus patent office fees.

[fol. 4114] EXHIBIT D-70

This agreement made this 13th day of August, 1923, between Western Electric Company, Incorporated, a New York Corporation, hereinafter called the Western Company; and Stromberg-Carlson Telephone Manufacturing Company, a New York corporation, hereinafter called the Stromberg Company, witnesseth:

Whereas, the Stromberg Company has heretofore granted certain licenses to the Western Company under certain United States patents and applications for United States patents owned by the Stromberg Company; and the Stromberg Company has since acquired certain other United States patents and applications for United States patents, a list of which is hereto attached and marked "Schedule B, List of Stromberg Patents and Applications", said list being intended to be a complete list of all United States patents and applications for United States patents now owned by the Stromberg Company under which the Western Company is not already licensed; and

Whereas, the Western Company desires to acquire licenses under the patents and applications listed or intended to be listed in said "Schedule B and under all United States patents and applications for United States patents relating to automatic or semi-automatic telephone systems or apparatus which may during the next ten years be acquired by the Stromberg Company; and

Whereas, the Western Company is the owner of numerous United States patents and applications for United States patents relating to automatic and semi-automatic telephone systems and apparatus, among which are certain patents and applications set forth in a list attached hereto and marked "Schedule A, List of Western Patents and Applications"; and

Whereas, the Stromberg Company has heretofore developed in its laboratories a certain automatic telephone exchange system and apparatus, employing step-by-step progressively movable switches for selectors, connectors and other switching purposes, which system and apparatus have been exhibited to representatives of the Western Company and which the Western Company asserts to be covered by certain of the claims of the patents and applications listed in said "Schedule A", (which is intended to be a complete list of all the Western Company's United States patents and applications for United States patents covering said system and apparatus heretofore developed by the Stromberg Company); and

Whereas, the Stromberg Company desires to acquire a license under the patents and applications of the Western [fol. 4115] Company, to such extent as may be necessary to enable it to make, use and sell (under the conditions and with the limitations hereinafter stated), systems and apparatus substantially the same as said system and apparatus heretofore developed by it, and to utilize the same inventions in further developing said system and apparatus; and

Whereas, certain types of switches and other features disclosed in said patents and applications involve inventions which are not necessary in systems and apparatus such as those developed and proposed to be developed by the Stromberg Company, which inventions are covered by other patents of the Western Company under which it is not intended that the Stromberg Company shall be licensed;

Now, therefore, in consideration of the licenses herein granted and the covenants and agreements herein contained, the parties hereto agree as follows:

1. The Western Company hereby grants to the Stromberg Company a non-exclusive license under all of the United States patents and applications for United States patents listed in said "Schedule A" and under all reissues and extensions of said patents, and under all patents (and reissues and extensions thereof) that may be issued upon said applications or upon divisions or renewals thereof, to make and to cause to be made for it and to use and sell automatic telephone exchange apparatus and systems in which the selectors, connectors and other switches are of the step-by-step progressively movable type, except, however, that no rights are herein granted *to* agreed to be granted to the Stromberg Company (1) to make, use or sell any automatic telephone systems or automatic telephone apparatus for exchanges of more than 10,000 lines capacity, or (2) to make, use or sell any such apparatus of whatever capacity for use in connection with the telephone system of the American Telephone and Telegraph Company or any of its present or future Associated Companies.

2. The Stromberg Company agrees to pay to the Western Company a royalty upon all telephone exchange apparatus for exchanges having a capacity of more than four hundred and ninety-nine (499) lines each, / which shall be used, sold, leased or otherwise furnished others, / by the Stromberg Company during the ten (10) years next succeeding the date of this contract under the license herein granted or agreed to be granted, at the following rates, based upon the gross selling price of said apparatus (or if furnished otherwise [fol. 4116] than by outright sale, upon the value of such apparatus as measured by its current selling price of similar apparatus) exclusive of installation charges:

Upon all telephone exchange apparatus having a capacity of five hundred (500) lines and over and less than one thousand (1,000) lines, two and one-half per cent (2½%);

Upon all telephone exchange apparatus having a capacity of one thousand (1,000) lines and over and less than five thousand (5,000) lines, five per cent (5%);

Upon all telephone exchange apparatus having a capacity of five thousand (5,000) lines and over and less than ten thousand (10,000) lines, ten per cent (10%);

Apparatus for telephone exchanges having a capacity of less than five hundred (500) lines shall not be subject to royalty.

In the case of additions to equipment initially furnished by the Stromberg Company under this license, such additional equipment shall be subject to royalty at the rate above fixed for exchanges of a size corresponding to the total capacity of the exchange in question, with such additional equipment included; that is to say, for example, if the Stromberg Company should sell an exchange of two thousand (2,000) lines capacity it would be subject to royalty of five per cent (5%). If the Stromberg Company should thereafter furnish additional equipment for an additional two thousand (2,000) lines capacity, this additional equipment would also be subject to a royalty of five per cent (5%) and if the Stromberg Company should thereafter again furnish additional equipment for adding one thousand five hundred (1,500) lines to such exchange thereby increasing its total capacity to five thousand five hundred (5,500) lines, the equipment for the last mentioned one thousand five hundred (1,500) lines would be subject to a royalty of ten per cent (10%) but the royalty on the first two installations would not be increased.

3. The Stromberg Company agrees to make quarterly reports to the Western Company on or before the fifteenth day of January, April, July and October in each year, covering all telephone exchange equipment put into service by the Stromberg Company itself or furnished by it to others under this license for use during the three calendar [fol. 4117] months then last past, such reports to show the name of the purchaser or user of the apparatus, the location of the exchange and the gross selling price (or actual value, if furnished otherwise than by outright sale, such value to be measured by the current selling price of similar apparatus); and the Stromberg Company agrees to pay to the Western Company at the time of making each such report, the entire amount of royalty upon said apparatus so put into service or furnished to others during such three preceding calendar months. The Stromberg Company agrees to keep full and accurate records of all its operations under this license, which records shall be open to the inspection of the Western Company or its authorized representatives at all reasonable times.

For the purpose of determining whether or not apparatus furnished by the Stromberg Company has been sold or furnished within the term of ten (10) years referred to, the date of acceptance of the order by the Stromberg Company shall control; but royalty shall not be actually payable until the apparatus is billed or delivered to the customer.

4. The Stromberg Company hereby grants to the Western Company non-exclusive licenses under the patents and applications for patents listed in said annexed "Schedule B", and the Stromberg Company further agrees to grant to the Western Company licenses under all United States patents and applications for patents relating to automatic or semi-automatic telephone systems or apparatus which may be acquired (or in respect of which rights to grant licensee may be acquired) by the Stromberg Company at any time within ten (10) years from and after the date of this agreement. The licenses herein granted and agreed to be granted to the Western Company include the right to make and to cause to be made by others for it and to use and sell the

inventions and improvements covered by said United States patents and applications of the Stromberg Company, for the entire terms of the respective patents issued and to be issued, and said licenses are free of royalty and of every other condition, limitation or restriction. The Stromberg Company agrees to give immediate written notice to the Western Company as and when it shall hereafter acquire any United States patents or applications for United States patents in respect to which the Western Company shall be entitled to license hereunder.

[fol. 4118] 5. The licenses herein granted agreed to be granted by each of the parties to the other are only under patents and applications for patents in the United States of America, and no rights are herein granted or agreed to be granted under any patents of foreign countries, and the manufacture or sale of apparatus in the United States by either party shall imply no right to the purchaser to use said apparatus under any patents in foreign countries.

No rights are herein granted or agreed to be granted to the Stromberg Company under any patents or applications of the Western Company other than those recited in the annexed "Schedule A", and no rights are granted or agreed to be granted by either party to the other except as herein expressly stated.

6. Each of the parties hereto hereby releases and forever discharges the other party (and the Stromberg Company further releases and discharges the American Telephone and Telegraph Company and each and all of the associated companies of the latter) of and from all claims, demands and rights of action on account of any past infringement of patents; and each of the parties further releases all purchasers and users of apparatus heretofore furnished by the other party from all claims for infringement of patents by reason of the use or sale of any apparatus heretofore furnished by such other party; and each party hereby licenses the continued use of all apparatus heretofore furnished by the other party, and the Stromberg Company hereby licenses the continued use by the American Telephone and Telegraph Company and its several associated companies of any and all apparatus now installed or used by them or any of them.

7. This agreement and the rights and licenses herein granted and agreed to be granted shall be assignable by the parties hereto respectively to the successors to substantially their entire good will and business relating to telephone apparatus, but may not otherwise be assigned.

In witness whereof the parties hereto have caused this instrument to be executed by their proper officers, the day and year first above written.

Western Electric Company, Incorporated, by C. C. DuBois, President.

[fol. 4119] Attest: E. J. Moriarty, Secretary. Stromberg-Carlson Telephone Manufacturing Company, by Fred C. Goodwin, Vice-President. Attest: W. M. Angle, Secretary.

The undersigned American Telephone and Telegraph Company, a New York corporation, hereby consents to the execution and delivery of the foregoing license by Western Electric Company, Incorporated, and to the extent of its right, title and interest in, to or under the patents and applications for patents listed in "Schedule A" attached to said agreement, said American Telephone and Telegraph Company hereby joins in the granting of the license therein granted to the Stromberg-Carlson Telephone Manufacturing Company under said patents and applications.

American Telephone and Telegraph Company, by H. B. Thayer, President. Attest: James Robb, Ass't Secretary.

[fol. 4120] EXTRACTS FROM EXHIBIT D-71

Agreement made in duplicate this 2nd day of June, 1914, between Kellogg Switchboard & Supply Company, hereinafter called the Kellogg Company, and Western Electric Company, hereinafter called the Western Company, corporations of Illinois, witnesseth:

Whereas the Kellogg Company owns certain United States patents and applications for patents, or has the right to grant a license as herein expressed under said patents and the patents to be issued upon said applications, as enumerated in the list attached hereto and marked "Kellogg List"; and

Whereas the Western Company is also the owner of certain United States patents and applications for patents, and certain patents and applications of the respective parties are now involved in interference in the United States Patent Office; and

Whereas each of the parties hereto desires to avoid patent litigation with the other party and to manufacture, use and sell its apparatus, systems and devices without liability to the other for infringement,

Now, therefore, in consideration of the agreements herein contained and the payment to the Kellogg Company of the sum of Two Hundred and Fifty Thousand Dollars ($250,000), the receipt of which is hereby acknowledged the parties hereto agree as follows:

The Kellogg Company hereby grants and agrees to grant to the Western Company a license of the character defined in sections VII and VIII hereof under each and every United States patent, issued on applications filed prior to date hereof, (or upon reissues, divisions or renewals thereof), now owned or controlled by said Kellogg Company, or under which it has the right to grant a license, and under all patents that may be issued upon applications and upon reissues, divisions and renewals thereof now owned or controlled by it, or under which it has the right to grant licenses, in so far as said present and future patents relate to automatic or semi-automatic telephone system or apparatus, or automatic busy test or ringing systems, or harmonic party line systems, or to any kind of system or apparatus which the Western Company has prior to date hereof, made and sold, to the ends of the respective terms for which said patents are or may be granted, all of said patents and applications being intended to be included in the said Kellogg List, but if any are omitted they shall be added thereto as soon as the omission is discovered and whether added or not shall be deemed to be included within this license.

[fol. 4121]

II

If the Kellogg Company shall hereafter acquire title to any other application or applications for United States patent filed prior to date hereof, or the title to or right to grant licenses under any United States patent or patents issued or to be issued on applications filed prior to date hereof or on divisions, reissues or renewals thereof, relating to automatic or semi-automatic telephone systems or appartus, or automatic busy test or ringing systems, or harmonic party line systems, or relating to any kind of system or apparatus which the Western Company has prior to date hereof made and sold, the Kellogg Company shall immediately notify the Western Company thereof, and the Western Company shall, at its option, immediately be entitled to a license under any and all such patents, free of additional cost to said Western Company, except that if such patents or rights under the same are acquired by the Kellogg Company on the basis of royalty or other deferred payments based upon the use of the inventions covered thereby, or subject to any conditions as to the exercise of rights thereunder, the Western Company shall be entitled to licenses thereunder only on making or agreeing to make the same payments and complying or agreeing to comply with the same conditions.

* * * * * * *

IV

The Western Company hereby grants and agrees to grant to the Kellogg Company a license of the character defined in sections VII and VIII hereof under each and every United States patent, issued on applications filed prior to date hereof (or upon reissues, divisions or renewals thereof), now owned or controlled by said Western Company, or under which it has the right to grant a license, [fol. 4122] and under all patents that may be issued upon applications and upon reissues, divisions and renewals thereof now owned or controlled by it, or under which it has the right to grant licenses, in so far as said present and future patents relate to automatic or semi-automatic telephone systems or apparatus, or automatic busy test or ringing systems, or harmonic party line systems, or to any kind of system or apparatus which the Kellogg Company has prior to date hereof, made and sold, to the ends of the respective terms for which said patents are or may be granted.

* * * * * * *

V

If the Western Company shall hereafter acquire title to any other application or applications for United States patent filed prior to date hereof, or the title to or right to grant licenses under any United States Patent or patents issued or to be issued on applications filed prior to date hereof or on divisions, reissues or renewals thereof, relating to automatic or semi-automatic telephone systems or apparatus, or automatic busy test or ringing systems, or harmonic party line systems, or relating to any kind of system or apparatus which the Kellogg Company has prior to date hereof made and sold, the Western Company shall immediately notify the Kellogg Company thereof, and the Kellogg Company shall, at its option, immediately be entitled to a license under any and all such patents free of additional cost to said Kellogg Company, except that if such patents or rights under the same are acquired by the Western Company on the basis of royalty or other deferred payments based upon the use of the inventions covered thereby, or subject to any conditions as to the exercise of rights thereunder, the Kellogg Company shall be entitled to licenses thereunder only on making or agreeing to make the same payments and complying or agreeing to comply with the same conditions.

• • • • • • •

VII

All of the Licenses granted and to be granted under this contract are and shall be non-exclusive and non-divisible, and shall cover the right to make, use and sell, except as specified in Section VIII hereof, throughout the United States and territories thereof for the life of the patents [fol. 4123] covered in this agreement; the sale of apparatus embodying or installed to operate in accordance with any inventions under which licenses are herein granted or to be granted shall carry with it an implied license to use and sell the apparatus so sold. This agreement and the licenses herein granted and agreed to be granted are and shall be assignable only as follows: If either party is succeeded in business by a third party not a party to this agreement, and said third party is the possessor of patents or applications filed prior to date hereof and relating to the classes of systems and apparatus covered by this contract under which patents or applications the other party to this agreement has no rights, the licenses granted hereunder to the party so succeeded in business shall be terminable at the option of said other party unless licenses similar in scope and territory to those herein granted under said patents and applications of said successor are offered within ninety days to said other party without cost or upon such royalty only as such successor must pay, and upon such offer being made by such successor this agreement and the licenses herein granted and agreed to be granted shall be assignable to such successor, and when so assigned all of the provisions of this agreement shall inure to the benefit of and be binding upon said successor. Except as above provided, this agreement and the licenses hereunder granted and to be granted are non-assignable and neither party may grant any sub-licenses or rights under patents or inventions of the other party.

VIII

The licenses herein granted and agreed to be granted by each of the parties to the other are subject to the limitation that neither party is licensed to copy exactly or substantially, in its commercial apparatus, the particular design or construction of the commercial switches and calling devices of the other party, and the licenses herein granted and agreed to be granted by the Western Company to the Kellogg Company are subject to the further limitation that the Kellogg Company is not licensed to make or sell systems of the so-called "rotary" and "panel" type such as have been developed by the Western Company, or any of the apparatus or circuits thereof, except in so far as features of such systems may be applicable to systems of other types, such for instance as the "step-by-step" system heretofore developed by the Kellogg Company, and except also that none of the limitations of this paragraph shall be construed to prevent either party from making, using or selling any type of apparatus or circuits heretofore developed by such party or shown or described in any of its existing [fol. 4124] patents or pending applications. Each of the parties hereto agrees to observe all the conditions and limitations of the licenses hereunder granted and to be granted to such party, and shall be liable in damages to the other party for any use of patented inventions of such other party in violation of any such conditions or limitations. If, in any year the sales of the Kellogg Company of automatic and semi-automatic switching and switchboard apparatus and calling devices, employing an invention or inventions with reference to which it receives a license hereunder, shall exceed the sum of Five Hundred Thousand Dollars ($500,000), the overplus shall be subject to a fair an just royalty to be paid to the Western Company by the Kellog Company, and such royalty shall be assessed on a line or percentage basis, and shall be reasonable in amount considering the market price of such apparatus, and shall be fixed by the arbitrator or arbitrators. In reaching their decision the arbitrator or arbitrators shall take into consideration as one factor, the value of the inventions of the parties hereto at a valuation not less than their cost to either party, the decision of such arbitrator or a majority of said arbitrators shall be final as to amount per line or percentage, and said arbitrator or arbitrators shall set an aggregate amount to be ultimately paid, after which the royalties or percentage shall cease.

The Kellogg Company agrees to pay to the Western Company the entire amount of royalty found to be due by any decision of the arbitrators within thirty days of such decision.

* * * * * * *

The American Telephone and Telegraph Company, a corporation of New York, and The American Bell Telephone Company, a Massachusetts corporation, hereby assent to the execution of the above instrument by Western Electric Company, and they severally assume to the Kellogg Switchboard & Supply Company, obligations similar in all respects to those assumed by the Western Electric Company under said instrument, and severally grant licenses to the Kellogg Switchboard & Supply Company similar in all respects to those granted by the Western Company under all their patents and applications filed prior to date hereof upon the classes of systems and apparatus contemplated by said instrument in consideration of said Kellogg Company granting to said American Telephone and Telegraph Company and to The American Bell Telephone Company the same licenses and assuming to them severally the same [fol. 4125] obligations as said Kellogg Company grants and assumes to the said Western Company as expressed in said above instrument, to which the said Kellogg Company hereby agrees, and hereby grants and agrees to grant to said The American Bell Telephone Company and to said American Telephone & Telegraph Company licenses similar in all respects to those in said above instrument granted or agreed to be granted by the Kellogg Company to the Western Company.

* * * * * * *

[fol. 4126] In addition to the portions of this contract, printed in full above, it contains, in substance, the following provisions:

Kellogg Company covenants that the licenses granted and agreed to be granted are free from adverse agreement, assignment, grant, mortgage or other incumbrances and are and will be free and clear of royalty and other payments except as expressed in the contract and it will indemnify Western and its vendees from adverse claims. (P. III) The Western makes a similar agreement with relations to the licenses by it to Kellogg (P. VI).

Each party agrees not to simulate the design or construction of the other's commercial apparatus in such a manner as will constitute unfair competition. If there shall be dispute with relation to such, it shall be submitted to arbitration (P. IX)..

Arbitration is provided for applicable to the entire contract (P. X). Parties will attempt to themselves settle interference as between them but in case of failure to do so, will submit the same to the patent office tribunals and may appeal not beyond the Commissioner of Patents. Kellogg will give notice to the Western of claimed interferences with patents licensed under contract. Western may participate in defense or defend entirely if Kellogg elects not to do so (P. XII).

Each party releases the other and their vendees from all claims arising from infringement of any patents of the one by the other.

[fol. 4127] EXHIBIT D-72

Description of Western Electric Costs

1. General:

The fundamental elements of cost are:

1. Pay rolls.
2. Purchases.
3. Taxes.
4. Reserve for deferred payments.

By reason of the organization of the company's operations, the nature of the work done and the method of allocation and accounting followed, these fundmental elements of cost appear in different places under varying names in the process of building up the complete cost of sales, as illustrated by the accompanying chart. Capital charges in the form of interest and dividends are not included in the cost of sales.

2. Definition of primary costs and their grouping into assembled costs:

As shown by the chart, sales are made up of—

1. Complete cost of manufactured products.
2. Complete cost of purchased supplies.
3. Net profits.

Complete cost of manufactured products in turn is made up of—

1. Shop cost.
2. Installation cost. } (Apply to central office
3. Equipment specification cost. } equipment only.)
4. Development cost.
5. Distribution cost.
6. Less credits for interest received from operations.

Complete cost of purchased supplies comprises invoice cost of purchased supplies and their cost of distribution, less credits for interest received from operations.

These main elements making up the complete costs of sales in turn represent assemblies of primary costs which are briefly defined in the following paragraphs.

3. Shop cost:

Shop cost comprises all of the labor and other expenses of the Manufacturing Department in carrying out its function of manufacturing cable, apparatus and equipment.

Shop cost is made up of the following primary costs:

1. Direct Labor. Payments to employees who perform manufacturing and assembly operations which can be charged to running orders covering such operations.

2. Indirect Labor. Amounts paid to direct labor employees which cannot practically be charged to such running orders for manufacturing operations but which are distributed over all such orders by percentages applied to [fol. 4128] direct labor. Such payments include vacations, forced absences, overtime allowances, sickness and accident disability payments and accruals for service pension liability.

3. Raw Materials. Raw materials comprise that material used in the manufacture of the product which either becomes part of the finished article or waste normally resulting from manufacturing processes. Scrap value of such waste is deducted from the gross cost of materials.

4. Manufacturing Overhead. This comprises accruals for depreciation of plant and all administrative, clerical and other expenses of the Manufacturing Department which cannot be assessed directly to the cost of the order as expended, but are included in shop cost as loading.

4. Installation cost:

Installation cost comprises the expenditures of the Installation Department required to install central office equipment. It represents the assembly of the following primary costs:

1. Direct labor.
2. Indirect labor.
3. Installation materials.
4. Installation overhead.

In general, these elements of cost of installation work correspond to those defined in the previous section for manufacturing work.

5. Equipment specification cost:

Equipment specification cost represents the work of issuing in the form of specifications and drawings the engineering requirements of the Telephone Companies and Bell Telephone Laboratories for a central office order in such a manner that the necessary manufacturing and installing information may be presented to the Manufacturing Department and Installation Divisions.

The cost of preparing these specifications and drawings is similarly made up of the following items:

1. Direct labor.
2. Indirect labor.
3. Equipment materials.
4. Equipment overhead.

(Note.—The cost of preparing standard or master specifications is included in development cost as standardization, as brought out in the following paragraph.)

6. Development cost:

Development cost comprises expenditures for—

1. Developing, designing and patenting prior to the initial manufacture.
2. Preparing and maintaining standard specifications and drawings covering central office equipment and circuits.
3. Patents purchased and royalties and license fees paid for use of patents.

[fol. 4129] Development cost includes:

a. Charges from the Bell Telephone Laboratories for development work.
b. Charges from the Installation Department for standardization. (See above.)
c. Expenditures by the Patent Department.

7. Distribution cost:

Distribution cost is made up of four elements:

1. Merchandise Expenses, which include all of the labor and other expenses of the Telephone Sales Department in receiving, storing and shipping both manufactured products and supplies purchased from others.

This includes the operating expenses of the General Merchandise Departments at Hawthorne, Kearny and Point Breeze and of 32 distributing warehouses throughout the country. Packing and transportation charges are also included.

2. Purchasing expense, which represents the cost of purchasing both raw materials and purchased supplies.

3. General expense, which includes the expenses of the executive and administrative officers of the company and their staffs, such as the Legal, Accounting, Treasury, Personnel and Advertising.

4. Federal taxes.

Distribution cost is divided between—

a. Distribution cost of manufactured products.
b. Distribution cost of purchased supplies.

8. Interest received from operations (credit):

From the sum of the preceding elements of cost is deducted interest received from operations, in arriving at the complete cost of sales.

9. Aggregate cost and figured standard cost:

In the administration of its business and the determination of profits, the Western Electric Company makes use of—

a. Aggregate costs:

These are ascertained from the books for the various departments on which are recorded the actual expenditures for pay rolls, purchases and accruals for taxes, depreciation and other deferred payments. Such expenditures, adjusted for changes in inventories, give the aggregate cost of sales divided departmentally, such as shop, installation, development and distribution.

[fol. 4130] b. Figured standard cost:

To determine the figured standard cost of individual items produced, direct labor and material is charged by means of time and material tickets to running orders for similar operations or groups of operations, to which are added by means of loading rates such expenses as cannot practically be charged direct to the order. From the specification or manufacturing lay-out showing the operations required to produce a given article and from the operation cost determined from these running orders, is assembled the figured standard cost of a particular product. Although necessarily differing for particular periods, the total of all figured standard costs will, over a period of years, equal the aggregate cost.

10. The allocation of cost of sales between Bell and Non-Bell Companies is determined as follows:

Manufactured Products

1. Shop cost:

The figured standard shop cost is shown on the Western Electric Co. copy of each bill rendered by the Merchandise Department to Distributing Houses for shipments to Bell customers and on copy of each bill to Non-Bell customers, and these summarized, furnish for each year the total figured shop costs for Bell and Non-Bell business. Any difference between such total figured shop cost and the total aggregate shop cost of manufactured products is added to or deducted from the figured shop cost on a pro-rata basis, to obtain the aggregate cost of sales to Bell and Non-Bell customers. The adjustment to actual cost is not made for isolated items of Western Electric manufacture.

2. Installation and equipment specification costs:

Such costs are accumulated directly for each order of central office equipment and are included in cost of sales for Bell business or Non-Bell business, depending on which class of customer ordered the equipment.

3. Development cost:

Development expense is classified according to main classes of products and divided in proportion to the shop cost of each class of products sold to Bell and Non-Bell customers.

4. Distribution cost:

Distribution cost is divided between Bell and Non-Bell insofar as practical on the basis of time studies and estimates and the remainder assessed pro-rata to the shop cost of sales, except for Federal taxes which is divided on the basis of taxable profits on Bell and Non-Bell business.

5. Interest received from operations:

The source of such interest frequently determines whether it should be included under Bell or Non-Bell business. Other is divided pro-rata to the shop cost of sales, the same basis as used in assessing investment in cash, the source of practically all of the interest prorated.

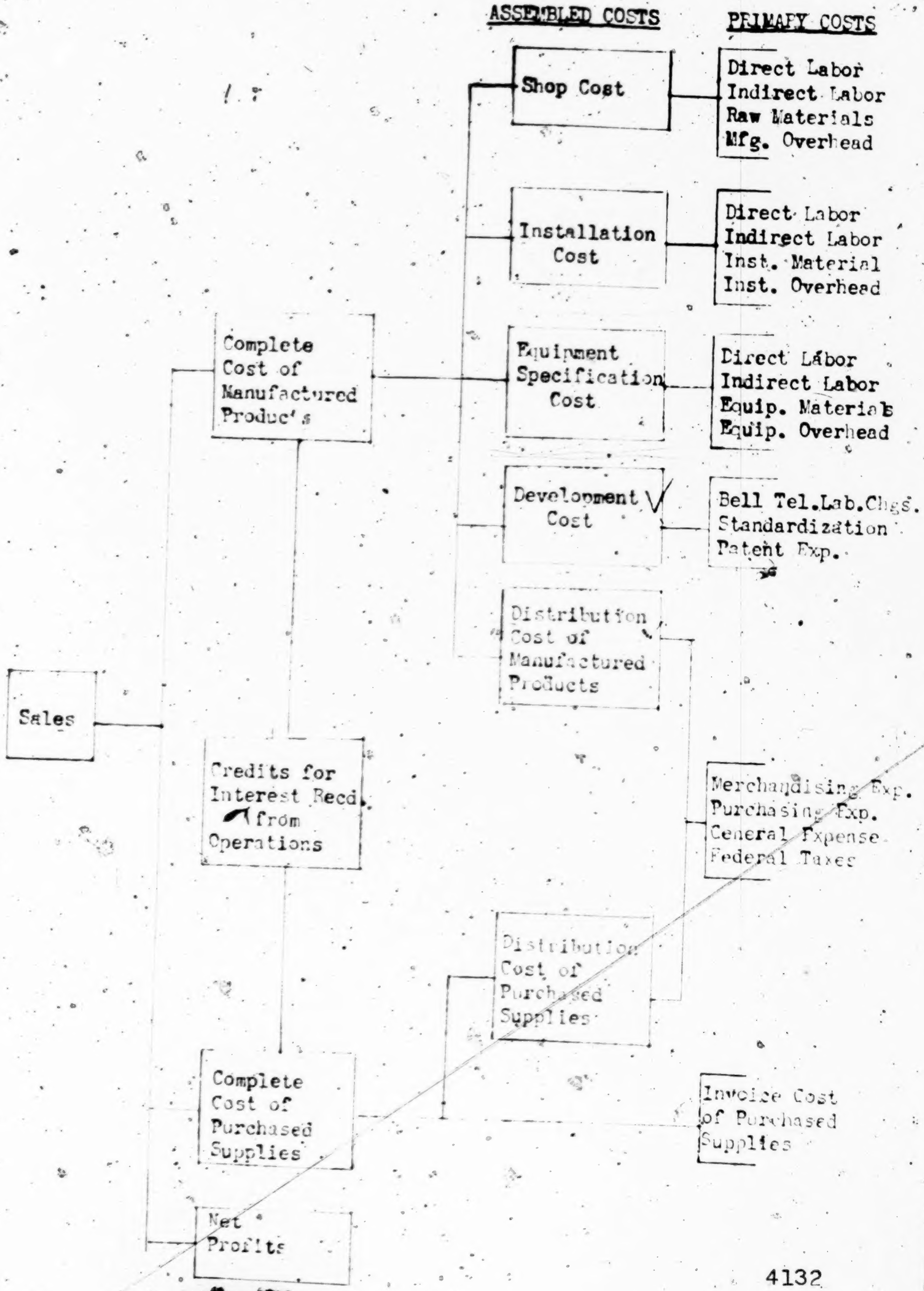
[fol. 4131] Purchased Supplies

6. To the known invoiced cost of sales to Bell and to Non-Bell customers is added the cost of distribution and deducted the interest received from operations, allocated between Bell and Non-Bell business in the manner described in section 4—Distribution Cost and Section 5—Interest Received from Operations.

(Here follows side folio 4132)

APPENDIX A

ANALYSIS OF WESTERN ELECTRIC SALES AND COSTS


ASSEMBLED COSTS
PRIMARY COSTS
Shop Cost
Direct Labor
Indirect Labor
Raw Materials
Mfg. Overhead
Installation Cost
Direct Labor
Indirect Labor
Inst. Material
Inst. Overhead
Equipment Specification Cost
Direct Labor
Indirect Labor
Equip. Materials
Equip. Overhead
Development Cost
Bell Tel.Lab.Chgs.
Standardization
Patent Exp.
Distribution Cost of Manufactured Products
Merchandising Exp.
Purchasing Exp.
General Expense
Federal Taxes
Distribution Cost of Purchased Supplies
Invoice Cost of Purchased Supplies
Complete Cost of Manufactured Products
Credits for Interest Recd from Operations
Complete Cost of Purchased Supplies
Net Profits
Sales

4132

37221

[fol. 4133]

Exhibit D-73

Western Electric Company, Inc.

Investment in Products Company

On January 1, 1927, the Products Company was set up, at which time the following assets were transferred:

Investments:		
Graybar Company Stock	$6,699,000	
Northern Electric Company Stock	1,370,000	
W. E. Co. Limited of London Stock	1,000	
		$8,070,000
Marketable Securities:		
Liberty Bonds	$21,549,000	
U. S. Treasury Notes	4,452,000	
U. S. Treasury Notes	4,692,000	
		30,693,000
Cash		1,000,000
Accounts Receivable less Accrued Liabilities		1,299,000
		$41,062,000
Of this amount, capital was set up on the Products books of		1,000,000
And surplus was set up amounting to		40,062,000
During 1927 the Products Company earned		5,504,000
At December 31st the following revaluations were made increasing the value of the Products Company holdings in the Northern Electric Company and the Graybar Electric Company:		
On account of Graybar Electric Company	$1,800,000	
On account of Northern Electric Company	2,880,000	
		4,680,000
Total		$50,246,000
Out of this the following dividends were paid to the Western Electric Company:		
Regular dividend at $5.00 per share	$3,750,000	
Special dividend at $60.00 per share	45,000,000	
		48,750,000
Leaving a surplus at the end of 1927 on Products Company books of		$1,496,000
On the Western Electric Company books as of January 1, 1927, the investment in Products Company was carried at		41,062,000
As of December 31, 1927, this investment was revalued to represent 750,000 shares of common stock at $3.00 per share, or		2,250,000
Resulting in a charge to surplus on Western's books of		$38,812,000
This revaluation was arrived at as follows:		
Capital stock and surplus of the Products Company—1/1/27		41,062,000
Estimated earnings of the Products Company for 1927		5,258,000
Revaluation of Graybar and Northern Electric investments		4,680,000
Total		$51,000,000
Less dividends paid		48,750,000
Estimated value of capital stock and surplus on Products books at December 31, 1927		$2,250,000

Which was equivalent to $3.00 a share on 750,000 shares.

At December 31, 1928, the Western Electric Company's holdings in the Products Company were increased from $2,250,000 to $6,250,000, reflecting the revaluation made by the Products Company of their capital stock from $1,000,000 to $5,000,000 as of this date. The stock investment in the Electrical Research Products, Inc., is now carried on the books of the Western Electric Company at $6,250,000.

[fol. 4134]

Exhibit D-74

Electrical Research Products, Inc., General Auditing Department

Monthly Report No. 1

Condensed Summary of Results for Years 1927 to 1930, Inclusive

(Dollars in Thousands)

	a Dec. 31, 1930	b Dec. 31, 1929	c Dec. 31, 1928	d Dec. 31, 1927	
Assets and Liabilities:					
1. Plant	$854	$690	$203	$45	1
2. Investments	10,170	19,675	10,597	12,761	2
3. Merchandise	6,992	6,941	4,501	1,203	3
4. Deferred Receivables	......	3,905	4,729	3,000	4
5. Notes Receivable	1,069	18,701	2,720	1,082	5
6. Accounts Receivable	9,336	13,661	8,609	502	6
7. Cash	1,168	1,176	278	337	7
8. Total Assets	29,589	64,749	31,637	18,930	8
9. Capital (750,000 Shares No Par)	5,000	5,000	5,000	1,000	9
10. Current Liabilities — Western Electric Co., Inc.	940	3,256	3,804	317	10
11. Other	1,161	1,818	4,168	886	11
12. Notes Payable—Western Electric Co., Inc.	11,200	43,200	12,800	14,200	12
13. Pension Fund Trustee	458	238	76	8	13
14. Notes Receivable Discounted	......	1,500	......	......	14
15. Reserves for Depreciation of Plant	838	519	107	18	15
16. Depreciation on Receivables	1,891	2,176	1,760	1,000	16
17. Contingencies	2,819	1,771	......	......	17
18. Employees' Benefit Fund	......	......	......	5	18
19. Surplus and Undivided Profits	5,282	5,271	3,922	1,496	19
20. Total Liabilities	29,589	64,749	31,637	18,930	20
	e 1930	f 1929	g 1928	h 1927	
21. Operating Revenue	$28,438	$46,523	$17,257	$3,695	21
22. Profits from Operations	8,543	14,385	6,796	1,534	22
23. Profits from Investments	5,142	2,011	4,279	6,282	23
24. Total Gross Income	13,685	16,396	11,075	7,816	24
25. General Expense	5,785	3,549	1,488	571	25
26. Engineering Expense	1,871	3,050	1,366	880	26
27. Reserves	0	640	325	767	27
28. Federal Taxes	0	678	358	94	28
29. Total Expenses	7,656	7,917	3,537	2,312	29
30. Net Earnings Available for Interest and Dividends	6,029	8,479	7,538	5,504	30
31. Interest Deductions	1,518	1,880	674	0	31
32. Net Income Available for Dividends	4,511	6,599	6,864	5,504	32
33. Dividends ($6.00 per Share 1930, $7.00 per Share 1929, $1.25 per Share 1928, $5.00 per Share 1927)	4,500	5,250	938	3,750(A)	33

	e 1930	f 1929	g 1928	h 1927	
34. Undivided Profits	$11	$1,349	$5,926	$1,754	34
35. Average Investment	37,319	45,309	19,293	43,868	35
36. % Return on Investment	16.2	18.7	39.1	12.6	36
37. Net Income per Share of Stock	$6.01	$8.80	$9.15	$7.34	37

Contingent Liabilities to:	1930	1929
Chatham & Phenix Bank, New York	$3,875,000	....
National City Bank, New York	300,000	....
First National Bank, Boston	44,000	....
Bankers Trust Company, New York	....	975,937
	4,219,000	975,937

A Excludes special dividend of $45,000,000.

[fol. 4135]

EXHIBIT D–75

Analysis of E. R. P. Inc. Deferred Receivables for the Period 1927–1930

(Dollars in Thousands)

	Dec. 31, 1930	Dec. 31, 1929	Dec. 31, 1928	Dec. 31, 1927
1. Sale of Option to Purchase Stock of International Telephone Sales and Engineering Corporation	$......	$2,500	$3,000	$3,000
2. German War Claim	......	1,205	1,511	......
3. New Zealand War Claim	......	200	200	......
4. Vienna "Special" Claim	......	......	18	......
	......	3,905	4,729	3,000

[fol. 4136] Analysis of Profits Received by Electrical Research Products, Inc., from its Subsidiaries Operating in Foreign Countries and from Northern Electric Company, Limited, 1927–1930, Inclusive

(Dollars in Thousands)

Dividends Received During—	
1927	$314
1928	261
1929	259
1930	3,539
Total Dividends Received	4,373
Profit Due to Write-up of Investment, 1927-1930	2,880
Total Profits	7,253

Total Analyzed

Dividends:	
1927. Northern Electric Company, Limited	314
1928. Northern Electric Company, Limited	261
1929. Northern Electric Company, Limited	259
1930. Northern Electric Company, Limited	163
Subsidiaries Operating in Foreign Countries:	
Western Electric Company, Limited (London)	2,681
Western Electric Company of Brazil	36

Western Electric Company (Australia), Limited	494
Western Electric Company of Asia	75
Western Electric Company Inc. of Cuba	55
Western Electric Company of Chile	30
Western Electric Company of Mexico	5
Total Dividends	4,373
Write-up of Investment in Northern Electric Company Limited	2,880
Total	7,253

[fol. 4137] Surplus and Profits of Electrical Research Products, Inc., for Four Years, 1927 to 1930, Inclusive

Surplus resulting from assets transferred to Products Company at time of its organization (January 1, 1927)	$40,062,000
1927:	
Net Profits	5,504,000
Revaluation of investment in Northern Electric Company	2,880,000
Revaluation of investment on Graybar Electric Company	1,800,000
Dividends paid	48,750,000
Surplus as of December 31, 1927	1,496,000
1928:	
Net Profits	6,864,000
Revaluation of Investment in Graybar Electric Company at time of sale	500,000
Surplus transferred to capital through revaluation of capital stock	4,000,000
Dividends paid	938,000
Surplus as of December 31, 1928	3,922,000
1929:	
Net profits	6,599,000
Dividends Paid	5,250,000
Surplus as of December 31, 1929	5,271,000
1930:	
Net Profits	4,511,000
Dividends paid	4,500,000
Surplus as of December 31, 1930	5,282,000

[fol. 4138]

Electrical Research Products, Inc.

Statement of Loans by Western Electric Company, Incorporated, to Electrical Research Products, Inc.

Date of Borrowing	1927 Amount	Date of Repayment	1927 Amount	1928 Amount	1929 Amount	1930 Amount	Balance due at 12/31/30
12/31	$14,200,000	6/29		$500,000			
		8/23		400,000			
		12/31		3,000,000			
		10/ 1			$700,000		
		10/ 2			300,000		
		11,25			400,000		
		1/10				$800,000	
		5/12				400,000	
		5/31				7,700,000	
Total	$14,200,000			$3,900,000	$1,400,000	$8,900,000	
	1928						
8/11	$100,000	8/23		$100,000			
9/11	200,000	5/31				$200,000	
10/11	300,000	5/31				300,000	
11/30	300,000	5/31				300,000	
12/11	500,000	5/31				500,000	
12/22	300,000	5/31				300,000	
12/31	900,000	5/31				900,000	
Total	$2,600,000			$100,000		$2,500,000	

]fol. 4139]

Electrical Research Products, Inc.

Statement of Loans by Western Electric Company, Incorporated, to Electrical Research Products, Inc.

Date of Borrowing	1929 Amount	Date of Repayment	1927 Amount	1928 Amount	1929 Amount	1930 Amount	Balance due 12/31/30
1/22	$500,000	5/31				$500,000	
1/31	1,000,000	5/31				1,000,000	
2/11	1,000,000	5/31				1,000,000	
2/23	400,000	5/31				400,000	
2/26	15,000,000	5/ 6				5,000,000	
		5/13				3,000,000	
		5/20				1,000,000	
		7/ 2				1,000,000	
		9/23				5,000,000	
2/28	500,000	5/28				500,000	
3/11	600,000	7/31				600,000	
3/22	900,000	7/31				400,000	
		8/11				500,000	
3/30	300,000	7/24				300,000	
4/30	500,000	8/11				500,000	
5/22	700,000	5/31				700,000	
5/31	600,000	9/ 5				500,000	
		10/30				100,000	
6/11	700,000	10/30				400,000	
		11/11				300,000	
6/22	600,000	11/22				500,000	
		11/29				100,000	
7/11	700,000	11/29				200,000	$500,000
7/22	600,000						600,000
7/31	300,000						300,000
11/30	500,000						500,000
12/11	200,000						200,000
12/23	700,000						700,000
12/30	1,300,000						1,300,000
12/31	4,200,000						4,200,000
Total	31,800,000					23,500,000	8,300,000

[fol. 4140]

Date of Borrowing	1930 Amount	Date of Repayment	1927 Amount	1928 Amount	1929 Amount	1930 Amount	Balance due at 12/31/30
1/22	$500,000						$500,000
1/31	100,000						100,000
2/11	100,000						100,000
6/30	300,000						300,000
9/30	300,000						300,000
12/31	1,600,000						1,600,000
Total	2,900,000						2,900,000
Grand Total	51,500,000			$4,000,000	$1,400,000	$34,900,000	11,200,000
Balance End of Year			$14,200,000	$12,800,000	$43,200,000	$11,200,000	

[fol. 4141]

Payments Made by Graybar Electric Company, Inc. to Electrical Research Products, Inc. for Dividends and Retirement of Preferred Stock January 1, 1927, to May 31, 1930 (U)

(Dollars in Thousands)

Dividends:	
1927	$1,800
1928	2,010
1929	1,501
1930 (5 Months 1930)	309 (U)
Total	5,620

Retirement of Preferred Stock:	Retirement	Balance at End of Year
1928	$ 0	$6,000
1929:		
March 30, 1929	200	
June 29, 1929	200	
September 30, 1929	400	
December 31, 1929	200	5,000
1930:		
March 31, 1930	400	4,600 (U)

(U) Investment by Electrical Research Products Inc. in preferred stock of Graybar Electric Company, Inc. was sold to Weco Corporation as of May 31, 1930 for $4,600,000.

[fol. 4142]

Change in Investment of Electrical Research Products, Inc., in Graybar Electric Company, Inc., 1927 to May 31, 1930 (U)

(Dollars in Thousands)

		Balance at End of Year
1927.		
1. 150,000 Shares of Graybar Electric Company, Inc. Common Stock Purchased from Western Electric Company, Incorporated	$6,700 (A)	
2. Revaluation of Investment in Graybar Electric Company, Inc. Common Stock at December 31, 1927	1,800	$8,500
1928.		
3. Revaluation of Investment in Graybar Electric Company, Inc. Stock at Time of Sale	500	9,000
4. Graybar Electric Company, Inc. was sold to Graybar Management Corporation at December 31, 1928 for $9,000,000 paid for		
In Cash	3,000	
In Preferred Stock	6,000	6,000
1929.		
5. Retirement of 10,000 Shares of Graybar Electric Company, Inc. Preferred Stock	1,000	5,000
1930.		
6. Retirement of 4,000 Shares of Graybar Electric Company, Inc. Preferred Stock	400	4,600 (U)

U. Investment by Electrical Research Products Inc. in preferred stock of Graybar Electric Company, Inc. was sold to Weco Corporation as of May 31, 1930 for $4,600,000.

(A) Par value of investment	$15,000,000
Less reserve transfered from W. E. at time of sale	8,300,000
Net value	6,700,000

[fol. 4143]

Extracts from Exhibit D-77

Western Electric Company, Incorporated

Statement of Surplus and Undivided Earnings for Years 1916 to 1930

a	b	c	d	e	f	g	h	
			Dividends Paid					
Year Ending Dec. 31st	Total Earnings	Interest Paid on Bonds, Borrowings and Bond Discount	Common Stock	Preferred Stock	Balance Carried to Common Stock and Surplus (b—(c to e)	Adjustments to Capital Stock and surplus (Analyzed on Attached Statement)	Capital and surplus at End of Each Year (A)	
1915	$	$	$	$	$	$	$25,229,032	1
1916	3,204,710	880,094	1,200,000	900,000	224,616	0	25,453,648	2
1917	4,161,560	1,309,844	1,200,000	1,350,000	301,716	0	25,755,364	3
1918	5,050,849	1,540,528	1,500,000	1,800,000	210,321	0	25,965,685	4
1919	5,652,089	1,263,180	1,500,000	1,800,000	1,088,909	0	27,054,594	5
1920	5,277,414	4,037,645	3,000,000	345,000	894,769	30,000,000(B)	57,949,453	6
1921	10,166,337	5,842,340	3,500,000	0	823,997	0	58,773,450	7
1922	9,235,890	3,904,097	3,500,000	686,857	1,144,936	15,013,438(C)	74,931,826	8
1923	10/079,471	1,159,958	5,000,000	1,727,572	2,191,941	0	77,123,767	9
1924	14,505,857	4,378,927	5,000,000	1,727,572	3,399,358	0	80,523,125	10
1925	16,073,981	1,790,679	5,625,000	1,233,980	7,424,322	(39,012,864)(D)	48,934,583	11
1926	16,431,933	1,857,895	7,500,000	0	7,074,038	0	56,008,621	12
1927	19,339,174	1,982,757	7,500,000	0	9,856,417	(52,877,252)(E)	12,987,786	13
1928	22,023,282	2,315,393	11,250,000	0	8,457,889	(10,661,721)(F)	10,783,954	14
1929	31,555,774	4,560,528	23,500,000	0	3,495,246	277,745(G)	14,556,945	15
1930	20,297,612	4,672,773	23,250,000	0	(7,625,161)	0(H)	6,931,784	16
Grand Total	196,055,933	41,496,638	104,025,000	11,570,981	36,963,314	(57,260,564)		17

[fol. 4144] A. For the Years 1916 to 1924 Inclusive, Capital and Surplus was stated as the book value of Outstanding Capital Stock. In 1925 Surplus Account was set up.

B. Represents:

200,000 shares of Common Stock issued at $180 per share.....	$36,000,000
Less Premium paid on the Redemption of 300,000 shares of Preferred Stock par $100 at $120 per share..............	6,000,000
	30,000,000
Plus Premium of $10 a share on 9 shares of Common Stock not subscribed to and sold to American Telephone and Telegraph Company at $190..............................	90
Net adjustment 1920..................................	30,000,090

C. Represents:

150,000 shares of Common Stock issued at $100 per share.....	15,000,000
Premium on Sale of 1,413 shares of Preferred Stock..........	13,438
Net adjustment 1922..................................	15,013,438

D. Represents:

Special Dividend received from International Western Electric Company, Incorporated	9,700,000
Profit resulting from Sale of International Western Electric Company, Incorporated	6,255,096
	15,955,096
Less:	
Premium paid of $10 per share on Redemption of 246,796 shares of Preferred Stock..............................	2,467,960
Stated Capital set up per Board of Directors...............	52,500,000
	54,967,960
Net adjustment 1925..................................	39,012,864

E. Represents:

Reserve for Contingencies transferred to Surplus............	6,824,710
Reserve against Bell Laboratories Notes transferred to Surplus	1,056,302
Adjustment for International Standard Electric Corporation Pension Reserve transferred to Surplus..................	330,154
Adjustment for Graybar Electric Company, Inc. Pension Reserve transferred to Surplus............................	373,152
Receipt of Special Dividend for Electrical Research Products Inc.	48,750,000
	57,334,318
Less:	
Revaluation of the Holdings in Electrical Research Products Inc.	38,811,570
Distribution of Special Dividend received from Electrical Research Products Inc.—Rate of $13.00 a share........	48,750,000
Special Surplus Adjustment................................	150,000
Transfer of Surplus to Common Stock......................	22,500,000
	110,211,570
Net adjustment 1927..................................	52,877,252

F. Represents:

Final adjustment to Graybar Pension Fund	$325,831
Adjustment for Electrical Research Products Inc. Pension Fund	12,448
Revaluation of holdings in Electrical Research Products Inc.	4,000,000
Funds received from the issue of 250,000 shares of Common Stock at $40 per share	10,000,000
	14,338,279
Less Transfer of Surplus to Common Stock	25,000,000
Net adjustment 1928	10,661,721

(Here follows side folio 4145)

[fol. 4145]

Western Electric Company, Incorporated, Subsidiary Companies

Percentage of Total Common Stock of Subsidiary Companies Directly Owned by Western Electric Company, Incorporated, at December 31st 1916–1930

	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930
Western Electric Co., Ltd. of Canada	100.0%	100.0%	100.0%							100.0%	100.0%				
Manufacturers' Junction Ry. Co	99.9	99.9	99.9	99.9%	99.9%	99.9%	99.9%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%	99.8%
International Western Electric Co., Inc.				100.0	100.0	100.0	100.0	100.0	100.0						
395 Hudson St. Corp				100.0	81.5	82.5	82.5	82.5	82.5	82.5	82.5	82.5	82.5	82.5	82.5
Electrical Discount Corp							100.0	100.0	100.0						
Bell Telephone Laboratories, Inc									50.0	50.0	50.0	50.0	50.0	50.0	50.0
Graybar Electric Co., Inc										100.0	100.0				
Western Electric Co., Ltd. (London)											100.0				
Western Electric Co., (Australia) Ltd.											100.0	100.0	100.0		
Electrical Research Products Inc												100.0	100.0	100.0	100.0
Weco Realty Corp														100.0	100.0
Weco Corp															100.0
Teletype Corp															100.0

Approximate Number of Majority Owned Companies of the Above Subsidiaries

	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930
Western Electric Co., Ltd. of Canada	6	6	7												
International Western Electric Co., Inc.				8	9	10	10	11	11						
Graybar Electric Co., Inc										1	1				
Electrical Research Products Inc												4	3	19	21
Weco Corp															1
Teletype Corp															2

[fol. 4146]

Def't's. Ex. D-78

Western Electric Company, Incorporated. Analysis of 1925 Cost of Sales

(Dollars in Thousands)

	Grand Total	Manufacturing Department	Installation Department	Sales Department (Including Supply Department)	Headquarters
Beginning Inventory	$67,953	$28,542	$371	$38,564	$476
Additions:					
Productive Labor:					
Direct	38,087	22,689	12,027	3,371	......
Indirect	2,423	1,511	838	74	......
Total	40,510	24,200	12,365	3,445	......
Expenses (Manufacturing, Installation, Distributing, Distributing Shops, General and Federal Taxes):					
Salaries and Wages	34,892	16,733	4,696	10,498	2,965
Depreciation of Plant	5,452	4,638	280	483	51
Taxes	4,629	896	13	841	2,879
Rent	2,668	299	249	1,655	465
Repairs Other	18,087	9,451	3,100	4,527	1,009
Total	65,728	32,017	8,338	18,004	7,369
Packing, Converting and Repairing, Junking, etc.	2,793	......	......	2,793	......
Transportation Not Charged to Expense	7,554	......	......	7,554	......
Development	9,744	466	805	517	7,956
Materials Purchased Less Process Scrap Sold	164,477	50,297	......	112,926	1,254
Extraordinary Reserve Against Plant	2,168	......	......	......	2,168
Addition to Employees' Benefit Fund	3,500	......	......	......	3,500
Pension Fund Under Agreement with Graybar Electric Company, Inc.	1,400	......	......	......	1,400
Total Beginning Inventory and Additions	365,827	135,522	22,379	183,803	24,123

DEF'T'S. EX. D-78—Continued

	Grand Total	Manufacturing Department	Installation Department	Sales Department (Including Supply Department)	Headquarters
Less:					
Production of Plant Items and Elimination of Costs not applicable to Sales	$20,691	$13,158	$1,215	$2,342	$3,976
Operating Interest and Other Income Received	1,551	32	6	374	1,139
Unbilled Equipment Specifications and Installation Included in Receivables	956	......	956	......	......
Inventory of Supply Department Sold to Graybar Electric Company, Inc.	4,490	......	......	4,490	......
Ending Inventory	55,990	26,712	192	30,255	(1,169)*
Total Deductions	83,678	39,902	2,369	37,461	3,946
Net Cost of Sales	282,149	95,620	20,010	146,342	20,177

* Represents depreciation for overstocks applicable to total inventories, but placed on Headquarters' books.

Western Electric Company, Incorporated

Analysis of 1930 Cost of Sales

(Dollars in Thousands)

	Grand Total	Manufacturing Department	Installation Department	Telephone Sales Department	Headquarters
Beginning Inventory	$95,940	$51,414	$3,941	$40,435	$150
Additions:					
Productive Labor:					
Direct	73,323	42,354	25,358	5,611	0
Indirect	9,773	5,364	2,914	1,495	0
Total	83,096	47,718	28,272	7,106	0
Expenses (Manufacturing, Installation, Merchandising, Distributing Shops, General and Federal Taxes):					
Salaries and Wages	51,967	34,733	3,532	9,808	3,894
Depreciation of Plant	13,136	12,239	250	583	64
Taxes	2,447	616		304	1,527
Rent	2,828	698	247	1,230	653
Repairs	6,959	6,610	87	262	......
Other	23,653	5,776	5,940	10,880	1,057
Total	100,990	60,672	10,056	23,067	7,195
Less Transportation in Selling Prices	2,573	......	......	2,573	......
Total Excluding Transportation	98,417	60,672	10,056	20,494	7,195
Development	14,370	0	954	0	13,416
Materials Purchased Less Process Scrap Sold	161,752	71,685	......	87,274	2,793
Total Transportation Billed	10,428	168	......	10,260	......
Total Beginning Inventory and Additions	464,003	231,657	43,223	165,569	23,554
Less:					
Production of Plant Items and Elimination of Costs not applicable to Sales	27,893	22,783	1,454	3,423	233
Operating Interest Received	888	54	2	846	(14)
Ending Inventory	86,678	39,103	3,236	44,341	(2)
Total Deductions	115,459	61,940	4,692	48,610	217
Net Cost of Sales	348,544	169,717	38,531	116,959	23,337

[fol. 4148]

EXHIBIT D-80

Statement Showing the Relation of Manufacturing Department Surplus to Standard Shop Output, 1921 to 1930

(Dollars in Thousands)

	Operating surplus	Per cent operating surplus of output	Current underrun (U)	Per cent current underrun of output	Total mfg. dept. surplus	Per cent manufacturing surplus of output
1921	$2,569	3.4	$5,044	6.6	$7,613	10.0
1922	322	.5	224	.4	546	.9
1923	3,057	3.7	(3,337)	(4.0)	(280)	(.3)
1924	(4,633)	(4.5)	(4,633)	(4.5)	(9,266)	(9.0)
1925	(1,900)	(2.2)	(8,147)	(9.5)	(10,047)	(11.7)
1926	7,054	6.2	(762)	(.7)	6,292	5.5
1927	(543)	(.5)	3,563	3.4	3,020	2.9
1928	2,675	2.3	5,084	4.4	7,759	6.7
1929	(2,238)	(1.2)	988	.5	(1,250)	(.7)
1930	(7,746)	(4.6)	5,192	3.1	(2,554)	(1.5)
Total 1921 to 1930, incl.	(1,383)	(.1)	3,216	.3	1,833	.2

U: Current underrun applicable to shop output.

[fol. 4149]

DEF'T'S EX. D-81, ID.

Standard and Current Cost of Copper Bar and Lead Purchased by Manufacturing Department, 1918–1931

(Prices per Cwt. F. O. B. Factory)

	Copper Bar (a)		Lead	
	Standard cost	Average current cost	Standard cost	Average current cost
1918	....	....	$4.50	$7.45
1919	....	....	4.50	5.78
1920	....	....	4.50	7.92
1921	....	....	8.50	4.39
1922	....	....	5.00	5.50
1923	....	....	5.00	7.38
1924	$18.00	$13.33	5.00	7.92
1925	15.00	14.49	5.00	8.96
1926	15.00	14.22	8.00	8.42
1927	15.00	13.35	8.00	6.80
1928	15.00	14.81	8.00	6.30
1929	15.00	18.03	8.00	6.83
1930	15.00	13.85	8.00	5.60
1931	15.00	10.40	8.00	4.22

A. Prior to 1924, copper wire was purchased.

[fol. 4150]

DEF'T'S EX. D-82, ID.

May 26, 1927.

Mr. H. L. Gary, Kansas City, Missouri.

DEAR MR. GARY: Referring to the memorandum of agreement this day made between International Telephone Sales and Engineering Corporation and Electrical Research Products, Inc. providing for payment by the former to the latter of several amounts aggregating $4,000,000.00, I agree that in the event the results should not conform to expectations between now and December 31, 1930, I, or my successor, will, upon a proper showing of facts, give the matter fair consideration and reduce the amount from $4,000,000.00 to some intermediate figure not below $3,000,000.00. After December 31, 1930, however, no reduction in the basic amount will be considered.

In the event that such claim should be made and I am not then president of Electrical Research Products Inc. I obligate myself to see that this phase of the arrangement is carried out in good faith.

Yours very truly, (Signed) Edgar S. Bloom, President.

[fol. 4151] DE'F'TS EX. D-83, ID.

Approximate Purchases from Certain Suppliers, 1916-1930 (A) (B)

(Dollars in Thousands)

	American Electrical Works	Automatic Electric Company	Kellogg Switchboard and Supply Company	Reliable Electric Company	Stromberg-Carlson Tel. Mfg. Company	Total
1916	186	.....	2	33	2	223
1917	361	9	2	38	14	424
1918	162	143	7	20	11	343
1919	154	417	27	61	53	712
1920	604	1,967	69	63	120	2,823
1921	344	4,660	61	33	827	5,925
1922	75	4,505	79	42	536	5,237
1923	224	4,170	474	60	947	5,875
1924	95	6,435	2,354	294	1.222	10,400
1925	46	7,555	1,302	260	1,709	10,872
1926	...	6,620	1,412	284	1,012	9.328
1927	...	4,442	1,445	280	758	6,925
1928	...	3,623	609	335	713	5.280
1929	70	4,804	1,473	693	1,189	8,229
1930	...	5,497	1,307	542	1,948	9,294
Total	2,321	54,847	10,623	3,038	11,061	81.890

(A) Excluding purchases of Western Electric contained apparatus where determinable.

(B) Purchases were made at agreed upon prices except in the case of purchases from Automatic Electric Company which were made on a cost plus basis.

[fol. 4152] DEFENDANT'S EXHIBIT D-84

Rented Area Leased July 1, 1929, and After at Manufacturing Locations

July, 1929:	Square Feet
430 Communipaw Ave., Jersey City	148,000
Warren, Newark and Wilsey Sts., Newark	46,000
43rd and Damen Ave., Chicago	150,000
Oct., 1929:	
620 So. Kilbourne Ave., Chicago	106,000
Nov., 1929:	
39th Place and Lincoln, Chicago	35,000
1201 Flushing Ave., Brooklyn	71,000
	556,000

Equivalent to approximately 13 acres.

Represents between 8% and 9% of total space at manufacturing locations as of 12-31-29.

[fol. 4153] DEF'T'S EX. D-85 ID.

Additions to Pension Fund in 1931

Charged to Costs	$2,791,000
Charged to Interest	1,748,000
	$4,539,000
Less Pensions Paid	197,000
Net Increase in Fund	$4,342,000

[fol. 4154]

Def't's Ex. D-86

Depreciation Expense Included in Cost of Plant Made, 1916 to 1931, Inclusive

(Dollars in Thousands)

	Plant made by Mfg. Dept. for Mfg. Dept.	Depreciation Expense Included in Cost of Plant Made
1916	962	48
1917	2,167	115
1918	2,021	91
1919	1,835	86
1920	3,287	171
1921	4,712	212
1922	3,177	127
1923	2,999	99
1924	4,830	169
1925	3,497	133
1926	3,562	114
1927	4,854	165
1928	5,326	239
1929	13,051	483
1930	9,728	447
1931	6,064	327
Total 1916-31	72,072	3,026
Total 1923-31	53,911	2,176

[fol. 4155]

Def't's Ex. D-87

Total 1929 Average Investment, Bell and Non-Bell Business, with Percentage Apportioned on Basis of Standard Cost of Sales

	Average Investment	Percentage Apportioned on Cost of Soles Basis of Standard
Plant	$109,953,000	96%
Merchandise	82,843,000	72%
Receivables	54,757,000	5 (A)
Cash	9,754,000	97
Current Payables (Deduct)	26,381,000 (red)	76
	$230,926,000	68

(A) Apportioned on Basis of Sales.

[fol. 4156] DEF'T'S EX. D-88 ID.

Total 1929 Expenses and Operating Interest, Bell and Non-Bell Business, with Percentage Apportioned on Basis of Standard Cost of Sales

		Percentage Apportioned on Basis of Standard Cost of Sales
Development Expense	$11,024,000	100%
Merchandising and General Expenses	25,275,000	63
Federal Taxes	2,092,000	0
Total Expenses	$38,391,000	70%
Operating Interest	883,000	20

[fol. 4157] DEF'T'S EX. D-89

Resolutions of Board of Directors Authorizing Extraordinary Depreciation

March 17, 1925.—"Resolved that there be and hereby is appropriated from the profits of 1924 the amount of $1562539 for an extraordinary depreciation reserve on permanent plant of the manufacturing department at Hawthorne and Kearny works."

March 12, 1926.—"Resolved that there be and hereby is appropriated from the profits of 1925 the amount of $2167759 for an extraordinary depreciation reserve on permanent plant of the manufacturing department at Hawthorne and Kearny works."

March 1, 1927.—"Resolved that the action of the officers in setting aside $2101855 as extraordinary depreciation reserve on permanent plant of the manufacturing department at Hawthorne and Kearny works be and is hereby approved."

February 21, 1928.—"Resolved that the action of the officers in setting aside $1803103 as extraordinary depreciation reserve on permanent plant of the manufacturing department at Hawthorne and Kearny works be and is hereby approved."

[fol. 4158] EXTRACTS FROM EXHIBIT D-90

March 3, 1927.

Extraordinary Depreciation on Plant

It is recommended that an extraordinary depreciation reserve on plant be made in 1926 in the amount of $2,101,855 and charged to Profit and Loss. This amount is arrived at as follows:

1. Hawthorne:

A. Buildings and Permanent Fixtures $448,588

Mr. Lincoln has estimated that the construction cost index figure for the ten years 1930-1939 will be 154 on the average, taking 1914 as 100. If we make an extraordinary depreciation reserve in 1926 to cover the excess construction cost in the particular years in which the actual cost exceeded 154 we would write off at Hawthorne $2,040,752, as follows:

	Buildings	Permanent fixtures	Total
1918	$3,174	$2,142	$5,316
1919	26,362	12,887	39,249
1920	563,822	166,152	729,974
1921	287,020	207,694	494,714
1922	37,944	26,064	64,008
1923	218,280	141,240	359,520
1924	98,802	139,788	238,590
1925	35,728	35,728	71,456
1926	23,310	14,615	37,925
	1,294,442	746,310	2,040,752

In addition to depreciation at regular rates we have, in the past, made extraordinary depreciation reserves in 1913 and in the war years covering amortization of excess costs, and in 1924 and 1925 for the large construction program of recent years carried on at a higher cost than it is believed would normally prevail.

If we apply this extraordinary depreciation reserve on buildings, $1,010,000, against the excess cost of construction as noted above, a further reserve of $284,442 is necessary to bring the construction cost in excess years down to the 154 index figure.

In the case of permanent fixtures, if we apply this extraordinary depreciation reserve, $582,164, against the excess cost of construction as noted above, a further reserve of $164,146 is necessary to bring the construction costs in excess years down to the 154 index figure.

I recommend, therefore, that an extraordinary reserve be made of $284,442 on buildings and $164,146 on permanent fixtures.

[fol. 4159] The attached statements show the reserve on buildings at Hawthorne as 47% of the face value at the end of 1926 as compared with

44% at the end of 1925;
41 at the end of 1915.

If the extraordinary reserve of $284,442 recommended above is made, the reserve on Hawthorne buildings at December 31, 1926 will be 50%.

The depreciation reserve on permanent fixtures at Hawthorne as shown on the attached statement, is 55% of the face value at the end of 1926 as compared with

51% at the end of 1925;
54 at the end of 1915.

If the extraordinary reserve of $164,146 recommended above *in* made, the reserve on Hawthorne permanent fixtures at December 31, 1926 will be 57%.

B. Machinery $227,318

Mr. Lincoln's study indicates that the machinery cost index of construction for the next ten years will average 171 taking 1914 as 100. If we make an extraordinary reserve in 1926 to cover the excess cost of construction in those years in which the cost exceeded the estimated average cost, it would mean writing off for

1919	$13,185
1920	446,661
1921	410,785
1922	164,346
1923	216,775
1924	386,750
1925	204,452
1926	265,754
	$2,108,708

The extraordinary depreciation reserve made in 1913 and the amortization of machinery in the war years and the extraordinary depreciation reserve made in 1924 and 1925 to revalue purchases of machinery in the years of high cost to an average cost level for the next ten years, then estimated to be 175, will take care of $1,881,390 of this amount, leaving $227,318 to be written off in 1926 and I recommend, therefore, that a reserve in this amount be made this year.

This would make the depreciation reserve on Hawthorne machinery 65% of the face value at the end of 1926. If this reserve is not made, the depreciation reserve would be 64% of the face value at the end of 1926 as compared with

63% at the end of 1925;
72 at the end of 1915.

[fol. 4160] 2. Kearny:

A. Buildings and Permanent Fixtures $1,125,494

Mr. Lincoln estimates that the average cost index of construction at Kearny for the next ten years will be 168 on the average, taking 1914 as 100. If we make an extraordinary depreciation reserve in 1926 to cover the excess construction cost at Kearny, we would write off $2,760,494 as follows:

	Buildings	Permanent fixtures	Total
1923	$101,050	$25,585	$126,635
1924	934,510	226,452	1,160,962
1925	575,468	396,304	971,772
1926	329,160	171,965	501,125
	1,940,188	820,306	2,760,494

In 1925, in addition to the depreciation at regular rates, we made an extraordinary depreciation reserve to revalue the Kearny plant to the average cost level for the next ten years. The index figure for the next ten years was then estimated at 170.

If we apply the extraordinary depreciation reserves on buildings and permanent fixtures made in 1924 and 1925 amounting to $1,169,000 and $466,000, respectively, against the excess cost of construction as noted above, a further reserve of $771,188 on buildings and $354,306 on permanent fixtures, a total of $1,125,494, is necessary to bring the construction cost in these years down to the 168 index.

I recommend, therefore, that an extraordinary reserve of $1,125,494 be made on buildings and permanent fixtures at Kearny.

The depreciation reserve on Kearny buildings and permanent fixtures at December 31, 1926 is 15% and 18%, respectively. If extraordinary depreciation is written off in 1926 in accordance with the above recommendation, these rates will be 24% and 27%, respectively.

B. Machinery $300,455

Mr. Lincoln estimates that the average cost index of construction at Kearny for the next ten years will be 171 taking 1914 as 100. On this basis, if we make a depreciation reserve to cover excess construction cost at Kearny, we would make an extraordinary depreciation reserve in 1926 amounting to $602,455 as follows:

1923	$109,765
1924	201,110
1925	143,306
1926	148,274
	602,455

In 1925, in addition to the depreciation at regular rates, we made an extraordinary depreciation reserve to revalue Kearny machinery to the average cost level for the next ten years. The index figure for the next ten years was then estimated at 175.

[fol. 4161] If we apply this extraordinary depreciation reserve made in 1924 and 1925 on machinery amounting [illegible] $302,000 against the excess cost of construction as noted above, a further reserve of $300,455 is necessary to bring the construction cost in excess years down to the 171 index.

I recommend, therefore, that an extraordinary reserve of $300,455 be made on machinery at Kearny.

The depreciation reserve on Kearny machinery at December 31, 1926 is 23%. If extraordinary depreciation is written off in 1926 in accordance with the above recommendation, this rate will be 30%.

The total extraordinary depreciation for 1926 as recommended above amounts to $2,101,855.

R. H. Gregory.

(Here follow side folios 4162-4182)

5

METHOD USED IN DETERMINING RECOMMENDATION FOR EXTRAORDINARY DEPRECIATION
ON PERMANENT PLANT AT HAWTHORNE AND KEARNY OF $2,101,855
FOR THE YEAR 1926.

	a	b	c	d	
		Buildings and Permanent Fixtures			
	Total	Hawthorne	Kearny	Machinery (Hawthorne & Kearny)	
1. Average cost indices as estimated by Mr. Lincoln for the ten years 1930 to 1939 inclusive (1914 = 100) - - -		154	168	171	1
Current cost indices for the year 1926 (1914 = 100) - - - - - - - - - - - - -		189	215	208	2
2. Excess cost of plant additions for the years in which actual cost exceeded indices given above - - - - - - - -	$7,512,409	$2,040,752	2,760,494	2,711,163	3
3. Extraordinary depreciation reserves made in prior years in addition to depreciation charged to expense at regular rates - - - - - - - - - - - -	5,410,554	1,592,164	1,655,000	2,183,390	4
4. Extraordinary reserve for depreciation on plant recommended to be made in 1926 (2 - 3) - - - - - - - - - - - - -	2,101,855	448,589	1,125,494	527,773	5
5. Total reserve for depreciation on plant before making 1926 extraordinary depreciation reserve at December 31, 1926 - - - - - - - - - - - - - - - -	23,796,304	9,546,666	2,082,357	12,166,281	6
6. Total reserve for depreciation on plant at December 31, 1926 after making 1926 extraordinary depreciation reserve - - - - - - - - - - - - - - -	25,897,159	9,995,254	[illegible]	12,834,054	7
7. Per cent depreciation reserve to face value of plant December 31, 1926.					
Excluding all extraordinary depreciation - - - - - - - - - - - - - - - -	34.1	41.3	[illegible]	45.6	8
Excluding 1926 extraordinary depreciation - - - - - - - - - - - - - - - -	44.2	50.1	16.1	55.6	9
Including all extraordinary depreciation.					
December 31, 1926 - - - - - - - - - -	48.1	52.5	24.8	58.0	10
December 31, 1925 - - - - - - - - - -	44.0	45.8	17.6	[illegible]	11
December 31, 1924 - - - - - - - - - -	40.7	42.9	[illegible]	46.8	12
December 31, 19[illegible] - - - - - - - - - -	42.8	[illegible]	[illegible]	49.0	13

3746A

4162

Western Electric Company,
Incorporated
General Accounting Department.

Date Issued Feb. 19, 1927.

DETAILS OF JOURNAL ENTRY FOR EXTRAORDINARY PLANT DEPRECIATION

DECEMBER 31, 1926.

	a	b	c	d	e	f	g	
	Hawthorne			Kearny				
	Buildings	Permanent Fixtures	Machinery	Buildings	Permanent Fixtures	Machinery	Grand Total	
Balance Remaining at December 31, 1926 of Extraordinary Depreciation Charged to Reserve for Contingencies, December 31, 1913 - - - - - - -	$466,600	$438,115	$177,496	$	$	$	$1,082,211	1
Extraordinary Depreciation on Hawthorne Books Resulting from the Writing back at December 31, 1924 of the Face Value of Additions in the Years 1917 to 1920 Inclusive - - - - - - - -	424,874	127,193	332,141				884,208	2
If the Write-off of the Face Value of Gross Additions in the Years 1917 to 1920 had not been made, Depreciation would have been accrued at Standard Rates up to December 31, 1924 amounted to - - - - - - - - - - - - - - -	(81,452)	(47,084)	(157,627)				(286,163)	3
Extraordinary Depreciation Written off to Profit and Loss at December 31, 1924 to Revalue Buildings, Permanent Fixtures and Machinery to Estimated Costs for the next Ten Years (J.E. 284) - - - - - - - - - - - - - - - - - -			314,810	732,463	156,334	177,742	1,377,349	4
Additional Depreciation Written off to Profit and Loss in 1924 for Faster Obsolescence on Machinery (J.E. 284) - - - - - - - - - - - -			185,190				185,190	5
Extraordinary Depreciation Written off to Profit and Loss at December 31, 1925 to Revalue Buildings, Permanent Fixtures and Machinery to Estimated Costs for the next Ten Years (J.E. 280) - - - - - - - - - - - - - - - - - -	213,018	0	1,084,280	436,537	309,666	124,258	2,167,759	6
Total Extraordinary Depreciation on Books at December 31, 1925 -	1,010,000	582,164	1,881,390	1,169,000	466,000	302,000	5,410,554 -	7
Total Extraordinary Depreciation Based on Studies to Revalue Plant to Estimated Cost Levels to Obtain for the next Ten Years 1930 - 1939 -	1,294,442	746,310	2,108,708	1,940,188	820,306	602,455	7,512,409	8
Extraordinary Depreciation to be Written off at December 31, 1926 - - - - - - - - - - - - - -	284,442	164,146	227,318	771,188	354,306	300,455	2,101,855 -	9

⑩

( ) Indicate negative figures.

Western Electric Company,
Incorporated
General Accounting Department.

//

[illegible] 16, 1927

	a	b	c	d	e	f	
	Year	Additions	Actual Cost Index (1914)	Estimated Ten Year Index	Per Cent Excess	Amount of Excess	
Hawthorne Buildings.	1918	[illegible]	155	154	.6	[illegible],174	1
	1919	[illegible]	162	154	4.9	[illegible]	2
	1920	[illegible]	227	154	[illegible]	[illegible],822	3
	1921	1,270,000	199	154	22.6	287,020	4
	1922	527,000	166	154	7.2	37,944	5
	1923	1,020,000	196	154	21.4	218,280	6
	1924	499,000	192	154	19.8	98,802	7
	1925	203,000	187	154	17.6	35,728	8
	1926	126,000	189	154	18.5	23,310	9
		6,463,000				1,[illegible]94,442	10
Permanent Fixtures	1918	357,000	155	154	.6	2,142	11
	1919	263,000	162	154	4.9	12,887	12
	1920	516,000	227	154	32.2	166,152	13
	1921	919,000	199	154	22.6	207,694	14
	1922	362,000	166	154	7.2	26,064	15
	1923	660,000	196	154	21.4	141,240	16
	1924	706,000	192	154	19.8	139,788	17
	1925	203,000	187	154	17.6	35,728	18
	1926	79,000	189	154	18.5	14,615	19
		4,065,000				746,310	20
Machinery- - - - -	1919	293,000	179	171	4.5	13,185	21
	1920	1,917,000	223	171	23.3	446,661	22
	1921	2,833,000(7)	200	171	14.5	410,785	23
	1922	1,911,000(7)	187	171	8.6	164,346	24
	1923	1,495,000	200	171	14.5	216,775	25
	1924	3,250,000	194	171	11.9	386,750	26
	1925	1,294,000(7)	203	171	15.8	204,452	27
	1926	1,493,000	208	171	17.8	265,754	28
		14,485,000				2,108,708	29
Kearny Buildings.- -	1923	470,000	214	168	21.5	101,050	30
	1924	4,135,000	217	168	22.6	934,510	31
	1925	[illegible],061,000	207	168	18.8	[illegible]75,468	32
	1926	[illegible]	21[illegible]	168	21.1	[illegible]29,160	33
		9,[illegible]26,000				1,940,188	34
Permanent Fixtures	1923	119,000	214	168	21.5	25,585	35
	1924	1,002,000(7)	217	168	22.6	226,452	36
	1925	2,108,000	207	168	18.8	396,304	37
	1926	815,000	213	168	21.1	171,965	38
		4,044,000				820,306	39
Machinery- - - - -	1923	757,000	200	171	14.5	109,765	40
	1924	1,690,000	194	171	11.9	201,110	41
	1925	907,000	203	171	[illegible]	143,306	42
	1926	833,000	208	171	17.8	148,274	43
		4,187,000				602,456	44

[illegible] Per Mr. Lincoln's memorandum of October 14, 1926.
[illegible] Per Mr. Lincoln's memorandum of November 11, 1926 and November [illegible], 1926.
[illegible] purchased from [illegible]. Balance of additions taken from [illegible]
[illegible] Bright's study.

4164

Revised Estimate of Future Machinery Cost Indices.

November 26, 1926

MR. T. K. STEVENSON:

As per our conversation, herewith final revised estimate of future machinery cost indices, which can be used for depreciation purposes in place of the indices furnished you under date of October 26, 1926. These are the same indices as originally furnished, but reduced on the assumption that over the next fifteen years there will be a 15 per cent increase in efficiency of productive labor used in the manufacture of the machinery which we make and purchase.

We are purposely on the low side in this estimate for depreciation purposes. I should not be surprised if a reconsideration of our estimates at any time during the next three or four years would make it appear that these future indices are running a little too low. However, I believe that we should stay put, as there is a good possibility that prices in general may fall more rapidly after 1930 than many of us now expect.

The new 10-year moving average index for machinery 1930-1939 is 171, as compared with 180 for the previous index. In view of heavy additions to machinery during 1926, I understand that this change will make possible an additional write-off of more than $900,000, which will be about $200,000 higher than the total future depreciation reserve already approved by the directors.

E. E. LINCOLN

MS
Att. 11/24/26

[illegible]

[illegible]

It is recommended that an extraordinary depreciation reserve on plant be made in 1925 in the amount of 2,167,7[illegible]9 and charged to profit and loss. This amount is arrived at as follows:

1. [illegible]

A. Buildings and Permanent Fixtures - [illegible]209,018

Mr. Lincoln has estimated that the construction cost index figure for the next ten years will be 155 on the average, taking 1913 as 100. If we make an extraordinary depreciation reserve in 1925 to cover the excess construction cost in the particular years in which the actual cost exceeded 155 we would write off at that time, 1,545,000 as follows:-

	Buildings	Permanent Fixtures	Total
1920 - - - - -	$ 505,000	$ 131,000	$ 636,000
1921 - - - - -	227,000	159,000	386,000
1922 - - - - -	7,000	5,000	12,000
1923 - - - - -	173,000	115,000	288,000
1924 - - - - -	75,000	102,000	177,000
1925 - - - - -	23,000	23,000	46,000
	1,010,000	535,000	1,545,000

In addition to depreciation at regular rates we have, in the past, made extraordinary depreciation reserves in 1913 and in the [illegible] years covering amortization of excess costs.

If we apply these extraordinary depreciation reserves on buildings, [illegible]80[illegible],982, against the excess cost of construction as noted above, a further reserve of $209,018 is necessary to bring the construction cost in excess years down to the 155 index figure.

In the case of permanent fixtures, if we apply the extraordinary depreciation reserves, [illegible]582,164, against the excess cost of construction as noted above, the reserve would be [illegible],164 more than necessary to bring the construction costs in excess years down to the index figure.

I recommend, therefore, that on buildings, an extraordinary reserve of 209,018 be made and that on permanent fixtures no extraordinary reserve be made.

The attached statements show the reserve on buildings at [illegible] to 4[illegible] of the face value at the end of 19[illegible] as compared with

40 at the end of 1924
41 at the end of 1925

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3740[illegible]

If the extraordinary reserve of $209,018 recommended above is made, the reserve on Hawthorne buildings at December 31, 1925 will be 44%.

The depreciation reserve on permanent fixtures at Hawthorne as shown on the attached statement is 51% of the face value at the end of 1925 as compared with

48% at the end of 1924
54% at the end of 1916

B. Machinery - 1,084,280

Mr. Lincoln's study indicates that the machinery cost index of construction for the next ten years will average 175 taking 1913 as 100. If we make an extraordinary reserve in 1925 to cover the excess cost of construction in those years in which the cost exceeded the estimated average cost, it would mean writing off for

1919 - - - - -	36,000
1920 - - - - -	385,000
1921 - - - - -	380,000
1922 - - - - -	170,000
1923 - - - - -	225,000
1924 - - - - -	344,000
1925 - - - - -	156,000
	1,696,000

The extraordinary depreciation reserve made in 1913 and the amortization of machinery in the war years and the extraordinary depreciation reserve made in 1924 to revalue purchases of machinery in the years of high cost to an average cost level for the next ten years, then estimated to be 200, will take care of 611,720 of this amount, leaving 1,084,280 to be written off in 1925, and I recommend, therefore, that a reserve in this amount be made this year.

This would make the depreciation reserve on Hawthorne machinery 63% of the face value at the end of 1925. If this reserve is not made, the depreciation reserve would be 56% of the face value at the end of 1925 as compared with

52% at the end of 1924
72% at the end of 1916

C. KEARNY

A. Buildings and Permanent Fixtures - - - - - - - - - - - - - 746,203

Mr. Lincoln estimates that the average cost index of construction at Kearny for the next ten years will be 170 on the average taking 1913 as 100. If we make an extraordinary depreciation reserve in 1925 to cover the excess construction cost at Kearny, we would write off $1,635,000 as follows:

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	Buildings	Permanent Fixtures	Total
1923	$ 46,000	$ 19,000	$ 65,000
1924	709,000	177,000	886,000
1925	414,000	270,000	684,000
	1,169,000	466,000	1,635,000

In 1924, in addition to the depreciation at regular rates, we made an extraordinary depreciation reserve to revalue the Kearny plant to the average cost level for the next ten years. The index figure for the next ten years was then estimated at 175.

If we apply these extraordinary depreciation reserves on buildings and permanent fixtures made in 1924 amounting to $732,463 and $156,334, respectively, against the excess cost of construction as noted above, a further reserve of $436,537 on buildings and $309,666 on permanent fixtures, a total of $746,203 is necessary to bring the construction cost in these years down to the 170 index.

I recommend, therefore, that an extraordinary reserve of $746,203 be made on buildings and permanent fixtures at Kearny.

The depreciation reserve on Kearny buildings and permanent fixtures at December 31, 1925 is 10% and 12%, respectively. If extraordinary depreciation is written off in 1926 in accordance with the above recommendation, these rates will be 16% and 21%, respectively.

B. Machinery - $ 126,259

Mr. Lincoln estimates that the average cost index of construction at Kearny for the next ten years will be 175 taking 1913 as 100. On this basis, if we make a depreciation reserve to cover excess construction cost at Kearny, we would make an extraordinary depreciation reserve in 1926 amounting to $302,000 as follows:

1923 - - - -	$ 42,000
1924 - - - -	229,000
1925 - - - -	31,000
	302,000

In 1924, in addition to the depreciation at regular rates, we made an extraordinary depreciation reserve to revalue Kearny machinery to the average cost level for the next ten years. The index figure for the next ten years was then estimated at [illegible].

4168

3746

If we apply this extraordinary depreciation reserve made in 1924 on machinery amounting to $173,742 against the excess cost of construction as noted above, a further reserve of $125,756 is necessary to bring the construction cost in excess years down to the 175 index.

I recommend, therefore, that an extraordinary reserve of $126,258 be made on machinery at Kearny.

The depreciation reserve on Kearny machinery at December 31,1925 is 17%. If extraordinary depreciation is written off in 1926 in accordance with the above recommendation this rate will be 21%.

The total extraordinary depreciation for 1926 as recommended above amounts to - $2,167,759

R. W. GREGORY.

4169

37463

Western Electric Company,
Incorporated
[illegible]

[illegible]

Date Issued Mar. 9, 1926.

	a	b	c	d	e	f	
	Hawthorne			Kearny			
	Buildings	Permanent Fixtures	Machinery	Buildings	Permanent Fixtures	Machinery	
Balance remaining at Dec. 31, 1925 of extraordinary depreciation charged to Reserve for contingencies Dec. 31, 1913 - - - - - -	$ 440,600	$ 488,110	$ 133,496	$ 0	$ 0	$ 0	1
Extraordinary Depreciation resulting from the Writing Back at Dec. 31, 1924 of the Face Value of Gross Additions in the Years 1917 to 1920 Inclusive - - - - - - - - - - - - - - - - - - -	424,834	137,138	342,241	0	0	0	2
Extraordinary Depreciation written off at Dec. 31, 1924 to Revalue Buildings, Permanent Fixtures and Machinery to Estimated Average Costs for the Next Ten Years - - - - - - - - - - - - -	0	0	520,000 [2]	732,463	156,334	173,742	3
Total Extraordinary Depreciation at Dec. 31, 1925 (1 to 3)	865,434	625,248	995,737	732,463	156,334	173,742	4
Depreciation Reserve Accrued to Dec. 31, 1925 through the Application of Standard Normal Rates - - - - - - - - - - -	4,172,991	2,983,351	8,382,520	58,619	230,502	410,424	5
Total Depreciation Reserve as of Dec. 31, 1925 (4 + 5) - -	5,038,425	3,608,599	9,378,257	791,082	386,836	584,166	6
Line 5 above -	4,172,991	2,983,351	8,382,520	58,619	230,502	410,424	7
If the write off of the Face Value of Gross Additions in the years 1917 to 1920 (line 2 above) had not been made, depreciation would have been accrued at standard rates up to Dec. 31, 1924 amounting to -	64,452	43,084	198,627	0	0	0	8
Total revised depreciation accrued to Dec. 31, 1925 at standard rates (7 + 8) - - - - - - - - - - - - - - - -	4,237,443	3,026,435	8,581,147	58,619	230,502	410,424	9
Total revised extraordinary depreciation as of Dec. 31, 1925 (4 - 8) -	800,982	582,164	797,110	732,463	156,334	173,742	10
Total depreciation reserve as of Dec. 31, 1925 (checks with line 6) -	5,038,425	3,608,599	9,378,257	791,082	386,836	584,166	11
Total Extraordinary Depreciation based on studies by Mr. . . . Lincoln to revalue plant to the estimated cost levels to obtain for the next ten years - - - - - - - - - - - - - - -	1,010,000	535,000	1,881,190	1,171,000	466,000	302,000	12
Extraordinary Depreciation on books as of Dec. 31, 1925 (line 10)	800,982	582,164	796,910	732,463	156,334	173,742	13
Total Amount of Extraordinary Depreciation to be set on books as of Dec. 31, 1925 to meet the revised indices (12 - 13) -	209,018	47,164	1,084,280	438,537	309,666	128,258	14
Total Hawthorne (line 14, col. a + b + c) - - - - - - - - - -	1,246,134						15
Total Kearny (line 14, col. d + e + f) - - - - - - - - - -	876,461						16
Grand Total (15 + 16) - - - - - - - - - - - - - - - - -	2,122,595						17

(23)

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2 Includes $185,190 additional depreciation written off in 1924 due to faster obsolescence of machinery.

4170

estern Electric Company,
Incorporated
eneral Accounting Department.

34

[illegible]

Date Issued: Mar. 9, 1926.

[illegible]

[illegible]

	a	b	c	d	e	f	Analysis of Excess		
	Additions (J)	Actual Cost Index	Estimated 10 Year Future Cost Index	Excess (b-c)	Per Cent Excess (d÷b)	Amount of Excess (a x e)	Buildings	Permanent Fixtures	
1920	$2,304,068	214	155	59	27.6	636,000	505,000	131,000	1
1921	2,190,482	188	155	33	17.6	386,000	227,000	159,000	2
1922	903,245	157	155	2	1.3	12,000	7,000	5,000	3
1923	1,726,359	186	155	31	16.7	288,000	173,000	115,000	4
1924	1,229,066	181	155	26	14.4	177,000	75,000	102,000	5
1925	406,311	[illegible] /77	155	20	11.4	46,000	23,000	23,000	6
						1,545,000	1,010,000	535,000	7

MACHINERY

	a	b	c	d	e	f	
1917	1,282,195	153	175	-			
1918	954,318	164	175	-			8
1919	666,932	185	175	10	5.4		9
1920	1,999,568	217	175	42	19.4	36,000	10
1921	2,832,741	202	175	27	13.4	388,000	11
1922	1,911,140	192	175	17	8.9	380,000	12
1923	2,008,634	197	175	22	11.2	170,000	13
1924	2,967,387	~~[illegible]~~-196	175	23	11.6	225,000	14
1925	1,317,147	~~[illegible]~~ 204	175	23	11.6	344,000	15
						153,000	16
						1,696,000	17

KEARNY

BUILDINGS AND PERMANENT FIXTURES

	a	b	c	d	e	f	Buildings	Permanent Fixtures	
1923	408,689(J)	202	170	32	15.8	65,000	46,000	19,000	18
1924	5,178,377(J)	205	170	35	17.1	886,000	709,000	177,000	19
1925	5,340,980(J)	195	170	25	12.8	684,000	414,000	270,000	20
						1,635,000	1,169,000	466,000	21

MACHINERY

	a	b	c	d	e	f	
1923	371,157	197	175	22	11.2	42,000	22
1924	1,972,657	~~[illegible]~~-196	175	23	11.6	229,000	23
1925	264,124	~~[illegible]~~-204	175	23	11.6	31,000	24
						302,000	25

Excludes cost of bulkhead transferred to Grounds in 1925 as follows:

1923	$300,000
1924	322,000

J Additions represent the following:

Hawthorne	Gross Additions	On assumption that plant disposed of during period 1917 to 1925 was purchased in prior years when cost levels were not excessive.
Kearny		
Buildings and Permanent Fixtures	Net Additions	All plant was purchased during years of high cost levels.
Machinery	Net Additions	Excluding machinery transferred from Hawthorne which was included in Hawthorne gross additions.

25

Machinery Cost Index, 1926-1935.

January 8, 1926

MR. T. K. STEVENSON:

We make no change in our estimate of the machinery cost index over the next 10 year period. The figure should stand at 175 for "Machinery Made and Purchased", in accordance with my memorandum of June 30, 1925, or 200 for "Machinery Made" only, as per my memoranda of February 25, 1925, and April 21, 1925.

We are trying to get estimates from the factory covering "Machinery Made and Purchased" during 1925. So far as we know, however, the 1925 index will be about the same as 1924.

E. E. LINCOLN

MS

26

Estimate of Building Construction Costs, Kearny and Hawthorne:
1925 and Next 10 Years.

December 28, 1925.

MR. T. K. STEVENSON:

Referring to your request, we have reviewed the estimates of building construction costs furnished under date of April 1, 1925, with the following results:

Our Hawthorne and Kearny indices for 1925 remain unchanged at 175 and 195 respectively (1913 = 100%).

Our estimate for 1926 is 170 for Hawthorne and 185 for Kearny — in each case a drop of 5 points from our earlier 1926 estimate.

For the 10 year period, 1926-1935, we now estimate an average of 155 for Hawthorne and 170 for Kearny. This is in each case a drop of 5 points from our earlier estimates for the period 1925-1934.

E. E. LINCOLN

MS
Copy to Mr. R.H.Gregory.

27

Ten Year Estimate of Building Construction and Machinery Costs.

June 30, 1925

MR. T. K. STEVENSON:

As per your request we have carefully considered our earlier estimates of building construction and machinery costs for the next decade and see no good reason to modify our original figures, which are as follows:

Hawthorne . . . . 160 (1913 = 100%)
Kearny . . . . 175 " "
Machinery Costs
Made & Purchased. . 175

The 10 year average machinery cost index of 200 given in my memorandum of April 21st was a mistake in copy, but I do not believe you made use of it in any way.

E. E. LINCOLN

me

Copy to Mr. Gregory

Five Year Estimates of Building Construction and Machinery Costs. APR 22 AM

28

MR. T. K. STEVENSON:

April 21, 1925

Replying to your request, we make the following estimates of building construction costs and machinery costs for the period 1925-29. These estimates are based on the same computations and assumptions which were supplied by us in previous reports in establishing 1924 excess depreciation write-off.

Five Year Estimates of Building Construction and Machinery Costs
(1913 = 100%)

	Building Construction Costs		Machinery Costs
	Hawthorne	Kearny	
1925	175	195	210
1926	175	190	210
1927	165	180	200
1928	160	175	195
1929	165	180	205
5 Year Average . .	168	184	204
10 Year Average (1925-1934) . .	160	175	200

E. E. LINCOLN

4173

MS
Copy to Mr. R.H.Gregory

29

Estimated Amount of Reserve to Cover Excess Cost of Machinery.

February 25, 1925

MR. T. K. STEVENSON:

On the basis of data now available, herewith the best estimate which we can make on the reserve which may properly be set up against the excess cost of our machinery during the past few years.

Until we can secure detailed information from Hawthorne it is impossible for us to know whether our annual estimates are consistent with the facts. However, we have checked carefully from different angles, and believe that our estimates are very conservative.

On the basis of our findings, we are certainly justified in setting up a reserve of at least $1,000,000.

E. E. LINCOLN

EE
Copy to Mr. Gregory
4

1134

It is recommended that an extraordinary depreciation reserve on plant be made in 1924 in amount of 1,64[illegible]39 and [illegible] profits for the year. This amount is arrived at as follows:

1. HAWTHORNE

a. Buildings and permanent fixtures - - - - - - - - - 0

Mr. Lincoln has estimated that the construction cost index figure for the next ten years will be 150 on the average, taking 1913 as a basis. If we make an extraordinary depreciation reserve in 1924 to cover the excess construction cost in the particular years in which the actual cost exceeded 150, we would write off at Hawthorne 1,[illegible]456 as follows:

1920 - - - - - - 860,628
1921 - - - - - - 3[illegible]6,38[illegible]
1923 - - - - - - 41,090
1924 - - - - - - 101,780

In addition to depreciation at regular rates, we have, in the past, made extraordinary depreciation reserves in 1915 and in the war years covering amortization of excess [illegible] costs.

If we apply the extraordinary depreciation reserves set up as above, 1,[illegible],442, against the excess cost of construction as noted above, the reserves will be 906,5[illegible]7 more than necessary to bring the construction cost in excess years down to the 150 index figure.

I recommend, therefore, that on buildings and permanent fixtures at Hawthorne no extraordinary reserve be made this year.

The attached statements show the reserve on buildings at Hawthorne as 35.9 of the [illegible] value at the end of 1924, as compared with

3[illegible] at the end of 19[illegible].
41 at the end of 19[illegible].

b. Permanent [illegible]

[illegible] the [illegible] of 1924
19[illegible]
1911

some re[illegible]

Machinery - [illegible]00,000

Mr. Lincoln's study indicates that the machinery cost index for the next ten years will average [illegible]0 as compared with the 1913 base of 100. If we make an extraordinary depreciation reserve in 1924 covering the excess construction

26

[illegible] - - - [illegible]

cost in those years in which the cost exceeded the average cost it [illegible] written off for

1917 - - - - - - -	11[illegible]
1920 - - - - - - -	2[illegible]7,936
1921 - - - - - - -	[illegible]7,986
1923 - - - - - - -	96,414
1924 - - - - - - -	269,725
Total	848,741

The extraordinary depreciation reserve made in 1913 and the amortisation of machinery in plant accounts in the war years will take care of $533,931 of this amount, leaving $314,810 to be written off in 1924.

I would increase the amount recommended as a result of Mr. Lincoln's study to $500,000, having in mind that changes in design of machinery are making a portion of our machinery out-of-date more quickly than in the past.

This would make a depreciation reserve at Hawthorne of 52% at the end of 1924.

2. **K[illegible]**

a. Buildings and Permanent Fixtures - - - - - - - - - - - - - 948,797

In 1924 normal depreciation was written off for the plant items installed at the West Side, Waverly and Philadelphia Instrument Shops. No depreciation has been written off on the new construction at Kearny proper.

At the close of the year the building account showed a face value of - - - - - - - - - - - - - - $5,065,485
permanent fixtures - - 1,153,591

Mr. Lincoln estimates that the average cost of construction at Kearny for the next ten years will be 175 as compared with the 1913 base. On this basis, if we make a depreciation reserve to bring the net value down to average estimated cost for the next ten years, we would make an extraordinary depreciation reserve in 1924 on buildings and permanent fixtures of $948,797

b. Machinery - 173,742

At the end of 1924 we have $[illegible],500,512 in the machinery account at Kearny, which includes the machinery in storage for the new plant and in use at the Waverly, West Side and Philadelphia [illegible] annexes. Normal depreciation has been written off on machinery in use.

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Mr. Lincoln estimates that the average machinery cost index for the next ten years will be 200, whereas in 1923 the index was 210, and in 1924 was 220.

A reserve for the excess cost would call for - - - - - - in 1924, and the total reserve, including normal reserve on plant in use will be as follows: 173,742

	Face Value	Reserve	Per Cent
Buildings - - - -	$5,055,485	$732,463	14.5%
Permanent Fixtures	1,155,581 -	233,253	20.2
Machinery - - - -	2,500,512	344,329	13.8

R. H. GREGORY

Bldg & PF
732.463
233.253
Tot required 965.716
76919
Replace up 888.597

Machinery
344.329
170.587
173.742

42

February 10, 1925

MR. GREGORY:

Attached is a study made by Mr. Lincoln showing the gross additions made to plant in each year, 1915 to 1924, the index for construction cost for that year, and his estimate of the probable index for construction cost for the next ten years.

This indicates that all construction done prior to 1920 was done at a cost under that which would exist during the next ten years, but that construction expenses in 1920, 1921, 1923 and 1924 were performed at higher levels than will be effective during the next ten years.

The supernormal cost in these years at Hawthorne amounts to $1,250,456, and at Kearny $897,651, a total of $2,148,107.

The amount that was written off the face of our plant in 1917 and 1918 cannot be considered as an offset to these amounts, because it was written off construction costs in years when the actual construction cost was lower than it is expected to be during the next ten years. On the other hand, it would seem perhaps somewhat illogical to write down the construction costs in 1920, 1921, 1923 and 1924 at Hawthorne to a 160 basis, and to permit the old entry writing off the costs of 1917, 1918 and 1919 to lower values than actual, which in turn is lower than the estimated future cost, to remain on our books.

The effect of this old entry is as follows:

Actual gross additions to buildings and permanent fixtures in 1917 -	$1,282,795
Construction index -	144%
Amount written off the face - - - - - - - - - - - - - -	233,388
Amount actually included in the face of plant accounts for 1917 gross additions - - - - - - - -	$1,049,407

This means that as a result of this entry 1917 gross additions are included in plant account at an index of 118%.

For 1918 the gross additions of $946,543 were reduced by an entry writing off the face $131,911, leaving the amount actually included in the plant account for this year's gross additions $815,532. The actual construction cost index for that year was 147%, but after having made this entry the gross additions for the year were included in plant account at a construction cost index of 127%.

43

In 1919 the matter was handled differently: a reserve was made for commitments amounting to $197,568, and therefore, although the gross additions show only $802,045, the real expenditures for plant in 1919 were $999,613, the actual cost index for the year being $153%, but the value at which they were included in plant accounts was, as a result of charging part of the cost to commitment reserve, only 123%.

It would seem, therefore, that if we make a new reserve writing off $2,148,107 extraordinary depreciation in accordance with Mr. Lincoln's study, we should, to be consistent, reverse the entry made in 1917 or 1918 and write onto our face the amount then written off, $561,967.

In making the above entries consideration should be given to the fact that depreciation has been charged off on the basis of the face as shown in our plant account.

JF

T. K. STEVENSON

44

M

Estimated Amount to be "Written Off" Buildings and Permanent Fixtures.

February 17, 1925

MR. T. K. STEVENSON:

Herewith our detailed computation showing the actual amount which we think it would be reasonable to write off the plant and permanent fixtures constructed at Hawthorne and Kearny during the past ten years. The total, according to this detailed computation is $2,148,107.

Since our estimated cost of construction did not until 1920 reach a point above what we estimate will be the average cost over the next ten years, no adjustments have been made prior to that date.

I trust that this will serve your purposes.

E. E. LINCOLN

MS
Att.
Copy to Mr. R.H.Gregory

ESTIMATED AMOUNT TO - "WRITTEN OFF" BUILDINGS AND PERMANENT FIXTURES FOR HAWTHORNE AND KEARNY PLANTS DURING YEARS 1925-1934.

HAWTHORNE

Year	Gross Additions to Face Values of Buildings and Permanent Fixtures	Construction Cost Index (1913 = 100)	Estimated Construction Cost Index for Next Ten Years (1913 = 100)	Difference Between Estimated 10-Yr. Cost Index and Actual Cost Index	Per Cent of Gross Additions to be Written Off During 1925-1934. %	Estimated Amt. To Be Written Off During Years 1925-34
1915	$ 157,968	97	160	-	-	-
1916	367,286	119	160	-	-	-
1917	1,282,795	144	160	-	-	-
1918	946,543	147	160	-	-	-
1919	802,045	153	160	-	-	-
1920	2,304,068	214	160	54	25.2	580,625
1921	2,190,482	188	160	28	14.9	326,382
1922	903,245	157	160	-	-	-
1923	1,726,350	186	160	26	14.0	241,890
1924	877,230	181	160	21	11.6	101,759
	$11,588,021	161	160		-	$1,250,456

5

Total Amount to be Written Off Plant and Fixtures in Ten Years Due to The Estimated Reduction in Building Costs - $1,250,456.

Per Cent of the Total Amount Written Off to Total Gross Additions to Face Values of Buildings and Permanent Fixtures - - - - - - - - - - - - - - - - - - 10.8%

KEARNY

1923	708,689	202	175	27	13.4	94,964
1924	5,497,855	205	175	30	14.6	802,687
	$6,206,544	203.5	175	-	-	$897,651

Total Amount to be Written Off Plant and Fixtures in Ten Years Due to The Estimated Reduction in Building Costs - $ 897,651

Per Cent of the Total Amount Written Off to Total Gross Additions to Face Values of Buildings and Permanent Fixtures - - - - - - - - - - - - - - - - - 14.5%

GRAND TOTAL - - - - - - - - - - - - - - - $2,148,107

VAF/JM
2/17/25

46

Probable Decline in Cost of Factory Construction and Equipment during the Next Ten Years. (Hawthorne and Kearny)

February 16, 1925

MR. R. H. GREGORY:

Covering your request, it is our best judgment that within ten years the cost of constructing and equipping factory buildings such as our Hawthorne and Kearny plants should drop approximately 15 per cent from present levels, although the average annual cost of construction during the period may not be much more than 10 per cent below present levels.

Building construction costs remained practically stationary from 1913 to 1915 inclusive.

Beginning with 1916, net additions at Hawthorne, including permanent fixtures, amounted to $10,798,000. We estimate that the weighted average cost of this construction related to 1913 as a base year was 175 per cent.

Our construction at Kearny during the past two years, including permanent fixtures, has amounted to approximately $6,206,000. We estimate that the Kearny construction cost index related to 1913 as a base year is about 205 per cent.

The total amount of construction and permanent fixtures since 1916 in the two locations is approximately $17,000,000, with an estimated construction cost index of about 186 per cent related to 1913 as 100 per cent.

It is an ultra-conservative policy to set up reserves for problematical and gradual price declines. However, I think we can safely defend from 10 to 15 per cent of the face value, which would be from $1,700,000 to $2,550,000, and I would recommend that $2,000,000 is the best figure to use.

MS

Copy to Mr. T.K.Stevenson

E. E. LINCOLN

[fol. 4183]

Copy

Estimated Amount to be "Written Off" Machinery for Hawthorne and Kearny Plants During Years 1925–1934

Hawthorne

Year	(a) Gross Additions to Face Values of Machinery	(b) Estimated Machinery Cost Index (1913 = 100)	(c) Est. Avg. Machinery Cost Index for Next Ten Years (1913 = 100)	(d) Difference Between Column (b) and Column (c)	(e) Per Cent of Gross Additions to be Written Off During 1925–1934	(f) Estimated Amt. to be Written Off During Years 1925–34
1915	$250,014	...	...	...	...	...
1916	450,148	...	...	...	...	...
1917	1,282,195	220	200	20	9.1	116,680
1918	954,318	200	200	...	...	...
1919	666,932	200	200	...	...	...
1920	1,999,568	235	200	35	14.9	297,936
1921	2,832,741	205	200	5	2.4	67,986
1922	1,911,140	185	200	...	...	...
1923	2,008,634	210	200	10	4.8	96,414
1924	2,964,007	220	200	20	9.1	269,725
	$15,319,697	211	200		5.8	$848,741

Total Amount to be Written Off Machinery in Ten Years Due to the Estimated Reductionin Machinery Costs...... $848,741

Kearny

Year	(a)	(b)	(c)	(d)	(e)	(f)
1923	371,157	210	200	10	4.8	17,816
1924	1,930,000	220	200	20	9.1	175,630
	$2,301,157	218	200		8.4	$193,446

Total Amount to be Written Off Machinery in Ten Years Due to the Estimated Reduction in Machinery Costs..... $193,446

Grand Total (Hawthorne and Kearny)........................ $1,042,187

VAF/JM.
2/25/25.

[fol. 4184]

Western Electric Company, Incorporated

General Accounting Department

Date Issued: —— —, ——

Study of Depreciation on Permanent Plant in the Manufacturing Department as of December 31, 1924

	a	b	c	d	e	f	
	Hawthorne			Kearny			
	Buildings	Permanent Fixtures	Machinery	Buildings	Permanent Fixtures	Machinery	
Balance remaining at Dec. 31, 1924, of Extraordinary Depreciation charged to Reserve for Contingencies Dec. 31, 1913 . .	$456,823	$491,892	$133,496	$ 0	$ 0	$ 0	1
Extraordinary Depreciation as of Dec. 31, 1924, offsetting the writing back of the amount written off the Face Value of Gross Additions in the years 1917 to 1920 inclusive	424,834.	137,133	322,241	0	0	0	2
Total Extraordinary Depreciation at Dec. 31, 1924 (1+2)	881,657	629,025	455,737	0	0	0	3
Depreciation Reserve accrued to Dec. 31, 1924, through the application of standard normal rates	3,785,855	2,726,621	7,335,152	0	76,919	170,587	4
Total Depreciation Reserve as of Dec. 31, 1924 (3+4) . .	4,667,512	3,355,646	7,790,889	0	76,919	170,587	5
Line 4 above	3,785,855	2,726,621	7,335,152	0	76,919	170,587	6

If the write off of the Face Value of Gross Additions in the years 1917 to 1920 (line 2 above) had not been made, depreciation would have been accrued at standard rates up to Dec. 31, 1924, amounting to	84,452	43,084	158,627	0	0	0	7
Total Revised Depreciation accrued to Dec. 31, 1924, at Standard Rates (6+7)	3,870,307	2,769,705	7,493,779	0	76,919	170,587	8
Total Revised Extraordinary Depreciation as of Dec. 31, 1924 (3+7)	797,205	585,941	297,110	0	0	0	9
Total Depreciation Reserve as of Dec. 31, 1924 (Checks with line 5)	4,667,512	3,355,646	7,790,889	0	76,919	170,587	10
Total Extraordinary Depreciation recommended by Mr. E. E. Lincoln to revalue plant to the estimated cost levels to obtain for the next ten years	831,158	419,298	848,741	732,463	165,188	193,446	11
Up to Dec. 31, 1924 Depreciation had been accrued, by the application of standard rates to Face Values in excess of levels to obtain for the next ten years, amounting to	110,844	62,453	236,821	0	8,854	19,704	12
Net amount of Extraordinary Depreciation needed to meet Mr. E. E. Lincoln's recommendation (11−12)	720,314	356,845	611,920	732,463	156,334	173,742	13
Extraordinary Depreciation on Books as of Dec. 31, 1924 (line 9)	797,205	585,941	297,110	0	0	0	14
Total Amount of Extraordinary Depreciation to be put on books as of Dec. 31, 1924, to meet Mr. E. E. Lincoln's recommendation (13−14)	76,891	229,096	314,810	732,463	156,334	173,742	15
Total Hawthorne (line 15, col. a+b+c)	8,823	....	....	....	....	....	16
Total Kearny (line 15, col. d+e+f)	1,062,539	....	....	....	....	....	17
Grand Total (16+17)	1,071,362	....	....	....	....	....	18

[fol. 4185] EXTRACTS FROM EXHIBIT DEF'T'S EX. D-92

The Telephone Company as a Citizen of Your Community

An Address by F. O. Hale, President Illinois Bell Telephone Company, Before Mid-Day Luncheon Club, Springfield, Illinois, April 2, 1931

* * * * * * *

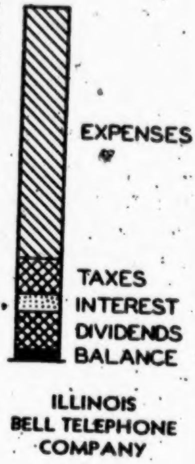
I wonder if it is generally realized that no great fortunes have ever been made out of the telephone business. If you should run over in your minds the names of the very wealthy men in America, you will not find on that list any men who acquired their fortunes through the telephone business. Executive heads of the Bell System have publicly stated on numerous occasions that the System does not seek speculative profits or melons; that the stockholders have the right to expect regular, moderate dividends only, with the right from time to time to make new investments on favorable terms. If the operations of the business yield more than is necessary for this, the excess must be put into improvements in the service or the rates reduced. Thus, any profits beyond those consistent with financial safety and a high grade service go to the users and not to the owners. These principles were adopted, not from altruistic or benevolent motives, but rather because they are in the interest of good business in the long run. To earn large or speculative profits would endanger the business. To earn less than safe returns would endanger the service, both present and future. It seems to us that this policy carries out our threefold obligation, and we believe that the public approves it.

* * * * * * *

(Here follows side folio 4186)

EXHIBIT D-92

Most of what customers pay for telephone service goes for expenses and taxes. Half of the revenue is required for wages of employees. There are regular, moderate payments to investors but no speculative profits or melons. The balance which remains for financial safety is small.



[fol. 4187]

EXHIBIT D-93

February 27, 1932.

Total Expense on Radio to December 31, 1931

Year	Billed by B. T. L.	Incurred by D. & R.	Total
1910	$........	$52	$52
1911	....	269	269
1912	....	765	765
1913	....	793	793
1914	4,743	2,265	7,008
1915	34,381	19,601	53,982
1916	65,046	839	65,885
1917	32,893	16	32,909
1918	26,743 cr.	95	26,648 cr.
1919	226,627	567	227,194
1920	677,267	40,158	717,425
1921	388,066	39,967	428,033
1922	292,090	74,776	366,866
1923	289,470	115,032	404,502
1924	353,971	219,905	573,876
1925	441,507	309,711	751,218
1926	471,591	438,673	910,264
1927	808,168	272,770	1,080,938
1928	859,524	215,958	1,075,482
1929	1,284,974	356,641	1,641,615
1930	1,600,243	409,656	2,009,899
1931	887,571	299,944	1,187,515
Total	$8,691,389	$2,818,453	$11,509,842

[fol. 4188]

EXTRACTS FROM EXHIBIT EXHIBIT D-94

Chart III

Department of Development and Research

Expense of Development Work for Year 1920 (including Western Electric Development Bills)

* * * * * * *

Total expense for year 1920 .... $2,596,429 [fol. 4189] EXTRACTS FROM EXHIBIT EXHIBIT D-95

Chart II

Western Electric Engineering Expense Chargeable to Department of Development and Research (incurred in 1921)

Comparison with Budget, December 31, 1921

	Cumulative 12 Mos.	Budget 1921
Grand total	$1,089,158	$1,165,000

[fol. 4190] EXTRACTS FROM EXHIBIT EXHIBIT D-96

Chart III

Western Electric Engineering Expense Billed to Department of Development and Research

Comparison with Budget for Year Ending December 31, 1922

	Total for Year	Budget 1922
Grand total	$1,021,057	$1,356,000

[fol. 4191] EXHIBIT D-97

Western Electric Company, Inc.

Number of Employees of Western Electric Company, Inc., 1916-1930

Year	Number of employees at January 1	Additions during year (Approximate)	Separations during year (Approximate)	Number of employees at December 31
1916	17,135	Not available	Not available	26,878
1917	26,878	Not available	Not available	30,737
1918	30,737	Not available	Not available	26,126
1919	26,126	19,611	18,153	27,584
1920	27,584	44,000	31,934	39,650
1921	39,650	44,422	38,829	45,243
1922	45,243	46,211	40,292	51,162
1923	51,162	68,602	55,956	63,808
1924	63,808	33,410	48,061	49,157
1925	43,922*	15,802	20,264	39,460
1926	39,460	29,121	23,471	45,110
1927	45,110	14,787	19,332	40,565
1928	40,565	31,813	16,054	56,324
1929	56,324	65,416	36,892	84,848
1930	84,848	17,253	37,848	64,253

* Excludes Supply and Engineering Departments.

(Copied from Company's Statement.)

[fol. 4192]

Exhibit D-98

No. 393

195 Broadway,
New York, N. Y., December 31, 1927.

American Telephone and Telegraph Company in Account With Illinois Bell Telephone Company, Mr. U. F. Cleveland, General Auditor, Chicago, Ill.

All Bills Payable in New York Funds.

Sale to you of telephone instruments charged your account at December 31, 1927, in accordance with terms set forth in President Gifford's letter dated November 17, 1927

(a)	65,510 Switchboard Receivers	at $1.44	$94,334.40
(b)	29,916 Switchboard Transmitters	" 1.73	51,754.68
(c)	28,934 Switchboard Induction Coils	" .68	19,675.12
(d)	1,321,610 Station Receivers	" .97	1,281,961.70
(e)	1,355,518 Station Transmitters	" 1.10	1,491,069.80
(f)	1,346,712 Station Induction Coils	" .38	511,750.56
(g)	6,810 Handsets	" 10.80	*73,548.00
(h)	Total		$3,524,094.26
(i)	Less credit adjustment		*26,559.00
(j)	Net amount due		$3,497,535.26

* The price for Handsets was based on current cost less 20% approximated at time sale agreement was made. Credit herewith is to adjust above prices to actual current cost less 20% as finally determined.

[fol. 4193]

Exhibit D-99

American Telephone and Telegraph Company

Prices Charged Licensee Companies for Instruments Based on Average Current Cost to American Tel. and Tel. Co. Less 20%

	Instruments Purchased by A. T. and T. Co. from W. E. Co. during Nine Months Ending Sept. 30, 1927				Price Charged Licensee Companies
	Number (1)	Cost (2)	Average Cost per Instrument (3)	20% of Average Cost (4)	(Col. 3) less (Col. 4) (5)
Switchboard:					
Receivers	51,784	$93,177.05	1.7993	$.3599	$1.44
Transmitters	15,302	33,032.54	2.1587	.4317	1.73
Induction Coils	14,801	12,517.93	.8457	.1691	.68
Station:					
Receivers	855,359	1,033,131.69	1.2078	.2416	.97
Transmitters	963,624	1,323,718.73	1.3737	.2747	1.10
Induction Coils	695,083	330,051.22	.4748	.0950	.38
Hand Sets	......	....	13.50	2.70	*6.90

* This price ($6.90) represents price at which billed to American Company less 20% further reduced by special adjustment.

(Here follows side folio 4194)

EXHIBIT D-100

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

ANALYSIS OF RESERVE FOR DEPRECIATION OF TELEPHONE INSTRUMENTS

YEARS 1923 - 1927

Year	Reserve for Accrued Depreciation Beginning of Year (1)	Amount of Depreciation Charged Expense and Credited to Reserve (2)	Book Value of Instruments Retired (3)	Cost of Returning Instruments to Repair Shops for Salvage (4)	Salvage (5)	Net Charges to the Reserve (6)	Reserve f Accrued Depreciat End of Y (7)
1923	*$14,236,028	$2,133,172	$ 960,283	$24,315	$ 322,435	$662,143	$15,707,
1924	15,707,057	2,390,753	1,155,395	34,078	485,582	701,891	17,395,
1925	17,395,919	2,648,084	1,342,691	44,858	474,308	913,241	19,130,
1926	19,130,712	2,920,151	1,414,318	37,963	534,251	908,030	21,142,
1927 (Transactions prior to sale of instruments)	21,142,833	3,150,992	1,411,025	15,076	478,181	947,920	23,345,
Adjustments concurrent with and incidental to sale to licensee companies December 31:							
Instruments held by Western Electric Company to be repaired or salvaged, sold to that Company			651,078		370,549	x x x	x x x
Less - Adjustment of excess credit from Western Electric Company to American Tel. and Tel. Co. on instruments previously returned by licensee companies for repairs					252,262	x x x	x x x
Net adjustments			651,078		118,287	x x x	332,
Balance as adjusted			x x x		x x x		22,813,
Transferred to Long Lines Department at book value less depreciation accrued in reserve			35,893	②	18,165	x x x	17,
Balance applicable to instruments sold to Licensee companies December 31			x x x		x x x		22,795,
Sold to licensee companies December 31 at Average Current Cost less 20%			46,583,314	①	38,185,727 ①	x x x	2,300

EXHIBIT D-100

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

ANALYSIS OF RESERVE FOR DEPRECIATION OF TELEPHONE INSTRUMENTS

YEARS 1923 - 1927

Year	Reserve for Accrued Depreciation Beginning of Year (1)	Amount of Depreciation Charged Expense and Credited to Reserve (2)	Book Value of Instruments Retired (3)	Cost of Returning Instruments to Repair Shops for Salvage (4)	Salvage (5)	Net Charges to the Reserve (6)	Reserve for Accrued Depreciation End of Year (7)
. . . .	*$14,236,028	$2,133,172	$ 960,283	$24,315	$ 322,455	$662,143	$15,707,057
. . . .	15,707,057	2,390,753	1,153,395	34,078	485,582	701,891	17,395,919
. . . .	17,395,919	2,648,034	1,342,691	44,858	474,308	913,241	19,130,712
. . . .	19,130,712	2,920,151	1,434,318	37,963	534,251	908,030	21,142,833
(Transactions prior to sale of instruments)	21,142,833	3,150,992	1,411,025	15,076	478,161	947,920	23,345,968
Adjustments concurrent with and incidental to sale to licensee companies December 31:							
Instruments held by Western Electric Company to be repaired or salvaged, sold to that Company			651,078		370,569	x x x	x x x
Less - Adjustment of excess credit from Western Electric Company to American Tel. and Tel. Co. on instruments previously returned by licensee companies for repairs					252,282	x x x	x x x
Net adjustments			651,078		118,287	x x x	532,791
lance as adjusted			x x x		x x x		22,813,114
ansferred to Long Lines Department at book value less depreciation accrued in reserve			35,893	②	18,165	x x x	17,728
lance applicable to instruments sold to Licensee companies December 31			x x x		x x x		22,795,386 ④
to licensee companies December 31 at Average Current Cost less 20%			46,583,314	①	38,183,727 ④	x x x	8,399,587

Balance applicable to instruments sold to Licensee companies December 31	x x x		x x x		22,7
Sold to licensee companies December 31 at Average Current Cost less 20% 4,729 36	46,583,314	①	38,183,727 ②	x x x	8,3
Balance	x x x		x x x	x x x	414,3

* Includes $5,629,447 transferred from appropriated surplus in July, 1912.

July 6, 1931.

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4

se applicable to instruments sold to ensee companies December 31	x x x		x x x		22,793,386 ④
to licensee companies December 31 at Average Current Cost less 20% 4,729.36	46,583,314	①	38,185,727 ①	x x x	8,399,587
Balance	x x x		x x x	x x x	$14,393,799

* Includes $5,629,447 transferred from appropriated surplus in July, 1914.

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Vol. VI

TRANSCRIPT OF RECORD

EXHIBITS

Supreme Court of the United States

OCTOBER TERM, 1933

No. 440

BENJAMIN F. LINDHEIMER AND OTHERS, CONSTITUTING THE ILLINOIS COMMERCE COMMISSION OF THE STATE OF ILLINOIS; OTTO KERNER, ATTORNEY GENERAL OF THE STATE OF ILLINOIS, AND THE CITY OF CHICAGO, APPELLANTS,

vs.

ILLINOIS BELL TELEPHONE COMPANY

No. 548

ILLINOIS BELL TELEPHONE COMPANY, APPELLANT,

vs.

BENJAMIN F. LINDHEIMER AND OTHERS, CONSTITUTING THE ILLINOIS COMMERCE COMMISSION OF THE STATE OF ILLINOIS; OTTO KERNER, ATTORNEY GENERAL OF THE STATE OF ILLINOIS, AND THE CITY OF CHICAGO

APPEALS FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF ILLINOIS

FILED SEPTEMBER 8, 1933

FILED OCTOBER 25, 1933

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1933

No. 440

BENJAMIN F. LINDHEIMER AND OTHERS, CONSTITUTING THE ILLINOIS COMMERCE COMMISSION OF THE STATE OF ILLINOIS; OTTO KERNER, ATTORNEY GENERAL OF THE STATE OF ILLINOIS, AND CITY OF CHICAGO, APPELLANTS,

vs.

ILLINOIS BELL TELEPHONE COMPANY

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF ILLINOIS

VOL. VI

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X-75 (a)—Statement re Western Electric Company, sales to Graybar Electric Company	4478	3938
X-76—Commercial agreement between Western Electric Company and Graybar Electric Company, dated December 31, 1925	4479	3939
X-77—Distributor contract between Western Electric Co. and Graybar Electric Co., dated October 11, 1928, effective November 1, 1928	4485	3943
X-79—Statement re Western Electric, profits from operations of Erpi and percentage of return on Western Electric investment	4501	3956
X-80—Copy of journal entry No. 150, dated June 30, 1927, Electrical Research Products, Inc.	4502	3957
X-81—Statement re Western Electric Co., Inc., return on investment in Northern Electric Company, Ltd	4504	3959
X-82—Statement re Western Electric, percentage of return on average capital stock and surplus allocated to Bell and non-Bell average investment based on a 10% return on the average investment in Bell and non-Bell assets	4505	3959

	Original	Print
X-83—Statement showing investment, profits, and percentage of return	4506	3960
X-83 (a) Western Electric, Inc., and subsidiaries computation of average investment (per Touche, Niven & Co.)	4507	3960
X-83 (b) Western Electric, subsidiaries, reconciliation of consolidated net profits per company with consolidated profits as adjusted	4508	3961
X-87-X-88—Western Electric Company, Inc., and subsidiaries, consolidated average investment, profits, and percentage of return	4509	3962
X-89—Statement re Western Electric, basis of published figures of companies included in Plaintiff's Exhibit A-85 (taken from Poor's Manual)	4511	3963
X-90—Western Electric, comparison of earnings and rate of return computed on basis shown in Exhibit A-85 with that of Exhibits A-77 and A-79	4514	3965
X-91—Statement re Western Electric Company, Inc., percentage of return on "average net investment" (exclusive of bonded indebtedness) to "earnings available for dividends" taken from Poor's Manual	4515	3966
X-92—Depreciation policy of companies from Poor's 1931 Manual	4516	3967
X-93—Statement re Western Electric, Plaintiff's Exhibit A-85, depreciation rates	4529	3985
X-94—Statement re Western Electric, adjustments to surplus accounts omitted in computation of average annual earnings of various companies included in Plaintiff's Exhibit A-85	4531	3988
X-95—Western Electric, comparison of per cent of return on investment and per cent of net profit to sales of companies—shown on Plaintiff's Exhibits A-85-6-7	4543	4001
X-96—Statement re Western Electric, ratio of sales to average investment for year 1927 (compiled from Poor's Manual)	4544	4003
X-97—Statement re Western Electric, results obtained by apportioning combined plant of two companies (selected from Plaintiff's Exhibit A-85 on the basis of the combined sales, year 1930)	4545	4004
X-99—Statement re A. T. & T., investment in Western Electric Co. common stock (New York corporation)	4546	4005

	Original	Print
X-100—Statement re American Telephone and Telegraph Co., monthly high, low, and average price of common stock (per New Stock Exchange quotations, 1920-31)	4547	4006
X-104—A. T. & T. Co., statement of total revenues and expenses showing separately: (1) Long lines dept. operations; (2) License contract operations; (3) Holding company operations. Schedule 3001 of report to I. C. C., years 1920-1931	4549	4008
X-105—A. T. & T., statement of average assets showing separately: (1) Long lines dept. operations; (2) License cont. operations; (3) Holding Co. operations. Schedule 200 A, report of I. C. C., 1926-1931	4561	4008
X-108—Statement re American Telephone and Telegraph Company, average cost of funds used in business, years 1920-1930, inclusive	4573	4009
X-109—American Telephone and Telegraph Company, computation of annual cost of furnishing telephone instruments to Chicago division of Illinois Bell Telephone Company, year ended December 31, 1923	4584	4020
X-110—Illinois Bell Telephone Company, Chicago division, comparison of company's tabulation (R. 1038) of annual cost of furnishing telephone instruments with Commission accountant's computation (as per sheet attached) of annual cost of furnishing telephone instruments for year ended December 31, 1923	4585	4020
X-111—Statement re American Tel. & Tel. Co., amount of return on investment in telephone instruments shown by company's tabulation (Record 1038), related to amount of investment in telephone instruments shown by Commission accountant's computation during year ended December 31, 1923	4586	4022
X-112—Statement re A. T. & T., percent of return on investment in telephone instruments used by Illinois Bell Telephone Company, Chicago division, per Exhibit A-200 "fair allowance for telephone instruments in Chicago division (Exhibit A-165), less costs already included in * * * (costs shown in Exhibit A-170)" during years 1923 to 1927, inclusive	4587	4023

	Original	Print
X-121—Statement re A. T. & T. Co., percent of relationship of book value of investment in telephone instruments to depreciation reserve for telephone instruments, compared with percent of depreciation deducted from book cost or current value new as the basis for sale to long lines and to licensee companies, as of December 31, 1927	4588	4024
X-122—Statement showing investments in capital stocks of licensee companies as of December 31, 1919 to 1922, and from 1923 to 1930, inclusive	4589	4025
X-123—Statement showing dividend rates of licensee companies during years 1914 to 1930, inclusive	4590	4026
X-124—Statement showing capital stock holdings in licensee companies showing dividend rates and yields thereon during years 1920, 1921, and 1922, and from 1923 to 1930, inclusive	4591	4027
X-126—Statement showing dividend yields on investments in capital stocks of licensee companies during years 1920 to 1930, inclusive	4592	4027
X-127—Statement showing average return to A. T. & T. from dividends on its investments in capital stocks of licensee companies converted into average return to stockholders of A. T. & T. on their investments in capital stock of A. T. & T. during years 1920 to 1922, and during years 1923 to 1930, inclusive	4593	4028
X-128—Statement showing profit on investment in capital stocks of licensee companies during years 1920 to 1922, and during years 1923 to 1930, inclusive	4594	4029
X-129—Statement showing ratio of capital stock holdings of Ill. Bell to capital stock holdings in all licensee companies; ratio of profit on stock holdings in Ill. Bell to profit on stock holdings in all licensee companies and percentages of profit on stock holdings during years 1920 to 1922, and during years 1923 to 1930, inclusive	4595	4030
X-130—Statement showing amounts required in order to receive the same percent of return on investment in capital stock of each licensee company as received from investment in capital stock of Illinois Bell Tel. Co. during years 1920 to 1922, and during years 1923 to 1930, inclusive	4597	4030B

	Original	Print
X-131—Statement showing losses on loans to licensee companies prorated between companies, years 1920 to 1922, and 1923 to 1930, inclusive	4601	4030F
X-132—Statement showing profit or loss on investments in licensee companies years 1920 to 1922, and 1923 to 1930, inclusive	4605	4030K
X-133—Statement showing average return from dividends and interest on investments (stocks and loans) in licensee companies during years 1920 to 1922, and 1923 to 1930, inclusive	4612	4030S
X-134—Statement showing average return to A. T. & T. from dividends and interest on its investments (stocks and loans) in licensee companies, converted into average return to stockholders of A. T. & T. on their investments in capital stock of A. T. & T. during years 1920 to 1922, and 1923 to 1930, inclusive	4614	4030T
X-135—Statement showing A. T. & T. ratio of capital investment in Illinois Bell to capital investment in all licensee companies; ratio of profit on capital investment in Ill. Bell to profit on capital investment in all licensee companies and percentages of profit on investment during years 1920 to 1922, and 1923 to 1930, inclusive	4616	4031
X-136—Statement showing percentage relationships of average investments in capital stocks of licensee companies and in loans to licensee companies to total average investments (stocks and loans) in licensee companies years ended December 31, 1920 to 1922, and 1923 to 1930, inclusive	4618	4033
X-137—Statement showing amounts required in order to receive the same per cent of return on investment (stock and loans) in each licensee company as received from investment in Ill. Bell during years 1920 to 1922, and 1923 to 1930, inclusive	4619	4034
X-140—Statement re A. T. & T., cost of other services performed under license contract prorated to licensee companies on basis of license payments, years 1920 to 1930, inclusive. Departmental costs incurred in rendering licensee contract services during years 1920 to 1930, inclusive	4620	4035

[fol. 4195] EXTRACTS FROM EXHIBIT DEF'T'S EX. D-101.

American Telephone and Telegraph Company,
195 Broadway

New York, March 24, 1921.

Mr. Frank S. Fowler, Chief of Depreciation Section, Interstate Commerce Commission, Washington, D. C.

DEAR SIR: In response to your letters of January 6 and February 2, 1921, requesting a statement of our views regarding depreciation accounting for telephone companies, with particular reference to questions presented in connection with Section 20 of the Interstate Commerce Act as amended February 28, 1920, we beg to submit the following on behalf of the companies comprising the Bell System (List attached).

General Statement of Bell System Practice

It has been the practice of the telephone companies comprising the Bell System to provide depreciation reserves in order that the capital invested in depreciable property may continuously be maintained unimpaired. This practice is in accord with the policy set forth on pages 22 to 24, inclusive, in the Twentieth Annual Report of the Interstate Commerce Commission on the Statistics of Railways in the United States for the year ending June 30, 1907. The depreciation reserves of Bell System Companies are built up by monthly or annual charges against earnings in such amounts as will distribute, as nearly as may be, evenly throughout the service life of the property, the cost of capital consumed in operation. The amount of these charges depends upon the cost of the plant, its service life, and the net salvage to be realized upon retirement. In telephone plant the service life rarely equals the actual physical life of plant. Plant may be in good physical condition but due to public requirement, inadequacy, obsolescence, etc., it is removed and new plant substituted therefor before it is worn out, as a result of physical deterioration. For example, underground construction may be substituted for overhead construction; a common battery exchange may be substituted for a magneto system exchange;

new and improved facilities of various kinds may be substituted for existing facilities; or plant may be destroyed by storms or other casualties and rebuilt. All these factors have a direct bearing upon the service life of the plant, and this service life in turn determines the rate of the monthly or annual charges against earnings for depreciation.

[fol. 4196] It is the aim of Bell Companies, when plant is retired from service that the depreciation reserve shall, for such plant, contain an amount equal to the original cost of the plant retired plus cost of removal less salvage recovered. These companies consider that any practice which does not provide for the consumption of capital by charges to Operating Expenses during the service life of property is a wrong practice, and one which is detrimental to the maintenance of stable and efficient telephone service.

* * * * * * *

5. Inadequacy:

The growth of the business is necessarily such that the plant which was considered adequate for a reasonable future period when installed has become inadequate to care for the growth of the business and must be replaced with plant of larger capacity. The importance of this item is that normally telephone plants are of rapid growth, and that it is generally impossible, in a growing community, to economically build — plant which will not become inadequate before it has reached the end of its physical life.

* * * * * * *

[fol. 4197] III. Bases Upon Which Depreciation Charges Should be Accrued

(a) Accruals should be based on original cost or investment.

All telephone property, excepting land, is subject to depreciation and the continual consumption of the investment is a part of the cost of the service and must be provided for by charges against earnings.

The sound theory is that the charges to the reserve for depreciation should be based on the original cost of the property retired, less the net salvage credit. This is demonstrated by the following considerations:

1. The function of the depreciation reserve is to amortize the portion of the expense of conducting the business caused by using up this depreciable property.

2. The actual amount of this expense is the original cost of this property less net salvage credits.

3. This method is equitable in that it provides for the amortization of the actual investment during the period it is consumed in rendering the service.

4. Upon this theory the amount to be credited by the reserve is definite and fixed so that the periodical charges to operating expenses on account of the reserve can be made certain.

5. This method tends to certainty and definiteness in the accounting.

The current charges against earnings and concurrent credits to the reserve should be based on the investment, [fol. 4198] that is, on the original cost, of the depreciable property, its service life and the estimated net salvage to be realized (see Section II above), in order that by the time such property goes out of service there shall have been accumuluated in respect thereof a reserve equal to its original cost plus the expenses incident to removal less the value of any salvage. We know of no other practical way to maintain the integrity of the investment in depreciable property devoted to the telephone business. When retirements of such property occur the original cost of the plant can then be credited to the investment account and concurrently charged to the depreciation reserve. In this manner the investment always shows the actual investment in, or cost of, the property actually in use. This practice follows the principles prescribed by the Interstate Commerce Commission in its System of accounts.

The depreciation reserve underlies and protects a company's investment in depreciable fixed capital as a whole. It is our view that no subdivisions of the reserve per se should, or can properly, be set up for any particular units or classes of property or for territorial divisions of a company's property. When depreciable property is retired from service for any cause the original cost plus the cost of removal less salvage should be charged to this single reserve which is provided in respect of the company's entire depreciable property. While some units of property may remain in service beyond their expected service life, other units are retired before they reach the end of their expected service life. In determining the rate of depreciation and the expected life, consideration is given to such variations in order that the reserve will provide for retirements based upon the average expected life. A depreciation reserve on this basis will not, of course, at any particular time, except by mere coincidence, represent the actual physical deterioration in the plant, for in addition to providing for deterioration actually in evidence the reserve provides for facts and contingencies which may not yet be manifest, but which, from past experience, are certain of realization, e. g., obsolescence, inadequacy, public requirements, casualties, etc., within the period of service life on the basis of which the reserve is set up.

(b) Straight Line Method:

The straight line method is used by Bell System Companies in accruing depreciation. Of all known methods [fol. 4199] this one is the most practical and the simplest of application. It obviates complicated interest calculations and distributes uniformly and equitably over the life of the property the loss in investment occasioned by depreciation. It is the only practicable method of procedure in the telephone business, because the life of telephone plant is relatively short, such plant is continually growing, renewals thereof are frequent, and changes in the art are constant. These conditions are all met by the straight line method.

IV. The Necessity for Accruals

Depreciation is continuous from the moment any unit or units of telephone property are installed until such units are retired. Inasmuch as depreciation is a proper charge against earnings to maintain the integrity of the investment, in order to properly and uniformly maintain such integrity requires that provision be made for the protection of the investment while the consumption by use of the property devoted to the service is in progress. Otherwise the integrity of the investment is not maintained. A mere promise to provide for retirement at the end of the period or life is not sufficient. If no reserve were provided uniformly during the service life of the property to take care of capital consumed in operation, companies would be compelled to charge fluctuating rates or make inroads into their earnings when retirements of property become necessary. Accruals, therefore, are made and reserves are built up by a uniform monthly or annual charge, first, to give protection to the investment, second, to insure stability of telephone service, and third, to keep the charges for service to the user equitably distributed and as reasonably stable and uniform as possible.

* * * * * * *

Depreciation Has Been Recognized in the Accounts of the Bell System Since 1884

The rules regarding depreciation accounting prescribed by your Commission have been followed by the Bell System since January 1, 1913, the effective date of the System of Accounts. From January 1, 1910, to January 1, 1913, depreciation was handled in practically the same manner as that now prescribed by the Commission with some minor exceptions. Prior to 1910 and as far back as 1884 depre- [fol. 4200] ciation was recognized in the accounts but under a method differing somewhat from the one now in use but aiming to bring about the same general result.

The depreciation reserve now carried by the Bell System is therefore the result of the depreciation policy followed since 1884, the last eleven years being on a practically uniform basis and in accordance with the Commission's regulations set forth in the Uniform System of Accounts.

* * * * * * *

Interest During Construction

The amount carried in the fixed capital account "Interest during Construction" consists of interest charges accrued during the construction period on investment ultimately charged to the tangible fixed capital accounts involved. Since this amount is a part of the cost of property it is subject to depreciation at the same rate as the plant to which it pertains. Therefore, the monthly or annual depreciation charges against earnings should include provision for the ultimate retirement of the "Interest during Construction" element of investment, these charges to be based upon the composite or average rate applicable to related plant accounts.

Under this method the interest during Construction is depreciated on practically the same rates as those applying on the plant in respect of which such interest has been set up. It would be preferable if "Interest during Construction" were not carried in a separate fixed capital account but were distributed among the several tangible fixed capital accounts. In such case the proper depreciation rate would be applied against the entire investment in each class of plant and as plant is retired the proper amount of related interest during construction would be automatically written off.

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[fol. 4201] In conclusion we desire to bring to the attention of the Commission the following general phases of the subject under consideration:

The rates used and the practices followed by the Bell System Companies are the result of the best expert judgment and experience which we have been able to bring to th subject, due weight being given to all pertinent factors. Experience has proven that the depreciation accounting procedure followed by our companies is sound in principle and produces proper results. While it may, and probably will, be necessary to revise rates slightly from time to time in the future, as has been done in the past, it is believed that the rates now applied are correct. Since these methods and practices have generally been accepted as sound and proper and are consistent with the rules so far prescribed by the Commission, we respectfully recommend that they be continued with the exception of the treatment now prescribed for Right of Way and Other Intangible Capital.

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Bell System Companies have followed consistently for a long period the practice of setting up depreciation on all depreciable property, and their experience gives them trustworthy data which may be used in the present study of depreciation. Full information regarding depreciation of telephone property is available and can be placed at the disposal of the Commission. With these data at hand, the Commission will, we believe, be in a position to pass upon the question of depreciation accounting for telephone companies without delay.

The telephone business has the following important characteristics:

(a) There is a continuous and rapid growth of the plant and extension of territory which demands additional facilities and new capital.

(b) The plant consists of a large number of small integral but expensive parts.

(c) The plant and equipment are of relatively short service life insofar as a very considerable portion thereof is concerned.

(d) There is a constant replacing of existing plant due to changes in the art, public requirements, etc.

(e) There is a constant change in location of plant to meet the demands of the users of the service.

[fol. 4202] The subject of depreciation is a vital one to telephone industry. It is very intimately related to the question of financing, and constantly arises in connection with administrative and operating matters. In determining the rates of depreciation for telephone propert[illegible] peculiarities and needs of that business should be [illegible] independent consideration.

* * * * * * *

(Here follows side folios 4203, 4204, 4205 and 4206)

[fol. 4203]

EXHIBIT D-102

Prices of Transmitters, Receivers and Induction Coils Sold to Both Bell and Non-Bell Customers from January 1, 1916, to December 31, 1925

	1916						1917					1918		
	Bell		Non-Bell*(G)				Bell		Non-Bell*			Bell		Non-Bell*
	1/1 to 3/15	3/16 to 12/31	1/1 to 4/2	4/3 to 9/24	....	9/25 to 12/31	1/1 to 3/15	3/16 to 12/31	1/1 to 3/19	3/20 to 12/19	12/20 to 12/31	1/1 to 10/15	10/16 to 12/31	1/1 to 12/31
Transmitters:														
234	$1.325	$1.465	$2.20	$2.40	....	$2.60	$1.465	$1.575	$2.60	$3.25	$3.00	$1.575	$1.70	$3.00
244	1.065	1.48	....	....	....	2.25	1.48	1.445	2.25	2.81	2.75	1.445	1.46	2.75
266	.675	.725	....	....	....	1.20	.725	.81	1.20	[illegible].50	1.50	.81	.87	1.50
311	.88	1.06	....	....	....	1.75	1.06	....	1.75	[illegible].20	1.95	....	....	1.95
312	....	....	....	....	....	3.35	....	....	3.35	4.19	3.75	....	....	3.75
323	....	....	....	....	....	....	....	....	....	....	....	....	1.375	....
329	.875	1.105	1.50	1.75	....	1.75	1.105	1.315	1.75	2.20	2.00	1.315	....	2.00
337	....	....	....	....	....	....	....	....	....	....	....	....	....	....
350	.955	1.295	....	....	....	2.00	1.295	1.66	2.00	2.50	2.25	1.66	....	2.25
353 Pressed Arm	....	....	....	....	....	....	....	....	....	....	....	....	1.72	....

	Bell		Non-Bell*(G)				Bell		Non-Bell*			Bell		Non-Bell*
	1/1 to 3/15	3/16 to 12/31	1/1 to 5/31	6/1 to 9/24		9/25 to 12/31	1/1 to 3/15	3/16 to 12/31	1/1 to 3/7	3/8 to 12/19	12/20 to 12/31	1/1 to 10/15	10/16 to 12/31	1/1 to 12/31
Receivers:														
127	$....	$....	$....	$....		$2.25	$....	$....	$2.25	$2.81	$2.80	$....	$....	$2.80
128	1.075	1.06	1.45	1.65	....	1.65	1.06	1.27	1.65	2.05	2.25	1.27	1.42	2.25
131	1.41	1.56	....	....	....	2.00	1.56	1.645	2.00	2.50	2.50	1.645	1.765	2.50
144	.915	.885	1.14	1.25	....	1.25	.885	.94	1.25	1.55	1.45	.94	.96	1.45
146	1.33	....	....	....	....	1.75	....	....	1.75	2.20	2.25	....	1.495	2.25
157	1.26	1.32	....	....	....	2.35	1.32	1.475	2.35	2.94	2.60	1.475	1.60	2.60
528	....	....	....	....	....	....	....	....	....	....	....	....	....	....

	Bell	Non-Bell*(G)				Bell		Non-Bell*			Bell		Non-Bell*
	1/1 to 12/31	1/1 to 4/2	4/3 to 7/23	7/24 to 9/24	9/25 to 12/31	1/1 to 6/15	6/16 to 12/31	1/1 to 3/7	3/8 to 12/19	12/20 to 12/31	1/1 to 10/15	10/16 to 12/31	1/1 to 13/31
Induction Coils:													
5	$.345	$....	$....	$....	$1.30	$.345	$.615	$1.30	$1.625	$1.65	$.615	$.545	$1.65
10	.82(D)	1.50	1.65	1.65	1.00	....	.88	1.70	2.125	2.00	.88	.965	2.00
13	.345	.35	.40	.45	.50	.345	.615	.50	.625	.75	.615	.545	.75
20	.345	.55	.60	.60	.70	.345	.615	.70	.875	.95	.615	.545	.95
23	.82	.90	1.00	1.00	1.20	.82	.88	1.20	1.50	2.00	.88	.965	2.00
24	.82	1.10	1.25	1.25	1.40	.82	.88	1.40	1.75	2.25	.88	.965	2.25
29	....	....	....	....	.60	....	....	.60	.75	.85	....	....	.85
31	.345	....	....	....	.50	.345	.615	.50	.625	.75	.615	.545	.75
46	....	....	....	....	....	....	....	....	....	....	....	....	....

*The Non-Bell prices shown on this statement are the minimum prices charged to the general trade (Non-Bell Operating Companies) by the Supply Department of the Western Electric Company.

[fol. 4204]

EXHIBIT D-102

Prices of Transmitters, Receivers and Induction Coils Sold to Both Bell and Non-Bell Customers from January 1, 1916, to December 31, 1925

	1919					1920				1921				
	Bell		Non-Bell*			Bell		Non-Bell		Bell		Non-Bell*		
	1/1 to 8/15	8/16 to 12/31	1/1 to 10/31		11/1 to 12/31	1/1 to 9/15	9/16 to 12/31	1/1 to 5/31	6/1 to 12/31	1/1 to 11/15	11/16 to 12/31	1/1 to 8/31	9/1 to 12/26	12/27 to 12/31
Transmitters:														
234	$1.70	$2.37	$3.00	.....	$3.75	$2.37	$3.04	$3.75	$4.50	$3.04	$2.25	$4.85	$4.00	$3.25
244	1.46	1.85	2.75	.....	3.00	1.85	2.32	3.00	3.50	2.32	1.69	3.50	3.10	2.25
266	.87	1.17	1.50	.....	1.90	1.17	1.47	1.90	2.25	1.47	.....	2.55	2.15	1.60
311	.....	.....	1.95	.....	2.20	.....	.....	2.20	2.65	.....	.....	2.65	2.45	1.85
312	.....	.....	3.75	.....	4.55	.....	.....	4.55	5.45	.....	.....	5.45	5.00	3.80
323	1.375	1.53	2.00(A)	.....	2.25	1.53	1.87	2.25	2.70	1.87	1.37	2.70	2.50	1.90
329	.....	.....	2.00	.....	2.25	.....	.....	2.25	2.70	.....	.....	2.70	2.50	1.[illegible]0
337	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.47	.....	.....	.....
350	.....	.....	2.25	.....	2.85	.....	.....	2.85	3.40	.....	.....	.....	.....	.....
353 Pressed Arm	1.72	1.93	.....	.....	2.65(B)	1.93	2.34	2.65(B)	3.15(B)	2.34	1.72	3.50(B)	3.10(B)	2.40(B
	Bell		Non-Bell*			Bell		Non-Bell*		Bell		Non-Bell*		
	1/1 to 8/15	8/16 to 12/31	1/1 to 4/11	4/12 to 10/31	11/1 to 12/31	1/1 to 9/15	9/16 to 12/31	1/1 to 5/31	6/1 to 12/31	1/1 to 11/15	11/16 to 12/31	1/1 to 8/31	9/1 to 12/26	12/27 to 12/31
Receivers:														
127	$.....	$.....	$2.80	$2.90	$4.00	$.....	$.....	$4.00	$.480	$.....	$.247	$4.50	$1.25	$3.40
128	1.42	.....	2.25	2.40	3.30	.....	.....	3.30	4.00	.....	.....	3.65	3.00	.....
131	1.765	2.29	2.50	2.75	3.50	2.29	2.73	3.50	4.25	2.73	2.20	4.25	3.60	3.00
144	.96	1.33	1.45	1.50	2.10	1.33	1.62	2.10	2.50	1.62	1.37	2.50	2.25	2.05
146	1.495	2.00	2.25	2.50	3.25	2.00	2.68	3.25	3.99	2.68	2.17	4.35	3.70	2.90
157	1.60	2.10	2.60	.....	.....	2.10	2.86	.....	.....	2.86	2.24	.....	.....	.....
528	.....	2.00	.....	.....	.....	2.00	2.81	.....	.....	2.81	2.21	.....	.....	2.95
	Bell		Non-Bell*			Bell		Non-Bell*		Bell		Non-Bell*		
	1/1 to 8/15	8/16 to 12/31	1/1 to 9/1		9/2 to 12/31	1/1 to 9/15	9/16 to 12/31	1/1 to 7/31	8/1 to 12/31	1/1 to 11/15	11/16 to 12/31	1/1 to 12/26		12/27 to 12/31
Induction Coils:														
5	$.515	$.585	$1.65	.....	$1.65	$.585	$.765	$1.65	$2.50	$.765	$.58	$4.00	.....	$2.50
10	.965	1.96	2.00	.....	3.50	1.96	2.10	3.50	5.00	2.10	1.39	5.00	.....	4.45
13	.545	.585	.75	.....	.75	.585	.765	.75	.95	.765	.58	.95	.....	.70
20	.545	.585	.95	.....	.95	.585	.765	.95	1.10	.765	.58	1.40	.....	.80
23	.965	1.96	2.00	.....	3.50	1.96	2.10	3.50	2.50	2.10	1.39	2.15	.....	1.40
24	.965	1.96	2.25	.....	3.75	1.96	2.10	3.75	4.00	2.10	1.39	4.00	.....	2.65
29	.....	.....	.85	.....	.85	.....	.....	.85	1.30	.....	.....	1.45	.....	1.00
31	.545	.585	.75	.....	.75	.585	.765	.75	.95	.765	.58	1.00	.....	1.25
46	.....	.....	.....	.....	.....	.....	.....	.....	1.10	.....	.58	1.15	.....	.80

* The Non-Bell prices shown on this statement are the minimum prices charged to the general trade (Non-Bell Operating Companies) by the Supply Department of the Western Electric Company.

[fol. 4205]

	1922				1923			1924				1925		
	Bell		Non-Bell*		Bell	Non-Bell*		Bell		Non-Bell*		Bell	Non-Bell*	
	1/1 to 5/15	5/16 to 12/31	1/1 to 8/4	8/5 to 12/31	1/1 to 12/31	1/1 to 1/11	1/12 to 12/31	1/1 to 12/31		1/1 to 6/30	7/1 to 12/31	1/1 to 12/31	1/1 to 3/31	4/1 to 12/31
Transmitters:														
234	$2.25	$2.40	$3.25	$3.25	$2.30	$3.25	$3.10	$2.38	....	$3.30	$3.25	$2.53	$3.25	$3.45
244	1.69	1.74	2.25	2.25	1.77	2.25	2.35	1.81	....	2.50	2.45	1.81	2.45	2.45
266	....	1.40	1.60	2.00	1.43	2.00	2.00	1.48	....	2,20	2.15	1.61	2.15	2.25
311	....	....	1.85	1.85	....	1.85	~~1.85~~	....	....	....	....	....	....	....
312	....	....	3.80	3.80	....	3.80	3.80	....	....	3.95	3.80	2.97	3.80	3.95
323	1.37	1.41	1.90	1.90	1.43	1.90	1.90	1.45	....	2.00	2.00	1.45	2.00	2.00
329	....	....	1.90	1.90	....	1.90	1.95	....	....	....	....	....	....	....
337	1.47	1.54	....	....	1.52	....	....	1.56	....	2.25	2.15	1.57	2.15	2.15
360	....	....	....	....	....	....	....	....	....	....	....	....	....	....
353 Pressed Arm	1.72	1.71	2.40(B)	2.40(B)	1.77	2.40(B)	2.35(B)	1.73	....	2.40(B)	2.30(B)	1.77	2.30(B)	2.35(B)
	Bell		Non-Bell*		Bell	Non-Bell*		Bell		Non-Bell*		Bell	Non-Bell*	
	1/1 to 5/15	5/16 to 12/31	1/1 to 12/31		1/1 to 12/31	1/1 to 12/31		1/1 to 4/30	5/1 to 12/31	1/1 to 6/30	7/1 to 12/31	1/1 to 12/31	1/1 to 3/31	4/1 to 12/31
Receivers:														
127	$2.47	$2.48	$3.40	....	$2.45	$3.35	....	$3.25	$3.25	$4.55	$4.50(C)	$3.60	$....	$....
128	....	....	....	....	....	....	....	....	....	....	....	....	....	....
131	2.20	2.11	3.00		2.16	2.95	....	2.35	2.35	3.30	3.25	2.43	3.25	3.35
144	1.37	1.33	2.05		1.25	1.95	....	1.33	1.33	2.05	2.00	1.35	2.00	2.00
146	2.17	2.06	2.90		....	2.55	....	....	....	3.00	2.95	....	2.95	3.15
157	2.24	2.18	....	....	2.17	....	....	2.35	2.42	....	....	....	....	....
528	2.21	2.17	2.95	....	2.13	2.90	....	2.10	2.17	3.05	2.90	2.27	2.90	3.05
	Bell		Non-Bell*		Bell	Non-Bell*		Bell		Non-Bell*		Bell	Non-Bell*	
	1/1 to 5/15	5/16 to 12/31	1/1 to 2/28	3/1 to 12/31	1/1 to 12/31	1/1 to 12/31		1/1 to 12/31		1/1 to 6/30	7/1 to 12/31	1/1 to 12/31	1/1 to 3/31	4/1 to 12/31
Induction Coils:														
5	.58	$....	$2.50	$2.50(E)	$1.87	$2.55	....	$2.09	....	$2.90	$2.85	$2.05	$2.85	$2.80
10	1.39	....	4.45	3.45(E)	2.70	3.60	....	3.00	....	4.10	4.00	3.13	4.00	4.15
13	.58	.43	.70	.80(E)	.41	.75	....	.44	....	.80	.80	.45	.80	.80
20	.58	....	.80	.80(E)	....	.80	....	....	....	....	....	....	....	....
23	1.39	1.01	1.40	1.85(EF)	.95	1.70	....	....		1.85	1.80	1.09	1.80	1.90
24	1.39	1.76	2.65	2.65(E)	1.84	2.75	....	....	....	2.90	2.85	1.98	2.85	2.95
29	....	....	1.00	1.00	....	.85	....	....	....	.95	.90	.69	.90	.95
31	.58	....	1.25	1.25(E)	.43	1.25	....	38	....	1.20	1.20	.51	1.20	1.35
46	.58	.58	.80	.80(E)	.55	.80	....	.56	....	.85	.85	.57	.85	.85

(A) Published 4/12/19.
(B) Non-Bell price assumed to apply to pressed arm although no records are available to substantiate this.
(C) Withdrawn 12/10/24.
(D) Withdrawn 6/15/16.
(E) Withdrawn 7/1/22 to 8/4/22.
(F) Revised to $1.75 on 8/5/22.
(G) Published prices prior to 9/25/16 not available. Prices on the major items shown were taken from other records.
LFT-1/27/32

* The Non-Bell prices shown on this statement are the minimum prices charged to the general trade (Non-Bell Operating Companies) by the Supply Department of the Western Electric Company.

(Here fellows side folio 4206)

EXHIBIT D-103

PRICES OF TRANSMITTERS, RECEIVERS AND INDUCTION COILS SOLD TO BELL AND NON-BELL CUSTOMERS
FROM JANUARY 1, 1926 TO DECEMBER 31, 1930.

	1926			1927		1928				1929					
	Bell	Non-Bell		Bell	Non-Bell	Bell		Non-Bell		Bell		Non-Bell		Bell	
Code Number	1/1 to 12/31	1/1 to 11/1	11/1 to 12/31	1/1 to 12/31	1/1 to 12/31	1/1 to 4/1	4/1 to 12/31	1/1 to 4/15	4/15 to 12/31	1/1 to 7/1	7/1 to 12/31	1/1 to 7/1	7/1 to 12/31	1/1 to 11/1	11 t 12
Transmitters.															
234	2.44	[illegible]	2.14	2.16	2.44	2.16	[illegible]	[illegible]	[illegible]	2.10	2.00	[illegible]	2.20	$2.00	$2
244	1.79	[illegible]	1.79	[illegible]	1.79	1.67	[illegible]	1.79	[illegible]	[illegible]	[illegible]	1.75	1.60	[illegible]	1.
266	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.20	[illegible]	[illegible]	[illegible]	1.
312	[illegible]	[illegible]	[illegible]	[illegible]	2.79	[illegible]	[illegible]	[illegible]	[illegible]	2.64	[illegible]	2.75	2.50	2.40	2,
323	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible] ✓	[illegible]	1.43	1.25	[illegible]	1.10	1.25	1.15	1.10	1.
337	[illegible]	1.57	[illegible]	[illegible]	[illegible]	[illegible] ✓	[illegible]	[illegible]	1.25	[illegible]	1.10	1.25	1.15	1.10	1.
Receivers.															
127	[illegible]	–			–	[illegible]	[illegible]	–	–	[illegible]	2.88	–	–	2.85	2.
131	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.22	2.20	[illegible]	[illegible]	[illegible]	[illegible]	1.70	1.
144	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible] ✓	[illegible]	[illegible]	1.20	1.15	1.05	[illegible](3)	[illegible]	1.05	1.
146-	[illegible]	[illegible]	[illegible]	[illegible]	2.41	[illegible]	[illegible]	2.41	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.25	2.
157	–	–	–	–	–	–	–	–	–	–	–	–	–	2.17	2.
525 (3– Headband)	2.03	–	–	[illegible]	–	[illegible]	[illegible]	–	–	1.83	[illegible]	–	–	[illegible]	
525 11– Headband as of 9/1/30	–	–	–	–	–	–	–	–	–	–	–	–	–	1.72	1.
528 3– Headband	1.94	[illegible]	1.94	1.79	1.94	[illegible]	1.70	1.94	1.71	1.70	[illegible]	1.71	1.65	1.56	
528 11– Headband as of 9/1/30	–	–	–	–	–	–	–	–	–	–	–	–	–	1.42	1.
Induction Coils.															
6	1.76	2.05	1.76	1.65	1.76	1.65	1.65	1.76	1.70	1.65	1.60	1.70	1.68	1.60	1.
10	2.87	3.13	2.87	2.93	2.93([illegible])	2.93	2.92	2.94	3.05	2.93	2.90	3.06	3.06	2.90	3.
13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.37	.37	[illegible]	[illegible]	[illegible]	.34	.39	.39	.34	[illegible]
23	1.08	1.09	1.08	1.05	1.08	1.05	1.06	1.08	1.10	1.06	1.00	1.10	1.05	1.00	1.
24	1.97	1.98	1.97	[illegible]	1.97	[illegible]	1.87	1.97	1.96	1.87	[illegible]	–	1.96	[illegible]	2.
9	–	.69	.60	–	.60	.60	.60	.60	.65	.60	.50	[illegible]	.55	.80	
1	.49	.51	.49	.41	.49	.41	.41	.49	.50	.41	[illegible]	[illegible]	.40	.38	.
46	.51	.57	[illegible]	[illegible]	.51	[illegible] ✓	.48	.51	.60	.48	–	.50	–	–	
46-3	–	–	–	–	–	–	–	–	–	–	.44	–	.46	.44	.
58	–	1.10	1.10	–	1.10	1.10	1.10	1.10	1.15	1.10	[illegible]	1.16	1.16	1.10	1.
59	–	.90	.90	–	.90	.90	.90	.90	.95	.90	.90	.95	.95	.90	1.
62	.90	.97	.90	.88	.90	[illegible]	.88	.90	.90	[illegible]	.80	.90	.84	.80	.
63	.97	1.07	.97	.92	.97	.92 ✓	.92	.97	.96	.92	.85	.96	.89	.85	1.
65	.98	1.06	.98	.90	.98	.90	.90	.98	.95	.90	.80	.95	.84	.80	.
Hand Telephone Sets					–	14.00	12.75(G)	–	13.08(C)	10.00	9.50	[illegible]	10.20	9.80(D)	9.
" " " Elliptical															

EXHIBIT D-103

PRICES OF TRANSMITTERS, RECEIVERS AND INDUCTION COILS SOLD TO BELL AND NON-BELL CUSTOMERS FROM JANUARY 1, 1926 TO DECEMBER 31, 1930.

	1926			1927		1928				1929				1930			
	Bell	Non-Bell		Bell	Non-Bell	Bell		Non-Bell		Bell		Non-Bell		Bell		Non-Bell	
	1/1 to 12/31	1/1 to 11/1	11/1 to 12/31	1/1 to 12/31	1/1 to 12/31	1/1 to 4/1	4/1 to 12/31	1/1 to 4/15	4/15 to 12/31	1/1 to 7/1	7/1 to 12/31	1/1 to 7/1	7/1 to 12/31	1/1 to 11/1	11/1 to 12/31	1/1 to 11/1	11/1 to 12/31
- - - - - - - -	2.44	[illegible]	2.14	2.16	2.44	2.16	[illegible]	2.44	[illegible]	2.10	2.00	[illegible]	2.20	$2.00	[illegible]	2.20	$2.55
- - - - - - - -	1.79	[illegible]	1.79	[illegible]	1.79	1.67	[illegible]	1.79	[illegible]	[illegible]	[illegible]	1.75	1.60	[illegible]	1.50	1.60	1.60
- - - - - - - -	[illegible]	1.61	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.20	[illegible]	[illegible]	[illegible]	1.20	1.25	1.25
- - - - - - - -	[illegible]	[illegible]	[illegible]	2.64	2.79	2.64	[illegible]	2.79	[illegible]	2.64	2.40	2.75	2.50	2.40	2.40	2.50	2.50
- - - - - - - -	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible] ✓	[illegible]	1.43	1.25	[illegible]	1.10	1.25	1.15	1.10	1.10	1.15	1.15
- - - - - - - -	[illegible]	1.57	[illegible]	[illegible]	[illegible]	[illegible] ✓	[illegible]	[illegible]	1.25	[illegible]	1.10	1.25	1.15	1.10	1.10	1.15	1.15
- - - - - - - -	[illegible]	-			-			-	-	[illegible]	2.85	-	-	2.85	2.85	-	-
- - - - - - - -	2.22	[illegible]	2.22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.20	[illegible]	[illegible]	[illegible]	[illegible]	1.90	1.90	2.00	2.00
- - - - - - - -	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible] ✓	[illegible]	[illegible]	1.20	1.15	1.05	[illegible](B)	1.10	1.05	1.05	1.10	1.10
- - - - - - - -	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.41	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.25	2.25	[illegible]	2.35
- - - - - - - -	-	-	-	-	-	-	-	-	-	-	-	-	-	2.17	2.20	2.30	2.33
- - - - - - - -	2.03	-	-	[illegible]	-	[illegible]	[illegible]	-	-	1.83	[illegible]	-	-	[illegible]	-	-	-
as of 9/1/30	-	-	-	-	-	-	-	-	-	-	-	-	-	1.72	1.95	1.80	2.03
- - - - - - - -	1.94	[illegible]	1.94	1.79	1.94	[illegible]	1.70	1.94	1.71	1.70	[illegible]	1.71	1.65	1.55	-	1.65	-
as of [illegible]/1/30	-	-	-	-	-	-	-	-	-	-	-	-	-	1.42	1.70	1.52	1.80
- - - - - - - -	1.76	2.05	1.76	1.65	1.76	1.65	1.66	1.76	1.70	1.65	1.60	1.70	1.68	1.60	1.85	1.68	1.98
- - - - - - - -	[illegible]	3.13	2.87	2.93	2.93(B)	2.35	2.92	2.93	3.05	2.93	2.90	3.06	3.05	2.90	3.35	3.05	3.55
- - - - - - - -	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.37	[illegible]	[illegible]	[illegible]	[illegible]	.34	.37	.39	[illegible]	.40	.39	.45
- - - - - - - -	1.08	1.09	1.08	1.05	1.08	1.05	1.06	1.08	1.10	1.06	1.00	1.10	1.05	1.00	1.15	1.05	1.20
- - - - - - - -	1.97	1.98	1.97	[illegible]	1.97	[illegible]	1.87	1.97	1.95	1.87	1.85	-	1.95	[illegible]	2.15	1.95	2.25
- - - - - - - -	-	.69	.60	-	.60	.60	.60	.60	.65	.60	.50	[illegible]	.55	[illegible]	.60	.53	.65
- - - - - - - -	.49	.51	.49	.41	.49	.41	.41	.49	.50	.41	.39	.50	.40	.38	.45	.40	.47
- - - - - - - -	.51	.57	[illegible]	[illegible]	.51	[illegible] ✓	.48	.51	.60	.48	-	.50	-	-	-	-	-
- - - - - - - -	-	-	-	-	-	-	-	-	-	-	.44	-	.46	.44	.50	.46	.52
- - - - - - - -	-	1.10	1.10	-	1.10	1.10	1.10	1.10	1.15	1.10	[illegible]	1.16	1.16	1.10	1.10	1.16	1.16
- - - - - - - -	-	.90	.90	-	[illegible]	.90	.90	.90	.95	.90	.90	.95	.95	.90	[illegible]	.95	1.15
- - - - - - - -	.90	.97	.90	.88	.90	[illegible]	.88	.90	.90	[illegible]	.80	.90	.84	.80	.90	.84	.94
- - - - - - - -	.97	1.07	.97	.92	.97	.92 ✓	.92	.97	.95	.92	.85	.95	.89	.85	[illegible]	.89	1.05
- - - - - - - -	.98	1.06	.98	[illegible]	[illegible]	.90	.90	.98	.95	.90	.80	.95	.84	.80	.90	[illegible]	.94
- - - - - - - -					-	14.00	12.75(C)	-	[illegible](C)	10.00	9.50	[illegible]	[illegible]	9.50(D)	9.25	[illegible](D)	9.81
Elliptical															9.05		9.61

63 - - - - - - - - - - - - - -	.97	1.07	.97	.92	.97	.92✓	.92	.97	.95	.92	.85	.95	.89	.85	1
66 - - - - - - - - - - - - - -	.98	1.06	.98	.90	.98	.90	.90	.98	.95	.90	.80	.95	.84	.80	
Hand Telephone Sets - - - - - - -					-	14.00	12.75(C)	-	13.08(C)	10.00	9.50	10.32	10.20	9.80(D)	9
" " " Elliptical Mounting - - - - - - - - - - -															9

A When sold for export 5% Royalty was added to these prices. After April 1[illegible], 1928 Non-Bell pric is the royalty factor.
B Price of 144 type Receiver to Non-Bell Customers was 1.15 from 5/1/29 to 6/30/29.
C Price of the Hand Telephone Set was changed during this period as follows: Bell 8/1/28 $11.00 ell 10/1/28 11.33.
D " " " " " " " " " " " " " - Bell 9/1/30 8.89 Bell 9/1/30 9.47

- . -	.97	1.07	.97	.92	.97	.92✓	.92	.97	.95	.92	.85	.95	.89	.85	1.00	.89	1.08
- -	.98	1.06	.98	.90	.98	.90	.90	.98	.95	.90	.80	.95	.84	.80	.90	.84	.94
- -					-	14.00	12.75(C)		13.08(C)	10.00	9.50	10.33	10.20	9.80(D)	9.25	10.80(D)	9.81
al																	
--															9.06		9.61

yalty was added to these prices. After April 1?, 1928 Non-Bell price ude the royalty factor.
er to Non-Bell Customers was 1.15 from 5/1/29 to 6/30/29.
e st was changed during this period as follows: Bell 6/1/28 $11.00 ell 10/1/28 $11.33.
" " " " " " " " Bell 9/1/30 8.89 -Bell 9/1/30 9.47

[fol. 4207]

EXHIBIT D-104

Sales of Telephone Receivers, Transmitters, and Induction Coils, 1916 to 1930, Inclusive

Year	Bell	Non-Bell
1916	$2,200,641	Information not available
1917	2,420,569	
1918	2,230,155	
1919	2,530,083	
1920	3,852,712	
1921	4,597,725	
1922	4,342,821	
1923	4,496,482	
1924	4,900,159	
1925	5,017,587	
1926	5,262,559	$439,464
1927	4,836,000	439,000
1928	8,561,199(S)	431,872(S)
1929	8,729,980(S)	538,971(S)
1930	10,015,999(S)	528,445(S)

(S) Includes Hand Sets.

[fol. 4208]

Exhibit D-111

American Telephone and Telegraph Company

Royalties Received from Western Electric Company, Incorporated, Electrical Research Products, Incorporated, and Others

Years 1923–1931

	1923	1924	1925	1926	1927	1928	1929	1930	1931	Total
Royalties Received by E. R. P. I. (assignee of W. E. Co.) and Portion thereof paid to A. T. and T. Co.	$......	$......	$42,923	$93,645	$198,087	$206,970	$304,861	$592,270	$959,450	$2,398,206
Sales by Graybar Electric Company of close talking microphones	......	......	......	......	......	......	......	......	240	240
Sales by Western Electric Company of Restricted Apparatus	94,977	67,677	82,797	77,417	203,223	218,298	899,934	514,653	161,808	2,320,784
Miscellaneous Royalties	......	......	......	......	1,167	579	2,080	3,232	14,057	21,115
Total	94,977	67,677	125,720	171,062	402,477	425,847	1,206,875	1,110,155	1,135,555	4,740,345
Patent Receipts	......	......	5,239	......	33,489	16,250	11,775	20,000	......	86,753
License Fees for Radio Broadcasting	2,500	45,859	81,557	89,919	104,461	63,796	14,451	500	......	402,043
Total	$97,477	$113,536	$212,516	$260,981	$540,427	$505,893	$1,233,101	$1,129,655	$1,135,555	$5,229,141

[fol. 4209] DEF'T'S EX. D-112

This agreement, made and entered into on this 8th day of July, 1919, by and between the International Telephone Sales and Engineering Corporation, a corporation created under the laws of the state of Delaware (hereinafter for convenience called the Sales Corporation), and the American Telephone and Telegraph Company, a corporation created under the laws of the state of New York (hereinafter for convenience called the American Company), will witness:

Section 1. The Sales Corporation is now the owner of twenty-six thousand (26,000) shares, constituting approximately fifty-one per cent (51%) of the capital stock of the Automatic Electric Company (hereinafter for convenience called the Automatic Company). The Sales Corporation will endeavor to acquire all of the outstanding capital stock of the Automatic Company, and will acquire not less than 90% of said stock, including said stock now held by it, prior to the date for the exercise of the option hereinafter granted.

Section 2. Upon the terms and conditions hereinafter set out, and in consideration of One Dollar ($1.00) and other valuable considerations, the receipt whereof is hereby acknowledged, the Sales Corporation hereby grants to the American Company an option to acquire all of the capital stock of the Automatic Company, now or hereafter owned by the Sales Corporation, which shall be not less than 90% of said stock, which terms and conditions are:

(a) The American Company shall, on or before July 1, 1924, notify the Sales Corporation in writing of its election to exercise said option, which notice may be given by letter, deposited in the mail, postage prepaid, on or before July 1, 1924, and addressed to the Sales Corporation at Chicago, Illinois, or at such other address as it may hereafter designate in writing for that purpose.

(b) Upon the election to exercise the option, the transaction shall be closed by a transfer of the stock and payment therefor on January 1, 1925, at the office of the American Company in New York. Not less than ten days prior to said date, the Sales Corporation shall, in writing, notify the American Company of the number of shares which it will assign and deliver.

(c) The Sales Corporation shall furnish to the American Company at its office in the city of New York, balance sheets showing the assets and liabilities of the Automatic Company, in such detail as the American Company may require, as follows:

[fol. 4210] One as of June 1st, 1919, to be furnished on or before July 1st, 1919.

One as of December 1st, 1923, to be furnished on or before December 20th, 1923.

One as of December 1st, 1924, to be furnished on or before December 20th, 1924.

The American Company shall be afforded reasonable opportunities to make such verifications of said balance sheets and such other investigations of the records and accounts of the Sales Corporation and Automatic Company as it may deem desirable.

(d) The Sales Corporation agrees that the Automatic Company will not, after July 1st, 1919, without the consent of the American Company, incur any indebtedness or other obligations, other than the ordinary current obligations incident to its manufacturing business, and those incident to the increase of its capacity to 100,000 lines per annum.

(e) The Sales Corporation agrees that the Automatic Company will not, without the consent of the American Company, increase the amount of its outstanding capital stock during the term of this agreement.

(f) The definitive price to be paid by the American Company for the said stock of the Automatic Company, in the event that it acquires the same under this option, shall be determined as follows:

(1) All of the profits of the Sales Corporation and the Automatic Company arising out of the manufacture and sale of the apparatus covered by a contract between the Sales Corporation and the Western Electric Company, Incorporated, of even date herewith, for 250,000 lines, shall be ascertained, and to this amount there shall be added an amount equal to one-half of the profits (other than those above described) of the Sales Corporation and the Automatic Company arising out of all of their business between

June 16, 1919 and December 31, 1924, and the total so found shall be divided by the number of shares acquired by the American Company hereunder.

Said profits shall be ascertained by deducting from gross income, all operating expenses prudently incurred, together with uncollectible items, taxes and interest on the necessary obligations of the Sales and Automatic Companies.

[fol. 4211] If there has not been acquired by it on or before July 15, 1919, all of the outstanding stock of the Automatic Company, the Sales Corporation shall be entitled to have treated as interest expense, in computing profits as aforesaid, such an amount in each year on account of the stock of the Automatic Company at the time outstanding as would have been paid in interest in the year in question by the Sales Corporation, if such outstanding stock of the Automatic Company had been purchased by the Sales Corporation on or before July 15th, 1919, upon the same terms upon which the stock acquired by the Sales Corporation prior to that time was purchased.

(2) The amount to be ascertained as provided in the preceding paragraph (1) shall be credited upon $137.50, and the balance remaining shall be the definitive price per share to be paid for said stock.

If the credit so to be made on account of profits shall equal or exceed $137.50, then the stock shall be delivered to the American Company without payment by it, and the American Company shall be entitled to the excess, if any.

(3) In order to provide for the accurate determination of said definitive price, on or before the date for closing the purchase of the stock, January 1, 1925, the American Company shall, at such time as it elects after July 1, 1924, make an audit of the books of the Sales Corporation and the Automatic Company, and shall determine the factors which fix such definitive price. The Automatic Company and the Sales Corporation shall afford to the American Company all reasonable facilities for and assistance in making such audit.

The transaction shall be closed on January 1, 1925, upon the basis determined by such audit, but this shall be subject, however, to readjustment as hereinafter provided.

(g) If the parties are on January 1, 1925, or thereafter, in disagreement as to the amount of such profits, the stock in question shall then be deposited, endorsed in blank, with the Bankers Trust Company of New York, in escrow, to be held by it until there is certified to it by the Audit Company of New York, (or some other chartered accountant to be selected by the parties, or if they cannot agree by said trust company) the amount, if any, due the Sales Corporation or the American Company on account of such purchase price or such excess credit, and upon such certification, and upon the payment by the American Company to [fol. 4212] said Trust Company of the amount, if any, so certified to be due from the American Company, said stock shall be delivered to the last named company. If said Audit Company shall so certify that on account of excess profits there is a balance due to the American Company, the amount of such balance shall be forthwith paid to the American Company by the Sales Corporation.

All differences as to the amount of such profits shall be submitted by the parties to the said Audit Company of New York, or to the other chartered accountant to be selected as aforesaid, which shall investigate and determine the same, and this determination shall, as to all matters of fact, be final and binding upon both parties. The expense of such determination shall be equally divided between the Sales Corporation and the American Company.

(h) The Sales Corporation agrees that it will not distribute any of its surplus profits as dividends until it has acquired not less than 90% of the outstanding capital stock of the Automatic Company and has paid all obligations given by it in connection with the acquisition of Automatic Company stock.

(i) The Sales Corporation further agrees that if the American Company shall acquire the said stock of the Automatic Company under this option, it will, if and when requested so to do by the Automatic Company, cancel any contracts then existing between the Sales Corporation and the Automatic Company, provided, however, that any contracts then existing between the Sales Corporation and the Automatic Company under which the Automatic Company is to manufacture apparatus for the Sales Corporation, shall be performed by the Automatic Company, upon the condition that the Sales Corporation shall account to the Automatic Company for a proportion of the Sales Corporation's profits under such contracts, equal to the proportion of the work of manufacturing done after the said option is exercised.

Section 3. If, because of doubt as to the legal right of the Sales Corporation to sell said stock to the American Company, or as to the legal right of the latter to acquire such stock, or for any other reason, the American Company shall not desire to avail itself of the option hereby granted, it may assign this option to any person to whom a sale of said stock at that time would be free from legal objections, and its assignee under such an assignment shall succeed to all of its rights under this agreement.

In witness whereof the parties hereto have caused this [fol. 4213] instrument to be executed in their behalf in duplicate by their respective presidents or vice presidents, and attested with their corporate seals by their respective secretaries on the date first above written.

American Telephone and Telegraph Company, by
(Sd.) H. B. Thayer, President. O. K. N. T. G.
Attest: (Sd.) A. A. Marsters, Secretary. (Seal.)
International Telephone Sales and Engineering Corporation, by (Sd.) A. F. Adams, President.
Attest: (Sd.) Charles A. Bennett, Asst. Secretary.
(Seal.)

[fol. 4214] EXTRACTS FROM EXHIBIT D-115

American Telephone and Telegraph Company

Study of License Revenue, Year 1928

License Revenue as reported to Interstate Commerce Commission		$17,622,365.17
Expenses and Costs Incurred:		
Operation expenses	$15,827,556.21	
Portion assigned to Long Lines Department	1,581,796.77	
		$14,245,759.44
Taxes		1,134,984.38
Rent and Miscellaneous		1,296,537.84
		$16,677,281.66
Carrying Charges on Office Furniture and Fixtures, Equipment, etc.—average investment for the year $1,252,659.04 @ 7.71% the average charge paid on all Capital Obligations in 1928		$96,580.01

Net Loss on Funds held available for Associated Companies average amount for 1928 $102,175,925.81 @ say 3.67%	$3,749,856.48

(The average rate paid for new money by the company during 1927-1928 was 8.01%. On these cash balances the company earned 4.34%, leaving a loss thereon of 3.67%.)

Net Loss incurred in Temporary (Demand Note) Financing of Associated Compaines on a 5.88% basis—average for year $180,362,137.17 @ say 2.28%	$4,112,256.73

(The cost of new money procured by the American Company during—

3 years, 1926-1928	8.17%
2 " 1927-1928	8.01%
1 year, 1928	8.11%

Assume these funds cost the American Company the three-year average of say 8.17%. It received an average of 5.89% from the Companies, leaving a net loss of 2.28%.)

Summary

Revenue		$17,622,365.17
Costs:		
Expenses	$16,677,281.66	
Carrying charges on investments	96,580.01	
Net loss on Funds held available	3,749,856.48	
Net loss on Demand Note Financing	4,112,256.73	
		24,635,974.88
Balance		$7,013,609.71

April 10, 1929.

[fol. 4215] American Telephone and Telegraph Company

Study of License Revenue, Year 1928

(Giving Effect to Reduction of License Revenue from 2% to 1½%)

License Revenue as reported to Interstate Commerce Commission		$17,622,365.17
Reduction on account of change in rate of payment from 2% to 1½%		4,408,059.14
License Revenue computed at 1½%		$13,214,306.03
Expenses and Costs Incurred:		
Operation expenses	$15,827,556.21	
Portion assigned to Long Lines Department	1,186,347.58	
		$14,641,208.63
Taxes		556,925.45
Rent and Miscellaneous		1,296,537.84
		$16,494,671.92

Carrying Charge on Office Furniture and Fixtures, Equipment, etc.—average investment for the year $1,252,659.04 @ 7.71%, the average charge paid on all Capital Obligations in 1928.................................... $96,580.01

Net Loss on Funds held available for Associated Companies Average amount for $1928 $102,175,925.81 @ say 3.67%... $3,749,856.48

(The average rate paid for new money by the company during 1927-1928 was 8.01%. On these cash balances the Company earned 4.34%, leaving a loss thereon of 3.67%.)

Net loss incurred in Temporary (Demand Note) Financing of Associated Companies on a 5.88% basis—average for the year $180,362,137.17 @ say 2.28%........................ $4,112,256.73

(The cost of new money procured by the American Company during—

3 years, 1926-1928	8.17%
2 " 1927-1928	8.01%
1 year, 1928	8.11%

Assume these funds cost the American Company the three-year average of say 8.17%. It received an average of 5.89% from the Companies, leaving a net loss of 2.28%.)

Summary

Revenue		$13,214,306.03
Costs:		
Expenses	$16,494,671.92	
Carrying charges on investments	96,580.01	
Net loss on funds held available	3,749,856.48	
Net loss on demand note financing	4,112,256.73	
		24,453,365.14
Balance		$11,239,059.11

April 10, 1929.

(Here follows Def. Ex. D-116, side folios 4216 and 4217)

[fol. 4216]

Def. Ex. D-116 Heiss Exhibit No. 10

American Telephone and Telegraph Company

A.—Estimate of Costs Incurred in Rendering License Contract Services*

B.—Amounts Received for License Contract Services

	1923			1924			1925			1926		
	Direct Costs	Indirect Costs	Total	Direct Costs	Indirect Costs	Total	Direct Costs	Indirect Costs	Total	Direct Costs	Indirect Costs	Total
A. Costs of Rendering License Contract Services:												
Departmental:												
Development and Research	$2,841,988	...	$2,841,988	$3,078,422	...	$3,078,422	$3,624,850	...	$3,624,850	$4,295,693	...	$4,295,693
Operation and Engineering	2,550,709	...	2,550,709	2,688,340	...	2,688,340	2,963,159	...	2,963,159	3,301,306	...	3,301,306
Operation—General	213,551	...	213,551	209,788	...	209,788	211,565	...	211,565	240,549	...	240,549
Personnel	518,882	$83,860	602,742	436,646	$78,819	515,465	514,980	$88,543	603,523	601,787	$106,173	707,960
Information	598,011	36,327	634,338	660,432	33,995	694,427	705,947	34,517	740,464	833,282	24,038	857,320
Public Relations	...	...	...	21,878	...	21,878	27,751	...	27,751	27,365	...	27,365
Legal	664,112	95,079	759,191	662,100	84,567	746,667	668,165	112,100	780,265	659,735	90,865	750,600
Comptroller	890,194	82,379	972,573	979,922	90,815	1,070,737	1,080,077	96,643	1,176,720	1,199,257	107,357	1,306,614
Treasurer	85,363	869,498	954,861	123,205	1,134,892	1,258,097	116,199	828,715	944,914	127,102	1,254,650	1,381,752
Secretary	4,372	54,183	58,555	4,945	58,775	63,720	4,776	58,092	62,868	4,973	61,150	66,123
General Service Bureau	232,149	50,959	283,108	268,325	62,940	331,265	305,326	58,157	363,483	354,984	72,708	427,692
Sundry Items	129,861	611,555	741,416	91,149	584,935	676,084	81,301	665,056	746,357	41,374	713,361	754,735
Total Departmental Costs	$8,729,192	$1,883,840	$10,613,032	$9,225,152	$2,129,738	$11,354,890	$10,304,096	$1,941,823	$12,245,919	$11,687,407	$2,430,302	$14,117,709
Instrument Maintenance	3,219,594	...	3,219,594	3,719,626	...	3,719,626	4,261,771	...	4,261,771	4,953,961	...	4,953,961
Taxes	1,824,297	1,158,360	2,982,657	1,837,220	1,700,481	3,537,701	2,123,688	1,831,971	3,955,659	1,525,910	1,882,885	3,408,795
Cost (net) of carrying investment in physical property used in rendering License Contract Services†	1,293,984	33,734	1,327,718	1,375,142	16,600	1,391,742	1,595,791	21,893	1,617,684	1,610,280	6,100	1,616,380
Cost (net) incurred in holding funds available during year to meet cash requirements of Licensee Companies†	2,368,129	222,647	2,590,776	2,617,596	257,517	2,875,113	3,430,048	286,145	3,716,193	3,053,074	325,719	3,378,793
Cost (net) of Temporary Financing†	1,535,913	...	1,535,913	2,259,798	805	2,260,603	2,596,087	10,192	2,606,279	2,074,265	21,100	2,095,365
Total	$18,971,109	$3,298,581	$22,269,690	$21,034,534	$4,105,141	$25,139,675	$24,311,481	$4,092,024	$28,403,505	$24,904,897	$4,666,106	$29,571,003
Deduct from "Indirect Costs" estimated amount of corporate expenses attributable to ownership of System Securities and related expenses	...	1,000,000	1,000,000	...	1,200,000	1,200,000	...	1,400,000	1,400,000	...	1,600,000	1,600,000
Total Costs incurred in rendering License Contract Services	$18,971,109	$2,298,581	$21,269,690	$21,034,534	$2,905,141	$23,939,675	$24,311,481	$2,692,024	$27,003,505	$24,904,897	$3,066,106	$27,971,003
B. Amounts Received for License Contract Services:	...	...	# (4-1/2%)	...	...	# (4-1/4%)	...	...	# (4-1/2%)	...	...	# (4%)
From Licensee Companies	...	...	$24,309,368	...	...	$26,784,492	...	...	$30,197,214	...	...	$29,850,303
From Long Lines Department	...	...	1,592,181	...	...	1,593,209	...	...	1,768,414	...	...	1,696,400
Total Receipts for License Contract Services	...	...	$25,901,549	...	...	$28,377,701	...	...	$31,965,628	...	...	$31,546,703
Balance	...	...	$4,631,859	...	...	$4,438,026	...	...	$4,962,123	...	...	$3,575,700
†Average Cost of Funds during year	...	...	6.87%	...	...	6.85%	...	...	6.93%	...	...	6.83%

* These costs do not include any amounts for Contingencies.
# Represents per cent of certain gross revenues, received as per License Contract.

Apr. 17, 1931.

American Telephone and Telegraph Company

A.—Estimate of Costs Incurred in Rendering License Contract Services*

B.—Amounts Received for License Contract Services

	1927			1928			1929			1930		
	Direct Costs	Indirect Costs	Total	Direct Costs	Indirect Costs	Total	Direct Costs	Indirect Costs	Total	Direct Costs	Indirect Costs	Total
A. Costs of Rendering License Contract Services:												
Departmental:												
Development and Research	$5,386,349		$5,386,349	$5,526,817		$5,526,817	$7,090,199		$7,090,199	$9,556,804		$9,556,804
Operation and Engineering	3,562,940		3,562,940	3,813,983		3,813,983	4,102,105		4,102,105	4,340,568		4,340,568
Operation—General	233,029		233,029	254,250		254,250	268,793		268,793	277,792		277,792
Personnel	805,419	$132,996	938,415	784,693	$139,725	924,418	896,496	$159,810	1,056,306	926,338	$173,935	1,100,273
Information	759,142	30,555	789,697	996,146	37,852	1,033,998	1,314,266	32,904	1,347,170	1,318,276	33,335	1,351,611
Public Relations	27,471		27,471	27,878		27,878	35,741		35,741	49,467		49,467
Legal	720,319	76,415	796,734	936,315	93,015	1,029,330	591,505	101,222	692,727	861,264	105,767	967,031
Comptroller	1,295,176	117,055	1,412,231	1,359,470	125,001	1,484,471	1,435,557	131,265	1,566,822	1,561,324	143,338	1,704,662
Treasurer	194,147	908,983	1,103,130	193,483	1,454,743	1,648,226	191,899	1,399,164	1,591,063	337,044	2,162,630	2,499,674
Secretary	5,076	58,558	63,634	5,397	63,066	68,463	5,847	63,501	69,348	6,178	62,206	68,384
General Service Bureau	379,196	61,729	440,925	391,442	74,560	466,002	426,758	81,287	508,045	460,776	94,376	555,152
Sundry Items	57,148	819,776	876,924	25,783	751,299	777,082	25,811	778,116	803,927	249,099	766,467	1,015,566
Total Departmental Costs	$13,425,412	$2,206,067	$15,631,479	$14,315,657	$2,739,261	$17,054,918	$16,384,977	$2,747,269	$19,132,246	$19,944,930	$3,542,054	$23,486,984
Instrument Maintenance	5,217,807		5,217,807									
Taxes	2,196,068	1,144,002	3,340,070	285,189	1,386,683	1,671,872	94,405	923,697	1,018,102	26,611	962,287	988,898
Cost (net) of carrying investment in physical property used in rendering License Contract Services†	1,575,642	6,047	1,581,689	40,331	7,442	47,773	42,924	7,409	50,333	45,920	8,022	53,942
Cost (net) incurred in holding funds available during year to meet cash requirements of Licensee Companies†	2,464,839	330,243	2,795,082	2,519,440	325,934	2,845,374	980,607	357,018	1,337,625	4,188,557	390,432	4,578,989
Cost (net) of Temporary Financing†	1,827,556	12,053	1,839,609	1,039,700	11,730	1,051,430	2,444,214	8,322	2,452,536	1,134,848	2,602	1,137,450
Total	$26,707,324	$3,698,412	$30,405,736	$18,200,317	$4,471,050	$22,671,367	$19,947,127	$4,043,715	$23,990,842	$25,340,866	$4,905,397	$30,246,263
Deduct from "Indirect Costs" estimated amount of corporate expenses attributable to ownership of System Securities and related expenses		1,800,000	1,800,000		2,000,000	2,000,000		2,250,000	2,250,000		2,500,000	2,500,000
Total Costs incurred in rendering License Contract Services*	$26,707,324	$1,898,412	$28,605,736	$18,200,317	$2,471,050	$20,671,367	$19,947,127	$1,793,715	$21,740,842	$25,340,866	$2,405,397	$27,746,263
B. Amounts Received for License Contract Services			# (4%)			# (2%)			# (1½%)			# (1½%)
From Licensee Companies			$32,454,652			$17,622,365			$14,455,588			$15,025,890
From Long Lines Department			1,788,032			1,581,797			1,422,935			1,485,249
Total Receipts for License Contract Services			$34,242,684			$19,204,162			$15,878,523			$16,511,139
Balance			$5,636,948			‡$1,467,205			‡$5,862,319			‡$11,235,124
†Average Cost of Funds during year			6.86%			6.55%			6.53%			6.25%

* These costs do not include any amounts for Contingencies.

# Represents per cent of certain gross revenues, received as per License Contract.

‡ Red figures.

April 17, 1931.

[fol. 4218]

American Telephone and Telegraph Company

1.—Estimate of Costs Incurred in Rendering License Contract Services:

2.—Amounts Received for License Contract Services

	1931		
	Direct Costs (i. e. Costs Definitely Allocable to License Contract Services)	Indirect Costs (i. e. Costs Incurred Jointly for (a) License Contract Services and (b) Other Activities)	Total
1. Costs of Rendering License Contract Services:			
Departmental:			
Development and Research	$8,882,166	$0	$8,882,166
Operation and Engineering	4,234,967	0	4,234,967
Operation—General	273,631	0	273,631
Personnel	927,187	153,508	1,080,695
Information	1,268,162	39,318	1,307,480
Public Relations	38,439	0	38,439
Legal	817,142	98,483	915,625
Comptroller	1,567,221	124,854	1,692,075
Treasurer	351,456	1,300,826	1,652,282
Secretary	5,128	51,215	56,343
General Service Bureau	450,493	67,315	517,808
Sundry Items (Including Administration)	25,559	726,212	751,771
a) Total Departmental Costs	$18,841,551	$2,561,731	$21,403,282
b) Instrument Maintenance	0	0	0
c) Taxes	42,352	1,495,008	1,537,360
d) Cost (net) of carrying investment in physical property used in rendering License Contract Services‡	51,703	6,834	58,537
e) Cost (net) incurred in holding funds available during year to meet cash requirements of Licensee Companies‡	3,820,591	561,866	4,382,457

American Telephone and Telegraph Company

1.—Estimate of Costs Incurred in Rendering License Contract Services

2.—Amounts Received for License Contract Services

	1931		
	Direct Costs (i. e. Costs Definitely Allocable to License Contract Services)	Indirect Costs (i. e. Costs Incurred Jointly for (a) License Contract Services and (b) Other Activities)	
f) Cost (net) of Temporary Financing‡	$ 1,706,913	$ 2,615	$ 1,709,528
g) Total	$24,463,110	$4,628,054	$29,091,164
h) Deduct from "Indirect Costs" estimated amount of corporate expenses attributable to ownership of System Securities and related expenses ("Other Activities")		2,500,000	2,500,000
i) Total Costs incurred in rendering License Contract Services	$24,463,110	$2,128,054	$26,591,164
2. Amounts Received for License Contract Services:			*(1½%)
From Licensee Companies			$14,718,361
From Long Lines Department			1,417,094
Total Receipts for License Contract Services			$16,135,455
Balance			$10,455,709*
‡ Average Cost of Funds during year			6.42%

: These costs do not include any amounts for contingencies.
* Red Figure.
* Represents per cent of certain gross revenues, received as per License Contracts.

(Here follow side folios 4219-4222)

EXHIBIT D-119

HISTORICAL DATA FOR MORTALITY STUDY OF CENTRAL OFFICE EQUIPMENT

NAME OF CENTRAL OFFICE ....

NAME OF EXCHANGE ....

TYPE OF SWITCHBOARD ....

3774A

COMPANY ....

CALENDAR YEAR (1)	ACTUAL GROSS ADDITIONS (2)	ACTUAL RETIREMENTS AMOUNT (3)	ACTUAL RETIREMENTS YEAR INSTALLED (4)	INDEX NUMBERS FOR GROSS ADDITIONS (5)	INDEX NUMBERS FOR RETIREMENTS (6)	ADJUSTED GROSS ADDITIONS (7)	ADJUSTED RETIREMENTS (8)	ADJUSTED AMOUNT IN SERVICE ON DEC. 31 OF EACH YEAR (9)	(10)	(11)	(12)	(13)
1926	378 077	93						377 984	188 992	188 992	378 077	.50
1927	212 667	391						590 260	188 992 295 130	673 114	590 744	1.14
1928	21 828	1,269						610 819	295 130 305 410	1 273 654	612 572	2 08
1929	12 840	3 211						620 448	305 409 310 224	1 889 287	625 412	3 02
1930	61 300	500						681 348	310 224 340 674	2 540 185	686 712	70
1931	71 000	3,100						749 248	340 674 374 624	3 255 483	757 712	4 30
1932	289 300	4 200						1 024 348	374 624 512 174	4 142 281	1 047 012	3 96
1933	109 200	3 500						1 140 048	512 174 570 024	5 224 479	1 156 212	4 53
1934	170 000	700						1 309 348	570 024 654 674	6 459 177	1 326 212	4 87
1935	95,000	200						1 404 148	654 674 702 074	7 815 925	1 421 212	5 50
1936	87 700	200						1 491 648	702 074 745 824	9 263 823	1 508 912	6 14
1937	91,600	300						1 582 948	745 824 791 474	10 801 121	1 600 512	6 75
1938	86,000	400						1 668 648	791 474 834 324	12 426 849	1 686 512	7.37
1939	69,900	200						1 738 248	834 324 869 124	14 130 267	1 756 412	8 04
1940	63,800	200						1 801 848	869 124 900 924	15 900 315	1 820 212	8 74
1941	51,900	100						1 853 648	900 924 926 824	17 728 063	1 872 112	9.47
1942	56,300	500						1 909 448	926 824 954 724	19 609 611	1 928 412	10.17
1943	55,000	300						1 964 148	954 724 982 074	21 546 409	1 983 412	10 36
1944	26000	1 990 148						0	982 074 0	22 528 483	2 009 412	11.21

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Ex D 119

5

EXHIBIT D-120

3774B

HISTORICAL DATA FOR MORTALITY STUDY OF BUILDINGS

NAME OF BUILDING

MEE[illegible]

NAME OF EXCHANGE

[illegible]

COMPANY

TYPE OF BUILDING

CALENDAR YEAR	ACTUAL GROSS ADDITIONS	ACTUAL RETIREMENTS	INDEX NUMBERS FOR GROSS ADDITIONS	INDEX NUMBERS FOR RETIREMENTS	ADJUSTED GROSS ADDITIONS	ADJUSTED RETIREMENTS	ADJUSTED AMOUNT IN SERVICE ON DEC. 31 OF EACH YEAR	AVERAGE AMOUNT IN SERVICE EACH YEAR	ACCUMULATIVE DOLLAR YEARS ~ DEC. 31 OF EACH YEAR	ACCUMULATIVE GROSS ADDITIONS DEC. 31 OF EACH YEAR	AVERAGE REALIZED LIFE DEC. 31 OF EACH YEAR
1926	235,560						235,560	117,780	117,780	235,560	.50
1927	1,826	341					237,045	117,780 118,522	354,082	237,386	1.49
1928	656						237,701	118,523 118,[illegible]	591,455	238,042	2.48
1929	179						237,880	118,851 118,940	829,246	238,221	3.48
1930							237,850	118,940 118,940	1,067,126	238,221	4.48
1931	152,000	10,000					379,880	118,940 189,940	1,376,606	390,221	3.53
1932							379,880	189,940 189,940	1,755,886	390,221	4.50
1933							379,880	189,940 189,940	2,135,766	390,221	5.47
1934							379,880	189,940 189,940	2,515,646	390,221	6.45
1935							379,880	189,940 189,940	2,895,526	390,221	7.42
1936							379,880	189,940 189,940	3,275,406	390,221	8.39
1937							379,880	189,940 189,940	3,655,286	390,221	8.37
1938							379,880	189,940 189,940	4,035,166	390,221	10.34
1939							379,880	189,940 189,940	4,415,046	390,22	11.31
1940							379,880	189,940 189,940	4,794,926	390,221	12.29
1941							379,880	189,940 189,940	5,174,806	390,221	13.26
1942							379,880	189,940 189,940	5,554,686	390,22	14.23
1943							379,880	189,940 189,940	5,934,566	390,221	15.21
1944	665,000	75,000					949,880	189,940 474,940	6,599,446	1,035,221	6.37
							949,880	474,940 474,940	7,549,326	1,035,221	7.29
							949,880	474,940 474,940	8,499,206	1,035,221	8.21
							949,880	474,940 474,940	9,449,086	1,035,221	9.13
							949,880	474,940 474,940	10,398,966	1,035,221	10.05
							949,880	474,940 474,940	11,348,846	1,035,221	10.96
							949,880	474,940 474,940	12,298,726	1,035,221	11.88
							949,880	474,940 474,940	13,248,606	1,035,221	12.80
							949,880	474,940 474,940	14,198,486	1,035,221	13.72
							949,880	474,940 474,940	15,148,366	1,035,221	14.63
1954	95,000	10,000					1,034,880	474,940 517,440	16,140,746	1,130,221	14.28
							1,034,880	517,440 517,440	17,175,626	1,130,221	15.20
							1,034,880	517,440 517,440	18,210,506	1,130,221	16.11
							1,034,880	517,440 517,440	19,245,386	1,130,221	17.03
							1,034,880	517,440 517,440	20,280,266	1,130,221	17.94
1959							1,034,880	517,440 517,440	21,315,146	1,130,221	18.86

$ 120

HISTORICAL DATA FOR MORTALITY STUDY OF BUILDINGS

NAME OF BUILDING

[illegible]
NAME OF EXCHANGE

TYPE OF BUILDING

ILLINOIS BELL TELEPHONE
COMPANY

P. 2

CALENDAR YEAR	ACTUAL GROSS ADDITIONS	ACTUAL RETIREMENTS	INDEX NUMBERS		ADJUSTED GROSS ADDITIONS	ADJUSTED RETIREMENTS	ADJUSTED AMOUNT IN SERVICE ON DEC. 31 OF EACH YEAR	AVERAGE AMOUNT IN SERVICE EACH YEAR	ACCUMULATIVE DOLLAR YEARS DEC. 31 OF EACH YEAR	ACCUMULATIVE GROSS ADDITIONS DEC. 31 OF EACH YEAR	AVERAGE REALIZED LIFE DEC. 31 OF EACH YEAR
			FOR GROSS ADDITIONS	FOR RETIREMENTS							
1960							1,034,880	517,440 517,440	22,350,026	1,130,221	19.77
							1,034,880	517,440 517,440	23,384,906	1,130,221	20.69
							1,034,880	517,440 517,440	24,419,786	1,130,221	21.61
							1,034,880	517,440 517,440	25,454,666	1,130,221	22.52
1964	100,000	11,000					1,123,880	517,440 561,940	26,534,046	1,230,221	21.57
							1,123,880	561,940 561,940	27,657,926	1,230,221	22.48
							1,123,880	561,940 561,940	28,781,806	1,230,221	23.40
							1,123,880	561,940 561,940	29,905,686	1,230,221	24.31
							1,123,880	561,940 561,940	31,029,566	1,230,221	25.22
							1,123,880	561,940 561,940	32,153,446	1,230,221	26.14
							1,123,880	561,940 561,940	33,277,326	1,230,221	27.05
							1,123,880	561,940 561,940	34,401,206	1,230,221	27.96
							1,123,880	561,940 561,940	35,525,086	1,230,221	28.87
							1,123,880	561,940 561,940	36,648,966	1,230,221	29.79
1974	62,000	9,000					1,176,880	561,940 588,440	37,799,346	1,292,221	29.25
							1,176,880	588,440 588,440	38,976,226	1,292,221	30.16
							1,176,880	588,440 588,440	40,153,106	1,292,221	31.07
							1,176,880	588,440 588,440	41,329,986	1,292,221	31.98
							1,176,880	588,440 588,440	42,506,866	1,292,221	32.89
							1,176,880	588,440 588,440	43,683,746	1,292,221	33.81
							1,176,880	588,440 588,440	44,860,626	1,292,221	34.72
							1,176,880	588,440 588,440	46,037,506	1,292,221	35.63
							1,176,880	588,440 588,440	47,214,386	1,292,221	36.54
							1,176,880	588,440 588,440	48,391,266	1,292,221	37.45
1984		1,176,880					0	588,440 0	48,979,706	1,292,221	37.90

DEFENDANT'S EXHIBIT D-121

3774

HISTORICAL DATA FOR MORTALITY STUDY OF CENTRAL OFFICE EQUIPMENT

Beverly
Chicago
No. 1 Common Battery

Illinois Bell Telephone Co.

CALENDAR YEAR	ACTUAL GROSS ADDITIONS	ACTUAL RETIREMENTS		INDEX NUMBERS		ADJUSTED GROSS ADDITIONS	ADJUSTED RETIREMENTS	ADJUSTED AMOUNT IN SERVICE ON DEC. 31 OF EACH YEAR				
		AMOUNT	YEAR INSTALLED	FOR GROSS ADDITIONS	FOR RETIREMENTS							
1914	77,148	17						77,131	[illegible]	38,566	77,148	.50
1915	926	308						77,749	[illegible]	116,006	78,074	1.49
1916	456	77						78,128	[illegible]	193,944	78,530	2.47
1917	725	100						78,753	[illegible]	272,385	79,255	3.44
1918	15,084	1,434						92,403	[illegible]	357,963	94,339	3.79
1919	2,158	60						94,501	[illegible]	451,415	96,497	4.68
1920	1,424	107						95,818	[illegible]	546,574	97,921	5.58
1921	9,682	589						104,911	[illegible]	646,939	107,603	6.01
1922	25,081	402						129,590	[illegible]	764,189	132,684	5.76
1923	78,435	910						207,115	[illegible]	932,542	211,119	4.42
1924	5,404	684						211,835	[illegible]	1,142,017	216,523	5.27
1925	102,172	502						313,505	[illegible]	1,404,687	318,695	4.41
1926	55,470	33,210						335,765	[illegible]	1,729,322	374,165	4.62
1927	47,580	1,922						381,423	[illegible]	2,087,916	421,745	4.95
1928	119,344	1,386						499,381	[illegible]	2,528,318	541,089	4.67
1929	58,074							557,455	[illegible]	3,056,736	599,163	5.10
1930	76,500	300						633,655	[illegible]	3,652,291	675,663	5.41
1931	83,300	2,500						714,455	[illegible]	4,326,346	758,963	5.70
1932	80,800	3,100						792,155	[illegible]	5,079,651	839,763	6.05
1933	93,500	2,900						882,755	[illegible]	5,917,106	933,263	6.34
1934	88,100	600						970,255	[illegible]	6,843,611	1,021,363	6.70
1935	65,000	100						1,035,155	[illegible]	7,846,316	1,086,363	7.22
1936	54,400	200						1,089,355	[illegible]	8,908,571	1,140,763	7.81
1937	49,500	200						1,138,655	[illegible]	10,022,576	1,190,263	8.42
1938	43,000	300						1,181,355	[illegible]	11,182,581	1,233,263	9.07
1939	34,000	200						1,215,155	[illegible]	12,380,836	1,267,263	9.77
1940	36,000	1,251,155						0	[illegible]	12,988,413	1,303,263	9.97

Beverly

[fol. 4223]

EXHIBIT D-122

American Telephone and Telegraph Company

Instrument Credit, Bell System

	1923	1924	1925	1926	1927
1. Average Current Cost	$36,712,948	$42,095,239	$46,392,461	$48,421,792	$46,937,162
2. Actual Depreciation (8% of Item 1)	2,937,036	3,367,619	3,711,397	3,873,743	3,754,973
3. Current Cost less 8% Depreciation (Item 1 less Item 2)	33,775,912	38,727,620	42,681,064	44,548,049	43,182,189
4. Depreciation Expense—7% of Current Cost (Item 1)	2,569,906	2,946,667	3,247,472	3,389,525	3,285,601
5. Return on Current Cost less 8% Depreciation (8% of Item 3)	2,702,073	3,098,210	3,414,485	3,563,844	3,454,575
6. Total, Items 4 and 5	5,271,979	6,044,877	6,661,957	6,953,369	6,740,176
7. Margin for Additional Instruments (6% of Item 6)	316,319	362,693	399,717	417,202	404,411
8. Instrument Repairs	1,086,422	1,328,873	1,613,737	2,033,810	2,066,815
9. Total, Items 6, 7 and 8	6,674,720	7,736,443	8,675,411	9,404,381	9,211,402

[fol. 4224] Exhibit D-123

The Straight-line Depreciation Accounting Practice of Telephone Companies in the United States

(Paper Presented to International Congress on Accounting, New York, September 9-14, 1929)

When the telephone business originated, a little over fifty years ago, electrical science was in its infancy.

There was no accumulated knowledge or experience to which the telephone engineer could have recourse; indeed there was no such person as an electrical engineer as we use the term today. There was no college which taught electrical engineering. There were no electric power lines, no trolley cars.

The telephone was not an improvement upon something previously existing—it was wholly new and strange. When the instruments were made commercially available, the whole science and art of telephony was still to be created. There was no switchboard, no signalling apparatus, no knowledge regarding the telephone line circuit or indeed of any of the facts that have since been found needed to make the telephone a reliably useful thing.

Everything had to be worked out and energetic research and development work brought a continuous flow of inventions. Equipment which had been the best yesterday was today dethroned by something later and better.

In addition to rapid advances in the art affecting all parts of the investment, telephone plants in the open were partially destroyed by storms or other casualties. The great enemy of the outdoor plant proved to the the sleet storm.

The early telephone wire lines in cities, which were almost exclusively aerial, soon became unsightly and incon-[fol. 4225] venient and as the size of the plants increased public convenience and necessity were served by the progressive substitution of aerial cables for open wires and later by the introduction of underground conduits and cables which removed many of the lines from sight altogether.

Early Recognition of Depreciation by Telephone Men

Telephone men were thus early brought to a realization that the maintenance cost of providing telephone service included something more than the day-to-day upkeep of the property; it included the cost occasioned by the using up of major portions of the property.

The first circular recommending a system of telephone accounts was sent out by the American Bell Company to its various local licensee companies throughout the coutry in 1884. Written at a time when depreciation accounting had generally received but scant attention in the business and industrial concerns of America, this circular clearly recognized depreciation as a cost of operation. It said, in part:

> * * * It is certain that the present expense for Repairs and Reconstruction is not proportionate to the actual deterioration of property and that in future years the revenue of most companies will be subjected to much heavier charges on this account. It is suggested that a reserve fund be set apart, to which shall be carried such part of the annual profits as represents the estimated amount of yearly depreciation not covered by the expenditure on account of Repairs and Reconstruction.

A depreciation rate of 10% was suggested in this circular as a reasonable composite rate for all classes of telephone property taken together.

Neglect of depreciation was one of the historical causes of financial disaster to many of the smaller telephone companies in the United States and the ability of the companies of the Bell System and various of the independent companies to maintain themselves is undoubtedly traceable [fol. 4226] in part to a better perception of the nature of depreciation in the operating property.

Present Accounting

About the years 1908 to 1910 the Bell Companies generally were making provision for depreciation by charging operating expenses with the difference between (a) the amount of depreciation expense computed by the application to the property in use during the year of the current depreciation rates and (b) the amount of depreciation overcome by that year's reconstruction. Since that time, the general practice has been to charge operating expense and credit depreciation reserve with the full amount of the accruing depreciation for the year and to charge against the accumulated reserve the losses on property retired; all depreciation transactions being thus mirrored by the reserve.

In 1912, the Interstate Commerce Commission promulgated a Uniform System of Accounts, mandatory for use after December 31st of that year by all of the larger telephone companies throughout the United States. The mandatory system (still in effect) required the use of depreciation reserve accounting and assigned depreciation to the operating expenses as a branch of Maintenance; the annual depreciation charges against earnings to be in such amounts as should distribute, as nearly as may be, evenly throughout the service life of the property, the cost of property consumed in operations. This is accomplished by the "Straight-Line" method.

The formal recognition of depreciation as an operating expense by the government authorities was very satisfactory to the telephone accountants at the time, for in view of the characteristics of the telephone business, they regarded—as indeed they still do—a sound method of depreciation accounting as imperative for it.

The universal agreement on this point among both [fol. 4227] Bell and independent telephone companies and the government experts is significant.

Characteristics of Depreciable Telephone Property

Some of the characteristics of the telephone business of importance in this relation are:

Growth

The business has increased in a half century amazingly. Beginning with a few hundred thousand dollars in 1878, the Bell Companies had in 1917 plants which had a first cost of over one billion dollars. From 1917 to 1923 another billion dollars was added, as net property additions. At pres- [fol. 4228] ent these companies have more than three and a quarter billions of dollars of telephone property and the four billion mark will be passed shortly after the close of this decade. The telephone companies not comprised in the Bell System also have very considerable growing property investments.

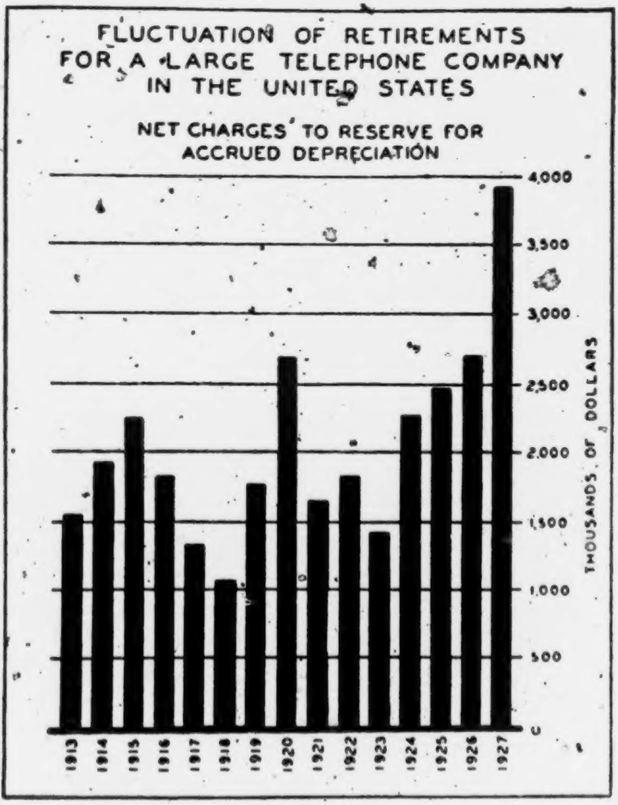

FIG. 4

Short Service Life

Due to wear and tear, changes in the art, storms and casualties, public requirements and above all to inadequacy due to growth of the service, most telephone plant has a relatively short service life; the average composite life of the plant as a whole, excluding underground conduit being less than fifteen years.

Fluctuation in Retirements

Retirements are by no means uniform from year to year. They fluctuate over a wide range, not merely for the individual classes of plant, but for all of the classes taken together. The annual fluctuations are so serious that if the net retirement charges for the year were taken into the operating expenses in lieu of the proper depreciation accrual, these expenses—in addition to seriously understating the true expense of depreciation—would be highly irregular.

Location of Property

A large percentage of telephone property is placed upon premises not under the control of the telephone company, such as public buildings, highways and alleys and the premises of its individual subscribers. This property is subject to the changing conditions affecting such public or private property, as well as to ordinary depreciation hazards.

With these special characteristics of the telephone business in view, the suitability of the straight-line method will be apparent probably to most accountants. But not everyone is an accountant and it has frequently been necessary [fol. 4229] to explain and to defend the fundamental soundness of the depreciation rules of the telephone companies.

The Theory of "Straight-line" Telephone Depreciation

The Bell System's position in respect of straight-line depreciation accounting admits of very simple statement.

The operating expenses to be entire must reflect the cost of all of the things purchased and used up in conducting the operations. This includes the cost of some things which are used up at once or in a short time, such as operating labor, lunch room supplies, coal or stationery; and of other things which are used up slowly, such as tools, furniture, automobiles, poles and switchboards. The ultimate cost of a service must include the cost of everything used up in furnishing it, and if a telephone company in the rendition of its telephone service uses up any property, then the cost of that property is necessarily a part of the cost of that service.

The function of the accounts is to record the facts as to the transactions of the company. Any item of operating cost is an operating expense. If any item of such cost is omitted from the operating expenses they will not reflect the facts. Granting that the cost of property used up is operating expense, the next question which presents itself is as to the time when the expense should be charged in the accounts. It is a fundamental rule of accounting that charges for expense should be made to the accounts of the period to which the expense relates and for the benefit of which it has been incurred. The expense of depreciation is incurred within the period when the property is being employed to render the service. It should therefore be charged to operating expenses within that period.

In the case of depreciable property of long life, the books must be opened and closed many times during the life term [fol. 4230] and so the further problem arises as to how the accounts of each period can be made to provide equitably for the cost of the property which is being consumed. The straight-line method meets this problem simply, effectively and equitably. The company charges off against its revenues the actual net capital loss and only that loss, as nearly as it may be determined, and it charges to the operating expenses of any period only that proportion of the loss which is measured by the length of that period as related to the length of the entire useful life of the property lost. This practice is equitable because it reflects expense in the operating costs of successive accounting periods, only for such depreciable property as is in use for the benefit of these periods, and in an amount which is uniform and fair for each period, taken either separately or in combination with others.

There is nothing anomalous in the way this item of expense is treated under such a plan. It is the general practice to accrue within a term any expense incurred for that term regardless of when the cost is paid, whether in advance or in arrears. Taxes are accrued during the period to which the tax relates. Insurance premiums are apportioned to accounts over the life term of the policy. The same rule is followed with bond discounts and many other items. However, we should not insist that time is the sole unit of measurement applicable to the straight-line method. It has proven, so far, a quite suitable unit for employment in the telephone business, where the production and use of the service are continuous and variation in the extent of operating use causes as a rule but slight variation in the rate of wear and tear of the equipment. It is easy to conceive of cases in which the extent of use of depreciable property oscillates, or even fluctuates, widely in successive periods, and there are many industries where wear and tear is a major factor in depreciation closely associated with a varying extent of use.

The straight-line method is sufficiently versatile to per-[fol. 4231] mit the employment of time in active operation, volume of output and similar units of measurement.

It is, of course, evident from what has just been said that the Bell System depreciation reserve is a retirement reserve, not a replacement reserve. Under the theory as stated, the amount or replacements cannot affect the amount of this depreciation expense. It is what the company loses in the way of original capital consumed which determines the amount of the loss, which would be exactly the same regardless of whether or not replacements are made. Telephone companies moreover seldom make replacements in kind, some other or different equipment or construction being usually necessary. It would be impossible to estimate years ahead what replacement costs are going to be, and in any event, it is fairly centain that investors in telephone securities are not primarily interested in property as such but are interested in safeguarding the money invested in the property which so far as it will some day be lost in operations, is therefore what should be covered by the depreciation provision.

Relation of Current Maintenance to Depreciation

We define depreciation for accounting purposes as the expense occasioned by the using up of physical property employed as fixed capital. This results in a complementary definition of current maintenance as the expense occasioned by keeping such physical property in condition necessary for continued use during its service life. These definitions seem to have the simplicity and clearness characteristic of good definitions. Of course, in practice some minor concession has to be made to economy and convenience. It is the aim of the accountants of the Bell System, as it is of accountants generally, to produce results as correct as possible with reasonable limitation of expenditure for accounts and records.

[fol. 4232]

Units of Property

On this account it is the practice in specifying the items of property to be given depreciation treatment to exclude minor and inconsequential items which can be safely accounted for as part of or auxiliary to the items which are specified. For example: In the aerial cable plant, the main expenditure is for the aerial cable itself, while a minor part of the total cost is made up of suspension strand wire, clamps, rings and other hardware. The unit of property selected for depreciation purposes is: "One span of aerial cable"—one span being the length of cable suspended between two poles. If one or more spans of cable are retired, the cost of property lost is charged to the depreciation reserve and this charge covers the associated suspension strand, clamps, rings, etc. But if any amount of strand, clamps or rings is renewed to keep the composite cable structure in good working condition during the service life of the aerial cable which is the principal constituent of the structure, the charge is to current maintenance. It is not the custom to allow suspension strand and rings to remain standing in the plant after the retirement of the aerial cable which they were erected to support, but in the unlikely event that such items should so stand for a considerable time and be eventually retired by themselves, no retirement entry would be necessary for them, because the proper amount of such auxiliary items is included in the average retirement unit cost for the aerial cable.

Average Unit Costs

Generally speaking, the retirement unit costs used in the Bell System are averages of original cost per unit, so calculated and recalculated currently that if, for example, all the units in the cable account with their associated elements were to be instantaneously retired from service, the accounting procedure would then and there empty the asset account for cable, leaving it at zero. This plan gives assur-[fol. 4233] ance, on the basis of averages, that no physical property costs remain in the asset accounts after the physical property itself has in fact gone out of service.

Property Individualized

In the case of buildings, large switchboards and machines and certain other items which can be conveniently individualized for accounting purposes, actual original cost is maintained and it is not necessary to resort to the use of average costs.

Ascertainment of Service Lives on the "Group" Basis

A very imporant consideration in modern depreciation accounting is the problem of group treatment.

Our good accounting books tell us that the factors which enter into straight-line accounting for depreciation are, first, the cost of the property; second, the net salvage or junk value realizable upon the retirement of the property and third, the life in service, represented by the number of accounting periods within which the service life of the property is comprised. The proportion of expense chargeable to any single period is the consumable portion of original cost (total cost, less salvage) divided by the number of periods involved.

The amount of depreciation chargeable annually on this basis divided by the original cost of the depreciable property is the annual depreciation rate.

This is fairly simple, but a complex situation arises in actual practice because in large modern undertakings the items become so exceedingly numerous. For example, one of the large companies of the Bell System has over 721,020 poles, 12,000,000 conductor miles of wire and over 2,000,000 sets of subscribers' instruments.

It is impossible to deal with the individual service life of each item, such as a pole or a telephone instrument. It is necessary to study the behavior of large groups of such items.

(Here follows side folio 4234)

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THE "GROUP" BASIS

PRO FORMA CALCULATION OF GROUP DEPRECIATION RATE AND RESULTING ACCOUNTING TREATMENT

UNITS	SERVICE YEARS	UNIT YEARS
5	.5	2.5
7	1.5	10.5
8	2.5	20.0
10	3.5	35.0
15	4.5	67.5
35	5.5	192.5
60	6.5	390.0
90	7.5	675.0
120	8.5	1,020.0
150	9.5	1,425.0
150	10.5	1,575.0
120	11.5	1,380.0
90	12.5	1,125.0
60	13.5	810.0
35	14.5	507.5
15	15.5	232.5
10	16.5	165.0
8	17.5	140.0
7	18.5	129.5
5	19.5	97.5
1,000	x	10,000.0
10,000 ÷ 1,000 = 10 YEARS		

YEAR	INVESTMENT AT BEGINNING OF YEAR (a)	RETIREMENTS DURING YEAR (b)	AVERAGE INVESTMENT DURING YEAR (c)	ANALYSIS OF ENTRIES PASSING THROUGH "DEPRECIATION RESERVE" ACCOUNT				
				ENTRIES		BALANCE		
						ANNUAL NET		CUMULATIVE
				* CREDITS (d)	DEBITS (e)	CREDITS (f)	DEBITS (g)	NET CREDIT (h)
1	$1,000	$ 5.00	$997.50	$ 99.75	$ 5.00	$94.75	$	$ 94.75
2	995	7.00	991.50	99.15	7.00	92.15		186.90
3	988	8.00	984.00	98.40	8.00	90.40		277.30
4	980	10.00	975.00	97.50	10.00	87.50		364.80
5	970	15.00	962.50	96.25	15.00	81.25		446.05
6	955	35.00	937.50	93.75	35.00	58.75		504.80
7	920	60.00	890.00	89.00	60.00	29.00		533.80
8	860	90.00	815.00	81.50	90.00		8.50	525.30
9	770	120.00	710.00	71.00	120.00		49.00	476.30
10	650	150.00	575.00	57.50	150.00		92.50	383.80
11	500	150.00	425.00	42.50	150.00		107.50	276.30
12	350	120.00	290.00	29.00	120.00		91.00	185.30
13	230	90.00	185.00	18.50	90.00		71.50	113.80
14	140	60.00	110.00	11.00	60.00		49.00	64.80
15	80	35.00	62.50	6.25	35.00		28.75	36.05
16	45	15.00	37.50	3.75	15.00		11.25	24.80
17	30	10.00	25.00	2.50	10.00		7.50	17.30
18	20	8.00	16.00	1.60	8.00		6.40	10.90
19	12	7.00	8.50	.85	7.00		6.15	4.75
20	5	5.00	2.50	.25	5.00		4.75	
21								
TOTAL		$1,000.00		$1,000.00	$1,000.00		-0-	

*CONTRA OF CHARGES TO EXPENSE ACCOUNT "DEPRECIATION"

FIG. 5.

[fol. 4235] The first step obviously is to make such division of the asset accounts into certain groups as will insure reasonable homogeneity in the groups. The Uniform System of Accounts does this. Pole Lines are in one account, Aerial Cables in another, Open Wire in another. Subscribers' station apparatus, private branch exchanges and telephone booths are each in a separate account.

Let us consider the pole line account. As soon as we propose an accounting on the basis of groups of poles, we are faced with the fact that of the poles going into the plant in any one year, some will have a much longer life than others. Some poles will be retired because of storms, others because of public convenience, others because of the substitution of underground for overhead distribution. There will be a wide dispersion of retirements.

We have also to consider that as soon as a pole is physically retired its cost must be removed from the fixed capital account and so the depreciation rate must be applied to a changing quantity of poles. As to the group of poles installed in any one year, it will be applied always to the remainder, continually growing less, of the original number of poles. The whole of the book account for poles will cover the remainders of many such groups of poles, one group for each year of original installation.

Analogy to Life Insurance

The problem of determining average service lives for telephone plant where there is a substantial variation in age at retirement is similar to that of the life insurance actuary in determining the expectation of human life. The recorded experience upon which the studies of the life insurance actuary are based, covers large numbers of men. It shows, first, out of the total number of individuals constituting the group under observation how many were [fol. 4236] alive in each year of age and therefore "exposed to the risk of dying," to use an actuarial expression, during that year, and second, how many actually did die during each year of age. Based upon this information the life insurance actuary is able to compute rates of human mortality by age and from these to determine the related expectation of life. This latter determination is based upon the calculation of a "Life Table" consisting of a series of figures which show for an initial group of individuals at a given age the number who will survive for each successive year of age thereafter.

[fol. 4237] The ratio between the number dying in any one year and the number exposed to the risk of dying constitutes "the mortality rate" for that year of age. There is a well developed actuarial procedure by which a series of such mortality rates by age can be converted into a life expectancy for the group.

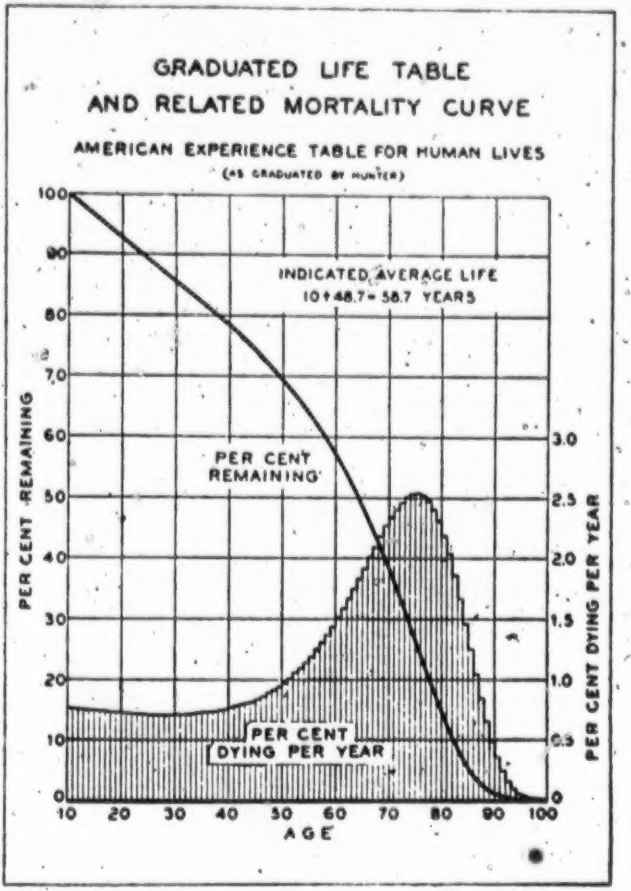

Fig. 6

Data as to retirement experience similar to the experience analyzed by the life insurance actuary are available for several important classes of telephone plant, and it has therefore been natural to apply such actuarial methods of analysis in the determination of average service lives for those classes of plant. Extended application of those methods to thousands of telephone plant life tables has demonstrated conclusively that they are entirely suitable, and it has been found that each life table can be adequately described by a mathematical formula, whose constants are separately determined from each observed life table.

Gompertz-Makeham Formula

The formula involved was first given mathematical expression by two actuaries, Gompertz and Makeham, and is widely employed at the present time by life insurance actuaries in the graduation of life tables.

One of the interesting points about the use of this formula is that in spite of its complexity, its application has been reduced to a series of routine computations which can be carried out to completion by ordinary skilled comptometer operators, working under competent supervision.

As might be anticipated, the mortality rates for any given age are by no means identical for all classes of telephone property. Indeed, they are not the same for a single class of such property for various sections of the country, and even in a particular part of the country there may be a change in the rate as the environment of the plant undergoes a change. The flexibility of the Gompertz-Makeham

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D 123

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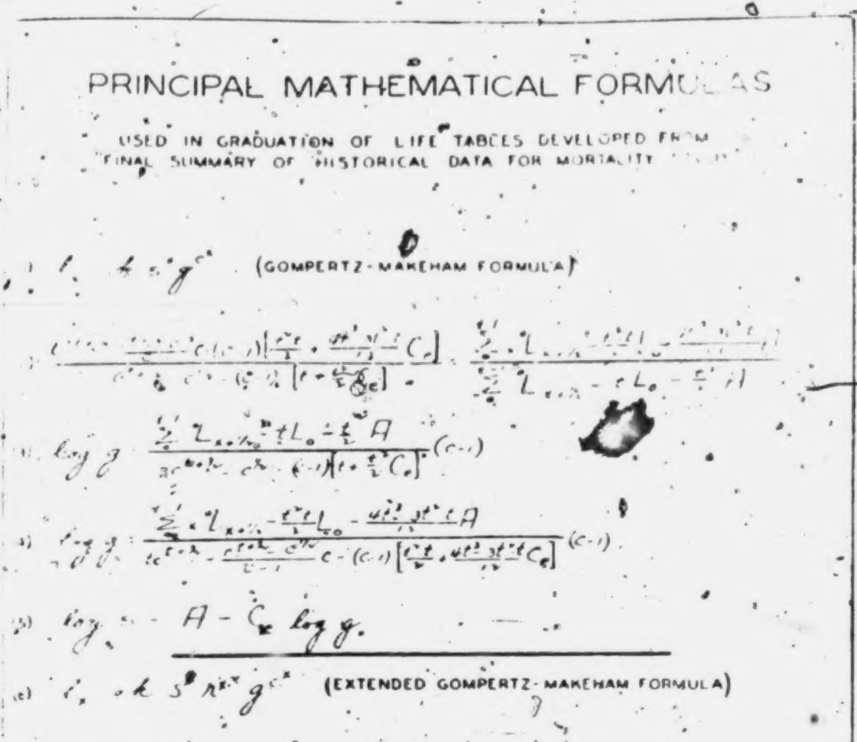

PRINCIPAL MATHEMATICAL FORMULAS

USED IN GRADUATION OF LIFE TABLES DEVELOPED FROM FINAL SUMMARY OF HISTORICAL DATA FOR MORTALITY STUDY

(1) $l_x = k s^x g^{c^x}$ (GOMPERTZ-MAKEHAM FORMULA)

(2) $$\frac{tc^{t+x_0} - \frac{c^{t+x_0}-c^{x_0}}{c-1}c - (c-1)\left[\frac{t^2-t}{2} + \frac{4t^3-3t^2-t}{12}C_e\right]}{c^{t+x_0} - c^{x_0} - (c-1)\left[t + \frac{t^2}{2}C_e\right]} = \frac{\sum_0^{t-1} x L_{x+x_0} - \frac{t^2-t}{2}L_0 - \frac{4t^3-3t^2-t}{12}A}{\sum_0^{t-1} L_{x+x_0} - tL_0 - \frac{t^2}{2}A}$$

(3) $$\log g = \frac{\sum_0^{t-1} L_{x+x_0} - tL_0 - \frac{t^2}{2}A}{c^{t+x_0} - c^{x_0} - (c-1)\left[t + \frac{t^2}{2}C_e\right]}(c-1)$$

(4) $$\log g = \frac{\sum_0^{t-1} x L_{x+x_0} - \frac{t^2-t}{2}L_0 - \frac{4t^3-3t^2-t}{12}A}{tc^{t+x_0} - \frac{c^{t+x_0}-c^{x_0}}{c-1}c - (c-1)\left[\frac{t^2-t}{2} + \frac{4t^3-3t^2-t}{12}C_e\right]}(c-1)$$

(5) $\log s = A - C_e \log g.$

(6) $l_x = k s^x r^{x^2} g^{c^x}$ (EXTENDED GOMPERTZ-MAKEHAM FORMULA)

(7) $$\frac{tc^{t+x_0} - \frac{c^{t+x_0}-c^{x_0}}{c-1}c - (c-1)\left[\frac{t^2-t}{2} + \frac{4t^3-3t^2-t}{12}C_e + \frac{t^2-t}{48}(6t^2+2t-1)C_e^2\right]}{c^{t+x_0} - c^{x_0} - (c-1)\left[t + \frac{t^2}{2}C_e + \frac{4t^3-t}{24}C_e^2\right]}$$

$$= \frac{\sum_0^{t-1} x L_{x+x_0} - \frac{t^2-t}{2}L_0 - \frac{4t^3-3t^2-t}{12}A - \frac{t^2-t}{48}(6t^2+2t-1)B}{\sum_0^{t-1} L_{x+x_0} - tL_0 - \frac{t^2}{2}A - \frac{4t^3-t}{24}B}$$

(8) $$\log g = \frac{\sum_0^{t-1} L_{x+x_0} - tL_0 - \frac{t^2}{2}A - \frac{4t^3-t}{24}B}{c^{t+x_0} - c^{x_0} - (c-1)\left[t + \frac{t^2}{2}C_e + \frac{4t^3-t}{24}C_e^2\right]}(c-1)$$

(9) $$\log g = \frac{\sum_0^{t-1} x L_{x+x_0} - \frac{t^2-t}{2}L_0 - \frac{4t^3-3t^2-t}{12}A - \frac{t^2-t}{48}(6t^2+2t-1)B}{tc^{t+x_0} - \frac{c^{t+x_0}-c^{x_0}}{c-1}c - (c-1)\left[\frac{t^2-t}{2} + \frac{4t^3-3t^2-t}{12}C_e + \frac{t^2-t}{48}(6t^2+2t-1)C_e^2\right]}(c-1)$$

(10) $\log s = A - C_e \log g$

(11) $\log r = \frac{1}{2}\left[B - C_e^2 \log g\right]$

NOTE $A = \left[\frac{dL_x}{dx}\right]_{x=0}$

$B = \left[\frac{d^2L_x}{dx^2}\right]_{x=0}$

OTHER CAPITAL LETTERS REPRESENT LOGARITHMS OF CORRESPONDING SMALL LETTERS.

FIG. 7

4238

formula is such, however, that no difficulty is introduced by [fol. 4239] these facts. A set of constants can be determined from the recorded observations, from which some one curve out of the infinite number of conceivable Gompertz-Makeham curves can be derived as representative of the mortality experience of property, of the class and in the situation under examination, and wherever the life history is not yet complete, this curve will provide a logical and scientific basis for projection of an observed life table out to its close.

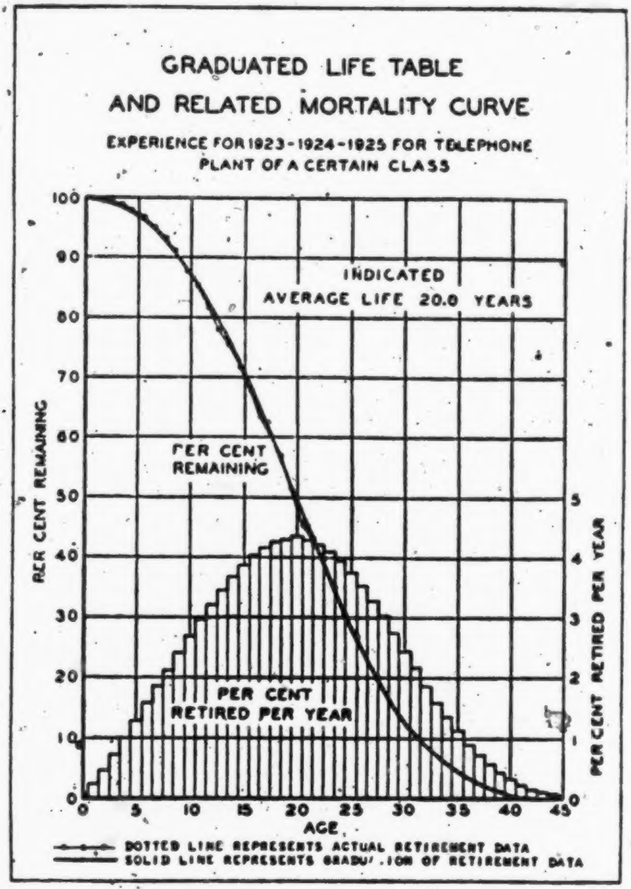

FIG. 8

One of the advantages of the actuarial method of [fol. 4240] studying plant mortality is ability to bring the depreciation studies closely up-to-date.

"Band" Analysis

Owing to improvements in the telephone art, telephone companies are today obtaining a longer average life from many plant elements than was formerly the case. For this reason a study of the retirement experience in recent years is of special significance and it is the practice to make concentrated study of portions of recorded experience, confined to a given strip or band of the tabular matter. Taking the band of say 1928 as an illustration: This would disclose the first year's retirements on plant installed one year ago, the second year's retirements on plant installed two years ago, the third year's retirements on plant installed three years ago, and so on backward, say to the thirtieth and final year's retirements on plant installed thirty years ago and now completely retired.

The band study substitutes for the complete analysis of say, 30 years' experience of one group, an analysis of one year's experience with say 30 groups, each group successively one year later in time of installation than its next predecessor group. One study scans, as it were, the warp while the other scans the woof, of the statistical fabric.

The advantages gained are first, the greater reliability of the most recent records, and second, the reflection in the results of the most recent company policy and plant administrative technique.

The two sorts of studies mentioned may be made in conjunction, the results compared and their mutual consistency derived. In practice, studies are not ordinarily made of bands for a period so short as one year. Three years is generally as narrow a band as the quantity of data will justify as adequate. The bands may be selected so as to overlap; for example, having analyzed the 1915-17 band, the next band taken may be 1916-18, then 1917-19 and so on.

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D. 123

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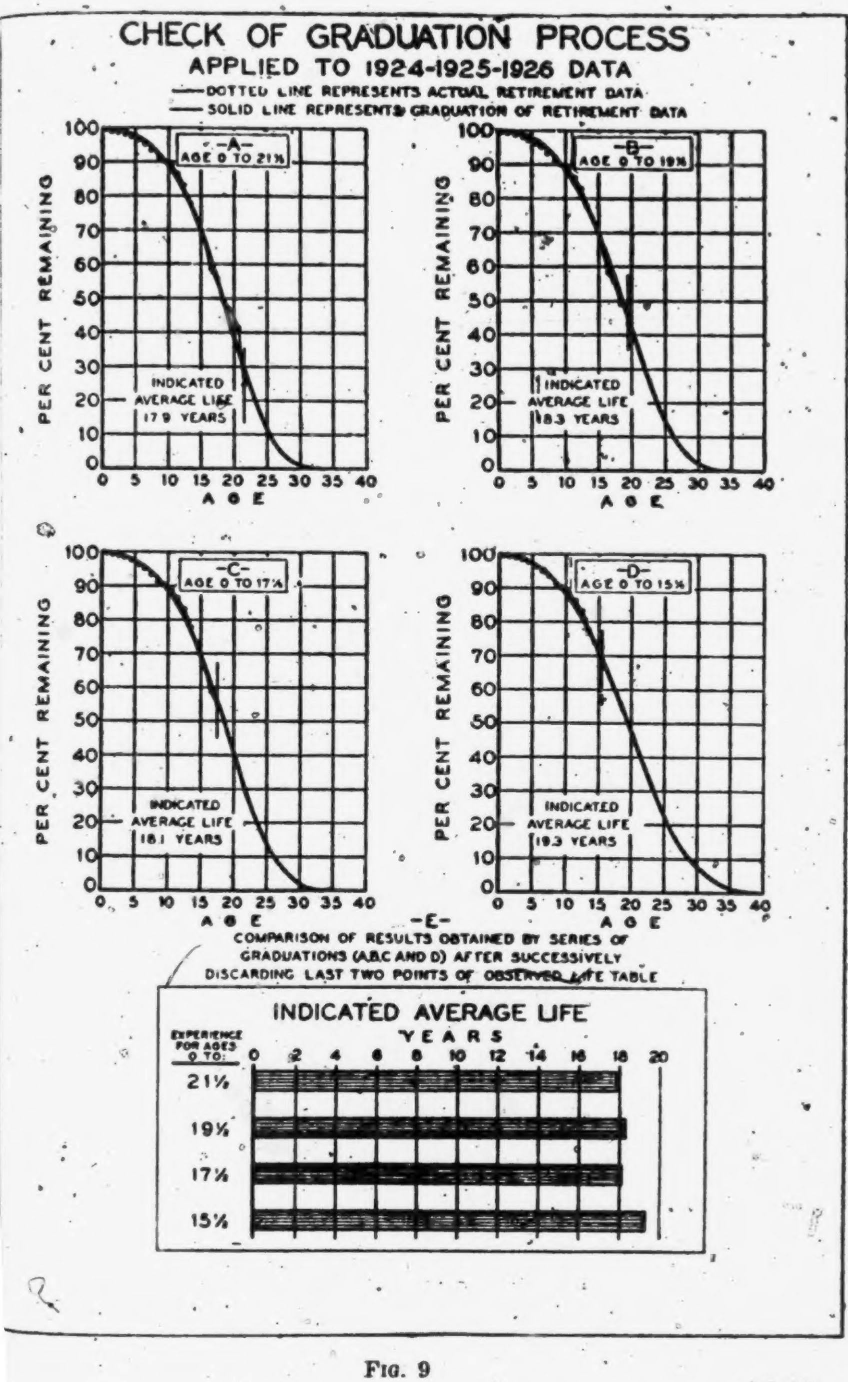

FIG. 9

4241

[fol. 4242]

Turn-over Method

For certain classes of telephone property, the actuarial method just described cannot be employed in practice on account of technical difficulties and expense in the collection of data.

For these classes, an alternative method of procedure is employed, which has been denominated the "turn-over method." Those familiar with life insurance will understand at once the fundamental principle of the turn-over plan when we say that it is the same as that which is involved in the relation of total deaths of human beings of all ages to exposed population of all ages in a non-growing community.

The accounts of the telephone companies are kept to show separately the amount of plant of each class going new into the plant in any year and the amount of old plant of each class retired from service in any year.

If the class of plant were to remain stationary in amount and stable in its life characteristics and age distribution, the average time that plant remained in service could be readily ascertained from a relation of either the retirements or the replacements to the total plant. Either the length of the period of time required for the most recent replacements to accumulate to the amount of the plant at the end of that period or the length of the period of time required for the retirements to accumulate backwards in time to the amount of the plant at the beginning of that period—the two periods being the same—would be the length of the life of plant of the given class, on the average.

Determination of the average life of telephone property on this basis is made difficult by several conditions; viz.:

a. Changes in the life characteristics of plant which occur during the period studied.

b. Changes in the purchasing power of the dollars, in which the books are kept, whereby a given number of dollars may represent more or less plant than formerly.

:

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P-23

EXAMPLE TO ILLUSTRATE PRINCIPLE OF TURNOVER METHOD

PLANT GROWING AT THE RATE OF 10% ANNUALLY

DATA IN TERMS OF PLANT COSTS – AVERAGE LIFE OF UNITS 10 YEARS

TABLE OF PLANT UNITS AND COSTS

YEAR	PLANT PLACED			PLANT RETIRED				PLANT IN SERVICE JANUARY 1st	
	NUMBER OF UNITS 1	UNIT COSTS 2	TOTAL COST 3	NUMBER OF UNITS 4	UNIT COSTS 5	TOTAL COST 6	TOTAL COST ACCUMULATED FROM 1926 7	NUMBER OF UNITS 8	TOTAL COST 9
1913	50,545	$1.00	$50,545	20,820	$1.00	$20,820		292,982	$292,982
1914	55,599	.90	50,039	23,110	1.00	23,110		322,701	322,701
1915	61,159	1.10	67,275	25,539	1.00	25,539		355,190	349,630
1916	67,275	1.60	107,640	28,163	1.00	28,163		390,810	391,366
1917	74,003	1.80	133,205	31,010	1.00	31,010		429,922	470,843
1918	81,403	1.65	134,315	34,112	1.00	34,112	$ 602,491	472,915	573,038
1919	89,543	1.40	125,360	37,523	1.00	37,523	568,379	520,206	673,241
1920	98,497	1.60	157,595	41,273	1.33	54,893	530,856	572,226	761,078
1921	108,347	1.30	140,851	45,404	1.37	62,203	475,963	629,450	863,780
1922	119,182	1.25	148,978	49,942	1.36	67,921	413,760	692,393	942,428
1923	131,100	1.35	176,985	54,935	1.34	73,613	345,839	761,633	1,023,485
1924	144,210	1.40	201,894	60,429	1.35	81,579	272,226	837,798	1,126,857
1925	158,631	1.55	245,878	66,475	1.35	89,741	190,647	921,579	1,247,172
1926	174,494	1.50	261,741	73,120	1.38	100,906	100,906	1,013,735	1,403,309
1927	-	-	-	-	-	-	-	1,115,109	1,564,144

APPLICATION OF TURNOVER METHOD

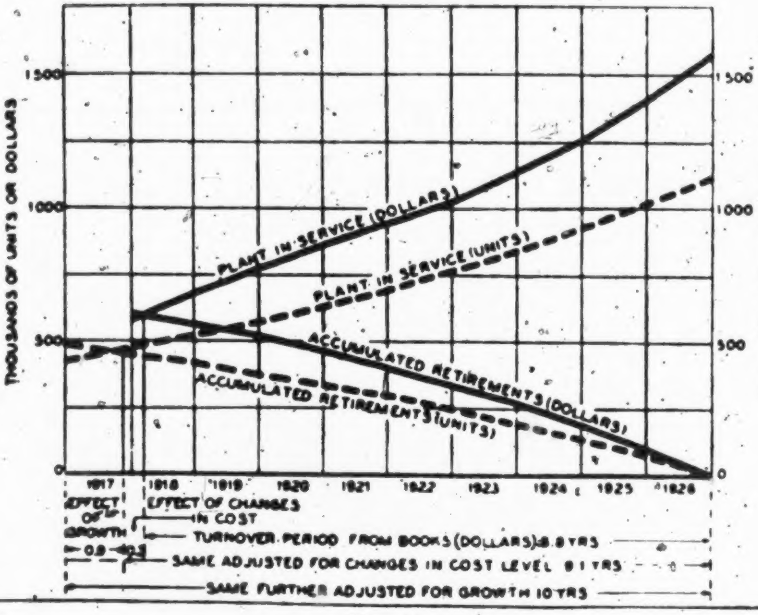

Fig. 10

[fol. 4244] c. Growth, positive or inverse, in the total plant of the given class during and preceding the period studied, which disturbs the mortality ratio. When retirements are studied, for example, positive growth introduces the condition that some of low age mortalities of the added plant which produces the growth enter the results as a disturbing element.

d. Purchases and sales of telephone plant from one company to another. These transactions operate like sudden growth.

None of these difficulties is insuperable. The changes in the characteristics of plant may be fairly well recognized. The changes in the value of money can be compensated by placing the study upon an "index number" basis. Suitable methods have been developed to make allowance for the effect upon the turn-over period of such growth as may have taken place.

The turn-over method while theoretically inferior to the actuarial method has been found practically very useful and dependable.

Special Cases—Buildings and Central Office Equipment

For two classes of telephone property, buildings and central office telephone equipment, we find that the best way to estimate the depreciation rates is to forecast how long, in view of population growth and the progress of the service, existing buildings and equipment will individually serve to meet the needs of the community.

The long-term basis upon which plant of these classes is engineered is such that forecasts of this sort can be made with a reasonable approach to accuracy and in the case of central office telephone equipment the existence of a condition peculiar to such equipment should be mentioned.

Central Office telephone equipment is usually not installed to the full capacity of the Central Office at the time of initial [fol. 4245] provision of such equipment. A certain quantity of equipment is installed sufficient to provide service for a given number of years and is added to from time to time as demand increases, the later equipment being commingled with the earlier.

We thus have a problem of growing property structures, wherein the weighted average age of the component units of the structures is much less than the overall age of the structures as operative entities.

Some interesting investigations have demonstrated the relation of average realized life of Central Office equipment to age of initial installation for various ages of the latter, and it has been found that the engineering economics in the advance provision of this class of property set rather definite limitations to the average life of the composite structures, even though the age of the first and oldest portions of the structures may be very lengthy.

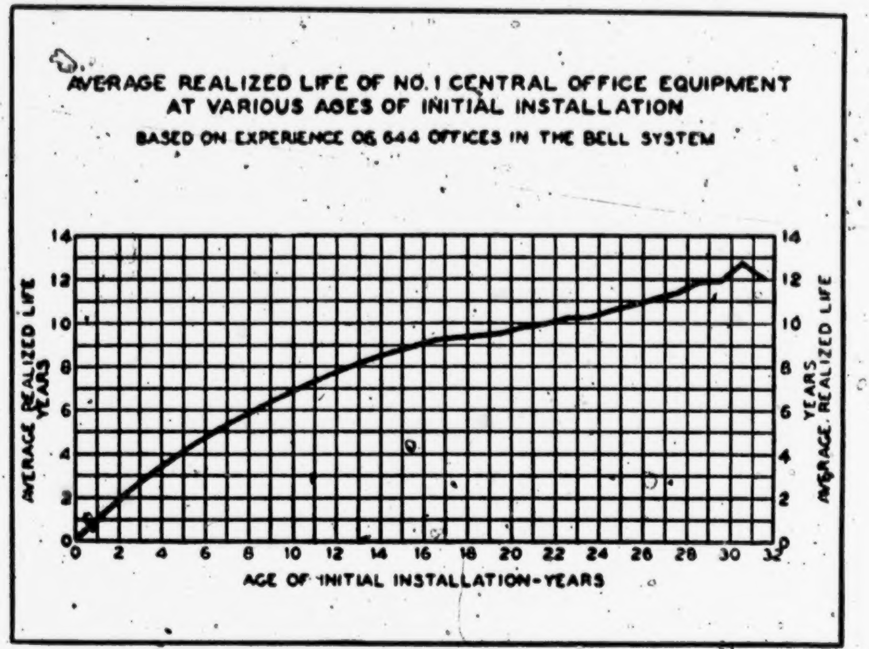

Fig. 11

In the ordinary classes of telephone property we have groups of homogeneous units, the components of which ar- [fol. 4246] rive together in a given year but gradually and variously waste away.

In the case of Central Office telephone equipment, we have the rather unusual phenomenon of groups of units which arrive from time to time and are completed in a single structure, no part of which is separable for deprecia-

SOME CAUSES OF ORDINARY DEPRECIATION OF TELEPHONE PLANT AND ILLUSTRATIONS OF THEIR EFFECTS

CAUSES OF DEPRECIATION	KIND OF DEPRECIATION (PREDICTABLE EFFECT)	PLANT CHARACTERISTICS AFFECTED	ILLUSTRATIVE CASES
ACTION OF ELEMENTS	ROT, RUST AND DECAY	PHYSICAL CONDITION	DETERIORATION OF WIRE
ORGANIC AGENCIES	ROT, RUST AND DECAY	PHYSICAL CONDITION	ROTTING OF POLES
USE IN OPERATION	WEAR AND TEAR	PHYSICAL CONDITION	DETERIORATION OF AUTOMOBILES IN USE
INJURY	WEAR AND TEAR	PHYSICAL CONDITION	UNDERGROUND CABLE INJURED BY WORKMANS PICK
STORMS AND CASUALTIES	WEAR AND TEAR	PHYSICAL CONDITION	POLES DESTROYED BY SLEET STORM
IMPROVEMENTS IN THE ART	OBSOLESCENCE	FUNCTION	SUBSTITUTION OF CALL INDICATOR POSITIONS FOR MANUAL "B" POSITIONS IN CENTRAL OFFICES
GROWTH OF COMMUNITIES SERVED	INADEQUACY	CAPACITY	SUBSTITUTION OF A LARGER UNIT, SUCH AS A SWITCHBOARD OR CABLE
MORE INTENSIVE SERVICE	INADEQUACY	CAPACITY	SUBSTITUTION OF A LARGER UNIT, SUCH AS A SWITCHBOARD OR CABLE
FIRES	DAMAGE	PHYSICAL CONDITION	BURNING OF STATION APPARATUS IN A BUILDING FIRE
ADVANCING SOCIAL STANDARDS	PUBLIC REQUIREMENTS	CHARACTER AND LOCATION	LINES RETIRED BECAUSE OF PUTTING WIRES UNDERGROUND ON THOROUGHFARES
PUBLIC CONVENIENCE	PUBLIC REQUIREMENTS	CHARACTER AND LOCATION	POLES RETIRED BECAUSE OF HIGHWAY CHANGES

FIG. 12

tion purposes because of the mutuality of relation of all of the parts, regardless of age, the entire structure being eventually retired en bloc.

[fol. 4247] "Ordinary Depreciation" vs. "Extraordinary Depreciation"

In the studies and projections previously referred to, we have been concerned with losses caused by what is generally termed "Ordinary Depreciation." However, there may be certain other operating losses, to which we have not heretofore referred, that might well be classed as "Extraordinary Depreciation."

Fundamental accounting considerations lead us to distinguish four kinds of losses:

First. Losses such as customarily result from the devotion of perishable plant to service through wear and tear, storms and other casualties, inadequacy, obsolescence, etc.; that is, "ordinary depreciation." Reasonable prudence demands proper and adequate provision for the full amount of such losses.

Second. Losses, not the ordinary outcome of use in operations but which are known from the nature of the property, to be at times the outcome of a definite hazard of employment, for example, destruction by fire. Prudence makes such provision proper as is dictated by the nature and extent of the hazard and the contingency of depreciation loss. (In the case of the Bell System, because of the nature of the property and the extraordinary precautions taken to protect the service against interruption, fire losses not covered by underwritten insurance have been of such extremely minor consequence that we prefer to consider them as covered in our provision for ordinary depreciation.)

Third. Extraordinary losses which are not common to the particular property and do not flow from the ordinary hazards of employment, which prudence does not require us to anticipate but which are nevertheless conceivable and for which the accounting system must afford the means of possible depreciation treatment. Losses due to earthquake or war or to some unforeseen revolutionary invention would come under this class. Such losses are too uncertain and remote to admit of advance provision being made by any method sufficiently definite to warrant inclusion of charges as operating expenses and, under these conditions, the blow to the assets, should it occur, must be met temporarily by [fol. 4248] the company' existing surplus, which ought to be maintained, among other things, to enable the company to outride the financial troubles induced by such unforeseen events. Their amortization must be accomplished after the event and in the telephone business we consider that it would be good accounting in order not to distort the current accounting of the time when the blow fell, to charge such losses initially to suspense and to amortize the amount involved, by installment charges, over a reasonable period of time, in a separate account under Operating Expenses to be entitled "Extraordinary Depreciation." If revenues during this process are sufficient for the purpose, the gradual accumulation in the undertaking of additional assets equivalent to the amortization installments will eventually effect a restoration of the surplus.

The fourth species of loss is that which does not affect merely individual items of plant or equivalent in a continuing industry so much as it attacks the industry as a whole. For example, there was the supersession of the wooden ship building industry when iron ships made their appearance. There was the destruction of many bicycle businesses when the automobile arrived. The risk of losses of this sort, which cripple or destroy an industry, not merely items of its equipment, must be covered, if at all, out of current profits. Such risk is one of the general hazards of business to be considered in determining what is an acceptable return from the enterprise.

With this understanding of the limitations of ordinary depreciation accounting, we may say that it covers the losses that culminate upon the retirement of property from service which are occasioned by causes known to become operative in the ordinary conduct of the undertaking and the effects of which can be forecast.

The fact that no account is taken by telephone companies of the possibility of something extraordinary happening does not mean that the eyes of telephone accountants are shut to that possibility. We simply resolve our doubts in favor of a longer rather than a shorter life, until the unforseen shall occur.

[fol. 4249] Forecasting Service Life and Salvage of Existing Property

The problem of forecasting ordinary life and salvage of telephone plant is not a difficult problem, as business and accounting problems go nowadays. It requires sufficient data, drawn largely from past experience, and the consideration and judgment of competent experts.

The telephone business has certain peculiarities which favor the correct determination of the depreciation factors of service life and salvage.

A telephone company undertakes the provision of the entire service within an area. It operates without competition of similar companies. There is a direct relation between the spread of its service and the growth of population. Telephone plant is so costly and the importance of locating central offices and distributing systems economically with reference to the spread of communities is so immense, that it is the custom of telephone engineers to prepare and continuously maintain for the exchange plants of urban centers and for toll systems, "Fundamental Plans" which look ahead for a certain number of years and furnish a dependable conspectus of the telephone situation, present and prospective, in the area.

Long-lived Property

Certain long-lived properties, such as main conduit runs and buildings of the typical American monumental type offer points of difficulty as to probable service life. The judgment of experts is of special value here and there is always opportunity to restudy the matter as the age of the units increases and the engineers obtain a farther view into the future through the Fundamental Plans. The eventual retirement of such property can be forecast as most probable, therefore a reasonable estimate—even though containing a margin of error—keeps the accounts more nearly correct from year to year than if a heavy retirement liability be conveyed to the future without any provision to meet it.

(Here follows side folio 4250)

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P 38

ILLUSTRATION OF METHOD OF DETERMINING ANNUAL DEPRECIATION EXPENSE

CLASS OF PROPERTY 1	COST 2	AVERAGE SERVICE LIFE YEARS 3	GROSS SALVAGE 4	COST OF REMOVAL 5	NET SALVAGE		PROPERTY COST USED UP		ANNUAL DEPR. RATE PER CENT (COL 9 ÷ COL 3) 10	ANNUAL DEPR EXPENSE (COL 2 × COL 10) 11
					AMOUNT 6	% OF COL 2 7	AMOUNT (COL 2 - COL 6) 8	% OF COL 2 9		
BUILDINGS	$ 82,000	30	$ 32,800	$	$ 32,800	40	$ 49,200	60	2	$ 1,640
CENTRAL OFFICE EQUIPMENT	196,000	13	47,040	15,680	31,360	16	164,640	84	6.5	12,740
STATION APPARATUS	78,000	5	54,600		54,600	70	23,400	30	6	4,680
PRIVATE BRANCH EXCHANGES	32,000	6	22,080	1,600	20,480	64	11,520	36	6	1,920
BOOTHS	4,000	6	2,760	200	2,560	64	1,440	36	6	240
EXCHANGE POLE LINES	67,000	13				0	67,000	100	8	5,360
EXCHANGE AERIAL CABLE	64,000	14	24,320	9,600	14,720	23	49,280	77	5.5	3,520
EXCHANGE AERIAL WIRE	53,000	11	21,200	7,950	13,250	25	39,750	75	6.8	3,604
EXCH. UNDERGROUND COND.	82,000	50				0	82,000	100	2	1,640
EXCH UNDERGROUND CABLE	110,000	18.5	55,000	16,500	38,500	35	71,500	65	3.5	3,850
EXCH SUBMARINE CABLE	1,300	12.5				0	1,300	100	8	104
TOLL POLE LINES	75,000	16.5				0	75,000	100	6.1	4,575
TOLL AERIAL CABLE	10,000	14	4,500	1,500	3,000	30	7,000	70	5	500
TOLL AERIAL WIRE	77,000	20	34,650	11,550	23,100	30	53,900	70	3.5	2,695
TOLL UNDERGROUND COND.	9,000	60				0	9,000	100	1.7	153
TOLL UNDERGROUND CABLE	19,000	25	10,450	2,850	7,600	40	11,400	60	2.4	456
TOLL SUBMARINE CABLE	1,000	12.5				0	1,000	100	8	80
FURNITURE AND FIXTURES	7,000	10	1,400		1,400	20	5,600	80	8	560
SHOP EQUIPMENT	100	10	20		20	20	80	80	8	8
STORE EQUIPMENT	600	10	120		120	20	480	80	8	48
GARAGE EQUIPMENT	8,000	5	2,000		2,000	25	6,000	75	15	1,200
TOOLS AND IMPLEMENTS	4,000	4	800		800	20	3,200	80	20	800
RIGHT OF WAY - EXCH.	5,000	30				0	5,000	100	3.3	165
RIGHT OF WAY - TOLL	7,000	40				0	7,000	100	2.5	175
INTEREST DURING CONSTR'N	8,000						8,000	100	5.1	409
TOTAL	$1,000,000		$313,740	$67,430	$246,310		$753,690			$ 51,122

- COMPOSITE RATE -

(A) TOTAL INVESTMENT $1,000,000 (B) TOTAL ANNUAL DEPRECIATION EXPENSE $51,122

(C) COMPOSITE DEPRECIATION RATE (B ÷ A) 5.11%

FIG. 13

[fol. 4251]

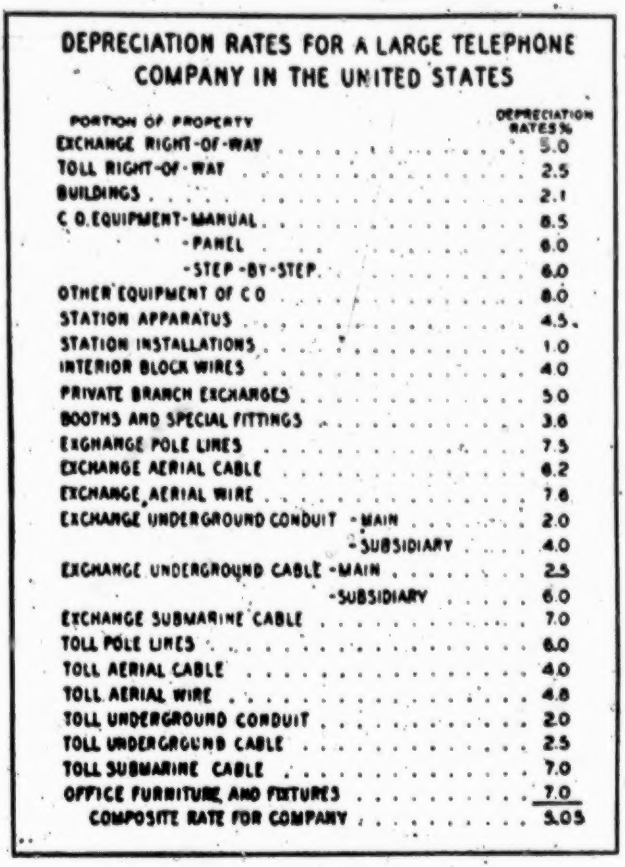
Salvage

The factor of salvage in telephone depreciation has been successfully dealt with in practice. A study recently made of plant retired, salvage on which was allowed for in the computation of depreciation rates to the amount of $122,594,000, revealed that the net salvage actually realized was $122,499,000. The chief problem in the treatment of salvage, especially for the longer-lived property, is one of secular variation in cost levels. Index number studies are very helpful in interpreting the records of the past as shown in the accounts. Existing market prices of junk material are helpful. Price changes in the future may properly be considered, if a fairly definite forecast can be made, but resort to speculation is not advisable.

The Rôle of Judgment

The proper interpretation of the data regarding plant life and salvage obtainable from accounts, records and statistics is of equal importance with the integrity of the data themselves. It would seem that we should have first: investigations of past service life and salvage through sound accounting and statistical methods; second: investigations of the conditions surrounding the employment of such plant in the past and of the extent to which such conditions still prevail; third: the best possible forecast of conditions looming in the future which should exert a modifying influence upon either life or salvage. And then, the active judgment which fuses the experience of the past, so far as it is still pertinent, and the expectation for the future, so far as it is presently pertinent, into a just and reasonable determination of the current rate of depreciation for the time being.

The ascertainment and interpretations of the facts and [fol. 4252] the making of the expert opinions and estimates must be undertaken by persons thoroughly familiar with the property and conversant with the future plans of the management. The company's future policy and program are intimately bound up with this undertaking. Fundamentally, the determination of the proper rate is a problem of management; there can be no machine solution of it.



DEPRECIATION RATES FOR A LARGE TELEPHONE COMPANY IN THE UNITED STATES

PORTION OF PROPERTY	DEPRECIATION RATES %
EXCHANGE RIGHT-OF-WAY	5.0
TOLL RIGHT-OF-WAY	2.5
BUILDINGS	2.1
C.O. EQUIPMENT-MANUAL	8.5
-PANEL	6.0
-STEP-BY-STEP	6.0
OTHER EQUIPMENT OF C.O.	8.0
STATION APPARATUS	4.5
STATION INSTALLATIONS	1.0
INTERIOR BLOCK WIRES	4.0
PRIVATE BRANCH EXCHANGES	5.0
BOOTHS AND SPECIAL FITTINGS	3.6
EXCHANGE POLE LINES	7.5
EXCHANGE AERIAL CABLE	6.2
EXCHANGE AERIAL WIRE	7.6
EXCHANGE UNDERGROUND CONDUIT -MAIN	2.0
-SUBSIDIARY	4.0
EXCHANGE UNDERGROUND CABLE -MAIN	2.5
-SUBSIDIARY	6.0
EXCHANGE SUBMARINE CABLE	7.0
TOLL POLE LINES	6.0
TOLL AERIAL CABLE	4.0
TOLL AERIAL WIRE	4.8
TOLL UNDERGROUND CONDUIT	2.0
TOLL UNDERGROUND CABLE	2.5
TOLL SUBMARINE CABLE	7.0
OFFICE FURNITURE AND FIXTURES	7.0
COMPOSITE RATE FOR COMPANY	5.05

Fig. 14

The Depreciation Reserve Account

Passing now to another phase of the subject; i. e., the depreciation reserve account in the balance sheet, which arises [fol. 4253] as a result of the accrued depreciation charges in the Income Statement.

In its origin, the "Reserve for Depreciation" account is merely the reflection under a system of double entry bookkeeping of what remains in the liabilities from the past charges for depreciation expense. The entry of prime importance is the charge to expense, which could be made equally as well under single entry bookkeeping; such a charge would be sufficient in itself to insure correct accounting. The expense charge serves the fundamentally important and useful purpose of debiting to any year or other accounting period recognized by the accounting, one of the costs of rendering telephone service during that period, namely the expense of depreciation. The total cost of that service cannot be inclusive without the item of depreciation. Along with this fundamental proposition of stating depreciation costs in periods in which they should be stated in order that the expense accounts may reflect true costs, goes the point that this procedure has the advantage of substantially equalizing the effect of property retirements. It is, of course, desirable that there be reasonable equalization, but this effect of depreciation accounting is merely a collateral effect of steps taken primarily to accomplish the purpose of spreading the retirement costs equitably over the service life to the depreciating property.

However, because double entry bookkeeping is employed and because the balance sheets of corporations which have become so important in modern times are a product of the double entry system, the reserve for depreciation, as a liability account, of itself comes to serve some important and useful purposes.

Advantages of Reserve Accounting

As an accounting consideration, the reserve account exhibits the accumulating provision for retirement of existing plant, which remains after charging off the loss on

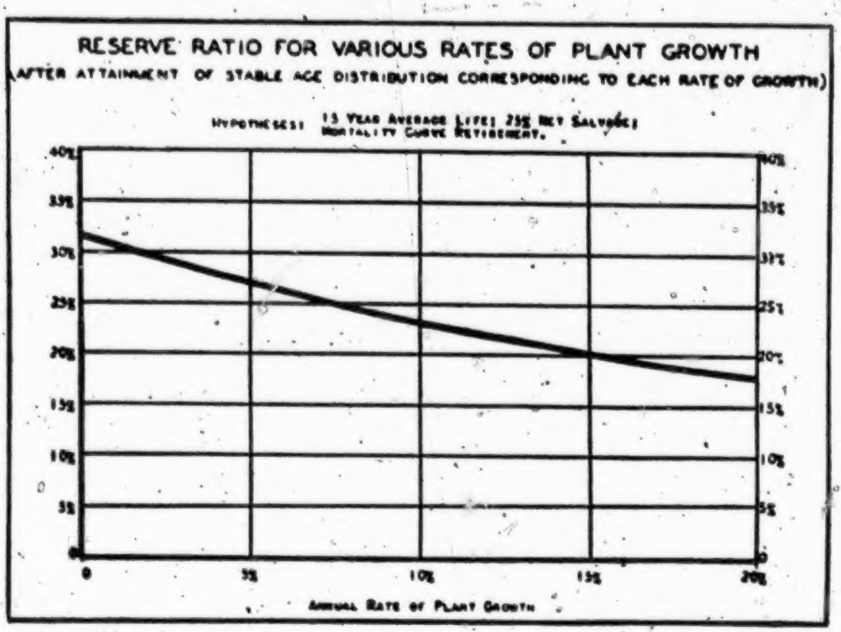


FIG. 15

[fol. 4254] items that have already been retired from service. In the same way, the reserve of a life insurance company represents the provision for meeting the accumulating liability which will mature upon the death of its policyholders.

As business considerations, several advantages of the reserve account appear. An adequate reserve account appearing in the balance sheet is a sign that the integrity of the company's assets is being maintained. The appearance of the account in this way before investors assists the companies to attract capital for extensions and betterments on favorable terms and as a result of these features, the depreciation reserve account assists a company to maintain service to its users with economy and in a high-grade manner.

Accuracy of the Reserve Account

In the course of years the reserve account assumes a prominent place in the balance sheet, and sooner or later it [fol. 4255] may become a matter of concern to know that it is reasonably correct. For this reason a knowledge of the characteristics of reserve growth is important. For any particular group of property installed at a given time the reserve account must, of course, increase steadily at first, reaching its maximum in dollars about the time of the average life and its maximum as a per cent of the property to which it relates immediately before retirement of those components of the group which achieve the longest individual lives.

For all groups of a homogeneous class taken together, the reserve account will exhibit a condition which is dependent upon the complex of the successive groups, upon their relative volume and upon their appearance and disappearance in time with respect to each other.

Theory of the Reserve Account in Growing Properties

The introduction of new groups into the class will decrease the reserve ratio: the ratio of the amount of the reserve account to the amount of the property class. Reserve ratios are lower in growing than in non-growing properties, other conditions being the same. Disregarding oscillations, a long continued uniform rate of growth tends to produce a stabilization of the reserve ratio, at a point dependent upon the particular rate of growth. If the rate of growth later increases, the reserve ratio becomes lower and will tend to stabilize at the lower figure as long as the higher rate of growth continues.

Theory of Reserve Account in Non-growing Properties

A condition of non-growth in a continuing property eventually brings about, after a stable age distribution is achieved, a reserve ratio at the highest point obtainable in a non-disappearing plant with stable age distribution. If [fol. 4256] units were always retired at the point of the average life (i. e., if they all had the same age at time of retirement), this highest ratio would be, with no salvage .50, or, with salvage, one-half of the sum derived by subtracting the ratio of salvage from 1.00; but with distributed retirements, the highest ratio must always be less than .50, for the loss of those members of the group which perish before the term of the average life occasions a greater reduction, percentagewise, in the reserve account to which their loss is charged than in the property from which their original cost is subtracted.

Effects of Group Basis of Accrual

Group accrual does not provide for the entire loss of short-lived components during their individual lives; the accrual must be carried out on the longer-lived components to the end of their lives and beyond the midpoint representing the average life of all compoents, in order to provide for the entire loss of the group as such. For this reason, it is not possible to reckon up from an examination of the ages of items presently in service how much should stand in the reserve account in respect of such items.

Retirement Expense Less Than Depreciation in Growing Properties

A knowledge of the characteristics of the ratios of current annual retirements (which are the annual gross debits to the reserve account), to the straight-line accruals for depreciation in the same year is also desirable.

In a growing plant, the annual retirement losses will be less than the current true annual expense of depreciation and the greater the rate of growth, the smaller the retirement losses will appear in comparison with the current depreciation rate, the reason being, of course, that in a growing plant there are new plant groups in operation on which [fol. 4257] depreciation is accruing but which are not yet represented, or are but slightly represented, in the retirement losses. If we conceive of a rapidly growing plant in three successive stages of its existence, such stages being representative of a period of turnover of the plant, designated A, B and C, then, speaking in averages, the retirements during B will relate for the most part to the smaller plant A, while the depreciation reserve account is currently building up to meet the greatly increased eventual retirement liability of B. Similarly in period C retirements will relate to the smaller plant B, while the accruals now relate to the greater plant C. For this reason any attempt to ascertain percentages of current depreciation expense to investment in a growing property by dividing the average retirement losses by the average plant in service during the period within which such losses culminate, involves a mathematical fallacy.

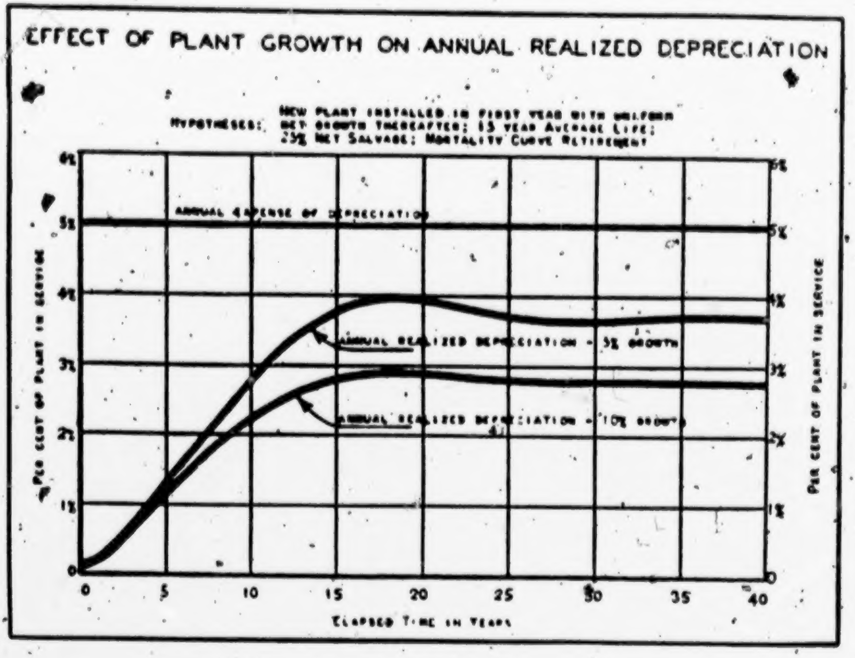


Fig. 16

[fol. 4258] Obstacles to Employment of Straight-line Method

In all that has been said so far, the practicability and indeed the desirability of the straight-line method for depreciation expense accounting has been taken for granted, but obstacles to the use of this method undoubtedly exist in some cases. The obstacles usually appearing are:

Inability to Set up a Line of Demarcation Between Current Maintenance and Depreciation.—It would seem possible generally, though perhaps not universally, to overcome this difficulty by the adoption of a system of units of property, the retirement of which would be depreciation, work on which while in service, including replacements of parts, would be current maintenance. Under this plan minor parts would be charged as depreciation only as originally embodied in the unit of which they were a part at the time of its installation and would be written off to reserve as an undivided part of the retirement loss of the unit, when the unit is removed or abandoned.

Difficulties in Forecasting Service Life.—This obstacle may in some cases appear serious, but in most instances it is unduly magnified. Most accountants probably would agree that the difficulty of accounting does not warrant entire neglect of accruing depreciation. It is the duty of a company to manage its business well and sound management may require, in many cases, ample provision for an inevitable loss, uncertain merely as to the time of its incidence. If provision should be made on some basis, probably a straight-line treatment, even with a considerable margin of error in the initial assumptions, would be reasonable, the matter to be periodically reexamined. Is it not a good rule that where difficulties in ascertaining accounting values are largely inherent in the nature of the subject-matter, the accounting should nevertheless go forward, the factors involved to be determined arbitrarily by the use of judgment, as nearly as may be?

In a number of industries, it has been considered that the straight-line method does not afford sufficient protection against unanticipated depreciation, due to unforeseen progress in the art, exigencies of competition, etc., and the reducing balance method has been adopted. One factor here is whether the nature of the enterprise is such that amortization in arrears of extraordinary casualty damage, sudden major obsolescence or losses on unanticipated reconstruction, is possible without too great risk or detriment. Certainly, risky and uncertain enterprises and those in a rapidly evolving state due to revolutionary inventions or [fol. 4259] discoveries, if they apply the straight-line method, may very well reverse the ordinary course, and resolve their doubts, in the early years of use of plant units, in favor of a shorter rather than a longer life.

In Conclusion

Within the lifetime of our older accountants; the depreciation charge has been successively characterized as improper, then legitimate, and lastly as necessary. There are but few now who contend that the depreciation charge is improper; its legitimacy is generally recognized. Not all agree that it should be compulsory. As regards telephone companies, the straight-line basis is generally believed to be in the best interest of the companies as regulated undertakings, and of the public which they serve, and it is compulsory by law.

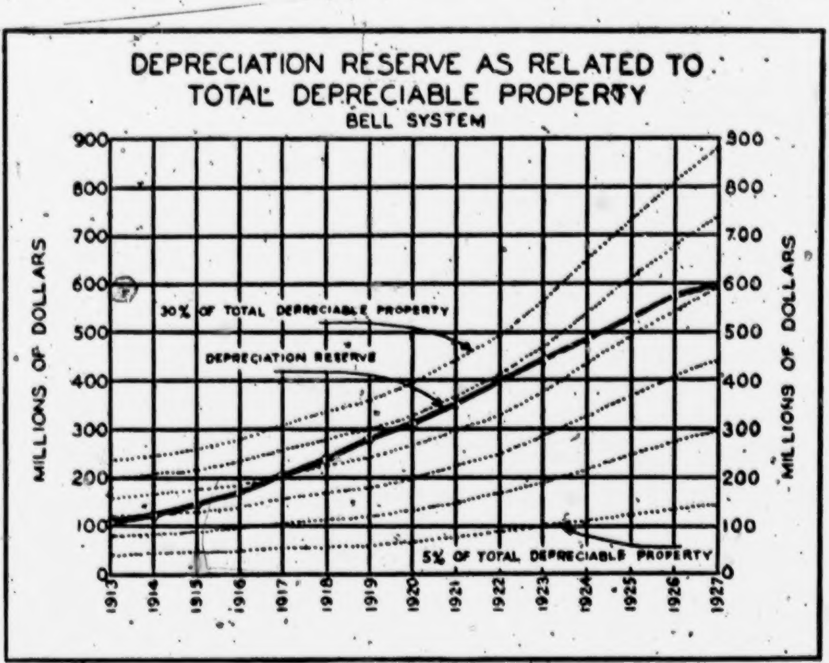


FIG. 17

It is unwise to become dogmatic regarding the treatment of depreciation because the question presents so many different aspects as viewed from different industries, with their varied histories and traditions, practices, and pros- [fol. 4260] pects. Any accounting method which generally commends itself as a fair method to those interested in an industry of a particular type is worthy of a fair hearing and if it has worked well, it should not be lightly overturned. Nevertheless, there cannot be more than one set of sound accounting principles. This makes necessary mutual agreement upon the fundamentals, upon definitions and the use of terms, without which arguments become confused and the meeting of minds impossible. When the terms employed are made susceptible of but one meaning, it may be possible to secure general agreement as to principles, and the application of sound principles to highly various industrial fields of operations may well result in a variety of treatments which are salutary and practicable in certain fields to which suited, but impracticable or inadvisable elsewhere.

In the telephone business in the United States, the suitability of the straight-line depreciation accounting practice has been tested and demonstrated by long experience.

Allan B. Crunden, Donald R. Belcher.

Editor's Note.—Mr. Crunden is Assistant Comptroller and Mr. Belcher is Assistant Chief Statistician of the American Telephone and Telegraph Company.

(Here follows side folio 4261)

DEFENDANT'S EXHIBIT D-125

WHAT IS THE

A·T·&·T·?

All that most people see of the telephone company are a telephone and a few feet of wire.

But through that telephone you can talk with any one of millions of people, all linked together by the web of equipment of the Bell System.

All its efforts are turned constantly to one job—to give better telephone service to an ever-increasing number of people, as cheaply as it possibly can.

The American Telephone and Telegraph Company provides the staff work for the Bell System. To it the operation of the telephone service is a public trust. It pays a reasonable dividend to its stockholders . . . and uses all earnings beyond that to improve and extend the service.

There are more than 550,000 stockholders, and no one person owns so much as one per cent of its stock.

The Bell System operates through 24 regional companies, each one attuned to the needs of its particular territory. In addition, the 5000 members of the Bell Laboratories staff do the scientific work which makes it possible to improve and widen the service at least cost to its users. The Western Electric Company, which manufactures for the Bell System, specializes in the economical production of telephone equipment of the highest quality.

All these facilities are directly available throughout the entire Bell System, at any time or place. . . . Because of them, every dollar that you spend for telephone service brings you constantly greater value and convenience.

★ *THE AMERICAN TELEPHONE AND TELEGRAPH COMPANY* ★

[fol. 4262]

EXHIBIT D-126

Illinois Bell Telephone Company, Chicago Exchange

Estimated Costs in Connection with Subscriptions for A. T. & T. Co. Stock under the Employees' Stock Plan

	Accounting Department				Treasurer's Office	Traffic Dept.	Plant Department			Commercial Dept.	Engineering Dept.	Grand Total
	Special Stock Group	Other Sections										
		Disbursements	Revenue	Total			Field	Acct'g.	Total			
1923	$15,064	$1,834	$816	$17,714	$180	$5,714	$2,493	$3,212	$5,705	$368	$20	$29,701
1924	17,650	1,835	895	20,380	180	5,919	2,645	3,265	5,910	391	21	32,800
1925	18,073	1,842	905	20,820	180	6,218	2,007	3,242	5,249	438	21	32,926
1926	18,194	1,824	895	20,913	180	6,270	1,942	3,329	5,271	[illegible]	21	33,116
1927	18,208	2,885	956	22,049	180	6,154	1,951	3,439	5,390	508	21	34,302
1928	18,682	3,125	966	22,773	180	6,303	2,079	3,505	5,584	613	14	35,467
1929	21,841	3,137	1,270	26,248	180	6,349	2,569	3,633	6,202	742	17	39,738
1930	27,603	3,149	1,248	32,000	2,349	6,006	2,814	525	3,339	859	17	44,570
1931	29,462	3,146	740	33,348	3,182	5,440	2,826	......	2,826	450	17	45,263

[fol. 4263]

EXHIBIT D-127

Illinois Bell Telephone Company, Chicago Exchange

Estimated Costs in Connection with Subscriptions for A. T. & T. Co. Stock under the Bell Telephone Securities Co. Plan

			Commercial Department							
	Accounting Department	Treasurer's Office	Special Stock Group	Cashier's Section	Postage, Stationery & Misc. Exp.	Total	Plant, Etc. Depts.	Grand Total	Amount billed Bell Tel. Sec. Co.	Net
1923	$1,677	$60	$5,230	$2,333	$1,616	$9,179	$4,104	$15,020	$809	$14,211
1924	8,814	60	6,113	2,651	2,188	10,952	5,298	25,124	10,270	14,854
1925	10,975	60	6,073	3,782	1,923	11,778	6,250	29,063	9,614	19,449
1926	11,445	60	5,918	3,753	1,988	11,659	6,236	29,400	9,688	19,712
1927	11,896	60	5,708	3,178	1,684	10,570	4,863	27,389	9,584	17,805
1928	8,373	60	4,414	963	462	5,839	1,715	15,987	9,129	6,858
1929	6,835	60	4,375	2,211	917	7,503	3,231	17,629	3,752	13,877
1930	6,914	275	5,505	1,263	852	7,620	2,627	17,436	4,015	13,421
1931	6,188	428	5,981	1,727	612	8,320	4,731	19,667	3,615	16,052

[fol. 4264] EXHIBIT D-128

Our Slogan: "Every Subscriber a Stockholder"

The Illinois Bell Telephone Company stood almost at the top among the Bell companies last year in the sale of A. T. & T. stock to the public through employees.

This is a proud record and we want to hold or surpass it this year.

Each department has a quota. Every employee should make one or more sales.

Do your part now.

[fol. 4265] EXHIBIT D-129

Illinois Bell Telephone Company

Amounts Billed to the Bell Telephone Securities Company for Services Rendered by Illinois Bell in Connection with Rights, Transactions, and Related Stock and Bond Subscriptions

	1926 Stock Issue	1928 Stock Issue	192[illegible] Bond Issue	1930 Stock Issue
Amount covering contacts with the public in connection with purchase and sale of rights and stock subscriptions	‡	$1,840.11	$3,911.93	$8,175.91
Amount covering summarizing, reporting, etc., and settlement with Bell Telephone Securities Company	‡	2,621.29	3,860.40	4,260.55
Total	$1,151.21	$4,461.40	$7.772.33	$12,436.46

‡ Separation not available.

[fol. 4266] EXHIBIT D-130

Illinois Bell Telephone Company

Amounts Billed to the Bell Telephone Securities Company for Services Rendered by the Illinois Bell Telephone Company in connection with the Sale of A. T. & T. Company Stock to the Public

Year	Accounting Services	Commercial Services (Collections, etc.)	Total
1924	$5,700	$3,300	$9,000
1925	5,700	3,300	9,000
1926	5,700	3,300	9,000
1927	5,700	3,300	9,000
1928	5,700	3,300	9,000
1929	2,400	1,200	3,600
1930	2,400	1,200	3,600
1931	2,400	1,200	3,600

[fol. 4267]

EXHIBIT D-131

Illinois Bell Telephone Company

Amount of Collections and Amount of Remittances Made to the American Telephone and Telegraph Company in Connection with the Employees' Stock Plan During the Years 1923 to 1931

Year	Collections	Remittances
1923	$1,660,224.27	$1,510,903.76
1924	1,623,352.23	1,246,401.33
1925	1,902,344.12	1,231,251.67
1926	1,928,575.30	1,154,086.16
1927	2,092,629.35	1,478,347.67
1928	2,465,405.23	1,803,449.85
1929	3,410,854.77	2,692,885.17
1930	4,208,259.81	3,377,477.87
1931	3,697,836.55	2,243,365.23

[fol. 4268]

EXHIBIT D-132

Illinois Bell Telephone Company

Amount of Collections and Amount of Remittances Made to the Bell Telephone Securities Company in Connection with the Sale of American Telephone & Telegraph Company Stock under the Bell Telephone Securities Company Plan for the Years 1923 to 1931

Year	Collections	Remittances
1923	$2,718,065.83	$2,688,060.46
1924	4,158,328.19	4,019,618.95
1925	4,041,330.88	3,884,136.15
1926	3,814,171.01	3,701,453.46
1927	3,096,306.75	2,993,009.75
1928	2,079,290.92	2,042,751.91
1929	3,494,682.55	3,455,607.55
1930	3,980,573.12	3,826,309.65
1931	2,924,352.42	2,760,131.23

[fol. 4269]

EXHIBIT D-133

Illinois Bell Telephone Company

Amount of Collections and Amount of Remittances to A. T. & T. Co. and Bell Telephone Securities Company in Connection with Rights, Transactions, and Related Stock and Bond Subscriptions

	1926 Stock Issue	1928 Stock Issue	1929 Bond Issue	1930 Stock Issue
Amounts collected from Rights sold to the public	$98,886.44	$182,461.35	$99,115.25	$242,811.10
Amounts paid for Rights purchased from the public	126,455.08	305,347.40	413,524.76	987,898.43
Net payment to public	$27,568.64	$122,886.05	$314,409.51	$745,087.33

	1826 Stock Issue	1928 Stock Issue	1929 Bond Issue	1930 Stock Issue
Net amount received from Bell Telephone Securities Co. in connection with above Rights transactions...	$27,568.64	$122,851.48	$314,409.51	$745,085.00
Amounts collected from public and remitted to A. T. & T. covering stock subscriptions paid in full and installment payments..	$1,027,937.60	$1,579,572.78	$1,532,300.00	$1,759,324.05

[fol. 4270]

DEF'TS' EX. D-135

Know all men by these presents, that Western Electric Company, Incorporated, a New York corporation (hereinafter called the Western Company) Party of the first part, for and in consideration of the sum of One dollar and other good and valuable considerations to it in hand paid at or before the ensealing and delivery of these presents by Electrical Research Products Inc., a Delaware corporation (hereinafter called the Products Company), party of the second part, the receipt whereof is hereby acknowledged, has granted, bargained, sold, assigned and delivered and by these presents does grant, bargain, sell, assign and deliver unto the Products Company, its successors and assigns, all right, title and interest of the Western Company in and to the following property:

1. One hundred fifty thousand (150,000) shares of the capital stock of Graybar Electric Company, Inc.

2. Twenty-six thousand one hundred sixty (26,160) shares of the capital stock of Northern Electric Company, Limited.

3. One hundred (100) shares of the capital stock of Western Electric Company, Limited of Canada.

4. One hundred (100) shares of Western Electric Company, Limited of London.

5. All accounts receivable owing on January 1, 1927, by Western Electric Company, Limited of Canada to the Western Company.

6. All accounts receivable owing on January 1, 1927, by Western Electric Company, Limited of London to the Western Company.

7. Bonds and certificates of indebtedness of the United States of the aggregate face value of $30,000,000 which are listed in Exhibit A attached hereto, subject, however, to outstanding agreements by the Western Company to re-sell said securities or any part thereof at rates or on bases fixed at the time the same were purchased by the Western Company, which re-sale agreements are hereby assumed by the Products Company.

[fol. 4271] 8. All accounts receivable outstanding on January 1, 1927, which relate solely to the business agreed to be transferred by the Western Company to the Products Company pursuant to the provisions of an agreement between said companies dated December 30, 1926.

9. All interest accrued and unpaid to January 1, 1927, on items 5, 6, 7 and 8 above listed.

10. All royalties accrued and unpaid to January 1, 1927, under contracts to be assigned by the Western Company to the Products Company, pursuant to the provisions of an agreement between said companies dated December 30, 1926, less such part of said royalties as the Western Company is obligated to pay to others.

11. Apparatus, material and equipment which on January 1, 1927, was under lease or loan by the Western Company in the course of that part of its business to be transferred to the Products Company, pursuant to the provisions of an agreement between said companies dated December 30, 1926.

12. All right, title and interest of the Western Company or of others acting for it in and to the following claims:

(a) Claim against Russia on account of deposits in banks, stock interest in, and receivables from, N. C. Heisler and Company, and accounts receivable owing to the Western Company (as assignee of International Western Electric Company, Incorporated and its subsidiaries) from Russian customers.

(b) Claim against Germany for losses and damages in Belgium growing out of the World War.

13. The Western Company's business (as distinguished from its property) existing on January 1, 1927 which is

separate and distinct from the business reserved to the Western Company pursuant to the provisions of an agreement between it and the Products Company dated December 30, 1926.

[fol. 4272] 14. All right, title and interest which the Western Company has the right so to transfer in and to all contracts, good-will, patents, trade-marks and trade-names of the Western Company (except the trade-mark or trade-name "Western Electric") in so far as but only to the extent that the same respectively pertain to the business and property agreed to be transferred pursuant to the provisions of an agreement between the Western Company and the Products Company dated December 30, 1926, and subject to all the reservations, terms, conditions and limitations in said agreement contained.

The Western Company agrees to execute, acknowledge and deliver such further instruments in writing as may be necessary to carry into effect the transfer and assignment of the business, property, effects, assets, rights, licenses and good-will covered hereby to the Products Company.

To have and to hold the said business, property, effects, assets, rights, licenses and good-will unto the Products Company, its successors and assigns to and for it and their own proper use and behoof forever.

In witness whereof the said party of the first part has caused these presents to be executed on its behalf by its officers thereunto duly authorized, and its corporate seal to be hereunto affixed the third day of January, 1927.

Western Electric Company, Incorporated, by (Sgd.) H. A. Halligan, Vice-President. Attest: (Sgd.) H. B. Gilmore, Secretary.

[fol. 4273]

EXHIBIT "A"

United States Government Securities

Issue	Rate	Face Value
1st Liberty Loan 1932-47	3½%	$500,000
1st Liberty Loan 1932-47	4¼%	500,000
2nd Liberty Loan 1927-42	4¼%	5,500,000
3rd Liberty Loan 1928	4¼%	4,000,000
4th Liberty Loan 1933-38	4¼%	10,600,000
U. S. Treasury Refunding Bonds 1944-54	4%	3,500,000
U. S. Treasury Refunding Bonds 1947-52	4¼%	960,000
U. S. Treasury Notes due 3/15/27	4¾%	4,440,000
		$30,000,000

EXHIBIT D-136

Net Profits on Sales of New A. T. & T. Instruments, 1916 to 1927, Inclusive

(Dollars in Thousands)

	Sales	Net Profits on Sales Before Deducting Federal Taxes	Per Cent Net Profits To Sales Before Federal Taxes	Federal Taxes	Net Profits After Deducting Federal Taxes	Per Cent Net Profits to Sales
1927	$4,836	$743	15.4	$97	$646	13.4
1926	5,262	1,043	19.8	141	902	17.2
1925	5,017	624	12.4	85	539	10.8
1924	4,900	975	19.9	117	858	17.5
1923	4,496	698	15.5	79	619	13.8
1922	4,343	894	20.6	112	782	18.0
1921	4.598	1,064	23.1	106	958	20.8
1920	3,853	606	15.7	61	545	14.1
1919	2,530	(187)	(7.4)	0	(187)	(7.4)
1918	2,230	124	5.6	15	109	4.9
1917	2.421	423	17.5	31	392	16.2
1916	2,201	180	8.2	4	176	8.0
	$46,687	$7,187	15.4	$848	$6,339	13.9

(Here follows side folio 4275)

Western Electric Company,
Incorporated
General Accounting Department.

EXHIBIT D-137

Date Issued

~~CA-4.13~~

NET PROFITS ~~ON INVESTMENT IN~~ on Sales of NEW A. T. & T. INSTRUMENTS.
1916 TO 1926
(~~Expressed in Thousands of Dollars~~)

D-137

	a	b	c	d	e		f	g	
	Sales	Net Profits on Sales ~~of A.T.&T. Instruments~~ Before Deducting Federal Taxes	Per Cent of Sales	Federal Taxes	Net Profits After Deducting Taxes	Per Cent Sales	Average Investment (S)	Return on Investment (e÷f)	
1926	$ 5,262	$1,043	19.8	$141	$ 903	17.2	$6,626	13.6%	1
1925	5,017	624	12.4	85	571	11.4	6,707	8.5	2
1924	4,900	975	19.9	117	858	17.5	6,052	14.2	3
1923	4,496	698	15.5	79	619	13.8	5,482	11.3	4
1922	4,343	894	20.6	112	782	18.0	5,045	15.5	5
1921	4,598	1,064	23.1	106	958	20.8	6,054	15.8	6
1920	3,853	606	15.7	61	545	14.1	5,262	10.4	7
1919	2,530	(187)	(7.4)	0	(187)	7.4	3,196	(5.9)	8
1918	2,230	124	5.6	15	109	4.9	2,601	4.2	9
1917	2,421	423	17.5	31	392	16.2	2,813	13.9	10
1916	2,201	180	8.2	4	176	8.0	2,936	6.0	11
	41,851	6,444	15.4	751	5,726	13.7	4,798	10.9	12

( ) Indicates negative figures.
S Average investment represents the book cost of plant and working assets less current accounts payable.
U Reconciled with CA-4.13 report as follows:

Column b, line 5, CA-4.13			
Profit W. E. Company should earn (20% over completed cost before adding Federal Income Tax) - - - - - - - - - - - -	1926 $ 844,000	13
Column a, line 8, CA-4.13			
Profits more than 20% by - - - - - - - - - - - - - - - - -	199,000	14
Total net profit before deducting Federal Income Tax (13 + 14) - - - - - - - - - -	1,043,000	15

[fol. 4276]

Ex. D-137

Date Issued:—— ——

Western Electric Company, Incorporated

General Accounting Department

CA-4.14

Net Profits on Investment in New A. T. & T. Instruments, 1916 to 1926
(Expressed in Thousands of Dollars)

	a	b	c	d	e	f	g	
	Sales	Net Profits on Sales of A. T. & T. Instruments Before Deducting Taxes	Per Cent of Sales (b-a)	Federal Taxes	Net Profits after Deducting Taxes (b-d)	Average Investment (S)	Return on Investment (e-f)	
1926......	$5,262	$1,043 (U)	19.6	$141	$903	$6,626	13.6	1
1925......	5,017	624	12.4	85	571	6,707	8.5	2
1924......	4,900	975	19.9	117	858	6,052	14.2	3
1923......	4,496	698	15.5	79	619	5,482	11.3	4
1922......	4,343	894	20.6	112	782	5,045	15.5	5
1921......	4,598	1,064	23.1	106	958	6,054	15.8	6
1920......	3,833	606	15.7	61	545	5,262	10.4	7
1919......	2,530	(187)	(7.4)	0	(187)	3,196	(5.9)	8
1918......	2,230	124	5.6	15	109	2,601	4.2	9
1917......	2,421	423	17.5	31	392	2,813	13.9	10
1916......	2,201	180	8.2	4	176	2,936	6.0	11
	41,851	6,444	15.4	751	5,726	4,798	10.9	12

( ) Indicates negative figures.

S. Average investment represents the book cost of plant and working assets less current accounts payable.

U. Reconciled with CA-4.13 report as follows:

	1926	
Column b, line 5, CA-4.13: Profit W. E. Company should earn (20% over completed cost before adding Federal Income Tax)	$844,000	13
Column a, line 8, CA-4.13: Profits more than 20% by..........	199,000	14
Total net profit before deducting Federal Income Tax (13 plus 14).......................................	1,043,000	15

[fol. 4277] **Exhibit D-138**

Illinois Bell Telephone Company, Chicago Area

Comparison of Depreciation Expense Actually Charged for Certain Accounts and as Modified on Basis of Present View (1932).

[fol. 4278] **Illinois Bell Telephone Company, Chicago Area**

Comparison of Depreciation Expense Actually Charged for Certain Accounts and as Modified on Basis of Present View (1932)

Year	Actual Expense	Present View	Excess of Present View over Actual
1923	3,286,960	3,127,118	159,842*
1924	2,789,383	2,787,995	1,388*
1925	3,106,583	3,149,303	42,720
1926	2,929,282	3,010,945	81,663
1927	3,239,054	3,325,978	86,924
Total	15,351,262	15,401,339	50,077

* Red Figure.

[fol. 4279]

Illinois Bell Telephone Company, Chicago Area

Comparison of Depreciation Rates Used in 1923–1927, Inclusive, and as Modified on Basis of Present View (1932)

Property	1923 Life	1923 Salv.	1923 Rate	1924 Life	1924 Salv.	1924 Rate	1925 Life	1925 Salv.	1925 Rate	1926 Life	1926 Salv.	1926 Rate	1927 Life	1927 Salv.	1927 Rate
C. O. Equipment:															
Actual	10	20%	8.0%	12	20%	6.7%	12	20%	6.7%	12	20%	6.7%	12	20%	6.7%
Revised—Manual	12.5	10	7.2	12.5	10	7.2	12.5	10	7.2	12.5	10	7.2	12.5	10	7.2
Dial	....	....	......	18	5	5.3	18	5	5.3	18	5	5.3	18	5	5.3
Toll	7.5	22	10.4	7.5	22	10.4	7.5	22	10.4	7.5	22	10.4	7.5	22	10.4
Other Equip.	9	50	5.6	9	50	5.6	9	45	6.1	9	45	6.1	9	45	6.1
Composite			7.4			7.0			7.1			7.1			7.1
Station Apparatus:															
Actual	5	65	7.0	5	70	6.0	5	70	6.0	....	....	......	....	....	......
Revised—Substations	7	60	5.7	7	60	5.7	6	65	5.8	....	....	......	....	....	......
Teletype	....	....	......	....	....	......	3	65	11.7	....	....	......	....	....	......
Composite			5.7			5.7			5.8						

Illinois Bell Telephone Company, Chicago Area

Illinois Bell Telephone Company, Chicago Area

Comparison of Depreciation Rates Used in 1923–1927, Inclusive, and as Modified on Basis of Present View (1932)

Property	1923			1924			1925			1926			1927		
	Life	Salv.	Rate	Life	Salv.	Rate	Life	Salv.	Rate	Life	Salv.	Rate	Life	Salv.	Rate
Booths and Spl. Fittings:															
Actual	7	45	8.0	8	35	8.0	8	35	8.0	8	35	8.0	8	35	8.0
Revised	10	55	4.5	10	55	4.5	10	55	4.5	10	60	4.0	10	60	4.0
Exchange Pole Lines:															
Actual	13	0	7.7	14	5*	7.5	14	5*	7.5	14	5*	7.5	14	5*	7.5
Revised	20	10*	5.5	21	10*	5.2	21	10*	5.2	21	10*	5.2	22	10*	5.0
Exchange U. G. Cable:															
Actual—Main	25	40	2.4	....	....	......	....	....	......	....	....	......	....	....	......
Subsidiary	20	20	4.0	....	....	......	....	....	......	....	....	......	....	....	......
Composite			2.7	....	....	......	....	....	......	....	....	......	....	....	......
Revised—Main Subsc	20	40	3.0	....	....	......	....	....	......	....	....	......	....	....	......
Subsidiary	15	0	6.7	....	....	......	....	....	......	....	....	......	....	....	......
House	20	0	5.0	....	....	......	....	....	......	....	....	......	....	....	......
Trunk	22	40	2.7	....	....	......	....	....	......	....	....	......	....	....	......
Load Coils	10	40	6.0	....	....	......	....	....	......	....	....	......	....	....	......
Composite			3.6			......			......			......			......

* Red Figure.

[fol. 4280] Depreciation Rates, 1923-1927, Inclusive

(As estimated by J. R. Turner March 4, 1932)

Central Office Telephone Equipment:

The same life as that now in effect was used in all previous years for central offices then in service and now surviving. The actual life of offices in service in each year, which have since been retired, was included in the composite life. The same method was followed for salvage.

Other Equipment of Central Office:

Nine year life used throughout based on turnover cycle studies and retirement ratios. Salvage varied in accordance with salvage chart.

The depreciation rates derived from the above life and salvage factors were then composited into one rate for Central Office Equipment comparable to the rate actually in effect for this period.

Station Apparatus:

An examination of the rate of retirement which showed an upward tendency subsequent to 1920, indicated that an average life of seven years would be a reasonable expectation for the years 1923 and 1924, and six years for 1925.

The salvage used with the seven year life was computed on the basis of three service lives. For the six year life 3½ service lives were used.

Available information is insufficient to justify a change in the average life of teletypewriters during this period. Changes in supply expense were too small to require a change in salvage. Three service lives were used throughout.

Booths:

The turnover cycle studies combined with a consideration of the higher rate of retirement during the period, than previously experienced, indicated a ten year life throughout. The only deviation in salvage was that caused by the decreasing supply expense.

Exchange Poles:

From the mortality studies it appears that a life of 20 years has been applicable for untreated poles during the period 1923-1927. The life used in each year was the composite of this and 27 years for treated poles weighted on the relative investment at the beginning of each year. The use of this longer life than that of poles retired, justifies the use of —10% net salvage throughout.

[fol. 4281] **Exchange U. G. Cable:**

The lives of all classes of U. G. cable have been estimated by judgment predicated upon the results shown by the mortality studies. Allowance has been made for a somewhat longer life for the full size cables. Salvage estimated for all classes has closely followed the experience shown by the salvage charts.

[fol. 4282] Illinois Bell Telephone Company, Chicago Area

Comparison of Depreciation Expense Actually Charged for Certain Accounts and as Modified on Basis of Present View (1932)

	Actual Expense			Present View		
Year	Investment in Physical Property	Interest During Construction	Total	Investment in Physical Property	Interest During Construction	Total
1923...	3,242,025	44,935	3,286,960	3,085,213	41,905	3,127,118
1924...	2,748,642	40,741	2,789,383	2,745,432	42,563	2,787,995
1925...	3,060,331	46,252	3,106,583	3,100,292	49,011	3,149,303
1926...	2,872,701	56,581	2,929,282	2,950,987	59,958	3,010,945
1927...	3,178,194	60,860	3,239,054	3,261,487	64,491	3,325,978
Total	15,101,893	249,369	15,351,262	15,143,411	257,928	15,401,339

[fol. 4283] Illinois Bell Telephone Company, Chicago Area

Comparison of Depreciation Expense Actually Charged for Certain Accounts and as Modified on Basis of Present View (1932)

1923

	Actual Expense	Present View	Excess of Present View Over Actual
Central Office Equip.	$2,003,375.89	$1,853,122.70	$150,253.19*
Station Apparatus	585,153.58	476,482.20	108,671.38*
Booths & Spl. Fittings	21,109.26	11,873.96	9,235.30*
Exchange Pole Lines	160,646.98	114,747.84	45,899.14*
Exchange U. G. Cable	471,739.42	628,985.90	157,246.48
Total	$3,242,025.13	$3,085,212.60	$156,812.53*

* Red Figure.

[fol. 4284]

1924

	Actual Expense	Present View	Excess of Present View over Actual
Central Office Equip.	$1,981,269.54	$2,069,983.10	$88,713.56
Station Apparatus	570,752.31	542,214.70	28,537.61*
Booths & Spl. Fittings	23,609.57	13,280.38	10,329.19*
Exchange Pole Lines	173,010.99	119,954.28	53,056.71*
Total	$2,748,642.41	$2,745,432.46	$3,209.95*

* Red Figure.

[fol. 4285]

1925

	Actual Expense	Present View	Excess of Present View over Actual
Central Office Equip.	$2,208,049.05	$2,339,872.87	$131,823.82
Station Apparatus	634,399.36	613,252.71	21,146.65*
Booths & Spl. Fittings	29,797.16	16,760.90	13,036.26*
Exchange Pole Lines	188,085.36	130,405.85	57,679.51*
Total	$3,060,330.93	$3,100,292.33	$39,961.40

* Red Figure.

[fol. 4286]

1926

	Actual Expense	Present View	Excess of Present View Over Actual
Central Office Equip.	$2,636,569.77	$2,793,976.93	$157,407.16
Booths & Spl. Fittings	34,697.10	17,348.55	17,348.55*
Exchange Pole Lines	201,434.51	139,661.26	61,773.25*
Total	$2,872,701.38	$2,950,986.74	$ 78,285.36

* Red Figures.

[fol. 4287]

1927

	Actual Expense	Present View	Excess of Present View over Actual
Central Office Equip.	$2,924,168.22	$3,098,745.42	$174,577.20
Booths & Sup. Fittings	39,656.22	19,828.11	19,828.11*
Exchange Pole Lines	214,369.47	142,912.98	71,456.49*
Total	$3,178,193.91	$3,261,486.51	$83,292.60

* Red Figure.

(Here follow side folios 4288-4305)

ILLINOIS BELL TELEPHONE COMPANY
CHICAGO AREA

Form 3230

DEPRECIATION EXPENSE

PROPERTY	AVERAGE INVESTMENT	DEPRECIATION				Excess of P.V. over actual
		ACTUAL		PRESENT VIEW		
		RATE	EXPENSE	RATE	EXPENSE	
1923						
221-222	25,042,198.59	8.0	2,003,375.89	7.4	1,853,122.10	* 150253.19
231	8359836.91	7.0	585,153.58	5.7	476,482.28	* 108671.38
235	263865.74	8.0	21,109.26	4.5	11,873.96	* 9235.30
241	2,086,324.37	7.7	160,646.98	5.5	114,747.84	* 45899.14
245	17,471,830.42	2.7	471,739.42	3.6	628,985.90	157,246.48
TOTAL			3242,025.13		3085,212.60	* 156812.53
1924						
221-222	29,571,187.10	6.7	1981269.54	7.0	2,069,983.10	88713.56
231	9,512,538.55	6.0	570752.31	5.7	542,214.71	* 28537.61
235	295,119.59	8.0	23609.57	4.5	13,280.38	* 10329.19
241	2,306,813.46	7.5	173,010.99	5.2	119,954.28	* 53059.71
TOTAL			2,748,642.41		2,745,432.46	* 3209.95
1925						
221-222	32955955.90	6.7	2208049.05	7.1	2,339,872.87	131823.82
231	10,513,322.61	6.0	634,399.36	5.8	613,252.71	* 21146.65
235	372,464.53	8.0	29797.16	4.5	16,760.90	* 13036.26
241	2,507,804.86	7.5	188,085.36	5.2	130,405.85	* 57679.51
TOTAL			3,060,330.93		3,100,292.33	39,961.60
1926						
221-222	39,351,787.68	6.7	2,636,569.77	7.1	2,793,976.93	157407.16
235	433,713.78	8.0	34,697.10	4.0	17,348.55	* 17348.55
241	2,685,793.40	7.5	201,434.51	5.2	139,661.26	* 61773.25
TOTAL			2,872,701.38		2,950,986.14	78,285.36
1927						
221-222	[illegible]801.76	6.7	2,924,168.22	7.1	3,098,745.42	174577.70
235	[illegible]702.76	8.0	39,656.22	4.0	19,828.11	* 19828.11
241	2,858,259.63	7.5	214,369.41	5.0	142,912.98	* 71456.49
TOTAL			3,178,193.91		3,261,486.51	83292.60

* RED FIGURES

Fo: 3108

ILLINOIS BELL TELEPHONE COMPANY
CHICAGO AREA.
COMPOSITE DEPRECIATION RATES.

PROPERTY	JAN. 1, 1923				JAN. 1, 1924				
	INVESTMENT DEC. 31 1922	BASIC RATES	DEPRECIATION EXPENSE	COMPOSITE RATE	INVESTMENT DEC 31 1923	BASIC RATES	DEPRECIATION EXPENSE	COMPOSITE RATE	INVESTME DEC. 31 19
C. O. TELEPHONE EQUIPMENT									
MANUAL	17 765 570	7.2	1,279 121		20 453 865	7.2	1,472 678		22 439
DIAL	—	—	—		5 164 290	5.3	268 407		5 019
TOLL	1 778 443	10.4	184 958		1 847 222	10.4	202 511		341
SUB TOTAL	19 544 013		1,464 079	7.5	27 465 377		1943 596	7.1	27 849
OTHER EQUIPT. OF C. O.	831 992	5.6	46 592		892 698	5.6	49 991		987
TOTAL	20 376 005		1,510 671	7.4	28 358 075		1,993 587	7.0	30 837
STATION APPARATUS									
SUB-STATIONS									10 051
TELETYPEWRITERS									10
COMPOSITE									10 061
EXCHANGE U. G. CABLE									
MAIN SUBSCRIBERS	7 051 008	3.0	211 530						
SUBSIDIARY	1 787 062	6.7	119 867						
HOUSE	2 063 101	5.0	103 155						
TRUNK	5 318 751	2.7	143 612						
LOAD COILS	457 496	6.0	27 450						
COMPOSITE	16 677 618		605 614	3.6					

PROPERTY	JAN. 1, 1926				JAN. 1, 1927			
	INVESTMENT DEC. 31, 1925	BASIC RATES	DEPRECIATION EXPENSE	COMPOSITE RATE	INVESTMENT DEC. 31, 1926	BASIC RATES	DEPRECIATION EXPENSE	COMPOSITE RATE
C. O. TELEPHONE EQUIPMENT								
MANUAL	25 604 205	7.2	1,843 503		29 403 697	7.2	2,117 066	
DIAL	7 225 840	5.3	382 970		8 143 909	5.3	431 627	
TOLL	3 000 123	10.4	312 013		3 581 785	10.4	373 506	
SUB-TOTAL	35 830 168		2,538 486	7.1	41 129 391		2,921 199	7.1
OTHER EQUIPT. OF C. O.	1 091 276	6.1	66 568		1 303 418	6.1	79 508	
TOTAL	36 921 444		2,605 054	7.1	42 432 809		3,000 707	7.1
STATION APPARATUS								
SUB-STATIONS	11 077 524	6.0	664 651		12 115 699	6.0	720 942	
TELETYPEWRITERS	23 233	11.7	2 718		49 616	11.7	5 805	
COMPOSITE	11 100 757		667 369	6.0	12 165 315		726 747	6.0

ILLINOIS BELL TELEPHONE COMPANY.

CHICAGO AREA.

COMPOSITE DEPRECIATION RATES.

		JAN. 1, 1924				JAN. 1, 1925			
CIATION ENSE	COMPOSITE RATE	INVESTMENT DEC 31 1923	BASIC RATES	DEPRECIATION EXPENSE	COMPOSITE RATE	INVESTMENT DEC. 31 1924	BASIC RATES	DEPRECIATION EXPENSE	COMPOSITE RATE
021		20 453 865	7.2	1,473 618		22 439 355	7.2	1,615 634	
		5 164 290	5.3	268 407		5 019 111	5.3	267 163	
956		1 947 222	10.4	202 511		391 378	10.4	243 503	
079	7.5	27 465 377		1943 576	7.1	29 849 844		2127 800	7.1
592		892 698	5.6	49 941		987 256	6.1	60 223	
671	7.4	28 358 075		1993 587	7.0	30 837 100		3188 023	7.1
						10 [illegible] 213	5.8	582 970	
						[illegible] 125	8.7	1 185	
						10 061 338		584 155	5.8
530									
867									
155									
612									
450									
614	3.6								

		JAN. 1, 1927			
CIATION ENSE	COMPOSITE RATE	INVESTMENT DEC. 31 1926	BASIC RATES	DEPRECIATION EXPENSE	COMPOSITE RATE
503		29 403 697	7.2	2,117 066	
970		8 143 909	5.3	431 627	
013		3 581 785	10.4	372 506	
486	7.1	41 129 391		2,921 199	7.1
568		1 303 418	6.1	79 508	
054	7.1	42 432 809		3,000 707	7.1
651		12 615 699	6.0	720 942	
718		49 676	11.7	5 805	
369	6.0	12 665 315		726 747	6.0

Form 3220

ILLINOIS BELL TELEPHONE COMPANY
CHICAGO AREA
DEPRECIATION EXPENSE
INTEREST DURING CONSTRUCTION

YEAR	ACCT	AVERAGE INVESTMENT ACCT 268	DEPRECIATION			
			ACTUAL		PRESENT VIEW	
			RATE	EXPENSE	RATE	EXPENSE
1923						
	221-222	551,218.44	8.0	44,097.48	7.4	40,790.16
	231	—		—		—
	235	—		—		—
	241	54.18	7.7	4.17	5.5	2.98
	245	30,875.18	2.7	833.63	3.6	1,111.51
	TOTAL			44,935.28		41,904.65
	for 3 mos = ¼ of total			11,233.82		10,476.16
1924						
	221-222	608,000.62	6.7	40,736.04	7.0	42,560.04
	231			—		—
	235	—		—		—
	241	59.76	7.5	4.48	5.2	3.11
	TOTAL			40,740.52		42,563.15
1925						
	221-222	690,251.70	6.7	46,246.86	7.1	49,007.87
	231	—				—
	235			—		—
	241	67.84	7.5	5.09	5.2	3.53
	TOTAL			46,251.95		49,011.40
1926						
	221-222	844,422.40	6.7	56,576.30	7.1	59,953.99
	235					
	241	68.84	7.5	5.16	5.2	3.58
	TOTAL			56,581.46		59,957.57
1927						
	221-222	908,270.96	6.7	60,854.15	7.1	64,487.24
	235	—		—		—
	241	71.75	7.5	5.38	5.0	3.59
	TOTAL			60,859.53		64,490.83

ILLINOIS BELL TELEPHONE COMPANY
CHICAGO AREA
ALLOCATION OF AVERAGE INVESTMENT IN ACCOUNT 268 FOR 1923 AND 1924 ON BASIS OF 1925 SEPARATION

Form 3220

	AVERAGE INVESTMENT IN ACCOUNT 268				
	1925	1924		1923	
		RATIO	AMOUNT	RATIO	AMOUNT
212	23,239.62		20,470.36		18.558.60
221-222	690,251.70		608.000.62		551,218.44
231-232	7.50		6.61		5.99
241	67.84		59.76		54.18
242	1.046.06		921.41		835.36
243	3.11		2.74		2.48
244	2,128.05		1.874.47		1.699.41
245	38,662.79		34.055.69		30.875.18
255	2.635.11		2.321.11		2.104.34
TOTAL	758,041.78	.880839	667.712.91	.798576	605,354.21

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Form 3220

Illinois Bell Telephone Company
Chicago Area
Manual Central Office Building
Composite Average Life Calculated for Buildings in Service as of December 31, 1922

Building	Investment Dec 31 1922	Estimated Average Life at Retirement	Annual Requirement	Estimated Net Salvage %	Estimated Net Salvage
Austin	$ 129,917	36.15	3,593.83	16.7	60
Belmont	128,598	18.75	6,858.56	27.1	1859
Beverly	51,216	37.45	1,369.79	7.0	96
Calumet (old)	16,778	17.85	939.94	14.4	135
Calumet (new)	146,986	16.11	9,121.42	38.9	3398
Canal	84,431	12.28	6,916.21	32.3	2234
Drover	35,209	25.59	1375.89	79.0	1087
Edgewater	134,329	23.03	5,833.18	23.1	1388
Humboldt	132,750	18.23	7,281.95	35.7	2600
Hyde Park	187,911	38.47	4,865.90	18.7	910
Irving	164,715	17.14	6,109.39	23.6	1642
Kedzie	137,531	16.81	8,181.56	23.0	1882
Kildare	139,[illegible]	38.38	3,629.10	17.7	642
Lakeview (old)	82,826	23.62	3,506.52	29.0	1017
Lakeview (new)	121,746	32.60	3,734.54	20.0	747
Lawndale	140,382	16.70	8,406.11	14.2	1244
Lincoln	80,938	14.91	5,431.79	11.7	636
Main	382,170	27.14	14,081.43	-	-
La Fayette	118,812	33.28	3,570.07	7.1	253
Monroe	82,019	15.51	5,288.14	14.5	767
Merrill Park	55,686	20.57	2,707.15	25.9	701
Oakland	82,792	21.17	3,910.82	1.5	344
Prospect	102,792	12.40	8,219.68	23.7	1865
Pullman	66,208	37.98	1,763.23	7.2	26
Randolph	171,422	17.27	9,926.00	100.0	9,926
Rogers Park	101,789	36.10	2,819.64	18.0	368
So Chicago	105,712	34.55	3,059.68	7.7	236
Stewart	99,529	13.79	7,217.48	26.1	1884
Superior (Belmont)	59,734	24.06	3,482.71	55.9	1388
Toll	513,936	21.42	23,993.28	-	
Wabash	330,127	35.00	9,432.20	20.0	1886
Wentworth	102,208	25.23	4,051.05	15.6	632
West	194,734	15.69	12,411.34	11.1	1378
Yards	70,610	16.76	4,213.01	13.2	556
Total	4,495,696	21.79	206,352.40	21.6	44,617

75 yrs - 25% [illegible] = 3.0

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Illinois Bell Telephone Company
Chicago Area
Manual Central Office Buildings
Composite Average Life Calculations for Buildings in Service December 31, 1923

Form 3220

Building	Investment Dec 31, 1923	Estimated Average Life at Retirement	Annual Requirement	Estimated Net Salvage %	Estimated Net Salvage
Austin	122,242	36.15	3,381.57	16.7	565
Belmont	148,248	18.75	7906.56	27.1	2,143
Beverly	51,302	37.45	1,369.88	7.0	96
Calumet (old)	18,090	17.85	1,013.45	14.4	146
Calumet (new)	149,468	16.11	9277.96	38.9	3,609
Canal	85,572	12.28	6,968.40	32.3	2,251
Delaware	61,322	24.06	2,548.71	55.9	1,425
Douglas	35,752	25.59	1,397.11	79.0	1,104
Edgewater	139,513	23.03	6,057.88	23.8	1,442
Humboldt	135,088	18.23	7410.20	35.7	2,645
Hyde Park	190,372	38.47	4,948.58	18.7	925
Irving	106,820	17.14	6,232.21	23.6	1,471
Kedzie	138,104	16.81	8,215.59	23.0	1,890
Kildare	139,921	38.38	3,645.67	17.7	645
Lakeview (old)	86,059	23.62	3,643.48	29.0	1,057
Lakeview (new)	121,746	32.60	3,734.54	20.0	747
Lawndale	144,519	16.70	8,474.19	14.8	1,254
Lincoln	133,871	14.91	8,978.60	11.7	1,050
Lafayette	118,998	33.28	3,575.66	7.1	254
Main	388,568	27.14	14,317.17	-	-
Monroe	83,805	15.51	5,403.29	14.5	783
Morgan Park	56,369	20.57	2,740.35	25.9	710
Oakland	84,843	21.17	4,007.70	8.8	353
Prospect	103,313	12.40	8,331.69	23.7	1,975
Pullman	66,254	37.98	1,744.44	7.2	126
Randolph	184,371	17.27	10,675.80	100.0	10,67[illegible]
Rogers Park	102,741	36.10	4,508.06	18.0	811
S. Chicago	106,280	34.[illegible]	3,076.12	7.7	237
Stewart	102,742	13.79	7,450.47	26.1	1,945
Toll	519,843	21.42	24,269.05	-	-
Wabash	331,546	35.00	9,472.74	20.0	1,895
Wentworth	102,874	25.23	4,077.45	15.6	636
West	195,949	15.69	12,488.78	11.1	1,386
Yards	71,777	16.76	4,282.64	13.2	565
Total	4,685,282	21.73	215,625.94	21.7	46,817

25 yrs - 25% net sal = 3.0 %

4293

3824G

HISTORICAL DATA FOR MORTALITY STUDY OF BUILDINGS

Delaware
NAME OF BUILDING

NAME OF EXCHANGE

COMPANY

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TYPE OF BUILDING

CALENDAR YEAR	ACTUAL GROSS ADDITIONS	ACTUAL RETIREMENTS	INDEX NUMBERS		ADJUSTED GROSS ADDITIONS	ADJUSTED RETIREMENTS	ADJUSTED AMOUNT IN SERVICE ON DEC. 31 OF EACH YEAR	AVERAGE AMOUNT IN SERVICE EACH YEAR	ACCUMULATIVE DOLLAR YEARS DEC. 31 OF EACH YEAR	ACCUMULATIVE GROSS ADDITIONS DEC. 31 OF EACH YEAR	AVERAGE REALIZED LIFE DEC. 31 OF EACH YEAR
			FOR GROSS ADDITIONS	FOR RETIREMENTS							
1929	61						67 976		1,666,374	73,041	22.81
1930	444						68 420	33 988 34 210	1,734,572	73,485	
1931	31	68,451					0 –	34 210 0 –	1,768,782	73,516	24.06

1929 taken from
1930 Studies

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ILLINOIS BELL TELEPHONE COMPANY
AVERAGE REALIZED LIFE STUDY

OF Buildings

Randolph
NAME OF CENTRAL OFFICE

Chicago
NAME OF EXCHANGE

Central Office
TYPE OF Building

CALENDAR YEAR	GROSS ADDITIONS	RETIREMENTS	AMOUNT IN SERVICE DEC. 31 OF EACH YEAR	AVERAGE AMOUNT IN SERVICE EACH YEAR	CUMULATIVE DOLLAR YEARS DEC. 31 OF EACH YEAR	CUMULATIVE GROSS ADDITIONS DEC 31 OF EACH YEAR	AVERAGE REALIZED LIFE DEC. 31 OF EACH YR
1904	23,082		23,082	11,541	11,541	23,082	
1905	77,869		100,951	11,541 50,476	73,557	100,951	
1906	32,918		133,869	50,476 66,934	190,967	133,869	
1907	547		134,416	66,435 67,208	325,110	134,416	
1908			134,416	67,208 67,208	459,326	134,416	
1909	523		134,939	67,208 67,469	594,205	134,939	
1910	668		135,607	67,470 67,803	729,476	135,607	
1911	627	97	136,137	67,804 68,068	865,348	136,234	
1912	214	432	135,919	68,069 67,959	1,001,376	136,448	
1913	619	23	136,515	67,960 68,257	1,137,593	137,067	
1914	1,343	17	137,841	68,258 68,920	1,274,771	138,410	
1915	25,294	46	163,089	68,921 81,544	1,425,236	163,704	
1916	2,282	118	165,253	81,545 82,626	1,589,407	165,986	
1917	3,758	107	168,904	82,627 84,452	1,756,486	169,744	
1918		235	168,164	84,452 84,082	1,925,020	169,239	
1919	950	6	169,108	84,082 84,554	2,093,656	170,189	
1920	599	143	169,564	84,554 84,782	2,262,992	170,788	
1921	653	57	170,160	84,782 85,080	2,432,854	171,441	
1922	1,270	7	171,423	85,080 85,711	2,603,645	172,711	
1923	19,865	6,976	18[illegible]	85,712 92,186	2,781,543	192,576	
1924	3,533	365	187,540	92,186 93,770	2,967,499	196,109	
1925	2,395	61	189,874	93,770 94,937	3,156,206	198,504	
1926	813	20	190,667	94,937 95,334	3,346,476	199,317	
1927		190667	0	95,334	3,441,810	199,317	17.27

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Form 3220

Illinois Bell Telephone Company
Chicago Area
Dial Central Office Buildings
Average Life

	Investment Dec. 31	Average Life	Annual Requirement
1923			
Franklin	$2,338,942	40	$58,473.55
1924			
Franklin	2,323,303	40	58,082.58
Superior	715,893	30	23,863.10
Total	3,039,196	37.1	81,945.68
1925			
Franklin	2,339,986	40	58,499.65
Superior	740,486	30	24,682.87
Total	3,080,472	37.0	83,182.52
1926			
Franklin	2,344,094	40	58,602.35
Superior	740,554	30	24,685.13
Total	3,084,648	37.0	83,287.48
1927			
Franklin	2,350,038	40	58,750.95
Long Beach	335,754	30	11,191.80
Superior	740,750	30	24,691.67
Total	3,426,542	36.2	94,634.42

Form 3220

Illinois Bell Telephone Company
Chicago Area
Garages and Warehouses
Composite Life and Salvage

	Investment Dec 31	Average Life	Annual Accrual	Net Salvage %	Net Salvage
1922					
North Div Barn	47,957	17.05	2,813	42.9	1,207
Cent	349,888	25.00	13,996	15.0	2,099
Total	397,845	23.67	16,809	19.1	3,306
1923					
North Div Barn	47,871	17.05	2,808	42.9	1,205
Cent	362,194	25.00	14,488	15.0	2,173
Total	410,065	23.71	17,296	19.5	3,378
1924					
North Div Barn	47,758	17.05	2,801	42.9	1,202
Cent	378,335	25.00	15,133	15.0	2,270
Total	426,093	23.76	17,934	19.4	3,472
1925					
North Div Barn	41,698	17.05	2,446	42.9	1,049
Cent	[illegible]	25.00	15,362	15.0	2,304
Total	425,751	23.91	17,808	18.8	3,353
1926					
North Div Barn	41,312	17.05	2,423	42.9	1,039
Cent	386,217	25.00	15,449	15.0	2,317
Total	427,529	23.92	17,872	18.8	3,356

North Div Garage Retired 1928

24 yrs Average Life and [illegible]
20% Salvage " "

Illinois Bell Telephone Company
Chicago Area
Manual Central Office Telephone Equipment
Calculation of Composite Average Service Life for Offices in Service Dec. 31, 1922

Form 3220

Offices	Investment December 31, 1922	Estimated Life at Retirement	Annual Requirement	Retired Offices Percent Net Salvage	Salvage Value Annual Requirement
Austin	*506245	10.52	48,122.15		
Belmont	624,026	11.45	54,500.09		
Beverly	129,590	9.97	12,997.99		
Calumet	628,620	11.55	54,425.97		
Canal	305,855	9.69	31,563.98		
Chesterfield	17,207	11.01 98	1,562.15	1756 3 7.	53
Dearborn	860,689	7.86	109,502.42		
Douglas	226,611	17.54	12,919.67		
Edgewater	647,635	18.33	35,331.97		
Humboldt	646,191	11.17	57,850.58		
Hyde Park	901,948	11.15	80,892.20		
Irving	531,871	14.33	37,115.91		
Kedzie	603,683	12.61	47,813.35		
Kildare	290,920	13.21	22,022.71		
La Fayette	270,505	9.71	27,858.34		
Lakeview	942,722	11.17	84,397.67		
Lawndale	718,139	12.27	58,528.04		
Lincoln	464,374	10.64	43,644.17		
Monroe	536,778	12.79	41,968.57		
Newcastle	-	9.75	-		
Oakland	725,373	17.52	41,402.57		
Prospect	358,884	11.02	32,566.61		
Pullman	232,066	10.07	23,045.28		
Randolph (Central)	305000*	12.71 11.5	23,996.85	26,991	1557
Randolph	624440* *	16.18 14.4	38,593.33	43,264	
Rogers Park	395,007	8.18	48,284.36		2168
South Chicago	320,225	12.66	25,294.23		
Stewart	427,212	11.88	35,960.61		
Superior	331,141	13.39	24,730.47		
Wabash	1,379,907	10.45 .03	132,048.52	148,377	11,810
Wentworth	621,801	14.93	41,647.16		
West	491,652	12.76	38,530.72		
Yards	459,558	15.19	30,253.99		8133
Main	1,125574	13.00 11.6	86,582.12	97,632	
		11.88	1,486,021.19		
		11.80			20,381
	3452,128	10.87	317520	96	
	14,199,321	13.00	1,092,255	100	109,226
	17,651,449	12.52	1,409,775	99	129,607
	12.5 years 10% net = 7.2 rate				

Form 3220

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Illinois Bell Telephone Company
Chicago Area
Manual Central Office Telephone Equipment
Calculation of Composite Average Service Life for Offices in Service December 31, 1923

Office	Investment December 31, 1923	Estimated Life at Retirement	Annual Requirement	Retired Offices Percent Net Salvage	Retired Offices Salvage Value % Ann Requirement
Austin	660,586	10.52	62,793.35		
Belmont	657,322	11.45	57,408.03		
Beverly	207,114	9.97	20,773.72		
Calumet	756,726	11.55	65,517.40		
Canal	410,976	9.69	42,412.38		
Chesterfield	17,462	11.01 9.8	1,586.01 1782	3%	53 47.58
Douglas	241,923	17.54	13,792.65		
Edgewater	842,456	18.33	45,960.50		
Humboldt	810,977	11.17	72,603.13		
Hyde Park	995,921	11.15	89,320.27		
Irving	600,699	14.33	41,918.98		
Kedzie	737,120	12.61	58,455.19		
Kildare	417,942	13.21	31,638.30		
La Fayette	283,214	9.71	29,167.23		
Lakeview	1,186,467	11.17	106,219.07		
Lawndale	843,706	12.27	68,761.70		
Lincoln	502,378	10.64	47,215.98		
Monroe	589,137	12.79	46,062.34		
Newcastle	5,665	9.75	581.03		
Oakland	882,103	17.52	50,348.34		
Prospect	465,534	11.02	42,244.46		
Pullman	248,568	10.07	24,684.01		
✓ Randolph	695,526	16.18 14.4	42,986.77 48,300	5%	2415 2,149.34
Rogers Park	525,383	8.18	64,227.75		
South Chicago	412,354	12.66	32,571.41		
Stewart	573,883	11.88	48,306.15		
Superior	398,605	13.39	29,768.86		
✓ Wabash	1,466,113	10.45 9.3	140,297.89 157,647	8%	12,612 11,223.83
Wentworth	674,300	14.93	45,164.10		
West	533,914	12.76	41,842.79		
Yards	491,781	15.19	32,375.31		
Dearborn	1,003,942	7.86	127,727.91		
✓ Main	1,125,574	13.00 11.6	86,582.62 97,032	9%	8733 7792.44
Total	20,265,371	11.84	1,711,316.19		
	16,960,696	11.78	1,439,862.90	7.8	23,813.
	3,304,675		304,761		
	16,960,696	13	1,304,669	10	130,467
	3,304,675	10.84	304,859	7.8	23,813
	20,265,371	12.59	1,609,528	9.6%	154,280

12.5 years 10% av = 7.2 rate

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ILLINOIS BELL TELEPHONE COMPANY
AVERAGE REALIZED LIFE STUDY
OF C O Telephone Equipment

Delaware
NAME OF CENTRAL OFFICE

Chicago
NAME OF EXCHANGE

No 1 Common Battery
TYPE OF Equipment

CALENDAR YEAR	GROSS ADDITIONS	RETIREMENTS	AMOUNT IN SERVICE DEC. 31 OF EACH YEAR	AVERAGE AMOUNT IN SERVICE EACH YEAR	CUMULATIVE DOLLAR YEARS DEC. 31 OF EACH YEAR	CUMULATIVE GROSS ADDITIONS DEC 31 OF EACH YEAR	AVERAGE REALIZED LIFE DEC. 31 OF EACH YR
1900							
1							
2							
3							
4							
5							
6							
7							
8							
9							
1910							
1							
2							
3							
4							
5							
6							
7							
8							
9							
1920							
1							
2							
3							
4							
5							
6							
7							
8							
1929	6.944	9.942	454.784	228.891 227.342	7.070.021	577.266	1225
1930	6.460	14.837	441.407	227.392 220.704	7.518.117	578.726	
1931	717	440.690	0	220.703 0	7.738.820	578.009	13.39

1924 Taken from 1930 Study

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ILLINOIS BELL TELEPHONE COMPANY
AVERAGE REALIZED LIFE STUDY

OF C.O. Telephone Equipment

Dearborn
NAME OF CENTRAL OFFICE

Chicago
NAME OF EXCHANGE

No 1 Common Battery
TYPE OF Equipment

CALENDAR YEAR	GROSS ADDITIONS	RETIREMENTS	AMOUNT IN SERVICE DEC. 31 OF EACH YEAR	AVERAGE AMOUNT IN SERVICE EACH YEAR	CUMULATIVE DOLLAR YEARS DEC. 31 OF EACH YEAR	CUMULATIVE GROSS ADDITIONS DEC. 31 OF EACH YEAR	AVERAGE REALIZED LIFE DEC. 31 OF EACH YR
1921							
2							
3							
4							
5							
6							
7							
3							
1929	54542	8,351	1,259,779	606,794 634,840	8,620,568	1,312,693	6.57
1930	27784	374	1,287,189	639,889 643,585	9,894,052	1,340,477	
1931		1,287,189	— 0 —	643,544 c	10,537,646	1,340,477	7.86

1929 taken from 1930 Study

4301

ILLINOIS BELL TELEPHONE COMPANY
CHICAGO AREA
C.O. TELEPHONE EQUIPMENT
COMPARISON OF AVERAGE REALIZED LIFE
ON ACTUAL AND UNIFORM COST BASIS

Ofi.	Investment Dec. 31, 1928	Average Realized Life Actual	Average Realized Life Uniform Cost Basis	Annual Requirements Actual Life Basis	Annual Requirements Uniform Cost Basis
A	B	C	D	E = B ÷ C	F = B ÷ D
Belmont	1,214,002	7.18	7.05	169,081	172,199
Beverly	499,381	4.67	4.95	106,934	100,885
Calumet	1,075,619	7.97	9.26	134,958	116,158
Canal	667,364	7.43	9.28	89,820	71,914
Delaware	457,782	11.60	12.01	39,464	38,117
Douglas	343,574	11.46	12.78	29,980	26,884
Edgewater	1,500,023	7.80	9.24	192,311	162,340
Humboldt	1,167,985	8.23	9.89	141,918	118,098
Irving	1,229,710	6.36	7.27	193,351	169,149
Kedzie	1,146,825	8.44	9.70	135,880	118,229
Lakeview	1,966,209	7.32	8.36	268,519	233,877
Lawndale	1,237,200	8.26	8.41	149,782	147,111
Monroe	824,959	10.57	12.13	78,047	68,010
Oakland	1,140,582	10.65	13.36	107,097	85,373
Stewart	1,358,385	5.31	5.71	255,816	237,896
Wabash	1,676,560	9.99	12.34	167,824	135,864
Wentworth	937,099	10.56	10.81	88,740	86,688
West	700,803	9.93	11.72	70,574	59,795
Yards	677,026	10.62	14.06	63,750	48,153
Composite	19,810,087	7.98	9.02	2,483,910	2,196,740

$\frac{7.98}{9.02} = 89\%$

These rates used to determine effect of using actual investment versus common cost level in determining average life of retired offices

Illinois Bell Telephone Company
Chicago Area
Toll Central Office Equipment
Composite Life and Salvage

Form 8250

	Investment Dec 31	Average Life	Annual Requirement	Net Salvage %	Net Salvage
1922					
L.D. Toll Office	755,076	5.86	128,853	26.49	34,193
OBJ "	594,917	11.42	52,094	14.32	7,460
Repeater Equip	428,291	8	53,536	20.0	10,[illegible]7
Total	1,778,284	7.6	234,483	22.3	52,300
1923					
L.D. Toll Office	770,417	5.86	131,470	26.49	34,826
OBJ "	590,998	11.42	51,751	14.32	7,411
Repeater Equip	585,648	8	73,206	20.0	14,641
Total	1,947,063	7.6	256,427	22.2	56,878
1924					
L.D. Toll Office	784,882	5.86	133,939	26.49	35,480
OBJ	597,716	11.42	52,339	14.32	7,495
Repeater Equip	958,621	8	119,828	20.0	23,966
Total	2,341,219	7.6	306,106	21.9	66,941
1925					
L.D. Toll Office	877,187	5.86	149,691	26.49	39,653
OBJ	597,716	11.42	52,339	14.32	7,495
Repeater Equip	1,525,061	8	190,633	20.0	38,127
Total	2,999,964	7.6	392,663	21.7	85,275
1926					
L.D. Toll Office	1,058,707	5.86	180,667	26.49	47,859
OBJ Toll	641,480	11.42	56,172	14.32	8,044
Repeater Equip	1,881,598	8	235,200	20.0	47,040
Total	3,581,785	7.6	472,039	21.8	102,943

Chicago Area

Average Life of Exchange Poles

Form 3220

	Investment Weighting Jan 1		Average Life		Annual Requirement
1923					
Treated	10%		27		.4%
Untreated	90		20		45
Total	100		204		49
1924					
Treated	16		27		.6
Untreated	84		20		42
Total	100		208		4.8
1925					
Treated	24		27		.9
Untreated	76		20		38
Total	100		21.3		4.7
1926					
Treated	27		27		1.0
Untreated	73		20		3.7
Total	100		21.3		47
1927					
Treated	32		27		1.2
Untreated	68		20		34
Total	100		21.7		46

Illinois Bell Telephone Company
Chicago Area
Station Equipment
Calculation of Average Salvage Percentage

Form 3320

Year and Item	Service Life	Overall Life	Reuse Salvage	Losses Allowed for in Reuse Sal.		Junk Sal.	Average Salvage
				Supp. Exp.	Mat.		
1923							
Station Apparatus	7	21	88%	9%	3%	5%	60%
Non-mult. P.B.X	6	18	75	9	16	5	55
1924							
Same as 1923							
1925							
Substations	6	19	90	7	3	5	65
Teletypewriters	3	-9	92	7	1	5	65
1926							
Substations	5.	20	91	6	3	5	70
Teletypewriters	3	9	93	6	1	5	65
1927							
Substations	6	20	92	5	3	5	70
Teletypewriters	3	9	94	5	1	5	65

4305

[fol. 4306]

EXHIBIT D-139

Illinois Bell Telephone Company, Chicago Area

Data Requested by Mr. Goldstein

Investment in Manual and Dial C. O. Telephone Equipment

	Manual	Dial
December 31, 1923	$22,401,087*	$5,064,290
December 31, 1931	39,187,914*	20,888,253

Gross Additions and Displacements—Kedzie Central Office Equipment

	Actual		Estimated	
	Gross Additions	Displ.	Gross Additions	Displ.
1930	$122,411	$16,884	$36,000	$700
1931	14,527	8,516	51,100	6,200

* Including Toll Equipment.

(Here follows side folio 4307)

EXHIBIT. D-140

ILLINOIS BELL TELEPHONE COMPANY
AVERAGE REALIZED LIFE STUDY

OF [illegible]

[illegible]
NAME OF CENTRAL OFFICE

Chicago
NAME OF EXCHANGE

[illegible]
TYPE OF EQUIPMENT

CALENDAR YEAR	GROSS ADDITIONS	RETIREMENTS	AMOUNT IN SERVICE DEC. 31 OF EACH YEAR	AVERAGE AMOUNT IN SERVICE EACH YEAR	CUMULATIVE DOLLAR YEARS DEC. 31 OF EACH YEAR	CUMULATIVE GROSS ADDITIONS DEC 31 OF EACH YEAR	AVERAGE REALIZED LIFE DEC. 31 OF EACH YR
1926	378 077	93	377 984	188 992	188,992	378 077	.50
1927	212 667	391	590 260	[illegible]	673,114	590 744	1.14
1928	21 828	1269	610 819	[illegible]	1,273,654	612 572	2.08
1929	12 840	3211	620 448	[illegible]	1,889,287	625 412	3.02
1930	59 735	10 345	669 838	[illegible]	2,534,430	685,147	3.70
1931	23,378	3,245	689,971	[illegible]	3,214,334	708,525	4.54
1932	400	100	690,271	[illegible]	3,904,465	708,925	5.51
1933	12 674	4366	698,579	[illegible]	4,598,890	721,599	6.37
1934	247 382	8762	937,249	[illegible]	5,416,194	968,981	5.59
1935	93 100	200	1,030,149	[illegible]	6,400,493	1,062,081	6.03
1936	158 500	200	1,188,449	[illegible]	7,509,792	1,220,581	6.15
1937	190 000	300	1,378,149	[illegible]	8,793,091	1,410,581	6.23
1938	134 000	400	1,511,749	[illegible]	10,238,040	1,544,581	6.63
1939	61 700	200	1,573,249	[illegible]	11,780,539	1,606,281	7.33
1940	50 200	200	1,623,249	[illegible]	13,378,788	1,656,481	8.08
1941	54 300	100	1,677,549	[illegible]	15,029,187	1,710,881	8.78
1942	53 200	500	1,730,249	[illegible]	16,733,086	1,764,081	9.49
1943	25,200	300	1,755,149	[illegible]	18,475,785	1,789,281	10.33
1944		1,755,149	0	877 575	19,353,360	1,789,281	10.82

[fols. 4308 & 4309]

EXHIBIT X-1

Illinois Bell Telephone Company, Chicago Exchange

Table to Illustrate that Results Obtained in City's Exhibit No. 95 are not Affected by Choice of Base Year having Different Proportions of Material and Labor

Account 241—Exchange Pole Lines

Date	Material Index (1)	Each Year's Gross Additions % Material (2)	% Labor (3)	% Labor of Material (4)	Extension (5)	Labor Index as Computed from Sloan's Material Ratio (6)	Sloan's Labor Ratio (7)	% 6-30-23 of Given Year as Computed from Sloan's Labor Ratio. (8)	Sloan's Material Ratio (9)	City's Exhibit No. 95 Table No. 1 (10)
1911	39.70	47.4	52.6	111.0	44.07	17.66	58.80	170.06	566.25	566.34
1912	43.14	47.4	52.6	111.0	47.89	19.19	58.73	170.27	521.10	521.20
1913	53.93	58.0	42.0	72.4	39.05	15.65	59.04	169.39	638.98	639.35
1914	54.71	55.1	44.9	81.5	44.59	17.86	60.60	165.01	559.91	559.74
1915	59.20	52.3	47.7	91.2	53.99	21.63	67.93	147.21	462.32	462.28
1916	52.92	54.1	45.9	84.8	44.88	17.98	69.83	143.20	556.17	556.16
1917	58.47	54.2	45.8	84.5	49.41	19.80	71.29	140.27	505.05	505.16
1918	73.51	35.6	64.4	180.9	132.98	53.28	83.98	119.08	187.69	187.70
1919	78.06	40.5	59.5	146.9	114.67	45.94	96.28	103.86	217.68	217.67
1920	88.56	36.9	63.1	171.0	151.44	60.67	108.23	92.40	164.83	164.83
1921	101.79	31.4	68.6	218.5	222.41	89.11	108.61	92.07	112.22	112.27
1922	88.68	26.6	73.4	275.9	244.67	98.02	101.81	98.22	102.02	102.02
1923	93.61	28.6	71.4	249.6	233.65	93.61	99.99	100.01	106.83	106.83
6-30-23	100.00	28.6	71.4	249.6	249.60	100.00	100.00	100.00	100.00	100.00

Notes:

(1) Computed from Plaintiff's Exhibit No. 1, pages 120-121.
(2) and (3) Taken from Plaintiff's Exhibit No. 1, pages 114-115.
(4)=(3) ÷ (2)
(5)=(1) × (4)
(6)=(5) Converted to index on 6-30-23 base.
(7) and (8) Computed from Plaintiff's Exhibit No. 1, pages 131, 132.
(9)=Reciprocal of Col. (6).
(10)=Computed from Table No. 1 of City's Exhibit No. 95, Col. (7).

[fol. 4310]

X-1

Illinois Bell Telephone Company, Chicago Exchange

Table to Illustrate That Results Computed in J. G. Wray Affidavit are not Affected by Choice of Base Year Having Different Proportions of Material and Labor

(Computed From Sloan Exhibit No. 86 in Commission Case No. 11894)

Account 244—Exchange Underground Conduit

					Ratio 1919 Labor to Preceding Years	
Year (1)	Material Index (2)	% Labor of Material (3)	Extension (4)	Labor Inedx (5)	Co. Experience (6)	Sloan (7)
			Computed on 7-31-19 Base			
1911.......	51.7	266.3	137.7	48.1	207.9	253.8
1912.......	56.5	266.3	150.4	52.6	190.1	253.8
1913.......	55.2	240.1	132.5	46.3	215.9	253.8
1914.......	53.9	274.5	148.0	51.7	193.4	251.2
1915.......	48.5	287.6	139.5	48.8	204.9	250.6
1916.......	61.7	278.8	172.0	60.1	166.3	214.7
1917.......	72.3	254.7	184.1	64.3	155.5	186.3
1918.......	85.5	269.0	230.0	80.4	124.3	136.0
7-31-19....	100.0	286.1	286.1	100.0	100.0	100.0
			Computed on 1913 Base			
1911.......	93.66	266.3	249.42	103.88	207.8	253.8
1912.......	102.36	266.3	272.58	113.53	190.1	253.8
1913.......	100.00	240.1	240.10	100.00	215.9	253.8
1914.......	97.64	274.5	268.02	111.63	193.4	251.2
1915.......	87.86	287.6	252.69	105.24	205.1	250.6
1916.......	111.78	278.8	311.64	129.80	166.3	214.7
1917.......	130.98	254.7	333.61	138.95	155.4	186.3
1918.......	154.89	269.0	416.65	173.53	124.4	136.0
7-31-19....	181.16	286.1	518.30	215.87	100.0	100.0

Notes:

(2) and (3) Computed from Sloan Exhibit No. 86 in I. C. C. Case No. 11894.
(4)=(2)×(3).
(5)=(4) converted to index on bases shown.
(6)=Reciprocal of (5).
(7) Taken from Sloan Exhibit No. 86 in I. C. C. Case No. 11894.

(Here follow Exhibits X-2 and X-3, side folios 4311 and 4312).

[fol. 4311]

EXHIBIT X-2

Illinois Bell Telephone Company, Chicago Exchange

Measurement of Error in Percentages of Increase in Plant Costs Used in Plaintiff's Exhibit No. 1 on Assumption that Increases in Material and Labor Costs are Correct

Account 241—Exchange Pole Lines

	Aug. 1 to Dec. 31, 1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	Jan. 1 to June 30, 1923	June 30, 1923
Composite Percentages Showing Increase in Cost of Material and Labor June 30, 1923, Over Previous Periods (Plaintiff's Exhibit No. 1, page 114–115)														
(A) Percent Increase—Material	151.86	131.79	85.44	82.77	68.91	88.96	71.02	36.04	28.11	12.92	1.76*	12.77	6.83	
" " —Labor	70.06	70.27	69.39	65.01	47.21	43.20	40.27	19.08	3.86	7.60*	7.93*	1.78*	.01	
" of Total Cost—Material	47.4	47.4	58.0	55.1	52.3	54.1	54.2	35.06	40.5	36.9	31.4	26.6	28.6	
" " " " —Labor	52.6	52.6	42.0	44.9	47.7	45.9	45.8	64.4	59.5	63.1	68.6	73.4	71.4	
Composite Percent—Material	71.98	62.47	49.56	45.61	36.04	48.13	38.49	12.83	11.38	4.77	.55*	3.40	1.95	
" " —Labor	36.85	36.96	29.14	29.19	22.52	19.83	18.44	12.29	2.30	4.80*	5.44*	1.31*	.01	
Total	108.83	99.43	78.70	74.80	58.56	67.96	56.93	25.12	13.68	.03*	5.99*	2.09	1.96	
Cost of Typical Plant on June 30, 1923														
(B) Material Cost of Typical Plant Jan. 1 to June 30, 1923 (Plaintiff's Exhibit No. 1, page 121)													1,497.21	
1923 Ratio of Labor to Material (71.4÷28.6, Plaintiff's Exhibit No. 1, page 115)													249.65	
Labor Cost of Typical Plant Jan. 1 to June 30, 1923													3,737.78	
Total " " " " " " " " " "													5,234.99	
Recomputation of Percent of Total Cost—Material and Percent of Total Cost—Labor, Based on Percentages of Increase														
(C) Material Cost of Typical Plant	$635.08	$690.06	$862.52	$875.13	$946.96	$846.49	$935.25	$1,175.73	$1,248.55	$1,416.52	$1,628.21	$1,418.43	$1,497.21	$1,599.50
Labor " " " "	2,198.14	2,195.42	2,206.83	2,265.41	2,539.33	2,610.44	2,664.97	3,139.19	3,599.22	4,045.62	4,060.12	3,805.89	3,737.78	3,738.15
Total " " " "	2,833.22	2,885.48	3,069.35	3,140.54	3,486.29	3,456.93	3,600.22	4,314.92	4,847.77	5,462.14	5,688.33	5,224.32	5,234.99	
Percent of Total Cost—Material	22.4	23.9	28.1	27.9	27.2	24.5	26.0	27.2	25.8	25.9	28.6	27.2	28.6	
" " " " —Labor	77.6	76.1	71.9	72.1	72.8	75.5	74.0	72.8	74.2	74.1	71.4	72.8	71.4	
(D) Percent Increase—Material	151.86	131.79	85.44	82.77	68.91	88.96	71.02	36.04	28.11	12.92	1.76*	12.77	6.83	
" " —Labor	70.06	70.27	69.39	65.01	47.21	43.20	40.27	19.08	3.86	7.60*	7.93*	1.78*	.01	
" of Total Cost—Material	22.4	23.9	28.1	27.9	27.2	24.5	26.0	27.2	25.8	25.9	28.6	27.2	28.6	
" " " " —Labor	77.6	76.1	71.9	72.1	72.8	75.5	74.0	72.8	74.2	74.1	71.4	72.8	71.4	
Composite Percent—Material	34.02	31.50	24.01	23.09	18.74	21.80	18.47	9.80	7.25	3.35	.59*	3.47	1.95	
" " —Labor	54.37	53.48	49.89	46.87	34.37	32.62	29.80	13.89	2.86	5.63*	5.66*	1.30*	.01	
Total	88.39	84.98	73.90	69.96	53.11	54.42	48.27	23.69	10.11	2.28*	6.16*	2.17	1.96	
Percentage of Error in (A)	23.12	17.00	6.50	6.92	10.26	24.88	17.94	6.04	35.31	2.30	.18	3.69*	......	

*=Red.

[fol. 4312]

Exhibit X-3

Productivity of Labor Studies Made by U. S. Department of Labor and Published in Monthly Labor Review

Issue of January 1927—Page 37

1919 = 100

	1899	1904	1909	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929
Iron and Steel																			
Industry as a whole	60	69	100	100	120	124	109	103	100	115	94	136	139	137	159	...	...	...	...
Blast Furnaces	46	61	83	104	...	...	...	...	100	...	115	...	160	...	...	...	...	...	...
Steel Works and Rolling Mills	62	70	103	99	...	...	...	...	100	...	91	...	136	...	157	...	...	...	...
Boots and Shoes	95	103	95	95	...	...	...	...	100	...	110	110	102	102	101	...	...	...	...
Leather Tanning	92	91	91	99	...	...	...	...	100	98	125	129	133	130	125	...	...	...	...
Slaughtering and Meat Packing	...	...	124	108	...	...	...	...	100	...	128	134	138	139	137	...	...	...	...
Petroleum Refining	67	62	127	109	...	...	...	...	100	...	121	137	147	177	199	...	...	...	...
Paper and Pulp	...	79	91	96	...	...	...	...	100	98	90	113	112	123	129	...	...	...	...
Cement Manufacturing	...	...	...	97	...	...	...	...	100	...	120	...	128	139	156	...	...	...	...
Automobiles	...	29	26	74	...	88	98	66	100	110	142	183	199	193	200	...	...	...	...
Rubber Tires	...	...	...	77	...	...	...	...	100	...	146	...	205	232	239	...	...	...	...
Flour Milling	...	98	97	104	...	...	...	...	100	...	123	...	133	...	146	...	...	...	...
Cane Sugar Refining	...	...	...	127	...	...	...	...	100	...	104	...	129	144	162	...	...	...	...

Issue of June 1927—Pages 53 and 54

1919 = 100

	1899	1904	1909	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929
All Industries	95	98	104	102	...	...	...	...	100	...	103	...	127	...	141	...	...	...	...
Food and kindred Products	108	121	119	114	...	...	...	...	100	...	123	...	134	...	143	...	...	...	...
Textiles	95	100	108	108	...	...	...	...	100	...	102	...	111	...	114	...	...	...	...
Iron and Steel	111	112	129	104	...	...	...	...	100	...	86	...	129	...	138	...	...	...	...
Lumber	122	125	121	111	...	...	...	...	100	...	108	...	111	...	121	...	...	...	...
Leather	107	116	104	102	...	...	...	...	100	...	104	...	106	...	103	...	...	...	...
Paper and Printing	86	93	107	114	...	...	...	...	100	...	101	...	129	...	140	...	...	...	...
Chemicals	71	87	97	101	...	...	...	...	100	...	122	...	131	...	153	...	...	...	...
Stone, Clay and Glass Products	98	97	109	103	...	...	...	...	100	...	111	...	135	...	156	...	...	...	...
Metals and Products (Except Iron and Steel)	73	86	99	98	...	...	...	...	100	...	124	...	138	...	163	...	...	...	...
Tobacco Manufacture	54	56	61	66	...	...	...	...	100	...	102	...	120	...	156	...	...	...	...
Vehicles for Land Transportation	20	31	42	66	...	...	...	...	100	...	118	...	174	...	220	...	...	...	...
Ship and Boat Building	76	76	66	62	...	...	...	...	100	...	110	...	12	...	52	...	...	...	...
Rubber	...	...	83	78	...	...	...	...	100	...	128	...	163	...	199	...	...	...	...

Issue of January 1932—Page 20

1925 = 100

	1899	1904	1909	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929
Bar Shearing	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100	103	112	114	116
Hot Rolling	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100	106	106	108	149
Cold Rolling	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100	104	121	135	128
Sheet Annealing	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100	99	94	94	95
Sheet Pickling	...	...	...	...	...	...	...	...	...	...	...	...	...	...	100	97	94	122	122

[fol. 4313]

Productivity of Labor

Study Made by U. S. Department of Labor and Published in Monthly Labor Review, Issue of February, 1932—Page 292

Coal Mining

Year	Anthracite		Bituminous	
	Output per Man per Day (ton)	Index on 1919 Base	Output per Man per Day (ton)	Index on 1919 Base
1911	2.75	98	4.01	86
1912	2.69	96	4.24	91
1913	2.67	95	4.16	90
1914	2.67	95	4.28	92
1915	2.78	99	4.49	97
1916	2.74	98	4.57	98
1917	2.89	103	4.51	97
1918	2.94	105	4.62	100
1919	2.81	100	4.64	100
1920	2.93	104	4.80	103
1921	2.70	96	4.86	105
1922	2.87	102	4.98	107
1923	2.70	96	5.15	111
1924	2.53	90	5.17	111
1925	2.60	93	5.09	110
1926	2.53	90	5.07	109
1927	2.58	92	5.11	110
1928	2.60	93	5.26	113
1929	2.64	94	5.42	117
1930	2.63	94	5.61	121

[fol. 4314]

Exhibit X-4

Illinois Bell Telephone Company, Chicago Exchange

Table to Illustrate that Reducation in Labor Cost from Any Cause is not Fully Reflected in Plaintiff's Exhibit No. 1

Account 241—Exchange Pole Lines, 1922-3

	W. F. Sloan		J. G. Wray & Co.	
	1922	1923	1922	1923
(1) Material Cost of Typical Plant	$1,418.43	$1,497.21	$1,418.43	$1,497.21
(2) Labor Cost of Typical Gang	1,113.67	1,093.70	....	....
(3) Material Index	100.00	105.55	....	....
(4) Labor Index	100.00	98.21	....	....
(5) Percent of Total Cost—Material	26.6	28.6	26.6	28.6
(6) Percent of Total Cost—Labor	73.4	71.4	73.4	71.4
(7) Percent Labor of Material Cost	....	....	275.93	249.65

Notes:
Lines (1), (2), (5) and (6) taken from Plaintiff's Exhibit No. 1.
Line (3) computed from Line (1).
Line (4) computed from Line (2).
Line (7) = Line (6) ÷ Line (5).

	W. F. Sloan 1922	W. F. Sloan 1923	J. G. Wray & Co. 1922	J. G. Wray & Co. 1923
(8) Labor Cost of Typical Plant	....	....	3,913.87	3,737.78
(9) Total Cost of Typical Plant	....	....	5,332.30	5,234.99
(10) Composite Percent — Material	26.6	30.19	....	....
(11) Composite Percent—Labor	73.4	70.12	....	....
Total Cost Index	100.00	100.31	100.00	98.18

Line (8) = Line (7) x Line (1).
Line (9) = Line (1) + Line (8).
Line (10) = Line (3) x Line (5).
Line (11) = Line (4) x Line (6).

[fol. 4315]

Exhibit X–5

Illinois Bell Telephone Company, Chicago Exchange

Comparison of Gang Make-ups as of June 30, 1923, Used in Plaintiff's Exhibits Nos. 1 and A–2

Exchange, Outside Plant

Acct. No.	Description	Number in Plaintiff's Exhibit No. 1	Number in Plaintiff's Exhibit No. A-2	Percent of Total in Plaintiff's Exhibit No. 1	Percent of Total in Exhibit No. A-2
241	Exchange Pole Lines Line Gang				
	Line Foreman	1	1	16.66	16.66
	Linemen	3	3	50.00	50.00
	Groundmen	1	1	16.67	16.67
	Driver	1	1	16.67	16.67
	Total	6	6	100.00	100.00
242	Exchange Aerial Cable Placing Gang				
	Line Foreman	1	1	9.80	6.35
	Linemen	3	3	29.42	19.05
	Groundmen	1	1	9.80	6.35
	Driver	1	1	9.80	6.35
	Splicing Gang				
	Splicing Foreman	.2	.75	1.96	4.76
	Splicers and Helpers	4.0	9.00	39.22	57.14
	Total	10.2	15.75	100.00	100.00
243	Exchange Aerial Wire Line Gang				
	Line Foreman	1	.....	12.50	......
	Linemen	3	.....	37.50	......
	Groundman	1	.....	12.50	......
	Driver	1	.....	12.50	......
	Line Installers	2	1	25.00	100.00
	Total	8	1	100.00	100.00
244	Exchange U. G. Conduit				
	Foreman	1	1	3.03	1.79
	Sub-Foremen	....	3	......	5.35
	Bricklayer	1	1	3.03	1.79
	Timekeeper	1	1	3.03	1.79
	Laborers	30	50	90.91	89.28
	Total	33	56	100.00	100.00

Acct. No.	Description	Number in Plaintiff's Exhibit No. 1	Number in Plaintiff's Exhibit No. A-2	Percent of Total in Plaintiff's Exhibit No. 1	Per cent of Total in Exhibit No. A-2
245	Exchange U. G. Cable Placing Gang				
	Placing Foreman	1	1	3.01	2.53
	Linemen	4	.....	12.05	......
	Groundmen	2	.....	6.02	......
	Driver	1	.....	3.01	......
	Cablemen	....	7	......	17.72
	Splicing Gang				
	Splicing Foreman	1.2	1.5	3.62	3.80
	Splicers and Helpers	24.0	30.0	72.29	75.95
	Total	33.2	39.5	100.00	100.00

[fol. 4316]

Exhibit X-6

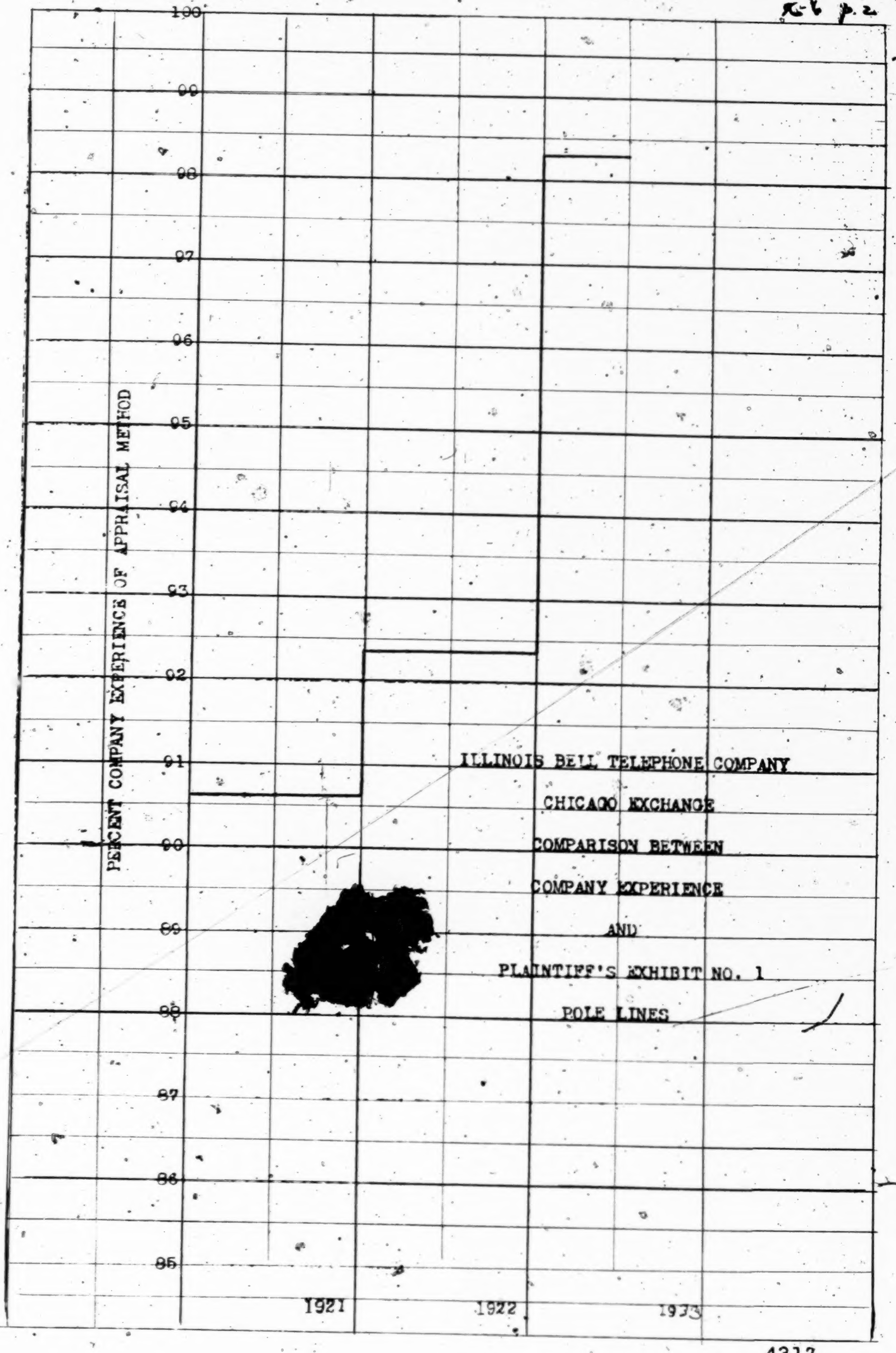
Illinois Bell Telephone Company, Chicago Exchange

Comparison Between Company Experience and Plaintiff's Exhibit No. 1, 1921–1923

	Total Gross Additions June 30, 1923 Level		
	Appraisal Method	Company Experience	% of Appraisal Method
	Year 1921		
Account 241—Exchange Pole Lines	$81,843.23	$74,173.42	90.63
Account 242—Exchange Aerial Cable	101,883.21	90,096.65	88.43
Account 245—Exchange Underground Cable	700,337.81	664,748.95	94.92
Total	$884,064.25	$829,019.02	93.77
	Year 1922		
Account 241—Exchange Pole Lines	$220,997.29	$204,155.69	92.38
Account 242—Exchange Aerial Cable	284,925.40	269,692.32	94.65
Account 245—Exchange Underground Cable	1,594,642.02	1,527,951.18	95.82
Total	$2,100,564.71	$2,001,799.19	95.30
	Jan.-June 1923		
Account 241—Exchange Pole Lines	$121,142.75	$119,087.27	98.30
Account 242—Exchange Aerial Cable	194,054.35	187,716.56	96.73
Account 245—Exchange Underground Cable	1,007,138.91	1,009,207.96	100.21
Total	$1,322,336.01	$1,316,011.79	99.52

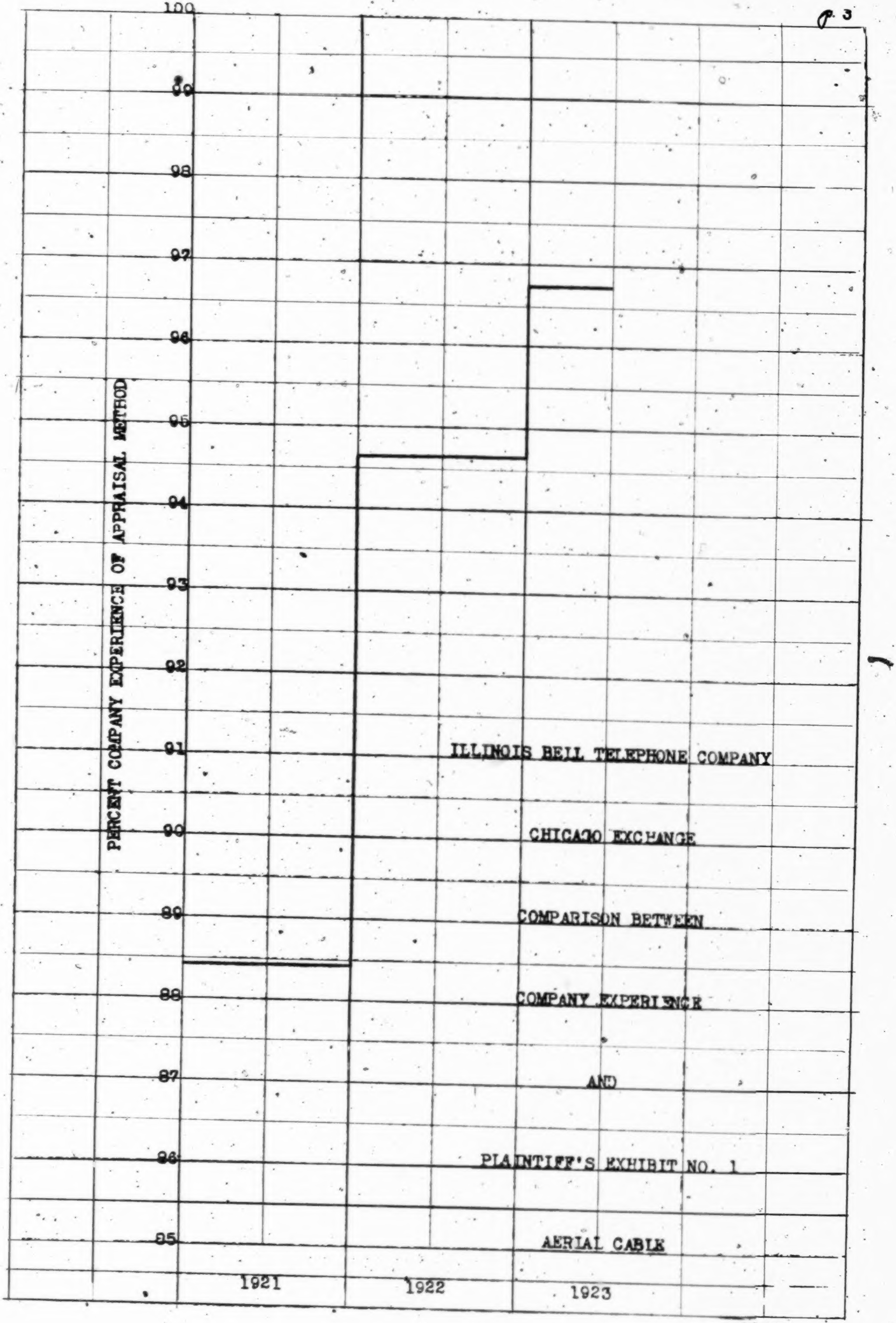
(Here follows Plaintiff's Exhibit No. 6, side folios 4317, 4318, 4319, 4320.)

x-6 p.2



ILLINOIS BELL TELEPHONE COMPANY
CHICAGO EXCHANGE
COMPARISON BETWEEN
COMPANY EXPERIENCE
AND
PLAINTIFF'S EXHIBIT NO. 1
POLE LINES

P 3



ILLINOIS BELL TELEPHONE COMPANY

CHICAGO EXCHANGE

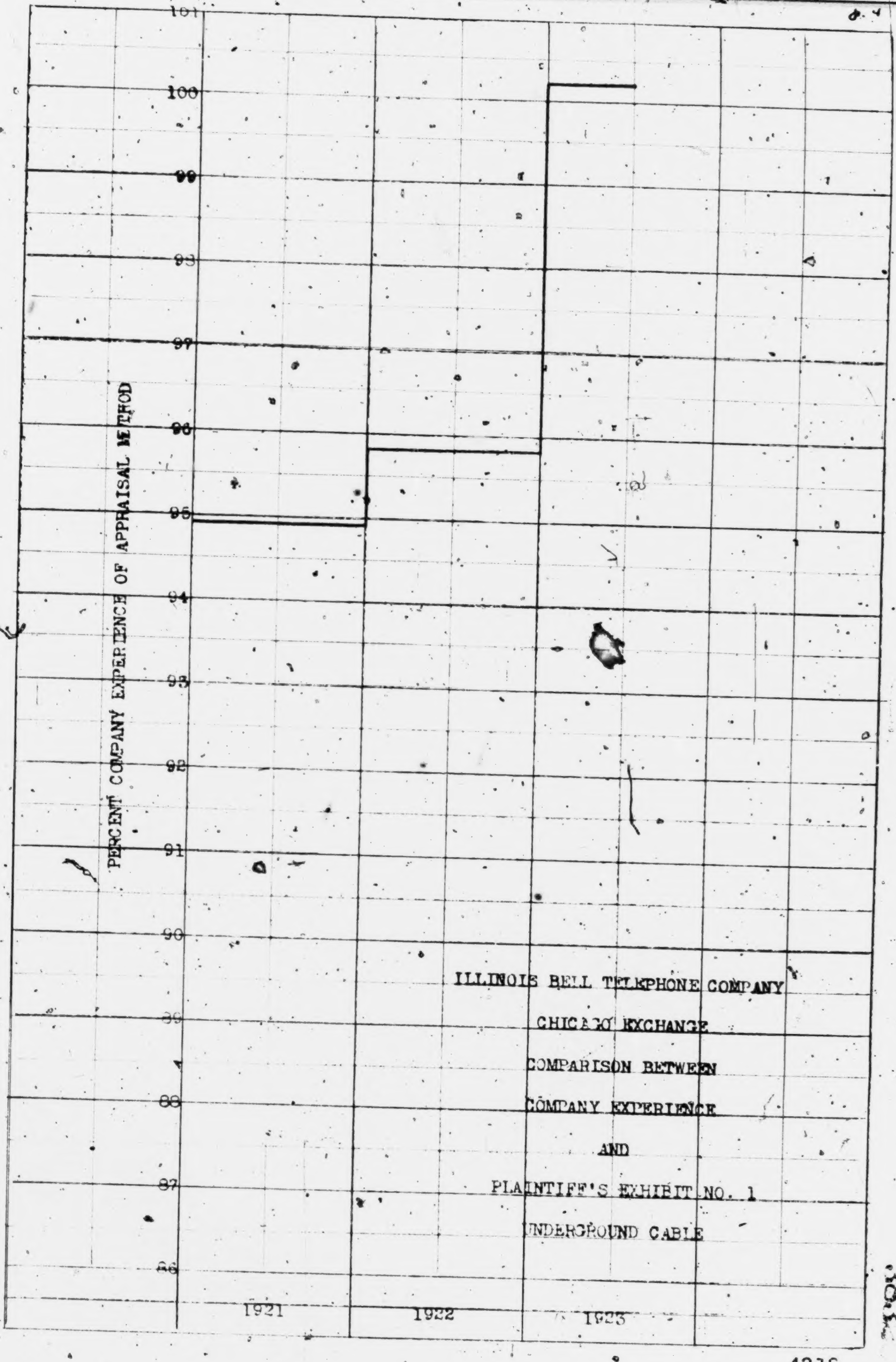
COMPARISON BETWEEN

COMPANY EXPERIENCE

AND

PLAINTIFF'S EXHIBIT NO. 1

AERIAL CABLE



ILLINOIS BELL TELEPHONE COMPANY

CHICAGO EXCHANGE

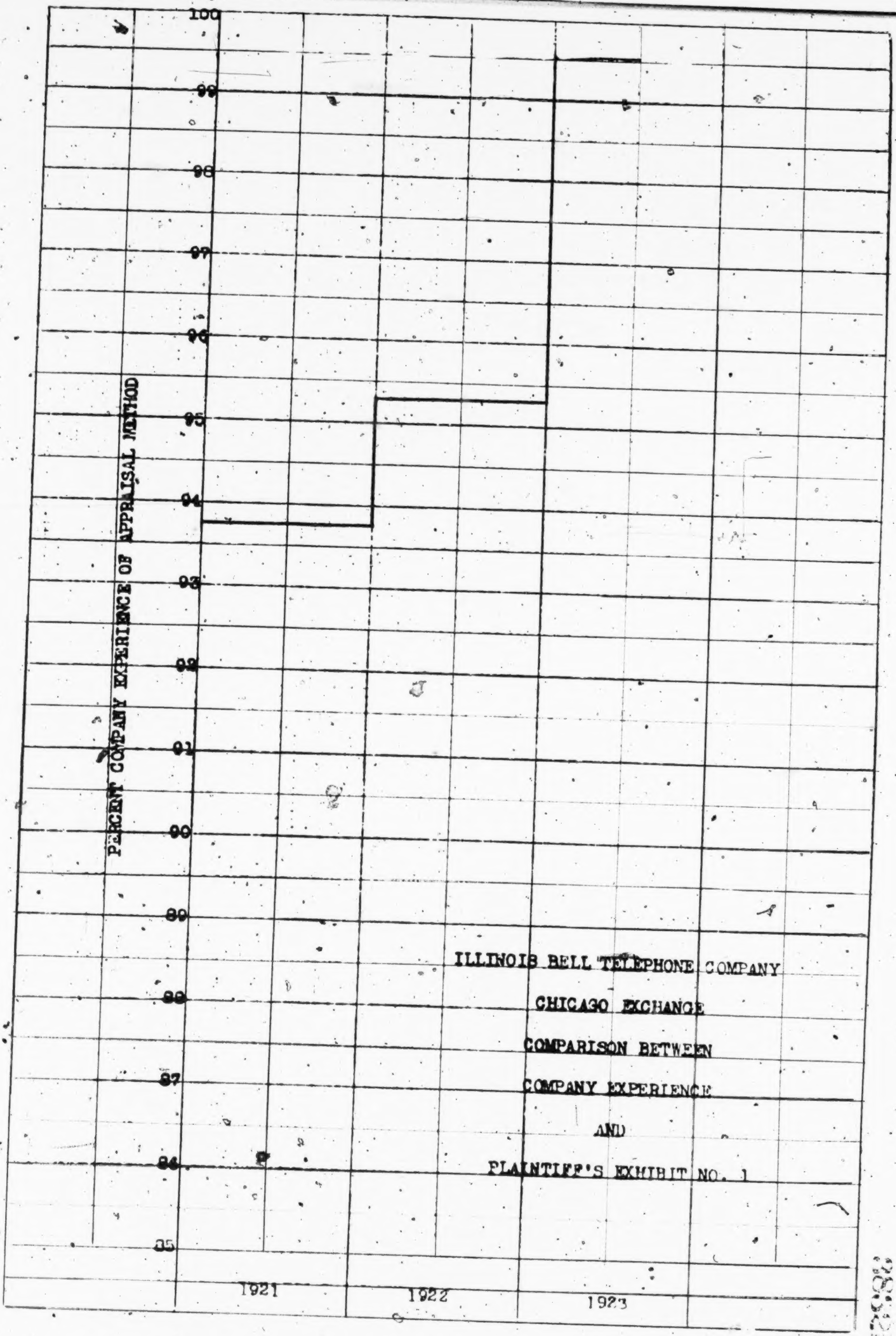
COMPARISON BETWEEN

COMPANY EXPERIENCE

AND

PLAINTIFF'S EXHIBIT NO. 1

UNDERGROUND CABLE



ILLINOIS BELL TELEPHONE COMPANY
CHICAGO EXCHANGE
COMPARISON BETWEEN
COMPANY EXPERIENCE
AND
PLAINTIFF'S EXHIBIT NO. 1

[fol. 4321]

Illinois Bell Telephone Company, Chicago Exchange

Difference Between Gross Additions at Cost Level of June 30, 1923, as Developed from Company's Experience and from Plaintiff's Exhibit No. 1

Account 241—Exchange Pole Lines

	Year 1921	Year 1922	Jan.-June 1923	Total
Gross Additions (Ptf. Exh. No. 1)	$87,058.00	$216,473.00	$118,814.00	$422,345.00
Percent Increase June 30, 1923 over previous periods:				
Company Experience	(14.80)	(5.69)	.23	(5.90)
Plaintiff's Exh. No. 1	(5.99)	2.09	1.96	.39
Amount of Increase:				
Company Experience	$(12,884.58)	$(12,317.31)	$273.27	$(24,928.62)
Plaintiff's Exh. No. 1	(5,214.77)	4,524.29	2,328.75	1,638.27
Difference	$7,669.81	$16,841.60	$2,055.48	$26,566.89
Difference as % of Actual Increase (or decrease)	59.53	136.73	752.19	106.57
Gross Additions at Level of June 30, 1923:				
Company Experience	$74,173.42	$204,155.69	$119,087.27	$397,416.38
Plaintiff's Exh. No. 1	81,843.23	220,997.29	121,142.75	423,983.27
Difference	$7,669.81	$16,841.60	$2,055.48	$26,566.89
Difference as % of Company Experience	10.34	8.25	1.73	6.68

( )=decrease

[fol. 4322] Illinois Bell Telephone Company, Chicago Exchange

Composite Percentages Showing Increase in Costs of Labor and Material, June 30, 1922, Over Previous Periods

Account 241—Exchange Pole Lines

	Year 1921	Year 1922	Jan.-June, 1923
Per cent increase—Material	(6.91)	5.24	.77
" " —Labor	(18.41)	(9.65)	.01
" of Total cost—Material*	31.4	26.6	28.6
" " " " —Labor*	68.6	73.4	71.4
Composite per cent—Material	(2.17)	1.39	.22
" " —Labor	(12.63)	(7.08)	.01
Total	(14.80)	(5.69)	.23

---

*Taken from Plaintiff's Exhibit No. 1.
( )=decrease.

[fol. 4323] Illinois Bell Telephone Company, Chicago Exchange

Difference Between Material Costs as Developed from Company's Experience and from Plaintiff's Exhibit No. 1

Account 241—Exchange Pole Lines

	Year 1921	Year 1922	Jan.-June 1923
Actual Material Cost (Constr. Records)	$26,547.72	$57,245.49	$34,625.41
Percent Increase June 30, 1923 over previous periods:			
Company Experience	(6.91)	5.24	.77
Plaintiff's Exh. No. 1	(1.76)	12.77	6.83
Amount of Increase:			
Company Experience	$(1,834.45)	$2,999.66	$266.62
Plaintiff's Exh. No. 1	(467.24)	7,310.25	2,364.92
Difference	$1,367.21	$4,310.59	$2,098.30
Difference as % of Actual Increase (or Decrease)	74.53	143.70	787.00
Material Cost at Level of June 30, 1923:			
Company Experience	$24,713.27	$60,245.15	$34,892.03
Plaintiff's Exh. No. 1	26,080.48	64,555.74	36,990.33
Difference	$1,367.21	$4,310.59	$2,098.30
Difference as % of Company Experience	5.53	7.16	6.01

( )=decrease.

[fol. 4324] Illinois Bell Telephone Company, Chicago Exchange

Difference Between Labor Costs as Developed from Company's Experience and from Plaintiff's Exhibit No. 1

Account 241—Exchange Pole Lines

	Year 1921	Year 1922	Jan.-June 1923
Actual Labor Cost*	$16,997.17	$53,591.26	$25,243.22
Percent Increase June 30, 1923 over previous periods:			
Company Experience	(18.41)	(9.65)	.01**
Plaintiff's Exh. No. 1	(7.93)	(1.78)	.01
Amount of Increase:			
Company Experience	$(3,129.18)	$(5,171.56)	$2.52
Plaintiff's Exh. No. 1	(1,347.88)	(953.92)	2.52
Difference	$1,781.30	$4,317.64	$....
Difference as % of Actual Increase (or Decrease)	56.93	81.55	....
Labor Cost at Level of June 30, 1923:			
Company Experience	$13,867.99	$48,419.70	$25,240.70
Plaintiff's Exh. No. 1	15,649.29	52,637.34	25,240.70
Difference	$1,781.30	$4,217.64	$........
Difference as % of Company Experience	12.84	8.71	....

* Direct labor cost from Company's construction records, plus plant supervision and tool expense computed at same percentages as in Plaintiff's Exhibit No. 1.

** Plaintiff's Exhibit No. 1.

( )=decrease.

[fol. 4325]

Illinois Bell Telephone Company, Chicago Exchange

Difference Between Gross Additions at Cost Level of June 30, 1923 as Developed from Company's Experience and From Plaintiff's Exhibit No. 1

Account 242—Exchange Aerial Cable

	Year 1921	Year 1922	Jan.-June, 1923	Total
Gross Additions (Ptf. Exh. No. 1)	$112,790.00	$277,976.00	$190,324.00	$581,090.00
Percent Increase June 30, 1923 over previous periods:				
Company Experience	(20.12)	(2.98)	(1.37)	(5.78)
Plaintiff's Exh. No. 1	(9.67)	2.50	1.96	(.04)
Amount of Increase:				
Company Experience	$(22,693.35)	$(8,283.68)	$(2,607.44)	$(33,584.47)
Plaintiff's Exh. No. 1	(10,906.79)	6,949.40	3,730.35	(227.04)
Difference	$11,786.56	$15,233.08	$6,337.79	$33,357.43
Difference as % of Actual Increase (or decrease)	51.94	183.89	243.07	99.32
Gross Additions at Level of June 30, 1923:				
Company Experience	$90,096.65	$269,692.32	$187,716.56	$547,505.53
Plaintiff's Exh. No. 1	101,883.21	284,925.40	194,054.35	580,862.96
Difference	$11,786.56	$15,233.08	$6,337.79	$33,357.43
Difference as % of Company Experience	13.08	5.65	3.38	6.09

( )=decrease.

[fol. 4326] **Illinois Bell Telephone Company, Chicago Exchange**

Composite Percentages Showing Increase in Costs of Labor and Material, June 30, 1923 over Previous Periods

Account 242—Exchange Aerial Cable

	Year 1921	Year 1922	Jan.-June 1923
Percent increase—Material	(18.21)	(2.49)	(2.39)
“ “ —Labor	(21.93)	(3.53)	.02
“ of total cost—Material*	48.8	53.0	57.8
“ “ “ “ —Labor*	51.2	47.0	42.2
Composite percent—Material	(8.89)	(1.32)	(1.38)
“ “ —Labor	(11.23)	(1.66)	.01
Total	(20.12)	(2.98)	(1.37)

* Taken from Plaintiff's Exhibit No. 1.
( ).=decrease.

[fol. 4327] **Illinois Bell Telephone Company, Chicago Exchange**

Difference Between Material Costs as Developed from Company's Experience and from Plaintiff's Exhibit No. 1

Account 242—Exchange Aerial Cable

	Year 1921	Year 1922	Jan-June 1923
Actual Material Cost (Constr. Records)	$54,714.23	$136,563.58	$100,521.22
Percent Increase June 30, 1923 over previous periods:			
Company Experience	(18.21)	(2.49)	(2.39)
Plaintiff's Exh. No. 1	(10.97)	5.48	3.37
Amount of Increase:			
Company Experience	$(9,963.46)	$(3,400.43)	$(2,402.46)
Plaintiff's Exh. No. 1	(6,002.15)	7,483.68	3,387.57
Difference	$3,961.31	$10,884.11	$5,790.03
Difference as % of Actual Increase (or decrease)	39.76	320.08	241.00
Material Cost at Level of June 30, 1923:			
Company Experience	$44,750.77	$133,163.15	$98,118.76
Plaintiff's Exh. No. 1	48,712.08	144,047.26	103,908.79
Difference	$3,961.31	$10,884.11	$5,790.03
Difference as % of Company Experience	8.85	8.17	5.90

( )=Decrease.

[fol. 4328] Illinois Bell Telephone Company, Chicago Exchange

Difference Between Labor Costs as Developed from Company's Experience and from Plaintiff's Exhibit No. 1

Account 242—Exchange Aerial Cable

	Year 1921	Year 1922	Jan.-June 1923
Actual Labor Cost*	$43,732.89	$96,449.97	$68,211.69
Percent Increase June 30, 1923 over previous periods:			
Company Experience	(21.93)	(3.53)	.02**
Plaintiff's Exh. No. 1	(8.43)	(.86)	.02
Amount of Increase:			
Company Experience	$(9,590.62)	$(3,404.68)	$ 13.64
Plaintiff's Exh. No. 1	(3,686.68)	(829.47)	13.64
Difference	$ 5,903.94	$ 2,575.21	$ ....
Difference as % of Actual Increase (or decrease)	61.56	75.64	....
Labor Cost at Level of June 30, 1923:			
Company Experience	$34,142.27	$93,045.29	$68,225.33
Plaintiff's Exh. No. 1	40,046.21	95,620.50	68,225.33
Difference	$ 5,903.94	$ 2,575.21	$ ....
Difference as % of Company Experience	17.29	2.77	....

* Direct labor cost from Company's construction records, plus plant supervision and tool expense computed at same percentages as in Plaintiff's Exhibit No. 1.

** Plaintiff's Exhibit No. 1.

( )=decrease.

[fol. 4329]

Illinois Bell Telephone Company, Chicago Exchange

Difference Between Gross Additions at Cost Level of June 30, 1923, as Developed from Company's Experience and from Plaintiff's Exhibit No. 1

Account 245—Exchange Underground Cable

	Year 1921	Year 1922	Jan.-June 1923	Total
Gross Additions (Ptf. Exh. No. 1)	$747,665.00	$1,522,622.00	$985,266.00	$3,255,553.00
Percent Increase June 30, 1923 over previous periods:				
Company Experience	(11.09)	.35	2.43	(1.65)
Plaintiff's Exh. No. 1	(6.33)	4.73	2.22	1.43
Amount of Increase:				
Company Experience	$(82,916.05)	$5,329.18	$23,941.96	$(53,644.91)
Plaintiff's Exh. No. 1	(47,327.19)	72,020.02	21,872.91	46,565.74
Difference	$35,588.86	$66,690.84	$(2,069.05)	$100,210.65
Difference as % of Actual Increase (or decrease)	42.92	1,251.43	8.64	186.90
Gross Additions at Level of June 30, 1923:				
Company Experience	$664,748.95	$1,527,951.18	$1,009,207.96	$3,201.908.09
Plaintiff's Exh. No. 1	700,337.81	1,594,642.02	1,007,138.91	3,302,118.74
Difference	$35,588.86	$66,690.84	$(2,069.05)	$100,210.65
Difference as % of Company Experience	5.35	4.36	(.21)	3.13

( )=decrease.

[fol. 4330] Illinois Bell Telephone Company, Chicago Exchange

Composite Percentages, Showing Increase in Costs of Labor and Material June 30, 1923, over Previous Periods

Account 245—Exchange Underground Cable

	Year 1921	Year 1922	Jan.-June 1923
Per cent Increase—Material	(7.10)	3.92	3.83
" " —Labor	(16.22)	(5.33)	.07
" of Total Cost—Material*	56.3	61.4	62.6
" " " " —Labor*	43.7	38.6	37.4
Composite Per cent—Material	(4.00)	2.41	2.40
" " —Labor	(7.09)	(2.06)	.03
Total	(11.09)	.35	2.43

* Taken from Plaintiff's Exhibit No. 1.
( ) = decrease.

[fol. 4331] Illinois Bell Telephone Company, Chicago Exchange

Difference Between Material Costs as Developed from Company's Experience and from Plaintiff's Exhibit No. 1

Account 245—Exchange Underground Cable

	Year 1921	Year 1922	Jan.-June 1923
Actual Material Cost (Constr. Records)	$483,550.29	$900,689.27	$505,151.99
Percent Increase June 30, 1923 over previous periods:			
Company Experience	(7.10)	3.92	3.83
Plaintiff's Exh. No. 1	(4.36)	8.86	3.50
Amount of Increase:			
Company Experience	$(34,332.07)	$35,307.02	$19,347.32
Plaintiff's Exh. No. 1	(21,082.79)	79,801.07	17,680.32
Difference	$13,249.28	$44,494.05	$1,667.00
Difference as % of Actual Increase (or decrease)	38.59	126.02	8.62
Material Cost at Level of June 30, 1923:			
Company Experience	$449,218.22	$935,996.29	$524,499.31
Plaintiff's Exh. No. 1	462,467.50	980,490.34	522,832.31
Difference	$13,249.28	$44,494.05	$1,667.00
Difference as % of Company Experience	2.95	4.75	.32

( )=decrease.

[fol. 4332] Illinois Bell Telephone Company, Chicago Exchange

Difference Between Labor Costs as Developed from Company's Experience and from Plaintiff's Exhibit No. 1

Account 245—Exchange Underground Cable

	Year 1921	Year 1922	Jan.-June 1923
Actual Labor Cost*	$283,470.76	$476,410.38	$339,412.75
Percent Increase June 30, 1923 over previous periods:			
Company Experience	(16.22)	(5.33)	.07**
Plaintiff's Exh. No. 1	(8.87)	(1.84)	.07
Amount of Increase:			
Company Experience	$(45,978.96)	$(25,392.67)	$ 237.59
Plaintiff's Exh. No. 1	(25,143.86)	(8,765.95)	237.59
Difference	$ 20,835.10	$ 16,626.72	$........
Difference as % of Actual Increase (or decrease)	45.31	65.48	....
Labor Cost at Level of June 30, 1923:			
Company Experience	$237,491.80	$451,017.71	$339,650.34
Plaintiff's Exh. No. 1	258,326.90	467,644.43	339,650.34
Difference	$ 20,835.10	$ 16,626.72	$........
Difference as % of Company Experience	8.77	3.69	

* Direct labor cost from Company's construction records, plus plant supervision and tool expense computed at same percentages as in Plaintiff's Exhibit No. 1.

** Plaintiff's Exhibit No. 1.

( ) = decrease.

[fol. 4333]

EXHIBIT X-7

Illinois Bell Telephone Company, Chicago Exchange

Account 241—Exchange Pole Lines

Average Length of Poles Placed, 1921-2-3

	Specific Estimates		Routine Estimates	
Item	Number of Poles Placed 1921-1922 Jan.-June 1923	Total Pole Feet	Number of Poles Placed 1921-1922 Jan.-June 1923	Total Pole Feet
25 ft.	7	175	27	675
30 "	110	3,300	360	10,800
35 "	224	7,840	1,752	61,320
40 "	24½	980	403	16,120
45 "	..	.....	131	5,895
50 "	..	.....	5	250
55 "	..	.....	7	385
60 "	..	.....	6	360
Total	365½	12,295	2,691	95,805
Average length	33.6 ft.		35.6 ft.	

[fol. 4334] Illinois Bell Telephone Company, Chicago Exchange

Account 242—Exchange Aerial Cable

Average Size Cable Placed, 1921-2-3

Item	Specific Estimates Cable Feet Placed 1921-1922 Jan.-June 1923	Total Pair Feet	Routine Estimates Cable Feet Placed 1921-1922 Jan.-June 1923	Total Pair Feet
16 pr.	293	4,688	79	1,264
26 "	10,834	281,684	3,765	97,890
51 "	169,296	8,634,096	97,251	4,959,801
76 "	1,800	136,800		
101 "	48,999	4,948,899	26,325	2,658,825
152 "	376	57,152	350	53,200
202 "	9,484	1,915,768	8,612	1,739,624
303 "	9,145	2,770,935	5,732	1,736,796
404 "	2,287	923,948	1,674	676,296
Total.	252,514	19,673,970	143,788	11,923,696
Average Size. . . .		77.9		82.9

[fol. 4335] EXHIBIT X-8

Illinois Bell Telephone Company, Chicago Exchange

Labor Hour Performance on Combined Specific and Routine Estimates

Account 241—Exchange Pole Lines

	Quantity	Trial Labor Hours	Extension	Labor Hours at Level of Book Costs
Poles—				
25 foot, A.	8	11.41	91	11.07
25 " B.	9	11.41	103	11.07
25 " C.	17	11.41	194	11.07
30 " AA.	4	15.41	62	14.95
30 " A.	59	15.41	909	14.95
30 " B.	400	15.41	6,164	14.95
30 " C.	7	15.41	108	14.95
35 " AA.	99	20.21	2,001	19.60
35 " A.	205	20.21	4,143	19.60
35 " B.	1,671	20.21	33,771	19.60
35 " C.	1	20.21	20	19.60
40 " AA.	42	23.95	1,006	23.23
40 " A.	181-1/2	23.95	4,347	23.23
40 " B.	204	23.95	4,886	23.23
45 " AA.	22	28.13	619	27.28
45 " A.	67	28.13	1,885	27.28
45 " B.	42	28.13	1,181	27.28
50 " A.	1	32.48	32	31.50
50 " B.	4	32.48	130	31.50
55 " A.	3	37.22	112	36.10
55 " B.	4	37.22	149	36.10
60 " A.	1	42.47	42	41.19
60 " B.	5	42.47	212	41.19
65 " A.	. . . . . .	47.14	. . . . . .	45.72
Guard Arms.	11,046	1.25	13,808	1.21
Crossarms.	102	1.25	127	1.21
Patent Anchors and Guys	1,676-1/2	9.65	16,178	9.36

Total Computed. 92,280
Actual Performance (Book Costs). 89,499
Correction Factor. 96.99%

[fol. 4336]

Illinois Bell Telephone Company, Chicago Exchange

Labor Hour Performance on Specific Estimates

Account 241—Exchange Pole Lines

Item	Quantity: Year 1921	Quantity: Year 1922	Quantity: Jan.-June 1923	Quantity: Total	Labor Hours at Level of Book Costs	Extension	Labor Hours at Level of Specific Estimates
25′—A Poles	...	5	1	6	11.07	66	9.51
25′—B "	...	1	..	1	11.07	11	9.51
30′—AA "	1	...	..	1	14.95	15	12.84
30′—A "	...	4	2	6	14.95	90	12.84
30′—B "	54	27	22	103	14.95	1,540	12.84
35′—AA "	1	1	4	6	19.60	118	16.84
35′—A "	3	11	2	16	19.60	314	16.84
35′—B "	46	96	60	202	19.60	3,959	16.84
40′—A "	8	5	7½	20½	23.23	476	19.95
40′—B "	3	1	..	4	23.23	93	19.95
Guard Arms	158	677	59	894	1.21	1,082	1.04
Crossarms	47	...	..	47	1.21	57	1.04
Patent Anchors and Guys	42	258	21½	321½	9.36	3,009	8.04

Total Computed 10,830
Total Actual 9,305.50
Correction Factor 85.9%

[fol. 4337]

Illinois Bell Telephone Company, Chicago Exchange

Labor Hour Performance on Routine Estimates

Account 241—Exchange Pole Lines

Item	Quantity Year 1921	Year 1922	Jan.-June 1923	Total	Labor Hours at Level of Book Costs	Extension	Labor Hours at Level of Routine Estimates
25′—A Poles	1	1	..	2	11.07	22	11.29
25′—B "	5	2	1	8	11.07	89	11.29
25′—C "	4	7	9	17	11.07	188	11.29
30′—AA "	...	2	1	3	14.95	45	15.24
30′—A "	17	25	11	53	14.95	792	15.24
30′—B "	58	140	99	297	14.95	4,440	15.24
30′—C "	3	3	1	7	14.95	105	15.24
35′—AA "	10	48	35	93	19.60	1.823	19.98
35′—A "	38	101	50	189	19.60	3,704	19.98
35′—B "	280	734	455	1,469	19.60	28,792	19.98
35′—C "	...	...	1	1	19.60	20	19.98
40′—AA "	7	13	22	42	23.23	976	23.69
40′—A "	25	89	47	161	23.23	3,740	23.69
40′—B "	49	91	60	200	23.23	4,646	23.69
45′—AA "	4	8	10	22	27.28	600	27.81
45′—A "	26	24	17	67	27.28	1,828	27.81
45′—B "	5	25	12	42	27.28	1,146	27.81
50′—A "	...	5	(4)	1	31.50	31	32.12
50′—B "	1	1	2	4	31.50	126	32.12
55′—A "	...	...	3	3	36.10	108	36.81
55′—B "	...	2	2	4	36.10	144	36.81
60′—A "	...	1	..	1	41.19	41	42.00
60′—B "	...	4	1	5	41.19	206	42.00
65′—A "	...	1	(1)	...	45.72	...	46.62
Guard Arms	1,367	5,622	3,163	10,152	1.21	12,284	1.23
Crossarms	7	33	15	55	1.21	67	1.23
Patent Anchors and Guys	250	705	400	1,355	9.36	12,683	9.54

Total Computed 78,646
Total Actual 80,193.5
Correction Factor 101.9%

( ) = decrease

(Here follows side folio 4338)

[fol. 4338]

Illinois Bell Telephone Company, Chicago Exchange

Account 241—Exchange Pole Lines

Table Showing Estimate Number and Total Construction Charges in Each

Jan. 1, 1921—June 30, 1923

$0-$24.99		$25.00-$49.99		$50.00-$99.99		$100.-$199.99		$200.-$399.99		$400.-$749.99		$750.-$1.199.99		$1,200.-$2,000.		Over $2,000	
No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.
20,011	$9.76	20,028	$41.45	20,194	$76.94	19,181	$184.11	20,214	275.28	20,198	$532.44	21,135	$762.44	21,136	$1,206.01	21,069	$3,001.24
20,181	5.52	20,173	38.92	22,051	84.16	21,066	134.42	20,215	208.11	21,142	531.06	21,147	1,151.59	21,139	1,287.37	21,133	3,180.84
20,193	12.78	22,044	27.82	22,072	77.56	21,120	136.56	20,223	316.56	23,074	615.59			22,069	1,737.87	21,129	2,289.82
22,090	20.99	22,065	27.99	22,113	77.86	21,148	140.18	20,238	211.22					22,197	1,223.56	22,015	3,500.59
		23,063	25.04	23,105	58.87	22,009	121.39	21,121	357.02								
		23,084	41.84			22,018	116.83	21,127	223.97								
						22,077	106.15	21,128	282.39								
						22,120	113.34	22,032	276.19								
						22,146	124.44	22,169	298.54								
						22,180	140.75										
4	$49.05	6	$203.06	5	$375.39	10	$1,318.17	9	$2,449.28	3	$1,679.09	2	$1,914.03	4	$5,454.81	4	$11,972.49

Group	Number of Estimates	% of Total	Cumulative %	Total Construction Charges	% of Total	Cumulative %	Average Dollars in Group
$0-24.99	4	8.51	8.51	$49.05	.19	.19	$12.26
25.00-49.99	6	12.77	21.28	203.06	.79	.98	33.84
50.00-99.99	5	10.64	31.92	375.39	1.48	2.46	75.08
100.00-199.99	10	21.28	53.20	1,318.17	5.19	7.65	131.02
200.00-399.99	9	19.15	72.35	2,449.28	9.64	17.29	272.14
400.00-749.99	3	6.38	78.73	1,679.09	6.61	23.90	559.69
750.00-1,199.99	2	4.25	82.98	1,914.03	7.53	31.43	957.02
1,200.00-2,000.00	4	8.51	91.49	5,454.81	21.46	52.89	1,383.70
Over 2,000.00	4	8.51	100.00	11,972.49	47.11	100.00	2,993.12
Totals........	47	100.00	......	$25,415.37	100.00	......	$540.75

44 Estimates are under $2,500.00 = 94% of total number, 61% of total charges.

[fol. 4339]

Illinois Bell Telephone Company, Chicago Exchange

Account 241—Exchange Pole Lines

Table Showing Estimate Number and Total Labor Hours in Each Jan. 1, 1921–June 30, 1923

0–19		20–49		50–99		100–199		200–299		300–499		500–1000		Over 1000	
No.	Hr.	No.	Hr.	No.	Hr.	No.	Hr.	No.	Hr.	No.	Hr.	No.	Hr.	No.	Hr.
20,011	5	20,173	22	19,181	91	20,214	143	20,198	241	21,135	302	21,069	724	22,015	1,893
20,028	18	20,194	40	20,215	97	20,223	140	21,142	225	21,136	353	21,129	588	......	.....
20,181	1	21,066	37	20,238	65	21,121	124	......	...	21,139	471	21,133	841	......	.....
20,193	7	21,148	42	21,120	56	21,128	104	......	...	21,147	366	22,069	694	......	.....
22,044	12	22,009	27	21,127	86	22,032	112	......	...	......	...	22,197	604	......	.....
22,055	12	22,051	30	22,018	55	22,169	176	......	...	......	...	......	...	......	.....
22,090	15	22,072	36	22,146	58	23,074	163	......	...	......	...	......	...	......	.....
23,063	16	22,077	42	......	...	......	...	......	...	......	...	......	...	......	.....
23,105	10	22,113	38	......	...	......	...	......	...	......	...	......	...	......	.....
......	..	22,120	46	......	...	......	...	......	...	......	...	......	...	......	.....
......	..	22,180	46	......	...	......	...	......	...	......	...	......	...	......	.....
......	..	23,084	32	......	...	......	...	......	...	......	...	......	...	......	.....
9	96	12	438	7	508	7	962	2	466	4	1,492	5	3,451	1	1,893

Group	Number of Estimates	% of Total	Cumulative %	Total Hours	% of Total	Cumulative %	Average Hours in Group
0–19	9	19.1	19.1	96	1.0	1.0	11
20–49	12	25.6	44.7	438	4.7	5.7	36
50–99	7	14.9	59.6	508	5.5	11.2	72
100–199	7	14.9	74.5	962	10.3	21.5	137
200–299	2	4.3	78.8	466	5.0	26.5	233
300–499	4	8.5	87.3	1,492	16.0	42.5	373
500–1000	5	10.6	97.9	3,451	37.1	79.6	690
Over 1000	1	2.1	100.0	1,893	20.4	100.0	1,893
Totals	47	100.0	.....	9,300	100.0	.....	198

[fol. 4340] Illinois Bell Telephone Company, Chicago Exchange

Labor Hour Performance on Combined Specific and Routine Estimates

1921, 1922, Jan.-June 1923

Account 242—Exchange Aerial Cable

		Quantity	Labor Hours	Extension	Labor Hours at Level of Book Costs
Cable—L.C.	51 x 19	19,568	.1104	2,160	.1202
	101 x 19	14,959½	.1314	1,966	.1431
	202 x 19	1,238½	.1724	213	.1877
	303 x 19	6,488	.2129	1,381	.2318
	16 x 22	3,811	.1089	415	.1186
	26 x 22	56,525½	.1089	6,156	.1186
	51 x 22	313,014	.1089	34,087	.1186
	76 x 22	2,003	.1182	237	.1287
	101 x 22	86,491½	.1260	10,898	.1372
	152 x 22	260	.1460	38	.1590
	202 x 22	9,430½	.1616	1,524	.1760
	303 x 22	2,258½	.1964	443	.2139
	404 x 22	1,705	.2312	394	.2518
	16 x 24	3,233	.1089	352	.1186
	26 x 24	40,725½	.1089	4,435	.1186
	51 x 24	190,573	.1089	20,753	.1186
	76 x 24	14,268	.1182	1,686	.1287
	101 x 24	63,215	.1260	7,965	.1372
	152 x 24	628	.1460	92	.1590
	202 x 24	6,422	.1612	1,035	.1755
	303 x 24	457	.1962	90	.2137
	404 x 24	613	.2310	142	.2516
	16 x 22 S. & C.	466	.1104	51	.1202
	26 x 22 "	24	.1104	3	.1202
	101 x 22 "	35	.1314	5	.1431
Term. —	11 pr. unprot.	3,174	12.39	39,326	13.49
	16 " "	5,411	12.83	69,423	13.97
	26 " "	316	13.90	4,392	15.14
	16 " prot. (WL)..	1	12.00	12	13.07
	26 " "	9	12.00	108	13.07
	51 " "	13	13.00	169	14.16
	101 " "	4	16.00	64	17.42
22A Load Pot with 574B Coils.		1	35.40	35	38.55
Total Computed................................				210,050	
Total Actual................................				228,668 Hrs.	
Correction Factor................................				108.9%	

[fol. 4341]

Illinois Bell Telephone Company, Chicago Exchange
Labor Hour Performance on Specific Estimates
Account 242—Exchange Aerial Cable

Item	Quantity Year 1921	Year 1922	Jan.-June 1923	Total	Labor Hours at Level of Book Costs	Extension	Labor Hours at Level of Specific Estimates
51 x 19 Cable, L.C.	4,800	5,834	1,828	12,462	.1202	1,498	.1096
101 x 19 " "	9,643	42	2,586	12,271	.1431	1,756	.1305
202 x 19 " "	348½	....	890	1,238½	.1877	232	.1712
303 x 19 " "	....	3	6,485	6,488	.2318	1,504	.2114
16 x 22 " "	141	79	......	220	.1186	26	.1082
26 x 22 " "	2,069	4,228	119	6,416	.1186	761	.1082
51 x 22 " "	24,223½	85,276½	6,187	115,687	.1186	13,720	.1082
101 x 22 " "	739	25,237	1,357	27,333	.1372	3,750	.1251
202 x 22 " "	....	929½	4,526	5,455½	.1760	960	.1605
303 x 22 " "	....	2,210	5	2,215	.2139	474	.1951
404 x 22 " "	....	1,773	(99)	1,674	.2518	422	.2296
16 x 24 " "	....	73	......	73	.1186	9	.1082
26 x 24 " "	569	3,156	693	4,418	.1186	524	.1082
51 x 24 " "	3,000	30,740	7,407	41,147	.1186	4,880	.1082
76 x 24 " "	....	1,800	......	1,800	.1287	232	.1174
101 x 24 " "	....	5,149	4,211	9,360	.1372	1,284	.1251
152 x 24 " "	....	26	350	376	.1590	60	.1450
202 x 24 " "	....	....	2,790	2,790	.1755	490	.1601
303 x 24 " "	....	9	433	442	.2137	94	.1949
404 x 24 " "	....	685	(72)	613	.2516	154	.2295
101 x 22 " S. & C.	35	....	......	35	.1431	5	.1305
11 pr. Unprot. Terminals	68	1,010	144	1,222	13.49	16,485	12.30
16 " " "	155	356	77	588	13.97	8,214	12.74
26 " " "	2	8	2	12	15.14	182	13.81
16 " Prot. " (WL)	....	1	......	1	13.07	13	11.92
26 " " "	1	....	......	1	13.07	13	11.92
51 " " "	....	3	......	3	14.16	42	12.91
101 " " "	....	1	......	1	17.42	17	15.89
No. 22-A Load Pot with 30 No. 574B Coils	1	....	......	1	38.55	39	35.16
Total Computed Hours	....	....	......	....	....	57,840	....
Total Actual Hours	....	....	......	....	....	52,757	....
Correction Factor	....	....	......	....	....	91.2%	....

( ) = decrease.

Illinois Bell Telephone Company, Chicago Exchange
Labor Hour Performance on Specific Estimates over 1000 Hours
Account 242—Exchange Aerial Cable

Item	Quantity: Year 1921	Quantity: Year 1922	Quantity: Jan.–June 1923	Quantity: Total	Labor Hours at Level of Book Costs	Extension	Labor Hours at Level of Specific Estimates over 1000 Hrs
Cable—51 pr. x 19 ga.	4,382	5,834	(33)	10,183	.1202	1,224	.1064
101 " "	8,216	4	36	8,256	.1431	[illegible]181	.1266
202 " "	348½			348½	.1877	65	.1661
303 " "		4	4,096	4,100	.2318	950	.2051
16 " 22 ga.		79		79	.1186	9	.1050
26 " "	725	1,459	163	2,347	.1186	278	.1050
51 " "	3,471	61,272	3,685	68,428	.1186	8,116	.1050
101 " "		11,214	(38)	11,176	.1372	1,533	.1214
202 " "		929½	4,544	5,473½	.1760	963	.1558
303 " "		1,190		1,190	.2139	255	.1893
404 " "		1,674		1,674	.2518	422	.2228
606 " "		(8½)		(8½)			
909 " "		(16)		(16)			
26 " 24 ga.		1,455	(37)	1,418	.1186	168	.1050
51 " "		12,981	5,659	18,640	.1186	2,211	.1050
101 " "		2,400	4,493	6,893	.1372	946	.1213
152 " "			350	350	.1590	56	.1407
202 " "			2,790	2,790	.1755	490	.1553
303 " "		9	433	442	.2137	94	.1891
Terminals— 11 pr. Unprot. (B)		726	104	830	13.49	11,197	11.94
16 " " (C)	27	175	42	244	13.97	3,409	12.36
26 " " (D)	1	6	3	10	15.14	151	13.40
16 " Prot. (WL)		1		1	[illegible]3.07	13	11.57
26 " " (B)	1			1	13.07	13	11.57
51 " " (B)	1	2		3	14.16	42	12.53
101 " " (B)			(1)	(1)			
404 " " (B)		1	(1)				
Load Coil Pot 30 #574 coils	1			1	38.55	39	34.12
Total Computed Hours						33,825	
Total Actual Hours						29,930	
Correction Factor						88.5%	

( ) = decrease.

[fol. 4343] Illinois Bell Telephone Company, Chicago Exchange

Labor Hour Performance on Specific Estimates under 1,000 Hours

Jan. 1, 1921–June 30, 1923

Account 242—Exchange Aerial Cable

Item	Quantity	Labor Hours at Level of Book Costs	Extension	Labor Hours at Level of Specific Ests. Under 1000 Hrs.
Cable—				
19 ga. 51 pr. L.C.	2,279	.1202	274	.1142
101 " "	4,015	.1431	575	.1360
202 " "	890	.1877	167	.1784
303 " "	2,388	.2318	554	.2203
22 ga. 16 " "	141	.1186	17	.1127
26 " "	4,069	.1186	483	.1127
51 " "	47,259	.1186	5,605	.1127
101 " "	16,157	.1372	2,217	.1304
303 " "	1,025	.2139	219	.2033
24 ga. 16 " "	73	.1186	9	.1127
26 " "	3,000	.1186	356	.1127
51 " "	22,507	.1186	2,669	.1127
76 " "	1,800	.1287	232	.1223
101 " "	2,467	.1372	338	.1304
152 " "	26	.1590	4	.1511
404 " "	613	.2516	154	.2391
22 ga. 101 " S.&C.	35	.1431	5	.1360
Terminals—				
11 pr. Unprotected	392	13.49	5,288	12.82
16 " "	344	13.97	4,806	13.28
26 " "	2	15.14	30	14.39
101 " Protected	1	17.42	17	16.56

Total Computed Hours........................ 24,019
Total Actual Hours........................ 22,827
Correction Factor........................ 95.04%

Illinois Bell Telephone Company, Chicago Exchange

Labor Hour Performance on Routine Estimates

Account 242—Exchange Aerial Cable

Item	Quantity				Labor Hours at Level of Book Costs	Extension	Labor Hours at Level of Routine Estimates
	Year 1921	Year 1922	Jan.-June 1923	Total			
51 x 19 Cable, L.C.	885	899	5,322	7,106	.1202	854	.1237
101 x 19 " "	12	2,599½	77	2,688½	.1431	385	.1473
202 x 19 " "							
16 x 22 " "	942	2,069	580	3,591	.1186	426	.1221
26 x 22 " "	17,292	20,343½	12,474	50,109½	.1186	5,942	.1221
51 x 22 " "	37,890	73,305	86,132	197,327	.1186	23,403	.1221
76 x 22 " "		753	1,250	2,003	.1287	258	.1325
101 x 22 " "	6,511	23,781½	28,866	59,158½	.1372	8,117	.1412
152 x 22 " "			260	260	.1590	41	.1637
202 x 22 " "	34	965	2,976	3,975	.1760	700	.1812
303 x 22 " "		27	16½	43½	.2139	9	.2202
404 x 22 " "			31	31	.2518	8	.2592
16 x 24 " "		845	2,315	3,160	.1186	375	.1221
26 x 24 " "	2,182	16,570½	17,555	36,307½	.1186	4,306	.1221
51 x 24 " "	1,502	81,160½	66,764	149,426½	.1186	17,722	.1221
76 x 24 " "		7,244	5,224	12,468	.1287	1,605	.1325
101 x 24 " "	295	18,750	34,810	53,855	.1372	7,389	.1412
152 x 24 " "		252		252	.1590	40	.1637
202 x 24 " "		2,405	1,227	3,632	.1755	637	.1806
303 x 24 " "		15		15	.2137	3	.2200
16 x 22 " S. & C.	90	368	5	463	.1202	56	.1237
26 x 22 " "			24	24	.1202	3	.1237
11 pr. Unprot. Terminals	88	920	944	1,952	13.49	26,332	13.89
16 " " "	1,555	1,988	1,280	4,823	13.97	67,377	14.38
25 " " "	97	142	65	304	15.14	4,603	15.58
26 " Prot. "	2	5	1	8	13.07	105	13.45
51 " " "	1	8	1	10	14.16	142	14.57
101 " " "	1	2		3	17.42	52	17.93
202 " " "		1	(1)				
Total Computed						170,890	
Total Actual						175,911.5	
Correction Factor						102.93%	

( ) = decrease

(Here follows side folio 4345 and 4346)

Illinois Bell Telephone Company, Chicago Exchange.

Table Showing Estimate Number and Total Construction Charges in Each, Jan. 1, 1921–June 30, 1923

Account 242—Exchange Aerial Cable

Less than $0		$0–$24.99		$25.00–$49.99		$50.00–$99.99		$100–$199.99		$200–$349.99		$350–$599.99		$600–$999.99		$1000–$199	
No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	A
17,082	$(25.57)	16,276	$7.20	19,121	$35.92	19,096	$87.72	19,056	$136.71	19,190	$279.08	19,062	$509.70	19,179	$741.97	20,173	$1,3
19,050	(609.56)	19,067	19.73	20,023	45.35	22,110	60.88	19,133	149.61	20,011	291.78	20,151	591.95	20,028	870.42	21,127	1,8
		19,097	11.54	20,206	31.72	22,190	64.67	20,031	142.01	20,100	292.43	20,193	398.30	21,132	836.31	21,142	1,6
		19,139	23.43	21,146	35.78	22,127	57.14	20,080	101.50	20,218	232.23	21,120	503.82	22,070	659.68	22,006	1,9
		19,191	11.00					20,085	186.54	20,238	320.86	22,030	566.42	22,072	612.04	22,018	1,1
		20,057	10.96					20,110	117.09	22,074	268.47	22,046	409.57	22,077	707.66	22,051	1,7
		20,088	7.83					20,194	151.82	22,192	289.49	23,096	517.30	22,081	646.91	22,052	1,3
		20,183	13.21					20,197	176.35	23,006	221.35	22,079	397.34	22,146	652.99	22,102	1,7
		20,195	21.37					21,066	111.34	23,074	233.68			22,177	650.25	22,104	1,1
		20,202	23.36					22,015	183.83					22,194	604.69	22,120	1,1
		22,073	4.03					22,065	198.22							23,039	1,0
		23,104	2.31					22,092	122.82								
		23,105	7.99					22,103	181.36								
								22,191	152.31								
								23,084	188.15								
2	$(635.13)	13	$163.96	4	$148.77	4	$270.41	15	$2,299.66	9	$2,429.27	8	$3,894.40	10	$6,982.92	11	$16,1

Group	Number of Estimates	% of Total	Cumulative %	Total Charges	% of Total	Cumulative %	Average Amount in Group
Less than $0	2	1.94	1.94	$(635.13)	(.41)	(.41)	$(317.57)
$0– 24.99	13	12.62	14.56	163.96	.11	(.30)	12.61
25.00– 49.99	4	3.88	18.44	148.77	.10	(.20)	37.19
50.00– 99.99	4	3.88	22.32	270.41	.17	(.03)	67.60
100.00– 199.99	15	14.56	36.88	2,299.66	1.48	1.45	153.31
200.00– 349.9	9	8.74	45.62	2,429.27	1.56	3.01	269.92
350.00– 599.99	8	7.77	53.39	3,894.40	2.50	5.51	486.80
600.00– 999.99	10	9.71	63.10	6,982.92	4.49	10.00	698.29
1000.00– 1999.99	11	10.68	73.78	16,194.69	10.40	20.40	1,472.24
2000.00– 3999.99	17	16.50	90.28	52,188.22	33.53	53.93	3,069.89
4000.00– 7500.00	5	4.86	95.14	27,611.91	17.74	71.67	5,522.38
Over 7500.00	5	4.85	100.00	44,099.45	28.33	100.00	8,819.89
Totals	103	100.00	......	$155,648.63	100.00	......	$1,511.15

Note—79 Estimates under $2500 = 76.7% of total number = 24.8% of total charges.

( ) = Red.

Illinois Bell Telephone Company, Chicago Exchange

Table Showing Estimate Number and Total Construction Charges in Each, Jan. 1, 1921–June 30, 1923

Account 242—Exchange Aerial Cable

	.00–$99.99	$100–$199.99		$200–$349.99		$350–$599.99		$600–$999.99		$1000–$1999.99		$2000–$3999.99		$4000–$7500.00		Over $7500.00	
	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.
6	$87.72	19,056	$136.71	19,190	$279.08	19,062	$509.70	19,179	$741.97	20,173	$1,372.59	20,198	$2,533.99	19,181	$6,553.98	21,133	$9,186.86
0	60.88	19,133	149.61	20,011	291.78	20,151	591.95	20,028	870.42	21,127	1,817.65	20,214	2,290.47	21,069	5,132.57	21,139	8,363.35
0	64.67	20,031	142.01	20,100	292.43	20,193	398.30	21,132	836.31	21,142	1,639.23	20 215	2,425.08	21,136	5,950.05	22,069	7,988.73
7	57.14	20,080	101.50	20,218	232.23	21,120	503.82	22,070	659.68	22,006	1,929.12	20,223	2,519.74	21,147	4,260.29	22,155	10,586.98
.	......	20,085	186.54	20,238	320.86	22,030	566.42	22,072	612.04	22,018	1,169.97	21,121	3,999.16	22,197	5,715.02	23,046	7,973.53
.	......	20,110	117.09	22,074	268.47	22,046	409.57	22,077	707.66	22,051	1,770.14	21,122	2,561.20	......	....	......	....
.	......	20,194	151.82	22,192	289.49	23,096	517.30	22,081	646.91	22,052	1,307.08	21,128	2,082.84	......	....	......	....
.	......	20,197	176.35	23,006	221.35	22,079	397.34	22,146	652.99	22,102	1,799.03	21,129	3,716.42	......	....	......	....
.	......	21,066	111.34	23,074	233.68	......	......	22,177	650.25	22,104	1,199.82	21,135	2,868.24	......	....	......	....
.	......	22,015	183.83	......	......	......	......	22,194	604.69	22,120	1,115.87	22,009	3,093.83	......	....	......	....
.	......	22,065	198.22	......	......	......	......	......	......	23,039	1,074.19	22,032	3,851.99	......	....	......	....
.	......	22,092	122.82	......	......	......	......	......	......	......	....	22,050	2,936.83	......	....	......	....
.	......	22,103	181.36	......	......	......	......	......	......	......	....	22,113	3,598.97	......	....	......	....
.	......	22,191	152.31	......	......	......	......	......	......	......	....	22,134	3,309.74	......	....	......	....
.	......	23,084	188.15	......	......	......	......	......	......	......	....	22,169	3,466.77	......	....	......	....
.	......	......	......	......	......	......	......	......	......	......	....	22,180	3,833.79	......	....	......	....
.	......	......	......	......	......	......	......	......	......	......	....	23,010	3,099.16	......	....	......	....
	$270.41	15	$2,299.66	9	$2,429.27	8	$3,894.40	10	$6,982.92	11	$16,194.69	17	$52,188.22	5	$27,611.91	5	$44,099.45

	% of Total	Cumulative %	Average Amount in Group
)	(.41)	(.41)	$(317.57)
	.11	(.30)	12.61
	.10	(.20)	37.19
	.17	(.03)	67.60
	1.48	1.45	153.31
	1.56	3.01	269.92
	2.50	5.51	486.80
	4.49	10.00	698.29
	10.40	20.40	1,472.24
	33.53	53.93	3,069.89
	17.74	71.67	5,522.38
	28.33	100.00	8,819.89
	100.00	......	$1,511.15

tal charges.

[fol. 4346]

Illinois Bell Telephone Company, Chicago Exchange

Account 242—Exchange Aerial Cable

Table Showing Total Labor Hours in Each Estimate, Jan. 1, 1921-June 30, 1923

0-19		20-49		50-99		100-200		300-399		400-499		500-749		750-999		1000-1999		2000-3500		3500-5000	
No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.
16,276	5	19,096	49	19,056	72	19,050	179	20,151	348	19,179	466	20,214	616	20,198	893	19,181	1,082	21,133	2,787	22,155	4,696
17,082	(15)	19,121	30	20,110	99	19,062	168	22,072	320	20,173	414	20,215	694	21,122	873	21,069	1,118	21,136	2,203	......	......
19,067	10	20,194	38	20,193	62	19,190	162	22,081	403	22,030	402	20,223	515	21,127	885	21,121	1,386	21,139	2,030	......	......
19,097	7	20,197	27	22,046	58	20,011	160	22,146	330	22,070	410	22,006	545	21,128	858	21,129	1,056	22,032	2,105	......	......
19,133	8	20,202	20	22,092	55	20,028	133	22,177	382	22,104	464	22,018	481	21,135	901	21,147	1,332	22,069	3,059	......	......
19,139	17	20,206	26	22,103	98	20,031	106	23,010	312	......	......	22,077	542	22,009	835	22,050	1,417	......	......	......	......
19,191	3	21,023	38	22,129	60	20,085	102	......	......	......	......	22,102	695	22,051	884	22,134	1,055	......	......	......	......
20,057	9	21,066	38	22,192	51	20,100	177	......	......	......	......	22,120	665	22,052	778	22,180	1,338	......	......	......	......
20,088	3	21,146	38	22,194	93	20,218	181	......	......	......	......	......	......	22,113	886	22,197	1,871	......	......	......	......
20,183	10	22,110	40	23,006	56	20,238	130	......	......	......	......	......	......	22,169	896	23,046	1,396	......	......	......	......
20,195	17	22,015	28	23,096	97	21,120	142	......	......	......	......	......	......	......	......	21,142	1,153	......	......	......	......
......	..	22,190	29	......	...	21,132	102	......	......	......	......	......	......	......	......	......	......	......	......	......	......
22,073	2	23,084	38	......	...	22,065	128	......	......	......	......	......	......	......	......	......	......	......	......	......	......
22,127	10	......	...	......	...	22,074	200	......	......	......	......	......	......	......	......	......	......	......	......	......	......
223,104	2	......	...	......	...	22,079	130	......	......	......	......	......	......	......	......	......	......	......	......	......	......
3,105	8	......	...	......	...	22,191	104	......	......	......	......	......	......	......	......	......	......	......	......	......	......
......	..	......	...	......	...	23,039	108	......	......	......	......	......	......	......	......	......	......	......	......	......	......
......	..	......	...	......	...	23,074	132	......	......	......	......	......	......	......	......	......	......	......	......	......	......
15	96	13	439	11	801	18	2,544	6	2,095	5	2,156	8	4,853	10	8,689	11	14,204	5	12,184	1	4,696

Group		Number of Estimates	% of Total	Cumulative %	Toatl Hours	% of Total	Cumulative %	Average Hours in Group
0-19	Hrs..................	15	14.56	14.56	96	.18	.18	6
20-49	"	13	12.62	27.18	439	.83	1.01	34
50-99	"	11	10.68	37.86	801	1.52	2.53	73
100-199	"	18	17.48	55.34	2,544	4.82	7.35	141
300-399	"	6	5.83	61.17	2,095	3.97	11.32	349
400-499	"	5	4.85	66.02	2,156	4.09	15.41	431
500-749	"	8	7.77	73.79	4,853	9.20	24.61	607
750-999	"	10	9.71	83.50	8,689	16.47	41,08	869
1000-1999	"	11	10.68	94.18	14,204	26.92	68,00	1,291
2000-3499	"	5	4.85	99.03	12,184	23.10	91.10	2,437
3500-5000	"	1	.97	100.00	4,696	8.90	100.00	4,696
Totals..................		103	100.0	......	52,757	100.0	......	512

( ) = decrease

[fol. 4347] Illinois Bell Telephone Company, Chicago Exchange

Labor Hour Performance on Combined Specific and Routine Estimates

Account 245—(5C only) Exchange Underground Cable

	Quantity	Trial Labor Hours	Extension	Labor Hours at Level of Book Costs
Cable:				
19 ga. 2 pr.	280	.2200*	62	.2607
26 "	82	.2301	19	.2727
51 "	1,201	.2309	277	.2736
101 "	6,370	.2485	1,583	.2945
202 "	1,989	.2832	563	.3356
303 "	98,168	.3187	31,286	.3777
455 "	42,373	.3430	14,534	.4065
22 ga. 6 "	10	.2200*	2	.2607
11 "	165	.2200*	36	.2607
16 "	3,584	.2200*	788	.2607
26 "	24,719	.2241	5,540	.2656
40 "	15	.2298*	3	.2723
51 "	82,267	.2335	19,209	.2767
76 "	485	.2425	118	.2874
101 "	68,466	.2523	17,274	.2990
152 "	1,222	.2703	330	.3203
202 "	31,254	.2892	9,039	.3427
303 "	15,858	.3256	5,163	.3858
404 "	20,492	.3620	7,418	.4290
455 "	50	.3804	19	.4508
606 "	207,302	.4284	88,808	.5077
909 "	97,272	.5355	52,089	.6346
24 ga. 16 "	491	.2200*	108	.2607
26 "	13,416	.2241	3,007	.2656
51 "	72,079	.2335	16,830	.2767
76 "	5,143	.2425	1,247	.2874
101 "	55,239	.2523	13,937	.2990
152 "	1,645	.2703	445	.3203
202 "	32,046	.2892	9,268	.3427
303 "	15,010	.3256	4,887	.3858
404 "	10,672	.3620	3,863	.4290
606 "	126,638	.4284	54,252	.5077
909 "	12,856	.5355	6,884	.6346
1212 "	278,383	.6662	185,459	.7894
14 & 16 ga. 140 "	283	.4641*	131	.5500
19 & 22 ga. 404 "	72	.4284*	31	.5077
455 "	12,526	.4462*	5,589	.5287
S & C. 11 pr.	497	.4514	224	.5349
16 "	1,604	.4563	730	.5395
21 "	1,107	.4591	508	.5440
26 "	695	.4630	322	.5487
51 "	280	.4833	135	.5727
152 "	99	.5713	57	.6770
202 "	1,015	.6157	625	.7296
303 "	7,107	.7047	5,008	.8351
404 "	5,220	.7937*	4,143	.9405
606 "	1,361	.9666	1,316	1.1454

* Computed.

[fol. 4348]

Cable:				
T. S. 1212 pr.	21	.6662	14	.7894
92 pr.–37 qds., 13 ga., 18 pr. 19 ga.	750	.3187*	239	.3777
150 pr.–12 qds., 13 ga. 5 " 16 " 28 x 22	1,240	.3074*	381	.3643
175 pr. 75 pr. 16 ga., 100 pr. 19 ga.	803	.3010*	242	.3567
292 pr. 7 qds. 16 ga., 137 qds. 19 ga. 13 pr. 19 ga., 1 pr. 22 ga.	1,210	.4284*	518	.5077
450-pr. S.P. ins. Spec. 49529—19 ga.	2,599	.3430*	891	.4065
Terminals:				
14B– 10 pr.	13	12.39	161	14.68
14C– 15 "	243	12.83	3,118	15.20
14D– 25 "	70	13.90	973	16.47
B– 26	91	12.00	1,092	14.22
B– 51	595	13.00	7,735	15.40
B– 76	22	14.00	308	16.59
B–101	280	16.00	4,480	18.96
B–152	3	21.00	63	24.88
B–202	17	24.00	408	28.44
B–303	3	35.00	105	41.48
B–404	1	42.00	42	49.77
22A– 10 pr.	3	12.00	36	14.22
22B– 16 "	10	12.00	120	14.22
22C– 20 "	4	12.10*	48	14.34
22D– 32 "	8	12.20	98	14.46
22E– 42 "	1	12.60	13	14.93
23A– 52 "	2	13.00	26	15.40
23D–208 "	3	24.00	72	28.44
23E–260 "	1	29.30	29	34.72
17A– 26 "	4	13.90	56	16.47
17C– 51 "	32	13.00	416	15.40
8A–	1	12.39	12	14.68
50FX	1	13.00	13	15.40
15WL 29–27	1	10.00*	10	11.85
" 30–27	1	10.00*	10	11.85
" 30	1	10.00*	10	11.85
25WL 35–37	1	11.20	11	13.27
" 30	7	11.20	78	13.27
" 63	1	11.20	11	13.27
50WL 30–27	4	13.00	42	15.40
" 35–37	1	13.00	13	15.40
" 63	7	13.00	91	15.40
100WL 63	6	16.00	96	18.96
150WL 63	1	21.00	21	24.88
15 pr. Flush	12	12.08*	144	14.22
Load Coils:				
11C	4	35.00*	140	41.48
22C–50 coils	5	47.00	235	55.70
23A–28 "	2	35.00	70	41.48
23C–56 "	3	47.00	141	55.70
23J–98 pr.–575B coils	10	60.00*	600	71.10
22C–50 " " "	3	47.00	141	55.70
" 50 " 574B "	4	47.00	188	55.70
" 75 " " "	2	52.00*	104	61.62

* Computed.

[fol. 4349]

Load Coils—23L—75 pr.	8	52.00*	416	61.62
23J —98 “ 574B coil	2	60.00*	120	71.10
Terminals—				
1200 pr. oak	2	137.00	274	162.34
351 “	5	49.50	247	58.66
16 “ prot.	1	5.50	6	6.52
26 “ “	1	6.39	6	7.57
Total Computed		598,100		
Total Actual		708,743		
Correction Factor		118.50		

* Computed.

[fol. 4350] Illinois Bell Telephone Company, Chicago Exchange

Labor Hour Performance on Specific Estimates, Jan. 1, 1921–June 30, 1923

Account 245—(5C only) Exchange Underground Cable

	Quantity	Labor Hours at Level of Book Costs	Extension	Labor Hours at Level of Specific Ests.
Cable:				
19 ga. 26 pr.	2	.2727	1	.2210
51 “	1,201	.2736	329	.2218
101 “	6,164	.2945	1,815	.2387
202 “	1,198	.3356	402	.2720
303 “	67,536	.3777	25,508	.3062
455 “	40,428	.4065	16,434	.3295
22 ga. 16 “	140	.2607	36	.2113
26 “	5,136	.2656	1,364	.2153
40 “	15	.2723	4	.2207
51 “	25,145	.2767	6,958	.2243
76 “	20	.2874	6	.2330
101 “	21,252	.2990	6,354	.2424
152 “	448	.3203	143	.2596
202 “	14,844	.3427	5,087	.2778
303 “	11,236	.3858	4,335	.3127
404 “	12,257	.4290	5,258	.3477
455 “	50	.4508	23	.3654
606 “	181,965	.5079	92,384	.4115
909 “	94,919	.6346	60,236	.5144
24 ga. 16 “	25	.2607	7	.2113
26 “	2,201	.2656	585	.2153
51 “	27,123	.2767	7,505	.2243
76 “	777	.2874	223	.2330
101 “	7,084	.2990	2,118	.2424
152 “	500	.3203	160	.2596
202 “	11,738	.3427	4,023	.2778
303 “	11,153	.3858	4,303	.3127
404 “	9,230	.4290	3,960	.3477
606 “	122,724	.5077	62,307	.4115
909 “	12,856	.6346	8,158	.5144
1212 “	273,734	.7894	216,086	.6399
19 & 22 ga., 404 pr.	72	.5077	37	.4115
455 “	12,098	.5287	6,396	.4286
S. & C. Cable:				
11 pr.	472	.5349	252	.4336
16 “	87	.5395	47	.4373
21 “	1,000	.5440	544	.4410
26 “	6	.5487	3	.4448
152 “	15	.5770	10	.5488
202 “	617	.7296	450	.5914
303 “	6,223	.8351	5,197	.6769
404 “	4,722	.9405	4,441	.7624
606 “	1,356	1.1454	1,553	.9285

[fol. 4351]

Illinois Bell Telephone Company, Chicago Exchange

Labor Hour Performance on Specific Estimates, Jan. 1, 1921–June 30, 1923

Account 245—(5C only) Exchange Underground Cable

	Quantity	Labor Hours at Level of Book Costs	Extension	Labor Hours at Level of Specific Ests.
T.S. Cable—1212 pr.	21	.7894	17	.6399
92 pr.–37 qds. 13 ga., 18 pr. 19 ga.	750	.3777	283	.3062
175 pr.–75 pr. 16 ga., 100 pr. 19 ga.	803	.3567	286	.2891
292 pr. {4 qds. 16 ga., 137 qds. 19 ga. 13 pr. 19 ga., 1 pr. 22 ga.}	1,210	.5077	614	.4115
450 S.P.–Spec. 49529—19 ga.	2,599	.4065	1,056	.3295
Terminals:				
14C	43	15.20	654	12.32
14D	14	16.47	231	13.35
B– 26	11	14.22	156	11.53
51	236	15.40	3,634	12.48
76	6	16.59	100	13.45
101	80	18.96	1,517	15.37
202	5	28.44	142	23.05
303	3	41.48	124	33.62
404	1	49.77	50	40.34
22A	1	14.22	14	11.53
17A	3	16.47	49	13.35
C	32	15.40	493	12.48
50FX	1	15.40	15	12.48
Load Coils:				
11C	3	41.48	124	33.62
22C	3	55.70	167	45.15
23C	3	55.70	167	45.15
23J–98 pr.–575B Coil	10	71.10	711	57.63
22C–50 " " "	3	55.70	167	45.15
22C–50 " 574B "	4	55.70	223	45.15
22C–75 " " "	2	61.62	123	49.95
23L–75 " " "	8	61.62	493	49.95
23J–98 " 574B "	2	71.10	142	57.63
Terminals:				
1200 oak	2	162.34	325	131.59
351 pr.	5	58.66	293	47.55
Total Computed			567,412	
Total Actual			459,960	
Correction Factor			81.06%	

[fol. 4352] Illinois Bell Telephone Company, Chicago Exchange

Labor Hour Performance on Routine Estimates, Jan. 1, 1921–June 30, 1923

Account 245 (5C only) Exchange Underground Cable

Cable:	Quantity	Labor Hours at Level of Book Costs	Extension	Labor Hours at Level of Routine Ests.
19 ga. 2 pr.	280	.2607	73	.4588
26 "	80	.2727	22	.4799
101 "	206	.2945	61	.5183
202 "	791	.3356	265	.5906
303 "	30,632	.3777	11,570	.6647
455 "	1,945	.4065	791	.7154
22 ga. 6 "	10	.2607	3	.4588
11 "	165	.2607	43	.4588
16 "	3,444	.2607	898	.4588
26 "	19,583	.2656	5,201	.4674
51 "	57,122	.2767	15,806	.4870
76 "	465	.2874	134	.5058
101 "	47,214	.2990	14,117	.5262
152 "	774	.3203	248	.5637
202 "	16,410	.3427	5,624	.6031
303 "	4,622	.3858	1,783	.6790
404 "	8,235	.4290	3,533	.7550
606 "	25,337	.5077	12,864	.8935
909 "	2,353	.6346	1,493	1.1168
24 ga. 16 "	466	.2607	121	.4588
26 "	11,215	.2656	2,979	.4674
51 "	44,956	.2767	12,439	.4870
76 "	4,366	.2874	1,255	.5058
101 "	48,155	.2990	14,398	.5262
152 "	1,145	.3203	367	.5637
202 "	20,308	.3427	6,960	.6031
303 "	3,857	.3858	1,488	.6790
404 "	1,442	.4290	619	.7550
606 "	3,914	.5077	1,987	.8935
1212 "	4,649	.7894	3,670	1.3893
14 & 16 ga. 140 pr.	283	.5500	156	.9679
19 & 22 ga. 455 "	428	.5287	226	.9305
S. & C. 11 "	25	.5349	13	.9414
16 "	1,517	.5395	818	.9495
21 "	107	.5440	58	.9574
26 "	689	.5487	378	.9657
51 "	280	.5727	160	1.0079
152 "	84	.6770	57	1.1915
202 "	398	.7296	290	1.2840
S. & C. 303 "	884	.8351	738	1.4697
404 "	498	.9405	468	1.6552
606 "	5	1.1454	6	2.0158
150 pr. 12 qds. 13 ga. 5 qds. 16 ga., 28 pr. 22 ga.	1,240	.3643	452	.6411

Illinois Bell Telephone Company, Chicago Exchange

Labor Hour Performance on Routine Estimates, Jan. 1, 1921–June 30, 1923

Account 245 (5C only) Exchange Underground Cable

[fol. 4353]	Quantity	Labor Hours at Level of Book Costs	Extension	Labor Hours at Level of Routine Ests.
Terminals:				
14B	13	14.68	191	25.84
14C	200	15.20	3,040	26.75
14D	56	16.47	922	28.99
B–26	80	14.22	1,138	25.03
B–51	359	15.40	5,529	27.10
B–76	16	16.59	265	29.20
B–101	200	18.96	3,792	33.37
B–152	3	24.88	75	43.79
B–202	12	28.44	341	50.05
22–A	2	14.22	28	25.03
22–B	10	14.22	142	25.03
22–C	4	14.34	57	25.24
22–D	8	14.46	116	25.45
22–E	1	14.93	15	26.28
23–A	2	15.40	31	27.10
23–D	3	28.44	85	50.05
23–E	1	34.72	35	61.10
17–A	1	16.47	16	28.99
8–A	1	14.68	15	25.84
15WL–29–27	1	11.85	12	20.85
" 30–27	1	11.85	12	20.85
" 30	1	11.85	12	20.85
25WL–35–37	1	13.27	13	23.35
30	1	13.27	93	23.35
63	1	13.27	13	23.35
50WL–30–27	4	15.40	62	27.10
" 35–37	1	15.40	15	27.10
" 63	7	15.40	108	27.10
100WL–63	6	18.96	114	33.37
150WL–63	1	24.88	25	43.79
15 pr. Flush	12	14.22	171	25.03
Load Coils:				
11C	1	41.48	41	73.00
22C	2	55.70	111	98.03
23A	2	41.48	83	73.00
Terminals:				
16 pr. prot.	1	6.52	7	11.47
26 " "	1	7.57	8	13.32
Total Computed			141,365	
Total Actual			248,783	
Correction Factor			175.99	

(Here follows side folios 4354 and 4355)

Illinois Bell Telephone Company, Chicago Exch

Table Showing Estimate Number and Total Construction Charges in Each,

Account 245 (5C Only) Exchange Underground C

Less than 0		$0–$34		$35–$99		$100–$199		$200–$349		$350–$599		$600–$999		$1,000–$1,599		$1,600–$2,499	
No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt
19,110	$(528)	16,276	$15	19,069	$73	19,056	$176	20,080	$307	20,019	$363	19,179	$782	20,023	$1,207	19,050	$2,0
20,115	(457)	17,082	26	19,144	49	19,062	112	20,142	310	20,028	595	20,088	746	20,077	1,464	20,017	2,0
20,143	(15)	19,029	10	20,197	65	20,110	111	20,193	344	20,085	448	20,120	877	20,211	1,252	20,027	1,9
20,149	(150)	19,034	10	20,236	84	20,218	113	20,239	318	21,008	580	20,173	672	20,214	1,240	20,053	2,1
20,202	(23)	19,096	15	22,169	57	20,219	117	22,015	346	21,097	400	20,223	700	20,238	1,311	20,191	1,8
		19,097	27	22,179	69	22,063	156	22,044	341	22,029	572	21,118	998	21,071	1,160	21,002	2,0
		19,121	28	23,066	89	22,089	161	22,197	335	22,073	536	22,066	971	21,124	1,494	21,087	2,4
		19,126	12	23,084	91	23,052	191	23,039	337	22,082	448	22,072	796	21,132	1,420	21,093	2,1
		20,016	13	23,093	80	23,053	129	23,074	344	22,104	485	22,180	673	22,070	1,591	21,119	1,8
		20,057	14			23,054	176			22,173	415	23,005	760	22,084	1,029	21,129	2,3
		20,157	22			23,061	198			22,186	445	23,043	951	22,090	1,011	22,048	2,1
		21,115	23			23,072	141			23,035	437	23,068	612	22,099	1,463	22,067	2,0
		22,131	32			23,085	162			23,042	422	23,071	730	22,110	1,312	22,120	2,1
		22,147	4							23,044	369	23,091	955	22,174	1,369	22,124	2,4
		23,045	4							23,051	477	20,222	731	22,194	1,352	22,125	1,6
		23,073	22							23,078	414			23,022	1,297	22,171	1,73
		23,079	27							23,081	494			23,026	1,303	22,178	2,23
														23,077	1,272	22,190	2,14
														23,080	1,511	23,059	1,7
5	$(1,173)	17	$304	9	$657	13	$1,943	9	$2,982	17	$7,900	15	$11,954	19	$25,058	19	$39,25

Group	Number of Estimates	% of Total	Cumulative %	Total Charges
Less than $0	5	2.01	2.01	$(1,173)
$0–34	17	6.83	8.84	304
35–99	9	3.61	12.45	657
100–199	13	5.22	17.67	1,943
200–349	9	3.61	21.28	2,982
350–599	17	6.83	28.11	7,900
600–999	15	6.03	34.14	11,954
1,000–1,599	19	7.63	41.77	25,058
1,600–2,499	19	7.63	49.40	39,255
2,500–3,999	20	8.03	57.43	62,941
4,000–6,499	24	9.64	67.07	129,449
6,500–9,999	18	7.23	74.30	142,953
10,000–15,999	27	10.84	85.14	355,803
16,000–25,000	26	10.44	95.58	509,528
Over 25,000	11	4.42	100.00	515,348
Totals	249	100.00	.....	$1,804,902

( ) = Red

Illinois Bell Telephone Company, Chicago Exchange

Estimate, Number and Total Construction Charges in Each, Jan. 1, 1921–June 30, 1923

Account 245 (5C Only) Exchange Underground Cable

$600-$999		$1,000-$1,599		$1,600-$2,499		$2,500-$3,999		$4,000-$6,499		$6,500-$9,999		$10,000-$15,999		$16,000-$25,000		Over $25,000	
o.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.
179	$782	20,023	$1,207	19,050	$2,034	19,186	$2,515	19,084	$6,012	20,156	$8,871	20,072	$13,578	19,190	$21,643	20,081	$33,588
088	746	20,077	1,464	20,017	2,011	20,011	3,570	20,032	6,227	20,233	9,420	20,100	10,157	20,106	24,092	21,075	69,679
120	877	20,211	1,252	20,027	1,964	20,119	2,632	20,083	4,479	21,073	7,015	20,170	15,394	20,198	20,822	21,135	37,910
173	672	20,214	1,240	20,053	2,164	20,151	2,810	20,094	5,321	21,089	7,288	20,215	14,296	21,019	24,052	21,136	27,590
223	700	20,238	1,311	20,191	1,822	21,007	2,801	20,150	5,031	21,090	7,735	20,221	15,365	21,072	24,375	21,137	39,672
118	998	21,071	1,160	21,002	2,065	21,021	3,824	20,194	4,315	21,127	6,525	21,088	10,707	21,092	21,579	21,140	36,149
066	971	21,124	1,494	21,087	2,483	21,066	2,827	21,086	4,915	21,141	6,710	21,126	11,321	21,120	16,609	22,032	37,139
072	796	21,132	1,420	21,093	2,175	21,069	3,397	21,123	6,386	22,008	8,443	21,130	11,501	21,122	18,956	22,040	73,160
180	673	22,070	1,591	21,119	1,830	21,121	3,391	21,128	6,178	22,018	6,714	21,134	13,838	21,131	17,759	22,064	40,041
005	760	22,084	1,029	21,129	2,381	21,148	3,695	21,139	6,448	22,021	6,950	21,138	10,486	21,142	16,034	22,101	77,702
043	951	22,090	1,011	22,048	2,197	22,009	2,641	22,068	6,337	22,045	9,767	21,146	11,725	22,006	19,811	22,189	42,718
068	612	22,099	1,463	22,067	2,018	22,053	2,686	22,069	4,335	22,046	6,957	22,020	15,477	22,007	16,600		
71	730	22,110	1,312	22,120	2,103	22,074	3,512	22,071	5,740	22,127	7,370	22,030	14,579	22,051	22,039		
91	955	22,174	1,369	22,124	2,453	22,079	2,996	22,080	5,602	22,154	9,775	22,031	13,402	22,077	16,538		
222	731	22,194	1,352	22,125	1,645	22,102	2,532	22,086	4,301	22,198	8,580	22,050	16,173	22,088	17,782		
		23,022	1,297	22,171	1,736	22,149	3,744	22,126	6,797	23,007	7,769	22,052	15,727	22,087	21,069		
		23,026	1,303	22,178	2,238	22,187	3,768	22,158	5,266	23,008	9,176	22,065	15,188	22,103	16,778		
		23,077	1,272	22,190	2,146	22,195	3,087	22,188	6,176	23,016	7,888	22,075	10,751	22,133	22,004		
		23,080	1,511	23,059	1,790	23,015	3,746	22,193	4,265			22,081	11,759	22,146	18,615		
						23,075	2,767	22,201	4,289			22,092	15,230	22,175	16,036		
								23,002	5,401			22,134	12,051	22,176	18,238		
								23,041	5,397			22,170	13,623	22,177	21,539		
								23,105	5,038			22,172	11,750	22,191	16,553		
								22,192	5,193			23,003	10,559	23,004	23,389		
												23,006	15,418	23,010	19,001		
												23,024	11,693	21,091	17,622		
												23,046	15,055				
	$11,954	19	$25,058	19	$39,255	20	$62,941	24	$129,449	18	$142,953	27	$355,803	26	$909,528	11	$515,348

Number of Estimates	% of Total	Cumulative %	Total Charges	% of Total	Cumulative %	Average Amount in Group
5	2.01	2.01	$(1,173)	(.07)	(.07)	$(235)
17	6.83	8.84	304	.02	(.05)	18
9	3.61	12.45	657	.04	(.01)	73
13	5.22	17.67	1,943	.11	.10	149
9	3.61	21.28	2,982	.17	.27	331
17	6.83	28.11	7,900	.44	.71	465
15	6.03	34.14	11,954	.66	1.37	797
19	7.63	41.77	25,058	1.39	2.76	1,319
19	7.63	49.40	39,255	2.17	4.93	2,066
20	8.03	57.43	62,941	3.49	8.42	3,147
24	9.64	67.07	129,449	7.17	15.59	5,394
18	7.23	74.30	142,953	7.92	23.51	7,936
27	10.84	85.14	355,803	19.71	43.22	13,178
26	10.44	95.58	509,528	28.23	71.45	19,597
11	4.42	100.00	515,348	28.55	100.00	46,850
249	100.00	......	$1,804,902	100.00	......	$7,249

[fol. 4355]

Illinois Bell Telephone Company, Chicago Exchange

Table Showing Estimate Number and Total Labor Hours in Each, Jan. 1, 1921-June 30, 1923

Account 245 (50 only) Exchange Underground Cable.

Less than 0		0–19		20–49		50–99		100–199		200–349		350–599		600–999		1000-1599	
No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.
19,110	(443)	16,276	11	19,121	23	19,062	63	20,019	140	19,056	206	19,050	510	20,011	692	19,190	1,275
20,143	(27)	17,082	15	19,144	35	19,069	62	20,023	188	20,085	282	19,179	466	20,053	972	20,017	1,312
20,202	(20)	19,027	2	20,149	32	20,016	52	20,028	139	20,142	258	19,186	588	20,077	972	20,027	1,096
		19,034	8	20,236	42	20,115	51	20,080	171	20,173	205	20,088	391	20,151	881	20,083	1,570
		19,096	17	22,063	49	20,218	84	20,193	174	20,211	264	20,120	594	20,194	782	20,119	1,306
		19,097	17	22,131	34	20,219	94	20,197	118	20,222	243	20,191	449	21,066	699	21,007	1,040
		19,126	8	22,179	44	22,169	62	20,239	103	21,069	234	20,214	464	21,121	881	21,073	1,390
		20,057	1	23,074	28	23,042	65	21,008	122	22,029	266	20,223	350	21,132	650	21,086	1,594
		20,157	10	23,079	22	23,044	59	21,071	154	22,072	306	20,238	368	21,148	754	21,090	1,560
		21,115	18			23,053	79	21,097	158	22,073	297	21,002	398	22,009	654	21,124	1,216
		22,147	2			23,066	68	22,015	174	22,082	267	21,021	588	22,067	638	21,127	1,570
		23,045	4			23,077	62	22,044	198	22,090	257	21,087	570	22,070	760	21,128	1,185
		23,073	17			23,081	78	22,066	118	22,104	254	21,093	536	22,120	781	21,139	1,357
		23,085	7			23,084	67	22,089	107	22,173	289	21,118	401	22,149	661	22,053	1,548
						23,093	61	22,186	130	22,180	310	21,119	466	22,171	966	22,068	1,371
						20,110	68	23,026	186	22,192	214	21,123	582	22,174	608	22,069	1,120
								23,039	118	22,197	300	21,129	529	22,178	903	22,074	1,315
								23,052	150	23,035	274	22,048	491	22,195	680	22,079	1,520
								23,054	127	23,041	340	22,084	417	23,024	976	22,080	1,598
								23,061	143	23,051	224	22,099	599	23,059	678	22,124	1,186
								23,072	104	23,068	212	22,102	486			22,127	1,187
										23,071	307	22,110	586			22,158	1,162
										23,075	226	22,125	506			22,188	1,368
										23,078	341	22,187	388			22,193	1,060
										23,091	314	22,190	599			22,201	1,500
												22,194	520			23,002	1,332
												23,005	430			23,007	1,236
												23,022	372			23,105	1,290
												23,043	389				
												23,080	498				
3	(422)	14	137	9	309	16	1,075	21	3,022	25	6,690	30	14,531	20	15,588	28	37,262

Group.	Number of Estimates	% of Total	Cumulative %	Total Hours	% of Total	Cumulative %	Average Hours in Group
Less than 0 Hours	3	1.21	1.21	(422)	(.09)	(.09)	(141)
0–19 "	14	5.62	6.83	137	.03	(.06)	10
20–49 "	9	3.61	10.44	309	.07	.01	34
50–99 "	16	6.43	16,87	1,075	.21	.22	67
100–199 "	21	8.43	25.30	3,022	.66	.88	144
200–349 "	25	10.04	35.34	6,690	1.45	2.33	268
350–599 "	30	12.06	47.40	14,531	3.15	5.48	484
600–999 "	20	8.03	55.43	15,588	3.38	8.86	779
1,000–1,599 "	28	11.24	66.67	37,262	8.08	16.94	1,331
1,600–2,499 "	21	8.43	75.10	43,427	9.42	26,36	2,068
2,500–3,699 "	25	10.04	85.14	77,540	16.82	43,18	3,102
3,700–6,499 "	24	9.64	94.78	112,512	24.41	67.59	4,688
6,500–9,999 "	7	2.81	97.59	54,130	11.74	79.33	7,733
Over 10,000 "	6	2.41	100.00	95,273	20.67	100.00	15,879
Totals	249	100.00	......	461,074	100.00	......	1,852

( ) = Red

Illinois Bell Telephone Company, Chicago Exchange

Table Showing Estimate Number and Total Labor Hours in Each, Jan. 1, 1921–June 30, 1923

Account 245 (50 only) Exchange Underground Cable

200–349		350–599		600–999		1000–1599		1600–2499		2500–3699		3700–6499		6500–9999		Over 10,000	
No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.
19,056	206	19,050	510	20,011	692	19,190	1,275	20,094	1,796	19,084	2,962	29,106	3,732	21,019	7,008	20,081	14,944
20,085	282	19,179	466	20,053	972	20,017	1,312	20,100	1,827	22,008	2,732	20,156	4,034	21,075	6,675	21,137	29,984
20,142	258	19,186	588	20,077	972	20,027	1,096	20,215	1,836	20,032	2,614	21,092	5,894	21,136	7,184	21,140	10,124
20,173	205	20,088	391	20,151	881	20,083	1,570	21,072	1,906	20,072	2,600	21,122	4,690	22,032	9,087	22,040	15,728
20,211	264	20,120	594	20,194	782	20,119	1,306	21,089	2,387	20,150	2,796	21,131	5,012	22,051	7,682	22,101	15,034
20,222	243	20,191	449	21,066	699	21,007	1,040	21,091	1,903	20,170	3,050	21,134	4,728	22,064	7,575	22,189	10,459
21,069	234	20,214	464	21,121	881	21,073	1,390	21,138	2,450	20,198	3,655	21,135	5,619	22,133	8,719		
22,029	266	20,223	350	21,132	650	21,086	1,594	21,141	2,086	20,221	3,028	21,142	4,486				
22,072	306	20,238	368	21,148	754	21,090	1,560	22,021	2,288	20,233	3,578	22,006	5,310				
22,073	297	21,002	398	22,009	654	21,124	1,216	22,046	2,097	21,088	2,884	22,007	4,684				
22,082	267	21,021	588	22,067	638	21,127	1,570	22,071	1,912	21,120	3,364	22,020	3,821				
22,090	257	21,087	570	22,070	760	21,128	1,185	22,086	2,042	21,126	3,216	22,030	3,986				
22,104	254	21,093	536	22,120	781	21,139	1,357	22,126	1,631	21,130	3,262	22,031	4,178				
22,173	289	21,118	401	22,149	661	22,053	1,548	22,170	2,108	21,146	3,294	22,050	5,368				
22,180	310	21,119	466	22,171	966	22,068	1,371	22,198	2,452	22,018	3,425	22,052	5,129				
22,192	214	21,123	582	22,174	608	22,069	1,120	23,003	2,210	22,045	3,056	22,077	4,112				
22,197	300	21,129	529	22,178	903	22,074	1,315	23,006	2,397	22,065	3,248	22,088	5,452				
23,035	274	22,048	491	22,195	680	22,079	1,520	23,010	1,786	22,075	2,972	22,087	5,588				
23,041	340	22,084	417	23,024	976	22,080	1,598	23,015	2,200	22,081	3,300	22,092	4,219				
23,051	224	22,099	599	23,059	678	22,124	1,186	23,016	1,953	22,103	3,231	22,134	4,262				
23,068	212	22,102	486			22,127	1,187	23,046	2,160	22,154	2,947	22,146	4,786				
23,071	307	22,110	586			22,158	1,162			22,172	2,631	22,175	4,611				
23,075	226	22,125	506			22,188	1,368			22,191	3,398	22,176	4,830				
23,078	341	22,187	388			22,193	1,060			23,004	3,468	22,177	3,981				
23,091	314	22,196	599			22,201	1,500			23,008	2,829						
		22,194	520			23,002	1,332										
		23,005	430			23,007	1,236										
		23,022	372			23,105	1,290										
		23,043	389														
		23,080	498														
25	6,690	30	14,531	20	15,588	28	37,262	21	43,427	25	77,540	24	112,512	7	54,130	6	95.273

[fol. 4356] Illinois Bell Telephone Company, Chicago Exchange

Labor Hour Performance on Specific and Routine Estimates, Jan. 1, 1921-June 30, 1923

Account 245 (35C Only) Exchange Underground Cable

		Quantity	Trial Labor Hours	Extension	Labor Hours at Level of Book Cost
Cable:					
13 ga.—	16 pr.	100	.4591*	.46	.5438
22 "	16 "	16,723	.4553	7,614	.5393
	21 "	1,000	.4591	459	.5438
	26 "	71,580	.4630	33,142	.5484
	51 "	45,780	.4833	22,125	.5725
	76 "	992	.5055	501	.5988
	101 "	31,328	.5278	16,535	.6252
	152 "	474	.5713	271	.6767
	202 "	11,450	.6157	7,050	.7293
	303 "	3,135	.7047	2,209	.8347
	404 "	2,494	.7926	1,977	.9388
	606 "	1,856	.9666	1,794	1.1449
24 ga.	16 "	11,815	.4553	5,379	.5393
	26 "	77,770	.4630	36,008	.5484
	51 "	83,981	.4833	40,588	.5725
	76 "	8,684	.5055	4,390	.5988
	101 "	40,612	.5278	21,435	.6252
	152 "	3,186	.5713	1,820	.6767
	202 "	12,677	.6157	7,805	.7293
	303 "	4,42[illegible]	.7047	3,118	.8347
	404 "	3,2[illegible]2	.7926	2,562	.9388
	606 "	3,124	.9666	3,020	1.1449
	909 "	863	1.2085	1,043	1.4315
	1212 "	4,628	1.4275*	6,606	1.6909
S. & C.	Ins.—11 pr.	3,738	.4514	1,687	.5347
	16 "	37,436	.4553	17,045	.5393
	21 "	44,421	.4591	20,394	.5438
	26 "	42,888	.4630	19,857	.5484
	31 "	1,709	.4670*	798	.5532
	51 "	17,542	.4833	8,478	.5725
	76 "	1,499	.5055	758	.5988
	101 "	6,544	.5278	3,454	.6252
	152 "	550	.5713	314	.6767
	202 "	4,559	.6157	2,807	.7293
	303 "	1,046	.7047	737	.8347
	404 "	521	.7926	413	.9388
	606 "	96	.9666	93	1.1449
Terminals—	14 B—10 pr.	74	12.39	917	14.68
	14 C 15 "	322	12.83	4,131	15.20
	14 D 25 "	76	13.90	1,056	16.46
	B-51	1	12.51	13	14.82
	202	102	31.08	3,170	36.81
	22 A—10 pr.	1,125	5.10	5,738	6.04
	B 15 "	1,048	5.50	5,764	6.51
	C 20 "	394	5.87	2,312	6.95
	D 30 "	452	6.91	3,123	8.18
	E 40 "	517	8.05	4,162	9.54

*=Computed.

[fol. 4357]

	Quantity	Trial Labor Hours	Extension	Labor Hours at Level of Book Cost
23 A—52 pr. ..	556	12.51	6,956	14.82
B 104 “ ..	308	18.57	5,720	21.99
C 156 “ ..	46	25.02	1,151	29.64
D 208 “ ..	87	31.08	2,704	36.81
E 260 “ ..	48	37.24	1,788	44.11
F 312 “ ..	34	43.31	1,473	51.30
G 416 “ ..	20	55.53	1,111	65.78
15WL—29-27	6	5.50	33	6.51
28-29	1	5.50	6	6.51
30-27	25	5.50	137	6.51
35-37	1	5.50	6	6.51
29	5	5.50	28	6.51
30	4	5.50	22	6.51
74	2	5.50	11	6.51
15WL	1	5.50	6	6.51
25WL—29-27	132	6.39	843	7.57
29-28	2	6.39	13	7.57
30-27	190	6.39	1,214	7.57
30-28	4	6.39	26	7.57
35-37	7	6.39	45	7.57
29	2	6.39	13	7.57
30	4	6.39	26	7.57
63	4	6.39	26	7.57
—	1	6.39	6	7.57
50WL—29-27	62	12.51	776	14.82
29-28	1	12.51	13	14.82
30-27	87	12.51	1,088	14.82
30-28	1	12.51	13	14.82
35-37	2	12.51	25	14.82
63	99	12.51	1,238	14.82
—	1	12.51	13	14.82
100WL—29-27	5	18.57	93	21.99
30-27	5	18.57	93	21.99
63	108	18.57	2,006	21.99
150WL—63	23	25.02	575	29.64
200WL—29-28	1	31.08	31	36.81
63	11	31.08	342	36.81
300WL—63	1	43.31	43	51.30
400WL—29-28	1	55.53	56	65.78
15 pr. Flush	18	7.90*	142	9.36
25 “ “	89	8.43*	750	9.99
15 Special steel	15	5.50	82	6.51
15 Bldg. term.	3	12.83	38	15.20
Special steel box	43	5.00*	215	5.92
161 W. M. Bldg. term.	12	24.82*	298	29.40
200 pr. vertical	1	31.08	31	36.81
200 “ special 87393	2	31.08	62	36.81
400 “ oak	3	55.53	167	65.78
[fol. 4358]				
600 pr. oak	7	77.50	542	91.80
624 “ “	10	77.50*	775	91.80
1200 “ “	4	137.00	548	162.28
1800 “ “	1	198.00*	198	234.53
1092 mahogany	1	120.00*	120	142.14
600 pr. locknut	2	77.50	155	91.80
624 “ “	1	77.50*	78	91.80
858 “ “	2	99.00	198	117.27

*=Computed.

	Quantity	Trial Labor Hours	Extension	Labor Hours at Level of Book Cost
1040 " "	4	115.00	460	136.22
1092 " "	1	120.00*	120	142.14
1248 " "	2	137.00	274	162.28
6241 " "	2	77.50*	155	91.80
624 " term.	7	77.50	542	91.80
702 " "	1	86.80	87	102.81
832 " "	8	99.00	792	117.27
1040 " "	1	115.00	115	136.22
1200 " "	1	137.00	137	162.28
1800 " "	1	198.00*	198	234.53
1872 mahogany	1	198.00*	198	234.53
4160 "	1	55.53*	56	65.78
11 pr. prot.	3	5.10	15	6.04
16 " "	24	5.50	132	6.51
26 " "	7	6.39	45	7.57
51 " "	5	12.51	63	14.82

Total Computed 372,275
Total Actual 440,962
Correction Factor 118.45%

[fol. 4359] Illinois, Bell Telephone Company, Chicago Exchange

Labor Hour Performance on Specific Estimates, Jan. 1, 1921-June 30, 1923

Account 245 (35C only) Exchange Underground Cable

Cable:		Quantity	Labor Hours at Level of Book Costs	Extension	Labor Hours at Level of Specific Est.
22 ga.	16 pr.	2,046	.5393	1,103	.5773
	21 "	1,000	.5438	544	.5821
	26 "	12,438	.5484	6,821	.5871
	51 "	5,598	.5725	3,205	.6129
	101 "	5,921	.6252	3,702	.6693
	152 "	131	.6767	89	.7244
	202 "	6,207	.7293	4,527	.7807
	303 "	1,547	.8347	1,291	.8935
	404 "	2,310	.9388	2,169	1.0050
	606 "	1,496	1.1449	1,713	1.2256
24 ga.	16 "	579	.5393	312	.5773
	26 "	10,211	.5484	5,600	.5871
	51 "	6,925	.5725	3,965	.6129
	76 "	2,280	.5988	1,365	.6410
	101 "	3,813	.6252	2,384	.6693
	152 "	1,234	.6767	835	.7244
	202 "	2,843	.7293	2,073	.7807
	303 "	2,158	.8347	1,801	.8935
	404 "	555.	.9388	521	1.0050
	606 "	2,073	1.1449	2,373	1.2256
	909 "	863	1.4315	1,235	1,5324
	1212 "	2,711	1.6909	4,584	1.8101
S. & C.	16 "	1,793	.5393	967	.5773
	21 "	20	.5438	11	.5821
	26 "	5,602	.5484	3,072	.5871
	51 "	1,595	.5725	913	.6129
	76 "	540	.5988	323	.6410
	101 "	1,302	.6252	814	.6693
	152 "	70	.6767	47	.7244

*=Computed.

	Quantity	Labor Hours at Level of Book Costs	Extension	Labor Hours at Level of Specific Est.
202 "	1,185	.7293	864	.7807
303 "	351	.8347	293	.8935
404 "	169	.9388	159	1.0050
606 "	22	1.1449	25	1.2256
Terminals:				
14B	1	14.68	15	15.71
14C	28	15.20	426	16.27
14D	5	16.46	82	17.62
B-202	102	36.81	3,755	39.41
22A	127	6.04	767	6.47
22B	145	6.51	944	6.97
22C	35	6.95	243	7.44
22D	13	8.18	106	8.76
22E	142	9.54	1,355	10.21
23A	118	14.82	1,749	15.86
23B	72	21.99	1,583	23.54
23D	10	36.81	368	39.41
23G	1	65.78	66	70.42

[fol. 4360]

	Quantity	Labor Hours at Level of Book Costs	Extension	Labor Hours at Level of Specific Est.
15WL—29	1	6.51	7	6.97
30	1	6.51	7	6.97
—	1	6.51	7	6.97
25WL—30-27	1	7.57	8	8.10
35-37	1	7.57	8	8.10
29	2	7.57	15	8.10
30	4	7.57	30	8.10
—	1	7.57	8	8.10
50WL—30-27	2	14.82	30	15.86
63	3	14.82	44	15.86
—	1	14.82	15	15.86
100WL—63	4	21.99	88	23.54
400WL—29-28	1	65.78	66	70.42
25 pr. Flush	66	9.99	659	10.69
Special steel box	43	5.92	255	6.34
161WM—40 Bldg. term.	12	29.40	353	31.47
1200 oak	2	162.28	325	173.72
600 pr. locknut	2	91.80	184	98.27
624 " "	1	91.80	92	98.27
1040 " "	3	136.22	409	145.82
1092 " "	1	142.14	142	152.16
1248 " "	2	162.28	325	173.72
No. 6241 "	2	91.80	184	98.27
624 term.	2	91.80	184	98.27
832 "	2	117.27	235	125.54
1040 "	1	136.22	136	145.82
1800 "	1	234.53	235	251.06
1872 mahogany	1	234.53	235	251.06
4160 "	1	65.78	66	70.42
Total Computed			75,511	
Total Actual			80,834	
Correction Factor			107.50%	

[fol. 4361] **Illinois Bell Telephone Company, Chicago Exchange**

Labor Hour Performance on Routine Estimates, Jan. 1, 1921-June 30, 1923

Account 245 (35C Only) Exchange Underground Cable

		Quantity	Labor hours at level of book costs	Extension	Labor hours at level of routine est.
Cable:					
16 ga.	13 pr.	100	.5438	54	.5359
22 "	16 "	14,677	.5393	7,915	.5314
	26 "	59,142	.5484	32,433	.5404
	51 "	40,182	.5725	23,004	.5641
	76 "	992	.5988	594	.5901
	101 "	25,407	.6252	15,884	.6161
	152 "	343	.6767	232	.6668
	202 "	5,243	.7293	3,824	.7187
	303 "	1,588	.8347	1,326	.8225
	404 "	184	.9388	173	.9251
	606 "	360	1.1449	412	1.1282
24 ga.	16 "	11,236	.5393	6,060	.5314
	26 "	67,559	.5484	37,049	.5404
	51 "	77,056	.5725	44,115	.5641
	76 "	6,404	.5988	3,835	.5901
	101 "	36,799	.6252	23,007	.6161
	152 "	1,952	.6767	1,321	.6668
	202 "	9,834	.7293	7,172	.7187
	303 "	2,266	.8347	1,891	.8225
	404 "	2,677	.9388	2.513	.9251
	606 "	1,051	1.1449	1,203	1.1282
	1212 "	1,917	1.6909	3,241	1,6662
S. & C.	11 "	3,738	.5347	1,999	.5269
	16 "	35,643	.5393	19,222	.5314
	21 "	44,401	.5438	24,145	.5359
	26 "	37,286	.5484	20,448	.5404
	31 "	[illegible]	.5532	945	.5451
	51 "	[illegible]	.5725	9,130	.5641
	76 "	[illegible]	988	574	.5901
	101 "	[illegible]	252	3,277	.6161
	152 "	[illegible]	767	325	.6668
	202 "	[illegible]	293	2,461	.7187
	303 "	[illegible]	347	580	.8225
	404 "	35	388	330	.9251
	606 "	74	49	85	1.1282
Terminals:					
14B		73	14.68	1,072	14.47
14C		294	15.20	4,469	14.98
14D		71	16.46	1,169	16.22
B-51		1	14.82	15	14.60
22A		998	6.04	6,028	.595
22B		903	6.51	5,879	.641
22C		359	6.95	2,495	.685
22D		439	8.18	3,591	8.06
22E		375	9.54	3,578	9.40

[fol. 4362]

	Quantity	Labor hours at level of book costs	Extension	Labor hours at level of routine est.
23A	438	14.82	6,491	14.60
B	236	21.99	5,190	21.67
C	46	29.64	1,363	29.21
D	77	36.81	2,834	36.27
E	48	44.11	2,117	43.47
F	34	51.30	1,744	50.55

	Quantity	Labor hours at level of book costs	Extension	Labor hours at level of routine est.
G	19	65.78	1,250	64.82
15WL—29–27	6	6.51	39	6.41
29–28	1	6.51	7	6.41
30–27	25	6.51	163	6.41
35–27	1	6.51	7	6.41
29	4	6.51	26	6.41
30	3	6.51	20	6.41
74	2	6.51	13	6.41
25WL—29–27	132	7.57	999	7.46
29–28	2	7.57	15	7.46
30–27	189	7.57	1,431	7.46
30–28	4	7.57	30	7.46
35–37	6	7.57	45	7.46
63	4	7.57	30	7.46
50WL—29–27	62	14.82	919	14.60
29–28	1	14.82	15	14.60
30–27	85	14.82	1,260	14.60
30–28	1	14.82	15	14.60
35–37	2	14.82	30	14.60
63	96	14.82	1,423	14.60
100WL—29–27	5	21.99	110	21.67
30–27	5	21.99	110	21.67
63	104	21.99	2,287	21.67
150WL—63	23	29.64	682	29.21
200WL—29–28	1	36.81	37	36.27
63	11	36.81	405	36.27
300WL—63	1	51.30	51	50.55
15 pr. Flush	18	9.36	168	9.22
25 " "	23	9.99	230	9.84
25 " steel special.	15	6.51	98	6.41
15 " bldg. term.	3	15.20	46	14.98
200 " vertical	1	36.81	37	36.27
200 " Spec. 87393	2	36.81	74	36.27
400 " oak	3	65.78	197	64.82
600 " "	7	91.80	643	90.46
624 " "	10	91.80	918	90.46
1200 " "	2	162.28	325	159.91
1800 " "	1	234.53	235	231.11
[fol. 4363]				
1092 pr. mahogany	1	142.14	142	140.06
858 " locknut	2	117.27	235	115.56
1040 " "	1	136.22	136	134.23
624 " term.	5	91.80	459	90.46
702 " "	1	102.81	103	101.31
832 " "	6	117.27	704	115.56
1200 " "	1	162.28	162	159.91
11 " prot.	3	6.04	18	5.95
16 " "	24	6.51	156	6.41
26 " "	7	7.57	53	7.46
51 " "	5	14.82	74	14.60

Total Computed 365,446
Total Actual 360,128
Correction Factor 98.54%

(Here follow side folios 4364 and 4365)

[fol. 4364]

Illinois Bell Telephone Company, Chicago Exchange

Table Showing Estimate Number and Total Construction Charges in Each, Jan. 1, 1921-June 30, 1923

Account 245 (35C Only), Exchange Underground Cable

$0-49		$50-149		$150-299		$300-499		$500-899		$900-1,499		$1,500-2,499		$2,500-3,999		$4,000-5,999		$6,000-10,000		Over 10,000	
No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.	No.	Amt.
20,077	16	19,091	120	19,179	202	20,019	360	19,050	606	19,04[illegible]	1,181	21,066	1,844	20,023	2,668	20,010	4,020	20,053	7,407	21,049	14.466
20,190	1	20,011	109	20,143	208	20,031	461	19,056	520	20,078	1,242	21,093	2,255	20,236	3,155	20,178	4,120	21,008	6,255	22,125	15,275
20,217	25	20,091	113	20,198	263	20,085	303	20,191	892	20,093	921	21,119	2,105	22,082	3,569	22,029	4,015	21,078	6,695		
21,127	21	20,088	148	20,206	203	20,106	466	22,084	667	20,119	1,073	21,118	2,442	22,147	2.709	22,053	5,755	22,073	6,909		
21,136	27	20,211	143	20,218	229	20,203	399	22,110	633	20,169	1,358	21,132	2,427	22,171	3.052	22,059	4,650	22,193	9,821		
22,070	24	20,239	79	20,238	283	20,222	369	22,178	687	21,002	1,367	22,048	1,905	23,022	3,914	22,063	4,634				
22,074	26	21,023	50	21,120	283	22,072	400	22,173	543	21,092	1,089	22,089	1,787			22,099	5,392				
		21,028	63	21,134	225	23,091	371	23,015	854	22,088	1,075	22,115	2,470			22,124	4,248				
		21,097	108					23,026	859	22,198	1,388	23,005	2.475			22,186	4,106				
		21,121	93							21,071	1,343										
		22,032	110																		
		22,052	97																		
7	$140	12	$1,233	8	$1,896	8	$3,129	9	$6,261	10	$12,037	9	$19,710	6	$19,067	9	$40,940	5	$37,087	2	$29,741

Group	Number of Estimates	% of Total	Cumulative %	Total Charges	% of Total	Cumulative %	Average Amount in Group
$0-49	7	8.24	8.24	$140	.08	.08	$20
50-149	12	14.12	22.36	1,233	.72	.80	103
150-299	8	9.41	31.77	1,896	1.11	1.91	237
300-499	8	9.41	41.18	3,129	1.83	3.74	391
500-899	9	10.59	51.77	6,261	3.65	7.39	696
900-1499	10	11.76	63.53	12,037	7.03	14.42	1,204
1500-2499	9	10.59	74.12	19,710	11.51	25.93	2,190
2500-3999	6	7.06	81.18	19,067	11.13	37.06	3,178
4000-5999	9	10.59	91.77	40,940	23.91	60.97	4,549
6000-10,000	5	5.88	97.65	37,087	21.66	82.63	7,417
Over -10,000	2	2.35	100.00	29,741	17.37	100.00	14,870
Totals	85	100.00		$171,241	100.00		$2,015

[fol. 4365,

Illinois Bell Telephone Company, Chicago Exchange

Table Showing Estimate Number and Total Labor Hours in Each, Jan. 1, 1921–June 30, 1923

Account 245 (35C only), Exchange Underground Cable

$0–34		$35–99		$100–199		$200–349		$350–599		$600–999		$1,000–1,749		$1,750–2,999		$3,000–5,000		Over $5,000	
No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.
20,077	12	20,011	68	19,179	112	19,050	302	20,078	548	19,048	612	20,023	1,324	20,010	1,921	20,053	3,332	21,049	5,976
21,127	9	20,088	68	20,085	156	19,056	240	20,093	353	20,091	715	20,169	1,336	20,178	1,814	22,073	3,824	22,175	6,552
21,134	33	20,143	60	20,106	190	19,091	230	20,119	448	20,236	925	21,119	1,334	21,008	2,271			22,193	5,574
21,136	9	20,190	60	20,198	140	20,019	224	20,191	454	21,002	664	21,118	1,050	21,078	2,521				
22,052	24	20,211	56	20,206	112	20,031	244	21,092	443	21,066	988	22,029	1,550	22,053	1,940				
22,070	17	20,218	96	20,217	158	20,203	328	21,071	518	21,093	934	22,082	1,158	22,059	1,976				
22,074	22	20,239	42	20,222	194	22,173	232	22,084	405	22,048	980	22,115	1,190	22,063	2,673				
		21,023	40	20,238	103	23,091	219	22,110	428	22,088	608	22,147	1,402	22,099	2,171				
		21,028	80	21,120	138			22,178	432	22,089	922	22,171	1,690	22,124	2,179				
		21,097	40	21,132	161			22,198	449			23,005	1,116	22,186	2,231				
		21,121	40	22,072	197			23,026	454					23,022	2,206				
		22,032	69					23,015	513										
7	126	12	719	11	1,661	8	2,019	12	5,445	9	7,348	10	13,150	11	23,903	2	7,156	3	18,102

Group	Number of Estimates	% of Total	Cumulative %	Total Hours	% of Total	Cumulative %	Average Hours in Group
0–34	7	8.24	8.24	126	.16	.16	18
35–99	12	14.12	22.36	719	.90	1.06	60
100–199	11	12.94	35.30	1,661	2.09	3.15	151
200–349	8	9.41	44.71	2,019	2.54	5.69	252
350–599	12	14.12	58.83	5,445	6.84	12.53	454
600–999	9	10.59	69.42	7,348	9.23	21.76	816
1000–1749	10	11.76	81.18	13,150	16.51	38.27	1,315
1750–2999	11	12.94	94.12	23,903	30.02	68.29	2,173
3000–5000	2	2.35	96.47	7,156	8.98	77.27	3,578
Over 5000	3	3.53	100.00	18,102	22.73	100.00	6,034
Totals	85	100.00		79,629	100.00		937

[fol. 4366] EXHIBIT X-8A

Illinois Bell Telephone Company, Chicago Exchange

Labor Hour Performance on Combined Specific and Routine Estimates Account 241—Exchange Pole Lines

	Quantity	Trial Labor Hours	Extension	Labor Hours at Level of Book Costs
Poles:				
25 foot, A	8	11.41	91	11.23
25 " B	9	11.41	103	11.23
25 " C	17	11.41	194	11.23
30 " AA	4	15.41	62	15.17
30 " A	59	15.41	909	15.17
30 " B	400	15.41	6,164	15.17
30 " C	7	15.41	108	15.17
35 " AA	97	20.21	1,960	19.90
35 " A	205	20.21	4,143	19.90
35 " B	1,614	20.21	32,619	19.90
35 " C	1	20.21	20	19.90
40 " AA	42	23.95	1,006	23.58
40 " A	174	23.95	4,167	23.58
40 " B	204	23.95	4,886	23.58
45 " AA	22	28.13	619	27.70
45 " A	67	28.13	1,885	27.70
45 " B	42	28.23	1,181	27.70
50 " A	1	32.48	32	31.98
50 " B	4	32.48	130	31.98
55 " A	3	37.22	112	36.65
55 " B	4	37.22	149	36.65
60 " A	1	42.47	42	41.82
60 " B	5	42.47	212	41.82
65 " A		47.14	....	46.41
Guard Arms	11,046	1.25	13,808	1.23
Crossarms	102	1.25	127	1.23
Patent Anchors and Guys	1,676	9.65	16,173	9.50

Total Computed 90,902

Actual Performance (Book Costs) 89,499

Correction Factor 98.46%

[fol. 4367]

Illinois Bell Telephone Company, Chicago Exchange

Labor Hour Performance on Specific Estimates

Account 241—Exchange Pole Lines

Item	Quantity				Labor Hours at Level of Book Costs	Extension	Labor Hours at Level of Specific Estimates
	Year 1921	Year 1922	Jan.-June 1923	Total			
25′-A Poles	...	5	1	6	11.23	67	10.84
25′-B "	...	1	...	1	11.23	11	10.84
30′-AA "	1	...	...	1	15.17	15	14.64
30′-A "	...	4	2	6	15.17	91	14.64
30′-B "	54	27	22	103	15.17	1,563	14.64
35′-AA "	1	1	2	4	19.90	80	19.20
35′-A "	3	11	2	16	19.90	318	19.20
35′-B "	46	96	3	145	19.90	2,886	19.20
40′-A "	8	5	...	13	23.58	307	22.75
40′-B "	3	1	...	4	23.58	94	22.75
Guard Arms	158	677	59	894	1.23	1,100	1.19
Crossarms	47	...	...	47	1.23	58	1.19
Patent Anchors and Guys	42	258	21	321	9.50	3,050	9.17

Total Computed	9,640
Total Actual	9,305.50
Correction Factor	96.5%

[fol. 4368]

Labor Hour Performance on Routine Estimates

Account 241—Exchange Pole Lines

Item	Quantity Year 1921	 Year 1922	 Jan.-June 1923	 Total	Labor Hours at Level of Book Costs	Extension	Labor Hours at Level of Routine Estimates
25′-A Poles	1	1	...	2	11.23	22	11.27
25′-B "	5	2	1	8	11.23	90	11.27
25′-C "	1	7	9	17	11.23	191	11.27
30′-AA "	...	2	1	3	15.17	46	15.23
30′-A "	17	25	11	53	15.17	804	15.23
30′-B "	58	140	99	297	15.17	4,505	15.23
30′-C "	3	3	1	7	15.17	106	15.23
35′-AA "	10	48	35	93	19.90	1,851	19.98
35′-A "	38	101	50	189	19.90	3,761	19.98
35′-B "	280	734	455	1,469	19.90	29,233	19.98
35′-C "	...	...	1	1	19.90	20	19.98
40′-AA "	7	13	22	42	23.58	990	23.67
40′-A "	25	89	47	161	23.58	3,796	23.67
40′-B "	49	91	60	200	23.58	4,716	23.67
45′-AA "	4	8	10	22	27.70	609	27.81
45′-A "	26	24	17	67	27.70	1,856	27.81
45′-B "	5	25	12	42	27.70	1,163	27.81
50′-A "	...	5	(4)	1	31.98	32	32.11
50′-B "	1	1	2	4	31.98	128	32.11
55′-A "	...	...	3	3	36.65	110	36.80
55′-B "	...	2	2	4	36.65	147	36.80
60′-A "	...	1	...	1	41.82	42	41.99
60′-B "	...	4	1	5	41.82	209	41.99
65′-A "	...	1	(1)	...	46.41		46.60
Guard Arms	1,367	5,622	3,163	10,152	1.23	12,487	1.23
Crossarms	7	33	15	55	1.23	68	1.23
Patent Anchors and Guys	250	705	400	1,355	9.50	12,872	9.54
Total Computed						79,854	
Total Actual						80,193.5	
Correction Factor						100.4%	

( ) = decrease.

[fol. 4369]

EXHIBIT X-9

Illinois Bell Telephone Company, Chicago Exchange

Comparison Between Company Experience on Its Larger Construction Projects and Plaintiff's Exhibit No. 1, 1921-1923

	Total Gross Additions June 30, 1923, Level		
	Appraisal Method	Company Experience	% of Appraisal Method
	Year 1921		
Account 241—Exchange Pole Lines	$81,843.23	$65,545.97	80.09
Account 242—Exchange Aerial Cable	101,883.21	86,577.60	84.98
Account 245—Exchange Underground Cable	700,337.81	642,692.83	91.77
Total	$884,064.25	$794,816.40	89.90
	Year 1922		
Account 241—Exchange Pole Lines	$220,997.29	$178,546.93	80.79
Account 242—Exchange Aerial Cable	284,925.40	259,573.99	91.10
Account 245—Exchange Underground Cable	1,594,642.02	1,470,243.80	92.20
Total	$2,100,564.71	$1,908,364.72	90.85
	Jan.-June, 1923		
Account 241—Exchange Pole Lines	$121,142.75	$102,928.57	84.96
Account 242—Exchange Aerial Cable	194,054.35	181,226.51	93.39
Account 245—Exchange Underground Cable	1,007,138.91	966,151.84	95.93
Total	$1,322,336.01	$1,250,306.92	94.55

[fol. 4370]

Illinois Bell Telephone Company, Chicago Exchange

Difference Between Cross Additions at Cost Level of June 30, 1923, as Developed from Company's Experience after Eliminating Individual Small Jobs and from Plaintiff's Exhibit No. 1

Account 241—Exchange Pole Lines

	Year 1921	Year 1922	Jan.-June 1923	Total
Gross Additions (Ptf. Exh. No. 1)	$87,058.00	$216,473.00	$118,814.00	$422,345.00
Percent Increase June 30, 1923 over previous periods:				
Company Experience	(24.71)	(17.52)	(13.37)	(17.83)
Plaintiff's Exh. No. 1	(5.99)	2.09	1.96	.39
Amount of Increase:				
Company Experience	$(21,512.03)	$(37,926.07)	$(15,885.43)	$(75,323.53)
Plaintiff's Exh. No. 1	(5,214.77)	4,524.29	2,328.75	1,638.27
Difference	$16,297.26	$42,450.36	$18,214.18	$76,961.80
Difference as % of Actual Increase (or decrease)	75.76	119.29	114.66	102.17
Gross Additions at Level of June 30, 1923:				
Company Experience	$65,545.97	$178,546.93	$102,928.57	$347,021.47
Plaintiff's Exh. No. 1	81,843.23	220,997.29	121,142.75	423,983.27
Difference	$16,297.26	$42,450.36	$18,214.18	$76,961.80
Difference as % of Company Experience	24.86	23.78	17.70	22.18

( ) = decrease.

[fol. 4371] Illinois Bell Telephone Company, Chicago Exchange

Composite Percentages Showing Increase in Costs of Labor and Material, June 30, 1923 over Previous Periods

Account 241—Exchange Pole Lines

	Year 1921	Year 1922	Jan.-June 1923
Percent Increase—Material	(6.91)	5.24	.77
" " —Labor	(34.22)	(27.14)	(19.96)
" of Total Cost—Material*	34.8	29.7	31.8
" " " " —Labor*	65.2	70.3	68.2
Composite Percent—Material	(2.40)	1.56	.24
" " —Labor	(22.31)	(19.08)	(13.61)
Total	(24.71)	(17.52)	(13.37)

* Based on percentages used in Plaintiff's Exhibit No. 1, with adjustments corresponding to decrease in labor hours.

( )=decrease.

[fol. 4372] Illinois Bell Telephone Company, Chicago Exchange

Per Cent Increase in Labor Costs June 30, 1923, Over Previous Periods as Affected by Elimination of Individual Small Jobs

Account 241—Exchange Pole Lines

	Year 1921	Year 1922	Jan.-June 1923
Labor Hours:			
Specific Estimates	1,856.00	6,714.50	735.00
Routine Estimates	12,351.00	42,901.50	24.941.00
Total	14.207.00	49,616.00	25,676.00
Labor Performance—Ratio of Specific Estimates to Specific and Routine Combined	.859	.859	.859
Labor Hours Required at Level of Specific Estimate Performance	12,203.81	42,620.14	22,055.68
Cost per Hour on Specific Estimates at Level of June 30, 1923	$.8459	$.8459	$.8459
Direct Labor Cost at Level of June 30, 1923	$10,323.20	$36,052.38	$18,656.90
Plant Supervision and Tool Expense at 8.3%	856.83	2,992.35	1,548.52
Total Labor Cost at Level of June 30, 1923	$11.180.03	$39,044.73	$20,205.42
Actual Labor Cost	16,997.17	53,591.26	25,243.22
Difference	$5,817.14	$14,546.53	$5,037.80
Percent Increase June 30, 1923 over previous periods	(34.22)	(27.14)	(19.96)

( ) = decrease.

[fol. 4373]

Illinois Bell Telephone Company, Chicago Exchange

Difference Between Gross Additions at Cost Level of June 30, 1923, as Developed from Company's Experience After Eliminating Individual Small Jobs and from Plaintiff's Exhibit No. 1

Account 242—Exchange Aerial Cable

	Year 1921	Year 1922	Jan.-June 1923	Total
Gross Additions (Ptf. Exh. No. 1)	$112,790.00	$277,976.00	$190,324.00	$581.090.00
Percent Increase June 30, 1923 over previous periods:				
Company Experience	(23.24)	(6.62)	(4.78)	(9.24)
Plaintiff's Exh. No. 1	(9.67)	2.50	1.96	(.04)
Amount of Increase;				
Company's Experience	$(26,212.40)	$(18.402.01)	$(9.097.49)	$(53,711.90)
Plaintiff's Exh. No. 1	(10,906.79)	6,949.40	3,730.35	(227.04)
Difference	$15,305.61	$25,351.41	$12.827.84	$53,484.86
Difference as % of Actual Increase (or decrease)	58.39	137.76	141.00	99.58
Gross Additions at Level of June 30, 1923:				
Company Experience	$86.577.60	$259.573.99	$181.226.51	$527.378.10
Plaintiff's Exh. No. 1	101,883.21	284,925.40	194,054.35	580,862.96
Difference	$15.305.61	$25,351.41	$12,827.84	$53,484.86
Difference as % of Company Experience	17.68	9.77	7.08	10.14

( ) = decrease.

[fol. 4374] **Illinois Bell Telephone Company, Chicago Exchange**

Composite Percentages Showing Increases in Costs of Labor and Material June 30, 1923, over Previous Periods

Account 242—Exchange Aerial Cable

	Year 1921	Year 1922	Jan.-June 1923
Percent Increase—Material	(18.21)	(2.49)	(2.39)
" " —Labor	(28.49)	(11.72)	(8.37)
" or Total Cost—Material*	51.1	55.3	60.0
" " " " —Labor*	48.9	44.7	40.0
Composite Percent—Material	(9.31)	(1.38)	(1.43)
" " —Labor	(13.93)	(5.24)	(3.35)
Total	(23.24)	(6.62)	(4.78)

*** Based on percentages used in Plaintiff's Exhibit No. 1, with adjustments corresponding to decrease in labor hours.**

( ) = decrease.

[fol. 4375] Illinois Bell Telephone Company, Chicago Exchange

Per cent Increase in Labor Costs June 30, 1923, Over Previous Periods as Affected by Elimination of Individual Small Jobs

Account 242—Exchange Aerial Cable

	Year 1921	Year 1922	Jan.-June 1923
Labor Hours—Placing:			
Specific Estimates	2,911.50	13,595.26	3,323.04
Routine Estimates	7,434.00	40,409.25	19,196.31
Total	10,345.50	54,004.51	22,519.35
Labor Performance—Ratio of Specific Estimates to Specific and Routine Combined	.912	.912	.912
Labor Hours Required at Level of Specific Estimate Performance	9,435.10	49,252.11	20,537.65
Cost per Hour on Specific Estimates at Level of June 30, 1923	$.8827	$.8827	$.8827
Direct Labor Cost at Level of June 30, 1923	8,328.36	43,474.84	18,128.58
Labor Hours—Splicing:			
Specific Estimates	5,236.00	17,299.74	10,391.96
Routine Estimates	25,345.00	35,008.75	48,518.19
Total	30,581.00	52,308.49	58,910.15
Labor Performance—Ratio of Specific Estimates to Specific and Routine Combined	.912	.912	.912
Labor Hours Required at Level of Specific Estimate Performance	27,889.87	47,705.34	53,726.06
Cost per Hour on Specific Estimates at Level of June 30, 1293	$.7368	$.7368	$.7368
Direct Labor Cost at Level of June 30, 1923	20,549.26	35,149.29	39,585.36
Total Direct Labor Cost at Level of June 30, 1923	$28,877.62	$78,624.13	$57,713.94

	Year 1921	Year 1922	Jan.-June 1923
Plant Supervision and Tool Expense at 8.3%	2,396.84	6,525.80	4,790.26
Total Labor Cost at Level of June 30, 1923	$31,274.46	$85,149.93	$62,504.20
Actual Labor Cost	43,732.89	96,449.97	68,211.69
Difference	$12,458.43	$11,300.04	$5,707.49
Per cent Increase June 30, 1923 over Previous Periods	(28.49)	(11.72)	(8.37)

( ) = decrease.

[fol. 4376]

Illinois Bell Telephone Company, Chicago Exchange

Difference Between Gross Additions at Cost Level of June 30, 1923, as Developed from Company's Experience after Eliminating Individual Small Jobs and from Plaintiff's Exhibit No. 1

Account 245—Exchange Underground Cable

	Year 1921	Year 1922	Jan.-June 1923	Total
Gross Additions (Ptf. Exh. No. 1)	$747,665.00	$1,522,622.00	$985,266.00	$3,255,553.00
Percent Increase June 30, 1923 over Previous Periods:				
Company Experience	(14.04)	(3.44)	(1.94)	(5.42)
Plaintiff's Exh. No. 1	(6.33)	4.73	2.22	1.43
Amount of Increase:				
Company Experience	$(104,972.17)	$(52,378.20)	$(19,114.16)	$(176,464.53)
Plaintiff's Exh. No. 1	(47,327.19)	72,020.02	21,872.91	46,565.74
Difference	$57,644.98	$124,398.22	$40,987.07	$223,030.27
Difference as % of Actual Increase (or decrease)	54.91	237.50	214.43	126.39
Gross Additions at Level of June 30, 1923:				
Company Experience	$642,692.83	$1,470,243.80	$966,151.84	$3,079,088.47
Plaintiff's Exh. No. 1	700,337.81	1,594,642.02	1,007,138.91	3,302,118.74
Difference	$57,644.98	$124,398.22	$40,987.07	$223,030.27
Difference as % of Company Experience	8.97	8.46	4.24	7.24

( ) = decrease.

[fol. 4377] Illinois Bell Telephone Company, Chicago Exchange

Composite Percentages Showing Increases in Costs of Labor and Material June 30, 1923, over Previous Periods

Account 245—Exchange Underground Cable

	Year 1921	Year 1922	Jan.-June 1923
Per cent Increase—Material	(7.10)	3.92	3.83
" " —Labor	(24.65)	(16.53)	(10.43)
" of Total Cost—Material*	60.5	64.0	59.5
" " " " —Labor*	39.5	36.0	40.5
Composite Per cent—Material	(4.30)	2.51	2.28
" " —Labor	(9.74)	(5.95)	(4.22)
Total	(14.04)	(3.44)	(1.94)

* Percentages developed from Company's construction records as composites of Code 5-C (specific estimates only) and Code 35-C (specific and routine estimates combined).

( ) = decrease.

[fol. 4378] Illinois Bell Telephone Company, Chicago Exchange

Development of Composite Percentages of Labor and Material

Account-245—Exchange Underground Cable

	Year 1921	Year 1922	Jan.-June 1923.
Distribution of Labor Costs			
Direct Labor Charges Code 5-C (Constr. Records)	$141,956.97	$277,757.08	$169,655.02
Direct Labor Charges Code 35-C (Constr. Records)	113,652.38	158,117.01	143,745.48
Direct Labor Charges Total (Constr. Records)	$255,609.35	$435,874.09	$313,400.50
Percent of Total Direct Labor—Code 5-C	55.5	63.7	54.1
Percent of Total Direct Labor—Code 35-C	44.5	36.3	45.9
Composite Percentages—Labor			
Percent Increase June 30, 1923 over previous periods:			
Code 5-C	(36.53)	(26.50)	(19.33)
Code 35-C	(9.84)	1.05	.07
Percent of Total—Code 5 C	55.5	63.7	54.1
" " " — " 35-C	44.5	36.3	45.9
Composite Percent—Code 5-C	(20.27)	(16.91)	(10.46)
" " — " 35-C	(4.38)	.38	.03
Total	(24.65)	(16.53)	(10.43)
Composite Percentages—Total			
Code 5-C:			
Percent of Total—Material	69.9	71.6	70.4
" " " —Labor	30.1	28.4	29.6
Code 35-C:			
Percent of Total—Material	38.6	38.6	35.1
" " " —Labor	61.4	61.4	64.9

Percent of Total—Code 5-C	70.1	77.1	69.0
" " " —Code 35-C	29.9	22.9	31.0
Composite Percent Code 5-C Material	49.0	55.2	48.6
" " " 35-C "	11.5	8.8	10.9
Total Percent—Material	60.5	64.0	59.5
Composite Percent Code 5-C Labor	21.1	21.9	20.4
" " " 35-C "	18.4	14.1	20.1
Total Percent—Labor	39.5	36.0	40.5

( ) = decrease.

[fol. 4379] Illinois Bell Telephone Company, Chicago Exchange

Percent Increase in Labor Costs June 30, 1923, Over Previous Periods as Affected by Elimination of Individual Small Jobs

Account 245—Exchange Underground Cable—Code 5-C

	Year 1921	Year 1922	Jan.-June 1923
Labor Hours—Placing:			
Specific Estimates	12,956.70	31,903.74	18 367.62
Routine Estimates	12,491.89	22,618.02	21,657.18
Total	25,448.59	54,521.76	40,024.80
Labor Performance—Ratio of Specific Estimates to Specific and Routine Combined	.811	.811	.811
Labor Hours Required at Level of Specific Estimate Performance	20,638.81	44,217.15	32,460.11
Cost per Hour on Specific Estimates at Level of June 30, 1923	$.8695	$.8695	$.8695
Direct Labor Cost at Level of June 30, 1923	$17,945.45	$38,446.81	$28,224.07
Labor Hours—Splicing:			
Specific Estimates	83,653.80	197,674.76	115,403.38
Routine Estimates	41,169.31	83,791.48	67,054.82
Total	124,823.41	281,466.24	182,458.20
Labor Performance—Ratio of Specific Estimates to Specific and Routine Combined	.811	.811	.811
Labor Hours Required at Level of Specific Estimate Performance	101,231.79	228,269.12	147,973.60
Cost per Hour on Specific Estimates at Level of June 30, 1923	$.7342	$.7342	$.7342
Direct Labor Cost at Level of June 30, 1923	$74,324.38	$167,595.19	$108,642.22
Total Direct Labor Cost at Level of June 30, 1923	$92,269.83	$206,042.00	$136,866.29
Plant Supervision and Tool Expense at 8.3%	7,658.40	17,101.49	11,359.90
Total Labor Cost at Level of June 30, 1923	$99,928.23	$223,143.49	$148,226.19
Actual Labor Cost	$157,430.27	$303,588.49	$183,736.39
Difference	$57,502.04	$80,445.00	$35,510.20
Percent Increase June 30, 1923 over previous periods	(36.53)	(26.50)	(19.33)

( ) = decrease.

[fol. 4380]

EXHIBIT X-9A

Illinois Bell Telephone Company, Chicago Exchange

Comparison Between Company Experience on Its Larger Construction Projects and Plaintiff's Exhibit No. 1, 1921–1923

	Total Gross Additions June 30, 1923 level		
	Appraisal Method	Company Experience	% of Appraisal Method
Year 1921			
Account 241—Exchange Pole Lines	81,843.23	69,716.05	85.18
Account 242—Exchange Aerial Cable	101,883.21	86,577.60	84.98
Account 245—Exchange Underground Cable	700,337.81	642,692.83	91.77
Total	$884,064.25	$798,986.48	$90.38
Year 1922			
Account 241—Exchange Pole Lines	$220,997.29	190,994.13	86.42
Account 242—Exchange Aerial Cable	284,925.40	259,573.99	91.10
Account 245—Exchange Underground Cable	1,594,642.02	1,470,243.80	92.20
Total	$2,100,564.71	$1,920,811.92	91.44
Jan.-June 1923			
Account 241—Exchange Pole Lines	121,142.75	110,615.83	91.31
Account 242—Exchange Aerial Cable	194,054.35	181,226.51	93.39
Account 245—Exchange Underground Cable	1,007,138.91	966,151.84	95.93
Total	$1,322,336.01	$1,257,994.18	95.13

[fol. 4381]

Illinois Bell Telephone Company, Chicago Exchange

Difference Between Gross Additions at Cost Level of June 30, 1923, as Developed from Company's Experience After Eliminating Individual Small Jobs and from Plaintiff's Exhibit No. 1

Account 241—Exchange Pole Lines

	Year 1921	Year 1922	Jan.-June 1923	Total
Gross Additions (Ptf. Exh. No. 1)	$87,058.00	$216,473.00	$118,814.00	$422,345.00
Percent Increase June 30, 1923 over previous periods:				
Company Experience	(19.92)	(11.77)	(6.90)	(12.08)
Plaintiff's Exh. No. 1	(5.99)	(2.09)	1.96	.39
Amount of Increase:				
Company Experience	$(17,341.95)	190,994.13	110,615.83	371,326.01
Plaintiff's Exh. No. 1	(5,214.77)	220,997.29	121,142.75	423,983.27
Difference	$12,127.18	$30,003.16	$10,526.92	$52,657.26
Difference as % of Company Experience	17.40	15.71	9.52	14.18

( ) = decrease.

[fol. 4382] Illinois Bell Telephone Company, Chicago Exchange

Composite Percentages Showing Increases in Costs of Labor and Material June 30, 1923, over Previous Periods

Account 241—Exchange Pole Lines

	Year 1921	Year 1922	Jan.-June 1923
Per cent Increase—Material	(6.91)	5.24	.77
" " —Labor	(26.11)	(18.15)	(10.08)
" of Total Cost—Material*	32.2	27.3	29.3
" " " " —Labor*	67.8	72.7	70.7
Composite Per cent—Material	(2.22)	1.43	.23
" " —Labor	(17.70)	(13.20)	(7.13)
Total	(19.92)	(11.77)	(6.90)

* Based on percentages used in Plaintiff's Exhibit No. 1, with adjustments corresponding to decrease in labor hours.

( ) = decrease.

[fol. 4383] Illinois Bell Telephone Company, Chicago Exchange

Per cent Increase in Labor Costs June 30, 1923, over Previous Periods as Affected by Elimination of Individual Small Jobs

Account 241—Exchange Pole Lines

	Year 1921	Year 1922	Jan.-June 1923
Labor Hours:			
Specific Estimates	1,856.00	6,714.50	735.00
Routine Estimates	12,351.00	42,901.50	24,941.00
Total	$14,207.00	49,616.00	25,676.00
Labor Performance—Ratio of Specific Estimates to Specific and Routine Combined	.965	.965	.965
Labor Hours Required at Level of Specific Estimate Performance	13,709.76	47,879.44	24,777.34
Cost per Hour on Specific Estimates at Level of June 30, 1923	$.8459	.8459	.8459
Direct Labor Cost at Level of June 30, 1923	$11,597.09	$40,501.22	$20,959.15
Plant Supervision and Tool Expense @ 8.3%	962.56	3,361.60	1,739.61
Total Labor Cost at Level of June 30, 1923	$12,559.65	$43,862.82	$22,698.76
Actual Labor Cost	16,997.17	53,591.26	25,243.22
Difference	$4,437.52	$9,728.44	$2,544.46
Percent Increase June 30, 1923 over previous period	(26.11)	(18.15)	(10.08)

( ) = Decrease.

[fol. 4384]

EXHIBIT X-10

Illinois Bell Telephone Company—Chicago Exchange

Material and Labor Ratios used in Plaintiff's Exhibits Nos. 1 and A-2 to A-10, Inclusive

		Account 241			Account 242			Account 243			Account 244			Account 245		
		Exchange Pole Lines			Exchange Aerial Cable			Exchange Aerial Wire			Exchange U. G. Conduit			Exchange U. G. Cable		
Year		% Mat.	% Labor	% Lab. of Mat.	% Mat.	% Labor	% Lab. of Mat.	% Mat.	% Labor	% Lab. of Mat.	% Mat.	% Labor	% Lab. of Mat.	% Mat.	% Labor	% Lab. of Mat.
Aug.-Dec.	1911	47.4	52.6	111.0	56.9	43.1	75.7	38.3	61.7	161.1	39.13	60.87	155.6	77.9	22.1	28.4
	1912	47.4	52.6	111.0	56.9	43.1	75.7	38.3	61.7	161.1	38.00	62.00	163.2	77.9	22.1	28.4
	1913	58.0	42.0	72.4	53.6	46.4	86.6	51.8	48.2	93.0	37.23	62.77	168.6	75.9	24.1	31.8
	1914	55.1	44.9	81.5	50.8	49.2	96.8	43.5	56.5	129.9	33.13	66.87	201.8	72.8	27.2	37.4
	1915	52.3	47.7	91.2	53.7	46.3	86.2	43.3	56.7	130.9	31.12	68.88	221.3	72.9	27.1	37.2
	1916	54.1	45.9	84.8	57.9	42.1	72.7	44.3	55.7	125.7	33.19	66.81	201.3	76.5	23.5	30.7
	1917	54.2	45.8	84.5	56.2	43.8	77.9	49.9	50.1	100.4	35.42	64.58	182.3	80.8	19.2	23.8
	1918	35.6	64.4	180.9	40.1	59.9	149.4	40.3	59.7	148.1	30.78	69.22	224.9	75.2	24.8	33.0
	1919	40.5	59.5	146.9	42.6	57.4	134.7	35.5	64.5	181.7	33.72	66.28	196.6	73.2	26.8	36.6
	1920	36.9	63.1	171.0	43.9	56.1	127.8	38.9	61.1	157.1	37.72	62.28	165.1	60.2	39.8	66.1
	1921	31.4	68.6	218.5	48.8	51.2	104.9	34.2	65.8	192.4	32.28	67.72	209.8	56.3	43.7	77.6
	1922	26.6	73.4	275.9	53.0	47.0	88.7	36.7	63.3	172.5	30.71	69.29	225.6	61.4	38.6	62.9
Jan.-June	1923	28.6	71.4	249.6	57.8	42.2	73.0	42.4	57.6	135.8	32.92	67.08	203.8	62.6	37.4	59.7
July-Dec.	1923	50.2	49.8	99.2	48.9	51.1	104.5	51.2	48.8	95.3	27.6	72.4	262.3	63.0	37.0	58.8
	1924	51.8	48.2	93.1	56.0	44.0	78.6	49.1	50.9	103.7	27.2	72.8	267.6	61.9	38.1	61.6
	1925	53.2	46.8	88.0	64.0	36.0	56.2	45.9	54.1	117.9	32.0	68.0	212.5	69.9	30.1	43.1
	1926	51.9	48.1	92.7	61.1	38.9	63.7	43.7	56.3	128.8	32.8	67.2	204.9	67.3	32.7	48.6
	1927	54.0	46.0	85.2	54.7	45.3	82.8	42.5	57.5	135.3	28.2	71.8	254.6	65.3	34.7	53.1
	1928	48.6	51.4	105.8	50.7	49.3	97.2	39.6	60.4	152.5	26.0	74.0	284.6	61.8	38.2	61.8
	1929	45.3	54.7	120.8	48.9	51.1	104.5	41.4	58.6	141.5	27.3	72.7	266.3	53.2	46.8	88.0
	1930	42.6	57.4	134.7	50.9	49.1	96.5	44.5	55.5	124.7	28.9	71.1	246.0	59.4	40.6	68.4
	1931	44.3	55.7	125.7	39.4	60.6	153.8	43.2	56.8	131.5	24.5	75.5	308.2	39.1	60.9	155.8

NOTE.—In the pole line account prior to June 30, 1923 Mr. Sloan does not appear to have made any allowance in his computations for construction joint with C. E. Co. while subsequent to that date he shows a figure purporting to represent such joint construction. He does not separate that figure as between material and labor, and in the above tabulation the ratios in this account subsequent to June 30, 1923, like those prior to that date, do not include the allowance for joint construction.

[fol. 4385]

EXHIBIT X-11

Illinois Bell Telephone Company, Chicago Exchange

1929

Labor Hour Performance on Specific Estimates

Account 242—Exchange Aerial Cable

Item	Quantity	Labor Hours at Level of Specific Estimates 1921–22–23	Extension	Labor Hours at Level of Specific Estimates 1929
Cable:				
19 ga. 51 pr.	4,992	.1096	547	.0694
101 "	9,653	.1305	1,260	.0826
152 "	25	.1516	4	.0960
202 "	3,254	.1712	557	.1084
303 "	11,924½	.2114	2,521	.1339
455 "	1,535	.2681	412	.1698
22 ga. 26 pr.	(10)	....	....	....
51 "	2,439	.1082	264	.0685
101 "	3,051½	.1251	382	.0792
152 "	936	.1450	136	.0918
202 "	1,851	.1605	297	.1016
303 "	75	.1951	15	.1235
404 "	2,644	.2296	607	.1454
606 "	2,209	.2979	658	.1886
24 ga. 16 pr.	33	.1082	4	.0685
26 "	150	.1082	16	.0685
51 "	1,705	.1082	184	.0685
76 "	339	.1174	40	.0743
101 "	2,902	.1251	363	.0792
152 "	1,074	.1450	156	.0918
202 "	862½	.1601	138	.1014
303 "	993	.1949	194	.1234
404 "	214	.2295	49	.1453
S. & C. 76 pr.	(28)	....	....	....
Terminals:				
14B	4	12.30	49	7.79
14C	42	12.74	535	8.07
14D	6	13.81	83	8.74
16C	323	12.74	4,115	8.07
26C	41	13.81	566	8.74
51B	5	12.91	65	8.17
101B	5	15.89	79	10.06
202B	2	23.84	48	15.10
303B	6	34.77	209	22.02
404B	1	41.71	42	26.41
Total Computed Hours	......	....	14,595	
Total Actual Hours	......	....	9,242	
Correction Factor	......	....	63.32%	

( ) = Red.

[fol. 4386] Illinois Bell Telephone Company, Chicago Exchange

1929

Labor Hour Performance on Specific Estimates

Account 245—Exchange Underground Cable (15C-25C-45C)

Item		Quantity	Labor Hours at Level of Specific Estimates 1921–22–23	Extension	Labor Hours at Level of Specific Estimates 1929
Cable:					
16 ga.	152 pr.	(808)	.2541	(213)	.2498
	404 "	11½	.3200	4	.3027
19 ga.	1 pr.	300	.2113	63	.1999
	6 "	(5½)	.....	......	.....
	26 "	15	.2210	3	.2090
	51 "	449	.2216	100	.2098
	76 "	9	.2385	2	.2256
	101 "	504½	.2387	120	.2258
	202 "	350¼	.2720	95	.2573
	303 "	15,077	.3062	4,617	.2896
	455 "	62,978½	.3295	20,751	.3117
	476 "	14	.3362	5	.3180
	606 "	7½	.4039	3	.3820
22 ga.	11 pr.	150	.2113	32	.1999
	16 "	555	.2113	117	.1999
	26 "	1,388	.2153	299	.2057
	51 "	1,199	.2243	269	.2122
	76 "	(21)	.....	......	.....
	101 "	453	.2424	110	.2293
	152 "	(20)	.....	......	.....
	202 "	4,898	.2778	1.361	.2628
	303 "	1,045½	.3127	327	.2958
	404 "	1,930	.3477	671	.3289
	455 "	(38)	.....	......	.....
	606 "	14,049½	.4115	5,781	.3892
	909 "	81,863¼	.5144	42,111	.4866
	1212 "	(95)	.....	......	.....
24 ga.	16 pr.	3	.2113	1	.1999
	26 "	314	.2153	68	.2037
	51 "	502½	.2243	113	.2122
	76 "	725	.2330	169	.2204
	101 "	2,990	.2424	725	.2293
	152 "	505½	.2596	131	.2456
	202 "	4,894	.2778	1,360	.2628
	303 "	1,278	.3127	400	.2958
	404 "	1,094	.3477	380	.3289
	606 "	5,420	.4115	2,230	.3892
	909 "	4,793¼	.5144	2,466	.4866
	1212 "	187,954¾	.6399	120,272	.6053
	1818 "	(68¾)	.....	......	.....
26 ga.	1818 pr.	37,6651/12	.8909	33,556	.8427

[fol. 4387]

Item		Quantity	Labor Hours at Level of Specific Estimates 1921–22–23	Extension	Labor Hours at Level of Specific Estimates 1929
Cable: (Cont'd.)					
Spec. 3901					
155 pr.	9 qd. ga. 55 " 16 " 27 pr. 19 "	(491)	.2641	(130)	.2498
Spec. 4457					
	19 qd. 16 ga.				

( ) = Red.

Illinois Bell Telephone Company, Chicago Exchange

1929

Labor Hour Performance on Specific Estimates

Account 245—Exchange Underground Cable (15C-25C-45C)

Item	Quantity	Labor Hours at Level of Specific Estimates 1921–22–23	Extension	Labor Hours at Level of Specific Estimates 1929
280 pr. { 120 " 19 " 1 " 22 "	(489)	.3062	(150)	.2895
140 pr. { 60 pr. 14 ga. 80 " 16 "	(40)	.....	...	.....
307 pr. { 27 qd. 16 ga. 253 pr. 19 "	(32,880)	.3062	(10,068)	.2896
455 pr. { 202 pr. 19 ga. 253 " 22 "	4,646	.3400	1,580	.3216
476 pr. { 19 qd. 16 ga. 54 " 19 " 1 " 22 " 328 pr. 22 "	(16,662)	.4115	(6,856)	.3892
480 pr. { 75 pr. 16 ga. 404 " 22 "	17,158	.4902	8,411	.4637
607 pr. { 51 pr. 16 ga. 556 " 22 "	8,433	.5218	4,400	.4936
S. & C. 26 pr.	(39)	.....	...	.....
50 "	40	.4642	19	.4391
101 "	182	.5069	92	.4795
152 "	140	.5488	77	.5191
202 "	8,296¼	.5914	4,906	.5594
303 "	674½	.6769	457	.6403
404 "	2,592	.7624	1,976	.7212
606 "	147	.9285	136	.8783

[fol. 4388]

Item	Quantity	Labor Hours at Level of Specific Estimates 1921–22–23	Extension	Labor Hours at Level of Specific Estimates 1929
Terminals:				
11–C	1	11.90	12	11.26
16–C	10	12.32	123	11.65
26–C	(1)	13.35	(13)	12.63
14–C	(1)	12.32	(12)	11.65
14–D	2	13.35	27	12.63
B 101	6	15.37	92	14.54
B 152	1	20.17	20	19.08
B 202	6	23.05	138	21.80
B 303	3	33.62	101	31.80
B 404	2	40.34	81	38.16
Load Coils:				
11–C 75–508	9	49.95	450	47.25
75–T545	5	49.95	250	47.25
75–574B	4	49.95	200	47.25

( ) = Red.

[fol. 4389] Illinois Bell Telephone Company, Chicago Exchange

1929

Labor Hour Performance on Specific Estimates

Account 245—Exchange Underground Cable (15C-25C-45C)

Item		Quantity	Labor Hours at Level of Specific Estimates 1921–22–[illegible]	Extension	Labor Hours at Level of Specific Estimates 1929
22–C	50–508	8	45.15	361	42.71
	50–T545	4	45.15	181	42.71
	50–574	3	45.15	135	42.71
	50–574B	13	45.15	587	42.71
	50–575	(1)	45.15	(45)	42.71
22–D	50–601	5	45.15	226	42.71
22–E	100–601	6	57.63	346	54.51
	100–612	1	57.63	58	54.51
22–F	50–602	(2)	45.15	(90)	42.71
	50–603	6	45.15	271	42.71
23–D	49–545	1	45.15	45	42.71
Terminals: (Cont'd.)					
23–J	98–508	2	57.63	115	54.51
	98–574B	1	57.63	58	54.51
	98–575B	13	57.63	749	54.51
23–L	75–574B	(1)	49.95	(50)	47.25
23–T	200–612	3	81.64	245	77.22
23–U	100–602	14	57.63	807	54.51
	100–603	1	57.63	58	54.51
	100–613	5	57.63	288	54.51
	200–602	1	81.64	82	77.22
	200–613	2	81.64	163	77.22
23–W	200–613	15	81.64	1,225	77.22
43–A	300–601	2	93.17	186	88.13
43–B	300–602	1	93.17	93	88.13
	300–603	3	93.17	280	88.13
	300–613	29	93.17	2,702	88.13
44–A	300–612	29	93.17	2,702	88.13
44–B	200–612	3	81.64	245	77.22
45–A	100–612	4	57.63	231	54.51
D6934	75–508	4	49.95	200	47.25
	75–574B	2	49.95	100	47.25
D81245	300–612	2	93.17	186	88.13
	300–613	(1)	93.17	(93)	88.13
D86437	6–616	52	19.21	999	18.17
D87809	600–612	8	150.80	1,206	142.64
D87807	600–612	1	150.80	151	142.64

Total Computed Hours	259,821
Total Actual Hours	245,754
Correction Factor	94.59%

( ) = Red.

[fol. 4390]

Illinois Bell Telephone Company, Chicago Exchange

Table Showing Estimate Number and Total Construction Charges in Each, Year 1929

Account 242—Exchange Aerial Cable

	Less than $		$0–$99		$100–$499		$500–$1,099		$1,100–$2,499		$2,500–$4,999		Over $5,000	
	No.	$	No.	$	No.	$	No.	$	No.	$	No.	$	No.	$
	38,050	(401)	38,557	35	38,157	448	38,621	973	38,613	1,100	38,637	2,592	39,524	14,463
	38,515	(561)	38,580	65	38,623	125	39,126	809	39,101	1,663	39,129	4,617	39,547	6,299
	38,599	(12)	38,603	37	39,550	222	39,151	770	39,529	1,327	39,568	3,101	......	......
	38,614	(21)	39,127	4	39,612	144	39,579	712	39,549	1,363	......	......	......	......
	......	......	39,146	58	......	......	39,588	766	39,576	2,443	......	......	......	......
	......	......	39,546	3	......	......	39,595	982	39,614	1,819	......	......	......	......
Totals......	4	$(995)	6	$202	4	$939	6	$4,962	6	$9,715	3	$10,310	2	$20,762

Group	No. of Estimates	% of Total	Cumulative %	Total Construction Charges	% of Total	Cumulative %	Average Dollars in Group
Less than $0....................	4	12.91	12.91	$(995)	(2.17)	(2.17)	(249)
$0–$99....................	6	19.35	32.26	202	.44	(1.73)	34
100–499....................	4	12.91	45.17	939	2.05	.32	235
500–1,099....................	6	19.35	64.52	4,962	10.81	11.13	827
1,100–2,499....................	6	19.35	83.87	9,715	21.17	32.30	1,619
2,500–4,999....................	3	9.68	93.55	10,310	22.46	54.76	3,437
Over–5,000....................	2	6.45	100.00	20,762	45.24	100.00	10,381
Totals....................	31	100.00%	......	$45,895	100.00%	......	$1,480

( ) = Red.

[fol. 4391]

Illinois Bell Telephone Company, Chicago Exchange

Table Showing Estimate Number and Total Labor Hours in Each, Year 1929

Account 242—Exchange Aerial Cable

	Less than 0 Hrs.		0–19		20–99		100–199		200–499		500–999		1,000–1,999		Over 2,000	
	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.
	38,050	(310)	38,580	15	38,557	24	38,621	104	38,637	461	39,129	606	39,547	1,810	39,524	2,361
	38,515	(55)	38,599	4	38,603	28	39,101	185	38,613	331	39,549	575	......	......	......	......
	......	......	39,127	2	38,614	24	39,126	156	39,529	402	39,576	653	......	......	......	......
	......	......	39,146	5	38,623	28	39,151	118	39,568	377	......	......	......	......	......	......
	......	......	39,546	1	39,612	46	39,579	188	39,595	286	......	......	......	......	......	......
	......	......	......	......	......	......	39,588	178	39,614	421	......	......	......	......	......	......
	......	......	......	......	......	......	39,550	118	......	......	......	......	......	......	......	......
	......	......	......	......	......	......	38,157	100	......	......	......	......	......	......	......	......
Totals.......	2	(365)	5	27	5	150	8	1,147	6	2,278	3	1,834	1	1,810	1	2,361

Group	No. of Estimates	% of Total	Cumulative %	Total Hours	% of Total	Cumulative %	Average Amount in Group
Less than 0, Hrs.	2	6.45	6.45	(365)	(3.95)	(3.95)	(182)
0–19 "	5	16.13	22.58	27	.29	(3.66)	5
20–99 "	5	16.13	38.71	150	1.62	(2.04)	30
100–199 "	8	25.80	64.51	1,147	12.41	10.37	143
200–499 "	6	19.35	83.86	2,278	24.65	35.02	380
500–999 "	3	9.68	93.54	1,834	19.84	54.86	611
1000–1999 "	1	3.23	96.77	1,810	19.58	74.44	1,810
Over–2000 "	1	3.23	100.00	2,361	25.56	100.00	2,361
Totals..................	31	100.00	....	9,242	100.00	....	298

(Here follow side folios 4392 and 4393)

Illinois Bell Telephone Company, Chicago Exchange

Table Showing Estimate Number and Total Construction Charges in Each, Year 1929

Account 245 (15C—Main Cable), Exchange Underground Cable

Less than $0		$0-$19		$20-$99		$100-$299		$300-$799		$800-$1,499		$1,500-$2,999		$3,000-$4,999		$5,000-$9,999		$10,000-$14,999		$15,000-$24	
No.	$	No.	$	No.	$	No.	$	No.	$	No.	$	No.	$	No.	$	No.	$	No.	$	No.	
26,147	(2,175)	38,105	1	27,060	34	27,218	237	38,158	373	38,109	1,040	38,159	2,343	27,235	3,284	27,197	7,928	38,609	14,645	38,153	16
26,225	(7,846)	38,121	2	38,139	81	27,245	269	38,51[illegible]	564	38,137	1,136	38,534	1,814	38,162	4,538	38,156	6,855	38,639	12,988	38,154	21
27,171	(91)	38,541	9	38,524	30	38,108	194	39,104	748	39,140	812	39,128	2,998	38,557	3,710	38,157	9,576	39,109	11,138	38,155	18
27,174	(401)	38,603	12	38,550	62	38,160	139	39,129	391	39,518	916	39,141	2,721	38,569	4,894	38,623	9,239	39,111	14,089	38,161	24
27,237	(4)	39,305	12	38,614	24	38,529	180	38,155	363	39,525	1,416	39,534	2,635	38,621	4,904	39,522	5,698	39,120	13,596	38,613	15
27,238	(70)	39,117	5	39,152	55	38,558	147	39,620	409	39,579	994	39,563	1,663	38,626	4,769	39,560	6,870	39,134	10,583	27,235	15
38,104	(11)	39,121	9	39,588	53	38,591	255	......	....	39,613	1,400	39,595	2,259	39,523	3,303	39,135	8,689	39,505	11,603	39,125	17
38,106	(43)	39,137	9	39,594	44	38,637	171	......	....	39,622	923	......	....	39,650	3,221	39,575	7,011	39,506	12,310	39,126	21
38,110	(1,717)	39,527	3	38,050	21	39,151	117	......	....	......	....	......	....	39,561	3,571	......	....	39,513	13,908	39,131	24
38,503	(98)	39,546	4	......	....	39,153	269	......	....	......	....	......	....	39,568	4,298	......	....	39,529	10,978	39,136	20
38,506	(679)	39,597	12	......	....	39,603	166	......	....	......	....	......	....	39,576	3,074	......	....	39,536	11,945	39,146	22
38,507	(429)	39,578	6	......	....	39,617	203	......	....	......	....	......	....	......	....	......	....	39,538	12,420	39,514	20
38,527	(22)	......	....	......	....	......	....	......	....	......	....	......	....	......	....	......	....	39,545	10,314	39,520	15
38,556	(7)	......	....	......	....	......	....	......	....	......	....	......	....	......	....	......	....	39,549	11,448	39,548	22
38,596	(56)	......	....	......	....	......	....	......	....	......	....	......	....	......	....	......	....	39,564	10,094	......	
38,116	(38)	......	....	......	....	......	....	......	....	......	....	......	....	......	....	......	....				
Totals 16	$(13,687)	12	$84	9	$404	12	$2,347	6	$2,848	8	$8,637	7	$16,433	11	$43,566	8	$61,866	15	$182,059	14	$274

Group	No. of Estimates	% of Total	Cumulative %	Total Construction Charges	% of Total	Cumulative %	Average Do in Grou
Less than $0	16	13.01%	13.01%	$(13,687)	(1.61)%	(1.61)%	$(85
From $ 0 to $ 19	12	9.76	22.77	84	.01	(1.60)	
" 20 " 99	9	7.32	30.09	404	.05	(1.55)	4
" 100 " 299	12	9.76	39.85	2,347	.28	(1.27)	19
" 300 " 799	6	4.88	44.73	2,848	.33	(.94)	47
" 800 " 1,499	8	6.50	51.23	8,637	1.01	.07	1,07
" 1,500 " 2,999	7	5.62	56.92	16,433	1.93	2.00	2,34
" 3,000 " 4,999	11	8.94	65.86	43,566	5.11	7.11	3,96
" 5,000 " 9,999	8	6.50	72.36	61,866	7.26	14.37	7,73
" 10,000 " 14,999	15	12.20	84.56	182,059	21.35	35.72	12,13
" 15,000 " 24,999	14	11.38	95.94	274,982	32.25	67,97	19,64
" 25,000 " 50,000	4	3.25	99.19	140,486	16.48	84.45	35,12
Over 50,000	1	.81	100.00	132.609	15.55	100.00	132,60
Totals	123	100.00	......	$852.634	100.00	......	$6,93

67 Estimates are under $2,500.00 = 54% of total number = 1.02% of total charges.

( ) = Red.

Illinois Bell Telephone Company, Chicago Exchange

Table Showing Estimate Number and Total Construction Charges in Each, Year 1929

Account 245 (15C—Main Cable), Exchange Underground Cable

$20–$99	$100–$299		$300–$799		$800–$1,499		$1,500–$2,999		$3,000–$4,999		$5,000–$9,999		$10,000–$14,999		$15,000–$24,999		$25,000–$50,000		Over $50,000	
$	No.	$	No.	$	No.	$	No.	$	No.	$	No.	$	No.	$	No.	$	No.	$	No.	$
34	27,218	237	38,158	373	38,109	1,040	38,159	2,343	27,235	3,284	27,197	7,928	38,609	14,645	38,153	16,870	39,101	27,497	39,103	132,609
81	27,245	269	38,515	564	38,137	1,136	38,534	1,814	38,162	4,538	38,156	6,855	38,639	12,988	38,154	21,915	39,124	43,555		
30	38,108	194	39,104	748	39,140	812	39,128	2,998	38,557	3,710	38,157	9,576	39,109	11,138	38,155	15,803	39,127	40,498		
62	38,160	139	39,129	391	39,518	916	39,141	2,721	38,569	4,894	38,623	9,239	39,111	14,089	38,161	24,786	39,584	28,936		
24	38,529	180	38,155	363	39,525	1,416	39,534	2,635	38,621	4,904	39,522	5,698	39,120	13,596	38,613	15,809				
55	38,558	147	39,620	409	39,579	994	39,563	1,663	38,626	4,769	39,560	6,870	39,134	10,583	27,235	15,050				
53	38,591	255			39,613	1,400	39,595	2,259	39,523	3,303	39,135	8,689	39,505	11,603	39,125	17,427				
44	38,637	171			39,622	923			39,650	3,221	39,575	7,011	39,506	12,310	39,126	21,632				
21	39,151	117							39,561	3,571			39,513	13,908	39,131	24,593				
	39,153	269							39,568	4,298			39,529	10,978	39,136	20,231				
	39,603	166							39,576	3,074			39,536	11,945	39,146	22,600				
	39,617	203											39,538	12,420	39,514	20,443				
													39,545	10,314	39,520	15,241				
													39,549	11,448	39,548	22,582				
													39,564	10,094						
$404	12	$2,347	6	$2,848	8	$8,637	7	$16,433	11	$43,566	8	$61,866	15	$182,059	14	$274,982	4	$140,486	1	$132,609

Group	No. of Estimates	% of Total	Cumulative %	Total Construction Charges	% of Total	Cumulative %	Average Dollars in Group
an $0	16	13.01%	13.01%	$(13,687)	(1.61)%	(1.61)%	$(855)
$ 0 to $ 19	12	9.76	22.77	84	.01	(1.60)	7
20 " 99	9	7.32	30.09	404	.05	(1.55)	45
100 " 299	12	9.76	39.85	2,347	.28	(1.27)	196
300 " 799	6	4.88	44.73	2,848	.33	(.94)	475
800 " 1,499	8	6.50	51.23	8,637	1.01	.07	1,079
1,500 " 2,999	7	5.62	56.92	16,433	1.93	2.00	2,348
3,000 " 4,999	11	8.94	65.86	43,566	5.11	7.11	3,960
5,000 " 9,999	8	6.50	72.36	61,866	7.26	14.37	7,733
10,000 " 14,999	15	12.20	84.56	182,059	21.35	35.72	12,137
15,000 " 24,999	14	11.38	95.94	274,982	32.25	67.97	19,642
25,000 " 50,000	4	3.25	99.19	140,486	16.48	84.45	35,121
Over 50,000	1	.81	100.00	132,609	15.55	100.00	132,609
Totals	123	100.00		$852,634	100.00		$6,932

mates are under $2,500.00 = 54% of total number = 1.02% of total charges.

d.

[fol. 4393]

Illinois Bell Telephone Company, Chicago Exchange

Table Showing Estimate Number and Total Labor Hours in Each, Year 1929

Account 245 (15C-Main), Exchange Underground Cable

Less than	0 Hrs.		0-9		10-49		50-99		100-199		200-399		400-799		800-1;499		1,500-2,499		2,500-4,000		Over 4,000	
	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs
	26,147	(470)	27,171	6	27,060	10	27,197	69	38,108	116	38,158	256	38,109	558	38,157	1,008	38,154	2,167	38,153	2,769	39,103	43,171
	26,225	(18)	27,218	9	27,238	12	27,245	54	38,591	189	39,140	320	38,137	576	38,161	1,456	38,155	1,502	38,639	2,967		
	27,174	(168)	38,104	4	38,503	15	38,139	94	38,637	104	39,525	248	38,557	576	38,162	965	38,609	2,107	39,101	3,403		
	27,237	(2)	38,105	1	38,524	16	38,160	92	39,129	117	39,563	341	39,104	413	38,534	888	38,613	2,059	27,235	2,691		
	38,050	(208)	38,110	1	38,529	14	38,515	55	39,518	152	39,613	280	39,146	444	38,569	945	39,125	2,316	39,124	3,914		
	38,106	(31)	38,121	1	38,550	30	39,151	74	39,579	178			39,523	692	38,621	852	39,136	1,865	39,126	2,702		
	38,506	(100)	27,255	2	38,603	22	39,603	68	39,588	124			39,534	520	38,623	1,463	39,505	1,792	39,127	3,366		
	38,507	(542)	38,541	4	39,152	35	39,620	58	39,617	125			39,550	588	38,626	920	39,506	1,656	39,514	2,574		
	38,527	(16)	38,558	2	39,153	38							39,561	567	39,109	1,394	39,513	1,867	39,520	2,782		
	38,556	(4)	38,614	3	39,155	49							39,568	420	39,128	1,060	39,536	1,813	39,584	3,824		
	38,596	(41)	38,156	7	39,594	19							39,576	788	39,131	1,379	39,538	1,663				
	38,116	(25)	39,117	3									39,595	515	39,134	1,027	39,545	1,750				
			39,121	5									39,622	401	39,144	1,193	39,548	2,381				
			39,137	5											39,522	1,167	39,549	2,244				
			39,305	6											39,529	1,303	39,564	2,035				
			39,527	1											39,560	1,058	39,135	1,658				
			39,546	1											39,575	1,450	39,111	2,318				
			39,597	8											38,159	810						
			39,578	4											39,120	1,433						
Totals	12	(1,625)	19	73	11	260	8	564	8	1,105	5	1,445	13	7,058	19	21,771	17	33,193	10	30,992	1	43,171

Group	No. of Estimates	% of Total	Cumulative %	Total Labor Hours	% of Total	Cumulative %	Average Hours in Group
Less than O Hrs	12	9.76	9.76	(1,625)	(1.18)	(1.18)	(1,354)
0-9 "	19	15.45	25.21	73	.05	(1.13)	4
10-49 "	11	8.94	34.15	260	.19	(.94)	24
50-99 "	8	6.50	40.65	564	.41	(.53)	70
100-199 "	8	6.50	47.15	1,105	.80	.27	138
200-399 "	5	4.07	51.22	1,445	1.05	1.32	289
400-799 "	13	10.57	61.79	7,058	5.11	6.43	543
800-1,499 "	19	15.45	77.24	21,771	15.78	22.21	1,146
1,500-2,499 "	17	13.82	91.06	33,193	24.05	46.26	1,953
2,500-4,000 "	10	8.13	99.19	30,992	22.46	68.72	3,099
Over 4,000 "	1	.81	100.00	43,171	31.28	100.00	43,171
Totals	123	100.00%	.....	138,007	100.00%	.....	1,122

( ) = Red.

[fol. 4394]

Illinois Bell Telephone Company, Chicago Exchange

Table Showing Estimate Number and Total Construction Charges in Each, Year 1929

Account 245 (25C Subsidiary), Exchange Underground Cable

Less than $0		$0-$99		$100-$249		$250-$599		$600-$1,399		$1,400-$2,499		Over $2,500	
No.	$	No.	$	No.	$	No.	$	No.	$	No.	$	No.	$
27,134	(17)	38,136	5	38,139	326	39,101	336	38,158	729	39,549	2,104	39,126	2,511
27,060	(19)	38,159	64	38,162	181	39,104	584	38,160	771	......	......	39,612	5,006
27,197	(28)	38,510	89	38,591	121	39,109	395	38,557	690	......	......	......	......
27,218	(25)	38,623	57	38,621	113	39,550	545	39,547	720	......	......	......	......
27,238	(28)	39,129	80	38,637	148	39,579	489	32,568	1,141	......	......	......	......
27,245	(43)	39,525	54	38,613	227	39,588	382	39,576	1,167	......	......	......	......
27,252	(116)	39,536	83	27,235	184	......	......	......	......	......	......	......	......
38,050	(206)	39,565	2	39,103	179	......	......	......	......	......	......	......	......
38,104	(4)	39,613	75	39,151	124	......	......	......	......	......	......	......	......
38,108	(178)	......	......	39,563	168	......	......	......	......	......	......	......	......
38,109	(15)	......	......	39,595	103	......	......	......	......	......	......	......	......
38,137	(67)	......	......	39,617	201	......	......	......	......	......	......	......	......
38,541	(5)	......	......	......	......	......	......	......	......	......	......	......	......
38,558	(53)	......	......	......	......	......	......	......	......	......	......	......	......
38,569	(372)	......	......	......	......	......	......	......	......	......	......	......	......
39,128	(59)	......	......	......	......	......	......	......	......	......	......	......	......
Totals 16	$(1,235)	9	$509	12	$1,975	6	$2,731	6	$5,218	1	$2,104	2	$7,517

Group	No. of Estimates	% of Total	Cumulative %	Total Construction Charges	% of Total	Cumulative %	Average Dollars in Group
Less than $0	16	30.76	30.76	$(1,235)	(6.56)	(6.56)	$(77)
From $ 0 to $ 99	9	17.31	48.07	509	2.70	3.86	56
" 100 " 249	12	23.08	71.15	1,975	10.49	6.63	165
" 250 " 599	6	11.54	82.69	2,731	14.51	21.14	455
" 600 " 1399	6	11.54	94.23	5,218	27.73	48.87	869
" 1400 " 2499	1	1.92	96.15	2,104	11.18	60.05	2,104
Over 2500	2	3.85	100.00	7,517	39.95	100.00	3,758
Total	52	100.00	......	$18,819	100.00	......	$362

( ) = Red.

[fol. 4395]

Illinois Bell Telephone Company, Chicago Exchange

Table Showing Estimate Number and Labor Hours in Each, Year 1929

Account 245 (25C Subsidiary), Exchange Underground Cable

	Less than 0		0–9		10–24		25–49		50–99		100–249		250–499		Over 500	
	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.
	27,134	(22)	27,197	1	38,162	16	38,159	38	38,139	86	38,160	111	39,568	446	39,126	722
	27,060	(2)	38,136	4	38,557	20	39,101	47	38,158	58	27,235	125	......	....	39,549	642
	27,218	(3)	38,613	6	38,591	21	39,104	41	38,510	69	39,103	110	......	....	39,612	1,499
	27,238	(10)	39,151	5	38,621	13	39,109	48	39,550	84	39,128	223	......	....	......	....
	27,245	(38)	39,536	6	38,623	13	39,129	26	39,579	93	39,547	124	......	....	......	....
	27,252	(16)	39,565	1	38,637	15	......	....	39,588	68	39,576	234	......	....	......	....
	38,050	(162)	39,613	4	39,525	10	......	....	39,595	77	......	....	......	....	......	....
	38,104	(4)	......	....	39,563	17	......	....	39,617	60	......	....	......	....	......	....
	38,108	(105)	......	....	......	....	......	....	......	....	......	....	......	....	......	....
	38,109	(9)	......	....	......	....	......	....	......	....	......	....	......	....	......	....
	38,137	(18)	......	....	......	....	......	....	......	....	......	....	......	....	......	....
	38,541	(4)	......	....	......	....	......	....	......	....	......	....	......	....	......	....
	38,558	(20)	......	....	......	....	......	....	......	....	......	....	......	....	......	....
	38,569	(223)	......	....	......	....	......	....	......	....	......	....	......	....	......	....
Totals...	14	(636)	7	27	8	125	5	200	8	595	6	927	1	446	3	2,863

Group	No. of Estimates	% of Total	Cumulative %	Total Labor Hours	% of Total	Cumulative %	Average Hours in Group
Less than 0 Hrs............	14	26.93	26.93	(636)	(13.99)	(13.99)	45
0–9 "	7	13.46	40.39	27	.59	(13.40)	4
10–24 "	8	15.38	55.77	125	2.75	(10.65)	16
25–49 "	5	9.62	65.39	200	4.40	(6.25)	40
50–99 "	8	15.38	80.77	595	13.09	6.84	74
100–249 "	6	11.54	93.31	927	20.39	27.23	154
250–499 "	1	1.92	94.23	446	9.81	37.04	446
Over 500 "	3	5.77	100.00	2,863	62.96	100.00	954
Total............	52	100.00%	......	4,547	100.00%	......	87

( ) = Red.

[fol. 4396]

Exhibit X-12

Illinois Bell Telephone Company, Chicago Exchange

June 30, 1923, Portion of December 31, 1929, Appraisal Priced on Basis of Wholesale Construction and 1929 Material and Labor Cost Levels

	June 30, 1923, Appraisal at December 31, 1929, Level		
	Appraisal Method	Company Experience	% of Appraisal Method
Account 242—Exchange Aerial Cable...	$4,184,407	$3,098,381	74.05
Account 245—Exchange U. G. Cable....	22,594,404	20,731,950	91.76
Total	$26,778,811	$23,830,331	88.99

[fol. 4397] Illinois Bell Telephone Company, Chicago Exchange

Adjustment of June 30, 1923, Portion of December 31, 1929, Appraisal to Reflect Actual Change in Labor Performance

Account 242—Exchange Aerial Cable

	Sloan	Wray
Company Appraisal as of June 30, 1923.......	$3,885,604	$3,885,604
Ratio Dec. 31, 1929 to June 30, 1923 Cost Level.	107.69	79.74
Company Appraisal as of June 30, 1923 at Cost Level of Dec. 31, 1929................	$4,184,407	$3,098,381
Difference—Amount	$1,086,026	
" —%	35.05	

[fol. 4398] Illinois Bell Telephone Company, Chicago Exchange

Composite Material and Labor Cost Trend

Account 242—Exchange Aerial Cable

1929

	Sloan	Wray
Ratio Dec. 31, 1929 to June 30, 1923 Cost of Material..	85.26	85.26
" " " " " " " " " " Labor.....	128.41	128.41
Ratio Specific Estimate Labor Performance to Specific and Routine Combined (1921-3 study)............	......	.912
Labor Ratio at Level of Specific Estimate Performance	......	117.11
Ratio 1929 to 1923 Number of Labor Hours Required..	......	.6332
Labor Ratio Adjusted to Level of 1929 Labor Performance	......	74.15
Percent of Total Cost—Material....................	48.0	50.3*
" " " " —Labor	52.0	49.7*
Ratio Dec. 31, 1929 Cost of Material and Labor at Level of Specific Estimate Performance to Level Used in Plaintiff's Exhibit No. 1...........................	107.69	79.74

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*Based on percentages used in Plaintiff's Exhibit A-8, with adjustments corresponding to labor decrease to level of specific estimate performance.

[fol. 4399] Illinois Bell Telephone Company, Chicago Exchange

Development of Material and Labor Indices from Plaintiff's Exhibits A-2 to A-10, Inclusive

Account 242—Exchange Aerial Cable

Date of Appraisal	Material: Chain Index (a)	Material: Index on June 30, 1923, Base (b)	Labor: Chain Index (a)	Labor: Index on June 30, 1923, Base (b)
June 30, 1923	100.00	100.00	100.00	100.00
Dec. 31, 1923	96.77	96.77	101.61	101.61
Dec. 31, 1924	101.19	97.92	104.21	105.89
Dec. 31, 1925	101.45	99.34	99.19	105.03
Dec. 31, 1926	91.24	90.64	101.02	106.10
Dec. 31, 1927	93.46	84.71	104.84	111.24
Dec. 31, 1928	93.42	79.14	105.98	117.89
Dec. 31, 1929	107.73	85.26	108.92	128.41
Dec. 31, 1930	91.86	78.32	103.71	133.17
Dec. 31, 1931	98.54	77.18	100.00	133.17

Notes:

(a) Taken from Plaintiff's Exhibits Nos. A-2 to A-10, inclusive.

(b) Computed from Col. (a).

[fol. 4400] Illinois Bell Telephone Company, Chicago Exchange

Adjustment of June 30, 1923, Portion of December 31, 1929, Appraisal to Reflect Actual Change in Labor Performance

Account 245—Exchange Underground Cable

	Sloan	Wray
Company Appraisal as of June 30, 1923	$20,244,068	$20,244,068
Ratio Dec. 31, 1929 to June 30, 1923 Cost Level	111.61	102.41
Company Appraisal as of June 30, 1923 at Cost Level of Dec. 31, 1929	$22,594,404	$20,731,950
Difference—Amount	$1,862,454	
" —%	8.98	

[fol. 4401] Illinois Bell Telephone Company, Chicago Exchange

Composite Material and Labor Cost Trend

Account 245—Exchange Underground Cable

1929

	Sloan	Wray
Ratio Dec. 31, 1929 to June 30, 1923 Cost of Material	97.86	97.86
" " " " " " " " " " Labor	135.02	111.96
Per cent of Total Cost—Material	63.0	67.7*
" " " " " —Labor	37.0	32.3*
Ratio Dec. 31, 1929 to June 30, 1923 Cost of Material and Labor	111.61	102.41

* Based on percentages used in Plaintiff's Exhibit A-8, with adjustments corresponding to labor decrease to level of specific estimate performance.

[fol. 4402] Illinois Bell Telephone Company, Chicago Exchange

Computation of Labor Costs Used in Plaintiff's Exhibit No. A-2

Account 245—Exchange Underground Cable

Cost of Reproduction June 30, 1923 (Ptf. Exh. A-2, page 3)	$20,244,068
Per cent of Total Cost—Labor (" " " " 54)	25.8
Labor Cost	5,222.970
Underground Cable Gang—% (Ptf. Exh. A-2, page 58)	71.5
Building Cable Gang—% (" " " " ")	28.5
Underground Cable Labor at Cost Level of June 30, 1923	3,734,424
Building Cable Labor " " " " " " "	1,488,546
Ratio Dec. 31, 1929 to June 30, 1923 Cost of Labor—Underground Cable Gang	1.3622
Ratio Dec. 31, 1929 to June 30, 1923 Cost of Labor—Building Cable Gang	1.3081
June 30, 1923 Labor at Cost Level of Dec. 31, 1929—Underground Cable	5,087.032
June 30, 1923 Labor at Cost Level of Dec. 31, 1929—Building Cable	1,947,167
Ratio Specific Estimate Labor Performance to Specific and Routine Combined (1921-3 Study)—Underground Cable	.8106
Labor Ratio at Level of Specific Estimate Performance	1.1042
Ratio 1929 to 1923 Number of Labor Hours Required	.9459
Labor Ratio Adjusted to Level of 1929 Labor Performance	1.0445
June 30, 1923 Labor Cost at Level of 1929 Specific Estimate Performance—Underground Cable	3,900,606
June 30, 1923 Labor Cost at 1929 Level (as above)—Building Cable	1.947,167
Total June 30, 1923 Labor Cost at 1929 Level	$5,847.773
Ratio Dec. 31, 1929 to June 30, 1923 Labor Cost—Total Account	1.1196

[fol. 4403] Illinois Bell Telephone Company, Chicago Exchange

Development of Material and Labor Indices from Plaintiff's Exhibits A-2 to A-10, Inclusive

Account 245—Exchange Underground Cable

Date of Appraisal	Material		Labor	
	Chain Index (a)	Index on June 30, 1923 Base (b)	Chain Index (a)	Index on June 30, 1923 Base (b)
June 30, 1923	100.00	100.00	100.00	100.00
Dec. 31, 1923	102.01	102.01	100.36	100.36
Dec. 31, 1924	100.47	102.49	105.68	106.06
Dec. 31, 1925	103.54	106.12	98.96	104.96
Dec. 31, 1926	91.73	97.34	101.55	106.59
Dec. 31, 1927	93.69	91.20	105.84	112.81
Dec. 31, 1928	93.58	85.34	108.47	122.37
Dec. 31, 1929	114.67	97.86	110.34	135.02
Dec. 31, 1930	82.96	81.18	103.82	140.18
Dec. 31, 1931	100.06	81.23	100.00	140.18

Notes:

(a) Taken from Plaintiff's Exhibits Nos. A-2 to A-10 inclusive.
(b) Computed from Col. (a).

[fol. 4404] **Illinois Bell Telephone Company, Chicago Exchange**

Development of Labor Indices from Plaintiff's Exhibits A-2 to A-10, Inclusive

Account 245—Exchange Underground Cable

	Underground Cable Gang			Building Cable Gang		
Date	Amount (a)	Chain Index (b)	Index on June 30, 1923 Base (c)	Amount (a)	Chain Index (b)	Index on June 30, 1923 Base (c)
6-30-23	$6,598.61	100.00	100.00	$1,302.93	100.00	100.00
12-31-23	6,622.01	100.35	100.35	1,307.65	100.36	100.36
12-31-28	6,969.88	105.25	105.62	1,449.89	110.88	111.28
12-31-25	6,885.95	98.80	104.35	1,459.78	100.68	112.04
12-31-26	6,984.98	101.44	105.85	1,499.31	102.71	115.07
12-31-26	6,939.58			2,223.58		
12-31-27	7,386.75	106.44	112.67	2,268.14	102.00	117.37
12-31-28	8,077.63	109.35	123.20	2,326.13	102.56	120.37
12-31-29	8,931.66	110.57	136.22	2,527.91	108.67	130.81
12-31-30	9,269.32	103.78	141.37	2,632.17	104.12	136.20
12-31-31	9,269.32	100.00	141.37	2,632.17	100.00	136.20

Notes:
(a) Taken from Plaintiff's Exhibits Nos. A-2 to A-10 inclusive.
(b) Computed from Col. (a).
(c) " " " (b).

[fol. 4405]

EXHIBIT X-12-A

Effect of Assumed Errors in Percentages of Increase in Labor Costs in Plaintiff's Exhibits A-2 to A-10, Inclusive

Account 242—Exchange Aerial Cable

	Index on Assumption of 1% Error in Chain Index		Index on Assumpiton of 2% Error in Chain Index	
	Chain	6-30-23	Chain	6-30-23
6-30-23	100.00	100.00	100.00	100.00
12-31-23	100.59	100.59	99.58	99.58
4	103.17	103.78	102.13	101.70
5	98.20	101.91	97.21	98.86
6	100.01	101.92	99.00	97.87
7	103.79	105.78	102.74	100.55
8	104.92	110.98	103.86	104.43
9	107.83	119.67	106.74	111.47
30	102.67	122.87	101.64	113.30
1	99.00	121.64	98.00	111.03

Index on Assumption of Error in 1923 Only

	2 Point Error		3 Point Error	
6-30-23	100.00	100.00	100.00	100.00
12-31-23	99.61	99.61	98.61	98.61
4	104.21	103.80	104.21	102.76
5	99.19	102.96	99.19	101.93
6	101.02	104.01	101.02	102.97
7	104.84	109.04	104.84	107.95
8	105.98	115.56	105.98	114.41
9	108.92	125.87	108.92	124.62
30	103.71	130.54	103.71	129.24
1	100.00	130.54	100.00	129.24

[fol. 4406]

Exhibit X-13

Illinois Bell Telephone Company, Chicago Exchange

Comparison Between Apparatus Prices as Used in Sloan Appraisal and as Furnished by Mr. Gregory (December 31st of Each Year)

Year	C. C. E. Account 221 (a)	Station Apparatus Account 231 (b)	P. B. X. Account 234 (c)	Total Apparatus from Sloan Appraisal (d)	Gregory Statement "B" (e)
1923..	100.00	100.00	100.00	100.00	100.00
1924..	92.5	101.0	98.4	98.2	94.3
1925..	92.1	103.3	98.3	95.6	93.3
1926..	82.2	94.8	95.9	89.2	85.2
1927..	78.5	94.1	91.9	89.5	81.0
1928..	71.8	88.1	85.8	79.9	72.7
1929..	69.0	75.2	79.5	72.1	66.5
1930..	78.3	74.7	86.2	79.0	73.2
1931..	78.7	75.5	86.3	78.8	

[fol. 4407]

Comparison Between Western Electric Experience and Sloan Appraisal on Central Office Telephone Equipment Installation Costs and Equipment Specification Costs

	Manual Equipment			Dial Equipment		
	Western Electric Average	Sloan Appraisal		Western Electric Average	Sloan Appraisal	
	Installation Costs					
	Index	Index	% Sloan Index of W. E. Index	Index	Index	% Sloan Index of W. E. Index
1923...	100.0	100.0	100.0	100.0	100.0	100.0
1924...	97.1	98.7	101.6	130.7	98.44	75.3
1925...	88.3	96.4	109.2	92.6	96.06	103.7
1926...	81.9	93.1	113.7	79.5	93.55	117.7
1927...	74.9	89.7	119.8	67.0	91.70	136.9
1928...	69.0	88.9	128.8	68.0	89.66	142.3
1929...	63.7	86.9	136.4	58.5	88.43	151.2
1930...	62.6	86.4	138.0	54.5	87.40	160.4
	Equipment Specification Costs					
1923...	100.0	100.0	100.0	100.0	100.0	100.0
1924...	105.3	96.0	91.2	169.3	95.4	56.3
1925...	81.3	91.2	112.2	165.4	91.3	55.2
1926...	58.5	85.6	146.3	97.4	83.6	85.8
1927...	51.6	79.2	153.5	78.7	79.9	101.5
1928...	47.7	75.6	158.5	72.6	77.2	106.3
1929...	44.5	70.8	159.1	66.1	72.0	108.9
1930...	44.0	67.9	154.3	61.3	68.5	111.7

[fol. 4408]

EXHIBIT X-13A

Statement B

Estimated Effect of Price Changes on Apparatus and Equipment Sold to Bell Company, 1921–1930

	Tel. Apparatus Sales at Preceding Year's Dec. 31st Prices	Effect of Price Change Made Each Year (Annual Basis)	% Price Change (Annual Basis)	Price Level at End of Year
12/31/20	....	....	......	100.0
1921	$70,015,000	(−$1,200,000)	(− 1.7)	98.3
1922	82,010,000	(− 8,800,000)	(−10.7)	87.8
1923	86,450,000	+ 200,000	+ 0.2	88.0
1924	109,670,000	(− 6,100,000)	(− 5.6)	83.0
1925	97,690,000	(− 1,100,000)	(− 1.1)	82.1
1926	107,870,000	(− 9,400,000)	(− 8.7)	75.0
1927	101,740,000	(− 5,000,000)	(− 4.9)	71.3
1928	112,240,000	(−11,500,000)	(−10.3)	64.0
1929	145,980,000	(−12,500,000)	(− 8.6)	58.5
1930	140,690,000	+14,400,000	+10.2	64.4

		Effect in 1930 of 1930 Changes	Average Increase Actually Effective in 1930	Average 1930 Price Level
1930 Sales at Average 1930 Prices	$143,040,000	+$2,350,000	+1.7	59.5
1930 Sales at Average 1930 Prices	....	....	....	$143,040,000
1930 Sales at 12/31/30 Prices	....	143,040,000	....	240,605,000
		.595		

Cumulative effect of Price Changes since 12/31/20 in 1930 Volume... 97,565,000

RAL:ID. 1/14/32.

Note.—The above is a complete copy of a table (Statement B) included in the supporting data and working papers made available on January 15th in response to my letter of January 11th to Mr. Gregory in reference to Statement A bearing the same title but on a non-cumulative basis.

EEH.

[fol. 4409]

EXHIBIT X-13B

Price Trend on Installation Work Performed for Bell Telephone Companies, 1923-1925=100

	Manual	Panel	Step-by-Step	Total
Weights	64.8	25.3	9.9	100.0
1920	132.8	113.9*	111.5*	125.9
1921	132.8	62.2	139.4	115.6
1922	111.3	62.2	117.2	99.5
1923	105.1	92.8	109.5	102.4
1924	102.0	121.3	106.9	107.4
1925	92.8	85.9	83.6	90.1
1926	86.1	73.8	72.3	81.6
1927	78.7	62.2	64.5	73.1
1928	72.5	58.5	60.9	67.8
1929	67.0	54.3	60.4	63.1
1930	65.8	50.6	59.9	61.4

* Assumed to be same as Manual on 1914 base.

(Here follow side folios 4410-4419)

10 YEARS BY MONTHS. PLAIN RULING. NO. 3156

CODEX BOOK CO. INC., NEW YORK

3892A

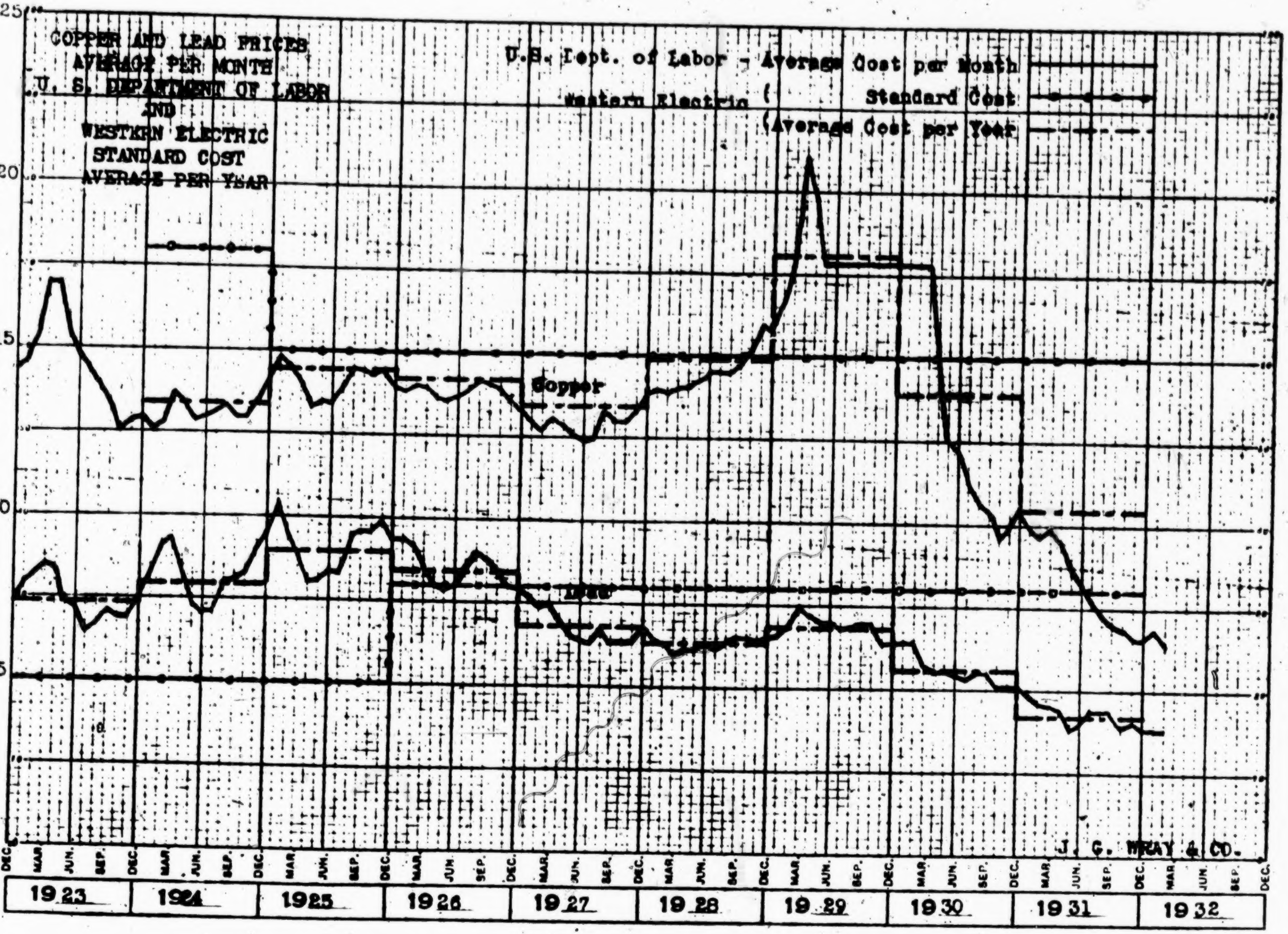
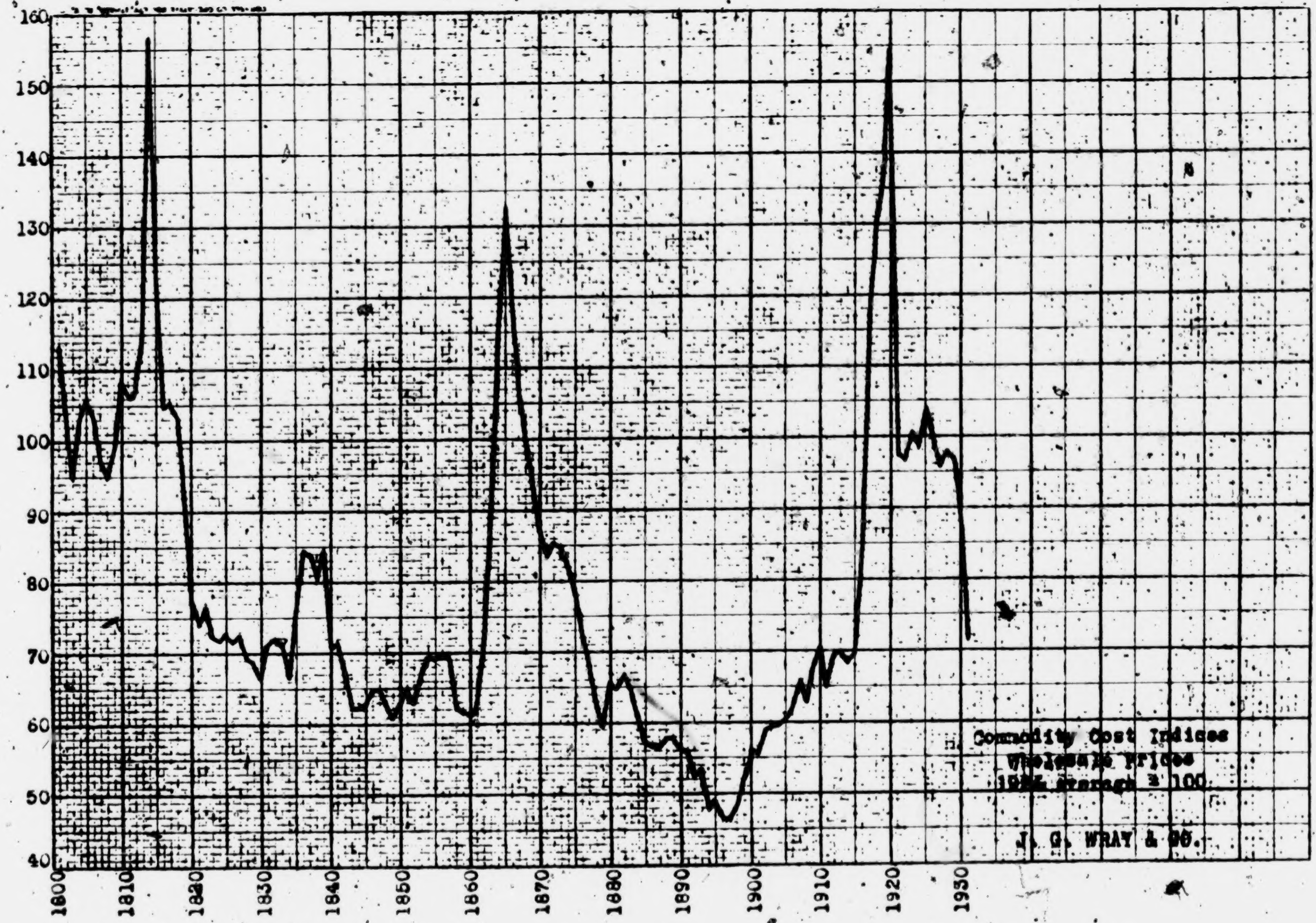


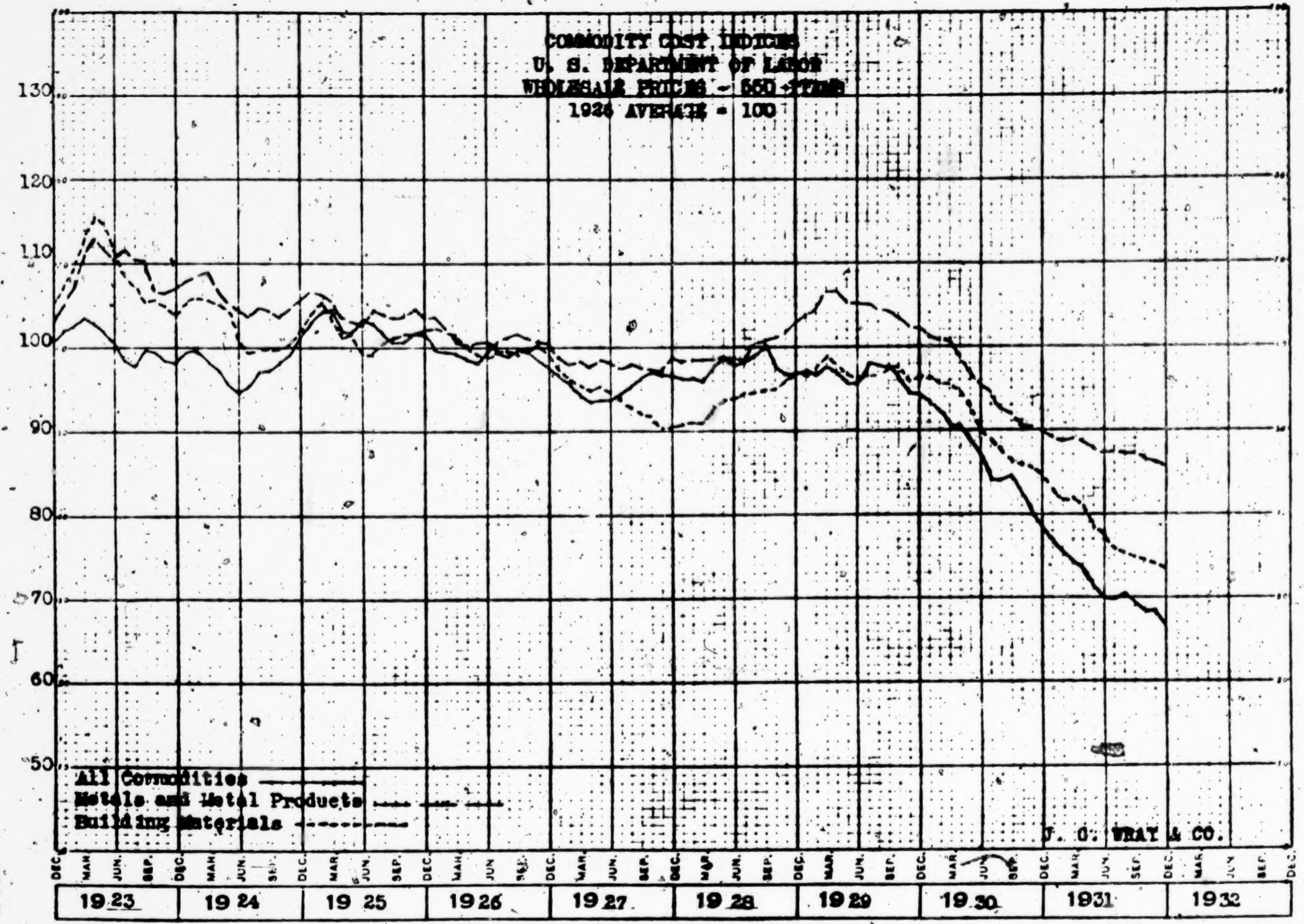
EXHIBIT X-14

4410



Commodity Cost Indices
Wholesale Prices
1926 average = 100

J. G. WRAY & CO.


COMMODITY COST INDICES
U. S. DEPARTMENT OF LABOR
WHOLESALE PRICES - 550 ITEMS
1926 AVERAGE = 100
130
120
110
100
90
80
70
60
50
All Commodities
Metals and Metal Products
Building Materials
J. C. WRAY & CO.
DEC.
MAR.
JUN.
SEP.
1923
1924
1925
1926
1927
1928
1929
1930
1931
1932

[fol. 4413]

EXHIBIT X–15

Western Electric Company, Inc.

Profit and Loss, Year 1929

(Dollars in Thousands)

		Total			Telephone Apparatus			Lead Covered Cable			Supplies		
	Not classified	Total	Bell	Non-Bell	Total	Bell	Non-Bell	Total	Bell	Non-Bell	Total	Bell	Non-Bell
Sales:													
Telephone appliances					$184,710	176,646	8,064						
Special commercial products					26,047	1,522	24,525						
Total Sales		$410,950	372,383	38,567	210,757	178,168	32,589	66,958	63,915	3,043	133,235	130,300	2,935
Gross Profit:													
Basic gross profit (adjusted)		$65,421	54,752	10,669	49,616	39,365	10,251	8,153	7,879	274	7,652	7,508	144
Manufacturing surplus and current underrun		17,720	17,747	2,286	16,767	14,680	2,087	2,890	2,691	199	376	376	
Manufacturing surplus and current underrun		15,247*	17,207*	353*	14,031*	13,734*	297*	2,516*	2,460*	56*	1,013*	1,013*	
Inventory revaluation and reserves		122	163	17	158	142	16	9	8	1	13	13	
Inventory revaluation and reserves		6,747*	6,136*	669*	6,103*	5,465*	638*	636*	605*	31*	66*	66*	
Total Gross Profit		$61,269	49,319	11,950	46,407	34,988	11,419	7,900	7,513	387	6,962	6,818	144
Other Income:													
Royalties	$295	$295											
Dividends	5,395	5,395											
Interest and other (Supplies includes (1) not classified)	2,756	3,640	869	14	732	720	12	65	63	2	87	86	
	$8,446	$9,330	869	14	732	720	12	65	63	2	87	86	
Total income	$8,446	$70,599	50,188	11,964	47,139	35,708	11,431	7,965	7,576	389	7,049	6,904	144
Expenses:													
Development expenses	$326	$11,350	8,910	2,114	10,218	8,142	2,076	806	768	38			
General expense (T. A. includes 42 not classified)		5,182	3,919	1,221	4,207	2,980	1,185	239	213	26	736	726	10
Merchandising expense		20,135	18,642	1,493	15,294	13,896	1,398	656	639	17	4,185	4,107	78
Federal taxes	272	2,363	1,329	762	1,267	540	727	628	597	31	196	192	4
Total Expenses	$598	$39,030	32,800	5,590	30,986	25,558	5,386	2,329	2,217	112	5,117	5,025	92
Net profit	$7,848	$31,569	17,388	6,374	16,153	10,150	6,045	5,636	5,359	277	1,932	1,879	52
Unallocated difference in gross profit		13											
		$31,556											

* Red figures.

[fol. 4414]

Exhibit X-16

Western Electric Company, Inc.

Analysis of Basic Gross Profit, Year 1929

(Dollars in Thousands)

	Total			Telephone Apparatus			Lead Covered Cable			Supplies		
	Total	Bell	Others	Total	Bell	Others	Total	Bell	Others	Total	Bell	Others
Merchandise Department:												
Basic gross	$56,899	46,541	10,358	47,426	37,407	10,019	8,191	7,931	260	1,282	1,203	79
Reversal of 1928 claim entries	31	30	1	30	30					1		1
1929 claim entries	169*	163*	6*	167*	162*	5*	1*	1*		1*		1*
Gross profit on supplies allowed distributing houses	554*	553*	1*							554*	553*	1*
Effect of price revision on D. H. inventories first six months of 1929	5*	5*		120*	120*		115	115				
Remuneration for inspection	88	60	28							88	60	28
Profit contract appraisals of returned exchanges	16	16		16	16							
Local cable design surplus	180	180		180	180							
Changes in allowance price for Class "A" material	89*	89*		89*	89*							
Excess profit on closed switchboard jobs	183	183		183	183							
Gross loss on Class "A" and "B" material (junked and salvaged)	236	236		236	236							
Adjustment to basic gross profit on Class "A H" material	28*	28*		28*	28*							
Errors in December 1928 partial deliveries	347*	294*	53*	347*	294*	53*						
Unexplained difference	1,805*	1,508*	297*	1,805*	1,508*	297*						
Sundry profit and losses	171	167	4	80	80		90	86	4	1	1	
	$54,807	44,773	10,034	45,595	35,931	9,664	8,395	8,131	264	817	711	106
Distributing Houses:												
Gross profit on local shop manufacture	$321	321		321	321							
Local shop surplus	828	828		828	828							
Effect of price revision on D. H. inventories last six months of 1929	267*	267*		267*	267*							
Liquidation of closing reserves	105			64			5	5		36		36
Profit on supplies billed on merchandise and other departments	5									5		
Profit on sale at distributor prices	11	551*	29	9	293*	19	2	43*	10			
Loss incurred in disposal of over-stock	9*			4*			1*			4*		
Other adjustments to profit (including unexplained difference)	634*			343*			34*			257*	220*	36*
Remuneration on sales of supplies	6,300	6,288	12							6,300	6,288	12
Inspection on purchase of supplies	671	671								671	671	
	$7,331	7,290	41	608	589	19	28*	38*	10	6,751	6,739	12
Installation Department:												
Gross profit and remuneration on direct expense material	$105	105		105	105							
General loading	1,067	1,067		1,067	1,067							
Accounts outlawed by statute of limitation	20	20		20	20							
[fol. 4415]	$1,192	1,192		1,192	1,192							
Broadway:												
Profit on sale of connecting blocks	$64	47	17	64	47	17						
Miscellaneous profits and losses	6	5	1	2	1	1	4	4				
Effect of revaluing D. H. inventories to standard shop cost	139*	139*		79	79		218*	218*				
Effect of change in reserve to distribute equipment gross profit in proportion to billing and installation	618*	618*		618*	618*							
Inspection on purchases of supplies	113	98	15							113	98	15
Remuneration on sales to distributors	12	1	11							12	1	11
Queensboro transfer (booths)	36*	36*								36*	36*	
Reserve discounts	5*	5*								5*	5*	
	$603*	647*	44	473*	491*	18	214*	214*		84	58	26
Special Service:												
Manufacturing Department	$42		42	42		42						
Merchandise	18	8	10	18	8	10						
Distributing Houses	2,117	2,117		2,117	2,117							
Broadway	491		491	491		491						
	$2,668	2,125	543	2,668	2,125	543						
Manufacturing Expense Recovered Through Royalties	$12	5	7	12	5	7						
Manufacturing Department Uncalled for Pay	$14	14		14	14							

Basic gross	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Reversal of 1928 claim entries	31	30	1	30	30					1		1
1929 claim entries	169*	163*	6*	167*	162*	5*	1*	1*		1*		1*
Gross profit on supplies allowed distributing houses	554*	553*	1*							554*	553*	1*
Effect of price revision on D. H. inventories first six months of 1929	5*	5*		120*	120*		115	115				
Remuneration for inspection	88	60	28							88	60	28
Profit contract appraisals of returned exchanges	16	16		16	16							
Local cable design surplus	180	180		180	180							
Changes in allowance price for Class "A" material	89*	89*		89*	89*							
Excess profit on closed switchboard jobs	183	183		183	183							
Gross loss on Class "A" and "B" material (junked and salvaged)	236	236		236	236							
Adjustment to basic gross profit on Class "A H" material	28*	28*		28*	28*							
Errors in December 1928 partial deliveries	347*	294*	53*	347*	294*	53*						
Unexplained difference	1,805*	1,508*	297*	1,805*	1,508*	297*						
Sundry profit and losses	171	167	4	80	80		90	86	4	1	1	
	$54,807	44,773	10,034	45,595	35,931	9,664	8,395	8,131	264	817	711	106
Distributing Houses:												
Gross profit on local shop manufacture	$321	321		321	321							
Local shop surplus	828	828		828	828							
Effect of price revision on D. H. inventories last six months of 1929	267*	267*		267*	267*							
Liquidation of closing reserves	105			64			5	5		36		36
Profit on supplies billed on merchandise and other departments	5									5		
Profit on sale at distributor prices	11	551*	29	9	293*	19	2	43*	10			
Loss incurred in disposal of over-stock	9*			4*			1*			4*		
Other adjustments to profit (including unexplained difference)	634*			343*			34*			257*	220*	36*
Remuneration on sales of supplies	6,300	6,288	12							6,300	6,288	12
Inspection on purchase of supplies	671	671								671	671	
	$7,331	7,290	41	608	589	19	28*	38*	10	6,751	6,739	12
Installation Department:												
Gross profit and remuneration on direct expense material	$105	105		105	105							
General loading	1,067	1,067		1,067	1,067							
Accounts outlawed by statute of limitation	20	20		20	20							
[fol. 4415]	$1,192	1,192		1,192	1,192							
Broadway:												
Profit on sale of connecting blocks	$64	47	17	64	47	17						
Miscellaneous profits and losses	6	5	1	2	1	1	4	4				
Effect of revaluing D. H. inventories to standard shop cost	139*	139*		79	79		218*	218*			[illegible]	
Effect of change in reserve to distribute equipment gross profit in proportion to billing and installation	618*	618*		618*	618*					[illegible]	[illegible]	
Inspection on purchases of supplies	113	98	15							[illegible]	[illegible]	15
Remuneration on sales to distributors	12	1	11							[illegible]	[illegible]	11
Queensboro transfer (booths)	36*	36*								[illegible]	[illegible]	
Reserve discounts	5*	5*								[illegible]	[illegible]	
	$603*	647*	44	473*	491*	18	214*	214*		84	[illegible]	26
Special Service:												
Manufacturing Department	$42		42	42		42						
Merchandise	18	8	10	18	8	10						
Distributing Houses	2,117	2,117		2,117	2,117							
Broadway	491		491	491		491						
	$2,668	2,125	543	2,668	2,125	543						
Manufacturing Expense Recovered Through Royalties	$12	5	7	12	5	7						
Manufacturing Department Uncalled for Pay	$14	14		14	14							
Total Basic Gross Profit	$65,421	54,752	10,669	49,616	39,365	10,251	8,153	7,879	274	7,652	7,508	144

* Red figures.

[fol. 4416]

EXHIBIT X-34

Western Electric Company, Inc.

Gross Profit

(Dollars in Thousands)

	Total Gross Profit				Adjusted Basic Gross				Manufacturing Inventory and Reserves Adjustments (Together)				Manufacturing Surplus Current Underrun (Current Variation)				Inv
	Total	T. A.	L. C. C.	Supp.	Total	T. A.	L. C. C.	Supp.	Total	T. A.	L. C. C.	Supp.	Total	T. A.	L. C. C.	Supp.	Total
Year 1931:																	
Additions to gross profit									17,257	7,760	9,729	77	16,691	7,036	9,655	......	566
Deductions from gross profit									22,557	13,243	8,074	1,549	16,184	9,364	6,411	409	6,373
Total adjustments to gross profit									39,814	21,003	17,803	1,626	32,875	16,400	16,066	409	6,939
Net adjustments to gross profit	$42,833	38,726	808	3,299	48,133	44,209	847*	4,771	5,300*	5,483*	1,655	1,472*	507	2,328*	3,244	409*	5,807*
Year 1930:																	
Additions to gross profit									14,001	6,938	7,404	1	12,814	5,797	7,236	......	1,187
Deductions from gross profit									21,402	15,885	4,816	1,043	15,251	11,585	3,716	169	6,151
Total adjustments to gross profit									35,403	22,823	12,220	1,044	28,065	17,382	10,952	169	7,338
Net adjustments to gross profit	$54,450	42,513	6,084	5,853	61,851	51,460	3,496	6,895	7,401*	8,947*	2,588	1,042*	2,437*	5,788*	3,520	169	4,964*
Year 1929:																	
Additions to gross profit									17,842	16,925	2,899	389	17,720	16,767	2,890	376	122
Deductions from gross profit									21,994	20,134	3,152	1,079	15,247	14,031	2,516	1,013	6,747
Total adjustments to gross profit									39,836	37,059	6,051	1,468	32,967	30,798	5,406	1,389	6,869
Net adjustments to gross profit	$61,269	46,407	7,900	6,962	65,421	49,616	8,153	7,652	4,152*	3,209*	253*	690*	2,473	2,736	374	637*	6,625*
Year 1928:																	
Additions to gross profit									16,777	12,111	5,145	205	13,014	8,410	5,086	186	3,763
Deductions from gross profit									11,130	11,099	688	27	6,358	6,815	185	26	4,772
Total adjustments to gross profit									27,907	23,210	5,833	232	19,372	15,225	5,271	212	8,535
Net adjustments to gross profit	$54,175	43,754	5,098	5,323	48,528	42,742	641	5,145	5,647	1,012	4,457	178	6,656	1,595	4,901	160	1,009*
Year 1927:																	
Additions to gross profit									13,374	8,818	4,603	594	10,597	6,956	3,752	427	2,777
Deductions from gross profit									5,331	5,383	552	37	3,654	3,690	465	37	1,677
Total adjustments to gross profit									18,705	14,201	5,155	631	14,251	10,646	4,217	464	4,454
Net adjustments to gross profit	$56,447	45,182	6,415	4,850	48,404	41,747	2,364	4,293	8,043	3,435	4,051	557	6,943	3,266	3,287	390	1,100*
Year 1926:																	
Additions to gross profit									12,347	10,458	2,055	......	11,309	9,373	2,052	......	1,038
Deductions from gross profit									10,108	7,823	2,321	130	6,025	4,878	1,263	......	4,083
Total adjustments to gross profit									22,455	18,281	4,376	130	17,334	14,251	3,315	......	5,121
Net adjustments to gross profit	$51,856	44,268	2,887	4,701	49,617	41,633	3,153	4,831	2,239	2,635	266*	130*	5,284	4,495	789	......	3,045*
Year 1925:																	
Additions to gross profit									4,100	4,022	71	71	3,008	2,987	22	63	1,092
Deductions from gross profit									15,379	7,297	8,146	......	11,713	3,710	8,067	......	3,666
Total adjustments to gross profit									19,479	11,319	8,217	71	14,721	6,697	8,089	63	4,758
Net adjustments to gross profit	$58,656	41,463	5,031	12,162	69,935	44,738	13,106	12,091	11,279*	3,275*	8,075*	71	8,705*	723*	8,045*	63	2,574*
Year 1924:																	
Additions to gross profit									4,395	4,308	87	131	3,949	3,880	69	130	446
Deductions from gross profit									11,863	6,737	5,132	125	9,498	4,431	5,072	125	2,365
Total adjustments to gross profit									16,258	11,045	5,219	256	13,447	8,311	5,141	255	2,811

EXHIBIT X-34

Western Electric Company, Inc.

Gross Profit

(Dollars in Thousands)

otal Gross Profit			Adjusted Basic Gross				Manufacturing Inventory and Reserves Adjustments (Together)				Manufacturing Surplus Current Underrun (Current Variation)				Inventory Revaluation and Reserves			
T. A.	L. C. C.	Supp.	Total	T. A.	L. C. C.	Supp.	Total	T. A.	L. C. C.	Supp.	Total	T. A.	L. C. C.	Supp.	Total	T. A.	L.C.C.	Supp.
.....	.....	.....	.....	.....	.....	.....	17,257	7,760	9,729	77	16,691	7,036	9,655	.....	566	724	74	77
.....	.....	.....	.....	.....	.....	.....	22,557	13,243	8,074	1,549	16,184	9,364	6,411	409	6,373	3,879	1,663	1,140
.....	.....	.....	.....	.....	.....	.....	39,814	21,003	17,803	1,626	32,875	16,400	16,066	409	6,939	4,603	1,737	1,217
38,726	808	3,299	48,133	44,209	847*	4,771	5,300*	5,483*	1,655	1,472*	507	2,328*	3,244	409*	5,807*	3,155*	1,589*	1,063*
.....	.....	.....	.....	.....	.....	.....	14,001	6,938	7,404	1	12,814	5,797	7,236	.....	1,187	1,141	168	1
.....	.....	.....	.....	.....	.....	.....	21,402	15,885	4,816	1,043	15,251	11,585	3,716	169	6,151	4,300	1,100	874
.....	.....	.....	.....	.....	.....	.....	35,403	22,823	12,220	1,044	28,065	17,382	10,952	169	7,338	5,441	1,268	875
42,513	6,084	5,853	61,851	~~51,460~~	~~3,496~~	6,895	7,401*	8,947*	2,588	1,042*	2,437*	5,788*	3,520	169*	4,964*	3,159*	932*	873*
.....	.....	.....	.....	.....	.....	.....	17,842	16,925	2,899	389	17,720	16,767	2,890	376	122	158	9	13
.....	.....	.....	.....	.....	.....	.....	21,994	20,134	3,152	1,079	15,247	14,031	2,516	1,013	6,747	6,103	636	66
.....	.....	.....	.....	.....	.....	.....	39,836	37,059	6,051	1,468	32,967	30,798	5,406	1,389	6,869	6,261	645	79
46,407	7,900	6,962	65,421	49,616	8,153	7,652	4,152*	3,209*	253*	690*	2,473	2,736	374	637*	6,625*	5,945*	627*	53*
.....	.....	.....	.....	.....	.....	.....	16,777	12,111	5,145	205	13,014	8,410	5,086	186	3,763	3,701	59	19
.....	.....	.....	.....	.....	.....	.....	11,130	11,099	688	27	6,358	6,815	185	26	4,772	4,284	503	1
.....	.....	.....	.....	.....	.....	.....	27,907	23,210	5,833	232	19,372	15,225	5,271	212	8,535	7,985	562	20
43,754	5,098	5,323	48,528	42,742	641	5,145	5,647	1,012	4,457	178	6,656	1,595	4,901	160	1,009*	583*	444*	18
.....	.....	.....	.....	.....	.....	.....	13,374	8,818	4,603	594	10,597	6,956	3,752	427	2,777	1,862	851	167
.....	.....	.....	.....	.....	.....	.....	5,331	5,383	552	37	3,654	3,690	465	37	1,677	1,693	87	.....
.....	.....	.....	.....	.....	.....	.....	18,705	14,201	5,155	631	14,251	10,648	4,217	464	4,454	3,555	938	167
5,182	6,415	4,850	48,404	41,747	2,364	4,293	8,043	3,435	4,051	557	6,943	3,266	3,287	390	1,100	169	764	167
.....	.....	.....	.....	.....	.....	.....	12,347	10,458	2,055	.....	11,309	9,373	2,052	.....	1,038	1,085	3	.....
.....	.....	.....	.....	.....	.....	.....	10,108	7,823	2,321	130	6,025	4,878	1,263	.....	4,083	2,945	1,058	130
.....	.....	.....	.....	.....	.....	.....	22,455	18,281	4,376	130	17,334	14,251	3,315	.....	5,121	4,030	1,061	130
4,268	2,887	4,701	49,617	41,633	3,153	4,831	2,239	2,635	266*	130*	5,284	4,495	789	.....	3,045*	1,860*	1,055*	130*
.....	.....	.....	.....	.....	.....	.....	4,100	4,022	71	71	3,008	2,987	22	63	1,092	1,035	49	8
.....	.....	.....	.....	.....	.....	.....	15,379	7,297	8,146	.....	11,713	3,710	8,067	.....	3,666	3,587	79	.....
.....	.....	.....	.....	.....	.....	.....	19,479	11,319	8,217	71	14,721	6,697	8,089	63	4,758	4,622	128	8
1,463	5,031	12,162	69,935	44,738	13,106	12,091	11,279*	3,275*	8,075*	71	8,705*	723*	8,045*	63	2,574*	2,552*	30*	8
.....	.....	.....	.....	.....	.....	.....	4,395	4,308	87	131	3,949	3,880	[illegible]	130	446	428	18	1
.....	.....	.....	.....	.....	.....	.....	11,863	6,737	5,132	125	9,498	4,431	[illegible]	125	2,365	2,306	60	.....
.....	.....	.....	.....	.....	.....	.....	16,258	11,045	5,219	256	13,447	8,311	5,141	255	2,811	2,734	78	1

Additions to gross profit																	
Deductions from gross profit									22,557	13,248	8,074	1,549	10,184	[illegible]	[illegible]	[illegible]	[illegible]
Total adjustments to gross profit									39,814	21,003	17,803	1,626	32,875	16,400	16,066	409	6,939
Net adjustments to gross profit	$42,833	38,726	808	3,299	48,133	44,209	847*	4,771	5,300*	5,483*	1,655	1,472*	507	2,328*	3,244	409*	5,807*
Year 1930:																	
Additions to gross profit									14,001	6,938	7,404	1	12,814	5,797	7,236	.....	1,187
Deductions from gross profit									21,402	15,885	4,816	1,043	15,251	11,585	3,716	169	6,151
Total adjustments to gross profit									35,403	22,823	12,220	1,044	28,065	17,382	10,952	169	7,338
Net adjustments to gross profit	$54,450	42,513	6,084	5,853	61,851	51,460	3,496	6,895	7,401*	8,947*	2,588	1,042*	2,437*	5,788*	3,520	169*	4,964*
Year 1929:																	
Additions to gross profit									17,842	16,925	2,899	389	17,720	16,767	2,890	376	122
Deductions from gross profit									21,994	20,134	3,152	1,079	15,247	14,031	2,516	1,013	6,747
Total adjustments to gross profit									39,836	37,059	6,051	1,468	32,967	30,798	5,406	1,389	6,869
Net adjustments to gross profit	$61,269	46,407	7,900	6,962	65,421	49,616	8,153	7,652	4,152*	3,209*	253*	690*	2,473	2,736	374	637*	6,625*
Year 1928:																	
Additions to gross profit									16,777	12,111	5,145	205	13,014	8,410	5,086	186	3,763
Deductions from gross profit									11,130	11,099	688	27	6,358	6,815	185	26	4,772
Total adjustments to gross profit									27,907	23,210	5,833	232	19,372	15,225	5,271	212	8,535
Net adjustments to gross profit	$54,175	43,754	5,098	5,323	48,528	42,742	641	5,145	5,647	1,012	4,457	178	6,656	1,595	4,901	160	1,009*
Year 1927:																	
Additions to gross profit									13,374	8,818	4,603	594	10,597	6,956	3,752	427	2,777
Deductions from gross profit									5,331	5,383	552	37	3,654	3,690	465	37	1,677
Total adjustments to gross profit									18,705	14,201	5,155	631	14,251	10,646	4,217	464	4,454
Net adjustments to gross profit	$56,447	45,182	6,415	4,850	48,404	41,747	2,364	4,293	8,043	3,435	4,051	557	6,943	3,266	3,287	390	1,100
Year 1926:																	
Additions to gross profit									12,347	10,458	2,055	.....	11,309	9,373	2,052	.....	1,038
Deductions from gross profit									10,108	7,823	2,321	130	6,025	4,878	1,263	.....	4,083
Total adjustments to gross profit									22,455	18,281	4,376	130	17,334	14,251	3,315	.....	5,121
Net adjustments to gross profit	$51,856	44,268	2,887	4,701	49,617	41,633	3,153	4,831	2,239	2,635	266*	130*	5,284	4,495	789	.....	3,045*
Year 1925:																	
Additions to gross profit									4,100	4,022	71	71	3,008	2,987	22	63	1,092
Deductions from gross profit									15,379	7,297	8,146	.....	11,713	3,710	8,067	.....	3,666
Total adjustments to gross profit									19,479	11,319	8,217	71	14,721	6,697	8,089	63	4,758
Net adjustments to gross profit	$58,656	41,463	5,031	12,162	69,935	44,738	18,106	12,091	11,279*	3,275*	8,075*	71	8,705*	723*	8,045*	63	2,574*
Year 1924:																	
Additions to gross profit									4,395	4,308	87	131	3,949	3,880	69	130	446
Deductions from gross profit									11,863	6,737	5,132	125	9,498	4,431	5,072	125	2,365
Total adjustments to gross profit									16,258	11,045	5,219	256	13,447	8,311	5,141	255	2,811
Net adjustments to gross profit	$55,114	41,421	2,589	11,104	62,582	43,850	7,634	11,098	7,468*	2,429*	5,045*	6	5,549*	551*	5,003*	5	1,919*

* Red figures

	Total Gross Profit				Adjusted Basic Gross				Manufacturing Inventory and Reserves Adjustments (Together)				Manufacturing Surplus Current Underrun (Current Variation)				Inventory Revaluation and Reserves			
	Total	T. A.	L. C. C.	Supp.	Total	T. A.	L. C. C.	Supp.	Total	T. A.	L. C. C.	Supp.	Total	T. A.	L. C. C.	Supp.	Total	T. A.	L.C.C.	Supp.
									17,257	7,760	9,729	77	16,691	7,036	9,655	......	566	724	74	77
ofit									22,557	13,243	8,074	1,549	16,184	9,364	6,411	409	6,373	3,879	1,663	1,140
ss profit									39,814	21,003	17,803	1,626	32,875	16,400	16,066	409	6,939	4,603	1,737	1,217
profit	$42,833	38,726	808	3,299	48,133	44,209	847*	4,771	5,300*	5,483*	1,655	1,472*	507	2,328*	3,244*	409*	5,807*	3,155*	1,589*	1,063*
									14,001	6,938	7,404	1	12,814	5,797	7,236	......	1,187	1,141	168	1
ofit									21,402	15,885	4,816	1,043	15,251	11,585	3,716	169	6,151	4,300	1,100	874
ss profit									35,403	22,823	12,220	1,044	28,065	17,382	10,952*	169	7,338	5,441	1,268	875
profit	$54,450	42,513	6,084	5,853	61,851	51,460	3,496	6,895	7,401*	8,947*	2,588	1,042*	2,437*	5,788*	3,520	169*	4,964*	3,159*	932*	873*
									17,842	16,925	2,899	389	17,720	16,767	2,890	376	122	158	9	13
ofit									21,994	20,134	3,152	1,079	15,247	14,031	2,516	1,013	6,747	6,103	636	66
ss profit									39,836	37,059	6,051	1,468	32,967	30,798	5,406	1,389	6,869	6,261	645	79
profit	$61,269	46,407	7,900	6,962	65,421	49,616	8,153	7,652	4,152*	3,209*	253*	690*	2,473	2,736	374	637*	6,625*	5,945*	627*	53*
									16,777	12,111	5,145	205	13,014	8,410	5,086	186	3,763	3,701	59	19
fit									11,130	11,099	688	27	6,358	6,815	185	26	4,772	4,284	503	1
s profit									27,907	23,210	5,833	232	19,372	15,225	5,271	212	8,535	7,985	562	20
profit	$54,175	43,754	5,098	5,323	48,528	42,742	641	5,145	5,647	1,012	4,457	178	6,656	1,595	4,901	160	1,009*	583*	444*	18
									13,374	8,818	4,603	594	10,597	6,956	3,752	427	2,777	1,862	851	167
fit									5,331	5,383	552	37	3,654	3,690	465	37	1,677	1,693	87	......
s profit									18,705	14,201	5,155	631	14,251	10,646	4,217	464	4,454	3,555	938	167
profit	$56,447	45,182	6,415	4,850	48,404	41,747	2,364	4,293	8,043	3,435	4,051	557	6,943	3,266	3,287	390	1,100	169	764	167
									12,347	10,458	2,055	......	11,309	9,373	2,052	......	1,038	1,085	3	......
fit									10,108	7,823	2,321	130	6,025	4,878	1,263	......	4,083	2,945	1,058	130
s profit									22,455	18,281	4,376	130	17,334	14,251	3,315	......	5,121	4,030	1,061	130
rofit	$51,856	44,268	2,887	4,701	49,617	41,633	3,153	4,831	2,239	2,635	266*	130*	5,284	4,495	789	......	3,045*	1,860*	1,055*	130*
									4,100	4,022	71	71	3,098	2,987	22	63	1,092	1,035	49	8
fit									15,379	7,297	8,146	......	11,713	3,710	8,067	......	3,666	3,587	79	......
profit									19,479	11,319	8,217	71	14,721	6,697	8,089	63	4,758	4,622	128	8
rofit	$58,656	41,463	5,631	12,162	69,935	44,738	13,106	12,091	11,279*	3,275*	8,075*	71	8,705*	723*	8,045*	63	2,574*	2,552*	30*	8
									4,395	4,308	87	131	3,049	3,880	69	130	446	428	18	1
it									11,863	6,737	5,132	125	9,498	4,431	5,072	125	2,365	2,306	60	......
profit									16,258	11,045	5,219	256	13,447	8,311	5,441	255	2,811	2,734	78	1
rofit	$55,114	41,421	2,589	11,104	62,582	43,850	7,634	11,098	7,468*	2,429*	5,045*	6	5,549*	551*	5,003*	5	1,919*	1,878*	42*	1

[fol. 4417]

Year 1923:																	
Additions to gross profit									5,638	5,017	664	......	4,171	3,927	287	......	1,46
Deductions from gross profit									6,141	3,427	2,757	......	5,409	2,695	2,757	......	73
Total adjustments to gross profit									11,779	8,444	3,421	......	9,580	6,622	3,044	......	2,19
Net adjustments to gross profit	$39,237	24,839	2,816	11,582	39,740	23,249	4,909	11,582	503*	1,590	2,093*	......	1,238*	1,232	2,470*	......	78
Year 1922:																	
Additions to gross profit									1,439	406	1,145	......	1,214	255	1,039	......	225
Deductions from gross profit									5,523	5,342	216	77	4,785	4,649	216	......	738
Total adjustments to gross profit									6,962	5,748	1,361	77	5,999	4,904	1,255	......	963
Net adjustments to gross profit	$30,003	20,035	1,689	8,279	34,087	24,971	760	8,356	4,084*	4,936*	929	77*	3,571*	4,394*	823	......	51
Year 1921:																	
Additions to gross profit									9,376	5,308	4,090	38	8,719	4,651	4,090	......	657
Deductions from gross profit									2,979	2,965	74	......	2,724	2,691	55	......	255
Total adjustments to gross profit									12,355	8,273	4,164	38	11,443	7,342	4,145	......	912
Net adjustments to gross profit	$29,252	22,360	1,360	5,532	22,855	20,017	2,656*	5,494	6,397	2,343	4,016	38	5,995	1,960	4,035	......	402
Year 1920:																	
Additions to gross profit									3,697	3,425	272	......	3,295	3,023	272	......	402
Deductions from gross profit									18,159	13,265	4,894	......	18,119	13,225	4,894	......	40
Total adjustments to gross profit									21,856	16,690	5,166	......	21,414	16,248	5,166	......	442
Net adjustments to gross profit	$27,623	13,147	1,647	12,829	42,085	22,987	6,269	12,829	14,462*	9,840*	4,622*	......	14,824*	10,202*	4,622*	......	362
Year 1919:																	
Additions to gross profit									2,093	1,724	202	167	1,676	1,627	49	......	417
Deductions from gross profit									8,574	6,484	2,035	55	8,519	6,484	2,035	......	55
Total adjustments to gross profit									10,667	8,208	2,237	222	10,195	8,111	2,084	......	472
Net adjustments to gross profit	$21,116	11,194	1,334	8,588	27,597	15,954	3,167	8,476	6,481*	4,760*	1,833*	112	6,843*	4,857*	1,986*	......	362
Year 1918:																	
Additions to gross profit									182	180	2	......	142	140	2	......	40
Deductions from gross profit									13,677	9,071	4,576	30	13,202	8,637	4,565	......	475
Total adjustments to gross profit									13,859	9,251	4,578	30	13,344	8,777	4,567	......	515
Net adjustments to gross profit	$20,045	11,288	582	8,175	33,540	20,179	5,156	8,205	13,495*	8,891*	4,574*	30*	13,060*	8,497*	4,563*	......	435
Year 1917:																	
Additions to gross profit									950	950	228	......	763	763	228	......	187
Deductions from gross profit									20,306	9,005	11,466	63	19,573	8,586	11,215	......	733
Total adjustments to gross profit									21,256	9,955	11,694	63	20,336	9,349	11,443	......	920
Net adjustments to gross profit	$17,576	8,438	1,385	7,753	36,932	16,493	12,623	7,816	19,356*	8,055*	11,238*	63*	18,810*	7,823*	10,987*	......	546
Year 1916:																	
Additions to gross profit									349	349	26	......	333	333	......	......	16
Deductions from gross profit									8,810	3,354	5,480	2	7,012	2,196	5,416	......	1,198
Total adjustments to gross profit									9,159	3,703	5,506	2	7,945	2,529	5,416	......	1,214
Net adjustments to gross profit	$13,200	5,870	1,563	5,767	21,661	8,875	7,017	5,769	8,461*	3,005*	5,454*	2*	7,279*	1,863*	5,416*	......	1,182

* Red figures.

..	.....	.....	.....	.....	.....	.....	.....	5,638	5,017	664	.....	4,171	3,927	287	.....	1,467	1,090	377	.....
..	.....	.....	.....	.....	.....	.....	.....	6,141	3,427	2,757	.....	5,409	2,695	2,757	.....	732	732	.....	.....
..	.....	.....	.....	.....	.....	.....	.....	11,779	8,444	3,421	.....	9,580	6,622	3,044	.....	2,199	1,822	377	.....
37	24,839	2.816	11.582	39,740	23.249	4,909	11,582	503*	1,590	2,093*	.....	1,238*	1,232	2,470*	.....	735	358	377	.....
..	.....	.....	.....	.....	.....	.....	.....	1,439	406	1,145	.....	1,214	255	1,039	.....	225	151	106	.....
..	.....	.....	.....	.....	.....	.....	.....	5,523	5,342	216	77	4,785	4,649	216	.....	738	693	.....	77
..	.....	.....	.....	.....	.....	.....	.....	6,962	5,748	1,361	77	5,999	4,904	1,255	.....	963	844	106	77
03	20,035	1,689	8.279	34,087	24,971	760	8,356	4,084*	4,936*	929	77*	3,571*	4,394*	823	.....	513*	542*	106	77*
..	.....	.....	.....	.....	.....	.....	.....	9,376	5,308	4,090	38	8,719	4,651	4,090	.....	657	657	.....	38
..	.....	.....	.....	.....	.....	.....	.....	2,979	2,965	74	.....	2,724	2,691	55	.....	255	274	19	
..	.....	.....	.....	.....	.....	.....	.....	12,355	8,273	4,164	38	11,443	7,342	4,145	.....	912	931	19	38
52	22,360	1.360	5.532	22,855	20,017	2,656*	5,494	6,397	2,343	4,016	38	5,995	1,960	4,035	.....	402	383	19*	38
..	.....	.....	.....	.....	.....	.....	.....	3,697	3,425	272	.....	3,295	3,023	272	.....	402	402	.....	.....
..	.....	.....	.....	.....	.....	.....	.....	18,159	13,265	4,894	.....	18,119	13,225	4,894	.....	40	40	.....	.....
..	.....	.....	.....	.....	.....	.....	.....	21,856	16,690	5,166	.....	21,414	16,248	5,166	.....	442	442	.....	.....
23	13,147	1,647	12,829	42,085	22,987	6,269	12,829	14,462*	9,840*	4,622*	.....	14,824*	10,202*	4,622*	.....	362	362	.....	.....
..	.....	.....	.....	.....	.....	.....	.....	2,093	1,724	202	167	1,676	1,627	49	.....	417	97	153	167
..	.....	.....	.....	.....	.....	.....	.....	8,574	6,484	2,035	55	8,519	6,484	2,035	.....	55	.....	.....	55
..	.....	.....	.....	.....	.....	.....	.....	10,667	8,208	2,237	222	10,195	8,111	2,084	.....	472	97	153	222
16	11,194	1,334	8,588	27,597	15.954	3,167	8,476	6,481*	4,760*	1,833*	112	6,843*	4,857*	1,986*	.....	362	97	153	112
:	.....	.....	.....	.....	.....	.....	.....	182	180	2	.....	142	140	2	.....	40	40	.....	.....
.	.....	.....	.....	.....	.....	.....	.....	13,677	9,071	4,576	30	13,202	8,637	4,565	.....	475	434	11	30
.	.....	.....	.....	.....	.....	.....	.....	13,859	9,251	4,578	30	13,344	8,777	4,567	.....	515	474	11	30
5	11,288	582	8.175	33,540	20,179	5,156	8,205	13,495*	8,891*	4,574*	30*	13,060*	8,497*	4,563*	.....	435*	394*	11*	30*
.	.....	.....	.....	.....	.....	.....	.....	950	950	228	.....	763	763	228	.....	187	187	.....	.....
.	.....	.....	.....	.....	.....	.....	.....	20,306	9,005	11,466	63	19,573	8,586	11,215	.....	733	419	251	63
.	.....	.....	.....	.....	.....	.....	.....	21,256	9,955	11,694	63	20,336	9,349	11,443	.....	920	606	251	63
6.	8.438	1,385	7,753	36,932	16,493	12,623	7,816	19,356*	8,055*	11,238*	63*	18,810*	7,823*	10,987*	.....	546*	232*	251*	63*
.	.....	.....	.....	.....	.....	.....	.....	349	349	26	.....	333	333	.....	.....	16	16	26	.....
.	.....	.....	.....	.....	.....	.....	.....	8,810	3,354	5,480	2	7,612	2,196	5,416	.....	1,198	1,158	64	2
.	.....	.....	.....	.....	.....	.....	.....	9,159	3,703	5,506	2	7,945	2,529	5,416	.....	1,214	1,174	90	2
)	5,870	1,563	5.767	21,661	8,875	7,017	5,769	8,461*	3,005*	5,454*	2*	7,279*	1,863*	5,416*	.....	1,182*	1,142*	38*	2*

Exhibit X-35

Western Electric Company, Inc.

Gross Profit

(Dollars in Thousands)

	Total Gross Profit				Adjusted Basic Gross				Manufacturing, Inventory and reserves adjustments (Together)				Manufacturing surplus and current under-run (Current Variation)				Inventory
	Total	T. A.	L.C.C.	Supp.	Total	T. A.	L.C.C.	Supp.	Total	T. A.	L. C. C.	Supp.	Total	T. A.	L. C. C.	Supp.	Total
Years 1923–1930, incl.																	
Additions	......	......	......	......	......	......	......	......	88,474	68,597	22,928	1,391	76,582	58,097	21,394	1,182	11,892
Deductions	......	......	......	......	......	......	......	......	103,348	77,785	27,564	2,441	73,155	51,835	24,041	1,370	30,193
Total	......	......	......	......	......	......	......	......	191,822	146,382	50,492	3,832	149,737	109,932	45,435	2,522	42,085
Net	$431,204	329,847	38,820	62,537	446,078	339,035	43,456	63,587	14,874*	9,188*	4,636*	1,050*	3,427	6,262	2,647*	188*	18,301*
Years 1921–1930, incl.																	
Additions	......	......	......	......	......	......	......	......	99,289	74,311	28,163	1,429	86,515	63,003	26,523	1,182	12,774
Deductions	......	......	......	......	......	......	......	......	111,850	86,092	27,854	2,518	80,664	59,175	24,312	1,370	31,186
Total	......	......	......	......	......	......	......	......	211,139	160,403	56,017	3,947	167,179	122,178	50,835	2,552	43,960
Net	$490,459	372,242	41,869	76,348	503,020	384,023	41,560	77,437	12,561*	11,781*	309	1,089*	5,851	3,828	2,211	188*	18,412*
Years 1916–1923, incl.																	
Additions	......	......	......	......	......	......	......	......	23,724	17,359	6,629	205	20,313	14,719	5,967	......	3,411
Deductions	......	......	......	......	......	......	......	......	84,169	52,913	31,498	227	79,943	49,163	31,153	......	4,226
Total	......	......	......	......	......	......	......	......	107,893	70,272	38,127	432	100,256	63,882	37,120	......	7,637
Net	$198,052	117,171	12,376	68,505	258,497	152,725	37,245	68,527	60,445*	35,554*	24,869*	22*	59,630*	34,444*	25,186*	......	815*
Years 1916–1924, incl.																	
Additions	......	......	......	......	......	......	......	......	28,119	21,667	6,716	336	24,262	18,599	6,036	130	3,857
Deductions	......	......	......	......	......	......	......	......	96,032	59,650	36,630	352	89,441	53,594	36,225	125	6,591
Total	......	......	......	......	......	......	......	......	124,151	81,317	43,346	688	113,703	72,193	42,261	255	10,448
Net	$253,166	158,592	14,965	79,609	321,079	196,575	44,879	79,625	67,913*	37,983*	29,914*	16*	65,179*	34,995*	30,189*	5	2,734*
Years 1916–1925, incl.																	
Additions	......	......	......	......	......	......	......	......	32,219	25,689	6,787	407	27,270	21,586	6,058	193	4,949
Deductions	......	......	......	......	......	......	......	......	111,411	66,947	44,776	352	101,154	57,304	44,292	125	10,257
Total	......	......	......	......	......	......	......	......	143,630	92,636	51,563	759	128,424	78,890	50,350	318	15,206
Net	$311,822	200,055	19,996	91,771	391,014	241,313	57,985	91,716	79,192*	41,258*	37,989*	55	73,884*	35,718*	38,234*	68	5,308*
Years 1916–1926, incl.																	
Additions	......	......	......	......	......	......	......	......	44,566	36,147	8,842	407	38,579	30,959	8,110	193	5,987
Deductions	......	......	......	......	......	......	......	......	121,519	74,770	47,097	482	107,179	62,182	45,555	125	14,340
Total	......	......	......	......	......	......	......	......	166,085	110,917	55,939	889	145,758	93,141	53,665	318	20,327
Net	$363,678	244,323	22,883	96,472	440,631	282,946	61,138	96,547	76,953*	38,623*	38,255*	75*	68,600*	31,223*	37,445*	68	8,353*

* Red figures

EXHIBIT X–35

Western Electric Company, Inc.

Gross Profit

(Dollars in Thousands)

Total Gross Profit				Adjusted Basic Gross				Manufacturing, Inventory and reserves adjustments (Together)				Manufacturing surplus and current under-run (Current Variation)				Inventory revaluations and reserves			
tal	T. A.	L.C.C.	Supp.	Total	T. A.	L.C.C.	Supp.	Total	T. A.	L. C. C.	Supp.	Total	T. A.	L. C. C.	Supp.	Total	T. A.	L. C. C.	Supp.
....	....	......	....	....	....	......	......	88,474	68,597	22,928	1,391	76,582	58,097	21,394	1,182	11,892	10,500	1,534	209
....	....	......	....	....	....	......	......	103,348	77,785	27,564	2,441	73,155	51,835	24,041	1,370	30,193	25,950	3,523	1,071
....	....	......	....	....	....	......	......	191,822	146,382	50,492	3,832	149,737	109,932	45,435	2,522	42,085	36,450	5,057	1,280
,204	329,847	38,820	62,537	446,078	339,035	43,456	63,587	14,874*	9,188*	4,636*	1,050*	3,427	6,262	2,647*	188*	18,301*	15,450*	1,989*	862*
....	....	......	....	....	....	......	......	99,289	74,311	28,163	1,429	86,515	63,003	26,523	1,182	12,774	11,308	1,640	247
....	....	......	....	....	....	......	......	111,850	86,092	27,854	2,518	80,664	59,175	24,312	1,370	31,186	26,917	3,542	1,148
....	....	......	....	....	....	......	......	211,139	160,403	56,017	3,947	167,179	122,178	50,835	2,552	43,960	38,225	5,182	1,395
,459	372,242	41,869	76,348	503,020	384,023	41,560	77,437	12,561*	11,781*	309	1,089*	5,851	3,828	2,211	188*	18,412*	15,609*	1,902*	901*
....	....	......	....	....	....	......	......	23,724	17,359	6,629	205	20,313	14,719	5,967	......	3,411	2,640	662	205
....	....	......	....	....	....	......	......	84,169	52,913	31,498	227	79,943	49,163	31,153	......	4,226	3,750	345	227
....	....	......	....	....	....	......	......	107,893	70,272	38,127	432	100,256	63,882	37,120	......	7,637	6,390	1,007	432
,052	117,171	12,376	68,505	258,497	152,725	37,245	68,527	60,445*	35,554*	24,869*	22*	59,630*	34,444*	25,186*	......	815*	1,110*	317	22*
....	....	......	....	....	....	......	......	28,119	21,667	6,716	336	24,262	18,599	6,036	130	3,857	3,068	680	206
....	....	......	....	....	....	......	......	96,032	59,650	36,630	352	89,441	53,594	36,225	125	6,591	6,056	405	227
....	....	......	....	....	....	......	......	124,151	81,317	43,346	688	113,703	72,193	42,261	255	10,448	9,124	1,085	433
166	158,592	14,965	79,609	321,079	196,575	44,879	79,625	67,913*	37,983*	29,914*	16*	65,179*	34,995*	30,189*	5	2,734*	2,988*	275	21*
....	....	......	....	....	....	......	......	32,219	25,689	6,787	407	27,270	21,586	6,058	193	4,949	4,103	729	214
....	....	......	....	....	....	......	......	111,411	66,947	44,776	352	101,154	57,304	44,292	125	10,257	9,643	484	227
....	....	......	....	....	....	......	......	143,630	92,636	51,563	759	128,424	78,890	50,350	318	15,206	13,746	1,213	441
822	200,055	19,996	91,771	391,014	241,313	57,985	91,716	79,192*	41,258*	37,989*	55	73,884*	35,718*	38,234*	68	5,308*	5,540*	245	13*
....	....	......	....	....	....	......	......	44,566	36,147	8,842	407	38,579	30,959	8,110	193	5,987	5,188	732	214
....	....	......	....	....	....	......	......	121,519	74,770	47,097	482	107,179	62,182	45,555	125	14,340	12,588	1,542	357
....	....	......	....	....	....	......	......	166,085	110,917	55,939	889	145,758	93,141	53,665	318	20,327	17,776	2,274	571
178	244,323	22,883	96,472	440,631	282,946	61,138	96,547	76,953*	38,623*	38,255*	75*	68,600*	31,223*	37,445*	68	8,353*	7,400*	810*	143*

[fol. 4419]

Years 1916–1927, incl.																	
Additions									57,940	44,965	13,445	1,001	49,176	37,915	11,862	620	8,764
Deductions									126,850	80,153	47,649	519	110,833	65,872	46,020	162	16,017
Total									184,790	125,118	61,094	1,520	160,009	103,787	57,882	782	24,781
Net	$420,125	289,505	29,298	101,322	489,035	324,693	63,502	100,840	68,910*	35,188*	34,204*	482	61,657*	27,957*	34,158*	458	7,253*
Years 1916–1928, incl.																	
Additions									74,717	57,076	18,590	1,206	62,190	46,325	16,948	806	12,527
Deductions									137,980	91,252	48,337	546	117,191	72,687	46,205	188	20,789
Total									212,697	148,328	66,927	1,752	179,381	119,012	63,153	994	33,316
Net	$474,300	333,259	34,396	106,645	537,563	367,435	64,143	105,985	63,268*	34,176*	29,747*	660	55,001*	26,362*	29,257*	618	8,262*
Years 1916–1929, incl.																	
Additions									92,559	74,001	21,489	1,595	79,910	63,092	19,838	1,182	12,649
Deductions									159,974	111,386	51,489	1,625	132,438	86,718	48,721	1,201	27,536
Total									252,533	185,387	72,978	3,220	212,348	149,810	68,559	2,383	40,185
Net	$535,569	379,666	42,296	113,607	602,984	417,051	72,296	113,637	67,415*	37,385*	30,000*	30*	52,528*	23,626*	28,883*	19*	14,887*
Years 1916–1930, incl.																	
Additions									106,560	80,939	28,893	1,596	92,724	68,889	27,074	1,182	13,836
Deductions									181,376	127,271	56,305	2,668	147,689	98,303	52,437	1,370	33,687
Total									287,936	208,210	85,198	4,264	240,413	167,192	79,511	2,552	47,523
Net	$590,019	422,179	48,380	119,460	664,835	468,511	75,792	120,532	74,816*	46,332*	27,412*	1,072*	54,965*	29,414*	25,363*	188*	19,851*
Years 1916–1931, incl.																	
Additions									123,817	88,699	38,622	1,673	109,415	75,925	36,729	1,182	14,402
Deductions									203,938	140,514	64,379	4,217	163,873	107,667	58,848	1,779	40,060
Total									327,750	229,213	103,001	5,890	273,288	183,592	95,577	2,961	54,462
Net	$632,852	460,905	49,188	122,759	712,968	512,720	74,945	125,303	80,116*	51,815*	25,757*	2,544*	54,458*	31,742*	22,119*	597*	25,658*

*Red figures.

	......	......	......	......	......	......	......	57,940	44,965	13,445	1,001	49,176	37,915	11,862	620	8,764	7,050	1,583	381
	......	......	......	......	......	......	......	126,850	80,153	47,649	519	110,833	65,872	46,020	162	16,017	14,281	1,629	357
	......	......	......	......	......	......	......	184,790	125,118	61,094	1,520	160,009	103,787	57,882	782	24,781	21,331	3,212	738
125	289,505	29,298	101,322	489,035	324,693	63,502	100,840	68,910*	35,188*	34,204*	482	61,657*	27,957*	34,158*	458	7,253*	7,231*	46*	24
	......	......	......	......	......	......	......	74,717	57,076	18,590	1,206	62,190	46,325	16,948	806	12,527	10,751	1,642	400
	......	......	......	......	......	......	......	137,980	91,252	48,337	546	117,191	72,687	46,205	188	20,789	18,565	2,132	358
	......	......	......	......	......	......	......	212,697	148,328	66,927	1,752	179,381	119,012	63,153	994	33,316	29,316	3,774	758
300	333,259	34,396	106,645	537,563	367,435	64,143	105,985	63,263*	34,176*	29,747*	660	55,001*	26,362*	29,257*	618	8,262*	7,814*	490*	42
	......	......	......	......	......	......	......	92,559	74,001	21,489	1,595	79,910	63,092	19,838	1,182	12,649	10,909	1,651	413
	......	......	......	......	......	......	......	159,974	111,386	51,489	1,625	132,438	86,718	48,721	1,201	27,536	24,668	2,768	424
	......	......	......	......	......	......	......	252,533	185,387	72,978	3,220	212,348	149,810	68,559	2,383	40,185	35,577	4,419	837
569	379,666	42,296	113,607	602,984	417,051	72,296	113,637	67,415*	37,385*	30,000*	30*	52,528*	23,626*	28,883*	19*	14,887*	13,759*	1,117*	11*
	......	......	......	......	......	......	......	106,560	80,939	28,893	1,596	92,724	68,889	27,074	1,182	13,836	12,050	1,819	414
	......	......	......	......	......	......	......	181,376	127,271	56,305	2,668	147,689	98,303	52,437	1,370	33,687	28,968	3,868	1,298
	......	......	......	......	......	......	......	287,936	208,210	85,198	4,264	240,413	167,192	79,511	2,552	47,523	41,018	5,687	1,712
19	422,179	48,380	119,460	664,835	468,511	75,792	120,532	74,816*	46,332*	27,412*	1,072*	54,965*	29,414*	25,363*	188*	19,851*	16,918*	2,049*	884*
	......	......	......	......	......	......	......	123,817	88,699	38,622	1,673	109,415	75,925	36,729	1,182	14,402	12,774	1,893	491
	......	......	......	......	......	......	......	203,933	140,514	64,379	4,217	163,873	107,667	58,848	1,779	40,060	32,847	5,531	2,438
	......	......	......	......	......	......	......	327,750	229,213	103,001	5,890	273,288	183,592	95,577	2,961	54,462	45,621	7,424	2,929
52	460,905	49,188	122,759	712,968	512,720	74,945	125,303	80,116*	51,815*	25,757*	2,544*	54,458*	31,742*	22,119*	597*	25,658*	20,073*	3,638*	1,947*

[fol. 4420]

Exhibit X-36

Western Electric Company, Inc.

Summary of Details of Manufacturing Department Surplus Items Resulting in the Net Figures Shown in Exhibit D-80

(Dollars in Thousands)

	Totals				Operating Surplus				Current Underrun			
	Total	T. A.	L. C. C.	Supp.	Total	T. A.	L. C. C.	Supp.	Total	T. A.	L. C. C.	Supp.
Year 1930:												
Additions to gross profit	$11,343	4,509	6,853	.....	2,408	2,346	62	.....	8,935	2,163	6,791	.....
Deductions from gross profit	13,898	10,781	3,136	.....	10,154	8,997	1,157	.....	3,744	1,784	1,979	.....
Total adjustments to gross profit	$25,241	15,290	9,989	.....	12,562	11,343	1,219	.....	12,679	3,947	8,770	.....
Net adjustments to gross profit	$2,555*	6,272*	3,717	.....	7,746*	6,651*	1,095*	.....	5,191	379	4,812	.....
Year 1929:												
Additions to gross profit	$9,607	9,383	2,126	410	6,568	5,613	1,262	229	3,039	3,770	864	181*
Deductions from gross profit	10,856	9,718	2,444	1,006	8,806	8,005	911	426	2,050	1,713	1,533	580
Total adjustments to gross profit	$20,463	19,101	4,570	1,416	15,374	13,618	2,173	655	5,089	5,483	2,397	761
Net adjustments to gross profit	$1,249*	335*	318*	596*	2,238*	2,392*	351	197*	989	2,057	669*	399*
Year 1928:												
Additions to gross profit	$11,635	7,133	4,914	156	6,544	5,759	1,278	57	5,091	1,374	3,636	99
Deductions from gross profit	3,877	3,941	481	23	3,869	3,915	481	23	8	26	.....	.....
Total adjustments to gross profit	$15,512	11,074	5,395	179	10,413	9,674	1,759	80	5,099	1,400	3,636	99
Net adjustments to gross profit	$7,758	3,192	4,433	133	2,675	1,844	797	34	5,083	1,348	3,636	99

EXHIBIT X-36—Continued

Western Electric Company, Inc.

Summary of Details of Manufacturing Department Surplus Items Resulting in the Net Figures Shown in Exhibit D-80

(Dollars in Thousands)

	Totals				Operating Surplus				Current Underrun			
	Total	T. A.	L. C. C.	Supp.	Total	T. A.	L. C. C.	Supp.	Total	T. A.	L. C. C.	Supp.
Year 1927:												
Additions to gross profit	$6,007	2,453	3,637	427	2,444	1,682	1,085	187	3,563	771	2,552	240
Deductions from gross profit	2,985	3,259	229	7	2,985	3,259	229	7	......	......	......	.....
Total adjustments to gross profit	$8,992	5,712	3,866	434	5,429	4,941	1,314	194	3,563	771	2,552	240
Net adjustments to gross profit	$3,022	806*	3,408	420	541*	1,577*	856	180	3,563	771	2,552	240
Year 1926:												
Additions to gross profit	$9,994	8,272	1,828	.....	9,796	8,057	1,739	.....	198	215	89	.....
Deductions from gross profit	3,702	2,321	1,487	.....	2,742	2,321	421	.....	960	......	1,066	.....
Total adjustments to gross profit	$13,696	10,593	3,315	.....	12,538	10,378	2,160	.....	1,158	215	1,155	.....
Net adjustments to gross profit	$6,292	5,951	341	.....	7,054	5,736	1,318	.....	762*	215	977*	.....
[fol. 4421]												
Year 1925:												
Additions to gross profit	$285	256	20	63	262	233	20	9	23	23	......	54
Deductions from gross profit	10,332	2,321	8,065	.....	2,162	1,840	322	.....	8,170	481	7,743	.....
Total adjustments to gross profit	$10,617	2,577	8,085	63	2,424	2,073	342	9	8,193	504	7,743	54
Net adjustments to gross profit	$10,047*	2,065*	8,045*	63	1,900*	1,607*	302*	9	8,147*	458*	7,743*	54

Year 1924:												
Additions to gross profit	$5	5	.....	130	5	5	.....	.....	.....	.....	.....	130
Deductions from gross profit	9,271	4,144	5,132	125	4,638	2,944	1,569	125	4,633	1,200	3,563	.....
Total adjustments to gross profit	$9,276	4,149	5,132	255	4,643	2,949	1,569	125	4,633	1,200	3,563	130
Net adjustments to gross profit	$9,266*	4,139*	5,132*	5	4,633*	2,939*	1,569*	125*	4,633*	1,200*	3,563*	130
Year 1923:												
Additions to gross profit	$3,616	3,352	264	.....	3,490	3,285	205	.....	126	67	59	.....
Deductions from gross profit	3,896	1,176	2,720	.....	433	352	81	.....	3,463	824	2,639	.....
Total adjustments to gross profit	$7,512	4,528	2,984	.....	3,923	3,637	286	.....	3,589	891	2,698	.....
Net adjustments to gross profit	$280*	2,176	2,456*	.....	3,057	2,933	124	.....	3,337*	757*	2,580*	.....
Year 1922:												
Additions to gross profit	$1,018	117	677	.....	456	117	333	.....	562	.....	344	.....
Deductions from gross profit	472	142	106	.....	134	22	106	.....	338	120	.....	.....
Total adjustments to gross profit	$1,490	259	783	.....	590	139	439	.....	900	120	344	.....
Net adjustments to gross profit	$546	25*	571	.....	322	95	227	.....	224	120*	344	.....
Year 1921:												
Additions to gross profit	$7,613	3,842	3,793	.....	2,569	2,591	.....	.....	5,044	1,251	3,793	.....
Deductions from gross profit	.....	.....	22	.....	.....	.....	22	.....	.....	.....	.....	.....
Total adjustments to gross profit	$7,613	3,842	3,815	.....	2,569	2,591	22	.....	5,044	1,251	3,793	.....
Net adjustments to gross profit	$7,613	3,842	3,771	.....	2,569	2,591	22*	.....	5,044	1,251	3,793	.....

* Red figures.

[fol. 4422]

Exhibit X-37

Western Electric Company, Inc.

Summary of Details of Manufacturing Department Surplus Items Resulting in the Net Figures Shown in Exhibit D-80 Combined in Groups by Series of Years

(Dollars in Thousands)

	Total				Operating Surplus				Current Underrun			
	Total	T. A.	L. C. C.	Supp.	Total	T. A.	L. C. C.	Supp.	Total	T. A.	L. C. C.	Supp.
Ten year period—Years 1921–1930 incl.:												
Additions to gross profit	$61,123	39,322	24,112	1,186	34,542	29,688	5,984	482	26,581	9,634	18,128	704
Deductions from gross profit	59,289	37,803	23,822	1,161	35,923	31,655	5,299	581	23,366	6,148	18,523	580
Total adjustments to gross profit	$120,412	77,125	47,934	2,347	70,465	61,343	11,283	1,063	49,947	15,782	36,651	1,284
Net adjustments to gross profit	$1,834	1,519	290	25	1,381*	1,967*	685	99*	3,215	3,486	395*	124
Nine year period—Years 1921–1929, incl.:												
Additions to gross profit	$49,780	34,813	17,259	1,186	32,134	27,342	5,922	482	17,646	7,471	11,337	704
Deductions from gross profit	45,391	27,022	20,686	1,161	25,769	22,658	4,142	581	19,622	4,364	16,544	580
Total adjustments to gross profit	$95,171	61,835	37,945	2,347	57,903	50,000	10,064	1,063	37,268	11,835	27,881	1,284
Net adjustments to gross profit	$4,389	7,791	3,427*	25	6,365	4,684	1,780	99*	1,976*	3,107	5,207*	124
Nine year period—Years 1922–1930, incl.:												
Additions to gross profit	$53,510	35,480	20,319	1,186	31,973	27,097	5,984	482	21,537	8,383	14,335	704
Deductions from gross profit	59,289	37,803	23,800	1,161	35,923	31,655	5,277	581	23,366	6,148	18,523	580
Total adjustments to gross profit	$112,799	73,283	44,119	2,347	67,896	58,752	11,261	1,063	44,903	14,531	32,858	1,284
Net adjustments to gross profit	$5,779*	2,323*	3,481*	25	3,950*	4,558*	707	99*	1,829*	2,235	4,188*	124

Eight year period—Years 1921-1928, incl.:												
Additions to gross profit	$40,173	25,430	15,133	776	25,566	21,729	4,660	253	14,607	3,701	10,473	523
Deductions from gross profit	34,535	17,304	18,242	155	16,963	14,653	3,231	155	17,572	2,651	15,011	......
Total adjustments to gross profit	$74,708	42,734	33,375	931	42,529	36,382	7,891	408	32,179	6,352	25,484	523
Net adjustments to gross profit	$5,638	8,126	3,109*	621	8,603	7,076	1,429	98	2,965*	1,050	4,538*	523
Eight year period—Years 1922-1929, incl.:												
Additions to gross profit	$42,167	30,971	13,466	1,186	29,565	24,751	5,922	482	12,602	6,220	7,544	704
Deductions from gross profit	45,391	27,022	20,664	1,161	25,769	22,658	4,120	581	19,622	4,364	16,544	580
Total adjustments to gross profit	$87,558	57,993	34,130	2,347	55,334	47,409	10,042	1,063	32,224	10,584	24,088	1,284
Net adjustments to gross profit	$3,224*	3,949	7,198*	25	3,796	2,093	1,802	99*	7,020*	1,856	9,000*	124
Eight year period—Years 1923-1930, incl.:												
Additions to gross profit	$52,492	35,363	19,642	1,186	31,517	26,980	5,651	482	20,975	8,383	13,991	704
Deductions from gross profit	58,817	37,661	23,694	1,161	35,789	31,633	5,171	581	23,028	6,028	18,523	580
Total adjustments to gross profit	$111,309	73,024	43,336	2,347	67,306	58,613	10,822	1,063	44,003	14,411	32,514	1,284
Net adjustments to gross profit	$6,325*	2,298*	4,052*	25	4,272*	4,653*	480	99*	2,053*	2,355	4,532*	124
Seven year period—Years 1921-1927, incl.:												
Additions to gross profit	$28,538	18,297	10,219	620	19,022	15,970	3,382	196	9,516	2,327	6,837	424
Deductions from gross profit	30,658	13,363	17,761	132	13,094	10,738	2,750	132	17,564	2,625	15,011	......
Total adjustments to gross profit	$59,196	31,660	27,980	752	32,116	26,708	6,132	328	27,080	4,952	21,848	424
Net adjustments to gross profit	$2,120*	4,934	7,542*	488	5,928	5,232	632	64	8,048*	298*	8,174*	424
Seven year period—Years 1922-1928, incl.:												
Additions to gross profit	$32,560	21,588	11,340	776	22,997	19,138	4,660	253	9,563	2,450	6,680	523
Deductions from gross profit	34,535	17,304	18,220	155	16,963	14,653	3,209	155	17,572	2,651	15,011	......
Total adjustments to gross profit	$67,095	38,892	29,560	931	39,960	33,791	7,869	408	27,135	5,101	21,691	523
Net adjustments to gross profit	$1,975*	4,284	6,880*	621	6,034	4,485	1,451	98	8,009*	201*	8,331*	523

[fol. 4423]

Exhibit X-37—Continued

Western Electric Company, Inc.

Summary of Details of Manufacturing Department Surplus Items

Resulting in the Net Figures Shown in Exhibit D-80 Combined in Groups by Series of Years

(Dollars in Thousands)

	Total				Operating Surplus				Current Underrun			
	Total	T. A.	L. C. C.	Supp.	Total	T. A.	L. C. C.	Supp.	Total	T. A.	L. C. C.	Supp.
Seven year period—Years 1923-1929, incl.:												
Additions to gross profit	$41,149	30,854	12,789	1,186	29,109	24,634	5,589	482	12,040	6,220	7,200	704
Deductions from gross profit	44,919	26,880	20,558	1,161	25,635	22,636	4,014	581	19,284	4,244	16,544	580
Total adjustments to gross profit	$86,068	57,734	33,347	2,347	54,744	47,270	9,603	1,063	31,324	10,464	23,744	1,284
Net adjustments to gross profit	$3,770*	3,974	7,769*	25	3,474	1,998	1,575	99*	[illegible],244*	1,976	9,344*	124
Seven year period—Years 1924-1930, incl.:												
Additions to gross profit	$48,876	32,011	19,378	1,186	28,027	23,695	5,446	482	20,849	8,316	13,932	704
Deductions from gross profit	54,921	36,485	20,974	1,161	35,356	31,281	5,090	581	19,565	5,204	15,884	580
Total adjustments to gross profit	$103,797	68,496	40,352	2,347	63,383	54,976	10,536	1,063	40,414	13,520	29,816	1,284
Net adjustments to gross profit	$6,045*	4,474*	1,596*	25	7,329*	7,586*	356	99*	1,284	3,112	1,952*	124
Six year period—Years 1921-1926, incl.:												
Additions to gross profit	$22,531	15,844	6,582	193	16,578	14,288	2,297	9	5,953	1,556	4,285	184
Deductions from gross profit	27,673	10,104	17,532	125	10,109	7,479	2,521	125	17,564	2,625	15,011	......
Total adjustments to gross profit	$50,204	25,948	24,114	318	26,687	21,767	4,818	134	23,517	4,181	19,296	184
Net adjustments to gross profit	$5,142*	5,740	10,950*	68	6,469	6,809	224*	116*	11,611*	1,069*	10,726*	184

Six year period—Years 1922-1927, incl.:												
Additions to gross profit	$20,925	14,455	6,426	620	16,453	13,379	3,382	196	4,472	1,076	3,044	424
Deductions from gross profit	30,658	13,363	17,739	132	13,094	10,738	2,728	132	17,564	2,625	15,011	......
Total adjustments to gross profit	$51,583	27,818	24,165	752	29,547	24,117	6,110	328	22,036	3,701	18,055	424
Net adjustments to gross profit	$9,733*	1,092	11,313*	488	3,359	2,641	654	64	13,092*	1,549*	11,967*	424
Six year period—Years 1923-1928, incl.:												
Additions to gross profit	$31,542	21,471	10,663	776	22,541	19,021	4,327	253	9,001	2,450	6,336	523
Deductions from gross profit	34,063	17,162	18,114	155	16,829	14,631	3,103	155	17,234	2,531	15,011	......
Total adjustments to gross profit	$65,605	38,633	28,777	931	39,370	33,652	7,430	408	26,235	4,981	21,347	523
Net adjustments to gross profit	$2,521*	4,309	7,451*	621	5,712	4,390	1,224	98	8,233*	81*	8,675*	523
Six year period—Years 1924-1929, incl.:												
Additions to gross profit	$37,533	27,502	12,525	1,186	25,619	21,349	5,384	482	11,914	6,153	7,141	704
Deductions from gross profit	41,023	25,704	17,838	1,161	25,202	22,284	3,933	581	15,821	3,420	13,905	580
Total adjustments to gross profit	$78,556	53,206	30,363	2,347	50,821	43,633	9,317	1,063	27,735	9,573	21,046	1,284
Net adjustments to gross profit	$3,490*	1,798	5,313*	25	417	935*	1,451	99*	3,907*	2,733	6,764*	124
Six year period—Years 1925-1930, incl.:												
Additions to gross profit	$48,871	32,006	19,378	1,056	28,022	23,690	5,446	482	20,849	8,316	13,932	574
Deductions from gross profit	45,650	32,341	15,842	1,036	30,718	28,337	3,521	456	14,932	4,004	12,321	580
Total adjustments to gross profit	$94,521	64,347	35,220	2,092	58,740	52,027	8,967	938	35,781	12,320	26,253	1,154
Net adjustments to gross profit	$3,221	335*	3,536	20	2,696*	4,647*	1,925	26	5,917	4,312	1,611	6*

* Red figures.

[fol. 4424]

EXHIBIT X-38

Western Electric Company, Inc.

Comparison of Total Amounts of Manufacturing, Inventory and Reserves Adjustments with Amounts Thereof Included in Exhibit D-80

(Dollars in Thousands)

	Totals				Included in Exhibit D-80				Not included in Exhibit D-80			
	Total	T. A.	L. C. C.	Supp.	Total	T. A.	L. C. C.	Supp.	Total	T. A.	L. C. C.	Supp.
Year 1930:												
Additions to gross profit	$14,001	6,938	7,404	1	11,343	4,509	6,853	[illegible]	2,658	2,429	551	1
Deductions from gross profit	21,402	15,885	4,816	1,043	13,898	10,781	3,136	....	7,504	5,104	1,680	1,043
Total adjustments to gross profit	$35,403	22,823	12,220	1,044	25,241	15,290	9,989	....	10,162	7,533	2,231	1,044
Net adjustments to gross profit	$7,401*	8,947*	2,588	1,042*	2,555*	6,272*	3,717	....	4,846*	2,675*	1,129*	1,042*
Year 1929:												
Additions to gross profit	$17,842	16,925	2,899	389	9,607	9,383	2,126	410	8,235	7,542	773	21*
Deductions from gross profit	21,994	20,134	3,152	1,079	10,856	9,718	2,444	1,006	11,138	10,416	708	73
Total adjustments to gross profit	$39,836	37,059	6,051	1,468	20,463	19,101	4,570	1,416	19,373	17,958	1,481	52
Net adjustments to gross profit	$4,152*	3,209*	253*	690*	1,249*	335*	318*	596*	2,903*	2,874*	65	94*
Year 1928:												
Additions to gross profit	$16,777	12,111	5,145	205	11,635	7,133	4,914	156	5,142	4,978	231	49
Deductions from gross profit	11,130	11,099	688	27	3,877	3,941	481	23	7,253	7,158	207	4
Total adjustments to gross profit	$27,907	23,210	5,833	232	15,512	11,074	5,395	179	12,395	12,136	438	53
Net adjustments to gross profit	$5,647	1,012	4,457	178	7,758	3,192	4,433	133	2,111*	2,180*	24	45
Year 1927:												
Additions to gross profit	$13,374	8,818	4,603	594	6,007	2,453	3,637	427	7,367	6,365	966	167
Deductions from gross profit	5,331	5,383	552	37	907	1,352	65	....	4,424	4,031	487	37

Total adjustments to gross profit....	$18,705	14,201	5,155	631	6,914	3,805	3,702	427	11,791	10,396	1,453	204
Net adjustments to gross profit.....	$8,043	3,435	4,051	557	5,100	1,101	3,572	427	2,943	2,334	479	130
Year 1926:												
Additions to gross profit............	$12,347	10,458	2,055	.....	9,808	8,086	1,828	.....	2,539	2,372	227	.....
Deductions from gross profit........	10,108	7,823	2,321	130	2,481	1,278	1,309	.....	7,627	6,545	1,012	130
Total adjustments to gross profit....	$22,455	18,281	4,376	130	12,289	9,364	3,137	.....	10,166	8,917	1,239	130
Net adjustments to gross profit......	$2,239	2,635	266*	130*	7,327	6,808	519	.....	5,088*	4,173*	785*	130*
[fol. 4425]												
Year 1925:												
Additions to gross profit............	$4,100*	4,022	71	71	262	233	20	63	3,838	3,789	51	8
Deductions from gross profit........	15,379	7,297	8,146	.....	10,332	2,321	8,065	.....	5,047	4,976	81	.....
Total adjustments to gross profit....	$19,479	11,319	8,217	71	10,594	2,554	8,085	63	8,885	8,765	132	8
Net adjustments to gross profit.....	$11,279*	3,275*	8,075*	71	10,070*	2,088*	8,045*	63	1,209*	1,187*	30*	8
Year 1924:												
Additions to gross profit............	$4,395	4,308	87	131	.....	.....	.....	130	4,395	4,308	87	1
Deductions from gross profit........	11,863	6,737	5,132	125	9,262	4,135	5,132	125	2,601	2,602	.....	.....
Total adjustments to gross profit....	$16,258	11,045	5,219	256	9,262	4,135	5,132	255	6,996	6,910	87	1
Net adjustments to gross profit.....	$7,468*	2,429*	5,045*	6	9,262*	4,135*	5,132*	5	1,794	1,706	87	1
Year 1923:												
Additions to gross profit............	$5,638	5,017	664	.....	3,616	3,352	264	.....	2,022	1,665	400	.....
Deductions from gross profit........	6,141	3,427	2,757	.....	3,896	1,176	2,720	.....	2,245	2,251	37	.....
Total adjustments to gross profit....	$11,779	8,444	3,421	.....	7,512	4,528	2,984	.....	4,267	3,916	437	.....
Net adjustments to gross profit....	$503*	1,590	2,093*	.....	280*	2,176	2,456*	.....	223*	586*	363	.....

EXHIBIT X-38—Continued

Western Electric Company, Inc.

Comparison of Total Amounts of Manufacturing, Inventory and Reserves Adjustments with Amounts Thereof Included in Exhibit D-80

(Dollars in Thousands)

	Totals				Included in Exhibit D-80				Not included in Exhibit D-80			
	Total	T. A.	L. C. C.	Supp.	Total	T. A.	L. C. C.	Supp.	Total	T. A.	L. C. C.	Supp.
Year 1922:												
Additions to gross profit	$1,439	406	1,145	.....	1,018	117	677	.....	421	289	468	.....
Deductions from gross profit	5,523	5,342	216	77	472	142	106	.....	5,051	5,200	110	77
Total adjustments to gross profit	$6,963	5,748	1,361	77	1,490	259	783	.....	5,472	5,489	578	77
Net adjustments to gross profit	$4,084*	4,936*	929	77*	546	25*	571	.....	4,630*	4,911*	358	77*
Year 1921:												
Additions to gross profit	$9,376	5,308	4,090	38	7,613	3,842	3,793	.....	1,763	1,466	297	38
Deductions from gross profit	2,979	2,965	74	.....	.....	.....	22	.....	2,979	2,965	52	.....
Total adjustments to gross profit	$12,355	8,273	4,164	38	7,613	3,842	3,815	.....	4,742	4,431	349	38
Net adjustments to gross profit	$6,397	2,343	4,016	38	7,613	3,842	3,771	.....	1,216*	1,499*	245	38

* Red figures.

[fol. 4426]

EXHIBIT X-39

Western Electric Company, Inc.

Division of Operating Surplus

Total Apparatus and Equipment and Lead Covered Cable

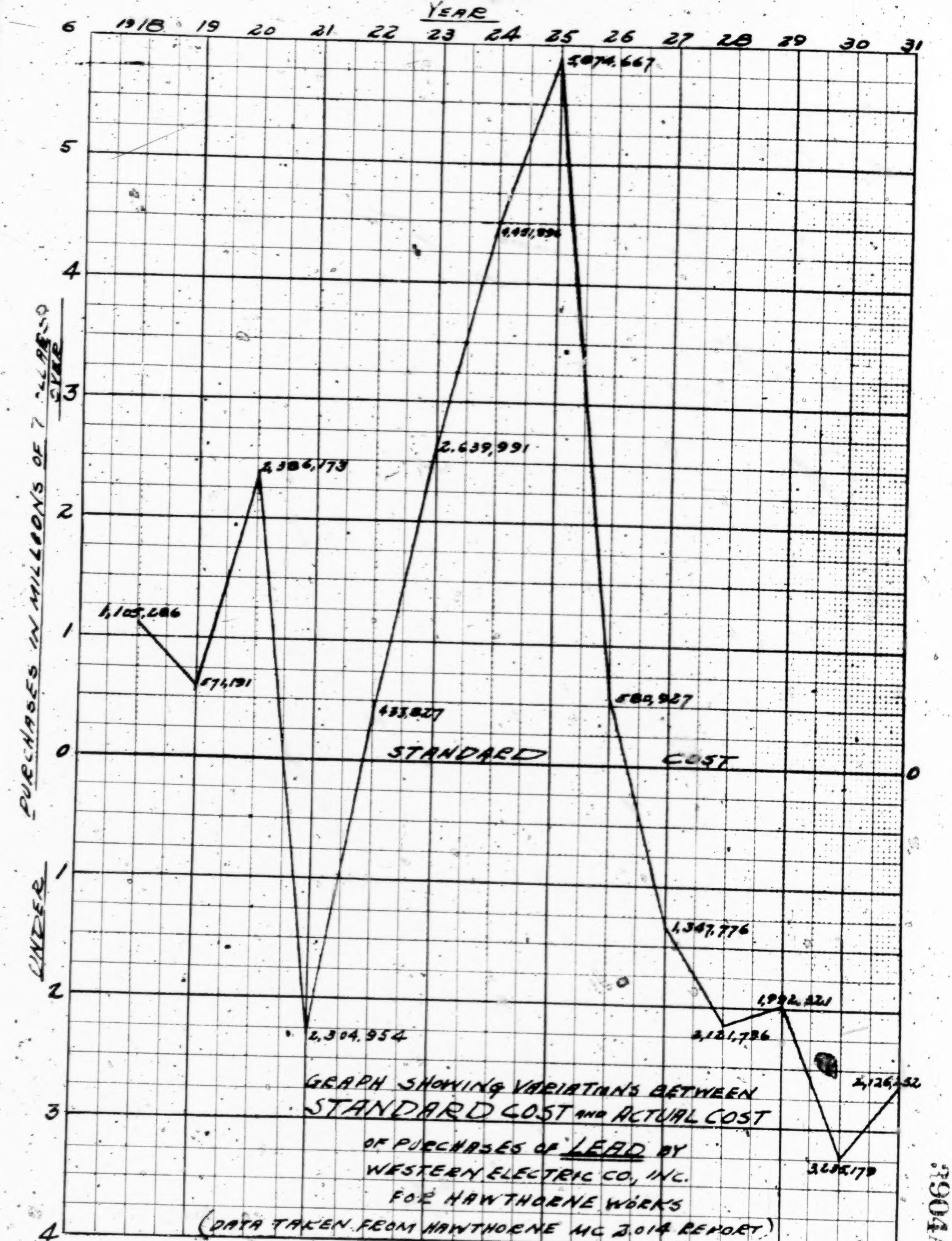
1921 to 1930, Inclusive

(Dollars in Thousands)

Year	Total	Process merchandise	Labor increment	Expense loading
1921	$2,569	(1,563)	402	3,730
1922	322	694	214	(586)
1923	3,057	755	(375)	2,677
1924	(4,633)	(4,625)	(253)	245
1925	(1,900)	4,908	342	(7,150)
1926	7,054	8,732	(578)	(1,100)
1927	(543)	5,819	80	(6,442)
1928	2,675	4,104	(644)	(785
1929	(2,238)	(5,939)	(3,061)	6,762
1930	(7,746)	(518)	701	(7,929)
Total 1921 to 1930	($1,383)	12,367	(3,172)	(10,578)

(Here follow Exhibits X-40, 41, 42, 43, 44, 45, 46, 47, side folios 4427-4434)

EXHIBIT X-40

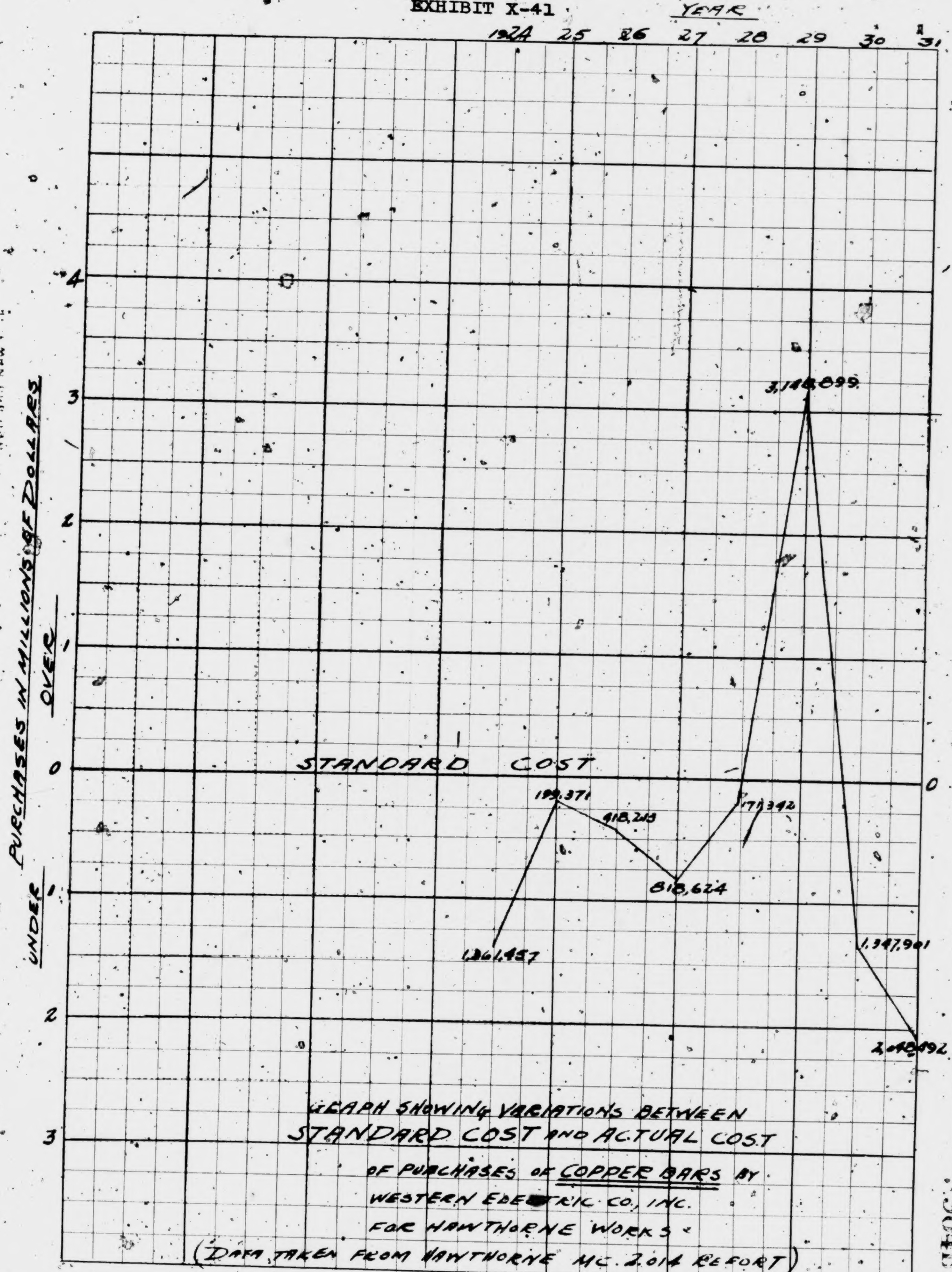


GRAPH SHOWING VARIATIONS BETWEEN
STANDARD COST AND ACTUAL COST
OF PURCHASES OF LEAD BY
WESTERN ELECTRIC CO., INC.
FOR HAWTHORNE WORKS
(DATA TAKEN FROM HAWTHORNE MC 2.014 REPORT)

4427

3904A

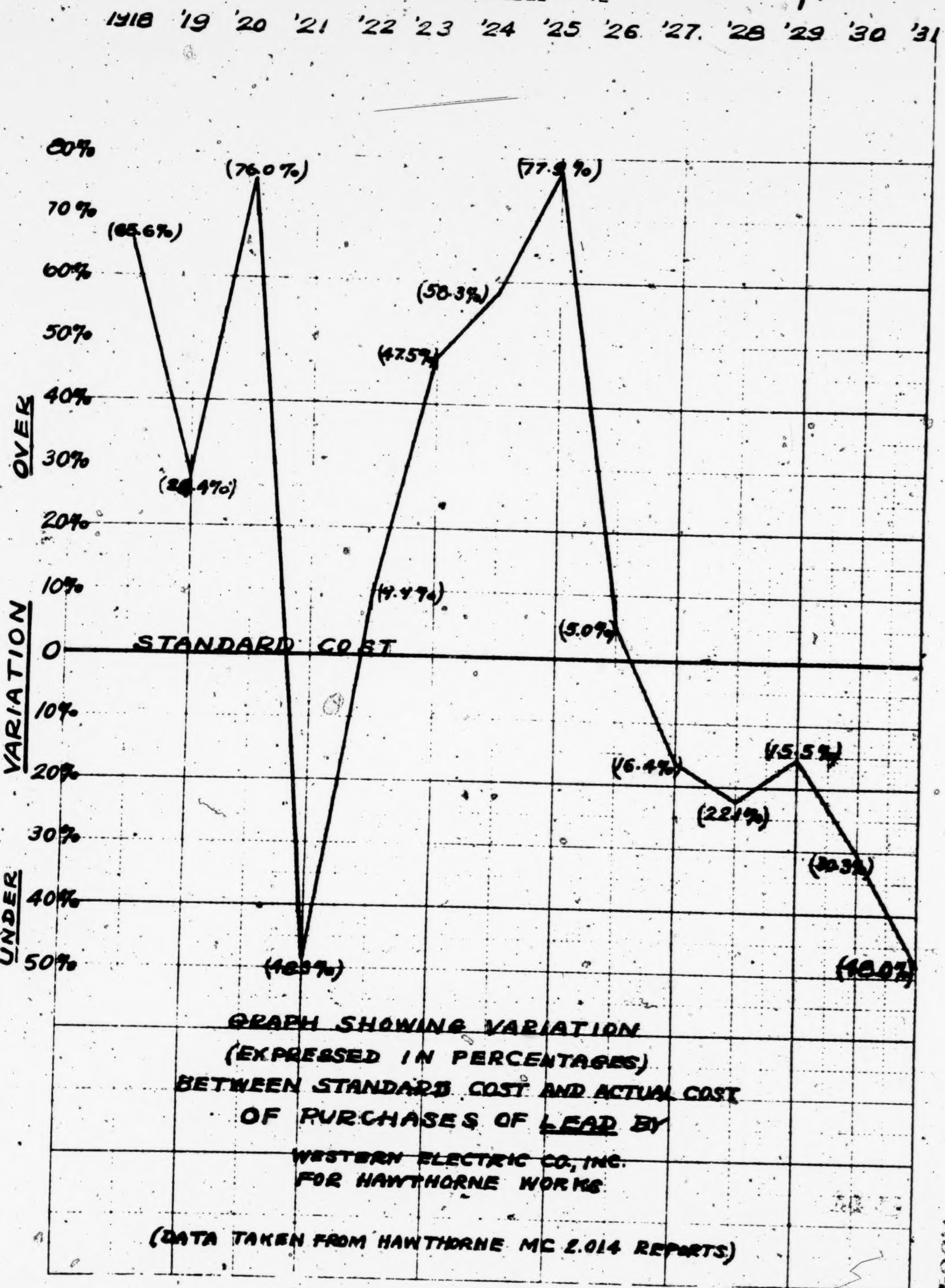
EXHIBIT X-41



GRAPH SHOWING VARIATIONS BETWEEN STANDARD COST AND ACTUAL COST OF PURCHASES OF COPPER BARS BY WESTERN ELECTRIC CO., INC. FOR HAWTHORNE WORKS.

(DATA TAKEN FROM HAWTHORNE MC. 2014 REPORT)

EXHIBIT X-42 ·42 ~~X138~~



GRAPH SHOWING VARIATION
(EXPRESSED IN PERCENTAGES)
BETWEEN STANDARD COST AND ACTUAL COST
OF PURCHASES OF LEAD BY
WESTERN ELECTRIC CO., INC.
FOR HAWTHORNE WORKS

(DATA TAKEN FROM HAWTHORNE MC 2.014 REPORTS)

EXHIBIT X-43

~~X-42~~ X-43

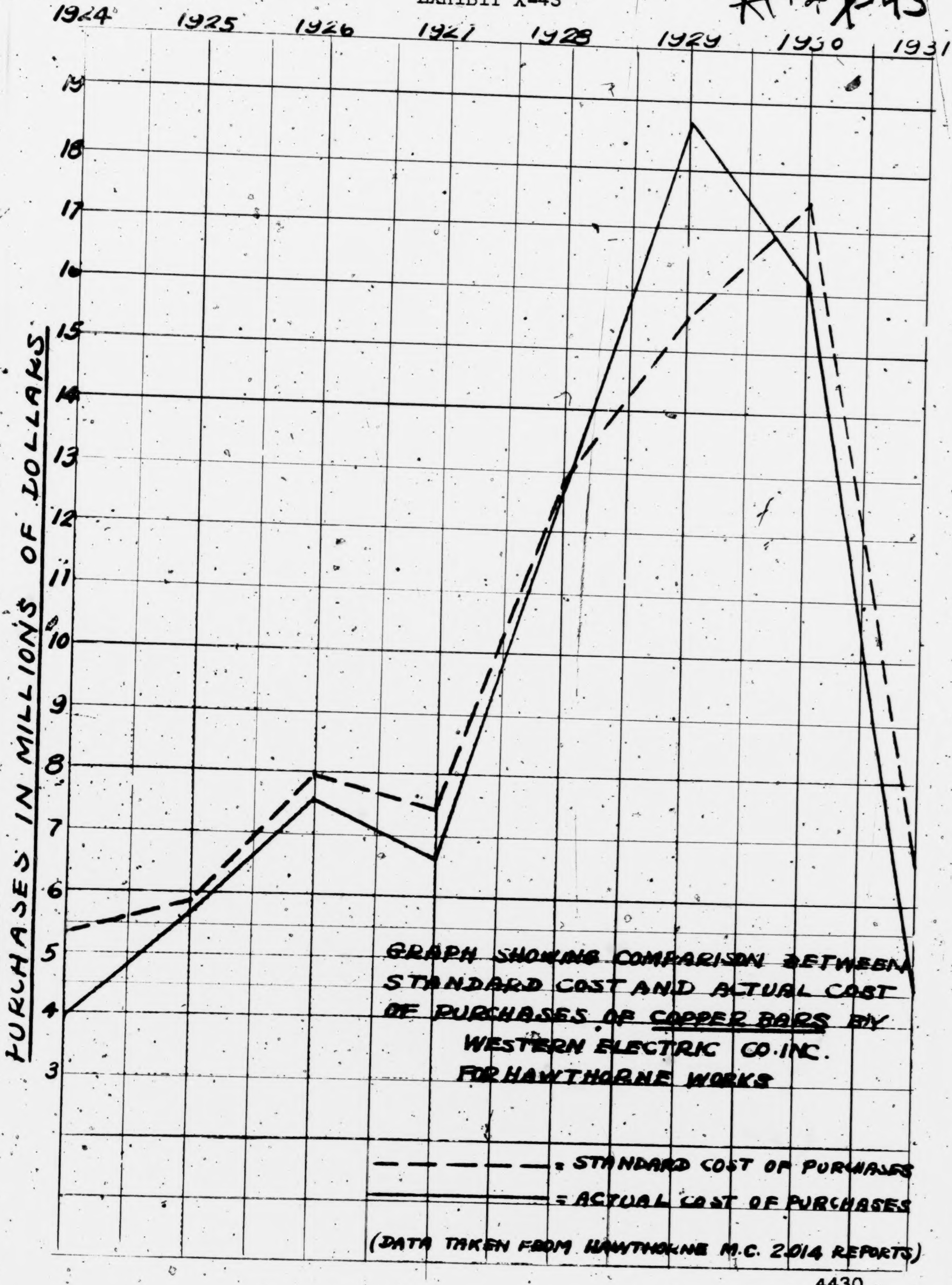
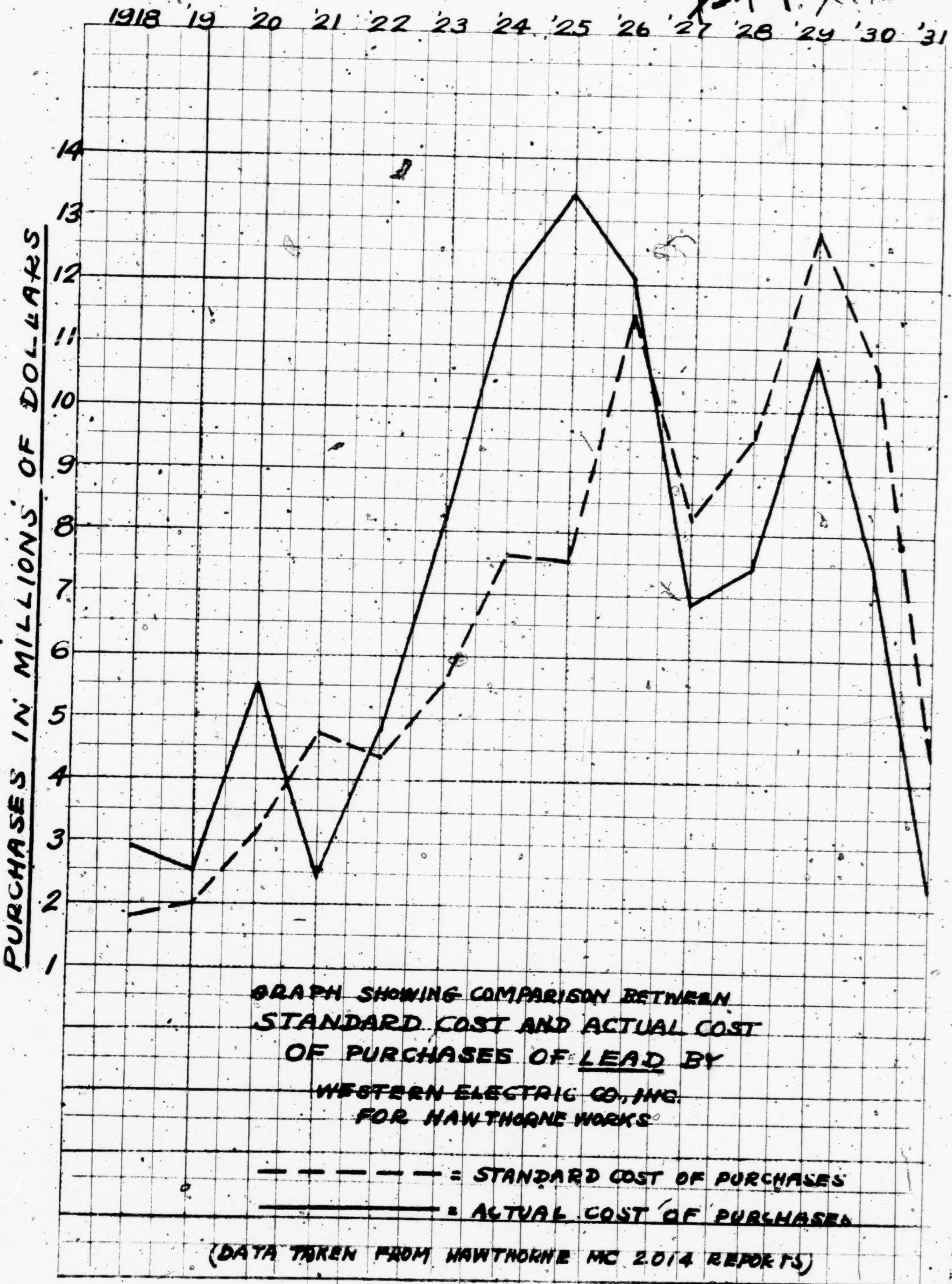


EXHIBIT X-44

X-44 ~~X-43~~



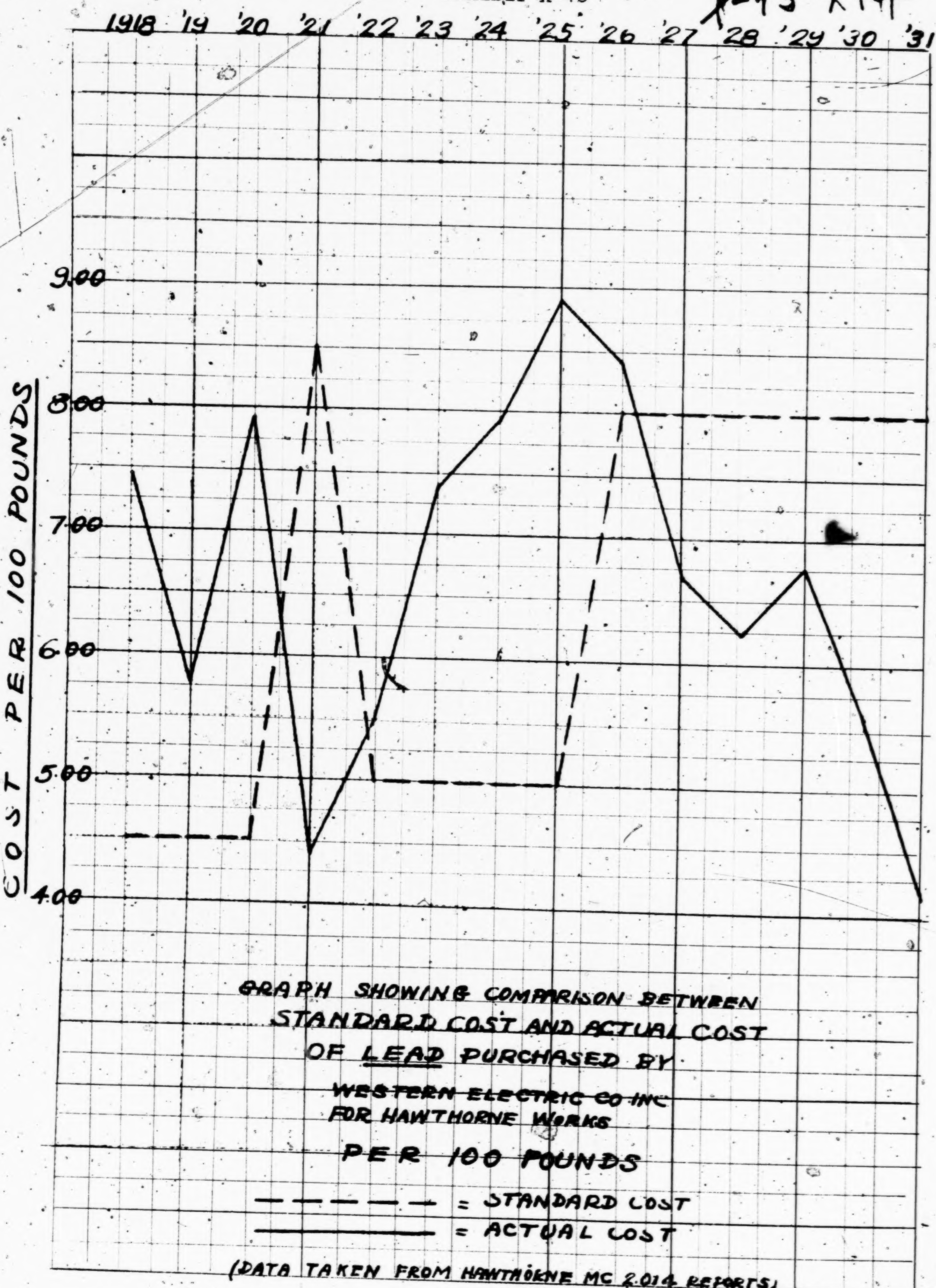
GRAPH SHOWING COMPARISON BETWEEN
STANDARD COST AND ACTUAL COST
OF PURCHASES OF LEAD BY
WESTERN ELECTRIC CO., INC.
FOR HAWTHORNE WORKS

(DATA TAKEN FROM HAWTHORNE MC 2014 REPORTS)

4431

3904E

EXHIBIT X-45 — X-45 ~~X141~~



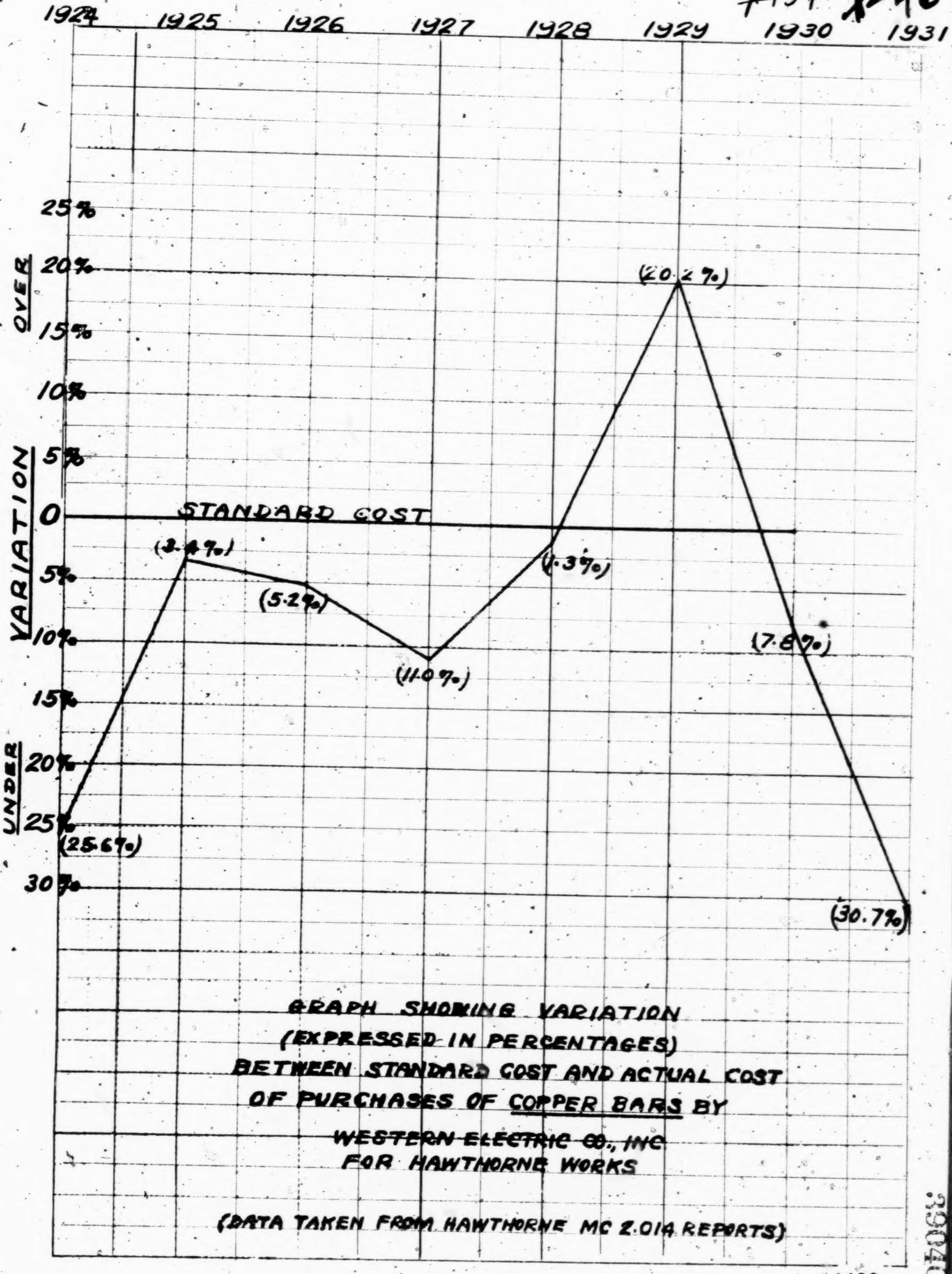
GRAPH SHOWING COMPARISON BETWEEN
STANDARD COST AND ACTUAL COST
OF LEAD PURCHASED BY
~~WESTERN ELECTRIC CO INC~~
FOR HAWTHORNE WORKS
PER 100 POUNDS

– – – – – – = STANDARD COST
———— = ACTUAL COST

(DATA TAKEN FROM HAWTHORNE MC 2.014 REPORTS)

EXHIBIT X-46

~~X139~~ X-46



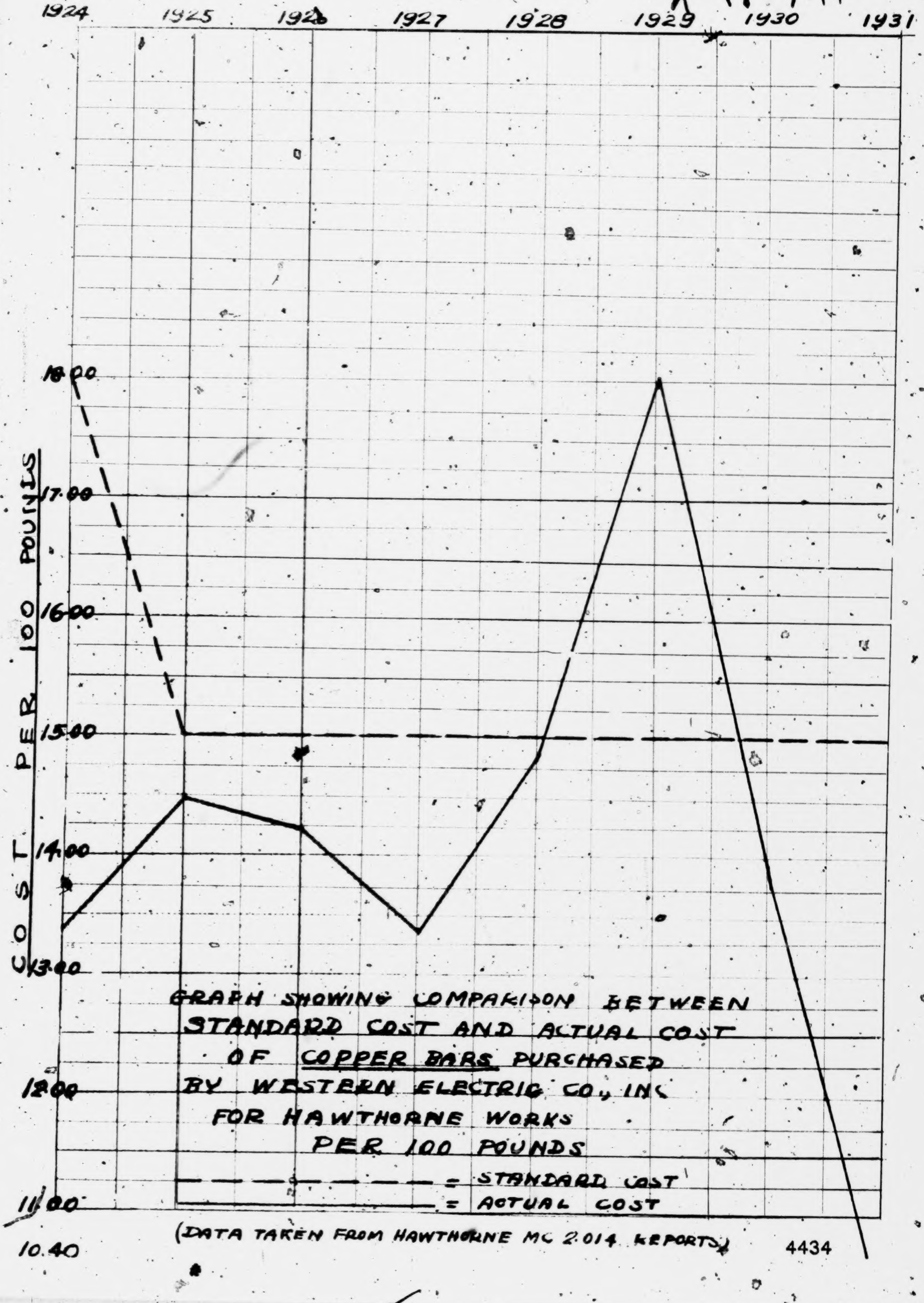
GRAPH SHOWING VARIATION
(EXPRESSED IN PERCENTAGES)
BETWEEN STANDARD COST AND ACTUAL COST
OF PURCHASES OF COPPER BARS BY
~~WESTERN ELECTRIC CO., INC~~
FOR HAWTHORNE WORKS

(DATA TAKEN FROM HAWTHORNE MC 2.014 REPORTS)

EDCO EFFICIENCY 20 X 20

EXHIBIT X-47

X-47 ~~X143~~



GRAPH SHOWING COMPARISON BETWEEN STANDARD COST AND ACTUAL COST OF COPPER BARS PURCHASED BY WESTERN ELECTRIC CO., INC FOR HAWTHORNE WORKS PER 100 POUNDS

(DATA TAKEN FROM HAWTHORNE MC 2014 REPORTS)

[fol. 4435]

EXHIBIT X-47A

Western Electric Company, Inc.

Standard Cost per Hundred of Selected Items, with Dates Adoption as Extracted from Bulletin A 451-1 of Indicated Years (Hawthorne Plant)

Cable switchboard No. 1016:

1930	9-28-31	$12.00
1928-29	6-25-28	14.00
1927	12-31-26	13.80

Cable switchboard No. 1024:

1930	9-28-31	$8.90
1928-29	6-25-28	9.70
1927	12-31-26	9.87

Cable switchboard No. 1070:

1930	9-28-31	$16.00
1928-29	6-25-28	18.00
1927	12-31-26	17.90

Condenser, mounted type, unequipped No. 33-A:

1930	3-11-30	$19.00
1928-29	5-29-28	17.00
1927	6-16-27	19.10
1926	6-19-26	19.60
1925	4-30-25	17.80
1924	10-28-24	17.10
1923	12-31-22	17.50
1922	7-17-22	16.20
1921	12-31-20	24.50
1920	3-31-20	18.00
1919	12-31-18	14.80
1918	12-31-17	11.00
1917	1- 1-16	10.70
1916	12-30-16	10.30

Induction coils No. 13:

1930	8-20-31	$28.00
1928-29	4- 6-29	25.00
1927	12-31-26	31.60
1926	2- 5-26	29.70
1925	5-26-25	30.80
1924	6- 9-24	31.00
1923	3-15-23	29.70
1922	7-20-22	29.70
1922	9-15-21	35.00
1920	4-21-20	33.30
1919	1- 9-19	25.10
1918	5- 1-18	20.30
1917	1- 1-16	16.40
1916	12-30-16	20.70

Induction coils No. 46:

1930	8-20-31	$33.00
1928-29	4- 6-29	32.00
1927	12-31-26	33.50
1926	2- 5-26	36.30
1925	5-26-25	38.70

Induction coils No. 46 (Cont'd):

1924	6- 9-21	$39.60
1923	3-15-23	40.00
1922	7-20-22	41.60
1921	9-15-21	48.00
1920	4-21-20	41.20

Terminal strips No. 35:

1930	11-23-31	$51.00
1928-29	12- 1-27	47.00
1926	6-19-26	53.80
1925	12-31-24	59.30
1924	8-19-24	55.30
1923	12-31-22	60.80
1922	1- 7-22	63.70
1921	8- 2-21	67.90
1920	12-31-19	57.70
1919	12-31-18	44.10
1918	12-31-17	37.20
1917	1- 1-16	37.90
1916	12-30-16	36.50

Terminal strips No. 36:

1930	11-23-31	$60.00
1928-29	12- 1-27	55.00
1927	12-31-26	60.80
1926	6-19-26	62.80
1925	12-31-24	69.60
1924	8-19-24	66.20
1923	12-31-22	73.00
1922	1- 7-22	68.40
1921	8- 2-21	76.70
1920	12-31-19	70.80
1919	12-31-18	53.40
1918	12-31-17	45.10
1917	1- 1-16	45.60
1916	12-30-16	44.20

Repeating coils No. 25-A:

1930	4-10-31	$467.00
1928-29	12-28-27	418.00
1927	1- 5-27	413.00
1926	5-24-26	494.00
1925	1- 5-25	383.00
1924	10-27-24	355.00
1923	12-31-22	347.00
1922	12-31-21	329.00
1921	8- 2-21	460.00
1920	4-23-20	316.00
1919	12-31-18	303.00
1918	12-31-17	255.00
1917	7-18-16	235.00
1916	12-30-16	253.00

EXHIBIT X-47A—Continued

Western Electric Company, Inc.

Standard Cost per Hundred of Selected Items, with Dates Adoption as Extracted from Bulletin A 451-1 of Indicated Years (Hawthorne Plant)

[fol. 4436]

Repeating coils No. 26-A:

1930	4-10-31	$303.00
1928-29	12-28-27	233.00
1927	1- 5-27	210.00
1926	5-24-26	258.00
1925	1-25-25	205.00
1924	10-27-24	187.00
1923	12-31-22	181.00
1922	12-31-21	170.00
1921	8- 2-21	237.00
1920	4-23-20	163.00
1919	12-31-18	156.00
1918	12-31-17	131.00
1917	7-18-16	138.00
1916	12-31-16	130.00

Repeating coils No. 76-A:

1930	4-10-31	$567.00
1928-29	4- 7-28	543.00
1927	4-27-27	487.00
1926	5-24-26	624.00
1923	1- 5-25	532.00
1924	10-27-24	499.00

Cords without plugs No. S3-A:

1930	7-27-31	$27.00
1928-29	12-31-27	32.00
1927	9-10-27	30.40

Cords without plugs No. S3-B:

1930	7-27-31	$29.00
1928-29	12-31-27	32.00
1927	9-10-27	31.00

Jacks, unmounted, No. 49:

1930	3- 2-31	$5.30
1928-29	8-13-28	4.80
1927	6-25-27	4.93
1926	8-23-26	6.10
1925	10- 5-25	5.98
1924	10-23-24	6.16
1922	6- 2-22	6.18
1921	7-23-21	7.02

Jacks, unmounted, No. 92:

1930	3- 2-31	$4.00
1928-29	8-13-28	3.40
1927	6-25-27	3.50
1926	8-23-26	3.69
1925	4-30-25	3.90
1924	10-23-24	4.10
1922	6- 2-22	4.34
1921	7-23-21	5.06

Plugs, unassembled, No. 109:

1930	11-23-31	$31.00
1928-29	2-24-28	37.00
1927	12-31-27	37.40
1926	8-23-26	42.20
1925	7-30-25	39.50
1924	12-31-23	40.60
1923	12-31-22	44.00
1922	11-21-22	38.70
1921	8-20-21	51.40
1920	3-31-30	36.00
1919	1-13-19	21.70
1918	12-31-17	19.60
1917	1- 1-16	20.40
1916	12-30-16	19.00

Plugs, unassembled, No. 110:

1930	11-23-31	$31.00
1928-29	2-24-28	37.00
1927	12-31-27	37.30
1926	8-23-26	42.50
1925	7-30-25	39.50
1924	12-31-23	41.00
1923	12-31-22	44.20
1922	11-21-22	37.40
1921	8-20-21	50.30
1920	3-31-20	37.50
1919	1-13-19	27.50
1918	12-31-17	24.70
1917	1- 1-16	22.80
1916	12-30-16	23.30

Relay No. E-4:

1930	7-27-31	$70.00
1928-29	3-29-28	80.00
1927	7-12-27	72.00
1926	8-23-26	88.60
1925	7-30-25	87.80
1924	9-27-24	90.30
1923	9- 7-23	96.20
1922	10-16-22	96.50
1921	10-11-21	93.40
1920	3-30-20	77.20
1919	12-31-18	66.30
1918	12-31-17	45.30

Loading coils No. 615:

1930	12-31-29	$154.00
1928-29	12-24-28	173.00

Loading coils No. 704:

1930	12-31-29	$650.00
1928-29	12-24-28	959.00

EXHIBIT X-47A—Continued

Western Electric Company, Inc.

Standard Cost per Hundred of Selected Items, with Dates Adoption as Extracted from Bulletin A 451-1 of Indicated Years (Hawthorne Plant)

[fol. 4437]

Loading coils No. 702:

1930	12-31-29	$420.00
1929-30	12-24-28	525.00

Telephone sets No. 1533A, unequipped:

1930	3-25-31	$197.00
1928-29	12- 1-27	197.00
1927	12-31-26	204.00
1926	4-16-26	221.00
1925	5- 2-25	240.00
1924	1-14-24	244.00
1922	8-23-22	231.00
1921	4-25-21	271.00
1920	4-23-20	207.00
1919	7- 7-19	178.00
1918	5- 1-18	155.00

Telephone sets No. 1533A, equipped:

1930	3-25-31	$513.00
1928-29	12- 1-27	519.00
1927	12-31-26	538.00
1926	4-16-26	577.00
1925	5- 2-25	596.00
1924	1-14-24	600.00
1922	8-23-22	588.00
1921	4-25-21	716.00
1920	4-23-20	540.00
1919	6- 7-19	450.00
1918	5- 1-18	400.00

Calling dial No. 2AA, unequipped:

1930	7-27-31	$197.00
1928-29	12- 1-27	220.00
1927	12-31-26	235.00
1926	12-31-25	286.00
1925	12-31-24	293.00
1924	8-27-24	287.00
1923	12-31-22	308.00
1922	7-17-22	295.00

Calling dial No. 2AA, equipped:

1930	7-27-31	$207.00
1928-29	12- 1-27	234.00
1927	12-31-26	249.00
1926	12-31-25	301.00
1925	12-31-24	306.00
1924	8-27-24	300.00
1923	12-31-22	324.00
1922	7-17-22	309.00

Switchboard, lever type, key No. 102A:

1930	11-23-31	$214.00
1928-29	8-13-28	225.00
1927	6-16-27	225.00
1926	7-10-26	243.00
1925	6-30-25	242.00
1924	10-23-24	255.00
1923	6-18-23	246.00
1922	12-31-21	190.00

Telephone repeater sets, 22A1-A-133506:

1930	3- 8-30	$1,580.00
1928-29	8-13-28	2,270.00
1927	12-31-26	2,410.00
1926	12-31-25	2,870.00
1925	5- 2-25	3,170.00

Telephone repeater sets, 44A1-A132590:

1930	3- 8-30	$2,080.00
1928-29	8-13-28	2,600.00
1927	12-31-26	2,970.00
1926	12-31-25	3,120.00
1925	5- 2-25	3,780.00

[fol. 4438]

EXHIBIT X-48

Western Electric Company, Inc.

Average Investment, Net Profits and Percentage of Return (per Exhibits A-77 and A-79)—Bell and non-Bell Business for the Years 1916 to 1930

(Dollars in Thousands)

Year	Average investment per Exhibits A-77 and A-79	Net profit per Exhibits A-77 and A-79	% Return on investment
1916	$ 59,095	3,870	6.5
1917	82,958	5,800	7.0
1918	93,790	6,034	6.4
1919	92,858	5,376	5.8
1920	125,471	7,290	5.8
1921	152,511	8,474	5.6
1922	140,343	8,034	5.7
1923	150,771	9,115	6.0
1924	178,920	13,245	7.4
1925	184,469	15,580	8.4
1926	172,622	14,247	8.3
1927	178,557	18,165	10.2
1928	176,580	19,876	11.3
1929	230,926	23,761	10.3
1930	289,354	42,934	4.5

[fol. 4439]

EXHIBIT X-49

Western Electric Company, Inc.

Average Investment per Exhibits A-77 and A-79 Adjusted to Exclude Excessive Cash, Current Liabilities, Reserve for Pension Fund, and Reserve for Depreciation—Bell and Non-Bell Business

(Dollars in Thousands)

Year	Average investment per Exhibits A-77 and A-79	Excess cash	Notes Payable		Reserve for Pension Fund	Working reserves (part interest and taxes, part Accounts payable)	Total adjustments	Average investment per Exhibits A-77 and A-79 adjusted		
			Others	Trustees of Pension Fund				Before depreciation	Reserve for depreciation	After depreciation
1916	$59,095	2,558	2,808	......	1,000	......	6,366	52,729	12,472	40,257
1917	82,958	2,299	9,423	......	1,000	......	12,722	70,236	13,924	56,312
1918	93,790	......	11,686	......	1,500	......	13,186	80,604	15,665	64,939
1919	92,858	......	9,694	......	1,600	......	11,294	81,564	17,239	64,325
1920	125,471	901	23,020	......	1,600	......	25,521	99,950	19,218	80,732
1921	152,511	3,343	38,289	......	1,600	......	43,232	109,279	21,781	87,498
1922	140,343	3,660	17,185	......	1,600	......	22,445	117,898	24,502	93,396
1923	150,771	......	23,077	......	2,000	......	25,077	125,694	27,847	97,847
1924	178,920	1,644	18,553	......	2,000	......	22,197	156,723	32,740	123,983
1925	184,469	20,561	465	......	4,775	......	25,801	158,668	33,290	125,378
1926	172,622	......	......	......	10,638	7,858	18,496	154,126	36,296	117,830
1927	178,557	......	2,608	......	15,364	11,110	29,082	149,475	40,112	109,363
1928	176,580	......	18,646	Included in others	1,533	6,912	27,091	149,489	42,273	107,216
1929	230,926	......	26,485	22,371	......	9,847	58,703	172,223	44,868	127,355
1930	289,354	......	25,412	27,823	......	7,784	61,019	228,335	51,388	176,947

[fol. 4440]

EXHIBIT X-49—Continued

Western Electric Company, Inc.

Average Investment per Exhibit A-77 Adjusted to Exclude Excessive Cash, Current Liabilities (Including Reserve for Pension Fund), and Reserve for Depreciation

(Dollars in Thousands)

Year	Average investment per Exhibit A-77	Adjustments			Average investment per Exhibit A-77 adjusted		
		Excess cash	Payables	Total adjustments	Before depreciation	Reserve for depreciation	After depreciation
1916	$46,112	1,778	2,635	4,413	41,699	9,915	31,784
1917	66,184	1,428	7,484	8,912	57,272	11,668	45,604
1918	70,685	......	7,793	7,793	62,892	12,532	50,360
1919	69,939	......	5,884	5,884	64,055	13,826	50,229
1920	98,914	653	14,378	15,031	83,883	16,451	67,432
1921	125,330	2,698	25,409	28,107	97,223	19,211	78,012
1922	123,089	3,100	12,905	16,005	107,084	22,150	84,934
1923	131,504	......	17,454	17,454	114,050	25,007	89,043
1924	158,488	1,371	15,230	16,601	141,887	29,499	112,388
1925	163,085	18,340	3,841	22,181	140,904	29,661	111,243
1926	160,255	......	16,924	16,924	143,331	32,812	110,519
1927	167,371	......	28,006	28,006	139,365	36,903	102,462
1928	161,378	......	25,438	25,438	135,940	37,412	98,528
1929	204,507	......	53,302	53,302	151,205	38,766	112,439
1930	270,556	......	56,992	56,992	213,564	47,637	165,927

[fol. 4441]

Western Electric Company, Inc.

Average Investment per Exhibit A-79 Adjusted to Exclude Excessive Cash, Current Liabilities (Including Reserve for Pension Fund), and Reserve for Depreciation—Non-Bell Business

(Dollars in Thousands)

Year	Average investment per Exhibit A-79	Adjustments			Average investment per Exhibit A-79 adjusted		
		Excess cash	Payables	Total adjustments	Before depreciation	Reserve for depreciation	After depreciation
1916	$12,983	780	1,173	1,953	11,030	2,557	8,473
1917	16,774	871	2,939	3,810	12,964	2,256	10,708
1918	23,105	.....	5,393	5,393	17,712	3,133	14,579
1919	22,919	.....	5,410	5,410	17,509	3,413	14,096
1920	26,557	248	10,242	10,490	16,067	2,767	13,300
1921	27,181	645	14,480	15,125	12,056	2,570	9,486
1922	17,254	560	5,880	6,440	10,814	2,352	8,462
1923	19,267	.....	7,623	7,623	11,644	2,840	8,804
1924	20,432	[illegible]	5,323	5,596	14,836	3,241	11,595
1925	21,384	[illegible]	1,399	3,620	17,764	3,629	14,135
1926	[illegible]	[illegible]	1,572	1,572	10,795	3,484	7,311
1927	[illegible]	[illegible]	1,076	1,076	10,110	3,209	6,901
1928	[illegible]	.....	1,653	1,653	13,549	4,861	8,688
1929	[illegible]	.....	5,401	5,401	21,018	6,102	14,916
1930	[illegible]	.....	4,027	4,027	14,771	3,751	11,020

[fol. 4442]

Exhibit X-49½

Income Account, Years Ended December 31

(Figures prior to 1926 include results of the Company's supply department, the business of which, since Jan. 1, 1926, has been carried on by the Graybar Electric Co., Inc.)

	1929	1928	1927	1926	1925	1924
Sales	$410,949,817	$287,931,396	$253,724,013	$263,105,194	$297,729,420	$298,281,138
Cost of sales	387,969,260	268,698,347	236,472,853	251,301,951	283,829,993	284,987,285
Net profits on sales	$22,980,557	$19,233,049	$17,251,160	$11,803,243	$13,899,427	$13,293,853
Other income	*8,575,217	*2,790,233	2,088,014	4,628,690	2,174,554	1,212,004
Net earnings available for interest and dividends	$31,555,774	$22,023,282	$19,339,174	$16,431,933	$16,073,981	$14,505,857
Interest deductions	4,560,528	2,315,393	1,982,757	1,857,895	1,790,679	**4,378,927
Net income available for dividends	$26,995,246	$19,707,889	$17,356,417	$14,574,038	$14,283,302	$10,126,930
Dividends paid:						
Preferred					1,233,980	1,727,572
Common	23,500,000	11,250,000	7,500,000	7,500,000	5,625,000	5,000,000
Balance carried to surplus	$3,495,246	$8,457,889	§$9,856,417	$7,074,038	¶$7,424,322	$3,399,358
7% Preferred shares outstanding						246,796
Times Preferred dividend earned						5.86
Common shares outstanding	5,250,000	4,000,000	3,750,000	750,000	750,000	500,000
Earnings per Common share	‡$5.14	‡$4.93	‡$4.63	†$19.43	†$17.39	†$16.79

*Represents other income less expenses applicable. **Includes bond discount amounting to $2,274,900 incurred upon issuance of 5% Gold Debenture bonds. †Figured on average number of shares outstanding during respective years. ‡Figured on 3,750,000 shares outstanding at end of 1927, 4,000,000 shares at end of 1928, and 5,250,000 shares at end of 1929. ¶Before special dividend received from International Western Electric Company, Incorporated, from undistributed earnings at Sept. 30, 1925, $9,700,000; profit resulting from sale of International Western Electric Company, Incorporated, after deducting Federal Income taxes and setting aside a reserve for pension fund under agreement with International Standard Electric Corporation, $6,255,096; total—$15,955,096. Deduct: Premium paid on redemption of Preferred stock, $2,467,960. Balance from special earnings carried to surplus, $13,487,136. §Does not include $48,750,000 dividends received from Electrical Research Products Inc., which amount was distributed as a special dividend of $13 per share on Dec. 31, 1927, to stockholders of Western Electric Co., Inc.

General Balance Sheet, December 31

(Figures prior to 1926 include results of the Company's supply department, the business of which, since Jan. 1, 1926, has been carried on by the Graybar Electric Co., Inc.)

Assets—	1929	1928	1927	1926	1925	1924
Land, buildings and permanent fixtures at cost	$60,102,640	$42,606,473	$38,809,592	$35,173,957	$32,965,487	$30,387,700
Machinery, tools and other equipment at cost	74,461,492	51,819,779	47,928,965	43,034,163	40,278,066	41,409,532
Merchandise, materials and supplies at cost or market, whichever is lower	95,940,378	60,177,391	52,680,988	61,455,789	55,990,232	67,952,558
Cash	14,604,973	12,303,035	5,186,077	7,454,343	21,418,305	9,920,018
Bills receivable & trade acceptances	....	....	....	....	....	86,940
Accounts receivable	65,179,732	48,796,568	38,734,274	40,665,639	37,613,759	45,735,932
Prepaid charges	252,183	160,844	149,704	122,318	172,092	213,090
Marketable securities	671,450	5,863,929	30,242,055	47,385,475	10,142,000	138,000
Investments, incl. stock in & advances to sub. cos.	62,178,802	30,002,873			17,624,506	2,280,546
International Western Electric Co., Inc	....	....	....	....	....	13,523,097
Total	$373,391,650	$251,730,892	$213,731,655	$235,291,684	$216,204,447	$212,421,413
Liabilities—						
Preferred stock	....	....	....	....	....	†$24,679,600
Capital	*$150,000,000	*$100,000,000	*$75,000,000	$108,508,621	$101,434,583	80,523,125
Surplus	14,556,945	10,783,954	12,987,786			
Funded debt	35,000,000	35,000,000	35,000,000	35,000,000	35,000,000	35,000,000
Notes sold to trustee of pension fund	26,128,933	....	....	....	....	....
Notes payable	42,819,000	21,064,706	4,967,000	....	....	....
Trade acceptances and bills receivable discounted	....	....	....	....	....	595,533
Accounts payable	34,733,139	24,753,263	15,458,625	17,775,078	16,330,720	17,501,759
Interest, taxes and other accruals not due	5,344,170	3,181,785	4,249,968	5,199,522	5,148,841	4,771,420
Res. for accrued deprec. on plant and equipment	64,670,737	56,821,896	51,319,208	46,516,764	41,767,842	40,490,901
Employees' benefit funds	....	‡	4,635,855	15,321,738	10,208,886	4,000,000
Reserve for contingencies	138,726	125,288	113,213	6,969,961	6,313,575	4,859,075
Total	$373,391,650	$251,730,892	$213,731,655	$235,291,684	$216,204,447	$212,421,413

*Represented by 3,750,000 shares in 1927, 4,000,000 shares in 1928 and 5,250,000 shares in 1929. †Retired at 110, Sept. 15, 1925. ‡Reserve for employees' benefit fund paid to trustee.

Exhibit X-49½—Continued

Statement of Working Capital, December 31

(Figures prior to 1926 include results of the Company's supply department, the business of which, since Jan. 1, 1926, has been carried on by the Graybar Electric Co., Inc.)

	1929	1928	1927	1926	1925	1924
Current Assets—						
Merchandise	$95,940,378	$60,177,391	$52,680,988	$61,455,789	$55,990,232	$67,952,558
Cash	14,604,973	12,303,035	5,186,077	7,454,343	21,418,305	9,920,018
Trade acceptance	....	....	....	....	....	616,051
Bills and accounts receivable	65,431,915	48,796,568	38,734,274	40,665,639	37,613,759	45,980,821
Marketable securities	671,450	5,863,929	....	....	10,142,000	138,000
Total	$176,648,716	$127,140,923	$96,601,339	$109,575,771	$125,164,296	$124,607,448
Current Liabilities—						
Bills payable	$42,819,000	$21,064,706	$4,967,000	....	....	....
Trade acceptances and bills receivable discounted	....	....	....	....	....	$595,533
Accounts payable	34,733,139	24,753,263	15,458,625	$17,775,078	$16,330,720	17,501,759
Interest, taxes and other accruals not due	5,344,170	3,181,785	4,249,968	5,199,522	5,148,841	4,771,420
Total	$82,896,309	$48,999,754	$24,675,593	$22,974,600	$21,479,561	$22,868,712
Net Working Capital	$93,752,407	$78,141,169	$71,925,746	$86,601,171	$103,684,735	$101,738,736

Officers: Edgar S. Bloom, Pres.; William P. Sidley, V-P.; H. A. Halligan, V-P., General Staff; C. G. Stoll, V-P., Operating Dept.; W. T. Teague, V-P., Installation and Sales; J. W. Bancker, V-P., Purchansing & Traffic; W. F. Hosford, V-P., Mfg. Dept.; C. G. Pratt, V-P. & Gen. Counsel; C. L. Rice, V-P. & Works Mgr. (Hawthorne); S. S. Holmes, V-P. & Works Mgr. (Kearny); W. H. Meese, V-P. & Works Mgr. (Point Breeze); R. H. Gregory, Compt.; F. L. Gilman, Treas; H. B. Gilmore, Sec.; P. L. Thomson, Director of Public Relations; D. F. G. Eliot, Personnel Director; J. D. Kennedy, Gen. Telephone Sales Mgr.; F. B. Gleason, Gen. Commercial Mgr.; T. K. Stevenson, Compt. of Manufacture.

Directors: Walter C. Allen, Edgar S. Bloom, James W. Bancker, Richard H. Gregory, Howard A. Halligan, Hale Holden, William F. Hosford, William B. Joyce, Charles S. McCain, Uzal H. McCarter, William H. Miner, Thomas I. Parkinson, George C. Pratt, William P. Sidley, Clarence G. Stoll, Donald Symington, William T. Teague.

Principal Office, 195 Broadway, New York.

101—440

[fol. 4443]

EXHIBIT X-49A

Earnings of the Western Electric Company on Non-Bell Business Expressed in Percentages of Sales and in Percentage of (a) Average Investment and (b) Average Investment Less Amount of Depreciation Reserve Account, 1916 to 1932, Inclusive

(Dollars in Thousands)

	(a) Sales	(b) Earnings	(c) Per Cent Earnings to Sales (b÷a)	(d) Average Investment	(e) Per Cent Earnings to Average Investment (b÷d)	(f) Average Investment Less Amount of Deprec. Reserve Account	(g) Per Cent Earnings to Average Investment Less Amount of Deprec. Reserve Account (b÷f)
1916	$33,072	$1,730	5.2	$12,983	13.3	$10,274	16.8
1917	45,658	3,275	7.2	16,774	19.5	14,270	23.0
1918	66,009	3,613	5.5	23,105	15.6	20,388	17.7
1919	55,361	2,689	4.9	22,919	11.7	18,930	14.2
1920	75,400	2,435	3.2	26,557	9.2	23,372	10.4
1921	46,880	(2,664)	(5.7)	27,181	(9.8)	24,176	(11.0)
1922	50,984	1,672	3.3	17,254	9.7	14,674	11.4
1923	67,018	2,923	4.4	19,267	15.2	15,898	18.4
1924	64,981	2,370	3.6	20,432	11.6	16,859	14.1
1925	71,029	(672)	(.9)	21,384	(3.1)	17,778	(3.8)
1926	15,902	1,696	10.7	12,367	13.7	6,734	25.2
1927	12,662	1,297	10.2	11,186	11.6	7,456	17.4
1928	20,123	2,592	12.9	15,202	17.0	8,950	29.0
1929	38,566	6,389	16.6	26,419	24.2	17,299	36.9
1930	22,648	1,249	5.5	18,798	6.6	13,120	9.5
1931	9,421	(151)	(1.6)	11,947	(1.3)	8,165	(1.8)
1932 (3 mos.) (X 4)	6,024	(500)	(8.3)	10,019	(5.0)	6,511	(7.7)
Total	$701,738	$29,943	4.3	$313,794	9.5	$244,854	12.2
Total, 1923 to 1931	322,350	17,693	5.5	157,002	11.3	112,259	15.8
Total, 1923 to 1932	328,374	17,193	5.2	167,021	10.3	118,770	14.5

[fol. 4444]

EXHIBIT X-50

Western Electric Company, Inc.

Reconciliation of Net Profits per Exhibits A-77 and A-79 with Profits as Adjusted—Bell and Non-Bell Business

(Dollars in Thousands)

Year	Net profits per Exhibits A-77 and A-79	Adjustments to profit: Pension fund accruals	Adjustments to profit: Extraordinary depreciation	Adjustments to profit: Excessive depreciation	Adjustments to profit: Federal income taxes	Adjustments to profit: Total adjustment	Profits as adjusted before interest deductions	Deduct: Interest on current obligations	Deduct: Interest on excessive cash balances	Profit as adjusted**
1916	$3,870	391*	.....	364	5	22*	3,848	90	64	3,694
1917	5,800	590*	.....	1,031	155	596	6,396	519	57	5,820
1918	6,034	657*	.....	591	115*	181*	5,853	750	....	5,103
1919	5,376	660*	.....	239	116	305*	5,071	473	....	4,598
1920	7,290	1,044*	.....	1,400	41	397	7,687	1,638	23	6,026
1921	8,474	1,351*	.....	1,136	183*	398*	8,076	2,780	84	5,212
1922	8,034	1,528*	.....	168*	5*	1,701*	6,333	877	91	5,365
1923	9,115	2,000*	.....	44*	224	1,820*	7,295	1,159	....	6,136
1924	13,245	209*	1,563	77	74*	1,357	14,602	791	41	13,770
1925	15,580	3,173	2,168	607*	35*	4,699	20,279	40	514	19,725
1926	14,247	3,100	2,102	147*	104	5,159	19,406	107	....	19,299
1927	18,165	2,871	1,803	555*	484*	3,635	21,800	232	....	21,568
1928	19,876	249	2,000	897	372	3,518	23,394	565	....	22,829
1929	23,761	78	.....	4,690	207	4,975	28,736	2,810	....	25,926
1930	12,934	.....	.....	1,622	217*	1,405	14,339	2,922	....	11,417

* Red figures.

** Exclusive of income from investments and before deduction of interest on funded debt.

Western Electric Company, Inc.

Net Profits per Exhibit A 77 as Adjusted—Bell Business

(Dollars in Thousands)

Year	Net profits per Exhibit A-77	Adjustments to Net Profit: Pension fund accruals	Extraordinary depreciation	Excessive depreciation	Federal income tax	Total adjustment	Profits as adjusted before interest deductions	Deduct: Interest on current obligations	Interest on excessive cash balances	Profits as adjusted**
1916	$2,140	279*	......	260	3	16*	2,124	64	44	2,016
1917	2,525	427*	......	746	67	386	2,911	376	35	2,500
1918	2,421	371*	......	334	52*	89*	2,332	424	....	1,908
1919	2,687	401*	......	145	59	197*	2,490	288	....	2,202
1920	4,855	679*	......	910	27	258	5,113	1,065	17	4,031
1921	11,138	1,011*	......	850	169*	330*	10,808	2,079	68	8,661
1922	6,362	1,186*	......	130*	4*	1,320*	5,042	681	77	4,284
1923	6,192	1,506*	......	33*	148	1,391*	4,801	873	....	3,928
1924	10,875	165*	1,563	61	65*	1,394	12,269	623	34	11,612
1925	16,252	1,663	1,966	463*	29*	3,137	19,389	30	458	18,901
1926	12,551	2,905	1,914	139*	101	4,781	17,332	101	....	17,231
1927	16,868	2,707	1,666	530*	445*	3,398	20,266	222	....	20,044
1928	17,284	236	1,831	844	324	3,235	20,519	532	....	19,987
1929	17,372	72	......	4,334	131	4,537	21,909	2,596	....	19,313
1930	11,685	......	......	1,531	186*	1,345	13,030	2,758	....	10,272

* Red figures.

** Exclusive of income from investments and before deduction of interest on funded debt.

[fol. 4446]

EXHIBIT X-50—Continued

Western Electric Company, Inc.

Reconciliation of Net Profits per Exhibit A-79, Non-Bell Business, with Profits as Adjusted

(Dollars in Thousands)

Year	Net profits per Exhibit A-79	Adjustments to Net Profit: Pension fund accruals	Extraordinary depreciation	Excessive depreciation	Federal income tax	Total adjustment	Profits as adjusted before interest deductions	Deduct: Interest on current obligations	Interest on excessive cash balances	Profits as adjusted**
1916	$1,730	112*	....	104	2	6*	1,724	26	20	1,678
1917	3,275	163*	....	285	88	210	3,485	143	22	3,320
1918	3,613	286*	....	257	63*	92*	3,521	326	..	3,195
1919	2,689	259*	....	94	57	108*	2,581	185	..	2,396
1920	2,435	365*	....	490	14	139	2,574	573	6	1,995
1921	2,664*	340*	....	286	14*	68*	2,732*	701	16	3,449*
1922	1,672	342*	....	38*	1*	381*	1,291	196	14	1,081
1923	2,923	494*	....	11*	76	429*	2,494	286	..	2,208
1924	2,370	44*	....	16	9*	37*	2,333	168	7	2,158
1925	672*	1,510	202	144*	6*	1,562	890	10	56	824
1926	1,696	195	188	8*	3	378	2,074	6	..	2,068
1927	1,297	164	137	25*	39*	237	1,534	10	..	1,524
1928	2,592	13	169	53	48	283	2,875	33	..	2,842
1929	6,389	6	....	356	76	438	6,827	214	..	6,613
1930	1,249	......	....	91	31*	60	1,309	164	..	1,145

*Red figures.

** Exclusive of income from investments and before deduction of interest on funded debt.

[fol. 4447]

EXHIBIT X-50A

Gross Additions for Plant Depreciation on Machinery

	1927	1926	1925	1924	
Gross Additions (CA-5.01)	$2,743,071	$2,262,033	$3,091,681	$2,527,514 (U)	1
Extraordinary Depreciation (CA-5.01)	851,624	527,773	1,212,538	673,742	2
Wire Mill (A-5.00)	74,102	71,908	65,741	61,868	3
Installation	177,731	140,526	218,061	456,390	4
Total Deduction (2 to 4)	$1,103,457	$740,207	$1,496,340	$1,192,000	5
Gross Additions computed at 7.5% of Cost Value (1-5)	1,639,614	1,521,826	1,595,341	1,335,514	6
As line 6 has been computed by applying 7.5% to cost value of machinery in use, to raise to 10%, increase line 6 by ⅓, or	546,538	507,275	531,780	445,171	7

U. Reduced by Engineering Department gross additions to depreciation reserve.

[fol. 4448]

(Copy)

February 6, 1929.

H. B. Gilmore, Secretary:

Intensive manufacturing development and cost reduction effort during the past five years has resulted in a marked increase in substitution of machines for manual operations and in the replacement of standard machinery by special machinery designed for a particular operation or product, thereby materially increasing the factor of obsolescence to be covered by depreciation.

For this reason depreciation charged against cost of 1928 was increased by 2.5% of the face value, making the rate 10% instead of 7.5%. A similar increase in the depreciation charged against cost for the years 1924 to 1927 computed at 2.5% of the average value of machinery in use during these years amounts to $2,030,764.

Please present these facts at the next meeting of the Board of Directors with the recommendation that in addition to the depreciation charged to costs at regular rates, $2,000,000, be set aside to the Reserve for Depreciation on Plant.

(Sd.) R. H. Gregory, Comptroller.

[fol. 4449] (Copy)

Western Electric Company, Incorporated

Certified Copy of Action of the Board of Directors

New York, February 13, 1929.

Mr. S. W. Murkland, Assistant Comptroller:

I hereby certify that the following is a true extract from the minutes of a meeting of the Board of Directors of Western Electric Company, Incorporated, held on the 13th day of February, 1929:

"On motion, duly seconded, the following resolution was adopted:

Whereas, there has been a material increase in the past five years in the factor of obsolescence of the machinery of the Manufacturing Department through the improvement made in methods and equipment, and

Whereas, the depreciation charge against cost during those years was not sufficient to cover this increased obsolescence,

Now, therefore, be it resolved, that the officers be and they are hereby authorized to set aside as depreciation reserve on plant $2,000,000, in addition to the depreciation charged at regular rates."

H. B. Gilmore, Secretary.

Copy to Mr. H. H. Gregory.

[fol. 4450]

EXHIBIT X-54

Western Electric Company, Inc.

Average Investment per Exhibits A-77 and A-79, Adjusted (Before Depreciation) Profits as Adjusted and Percentage of Return—Bell and non-Bell Business

(Dollars in Thousands)

Year	Average investments per Exhibits A-77 and A-79 adjusted (before depreciation)	Profits as adjusted**	% Return on investment
1916	$52,729	3,694	7.0
1917	70,236	5,820	8.3
1918	80,604	5,103	6.3
1919	81,564	4,598	5.6
1920	99,950	6,026	6.0
1921	109,279	5,212	4.8
1922	117,898	5,365	4.6
1923	125,694	6,136	4.9
1924	156,723	13,770	8.8
1925	158,668	19,725	12.4
1926	154,126	19,299	12.5
1927	149,475	21,568	14.4
1928	149,489	22,829	15.3
1929	172,223	25,926	15.1
1930	228,335	11,417	5.0

**Exclusive of income from investments and before deduction of interest on funded debt.

[fol. 4451]

Western Electric Company, Inc.

Average Investment, Per Exhibit A-77, Adjusted (Before Depreciation), Adjusted Profits and Percentage of Return—Bell Business (Dollars in Thousands)

Year	Adjusted average investment (before depreciation)	Adjusted profits**	% Return on investment
1916	$ 41,699	2,016	4.8
1917	57,272	2,500	4.4
1918	62,892	1,908	3.0
1919	64,055	2,202	3.4
1920	83,883	4,031	4.8
1921	97,223	8,661	8.9
1922	107,084	4,284	4.0
1923	114,050	3,928	3.4
1924	141,887	11,612	8.2
1925	140,904	18,901	13.4
1926	143,331	17,231	12.0
1927	139,365	20,044	14.4
1928	135,940	19,987	14.7
1929	151,205	19,313	12.8
1930	213,564	10,272	4.8

**Exclusive of income from investments and before deduction of interest on funded debt.

[fol. 4452] Western Electric Company, Inc.

Average Investment Adjusted (Before Depreciation), Adjusted Profits, and Percentage of Return non-Bell Business (Exhibit A-79 as Adjusted)

(Dollars in Thousands)

Year	Adjusted average investment (before depreciation)	Abjusted profits**	Return on investment
1916	$11,030	1,678	15.2
1917	12,964	3,320	25.6
1918	17,712	3,195	18.0
1919	17,509	2,396	13.7
1920	16,067	1,995	12.4
1921	12,056	3,449*	28.6*
1922	10,814	1,081	10.0
1923	11,644	2,208	19.0
1924	14,836	2,158	14.5
1925	17,764	824	4.6
1926	10,795	2,068	19.2
1927	10,110	1,524	15.1
1928	13,549	2,842	21.0
1929	21,018	6,613	31.5
1930	14,771	1,145	7.8

* Red figures.

** Exclusive of income from investments and before deduction of interest on funded debt.

[fol. 44[illegible]3] Exhibit X-55

Western Electric Company, Inc.

Average Investment per Exhibits A-77 and A-79 Adjusted (After Depreciation), Profits as Adjusted, and Percentage of Return

(Dollars in Thousands)

Year	Average investment per Exhibits A-77 and A-79 adjusted (after depreciation)	Profits as adjusted**	% Return on investment
1916	$40,257	3,694	9.2
1917	56,312	5,820	10.3
1918	64,939	5,103	7.9
1919	64,325	4,598	7.1
1920	80,732	6,026	7.5
1921	87,498	5,212	6.0
1922	93,396	5,365	5.7
1923	97,847	6,136	6.3
1924	123,983	13,770	11.1
1925	125,378	19,725	15.7
1926	117,830	19,299	16.4
1927	109,363	21,568	19.7
1928	107,216	22,829	21.3
1929	127,355	25,926	20.4
1930	176,947	11,417	6.5

** Exclusive of income from investments and before deductions of interest on funded debt.

[fol. 4454]

Western Electric Company, Inc.

Average Investment per Exhibit A-77 Adjusted (After Depreciation), Adjusted Profits, and Percentage of Return—Bell Business

(Dollars in Thousands)

Year	Adjusted average investment (after depreciation)	Adjusted profits**	% Return on investment
1916	$31,784	$2,016	6.3
1917	45,604	2,500	5.5
1918	50,360	1.908	3.8
1919	50,229	2,202	4.4
1920	67,432	4,031	6.0
1921	78,012	8,661	11.1
1922	84,934	4,284	5.0
1923	89,043	3.928	4.4
1924	112,388	11.612	10.3
1925	111,243	18.901	17.0
1926	110,519	17,231	15.6
1927	102,462	20,044	19.6
1928	98,528	19,987	20.3
1929	112,439	19.313	17.2
1930	165,927	10,272	6.2

** Exclusive of income from investments and before deduction of interest on funded debt.

[fol. 4455]

Western Electric Company, Inc.

Average Investment Adjusted (after depreciation), Adjusted Profits and Percentage of Return, Non-Bell Business (Exhibit A-79 as Adjusted)

(Dollars in Thousands)

Year	Adjusted average investment (after depreciation)	Adjusted profits**	% Return on investment
1916	$8,473	1,678	19.8
1917	10,708	3,320	31.0
1918	14,579	3,195	21.9
1919	14,096	2,396	17.0
1920	13,300	1,995	15.0
1921	9,486	3,449*	36.4*
1922	8,462	1,081	12.8
1923	8,804	2,208	25.1
1924	11,595	2.158	18.6
1925	14,135	824	5.8
1926	7,311	2,068	28.3
1927	6,901	1,524	22.1
1928	8,688	2,842	32.7
1929	14.916	6,613	44.3
1930	11,020	1,145	10.4

* Red figures.

** Exclusive of income from investments and before deduction of interest on funded debt.

[fol. 4456]

EXHIBIT X-56

Western Electric Company, Inc.

Average Investment per Exhibits A-77 and A-79, Net Profit (Adjusted in Respect of Pension Accruals), and Percentage of Return—Bell and Non-Bell Business

(Dollars in Thousands)

Year	Average investment per Exhibits A-77 and A-79	Net profits as adjusted for pension accruals	% Return on investment
1916	$59,095	3,479	5.9
1917	82,958	5,210	6.3
1918	93,790	5,377	5.7
1919	92,858	4,716	5.1
1920	125,471	6,246	5.0
1921	152,511	7,123	4.7
1922	140,343	6,506	4.6
1923	150,771	7,115	4.7
1924	178,920	13,036	7.3
1925	184,469	18,753	10.2
1926	172,622	17,347	10.0
1927	178,557	21,036	11.8
1928	176,580	20,125	11.4
1929	230,926	23,839	10.3
1930	289,354	12,934	4.5

[fol. 4457]

Western Electric Company, Inc.

Average Investment per Exhibit A-77, Profits (Adjusted in Respect of Pension Accruals), and Percentage of Return—Bell Business

(Dollars in Thousands)

Year	Average investment per Exhibit A-77	Profits as adjusted for pension accruals	% Return on investment
1916	$46,112	1,861	4.0
1917	66,184	2,098	3.2
1918	70,685	2,050	2.9
1919	69,939	2,286	3.3
1920	98,914	4,176	4.2
1921	125,330	10,127	8.1
1922	123,089	5,176	4.2
1923	131,504	4,686	3.6
1924	158,488	10,710	6.8
1925	163,085	17,915	11.0
1926	160,255	15,456	9.6
1927	167,371	19,575	11.7
1928	161,378	17,520	10.9
1929	204,507	17,444	8.5
1930	270,556	11,685	4.3

[fol. 4458]

Western Electric Company, Inc.

Average Investment, per Exhibit A-79, Profits (as Adjjusted in Respect of Pension Accruals), and Percentage of Return—Non-Bell Business.

(Dollars in Thousands)

Year	Average investment per Exhibit A-79	Profits as adjusted for pension accruals	% Return on investment
1916	$12,983	1,618	12.5
1917	16,774	3,112	18.6
1918	23,105	3,327	14.4
1919	22,919	2,430	10.6
1920	26,557	2,070	7.8
1921	27,181	3,004*	11.1*
1922	17,254	1,330	7.7
1923	19,267	2,429	12.6
1924	20,432	2,326	11.4
1925	21,384	838	3.9
1926	12,367	1,891	15.3
1927	11,186	1,461	13.1
1928	15,202	2,605	17.1
1929	26,419	6,395	24.2
1930	18,798	1,249	6.6

* Red figures.

[fol. 4459]

Exhibit X-65

Western Electric Company, Inc.

Return on Average Investment per Exhibits A-77 and A-79 After Deducting Reserve for Depreciation, Bell and Non-Bell Business

(Dollars in Thousands)

Year	Average investment per Gregory Exhibits A-77 and A-79 less depreciation	Net profit per Gregory Exhibits A-77 and A-79	% Return on investment
1916	$46,623	3,870	8.30
1917	69,034	5,800	8.40
1918	78,125	6,034	7.72
1919	75,619	5,376	7.11
1920	106,253	7,290	6.86
1921	130,730	8,474	6.48
1922	115,841	8,034	6.93
1923	122,924	9,115	7.41
1924	146,180	13,245	9.06
1925	151,179	15,580	10.30
1926	136,326	14,247	10.45
1927	138,445	18,165	13.12
1928	134,307	19,876	14.79
1929	186,058	23,761	12.77
1930	237,966	12,934	5.43

[fol. 4460]

Western Electric Company, Inc.

Return on Average Investment per Exhibit A-77 After Deducting Reserve for Depreciation, Bell Business

(Dollars in Thousands)

Year	Average investment per Exhibit A-77 after deducting depreciation	Net profit per Exhibit A-77	% Return on investment
1916	$36,197	2,140	5.91
1917	54,516	2,525	4.63
1918	58,153	2,421	4.16
1919	56,113	2,687	4.78
1920	82,463	4,855	5.88
1921	106,119	11,138	10.49
1922	100,939	6,362	6.30
1923	106,497	6.192	5.81
1924	128,989	10,875	8.43
1925	133,424	16,252	12.18
1926	127,443	12,551	9.84
1927	130,468	16,868	12.92
1928	123,966	17,284	13.94
1929	165,741	17,372	10.48
1930	222,919	11,685	5.24

[fol. 4461]

Western Electric Company, Inc.

Return on Average Investment per Exhibit A-79 After Deducting Reserve for Depreciation, Non-Bell Business

(Dollars in Thousands)

Year	Average investment per Exhibit A-79 after deducting depreciation	Net profit per Exhibit A-79	% Return on investment
1916	$10,426	1,730	16.59
1917	14,518	3,275	22.55
1918	19,972	3,613	18.09
1919	19,506	2,689	13.78
1920	23,790	2,435	10.23
1921	24,611	2,664*	10.82*
1922	14,902	1,672	11.21
1923	16,427	2,923	17.79
1924	17,191	2,370	13.78
1925	17,755	672*	3.78*
1926	8,883	1,696	19.09
1927	7,977	1,297	16.25
1928	10,341	2,592	25.06
1929	20.317	6,389	31.44
1930	15,047	1,249	8.30

[fol. 4462]

Exhibit X-67

Western Electric Company, Inc.

Return on Investment in International Western Electric Company, Years 1918 to 1925

Dividends received		$3,912,500
Profit on the sale of the stock of International Western Electric Company:		
Profit per stockholders' report, December 31, 1925	$15,955,095	
Adjustment of reserve for pension fund set up out of profit at December 31, 1925:		
Year 1927	330,154	
Year 1929	277,745	16,562,994
Total profit, June 1, 1918 to September 30, 1925		$20,475,494
Average profit per year		$2,792,112
Average yearly investment		$7,500,000
Average yearly return on investment		37.2%

[fol. 4463]

Exhibit X-69

Western Electric Company, Inc.

Investment in International Western Electric Company, Inc., Years 1918-1925

Year	Western Electric Average Investment	Net Earnings	% Return on Net Earnings	Dividends paid to Western Electric Company, Inc.	Excess of net Earnings over Dividends Paid
1918	$7,499,880	495,607 (1)	6.6 (1)	.....	495,607
1919	7,499,880	637,832	8.5	......	637,832
1920	7,499,880	516,166	6.9	$385,000	131,166
1921	7,500,000	1,113,407	14.9	998,800	114,607
1922	7,500,000	1,429,997	19.1	1,085,000	344,997
1923	7,500,000	1,129,329	15.1	525,000	604,329
1924	7,500,000	3,458,018 (3)	46.1	525,000	2,933,018
1925	7,500,000	1,110,900 (2)	14.8 (2)	393,700**	717,200**
		$9,891,256	18.6	$3,912,500	5,978,756

(1) Seven months June 1 to December 31, 1918 (Formed June 1, 1918).

(2) "Approximated" net earnings for six months ended June 30, 1925.

(3) Dividend income for 1924 equalled $4,191,493 and in 1923 equalled $1,763,841.

**Exclusive of special dividend of $9,700,000 paid September 30, 1925.

[fol. 4464]

EXHIBIT X-70.

Western Electric Company, Inc.

Investment in International Western Electric Company, Inc., Giving Effect to Accumulated Earnings, Years 1918 to 1925

(Dollars in Thousands)

Year	Average investment	Net earnings	% Return on average investment
1918	$7,747,683	$495,607 (1)	6.4 (1)
1919	8,314,403	637,832	7.7
1920	8,698,902	516,166 (4)	5.9
1921	8,821,908	1,113,407	12.6
1922	9,051,710	1,429,997	15.8
1923	9,506,373	1,129,329	11.9
1924	11,295,047	3,458,018 (3)	30.6
1925	13,120,156	1,110,900 (2)	8.5 (2)
		$9,891,256	13.2

(1) Seven months, June 1 to December 31, 1918. (Formed June 1, 1918).

(2) "Approximated" net earnings for six months ended June 30, 1925.

(3) Dividend income for 1924 equallel $4,191,493 anl in 1923 equalled $1,763,841.

(4) Does not include adjustment deduction made in 1920 for "accrued interest on Berlin notes not collected" in amount of $205,201 covering years prior to 1920.

[fol. 4465]

EXHIBIT X-71

Western Electric Company, Inc.

Supply Department, Years 1916-1925

Year	Average Investment per Western Electric Company Inc.	Net profits before interest deductions (1)	% Return before interest deductions
1916	$7,650,000	1,510,000**	19.7
1917	10,725,000	2,770,000**	25.8
1918	18,335,000	3,448,000**	18.8
1919	14,978,000	2,513,000**	16.8
1920	19,032,000	2,598,000**	13.7
1921	14,288,000	3,365,141*	23.5*
1922	8,308,000	697,010	8.4
1923	8,947,000	1,545,508	17.3
1924	7,884,000	1,972,846	25.0
1925	7,663,000	2,354,883	30.7

*Red Figures.

**Does not include "Sundry Income". Division of such income not made in 1920 and prior years.

(1) "Net profits before Interest Deductions" does not include any proportionate share of deductions on account of "Reserve for pension fund and contingencies."

NOTE.—Figures compiled and taken from Statements of Western Electric Company, Inc. years 1916 to 1920—"Division of Profits by Classes of Business" Years 1921 to 1924—"Profits for the Fiscal Year" (C. A. —204.00). Profits for 1925 obtained from "Summary of Profits for the Fiscal Year" A—4.00 and average investment from "investment binder". Combined all Departments average balance sheet details (page 4).

[fol. 4466]

EXHIBIT X-72

Western Electric Company, Inc.

Return on Investment in Graybar Electric Company, Inc., Years 1926-1928, Inclusive

Year	Average investment	Net earnings	% Return on net earnings
1926	$6,700,000	1,283,000	19.14
1927	6,700,000	1,740,000	25.97
1928	6,700,000	2,511,000	37.48
	$20,100,000	5,534,000	27.53

Year	Average investment giving effect to surplus earnings of Graybar Electric Company, Inc.	Profit for year	% Return of net earnings
1926	$7,341,500	1,283,000	17.48
1927	7,953,000	1,740,000	21.88
1928	8,173,500	2,511,000.	30.72
	$23,468,000	5,534,000	23.58

[fol. 4467]

EXHIBIT X-73

Graybar Electric Company, Inc.

Comparative Statement of Sales and Profits on Western Electric Manufactures and on Other Products

(Dollars in Thousands)

	Year ended Dec. 31 1926		Year ended Dec. 31 1927		Year ended Dec. 31 1928	
	Western Electric Manufactures	Other	Western Electric Manufactures	Other	Western Electric Manufactures	Other
Sales	$12,172	64,416	9,020	59,692	9,789	62,913
Gross profits	$2,748	9,049	2,345	8,553	2,428	9,087
Expenses	1,544	9,028	1,352	7,913	1,331	7,784
Net profits	$1,204	21	993	640	1,097	1,303
% of net profits to sales	9.9%	.03%	11.0%	1.1%	11.2%	2.1%

[fol. 4468] EXTRACTS FROM EXHIBIT NO. X-74-A

Electrical Research Products, Inc., and Graybar Management Corporation and Graybar Electric Company, Inc.

Agreement Covering Changes in Capital Structure and Sale of Common Stock of Graybar Electric Company, Inc.

Dated November 5, 1928

* * * * * * *

Section 1. Reduction and Classification of Graybar Stock.

Products agrees, on or before December 31, 1928, to take all action necessary, as the holder of all of the outstanding capital stock of Graybar, to effect the reduction of the capital stock of Graybar (without the withdrawal of any assets from Graybar) from Fifteen million dollars ($15,000,000), consisting of One hundred and fifty thousand (150,000) shares of the par value of One Hundred Dollars ($100) each, to Nine million dollars ($9,000,000) consisting of Ninety thousand (90,000) shares of the par value of One hundred dollars ($100) each, and to classify said Ninety thousand (90,000) shares so that there shall be Sixty thousand (60,000) shares of preferred stock and Thirty thousand (30,000) shares of common stock, the designations, preferences, privileges and voting powers or restrictions or qualifications of the shares of each class of stock, including a statement in regard to the cumulative and non-cumulative dividends payable on the preferred stock, to be substantially as set forth in Exhibit A attached hereto and made a part hereof.

Section 2. Sale of Graybar Stock.

Products agrees to sell to Management, and Management agrees to purchase from Products, on December 31, 1928, the Thirty thousand (30,000) shares of the common stock of Graybar mentioned in Section 1 hereof for the total price of Three million dollars ($3,000,000), and on said date [fol. 4469] Products agrees to deliver to Management certificates representing such stock endorsed for transfer to Management with the required transfer stamps affixed, and Management agrees to make payment to Products of the purchase price aforesaid in New York exchange. Such delivery and payment shall take place at Products' office at No. 195 Broadway, New York City.

* * * * * * *

Exhibit A

The designations, preferences, privileges and voting powers or restrictions or qualifications of shares of each class shall be as follows:

A. The preferred stock shall be designated as preferred stock.

(1) Holders of the preferred stock shall be entitled to receive out of funds available for dividends, when and as declared by the board of directors, dividends thereon at the rate of seven dollars ($7.00) per share per annum, payable quarterly on the last business day of March, June, September and December in each year, such dividends to accrue from the dividend date next preceding the date of issue or from the date of issue if the date of issue coincides with a dividend date. The first such dividend shall be payable March 30, 1929, for the quarter-year ending on March 31, 1929. Such dividends shall be cumulative and if the corporation shall fail to pay such dividends quarterly on all of the outstanding preferred stock all such accumulated dividends shall be paid, but without interest, before any amount shall be set apart for or credited to the sinking fund hereinafter provided for and before any dividends shall be set apart, declared or paid on the common stock. The holders of the preferred stock shall also be entitled to receive additional non-cumulative dividends based on the net earnings, as hereinafter defined, for each year. Such additional dividends shall be an amount equal to one per cent (1%) of such net earnings, as hereinafter defined, for each one thousand (1,000) shares of the average amount of preferred stock outstanding during the year, less an amount equal to certain United States taxes hereinafter provided [fol. 4470] for. Such additional dividends shall be payable quarter-yearly on the last business day of March, June, September and December, and each such dividend shall be based on estimated net earnings for the current

quarter year and the percentage to be applied to such net earnings for each quarter year shall be determined by the amount of preferred stock outstanding on the first day of such quarter year. The first of such additional dividends shall be payable on March 30, 1929 for the quarter year ending March 31, 1929. Such additional dividends for each of the first three quarters of each year shall be based on estimates of said net earnings for each of said quarters made according to the corporation's established accounting practices, except that for the third month of any quarter such net earnings shall be estimated from the information then available. If it appears after the close of a quarter year that the estimate of net earnings on which the additional dividend for such quarter year was based was not correct an adjustment shall be made to accord with the corrected estimate in declaring the additional dividend for the succeeding quarter year; provided that the amount of the additional dividend for the fourth quarter of each year shall be determined by the application of a percentage (representing the average of the percentages determined as above provided for each of the four quarters of said year) to the net earnings as estimated for the entire year, less additional dividends paid for the first three quarters of said year. After the net earnings for the year have been definitely determined a final determination of the amount of the additional dividends for the entire year shall be made and the difference between such dividends as finally determined and those actually paid shall be added to or subtracted from, as the case may be, the amount of the next succeeding additional dividends to be declared. Except as in this certificate expressly provided, preferred stock shall not be entitled to participate in any other earnings or profits of the corporation.

The term "net earnings" as used in this subdivision (1) of subparagraph A shall be deemed to mean net earnings as determined under the corporation's established accounting methods and after the deduction of the following items:

a. All taxes except United States income taxes;

b. Payments into the Pension Fund of the corporation covering the current accrued liability pursuant to the provisions of the corporation's Plan for Employees' Pension, Disability Benefits and Death Benefits but excluding payments to make up deficiencies in said Pension Fund;

c. Cumulative dividends upon the preferred stock:

d. The sum of $450,000 for each year.

[fol. 4471] To the net earnings for each year determined as aforesaid shall be applied the percentage determined as aforesaid, and from the result there shall be deducted an amount obtained by applying to the sum of the aforesaid result plus the amount of cumulative dividends on the preferred stock for such year, the rate of United States income tax for corporations applicable to such year. The remainder shall represent the amount payable as additional dividends on the preferred stock. If in any year the amount payable as additional dividends in less than the amount of the deduction last above-mentioned the amount by which it is less shall be carried over and deducted from the first additional dividends sufficient to absorb such amount.

(2) Upon any dissolution or liquidation of the corporation or sale of all of its assets, whether voluntary or involuntary, there shall be paid to the holders of preferred stock $100 per share and an amount equal to any accumulated or accrued dividends thereon to the date of payment plus an amount equal to any additional dividends earned and payable on said date of payment, but no more, before any sums shall be paid to or any assets distributed among the holders of the common stock and after such payments to the holders of the preferred stock all remaining assets and funds shall be paid to or distributed among the holders of the common stock.

(3) The preferred stock may be called for redemption, in whole or in part, but only in lots of one thousand (1,000) shares or multiples thereof, on the last business day of March, June, September or December in any year, at the option of the board of directors by mailing notice thereof to the holders of record of the shares to be redeemed at least three (3) days prior to the date fixed for redemption and such shares may be redeemed by paying for each share so redeemed the sum of $100 per share plus a sum equal to any accumulated or accrued dividends thereon to the date fixed for such redemption plus any additional dividends

earned and payable on said date of redemption, provided that in no event shall the aggregate of such redemptions during each of the years ending respectively December 31, 1929, and December 31, 1930 exceed in each year the par amount of $1,500,000 of such stock. If any such redemption is made of a part of the preferred stock, the preferred stock so called for redemption shall be redeemed by redeeming such proportion of the preferred stock held by each preferred stockholder as the total amount of said preferred stock then called for redemption shall bear to the total amount of preferred stock then outstanding. Subject to the above restrictions for the period ending December 31, 1930, the corporation may also at any time out of funds available for such purpose, provided such funds could be used under the provisions of the certificate of incorporation of this corporation as amended to pay dividends upon its common stock, purchase shares of its preferred stock in the open market or at private sale at not in excess of $100 per share and an amount equal to any accumulated or accrued and unpaid dividends thereon to the date of such purchase.

[fol. 4472] (4) The corporation shall in each year as long as any preferred stock shall be outstanding set apart from its earnings and/or surplus and credit to a sinking fund for the retirement of the preferred stock an amount sufficient to retire at $100 a share and accumulated or accrued dividends the par amount of the preferred stock to be retired in such year according to the following schedule:

In the year 1929	$500,000
In the year 1930	500,000
In the year 1931	500,000
In the year 1932	600,000
In the year 1933	600,000
In the year 1934	600,000
In the year 1935	600,000
In the year 1936	700,000
In the year 1937	700,000
In the year 1938	700,000

Said sinking fund obligations of the corporation shall be cumulative so that if the corporation shall fail to set apart for and credit to the sinking fund any and all amounts required as hereinabove provided to be so set apart and credited, the amount of the deficiency shall be set apart and credited to the sinking fund before any dividend or dividends, shall be declared or paid or set apart for the common stock. The corporation may at any time exceed the requirements of its sinking fund obligation hereunder and in such event shall be entitled to credit for the excess of the sinking fund payment or payments for the succeeding year or years. Subject to the above restrictions for the period ending December 31, 1930, all moneys paid into the sinking fund shall be applied by the board of directors, on or before December 31st in the year in which set apart to the purchase or redemption of preferred stock.

The term "accrued dividends" or "accumulated dividends" when used in this certificate of incorporation as amended refers to cumulative dividends on the preferred stock and shall be deemed to mean an amount which shall be equal to Seven Dollars ($7.00) per share per annum from the date when such dividends commence to accrue upon the particular shares of stock in question to the date in question, less the aggregate amount of all cumulative dividends paid upon such shares of preferred stock.

[fol. 4473] This exhibit consists of the total contract between the Electrical Research Products and Graybar Management Corporation and Graybar Electric Company dated November 5, 1928. In addition to the portion of this contract set forth in full above, it contains in substance provisions as follows:

Section 3. Management shall continue to hold Graybar stock so long as option to Products to repurchase stock under Section 5 remains in force.

Section 4. Provision that Management at its option may require Products to repurchase stock at price sufficient to enable Management to repay borrowed money under Section 6 and repay employees amounts advanced by them.

Section 5. Option given to Products to repurchase Graybar stock at same price fixed in Section 4.

Section 6. Particular covenants by Management as follows:

(a) Not to increase its capital stock.

(b) To take all proper action requested so far as possible to keep Management stock owned by employees of Graybar.

(c) Not to borrow money to purchase stock except as provided in Section 2.

(d) Not to encumber stock owned by Graybar.

(e) To engage in no business except holding stock of Graybar.

(f) To pay no dividends in excess of 6%.

(g) Not to alter its present Stock Purchase Plan.

[fol. 4474] (h) To vote its stock for such Directors as Products may designate.

(i) To furnish Products with copies of the minutes of all meetings of its stockholders, Directors, Executive Committee after each such meeting is held.

(j) To keep accurate records of its accounts and to permit examination of its products.

(k) Upon request of Products, to redeem the preferred stock of Graybar not redeemed under paragraph (s) of Section 7.

(l) Use amounts obtained on account of subscriptions of its stock to redeem common stock of Graybar referred to in Section 2.

(m) Not to consent to action by Graybar which would violate Section 7.

Section 7. Covenants by Graybar—

(a) Not to increase stock in excess of authorization at December 31, 1928.

(b) To pay no dividends in excess of 7%.

(c) To enter no contracts terminating after more than three years.

(d) Not to terminate contracts or leases in effect which exceed three years of the entire term.

(e) Not to increase salaries of officers to exceed $6,000 a year.

(f) Not to amend compensation plan for employees involving increases in compensation.

[fol. 4475] (g) (h) Not to change accounting systems, nor make any changes in its Pension, Benefits, or Death Benefits Plan.

(i) Not to purchase all or substantial part of the assets of any person or any firm or corporation except to protect an account owed to it.

(j) Not to purchase bonds, stocks, notes, securities, of other corporations or individuals except to protect accounts owed to it, and except as authorized by its Board on February 15 and June 14, 1927, relating to the purchase of Government and Public Utility Securities.

(k) Not to engage in any other line of business or to change the existing methods of business.

(l) Not to encumber its property.

(m) Not to authorize securities except for borrowing money from Products, or from the Western Electric Company, or for the purpose of selling such securities to the Trustee under its Pension.

(n) Continue suitable arrangements to have securities held by the Trustee of the Pension Fund prior to all other securities.

(o) To carry insurance on its property.

(p) Keep full and accurate records, and give Products access thereto.

(q) Furnish Products minutes of all meetings of its stockholders, Directors, and Executive Committee.

[fol. 4476] (r) To pay dividends on its preferred stock in accordance with its certificate of incorporation.

(s) To redeem and retire its preferred stock in the manner authorized by its certificate of incorporation as follows: $500,000 a year from 1929 to 1931, inclusive; $600,000 a year from 1932 to 1935, inclusive; $700,000 a year to 1938 inclusive.

(t) Not to redeem on or before December 31, 1930 preferred stock in excess of the amount of undistributed net earnings except as provided in paragraph (s).

(u) Not to reissue any redeemed or surrender any preferred stock.

Section 8. Provision permitting waivers by Products of any obligation of Management.

Section 9. Reference to "Stock" includes stock voting trust certificates and "stockholders of Management" includes holders of voting trust certificates.

[fol. 4477]

Exhibit X-75

Graybar Electric Company, Inc.

Additional Dividends on Preferred Stock Received by Subsidiaries of Western Electric Company, Inc., for the Years 1929 Through 1931

1929	$1,105,000
1930	318,895
1931	(11,367) (x)
	$1,412,528

(x) Represents adjustments to 1929 and 1930 additional dividends.

[fol. 4478]

Exhibit X-75-A

Western Electric Company Sales to Graybar Electric Company

(Dollars in Thousands)

	1929	1930	1931
Telephone apparatus*	$4,997	$3,922	$2,825
Lead covered cable	2,989	2,965	1,477
Supplies	181	167	125
	$8,167	$7,054	$4,427

* Includes special commercial products.

[fol. 4479] EXTRACTS FROM EXHIBIT X-76

Western Electric Company, Incorporated, and Graybar Electric Company, Inc.

Commercial Agreement, Dated December 31, 1925

* * * * * * *

1. Scope:

(a) The Western Company hereby appoints the Graybar Company its exclusive distributor for the sale of the apparatus specified in paragraph (b) of this Section 1 to all customers in the United States, provided that nothing herein contained shall cover or relate to sales to the following:

(1) Companies now or hereafter comprising the Bell Telephone System as defined in Section 2 (b) hereof.

(2) Such of the companies now or hereafter designated or known as Bell Connecting Companies as the Western Company may request the Graybar Company in writing from time to time to exclude from the provisions hereof.

(3) Companies (other than those above mentioned) operating public communication services with which the Western Company may at any time during the term hereof entered into continuing contracts to supply its manufactures.

(4) The United Sattes Government, except those sales which the Western Company may request the Graybar Company in writing from time to time to handle under the provisions hereof.

(5) Customers in the United States who purchase apparatus for export from the United States.

(6) Manufacturers who purchase apparatus for incorporation in or assembly with the apparatus of such manufacturers which is to be sold either to the Western Company only or to the Western Company and other customers of such manufacturers.

[fol. 4480] (7) Employees of the Western Company and its subsidiaries and employees in the Bell Telephone System as defined in Section 2 (b) hereof.

(b) The apparatus covered by this contract shall be such of the apparatus, which, immediately prior to December 31, 1925, was being manufactured by the Western Company and regularly distributed by it through its Supply Department to the supply trade, as the Western Company desires from time to time during the term hereof to have distributed to the supply trade (in so far as the Western Company may, from time to time, have the right to sell said apparatus to the Graybar Company. Also such other apparatus of Western Electric manufacture as the Western Company notifies the Graybar Company in writing from time to time is to be covered by this contract, after which notification the apparatus specified therein shall be subject to all the terms and provisions hereof.

* * * * * * *

(d) The term "apparatus" as used in this contract shall be deemed to include lead-covered cable and equipment.

* * * * * * *

(d) It is agreed that in so far as the Western Company now has, or during the term of this agreement may acquire, any rights to inventions or patents which relate to the business heretofore done by the Western Company through its Supply Department (under this agreement to be handled by the Graybar Company) and any extensions of that business along similar lines, the Western Company hereby grants and agrees to grant to the Graybar Company a non-exclusive license thereunder, for the field of said business only, subject at all times, however, to the existing or future contracts of the Western Company with others, provided that the license hereby granted or agreed to be [fol. 4481] granted does not include the right of the Graybar Company to

(1) Manufacture, or have manufactured for it by others than the Western Company, any apparatus, or

(2) Use, sell or lease any apparatus of other than Western Electric manufacture

of types which the Western Company manufactures or is prepared to manufacture.

* * * * * * *

11. Term of Contract:

This contract shall continue in force until terminated upon one year's written notice from either party to the other, provided that such notice shall not be given by either party prior to the expiration of nine years from the date hereof.

[fol. 4482] In addition to the portion of this contract printed in full above, it contains provisions in substance as follows:

Section 1. (c) The following apparatus and applications thereof are excluded from the contract: transmission of graphical matter and pictures (including television), apparatus for the recording and reproduction of sound, talking motion pictures, submerging signalling apparatus, direction finding apparatus, generally, all application and incidental uses of and telegraphic and telephonic apparatus not commonly known and understood as telephony and telegraphy, deep sea type and continuously loaded submarine cables, and terminal apparatus therefor and the apparatus for the installation thereof.

(d) Graybar has no right to new apparatus developed by the Western Electric Company other than that which may be considered as included as improvements of apparatus in terms of contract.

(e) Graybar agrees to purchase from the Western Electric Company materials and apparatus covered by contract to supply its customers and agrees to conform to licenses obtained by the Western Electric Company for its manufacture.

(f) If Graybar does not purchase from the Western Electric Company all of its apparatus of the type covered by the contract, the contract may be terminated and the Graybar become a non-exclusive distributor of Western's apparatus.

[fol. 4483] (g) Each agrees to sell to the other merchandise of non-Western Electric Company manufacture which it regularly handles.

(h) Western Electric Company retains the right to make sales directly to customers not reserved to it but will reimburse the Graybar Company for the profit which it would have derived had it made such sale.

Section 2. Definitions.

Section 3. Prices and Terms:—(a) The prices and terms to be paid by Graybar shall be as advantageous as those to the most favored customers except Bell System customers.

(b) Prices to be paid by either to the other for non-Western manufacture shall be the cost price plus a service charge.

Section 4. Apparatus of Western Electric sold by Graybar shall be such trade names or trade marks as shall be designated by Western Electric.

Section 5. Western Electric Company shall carry reasonable stock of apparatus which it regularly furnishes Graybar.

Section 6. Western Electric will repair apparatus sold to Graybar at price not greater than charged its most favored customers, except Bell System customers.

Section 7. Agreement that technical information coming to the attention of either party relating to the field of the business of the other, will be given the other.

[fol. 4484] Section 8. (a) Graybar will acquire from those of its employees engaged in development work, contracts giving it the right, for all countries, to the invention of such employees.

(b) Graybar will notify Western Electric Company of all inventions obtained from employees and shall sell, assign and transfer same to Western Electric at the actual cost to the Graybar.

(c) Graybar will bring to the attention of the Western Electric patents offered it relating to the business of the Western and will acquire said patents for Western Electric upon its instructions and its expense.

(d) Set forth in full above.

(e) Patents relating to field of Graybar offered to Western shall be acquired upon request of Graybar and at its expense. If they relate in part to field of Graybar it shall advise Western of such fact and amount it will pay for license thereunder.

(f) Graybar agrees to comply with restrictions as to sale of apparatus covered by license as Western may from time to time prescribe.

Section 9. Provides for interchange of pensions, and disability benefits under Employees Pension, Death and Benefit Plan.

[fol. 4485] Exhibit X-77

This agreement, made the 11th day of October, 1928, between Western Electric Company, Incorporated, a corporation of the State of New York (hereinafter called Western) and Graybar Electric Company, Inc., a corporation of the State of New York (hereinafter called Graybar), witnesseth:

That in consideration of the covenants and agreements herein contained, it is agreed by and between the parties hereto as follows:

Article I

Definitions

1. United States.

The term "United States" as used in this contract means the continental United States, Alaska, Hawaiian Islands, Philippine Islands, Virgin Islands and the Panama Canal Zone and all other territory (except Porto Rico) now or at any time during the term of this agreement subject to the jurisdiction of the United States.

2. United States Government.

The term "United States Government" as used in this contract means not only the Federal Government but also the Government of the Philippines and other federal possessions (except Porto Rico) present or future; but does not include any municipal, county or state government.

3. Bell Telephone System.

The term "Bell Telephone System" as used in this contract shall include all of the companies (whether operating [fol. 4486] telephone companies or otherwise) which Western usually and regularly treats, or may from time to time hereafter treat, as a part of said System.

4. Subsidiaries.

The term "subsidiaries" as used in this contract means corporations, a majority of whose stock having power to vote for the election of directors is owned, directly or indirectly, either by Western, or by Western and one or more of its other subsidiaries, or by one or more of its other subsidiaries.

5. Western Electric Manufacture.

Apparatus designed or engineered by Western and manufactured in whole or in part either by Western or by others on the orders and to the specifications of Western shall be classed as apparatus of Western Electric manufacture.

6. Apparatus.

The term "apparatus" as used in this contract shall be deemed to include cable.

Article II

Scope

1. Appointment.

Western hereby appoints Graybar its exclusive distributor to sell in the United States to the classes of customers herein specified and for the uses and purposes set forth in this contract and subject to the exceptions hereinafter set forth, apparatus of Western Electric manufacture, as standardized by Western from time to time for general sale, in so far as Western may, from time to time, have the right to sell said apparatus to Graybar for resale.

[fol. 4487] 2. Classes of Customers.

The classes of customers to whom Graybar is authorized to sell apparatus for the uses and purposes defined in this contract are as follows:

(a) Telephone companies, except those in the Bell Telephone System, and except those classified by Western at the effective date hereof as Class B companies, and except those which Western may from time to time hereafter designate as Class B companies by written notice to Graybar, in which event the company with reference to which such notice is given shall thereafter be excluded from the customers covered hereby.

(b) Companies (other than telephone companies) operating public communication service, until such time or times as Western enters into continuing contracts to supply its manufactures to any of such companies and so notifies Graybar in writing, in which event the company with reference to which such notice is given shall thereafter be excluded from the customers covered hereby.

(c) Central power and light stations and street railways.

(d) Industrial plants, except that Western reserves the right to furnish manufacturers with materials, parts of apparatus or particular devices for incorporation in or assembly with the product of such manufacturers, provided however, that this exception shall not apply to parts of apparatus or particular devices to be incorporated in or assembled with apparatus to be used for distance actuation and control of apparatus for power purposes, or for indicating at remote points the condition or position of apparatus for power purposes, or for police or fire alarm signal systems.

(e) Oil producing and refining companies.

(f) Electrical contractors and dealers.

(g) Department and furniture stores.

(h) Garages, hardware stores, retail merchants and radio dealers who regularly handle electrical supplies.

[fol. 4488] (i) Steam and electrical railroads and steamship lines.

(j) The United States Government, except that Western reserves the right to exclude from the provisions of this contract, from time to time, all or any part of the government business, upon notice in writing to Graybar.

(k) Customers buying over the counter.

(l) Customers (not specifically excepted) to whom apparatus, for the use and purposes covered by this contract, is ordinarily and regularly sold directly by the manufacturer or the manufacturer's distributor instead of through dealers.

3. Field of Contract.

The uses and purposes for which Graybar is authorized to sell apparatus hereunder to the customers within the classes above described are (subject to the exceptions hereinafter set forth) as follows:

(a) For telephone exchange systems (including substations) and telegraph offices and for telephone and telegraph transmission lines, but only to the extent to which the same are used for purposes commonly and commercially understood as wire telephony or wire telegraphy.

(b) For radio broadcast transmitting stations, but only for the transmission, by one-way wireless telephony, of entertainment, educational or advertising matter.

(c) For power line carrier current systems, but only for the private use of power companies for their own communications and not for rendering communication service to others.

(d) For train dispatching systems.

(e) For transmission measuring.

(f) For announcing outfits, artificial larynges, audiometers, audiophones and stethoscopes, but only when used for the specific purposes which the names imply.

(g) For public address systems, except for use in theatres, motion picture theatres, or other places where mo- [fol. 4489] tion pictures are regularly publicly shown. The term "public address system" means, for the purposes of this contract, a combination of one or more telephone transmitters, and one or more loud-speaking telephone receivers, with or without electrical amplifiers, operating by one-way wire telephony for the reproduction of sound with increased volume simultaneously with and in the immediate vicinity of the original sound so reproduced, or within the same building or group of buildings commonly owned or operated, but does not include any apparatus for (or for use in combination or connection with or as parts of apparatus for)

(1) Radio reception,

(2) Transmission to or reception from wires extending outside the building, or group of buildings commonly owned or operated, in which said apparatus is installed, or

(3) The recording of sound or the reproduction of sound from any form of sound record,

(h) For the reproduction of sound from stylus-operated sound records of the disc type by means of the combination of a turn-table, stylus-operated electro-magnetic reproducer, one or more electrictal amplifiers and one or more loud-speaking telephone receivers and apparatus for the control thereof; but for use only in the following:

(1) Hotels, hospitals and club rooms, except the private living rooms thereof;

(2) Parks, including dance-halls and dance pavilions located therein;

(3) Schools and churches;

(4) Local advertising displays;

(5) Other public places, except theatres, motion picture theatres, places where motion pictures are regularly publicly shown, ships, and public dance halls other than those in parks;

(6) Any place in conjunction with radio broadcast transmitters or as a part of audiometers;

Provided, however, that in no event shall apparatus for the reproduction of sound be sold or leased for use in connection with the exhibition or projection of motion pictures or sold or leased to phonograph companies; and provided [fol. 4490] further, that nothing herein contained shall be deemed to prevent apparatus for the reproduction of sound which is sold or leased by others than Graybar for use in connection with the exhibition or projection of motion pictures, from also being used for the reproduction of sound independently of the exhibition or projection of motion pictures.

4. Specifically Excluded Field.

(a) Apparatus which is intended for use outside of the United States is specifically excluded from the provisions of this contract.

(b) Apparatus which is to be used for or incidental to any of the following purposes, is specifically excluded from the provisions of this contract:

(1) Radio communication of any kind, except only as to the radio broadcast transmitting stations mentioned in paragraph (b) of Section 3 of this Article.

(2) Picture-transmission and television, meaning thereby the transmission and/or reception of pictures, motion pictures, drawings, writings, images or any graphical or printed matter, as such including the transmission and reception of messages by a pictorial reproduction of the message.

(3) Recording of sound.

(4) Reproduction of sound from any type of record thereof, except as provided in paragraph (h), Section 3 of this article.

(5) Synchronizing or co-ordinating in any manner the recording or reproduction of sound with the operation of any apparatus, including, but not by way of limitation, motion picture apparatus.

(6) Submarine signalling.

(7) Direction finding; radio goniometry.

(8) Electrical commnication by means of submarine cables of the deep sea type, or by means of continuously loaded submarine cables.

(9) Development, manufacture, installation, operation, testing or maintenance of any apparatus for any of the purposes referred to in the foregoing paragraphs (1) to (8) inclusive.

[fol. 4491] 5. Protection of Field.

Graybar agrees to use due diligence to determine the use, purpose and ultimate destination for which apparatus ordered from it is intended by the customer, and Graybar is not authorized to sell any apparatus hereunder which it has knowledge of the customer's intent to use or to furnish to others to use for purposes outside the scope or field of this contract, or to export from the United States. In the event that Graybar has knowledge that apparatus sold by it has subsequently been used for purposes outside the scope or field of this contract or exported from the United States, it is not authorized to make and agrees that it will not make any further sales hereunder to the customer in question, until it is assured that such further sales will not be in contravention of this contract.

6. New Processes, etc.

It is not intended that Graybar shall, by reason of this contract, have any right to exploit new processes, methods, materials, articles or apparatus (other than apparatus which may properly be considered improvements in the apparatus to be sold under this contract for the uses and purposes herein defined and not specifically excluded herein) which may be developed by or for Western, even though such new processes, methods, materials, articles or apparatus consist in whole or in part of combinations of apparatus covered by this contract, except in those cases in which Western so requests Graybar in writing and the parties mutually agree upon the terms and conditions under which the commercial exploitation of the same shall be undertaken.

7. Acceptance of Appointment.

(a) Graybar hereby accepts the appointment as exclusive distributor for Western as herein specified and agrees [fol. 4492] diligently to promote the sale of apparatus of Western Electric manufacture for the uses and purposes and to the classes of customers covered by this contract.

(b) Graybar agrees that in making sales as distributor for Western under this contract it will abide by the practices and policies prescribed from time to time by Western governing sales of its products to the classes of customers covered hereby and for the uses and purposes herein provided, and further agrees that it will abide by the conditions prescribed from time to time by Western relating to its sales hereunder of apparatus covered by United States patents under which Western is licensed to sell only for certain specified uses and purposes; provided that none of such conditions shall prescribe the price at which Graybar shall sell said apparatus to its customers.

8. Examination, Audit and Information.

Western shall have the right from time to time during the term hereof and at all reasonable times during business hours to have its accredited representative examine the records and accounts of Graybar, and Graybar agrees to afford all necessary facilities for such examination and to permit Western to make such extracts and excerpts from said records and accounts as Western may deem desirable. Graybar agrees to furnish Western such information relating to the policies and practices followed and action taken by Graybar in complying with the provisions of this contract as Western may request from time to time during the term hereof.

9. Termination of Appointment.

It is agreed that in the event Graybar does not purchase from Western all of the apparatus for the uses and purposes covered by this contract which Graybar requires to supply its customers within the classes hereinabove defined and which Western is ready and able to furnish to Graybar, [fol. 4493] the appointment of Graybar as exclusive distributor as herein provided may, at the election of Western, be terminated by ninety (90) days' written notice to Graybar to that effect.

10. Reservations.

(a) All of the agreements in this instrument contained are and shall be subject to all contracts and obligations of Western existing on the effective date hereof, and Western reserves all rights which are necessary to enable it to fully perform said contracts and obligations and further reserves the right and option at any time or times hereafter to modify its existing contractual relations, or to substitute new contractual relations in place of then existing contractual relations and this contract shall be and become subject to all such modifications and substitutions.

(b) Western reserves the right and option at any time or times to withdraw from the provisions of this contract any or all of the classes of customers covered hereby, and also to limit or exclude any of the uses and purposes for which Graybar may sell apparatus hereunder, provided that in each such case Western shall give Graybar at least ninety (90) days' notice of its intention so to do.

(c) Western reserves the right to make sales of any apparatus for any uses to the subsidiaries of Western, to the employees of Western or of its subsidiaries, or to employees in the Bell Telephone System.

(d) Western reserves the right upon notice in writing to Graybar, to make sales of any apparatus for any uses direct to any of the customers specified in Section 2 of this Article in such special cases as Western deems advisable.

(e) Nothing herein contained shall be construed as a grant of licenses under patents, or to impose any limitation upon Western with respect to the grant of licenses under patents.

(f) The general reservations contained in paragraphs (a) and (b) of this Section 10 shall be in addition to any [fol. 4494] specific reservation of rights by Western in this contract, and shall not be limited in any manner or respect by such specific reservation even though similar thereto.

Article III

Prices and Terms

1. Most Favored Customers.

The prices to be paid by Graybar to Western for apparatus of Western Electric manufacture purchased hereunder by Graybar shall be those established by Western from time to time, which prices shall (except as hereinafter provided) be not in excess of those at which Western from time to time sells said apparatus for similar uses and purposes in like quantities to its most favored customers, and the terms of payment for apparatus so purchased by Graybar shall (except as hereinafter provided) be as favorable as those extended by Western from time to time to its most favored customers.

2. Excepted Customers.

The prices and terms of payment on sales to the following shall not be used in determining the prices or terms of payment to Graybar hereunder:

(a) Sales to companies comprising the Bell Telephone System and companies classified by Western as Class B companies.

(b) Sales to customers excluded from this contract pursuant to paragraphs (a) and (b), Section 2, and paragraph (b), Section 10, Article II hereof.

(c) Sales to subsidiaries of Western.

(d) Sales to the United States Government.

(e) Sales to employees of Western, to employees of its subsidiaries and to employees in the Bell Telephone System.

(f) Sales in special cases pursuant to paragraph (d), Section 10, Article II hereof.

[fol. 4495]

Article IV

General Provisions

1. Trade Names, Trade-Marks and Patent Markings.

All apparatus of Western Electric manufacture covered by this contract shall be sold by Graybar under the name "Western Electric" or such other trade name or names and/or trade-mark or marks as Western may from time to time hereafter adopt, unless Western shall waive in writing this requirement as to particular apparatus, in which event such particular apparatus may be sold under Graybar's name, or under such other trade name or trade-mark as Graybar may select and Western consent to in writing. On all said apparatus, whether sold under a trade name or trade-mark of Western or otherwise, Western shall have the right to place such patent markings or restrictive license markings (with or without its name in connection therewith) as it may deem advisable or necessary.

2. Stock of Apparatus.

Western agrees that it will use every reasonable effort to carry on hand at all times a reasonable stock of apparatus of Western Electric manufacture which it regularly furnishes hereunder to Graybar and which it ordinarily carries as stock apparatus.

3. Repairs to Apparatus.

Western agrees that, except as to repairs covered by Section 5 of this Article, it will make repairs to apparatus of Western Electric manufacture purchased by Graybar, at such of Western's shops as Western may designate from time to time, and that the charges for such repairs shall be not in excess of those made by Western for similar work to its most favored customers other than those specified in Section 2, Article III hereof.

[fol. 4496] 4. Exchange of Information.

(a) Western agrees to furnish to Graybar from time to time, without charge (in so far as Western may from time to time have the right to furnish the same) such general technical information and literature relating to the apparatus of Western Electric manufacture sold to Graybar hereunder as is ordinarily furnished by a manufacturer to its distributor. In the event that copies of drawings and specifications of said apparatus are required by Graybar for the purposes of its sales hereunder, they shall be furnished by Western at prices and upon terms determined in the manner provided in Article III hereof.

(b) Graybar agrees that as and when general manufacturing and engineering information relating to apparatus of the general character now or hereafter manufactured by Western comes into its possession it will transmit promptly to Western such information together with a brief general description of such apparatus, and Graybar further agrees to furnish promptly to Western from time to time, without charge, such commercial information relating to said apparatus as Graybar now possesses or may acquire during the term of this contract and as may be of assistance to Western in improving said apparatus for commercial use and in developing new apparatus to meet commercial needs.

(c) All information furnished by either party to the other hereunder shall be kept confidential by the party to whom the same is furnished, except such information as it may be necessary to furnish to customers as instructions for the use of apparatus leased or sold and except that any information received by Western hereunder may be furnished by it to any of the companies comprising the Bell Telephone System, companies now or hereafter designated by Western as Class B companies and to any companies in which Western now or hereafter owns stock.

[fol. 4497] 5. Defective Apparatus.

Western agrees to repair or replace without charge, f. o. b. factory, any apparatus sold hereunder which, under normal and proper use and when used for the purpose for which it is intended, or, in the case of apparatus which is licensed only for certain specified uses, when used for such purposes, proves defective in workmanship or material within one (1) year from the date of shipment. The correction of such defects by repair or replacement shall constitute fulfillment of all of Western's obligations in respect to the apparatus sold hereunder. No warranties are implied, and Western shall not be liable for consequential damages.

6. Liability.

Western shall not be under any liability to Graybar for any loss, damage or delay in furnishing any apparatus or merchandise hereunder, or performing any act on its part to be performed hereunder, occasioned or caused by strikes, riots, fire, insurrection, war, the elements, embargo, failure of carriers, inability to obtain transportation facilities, acts of God or of the public enemy, prior orders, or limitations of Western's production, or by any causes beyond its control whether or not similar to the foregoing.

7. Sales of Not Western Electric Merchandise.

(a) It is understood that while this contract covers generally the distribution of apparatus of Western Electric manufacture only, each party agrees to sell to the other merchandise not of Western Electric manufacture which it regularly handles and which such other party may order from time to time during the term hereof.

(b) The prices to be paid by either party to the other for merchandise not of Western Electric manufacture pur- [fol. 4498] chased by either party from the other from time to time during the term hereof shall be the cost of such merchandise plus a service charge to be determined by mutual agreement or, in default of such agreement, to be determined by arbitration in accordance with the provisions of Section 8, of this Article; provided, that in no event shall such service charge be less than the rate current at the time under Western's standard supply contract with telephone companies.

(c) The terms of payment for merchandise of not Western Electric manufacture, purchased by either party from the other shall be on the same basis as provided in Article III hereof.

8. Arbitration.

In the event that the parties fail to mutually agree on the service charge provided to be paid under paragraph (b), Section 7, of this Article, either of the parties may make a request in writing for such matter to be referred to arbitration, in which event the parties shall endeavor to agree upon a single arbitrator, but should they be unable to so agree an arbitrator shall, upon application of either party on two days' written notice to the other, be appointed by the Presiding Justice of the Appellate Division of the Supreme Court of New York, First Department. The question of a reasonable service charge shall be promptly submitted to the arbitrator and each of the parties shall be required within thirty days after notice from the arbitrator to fully present its case, and the arbitrator shall within sixty days after final submission by the parties render his decision. The arbitrator shall in no event have power to fix a service charge which shall be less than the rate current at the time under Western's standard supply contract with telephone companies. The service charge fixed by the arbitrator shall be binding and conclusive upon both parties [fol. 4499] until such time as they mutually agree to a change therein or a different charge is determined by further arbitration hereunder. The cost of the arbitration shall be divided equally between the parties.

9. Addresses for Notices.

Until written notice of a change of address is personally served by either party upon the other, wherever hereunder any notice or other advice is required to be given the same shall be deemed to be sufficiently given when, if given by Western to Graybar, it shall be addressed to Graybar at No. 420 Lexington Avenue, New York City, and sent by registered mail, and when, if given by Graybar to Western, it shall be addressed to Western at No. 195 Broadway, New York City, and sent by registered mail.

10. Cancellation of Prior Contract.

This contract shall cancel and terminate the commercial agreement entered into by the parties hereto under date of December 31, 1925, and all licenses and rights therein granted or agreed to be granted, such cancellation to take effect as of the date this contract becomes effective.

11. Term of Contract.

This contract shall become effective on the 1st day of November, 1928, and shall continue in force until terminated upon one year's written notice from either party to the other, provided that such notice shall not be given by either party prior to the expiration of fourteen years from the date this contract becomes effective.

In witness whereof the parties hereto have caused this agreement to be executed by their officers thereunto duly [fol. 4500] authorized and their corporate seals to be hereunto affixed the day and year first above written.

Western Electric Company, Incorporated, by Everet A. Bloom, President. Attest: E. R. Finch, Asst. Secretary. Graybar Electric Company, Inc., by Albert L. Tait, President. Attest: T. Fuller, Secretary.

[fol. 4501]

Exhibit X-79

Western Electric Company, Inc.

Profits from Operations of Electrical Research Products, Inc., and Percentage of Return on Western Electric Company, Inc., Investment

(Dollars in Thousands)

	1927	1928	1929	1930
Net profits of Electrical Research Products, Inc., as shown by reports	$5,504	6,864	6,599	4,511
Deduct:				
Dividends received from:				
Graybar Electric Company, Inc.	$1,800	2,010	1,501	309
Northern Electric Company, Ltd.	314	261	259	163
Interest from investments	1,246	100	8	491
Revaluation of German War claim	....	1,717	....	40*
Revaluation of Northern Electric Co. Ltd., stock	....	....	....	843
	$3,360	4,088	1,768	1,766
	$2,144	2,776	4,831	2,745

	1927	1928	1929	1930
Add undistributed earnings of foreign subsidiaries	....	35*	2,130	58*
Profits from operations	$2,144	2,741	6,961	2,687
Average investment of Western Electric Company, Inc., excluding investments and marketable securities of Electrical Research Products, Inc.	$2,299	2,250	2,250	2,250
% return	93.3	121.8	309.4	119.4
Average investment of Western Electric Company, Inc., excluding investments and marketable securities of Electrical Research Products, Inc. (giving effect to surplus earnings of Electrical Research Products, Inc.)	$3,371	5,375	10,226	14,718
% return	63.6	51.0	68.1	18.2

[fol. 4502]

Exhibit X-80

Electrical Research Products, Inc.

Copy of Journal Entry No. 150, Dated June 30, 1927

	Debit	Credit
Deferred receivables	$3,500,000.00	
Accrued discount		$402,000.00
Reserve on deferred receivables		1,000,000.00
Income from sundry investments		2,098,000.00

Series of nine installments to be received from International Telephone Sales and Engineering Corporation as follows:

Date due	Amount	Discount at 6% as of 6-30-27	Net amount
1-1-28	$500,000.00	15,000.00	485,000.00
1-1-29	500,000.00	45,000.00	455,000.00
1-1-30	500,000.00	75,000.00	425,000.00
1-1-31	350,000.00	73,500.00	276,500.00
1-1-32	350,000.00	94,500.00	255,500.00
1-1-33 Part	300,000.00	99,000.00	201,000.00
	$2,500,000.00	402,000.00	2,098,000.00
1-1-33 Balance	$50,000.00		
1-1-34	350,000.00		
1-1-35	300,000.00		
1-1-36	300,000.00		
	$1,000,000.00		
	$3,500,000.00		

Approved by Board of Directors, June 15, 1927.

Approval

(Signed) John Burgess, Senior Accountant. J. B. Coles, Senior Auditor. (Signed) S. W. Murkland, Assistant General Auditor. (Signed) R. H. Gregory, General Auditor.

[fol. 4503]

Electrical Research Products, Inc.

Accrued Discount on Sale of Option

Discount set up June 30, 1927	$ 402,000.00
Taken up into profits as follows:	
Year 1927	$ 75,000.00
Year 1928	120,000.00
Year 1929	207,000.00
	$ 402,000.00
Reserve on deferred receivables set up June 30, 1927 J. E. # 150 (Still on books at December 31, 1931)	$1,000,000.00

Note.—On October 31, 1930, the reserve was credited to sundry income by J. E. #74, and reversed the same date on J. E. #82.

* * * * * * *

Cash Book Entries Relating to Sale of Option

May 27, 1927.	International Telephone Sales and Engineering Corporation, cashier's check of the National Park Bank, New York, endorsed as follows: Pay to the order of Electrical Research Products, Inc., International Telephone Sales and Engineering Corporation by H. L. Gary, Vice President (Credited to Income)	$500,000.00
Dec. 30, 1927.	Deferred bills receivable, Theodore Gary and Company, payment due January 1, 1928 on the obligation of the Automatic Products Corporation dated December 16, 1927	500,000.00
Jan. 2, 1929.	Deferred receivables, Theodore Gary and Company, Deferred receivables $3,500,000.00	500,000.00
Jan. 2, 1930.	Deferred receivables, Associated Telephone & Telegraph Co.	500,000.00
Oct. 24, 1930.	General, Weco Corporation ($49,422.18 represents interest)	2,049,422.18

(Explanation given on Weco Corporation J. E. #20, October 31, 1930, recites in part "obligation of Automatic Products Corporation repaid in full October 24, 1930, to Electrical Research Products, Inc., and transferred by E. R. P. I. to this Corporation October 25, 1930").

Total cash received, excluding interest $4,000,000.00

[fol. 4504]

EXHIBIT X-81

Western Electric Company, Inc.

Return on Investment in Northern Electric Company, Ltd.

(Dollars in Thousands)

Year	Average investment	Proportionate share of earnings	% Return on investment
1916	$1,370	292	21.3
1917	1,370	106	7.7
1918	1,370	223*	16.3*
1919	1,370	236	17.2
1920	1,370	39	2.8
1921	1,370	225*	16.4*
1922	1,370	57	4.2
1923	1,370	259	18.9
1924	1,370	247	18.0
1925	1,370	344	25.1
1926	1,370	562	41.0
1927	1,370	545	39.8
1928	1,370	518	37.8
1929	1,370	637	46.5
1930	3,180	532	16.7

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* Red figures.

[fol. 4505]

EXHIBIT X-82

Western Electric Company, Inc.

Percentage of Return on Average Capital Stock and Surplus Allocated to Bell and Non-Bell Average Investment Based on a 10% Return on the Average Investment in Bell and Non-Bell Assets

(Dollars in Thousands)

Year	Average investment per Defendant's Exhibits A-77 and A-79	10% return thereon	Average capital stock allocated to Bell and Non-Bell business	% return	Average capital stock and surplus allocated to Bell and Non-Bell business	% return
1926	$172,622	17,262	......*	...	86,220	20.0
1927	178,557	17,855	......*	...	82,549	21.6
1928	176,580	17,658	65,000	27.2	75,409	23.4
1929	230,926	23,092	84,011	27.5	101,531	22.7
1930	289,354	28,935	124,588	23.2	153,264	18.9

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*Capital stock and surplus not segregated prior to December 31, 1927.

[fol. 4506]

EXHIBIT X-83

Western Electric Company, Inc., and Subsidiaries

Consolidated Average Investment, Profits, and Percentage of Return

(Dollars in Thousands)

Year	Average investment per Company's computation	Net profit per Company	% Return on investment
1916	$80,299	2,769	3.4
1917	99,893	6,227	6.2
1918	113,747	6,639	5.8
1919	114,[illegible]25	5,874	5.1
1920	148,508	8,576	5.8
1921	178,074	11,093	6.2
1922	164,864	10,133	6.1
1923	173,434	11,083	6.4
1924	209,681	17,264	8.2
1925	209,148	25,772	12.3
1926	219,907	18,611	8.5
1927	246,057	24,524	10.0
1928	218,809	27,727	12.7
1929	299,120	34,896	11.7
1930	372,538	19,995	5.4

(Here follows Exhibit X-83A, side folio 4507)

[fol. 4507]

Exhibit X-83A

Western Electric Company, Inc., and Subsidiaries

Computation of Average Investment (Per Touche, Niven & Co.)

(Dollars in Thousands)

	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	19
Consolidated Gross Assets	$87,457	102,922	124,805	133,094	146,605	199,639	198,946	$186,670	221,126	238,180	233,995	255,267	228,
Deduct:													
Notes payable:													
Trustee Pension Fund													
Other	$16	5,515	10,610	12,772	15,799	43,916	29,609	$12,030	183	291	810	795	4,
Other current liabilities	6,742	15,472	10,783	11,317	17,390	17,562	17,824	21,035	26,628	27,614	28,337	29,065	1,
Reserve for Employees' Benefit Pension Fund	1,076	1,078	1,581	1,734	1,802	1,807	1,839	2,008	2,282	4,313	10,491	15,762	25,
Bills receivable and trade acceptances discounted						1,628	565	716	738	596			15,
Mortgages on property							1,650	1,650	1,650	1,650			
Patents	22					580	438	419	294	165			
Goodwill													
Elimination of inter-company gross profit on inventories	21	30	30	40	50	60	65	71	80	90	287	317	
Profit in 1930 on sale of land between W. E. Co. and M. J. R. R.													
Total Deductions	$7,877	22,095	23,004	25,863	35,041	65,553	51,990	$37,929	31,855	34,719	39,925	45,939	47,
Consolidated Net Assets before depreciation	$79,580	80,827	101,801	107,231	111,564	134,086	146,956	$148,741	189,271	203,461	194,070	209,328	181,
Reserve for Depreciation	15,461	17,119	20,444	23,712	26,220	28,367	33,232	36,253	40,279	47,586	46,027	51,954	57,
Consolidated Net Assets after depreciation	$64,119	63,708	81,357	83,519	85,344	105,719	113,724	$112,488	148,992	155,875	148,043	157,374	124,
Average Investment before depreciation		80,203	91,314	104,516	109,397	122,825	140,521	147,848	169,006	196,366	198,765	201,699	195,
Average Investment after depreciation		63,913	72,533	82,438	84,431	95,531	109,721	113,106	130,740	152,433	151,959	152,708	140,

EXHIBIT X-83A

Western Electric Company, Inc., and Subsidiaries

Computation of Average Investment (Per Touche, Niven & Co.)

(Dollars in Thousands)

	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	Total
......	$87,457	102,922	124,805	133,094	146,605	199,639	198,946	$186,670	221,126	228,180	233,995	255,267	228,887	268,338	399,235	406,996	3,432,162
......	......	......	......	......	......	......	......	......	......	......	......	......	4,967	21,055	26,405	32,530	84,957
......	$16	5,515	10,610	12,772	15,799	43,916	29,609	$12,030	183	291	810	795	1,073	1,213	42,799	32,451	209,882
......	6,742	15,472	10,783	11,317	17,390	17,562	17,824	21,035	26,628	27,614	28,337	29,065	25,178	32,856	46,877	25,801	360,481
......	1,076	1,078	1,581	1,734	1,802	1,807	1,839	2,008	2,282	4,313	10,491	15,762	15,190	630	848	441	62,882
......	......	......	......	......	......	1,628	565	716	738	596	......	......	......	......	1,500	......	5,743
......	......	......	......	......	......	......	1,650	1,650	1,650	1,650	......	......	......	......	145	195	6,940
......	22	......	......	......	......	580	438	419	294	165	......	......	......	......	......	292	2,210
on in-	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	23,813	23,813
...... o. and	21	30	30	40	50	60	65	71	80	90	287	317	653	1,600	2,080	1,771	7,245
......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	137	137
......	$7,877	22,095	23,004	25,863	35,041	65,553	51,990	$37,929	31,855	34,719	39,925	45,939	47,061	57,354	120,654	117,431	764,290
......	$79,580	80,827	101,801	107,231	111,564	134,086	146,956	$148,741	189,271	203,461	194,070	209,328	181,826	210,984	278,581	289,565	2,667,872
......	15,461	17,119	20,444	23,712	26,220	28,367	33,232	36,253	40,279	47,586	46,027	51,954	57,592	62,689	71,787	84,767	663,489
......	$64,119	63,708	81,357	83,519	85,344	105,719	113,724	$112,488	148,992	155,875	148,043	157,374	124,234	148,295	206,794	204,798	2,004,383
......	......	80,203	91,314	104,516	109,397	122,825	140,521	147,848	169,006	196,366	198,765	201,699	195,577	196,405	244,782	284,073	2,483,297
......	......	63,913	72,533	82,438	84,431	95,531	109,721	113,106	130,740	152,433	151,959	152,708	140,804	136,263	177,544	205,796	1,869,920

EXHIBIT X-83-B

Western Electric Company, Inc., and Subsidiaries

Reconciliation of Consolidated Net Profits per Company with Consolidated Profits as Adjusted

(Dollars in Thousands)

Year	Consolidated net profits per Company	Adjustments to Profits: Pension fund	Extraordinary depreciation	Excessive depreciation	Federal income taxes	Profit on sale of assets	Total	Consolidated profits as adjusted before interest deductions	Deduct interest on current obligations	Consolidated profits as adjusted
1916	$2,769	391*	......	364	5	....	22*	2,747	90	2,657
1917	6,227	590*	......	1,031	156	....	597	6,824	519	6,305
1918	6,639	657*	......	591	114*	....	180*	6,459	750	5,709
1919	5,874	660*	......	239	152	....	269*	5,605	473	5,132
1920	8,576	1,044*	......	1,400	83	....	439	9,015	1,638	7,377
1921	11,093	1,351*	......	1,136	108*	....	323*	10,770	2,780	7,990
1922	10,133	1,528*	......	168*	5*	....	1,701*	8,432	877	7,555
1923	11,083	2,000*	......	44*	229	....	1,815*	9,268	1,159	8,109
1924	17,264	209*	1,562	77	64*	....	1,366	18,630	791	17,839
1925	25,772	1,773	2,168	607*	6	4,102 (A)	7,442	33,214	40	33,174
1926	18,611	3,100	2,102	147*	130	....	5,185	23,796	107	23,689
1927	24,524	2,871	1,803	555*	473*	....	3,646	28,170	232	27,938
1928	27,727	249	2,000	897	409	457 (B)	4,012	31,739	565	31,174
1929	34,896	78	......	4,690	125	....	4,893	39,789	2,810	36,979
1930	19,995	......	......	1,622	291*	....	1,331	21,326	2,922	18,404

* Red figures.

(A)	Additional profit on sale of International Western Electric Company	$1,989
	Profit on sale of property to Bell Telephone Laboratories	2,113
		$4,102
(B)	Additional profit on sale of Graybar Electric Company	......

[fol. 4509]

EXHIBIT X-87

Western Electric Company, Inc., and Subsidiaries

Consolidated Average Investment, Profits, and Percentage of Return

(Dollars in Thousands)

Year	Average investment as adjusted-before depreciation	Profits as adjusted	% Return on investment
1916	$80,203	2,657	3.3
1917	91,314	6,305	6.9
1918	104,516	5,709	5.5
1919	109,397	5,132	4.7
1920	122,825	7,377	6.0
1921	140,521	7,990	5.7
1922	147,848	7,555	5.1
1923	169,006	8,109	4.8
1924	196,366	17,839	9.1
1925	198,765	33,174	16.7
1926	201,699	23,689	11.7
1927	195,577	27,938	14.3
1928	196,405	31,174	15.9
1929	244,782	36,979	15.1
1930	284,073	18,404	6.5

[fol. 4510]

EXHIBIT X-88

Western Electric Company, Inc., and Subsidiaries

Consolidated Average Investment, Profits, and Percentage of Return

(Dollars in Thousands)

Year	Average investment as adjusted after depreciation	Profits as adjusted	% Return on investment
1916	$64,095	2,657	4.1
1917	73,412	6,305	8.6
1918	84,128	5,709	6.8
1919	86,536	5,132	5.9
1920	98,456	7,377	7.5
1921	113,914	7,990	7.0
1922	117,783	7,555	6.4
1923	135,311	8,109	6.0
1924	157,801	17,839	11.3
1925	158,928	33,174	20.9
1926	161,436	23,689	14.7
1927	151,133	27,938	18.5
1928	148,664	31,174	21.0
1929	193,739	36,979	19.1
1930	225,147	18,404	8.2

[fol. 4511]

Exhibit X-89

Western Electric Company, Inc.

Basis of Published Figures of Companies Included in Defendant's Exhibit A-85

(Taken from Poor's Manual)

Company	Consolidated	Not consolidated	Subsidiaries
Air Reduction Co., Inc.	1925-1930		Yes
Allied Chemical and Dye Corp.	1925-1930		Yes
American Agricultural Chemical Co.	1925-1930		Yes
American Chain Co., Inc.	1925-1930		Yes
American Cyanamid Co.	1927-1930	1925-1926	Yes
American Ice Company	1925-1930		Yes
American Locomotive Company	1925-1930		Yes
American Radiator & Standard Sanitary Corp.	1925-1930		Yes
American Safety Razor Corp.	1925-1930		Yes
American Snuff Company		1925-1930	No
American Steel Foundries	1925-1930		Yes
Archer-Daniels-Midland Company	1925-1930		Yes
Atlas Powder Company	1925-1930		Yes
E. W. Bliss Company	1925-1930		Yes
Brown Shoe Company	1925-1930		Yes
Burroughs Adding Machine Company	1925-1930		Yes
J. I. Case Company		1925-1930	Yes
Caterpillar Tractor Co.	1925-1930		Yes
Chrysler Corporation	1925-1930		Yes
Columbian Carbon Company	1925-1930		Yes
Congoleum-Nairn, Inc.	1925-1930		Yes
Congress Cigar Company (Incorporated in 1926)		1927-1930	No
Continental Baking Corporation	1925-1930		Yes
Continental Can Co., Inc.	1925-1930		Yes
Continental Motors Corp.	1925-1930		[illegible]
Deere & Co.	1925-1930		[illegible]
Dennison Mfg. Co.	1929-1930	1925-1928	[illegible]
Diamond Match Co.		1925-1930	[illegible]
E. I. du Pont de Nemours & Co.	1925-1930		[illegible]
Electric Storage Battery Co.	1925-1930		[illegible]
Endicott-Johnson Corp.	1925-1930		Yes
Eureka Vacuum Cleaner Co.		1925-1930	No
Fairbanks, Morse & Co.	1925-1930		Yes
General Baking Corp.	1925-1930		Yes
General Cigar Co., Inc.		1925-1930	No
Consolidated Cigar Corp.	1925-1930		Yes
General Electric Co.		1925-1930	Yes
General Motors Corp.	1925-1930		Yes
General Railway Signal Co.	1925-1930		Yes
Glidden Co.	1925-1930		Yes

[fol. 4512]

EXHIBIT X-89—Continued

Company	Consolidated	Not consolidated	Subsidiaries
B. F. Goodrich Co.	1925-1930		Yes
Goodyear Tire & Rubber Co.	1925-1930		Yes
Holland Furnace Co.		1925-1930	No
Hudson Motor Car Co.	1925-1930		Yes
Hupp Motor Car Corp.	1925-1930		Yes
Ingersoll-Rand Co.	1925-1930		Yes
International Business Machine Co.	1925-1930		Yes
International Cement Corp.	1925-1930		Yes
International Harvester Co.	1925-1930		Yes
International Shoe Co.	1925-1930		Yes
International Silver Co.		1925-1930	Yes
Liggett & Myers Tobacco Co.		1925-1930	No
Liquid Carbonic Corp.		1925-1930	Yes
P. Lorillard Co.		1925-1930	Yes
Mack Trucks Co.	1925-1930		Yes
Marlin-Rockwell Corp.	1925-1930		Yes
Mathieson Alkali Works, Inc.		1925-1930	No
Motor Wheel Corp.		1925-1930	Yes
Nash Motors Co.		1925-1930	No
National Cash Register Co.		1925-1930	Yes
National Lead Co.	1925-1930		Yes
National Supply Corp.	1925-1930		Yes
Parke, Davis & Co.		1925-1930	No
Procter & Gamble Co.	1925-1930		Yes
Purity Bakeries Corp.	1925-1930		Yes
Radio Corp. of America	1925-1930		Yes
Remington Arms Co., Inc.	1925-1930		Yes
Reo Motor Car Co.		1925-1930	Yes
R. J. Reynolds Tobacco Co.		1925-1930	No
St. Regis Paper Co.	1928-1930	1925-1927	Yes
Simmons Co.	1925-1930		Yes
A. O. Smith Corp.		1925-1930	No
A. G. Spalding & Bros.	1925-1930		Yes
Spicer Mfg. Co.	1925-1930		Yes
Stewart-Warner Corp.	1925-1930		Yes
Studebaker Corp.	1925-1930		Yes
Timken Detroit Axle Co.	1925-1930		Yes
Timken Roller Bearing Co.	1925-1930		Yes
Torrington Co.	1925-1930		Yes
Union Carbide and Carbon Corp.	1925-1930		Yes

[fol. 4513]

Company	Consolidated	Not consolidated	Subsidiaries
U. S. Gypsum Co.	1925-1930		Yes
U. S. Industrial Alcohol Co.	1925-1930		Yes
Ward Baking Corp.	1925-1930		Yes
Warren Bros. Co.	1925-1930		Yes
Westinghouse Electric & Mfg. Co.	1925-1930		Yes
White Motor Co.	1925-1930		Yes
Willys-Overland, Inc.	1925-1930		Yes
Yale & Towne Co.		1925-1930	Yes

[fol. 4514]

Exhibit X-90

Western Electric Company, Inc.

Comparison of Earnings and Rate of Return Computed on the Basis Shown in Exhibit A-85 with That of Exhibits A-77 and A-79

(Dollars in Thousands)

Year	Poor's Manual (as per Exhibit A-85) Average investment before depreciation	Poor's Manual (as per Exhibit A-85) Earnings available for interest and dividends	Poor's Manual (as per Exhibit A-85) % Return	Exhibits A-77 and A-79 Average investment before depreciation	Exhibits A-77 and A-79 Net profits (operating)	Exhibits A-77 and A-79 % Return
1916	$71,568	3,204	4.48	$59,095	3,870	6.55
1917	81,474	4.160	5.11	82.958	5.800	6.99
1918	92,874	5,050	5.44	93.790	6,034	6.43
1919	95,763	5,651	5.90	92.858	5,376	5.79
1920	112,870	8,276	7.33	125,471	7,290	5.81
1921	131,853	10,165	7.71	152,511	8,474	5.56
1922	135.039	9,235	6.84	140.343	8,034	5.72
1923	137,989	10.078	7.30	150.771	9.115	6.05
1924	163,285	14,505	8.88	178,920	13,245	7.40
1925	185.036	16,073	8.69	184.469	15.580	8.45
1926	190,757	16.431	8.61	172,622	14,247	8.25
1927	185,709	19,339	10.21	178,557	18.165	10.17
1928	188,577	22,023	11.68	176,580	19.870	11.26
1929	233,549	31,555	13.51	230,926	23,761	10.29
1930	280,643	20,297	7.23	289,354	12,934	4.47

[fol. 4516

EXHIBIT X-91

Western Electric Company, Inc.

Percentage of Return on "Average Net Investment" (Exclusive of Bonded Indebtedness) to "Earnings Available for Dividends," Taken from Poor's Manual

(Dollars in Thousands)

Year	Capital	Surplus	Special reserves	Total	Average investment after depreciation and exclusive of bonded indebtedness	Earnings available for dividends	% of return
1915	$40,229	......	$4,346	$44,575	......	......	.....
1916	40,454	......	2,801	43,255	$43,915	$2,325	5.29
1917	55,755	......	4,333	60,088	51,671	2,852	5.52
1918	55,966	......	4,984	60,950	60,519	3,510	5.80
1919	57,055	......	4,833	61,888	61,419	4,389	7.15
1920	57,949	......	4,618	62,567	62,228	4,240	6.81
1921	58,773	......	4,819	63,592	63,080	4,324	6.85
1922	99,611	......	4,918	104,529	84,061	5,332	6.34
1923	101,804	......	4,808	106,612	105,571	8,920	8.45
1924	105,203	......	4,859	110,062	108,337	10,127	9.35
1925	101,435	......	6,314	107,749	108,905	14,283	13.12
1926	108,509	......	6,970	115,479	111,614	14,574	13.06
1927	75,000	$12,988	113	88,101	101,790	17,356	17.05
1928	100,000	10,784	125	110,909	99,505	19,708	19.81
1929	150,000	14,557	139	164,696	137,802	26,995	19.59
1930	180,000	6,932	184	187,116	175,906	15,625	8.88
	$1,387,743	$45,261	$59,164	$1,492,168	......	......	.....

[fol. 4516]

Exhibit X-92

J. I. Case Company—Poor's 1931 (1766, 1767):

Depreciation Policy.—It is the policy of the Company to provide adequate depreciation reserves in line with plant activity. The total amount of the depreciation reserve account at the close of 1928 was $5,665,233 or 34.83% of the book value of the property subject to depreciation. It is not the Company's policy to charge the cost of ordinary renewals and repairs against the depreciation reserve account, but to absorb such expense in the annual operation costs.

Hupp Motor Car Corporation—Poor's 1931 (1529, 1530):

Depreciation Policy.—It is the policy of the Company to charge off the following percentages for depreciation. All reinforced concrete buildings, 2%; mill constructed buildings, 5%; machinery and equipment, 10%; factory cars, 20%; furniture and fixtures, 10%; office machinery, 20%.

Reo Motor Car Company—Poor's 1931 (1894):

None declared.

The Studebaker Corporation—Poor's 1931 (1573, 1574):

Depreciation Policy.—The policy of the Corporation is to charge off to expense all items of repairs and replacements and further to provide for depreciation at rates calculated upon the book value of the several classes of property adequate to extinguish the book value of such assets over the average effective life of the various units. The principal rates of depreciation used are as follows: Buildings, mill construction, 2%; concrete, 1%; machinery, 3%; tools, 4%, 5% and 7%; electrical apparatus, 3%, 5% and 6%; furniture and fittings, 4%, 5% and 6%.

The White Motor Company—Poor's 1931 (2018):

None declared.

Continental Motors Corporation—Poor's 1931 (1096, 1097):

Depreciation Policy.—It is the policy of the Company to provide ample reserves for depreciation of buildings, equipment, etc., in accordance with approved accounting practice. The annual rates applied to the more important groups of its property are as follows: Buildings, 2%; building fixtures, 7½%; engine and boiler equipment, 7½%; plumbing, heating and sprinkler systems, 4%; machinery and equipment, 7½%; belting, 7½%; automobiles and trucks, 25%.

Marlin-Rockwell Corporation—Poor's 1931 (1537, 1538):

Depreciation Policy.—It is the practice of the Corporation to charge off annually depreciation on the fixed assets of its various plants. The percentages used based on cost are approximately as follows: Buildings, 2% to 4%; machinery, 10%; equipment, 10% to 25%.

Motor Wheel Corporation—Poor's 1931 (1522, 1523):

Depreciation Policy.—Corporation writes off depreciation at the following annual rates: Buildings (steel and concrete) 1½%; buildings (wood) 5%; general machinery, 7½%; transmission equipment, 7½%; belting, 10%; welding equipment, 7½%; furnaces, forges and tanks, 15%; pickling tanks, 50%; automotive equipment, 25%.

[fol: 4517] A. O. Smith Corporation—Poor's 1931 (1011, 1012):

Depreciation Policy.—The Corporation's policy has been to provide reserves for depreciation at an annual average rate of approximately 7%, in addition to keeping both the buildings and all the equipment in good repair and charging these, together with replacements and renewals, to operating expenses. Depreciation rates are of varying amounts according to the units depreciated, and are as large as permitted by the Treasury Department.

Spicer Manufacturing Corporation—Poor's 1931 (1987):

None declared.

The Timken-Detroit Axle Company—Poor's 1931 (1627):

None declared.

American Radiator & Standard Sanitary Corporation—Poor's 1931 (532):

None declared.

American Cyanamid Company—Poor's 1931 (1067, 1069):

Depreciation and Depletion Policy.—Company's policy is to set aside annually from earnings in a reserve account, such amount as will be sufficient to amortize the value of its properties at the end of the useful life thereof.

Archer-Daniels-Midland Company—Poor's 1931 (1159):

Depreciation Policy.—The policy of the Company is to make ample provision for depreciation based upon past experience and the estimated lives of the different items involved. The average rates are: Buildings, 2%; machinery, 5%; automobiles, 20%; electrical equipment, 8⅓%.

Atlas Powder Company—Poor's 1931 (1502, 1503):

Depreciation Policy.—The Company's policy as to depreciation has been to maintain all buildings and equipment in first class condition and repair by expenditures which have been charged to operating expense. The value of buildings and equipment replaced or renewed has been charged to expense of operation through the depreciation reserve or direct to costs. In addition the Company has provided reserves for depreciation and obsolescence, which at the close of the calendar year 1930 amounted to $5,292,624.

The B. F. Goodrich Company—Poor's 1931 (2179, 2181):

Depreciation Policy.—It is the policy of the Company to provide ample reserve for depreciation of buildings, equipment, etc., in accordance with approved accounting practice. Each building is treated individually and the depreciation percentage, never less than 2%, is so calculated with proper regard to the character of the building as to write off the cost within the life of the building. Where the Company, in connection with its building replacement and extension plan contemplates the removal and replacement of a building, it is depreciated at such a rate in excess of the minimum of 2% as will write off its cost within the period remaining before removal. Depreciation on machinery and equipment is based entirely on the estimated life of each individual item and is so calculated as to write off the cost within the life of the particular item. In no case is the depreciation basis on machinery and equipment less than 5%. Where, however, the Company contemplates the removal and replacement of any item due to obsolescence, the [fol. 4518] depreciation rate on that item is adjusted to such a rate in excess of the minimum of 5% as will write off its cost within the period remaining before removal. All repairs on buildings, machinery and equipment are treated as items of operating cost.

The Goodyear Tire & Rubber Company—Poor's 1931 (1662):

None declared.

American Ice Company—Poor's 1931 (1756):

None declared.

The Diamond Match Company—Poor's 1931 (2554, 2555):

Depreciation Policy.—The policy as to depreciation heretofore instituted will be continued. Under this policy there are charged against operations all items of repair and replacement necessary to maintain plants, machinery and equipment in a high state of efficiency, and also to make adequate provision for the depreciation and amortization of such of its properties as are subject to losses of this character, by setting up reserves. Such reserves are based upon costs and are provided at annual rates of not less than: Buildings, 3%; power plants and engines, 5%-7½%; machinery, 8⅓%; miscellaneous, 5%.

Eureka Vacuum Cleaner Company—Poor's 1931 (1314, 1315):

Depreciation.—Rates employed by the Company for depreciation are as follows: Machinery and equipment, 12% of cost per annum; automobiles and trucks, 33⅓%; office furniture and fixtures, 10%; buildings, 2½%.

The Procter & Gamble Company—Poor's 1931 (943):

None declared.

Simmons Company—Poor's 1931 (2836, 2838):

Depreciation Policy.—Rates of depreciation on the principal items are as follows: Real estate improvement, 5% to 6⅔%; buildings, 3%; machinery, electrical power plant and miscellaneous equipment, 10%; tools, 20%; piping, pulleys, shafting, etc., 5%; tracks, 10%; switch engine and hoist, 6⅔%; all autos, 25%; patterns, 30%; factory fixtures and fittings, 12½%; hand trucks and paint racks, 20%; office furniture and fixtures, 10%; office mechanical appliances, 25%; service station furniture and fixtures, 12½%.

Brown Shoe Company, Inc.—Poor's 1931 (987):

None declared.

Endicott Johnson Corporation—Poor's 1931 (1445, 1446):

Depreciation Policy.—The policy of the Corporation as to depreciation is to charge off to expense all items of repairs and replacements and further to provide for depreciation at rates, calculated upon the book value of the several classes of property, adequate to extinguish the book value of such assets during the average effective life of the various units.

[fol. 4519] The following are the rates of depreciation upon the items stated: Buildings, 4%; machinery, 6%; power equipment, 12½%; factory equipment, 20%; office furniture and fixtures, 10%; automobiles, 25%.

International Shoe Company—Poor's 1931 (1099, 1100):

Depreciation Policy.—Company each year charges off for depreciation 2½% on buildings and 9% on cost value of machinery and equipment. Lasts, dies and patterns are carried on the books at $1 and are charged to operations as purchased. Charge for depreciation is based upon the estimated life of the various plant and equipment items and, as a whole, is equivalent to approximately 3½% of the present reproductive value of the entire properties of the Company, exclusive of land.

E. W. Bliss Company—Poor's 1931 (2186):

None declared.

Fairbanks, Morse & Co.—Poor's 1931 (1801):

None declared.

Ingersoll-Rand Company—Poor's 1931 (2240, 2241):

Depreciation Policy.—Depreciation is provided at the rate of 10% per annum on machinery, 2½% per annum on buildings, and 5% per annum on water, electric light, sewage and similar distribution systems, based in all cases on actual cost.

The National Supply Company of Delaware—Poor's 1931 (1762, 1763):

Depreciation Policy.—Liberal depreciation is annually written off, the minimum rate ranging from 3% to 10%, depending upon the character of the property.

Parke, Davis & Company—Poor's 1931 (1265):

None declared.

American Chain Company, Inc.—Poor's 1931 (1636, 1638):

Depreciation Policy.—The Company and its subsidiaries use the following minimum rates of depreciation: Buildings and building equipment, 2%–5%; machinery, 7½%–10%; tools and miscellaneous equipment, 15%; patterns, 10%–15%; shop fittings, 25%; furnaces, 7½%–20%; office furniture, 10%–12½%. During periods of excessive wear and tear the above rates have been increased between 50% and 100%.

American Safety Razor Corporation—Poor's 1931 (1535, 1536):

Depreciation Policy.—It is the policy of the corporation to charge off annually 2½% on buildings, 7% on building equipment, 10% on machinery equipment, office furniture and fixtures, and 33⅓% on automobiles.

[fol. 4520] The Glidden Company—Poor's 1931 (1086, 1088):

Depreciation Policy.—The rate of depreciation which has been used on buildings has been 2% per annum. The rate of depreciation used on machinery and equipment is 5%, furniture and fixtures 10%, automobiles, motor equipment, etc., 40% yearly. The Board of Directors have felt that the depreciation rate of 10% on the machinery and equipment was too high and for that reason adopted a resolution on March 24, 1922, changing the rate of depreciation on machinery and equipment to 5%, this to be effective as of January 1, 1921.

International Silver Company—Poor's 1931 (1595, 1596):

Depreciation.—In addition to keeping plants in first class condition by liberal maintenance charges, annual provision for depreciation and obsolescence is made by charging the following rates: Buildings, 2⅖%; underground piping, 2½%; piping, 6%; plumbing and heating fixtures, 6%; elevators, 6%; electric light equipment, 6%; sprinkler system, 6%; fixtures, 6%; machinery, 6%; shafting, pulleys, etc., 6%; power plants, 6%.

The Liquid Carbonic Corporation—Poor's 1931 (989, 990):

Depreciation.—The rates of depreciation charged by the Corporation on the principal depreciable items, during recent years, have been substantially as follows: Buildings, 2⅖%; machinery and equipment, 5%; furniture and fixtures, 10%; auto trucks, 20%; horses and wagons, 20%; cylinders, 3½%.

National Lead Company—Poor's 1931 (1439):

None declared.

Remington Arms Company, Inc.—Poor's 1931 (1890, 1892):

Depreciation Policy.—Depreciation at the current rates approximates $215,000 per annum. This will be increased in subsequent years by depreciation of the properties acquired or to be acquired, with the proceeds of the above bond issue. The present annual rates in effect are as follows: Brick and concrete buildings, etc., 1⅓%; wooden buildings, 3⅓%; equipment forming part of buildings, 4%; machinery, furniture and other movable equipment, 2% to 25%; and tools, 6⅔% to 10%.

Burroughs Adding Machine Company—Poor's 1931 (2205, 2207):

Depreciation Policy.—Depreciation calculated to measure the useful life of the property has always been provided for on a uniform basis, due consideration being given both to deterioration and to obsolescence. The principal rates used are: Buildings, 2½%; machinery, equipment, office furniture and fixtures, 10%; patterns, drawings, tools and dies, 25%.

International Business Machines Corporation—Poor's 1931 (1752, 1754):

Depreciation Policy.—The consolidated companies make adequate reserves for depreciation of buildings, plant, equipment, and rental machines. The annual rates on buildings average about 3½%; on machinery, from 7% to 18%; on tools, dies, jigs and fixtures from 15% to 20%; and on all other equipment and machines, 12% to 20%.

[fol. 4521] The National Cash Register Company—Poor's 1931 (1992, 1993):

Depreciation Policy.—Corporation has for many years maintained a conservative policy of depreciation, shown by the following table of percentages which are deducted in the items mentioned per annum: Buildings, 2½%; machinery, furniture and fixtures, 8⅓%; manufacturing equipment, 16⅔%; railroad equipment, 10%; power house equipment, outside equipment, autos and trucks, 16⅔%; factory electric trucks, 20%; conveyor system and tools, 10%; office furniture and fixtures, 8⅓%.

Radio Corporation of America—Poor's 1931 (2849):

None declared.

American Locomotive Company—Poor's 1931 (1490):

None declared.

American Steel Foundries—Poor's 1931 (1554, 1555):

Depreciation Policy.—It is the policy of the Company to fully provide for depreciation (1) by being conservative in charges to capital. All smaller items of that character being charged direct to profit and loss or absorbed in costs; (2) by being liberal in the matter of repairs which are charged into costs, many of which are difficult to differentiate from replacements; (3) by setting aside not less than $1 per ton of steel castings produced.

General Railway Signal Company—Poor's 1931 (1191):

None declared.

American Snuff Company—Poor's 1931 (1264):

None declared.

Congress Cigar Company, Inc.—Poor's 1931 (2051, 2052):

Depreciation Policy.—The Company follows a liberal policy with respect to depreciation and seeks to make its charges accord so far as possible with past experience. Its rate on buildings is 2½%, on machinery 5% and on fixtures and equipment 10%.

Consolidated Cigar Corporation—Poor's 1931 (1348, 1349):

Depreciation.—The following is a schedule indicating the percentage of depreciation taken by Corporation on various types of buildings and equipment per annum: Machinery and equipment, 10%; construction, 20%; automobiles, 25%; frame buildings, 3%; brick buildings, 2%.

[fol. 4522] General Cigar Co., Inc.—Poor's 1931 (1189, 1190):

Depreciation Policy.—Company bases its depreciation policy on the estimated useful life of the property. The percentages allowed for depreciation are as follows: On fixtures, equipment and machinery, 1% per month; on buildings, 5% per annum; on fixtures of retail stores the depreciation is based on the life of the lease.

Liggett & Myers Tobacco Company—Poor's 1931 (1193, 1194):

Depreciation Policy.—It has been the consistent policy of Company since its organization to charge off yearly an ample amount for depreciation; 3% on real estate and buildings and 5% on machinery and fixtures.

P. Lorillard Company—Poor's 1931 (1375, 1376):

Depreciation Policy.—The policy of the Company with respect to depreciation on machinery and fixtures, and office furniture and fixtures, is to set aside annually in a reserve account such an amount as will suffice at the end of the useful life of the property, estimated to be at an average of twenty years, to replace the property. Ordinary repairs and renewals are charged to expenses. As to real estate, a depreciation on basis of 3% is set up on value of improvements to cover depreciation of improvements.

R. J. Reynolds Tobacco Company—Poor's 1931 (1126, 1127):

Depreciation Policy.—Company claims and uses as an expense each year an amount equal to the maximum amount allowed by the United States Government Bureau of Housing Revenue as depreciation upon its properties of all classes. This policy has obtained and has been complied with practically from the beginning of the business. In addition thereto, since 1918, when charges for obsolescence were first allowed, an amount equal to 5% on the items affected has been used as an expense each year.

[fol. 4523] Air Reduction—Poor's 1931 (1391, 1393):

Depreciation Policy.—The policy of the Company as to depreciation of property is as follows: It accumulates monthly reserves for depreciation at annual rates of from 2% to 33⅓%, depending on the character and age of the property.

Allied Chemical and Dye Corporation—Poor's 1931 (1814):

None declared.

American Agricultural Chemical Company—Poor's 1931 (1152, 1153):

Depreciation and Depletion Policy—The basis for the calculation of depreciation is the estimated useful life of each item of property subject to depreciation as determined by an independent survey made by the American Appraisal Co. The amount so determined is charged off the actual original cost of the respective items of property. Depletion rates are determined by dividing the fair value of the phosphate rock expected to be mined during the next succeeding 40 years by the total prospected tonnage of the mine.

Caterpillar Tractor Co.—Poor's 1931 (1262, 1263):

Depreciation Policy—The following are the annual rates of depreciation based on estimated useful life taken against the capital assets of Company on the basis of appraised value: Buildings, 2% to 5%; office furniture and fixtures, 8% to 10%; machinery and jigs, 6% to 20%; patterns, 20%; automobiles and trucks, 25%.

Chrysler Corporation—Poor's 1931 (2262, 2263):

Depreciation Policy—The depreciation rates in use by the Corporation are based upon the following annual rates: Building, 3%; real estate improvements, 10%; water and sewerage, 6%; heating and ventilating, 7½%; gas and air installation, 7½%; sprinkler system, 7½%; electrical installation, 10%; machinery and equipment, 12%; power transmission, 10%; furnaces, forges, ovens, etc., and miscellaneous, 15%; factory cars, 40%; furniture and fixtures, 12½%; tools and dies (amortized over car production).

Columbian Carbon Company—Poor's 1931 (1689, 1690):

Depreciation and Depletion Policy—Company provides for depreciation by the straight line method on the basis of cost, the rates varying from 5% on tank cars to 33⅓% on automobiles, the average rate on all classes of property being 15%. Depletion as provided for on the general basis in Section 214 of the Revenue Act of 1926, i. e., 27½% of the gross value of the output not exceeding 50% of the net.

Congoleum-Nairn Inc.—Poor's 1931 (1339):

None declared.

Continental Can Co., Inc.—Poor's 1931 (1305, 1307):

Depreciation Policy.—Reserve for depreciation is figured at 3% on the entire real estate, plant, machinery and equipment account of the can factories; at 4% on the real estate, plant, machinery and equipment account of the tin plate mill; and at 10% on the real estate, plants, machinery and equipment accounts of the Los Angeles Can Corp., the Continental Can Co., Inc., of California, and the Continental Can Co., Inc., of Washington.

Continental Baking Corporation—Poor's 1931 (2356):

None declared.

[fol. 4524] Deere & Company—Poor's 1931 (1183):

None declared.

Dennison Manufacturing Co. (Not in Standard Statistics Bulletin)—Poor's 1931 (552):

None declared.

E. I. Du Pont De Nemours & Company—Poor's 1931 (1238, 1241):

Depreciation Policy.—The main purpose for the depreciation reserves is to provide a fund to take care of the permanent assets as they become obsolete, it being the practice of the Company to carry all permanent assets at their original cost value and to charge operations with all repairs and replacements rather than to charge same against the depreciation reserve. A reserve for depreciation is provided for all the permanent assets, with the exception of real estate. Buildings, equipment and houses are depreciated at the rate of 3% to 6% per annum, except on certain special buildings and equipment to which is applied a rate of 10% to 20% per annum. Automobiles are depreciated at the rate of 30% per annum and auto trucks on a conservative mileage basis. Portable and permanent magazines located on leased land are depreciated at the rate of 6% per annum. No depreciation is set up on magazines and warehouses located on Company's own properties, as experience has proven that appreciation in real estate more than offsets depreciation on buildings.

The Electric Storage Battery Co.—Poor's 1931 (1523):

None declared.

General Baking Company—Poor's 1931 (1854, 1855):

Depreciation Policy.—The policy of the Company as to depreciation is to set aside a reserve annually at the following rates: Buildings, 1½%; ovens, 5%; machinery and equipment, 5% to 15%; horse-drawn vehicles, 8%; other delivery equipment, 10% to 15%.

General Electric Company—Poor's 1931 (2092):

None declared.

General Motors Corporation—Poor's 1931 (2070, 2072, 2075):

Research.—General Motors Research Laboratories, Detroit, Mich. Maintained for the continuous improvement of General Motors products. General Motors Proving Ground, Milford, Mich. A 1268-acre "outdoor laboratory" for the testing of General Motors cars and trucks. The average number of employees of the Corporation, not including certain affiliated companies, for 1930 was 172,938 as compared with 233,286 for 1929, 208,981 for 1928 and 175,666 for 1927.

Depreciation Policy.—Depreciation is computed by General Motors Corporation and its subsidiaries by the straight line method, without regard to salvage or residual value, on the basis of cost, or sound values as determined by independent appraisals, at the following annual rates: Buildings, 3%; machinery and equipment, 10%; furniture and fixtures, 10%; land improvements, 5%.

[fol. 4525] Holland Furnace Company—Poor's 1931 (1966, 1967):

Depreciation Policy.—It is the policy of Company to capitalize all permanent assets at cost. Depreciation is charged off on the straight line method, covering the average life of the assets in any particular group. Whenever assets are disposed of at less than their book value, the difference is immediately charged off as a capital loss. On the other hand, whenever an asset is completely depreciated, the lapse is properly adjusted. Experience has shown in the past years that on the whole the rates have more than covered actual depreciation. Annual charge offs are at the following rates: Buildings, 3%; machinery and equipment, 10%; office furniture and fixtures, 10%; office machinery and equipment, 20%; patterns, dies and flasks, 20%; cleaner equipment, 38-8/9% first year, 33⅓% second year, 16⅔% third year, 11-1/9% fourth year.

Hudson Motor Car Company—Poor's 1931 (1321, 1322):

Depreciation Policy.—It is the policy of the Company to provide ample reserves for depreciation of buildings, equipment, etc., in accordance with approved accounting practice.

International Cement Corporation—Poor's 1931 (1731, 1733):

Depreciation Policy.—It is the policy of the corporation to provide ample reserves, not only against depreciation of plants and machinery, but also against depletion of raw material deposit. The rates of depreciation charged by the Subsidiary Companies are based on the Mortality Schedule adopted by the Portland Cement Association which average approximately 6¼% to 6½% per annum, and which have been approved by the Treasury Department of the United States for Income tax purposes and by the Federal Trade Commission.

International Harvester Company—Poor's 1931 (1468):

None declared.

Mack Trucks, Inc.—Poor's 1931 (1648, 1649):

Depreciation Policy.—The normal depreciation rates per year had been standardized as follows: Building and building equipment, 5 per cent; machinery, 7½ to 10 per cent; power plant and transmission equipment, 10 per cent; office and factory furniture and fixtures, 15 per cent; auto and trucking equipment, 25 per cent; small tools and miscellaneous shop equipment, 20 per cent.

The Mathieson Alkali Works (Inc.)—Poor's 1931 (1362):

None declared.

[fol. 4526] The Nash Motors Company—Poor's 1931 (1157, 1158):

Depreciation Policy.—Company's policy as to depreciation has been to maintain all buildings and equipment in first-class condition and repair by expenditures which have been charged to operating expense. In addition Company has provided reserves for depreciation and obsolescence which on Nov. 30, 1927, amounted to $7,460,602 as compared with total values of plant and equipment of $15,900,601. Annual rates for depreciation applied to the more important items are as follows: Buildings, 3%; machinery, 10%; equipment, 10% to 20%; conveyors, 20%; furniture and fixtures, 10%.

Purity Bakeries Corporation—Poor's 1931 (1203, 1205):

Depreciation.—Rates used by various subsidiary companies up to the time of their acquisition by Purity Bakeries Corporation are the rates approved by U. S. Treasury Department for Income Tax purposes. Thereafter the rates used are those adopted and recommended by an independent appraisal company and are computed on the reproductive values of the properties. These rates are approximately as follows: Buildings, 1¾% to 5%; ovens, 6% to 10%; machinery and equipment, 6⅛% to 10%; automobiles 20 to 30%.

St. Regis Paper Company (not listed in Standard Statistics Bulletin)—Poor's 1931 (706):

None declared.

A. G. Spalding & Bros. (not listed in Standard Statistics Bulletin)—Poor's 1931 (1118, 1119):

Depreciation Policy.—Company follows a liberal policy with respect to depreciation and seeks to make its charges accord so far as possible with past experience, erring on the side of greater rather than lesser depreciation charges. The rate upon the buildings is 3%; furniture and fixtures, 10%; machinery and equipment, 10%; patterns, dies and jigs, 20%, and delivery equipment, 20% to 25%.

Stewart-Warner Corporation—Poor's 1931 (1302, 1303):

Depreciation Policy.—Corporation provides ample reserve for depreciation of buildings, equipment, etc., in accordance with approved accounting practice.

The Timken Roller Bearing Company—Poor's 1931 (2373, 2374):

Depreciation Policy.—Company's depreciation policy has been to keep its buildings and equipment up-to-date and in good condition by expenditures which have been charged to operating expenses and also to charge renewals and replacements to operating expenses. In addition Company has provided reserve for depreciation through Dec. 31, 1928, in the sum of $6,550,975.

The Torrington Company of Connecticut (not listed in Standard Statistics Bulletin)—Poor's 1931. See (1032, 1033):

[fol. 4527] Union Carbide and Carbon Corporation—Poor's 1931 (1694, 1696):

Depreciation Policy.—The policy of the Corporation is to keep manufacturing properties in a state of first class operating efficiency from earnings, and in addition to provide a reserve for depreciation sufficient to extinguish the book value over the estimated life of the property, the additions to such reserve being made annually.

United States Gypsum Company—Poor's 1931 (1847, 1848):

Depreciation Policy.—Depreciation at an average rate of 4% annually has been taken against all buildings and equipment since the organizetion of the Company. This is a composite rate and has received the approval of the United States Bureau of Internal Revenue. Experience has proven these deductions to be ample.

U. S. Industrial Alcohol Company—Poor's 1931 (2805, 2806):

Depreciation Policy.—The Company makes adequate provision for depreciation of plant and equipment. Rates vary from 2½% to 36% per annum depending upon character, use and age of the equipment.

Ward Baking Corporation—Poor's 1931 (1284):

None declared.

Warren Brothers Company—Poor's 1931 (2404, 2406):

Depreciation Policy.—It is the policy of the Company and its subsidiaries to set aside a reserve for depreciation of buildings and equipment, based on their estimated life, such reserves being, in all cases, as large as is permitted under the practice of United States Internal Revenue Department, Income Tax Division.

Westinghouse Electric & Manufacturing Company—Poor's 1931 (1704, 1705):

Depreciation Policy.—On account of the varied construction of its buildings and life of its machine tools and equipment different rates of percentages for depreciation are used by the Company, the minimum annual rates for the main items being 2% on fireproof buildings, 8⅓% on other buildings, and from 5% to 7½% on machinery and tools.

Research.—Investment in wholly owned companies includes capital advanced to, as well as the securities of, Westinghouse Electric Supply Co., operating a chain of distributing houses in the United States, and the branch companies representing the Westinghouse Electric International Company in certain foreign countries. The Westinghouse X-Ray Company, Inc., was organized in 1930 to supply equipment and appliances for therapeutic use. There have been acquired a majority interest in the capital stock of the Wappler Electric Co., Inc., of Long Island City, N. Y., manufacturers of X-Ray apparatus; and the assets of the American X-Ray Company of Chicago. The Westinghouse X-Ray Company, Inc., will continue the manufacture of standard equipment produced by the companies, acquired and will market new divices in this field as developed, including X-Ray tubes developed and manufactured by Westinghouse Lamp Co. for medical and industrial application. Carried also in this investment account are the Interborough Improvement Co., operating Company's plan for home ownership by employees, the interworks railway companies at East Pittsburgh, and other miscellaneous companies.

[fol. 4528] Interest in Radio Corp. of America.—In August, 1921, Radio Corp. of America (see General Index) entered into an agreement with the International Radio Telegraph Co. and the Westinghouse Electric & Mfg. Co.

by which the Radio Corp. of America acquired the radio inventions of the International Company and those of the Westinghouse Company. The Westinghouse Electric & Mfg. Co. purchased a substantial minority stock interest in the Radio Corp. of America. As of December 31, 1930, Westinghouse Electric & Manufacturing Company owned 50,000 shares of the "A" Preferred stock and 2,842,950 shares of no par value Common stock of Radio Corporation of America. Of these holdings of Common stock, Company received 2,632,150 shares as a result of certain reorganizations, effective as of Jan. 1, 1930, through which Radio Corporation of America acquired certain manufacturing rights for radio sets and tubes and related fields together with certain other assets formerly owned by Company, including its holdings of stock in General Motors Radio Corp., National Broadcasting Co., and RCA Photophone, Inc. In a suit filed by the Federal Government pending against Radio Corporation of America, Westinghouse Electric & Manufacturing Co. and others, the Government has questioned the relations of this Company with Radio Corp. of America, and other associated companies in the Radio field, including its right to hold the stock of Radio Corp. of America.

The Willys-Overland Company—Poor's 1931 (1870, 1872):

Depreciation Policy.—The Company's policy as to depreciation is shown by the following schedule of depreciation rates used during the year 1923; Buildings 2½%; machinery, general, special and miscellaneous equipment and furniture and fixtures, 10%; trucks 20%, 30% and 50%.

The Yale & Towne Manufacturing Company—Poor's 1931 (1821, 1822):

Depreciation Policy.—Company makes annual provision for depreciation and obsolescence at the following rates: Yard railway, elevators, power plant, line shafting, furnaces, etc.; machinery, wood buildings, 5%; office furniture and fixtures, 7%; industrial trucks, 16⅔%; fire apparatus, piping and plumbing and eleteric light equipment 3%; shop furniture and fixtures, 10%; patterns, etc., 15%; brick and concrete buildings, 2%.

[fol. 4529] EXHIBIT X-93

Western Electric Company, Inc.

Defendant's Exhibit A-85

Depreciation Rates

Machinery

5%:

Archer-Daniels-Midland Company.
The Glidden Company.
Liquid Carbonic Corporation.
Congress Cigar Company, Inc.
Liggett & Myers Tobacco Company.
Yale & Towne Manufacturing Company.

6%:

Endicott-Johnson Corporation.
International Silver Company.

8⅓%:

The Diamond Match Company,
National Cash Register Company.

5% to 7½%:

Westinghouse Electric & Manufacturing Company.

In conformity with rates approved by the Internal Revenue Department:

A. O. Smith Corporation.
R. J. Reynolds Tobacco Company.
The International Cement Corporation.
United States Gypsum Company.
Warren Brothers Company.

Depletion Basis:

American Cyanamid Company.
American Agricultural Chemical Company.
The International Cement Corporation.

Miscellaneous:

The National Supply Company of Delaware—3% to 10% depending upon the character of the property.

Chrysler Corporation.—Tools and dies—amortized over car production.

E. I. DuPont de Nemours & Company—no depreciation on magazines and warehouses located on Company's own property as experience has proven that appreciation on real estate offsets depreciation on buildings.

[fol. 4530] Western Electric Company, Inc.

Defendant's Exhibit A-85

Depreciation Rates

Furniture and Fixtures:

10%:

Hupp Motor Car Corporation.
Eureka Vacuum Cleaner Company.
Simmons Company.
Endicott-Johnson Corporation.
American Chain Company, Inc.
American Safety Razor Corporation.
Liquid Carbonic Corporation.
Burroughs Adding Machine Company.
Congress Cigar Company, Inc.
General Motors Corporation.
Holland Furnace Company.
Nash Motors Company.
A. G. Spaulding & Bros.
Willys-Overland Company.
Yale & Towne Manufacturing Company.

Less than 10%:

The Studebaker Corporation—4% to 6%.
International Silver Company—6%.
National Cash Register Company—8⅓%.
Liggett & Myers Tobacco Company—5%.
Caterpillar Tractor Co.—8% to 10%.

Other:

Simmons Company—12½%.
General Cigar Co., Inc.—12%.
Chrysler Corporation—12½%.
Mack Trucks, Inc.—15%.
American Chain Company, Inc.—12½%.
International Business Machines Corporation—15% to 20%.

Small Tools:

The Studebaker Corporation—4% to 7%.
Remington Arms Company, Inc.—6⅔% to 10%.
International Business Machines Corporation—15% to 20%.
National Cash Register Company—10%.
Caterpillar Tractor Co.—6% to 20%.
Holland Furnace Company—20%.
Mack Trucks, Inc.—20%.
A. G. Spaulding & Bros.—20%.
Westinghouse Electric & Manufacturing Company—5% to 7½%.
American Chain Company, Inc.—15%.
Burroughs Adding Machine Company—25%.

[fol. 4531]

Exhibit X-94

Western Electric Company, Inc.

Adjustments to Surplus Accounts Omitted in Computation of Average Annual Earnings of Various Companies, Included in Defendant's Exhibit A-85

(Debit Adjustments are Shown in Black; Credit Adjustments in Red)

Number	Company and Explanation of Adjustments	1925	1926	1927	1928	1929	1930
1	Air Reduction, Inc.:						
	Adjustments to surplus (no details given) (S yellow A 31-4)	$573,127	1,360*	679,373			
3	American Agricultural Chemical Co.:						
	Reduction in book value of capital assets as of July 1, 1924 (S yellow A 21-5)	501,176					
	Reserve for gen. plant and props. (S yellow A 21-5)						10,297,293
	Reserve for phosphate rock deposits (S yellow A 21-5)						11,325,701
	Reserve for accounts and notes receivable (S yellow A 21-5)						2,105,047
	Reserve for contingencies (S yellow A 21-5)						1,500,000
11	American Steel Foundries:						
	Loss from sale of investments and property (S yellow A 27-5)				642,500	448,320	158,788
13	Atlas Powder Co.:						
	Appropriation for reserve for contingencies (S yellow A 59-5)				2,500,000		
15	Brown Shoe Company:						
	Adjustments to surplus (no details given) (S yellow B 11-5)	142,613*	112,405*	51,833*	149,385*	268,911*	98,500*
16	Burroughs Adding Machine Co.:						
	Contingencies reserve adjustment (S yellow B 19-5)					812,375*	
	Patents written off (S yellow B 19-5)					3,099,212	
18	Caterpillar Tractor:						
	Abandonment and sale of Stockton plant, etc. (Poor's 1263)						1,584,719
19	Chrysler Corporation:						
	Miscellaneous net debit adjustment applicable to prior periods (S yellow C 61-5)		121,925				
21	Congoleum-Nairn, Inc.:						
	Miscellaneous adjustments (no details given) (S yellow C 49-4)	136,122	83,204				

23	Consolidated Cigar Corporation:						
	Miscellaneous debits (no details given) (S yellow C 53-7)	86,611	165,574	282,4[illegible]9	228,885	214,116	143,092
24	Continental Baking Corporation:						
	Tax adjustments (S yellow C 63-5)			9,385	28,482	21,747	10,388*
	Uncollectible accounts receivable of prior years written off (S yellow C 63-5)			152,672			
	Deferred advtg. at beginning of year written off (S yellow C 63-5)			313,964			

[fol. 4532]

25	Continental Can Co., Inc.:						
	Miscellaneous debits (no details given) (S yellow C 133-4)			37,618	303,268	220,849	151,807
	Patents written off (S yellow C 133-4)				15,537		
	Patents and goodwill written off (S yellow C 133-4)	67,833	31,893	100,992			
26	Continental Motors Corporation:						
	Adjustment of special tools, dies and patterns (S yellow C 155-5)						2,209,792
	Provision for obsol. and losses in investments (S yellow C 155-5)						971,392
	Reduction in value of used tools (S yellow C 155-5)						200,000
	Write-off of devel. costs (S yellow C 155-5)						385,060
	Elimination of sundry deferred charges (S yellow C 155-5)						183,450
	Increased reserve for bad debts (S yellow C 155-5)						273,637
	Provision for loss on obsolete machinery and equipment (S yellow C 155-5)						93,897
	Provision for contingencies (S yellow C 155-5)						165,000
	Adjustment of investments, leases and miscellaneous items (S yellow C 155-5)						101,742
	Provision for additional federal taxes payable for prior years (S yellow C 155-5)					1,092	
	Further adjustment in val. of investments in other companies (S yellow C 155-6)						53,312
	Federal tax refunds (S yellow C 155-6)		39,967*		3,819*		
29	Diamond Match Co.:						
	Miscellaneous credits (no details given) (S yellow D 15-6)					439,473*	11,625,489*

* Red figures.

Exhibit X-94—Continued

Western Electric Company, Inc.

Adjustments to Surplus Accounts Omitted in Computation of Average Annual Earnings of Various Companies, Included in Defendant's Exhibit A-85

(Debit Adjustments are Shown in Black; Credit Adjustments in Red)

Number	Company and Explanation of Adjustments	1925	1926	1927	1928	1929	1930
30	Dupont de Nemours:						
	Surplus from refunds and tax adjustments for prior years (S yellow D 21-8)	....	2,681,294*	....	....	....	....
	Appropriation for pension reserve (S yellow D 21-8)	....	4,880,729	....	....	3,807,968	....
	Miscellaneous adjustment applicable to prior years and appropriation for contingencies (S yellow D 21-8)	....	....	2,528,944	....	....	....
31	Electric Storage Battery:						
	Federal taxes for previous year (S yellow E 5-5)	851,007	1,086,596	848,410	772,785	....	....
	Loss on sale of plant and equipment of New Haven Carriage Co. (S yellow E 5-5)	73,314	....	....	....	....	....
	Adjustment of patents accounts to the approximate valuation allowed by the U. S. Treasury Department for the purpose of federal taxation (S yellow E 5-5)	4,999,999	....	....	....	....	....
32	Endicott-Johnson Corporation:						
	Reduction of workmen's compensation reserve to cons. requir. (S yellow E 27-5)	....	....	....	....	....	108,661*
	Adjustment of taxes for previous year (S yellow E 27-5)	....	....	....	582,468*	32,340*	120,496
	Additional depreciation (S yellow E 27-5)	232,708	....	....	....	....	705,750
	Conting. reserve including market decline of hide commitments (S yellows E 27-5)	....	....	....	....	....	3[illegible],381
37	General Electric Co.:						
	Reserve for Contract Purchase Corp. investments restored to surplus (S yellow G 1-6)	....	....	....	5,043,613*	....	....
	Reserve for federal tax restored to surplus (S yellow G 1-6)	....	....	....	4,220,928*	....	....

[fol. 4533]

39	General Railway Signal Co.:						
	Adjustment of reserve for contingencies (S yellow G 23-4)	$215,000*	138,684	60,000*			
	Adjustments applicable to prior periods, net (S yellow G 23-4)	56,877	93,712	14,764*	49,377*	86,025	836*
	Reserve for obsolescence (S yellow G 23-4)	120,000	120,000				
	Loss on sale of Albany property (S yellow G 23-4)			244,610			
	Adj. to reserve for depreciation and amortization to conform to federal tax requirements (S yellow G 23-4)			441,054			
	Adj. of plant and equipment to a cost basis (S yellow G 23-4)			554,440			
40	Glidden Company:						
	Inventory adjustment (S yellow G 29-7)		109,518				
	Trans. to contingencies reserve (S yellow G 29-7)		500,000				
	Miscellaneous debit adjustment (no details given) S yellow G 29-7)	13,249	11,735	1,294			
	Reappraisal of Oakland, Cal. plant (S yellow G 29-7)		193,061*				
	Appreciation of plants acquired (S yellow G 29-7)					76,625*	
	Miscellaneous credit divs. etc. (S yellow G 29-7)	9,287*					
41	Goodrich Co.:						
	Sundry adjustments not chargeable to current year's operations (S yellow G 25-6)				761,914	51,981	
	Sundry adjustments pertaining to prior years, including additional federal income tax applicable to 1925 and 1924 (S yellow G 25-6)			560,886			
	Income and war excess profits taxes paid during year, applicable to prior years (S yellow G 25-6)		1,762,505				
	Federal tax paid applicable to 1924 (S yellow G 25-6)	685,691					
42	Goodyear Tire and Rubber Co.:						
	Other adjustments (no details given) (S yellow G 39-5)						315,000
	Depreciation adjustment for prior years (S yellow G 39-5)					497,125	
	Goodwill and patents charged off (S yellow G 39-5)				10,209,274		
	Unused balance of tax reserve created prior to 1921 (S yellow G 39-5)				1,518,522*		

* Red figures.

Exhibit X-94—Continued

Western Electric Company, Inc.

Adjustments to Surplus Accounts Omitted in Computation of Average Annual Earnings of Various Companies, Included in Defendant's Exhibit A-85

(Debit Adjustments are Shown in Black; Credit Adjustments in Red)

Number	Company and Explanation of Adjustments	1925	1926	1927	1928	1929	1930
44	Hudson Motor Car Co.:						
	Contingencies reserve (S yellow H 1-3)	230,000	....	150,000	150,000	300,000	
	Adj. of federal taxes for prior years	....	108,071	....	....	....	....
47	International Business Machine Corp.:						
	Amortization of patents (S yellow I 43-5)	....	....	....	....	....	71,237
	Accumulated royalties of prior periods received during 1926	....	425,530*	....	....	....	....
	Reserve for contingencies	....	400,000	....	....	....	....

[fol. 4534]

Number	Company and Explanation of Adjustments	1925	1926	1927	1928	1929	1930
48	International Cement Corp.:						
	Income taxes of prior years and sundry adjustments (S yellow I 33-4)	9,123	69,398	....	....	....	....
	Miscellaneous adjustments affecting prior periods (S yellow I 33-4)	....	....	92,827*	....	....	....
	Increase in adj. for exchange of net current assets in South America (S yellow I 33-4)	82,154*	9,876	....	1,784	69,108	....
	Equipment dismantled principally in connection with reconstruction of Indiana plant, less depreciation accrued thereon (S yellow I 33-5)	....	....	....	....	683,086	....
50	International Shoe Co.:						
	Adjustment of physical property values (S yellow I 29-5)	12,480,944*	....	....	....	....	....
53	Liquid Carbonic:						
	Managers' and employees' profit sharing (Poor's 989)	131,050	170,000	105,232	185,000	140,000	125,000
	Reserve against receivables and collections (Poor's 989)	....	....	....	....	....	100,000

54	P. Lorillard Co.:						
	Rejected portion of claims for federal tax refunds for prior years carried in accounts rec. plus exp. incidental thereto (S yellow L 31–5)				1,604,076		
55	Mack Trucks, Inc.:						
	Additional reserve for contingencies (S yellow M 11–5)						1,000,000
	Adj. applicable to prior years (S yellow M 11–5)		114,783*				
57	Mathieson Alkali Works, Inc.:						
	Sundry adjustments (no details given) (S yellow M 21–4)	47,724	29,328	11,248	5,410	56,640	108,953
	Litigation exp. of coal suits (S yellow M 21–4)			79,237			
	Process development expense of prior years (S yellow M 21–4)			56,304			
	Reserve for obsolescence (S yellow M 21–4)	500,000					
	Acct. accident Saltp'le Settling Basin, December 24, 1924 (S yellow M 21–4)	25,000					
58	Motor Wheel Corp.:						
	Patent expense, prior year (S yellow M 37–5)						186,500
	Provision for contingencies (S yellow M 37–5)				75,000		
	Unused portion of federal income tax reserve (S yellow M 37–5)			9,319*			
	Additional depreciation on dies allowed by U. S. Bureau of Internal Revenue for years 1920 to 1923, inclusive (S yellow M 37–5)		66,949				
60	National Cash Register Co.:						
	Patents, goodwill, etc., written off (S yellow N 13–5)				1,683,334	4,081,268	39,889
	Reserve for contingencies not req. transferred to surplus (S yellow N 13–5)				683,334*		
	Organiz. expense written off (S yellow N 13–5)		247,911				

[fol. 4535]

66	Radio Corp. of America:						
	Additional reserve against foreign investments (S yellow R 17–8)*				1,400,909		
	Patent account written down (S yellow R 17–8)			1,000,000	4,789,924		
	Reserve for plant and equipment (S yellow R 17–8)			4,500,000			
	Sundry mach. tools and furniture written down to $1 (S yellow R 17–8)			799,310			

* Red figures.

EXHIBIT X-94—Continued

Western Electric Company, Inc.

Adjustments to Surplus Accounts Omitted in Computation of Average Annual Earnings of Various Companies, Included in Defendant's Exhibit A-85

(Debit Adjustments are Shown in Black; Credit Adjustments in Red)

Number	Company and Explanation of Adjustments	1925	1926	1927	1928	1929	1930
68	Reo Motor Car Co.:						
	Sundry debits (no details given) (1930 S White R 12-3; other years S yellow R 11-4)	....	....	....	....	3,080	38
	Reserve no longer required, federal taxes (1930 S White R 12-3; other years S yellow R 11-4)	....	....	....	....	276,800*	10,342*
	Reserve no longer required, contingencies (S yellow R 11-4)	....	....	195,556*	102,845*	....	....
	Sundry credits (no details given) (S yellow R 11-4)	....	....	90,570*	4,243*	2,643*	....
	Refund federal taxes, prior years (1930 S White R 12-3; other years S yellow R 11-4)	....	....	....	....	115,675*	40,812*
69	R. J. Reynolds Tobacco Co.:						
	Sundry items applicable to prior periods (S yellow R 23-5)	....	....	8,744,739*	....	....	....
71	Simmons Company:						
	Adjustment account prior years (S yellow S 17-5)	66,172	192,194	636,112	482,235	276,815	....
	Advertising and development expenses (S yellow S 17-5)	....	....	....	....	....	1,099,857
	Inventory write down (S yellow S 17-5)	....	....	....	....	....	1,430,317
	Depreciation on appreciation (S yellow S 17-5)	....	....	....	....	....	1,434,030
	Reallocation of exps. and write-down of miscellaneous advances and investments (S yellow S 17-5)	....	....	....	....	....	169,855
	Adj. resulting from revaluation of fixed assets at December 31, 1930, obsol. and allowance for loss of long-time note receivable (S yellow S 17-5)	....	....	....	....	....	556,451
75	Stewart-Warner Corp.:						
	Adjustment in respect of prior years, corporation income tax, tax, patents, development expense written off (S yellow S 21-4)	....	756,739	1,476,627	....	....	....

Appreciation arising from appraisal on properties and plant (S yellow S 21–4)	....	....	....	215,685*	....	....
Miscellaneous credit adjustments (no details given) (S yellow S 21–5)	....	....	....	....	....	157,369*
76 The Studebaker Corp.:						
Appr. to further reduce book value of Detroit plants not in use (S yellow S 39–6)	....	....	....	....	....	2,918,323
Losses and expenses incidental to centralizing factory operations at South Bend (S yellow S 39–6)	....	....	....	5,949,998	....	....
Reserve for contingencies (S yellow S 39–6)	3,000,000	....	....	....	....	....

[fol. 4536]

78 Timken Roller Bearing Co.:						
Prior year's taxes, etc. (S yellow T 9–5)	....	25,014	19,452*	....	4,321*	32,857*
Net additions to surplus to reflect amortization and depreciation all on plant property for prior years as determined by U. S. Treasury Department, adjust. of prior years tax expense, etc. (S yellow T 9–5)	....	....	....	410,543*	....	....
80 Union Carbide & Carbon Co.:						
Net adjustment (no explanation given) (S yellow U 5–4)	217,237*	5,162*	140,163*	294,057	4,515,122	....
Unamortized book value of patents, etc. (S yellow U 5–4)	29,423,509	....	....	....	....	....
82 U. S. Industrial Alcohol Co.:						
Miscellaneous adjustment (no details given) (S White U 40–2)	....	....	....	....	....	244,858
Additional depreciation, etc., applicable to tax returns for prior years (S yellow U 39–4)	....	717,157	2,464,663	....	1,262,816	....
Other adjustments net credit (no details given) (S yellow U 39–4)	....	....	32,000*	397,439*	20,865*	....
Claims paid for Boston tank accident, occuring in 1919 (S yellow U 39–4)	628,329	....	....	....	....	....

* Red figures.

EXHIBIT X-94—Continued

		Year to March, 31, 1926	Year to March 31, 1927	Year to March 31, 1928	Year to December 31, 1928
85	Westinghouse Electric & Mfg. Co.:				
	Miscellaneous debits (no explanation given) (S yellow W 13–5)	$214,183	642,118	....	83,634
	Balance of reserve previously appropriated for federal tax not required (S yellow W 13–5)	....	....	3,000,000*	1,000,000*
	Approp. for conting. res. for further possible shrinkage in investments (S yellow W 13–5)	....	....	1,770,976	....
	Patents, charters, franchises, etc., written down to nominal value (S yellow W 13–5)	....	....	4,621,784	....
	Additional reserve for federal taxes, 1917–1921 (S yellow W 13–5)	4,000,000	....	....	....
	Miscellaneous credits (no explanation given) (S yellow W 13–5)	82,765*	....	....	....
		1925	1926	1927	1928
86	White Motor Co.:				
	Contingencies reserve (S yellow W 49–3)	....	....	....	500,000
87	Willys-Overland, Inc.:				
	Additional depreciation on buildings dismantled applicable to prior years (S yellow W 43–6)	327,798	125,791	....	....
	Adjustment of reserves	....	130,214*	....	....

* Red figures.

[fol. 4537]

Western Electric Company, Inc.

Surplus Adjustments of 88 Companies, Year 1931

	Debits *Credits
4. American Chain Co.:	
Miscellaneous adjustment to earned surplus	$22,718.98
5. American Cyanamid Co.:	
Changes applicable to prior periods (net)	392,138.45
8. American Radiator & Standard Sanitary Corp.:	
Adjustment of Foreign Exchange valuations	623,242.47
9. American Safety Razor Corp.:	
Reserve to reduce marketable securities to lower of cost or market at December 31, 1931	499,006.21
Loss on Foreign Exchange at September 30, 1931	65,152.90
Loss on sale of Corporation's own shares	41,241.99
Adjustment of Federal, State and British taxes, etc.	9,826.06
11. American Steel Foundries:	
Loss from property sold and plant dismantled	146,197.82
13. Atlas Powder Company:	
Appropriated to Reserve for Obsolescence of Plants	1,900,000.00
16. Burroughs Adding Machine Company:	
Reserve for decrease in value of foreign accounts due to fluctuation in foreign exchange	237,429.76
Additional reserve for notes and accounts receivable	297,327.32
Reserve for decrease in market value of Government securities	336,100.02
Credit adjustment applicable to prior years	107,507.58*
20. Columbian Carbon Company:	
Credits applicable to prior years (net)	66,264.45*
Leases surrendered	57,594.33
Sterling exchange adjustment	5,317.96
22. Congress Cigar Company, Inc.:	
Write-down of leaf tobacco inventory at December 31, 1931	917,687.73
Other adjustments	56,941.22
23. Consolidated Cigar Corp.:	
Non-operating charges and prior period adjustments	18,265.74
24. Continental Baking Corp.:	
Adjustment of provision for prior years' federal taxes	208,040.58*
Adjustment of amortization of cost of patents applicable to prior years	185,000.00
Reserve for revaluation of capital assets of subsidiary companies	200,000.00
Provision for reducing investment in Corporation's Class "A" Common stock from cost to market value at December 26, 1931	496,633.44

[fol. 4538]

25. Continental Can Company, Inc.:	
Reserve to write down book value of mortgages, securities, etc.	350,000.00
Appropriation for unemployment relief	50,000.00
28. Dennison Manufacturing Co.:	
Unemployment relief and separation allowances paid to employees	75,745.09
Write-down of foreign balances due to governmental abandonments of gold standard	167,608.00

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* Red figures.

Surplus Adjustments of 88 Companies, Year 1931

	Debits *Credits
29. Diamond Match Company:	
Miscellaneous surplus adjustments	148,154.36*
30. E. I. du Pont de Nemours & Company:	
Appropriation to adjust book value of patents to nominal amount	5,354,104.61
Adjustment resulting from revaluation of Investment in General Motors Corp.	8,484,037.00
31. Electric Storage Battery Co.:	
Sundry adjustments of income, expenses, etc., applicable to the period prior to January 1, 1931 net	300,594.17
Employees' Pension Fund	100,000.00
32. Endicott-Johnson Corporation:	
Provision for adjustment of federal income taxes of prior years	77,959.77
33. Eureka Vacuum Cleaner Company:	
Provision of allowance to reduce carrying value of marketable securities to indicated market value at December 31, 1931	47,539.29
Provision for anticipated additional expenses in collection of installment accounts, and other expenses in closing branches	225,000.00
Provision for possible loss in disposition of branch furniture and fixtures	117,128.95
39. General Railway Signal Company:	
Appropriation to Reserve for Shrinkage in Value of Marketable Securities	1,625,000.00
Adjustment of fixed assets and depreciation reserves applicable to prior years	364,222.13
Other charges applicable to prior years	12,048.23
40. The Glidden Company:	
Provision to reduce net assets, exclusive of permanent accounts, located in Canada to prevailing rate of exchange at October 31, 1931	53,989.57

[fol. 4539]

41. The B. F. Goodrich Company:	
Sundry adjustments (net) not relating to operations of the current year	289,581.06*
42. The Goodyear Tire & Rubber Company:	
Provision for fluctuation in foreign exchange	3,414,039.54
Write-down of Government securities to market	711,384.29
44. Hudson Motor Car Company:	
Reserve for shrinkage foreign subsidiaries	2,000,000.00
Reserve for special tools	2,000,000.00
Special advertising	1,400,000.00
Rearrangement of plant equipment	632,706.94
46. Ingersoll-Rand Company:	
Adjustment of inventories of certain foreign subsidiary companies in respect to delivery costs previously charged to expense	139,822.16*
Abnormal loss arising from revaluation at current rates of exchange of investment in controlled manufacturing and wholly owned subsidiary companies	466,079.50
Provision for reduction of book value of securities to lower of cost or market, excepting 1932 maturities carried at par	306,614.80
Adjustment of property and reserve accounts in respect of amortization	49,940.50

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* Red figures.

Surplus Adjustments of 88 Companies, Year 1931

	Debits *Credits
48. International Cement Corporation:	
Provision for decline in exchange on net current assets in South America and other exchange adjustments	861,886,71
Equipment dismantled, less accrued depreciation...	181,644.08
Income taxes and other charges affecting prior years	86,400.11
49. International Harvester Company:	
Reserves from prior years' earnings for decline in market value, etc., released to income	11,000,000.00*
53. The Liquid Carbonic Corporation:	
Adjustment of investment in solid carbonic industry	246,111.77
57. The Mathieson Alkali Works, Inc.:	
Adjustments	59,292.40
58. Motor Wheel Corporation:	
Special provision made against the carrying value of securities as protection against shrinkage in the event of sale	178,169.77
Reserves provided in full against carrying value of patents, royalties, goodwill, etc.	827,779.03
Loss on sale of Jackson, Tennessee plant	57,426.41
[fol. 4540]	
59. Nash Motors Company:	
Federal and State income tax reserves of prior years returned to surplus	809,857.09*
Other non-operating credits	162,500.00*
To reduce U. S. Government securities and Treasury stock to basis of cost or market, whichever the lower	671,704.83
To write down Milwaukee machinery and equipment accounts	254,050.75
60. The National Cash Register Company:	
Abnormal losses arising from revaluation of foreign investments at current rates of exchange	551,773.68
Provision for losses on liquidation of inventories of obsolete models	523,642.50
Provision for obligations arising out of contracts with former employees	492,465.66
Leaseholds, improvements, etc., written off	202,226.36
Provision for loss on claims against closed banks.	100,0000.00
62. The National Supply Company of Delaware:	
Sundry adjustments, etc.	6,812.24*
Additional reserve for bad debts	562,796.38
63. Parke, Davis & Company:	
Transfer to Employees' Pension Fund	115,000.00
66. Radio Corporation of America:	
Write-down of inventories	10,359,000.00
Write-down of investments	1,391,300.00
67. Remington Arms Company, Inc.:	
Adjustments affecting prior years' operations	56,608.87
71. Simmons Company:	
Write-off of entire investment in and uncollected portion of receivables from Berkely and Gay Furniture Company, less operating losses absorbed in prior years	780,544.52
Allowances for possible losses on miscellaneous notes and accounts receivable and investments...	436,350.23
Write-down of inactive machinery and equipment of subsidiary	300,000.00
Miscellaneous adjustments applicable to prior years	22,620.81

Surplus Adjustments of 88 Companies, Year 1931

[fol. 4541]

	Debits *Credits
74. Spicer Manufacturing Corporation:	
Payments in settlement of patent rights	125,000.00
75. Stewart-Warner Corporation:	
Unamortized appreciation arising from appraisal of properties and plant in 1928, now charged off in full	3,528,947.07
Patents and licenses expenditures and experimental and development expenditures on new lines	540,662.28
Provision in respect of Canadian currency depreciation	70,562.85
Additional assessment of taxes for prior years and other items	85,597.17
76. The Studebaker Corporation:	
Adjustment of Studebaker investment in Pierce-Arrow stocks to present book value resulting from revaluation of certain assets of old Pierce Company taken over by new Company for liquidation, and from payment of Pierce dividends, less discount on Pierce stock held in treasury	499,034.24
77. The Timken-Detroit Axle Company:	
Reserve provided to reduce marketable securities to approximate market value	14,467.51
78. The Timken Roller Bearing Company:	
Additional federal income taxes and interest for prior years, less excess provision for 1930 federal and Canadian income taxes	19,170.70
79. The Torrington Company:	
Tax refunds	134,273.66*
80. Union Carbide and Carbon Corporation:	
Adjustment of fixed asset values	39,794,031.11
Adjustment of power contracts	1,602,621.38
Adjustment of marketable securities to market, December 31, 1931	3,507,199.64
Adjustment of net current assets of foreign companies and revaluation of inventories carried in United States dollars, but located in Canada and other foreign countries on account of decline in exchange	3,455,838.35
Miscellaneous items not affecting 1931 operations	1,188,328.67

[fol. 4542]

83. Ward Baking Corporation:	
Settlements and expenses on claims and taxes applicable to prior years and all expenses arising from special meeting of Stockholders January 26, 1931, and preparation therefor	172,146.13
85. Westinghouse Electric and Manufacturing Company:	
Revaluation of investments in companies not previously consolidated and other miscellaneous items	3,617,373.99
Provision for decline in value of securities	2,054,005.45
87. The Willys-Overland Company:	
Provision for plant, equipment and tool write-off	6,125,488.81
Provision for inventory write-down, commitments, contingencies, etc.	2,688,724.49
Investments in and advances to foreign and domestic affiliated companies written off	2,098,250.79
Extraordinary advertising	864,743.76

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* Red figures.

Surplus Adjustments of 88 Companies, Year 1931

	Debits *Credits
Provision for miscellaneous notes, accounts, advances, etc.	356,776.27
88. The Yale and Towne Manufacturing Company:	
Reinstatement of reserve for contingencies	1,000,000.00*
Adjustment of merchandise inventories during year due to declines in reproductive costs	515,603.00
Obsolete manufactured product written off during year due to changes in trade conditions	344,738.00
Adjustment in value of net current assets in foreign countries in conformity with the rates of exchange prevailing at December 31, 1931	195,474.00
Adjustment of investments to market values at December 31, 1931	394,176.00

[fol. 4543]

Exhibit X-95

Western Electric Company

Comparison of per Cent of Return on Investment and per Cent of Net Profit to Sales of Companies Shown on Defendant's Exhibits A185-86-87

		Years 1925-1930	
	Company	Percentage of average earnings to average investment	Percentage of net profits to sales for six year period
	Air Reduction	12.0	21.5
	American Ice	9.2	15.4
	Atlas Powder	7.5	8.8
	Brown Shoe	8.4	5.0
	Caterpillar Tractor	22.1	21.8
	Chrysler	15.5	7.5
	Columbian Carbon	9.4	26.7
	Congress Cigar	24.3	14.9
(A)	Electric Storage Battery	12.8	11.7
	Endicott-Johnson	7.1	5.6
	Eureka Vacuum Cleaner	18.4	10.9
	Fairbanks-Morse	6.0	7.8
	General Electric	10.0	10.7
	General Motors	24.4	16.9
	Glidden	9.9	7.5
	Goodrich	6.2	4.8
	Goodyear	8.5	6.9
	Holland Furnace	13.9	11.1
	Hupp Motor	10.9	5.0
	International Cement	9.4	19.2
	International Shoe	15.1	12.2
	International Silver	5.4	5.8
(A)	Liquid Carbonic	9.7	12.2
	Mack Truck	9.0	11.1
	National Cash Register	12.2	13.8
	National Supply	8.7	33.2
	Procter and Gamble	16.3	9.5

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* Red figures.

(A) 1926-1930 only.

	Company	Years 1925-1930	
		Percentage of average earnings to average investment	Percentage of net profits to sales for six year period
(B)	Purity Bakeries	18.4	10.9
	Remington Arms	4.6	7.3
	Reo Motors	8.8	4.3
	Simmons	7.2	8.6
	Spalding, A. G.	8.2	6.0
	St. Regis Paper	5.6	16.8
	Studebaker	9.9	7.8
(C)	U. S. Industrial Alcohol	5.3	3.6
	Warren Brothers	12.4	5.8
	Westinghouse Electric	7.4	8.2
(B)	White Motor	3.6	2.8

(B) 1925-1929 only.
(C) 1925-1928 only.

Per Defendant's Exhibits:

Average of above companies	...	11.6
Average of above companies and other companies for which Gregory does not schedule sales	12.2	...

[fol. 4544]

Exhibit X–96

Western Electric Company, Inc.

Ratio of Sales to Average Investment for Year 1927

(Compiled from Poor's Manual)

Name of Company	Land building, machinery after depreciation	Merchandise	Receivables	Cash	Current Liabilities	Net average investment after depreciation	Per cent Net profits (before interest deductions) to sales
Air Reduction Co., Inc.	1.82	10.11	7.21	4.61	10.11	1.11	17.80
American Ice Company	.62	14.89	12.87	20.39	13.55	.58	15.85
Caterpillar Tractor Co.	3.20	3.42	5.77	18.73	13.27	1.32	22.46
Columbian Carbon Company	.83	3.08	8.78	6.26	10.01	.59	23.04
International Cement Corporation	.74	5.51	12.61	28.22	9.81	.64	19.24
National Supply Company	1.43	.64	5.71	1.76	2.29	.26	36.28
St. Regis Paper Company	1.45	2.59	8.54	11.23	8.84	.86	15.52
Western Electric Company, Inc. (Poor's Manual)	7.56	4.45	6.37	40.15	6.54	2.59	7.62
Western Electric Company, Inc. (Per Defendant's Exhibits):							
Exhibit A-77—Bell Business	8.02	4.01	6.62	39.91	21.99	1.98	
Exhibit A-79—Non-Bell Business	4.87	3.78	8.97	43.22	29.55	1.75	
Total Exhibits A-77 and A-79	7.77	4.00	6.71	40.06	22.27	1.97	

[fol. 4545]

Exhibit X–97

Western Electric Company, Inc.

Results Obtained by Apportioning Combined Plant of Two Companies (Selected from Defendant's Exhibit A–85) on the Basis of the Combined Sales, Year 1930

(Dollars in Thousands)

Company	Plant before depreciation	Net sales	Cost of sales	Combined plant apportioned on basis of cost of sales	Variance as compared with individual plant
Chrysler Corporation	$126,767	207,789	183,138	145,256	18,489
Willys-Overland Co.	59,937	55,581	52,360	41,448	18,489*
	$186,704	263,370	235,498	186,704	......
Glidden Company	$18,182	36,434	29,053	25,480	7,298
National Lead Company	63,224	76,712	63,666	55,926	7,298*
	$81,406	113,146	92,719	81,406	......
American Radiator and Standard Sanitary Corporation	$129,486	108,094	77,336	155,051	25,565
International Cement Corporation	60,761	27,037	17,607	35,196	25,565*
	$190,247	135,131	94,943	190,247	......
Chrysler Corporation	$126,767	207,789	183,138	170,463	43,696
International Cement Corporation	60,761	27,037	17,607	17,065	43,696*
	$187,528	234,826	200,745	187,528	......
American Radiator and Standard Sanitary Corporation	$129,486	108,094	77,336	71,381	58,105*
Procter & Gamble Co.	67,700	192,352	136,384	125,805	58,105
	$197,186	300,446	213,720	197,186	......

*Red figures.

[fol. 4546]

Exhibit X-99

American Telephone and Telegraph Company

Investment in Western Electric Company Common Stock (New York Corporation)

Year	Additions		Balance at end of year	Average investment for year	Dividends received	% Return on average investment
	Date	Amount				
1915	11/17	$6,729,710	6,729,710		584,200	
1916			6,729,710	6,729,710	1,168,400	17.36
1917			6,729,710	6,729,710	1,168,400	17.36
1918	2/20	162,968	6,892,678	6,869,907	1,467,550	21.36
1919	3/29	10,000				
	7/11	200				
	10/7	4,019				
	10/23	3,026	6,909,923	6,901,870	1,468,000	21.27
1920	3/4	35,396,593				
	3/4	2,921,000*				
	4/3	1,710				
	5/29	380				
	6/22	4,100	39,391,706	33,783,796	2,943,095	8.71
1921	3/30	4,500				
	11/23	3,120	39,399,326	39,395,442	3,434,908	8.72
1922	6/9	62,530				
	12/30	14,763,734	54,225,590	39,474,893	3,437,625	8.71
1923	3/9	9,250				
	10/24	2,520	54,237,360	54,233,586	4,914,355	9.06
1924			54,237,360	54,237,360	4,914,460	9.06
1925	3/9	7,740				
	3/11	30,420				
	10/16	5,250				
	12/26	258*	54,280,512	54,269,334	5,531,238	10.19
1926			54,280,512	54,280,512	7,375,210	13.59
1927			54,280,512	54,280,512	7,375,210 47,938,865(A)	13.59 88.32
1928	12/31	9,833,712	64,114,224	54,280,512	11,062,815	20.38
1929	5/31	19,667,478				
	12/2	29,501,469	113,283,171	77,989,245	23,109,039	29.63
1930	3/31	29,518,935	142,802,106	135,523,464	22,864,143	16.87

* Red figures.

(A) Special non-recurring dividend

[fol. 4547]

Exhibit No. X-100

American Telephone and Telegraph Company

Monthly High, Low, and Average Price of Common Stock, 1931

(Per New York Stock Exchange Quotations)

Month	High	Low
January	190¼	176½
February	201¾	185¼
March	199¾	187½
April	190½	176⅛
May	185	162⅜
June	184¾	156½
July	184⅜	169
August	176⅝	164¼
September	172⅜	130½
October	142⅞	121⅛
November	147	124¼
December	131¾	112⅝

Monthly average—165½.
Dividend paid—$9 per share.
Yield.—5.4%.

[fol. 4548]

American Telephone and Telegraph Company

Monthly High, Low, and Average Price of Common Stock

(Per New York Stock Exchange Quotations)

	1930	1929	1928	1927	1926	1925	1924	1923	1922	1921	1920
January:											
High........	226-1/4	222	181	155-3/4	144	136-3/8	129-1/2	124	118-1/2	99-7/8	100-3/8
Low........	216	193-1/4	178-1/4	149-1/4	142-1/2	123-1/2	125-1/8	122	114-1/2	95-3/4	96-1/8
February:											
High........	241-3/8	220-7/8	180-3/8	160-3/8	150-3/4	134-5/8	129-1/8	123-3/8	120	100-1/2	99-7/8
Low........	224-1/8	205-3/8	176-1/2	152-5/8	144-1/8	132-5/8	128-1/4	121-3/4	117-1/2	99-1/2	96-1/8
March:											
High........	266	224	118-3/8	169	149	136	130-7/8	125-1/2	124-1/2	108-1/2	100-3/4
Low........	235-1/2	208	178-5/8	157	141	132	123	121-5/8	119	99-7/8	96-7/8
April:											
High........	174-1/4	238-1/2	190-1/4	172-3/8	146-5/8	136-7/8	128-3/4	123-1/8	124-1/8	107-3/4	97-1/4
Low........	246	214-1/2	179-3/4	161-1/4	143-1/8	132-7/8	124-1/4	121-1/4	120	105-5/8	93-7/8
May:											
High........	251-3/4	232-5/8	211	169-1/4	149-1/2	139-1/2	127	123	133-5/8	108-1/2	94-3/4
Low........	224-1/2	205-1/8	187-3/4	162-1/8	141	136	123	121-1/2	121-1/8	104-1/4	92-1/8
June											
High........	232-1/2	234-1/4	190-3/4	169-3/8	149-7/8	144-1/4	127-1/4	124-3/4	123-3/8	105-1/8	95-1/4
Low........	200-1/8	206-1/2	173-1/4	161-1/2	139-5/8	139-1/2	121-1/8	119-1/8	119-3/4	102-1/2	92-1/2
July:											
High........	221-5/8	273	178-1/2	168-1/2	142-3/8	141-1/8	125-1/4	123	122-1/4	105-1/2	95-1/2
Low........	203-1/4	228	172	162	140	136-7/8	121-3/8	119-1/2	120-1/8	102-3/4	92-7/8
August:											
High........	216	303-1/2	182-1/2	171-3/8	145-3/4	140-3/8	129-3/4	124-5/8	128-1/4	106	97-1/2
Low........	202-1/8	266	173-5/8	165-7/8	141-3/8	137-1/2	124-1/4	121-5/8	118	104-7/8	95-1/8

	1930	1929	1928	1927	1926	1925	1924	1923	1922	1921	1920
September:											
High	219–7/8	310–1/4	183	179–1/2	147–3/4	142–3/8	129	125	127–3/8	108–3/8	100–1/4
Low	202–1/4	280	179	168–7/8	144	138–7/8	126–1/2	121–5/8	120–3/8	105–7/8	97–1/4
October:											
High	208–3/8	305–1/2	188	185–1/2	146–3/4	142–7/8	127–7/8	123–3/4	125–7/8	108–3/8	100–3/8
Low	192–3/4	204	176–3/4	172	144–1/4	139–1/8	125	122–5/8	121	107–5/8	97–1/2
November:											
High	196–7/8	248–1/4	200	180–7/8	149–3/8	142–1/8	129–3/4	125–1/8	125	119–1/2	100–1/4
Low	178–1/2	197–1/4	181–3/4	174–1/8	146–1/2	140–1/2	127–3/4	123	121–1/4	108–1/4	97–3/4
December:											
High	190–5/8	235	195	182–7/8	151	145	134–3/4	128–3/4	125–5/8	117–3/8	99–1/4
Low	170–3/8	209–3/4	185–1/4	177–3/4	148–1/4	141	129–3/8	124–1/2	122–1/8	113–1/8	93–5/8
Total:											
High	2,745–1/2	3,047–3/4	2,262–3/4	2,064–3/4	1,772–3/4	1,681–1/2	1,548–7/8	1,494	1,498–1/2	1,295–3/8	1,181–3/8
Low	2,495–1/2	2,617–3/4	2,142–1/2	1,964–3/8	1,715–3/4	1,630–3/8	1,499	1,460–1/8	1,434–3/4	1,249–3/4	1,141–3/4
Monthly Ave.	218–3/8	236–1/8	183–1/2	167–7/8	145–3/8	138	127	123–1/8	122–1/4	106	96–3/4

(Here follow Exhibits X–104 and X–105, side folios 4549–4572)

P-2

EXHIBIT X-164

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

STATEMENT OF TOTAL REVENUES AND EXPENSES SHOWING SEPARATELY:

1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS)
3. HOLDING COMPANY OPERATIONS) (PARTLY ESTIMATED)

SCHEDULE 300I OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1921

I.C.C. Classification Account number	Title	Total for Company	Long Lines Department Operations (See "Note")	License Contract Operations* (Partly Estimated)	Holding Company (Incl. Miscellaneous Non-License Contract) Operations* (Partly Estimated)
	I. Operating Income				
300	Telephone operating revenues	$58,268,539	$37,033,729	$21,234,810	0
301	Telephone operating expenses	30,404,309	18,049,013	10,804,562	1,550,734
	Net telephone operating revenue	27,864,230	18,984,716	10,430,248	- 1,550,734
302	Other operating revenues	0	0	0	0
303	Other operating expenses	0	0	0	0
	Net revenue from other operations	0	0	0	0
	Total net operating revenues	27,864,230	18,984,716	10,430,248	- 1,550,734
304	Uncollectible operating revenues	350,810	350,810	0	0
305	Taxes assignable to operations	4,278,940	2,220,291	2,058,649	0
	Deductions from net operating revenues	4,629,750	2,571,101	2,058,649	0
	Operating Income	23,234,480	16,413,615	8,371,599	- 1,550,734
	II. Non-Operating Income				
310	Rent revenues from lease of telephone plant	0	0	0	0
311	Miscellaneous rent revenues	56,344	28,334	0	28,0[illegible]0
312	Dividend revenues	38,580,673	0	0	38,580,673
313	Interest revenues	14,596,676	382,661	12,766,885	1,447,130
314	Sinking and other reserve fund accretions	2,112	0	0	2,112
315	Profits from operations of others	0	0	0	0
316	Miscellaneous non-operating revenues	32,052	12,427	840	18,785
	Total non-operating revenues	53,267,857	423,422	12,767,725	40,076,710
320	Rent expense	1,151	0	1,151	0
321	Miscellaneous non-operating expense	0	0	0	0
	Total non-operating expense	1,151	0	1,151	0
322	Non-operating taxes	0	0	0	0
323	Uncollectible non-operating revenues	794,053	430	793,623	0
	Deductions from non-operating revenues	792,902	430	792,472	0
	Non-operating income	52,474,955	422,992	11,975,253	40,076,710
	Gross income	75,709,435	16,836,607	20,346,852	38,525,976
	III. Deductions from Gross Income				
330	Rent deductions for lease of telephone plant	0	0	0	0
331	Rent deductions for telephone offices	1,152,473	650,318	502,155	0
332	Rent deductions for conduits, poles and other supports	160,390	160,390	0	0
333	Rent deductions for instruments and equipment	221,051	221,051	0	0
334	Miscellaneous rent deductions	394,664	393,864	800	0
340	Amortization of landed capital	85,233	85,233	0	0
341	Miscellaneous deductions from income	237,628	11,554	0	226,074
335	Interest deductions for funded debt	16,076,697)			
336	Other interest deductions	1,541,244)			
338	Amortization of debt discount and expense	1,837,351)	6,526,954	16,831,331	38,771,410

333	Rent deductions for instruments and equipment *	221,051	221,051	0	0
334	Miscellaneous rent deductions	394,664	393,864	800	0
340	Amortization of landed capital	85,233	85,233	0	0
341	Miscellaneous deductions from income	237,628	11,554	0	226,074
335	Interest deductions for funded debt	16,076,697)			
336	Other interest deductions	1,541,244)			
338	Amortization of debt discount and expense	1,837,351)	6,526,954	16,831,331	38,771,410
351	Dividend appropriations of income	42,674,403)			
#	Adjustment for "Holding Company" estimated expenses jointly incurred with "License Contract Operations"	x x x	x x x	900,000	900,000
	Total	$64,381,134	$ 8,049,364	$16,434,286	$39,897,484
	Amount transferred to credit of Corporate Surplus	$11,328,601	$ 8,787,243	$ 3,912,566	$ 1,371,508

* The column "License Contract Operations" includes certain items which may be considered in part "Holding Company" items. (See adjustment for "Holding Company" portion - Account Number "#").

Note: Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department. The item appearing opposite Accounts 335-351, incl., represents interest and dividends apportioned to that department.

December 3, 1931.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
STATEMENT OF TOTAL REVENUES AND EXPENSES SHOWING SEPARATELY:
1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. HOLDING COMPANY OPERATIONS (PARTLY ESTIMATED)

SCHEDULE 300I OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1920

I.C.C. Classification Account Number	Title	Total for Company	Long Lines Department Operations (See "Note")	License Contract Operations* (Partly Estimated)	Holding Company (Incl. Miscellaneous Non-License Contract) Operations* (Partly Estimated)
	I. Operating Income				
300	Telephone operating revenues	$56,030,625	$37,051,467	$18,979,158	$ 0
301	Telephone operating expenses	27,827,434	18,657,078	9,170,356	0
	Net telephone operating revenue	28,203,191	18,394,389	9,808,802	0
302	Other operating revenues	0	0	0	0
303	Other operating expenses	0	0	0	0
	Net revenue from other operations	0	0	0	0
	Total net operating revenues	28,203,191	18,394,389	9,808,802	0
304	Uncollectible operating revenues	176,814	176,814	0	0
305	Taxes assignable to operations	3,162,535	1,420,266	1,742,269	0
	Deductions from net operating revenues	3,339,349	1,597,080	1,742,269	0
	Operating income	24,863,842	16,797,309	8,066,533	0
	II. Non-Operating Income				
310	Rent revenues from lease of telephone plant	0	0	0	0
311	Miscellaneous rent revenues	120,065	0	92,045	28,010
312	Dividend revenues	34,800,465	0	0	34,800,465
313	Interest revenues	14,072,645	257,438	13,023,304	791,903
314	Sinking and other reserve fund accretions	2,415	0	0	2,415
315	Profits from operations of others	0	0	0	0
316	Miscellaneous non-operating revenues	23,672	13,495	0	10,177
	Total non-operating revenues	49,019,252	270,933	13,115,349	35,632,970
320	Rent expense	58,450	0	58,450	0
321	Miscellaneous non-operating expense	0	0	0	0
	Total non-operating expense	58,450	0	58,450	0
322	Non-operating taxes	42,821	0	42,821	0
323	Uncollectible non-operating revenues	1,102,889	0	0	1,102,889
	Deductions from non-operating revenues	1,204,160	0	101,271	1,102,889
	Non-operating income	47,815,092	270,933	13,014,078	34,530,081
	Gross income	72,678,934	17,068,242	21,080,611	34,530,081
	III. Deductions from Gross Income				
330	Rent deductions for lease of telephone plant	0	0	0	0
331	Rent deductions for telephone offices	980,274	556,914	423,360	0
332	Rent deductions for conduits, poles and other supports	105,775	105,775	0	0
333	Rent deductions for instruments and equipment	244,395	244,395	0	0
334	Miscellaneous rent deductions	402,999	402,199	800	0
340	Amortization of landed capital	84,019	84,019	0	0
341	Miscellaneous deductions from income	311,134	7,7[illegible]	0	303,407
335	Interest deductions for funded debt	16,456,382)			
336	Other interest deductions	372,164)			
338	Amortization of debt discount and expense	1,900,576)	5,442,269	15,285,182	33,378,466
351	Dividend appropriations of income	35,376,793)			
#	Adjustment for "Holding Company" estimated expenses				

338	Amortization of debt discount and expense	1,930,570)			
351	Dividend appropriations of income	35,376,793)			
#	Adjustment for "Holding Company" estimated expenses jointly incurred with "License Contract Operations" . . .	x x x	x x x	* 845,000	845,000
	Total	$56,234,511	$ 6,843,298	$14,864,342	$34,526,871
	Amount transferred to credit of Corporate Surplus	$16,444,423	$10,224,944	$ 6,216,269	$ 3,210

* The column "License Contract Operations" includes certain items which may be considered in part "Holding Company" items. (See adjustment for "Holding Company" portion - Account Number "#").

Note: Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department. The item appearing opposite Accounts 335 - 351, incl., represents interest and dividends apportioned to that department.

December 7, 1931.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
STATEMENT OF TOTAL REVENUES AND EXPENSES SHOWING SEPARATELY:
1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS (PARTLY ESTIMATED)
3. HOLDING COMPANY OPERATIONS
SCHEDULE 3001 OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1922

I.C.C. Classification Account Number	Title	Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations* (Partly Estimated)	Holding Company (Incl. Miscellaneous Non-License Contract Operations* (Partly Estimated) (See Note B)
	I. Operating Income				
300	Telephone operating revenues	$65,324,890	$42,231,468	$23,090,460	$ 2,962
301	Telephone operating expenses	32,518,918	19,150,028	11,798,293	1,570,597
	Net telephone operating revenue.	32,805,972	23,081,440	11,292,167	←1,567,635
302	Other operating revenues	0	0	0	0
303	Other operating expenses	0	0	0	0
	Net revenue from other operations	0	0	0	0
	Total net operating revenues	0	0	0	0
		32,805,972	23,081,440	11,292,167	← 1,567,635
304	Uncollectible operating revenues	411,849	411,849	0	0
305	Taxes assignable to operations	5,922,173	2,977,129	2,945,044	0
	Deductions from net operating revenues	6,334,022	3,388,978	2,945,044	0
	Operating income.	26,471,950	19,692,462	8,347,123	← 1,567,635
	II. Non-Operating Income				
310	Rent revenues from lease of telephone plant	0	0	0	0
311	Miscellaneous rent revenues	116,736	38,928	49,798	28,010
312	Dividend revenues	44,972,929	0	0	44,972,929
313	Interest revenues	12,668,109	136,924	10,912,945	1,618,240
314	Sinking and other reserve fund accretions	2,221	0	0	2,221
315	Profits from operations of others	0	0	0	0
316	Miscellaneous non-operating revenues	108,990	20,023	5,800	83,167
	Total non-operating revenues	57,868,985	195,875	10,968,543	46,704,567
320	Rent expense	9,607	0	9,607	0
321	Miscellaneous non-operating expense	0	0	0	0
	Total non-operating expense	9,607	0	9,607	0
322	Non-operating taxes	0	0	0	0
323	Uncollectible non-operating revenues	386,519	364	386,155	0
	Deductions from non-operating revenues	396,126	364	395,762	0
	Non-operating income	57,472,859	195,511	10,572,781	46,704,567
	Gross income	83,944,809	19,887,973	18,919,904	45,136,932
	III. Deductions from Gross Income				
330	Rent deductions for lease of telephone plant	0	0	0	0
331	Rent deductions for telephone offices	1,150,637	745,975	404,161	501
332	Rent deductions for conduits, poles and other supports	136,117	136,117	0	0
333	Rent deductions for instruments and equipment	316,922	316,922	0	0
334	Miscellaneous rent deductions	541,554	536,170	2,025	3,359
340	Amortization of landed capital	89,237	89,237	0	0
341	Miscellaneous deductions from income	41,902	17,858	0	24,044
335	Interest deductions for funded debt	13,580,164)	7,049,748	16,721,946	44,697,570
336	Other interest deductions	1,917,848)			
351	Dividend appropriations of income	52,971,252)			
#	Adjustment for "Holding Company" estimated expenses jointly incurred with "License Contract Operations"	x x x	x x x	980,000	980,000
	Total	$70,745,633	$ 8,892,027	$16,148,132	$45,705,474

335	Interest deductions for funded debt	13,580,164)			
336	Other interest deductions	1,917,848)	7,049,746	16,721,946	44,697,570
351	Dividend appropriations of income	52,971,252)			
#	Adjustment for "Holding Company" estimated expenses jointly incurred with "License Contract Operations"	x x x	x x x	980,000	980,000
	Total	$70,745,633	$ 8,892,027	$16,144,132	$45,705,474
	Amount transferred to credit of Corporate Surplus	$13,199,176	$10,993,946	$ 2,771,772	$ 568,542

* The column "License Contract Operations" includes certain items which may be considered in part "Holding Company" items. (See adjustment for "Holding Company" portion Account Number "#").

Notes: A Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department. The item appearing opposite Accounts 335-351, incl., represents interest and dividends apportioned to that department.

B The column "Holding Company (including Miscellaneous Non-License Contract) Operations" includes total revenues and expenses of the Radio Broadcasting Operations (Station WEAF) for which separate subsidiary accounts were maintained.

December 3, 1936.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
STATEMENT OF TOTAL REVENUES AND EXPENSES SHOWING SEPARATELY:
1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS)
3. HOLDING COMPANY OPERATIONS) (PARTLY ESTIMATED)
SCHEDULE 3001 OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1935

I.C.C. Classification					
Account Number	Title	Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations* (Partly Estimated)	Holding Company (Incl. Miscellaneous Non-License Contract) Operations* (Partly Estimated) (See Note B)
	I. Operating Income				
300	Telephone operating revenues	$71,840,735	$45,815,137	$25,893,929	$ 131,669
301	Telephone operating expenses	34,197,386	21,069,889	13,008,662	118,835
	Net telephone operating revenue	37,643,349	24,745,248	12,885,267	12,834
302	Other operating revenues	0	0	0	0
303	Other operating expenses	0	0	0	0
	Net revenue from other operations	0	0	0	0
	Total net operating revenues	37,643,349	24,745,248	12,885,267	12,834
304	Uncollectible operating revenues	644,404	644,404	0	0
305	Taxes assignable to operations	6,581,947	3,378,879	3,184,047	19,021
	Deductions from net operating revenues	7,226,351	4,023,283	3,184,047	19,021
	Operating income	30,416,998	20,721,965	9,701,220	- 6,187
	II. Non-Operating Income				
310	Rent revenues from lease of telephone plant	0	0	0	0
311	Miscellaneous rent revenues	236,536	35,848	169,224	31,464
312	Dividend revenues	54,078,883	0	0	54,078,883
313	Interest revenues	12,998,157	158,784	10,313,295	2,526,078
314	Sinking and other reserve fund accretions	2,330	0	0	2,330
315	Profits from operations of others	0	0	0	0
316	Miscellaneous non-operating revenues	134,320	4,478	32,181	97,661
	Total non-operating revenues	67,450,226	199,110	10,514,700	56,736,416
320	Rent expense	30,802	0	30,186	616
321	Miscellaneous non-operating expense	0	0	0	0
	Total non-operating expense	30,802	0	30,186	616
322	Non-operating taxes	0	0	0	0
323	Uncollectible non-operating revenues	0	0	0	0
	Deductions from non-operating revenues	30,802	0	30,186	616
	Non-operating income	67,419,424	199,110	10,484,514	56,735,800
	Gross income	97,836,422	20,921,075	20,185,734	56,729,613
	III. Deductions from Gross Income				
330	Rent deductions for lease of telephone plant	0	0	0	0
331	Rent deductions for telephone offices	1,182,736	993,994	186,017	2,725
332	Rent deductions for conduits, poles and other supports	144,273	144,273	0	0
333	Rent deductions for instruments and equipment	359,211	352,906	0	6,305
334	Miscellaneous rent deductions	644,224	620,696	2,000	21,528
340	Amortization of landed capital	93,959	93,959	0	0
341	Miscellaneous deductions from income	22,101	20,740	0	1,361
335	Interest deductions for funded debt	11,443,469)			
336	Other interest deductions	2,254,268)	7,814,262	16,365,858	32,792,003
351	Dividend appropriations of income	63,274,388)			
#	Adjustment for "Holding Company" estimated expenses jointly incurred with "License Contract Operations"	x x x	x x x	[illegible]	1,000,000
	Total	$79,418,629	$10,040,833	$15,553,875	$33,823,922

†	Adjustment for "Holding Company" estimated expenses jointly incurred with "License Contract Operations" . . .	x x x	x x x	[illegible]	1,000,000
	Total	$79,418,629	$10,040,833	$15,535,875	$3,823,921
	Amount transferred to credit of Corporate Surplus	$18,417,793	$10,880,242	$ 4,631,859	$ 2,905,692

* The column "License Contract Operations" includes certain items which may be considered in part "Holding Company" items. (See adjustment for "Holding Company" portion - Account Number).

Notes: A Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department. The item appearing opposite Accounts 335-351, incl., represents interest and dividends apportioned to that department.

B The column "Holding Company (including Miscellaneous Non-License Contract Operations" includes total revenues and expenses of the Radio Broadcasting Operations (Station WEAF) for which separate subsidiary accounts were maintained.

August 25, 1931.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY

STATEMENT OF TOTAL REVENUES AND EXPENSES SHOWING SEPARATELY:

1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. HOLDING COMPANY OPERATIONS (PARTLY ESTIMATED)

SCHEDULE 2081 OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1924

I.C.C. Classification Account Number	I.C.C. Classification Title	Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations* (Partly Estimated)	Holding Company (Incl. Miscellaneous Non-License Contract) Operations* (Partly Estimated) (See Note B)
	I. Operating Income				
300	Telephone operating revenues	$ 75,513,105	$46,984,923	$28,303,393	$ 224,790
301	Telephone operating expenses	35,738,029	21,181,657	14,235,851	320,521
	Net telephone operating revenue	39,775,077	25,803,266	14,067,542	95,731
302	Other operating revenues	0	0	0	0
303	Other operating expenses	0	0	0	0
	Net revenue from other operations	0	0	0	0
	Total net operating revenues	39,775,077	25,803,266	14,067,542	95,731
304	Uncollectible operating revenues	641,646	641,131	0	695
305	Taxes assignable to operations	7,597,587	3,848,559	3,739,091	9,937
	Deductions from net operating revenues	8,239,233	4,489,710	3,739,091	10,632
	Operating income	31,535,844	21,313,556	10,328,451	106,163
	II. Non-operating Income				
310	Rent revenues from lease of telephone plant	0	0	0	0
311	Miscellaneous rent revenues	259,926	26,069	201,730	32,127
312	Dividend revenues	63,359,326	0	0	63,359,326
313	Interest revenues	14,570,871	222,746	12,757,552	1,590,573
314	Sinking and other reserve fund accretions	3,234	0	0	3,234
315	Profits from operations of others	0	0	0	0
316	Miscellaneous non-operating revenues	176,373	7,821	54,773	113,779
	Total non-operating revenues	78,369,730	256,636	13,014,055	65,099,039
320	Rent expense	42,963	0	42,104	859
321	Miscellaneous non-operating expense	0	0	0	0
	Total non-operating expense	42,963	0	42,104	859
322	Non-operating taxes	0	0	0	0
323	Uncollectible non-operating revenues	0	0	0	0
	Deductions from non-operating revenues	42,963	0	42,104	859
	Non-operating income	78,326,767	256,636	12,971,951	65,098,180
	Gross income	110,062,611	21,570,192	23,300,402	65,192,017
	III. Deductions from Gross Income				
330	Rent deductions for lease of telephone plant	0	0	0	0
331	Rent deductions for telephone offices	1,070,629	999,865	66,665	4,099
332	Rent deductions for conduits, poles and other supports	205,032	205,032	0	0
333	Rent deductions for instruments and equipment	320,564	318,326	0	2,238
334	Miscellaneous rent deductions	736,240	717,470	2,000	16,770
340	Amortization of landed capital	100,531	100,531	0	0
341	Miscellaneous deductions from income	10,252	7,025	0	17,278
335	Interest deductions for funded debt	13,658,801)			
336	Other interest deductions	2,914,241)	9,026,767	19,993,711	58,670,811
339	Release of premiums on debt - Cr.	0)			
351	Dividend appropriations of income	70,918,227)			

336	Other interest deductions	2,914,241)	9,026,747	19,993,711	58,470,811
339	Release of premiums on debt - Cr.	0)			
351	Dividend appropriations of income	70,918,227)			
#	Adjustment for "Holding Company" estimated expenses jointly incurred with "License Contract Operations"	x x x	x x x	1,200,000	1,200,000
	Total	$ 89,934,517	$11,360,945	$18,862,376	$59,711,196
	Amount transferred to credit of Corporate Surplus	$ 20,128,094	$10,209,247	$ 4,458,026	$ 5,460,821

* The column "License Contract Operations" includes certain items which may be considered in part "Holding Company" items. (See adjustment for "Holding Company" portion - Account Number "#").

Notes: A Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department. The item appearing opposite Accounts 335-351, incl., represents interest and dividends apportioned to that department.

B The column "Holding Company (including Miscellaneous Non-License Contract) Operations" includes total revenues and expenses of the Radio Broadcasting Operations (Station WEAF) for which separate subsidiary accounts were maintained.

August 25, 1931.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
STATEMENT OF TOTAL REVENUES AND EXPENSES SHOWING SEPARATELY:
1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. HOLDING COMPANY OPERATIONS (PARTLY ESTIMATED)

SCHEDULE 800I OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1925

I.C.C. Classification		Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations* (Partly Estimated)	Holding Company (Incl. Miscellaneous Non-License Contract) Operations* (Partly Estimated) (See Note B)
Account number	Title				
	I. Operating Income				
300	Telephone operating revenues	$ 86,534,624	$53,742,951	$31,932,812	$ 858,861
301	Telephone operating expenses	39,471,282	23,137,931	15,736,028	597,323
	Net telephone operating revenue	47,063,342	30,605,020	16,196,784	261,538
302	Other operating revenues	0	0	0	0
303	Other operating expenses	0	0	0	0
	Net revenue from other operations	0	0	0	0
	Total net operating revenues	47,063,342	30,605,020	16,196,784	261,538
304	Uncollectible operating revenues	694,432	693,552	0	880
305	Taxes assignable to operations	8,344,901	4,184,289	4,151,356	9,256
	Deductions from net operating revenues	9,039,333	4,877,841	4,151,356	10,136
	Operating income	38,024,009	25,727,179	12,045,428	251,402
	II. Non-operating Income				
310	Rent revenues from lease of telephone plant	0	0	0	0
311	Miscellaneous rent revenues	262,849	26,114	211,320	25,215
312	Dividend revenues	75,395,327	0	0	75,395,327
313	Interest revenues	17,967,082	320,252	16,333,187	1,313,643
314	Sinking and other reserve fund accretions	5,488	0	0	5,488
315	Profits from operations of others	0	0	0	0
316	Miscellaneous non-operating revenues	293,343	9,620	50,603	233,120
	Total non-operating revenues	93,924,289	355,986	16,595,110	76,973,193
320	Rent expense	62,856	2,011	59,020	1,825
321	Miscellaneous non-operating expense	0	0	0	0
	Total non-operating expense	62,856	2,011	59,020	1,825
322	Non-operating taxes	0	0	0	0
323	Uncollectible non-operating revenues	0	0	0	0
	Deductions from non-operating revenues	62,856	2,011	59,020	1,825
	Non-operating income	93,861,433	353,975	16,536,090	76,971,368
	Gross income	131,885,442	26,081,154	28,581,518	77,222,770
	III. Deductions from Gross Income				
330	Rent deductions for lease of telephone plant	0	0	0	0
331	Rent deductions for telephone offices	1,183,866	1,027,806	155,387	643
332	Rent deductions for conduits, poles and other supports	308,938	308,938	0	0
333	Rent deductions for instruments and equipment	361,833	361,764	0	69
334	Miscellaneous rent deductions	1,033,336	913,385	2,046	117,905
340	Amortization of landed capital	104,409	104,409	0	0
341	Miscellaneous deductions from income	-43,563	-44,824	0	1,261
335	Interest deductions for funded debt	18,902,534)			
336	Other interest deductions	2,728,753)			
339	Release of premiums on debt - Cr.	0)	9,951,263	24,862,012	67,862,438
361	Dividend appropriations of income	81,044,426)			
f	Adjustment for "Holding Company" estimated expenses jointly incurred with "License Contract Operations"	x x x	x x x	- 1,400,000	1,400,000

335	Interest deductions for funded debt	18,902,534)	[illegible]51,263	24,862,012	67,862,438
336	Other interest deductions	2,728,753)			
339	Release of premiums on debt - Cr.	0)			
351	Dividend appropriations of income	81,044,426)			
#	Adjustment for "Holding Company" estimated expenses jointly incurred with "License Contract Operations" . . .	x x x	x x x	+ 1,400,000	1,400,000
	Total	$105,324,822	$12,323,111	$23,619,395	$69,382,316
	Amount transferred to credit of Corporate Surplus	$ 26,360,620	$13,558,043	$ 4,962,123	$ 7,840,654

* The column "License Contract Operations" includes certain items which may be considered in part "Holding Company" items. (See adjustment for "Holding Company" portion - account Number "#".

August 25, 1931.

Notes: A Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department. The item appearing opposite Accounts 335-351, incl., represents interest and dividends apportioned to that department.

B The column "Holding Company (including Miscellaneous Non-License Contract) Operations" includes total revenues and expenses of the Radio Broadcasting Operations (Station WE F) for which separate subsidiary accounts were maintained.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
STATEMENT OF TOTAL REVENUES AND EXPENSES SHOWING SEPARATELY
1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS (PARTLY ESTIMATED)
3. HOLDING COMPANY OPERATIONS

SCHEDULE 300I OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1926

I.C.C. Classification Account Number	I.C.C. Classification Title	Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations* (Partly Estimated)	Holding Company (Incl. Miscellaneous Non-License Contract Operations* (Partly Estimated (See Note B)
	I. Operating Income				
300	Telephone operating revenues	$ 91,323,925	$59,242,807	$31,548,380	$ 532,738
301	Telephone operating expenses	45,035,389	26,697,702	17,976,126	361,561
	Net telephone operating revenue	46,288,536	32,545,105	13,572,254	171,177
302	Other operating revenues	0	0	0	0
303	Other operating expenses	0	0	0	0
	Net revenue from other operations	0	0	0	0
	Total net operating revenues	46,288,536	32,545,105	13,572,254	171,177
304	Uncollectible operating revenues	741,968	728,468	0	13,500
305	Taxes assignable to operations	8,042,783	4,632,214	3,408,795	1,774
	Deductions from net operating revenues	8,784,751	5,360,682	3,408,795	15,274
	Operating income	37,503,785	27,184,423	10,163,459	155,903
	II. Non-operating Income				
310	Rent revenues from lease of telephone plant	0	0	0	0
311	Miscellaneous rent revenues	91,165	91,165	0	0
312	Dividend revenues	91,963,935	0	0	91,963,935
313	Interest revenues	14,155,209	444,273	13,262,110	448,826
314	Sinking and other reserve fund accretions	17,610	0	0	17,610
315	Profits from operations of others	0	0	0	0
316	Miscellaneous non-operating revenues	359,122	27,779	0	331,343
	Total non-operating revenues	106,587,041	563,217	13,262,110	92,761,714
320	Rent expense	1,128	1,128	0	0
321	Miscellaneous non-operating expense	0	0	0	0
	Total non-operating expense	1,128	1,128	0	0
322	Non-operating taxes	0	0	0	0
323	Uncollectible non-operating revenues	0	0	0	0
	Deductions from non-operating revenues	1,128	1,128	0	0
	Non-operating income	106,585,913	562,089	13,262,110	92,761,714
	Gross income	144,089,698	27,746,512	23,425,569	92,917,617
	III. Deductions from Gross Income				
330	Rent deductions for lease of telephone plant	0	0	0	0
331	Rent deductions for telephone offices	2,339,427	1,232,496	1,095,176	11,755
332	Rent deductions for conduits, poles and other supports	191,991	191,991	0	0
333	Rent deductions for instruments and equipment	1,264,368	1,264,368	0	0
334	Miscellaneous rent deductions	1,249,709	1,172,304	2,045	75,360
340	Amortization of landed capital	111,328	111,328	0	0
341	Miscellaneous deductions from income	1,488	30	0	1,458
335	Interest deductions for funded debt	19,001,445)			

334	Miscellaneous rent deductions	1,249,709	1,172,304	2,045	75,360
340	Amortization of landed capital	111,328	111,328	0	0
341	Miscellaneous deductions from income	1,488	30	0	1,458
335	Interest deductions for funded debt	19,001,445)			
336	Other interest deductions	2,939,541)			
339	Release of premiums on debt - Cr.	0)	11,066,553	20,352,648	77,018,131
351	Dividend appropriations of income	86,496,346)			
=	Adjustment for "Holding Company" estimated expenses jointly incurred with "License Contract Operations"	x x x	x x x	1,600,000	1,600,000
	Total	$113,595,643	$15,[illegible]39,[illegible]7[illegible]	$19,640,869	$78,706,704
	Amount transferred to credit of Corporate Surplus	$ 30,494,055	$12,707,442	$ 3,575,700	$14,210,[illegible]13

* The column "License Contract Operations" includes certain items which may be considered in part "Holding Company" items. (See adjustment for "Holding Company" portion - Account Number "=").

Notes: A. Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department. The item appearing opposite Accounts 335-351, incl., represents interest and dividends apportioned to that Department.

B. The column "Holding Company (including Miscellaneous Non-License Contract Operations" includes total revenues and expenses of the Radio Broadcasting Operations (Station WEAF) for which separate subsidiary accounts were maintained.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
STATEMENT OF TOTAL REVENUES AND EXPENSES SHOWING SEPARATELY:
1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. HOLDING COMPANY OPERATIONS (PARTLY ESTIMATED)

SCHEDULE 2001 OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1927

I.C.C. Classification		Total for Company	Long Lines Department Operations (See "Note")	License Contract Operations* (Partly Estimated)	Holding Company (Incl. Miscellaneous Non-License Contract) Operations* (Partly Estimated)
Account Number	Title				
	I. Operating Income				
300	Telephone operating revenues	$ 99,866,791	$65,624,107	$34,242,684	$ 0
301	Telephone operating expenses	51,145,753	31,468,612	19,648,269	28,872
	Net telephone operating revenue	48,721,038	34,155,495	14,594,415	X 28,872
302	Other operating revenues	0	0	0	0
303	Other operating expenses	0	0	0	0
	Net revenue from other operations	0	0	0	0
	Total net operating revenues	48,721,038	34,155,495	14,594,415	X 28,872
304	Uncollectible operating revenues	833,609	830,590	0	3,019
305	Taxes assignable to operations	7,777,411	4,295,118	3,340,070	142,223
	Deductions from net operating revenues	8,611,020	5,125,708	3,340,070	145,242
	Operating income	40,110,018	29,029,787	11,254,345	X 174,114
	II. Non-operating Income				
310	Rent revenues from lease of telephone plant	0	0	0	0
311	Miscellaneous rent revenues	45,599	45,599	0	0
312	Dividend revenues	147,895,600	0	10,280	147,885,320
313	Interest revenues	15,998,396	502,617)	14,215,811	1,279,968
314	Sinking and other reserve fund accretions	25,324	0)	0	25,324
315	Profits from operations of others	0	0	0	0
316	Miscellaneous non-operating revenues	631,980	51,452	0	580,528
	Total non-operating revenues	164,596,899	599,668	14,226,091	149,771,140
320	Rent expense	0	0	0	0
321	Miscellaneous non-operating expense	0	0	0	0
	Total non-operating expense	0	0	0	0
322	Non-operating taxes	0	0	0	0
323	Uncollectible non-operating revenues	0	0	0	0
	Deductions from non-operating revenues	0	0	0	0
	Non-operating income	164,596,899	599,668	14,226,091	149,771,140
	Gross income	204,706,917	29,629,455	25,480,436	149,597,026
	III. Deductions from Gross Income				
330	Rent deductions for lease of telephone plant	0	0	0	0
331	Rent deductions for telephone offices	2,646,128	1,444,157	1,198,052	3,919
332	Rent deductions for conduits, poles and other supports	201,191	201,191	0	0
333	Rent deductions for instruments and equipment	1,573,857	1,573,857	0	0
334	Miscellaneous rent deductions	1,828,675	1,825,710	2,965	0
340	Amortization of landed capital	132,712	132,712	0	0
341	Miscellaneous deductions from income	1,594	30	0	1,564
335	Interest deductions for funded debt	18,908,325)	13,346,639	20,442,471	85,361,809
336	Other interest deductions	2,860,660)			
339	Release of premiums on debt - Cr.	0)			
351	Dividend appropriations of income	97,379,934)			

340	Amortization of landed capital	132,712	132,712	0	0
341	Miscellaneous deductions from income	1,594	30	0	1,564
335	Interest deductions for funded debt	18,908,325)			
336	Other interest deductions	2,860,660)			
339	Release of premiums on debt - Cr.	0)			
351	Dividend appropriations of income	97,379,934)	13,344,639	20,442,471	85,361,809
#	Adjustment for "Holding Company" estimated expenses jointly incurred with "License Contract Operations"	x x x	x x x	X 1,800,000	1,800,000
	Total	$125,533,076	$18,522,296	$19,843,488	$ 87,167,292
	Amount transferred to credit of Corporate Surplus	$ 79,173,841	$11,107,159	$ 5,636,948	$ 62,429,734

* The column "License Contract Operations" includes certain items which may be considered in part "Holding Company" items. (See adjustment for "Holding Company" portion--Account Number "#").

Note: Separate subsidiary accounts are currently maintained recording the results of the operations of the Long Lines Department. The item appearing opposite Accounts 335-351, incl., represents interest and dividends apportioned to that department.

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AMERIC.N TELEPHONE AND TELEGR.PH COMPANY

STATEMENT OF TOT.L REVENUES .ND EXPENSES SHOWING SEPAR.TELY:

1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. HOLDING COMPANY OPERATIONS (PARTLY ESTIM.TED)

SCHEDULE 300I OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YE.R 1938

I.C.C. Classification Account Number	I.C.C. Classification Title	Total for Company	Long Lines Department Operations (See "Note")	License Contract Operations* (Partly Estimated)	Holding Company (Incl. Miscellaneous Non-License Contract) Operations* (Partly Estimated)
	I. Operating Income				
300	Telephone operating revenues	$100,583,826	$81,379,664	$19,204,162	$ 0
301	Telephone operating expenses	54,417,425	38,589,869	15,762,903	64,653
	Net telephone operating revenue	46,166,401	42,789,795	3,441,259	X 64,653
302	Other operating revenues	0	0	0	0
303	Other operating expenses	0	0	0	0
	Net revenue from other operations	0	0	0	0
	Total net operating revenues	46,166,401	42,789,795	3,441,259	X 64,653
304	Uncollectible operating revenues	925,034	925,034	0	0
305	Taxes assignable to operations	7,741,067	6,068,856	1,671,872	339
	Deductions from net operating revenues	8,666,101	6,993,890	1,671,872	339
	Operating income	37,500,300	35,795,905	1,769,387	X 64,992
	II. Non-operating Income				
310	Rent revenues from lease of telephone plant	0	0	0	0
311	Miscellaneous rent revenues	52,583	52,583	0	0
312	Dividend revenues	119,176,197	0	0	119,176,197
313	Interest revenues	15,420,239	566,338	14,606,859	247,042
314	Sinking and other reserve fund accretions	34,600	0	0	34,600
315	Profits from operations of others	0	0	0	0
316	Miscellaneous non-operating revenues	514,532	8,504	0	506,028
	Total non-operating revenues	135,198,151	627,425	14,606,859	119,963,867
320	Rent expense	0	0	0	0
321	Miscellaneous non-operating expense	0	0	0	0
	Total non-operating expense	0	0	0	0
322	Non-operating taxes	0	0	0	0
323	Uncollectible non-operating revenues	0	0	0	0
	Deductions from non-operating revenues	0	0	0	0
	Non-operating income	135,198,151	627,425	14,606,859	119,963,867
	Gross Income	172,698,451	36,423,330	16,376,244	119,898,875
	III. Deductions from Gross Income				
330	Rent deductions for lease of telephone plant	0	0	0	0
331	Rent deductions for telephone offices	3,189,532	1,895,771	1,289,238	4,523
332	Rent deductions for conduits, poles and other supports	257,755	257,755	0	0
333	Rent deductions for instruments and equipment	2,263,198	2,263,198	0	0
334	Miscellaneous rent deductions	1,564,117	1,561,340	2,777	0
340	Amortization of landed capital	154,242	154,242	0	0
341	Miscellaneous deductions from income	1,558	30	0	1,528
335	Interest deductions for funded debt	18,831,03.)			
336	Other interest deductions	5,266,528)			
339	Release of premiums on debt - CR.	0)	16,179,436	16,551,436	92,180,126
351	Dividend appropriations of income	103,821,44.)			

335	Interest deductions for funded debt	18,831,03[illegible])	16,179,436	16,551,436	92,186,126
336	Other interest deductions	3,266,528)			
338	Release of premiums on debt - CR.	0)			
351	Dividend appropriations of income	103,821,44[illegible])			
#	Adjustment for "Holding Company" estimated expenses jointly incurred with "License Contract Operations" . . .	x x x	x x x	X2,000,000	2,000,000
	Total	$133,349,4[illegible]0	$21,311,772	$17,843,451	$94,194,177
	Amount transferred to credit of Corporate Surplus	$ 39,349,051	$15,111,558	X$ 1,467,205	$ 25,704,698

* The column "License Contract Operations" includes certain items which may be considered in part "Holding Company" items. (See adjustment for "Holding Company" portion - Account Number "#").

Note: Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department. The item appearing opposite Accounts 335-351, incl., represents interest and dividends apportioned to that department.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
STATEMENT OF TOTAL REVENUES AND EXPENSES SHOWING SEPARATELY:
1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS (PARTLY ESTIMATED)
3. HOLDING COMPANY OPERATIONS
SCHEDULE 300I OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1939

I.C.C. Classification		Total for Company	Long Lines Department Operations (See "Note")	License Contract Operations* (Partly Estimated)	Holding Company (Incl. Miscellaneous Non-License Contract) Operations* (Partly Estimated)
Account Number	Title				
	I. Operating Income				
300	Telephone operating revenues	$111,890,841	$96,011,714	$15,878,623	$ 0
301	Telephone operating expenses	65,043,863	46,929,661	17,824,300	59,998
	Net telephone operating revenue	46,846,978	49,082,053	- 1,94 ,677	- 59,998
302	Other operating revenues	0	0	0	0
303	Other operating expenses	0	0	0	0
	Net revenue from other operations	0	0	0	0
	Total net operating revenues	46,846,978	49,082,053	- 1,995,577	- 59,998
304	Uncollectible operating revenues	1,100,117	1,100,117	0	0
305	Taxes assignable to operations	6,626,745	5,618,032	1,018,102	611
	Deductions from net operating revenues	7,726,862	6,718,149	1,018,102	611
	Operating income	39,109,116	42,363,904	- 2,966,779	- 60,509
	II. Non-operating Income				
310	Rent revenues from lease of telephone plant	0	0	0	0
311	Miscellaneous rent revenues	52,424	52,424	0	0
312	Dividend revenues	140,911,891	0	0	140,911,891
313	Interest revenues	21,263,033	1,131,894	17,903,105	2,228,034
314	Sinking and other reserve fund accretions	21,380	0	0	21,380
315	Profits from operations of others	0	0	0	0
316	Miscellaneous non-operating revenues	1,257,036	13,738	0	1,243,298
	Total non-operating revenues	163,805,666	1,198,056	17,903,105	144,706,505
320	Rent expense	0	0	0	0
321	Miscellaneous non-operating expense	0	0	0	0
	Total non-operating expense	0	0	0	0
322	Non-operating taxes	0	0	0	0
323	Uncollectible non-operating revenues	0	0	0	0
	Deductions from non-operating revenues	0	0	0	0
	Non-operating income	163,805,666	1,198,056	17,903,105	144,706,505
	Gross income	202,915,182	43,331,960	14,939,326	144,645,896
	III. Deductions from Gross Income				
330	Rent deductions for lease of telephone plant	0	0	0	0
331	Rent deductions for telephone offices	3,678,194	2,366,627	1,302,483	9,084
332	Rent deductions for conduits, poles and other supports	290,373	290,373	0	0
333	Rent deductions for instruments and equipment	3,106,928	3,106,928	0	0
334	Miscellaneous rent deductions	1,822,802	1,817,239	5,563	0
340	Amortization of landed capital	192,405	192,405	0	0
341	Miscellaneous deductions from income	1,608	30	0	1,978
335	Interest deductions for funded debt	22,069,428)			
336	Other interest deductions	5,379,364)			
339	Release of premiums on debt - Cr.	13,873)	19,330,181	21,743,309	103,709,105
351	Dividend appropriations of income	116,378,771)			
#	Adjustment for "Holding Company" estimated expenses jointly incurred with "License Contract Operations"	x x x	x x x	- 2,250,000	2,250,000
	Total	$133,104,193	$27,332,783	$20,801,648	$106,989,987

330	Release of premiums on debt - Cr.	[illegible]			
331	Dividend appropriations of income	116,378,771)		0	
#	Adjustment for "Holding Company" estimated expenses jointly incurred with "License Contract Operations"	x x x	x x x	,250,000	2,250,000
	Total	$153,104,195	$27,332,783	$20.801.648	$104,969.767
	Amount transferred to credit of Corporate Surplus	$ 49,810,987	$16,199,177	5,563,319	$ 39,474,129

* The column "License Contract Operations" includes certain items which may be considered in part "Holding Company" items. (See adjustment for "Holding Company" portion - Account Number "#").

Note: Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department. The item appearing opposite Accounts 335-331, incl., represents interest and dividends apportioned to that department.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY

STATEMENT OF TOTAL REVENUES AND EXPENSES SHOWING SEPARATELY:

1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS)
3. HOLDING COMPANY OPERATIONS) (PARTLY ESTIMATED)

SCHEDULE 300I OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1936

I.C.C. Classification Account Number	Title	Total for Company	Long Lines Department Operations (See "Note")	License Contract Operations* (Partly Estimated)	Holding Company (Incl. Miscellaneous Non-License Contract) Operations* (Partly Estimated)
	I. Operating Income				
300	Telephone operating revenues	$114,560,865	$ 98,049,726	$ 16,511,139	$ 0
301	Telephone operating expenses	75,954,313	53,229,447	22,111,914	612,952
	Net telephone operating revenue	38,606,552	44,820,279	⌐5,600,775	⌐612,952
302	Other operating revenues	0	0	0	0
303	Other operating expenses	0	0	0	0
	Net revenue from other operations	0	0	0	0
	Total net operating revenues	38,606,552	44,820,279	⌐5,600,775	⌐612,952
304	Uncollectible operating revenues	1,240,846	1,243,336	0	2,490
305	Taxes assignable to operations	4,829,862	3,836,136	988,898	4,828
	Deductions from net operating revenues	6,070,708	5,079,472	988,898	2,338
	Operating income	32,535,844	39,740,807	⌐6,589,673	⌐615,290
	II. Non-operating Income				
310	Rent revenues from lease of telephone plant	0	0	0	0
311	Miscellaneous rent revenues	53,688	53,688	0	0
312	Dividend revenues	148,178,886	0	0	148,178,886
313	Interest revenues	28,026,861	1,725,698	19,416,159	6,885,004
314	Sinking and other reserve fund accretions	18,031	0	0	18,031
315	Profits from operations of others	0	0	0	0
316	Miscellaneous non-operating revenues	1,176,539	32,980	0	1,143,559
	Total non-operating revenues	177,454,005	1,812,366	19,416,159	156,225,480
320	Rent expense	0	0	0	0
321	Miscellaneous non-operating expense	0	0	0	0
	Total non-operating expense	0	0	0	0
322	Non-operating taxes	0	0	0	0
323	Uncollectible non-operating revenues	0	0	0	0
	Deductions from non-operating revenues	0	0	0	0
	Non-operating income	177,454,005	1,812,366	19,416,159	156,225,480
	Gross income	209,989,849	41,553,173	12,826,486	155,610,190
	III. Deductions from Gross Income				
330	Rent deductions for lease of telephone plant	0	0	0	0
331	Rent deductions for telephone offices	4,823,305	3,448,079	1,367,501	7,725
332	Rent deductions for conduits, poles and other supports	434,001	434,001	0	0
333	Rent deductions for instruments and equipment	4,404,272	4,404,272	0	0
334	Miscellaneous rent deductions	2,097,309	2,089,740	7,569	0
340	Amortization of landed capital	249,022	249,022	0	0
341	Miscellaneous deductions from income	1,455	29	0	1,426
335	Interest deductions for funded debt	25,438,441)			
336	Other interest deductions	7,017,835)			
339	Release of premiums on debt - Cr.	20,498)	24,417,353	25,186,540	122,069,958
351	Dividend appropriations of income	139,238,073)			

335	Interest deductions for funded debt	25,438,441)			
336	Other interest deductions	7,017,835)			
338	Release of premiums on debt - Cr.	20,498)	24,417,355	25,186,540	122,069,958
351	Dividend appropriations of income	139,238,073)			
	Adjustment for "Holding Company" estimated expenses jointly incurred with "License Contract Operations"	x x x	x x x	2,500,000	2,500,000
	Total	$183,683,215	$ 35,042,496	$ 24,061,610	$124,579,109
	Amount transferred to credit of Corporate Surplus	$ 26,306,634	$ 6,510,677	$ 11,235,124	$ 31,031,081

* The column "License Contract Operations" includes certain items which may be considered in part "Holding Company" items. (See adjustment for "Holding Company" portion - Account Number "f").

Note: Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department. The item appearing opposite Accounts 335-351, incl., represents interest and dividends apportioned to that Department.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY

STATEMENT OF TOTAL REVENUES AND EXPENSES SHOWING SEPARATELY:

1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. PERMANENT INVESTMENTS IN LICENSEE COMPANIES
4. OTHER ACTIVITIES

SCHEDULE 300I OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1931

I.C.C. Classification						
Account Number	Title	Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations (Partly Estimated)*	Permanent Investments in Licensee Companies*	Other Activities (Partly Estimated)*
	I. Operating Income					
300	Telephone operating revenues	$109,317,961	$93,139,746	$16,135,455	$ 0	$ 42,760
301	Telephone operating expenses	69,620,770	49,244,717	20,041,557	0	334,496
	Net telephone operating revenue	39,697,191	43,895,029	X 3,906,102	0	X 291,736
302	Other operating revenues	0	0	0	0	0
303	Other operating expenses	0	0	0	0	0
	Net revenue from other operations	0	0	0	0	0
	Total net operating revenues	39,697,191	43,895,029	X 3,906,102	0	X 291,736
304	Uncollectible operating revenues	1,264,782	1,264,782	0	0	0
305	Taxes assignable to operations	6,084,839	4,546,782	1,537,360	0	697
	Deductions from net operating revenues	7,349,621	5,811,564	1,537,360	0	697
	Operating income	32,347,570	38,083,465	X 5,443,462	0	X 292,433
	II. Non-operating Income					
310	Rent revenues from lease of telephone plant	0	0	0	0	0
311	Miscellaneous rent revenues	59,560	59,560	0	0	0
312	Dividend revenues	150,135,884	0	0	139,443,081	10,692,803
313	Interest revenues	27,138,694	2,378,953	16,976,469	26,920	7,756,352
314	Sinking and other reserve fund accretions	18,233	0	0	0	18,233
315	Profits from operations of others	0	0	0	0	0
316	Miscellaneous non-operating revenues	1,171,717	36,116	0	0	1,135,601
	Total non-operating revenues	178,524,088	2,474,629	16,976,469	139,470,001	19,602,989
320	Rent expense	0	0	0	0	0
321	Miscellaneous non-operating expense	0	0	0	0	0
	Total non-operating expense	0	0	0	0	0
322	Non-operating taxes	0	0	0	0	0
323	Uncollectible non-operating revenues	0	0	0	0	0
	Deductions from non-operating revenues	0	0	0	0	0
	Non-operating income	178,524,088	2,474,629	16,976,469	139,470,001	19,602,989
	Gross income	210,871,658	40,558,094	11,533,007	139,470,001	19,310,556
	III. Deductions from Gross Income					
330	Rent deductions for lease of telephone plant	0	0	0	0	0
331	Rent deductions for telephone offices	5,309,871	3,940,544	1,356,339	0	12,988
332	Rent deductions for conduits, poles and other supports	577,281	577,281	0	0	0
333	Rent deductions for instruments and equipment	5,271,874	5,271,874	0	0	0
334	Miscellaneous rent deductions	1,683,209	1,677,823	5,386	0	0
340	Amortization of landed capital	210,379	210,379	0	0	0
341	Miscellaneous deductions from income	1,633	30	0	0	1,603
335	Interest deductions for funded debt	23,415,572)				
336	Other interest deductions	7,737,702)				
339	Release of premiums on debt - Cr.	2,396)	28,359,418	B)23,126,991	117,477,133	25,775,810
351	Dividend appropriations of income	163,588,474)				
	Total	x x x x	x x x x	x x x x	117,477,133	25,790,401
	Net	x x x x	x x x x	x x x x	21,992,868	X 6,479,845

$15,513,023

Adjustment in respect of costs incurred jointly for

351	Dividend appropriations of income	163,588,474)				
	Total	x x x x	x x x x	x x x x	117,477,133	25,790,401
	Net	x x x x	x x x x	x x x x	21,992,868	X 6,479,845
					$15,513,023	
	Adjustment in respect of costs incurred jointly for (a) License Contract Services and (b) for Other Activities of the Company *	x x x x	x x x x	X 2,500,000	2,500,000	
	Total	207,793,599	40,037,349	21,988,716	x x x x	
	Amount transferred to credit of Corporate Surplus	$ 3,078,059	$ 520,745	X $10,455,709	$13,013,023	

* The column "License Contract Operations" includes certain items of costs which may be considered allocable in part under "Permanent Investments in Licensee Companies" or under "Other Activities". These items comprise the costs incurred jointly for License Contract Services and for other operations of the company. (See adjustment in respect of such items under Account Number "#".)

Notes: A. Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department. The item appearing opposite Accounts 335-351, inclusive, represents interest and dividends apportioned to that department.

B Includes Amortization of Debt Discount and Expense.

X Red figures

EXHIBIT X-105

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
STATEMENT OF AVERAGE ASSETS SHOWING SEPARATELY:
1. LONG LINES DEPARTMENT
2. LICENSE CONTRACT OPERATIONS) (PARTLY ESTIMATED)
3. HOLDING COMPANY OPERATIONS)

SCHEDULE 200A OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1920

I.C.C. Classification		Total for Company	Long Lines Department Operations (See "Note")	License Contract Operations* (Partly Estimated)	Holding Company (Including Miscellaneous Non-License Contract) Operations* (Partly Estimated)
Account Number	Title				
101	Fixed Capital	$107,645,614	$82,023,437	$ 25,112,910	$ 509,267
104	Construction Work in Progress	5,684,515	5,684,515	0	0
105	Investment Securities	589,722,446	0	23,830,995	565,891,451
110	Advances to System Corporations for Construction, etc.	163,768,614	0	163,768,614	0
111	Miscellaneous Investments	553,134	0	553,134	0
	Total Investment	867,374,323	87,707,952	213,265,653	566,400,718
112	Cash and Deposits	27,394,245	875,777	26,508,468	10,000
115	Employees' Working Funds	1,238,096	1,1[illegible]0,350	97,746	0
116	Marketable Securities	1,102,422	0	1,102,422	0
117	Bills Receivable	20,215,026	3,009	10,135,153	10,076,864
118	Due from Subscribers and Agents	214,346	214,346	0	0
119	Accounts Receivable from System Corporations	7,784,250	3,397,182	3,720,913	666,155
120	Miscellaneous Accounts Receivable	12,195,299	287,439	6,536,406	5,371,454
122	Materials and Supplies	973,109	441,634	531,475	0
124	Unmatured Interest, Dividends and Rents Receivable	1,063,006	0	0	1,063,006
	Total Working Assets and Accrued Income	72,179,799	6,359,737	48,632,583	17,187,479
125	Sinking Fund Assets	11,738	0	0	11,738
126	Insurance and Other Reserve Fund Assets	34,000	0	0	34,000
128	Prepayments	25,315	25,315	0	0
136	Other Suspense	718,646	491,928	0	226,718
	Total Deferred Debit Items	789,699	517,243	0	272,456
	Grand Total	$940,343,821	$94,584,932	$261,898,236	$583,860,653

* The column "License Contract Operations" include certain relatively minor amounts which may be considered in part "Holding Company" items. On the other hand the column "Holding Company Operations" includes items which are definitely related to License Contract Operations but have not been included in column "License Contract Operations" since no part of the cost of carrying the investment therein has been included in the computation of "Estimate of Total Costs Incurred in Rendering License Contract Services."

Note: Separate subsidiary accounts are currently maintained showing assets devoted to Long Lines Department Operations.

December 3, 1931.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

STATEMENT OF AVERAGE ASSETS SHOWING SEPARATELY:
1. LONG LINES DEPARTMENT
2. LICENSE CONTRACT OPERATIONS) (PARTLY ESTIMATED)
3. HOLDING COMPANY OPERATIONS)

SCHEDULE 200A OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1921

I.C.C. Classification Account Number	Title	Total for Company	Long Lines Department Operations (See "Note")	License Contract Operations* (Partly Estimated)	Holding Company (Including Miscellaneous Non-License Contract) Operations* (Partly Estimated)
101	Fixed Capital	$122,104,120	$ 90,456,740	$ 31,138,113	$ 509,267
104	Construction Work in Progress	6,678,870	6,678,870	0	0
105	Investment Securities	629,536,783	0	21,401,537	608,135,246
110	Advances to System Corporations for Construction, etc.	181,706,863	0	168,183,557	13,523,306
	Total Investment	940,026,636	97,135,610	220,723,207	622,167,819
112	Cash and Deposits	31,225,193	1,009,150	29,817,482	398,561
115	Employees' Working Funds	1,227,565	1,118,417	107,708	1,440
116	Marketable Securities	612,448	0	612,448	0
117	Bills Receivable	15,420,659	817	11,078,656	4,341,186
118	Due from Subscribers and Agents	220,224	220,224	0	0
119	Accounts Receivable from System Corporations	4,969,724	3,353,670	431,862	1,184,192
120	Miscellaneous Accounts Receivable	2,178,186	358,728	1,559,446	260,012
122	Materials and Supplies	1,823,954	1,342,430	481,524	0
124	Unmatured Interest, Dividends and Rents Receivable	950,932	0	0	950,932
	Total Working Assets and Accrued Income	58,628,885	7,403,436	44,089,126	7,136,323
125	Sinking Fund Assets	15,850	0	0	15,850
126	Insurance and Other Reserve Fund Assets	34,000	0	0	34,000
128	Prepayments	37,687	37,653	0	34
136	Other Suspense	538,407	401,517	0	136,890
	Total Deferred Debit Items	625,944	439,170	0	186,774
	Grand Total	$999,281,465	$104,978,216	$264,812,333	$629,490,916

* The column "License Contract Operations" includes certain relatively minor amounts which may be considered in part "Holding Company" items. On the other hand the column "Holding Company Operations" includes items which are definitely related to License Contract Operations but have not been included in column "License Contract Operations" since no part of the cost of carrying the investment therein has been included in the computation of "Estimate of Total Costs Incurred in Rendering License Contract Services."

Note: Separate subsidiary accounts are currently maintained showing assets devoted to Long Lines Department Operations.

December 3, 1931.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
STATEMENT OF AVERAGE ASSETS SHOWING SEPARATELY:
1. LONG LINES DEPARTMENT
2. LICENSE CONTRACT OPERATIONS)
3. HOLDING COMPANY OPERATIONS) (PARTLY ESTIMATED)

SCHEDULE 200A OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1922

I.C.C. Classification		Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations* (Partly Estimated)	Holding Company (Including Miscellaneous Non-License Contract) Operations* (Partly Estimated) (See Note B)
Account Number	Title				
101	Fixed Capital	$ 139,715,162	$100,988,248	$ 38,214,766	$ 512,148
104	Construction Work in Progress	2,510,646	2,510,646	0	0
105	Investment Securities	718,419,837	0	13,561,573	704,858,264
110	Advances to System Corporations for Construction, etc.	135,028,195	0	121,428,974	13,599,221
	Total Investment	995,673,840	103,498,894	173,205,313	718,969,633
112	Cash and Deposits	28,612,876	1,165,484	27,138,872	308,520
115	Employees' Working Funds	1,262,735	1,131,108	130,147	1,480
116	Marketable Securities	8,519,463	9	8,519,437	17
117	Bills Receivable	48,957,219	2,031	45,227,371	3,727,817
118	Due from Subscribers and Agents	243,862	243,862	0	0
119	Accounts Receivable from System Corporations	6,024,940	3,867,387	1,063,943	1,093,610
120	Miscellaneous Accounts Receivable	1,341,627	438,395	404,200	499,032
122	Materials and Supplies	2,598,046	1,899,196	698,850	0
124	Unmatured Interest, Dividends and Rents Receivable	1,464,379	256	0	1,464,123
	Total Working Assets and Accrued Income	99,025,147	8,747,728	83,182,820	7,094,599
125	Sinking Fund Assets	40	0	0	40
126	Insurance and Other Reserve Fund Assets	35,231	0	0	35,231
128	Prepayments	73,335	71,102	0	2,233
136	Other Suspense	523,352	459,984	0	63,368
	Total Deferred Debit Items	631,958	531,086	0	100,872
	Grand Total	$1,095,330,945	$112,777,708	$256,388,133	$726,165,040

* The column "License Contract Operations" includes certain relatively minor amounts which may be considered in part "Holding Company" items. On the other hand the column "Holding Company Operations" includes items which are definitely related to License Contract Operations but have not been included in column "License Contract Operations" since no part of the cost of carrying the investment therein has been included in the computation of "Estimate of Total Costs Incurred in Rendering License Contract Services."

Note; A Separate subsidiary accounts are currently maintained showing assets devoted to Long Lines Department Operations.

B The column "Holding Company (including Miscellaneous Non-License Contract) Operations" includes assets devoted to Radio Broadcasting Operations (Station WEAF) for which separate subsidiary accounts were maintained.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
STATEMENT OF AVERAGE ASSETS SHOWING SEPARATELY:
1. LONG LINES DEPARTMENT
2. LICENSE CONTRACT OPERATIONS) PARTLY ESTIMATED
3. HOLDING COMPANY OPERATIONS)
SCHEDULE 200A OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1923

I.C.C. Classification Account Number	I.C.C. Classification Title	Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations* (Partly Estimated)	Holding Company (Including Miscellaneous Non-License Contract) Operations* (Partly Estimated) (See Note B)
101	Fixed Capital	$ 154,316,766	$110,714,716	$ 42,800,336	$ 801,714
104	Construction Work in Progress	2,782,605	2,782,605	0	0
105	Investment Securities	821,880,390	0	13,581,757	808,298,633
110	Advances to System Corporations for Construction, etc.	123,615,569	0	118,279,896	5,335,673
	Total Investment	1,102,595,330	113,497,321	174,661,989	814,436,020
112	Cash and Deposits	26,243,731	1,043,584	25,145,494	54,663
115	Employees' Working Funds	1,383,587	1,238,516	144,734	337
116	Marketable Securities	46,792,853	0	46,792,748	105
117	Bills Receivable	22,983,463	875	5,041,667	17,940,921
118	Due from Subscribers and Agents	255,857	255,857	0	0
119	Accounts Receivable from System Corporations	8,704,658	4,218,499	1,202,695	3,283,464
120	Miscellaneous Accounts Receivable	327,359	315,458	0	11,901
122	Materials and Supplies	2,807,623	2,234,048	573,575	0
124	Unmatured Interest, Dividends and Rents Receivable	1,589,325	12,094	0	1,577,231
	Total Working Assets and Accrued Income	111,088,456	9,318,931	78,900,903	22,868,622
125	Sinking Fund Assets	4,711	0	0	4,711
126	Insurance and Other Reserve Fund Assets	38,925	0	0	38,925
128	Prepayments	88,293	75,294	0	12,999
136	Other Suspense	691,640	406,065	0	285,575
	Total Deferred Debit Items	823,569	481,359	0	342,210
	Grand Total	$1,214,507,355	$123,297,611	$253,562,892	$837,646,852

* The column "License Contract Operations" includes certain relatively minor amounts which may be considered in part "Holding Company" items. On the other hand the column "Holding Company Operations" includes items which are definitely related to License Contract Operations but have not been included in column "License Contract Operations" since no part of the cost of carrying the investment therein has been included in the computation of "Estimate of Total Costs Incurred in Rendering License Contract Services."

Notes: A Separate subsidiary accounts are currently maintained showing assets devoted to Long Lines Department Operations.

B The column "Holding Company (including Miscellaneous Non-License Contract) Operations" includes assets devoted to Radio Broadcasting Operations (Station WEAF) for which separate subsidiary accounts were maintained.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
STATEMENT OF AVERAGE ASSETS SHOWING SEPARATELY:
1. LONG LINES DEPARTMENT
2. LICENSE CONTRACT OPERATIONS)
3. HOLDING COMPANY OPERATIONS) PARTLY ESTIMATED

SCHEDULE 200A OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1924

I.C.C. Classification Account Number	I.C.C. Classification Title	Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations* (Partly Estimated)	Holding Company (Including Miscellaneous Non-License Contract) Operations* (Partly Estimated) (See Note B)
101	Fixed Capital	$ 174,867,924	$127,264,004	$ 46,735,596	$ 868,324
104	Construction Work in Progress	3,944,324	3,944,324	0	0
105	Investment Securities	927,385,926	0	11,000,000	916,385,926
110	Advances to System Corporations for Construction, etc.	171,092,227	0	171,092,227	0
	Total Investment	1,277,290,401	131,208,328	228,827,823	917,254,250
112	Cash and Deposits	26,641,702	1,020,961	25,556,150	64,591
115	Employees' Working Funds	1,458,569	1,301,117	157,043	409
116	Marketable Securities	52,073,272	2,850	52,070,321	101
117	Bills Receivable	4,306,126	1,358	160,067	4,144,701
118	Due from Subscribers and Agents	286,384	286,384	0	0
119	Accounts Receivable from System Corporations	10,600,687	4,570,834	1,179,778	4,850,075
120	Miscellaneous Accounts Receivable	342,365	309,733	0	32,632
122	Materials and Supplies	4,114,027	3,046,605	1,067,422	0
124	Unmatured Interest, Dividends and Rents Receivable	1,698,031	40,614	0	1,677,417
	Total Working Assets and Accrued Income	101,521,162	10,560,456	80,190,781	10,769,926
125	Sinking Fund Assets	10,858	0	0	10,858
126	Insurance and Other Reserve Fund Assets	38,925	0	0	38,925
128	Prepayments	84,240	76,729	0	7,511
136	Other Suspense	521,232	478,374	0	42,858
	Total Deferred Debit Items	655,255	555,103	0	100,152
	Grand Total	$1,379,466,819	$142,323,887	$309,016,604	$928,124,328

* The column "License Contract Operations" includes certain relatively minor amounts which may be considered in part "Holding Company" items. On the other hand the column "Holding Company Operations" includes items which are definitely related to License Contract Operations but have not been included in column "License Contract Operations" since no part of the cost of carrying the investment therein has been included in the computation of "Estimate of Total Costs Incurred in Rendering License Contract Services."

Notes: A Separate subsidiary accounts are currently maintained showing assets devoted to Long Lines Department Operations.

B The column "Holding Company (including Miscellaneous Non-License Contract) Operations" includes assets devoted to Radio Broadcasting Operations (Station WEAF) for which separate subsidiary accounts were maintained.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
STATEMENT OF AVERAGE ASSETS SHOWING SEPARATELY:
1. LONG LINES DEPARTMENT
2. LICENSE CONTRACT OPERATIONS)
3. HOLDING COMPANY OPERATIONS) PARTLY ESTIMATED

SCHEDULE 200A OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1925

I.C.C. Classification		Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations* (Partly Estimated)	Holding Company (Including Miscellaneous Non-License Contract) Operations* (Partly Estimated) (See Note B)
Account Number	Title				
101	Fixed Capital	$ 191,698,582	$141,222,313	$ 49,702,275	$ 773,994
104	Construction Work in Progress	3,829,793	3,829,793	0	0
105	Investment Securities	1,073,980,314	0	6,416,666	1,067,563,648
110	Advances to System Corporations for Construction, etc.	229,875,268	0	229,846,374	28,894
	Total Investment	1,499,383,957	145,052,106	285,965,315	1,068,366,536
112	Cash and Deposits	23,526,459	1,050,671	22,386,491	89,297
115	Employees' Working Funds	1,484,639	1,316,222	167,714	703
116	Marketable Securities	65,669,260	3,420	65,665,740	100
117	Bills Receivable	2,547,742	7,600	1,750,300	789,842
118	Due from Subscribers and Agents	302,250	302,250	0	0
119	Accounts Receivable from System Corporations	9,331,491	5,037,450	688,204	3,605,837
120	Miscellaneous Accounts Receivable	530,650	403,770	0	126,880
122	Materials and Supplies	3,428,400	2,214,076	1,214,324	0
124	Unmatured Interest, Dividends and Rents Receivable .	1,741,836	7,854	0	1,733,982
	Total Working Assets and Accrued Income . . .	108,562,727	10,343,313	91,872,773	6,346,641
125	Sinking Fund Assets	116,429	0	0	116,429
126	Insurance and Other Reserve Fund Assets	38,508	0	0	38,508
128	Prepayments	76,793	69,718	0	7,075
136	Other Suspense	495,485	446,482	0	49,003
	Total Deferred Debit Items	727,215	516,200	0	211,015
	Grand Total	$1,608,673,899	$155,911,619	$377,838,088	$1,074,924,192

* The Column "License Contract Operations" includes certain relatively minor amounts which may be considered in part "Holding Company" items. On the other hand the column "Holding Company Operations" includes items which are definitely related to License Contract Operations but have not been included in column "License Contract Operations" since no part of the cost of carrying the investment therein has been included in the computation of "Estimate of Total Costs Incurred in Rendering License Contract Services."

NOTES: A Separate subsidiary accounts are currently maintained showing assets devoted to Long Lines Department operations.

B The Column "Holding Company (including Miscellaneous Non-License Contract) Operations" includes assets devoted to Radio Broadcasting Operations (Station WEAF) for which separate subsidiary accounts were maintained.

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EXHIBIT X-105

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
STATEMENT OF AVERAGE ASSETS SHOWING SEPARATELY:
1. LONG LINES DEPARTMENT
2. LICENSE CONTRACT OPERATIONS) PARTLY ESTIMATED
3. HOLDING COMPANY OPERATIONS)

SCHEDULE 200A OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1926

I.C.C. Classification		Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations* (Partly Estimated)	Holding Company (Including Miscellaneous Non-License Contract) Operations* (Partly Estimated) (See Note B)
Account Number	Title				
101	Fixed Capital	$ 199,246,727	$156,209,287	$ 42,977,462	$ 59,978
104	Construction Work in Progress	6,766,445	6,766,445	0	0
105	Investment Securities	1,218,616,417	0	C	1,218,616,417
110	Advances to System Corporations for Construction, etc.	185,247,343	0	185,129,748	117,595
	Total Investment	1,609,876,932	162,975,732	228,107,210	1,218,793,990
112	Cash and Deposits	25,326,321	1,191,054	24,085,677	49,590
115	Employees' Working Funds	1,412,335	1,221,193	190,732	410
116	Marketable Securities	63,837,142	3,420	63,833,622	100
117	Bills Receivable	1,951,208	7,042	1,083,333	860,833
118	Due from Subscribers and Agents	320,584	320,584	0	0
119	Accounts Receivable from System Corporations	9,702,571	5,721,213	C	3,981,358
120	Miscellaneous Accounts Receivable	524,900	432,826	0	92,074
122	Materials and Supplies	4,254,441	2,863,467	1,390,974	0
124	Unmatured Interest, Dividends and Rents Receivable	1,522,070	22,488	0	1,499,582
	Total Working Assets and Accrued Income	108,851,572	11,783,287	90,584,338	6,483,947
125	Sinking Fund Assets	709,523	0	0	709,523
126	Insurance and Other Reserve Fund Assets	33,925	0	0	33,925
128	Prepayments	134,485	134,485	C	0
136	Other Suspense	723,341	674,453	C	48,888
	Total Deferred Debit Items	1,601,274	808,938	0	792,336
	Grand Total	$1,720,329,778	$175,567,957	$318,691,548	$1,226,070,273

* The column "License Contract Operations" includes certain relatively minor amounts which may be considered in part "Holding Company" items. On the other hand the column "Holding Company Operations" includes items which are definitely related to License Contract Operations but have not been included in column "License Contract Operations" since no part of the cost of carrying the investment therein has been included in the computation of "Estimate of Total Costs Incurred in Rendering License Contract Services."

NOTES: A Separate subsidiary accounts are currently maintained showing assets devoted to Long Lines Department Operations.

B The column "Holding Company (including Miscellaneous Non-License Contract) Operations" includes assets devoted to Radio Broadcasting Operations (Station [illegible]) for which separate subsidiary accounts were maintained.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY

STATEMENT OF AVERAGE ASSETS SHOWING SEPARATELY:

1. LONG LINES DEPARTMENT
2. LICENSE CONTRACT OPERATIONS) PARTLY ESTIMATED
3. HOLDING COMPANY OPERATIONS)

SCHEDULE 200A OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1927

I.C.C. Classification Account Number	I.C.C. Classification Title	Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations* (Partly Estimated)	Holding Company (Including Miscellaneous Non-License Contract) Operations* (Partly Estimated)
101	Fixed Capital	$ 230,472,562	$187,995,375	$ 42,468,866	$ 8,321
104	Construction Work in Progress	8,648,552	8,648,552	0	0
105	Investment Securities	1,334,663,037	0	0	1,334,663,037
110	Advances to System Corporations for Construction, etc.	200,642,206	0	200,618,206	24,000
	Total Investment	1,774,426,357	196,643,927	243,087,072	1,334,695,358
112	Cash and Deposits	20,780,180	1,122,733	19,647,536	9,911
113	Employees' Working Funds	1,132,751	956,886	175,776	89
116	Marketable Securities	54,508,826	11,753	54,496,990	83
117	Bills Receivable	268,242	5,133	0	263,109
118	Due from Subscribers and Agents	518,079	518,079	0	0
119	Accounts Receivable from System Corporations	10,425,444	5,645,904	0	4,779,540
120	Miscellaneous Accounts Receivable	454,823	439,488	0	15,335
122	Materials and Supplies	4,680,328	3,194,248	1,486,080	0
124	Unmatured Interest, Dividends and Rents Receivable	1,685,905	13,000	0	1,672,905
	Total Working Assets and Accrued Income	94,454,578	11,907,224	75,806,382	6,740,972
125	Sinking Fund Assets	999,812	0	0	999,812
126	Insurance and Other Reserve Fund Assets	36,473	0	0	36,473
128	Prepayments	105,218	103,139	0	2,079
136	Other Suspense	982,967	897,688	0	85,279
	Total Deferred Debit Items	2,124,470	1,000,827	0	1,123,643
	Grand Total	$1,871,005,405	$209,551,978	$318,893,454	$1,342,559,973

* The column "License Contract Operations" includes certain relatively minor amounts which may be considered in part "Holding Company" items. On the other hand the column "Holding Company Operations" includes items which are definitely related to License Contract Operations but have not been included in column "License Contract Operations" since no part of the cost of carrying the investment therein has been included in the computation of "Estimate of Total Costs Incurred in Rendering License Contract Services."

Note: A Separate subsidiary accounts are currently maintained showing assets devoted to Long Lines Department Operations.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY

STATEMENT OF AVERAGE ASSETS SHOWING SEPARATELY:

1. LONG LINES DEPARTMENT
2. LICENSE CONTRACT OPERATIONS)
3. HOLDING COMPANY OPERATIONS) PARTLY ESTIMATED

SCHEDULE 200A OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1928

I.C.C. Classification		Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations* (Partly Estimated)	Holding Company (Including Miscellaneous Non-License Contract) Operations* (Partly Estimated)
Account Number	Title				
101	Fixed Capital	$ 223,908,580	$222,655,921	$ 1,243,647	$ 9,012
104	Construction Work in Progress	10,199,395	10,199,395	0	0
105	Investment Securities	1,517,273,115	0	0	1,517,273,115
110	Advances to System Corporations for Construction, etc.	180,362,137	0	180,337,747	24,390
	Total Investment	1,931,743,227	232,855,316	181,581,394	1,517,306,517
112	Cash and Deposits	21,739,262	1,121,784	20,602,595	14,883
115	Employees' Working Funds	1,286,109	1,123,447	162,545	117
116	Marketable Securities	81,399,120	3,334	81,395,786	0
117	Bills Receivable	18,365	2,185	0	16,180
118	Due from Subscribers and Agents	769,212	769,212	0	0
119	Accounts Receivable from System Corporations	9,906,201	6,777,955	0	3,128,246
120	Miscellaneous Accounts Receivable	405,685	382,595	0	23,090
122	Materials and Supplies	3,682,407	3,682,407	0	0
124	Unmatured Interest, Dividends and Rents Receivable	1,651,[illegible]	500	0	1,650,941
	Total Working Assets and Accrued Income	120,857,802	13,863,419	102,160,926	4,833,457
125	Sinking Fund assets	1,125,555	0	0	1,125,555
126	Insurance and Other Reserve Fund Assets	37,747	0	0	37,747
128	Prepayments	76,485	71,816	0	4,669
136	Other Suspense	1,498,044	978,923	0	519,121
	Total Deferred Debit Items	2,737,831	1,050,739	0	1,687,092
	Grand Total	$2,055,338,860	$247,769,474	$283,742,320	$1,523,827,066

* The column "License Contract Operations" includes certain relatively minor amounts which may be considered in part "Holding Company" items. On the other hand the column "Holding Company Operations" includes items which are definitely related to License Contract Operations but have not been included in column "License Contract Operations" since no part of the cost of carrying the investment therein has been included in the computation of "Estimate of Total Costs Incurred in Rendering License Contract Services."

Note: A Separate subsidiary accounts are currently maintained showing assets devoted to Long Lines Department Operations.

September 16, 1931.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
STATEMENT OF AVERAGE ASSETS SHOWING SEPARATELY:
1. LONG LINES DEPARTMENT
2. LICENSE CONTRACT OPERATIONS) PARTLY ESTIMATED
3. HOLDING COMPANY OPERATIONS)
SCHEDULE 200A OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1929

I.C.C. Classification		Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations* (Partly Estimated)	Holding Company (Including Miscellaneous Non-License Contract) Operations* (Partly Estimated)
Account Number	Title				
101	Fixed Capital	$ 278,380,194	$277,026,858	$ 1,330,274	$ 23,062
104	Construction Work in Progress	21,030,098	21,030,098	0	0
105	Investment Securities	1,646,624,419	0	199,192	1,646,425,227
110	Advances to System Corporations for Construction,etc.	260,517,814	0	260,443,689	74,125
	Total Investment	2,206,552,525	298,056,956	261,973,155	1,646,522,414
112	Cash and Deposits	25,527,817	1,003,243	24,460,082	64,492
115	Employees' Working Funds	1,676,130	1,505,949	169,673	508
116	Marketable Securities	46,939,544	2,907	46,936,637	0
117	Bills Receivable	23,463,399	5,149	0	23,458,250
118	Due from Subscribers and Agents	774,891	774,891	0	0
119	Accounts Receivable from System Corporations	15,830,493	8,007,072	0	7,823,421
120	Miscellaneous Accounts Receivable	556,914	536,562	0	20,352
122	Materials and Supplies	5,038,105	5,038,105	0	0
124	Unmatured Interest, Dividends and Rents Receivable .	1,647,480	0	0	1,647,480
	Total Working Assets and Accrued Income . . .	121,454,773	16,873,878	71,566,392	33,014,503
125	Sinking Fund Assets	569,149	0	0	569,149
126	Insurance and Other Reserve Fund Assets	37,747	0	0	37,747
128	Prepayments	162,176	158,808	0	3,368
136	Other Suspense	1,438,094	1,391,781	0	46,313
	Total Deferred Debit Items	2,207,166	1,550,589	0	656,577
	Grand Total	$2,330,214,464	$316,481,423	$333,539,547	$1,680,193,494

* The Column "License Contract Operations" includes certain relatively minor amounts which may be considered in part "Holding Company" items. On the other hand the column "Holding Company Operations" includes items which are definitely related to License Contract Operations but have not been included in column "License Contract Operations" since no part of the cost of carrying the investment therein has been included in the computation of "Estimate of Total Costs Incurred in Rendering License Contract Services."

NOTE: A Separate subsidiary accounts are currently maintained showing assets devoted to Long Lines Department operations.

September 16, 1931.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
STATEMENT OF AVERAGE ASSETS SHOWING SEPARATELY:

1. LONG LINES DEPARTMENT
2. LICENSE CONTRACT OPERATIONS) PARTLY ESTIMATED
3. HOLDING COMPANY OPERATIONS)

SCHEDULE 200A OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1930

I.C.C. Classification		Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations* (Partly Estimated)	Holding Company (Including Miscellaneous Non-License Contract) Operations* (Partly Estimated)
Account Number	Title				
101	Fixed Capital	$ 364,089,312	$362,501,503	$ 1,442,222	$ 145,587
104	Construction Work in Progress	30,394,159	30,394,159	0	0
105	Investment Securities	1,902,012,035	77,084	0	1,901,934,951
110	Advances to System Corporations for Construction, etc.	281,866,517	96,250	281,625,808	144,459
	Total Investment	2,578,362,023	393,068,996	283,068,030	1,902,224,997
112	Cash and Deposits	64,489,445	1,298,693	39,586,021	23,604,731
115	Employees' Working Funds	1,700,135	1,527,922	171,142	1,069
116	Marketable Securities	207,289,450	1,653	80,738,597	126,549,200
117	Bills Receivable	21,825,991	9,491	0	21,816,500
118	Due From Subscribers and Agents	882,823	882,823	0	0
119	Accounts Receivable from System Corporations	14,037,220	7,005,849	0	7,031,371
120	Miscellaneous Accounts Receivable	1,015,875	980,684	0	35,191
122	Materials and Supplies	5,872,334	5,872,334	0	0
124	Unmatured Interest, Dividends and Rents Receivable	[illegible]	0	0	3,371,961
	Total Working Assets and Accrued Income	3[illegible]	17,579,449	120,495,760	182,410,023
125	Sinking Fund Assets	[illegible]	0	0	728,010
126	Insurance and Other Reserve Fund Assets	[illegible]	0	0	37,702
128	Prepayments	[illegible]	220,429	0	5,253
136	Other Suspense	1,[illegible]	1,856,161	0	97,860
	Total Deferred Debit Items	2,94[illegible]	2,076,590	0	868,825
	Grand Total	$2,901,792,670	$412,725,035	$403,563,790	$2,085,503,845

* The Column "License Contract Operations" includes certain relatively minor amounts which may be considered in part "Holding Company" items. On the other hand the column "Holding Company Operations" includes items which are definitely related to License Contract Operations but have not been included in column "License Contract Operations" since no part of the cost of carrying the investment therein has been included in the computation of "Estimate of Total Costs Incurred in Rendering License Contract Services."

NOTE: A Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department.

September 16, 1931.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

STATEMENT OF AVERAGE ASSETS SHOWING SEPARATELY:

1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. PERMANENT INVESTMENTS IN LICENSEE COMPANIES
4. OTHER ACTIVITIES

SCHEDULE 200A OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1931

I.C.C. Classification		Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations (Partly Estimated)*	Permanent Investments in Licensee Companies*	Other Activities (Partly Estimated)*
Account Number	Title					
101	Fixed Capital	$ 407,656,652	$406,023,768	$ 1,563,968	$ 0	$ 68,916
104	Construction Work in Progress	37,851,685	37,851,685	0	0	0
105	Investment Securities	2,092,090,338	100,000	110,377	1,931,439,115	160,440,846
113	Advances to System Corporations for Construction, etc.	261,682,472	1,656,250	258,429,149	0	1,597,073
	Total Investment	2,799,281,147	445,631,703	260,103,494	1,931,439,115	162,106,835
112	Cash and Deposits	57,441,434	456,984	33,448,843	0	23,535,607
115	Employees' Working Funds	1,063,726	895,017	168,125	0	584
116	Marketable Securities	271,035,606	1,020	67,165,221	0	203,869,365
117	Bills Receivable	25,234,574	26,241	0	0	25,208,333
118	Due from Subscribers and Agents	720,256	720,256	0	0	0
119	Accounts Receivable from System Corporations	11,368,776	7,083,305	0	0	B) 4,285,471
120	Miscellaneous Accounts Receivable	541,738	505,249	0	0	36,489
122	Materials and Supplies	5,343,326	5,343,326	0	0	0
124	Unmatured Interest, Dividends and Rents Receivable	3,533,880	0	0	0	B) 3,533,880
	Total Working Assets and Accrued Income	376,283,316	15,031,398	100,782,189	0	260,469,729
125	Sinking Fund Assets	970,495	0	0	0	970,495
126	Insurance and Other Reserve Fund Assets	163,192	0	0	0	163,192
128	Prepayments	184,967	177,909	0	0	7,058
136	Other Suspense	2,180,540	2,118,293	0	0	62,247
	Total Deferred Debit Items	3,499,194	2,296,202	0	0	1,202,992
	Grand Total	$3,179,063,657	$462,959,303	$360,885,683	$1,931,439,115	$423,779,556

* The column "License Contract Operations" includes certain relatively minor amounts of assets which may be considered allocable in part under "Permanent Investments in Licensee Companies" or under "Other Activities" of Company. On the other hand the columns "Permanent Investments in Licensee Companies" and "Other Activities" include items which are related to License Contract Operations.

Notes: A Separate subsidiary accounts are currently maintained showing assets devoted to Long Lines Department Operations.

B Includes non-interest bearing receivables from Licensee Companies.

[fol. 4573]

Exhibit X-108

American Telephone and Telegraph Company

Average Cost of Funds Used in Business, Year 1920

	Sources of funds		Dividends, interest and amortization charges		Average rate paid for funds (per cent)
	Average amount for year	Per cent	Amount	Per cent	
Capital stock	$442,209,900	49.78	$35,376,793	65.17	8.00
Capital stock premiums	47,900,923	5.39	....	....	...
Total	$490,110,823	55.17	35,376,793	65.17	7.22
Surplus unappropriated and appropriated	90,021,464	10.14	....	....	...
Total	$580,132,287	65.31	35,376,793	65.17	6.10
Funded debt	$300,495,819	33.83	18,449,811	33.99	6.14
Loans from Associated Companies	3,346,924	.38	216,614	.40	6.47
Loans from bankers	4,319,472	.48	241,752	.44	5.60
Total	$308,162,215	34.69	18,908,177	34.83	6.14
Grand Total	$888,294,502	100.00	$54,284,970	100.00	6.11

Note.—Method for determining Average Cost of Funds is the same as used for the years 1923 to 1930.

Furnished by A. T. & T. Co. November 30, 1931.

[fol. 4574]

EXHIBIT X-108—Continued

American Telephone and Telegraph Company

Average Cost of Funds Used in Business, Year 1921

	Sources of funds		Dividends, interest and amortization charges		Average rate paid for funds (per cent)
	Average amount for year	Per cent	Amount	Per cent	
Capital stock	$486,477,500	51.56	$42,674,403	67.74	8.77
Capital stock premiums	48,517,007	5.14	....	....	...
Total	534,994,507	56.70	42,674,403	67.74	7.98
Surplus unappropriated and appropriated	92,509,577	9.80	....	....	...
Total	627,504,084	66.50	42,674,403	67.74	6.80
Capital stock installments	4,377,876	.47	303,187	.48	6.93
Total	631,881,960	66.97	42,977,590	68.22	6.80
Funded debt	294,229,989	31.18	18,735,705	29.74	6.37
Loans from Associated Companies	16,243,411	1.72	1,213,096	1.93	7.47
Loans from bankers	1,194,166	.13	71,650	.11	6.00
Total	311,667,566	33.03	20,020,451	31.78	6.42
Grand Total	$943,549,526	100.00	$62,998,041	100.00	6.68

NOTE.—Method for determining Average Cost of Funds is the same as used for the years 1923 to 1930.

Furnished by A. T. & T. Co. November 30, 1931.

[fol. 4575]

American Telephone and Telegraph Company

Average Cost of Funds Used in Business, Year 1922

	Sources of funds		Dividends, interest and amortization charges		Average rate paid for funds (per cent)
	Average amount for year	Per cent	Amount	Per cent	
Capital stock	$594,009,500	57.92	$52,971,252	74.81	8.92
Capital stock premiums	50,963,814	4.97	....	....	...
Total	$644,973,314	62.89	52,971,252	74.81	8.21
Surplus unappropriated and appropriated	95,275,942	9.29	....	....	...
Total	$740,249,256	72.18	52,971,252	74.81	7.16
Capital stock installments	12,344,614	1.20	733,879	1.04	5.94
Total	$752,593,870	73.38	53,705,131	75.85	7.14
Funded debt	254,610,309	24.83	15,944,116	22.52	6.26
Loans from Associated Companies	18,401,428	1.79	1,156,879	1.63	6.29
Total	$273,011,737	26.62	17,100,995	24.15	6.26
Grand Total	$1,025,605,607	100.00	$70,806,126	100.00	6.90

Note.—Method for determining Average Cost of Funds is the same as used for the years 1923 to 1930.

Furnished by A. T. & T. Co. November 30, 1931.

[fol. 4576]

Exhibit X-108—Continued

American Telephone and Telegraph Company

Average Cost of Funds Used in Business, Year 1923

	Sources of funds		Dividends, interest and amortization charges		Average rate paid for funds (per cent)
	Average amount for year	Per cent	Amount	Per cent	
Capital stock	$719,964,000.00	63.39	$63,274,388.10	81.08	8.79
Capital stock premiums	52,290,661.47	4.61	....	...	...
Total	772,255,261.47	68.00	63,274,388.10	81.08	8.19
Surplus unappropriated and appropriated	110,176,041.50	9.70	....	...	...
Total	882,431,302.97	77.70	63,274,388.10	81.08	7.17
Capital stock installments	19,431,657.60	1.71	1,444,818.88	1.85	7.44
Total	901,862,960.57	79.41	64,719,206.98	82.93	7.18
Funded debt	220,755,867.61	19.43	12,565,490.66	16.10	5.69
Loans from Associated Companies	13,121,234.70	1.16	752,339.56	.97	5.73
Total	$233,877,102.31	20.59	13,317,830.22	17.07	5.69
Grand Total	$1,135,740,062.88	100.00	78,037,037.20	100.00	6.87

July 6, 1931.

[fol. 4577]

American Telephone and Telegraph Company

Average Cost of Funds Used in Business, Year 1924

	Sources of funds		Dividends, interest and amortization charges		Average rate paid for funds (per cent)
	Average amount for year	Per cent	Amount	Per cent	
Capital stock	$805,145,900.00	62.31	$70,918,227.27	80.18	8.81
Capital stock premiums	53,324,737.39	4.13	....	....	...
Total	858,470,637.39	66.44	70,918,227.27	80.18	8.26
Surplus unappropriated and appropriated	122,127,554.82	9.45	....	....	...
Total	980,598,192.21	75.89	70,918,227.27	80.18	7.23
Capital stock installments	20,945,567.32	1.62	1,214,805.33	1.37	5.80
Total	1,001,543,759.53	77.51	72,133,032.60	81.55	7.20
Funded debt	261,296,556.84	20.22	14,648,567.22	16.56	5.61
Loans from Associated Companies	29,350,239.54	2.27	1,669,891.42	1.89	5.69
Total	290,646,796.38	22.49	16,318,458.64	18.45	5.61
Grand Total	$1,292,190,555.91	100.00	$88,451,491.24	100.00	6.85

July 6, 1931.

[fol. 4578]

EXHIBIT X-108—Continued

American Telephone and Telegraph Company

Average Cost of Funds Used in Business, Year 1925

	Sources of funds		Dividends, interest and amortization charges		Average rate paid for funds (per cent)
	Average amount for year	Per cent	Amount	Per cent	
Capital stock	$911,181,400.00	60.82	$81,044,425.93	78.08	8.89
Capital stock premiums	54,387,652.56	3.63	....	....	...
Total	965,569,052.56	64.45	81,044,425.93	78.08	8.39
Surplus unappropriated and appropriated	133,007,894.94	8.88	....	....	...
Total	1,098,576,947.50	73.33	81,044,425.93	78.08	7.38
Capital stock installments	26,063,889.06	1.74	1,796,636.88	1.73	6.89
Total	1,124,640,836.56	75.07	82,841,062.81	79.81	7.37
Funded debt	357,960,608.61	23.89	20,086,703.31	19.35	5.61
Loans from Associated Companies	15,632,045.95	1.04	872,038.96	.84	5.58
Total	$373,592,654.56	24.93	$20,958,742.27	20.19	5.61
Grand Total	$1,498,233,491.12	100.00	$103,799,805.08	100.00	6.93

July 6, 1931.

[fol. 4579]

American Telephone and Telegraph Company

Average Cost of Funds Used in Business, Year 1926

	Sources of funds		Dividends, interest and amortization charges		Average rate paid for funds (per cent)
	Average amount for year	Per cent	Amount	Per cent	
Capital stock	$979,026,200.00	61.07	$86,496,345.50	78.95	8.83
Capital stock premiums	55,541,177.20	3.46	....	....	...
Total	1,034,567,377.20	64.53	86,496,345.50	78.95	8.36
Surplus unappropriated and appropriated	163,123,359.98	10.18	....	....	...
Total	1,197,690,737.18	74.71	86,496,345.50	78.95	7.22
Capital stock installments	38,227,418.65	2.38	2,510,565.75	2.29	6.57
Total	1,235,918,155.83	77.09	89,006,911.25	81.24	7.20
Funded debt	360,153,241.89	22.47	20,167,929.09	18.41	5.60
Loans from associated companies	7,057,854.30	.44	380,849.28	.35	5.40
Total	367,211,096.19	22.91	20,548,778.37	18.76	5.60
Grand Total	$1,603,129,252.02	100.00	$109,555,689.62	100.00	6.83

July 6, 1931.

[fol. 4580]

Exhibit X-108—Continued

American Telephone and Telegraph Company

Average Cost of Funds Used in Business, Year 1927

	Sources of funds		Dividends, interest and amortization charges		Average rate paid for funds (per cent)
	Average amount for year	Per cent	Amount	Per cent	
Capital stock	$1,093,242,000.00	62.43	$97,379,934.00	81.04	8.91
Capital stock premiums	58,818,404.81	3.36	....	....	...
Total	1,152,060,404.81	65.79	97,379,934.00	81.04	8.45
Surplus unappropriated and appropriated	199,229,820.85	11.37	....	....	...
Total	1,351,290,225.66	77.16	97,379,934.00	81.04	7.21
Capital stock installments	36,193,644.77	2.07	2,503,986.53	2.08	6.92
Total	1,387,483,870.43	79.23	99,883,920.53	83.12	7.20
Funded debt	358,438,455.78	20.47	19,970,018.58	16.62	5.57
Loans from associated companies	5,324,906.63	.30	313,104.51	.26	5.88
Notes payable to pension fund trustees	3,468.18	.....	190.75	....	5.50
Total	363,766,830.59	20.77	20,283,313.84	16.88	5.58
Grand Total	$1,751,250,701.02	100.00	$120,167,234.37	100.00	6.86

July 6, 1931.

[fol. 4581]

American Telephone and Telegraph Company

Average Cost of Funds Used in Business, Year 1928

	Sources of funds		Dividends, interest and amortization charges		Average rate paid for funds (per cent)
	Average amount for year	Per cent	Amount	Per cent	
Capital stock	$1,182,374,500.00	60.98	$103,821,439.95	81.81	8.78
Capital stock premiums	64,125,716.80	3.31	....	....	...
Total	1,246,500,216.80	64.29	103,821,439.95	81.81	8.33
Surplus unappropriated and appropriated	287,300,618.04	14.82	....	....	...
Total	1,533,800,834.84	79.11	103,821,439.95	81.81	6.77
Capital stock installments	44,209,630.21	2.28	2,989,456.47	2.35	6.76
Total	1,578,010,465.05	81.39	106,810,896.42	84.16	6.77
Funded debt	356,824,082.11	18.40	19,861,971.20	15.66	5.57
Loans from associated companies	1,541,483.67	.08	90,639.24	.07	5.88
Notes payable to pension fund trustees	2,637,250.91	.13	145,048.80	.11	5.50
Total	$361,002,816.69	18.61	20,097,659.24	15.84	5.57
Grand Total	$1,939,013,281.74	100.00	$126,908,555.66	100.00	6.55

July 6, 1931.

[fol. 4582]

EXHIBIT X-108—Continued

American Telephone and Telegraph Company

Average Cost of Funds Used in Business, Year 1929

	Sources of funds		Dividends, interest and amortization charges		Average rate paid for funds (per cent)
	Average amount for year	Per cent	Amount	Per cent	
Capital stock	$1,311,374,600.00	59.31	$116,378,771.00	80.61	8.87
Capital stock premiums	67,883,544.55	3.07	....	....	...
Total	1,379,258,144.55	62.39	116,378,771.00	80.61	8.44
Surplus unappropriated and appropriated	330,342,670.78	14.94	....	....	...
Total	1,709,600,815.33	77.33	116,378,771.00	80.61	6.81
Capital stock installments	61,546,239.25	2.78	4,294,909.67	2.98	6.98
Total	1,771,147,054.58	80.11	120,673,680.67	83.59	6.81
Funded debt	428,159,082.87	19.37	23,060,237.22	15.97	5.39
Loans from associated companies	2,271,897.20	.10	132,732.00	.09	5.84
Loans from bankers	508,333.27	.02	27,958.33	.02	5.50
Notes payable to pension fund trustees	8,752,188.30	.40	481,370.36	.33	5.50
Total	$439,691,501.64	19.89	$23,702,297.91	16.41	5.39
Grand Total	$2,210,838,556.22	100.00	$144,375,978.58	100.00	6.53

July 6, 1931.

[fol. 4583]

American Telephone and Telegraph Company

Average Cost of Funds Used in Business, Year 1930

	Sources of funds		Dividends, interest and amortization charges		Average rate paid for funds (per cent)
	Average amount for year	Per cent	Amount	Per cent	
Capital stock	$1,585,669,600.00	57.73	$139,238,073.39	81.12	8.78
Capital stock premiums	207,419,729.56	7.55	....	....	...
Total	1,793,089,329.56	65.28	139,238,073.39	81.12	7.77
Surplus unappropriated and appropriated	366,311,399.47	13.34	....	....	...
Total	2,159,400,729.03	78.62	139,238,073.39	81.12	6.45
Capital stock installments	83,494,025.66	3.04	5,695,443.27	3.32	6.82
Total	2,242,894,754.69	81.66	144,933,516.66	84.44	6.46
Funded debt	481,799,323.05	17.54	25,472,548.21	14.84	5.29
Loans from associated companies	9,808,864.11	.36	576,761.21	.34	5.88
Loans from bankers	1,828,472.20	.07	93,611.11	.05	5.12
Notes payable to pension fund trustees	10,293,382.73	.37	566,136.05	.33	5.50
Total	$503,730,042.09	18.34	26,709,056.58	15.56	5.30
Grand Total	$2,746,624,796.78	100.00	$171,642,573.24	100.00	6.25

July 6, 1931.

[fol. 4584]

EXHIBIT X-109

American Telephone and Telegraph Company

Computation of Annual Cost of Furnishing Telephone Instruments to Chicago Division of Illinois Bell Telephone Company, Year Ended December 31, 1923

	Totals all Licensees	Illinois Bell Telephone Company, Chicago Division
Average Stations in Service:		
All Licensees, using telephone instruments of A. T. & T. Co.	10,030,484	
Illinois Bell Telephone Co. — Chicago Division		660,927
Per cent, Chicago Division of all Licensees		6.589%
Average Investment in Telephone Instruments (Chi. Div. 6.589%)	$31,329,013	$2,064,269
Average Depreciation Reserve (Chi. Div. 6.589%)	14,971,542	986,475
Average Investment in Telephone Instruments, Less Average Depreciation Reserve	16,357,471	1,077,794
Return on Average Investment in Telephone Instruments, less Average Depreciation:		
Reserve at 6.87% (a)		74,044 (b)
Repairs (Chicago Division 6.589%)	1,086,422	71,584
Depreciation Expense (Chicago Div. 6.589%)	2,133,172	140,555
Taxes (actual)		54,720
Insurance & Contingencies (2% of Average Fixed Capital, Less Average Depreciation Reserve)		21,556
Total Annual Cost of Furnishing Instruments		$362,459

(a) Annual cost of funds.

(b) Return on average investment in telephone instruments (before deducting depreciation) amounts to $141,815.

[fol. 4585]

EXHIBIT X-110

Illinois Bell Telephone Company, Chicago Division

Comparison of Company's Tabulation (R. 1038) of Annual Cost of Furnishing Telephone Instruments with Commission Accountants' Computation (as per sheet attached) of Annual Cost of Furnishing Telephone Instruments for the Year Ended December 31, 1923

	Company's tabulation (Record, Vol. III, p. 1038)	Commission accountants' computation (as per sheet following)	Excess of company's tabulation over Commission accountants' computation	
			Amount	Per cent
Average Investment in Telephone Instruments	$3,494,271	$2,064,269	$1,430.002	69.27
Average Depreciation Reserve	......	986,475	986,475*	....
Average Investment in Telephone Instruments, Less Average Depreciation Reserve	$3,494,271	1,077,794	2,416,477	224.21
Return on Average Investment in Telephone Instruments	279,542	(a)	......	....
Return on Average Investment in Telephone Instruments, Less Average Depreciation Reserve (b)	......	74,044	205,498	360.31
Repairs	65,929	71,584	5,655*	8.57*
Depreciation	230,754	140,555	90,199	64.17
Taxes	62,897	54,720	8,177	14.94
Insurance and Contingencies	69,885	21,556	48,329	224.20
Total Annual Cost of Furnishing Tel. Instruments	709,007	362,459	346,548	95.61
Average Cost of Furnishing Instruments per Telephone Station in Service	1.07	.55	.52	
Average Investment in Tel. Instruments per Telephone Station in Service	5.29	3.12	2.17	
Average Investment in Tel. Instruments, Less Average Depreciation Reserve, Per Tel. Station in Service	...	1.63	3.66	

* Red Figures (Excess of Commission Accountants' Computation over Co.'s Tabulation).

(a) The return on Average Investment in telephone instruments, before deducting depreciation, is $141,815.

(b) "Return on Average Fixed Capital Less Average Depreciation Reserve" was computed for the purpose of this exhibit at the rate of 6.87%; this per cent is represented by the A. T. & T. Co. to have been the rate paid by it on funds used in its business in the year 1923 which were derived from its funded and other indebtedness and from its capital and surplus. Such cost of funds includes dividends at the rate of 9% per annum.

[fol. 4586]

EXHIBIT X-111

American Telephone and Telegraph Company

Amount of Return on Investment in Telephone Instruments Shown by Company's Tabulation (Record 1098) Related to Amount of Investment in Telephone Instruments Shown by Commission Accountants' Computation During Year Ended December 31, 1923

(1) Average investment in telephone instruments, less depreciation	$1,077,794
(2) Return on average investment at rate of cost of funds (6.87%)	$74,044
(3) Additional profit to A. T. & T. Co., to corporate surplus	346,548
(4) Total return	$420,592
(5) Per cent of return on investment (item 4 to item 1)	39.02%
(6) Per cent of return on investment expressed in per cent of return to A. T. & T. Co. stockholders on their average capital stock investment	59.53%

[fol. 4587]

Exhibit X-112

American Telephone and Telegraph Company

Per Cent of Return on Investment in Telephone Instruments Used by Illinois Bell Telephone Company, Chicago Division, per Exhibit A-200, "Fair Allowance for Telephone Instruments in Chicago Division (Exhibit A-163), Less Costs Already Included in *** (Costs Shown in Exhibit A-170)", During Years 1923 to 1927, Inclusive

Item	Reference	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927
(1) Net Investment in Telephone Instruments—A. T. & T. Co.	A-166	$16,318,631	$18,920,431	$20,985,998	$23,098,337	$22,407,037
(2) Investment Allocated to Long Lines	A-166	9,791	11,352	10,493	11,549	13,444
(3) Investment—Associated Companies	A-166	$16,308,840	$18,909,079	$20,975,505	$23,086,788	$22,393,593
(4) Investment Allocated to Chicago Division	A-166	1,076,383	1,229,090	1,363,408	1,500,641	1,477,977
(5) Return on Investment—Chicago Division	A-166	73,948	84,193	94,484	102,494	101,389
(6) Per Cent of Return on Investment—Chicago Division.	A-166 (a)	6.87%	6.85%	6.93%	6.83%	6.86%
(7) Additional Return on Investment—Chicago Division, included in A-200 as part of the fair allowance on telephone instruments	A-200 (b)	145,625	171,477	180,952	172,674	154,474
(8) Per Cent of Additional Return on Investment—Chicago Division (Item 7 divided by Item 4)	....	13.53%	13.95%	13.27%	11.51%	10.45%
(9) Total Return on Investment—Chicago Division, Asked by Plaintiff (Item 5 plus Item 7)	....	219,573	255,670	275,436	275,168	255,863
(10) Per Cent of Total Return on Investment—Chicago Division, Asked by Plaintiff (Item 9 divided by Item 4)	....	20.40%	20.80%	20.20%	18.34%	17.31%
(11) Per Cent of Total Return on Investment—Chicago Division, Converted to Average Return to A. T. & T. Co. Stockholders on Their Proportionate Investment in Capital Stock	....	30.13%	31.20%	30.71%	27.68%	25.65%

(a) Agrees with Plaintiff's Exhibit A-164—Cost of Funds Used in Business.
(b) Total shown by Exhibit A-163 less amounts shown for Chicago Division on Exhibits A-162 and A-166.

[fol. 4588]

EXHIBIT X-121

American Telephone and Telegraph Company

Percentage Relationship of Book Value of Investment in Telephone Instruments to Depreciation Reserve for Telephone Instruments, Compared with per cent of Depreciation Deducted from Book Cost or Current Value New as the Basis for Sale to Long Lines and to Licensee Companies as of December 31, 1927.

Equipment Sold to	Book Cost	Reserve For Accrued Depreciation	Book Cost Less Reserve For Accrued Depreciation	Per Cent of Reserve For Accrued Depreciation To Book Cost
Long Lines.....	$35,893	$17,728	$18,165	49.39%
Licensee Companies...	46,583,314	22,795,386	23,787,928	48.93%

Basis For Sale to	Book Cost	Depreciation Deducted	Sale Price	Per Cent of Depreciation Deducted From Book Value
Long Lines.....	$35,893	$17,728	$18,165	49.39%

Basis for Sale to	Current Val. New.	Depreciation Deducted	Sale Price	Per Cent Of Depreciation Deducted From Current Value New
Licensee Companies...	47,729,659(a)	9,545,932(b)	38,183,727	20.00%

Profit on Sale to				Amount
Long Lines.....	....	....	....	....
Licensee Companies:				
Appreciation of Plant (Net)............			$917,076	....
Clearance of Depreciation Reserve........			13,478,723	$14,395,799

(a) Appreciation (Current Value New Less Book Cost)—$1,146,345.

(b) Depreciation applicable to amount of appreciation only at 20% would be $229,269. Depreciation applicable to the book cost at 20% would be $9,316,663. The difference between the book cost and the sale price is $8,399,587, which amounts to a deduction of 18.03% from the book cost.

[fol. 4589] EXTRACTS FROM EXHIBIT X-122

American Telephone and Telegraph Company

Investments in Capital Stocks of Licensee Companies as of Dec. 31, 1919, to 1930, Inclusive

Year Ended Dec. 31	Total—All Licensee Companies	
	A. T. & T. Holdings—Par Value	A. T. & T. Holdings—Book Value
1919	$462,008,060	$490,792,063
1920	501,990,185	524,445,955
1921	587,779,257	609,628,197
1922	643,645,207	662,529,359
1923	726,427,207	748,545,932
1924	870,208,207	896,499,181
1925	989,382,307	1,027,448,630
1926	1,131,795,307	1,173,871,374
1927	1,305,736,507	1,347,823,006
1928	1,443,134,057	1,498,895,556
1929	1,512,981,807	1,569,443,857
1930	1,720,202,857	1,778,062,693

Exhibit from which these extracts were taken showed the same data for each licensee company shown in these extracts for Illinois Bell Telephone Company.

Exhibit X-123

American Telephone and Telegraph Company

Dividend Rates of Licensee Companies During Years 1914 to 1930, Inclusive

Name of Company	1914 (a)	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930
Bell Telephone Co. of Pennsylvania	..	..	..	..	6	6	6	8	8	8	8	8	8	8	8	8	8
Central Union Telephone Co	0	0	0	0	0	0	0	..	..	..	..	..	..	..	..	..	..
Chesapeake & Potomac Tel Co. (Balt.)	..	..	..	..	..	..	..	..	6	6	6	8	8	8	8	8	8
Chesapeake & Potomac Tel. Co. (N. Y.)	..	..	..	..	..	..	..	..	..	8	8	8	8	8	8	8	8
Chesapeake & Potomac Tel. Co. (Va.)	..	..	..	..	..	..	..	..	..	7½	7½	6	6	6	7	8	8
Chesapeake & Potomac Tel. Co. (W. Va.)	..	..	..	..	..	..	..	..	0	7	3	6	6	6	6	6	4
Cincinnati & Suburban Bell Tel. Co	..	..	4	22½	8	8	8	8	8	8	8	8	8	9	9	9	9
Cumberland Tel. & Tel. Co. (Ky.)	..	..	..	..	..	..	..	..	..	0	7	7	..	..	..	..	..
Diamond State Telephone Co	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	8
Illinois Bell Tel. Co. (b)	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Indiana Bell Tel. Co	..	..	..	..	..	..	0	0	0	0	0	0	4	6½	8	8	8
Iowa Tel. C9	6	7	7	7	7	7	..	..	..	..	..	..	..	..	..	..	..
Michigan Bell Tel. Co. (Com.) (e)	6	0	0	0	0	0	0	0	0	6½	8	8	8	8	8	8	5
Michigan Bell Tel. Co. (Pfd.) (c)	6	6	6	6	6	4½	0	0	19½(f)	..	..	..	..	..	..	..	..
Mountain States Tel. Co	7	7	7	7	7	7	7	7	7	7	7	7	7¼	8	8	8	8
Nebraska Tel. Co	6	6	7	7	7	7	..	..	..	..	..	..	..	..	..	..	..
New England Tel. & Tel. Co	7	7	7	7	7	7	7½	8	8	8	8	6	8	8	8	8	8
New Jersey Bell Tel. Co	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8	8	8
New York Tel. Co	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Northwestern Bell Tel. Co	..	..	..	..	..	..	7¾	4	5	6	8	8	8	8	8	8	8
Northwestern Tel. Exchange	4	5	5	5	5	5	..	..	..	..	..	..	..	..	..	..	..
Ohio Bell Tel. Co. (Com.) (d)	0	0	5	2½	0	0	0	6	0	1	3	6	6	6	7	7	6¼
Ohio Bell Tel. Co. (Pfd.) (d)	..	..	..	..	..	..	..	7	7	7	7	7	7	7	7	7	7
Pacific Tel. & Tel. Co. (Com.)	0	0	0	0	0	0	0	0	0	0	0	6	7	7	7	7	7
Pacific Tel. & Tel. Co. (Pfd.)	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Pioneer Tel. & Tel. Co	8	8	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Southern Bell Tel. & Tel. Co	6	6	6	6	6	6	6	6	6	7¾	8	8	8	8	8	8	8
Southern New England Tel. Co	..	..	4½	7	7	7	7½	8	8	8	8	8	8	8	8	8	8
Southwestern Bell Tel. Co. (e)	0	0	0	5	5	5	6	7½	8	8	8	8	8	8	8	8	8
Southwestern Tel. & Tel. (N. Y.)	6	5	5	5	5	5	..	..	..	..	..	..	..	..	..	..	..
Wisconsin Tel. Co	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8

(a) Year 1914 covers year ending June 30th, 1914. Begining with 1915, data covers period from January 1st to December 31st.
(b) Chicago Telephone Company prior to 1920.
(c) Michigan State Tel. Co. prior to 1924.
(e) Missouri & Kansas Telephone Company prior to 1916.
(d) Cleveland Telephone Co. prior to 1920.
(f) Dividend applicable to 3 months of 1919, year 1920, year 1921, and year 1922.

[fol. 4591]

EXTRACTS FROM EXHIBIT X-124

American Telephone and Telegraph Company

Capital Stock Holdings in Licensee Companies Showing Dividend Rates and Yields Thereon During Years 1920 to 1930 (Inclusive)

Year Ended Dec. 31	Average A. T. & T. Co. Stock Holdings Par Value	Average A. T. & T. Co. Stock Holdings—Book Value	Dividend Rate on Average A. T. & T. Stock Holdings—Par Value	Yield to A. T. & T. on Average Stock Holdings—Book Value
Illinois Bell Telephone Company:				
1920.....	$39,377,800	$46,462,494	8.00%	6.78%
1921.....	44,355,350	51,440,543	8.00	6.90
1922.....	49,367,225	56,452,540	8.00	7.00
1923.....	59,314,500	66,410,793	8.00	7.15
1924.....	66,750,950	74,851,757	8.00	7.13
1925.....	69,242,100	76,342,269	8.00	7.26
1926.....	79,214,500	86,330,488	8.00	7.34
1927.....	86,661,900	92,088,083	8.00	7.33
1928.....	109,016,750	114,461,965	8.00	7.62
1929.....	109,017,675	114,463,353	8.00	7.62
1930.....	128,872,200	134,335,909	8.00	7.67
Total—All Licensee Companies:				
1920.....	$445,976,720	$472,550,756	6.52%	6.15%
1921.....	515,787,829	539,170,232	6.66	6.37
1922.....	609,810,837	630,159,926	6.64	6.43
1923.....	694,378,429	715,359,946	6.85	6.65
1924.....	792,301,211	816,822,587	7.18	6.97
1925.....	932,451,415	969,909,008	7.32	7.03
1926.....	1,090,807,284	1,126,557,405	7.59	7.35
1927.....	1,185,110,831	1,227,186,809	7.66	7.39
1928.....	1,369,268,107	1,419,568,937	7.75	7.48
1929.....	1,471,882,257	1,527,994,644	7.76	7.48
1930.....	1,645,112,721	1,702,330,420	7.51	7.26

Exhibit from which these extracts were taken showed the same data for each licensee company shown in these extracts for Illinois Bell Telephone Company.

[fol. 4592]

EXTRACTS FROM EXHIBIT X-126

American Telephone and Telegraph Company

Dividend Yields on Investments in Capital Stocks of Licensee Companies During Years 1920 to 1930 (Inclusive)

Year Ended Dec. 31	Average Yield to A. T. & T. Co. on Book Value of Stock Holdings in Licensee Cos.	Average Yield to A. T. & T. Co. on Book Value of Stock Holdings in Licensee Cos. (Exclusive of I. B. T. Co.)
1920................................	6.15%	6.08%
1921................................	6.37	6.31
1922................................	6.43	6.37
1923................................	6.65	6.59
1924................................	6.97	6.95
1925................................	7.03	7.01
1926................................	7.35	7.35
1927................................	7.39	7.38
1928................................	7.48	7.47
1929................................	7.48	7.47
1930................................	7.26	7.22

[fol. 4593]

EXTRACTS FROM EXHIBIT X-127

Average Return to A. T. & T. Co. from Dividends on its Investments in Capital Stocks of Licensee Companies Converted into Average Return to Stockholders of A. T. & T. Co. on their Investments in Capital Stock of A. T. & T. Co. During Years 1920 to 1930 (Inclusive)

Year Ended Dec. 31	Average Yield on Stock Holdings in Illinois Bell Telephone Company	Average Yield on Stock Holdings in all Licensee Companies	Average Yield on Stock Holdings in all Licensee Companies exclusive of Illinois Bell Tel. Co.
1920	9.34%	8.08%	7.94%
1921	9.21	8.19	8.07
1922	9.08	8.10	7.99
1923	9.23	8.44	8.35
1924	9.26	9.00	8.97
1925	9.44	9.06	9.03
1926	9.66	9.68	9.68
1927	9.98	9.76	9.74
1928	10.54	10.32	10.30
1929	10.71	10.47	10.45
1930	11.24	10.53	10.46

Exhibits from which these extracts were taken showed the same data for each licensee company shown in these extracts for Illinois Bell Telephone Company.

[fol. 4594]

EXTRACTS FROM EXHIBIT X 128

American Telephone and Telegraph Company

Profit on Investment in Capital Stocks of Licensee Companies During Years 1920 to 1930, Inclusive

Year Ended Dec. 31	Yield to A. T. & T. Co. On Book Value of Stock Holdings %	Cost of Funds to A. T. & T. Company %	Per Cent of Profit to A. T. & T. Company %	Amount of Profit to A. T. & T. Company On Stock Holdings
Illinois Bell Telephone Company:				
1920	6.78	6.11	.67	$311,298.71
1921	6.90	6.68	.22	113,169.19
1922	7.00	6.90	.10	56,452.54
1923	7.15	6.87	.28	185,950.22
1924	7.13	6.85	.28	209,584.92
1925	7.26	6.93	.33	251,929.49
1926	7.34	6.83	.51	440,285.49
1927	7.53	6.86	.67	616,990.16
1928	7.62	6.55	1.07	1,224,743.03
1929	7.62	6.53	1.09	1,247,650.55
1930	7.67	6.25	1.42	1,907,569.91
Total—All Licensee Companies:				
1920	....	....	....	204,162.36
1921	....	....	....	1,683,768.03*
1922	....	....	....	2,961,123.51*
1923	....	....	....	1,599,965.72*
1924	....	....	....	948,646.41
1925	....	....	....	1,000,968.79
1926	....	....	....	5,823,638.44
1927	....	....	....	6,540,468.65
1928	....	....	....	13,172,269.29
1929	....	....	....	14,490,776.06
1930	....	....	....	17,136,008.97
Total—All Licensee Companies Exclusive of Ill. Bell Tel. Co.				
1920	....	....	....	107,136.35*
1921	....	....	....	1,796,937.22*
1922	....	....	....	3,017,576.05*
1923	....	....	....	1,785,915.94*
1924	....	....	....	739,061.49
1925	....	....	....	749,039.30
1926	....	....	....	5,383,352.95
1927	....	....	....	5,923,478.49
1928	....	....	....	11,947,526.26
1929	....	....	....	13,243,125.51
1930	....	....	....	15,228,439.06

* Red Figures (Losses).

NOTE.—Unless otherwise specifically designated, "A. T. & T. holdings" refer to Common Stock.

(a) "Cost of funds to A. T. & T. Co." is the annual amount which the A. T. & T. Co. represents was paid by it currently on funds used in its business which were derived from its funded and other indebtedness, and from its capital and surplus. The annual cost of funds includes dividends paid by the A. T. & T. Co. at the rate of 8% for the 1920 and for the first six months of 1921, and at the rate of 9% thereafter. The cost, as used above, was translated into a percentage of the funds.

(b) Profit or loss to A. T. & T. Co., as herein used, is the amount received by A. T. & T. Co. in excess of or less than its cost of funds as defined above.

Exhibit from which these extracts were taken showed the same data for each licensee company shown in these extracts for Illinois Bell Telephone Company.

[fol. 4595]

EXHIBIT X-129

American Telephone and Telegraph Company

Ratio of Capital Stock Holdings in Illinois Bell Telephone Co. to Capital Stock Holdings in All Licensee Companies, Ratio of Profit on Stock Holdings in Illinois Bell Telephone Co. to Profit on Stock Holdings in All Licensee Companies, and Percentages of Profit on Stock Holdings During Years 1920 to 1922, Inclusive

		Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
1	Capital Stock Holdings in Illinois Bell Telephone Co.	$46,462,494	$51,440,543	$56,452,540
2	Capital Stock Holdings in Other Licensee Companies	426,088,262	487,729,689	573,707,386
3	Capital Stock Holdings in All Licensee Companies	472,550,756	539,170,232	630,159,926
4	Profit on Capital Stock Holdings in Illinois Bell Telephone Co	311,298	113,169	56,462
5	Profit on Capital Stock Holdings in Other Licensee Companies	107,136*	1,796,937*	3,017,576*
6	Profit on Capital Stock Holdings in All Licensee Companies	204,162	1,683,768*	2,961,124*
7	Ratio of Capital Stock Holdings in Illinois Bell Telephone Co. to Capital Stock Holdings in All Licensee Companies	9.83%	9.54%	8.96%
8	Ratio of Profit of Illinois Bell Telephone Co. to Profit of All Licensee Companies	152.48%	(See Note)	(See Note)
9	Percentage of Profit on Stock Holdings in Illinois Bell Telephone Co	.67%	.22%	.10%
10	Percentage of Profit on Stock Holdings in Other Licensee Companies	.03%*	.37%*	.53%*
11	Percentage of Profit on Stock Holdings in All License Companies	.04%	.31%*	.4 %*

NOTE.—"Capital Stock Holdings" refers to the value recorded in the books of the A. T. T. Co. During the years 1921 and 1922 there was a profit on stock holdings of the Ill. Bell Tel. Co., but a net loss on the total stock holdings of All Licensee Companies.

* Indicates Red Figures (Losses).

(Here follows side folio 4596)

[fol. 4596]

American Telephone and Telegraph Company

Ratio of Capital Stock Holdings in Illinois Bell Telephone Co. to Capital Stock Holdings in All Licensee Companies, Ratio of Profit on Stock Holdings in Illinois Bell Telephone Co. to Profit on Stock Holdings in All Licensee Companies, and Percentages of Profit on Stock Holdings, During Years 1923 to 1930, Inclusive.

		Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
1	Capital Stock Holdings in Illinois Bell Tel. Co.	$66,410,793	$74,851,757	$76,342,269	$86,330,488	$92,088,083	$114,461,965	$114,463,353	$134,335,909
2	Capital Stock Holdings in Other Licensee Companies	648,949,153	741,970,830	893,566,739	1,040,226,917	1,135,098,726	1,305,106,972	1,413,531,291	1,567,994,511
3	Capital Stock Holdings in All Licensee Companies	715,359,946	816,822,587	969,909,008	1,126,557,405	1,227,186,809	1,419,568,937	1,527,994,644	1,702,330,420
4	Profit on Capital Stock Holdings in Ill. Bell Tel. Co.	185,950	209,585	251,930	440,285	616,990	1,224,743	1,247,651	1,907,570
5	Profit on Capital Stock Holdings in Other Licensee Companies	1,785,916*	739,061	749,039	5,383,353	5,923,479	11,947,526	13,243,125	15,228,439
6	Profit on Capital Stock Holdings in All Licensee Companies.	1,599,966*	948,646	1,000,969	5,823,638	6,540,469	13,172,269	14,490,776	17,136,009
7	Ratio of Capital Stock Holdings in Ill. Bell Tel. Co. to Capital Stock Holdings in all Licensee Companies	9.28%	9.16%	7.87%	7.66%	7.50%	8.06%	7.49%	7.89%
8	Ratio of Profit of Illinois Bell Telephone Co. to Profit of All Licensee Companies	(See Note)	22.09%	25.17%	7.56%	9.43%	9.30%	8.61%	11.13%
9	Percentage of Profit on Stock Holdings in Illinois Bell Telephone Co.	.28%	.28%	.33%	.51%	.67%	1.07%	1.09%	1.42%
10	Percentage of Profit on Stock Holdings in Other Licensee Companies	.28%*	.10%	.08%	.52%	.52%	.92%	.94%	.97%
11	Percentage of Profit on Stock Holdings in All Licensee Companies	.22%*	.12%	.10%	.52%	.53%	.93%	.95%	1.01%

NOTE.—"Capital Stock Holdings" refers to the value recorded in the books of the A. T. T. Co. During the year 1923 there was a profit on stock holdings of the Ill. Bell Tel. Co. but a net loss on the total stock holdings of all Licensee companies.

* Indicates Red Figures (Losses).

(Here follow Exhibits X-130, X-131, X-132, X-133, and X-134, side folios 4597-4615)

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EXHIBIT X-130

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

AMOUNTS REQUIRED IN ORDER TO RECEIVE THE SAME PER CENT OF RETURN ON INVESTMENT IN CAPITAL STOCK OF EACH ASSOCIATED COMPANY AS RECEIVED FROM INVESTMENT IN CAPITAL STOCK OF ILLINOIS BELL TELEPHONE COMPANY DURING YEARS 1920 TO 1922, INCLUSIVE

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
Bell Telephone Company of Pennsylvania			
(1) Amount Required To Equal Average I.B.T.Co. Return	$ 59,372.86	$ -	$ -
(2) Amount In Excess Of Average I.B.T.Co. Return	-	81,366.86	73,832.91
Central Union Telephone Company			
(1) Amount Required To Equal Average I.B.T.Co. Return	226,929.18	-	-
(2) Amount In Excess Of Average I.B.T.Co. Return	-	-	-
Chesapeake & Potomac Telephone Co. (Baltimore)			
(1) Amount Required To Equal Average I.B.T.Co. Return	-	-	16,000.00
(2) Amount In Excess Of Average I.B.T.Co. Return	-	-	-
Chesapeake & Potomac Telephone Co. (W. Virginia)			
(1) Amount Required To Equal Average I.B.T.Co. Return	-	-	238,889.00
(2) Amount In Excess Of Average I.B.T.Co. Return	-	-	-
Cincinnati & Suburban Bell Telephone Company			
(1) Amount Required To Equal Average I.B.T.Co. Return	18,812.81	22,295.86	23,176.47
(2) Amount In Excess Of Average I.B.T.Co. Return	-	-	-
Indiana Bell Telephone Company			
(1) Amount Required To Equal Average I.B.T.Co. Return	287,889.72	709,780.37	845,675.04
(2) Amount In Excess Of Average I.B.T.Co. Return	-	-	-
Michigan State Telephone Company			
Common Stock			
(1) Amount Required To Equal Average I.B.T.Co. Return	434,642.95	442,406.40	448,842.03
(2) Amount In Excess Of Average I.B.T.Co. Return	-	-	-
Preferred Stock			
(1) Amount Required To Equal Average I.B.T.Co. Return	131,074.82	138,227.91	-
(2) Amount In Excess Of Average I.B.T.Co. Return	-	-	282,190.36
Mountain States Telephone Company			
(1) Amount Required To Equal Average I.B.T.Company Return	-	-	-
(2) Amount In Excess Of Average I.B.T.Co. Return	61,619.93	28,009.77	-
New England Telephone & Telegraph Company			
(1) Amount Required To Equal Average I.B.T.Co. Return	52,014.72	-	-
(2) Amount In Excess Of Average I.B.T.Co. Return	-	91,025.76	47,680.16
New York Telephone Company			
(1) Amount Required To Equal Average I.B.T.Co. Return	712,500.00	831,665.47	581,260.80
(2) Amount In Excess Of Average I.B.T.Co. Return	-	-	-
Northwestern Bell Telephone Company			
(1) Amount Required To Equal Average I.B.T.Co. Return	-	1,118,345.44	740,141.35
(2) Amount In Excess Of Average I.B.T.Co. Return	180,900.00	-	-

Continued on next page.

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Sheet 2

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

AMOUNTS REQUIRED IN ORDER TO RECEIVE THE SAME PER CENT OF RETURN ON INVESTMENT IN CAPITAL STOCK OF EACH LICENSEE COMPANY AS RECEIVED FROM INVESTMENT IN CAPITAL STOCK OF ILLINOIS BELL TELEPHONE COMPANY (CONT'D) DURING YEARS 1920 TO 1922, INCLUSIVE

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
Ohio Bell Telephone Company			
Common			
(1) Amount Required To Equal Average I.B.T.Co.Return	$ 851,450.03	$ -	$ 1,644,926.15
(2) Amount In Excess Of Average I.B.T.Co.Return	-	119,994.32	-
Preferred			
(1) Amount Required To Equal Average I.B.T.Co.Return	-	-	-
(2) Amount In Excess Of Average I.B.T.Co.Return	-	4,666.43	102,359.58
Pacific Telephone & Telegraph Company (Common)			
(1) Amount Required To Equal Average I.B.T.Co.Return	134,183.52	173,774.85	196,005.25
(2) Amount In Excess Of Average I.B.T.Co. Return	-	-	-
Preferred			
(1) Amount Required To Equal Average I.B.T.Co.Return	179,016.24	206,557.20	223,117.22
(2) Amount In Excess Of Average I.B.T.Co. Return	-	-	-
Southern Bell Telephone Company			
(1) Amount Required To Equal Average I.B.T.Co. Return	68,476.05	122,591.90	150,453.69
(2) Amount In Excess Of Average I.B.T.Co.Return	-	-	-
Southern New England Telephone Company			
(1) Amount Required To Equal Average I.B.T.Co.Return	-	-	-
(2) Amount In Excess Of Average I.B.T.Co. Return	8,961.90	34,936.42	34,761.28
Southwestern Bell Telephone Company			
(1) Amount Required To Equal Average I.B.T.Co.Return	129,604.96	-	-
(2) Amount In Excess Of Average I.B.T.Co.Return	-	477,381.13	929,946.04
Wisconsin Telephone Company			
(1) Amount Required To Equal Average I.B.T.Co.Return	-	-	-
(2) Amount In Excess Of Average I.B.T.Co.Return	72,539.13	58,304.16	46,433.24
Totals - All Companies			
(1) Amount Required To Equal Average I.B.T.Co.Return	3,285,968.66	3,765,649.40	5,108,487.00
(2) Amount In Excess Of Average I.B.T.Co. Return	324,040.96	895,706.87	1,517,203.57
Net Amount Required To Equal Average I.B.T.Co.Return	2,961,927.70	2,869,942.53	3,591,283.43

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY

AMOUNTS REQUIRED IN ORDER TO RECEIVE THE SAME PER CENT OF RETURN ON INVESTMENT IN CAPITAL STOCK OF EACH LICENSEE COMPANY AS RECEIVED FROM INVESTMENT IN CAPITAL STOCK OF ILLINOIS BELL TELEPHONE COMPANY DURING THE YEARS 1923 to 1930, INCLUSIVE

	Year Ended Dec. 31 1923	Year Ended Dec. 31 1924	Year Ended Dec. 31 1925	Year Ended Dec. 31 1926	Year Ended Dec. 31 1927	Year Ended Dec. 31 1928	Year Ended Dec. 31 1929	Year Ended Dec. 31 1930
Bell Telephone Company of Pennsylvania								
(1) Amount required to equal average I.B.T.Co. return					$ 103,579.26	$ 181,263.70	$ 155,237.28	$ 183,000.50
(2) Amount in excess of average I.B.T.Co. return	$ 62,531.95	$ 133,913.66	$ 129,474.07	$ 60,421.24				
Chesapeake and Potomac Telephone Company (Baltimore)								
(1) Amount required to equal average I.B.T.Co. return	204,456.60	298,274.59				11,316.86	11,316.86	20,360.26
(2) Amount in excess of average I.B.T.Co. return			20,506.38	5,592.65	14,146.08			
Chesapeake and Potomac Telephone Company (New York)								
(1) Amount required to equal average I.B.T.Co. return					14,000.00	26,600.00	26,600.00	31,900.00
(2) Amount in excess of average I.B.T.Co. return	15,944.43	42,000.00	23,800.00	12,600.00				
Chesapeake and Potomac Telephone Company (Virginia)								
(1) Amount required to equal average I.B.T.Co. return			113,400.00	120,600.00	201,960.00	81,840.00		
(2) Amount in excess of average I.B.T.Co. return	25,107.94	33,300.00					50,160.00	47,520.00
Chesapeake and Potomac Telephone Company (West Virginia)								
(1) Amount required to equal average I.B.T.Co. return	14,372.03	433,650.00	132,300.00	159,795.00	247,860.00	262,440.00	262,440.00	594,540.00
(2) Amount in excess of average I.B.T.Co. return								
Cincinnati and Suburban Bell Telephone Company								
(1) Amount required to equal average I.B.T.Co. return	26,980.87	23,467.65	26,376.95	5,408.23				
(2) Amount in excess of average I.B.T.Co. return					37,857.63	39,978.02	47,560.43	54,617.79
Cumberland Telephone and Telegraph Company (Kentucky)								
(1) Amount required to equal average I.B.T.Co. return	554,096.40	10,074.48	82,061.63					
(2) Amount in excess of average I.B.T.Co. return								
Diamond State Telephone Company								
(1) Amount required to equal average I.B.T.Co. return							121,920.00	43,055.00
(2) Amount in excess of average I.B.T.Co. return								
Indiana Bell Telephone Company								
(1) Amount required to equal average I.B.T.Co. return	663,796.65	861,376.87	1,333,986.61	946,185.60	322,751.36			
(2) Amount in excess of average I.B.T.Co. return						70,346.85	70,346.85	55,054.05
Michigan Bell Telephone Company Common Stock								
(1) Amount required to equal average I.B.T.Co. return	159,400.64							2,700,765.65
(2) Amount in excess of average I.B.T.Co. return		255,776.37	337,714.91	297,373.04	201,603.84	290,365.81	290,364.11	
Mountain States Telephone Company								
(1) Amount required to equal average I.B.T.Co. return	42,014.66	39,412.70	72,825.41	126,269.34				
(2) Amount in excess of average I.B.T.Co. return					29,364.96	2,936.50	2,936.50	7,067.82
New England Telephone and Telegraph Company								
(1) Amount required to equal average I.B.T.Co. return	17,338.24		965,956.52			21,675.43	21,675.43	82,440.17
(2) Amount in excess of average I.B.T.Co. return		55,677.99		150,782.23	43,350.87			

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY

AMOUNTS REQUIRED IN ORDER TO RECEIVE THE SAME PER CENT OF RETURN ON INVESTMENT IN CAPITAL STOCK OF EACH LICENSEE COMPANY AS RECEIVED FROM INVESTMENT IN CAPITAL STOCK OF ILLINOIS BELL TELEPHONE COMPANY (CONT'D) DURING THE YEARS 1923 to 1930, INCLUSIVE

	Year Ended Dec. 31 1923	Year Ended Dec. 31 1924	Year Ended Dec. 31 1925	Year Ended Dec. 31 1926	Year Ended Dec. 31 1927	Year Ended Dec. 31 1928	Year Ended Dec. 31 1929	Year Ended Dec. 31 1930
New Jersey Bell Telephone Company								
(1) Amount required to equal average I.B.T.Co. return	$	$	$	$	$	$ 397,315.59	$ 661,561.83	$ 718,593.02
(2) Amount in excess of average I.B.T.Co. return								
New York Telephone Company								
(1) Amount required to equal average I.B.T.Co. return	944,548.60	896,110.40	1,210,960.00		425,012.47	698,234.77	698,234.77	752,486.02
(2) Amount in excess of average I.B.T.Co. return				151,789.40				
Northwestern Bell Telephone Company								
(1) Amount required to equal average I.B.T.Co. return	378,204.09							
(2) Amount in excess of average I.B.T.Co. return		471,738.44	549,143.77	350,009.30	224,534.27	165,098.73	165,098.72	132,076.96
Ohio Bell Telephone Company								
Common Stock								
(1) Amount required to equal average I.B.T.Co. return	1,395,637.33	820,113.18	53,198.00	454,700.94	770,633.68	465,255.43	550,505.74	1,420,586.97
(2) Amount in excess of average I.B.T.Co. return								
Preferred Stock								
(1) Amount required to equal average I.B.T.Co. return		3,183.66	55,315.07	72,523.76	102,446.47	116,099.61	115,947.24	126,342.59
(2) Amount in excess of average I.B.T.Co. return	33,270.91							
Pacific Telephone and Telegraph Company								
Common Stock								
(1) Amount required to equal average I.B.T.Co. return	213,368.51	228,889.11	252,179.[illegible]9		91,320.19	218,822.98	218,822.96	619,74[illegible]
(2) Amount in excess of average I.B.T.Co. return				101,562.14				
Preferred Stock								
(1) Amount required to equal average I.B.T.Co. return	276,037.79	301,494.03	397,101.88	262,979.62	369,200.53	419,648.33	419,648.33	447,624.89
(2) Amount in excess of average I.B.T.Co. return								
Southern Bell Telephone Company								
(1) Amount required to equal average I.B.T.Co. return								
(2) Amount in excess of average I.B.T.Co. return	380,959.92	544,344.80	488,624.46	456,758.41	309,799.62	244,349.47	313,460.96	278,994.68
Southern New England Telephone Company								
(1) Amount required to equal average I.B.T.Co. return								
(2) Amount in excess of average I.B.T.Co. return	30,209.78	40,117.02	34,307.48	32,804.24	20,260.44	16,222.32	20,369.39	16,118.43
Southwestern Bell Telephone Company								
(1) Amount required to equal average I.B.T.Co. return								
(2) Amount in excess of average I.B.T.Co. return	910,879.82	925,112.32	832,601.09	616,341.50	227,156.77	200,530.23	286,504.50	269,026.36
Algonquin Telephone Company								
(1) Amount required to equal average I.B.T.Co. return				9,375.96	140,903.46	155,433.24	147,256.56	156,119.18
(2) Amount in excess of average I.B.T.Co. return	28,574.30	72,609.62	79,778.24					
Totals - All Companies								
(1) Amount required to equal average I.B.T.Co. return	5,090,452.61	3,913,046.67	4,695,681.36	2,157,838.45	2,789,757.44	3,055,946.24	3,411,167.02	7,597,563.13
(2) Amount in excess of average I.B.T.Co. return	1,487,479.05	2,574,590.22	2,495,950.40	2,236,034.15	1,108,074.48	1,038,827.93	1,246,801.46	560,480.11
Net amount required to equal average I.B.T.Co. return	3,602,973.56	1,338,456.45	2,199,730.96	78,195.70*	1,681,682.96	2,017,118.31	2,164,365.56	7,037,083.02

* Red Figures

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EXHIBIT X-131

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
LOSSES ON LOANS TO LICENSEE COMPANIES PRORATED BETWEEN COMPANIES
YEARS 1920, 1921 AND 1922

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
Average Loans During Each Year to All Licensees	$176,377,669.25	$191,286,020.14	$140,490,424.80
Losses on Loans Made To All Licensees	189,512.00	2,097,643.00	1,574,615.00
Per cent Of Losses On Loans To Average Loans	.10744671%	1.09660026%	1.12079886%
Bell Telephone Company of Pennsylvania (a)			
Average Loans From A.T. & T. Co.	1,810,313.08	-	-
Losses to A.T. & T. Co. On These Loans	1,945.12	-	-
Central Union Telephone Company			
Average Loans From A.T. & T. Co.	38,909,906.99	-	-
Losses To A.T. & T. Co. On These Loans	41,807.41	-	-
Chesapeake & Potomac Telephone Cos. (a)			
Average Loans From A.T. & T. Co.	1,131,250.00	2,412,500.00	2,765,050.00
Losses to A.T. & T. Co. On These Loans	1,215.49	26,455.46	30,990.65
Cumberland Telephone & Telegraph Co.			
Average Loans From A.T. & T. Co.	7,741,105.38	7,818,330.38	8,227,080.38
Losses to A.T. & T. Co. On These Loans	8,317.56	85,735.83	92,209.02
Illinois Bell Telephone Company			
Average Loans From A.T. & T. Co.	1,522,230.95	3,200,000.00	741,462.50
Losses To A.T. & T. Co. On These Loans	1,635.59	35,091.21	8,310.30
Indiana Bell Telephone Company			
Average Loans From A.T. & T. Co.	7,831,250.00	11,348,750.00	13,763,312.50
Losses To A.T. & T. Co. On These Loans	8,414.42	124,450.42	154,259.04
Michigan State Telephone Company			
Average Loans From A.T. & T. Co.	18,358,045.83	21,850,198.18	17,874,665.63
Losses To A.T. & T. Co. On These Loans	19,725.12	239,609.33	200,339.04
Mountain States Telephone & Telegraph Co.			
Average Loans From A.T. & T. Co.	1,587,018.20	2,774,518.20	3,736,518.20
Losses to A.T. & T.Co. On These Loans	1,705.20	30,425.37	41,878.85
New England Telephone & Telegraph Co.			
Average Loans From A.T. & T.Co.	357,000.00	7,562,500.00	6,875,000.00
Losses to A.T. & T. Co. On These Loans	383.58	82,930.40	77,054.92
New York Telephone Co.			
Average Loans From A.T. & T. Co.	22,338,716.44	49,357,049.78	16,779,123.56
Losses to A.T. & T. Co. On These Loans	24,002.22	541,249.54	188,060.22

Continued on next page.

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Sheet 2

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
LOSSES ON LOANS TO LICENSEE COMPANIES PRO RATED BETWEEN COMPANIES (CONT'D)
YEARS 1920, 1921 and 1922

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
Northwestern Bell Telephone Co.			
Average Loans From A.T. & T. Co.	$25,660,344.52	$10,866,211.13	$ 4,885,000.00
Losses to A.T. & T. Company on These Loans	27,571.21	119,156.90	54,751.02
Ohio Bell Telephone Company			
Average Loans From A.T. & T. Co.	8,850,000.00	19,127,500.00	6,005,000.00
Losses to A. T. & T. Company on These Loans	9,509.03	209,752.21	67,303.57
Pacific Telephone & Telegraph Co. (a)			
Average Loans From A.T. & T. Co.	7,812,500.00	12,860,000.00	12,974,356.25
Losses to A.T. & T. Company on These Loans	8,394.27	141,022.79	145,416.43
Southern Bell Telephone & Telegraph Co.			
Average Loans From A.T. & T.Co.	3,165,238.45	8,664,988.45	13,448,988.45
Losses to A.T. & T.Company on These Loans	3,400.94	95,020.29	150,736.10
Southern New England Telephone Co.			
Average Loans From A.T. & T.Co.	1,965,843.32	1,991,118.32	2,696,532.49
Losses to A.T. & T. Company on These Loans	2,112.23	21,834.61	30,222.70
Southwestern Bell Telephone Co.			
Average Loans From A.T. & T. Co.	25,885,112.61	27,803,061.22	27,299,761.22
Losses to A.T. & T. Company on These Loans	27,812.70	304,688.44	305,975.40
Wisconsin Telephone Company			
Average Loans From A.T. & T. Co.	1,451,794.48	3,649,294.48	2,418,573.62
Losses to A.T. & T. Company on These Loans	1,559.91	40,018.18	27,107.34

(a) Including Associated Companies

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"Losses on loans" is the difference between the interest received by the A.T.& T.Co. from licensee companies and the annual cost of the funds from which the loans were made. Such annual cost of funds is represented by the A.T.& T. Co. to be the amount which was paid by it currently on funds used in its business, which were derived from its funded and other indebtedness, and from its capital and surplus. The annual cost of funds includes dividends paid by the A.T.& T.Co. at the rate of 8% for the year 1920 and for the first six months of 1921 and at the rate of 9% thereafter.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
LOSSES ON LOANS TO LICENSEE COMPANIES, PRESENT DEBTOR COMPANIES
YEARS 1923 TO 1930, INCLUSIVE

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927
Average Loans During Each Year To All Licensees	$124,615,454	$179,832,611	$231,494,350	$192,440,334	$194,312,996
Losses On Loans Made To All Licensees #	1,535,913	2,260,603	2,606,279	2,095,365	1,839,609
Per cent Of Loss On Loans To All Licensees	1.23%	1.26%	1.13%	1.09%	.95%
Bell Telephone Company of Pennsylvania (a)					
Average Loans From A.T. & T. Co.	3,012,500.00	$ 18,850,000.00	$ 24,900,000.00	-	$ 6,237,929.60
Losses To A.T. & T. Co. On These Loans	37,053.75	237,510.00	261,370.00	-	59,260.33
Chesapeake and Potomac Telephone Companies (a)					
Average Loans From A.T. & T. Co.	4,982,069.57	4,592,019.56	11,735,769.57	17,729,519.57	3,506,250.00
Losses to A.T. & T. Co. On These Loans	61,033.46	57,859.45	132,614.20	193,251.77	33,309.38
Cumberland Telephone and Telegraph Co.					
Average Loans From A.T. & T. Co.	8,440,830.38	3,707,480.38	7,791,670.84	7,443,277.09	-
Losses To A.T. & T. Co. On These Loans	105,822.21	46,714.25	88,045.88	81,131.72	-
Illinois Bell Telephone Company					
Average Loans From A.T. & T. Co.	200,000.00	-	2,317,041.90	6,874,655.91	3,750,000.00
Losses To A.T. & T. Co. On These Loans	2,460.00	-	28,182.57	74,933.75	35,625.00
Indiana Bell Telephone Company					
Average Loans From A.T. & T.Co.	16,427,375.00	17,776,125.00	16,193,830.37	6,561,069.61	6,500,000.00
Losses To A.T. & T. Co. On These Loans	202,056.71	223,979.18	182,990.28	71,515.66	61,750.00
Michigan Bell Telephone Company					
Average Loans From A.T. & T. Co.	20,990,465.00	20,690,232.50	11,271,250.00	24,590,000.00	38,495,000.00
Losses To A.T. & T. Co. On These Loans	258,182.72	260,696.93	127,365.13	268,031.00	365,702.50
Mountain States Telephone and Telegraph Co.					
Average Loans From A.T. & T. Co.	3,468,575.50	1,524,302.00	1,225,000.00	1,375,000.00	1,486,500.00
Losses to A.T. & T. Co. On These Loans	42,863.48	19,206.21	13,842.50	14.987.50	14,121.75
New England Telephone and Telegraph Co.					
Average Loans From A.T. & T.Co.	3,437,500.00	19,859,100.00	37,919,200.00	13,000,000.00	-
Losses To A.T. & T. Co. On These Loans	42,281.25	250,224.66	428,486.96	141,700.00	-
New Jersey Bell Telephone Company					
Average Loans From A.T. & T.Co.	-	-	-	-	2,886,809.87
Losses To A.T. & T. Co. On These Loans	-	-	-	-	27,424.69

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
LOSSES ON LOANS TO LICENSEE COMPANIES [illegible] D.B. [illegible] COMPANIES
YEARS 1923 TO 1930, INCLUSIVE

r Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
,615,454	$179,832,611	$231,494,350	$192,440,334	$194,312,996	$170,968,786	$245,788,267	$267,684,274
,335,913	2,260,603	2,606,279	2,095,365	1,839,609	1,051,430	2,452,536	1,137,450
1.23%	1.26%	1.13%	1.09%	.95%	.61%	.998%	.425%
12,500.00	$ 18,850,000.00	$ 24,900,000.00	-	$ 6,237,929.60	$ 825,000.00	$ 9,075,000.00	$ 13,852,500.00
37,053.75	237,510.00	261,370.00	-	59,260.33	5,032.50	90,566.50	58,873.13
962,069.57	4,592,019.56	11,735,769.57	17,729,519.57	3,506,250.00	7,617,013.31	12,448,263.00	19,610,765.00
61,033.46	57,859.45	132,614.20	193,251.77	33,309.38	46,463.78	124,233.66	83,345.74
40,830.38	3,707,480.38	7,791,670.84	7,443,277.09	-	-	-	-
105,822.21	46,714.25	88,045.88	81,151.72	-	-	-	-
200,000.00	-	2,317,041.90	6,874,655.91	3,750,000.00	4,575,776.19	12,412,500.00	550,000.00
2,460.00	-	26,182.57	74,933.75	35,625.00	27,912.23	123,876.75	2,337.50
27,375.00	17,776,125.00	16,193,830.37	6,561,069.61	6,500,000.00	3,500,000.00	3,500,000.00	5,381,240.00
02,056.71	223,979.18	182,990.28	71,515.66	61,750.00	21,350.00	34,930.00	22,870.27
90,465.00	20,690,232.50	11,271,250.00	24,590,000.00	38,495,000.00	19,177,385.95	37,654,686.00	34,596,846.00
58,182.72	260,696.93	127,365.13	268,031.00	365,702.50	116,982.05	377,791.76	147,036.60
8,575.50	1,524,302.00	1,225,000.00	1,375,000.00	1,486,500.00	4,496,056.92	16,887,500.00	12,325,000.00
2,863.48	19,206.21	13,842.50	14,987.50	14,121.75	27,425.95	138,597.25	52,381.25
7,500.00	19,859,100.00	37,919,200.00	13,000,000.00	-	3,149,599.81	8,462,500.00	11,200,000.00
2,281.25	250,224.66	428,486.96	141,700.00	-	19,212.56	84,455.75	47,600.00
-	-	-	-	2,886,809.87	26,635,868.68	17,897,103.00	31,022,103.00
-	-	-	-	27,424.69	162,478.80	178,613.09	131,845.94

Losses to A. T. & T. Co. On These Loans	42,863.48	19,206.21	13,842.50	14.987.50	14,121.75
New England Telephone and Telegraph Co.					
Average Loans From A. T. & T. Co.	3,437,500.00	19,859,100.00	37,919,200.00	13,000,000.00	-
Losses To A. T. & T. Co. On These Loans	42,281.25	250,224.86	428,486.96	141,700.00	-
New Jersey Bell Telephone Company					
Average Loans From A. T. & T. Co.	-	-	-	-	2,886,809.87
Losses To A. T. & T. Co. On These Loans	-	-	-	-	27,424.69
New York Telephone Company					
Average Loans From A. T. & T. Co.	9,111,553.99	36,696,553.99	50,081,553.99	37,932,553.99	47,134,985.89
Losses To A. T. & T. Co. On These Loans	112,072.11	462,376.58	667,621.56	413,464.84	447,782.37

(Continued on Next Page)

42,863.48	19,206.21	13,842.50	14.987.50	14,121.75	27,425.95	136,597.25	52,381.25
37,500.00	19,859,100.00	37,919,200.00	13,000,000.00	-	3,149,599.81	8,462,500.00	11,200,000.00
42,281.25	250,224.86	428,486.96	141,700.00	-	19,212.56	84,455.75	47,600.00
-	-	-	-	2,886,809.87	26,635,868.68	17,897,103.00	31,022,103.00
-	-	-	-	27,424.69	162,478.80	178,613.09	131,843.94
11,553.99	36,696,553.99	50,081,553.99	37,932,553.99	47,134,985.89	17,915,309.73	22,675,000.00	46,750,000.00
12,072.11	462,376.58	667,621.56	413,464.84	447,782.37	109,283.39	226,296.50	198,687.50

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
LOSSES ON LOANS TO ASSOCIATED COMPANIES [illegible]
YEARS 1923 TO 1930, INCLUSIVE

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Dec 19
Northwestern Bell Telephone Company					
Average Loans from A.T. & T. Co.	$ -	$ -	$ 4,512,500.00	$ 2,562,500.00	$ 75,0
Losses To A.T. & T. Co. On These Loans	-	-	50,991.25	27,931.25	7
Ohio Bell Telephone Company					
Average Loans from A.T. & T. Co.	$ 9,530,000.00	$ 12,853,107.94	$ 13,785,607.94	$ 10,531,107.94	$ 21,296,6
Losses To A.T. & T. Co. On These Loans	117,219.00	161,949.16	155,551.37	114,789.08	202,3
Pacific Telephone and Telegraph Co. (a)					
Average Loans from A.T. & T.Co.	11,362,500.00	33,468,750.00	34,588,600.00	46,375,000.00	34,998,7
Losses to A.T. & T. Co. on These Loans	139,758.75	421,706.25	390,851.18	505,487.50	332,4
Southern Bell Telephone and Telegraph Co.					
Average Loans from A.T. & T. Co.	10,934,678.84	2,240,000.00	2,454,750.00	7,257,420.18	14,558,1
Losses to A.T. & T. Co. on These Loans	134,496.55	28,224.00	27,738.68	79,105.88	138,3
Southwestern Bell Telephone Company					
Average Loans from A.T. & T. Co.	17,598,761.22	5,218,690.31	-	6,612,279.90	9,937,0
Losses to A.T. & T. Co. on These Loans	216,464.76	65,755.50	-	72,073.85	94,4
Southern New England Telephone Company					
Average Loans from A.T. & T. Co.	1,875,000.00	1,850,000.00	3,350,075.00	3,445,950.00	2,737,5
Losses to A.T. & T. Co. on These Loans	23,062.50	23,310.00	37,855.85	37,580.86	28,0
Wisconsin Telephone Company					
Average Loans from A.T. & T. Co.	3,263,644.00	506,250.00	387,500.00	150,000.00	712,5
Losses to A.T. & T. Co. on These Loans	40,142.82	6,378.75	4,378.75	1,635.00	6,7
Total Losses to A.T. & T. Co. on Loans as Prorated above (b)	$ 1,532,770.07	$ 2,265,890.92	$ 2,615,886.16	$ 2,097,599.66	$ 1,845,9

(a) Including Associated Companies

(b) Total losses on loans by companies, as shown in the foregoing computations, differ from the total losses to the A.T. & T. Co. listed as second item on first page of this Exhibit. This difference results from the method of applying percentages that were carried only two decimal points. The amounts of these yearly differences are as follows:

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
LOSSES ON LOANS TO [illegible] COMPANIES (CONT'D)
YEARS 1923 TO 1930, INCLUSIVE

ed 1,	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
	$ -	$ 4,512,500.00	$ 2,562,500.00	$ 75,000.00	$ 561,284.70	$ 3,175,000.00	$21,577,390.00
	-	50,991.25	27,931.25	712.50	3,423.84	31,686.50	91,703.91
.00	$ 12,853,107.94	$ 13,765,807.94	$ 10,531,107.94	$ 21,296,607.94	$ 5,659,859.03	$ 3,506,709.00	$ 9,275,000.00
.00	161,949.16	155,551.37	114,789.08	202,317.78	34,525.14	34,996.96	39,418.75
.00	33,468,750.00	34,588,600.00	46,375,000.00	34,998,725.00	41,551,880.48	63,528,880.00	38,626,630.00
.75	421,706.25	390,851.18	505,487.50	332,487.89	253,466.47	633,998.26	155,653.18
.84	2,240,000.00	2,454,750.00	7,257,420.18	14,558,127.41	18,700,622.91	26,435,676.00	362,500.00
55	28,224.00	27,738.68	79,105.88	138,302.21	114,073.80	283,828.04	1,540.63
22	5,218,690.31	-	6,612,279.90	9,937,059.81	9,182,089.53	5,375,000.00	10,525,000.00
76	65,755.50	-	72,073.85	94,402.07	55,888.75	53,642.50	44,731.25
00	1,850,000.00	3,350,075.00	3,445,950.00	2,737,500.00	5,105,654.04	4,900,000.00	6,879,300.00
50	23,310.00	37,855.85	37,580.86	28,006.25	31,144.49	48,902.00	29,237.03
0	506,250.00	387,500.00	150,000.00	712,500.00	2,335,384.89	656,250.00	7,150,000.00
2	6,378.75	4,378.75	1,635.00	6,768.75	14,245.85	6,549.38	30,387.50
7	$ 2,265,890.92	$ 2,615,886.16	$ 2,097,599.66	$ 1,845,973.47	$ 1,042,909.60	$ 2,452,968.90	$ 1,137,658.18

as shown in the foregoing computations, differ from the total losses to the A.T. & T. Co. listed as second item on first page of this Exhibit. This difference results from the method of applying percentages that were carried only two decimal points. The amounts of these yearly differences are as follows: $ 3,143 $ 5,288 $ 9,607 $ 2,235 $ 6,364

#"Losses on Loans" is the difference between the interest received by the A.T.& T.Co. from licensee companies and the annual cost of the funds from which the loans were made. Such annual cost of funds is represented by the A.T.& T.Co. to be the amount which was paid by it currently on funds used in its business, which were derived from its funded and other indebtedness, and from its capital and surplus. The annual cost of funds includes dividends paid by the A.T.& T.Co. at the rate of 8% for the year 1920 and for the first six months of 1921 and at the rate of 9% thereafter.

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143 $ 5,288 $ 9,607 $ 2,235 $ 6,384 $ 8,520 $ 431 $ 208

interest received by the A.T.& T.Co. from licensee companies
loans were made. Such annual cost of funds is represented by
by it currently on funds used in its business, which were
and from its capital and surplus. The annual cost of funds
the rate of 6% for the year 1920 and for the first six months

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Sheet 1

EXHIBIT X-132
AMERICAN TELEPHONE AND TELEGRAPH CO.
PROFIT OR LOSS ON INVESTMENTS IN LICENSEE COMPANIES
Years 1920, 1921 and 1922

	Year Ended Dec. 31, 1920		Year Ended Dec. 31, 1921		Year Ended Dec. 31, 1922
Bell Telephone Company of Pennsylvania					
(1) Profit to A.T. & T. Co. On Stock Holdings	9,014.66*	$	97,941.61	$	81,366.88
(2) Losses to A.T. & T. Co. On Loans	1,945.12		-		-
(3) Net Profit To A.T. & T. Co.	10,[illegible]*		97,941.61		81,366.88
(4) Average A.T. & T. Stock Holdings Plus Average Loans	9,325,865.08		7,533,970.00		7,533,970.00
(5) Per cent Of Net Profit On Stock and Loans	.12%*		1.30%		1.08%
Central Union Telephone Company					
(1) Profit to A.T. & T. Co. On Stock Holdings	204,5[illegible].02*		-		-
(2) Losses to A.T. & T. Co. On Loans	41,807.41		-		-
(3) Net Profit to A.T. & T. Co.	246,311.43*		-		-
(4) Average A.T. & T. Stock Holdings Plus Average Loans	42,256,944.99		-		-
(5) Per cent Of Net Profit On Stock and Loans	.58%*		-		-
Chesapeake & Potomac Telephone Companies					
(1) Profit to A.T. & T. Co. On Stock Holdings	-		-		249,876.30*
(2) Losses to A.T. & T. Co. On Loans	1,215.49		26,455.48		30,990.65
(3) Net Profit to A.T. & T. Co.	1,215.49*		26,455.48*		280,866.95*
(4) Average A.T. & T. Stock Holdings Plus Average Loans	1,131,250.00		2,412,500.00		7,777,750.00
(5) Per cent Of Net Profit on Stock and Loans	.11%*		.11%*		3.61%*
Cincinnati & Suburban Bell Telephone Company					
(1) Profit to A.T. & T. Co. On Stock Holdings	8,005.45		13,212.36*		18,719.45*
(2) Losses to A.T. & T. Co. On Loans	-		-		-
(3) Net Profit to A.T. & T. Co.	8,005.45		13,212.36*		18,719.45*
(4) Average A.T. & T. Stock Holdings Plus Average Loans	4,002,726.00		4,128,863.00		4,457,013.00
(5) Per cent Of Net Profit on Stock and Loans	.20%		.32%*		.42%*
Cumberland Telephone & Telegraph Company					
(1) Profit to A.T. & T. Co. On Stock Holdings	-		-		-
(2) Losses to A.T. & T. Co. On Loans	8,317.5[illegible]		85,735.83		92,209.02
(3) Net Profit to A.T. & T. Co.	8,317.[illegible]		85,735.83*		92,209.02*
(4) Average A.T. & T. Stock Holdings Plus Average Loans	7,741,105.38		[illegible],818,330.38		8,227,080.38
(5) Per cent Of Net Profit on Stock and Loans	.1[illegible]		1.10%*		1.12%*
Illinois Bell Telephone Company					
(1) Profit to A.T. & T. Co. On Stock Holdings	311,298.71		113,169.19		56,452.54
(2) Losses to A.T. & T. Co. On Loans	1,635.59		35,091.[illegible]		8,310.30
(3) Net Profit to A.T. & T. Co.	309,663.12		78,077.98		48,142.24
(4) Average A.T. & T. Stock Holdings Plus Average Loans	47,964,724.95		54,640,5[illegible].00		57,194,002.50
(5) Per cent of Net Profit on Stock and Loans	.65		.14%		.08%
Indiana Bell Telephone Company					
(1) Profit to A.T. & T. Co. On Stock Holdings	259,440.[illegible]*		687,149.69*		833,593.97*
(2) Losses to A.T. & T. Co. On Loans	8,414.42		124,452.42		154,259.04
(3) Net Profit to A.T. & T. Co.	267,854.86*		811,602.11*		987,853.01*
(4) Average A.T. & T. Stock Holdings Plus Average Loans	1[illegible],077,[illegible]11.00		21,635,422.00		25,844,304.50
(5) Per cent of Net Profit on Stock and Loans	2.22%*		3.75%*		3.82%*

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AMERICAN TELEPHONE AND TELEGRAPH CO.

PROFIT OR LOSS ON INVESTMENTS IN LICENSEE COMPANIES (CONT'D)

Years 1920,1921 and 1922

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
Michigan State Telephone Company			
(1) Profit to A.T. & T. Co. on Stock Holdings	$ 509,813.51*	$ 562,121.33*	$ 158,188.84*
(2) Losses to A.T. & T. Co. On Loans	19,725.12	239,609.33	200,339.04
(3) Net Profit to A.T. & T. Co.	529,538.63*	801,730.66*	358,527.88*
(4) Average A.T. & T. Stock Holdings Plus Average Loans	26,701,965.83	30,265,186.18	26,337,496.63
(5) Per cent Of Net Profit On Stock And Loans	1.98%*	2.65%*	1.36%*
Mountain States Telephone Company			
(1) Profit to A.T. & T. Co. on Stock Holdings	249,280.61	89,631.27	28,009.77
(2) Losses to A.T. & T. Co. on Loans	1,705.20	30,425.37	41,676.85
(3) Net Profit to A.T. & T. Co.	247,575.41	59,205.90	13,667.08*
(4) Average A.T. & T. Stock Holdings Plus Average Loans	29,596,075.20	30,784,290.20	31,746,290.20
(5) Per cent Of Net Profit On Stock and Loans	.84%	.19%	.04%*
New England Telephone and Telegraph Company			
(1) Profit to A.T. & T. Co. on Stock Holdings	238,400.81	186,386.09	91,0[illegible].76
(2) Losses to A.T. & T. Co. on Loans	383.58	82,930.40	77,[illegible]
(3) Net Profit to A.T. & T. Co.	238,017.23	103,455.69	13,970.[illegible]
(4) Average A.T. & T. Stock Holdings Plus Average Loans	43,702,602.00	50,908,102.00	50,220,602.00
(5) Per cent Of Net Profit On Stock and Loans	.54%	.20%	.03%
New York Telephone Company			
(1) Profit to A.T. & T. Co. On Stock Holdings	543,750.00	396,031.18*	339,068.80*
(2) Losses to A.T. & T. Co. on Loans	24,002.22	541,249.54	188,060.22
(3) Net Profit to A.T. & T. Co.	519,747.78	937,280.72*	527,129.02*
(4) Average A.T. & T. Stock Holdings Plus Average Loans	209,838,716.44	247,372,638.78	258,971,123.56
(5) Per cent Of Net Profit On Stock and Loans	.25%	.38%*	.20%*
Northwestern Bell Telephone Company			
(1) Profit to A.T. & T. Co. On Stock Holdings	277,862.40	1,028,877.81*	699,474.24*
(2) Losses to A.T. & T. Co. on Loans	27,571.21	119,158.90	54,751.02
(3) Net Profit to A.T. & T. Co.	250,291.19	1,148,036.71*	754,225.26*
(4) Average A.T. & T. Stock Holdings Plus Average Loans	40,132,344.52	51,533,318.13	45,552,107.00
(5) Per cent of Net Profit On Stock and Loans	.62%	2.23%*	1.66%*
Ohio Bell Telephone Company			
(1) Profit to A.T. & T. Co. On Stock Holdings	767,309.69*	170,093.61	1,502,820.07*
(2) Lossesto A.T. & T. Co. On Loans	9,509.03	209,752.21	67,303.97
(3) Net Profit to A.T. & T. Co.	776,818.72*	39,658.60*	1,570,124.04*
(4) Average A.T. & T. Stock Holdings Plus Average Loans	21,408,260.00	39,768,803.00	45,751,498.00
(5) Per cent of Net Profit On Stock and Loans	3.63%*	.10 *	3.43%*
Pacific Telephone and Telegraph Co.			
(1) Profit to A.T. & T. Co. On Stock Holdings	146,169.38*	324,303.51*	384,897.44*
(2) Losses to A.T. & T. Co. On Loans	8,394.27	141,022.79	145,416.43
(3) Net Profit to A.T. & T. Co.	154,563.65*	465,326.30*	530,313.87*
(4) Average A.T. & T. Stock Holdings Plus Average Loans	32,742,408.00	38,379,334.00	47,199,391.25
(5) Per cent of Net Profit On Stock and Loans	.47%*	1.21%*	1.12%*

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AMERICAN TELEPHONE AND TELEGRAPH CO.

PROFIT OR LOSS ON INVESTMENTS IN LICENSEE COMPANIES (CONT'D)
Years 1920,1921 and 1922

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
Southern Bell Telephone Company			
(1) Profit to A.T. & T. Co. On Stock Holdings	$ 101,447.18	$ 61,295.95*	$ 122,591.90*
(2) Losses to A.T. & T. Co. On Loans	3,400.94	95,020.29	150,736.10
(3) Net Profit to A.T. & T. Co.	98,046.24	156,316.24*	273,328.00*
(4) Average A.T. & T. Stock Holdings Plus Average Loans	28,527,033.45	36,526,783.45	41,310,783.45
(5) Per cent of Net Profit on Stock and Loans	.34%	.43%*	.66%*
Southern New England Telephone Company			
(1) Profit to A.T. & T. Co. On Stock Holdings	37,638.45	46,581.89	40,554.83
(2) Losses to A.T. & T. Co. On Loans	2,112.23	21,834.61	30,222.70
(3) Net Profit to A.T. & T.Co.	35,526.22	24,747.28	10,332.13
(4) Average A.T. & T. Stock Holdings Plus Average Loans	6,242,940.32	7,284,515.32	8,490,079.49
(5) Per cent of Net Profit on Stock and Loans	.57%	.34%	.12%
Southwestern Bell Telephone Company			
(1) Profit to A.T. & T. Co. On Stock Holdings	180,521.20	600,938.60	992,358.53
(2) Losses to A.T. & T. Co. on Loans	27,812.70	304,888.44	305,975.40
(3) Net Profit to A. T. & T. Co.	152,708.50	296,050.16	686,383.13
(4) Average A.T.& T.Stock Holdings Plus Average Loans	72,172,597.61	83,965,547.22	89,712,247.22
(5) Per cent of Net Profit on Stock and Loans	.21%	.35%	.77%
Wisconsin Telephone Company			
(1) Profit to A.T. & T. Co. On Stock Holdings	152,213.25	84,481.54	58,339.19
(2) Losses to A.T. & T. Co. On Loans	1,559.91	40,018.18	27,107.34
(3) Net Profit to A.T. & T. Co.	150,653.34	44,463.36	31,231.85
(4) Average A.T. & T. Stock Holdings Plus Average Loans	13,343,454.48	15,548,103.48	14,324,531.62
(5) Per cent of Net Profit on Stock and Loans	1.13%	.29%	.22%
Total All Licensee Companies			
(1) Total Profit to A.T. & T. Co. On Stock Holdings	204,162.36	1,683,768.03*	2,961,123.51*
(2) Total Losses to A.T. & T. Co. On Loans	189,512.00	2,097,643.00	1,574,615.00
(3) Net Profit to A.T. & T. Co. (Total)	14,650.36	3,781,411.03*	4,535,738.51*
(4) Total Average A.T. & T. Stock Holdings Plus Average Loans	646,928,426.25	730,456,252.14	770,650,350.80
(5) Composite Per cent of Net Profit on Stock and Loans	.00%	.52%*	.59%*
Total All Licensee Companies Exclusive of Ill.Bell Tel.Co.			
(1) Total Profit to A.T. & T. Co. On Stock Holdings	107,186.35*	1,796,937.22*	3,017,576.05*
(2) Total Losses to A.T. & T. Co. on Loans	187,876.41	2,062,551.79	1,566,304.70
(3) Net Profit to A.T. & T. Co.(Total)	295,012.76*	3,859,489.01*	4,583,880.75*
(4) Total Average A.T. & T. Stock Holdings Plus Average Loans	600,943,700.30	675,816,709.14	713,456,348.30
(5) Composite Per cent of Net Profit on Stock and Loans	.05%*	.57%*	.64%*

* Indicates Red Figures (Losses)

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
PROFIT OR LOSS ON INVESTMENTS IN LICENSEE COMPANIES
CALENDAR YEARS 1923 TO 1930, INCLUSIVE

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927
Bell Telephone Company of Pennsylvania					
(1) Profit to A.T. & T. Co. on Stock Holdings	$ 83,627.07	$ 241,044.60	$ 414,317.04	$ 500,633.09	$ 474,738.27
(2) Losses to A.T. & T. Co. on Loans	37,053.75	237,510.00	281,370.00	-	59,260.33
(3) Net Profit to A.T. & T. Co.	46,573.32	3,534.60	132,947.04	500,633.09	415,477.94
(4) Average A.T. & T. Stock Holdings Plus Average Loans	10,546,470.00	57,111,047.00	111,216,050.00	86,316,050.00	92,553,980.00
(5) Per cent of Net Profit on Stock and Loans	.44%	.01%	.12%	.58%	.45%
Chesapeake and Potomac Telephone Companies					
(1) Profit to A.T. & T. Co. on Stock Holdings	$ 78,684.88*	$ 510,626.54*	$ 29,324.49*	$ 10,990.17	$ 30,663.57
(2) Losses to A.T. & T. Co. on Loans	61,033.46	57,859.45	132,614.20	193,251.77	33,309.38
(3) Net Profit to A.T. & T. Co.	139,718.34*	568,485.99*	161,938.69*	182,261.60*	2,645.81*
(4) Average A. T. & T. Stock Holdings Plus Average Loans	40,351,848.00	56,734,182.00	63,877,932.00	71,296,681.00	75,198,412.00
(5) Per cent of Net Profit on Stock and Loans	.35%*	1.00%*	.25%*	.26%	-
Cincinnati and Suburban Bell Telephone Co.					
(1) Profit to A.T. & T. Co. on Stock Holdings	$ 13,490.44*	$ 9,182.99*	$ 7,856.96*	$ 25,238.42	$ 78,118.92
(2) Losses to A.T. & T. Co. on Loans	-	-	-	-	-
(3) Net Profit to A.T. & T.Co.	13,490.44*	9,182.99*	7,856.96*	25,238.42	78,118.92
(4) Average A.T. & T. Stock Holdings Plus Average Loans	4,818,013.00	5,101,653.00	5,612,116.00	6,009,148.00	6,009,148.00
(5) Per cent of Net Profit on Stock and Loans	.28%*	.18%*	.14%*	.42%	1.30%
Cumberland Telephone and Telegraph Co.					
(1) Profit to A.T. & T. Co. on Stock Holdings	$ 532,397.52*	$ 11,624.00	$ 17,588.92*	-	
(2) Losses to A.T. & T. Co. on Loans	103,822.21	46,714.25	88,045.88	81,131.72	
(3) Net Profit to A.T. & T. Co.	636,219.73*	35,090.25*	105,634.80*	81,131.72*	
(4) Average A.T. & T. Stock Holdings Plus Average Loans	16,190,430.00	11,457,080.00	27,334,917.00	7,443,277.00	
(5) Per cent of Net Profit on Stock and Loans	3.93%*	.31%*	.39%*	1.09%*	
Illinois Bell Telephone Company					
(1) Profit to A.T. & T. Co. on Stock Holdings	$ 185,950.22	$ 209,584.92	$ 251,929.49	$ 440,285.49	$ 616,990.16
(2) Losses to A.T. & T. Co. on Loans	2,460.00	-	26,182.57	74,933.75	35,625.00
(3) Net Profit to A.T. & T.Co.	183,490.22	209,584.92	225,746.92	365,351.74	581,365.16
(4) Average A.T. & T.Stock Holdings Plus Average Loans	66,610,793.00	74,851,757.00	76,659,311.00	93,205,144.00	95,838,083.00
(5) Per cent of Net Profit on Stock and Loans	.28%	.28%	.29%	.39%	.61%

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
PROFIT OR LOSS ON INVESTMENTS IN LICENSEE COMPANIES
DURING YEARS 1923 TO 1930, INCLUSIVE

Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
83,627.07	$ 241,044.60	$ 614,317.04	$ 500,633.09	$ 474,738.27	$ 742,318.03	$ 735,627.66	$ 1,197,722.42
37,053.75	237,510.00	281,370.00	-	59,260.33	5,032.50	90,568.50	58,873.13
46,573.32	3,534.60	132,947.04	500,633.09	415,477.94	737,285.53	645,059.16	1,138,849.29
10,546,470.00	57,111,047.00	111,216,050.00	86,316,050.00	92,553,980.00	87,141,050.00	101,991,050.00	114,118,550.00
.44%	.01%	.12%	.58%	.45%	.85%	.63%	1.00%
78,684.88*	$ 510,626.54*	$ 29,324.49*	$ 10,990.17	$ 30,663.57	$ 384,909.27	$ 531,247.70	$ 454,162.17
61,033.46	57,859.45	132,614.20	193,251.77	33,309.38	46,463.78	124,233.66	83,345.74
139,718.34*	568,485.99*	161,938.69*	182,261.60*	2,645.81*	338,445.49	407,014.04	370,816.43
40,351,848.00	56,734,182.00	63,877,932.00	71,296,681.00	75,198,412.00	79,309,175.00	84,140,425.00	93,796,850.00
.35%*	1.00%*	.25%*	.26%	-	.43%	.48%	.40%
13,490.44*	$ 9,182.99*	$ 7,856.96*	$ 25,238.42	$ 78,118.92	$ 110,103.39	$ 124,934.87	$ 167,019.62
-	-	-	-	-	-	-	-
13,490.44*	9,182.99*	7,856.96*	25,238.42	78,118.92	110,103.39	124,934.87	167,019.62
4,818,013.00	5,101,653.00	5,612,116.00	6,009,148.00	6,009,148.00	6,563,773.00	7,098,572.00	7,915,622.00
.28%*	.18%*	.14%*	.42%	1.30%	1.68%	1.76%	2.11%
532,397.52*	$ 11,624.00	$ 17,588.92*	-				
103,822.21	46,714.25	88,045.88	81,131.72				
636,219.73*	35,090.25*	105,634.80*	81,131.72*				
16,190,430.00	11,457,080.00	27,334,917.00	7,443,277.00				
3.93%*	.31%*	.39%*	1.09%*				
185,950.22	$ 209,584.92	$ 251,929.49	$ 440,285.49	$ 616,990.16	$ 1,224,743.03	$ 1,247,650.55	$ 1,907,569.91
2,460.00	-	26,182.57	74,933.75	35,625.00	27,912.23	123,876.75	2,337.50
183,490.22	209,584.92	225,746.92	365,351.74	581,365.16	1,196,830.80	1,123,773.80	1,905,232.41
66,610,793.00	74,851,757.00	76,659,311.00	93,205,144.00	95,838,083.00	119,037,741.00	126,873,853.00	134,885,909.00

Plus Average Loans	[illegible]	[illegible]	[illegible]	[illegible]	
(5) Per cent of Net Profit on Stock and Loans	5.93%*	.31%*	.39%*	1.09%*	

Illinois Bell Telephone Company

(1) Profit to A. T. & T. Co. on Stock Holdings	$ 185,950.22	$ 209,584.92	$ 251,929.49	$ 440,285.49	$ 616,990
(2) Losses to A. T. & T. Co. on Loans	2,460.00	-	26,182.57	74,933.75	35,62
(3) Net Profit to A. T. & T. Co.	183,490.22	209,584.92	225,746.92	365,351.74	581,365
(4) Average A. T. & T. Stock Holdings Plus Average Loans	66,610,793.00	74,851,757.00	76,659,311.00	93,205,144.00	95,838,083
(5) Per cent of Net Profit on Stock and Loans	.28%	.28%	.29%	.39%	.6

*Red Figures (Losses)

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[illegible]	[illegible]	[illegible]	[illegible]				
3.93%*	.31%*	.39%*	1.09%*				
185,950.22	$ 209,584.92	$ 251,929.49	$ 440,285.49	$ 616,990.16	$ 1,224,743.03	$ 1,247,650.55	$ 1,907,569.91
2,460.00	-	26,182.57	74,933.75	35,625.00	27,912.23	123,876.75	2,337.50
183,490.22	209,584.92	225,746.92	365,351.74	581,365.16	1,196,830.80	1,123,773.80	1,905,232.41
66,610,793.00	74,851,757.00	76,659,311.00	93,205,144.00	95,838,083.00	119,037,741.00	126,875,853.00	134,885,909.00
.28%	.28%	.29%	.39%	.61%	1.01%	.89%	1.41%

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
PROFIT OR LOSS ON INVESTMENTS IN LICENSEE COMPANIES
DURING YEARS 1923 TO 1930, INCLUSIVE

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Y
Indiana Bell Telephone Company						
(1) Profit to A.T. & T. Co. on Stock Holdings	$ 829,989.65*	$ 827,550.00*	$ 1,273,351.05*	$ 805,499.11*	$ 137,927.93*	$ 3
(2) Losses to A.T. & T. Co. on Loans	202,036.71	223,979.18	182,990.28	71,515.66	61,750.00	
(3) Net Profit to A.T. & T.Co.	1,032,026.36*	1,051,529.18*	1,456,341.33*	877,014.77*	199,677.93*	3
(4) Average A.T. & T. Stock Holdings Plus Average Loans	28,508,447.00	29,857,147.00	34,568,304.00	34,146,656.00	34,086,586.00	34,0
(5) Per cent of Net Profit on Stock and Loans	3.62%*	3.52%*	4.21%*	2.57%*	.59%	
Michigan Bell Telephone Company						
(1) Profit to A.T. & T. Co. on Stock Holdings	$ 102,179.89*	$ 348,785.96	$ 504,052.10	$ 554,424.31	$ 539,290.26	$ 1,2
(2) Losses to A.T. & T. Co. on Loans	258,182.72	260,696.93	127,365.13	268,031.00	365,702.50	1
(3) Net Profit to A.T. & T. Co.	360,362.61*	88,089.03	376,686.97	286,393.31	173,587.76	1,0
(4) Average A.T. & T. Stock Holdings Plus Average Loans	41,426,444.00	53,907,942.00	61,676,460.00	74,992,210.00	86,895,959.00	104,8
(5) Per cent of Net Profit on Stock and Loans	.87%*	.16%	.61%	.38%	.20%	
Mountain States Telephone Company						
(1) Profit to A.T. & T. Co. on Stock Holdings	$ 36,412.70	$ 42,014.66	$ 19,606.84	$ 23,491.97	$ 226,110.22	$ 3
(2) Losses to A.T. & T. Co. on Loans	42,663.48	19,206.21	13,842.50	14,987.50	14,121.75	
(3) Net Profit to A.T. & T. Co.	6,250.78*	22,808.45	5,764.34	8,504.47	211,988.47	
(4) Average A.T. & T. Stock Holdings Plus Average Loans	31,478,348.00	29,534,074.00	29,234,772.00	30,739,963.00	30,851,463.00	33,8
(5) Per cent of Net Profit on Stock and Loans	.02%*	.08%	.02%	.03%	.69%	
New England Telephone and Telegraph Co.						
(1) Profit to A.T. & T.Co. on Stock Holdings	$ 104,029.44	$ 197,403.80	$ 788,864.49*	$ 516,967.65	$ 527,435.55	$ 7
(2) Losses to A.T. & T. Co. on Loans	42,281.25	250,224.66	428,486.96	141,700.00	-	
(3) Net Profit to A.T. & T.Co.	61,748.19	52,820.86*	1,217,351.45*	375,267.65	527,435.55	7
(4) Average A.T. & T. Stock Holdings Plus Average Loans	46,783,102.00	70,475,459.00	91,583,451.00	84,801,063.00	72,251,446.00	75,4
(5) Per cent of Net Profit on Stock and Loans	.13%	.07%*	1.33%*	.44%	.73%	
New Jersey Bell Telephone Company						
(1) Profit to A.T. & T. Co. on Stock					- $ 27,424.69	$ 3 1
(3) Net Profit to A.T. & Holdings					27,424.69*	$ 1
(4) Average A.T. & T. Stock Holdings Plus Average Loans					2,886,610.00	95,1
(5) Per cent of Net Profit on Stock and Loans					.95%*	

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
PROFIT OR LOSS ON INVESTMENTS IN LICENSEE COMPANIES
DURING YEARS 1923 TO 1930, INCLUSIVE

Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
29,989.65*	$ 827,550.00*	$ 1,273,351.05*	$ 805,499.11*	$ 137,927.93*	$ 397,612.62	$ 403,729.73	$ 488,369.38
02,036.71	223,979.18	182,990.28	71,515.66	61,750.00	21,330.00	34,930.00	22,870.27
32,026.36*	1,051,529.18*	1,456,341.33*	877,014.77*	199,677.93*	376,282.62	368,799.73	465,499.11
08,447.00	29,857,147.00	34,568,304.00	34,146,656.00	34,085,586.00	34,085,586.00	34,085,586.00	35,966,826.00
3.62%*	3.52%*	4.21%*	2.57%*	.59%	1.10%	1.08%	1.30%
02,179.89*	$ 348,785.96	$ 504,052.10	$ 554,424.31	$ 539,290.28	$ 1,204,164.11	$ 1,221,237.30	$ 1,275,082.67*
58,182.72	260,696.93	127,365.13	268,031.00	365,702.50	116,982.05	377,791.76	147,036.60
60,362.61*	88,089.03	376,686.97	286,393.31	173,587.78	1,087,182.06	843,445.54	1,422,119.27*
26,444.00	53,907,942.00	61,676,460.00	74,992,210.00	88,895,959.00	104,579,096.00	123,286,096.00	134,997,057.00
.87%*	.16%	.61%	.38%	.20%	1.04%	.68%	1.05%*
,412.70	$ 42,014.66	$ 19,606.84	$ 23,491.97	$ 226,110.22	$ 317,141.60	$ 323,014.59	$ 508,882.72
,663.48	19,206.21	13,842.50	14,987.50	14,121.75	27,425.95	138,597.25	52,381.25
,250.78*	22,808.45	5,764.34	8,504.47	211,988.47	289,715.65	184,417.34	456,501.47
,348.00	29,534,074.00	29,234,772.00	30,739,963.00	30,851,463.00	33,861,020.00	43,252,463.00	47,664,078.00
.02%*	.08%	.02%	.03%	.69%	.86%	.43%	.96%
,029.44	$ 197,403.80	$ 788,864.49*	$ 516,987.65	$ 527,435.55	$ 751,415.04	$ 765,865.33	$ 1,088,210.31
,281.25	250,224.66	428,486.96	141,700.00	-	19,212.56	84,455.78	47,600.00
,748.19	52,820.86*	1,217,351.45*	375,287.65	527,435.55	732,202.48	681,409.55	1,040,610.31
,102.00	70,475,459.00	91,583,451.00	84,801,063.00	72,251,446.00	75,401,046.00	80,713,946.00	93,640,175.00
.13%	.07%*	1.33%*	.44%	.73%	.97%	.84%	1.11%
				-	$ 335,663.43	$ 581,718.16	$ 901,092.83
				$ 27,424.69	162,478.80	178,613.09	131,843.94
				27,424.69*	$ 173,184.63	$ 403,105.07	$ 769,248.89
				2,886,810.00	95,138,609.00	131,959,487.00	145,084,487.00
				.95%*	.18%	.31%	[illegible]

(5) Per cent of Net Profit on Stock and Loans	.13%	.07%*	1.33%*	.44%	.73%	
New Jersey Bell Telephone Company					-	$ 3
(1) Profit to A.T. & T. Co. on Stock					$ 27,424.69	
(3) Net Profit to A.T. & Holdings					27,424.69*	$
(4) Average A.T. & T. Stock Holdings Plus Average Loans					2,886,610.00	95,1
(5) Per cent of Net Profit on Stock and Loans					.93%*	

* Red Figures (Losses)

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.13%	.07%*	1.33%*	.44%	.73%	.97%	.84%	1.11%
				-	$ 335,663.43	$ 581,718.16	$ 901,092.83
				$ 27,424.69	162,478.80	178,613.09	131,843.94
				27,424.69*	$ 173,184.63	$ 403,105.07	$ 769,248.89
				2,886,810.00	95,138,809.00	131,959,487.00	145,084,487.00
				.93%*	.18%	.31%	.53%

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
PROFIT OR LOSS ON INVESTMENTS IN LICENSEE COMPANIES (Cont'd)
DURING YEARS 1923 TO 1930, INCLUSIVE

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Yea D
New York Telephone Company						
(1) Profit to A.T. & T. Co. on Stock Holdings	$ 266,411.20*	$ 217,972.80*	$ 411,726.40*	$ 1,700,041.28	$ 1,608,975.78	$ 2,55
(2) Losses to A.T. & T. Co. on Loans	112,072.11	462,376.58	667,621.56	413,464.84	447,782.37	10
(3) Net Profit to A.T. & T. Co.	378,483.31*	680,349.38*	1,079,347.96*	1,286,576.44	1,161,193.41	2,44
(4) Average A.T. & T. Stock Holdings Plus Average Loans	251,303,554.00	278,888,554.00	301,273,554.00	341,511,354.00	350,715,321.00	321,49
(5) Per cent of Net Profit on Stock and Loans	.15%*	.24%*	.36%*	.38%	.33%	
Northwestern Bell Telephone Company						
(1) Profit to A.T. & T.Co. on Stock Holdings	$ 264,336.20*	$ 585,606.34	$ 739,898.97	$ 686,810.70	$ 666,998.85	$ 87
(2) Losses to A.T. & T.Co. on Loans	-	-	50,991.25	27,931.25	712.50	
(3) Net Profit to A.T. & T. Co.	264,336.20*	585,606.34	688,907.72	658,879.45	666,286.35	86
(4) Average A.T. & T. Stock Holdings Plus Average Loans	40,667,107.00	40,367,107.00	62,317,107.00	68,601,990.00	66,114,490.00	66,60
(5) Per cent of Net Profit on Stock and Loans	.65%*	1.44%	1.11%	.96%	1.01%	
Ohio Bell Telephone Company						
(1) Profit to A.T. & T. Co. on Stock Holdings	$ 1,252,408.16*	$ 712,928.57*	$ 36,037.66	$ 217,216.46*	$ 432,205.79*	$ 38
(2) Losses to A.T. & T. Co. on Loans	117,219.00	161,949.16	155,551.37	114,789.08	202,317.78	3
(3) Net Profit to A.T.& T. Co.	1,369,627.16*	874,877.73*	119,513.71*	332,005.54*	634,523.57*	3
(4) Average A.T. & T. Stock Holdings Plus Average Loans	48,872,236.00	52,270,344.00	57,568,858.00	71,317,038.00	87,098,752.00	96,39
(5) Per cent of Net Profit on Stock and Loans	2.80%*	1.67%*	.21%*	.47%*	.73%*	
Pacific Telephone and Telegraph Company						
(1) Profit to A.T. & T. Co. on Stock Holdings	$ 370,635.49*	$ 378,312.60*	$ 340,987.67*	$ 302,552.66	$ 351,307.47	$ 76
(2) Losses to A.T. & T. Co. on Loans	139,758.75	421,706.25	390,851.18	505,487.50	332,487.89	2
(3) Net Profit to A.T. & T. Co.	510,394.24*	800,018.85*	731,838.85*	202,934.84*	18,819.58	5
(4) Average A.T. & T. Stock Holdings Plus Average Loans	53 ,780,645.00	87,779,659.00	128,010,808.00	137,349,538.00	156,180,546.00	172,96
(5) Per cent of Net Profit on Stock and Loans	.95%*	.91%*	.57%*	.15%*	.01%	
Southern Bell Telephone Company						
(1) Profit to A.T. & T. Co. on Stock Holdings	$ 480,650.37	$ 664,357.82	$ 630,068.39	$ 845,003.05	$ 958,442.57	$ 1,33
(2) Losses to A.T. & T. Co. on Loans	134,496.55	28,224.00	27,738.68	79,105.88	138,302.21	11
(3) Net Profit to A.T. & T.Co.	346,153.82	636,133.82	602,329.71	765,897.17	820,140.36	1,2
(4) Average A.T. & T. Stock Holdings Plus Average Loans	46,538,410.00	45,101,795.00	45,316,545.00	83,383,821.00	111,370,508.00	120,51
(5) Per cent of Net Profit on Stock and Loans	.74%	1.41%	1.33%	.92%	.74%	

* Red Figures (Losses)

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
PROFIT OR LOSS ON INVESTMENT IN LICENSEE COMPANIES (Cont'd)
DURING YEARS 1923 TO 1930, INCLUSIVE

ar Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
,411.20*	$ 217,972.80*	$ 411,726.40*	$ 1,700,041.28	$ 1,608,975.78	$ 2,550,074.81	$ 2,610,790.88	$ 3,893,297.24
,072.11	462,376.58	667,621.56	413,464.84	447,782.37	109,283.39	226,296.50	198,687.50
,483.31*	680,349.38*	1,079,347.96*	1,286,576.44	1,161,193.41	2,440,791.42	2,384,494.38	3,694,609.74
,554.00	278,888,554.00	301,273,554.00	341,511,354.00	350,715,321.00	321,495,645.00	328,255,335.00	373,917,835.00
.15%*	.24%*	.36%	.38%	.33%	.76%	.73%	.99%
,336.20*	$ 585,606.34	$ 739,898.97	$ 686,810.70	$ 666,998.85	$ 871,721.27	$ 884,929.17	$ 1,069,839.74
-	-	50,991.25	27,931.25	712.50	3,423.84	31,686.50	91,703.91
,336.20*	585,606.34	688,907.72	658,879.45	666,286.35	868,297.43	853,242.67	978,135.83
,107.00	40,367,107.00	62,317,107.00	68,601,990.00	66,114,490.00	66,600,775.00	69,214,490.00	87,616,880.00
.65%*	1.44%	1.11%	.96%	1.01%	1.30%	1.23%	1.12%
,408.16*	$ 712,928.57*	$ 36,037.66	$ 217,216.46*	$ 432,205.79*	$ 389,459.54	$ 472,158.78	$ 97,915.51
,219.00	161,949.16	155,551.37	114,789.08	202,317.78	34,525.14	34,996.96	39,418.75
,627.16*	874,877.73*	119,513.71*	332,005.54*	634,523.57*	354,934.40	437,161.82	58,496.76
,236.00	52,270,344.00	57,568,858.00	71,317,038.00	87,098,752.00	96,390,194.00	107,966,503.00	125,109,180.00
2.80%*	1.67%*	.21%*	.47%*	.73%*	.37%	.40%	.05%
,635.49*	$ 378,312.60*	$ 340,987.67*	$ 302,552.66	$ 351,307.47	$ 767,608.31	$ 793,890.17	$ 1,560,584.17
,758.75	421,706.25	390,851.18	505,487.50	332,487.89	253,466.47	633,998.26	155,663.18
,394.24*	800,018.85*	731,838.85*	202,934.84*	18,819.58	514,141.84	159,891.91	1,404,920.99
,645.00	87,779,659.00	128,010,808.00	137,349,538.00	156,180,546.00	172,961,190.00	194,936,190.00	221,694,091.00
.95%*	.91%*	.57%*	.15%*	.01%	.30%	.08%	.63%
,650.37	$ 664,357.82	$ 630,068.39	$ 845,003.05	$ 958,442.57	$ 1,333,740.88	$ 1,627,585.75	$ 2,079,778.55
,496.55	28,224.00	27,738.68	79,105.88	138,302.21	114,073.80	263,828.06	1,540.63
,153.82	636,133.82	602,329.71	765,897.17	820,140.36	1,219,667.08	1,363,757.69	2,078,237.92
,410.00	45,101,795.00	45,316,545.00	83,383,821.00	111,370,508.00	120,512,904.00	146,997,582.00	127,178,265.00
.74%	1.41%	1.33%	.92%	.74%	1.01%	.93%	1.63%

[illegible] Bell Telephone Company

(1) Profit to A.T. & T. Co. on Stock Holdings	$ 480,650.37	$ 664,357.82	$ 630,068.39	$ 845,003.05	$ 958,442.57	$ 1,333,
(2) Losses to A.T. & T. Co. on Loans	134,496.55	28,224.00	27,738.68	79,105.88	138,302.21	114,
(3) Net Profit to A.T. & T.Co.	346,153.82	636,133.82	602,329.71	765,897.17	820,140.36	1,219,
(4) Average A.T. & T. Stock Holdings Plus Average Loans	46,538,410.00	45,101,795.00	45,316,543.00	83,383,821.00	111,370,508.00	120,512,
(5) Per cent of Net Profit on Stock and Loans	.74%	1.41%	1.33%	.92%	.74%	1

* Red Figures (Losses)

Cont'd on next Page

$ 480,650.37	$ 664,357.82	$ 630,068.39	$ 845,003.05	$ 958,442.57	$ 1,333,740.88	$ 1,627,585.73	$ 2,079,778.55
134,496.55	28,224.00	27,738.68	79,105.88	138,302.21	114,073.80	263,828.04	1,540.63
346,153.82	636,133.82	602,329.71	765,897.17	820,140.36	1,219,667.08	1,363,757.69	2,078,237.92
46,538,410.00	45,101,795.00	45,316,545.00	83,383,821.00	111,370,508.00	120,512,904.00	146,997,582.00	127,178,265.00
.74%	1.41%	1.33%	.92%	.74%	1.01%	.93%	1.63%

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
PROFIT AND LOSS ON INVESTMENTS IN LICENSEE COMPANIES (CONT'd)
DURING YEARS 1923 TO 1930, INCLUSIVE

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927
Southern New England Telephone Co.					
(1) Profit to A.T. & T. Co. on Stock Holdings	$ 47,832.15	$ 60,540.23	$ 60,038.09	$ 76,830.98	$ 84,900.89
(2) Losses to A.T. & T. Co. on Loans	23,062.50	23,310.00	37,855.85	37,560.86	26,006.25
(3) Net Profit to A.T. & T.Co.	24,769.65	37,230.23	22,182.24	39,270.12	58,894.64
(4) Average A.T. & T. Stock Holdings Plus Average Loans	8,168,704.00	9,144,004.00	11,147,229.00	12,078,644.00	12,385,329.00
(5) Per cent of Net Profit on Stock and Loans	.30%	.41%	.20%	.33%	.48%
Southeastern Bell Telephone Company					
(1) Profit to A.T. & T.Co. on Stock Holdings	$ 1,110,134.78	$ 1,124,367.28	$ 1,067,437.29	$ 1,052,916.73	$ 918,952.39
(2) Losses to A.T. & T.Co. on Loans	216,464.76	65,755.50	-	72,073.85	94,402.07
(3) Net Profit to A.T. & T. Co.	893,670.02	1,058,611.78	1,067,437.29	980,842.88	824,550.32
(4) Average A.T. & T. Stock Holdings Plus Average Loans	88,761,247.00	76,381,176.00	71,162,486.00	92,215,266.00	113,190,137.00
(5) Per cent of Net Profit on Stock and Loans	1.01%	1.39%	1.50%	1.06%	.73%
Wisconsin Telephone Company					
(1) Profit to A.T. & T.Co. on Stock Holdings	$ 61,910.98	$ 119,890.30	$ 147,282.90	$ 110,167.51	$ 27,677.47
(2) Losses to A.T. & T. Co. on Loans	40,142.82	5,378.75	4,378.75	1,635.00	6,768.75
(3) Net Profit to A.T. & T.Co.	21,768.16	113,511.55	142,904.15	108,532.51	20,908.72
(4) Average A.T. & T. Stock Holdings Plus Average Loans	15,169,602.00	17,392,208.00	20,843,458.00	23,589,896.00	25,873,835.00
(5) Per cent of Net Profit on Stock and Loans	.14%	.65%	.69%	.46%	.08%
Totals - All Companies					
(1) Total Profit to A.T. & T. Co. on Stock Holdings	$ 1,599,965.72*	$ 948,646.41	$ 1,000,968.79	$ 5,823,638.44	6,540,468.65
(2) Total Losses to A.T. & T. Co. on Loans	1,532,770.07	2,265,890.92	2,615,886.16	2,097,599.66	1,845,973.47
(3) Total Net Profit to A.T. & T.Co.	3,132,735.79*	1,317,244.51*	1,614,917.37*	3,726,038.78	4,694,495.18
(4) Total Average A.T. & T. Stock Holdings plus Average Loans	$ 839,975,400.00	$996,655,198.00	$1,201,403,358.00	$1,318,997,739.00	$1,421,499,805.00
(5) Composite Per cent of Net Profit On Stock and Loans	.37%*	.13%*	.13%*	.28%	.33%
Totals - All Companies, Exclusive of I.B.T.Co.					
(1) Total Profit to A.T.& T.Co. on Stock Holdings	$ 1,785,915.94*	$ 739,061.49	$ 749,039.30	$ 5,383,352.95	$ 5,923,478.49
(2) Total Losses to A.T.& T.Co. on Loans	1,530,310.07	2,265,890.92	2,589,703.59	2,022,665.91	1,810,348.47
(3) Total Net Profit to A.T.& T.Co.	3,316,226.01*	1,526,829.43*	1,840,664.[illegible]*	[illegible]	[illegible]

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
PROFIT OR LOSS ON INVESTMENTS IN LICENSEE COMPANIES (CONT'd)
DURING YEARS 1923 TO 1930, INCLUSIVE

Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
47,832.15	$ 60,540.23	$ 60,038.09	$ 76,830.98	$ 84,900.89	$ 131,941.52	$ 150,973.15	$ 192,181.34
23,062.50	23,310.00	37,855.85	37,560.86	26,006.25	31,144.49	48,902.00	29,237.03
24,769.65	37,230.23	22,182.24	39,270.12	58,894.64	100,797.03	102,071.15	162,944.31
8,168,704.00	9,144,004.00	11,147,229.00	12,078,644.00	12,385,329.00	15,920,533.00	16,881,996.00	19,278,096.00
.30%	.41%	.20%	.33%	.48%	.63%	.60%	.85%
1,110,134.78	$ 1,124,367.28	$ 1,067,437.29	$ 1,052,916.73	$ 918,952.39	$ 1,528,338.15	$ 1,847,954.05	$ 2,516,206.45
216,464.76	65,755.50	-	72,073.85	94,402.07	55,888.75	53,642.50	44,731.25
893,670.02	1,058,611.78	1,067,437.29	980,842.88	824,550.32	1,472,449.40	1,794,311.55	2,471,475.20
88,761,247.00	76,381,176.00	71,162,486.00	92,215,266.00	113,190,137.00	132,415,166.00	148,627,252.00	168,776,978.00
1.01%	1.39%	1.50%	1.06%	.73%	1.11%	1.21%	1.46%
61,910.98	$ 119,890.30	$ 147,282.90	$ 110,167.51	$ 27,677.47	$ 131,314.29	$ 167,468.24	$ 287,259.28
40,142.82	5,378.75	4,378.75	1,635.00	6,768.75	14,245.85	6,549.38	30,387.50
21,768.16	113,511.55	142,904.15	108,532.51	20,908.72	117,068.44	160,918.86	256,871.78
15,169,602.00	17,392,208.00	20,843,458.00	23,589,896.00	25,873,835.00	29,134,220.00	29,530,085.00	38,373,835.00
.14%	.65%	.69%	.46%	.08%	.40%	.54%	.67%
1,599,965.72*	$ 948,646.41	$ 1,000,968.79	$ 5,823,638.44	6,540,468.65	$ 13,172,269.29	$ 14,490,776.06	$ 17,136,008.97
1,532,770.07	2,265,890.92	2,615,886.16	2,097,599.66	1,845,973.47	1,042,909.60	2,452,966.90	1,137,658.18
3,132,735.79*	1,317,244.51*	1,614,917.37*	3,726,038.78	4,694,495.18	12,129,359.69	12,037,809.16	15,998,350.79
9,975,400.00	$996,656,198.00	$1,201,403,358.00	$1,318,997,739.00	$1,421,499,805.00	$1,590,537,723.00	$1,773,782,911.00	$1,970,014,694.00
.37%*	.13%*	.13%*	.28%	.33%	.76%	.68%	.81
1,785,915.94*	$ 739,061.49	$ 749,039.30	$ 5,383,352.95	$ 5,923,478.49	$ 11,947,526.26	$ 13,243,125.51	$ 15,228,439.06
1,530,310.07	2,265,890.92	2,589,703.59	2,022,665.91	1,810,348.47	1,014,997.37	2,329,090.15	1,138,320.68
3,316,226.01*	1,526,829.43*	1,840,664.29*	3,360,687.04	4,113,130.02	[illegible]	[illegible]	

(5) Composite Per Cent of Net Profit On Stock and Loans	.37%*	.13%*	.13%*	.28%	.33%	
Totals - All Companies, Exclusive of I.B.T.Co.						
(1) Total Profit to A.T.& T.Co. on Stock Holdings	$ 1,785,915.94*	$ 739,061.49	$ 749,039.30	$ 5,383,352.95	$ 5,923,478.49	$ 11
(2) Total Losses to A.T.& T.Co. on Loans	1,530,310.07	2,265,890.92	2,589,703.59	2,022,665.91	1,810,348.47	1
(3) Total Net Profit to A.T.& T.Co.	3,316,226.01*	1,526,829.43*	1,840,664.29*	3,360,687.04	4,113,130.02	1
(4) Total Average A.T.& T.Stock Holdings Plus Average Loans	$ 773,364,607.00	$921,803,441.00	$1,122,744,047.00	$1,225,792,595.00	$1,325,661,722.00	$1,471
(5) Composite Per Cent of Net Profit On Stock and Loans	.43%*	.17%*	.16%*	.27%	.31%	

* Red Figures.

.37%*	.13%*	.13%*	.28%	.33%	.76%	.68%	.81
1,785,915.94*	$ 739,061.49	$ 749,039.30	$ 5,383,352.95	$ 5,923,478.49	$ 11,947,526.26	$ 13,243,125.51	$ 15,228,439.06
1,530,310.07	2,265,890.92	2,589,703.59	2,022,665.91	1,810,348.47	1,014,997.37	2,329,090.15	1,135,320.68
3,316,226.01*	1,526,829.43*	1,840,664.29*	3,360,687.04	4,113,130.02	10,932,528.89	10,914,035.36	14,093,118.38
773,364,607.00	$921,803,441.00	$1,122,744,047.00	$1,225,792,595.00	$1,325,661,722.00	$1,471,499,982.00	$1,646,907,056.00	$1,835,188,785.00
.43%*	.17%*	.16%*	.27%	.31%	.74%	.66%	.77%

EXHIBIT X-133

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

AVERAGE RETURN FROM DIVIDENDS AND INTEREST ON INVESTMENTS (STOCKS AND LOANS) IN LICENSEE COMPANIES DURING YEARS 1920 TO 1922, INCLUSIVE

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
Bell Telephone Company of Pennsylvania	5.99%	7.98%	7.98%
Central Union Telephone Company	5.53%	-	-
Chesapeake and Potomac Telephone Companies	6.00%	6.57%	3.29%
Cincinnati and Suburban Bell Telephone Co.	6.31%	6.36%	6.48%
Cumberland Telephone & Telegraph Co. (Kentucky)	6.00%	5.58%	5.78%
Illinois Bell Telephone Company	6.76%	6.82%	6.98%
Indiana Bell Telephone Company	3.89%	2.93%	3.08%
Michigan State Telephone Company	4.13%	4.03%	5.54%
Mountain States Telephone Company	6.95%	6.87%	6.86%
New England Telephone & Telegraph Co.	6.65%	6.88%	6.93%
New York Telephone Company	6.36%	6.30%	6.70%
Northwestern Bell Telephone Company	6.73%	4.45%	5.24%
Ohio Bell Telephone Company	2.48%	6.58%	3.47%
Pacific Telephone & Telegraph Company	5.64%	5.47%	5.79%
Southern Bell Telephone & Telegraph Company	6.45%	6.25%	6.24%
Southern New England Telephone Company	6.68%	7.08%	7.02%
Southwestern Bell Telephone Company	6.32%	7.03%	7.67%
Wisconsin Telephone Company	7.24%	6.97%	7.12%
Total All Licensee Companies	6.11%	6.16%	6.31%
Total All Licensee Companies exclusive of Illinois Bell Telephone Company	6.06%	6.11%	6.26%

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

AVERAGE RETURN FROM DIVIDENDS AND INTEREST ON INVESTMENT (STOCKS AND LOANS) IN LICENSEE COMPANIES DURING YEARS 1923 TO 193[illegible], INCLUSIVE

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926
Bell Telephone Company of Pennsylvania	7.31%	6.86%	7.05%	7.41%
Chesapeake and Potomac Telephone Companies	6.52%	5.85%	6.68%	6.57%
Cincinnati and Suburban Bell Telephone Co.	6.59%	6.67%	6.79%	7.25%
Cumberland Telephone & Telegraph Co. (Kentucky)	2.94%	6.54%	6.54%	5.74%
Illinois Bell Telephone Company	7.15%	7.13%	7.22%	7.22%
Indiana Bell Telephone Company	3.25%	3.33%	2.72%	4.26%
Michigan Bell Telephone Company	6.00%	7.01%	7.54%	7.21%
Mountain States Telephone Company	6.85%	6.93%	6.95%	6.86%
New England Telephone & Telegraph Co.	7.00%	6.78%	5.60%	7.27%
New Jersey Bell Telephone Company	-	-	-	-
New York Telephone Company	6.72%	6.61%	6.57%	7.21%
Northwestern Bell Telephone Company	6.22%	8.29%	8.04%	7.79%
Ohio Bell Telephone Company	4.07%	5.19%	6.72%	6.36%
Pacific Telephone & Telegraph Company	5.92%	5.94%	6.36%	6.68%
Southern Bell Telephone & Telegraph Company	7.61%	8.26%	8.26%	7.75%
Southern New England Telephone Company	7.17%	7.26%	7.13%	7.16%
Southwestern Bell Telephone Company	7.88%	8.24%	8.43%	7.89%
Wisconsin Telephone Company	7.01%	7.50%	7.62%	7.29%
Total All Licensee Companies	6.50%	6.72%	6.80%	7.11%
Total All Licensee Companies exclusive of Illinois Bell				

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

AVERAGE RETURN FROM DIVIDENDS AND INTEREST ON INVESTMENTS (STOCKS AND LOANS) IN LICENSEE COMPANIES DURING YEARS 1923 TO 1930, INCLUSIVE.

Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
7.31%	6.86%	7.05%	7.41%	7.31%	7.40%	7.16%	7.25%
6.52%	5.85%	6.68%	6.57%	6.86%	6.98%	7.01%	6.65%
6.59%	6.67%	6.79%	7.25%	8.16%	8.23%	8.29%	8.36%
2.94%	6.54%	6.54%	5.74%	-	-	-	-
7.15%	7.13%	7.22%	7.22%	7.47%	7.56%	7.42%	7.66%
3.25%	3.33%	2.72%	4.26%	6.27%	7.65%	7.61%	7.55%
6.00%	7.01%	7.54%	7.21%	7.06%	7.59%	7.21%	5.20%
6.85%	6.93%	6.95%	6.86%	7.55%	7.41%	6.96%	7.21%
7.00%	6.78%	5.60%	7.27%	7.59%	7.52%	7.37%	7.36%
-	-	-	-	5.91%	6.73%	6.84%	6.78%
6.72%	6.61%	6.57%	7.21%	7.19%	7.31%	7.26%	7.24%
6.22%	8.29%	8.04%	7.79%	7.87%	7.85%	7.76%	7.37%
4.07%	5.19%	6.72%	6.36%	6.13%	6.92%	6.93%	6.30%
5.92%	5.94%	6.36%	6.68%	6.87%	6.85%	6.61%	6.88%
7.61%	8.26%	8.26%	7.75%	7.60%	7.56%	7.46%	7.88%
7.17%	7.26%	7.13%	7.16%	7.34%	7.18%	7.13%	7.10%
7.88%	8.24%	8.43%	7.89%	7.59%	7.66%	7.74%	7.71%
7.01%	7.50%	7.62%	7.29%	6.94%	6.95%	7.07%	6.92%
6.50%	6.72%	6.80%	7.11%	7.19%	7.31%	7.21%	7.06%

Ohio Bell Telephone Company	4.07%	5.19%	6.72%	6.36%
Pacific Telephone & Telegraph Company	5.92%	5.94%	6.36%	6.68%
Southern Bell Telephone & Telegraph Company	7.61%	8.26%	8.26%	7.75%
Southern New England Telephone Company	7.17%	7.26%	7.13%	7.16%
Southwestern Bell Telephone Company	7.88%	8.24%	8.43%	7.89%
Wisconsin Telephone Company	7.01%	7.50%	7.62%	7.29%
Total All Licensee Companies	6.50%	6.72%	6.80%	7.11%
Total All Licensee Companies exclusive of Illinois Bell Telephone Company	6.44%	6.68%	6.77%	7.16%

	4.07%	5.19%	6.72%	6.36%	6.13%	6.92%	6.93%	6.30%
	5.92%	5.94%	6.36%	6.68%	6.87%	6.85%	6.61%	6.88%
	7.61%	8.26%	8.26%	7.75%	7.60%	7.56%	7.46%	7.88%
	7.17%	7.26%	7.13%	7.16%	7.34%	7.18%	7.13%	7.10%
	7.88%	8.24%	8.43%	7.89%	7.59%	7.66%	7.74%	7.10%
	7.01%	7.50%	7.62%	7.29%	6.94%	6.95%	7.07%	6.92%
ell	6.50%	6.72%	6.80%	7.11%	7.19%	7.31%	7.21%	7.06%
	6.44%	6.68%	6.77%	7.10%	7.17%	7.29%	7.19%	7.02%

X-134

EXHIBIT X-134

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

AVERAGE RETURN TO A. T. & T. CO. FROM DIVIDENDS AND INTEREST ON ITS INVESTMENTS (STOCK AND LOANS) IN LICENSEE COMPANIES, CONVERTED INTO AVERAGE RETURN TO STOCKHOLDERS OF A. T. & T. CO. ON THEIR INVESTMENTS IN CAPITAL STOCK OF A. T. & T. CO. DURING YEARS 1920 TO 1922, INCLUSIVE.

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
Bell Telephone Company of Pennsylvania	7.75%	11.31%	10.77%
Central Union Telephone Company	6.83%	-	-
Chesapeake & Potomac Telephone Companies	7.77%	8.57%	2.68%
Cincinnati & Suburban Bell Telephone Company	8.40%	8.17%	8.18%
Cumberland Telephone & Telegraph Company	7.77%	6.65%	6.98%
Illinois Bell Telephone Company	7.30%	9.06%	9.05%
Indiana Bell Telephone Company	3.54%	1.51%	2.31%
Michigan State Telephone Company	4.02%	9.65%	6.56%
Mountain States Telephone Company	9.68%	9.15%	8.84%
New England Telephone and Telegraph Company	9.08%	9.17%	8.96%
New York Telephone Company	8.50%	8.05%	8.56%
Northwestern Bell Telephone Company	9.24%	4.46%	6.04%
Ohio Bell Telephone Company	.70%	8.59%	2.99%
Pacific Telephone and Telegraph Co.	7.05%	6.44%	6.98%
Southern Bell Telephone Company	8.68%	7.95%	7.77%
Southern New England Telephone Company	9.14%	9.45%	9.12%
Southwestern Bell Telephone Company	8.42%	9.47%	10.24%
Wisconsin Telephone Company	10.27%	9.35%	9.29%
Total All Licensee Companies	8.00%	7.78%	7.89%
Total All Licensee Companies Exclusive of Ill. Bell Tel. Co.	7.90%	7.68%	7.80%

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

AVERAGE RETURN TO A. T. & T. CO. (DIVIDENDS AND INTEREST) ON ITS INVESTMENTS (STOCKS AND LOANS) IN LICENSEE COMPANIES, CONVERTED INTO AVERAGE RETURN TO STOCKHOLDERS OF A. T. & T. CO. ON THEIR INVESTMENTS IN CAPITAL OF A. T. & T. CO. DURING YEARS 1923 TO 19 INCLUSIVE

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926
Bell Telephone Company of Pennsylvania	9.48%	8.83%	9.09%	9.78%
Chesapeake and Potomac Telephone Companies	8.23%	7.21%	8.48%	8.27%
Cincinnati and Suburban Bell Telephone Co.	8.35%	8.52%	8.67%	9.51%
Cumberland Telephone and Telegraph Co.	2.59%	8.31%	8.25%	7.04%
Illinois Bell Telephone Company	9.23%	9.26%	9.37%	9.47%
Indiana Bell Telephone Company	3.08%	3.16%	1.97%	4.62%
Michigan Bell Telephone Company	7.41%	9.07%	9.90%	9.45%
Mountain States Telephone Company	8.76%	8.94%	8.93%	8.88%
New England Telephone and Telegraph Co.	8.99%	8.70%	6.71%	9.55%
New Jersey Bell Telephone Company				
New York Telephone Company	8.55%	8.43%	8.30%	9.45%
Northwestern Bell Telephone Company	7.76%	11.12%	10.72%	10.40%
Ohio Bell Telephone Company	4.37%	6.13%	8.55%	8.06%
Pacific Telephone and Telegraph Company	7.29%	7.35%	7.96%	8.58%
Southern Bell Telephone Company	9.95%	11.07%	11.08%	10.33%
Southern New England Telephone Co.	9.26%	9.47%	9.22%	9.37%
Southwestern Bell Telephone Company	10.38%	11.04%	11.36%	10.56%
Wisconsin Telephone Company	9.01%	9.85%	10.03%	9.58%
Total All Licensee Companies	8.20%	8.60%	8.68%	9.28%
Total All Licensee Companies Exclusive of Ill. Bell Tel. Co.	8.11%	8.54%	[illegible]	[illegible]

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

ERAGE RETURN TO A. T. & T. CO. FROM DIVIDENDS AND INTEREST
N ITS INVESTMENTS (STOCKS AND LOANS) IN LICENSEE COMPANIES,
VERTED INTO AVERAGE RETURN TO STOCKHOLDERS OF A. T. & T. CO.
ON THEIR INVESTMENTS IN CAPITAL STOCK OF A. T. & T. CO.
DURING YEARS 1923 TO 1930, INCLUSIVE

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
	9.48%	8.83%	9.09%	9.78%	9.63%	10.18%	9.93%	10.51%
	8.23%	7.21%	8.48%	8.27%	8.91%	9.50%	9.68%	9.48%
	8.35%	8.52%	8.67%	9.31%	10.99%	11.55%	11.83%	12.44%
	2.59%	8.31%	8.25%	7.04%				
	9.23%	9.26%	9.37%	9.47%	9.88%	10.45%	10.37%	11.23%
	3.08%	3.16%	1.97%	4.62%	7.96%	10.59%	10.69%	11.03%
	7.41%	9.07%	9.90%	9.45%	9.23%	10.50%	10.01%	6.08%
	8.76%	8.94%	8.93%	8.88%	10.01%	10.20%	9.59%	10.45%
	8.99%	8.70%	6.71%	9.55%	10.08%	10.38%	10.28%	12.75%
					7.38%	9.09%	9.39%	9.70%
	8.55%	8.43%	8.30%	9.45%	9.44%	10.04%	10.10%	10.50%
	7.76%	11.12%	10.72%	10.40%	10.52%	10.92%	10.94%	10.72%
	4.37%	6.13%	8.55%	8.06%	7.74%	9.40%	9.54%	9.87%
	7.29%	7.35%	7.96%	8.58%	8.92%	9.28%	9.00%	9.87%
	9.95%	11.07%	11.08%	10.33%	10.09%	10.45%	10.44%	11.61%
	9.26%	9.47%	9.22%	9.37%	9.68%	9.82%	9.88%	10.26%
	10.38%	11.04%	11.36%	10.56%	10.08%	10.61%	10.91%	11.31%
	9.01%	9.85%	10.03%	9.58%	9.03%	9.45%	9.78%	9.94%
	8.20%	8.60%	8.68%	9.28%	9.44%	10.04%	10.01%	10.19%
Co.	8.11%	8.54%	8.63%	9.27%	9.40%	10.00%	9.98%	10.12

Pacific Telephone and Telegraph Company	7.29%	7.35%	7.96%	8.58%
Southern Bell Telephone Company	9.95%	11.07%	11.08%	10.33%
Southern New England Telephone Co.	9.26%	9.47%	9.22%	9.37%
Southwestern Bell Telephone Company	10.38%	11.04%	11.36%	10.56%
Wisconsin Telephone Company	9.01%	9.85%	10.03%	9.58%
Total 11 Licensee Companies	8.20%	8.60%	8.68%	9.28%
Total 11 Licensee Companies Exclusive of Ill. Bell Tel. Co.	8.11%	8.54%	8.63%	9.27%

	7.29%	7.35%	7.96%	8.58%	8.92%	9.28%	9.00%	9.87%
	9.95%	11.07%	11.08%	10.33%	10.09%	10.45%	10.44%	11.61%
	9.26%	9.47%	9.22%	9.37%	9.68%	9.82%	9.88%	10.26%
	10.38%	11.04%	11.36%	10.56%	10.08%	10.61%	10.31%	11.31%
	9.01%	9.85%	10.03%	9.58%	9.03%	9.45%	9.78%	9.94%
	8.20%	8.60%	8.68%	9.28%	9.44%	10.04%	10.01%	10.19%
cl. o.	8.11%	8.54%	8.63%	9.27%	9.40%	10.00%	9.98%	10.12%

[fol. 4616]

Exhibit X-135

American Telephone and Telegraph Company

Ratio of Capital Investment in Illinois Bell Telephone Co. to Capital Investment in All Licensee Companies, Ratio of Profit on Capital Investment in Illinois Bell Telephone Co. to Profit on Capital Investment in All Licensee Companies, and Percentages of Profit on Investment During Years 1920 to 1922, Inclusive

		Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
1	Capital Investment in Illinois Bell Telephone Co	$47,984,725	$54,640,543	$57,194,003
2	Capital Investment in Other Licensee Companies	600,943,700	675,815,709	713,456,348
3	Capital Investment in All License Companies	648,928,425	730,456,252	770,650,351
4	Profit on Capital Investment in Ill. Bell Telephone Co	309,663	78,078	48,142
5	Profit on Capital Investm[illegible] in [illegible]er License Companies	295,013*	3,859,489*	4,583,881*
6	Profit on Capital Inves[illegible]censee Companies	14,650	3,781,411*	4,535,739*
7	Ratio of Capital Inv[illegible]Bell Telephone Co. to Capital Investment in All Licenseee Compa[illegible]	7.39%	7.48%	7.42%
8	Ratio of Profit on [illegible] in Ill. Bell Tel. Co. to Profit on Capital Investment in All Licensee [illegible]	2,113.74%	(See note)	(See note)
9	Percentage of P[illegible]tment in Illinois Bell Telephone Co	.65%	.14%	.08%
10	Percentage of P[illegible]stment in Other Licensee Companies	.05%*	.057%*	.64%*
11	Percentage of Pro[illegible]nvestment in All Licensee Companies	.00%	.52%*	.59%*

Note.—"Capital Investment" refers to the investment in Capital Stock and Loans to Licensee Companies. During the years 1921 and 1922 there was a profit in respect to Ill. Bell Tel. Co., but there was a net loss on all Licensee Companies.

* Indicates Red Figures (Losses).

(Here follows side folio 4617)

American Telephone and Telegraph Company

Ratio of Capital Investment in Illinois Bell Telephone Co. to Capital Investment in all Licensee Companies, Ratio of Profit on Capital Investment in Illinois Bell Telephone Co. to Profit on Capital Investment in All Licensee Companies and Percentages of Profit on Investment, During Years 1923 to 1930, Inclusive

		Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
1	Capital Investment in Illinois Bell Tel. Co.	$66,610,793	$74,851,757	$78,659,311	$93,205,144	$95,838,083	$119,037,741	$126,875,853	$134,885,909
2	Capital Investment in Other Licensee Companies	773,364,607	921,803,441	1,122,744,047	1,225,792,595	1,325,661,722	1,471,499,982	1,646,907,058	1,835,128,785
3	Capital Investment in All Licensee Companies	839,975,400	996,655,198	1,201,403,358	1,318,997,739	1,421,499,805	1,590,537,723	1,773,782,911	1,970,014,694
4	Profit on Capital Investment in Ill. Bell Tel. Co.	183,490	209,585	225,747	365,352	581,365	1,196,831	1,123,774	1,905,233
5	Profit on Capital Investment in Other Licensee Companies	3,316,226*	1,526,829*	1,840,664*	3,360,687	4,113,130	10,932,529	10,914,035	14,093,118
6	Profit on Capital Investment in All Licensee Companies	3,132,736*	1,317,244*	1,614,917*	3,726,039	4,694,495	12,129,360	12,037,809	15,998,351
7	Ratio of Capital Investment in Illinois Bell Tel. Co. to Capital Investment in All Licensee Companies	7.93%	7.51%	6.55%	7.07%	6.74%	7.48%	7.15%	6.85%
8	Ratio of Profit on Capital Investment in Ill. Bell Tel. Co. to Profit on Capital Investment in all Licensee Companies	(See Note)	(See Note)	(See Note)	9.81%	12.38%	9.87%	9.34%	11.91%
9	Percentage of Profit on Capital Investment in Illinois Bell Telephone Co.	.28%	.28%	.29%	.39%	.61%	1.01%	.89%	1.41%
10	Percentage of Profit on Capital Investment in Other Licensee Companies	.43%*	.17%*	.16%*	.27%	.31%	.74%	.66%	.77%
11	Percentage of Profit on Capital Investment in All Licensee Companies	.37%*	.13%*	.13%*	.28%	.33%	.76%	.68%	.81%

Note.—"Capital Investment" refers to the investment in Capital Stock and Loans to Licensee Companies. In the Years 1923 to 1925 there was a profit in respect to Ill. Bell Telephone Co. but there was a net loss on All Licensee Companies.

* Indicates Red Figures (Losses).

[fol. 4618]

EXTRACTS FROM EXHIBIT X-136

American Telephone and Telegraph Company

Percentage Relationships of Average Investments in Capital Stocks of Licensee Companies and in Loans to Licensee Companies to Total Average Investments (Stock and Loans) in Licensee Companies, Years Ended December 31, 1920, to 1930, Inclusive

Year ended Dec. 31 (1)	Average A. T. & T. stock holdings common % (2)	Average A. T. & T. stock holdings preferred % (3)	Average A. T. & T. loans % (4)
Illinois Bell Telephone Company:			
1920	96.83	....	3.17
1921	94.14	....	5.86
1922	98.70	....	1.30
1923	99.70	....	.30
1924	100.00	....	....
1925	97.05	....	2.95
1926	92.62	....	7.38
1927	96.09	....	3.91
1928	96.16	....	3.84
1929	90.22	....	9.78
1930	99.59	....	.41
Total All Licensee Companies:			
1920	68.99	3.83	27.18
1921	70.31	3.50	26.19
1922	75.32	6.45	18.23
1923	78.58	6.58	14.84
1924	75.23	6.73	18.04
1925	74.55	6.18	19.27
1926	79.97	5.44	14.59
1927	81.29	5.04	13.67
1928	84.75	4.50	10.75
1929	82.10	4.04	13.86
1930	82.77	3.64	13.59
Total All Licensee Companies Exclusive of Ill. Bell Tel. Co.			
1920	66.76	4.14	29.10
1921	68.38	3.79	27.83
1922	73.44	6.97	19.59
1923	76.76	7.15	16.09
1924	73.22	7.27	19.51
1925	72.98	6.61	20.41
1926	79.01	5.85	15.14
1927	80.22	5.41	14.37
1928	83.82	4.87	11.31
1929	81.48	4.35	14.17
1930	81.53	3.91	14.56

Exhibit from which these extracts were taken showed the same data for each licensee company shown in these extracts for Illinois Bell Telephone Company.

[fol. 4619]

EXTRACTS FROM EXHIBIT X-137

American Telephone and Telegraph Company

Amounts Required in Order to Receive the Same per Cent of Return of Investment (Stock and Loans) in Each Licensee Company as Received from Investment in the Illinois Bell Telephone Co. During Years 1920 to 1930 Inclusive

Total—All Licensee Companies

Year Ended Dec. 31 (1)	Amt. Required to Equal Average I. B. T. Co. Return (2)	Amt. in Excess of Average I. B. T. Co. Return (3)	Net Amount Required to Equal Average I. B. T. Co. Return (4)
1920	$4,320,112.76	$120,281.12	$4,199,831.64
1921	5,136,759.16	347,549.90	4,789,209.26
1922	5,854,101.69	717,804.58	5,136,297.11
1923	6,362,471.45	880,541.88	5,481,929.57
1924	5,990,525.28	1,905,458.15	4,085,067.13
1925	7,219,224.97	2,124,096.93	5,095,128.04
1926	3,098,905.40	1,675,524.57	1,423,380.83
1927	4,664,773.10	697,913.81	3,966,859.29
1928	4,356,898.87	431,518.46	3,925,380.41
1929	4,656,014.22	896,255.70	3,759,758.52
1930	12,195,043.79	419,590.02	11,775,453.77

The exhibit from which these extracts were taken showed for each licensee company for each year the data shown under Columns (2) and (3). The figures shown here are the totals of these items for all the companies for each year.

[fol. 4620]

EXHIBIT X-140

American Telephone and Telegraph Company

Cost of Other Services (See Note) Performed under License Contract, Prorated to Licensee Companies on Basis of License Payments, Years 1920 to 1922, Inclusive

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
Cost of Other Services:			
Departmental Services	$7,336,481	$8,556,290	$9,224,018
Taxes (Except on Telephone Instruments)	1,568,128	1,915,909	2,668,963
Cost of Carrying Investments in Physical Property (Other than Telephone Instruments)	162,349	393,512	486,869
Total	9,066,958	10,865,711	12,379,850
Deduct—Estimated Amount of Corporate Expenses Atrributable to Ownership of System Securities and Related Expenses	845,000	900,000	980,000
Cost of Other Services Chargeable to Licensees	8,221,958	9,965,711	11,399,850
Deduct—Proportion Chargeable to Long Lines Department of A. T. & T. Co.	876,537	1,026,089	1,252,067
Balance Chargeable to all other Licensees	7,345,421	8,939,622	10,147,783
Apportionment of Cost of Other Services to Other Licensees on Basis of License Payments:			
Bell Telephone Company of Pennsylvania	621,980	769,438	875,975
Central Union Telephone Company	241,799	....	....
Chesapeake and Potomac Telephone Company	333,610	417,153	450,517
Cincinnati and Suburban Bell Telephone Company	87,015	108,384	121,283
Illinois Bell Telephone Company	611,469	912,539	1,007,624
Indiana Bell Telephone Company	84,300	141,450	151,597
Michigan State Telephone Company	256,216	335,621	374,048
Mountain States Telephone and Telegraph Company	276,495	304,344	322,156
New England Telephone and Telegraph Company	712,503	799,324	894,221
New York Telephone Company	1,556,941	1,931,521	2,209,738
Northwestern Bell Telephone Company	383,775	437,684	479,651
Ohio Bell Telephone Company	110,702	303,580	408,710
Pacific Telephone and Telegraph Company	618,665	743,040	908,847

American Telephone and Telegraph Company

Cost of Other Services (See Note) Performed under License Contract, Prorated to Licensee Companies on Basis of License Payments, Years 1920 to 1922, Inclusive

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
Southern Bell Telephone and Telegraph Company	507,883	580,899	655,027
Southern New England Telephone Company	136,741	157,747	176,981
Southwestern Bell Telephone Company	666,804	825,235	908,974
Wisconsin Telephone Company	138,463	171,063	202,434
Total	$7,345,421	$8,939,622	$10,147,783

Note.—The services claimed by the A. T. & T. Co. include the departmental (development and research, operation and engineering, personnel, accounting, etc.) taxes on investment used in rendering license contract services (exclusion of taxes on telephone instruments) and cost of carrying investment in physical property other than telephone instruments.

(Here follows side folio 4621)

[fol. 4621]

American Telephone and Telegraph Company

Cost of Other Services (See Note) Performed under License Contract, Prorated to Licensee Companies on Basis of License Payments During Years 1923 to 1930, Inclusive

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
Cost of Other Services:								
Departmental Services	$10,613,032	$11,354,890	$12,245,919	$14,117,709	$15,631,479	$17,054,918	$19,132,246	$23,485,984
Taxes (Except on Telephone Instruments)	2,822,153	3,352,142	3,746,826	3,391,965	3,322,728	1,671,872	1,018,102	988,898
Cost of Carrying Investments in Physical Property (Other than Telephone Instruments)	203,960	91,585	154,740	27,274	168,235	47,773	50,333	53,942
Total	13,639,145	14,798,617	16,147,485	17,536,948	19,122,442	18,774,563	20,200,681	24,529,824
Deduct—Estimated Amount of Corporate Expense Attributable to Ownership of System Securities and Related Expenses	1,000,000	1,200,000	1,400,000	1,600,000	1,800,000	2,000,000	2,250,000	2,500,000
Cost of Other Services Chargeable to Licensees	12,639,145	13,598,617	14,747,485	15,936,948	17,322,442	16,774,563	17,950,681	22,029,824
Deduct—Proportion Chargeable to Bell Tel. Co. of Canada and Long Lines Department of A. T. & T. Co.	1,548,432	1,668,519	1,823,005	1,876,403	1,894,561	2,196,294	2,459,515	3,152,333
Balance Chargeable to all other Licensees	11,090,713	11,930,098	12,924,480	14,060,545	15,427,881	14,578,269	15,491,166	18,877,491
Apportionment of Cost of Other Services to Other Licensees on Basis of License Payments:								
Bell Telephone Company of Pennsylvania	959,193	1,046,209	1,154,255	1,255,284	1,309,757	1,121,336	1,172,802	1,419,660
Chesapeake and Potomac Tel. Co.	477,237	490,734	519,298	551,156	589,701	541,029	554,330	679,749
Cincinnati and Suburban Bell Tel. Co	129,083	135,721	140,748	153,701	174,086	162,048	167,825	199,683
Illinois Bell Tel. Co	1,072,480	1,135,494	1,182,962	1,282,338	1,409,327	1,324,147	1,435,971	1,748,997
Indiana Bell Tel. Co	167,666	199,585	199,098	209,108	224,357	204,355	215,156	253,006
Michigan Bell Tel. Co	427,617	492,210	520,640	482,493	617,908	598,221	656,609	773,379
Mountain States Tel. & Tel. Co	324,051	318,452	323,298	335,767	360,711	335,627	347,036	419,918
New England Tel. & Tel. Co	954,392	1,005,904	1,083,997	1,240,460	1,300,397	1,166,424	1,188,980	1,426,601
New Jersey Bell Tel. Co	....	....	....	....	199,703	723,092	766,855	929,290
New York Tel. Co	2,462,567	2,726,776	3,038,383	3,375,699	3,576,011	3,038,797	3,231,040	4,065,298
Northwestern Bell Tel. Co	516,095	523,836	533,323	534,027	562,151	546,926	635,052	767,155
Ohio Bell Tel. Co	454,716	493,307	552,424	610,545	676,537	639,166	688,835	822,988
Pacific Tel. & Tel. Co	1,043,123	1,145,985	1,294,334	1,416,375	1,573,336	1,487,636	1,589,796	1,945,131
Southern Bell Tel. & Tel. Co	684,791	735,707	822,975	905,157	984,541	919,743	964,160	1,154,636
Southern New England Tel. Co	192,650	204,346	217,471	235,570	260,021	252,919	267,147	327,787
Southwestern Bell Tel. Co	1,002,824	1,044,875	1,098,495	1,211,866	1,322,356	1,248,658	1,328,351	1,609,621
Wisconsin Tel. Co	222,228	230,957	242,779	260,999	286,981	268,145	281,221	338,592
Total	$11,090,713	$11,930,098	$12,924,480	$14,060,545	$15,427,881	$14,578,269	$15,491,166	$18,877,491

NOTE.—The services claimed by the A. T. & T. Co., include the departmental (development and research, operation and engineering, personnel, accounting, etc.), taxes on investment used in rendering license contract services (exclusive of taxes on telephone instruments), and cost of carrying investment in physical property other than telephone instruments.

fol. 4622] American Telephone and Telegraph Company

Departmental Costs Incurred in Rendering License Contract Services During Years 1920 to 1922, Inclusive

Department:	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
Development and Research	$2,596,428	$2,647,606	$2,352,199
Operation and Engineering	1,627,996	2,066,955	2,133,750
Operation—General	71,416	....	163,868
Personnel	151,225	421,487	525,975
Information	377,166	588,593	568,004
Public Relations	....	....	....
Legal	583,436	496,032	679,960
Comptroller	637,541	805,761	845,119
Treasurer	412,088	757,090	1,127,242
Secretary	....	37,404	75,719
General Service Bureau	62,387	83,394	200,229
Sundry Items	816,798	631,968	551,953
Total	7,336,481	8,556,290	9,224,018

[fol. 4623]

American Telephone and Telegraph Company

Departmental Costs Incurred in Rendering License Contract Services During Years 1923 to 1930, Inclusive

Department:	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
Development and Research	$2,841,988	$3,078,422	$3,624,850	$4,295,693	$5,386,349	$5,526,817	$7,090,199	$9,556,804
Operation and Engineering	2,550,709	2,688,340	2,963,159	3,301,306	3,562,940	3,813,983	4,102,105	4,340,568
Operation—General	213,551	209,788	211,565	240,549	233,029	254,250	268,793	277,792
Personnel	602,742	515,465	603,523	707,960	938,415	924,418	1,056,306	1,100,273
Information	634,338	694,427	740,464	857,320	789,697	1,033,998	1,347,170	1,351,611
Public Relations	....	21,878	27,751	27,365	27,471	27,878	35,741	49,467
Legal	759,191	746,667	780,265	750,600	796,734	1,029,330	692,727	967,031
Comptroller	972,573	1,070,737	1,176,720	1,306,614	1,412,231	1,484,471	1,566,822	1,704,662
Treasurer	954,861	1,258,097	944,914	1,381,752	1,103,130	1,648,226	1,591,063	2,499,674
Secretary	58,555	63,720	62,868	66,123	63,634	68,463	69,348	68,384
General Service Bureau	283,108	331,265	363,483	427,692	440,925	466,002	508,045	555,152
Sundry Items	741,416	676,084	746,357	754,735	876,924	777,082	803,927	1,015,566
Total	$10,613,032	$11,354,890	$12,245,919	$14,117,709	$15,631,479	$17,054,918	$19,132,246	$23,486,984

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Vol. VII

TRANSCRIPT OF RECORD

EXHIBITS

Supreme Court of the United States

OCTOBER TERM, 1933

No. 440

BENJAMIN F. LINDHEIMER AND OTHERS, CONSTITUTING THE ILLINOIS COMMERCE COMMISSION OF THE STATE OF ILLINOIS; OTTO KERNER, ATTORNEY GENERAL OF THE STATE OF ILLINOIS, AND THE CITY OF CHICAGO, APPELLANTS,

vs.

ILLINOIS BELL TELEPHONE COMPANY

No. 548

ILLINOIS BELL TELEPHONE COMPANY, APPELLANT,

vs.

BENJAMIN F. LINDHEIMER AND OTHERS, CONSTITUTING THE ILLINOIS COMMERCE COMMISSION OF THE STATE OF ILLINOIS; OTTO KERNER, ATTORNEY GENERAL OF THE STATE OF ILLINOIS, AND THE CITY OF CHICAGO

APPEALS FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF ILLINOIS

FILED SEPTEMBER 8, 1933

FILED OCTOBER 25, 1933

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1933

No. 440

BENJAMIN F. LINDHEIMER AND OTHERS, CONSTITUTING THE ILLINOIS COMMERCE COMMISSION OF THE STATE OF ILLINOIS; OTTO KERNER, ATTORNEY GENERAL OF THE STATE OF ILLINOIS, AND CITY OF CHICAGO, APPELLANTS,

vs.

ILLINOIS BELL TELEPHONE COMPANY

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF ILLINOIS

VOL. VII

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	Original	Print
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Exhibit X-142

American Telephone and Telegraph Company

Separation of the License Payments of Each Licensee Company into Component Parts of Cost and Profit

Years Ended December 31, 1920, to 1922, Inclusive

Sheet 1

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
Bell Telephone Company of Pennsylvania (a):			
(1) License Payment	$1,496,706	$1,719,428	$1,870,372
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	71,809	87,394*	73,340*
(3) Balance	1,424,897	1,806,822	1,945,712
(4) Deduct loss on loans (temporary financing)	1,945	....	....
(5) Balance	1,422,952	1,806,822	1,945,712
(6) Deduct loss on holding funds available for cash requirements	90,366	121,374	313,763
(7) Balance	1,332,586	1,685,448	1,631,949
(8) Deduct cost of furnishing telephone instruments	272,379	330,881	396,315
(9) Balance	1,060,207	1,354,567	1,235,634
(10) Deduct cost of other services	621,980	769,438	875,975
(11) Balance available for additional return to A. T. & T. Co. (b)	438,227	585,129	359,659
Central Union Telephone Company:			
(1) License Payment	581,855	....	....
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	519,760	....	....
(3) Balance	62,095	....	....
(4) Deduct loss on loans (temporary financing)	41,807	....	....
(5) Balance	20,288		
(6) Deduct loss on holding funds available for cash requirements	35,340	....	....

Exhibit X-142—Continued

American Telephone and Telegraph Company

Separation of the License Payments of Each Licensee Company into Component Parts of Cost and Profit

Years Ended December 31, 1920, to 1922, Inclusive

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
(7) Balance	15,052*	....	....
(8) Deduct cost of furnishing telephone instruments	115,789	....	....
(9) Balance	130,841*	....	....
(10) Deduct cost of other services	241,799	....	....
(11) Balance available for additional return to A. T. & T. Co. (b)	372,640*		
Chesapeake and Potomac Telephone Companies:			
(1) License Payment	802,784	933,533	961,938
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	8,598	6,031	286,999
(3) Balance	794,186	927,502	674,939
(4) Deduct loss on loans (temporary financing)	1,216	26,456	30,991
(5) Balance	792,970	901,046	643,948
(6) Deduct loss on holding funds available for cash requirements	16,379	16,284	74,934
(7) Balance	776,591	884,762	569,014
(8) Deduct cost of furnishing telephone instruments	144,335	175,985	194,727
(9) Balance	632,256	708,777	374,287
(10) Deduct cost of other services	333,610	417,753	450,517
(11) Balance available for additional return to A. T. & T. Co. (b)	298,646	291,024	76,230*

* Red Figures.

[fol. 4625]

Sheet 2

Cincinnati and Suburban Bell Telephone Company:			
(1) License Payment	$209,389	$242,201	$258,962
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	18,012	18,993	22,285
(3) Balance	191,377	223,208	236,677
(4) Deduct loss on loans (temporary financing)	....	....	....
(5) Balance	191,377	223,208	236,677
(6) Deduct loss on holding funds available for cash requirements	2,858	....	6,219
(7) Balance	188,519	223,208	230,458
(8) Deduct cost of furnishing telephone instruments	41,633	50,476	59,523
(9) Balance	146,886	172,732	170,935
(10) Deduct cost of other services	87,015	108,384	121,283
(11) Balance available for additional return to A. T. & T. Co. (b)	59,871	64,348	49,652
Illinois Bell Telephone Company:			
(1) License Payment	1,471,412	2,039,208	2,151,467
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	....	....	....
(3) Balance	1,471,412	2,039,208	2,151,467
(4) Deduct loss on loans (temporary financing)	1,636	35,091	8,310
(5) Balance	1,469,776	2,004,117	2,143,157
(6) Deduct loss on holding funds available for cash requirements	67,272	71,834	338,367
(7) Balance	1,403,504	1,932,283	1,804,790
(8) Deduct cost of furnishing telephone instruments	357,207	413,881	461,182
(9) Balance	1,045,297	1,518,402	1,343,608

Sheet 2—Continued

American Telephone and Telegraph Company

Separation of the License Payments of Each Licensee Company into Component Parts of Cost and Profit, Years Ended December 31, 1920, to 1922, Inclusive

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
(10) Deduct cost of other services	611,469	912,539	1,007,624
(11) Balance available for additional return to A. T. & T. Co. (b)	433,828	605,863	335,984
Indiana Bell Telephone Company:			
(1) License Payment	202,856	316,091	323,689
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	346,622	841,618	1,007,931
(3) Balance	143,766*	525,527*	684,242*
(4) Deduct loss on loans (temporary financing)	8,414	124,450	154,259
(5) Balance	152,180*	649,977*	838,501*
(6) Deduct loss on holding funds available for cash requirements	38,320	49,712	123,428
(7) Balance	190,500*	699,689*	961,929*
(8) Deduct cost of furnishing telephone instruments	58,709	73,686	82,401
(9) Balance	249,209*	773,375*	1,044,330*
(10) Deduct cost of other services	84,300	141,450	151,597
(11) Balance available for additional return to A. T. & T. Co. (b)	333,509*	914,825*	1,195,927*

[fol. 4626]

Sheet 3

Michigan State Telephone Company:			
(1) License Payment	$616,547	$749,996	$798,664
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	702,262	844,399	379,260
(3) Balance	85,715*	94,403*	419,404
(4) Deduct loss on loans (temporary financing)	19,725	239,609	200,339
(5) Balance	105,440*	334,012*	219,065
(6) Deduct loss on holding funds available for cash requirements	60,218	33,699	211,157
(7) Balance	165,658*	367,711*	7,908
(8) Deduct cost of furnishing telephone instruments	109,288	130,011	154,311
(9) Balance	274,946*	497,722*	146,403*
(10) Deduct cost of other services	256,216	335,621	374,048
(11) Balance available for additional return to A. T. & T. Co. (b)	531,162*	833,343*	520,451*
Mountain States Telephone and Telegraph Company:			
(1) License Payment	665,345	680,104	687,863
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	56,233*	15,392*	38,096
(3) Balance	721,578	695,496	649,767
(4) Deduct loss on loans (temporary financing)	1,705	30,425	41,879
(5) Balance	719,873	665,071	607,888
(6) Deduct loss on holding funds available for cash requirements	14,165	18,059	36,111
(7) Balance	705,708	647,012	571,777

* Red figures.

Exhibit X-142—Continued

American Telephone and Telegraph Company

Separation of the License Payments of Each Licensee Company into Component Parts of Cost and Profit

Years Ended December 31, 1920, to 1922, Inclusive

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
(8) Deduct cost of furnishing telephone instruments	111,858	133,245	151,773
(9) Balance	593,850	513,767	420,004
(10) Deduct cost of other services	276,495	304,344	322,156
(11) Balance available for additional return to A. T. & T. Co. (b)	317,355	209,423	97,848
New England Telephone and Telegraph Company (a):			
(1) License Payment	1,714,679	1,786,213	1,909,331
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	48,073	30,545*	25,110
(3) Balance	1,666,606	1,816,758	1,884,221
(4) Deduct loss on loans (temporary financing)	384	82,930	77,055
(5) Balance	1,666,222	1,733,828	1,807,166
(6) Deduct loss on holding funds available for cash requirements	57,552	126,539	326,503
(7) Balance	1,608,670	1,607,289	1,480,663
(8) Deduct cost of furnishing telephone instruments	292,311	359,250	426,658
(9) Balance	1,316,359	1,248,039	1,054,005
(10) Deduct cost of other services	712,563	799,324	894,221
(11) Balance available for additional return to A. T. & T. Co. (b)	603,796	448,715	159,784

* Red figures.

[fol. 4627]

Sheet 4

New York Telephone Company:			
(1) License Payment	$3,746,553	$4,316,281	$4,718,208
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	839,355	1,286,338	725,119
(3) Balance	2,907,198	3,029,943	3,993,089
(4) Deduct loss on loans (temporary financing)	24,002	541,250	188,060
(5) Balance	2,883,196	2,488,693	3,805,029
(6) Deduct loss on holding funds available for cash requirements	400,774	569,234	408,122
(7) Balance	2,482,422	1,919,459	3,396,907
(8) Deduct cost of furnishing telephone instruments	584,495	703,994	841,231
(9) Balance	1,897,927	1,215,465	2,555,676
(10) Deduct cost of other services	1,556,941	1,931,521	2,209,738
(11) Balance available for additional return to A. T. & T. Co. (b)	340,986	716,056*	345,938
Northwestern Bell Telephone Company:			
(1) License Payment	923,500	978,072	1,024,145
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	12,040	1,221,339	792,606
(3) Balance	911,450	243,267*	231,539
(4) Deduct loss on loans (temporary financing)	27,571	119,159	54,751
(5) Balance	883,889	362,426*	176,788
(6) Deduct loss on holding funds available for cash requirements	79,943	26,086	7,261

* Red figures.

Exhibit X-142—Continued

American Telephone and Telegraph Company

Separation of the License Payments of Each Licensee Company into Component Parts of Cost and Profit,

Years Ended December 31, 1920, to 1922, Inclusive

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
(7) Balance	803,946	388,512*	169,527
(8) Deduct cost of furnishing telephone instruments	171,036	200,488	229,997
(9) Balance	632,910	589,000*	60,470*
(10) Deduct cost of other services	383,775	437,684	479,651
(11) Balance available for additional return to A. T. & T. Co. (b)	249,135	1,026,684*	540,121*
Ohio Bell Telephone Company:			
(1) License Payment	266,388	678,396	872,674
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	916,274	95,445	1,605,878
(3) Balance	649,886*	582,951	733,204*
(4) Deduct loss on loans (temporary financing)	9,509	209,752	67,304
(5) Balance	659,395*	373,199	800,508*
(6) Deduct loss on holding funds available for cash requirements	15,763	28,619	189,431
(7) Balance	675,158*	344,580	989,939*
(8) Deduct cost of furnishing telephone instruments	44,447	145,816	227,864
(9) Balance	719,605*	198,764	1,217,803*
(10) Deduct cost of other services	110,702	303,580	408,710
(11) Balance available for additional return to A. T. & T. Co. (b)	830,307*	104,816*	1,626,513*

[fol. 4628]

Sheet 5

Pacific Telephone & Telegraph Company (a):			
(1) License Payment	$1,488,729	$1,660,438	$1,940,560
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	366,715	517,446	566,393
(3) Balance	1,122,014	1,142,992	1,374,167
(4) Deduct loss on loans (temporary financing)	8,394	141,023	145,417
(5) Balance	1,113,620	1,001,969	1,228,750
(6) Deduct loss on holding funds available for cash requirements	25,839	145,242	401,300
(7) Balance	1,087,781	856,727	827,450
(8) Deduct cost of furnishing telephone instruments	284,907	349,136	414,940
(9) Balance	802,874	507,591	412,510
(10) Deduct cost of other services	618,665	743,040	908,847
(11) Balance available for additional return to A. T. & T. Co. (b)	184,209	235,449*	496,337*
Southern Bell Telephone & Telegraph Company (a):			
(1) License Payment	1,222,147	1,298,107	1,398,607
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	148,041	305,150	404,425
(3) Balance	1,074,106	992,957	994,182
(4) Deduct loss on loans (temporary financing)	11,719	180,756	242,945
(5) Balance	1,062,387	812,201	751,237
(6) Deduct loss on holding funds available for cash requirements	104,972	81,278	116,990
(7) Balance	957,415	730,923	634,247
(8) Deduct cost of furnishing telephone instruments	182,653	212,582	246,870
(9) Balance	774,762	518,341	387,377
(10) Deduct cost of other services	507,883	580,899	655,027
(11) Balance available for additional return to A. T. & T. Co. (b)	266,879	62,558*	267,650*

* Red figures.

Exhibit X-142—Continued

American Telephone and Telegraph Company

Separation of the License Payments of Each Licensee Company into Component Parts of Cost and Profit

Years Ended December 31, 1920, to 1922, Inclusive

Southern New England Telephone Company:	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
(1) License Payment	329,048	352,509	377,887
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	4,994	14,569*	3,396*
(3) Balance	324,054	367,078	381,283
(4) Deduct loss on loans (temporary financing)	2,112	21,835	30,223
(5) Balance	321,942	345,243	351,060
(6) Deduct loss on holding funds available for cash requirements	11,759	21,464	....
(7) Balance	310,183	323,779	351,060
(8) Deduct cost of furnishing telephone instruments	63,511	77,823	91,396
(9) Balance	246,672	245,956	259,664
(10) Deduct cost of other services	136,741	157,747	176,981
(11) Balance available for additional return to A. T. & T. Co. (b)	109,931	88,209	82,683

[fol. 4629]

Sheet 6

Southwestern Bell Telephone Company (a):	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
(1) License Payment	$1,604,567	$1,844,115	$1,940,830
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	317,559	176,328*	619,915*
(3) Balance	1,287,008	2,020,443	2,559,845
(4) Deduct loss on loans (temporary financing)	27,813	304,889	305,975
(5) Balance	1,259,195	1,715,554	2,253,870
(6) Deduct loss on holding funds available for cash requirements	140,840	178,326	300,941
(7) Balance	1,118,355	1,537,228	1,952,929
(8) Deduct cost of furnishing telephone instruments	255,460	307,526	356,878

(9) Balance	862,895	1,229,702	1,596,051
(10) Deduct cost of other services	666,804	825,235	908,974
(11) Balance available for additional return to A. T. & T. Co. (b)	196,091*	404,467	687,077
Wisconsin Telephone Company:			
(1) License Payment	333,191	382,267	432,235
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	64,049*	23,322	20,054*
(3) Balance	397,240	405,589	452,289
(4) Deduct loss on loans (temporary financing)	1,500	40,018	27,107
(5) Balance	395,680	365,571	425,182
(6) Deduct loss on holding funds available for cash requirements	26,138	18,617	49,810
(7) Balance	369,542	346,954	375,372
(8) Deduct cost of furnishing telephone instruments	72,903	87,743	103,820
(9) Balance	296,639	259,211	271,552
(10) Deduct cost of other services	138,463	171,063	202,434
(11) Balance available for additional return to A. T. & T. Co. (b)	158,176	88,148	69,118
Total All Companies;			
(1) License Payment	17,675,896	19,976,959	21,667,432
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	4,199,832	4,789,209	5,136,297
(3) Balance	13,475,864	15,187,750	16,531,135
(4) Deduct loss on loans (temporary financing)	189,512	2,097,643	1,574,615
(5) Balance	13,286,352	13,090,107	14,956,520
(6) Deduct loss on holding funds available for cash requirements	1,188,498	1,506,367	2,904,337
(7) Balance	12,097,854	11,583,740	12,052,183
(8) Deduct cost of furnishing telephone instruments	3,162,921	3,752,523	4,439,886
(9) Balance	8,934,933	7,831,217	7,612,297
(10) Deduct cost of other services	7,345,421	8,939,622	10,147,783
(11) Balance available for additional return to A. T. & T. Co. (b)	1,589,512	1,108,405*	2,535,486*

* Red figures.

Exhibit X-142—Continued

American Telephone and Telegraph Company

Separation of the License Payments of Each Licensee Company into Component Parts of Cost and Profit,

Years Ended December 31, 1920, to 1922, Inclusive

[fol. 4630]

Sheet 7

Totals All Companies Exclusive of Illinois Bell Telephone Company:	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
(1) License Payment	$16,204,284	$17,937,751	$19,515,965
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	4,199,832	4,789,209	5,136,297
(3) Balance	12,004,452	13,148,542	14,379,668
(4) Deduct loss on loans (temporary financing)	187,876	2,062,552	[illegible]566,305
(5) Balance	11,816,576	11,085,990	12,813,363
(6) Deduct loss on holding funds available for cash requirements	1,121,226	1,434,533	2,565,970
(7) Balance	10,695,350	9,651,457	10,247,393
(8) Deduct cost of furnishing telephone instruments	2,805,714	3,338,652	3,978,704
(9) Balance	7,889,636	6,312,815	6,268,689
(10) Deduct cost of other services	6,733,952	8,027,083	9,140,159
(11) Balance available for additional return to A. T. & T. Co. (b)	1,155,684	1,714,268*	2,871,470*

* Red figures.

(a) Includes Associated Companies.

(b) "Balance available for additional return to A. T. & T. Co." (Item 11) is the amount carried to corporate surplus of the A. T. & T. Co. from the license payment of each licensee company after each company has been placed on an investment basis comparable to that of the Illinois Bell Telephone Company and after deducting in each case from such license payment the allocated proportion of the total amount claimed by the A. T. & T. Co. to have been the cost of furnishing the license contract services to all licensee companies. The cost of funds included in such total costs is the amount which the A. T. & T. Co. represents to be the annual amount paid by it currently on funds used in its business which were derived from its funded and other indebtedness, and from its capital and surplus. The cost of funds includes dividends paid by the A. T. & T. Co. at the rate of 8% for the year 1920 and for the first six months of 1921 and at the rate of 9% thereafter.

(Here follows side folios 4631 to 4637)

[fol. 4631]

American Telephone and Telegraph Company

Separation of the License Payments of Each Licensee Company Into Component Parts of Cost and Profit, Years Ended December 31, 1923 to 1930, Inclusive

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
Bell Telephone Company of Pennsylvania (a):								
(1) License Payment	$2,077,044	$2,315,133	$2,662,050	$2,627,461	$2,714,514	$1,320,207	$1,066,133	$1,100,628
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	16,874*	154,200	189,067	164,001*	148,086	139,426	265,177	467,686
(3) Balance	2,093,918	2,160,933	2,472,983	2,791,462	2,566,428	1,180,781	800,956	632,742
(4) Deduct loss on loans (temporary financing)	37,054	237,510	281,370		59,260	5,033	90,568	58,875
(5) Balance	2,056,864	1,923,423	2,191,613	2,791,462	2,507,168	1,175,748	710,388	573,869
(6) Deduct loss on holding funds available for cash requirements	245,370	465,967	364,235	290,550	141,072	187,006	98,406	349,501
(7) Balance	1,811,494	1,457,456	1,827,378	2,500,912	2,366,096	988,742	611,982	224,368
(8) Deduct cost of furnishing telephone instruments	407,112	467,837	520,860	581,969	528,006			
(9) Balance	1,404,382	989,619	1,306,518	1,918,943	1,838,090	988,742	611,982	224,368
(10) Deduct cost of other services	959,193	1,046,209	1,154,255	1,255,284	1,309,757	1,121,836	1,172,802	1,419,660
(11) Balance available for additional return to A. T. & T. Co. (b)	445,189	56,590*	152,263	663,659	528,333	132,594*	560,820*	1,195,292*
Chesapeake and Potomac Telephone Companies:								
(1) License Payment	1,033,413	1,085,934	1,197,653	1,153,637	1,222,175	636,982	503,912	526,993
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	254,217	726,197	344,941	463,428	458,710	459,993	344,976	947,348
(3) Balance	779,196	359,737	852,712	690,209	763,465	176,989	158,936	420,355*
(4) Deduct loss on loans (temporary financing)	61,033	57,859	132,614	193,252	33,309	46,464	124,234	83,346
(5) Balance	718,163	301,878	720,098	496,957	730,156	130,525	34,702	503,701*
(6) Deduct loss on holding funds available for cash requirements	53,092	97,735	103,544	132,922	98,665	64,547	44,622	203,100
(7) Balance	665,071	204,143	616,554	364,035	631,491	65,978	9,920*	706,801*
(8) Deduct cost of furnishing telephone instruments	195,042	221,799	248,448	274,758	275,150			
(9) Balance	470,029	17,656*	368,106	89,277	356,341	65,978	9,920*	706,801*
(10) Deduct cost of other services	477,237	490,734	519,298	551,156	589,701	541,029	554,330	679,749
(11) Balance available for additional returns to A. T. & T. Co. (b)	7,208*	508,390*	151,192*	461,879*	233,360*	475,051*	564,250*	1,386,550*
Cincinnati and Suburban Bell Telephone Company:								
(1) License Payment	279,517	300,333	324,606	321,714	360,798	190,787	152,561	154,810
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	26,981	23,468	24,132	1,803*	41,463*	43,910*	61,758*	55,409*
(3) Balance	252,536	276,865	300,474	323,517	402,261	234,697	214,319	210,219
(4) Deduct loss on loans (temporary financing)								
(5) Balance	252,536	276,865	300,474	323,517	402,261	234,697	214,319	210,219
(6) Deduct loss on holding funds available for cash requirements	5,516	6,730	14,520					
(7) Balance	247,020	270,135	285,954	323,517	402,261	234,697	214,319	210,219
(8) Deduct cost of furnishing telephone instruments	59,956	68,567	77,323	84,379	83,926			
(9) Balance	187,064	201,568	208,631	239,138	318,335	234,697	214,319	210,219
(10) Deduct cost of other services	129,083	135,721	140,748	153,701	174,086	162,048	167,825	199,683
(11) Balance available for additional return to A. T. & T. Co. (b)	57,981	65,847	67,883	85,437	144,249	72,649	46,494	10,536

* Red figures.

American Telephone and Telegraph Company

Separation of the License Payments of Each Licensee Company Into Component Parts of Cost and Profit, Years Ended December 31, 1923 to 1930, Inclusive

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
Illinois Bell Telephone Company:								
(1) License Payment	$2,322,356	$2,512,712	$2,728,256	$2,684,090	$2,920,877	$1,558,988	$1,305,366	$1,355,955
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	....	....	....	....	....	....	....	....
(3) Balance	2,322,356	2,512,712	2,728,256	2,684,090	2,920,877	1,558,988	1,305,366	1,355,955
(4) Deduct loss on loans (temporary financing)	2,460	....	26,183	74,934	35,625	27,912	123,877	2,337
(5) Balance	2,319,896	2,512,712	2,702,073	2,609,156	2,885,252	1,531,076	1,181,489	1,353,618
(6) Deduct loss on holding funds available for cash requirements	100,837	119,646	245,099	273,950	290,052	317,015	79,874	363,487
(7) Balance	2,219,059	2,393,066	2,456,974	2,335,206	2,595,200	1,214,061	1,101,615	990,131
(8) Deduct cost of furnishing telephone instruments	476,077	547,062	621,270	614,273	628,319	....	....	....
(9) Balance	1,742,982	1,846,004	1,835,704	1,720,933	1,966,881	1,214,061	1,101,615	990,131
(10) Deduct cost of other services	1,072,480	1,135,494	1,182,962	1,282,338	1,409,327	1,324,147	1,435,971	1,748,997
(11) Balance available for additional return to A. T. & T. Co. (b)	670,502	710,510	652,742	438,595	557,554	110,086*	334,356*	758,866*
Indiana Bell Telephone Company:								
(1) License Payment	363,065	441,657	459,179	437,689	464,987	240,598	195,587	196,149
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	1,111,829	1,134,572	1,555,574	1,010,741	409,027	30,677*	64,763*	39,563
(3) Balance	748,764*	692,915*	1,096,395*	573,052*	55,960	271,275	260,350	156,586
(4) Deduct loss on loans (temporary financing)	202,057	223,979	182,990	71,516	61,750	21,350	34,930	22,870
(5) Balance	950,821*	916,894*	1,279,385*	644,568*	5,790*	249,925	225,420	133,716
(6) Deduct loss on holding funds available for cash requirements	14,255	22,730	....	....	9,267	8,988	7,807	43,635
(7) Balance	965,076*	939,624*	1,279,385*	644,568*	15,057*	240,937	217,613	90,081
(8) Deduct cost of furnishing telephone instruments	78,972	84,425	91,639	99,456	97,532	....	....	....
(9) Balance	1,044,048*	1,024,049*	1,371,024*	744,024*	112,589*	240,937	217,613	90,081
(10) Deduct cost of other services	167,666	199,585	199,098	209,108	224,357	204,355	215,156	253,006
(11) Balance available for additional return to A. T. & T. Co. (b)	1,211,714	1,223,634*	1,570,122*	953,132*	336,946*	36,582	2,457	162,925*
Michigan Bell Telephone Company:								
(1) License Payment	925,966	1,089,202	1,200,749	1,009,917	1,280,634	704,317	596,889	599,582
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. on investment	476,404	64,659	197,365*	7,499	364,474	31,374*	258,838	3,320,928
(3) Balance	449,562	1,024,513	1,398,114	1,002,418	916,160	735,691	338,051	2,721,346*
(4) Deduct loss on loans (temporary financing)	258,183	250,697	127,365	268,031	365,703	116,982	377,792	147,637
(5) Balance	191,379	763,816	1,270,749	734,387	550,457	618,709	39,741	2,868,383*
(6) Deduct loss on holding funds available for cash requirements	123,403	195,256	184,300	245,664	308,379	285,967	86,860	295,418
(7) Balance	67,976	568,560	1,086,449	488,723	242,078	332,742	126,601*	3,163,801*
(8) Deduct cost of furnishing telephone instruments	164,862	207,683	240,007	276,111	279,739	....	....	....
(9) Balance	96,886*	360,877	846,442	212,612	37,661*	332,742	126,601*	3,163,801*
(10) Deduct cost of other services	427,617	492,210	520,640	482,493	617,908	598,221	656,609	773,379
(11) Balance available for additional return to A. T. & T. Co. (b)	524,503*	131,333*	325,802	269,881*	655,569*	265,479*	783,210*	3,937,180*

* Red figures.

[fol. 4633]

American Telephone and Telegraph Company

Separation of the License Payments of Each Licensee Company Into Component Parts of Cost and Profit, Years Ended December 31, 1923 to 1930, Inclusive

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
Mountain States Telephone and Telegraph Company:								
(1) License Payment	$701,703	$704,695	$745,619	$702,801	$747,585	$395,181	$315,472	$325,552
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	94,435	59,068	78,934	110,664	24,681*	50,792	198,961	214,488
(3) Balance	607,268	645,627	666,685	592,137	772,266	344,359	116,511	111,064
(4) Deduct loss on loans (temporary financing)	42,663	19,206	13,842	14,987	14,122	27,420	138,597	52,381
(5) Balance	564,605	626,421	652,843	577,150	758,144	316,933	22,086*	58,683
(6) Deduct loss on holding funds available for cash requirements	19,480	9,199	5,597	5,703	36,750	114,387	43,833	22,371
(7) Balance	545,125	617,222	647,246	571,447	721,394	202,546	65,919*	36,312
(8) Deduct cost of furnishing telephone instruments	143,936	160,798	177,871	193,857	192,478			
(9) Balance	399,189	456,424	469,375	377,590	528,916	202,364	65,919*	36,312
(10) Deduct cost of other services	324,051	318,452	323,298	335,767	360,711	335,627	347,036	419,918
(11) Balance available for additional return to A. T. & T. Co. (b)	75,138	137,972	146,077	41,823	168,205	133,081*	412,955*	383,606*
New England Telephone and Telegraph Company:								
(1) License Payment	2,066,648	2,225,944	2,500,024	2,596,434	2,695,115	1,373,292	1,080,839	1,100,009
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	70,175	246,664	1,483,652	42,401*	86,702*	30,160	40,357	280,921
(3) Balance	1,996,473	1,979,280	1,016,332	2,638,835	2,781,817	1,343,132	1,040,482	825,088
(4) Deduct loss on loans (temporary financing)	42,281	250,225	428,487	141,700		19,213	84,456	47,600
(5) Balance	1,954,192	1,729,055	487,875	2,497,135	2,781,817	1,323,919	956,026	777,488
(6) Deduct loss on holding funds available for cash requirements	230,687	308,801	389,481	335,454	99,129	84,172	62,110	154,263
(7) Balance	1,723,505	1,420,254	198,394	2,161,681	2,682,688	1,239,747	893,916	623,225
(8) Deduct cost of furnishing telephone instruments	428,741	491,397	546,379	583,917	577,371			
(9) Balance	1,294,764	928,857	347,985*	1,577,764	2,105,317	1,239,747	893,916	623,225
(10) Deduct cost of other services	954,392	1,005,904	1,083,997	1,240,460	1,300,397	1,166,424	1,188,980	1,426,601
(11) Balance available for additional return to A. T. & T. Co. (b)	340,372	77,047*	1,431,982*	337,304	804,920	73,323	295,064*	803,376*
New Jersey Bell Telephone Company:								
(1) License Payment					413,890	851,334	697,108	720,456
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment					45,034	789,650	765,365	1,276,743
(3) Balance					368,856	61,684	68,257*	556,287*
(4) Deduct loss on loans (temporary financing)					27,425	162,479	178,613	131,844
(5) Balance					341,431	100,795*	246,870*	688,131*
(6) Deduct loss on holding funds available for cash requirements					90,181	165,469	68,974	222,178
(7) Balance					251,250	266,264*	315,844*	910,309*
(8) Deduct cost of furnishing telephone instruments					116,405			
(9) Balance					134,845	266,264*	315,844*	910,309*
(10) Deduct cost of other services					199,703	723,092	766,855	929,290
(11) Balance available for additional return to A. T. & T. Co. (b)					64,858*	989,356*	1,082,699*	1,839,599*

* Red figures.

[fol. 4634]

American Telephone and Telegraph Company

Separation of the License Payments of Each Licensee Company Into Component Parts of Cost and Profit, Years Ended December 31, 1923 to 1930, Inclusive

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
New York Telephone Company:								
(1) License Payment	$5,332,462	$6,034,026	$7,007,400	$7,065,748	$7,411,400	$3,577,734	$2,937,169	$3,151,727
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	1,080,605	1,406,220	1,958,278	34,151	982,003	803,739	522,009	1,570,455
(3) Balance	4,251,857	4,583,806	5,049,122	7,031,597	6,429,397	2,773,995	2,415,160	1,581,272
(4) Deduct loss on loans (temporary financing)	112,072	462,377	667,622	413,465	447,782	109,283	226,296	198,687
(5) Balance	4,139,785	4,121,429	4,381,500	6,618,132	5,981,615	2,664,712	2,188,864	1,382,585
(6) Deduct loss on holding funds available for cash requirements	680,206	833,842	789,444	615,915	543,546	500,099	257,943	1,038,394
(7) Balance	3,459,579	3,287,587	3,592,056	6,002,217	5,438,069	2,164,613	1,930,921	344,191
(8) Deduct cost of furnishing telephone instruments	861,242	1,013,586	1,179,761	1,319,897	1,290,396	....	....	....
(9) Balance	2,598,337	2,274,001	2,412,295	4,682,320	4,147,673	2,164,613	1,930,921	344,191
(10) Deduct cost of other services	2,462,567	2,726,776	3,038,383	3,375,699	3,576,011	3,038,797	3,231,040	4,065,298
(11) Balance available for additional return to A. T. & T. Co. (b)	135,770	452,775*	626,088*	1,306,621	571,662	874,184*	1,300,119*	3,721,107*
Northwestern Bell Telephone Company:								
(1) License Payment	1,117,556	1,159,186	1,229,999	1,117,783	1,165,077	643,925	577,292	594,757
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	378,204	471,739*	511,000*	391,031*	264,458*	193,142*	235,329*	254,089
(3) Balance	739,352	1,630,925	1,740,999	1,508,814	1,429,535	837,067	812,621	340,668
(4) Deduct loss on loans (temporary financing)	....	....	50,991	27,931	713	3,424	31,687	91,704
(5) Balance	739,352	1,630,925	1,690,008	1,480,883	1,428,822	833,643	780,934	248,964
(6) Deduct loss on holding funds available for cash requirements	....	....	484,649	32,919	8,628	41,588	36,709	376,627
(7) Balance	739,352	1,630,925	1,205,359	1,447,964	1,420,194	792,055	744,225	127,663*
(8) Deduct cost of furnishing telephone instruments	222,763	250,104	274,805	292,284	291,490	....	....	....
(9) Balance	516,589	1,380,821	930,554	1,155,680	1,128,704	792,055	744,225	127,663*
(10) Deduct cost of other services	516,095	523,836	533,323	534,027	562,151	546,926	635,052	767,155
(11) Balance available for additional return to A. T. & T. Co. (b)	494	856,985	397,231	621,653	566,553	245,129	109,173	894,818*
Ohio Bell Telephone Company:								
(1) License Payment	984,645	1,091,629	1,274,052	1,277,944	1,402,144	752,524	626,184	638,043
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	1,505,265	1,010,272	287,844	613,327	1,167,123	616,897	529,036	1,701,485
(3) Balance	520,620*	72,357	986,208	664,617	235,021	135,627	97,148	1,063,442*
(4) Deduct loss on loans (temporary financing)	117,219	161,949	155,551	114,789	202,318	34,525	34,997	39,419
(5) Balance	637,839*	89,592*	830,657	549,828	32,703	101,102	62,151	1,102,861*
(6) Deduct loss on holding funds available for cash requirements	28,372	54,387	143,186	173,035	134,792	140,990	91,849	216,655
(7) Balance	666,211*	143,979*	687,471	376,793	102,089*	39,888*	29,698*	1,321,516*
(8) Deduct cost of furnishing telephone instruments	218,392	236,545	260,820	286,498	293,558	....	....	....
(9) Balance	884,603*	380,524*	426,651	90,295	395,647*	39,888*	29,698*	1,321,516*
(10) Deduct cost of other services	454,716	493,307	552,424	610,545	676,537	639,166	688,835	822,988
(11) Balance available for additional return to A. T. & T. Co. (b)	1,339,319*	873,831*	125,773*	520,250*	1,072,184*	679,054*	718,533*	2,144,504*

* Red figures.

Pacific Telephone & Telegraph Company (a):								
(1) License Payment	$2,258,788	$2,535,927	$2,985,112	$2,964,645	$3,260,790	$1,751,471	$1,445,200	$1,508,013
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	661,502	1,044,578	1,100,893	741,688	957,083	1,228,024	1,578,983	1,729,214
(3) Balance	1,597,286	1,491,349	1,884,219	2,222,957	2,323,707	523,447	133,783*	221,201*
(4) Deduct loss on loans (temporary financing)	139,759	421,706	390,851	505,487	332,488	253,466	633,998	155,663
(5) Balance	1,457,527	1,069,643	1,493,368	1,717,470	1,991,219	269,981	767,781*	376,864*
(6) Deduct loss on holding funds available for cash requirements	478,685	442,975	505,310	437,633	328,064	290,363	193,868	487,378
(7) Balance	978,842	626,668	988,058	1,279,837	1,663,155	20,382*	961,649*	864,242*
(8) Deduct cost of furnishing telephone instruments	424,287	500,048	574,497	651,085	668,524	....	....	....
(9) Balance	554,555	126,620	413,561	628,752	994,631	20,382*	961,649*	884,242*
(10) Deduct cost of other services	1,043,123	1,145,985	1,294,334	1,416,375	1,573,336	1,487,636	1,589,796	1,945,131
(11) Balance available for additional return to A. T. & T. Co. (b)	488,568*	1,019,363*	880,773*	787,623*	578,705*	1,508,018*	2,551,445*	2,809,373*
Southern Bell Telephone & Telegraph Company (a):								
(1) License Payment	1,482,852	1,628,031	1,898,021	1,894,603	2,040,494	1,082,861	876,467	895,161
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	467,540	442,053*	285,415*	331,773*	144,781*	....	58,799*	279,792*
(3) Balance	1,015,312	2,070,084	2,183,436	2,226,376	2,185,275	1,082,861	935,266	1,174,953
(4) Deduct loss on loans (temporary financing)	238,319	74,938	115,785	160,238	138,302	114,074	263,828	1,541
(5) Balance	776,993	1,995,146	2,067,651	2,066,138	2,046,973	968,787	671,438	1,173,412
(6) Deduct loss on holding funds available for cash requirements	66,766	143,065	195,958	387,833	259,007	234,918	78,211	[illegible]65,076
(7) Balance	710,227	1,852,081	1,871,693	1,678,305	1,787,966	733,869	593,227	908,336
(8) Deduct cost of furnishing telephone instruments	249,812	300,375	371,544	434,939	438,453	....	....	....
(9) Balance	460,415	1,551,706	1,500,149	1,253,366	1,349,513	733,869	593,227	908,336
(10) Deduct cost of other services	684,791	735,707	822,975	905,157	984,541	919,743	964,160	1,154,636
(11) Balance available for additional return to A. T. & T. Co. (b)	224,376*	615,999	677,174	348,209	364,972	185,874*	370,933*	246,300*
Southern New England Telephone Company:								
(1) License Payment	417,163	452,194	501,552	493,077	538,903	297,775	242,849	254,125
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	1,634*	11,887*	10,033	7,247	16,101	60,498	48,958	107,957
(3) Balance	418,799	464,081	491,519	485,830	522,802	237,277	193,891	146,168
(4) Deduct loss on loans (temporary financing)	23,062	23,310	37,856	37,561	26,006	31,144	48,902	29,237
(5) Balance	395,737	440,771	453,663	448,269	496,796	206,133	144,989	116,931
(6) Deduct loss on holding funds available for cash requirements	14,774	17,804	11,194	4,089	66,054	49,023	37,604	27,695
(7) Balance	380,963	422,967	442,469	444,180	430,742	157,110	107,385	89,236
(8) Deduct cost of furnishing telephone instruments	92,301	106,315	121,430	136,308	138,629	....	....	....
(9) Balance	288,662	316,652	321,039	307,872	292,113	157,110	107,385	89,236
(10) Deduct cost of other services	192,650	204,346	217,471	235,570	260,021	252,919	267,147	327,787
(11) Balance available for additional return to A. T. & T. Co. (b)	96,012	112,306	103,568	72,302	32,092	95,809*	159,762*	238,551*

* Red figures.

[fol. 4636]

Southwestern Bell Telephone Company (a):								
(1) License Payment	$2,171,522	$2,312,182	$2,533,450	$2,536,583	$2,740,626	$1,470,110	$1,207,534	$1,244,799
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	647,957*	847,831*	861,066*	617,842*	135,828*	132,415*	475,607*	84,388*
(3) Balance	2,819,479	3,160,013	3,394,516	3,154,425	2,876,454	1,602,525	1,683,141	1,329,187
(4) Deduct loss on loans (temporary financing)	216,465	65,756	....	72,074	94,402	55,889	53,643	44,731
(5) Balance	2,603,014	3,094,257	3,394,516	3,082,351	2,782,052	1,546,636	1,629,498	1,284,456
(6) Deduct loss on holding funds available for cash requirements	470,511	118,696	228,676	398,327	337,140	330,088	113,342	380,043
(7) Balance	2,132,503	2,975,561	3,165,840	2,684,024	2,444,912	1,216,548	1,516,156	904,413
(8) Deduct cost of furnishing telephone instruments	374,831	426,075	487,987	584,830	592,137	....	....	....
(9) Balance	1,757,672	2,549,486	2,677,853	2,099,194	1,852,775	1,216,548	1,516,156	904,413
(10) Deduct cost of other services	1,002,824	1,004,875	1,098,495	1,211,806	1,322,356	1,248,658	1,328,351	1,605,621
(11) Balance available for additional return to A. T. & T. Co. (b)	754,848	1,504,611	1,579,358	887,328	530,419	32,110*	187,805	701,208*
Wisconsin Telephone Company:								
(1) License Payment	481,215	511,081	559,919	546,302	594,777	315,701	255,643	262,502
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	21,237	64,351*	83,374*	16,513*	437,131	177,719	103,355	283,966
(3) Balance	459,978	575,432	643,293	562,815	457,646	137,982	152,288	21,464*
(4) Deduct loss on loans (temporary financing)	40,143	6,379	4,379	1,635	6,769	14,246	6,549	30,388
(5) Balance	419,835	569,053	638,914	561,180	450,877	123,736	145,739	51,852*
(6) Deduct loss on holding funds available for cach requirements	58,822	38,280	50,900	44,799	44,356	30,754	35,613	131,168
(7) Balance	361,013	530,773	588,014	516,381	406,521	92,982	110,126	183,020*
(8) Deduct cost of furnishing telephone instruments	103,529	122,721	1[illegible]9,006	155,336	156,488	....	....	....
(9) Balance	257,484	408,052	[illegible]	361,045	250,033	92,982	110,126	183,020*
(10) Deduct cost of other services	222,228	230,957	[illegible]	260,999	286,981	268,145	281,231	338,592
(11) Balance available for additional return to A. T. & T. Co. (b)	35,256	177,095	[illegible]	100,046	36,948*	175,163*	171,095*	521,612*
Total All Companies:								
(1) License Payment	24,015,917	26,399,866	29[illegible]	29,430,428	31,974,786	17,163,757	14,082,205	14,635,261
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	5,481,929	4,085,067	5,095,[illegible]	1,423,381	3,966,859	3,925,380	3,759,759	11,775,454
(3) Balance	18,533,988	22,314,799	24,712,503	28,007,047	28,007,927	13,238,377	10,322,446	2,859,807
(4) Deduct loss on loans (temporary financing)	1,532,770	2,265,891	2,615,886	2,097,600	1,845,974	1,042,910	2,452,967	1,137,658
(5) Balance	17,001,218	20,048,908	22,096,617	25,909,447	26,161,953	12,195,467	7,869,479	1,722,149
(6) Deduct loss on holding funds available for cash requirements	2,590,776	2,875,113	3,716,193	3,378,793	2,795,082	2,845,374	1,337,625	4,578,989
(7) Balance	14,410,442	17,173,795	18,380,424	22,530,854	23,366,871	9,350,093	6,531,854	2,856,840*
(8) Deduct cost of furnishing telephone instruments	4,503,855	5,205,337	5,933,547	6,559,897	6,648,601	....	....	....
(9) Balance	9,906,587	11,968,458	12,446,877	15,970,757	16,718,270	9,350,093	6,531,854	2,856,840*
(10) Deduct cost of other services	11,090,713	11,930,098	12,924,480	14,060,545	15,427,881	14,578,269	15,491,166	18,877,491
(11) Balance available for additional return to A. T. & T. Co. (b)	1,184,126*	38,360	477,603*	1,910,212	1,290,389	5,228,176*	8,959,312*	21,934,331*

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* Red figures.

[fol. 4637]

Totals All Companies exclusive of Illinois Bell Telephone Company:

(1) License Payment	$21,693,561	$23,887,154	$27,079,375	$26,746,338	$29,053,909	$15,604,769	$12,776,839	$13,279,306
(2) Deduct amount required to equal average I. B. T. Co. return to A. T. & T. Co. on investment	5,481,929	4,085,067	5,095,128	1,423,381	3,966,859	3,925,380	3,759,759	11,775,454
(3) Balance	16,211,632	19,802,087	21,984,247	25,322,957	25,087,050	11,679,389	9,017,080	1,503,852
(4) Deduct loss on loans (temporary financing)	1,530,310	2,265,891	2,589,703	2,022,666	1,810,349	1,014,998	2,329,090	1,135,321
(5) Balance	14,681,322	17,536,196	19,349,544	23,300,291	23,276,701	10,664,391	6,687,990	368,531
(6) Deduct loss on holding funds available for cash requirements	2,489,939	2,755,467	3,471,094	3,104,843	2,505,030	2,528,359	1,257,751	4,215,502
(7) Balance	12,191,383	14,780,729	15,923,450	20,195,448	20,771,671	8,136,032	5,430,239	3,846,971*
(8) Deduct cost of furnishing telephone instruments	4,027,778	4,658,275	5,312,277	5,945,624	6,020,282	....	....	....
(9) Balance	8,163,605	10,122,454	10,611,173	14,249,824	14,751,389	8,136,032	5,430,239	3,846,971*
(10) Deduct cost of other services	10,018,233	10,794,604	11,741,518	12,778,207	14,018,554	13,254,122	14,055,195	17,128,494
(11) Balance available for additional return to A. T. & T. Co. (b)	1,854,628*	672,150*	1,130,345*	1,471,617	732,835	5,118,090*	8,624,956*	20,975,465*

* Red figures.

(a) Includes Associated Companies.

(b) "Balance available for additional return to A. T. & T. Co." (Item 11) is the amount carried to corporate surplus of the A. T. & T. Co. from the license payment of each licensee company after each company has been placed on an investment basis comparable to that of the Illinois Bell Telephone Company and after deducting in each case from such license payment the allocated proportion of the total amount claimed by the A. T. & T. Co. to have been the cost of furnishing the license contract services to all licenses companies. The cost of funds included in such total costs is the amount which the A. T. & T. Co. represents to be the annual amount paid by it currently on funds used in its business which were derived from its funded and other indebtedness, and from its capital and surplus. The cost of funds includes dividends paid by the A. T. & T. Co. at the rate of 8% for the year 1920 and for the first six months of 1921 and at the rate of 9% thereafter.

[fol. 4638]

EXHIBIT X-143

American Telephone and Telegraph Company

Items Shown in Exhibit—Reduced to per Cents of the License Payment and to Amounts per Telephone Station
Years Ended December 31, 1920 to 1922, Inclusive

	Year 1920		Year 1921		Year 1922	
	Per Cent	Per Sta.	Per Cent	Per Sta.	Per Cent	Per Sta.
Bell Telephone Company of Pennsylvania (a):						
(1) License payment	100.00	$2.14	100.00	$2.28	100.00	$2.31
(2) Amount required to equal average I. B. T. Co. return on investment	4.80	.11	5.08*	.11*	4.03*	.09*
(3) Loss on loans	.13	.00	......	......	......	......
(4) Loss on holding funds available for cash requirements	6.03	.13	7.06	.16	16.78	.39
(5) Cost of furnishing telephone instruments	18.20	.38	19.24	.43	21.19	.48
(6) Balance	70.84	1.52	78.78	1.80	66.06	1.53
(7) Cost of other services	41.56	.89	44.75	1.02	46.83	1.08
(8) Balance available for additional return to A. T. & T. Co.	29.28	.63	34.03	.78	19.23	.45
Central Union Telephone Company:						
(1) License payment	100.00	1.89	......	......	......	......
(2) Amount required to equal average I. B. T. Co. return on investment	89.33	1.69	......	......	......	......
(3) Loss on loans	7.19	.13	......	......	......	......
(4) Loss on holding funds available for cash requirements	6.07	.11	......	......	......	......
(5) Cost of furnishing telephone instruments	19.90	.38	......	......	......	......
(6) Balance	22.49*	.42*	......	......	......	......
(7) Cost of other services	41.56	.79	......	......	......	......
(8) Balance available for additional return to A. T. & T. Co.	64.05*	1.21*	......	......	......	......
Chesapeake and Potomac Telephone Companies:						
(1) License payment	100.00	2.09	100.00	2.27	100.00	2.35
(2) Amount required to equal average I. B. T. Co. return on investment	1.07	.02	.65	.02	29.84	.70
(3) Loss on loans	.15	.00	2.83	.07	3.23	.08

* Red Figures.

Exhibit X-143—Continued

American Telephone and Telegraph Company

Items Shown in Exhibit—Reduced to per Cents of the License Payment and to Amounts per Telephone Station
Years Ended December 31, 1920 to 1922, Inclusive

	Year 1920		Year 1921		Year 1922	
	Per Cent	Per Sta.	Per Cent	Per Sta.	Per Cent	Per Sta.
(4) Loss on holding funds available for cash requirements	2.04	.04	1.74	.04	7.79	.18
(5) Cost of furnishing telephone instruments	17.98	.38	18.85	.43	20.24	.48
(6) Balance	78.76	1.65	75.93	1.71	38.90	.91
(7) Cost of other services	41.56	.87	44.75	1.01	46.83	1.10
(8) Balance available for additional return to A. T. & T. Co.	37.20	.78	31.18	.70	7.93*	.19*
Cincinnati and Suburban Bell Telephone Co.:						
(1) License payment	100.00	1.89	100.00	2.05	100.00	2.07
(2) Amount required to equal average I. B. T. Co. return on investment	8.60	.16	7.84	.16	8.61	.17
(3) Loss on loans	......	......	......	......	......	......
(4) Loss on holding funds available for cash requirements	1.37	.02	......	......	2.40	.05
(5) Cost of furnishing telephone instruments	19.88	.38	20.84	.43	22.99	.48
(6) Balance	70.15	1.33	71.32	1.46	66.00	1.37
(7) Cost of other services	41.56	.79	44.75	.92	46.83	.97
(8) Balance available for additional return to A. T. & T. Co.	28.59	.54	26.57	.54	19.17	.40
Illinois Bell Telephone Company:						
(1) License payment	100.00	2.12	100.00	2.43	100.00	2.46
(2) Amount required to equal average I. B. T. Co. return on investment	......	......	......	......	......	......
(3) Loss on loans	.11	.00	1.72	.04	.39	.01
(4) Loss on holding funds available for cash requirements	4.57	.10	3.52	.09	15.73	.39
(5) Cost of furnishing telephone instruments	24.28	.51	20.30	.49	21.44	.53
(6) Balance	71.04	1.51	74.46	1.81	62.44	1.53
(7) Cost of other services	41.56	.88	44.75	1.09	46.83	1.15
(8) Balance available for additional return to A. T. & T. Co.	29.48	.63	29.71	.72	15.61	.38

[fol. 4639] Indiana Bell Telephone Company:						
(1) License payment	100.00	$1.30	100.00	$1.83	100.00	$1.87
(2) Amount required to equal average I. B. T. Co. return on investment	170.87	2.22	266.26	4.88	311.39	5.82
(3) Loss on loans	4.15	.05	39.37	.72	47.66	.89
(4) Loss on holding funds available for cash requirements	18.89	.24	15.72	.28	38.13	.71
(5) Cost of furnishing telephone instruments	28.94	.38	23.31	.43	25.46	.48
(6) Balance	122.85*	1.59*	244.67*	4.48*	322.64*	6.03*
(7) Cost of other services	41.56	.54	44.75	.82	46.83	.88
(8) Balance available for additional return to A. T. & T. Co.	164.41*	2.13*	289.42*	5.30*	369.47*	6.91*
Michigan State Telephone Company:						
(1) License payment	100.00	2.13	100.00	2.46	100.00	2.46
(2) Amount required to equal average I. B, T. Co. return on investment	113.90	2.42	112.59	2.77	47.49	1.17
(3) Loss on loans	3.20	.07	31.95	.79	25.09	.62
(4) Loss on holding funds available for cash requirements	9.77	.21	4.49	.11	26.44	.65
(5) Cost of furnishing telephone instruments	17.72	.38	17.33	.43	19.32	.48
(6) Balance	44.59*	.95*	66.36*	1.64*	18.34*	.46*
(7) Cost of other services	41.56	.88	44.75	1.10	46.83	1.15
(8) Balance available for additional return to A. T. & T. Co.	86.15*	1.83*	111.11*	2.74*	65.17*	1.61*
Mountain States Telephone & Telegraph Co.:						
(1) License payment	100.00	2.24	100.00	2.18	100.00	2.16
(2) Amount required to equal average I. B. T. Co. return on investment	8.45*	.19*	2.26*	.05*	5.54	.12
(3) Loss on loans	.26	.01	4.47	.10	6.09	.13
(4) Loss on holding funds available for cash requirements	2.13	.05	2.65	.06	5.25	.11
(5) Cost of furnishing telephone instruments	16.81	.38	19.59	.43	22.07	.48
(6) Balance	89.25	1.99	75.55	1.64	61.05	1.32
(7) Cost of other services	41.56	.93	44.75	.97	46.83	1.01
(8) Balance available for additional return to A. T. & T. Co.	47.69	1.06	30.80	.67	14.22	.31

* Red Figures.

Exhibit X-143—Continued

American Telephone and Telegraph Company

Items Shown in Exhibit—Reduced to per Cents of the License Payment and to Amounts per Telephone Station
Years Ended December 31, 1920 to 1922, Inclusive

	Year 1920		Year 1921		Year 1922	
	Per Cent	Per Sta.	Per Cent	Per Sta.	Per Cent	Per Sta.
New England Telephone & Telegraph Co. (a):						
(1) License payment	100.00	2.21	100.00	2.12	100.00	2.13
(2) Amount required to equal average I. B. T. Co. return on investment	2.80	.06	1.71	.04	1.31	.03
(3) Loss on loans	.02	.00	4.64	.10	4.04	.09
(4) Loss on holding funds available for cash requirements	3.36	.07	7.09	.15	17.10	.36
(5) Cost of furnishing telephone instruments	17.05	.38	20.11	.43	22.35	.48
(6) Balance	76.77	1.70	69.87	1.48	55.20	1.17
(7) Cost of other services	41.56	.92	44.75	.95	46.83	1.00
(8) Balance available for additional return to A. T. & T. Co.	35.21	.78	25.12	.53	8.37	.17
New York Telephone Company:						
(1) License payment	100.00	2.42	100.00	2.62	100.00	2.67
(2) Amount required to equal average I. B. T. Co. return on investment	22.40	.54	29.80	.78	15.37	.41
(3) Loss on loans	.64	.02	12.54	.33	3.99	.10
(4) Loss on holding funds available for cash requirements	10.70	.26	13.19	.35	8.65	.23
(5) Cost of furnishing telephone instruments	15.60	.38	16.31	.43	17.83	.48
(6) Balance	50.66	1.22	28.16	.73	54.16	1.45
(7) Cost of other services	41.56	1.00	44.75	1.17	46.83	1.25
(8) Balance available for additional return to A. T. & T. Co.	9.10	.22	16.59	.44	7.33	.20

[fol. 4640] Northwestern Bell Telephone Company:

(1) License payment	100.00	$2.03	100.00	$2.08	100.00	$2.12
(2) Amount required to equal average I. B. T. Co. return on investment	1.30	.03	124.87	2.60	77.39	1.64
(3) Loss on loans	2.98	.06	12.18	.26	5.35	.11
(4) Loss on holding funds available for cash requirements	8.66	.17	2.67	.05	.71	.01
(5) Cost of furnishing telephone instruments	18.52	.38	20.50	.43	22.46	.48
(6) Balance	68.54	1.39	60.22*	1.26*	5.91*	.12*
(7) Cost of other services	41.56	.84	44.75	.93	46.83	.99
(8) Balance available for additional return to A. T. & T. Co.	26.98	.55	104.97*	2.19*	52.74*	1.11*
Ohio Bell Telephone Company:						
(1) License payment	100.00	2.26	100.00	1.99	100.00	1.82
(2) Amount required to equal average I. B. T. Co. return on investment	343.96	7.76	14.07	.28	184.02	3.35
(3) Loss on loans	3.57	.08	30.92	.61	7.71	.14
(4) Loss on holding funds available for cash requirements	5.92	.13	4.22	.08	21.71	.39
(5) Cost of furnishing telephone instruments	16.68	.38	21.49	.43	26.11	.48
(6) Balance	270.13*	6.09*	29.30	.59	139.55*	2.54*
(7) Cost of other services	41.56	.94	44.75	.89	46.83	.85
(8) Balance available for additional return to A. T. & T. Co.	311.69*	7.03*	15.45*	.30*	186.38*	3.39*
Pacific Telephone & Telegraph Company (a):						
(1) License payment	100.00	1.97	100.00	2.03	100.00	2.23
(2) Amount required to equal average I. B. T. Co. return on investment	24.63	.49	31.16	.63	29.19	.65
(3) Loss on loans	.56	.01	8.49	.17	7.50	.17

* Red Figures.

EXHIBIT X-143—Continued

American Telephone and Telegraph Company

Items Shown in Exhibit—Reduced to per Cents of the License Payment and to Amounts per Telephone Station
Years Ended December 31, 1920 to 1922, Inclusive

	Year 1920		Year 1921		Year 1922	
	Per Cent	Per Sta.	Per Cent	Per Sta.	Per Cent	Per Sta.
(4) Loss on holding funds available for cash requirements	1.74	.03	8.75	.18	20.68	.46
(5) Cost of furnishing telephone instruments	19.14	.38	21.03	.43	21.38	.48
(6) Balance	53.93	1.06	30.57	.62	21.25	.47
(7) Cost of other services	41.56	.82	44.75	.91	46.83	1.04
(8) Balance available for additional return to A. T. & T. Co.	12.37	.24	14.18*	.29*	25.28*	.57*
Southern Bell Telephone & Telegraph Company (a):						
(1) License payment	100.00	2.52	100.00	2.61	100.00	2.70
(2) Amount required to equal average I. B. T. Co. return on investment	12.11	.30	23.50	.61	28.92	.78
(3) Loss on loans	.96	.02	13.92	.36	17.37	.47
(4) Loss on holding funds available for cash requirements	8.59	.22	6.26	.16	8.37	.23
(5) Cost of furnishing telephone instruments	14.95	.38	16.38	.43	17.65	.48
(6) Balance	63.39	1.60	39.94	1.05	27.69	.74
(7) Cost of other services	41.56	1.05	44.75	1.17	46.83	1.26
(8) Balance available for additional return to A. T. & T. Co.	21.83	.55	4.81*	.12*	19.14*	.52*

Southern New England Telephone Company:						
(1) License payment	100.00	1.95	100.00	1.94	100.00	1.97
(2) Amount required to equal average I. B. T. Co. return on investment	1.52	.03	4.13*	.08*	.90*	.02*
(3) Loss on loans	.64	.01	6.19	.12	8.00	.15
(4) Loss on holding funds available for cash requirements	3.57	.07	6.09	.12	......	......
(5) Cost of furnishing telephone instruments	19.30	.38	22.07	.43	24.19	.48
(6) Balance	74.97	1.46	69.78	1.35	68.71	1.36
(7) Cost of other services	41.56	.81	44.75	.87	46.83	.92
(8) Balance available for additional return to A. T. & T. Co.	33.41	.65	25.03	.48	21.88	.44
[fol. 4641] Southwestern Bell Telephone Company (a)						
(1) License payment	100.00	$2.37	100.00	$2.56	100.00	$2.59
(2) Amount required to equal average I. B. T. Co. return on investment	19.79	.47	9.56*	.25*	31.89*	.82*
(3) Loss on loans	1.73	.04	16.53	.42	15.77	.41
(4) Loss on holding funds available for cash requirements	8.78	.21	9.67	.25	15.50	.40
(5) Cost of furnishing telephone instruments	15.92	.38	16.67	.43	18.39	.48
(6) Balance	53.78	1.27	66.69	1.71	82.23	2.12
(7) Cost of other services	41.56	.98	44.75	1.15	46.83	1.21
(8) Balance available for additional return to A. T. & T. Co.	12.22	.29	21.94	.56	35.40	.91
Wisconsin Telephone Company:						
(1) License payment	100.00	1.72	100.00	1.86	100.00	1.98
(2) Amount required to equal average I. B. T. Co. return on investment	19.22*	.33*	6.10*	.11*	4.64*	.09*
(3) Loss on loans	.47	.01	10.47	.19	6.27	.12
(4) Loss on holding funds available for cash requirements	7.84	.13	4.87	.09	11.53	.22
(5) Cost of furnishing telephone instruments	21.88	.39	22.95	.43	24.02	.48
(6) Balance	89.03	1.53	67.81	1.26	62.82	1.25
(7) Cost of other services	41.56	.72	44.75	.83	46.83	.93
(8) Balance available for additional return to A. T. & T. Co.	47.47	.81	23.06	.43	15.99	.32

* Red Figures.

Exhibit X-143—Continued

American Telephone and Telegraph Company

Items Shown in Exhibit—Reduced to per Cents of the License Payment and to Amounts per Telephone Station
Years Ended December 31, 1920 to 1922, Inclusive

	Year 1920		Year 1921		Year 1922	
	Per Cent	Per Sta.	Per Cent	Per Sta.	Per Cent	Per Sta.
Average for All Licensees:						
(1) License payment	100.00	2.17	100.00	2.31	100.00	2.35
(2) Amount required to equal average I. B. T. Co. return on investment	23.76	.52	23.97	.55	23.71	.56
(3) Loss on loans	[illegible].07	.02	10.50	.24	7.27	.17
(4) Loss on holding funds available for cash requirements	6.72	.15	7.54	.18	13.41	.31
(5) Cost of furnishing telephone instruments	17.90	.38	18.79	.43	20.49	.48
(6) Balance	50.55	1.10	39.20	.91	35.12	.83
(7) Cost of other services	41.56	.90	44.75	1.03	46.83	1.10
(8) Balance available for additional return to A. T. & T. Co.	8.99	.20	5.55*	.12*	11.71*	.27*
Average for all Licensees Exclusive of Ill. Bell Tel. Co.:						
(1) License payment	100.00	2.17	100.00	2.29	100.00	2.34
(2) Amount required to equal average I. B. T. Co. return on investment	25.92	.56	26.70	.61	26.32	.61
(3) Loss on loans	1.16	.02	11.50	.26	8.03	.18
(4) Loss on holding funds available for cash requirements	6.92	.15	8.00	.18	13.15	.31
(5) Cost of furnishing telephone instruments	17.31	.38	18.61	.43	20.39	.48
(6) Balance	48.69	1.06	35.19	.81	32.11	.76
(7) Cost of other services	41.56	.90	44.75	1.03	46.83	1.10
(8) Balance available for additional return to A. T. & T. Co.	7.13	.16	9.56*	.22*	14.72*	.34*

* Red Figures.

(a) Including Associated Companies.

(Here follow side folios 4642, 4643, 4644, and 4645)

American Telephone and Telegraph Company

Items shown in Exhibit — Reduced to Per Cents of the License Payment and to Amounts per Telephone Station, Years Ended December 31, 1923 to 1930, Inclusive

[fol. 4642]

	Year 1923		Year 1924		Year 1923		Year 1926		Year 1927		Year 1928		Year 1929		Year 1930	
	Per Cent	Per Sta.	Per Cent	Per Sta.	Per Cent	Per Sta.	Per Cent	Per Sta.	Per Cent	Per Sta.	Per Cent	Per Sta.	Per Cent	Per Sta.	Per Cent	Per Sta.
Bell Telephone Company of Pennsylvania (a):																
(1) License payment	100.00	$2.26	100.00	$2.34	100.00	$2.56	100.00	$2.37	100.00	$2.58	100.00	$1.18	100.00	$.89	100.00	$.85
(2) Amount required to equal average I. B. T. Co. return on investment	.81*	.02*	6.66	.16	7.10	.18	6.24*	.15*	5.46	.14	10.56	.13	24.87	.22	42.51	.36
(3) Loss on loans	1.78	.04	10.26	.24	10.57	.27	......	......	2.18	.06	.38	.01	8.50	.08	5.35	.05
(4) Loss on holding funds available for cash requirements	11.82	.27	20.13	.47	13.68	.35	11.06	.26	5.20	.13	14.16	.17	9.23	.08	31.75	.27
(5) Cost of furnishing telephone instruments	19.60	.44	20.21	.47	19.57	.50	22.15	.53	19.45	.50	......	......	......	......	......	......
(6) Balance	67.61	1.53	42.74	1.00	49.08	1.26	73.03	1.73	67.71	1.75	74.90	.87	57.40	.51	20.39	.17
(7) Cost of other services	46.18	1.04	45.19	1.06	43.36	1.11	47.78	1.13	48.25	1.24	84.94	1.00	110.01	1.00	128.99	1.09
(8) Balance available for additional return to A. T. & T. Co	21.43	.49	2.45*	.06*	5.72	.15	25.25	.60	19.46	.51	10.04	.13*	52.61*	.49*	108.60*	.92*
Chesapeake and Potomac Telephone Companies:																
(1) License payment	100.00	2.35	100.00	2.31	100.00	2.42	100.00	2.21	100.00	2.23	100.00	1.12	100.00	.84	100.00	.83
(2) Amount required to equal average I. B. T. Co. return on investment	24.60	.58	66.87	1.55	28.80	.70	40.17	.89	37.53	.84	72.21	.81	68.46	.57	179.76	1.49
(3) Loss on loans	5.91	.14	5.33	.12	11.07	.27	16.75	.37	2.73	.06	7.29	.08	24.65	.20	15.81	.13
(4) Loss on holding funds available for cash requirements	5.14	.12	9.00	.21	8.64	.21	11.52	.25	8.07	.18	10.13	.11	8.86	.07	38.54	.32
(5) Cost of furnishing telephone instruments	18.87	.44	20.43	.47	20.75	.50	23.82	.53	22.51	.50	......	......	......	......	......	......
(6) Balance	45.48	1.07	1.63*	.04*	30.74	.74	7.74	.17	29.16	.65	10.37	.12	1.97*	.00	134.11*	1.11*
(7) Cost of other services	46.18	1.08	45.19	1.05	43.36	1.05	47.78	1.05	48.25	1.08	84.94	.95	110.01	.92	128.99	1.07
(8) Balance available for additional return to A. T. & T. Co	.70*	.01*	46.82*	1.09*	12.62*	.31*	40.04*	.88*	19.09*	.43*	74.57*	.83*	111.98*	.92*	263.10*	2.18*
Cincinnati and Suburban Bell Telephone Co.:																
(1) License payment	100.00	2.06	100.00	2.07	100.00	2.10	100.00	2.01	100.00	2.16	100.00	1.09	100.00	.83	100.00	.83
(2) Amount required to equal average I. B. T. Co. return on investment	9.65	.20	7.81	.16	7.43	.16	.56*	.01*	11.49*	.24*	23.02*	.25*	40.48*	.34*	35.79*	.30*
(3) Loss on loans	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
(4) Loss on holding funds available for cash requirements	1.97	.04	2.24	.05	4.47	.09	......	......	......	......	......	......	......	......	......	......
(5) Cost of furnishing telephone instruments	21.45	.44	22.83	.47	23.82	.50	26.23	.53	23.26	.50	......	......	......	......	......	......
(6) Balance	66.93	1.38	67.12	1.39	64.28	1.35	74.33	1.49	88.23	1.90	123.02	1.34	140.48	1.17	135.79	1.13
(7) Cost of other services	46.18	.95	45.19	.93	43.36	.91	47.78	.96	48.25	1.04	84.94	.92	110.01	.92	128.99	1.07
(8) Balance available for additional return to A. T. & T. Co	20.75	.43	21.93	.46	20.92	.44	26.55	.53	39.98	.86	38.08	.42	30.47	.25	6.80	.06
Illinois Bell Telephone Company:																
(1) License payment	100.00	2.47	100.00	2.47	100.00	2.50	100.00	2.30	100.00	2.33	100.00	1.17	100.00	.93	100.00	.94
(2) Amount required to equal average I. B. T. Co. return on investment	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
(3) Loss on loans	.11	......	......	......	.96	.02	2.79	.06	1.22	.03	1.79	.02	9.49	.09	.17	......
(4) Loss on holding funds available for cash requirements	4.34	.11	4.76	.12	8.98	.23	10.21	.24	9.93	.23	20.33	.24	6.12	.06	26.81	.25
(5) Cost of furnishing telephone instruments	20.50	.51	21.77	.54	22.77	.57	22.89	.53	21.51	.50	......	......	......	......	......	......
(6) Balance	75.05	1.85	73.47	1.81	67.29	1.68	64.11	1.47	67.34	1.57	77.88	.91	84.39	.78	73.02	.69
(7) Cost of other services	46.18	1.14	45.19	1.11	43.36	1.08	47.78	1.10	48.25	1.13	84.94	.99	110.01	1.02	128.99	1.21
(8) Balance available for additional return to A. T. & T. Co	28.87	.71	28.28	.70	23.93	.60	16.33	.37	19.09	.44	7.06*	.08*	25.62*	.24*	55.97*	.52*
Indiana Bell Telephone Company:																

A. T. & T. Co.	28.87	.71	28.28	.70	23.95	.60	16.33	.37	19.09	.44	7.06*	.18*	25.62*	.24*	55.97*	.52*
Indiana Bell Telephone Company:																
(1) License payment	100.00	2.04	100.00	2.47	100.00	2.51	100.00	2.32	100.00	2.39	100.00	1.20	100.00	.90	100.00	.80
(2) Amount required to equal average I. B. T. Co. return on investment	306.24	6.24	256.89	6.35	338.77	8.51	230.93	5.34	87.96	2.10	12.75*	.16*	33.11*	.30*	20.17	.17
(3) Loss on loans	55.65	1.13	50.71	1.25	39.85	1.00	16.34	.37	13.28	.32	8.88	.10	17.86	.16	11.66	.10
(4) Loss on holding funds available for cash requirements	3.93	.08	5.15	.13	....	....	....	....	1.99	.05	3.73	.05	3.99	.03	22.25	.19
(5) Cost of furnishing telephone instruments	21.75	.44	19.12	.47	19.96	.50	22.72	.53	20.98	.50	....	....	....	....	....	....
(6) Balance	287.57*	5.85*	231.87*	5.73*	298.58*	7.50*	169.99*	3.92*	24.21*	.58*	100.14	1.21	111.26	1.01	45.92	.40
(7) Cost of other services	46.18	.94	45.19	1.12	43.36	1.09	47.78	1.11	48.25	1.15	84.94	1.02	110.01	.99	128.99	1.11
(8) Balance available for additional return to A. T. & T. Co.	333.75*	6.79*	277.06*	6.85*	341.94*	8.59*	217.77*	5.03*	72.46*	1.73*	15.20	.19	1.25	.02	83.07*	.71*

* Red figures.

American Telephone and Telegraph Company

Items Shown in Exhibit — Reduced to Per Cents of the License Payment and to Amounts per Telephone Station, Years Ended December 31, 1923 to 1930, Inclusive

	Year 1923		Year 1924		Year 1925		Year 1926		Year 1927		Year 1928		Year 1929		Year 1930	
	Per Cent	Per Sta.	Per Cent	Per Sta.	Per Cent	Per Sta.	Per Cent	Per Sta.	Per Cent	Per Sta.	Per Cent	Per Sta.	Per Cent	Per Sta.	Per Cent	Per Sta.
Michigan Bell Telephone Company:																
(1) License payment	100.00	$2.49	100.00	$2.48	100.00	$2.31	100.00	$1.92	100.00	$2.30	100.00	$1.16	100.00	$.90	100.00	$.88
(2) Amount required to equal average I. B. T. Co. return on investment	51.45	1.28	5.94	.15	16.44*	.41*	.74	.01	28.46	.66	4.45*	.05*	43.36	.39	553.87	4.87
(3) Loss on loans	27.88	.70	23.93	.60	10.61	.27	26.54	.51	28.56	.66	16.61	.19	63.29	.58	24.52	.22
(4) Loss on holding funds available for cash requirements	13.33	.33	17.93	.44	15.35	.39	24.33	.47	24.08	.55	40.60	.47	14.55	.13	49.27	.43
(5) Cost of furnishing telephone instruments	17.80	.44	19.07	.47	19.99	.50	27.84	.53	21.84	.50	......	......	......	......	......	......
(6) Balance	10.46*	.26*	33.13	.82	70.49	1.76	21.05	.40	2.94*	.07*	47.24	.55	21.20*	.20*	527.66*	4.64
(7) Cost of other services	46.18	1.15	45.19	1.12	43.36	1.09	47.78	.92	48.25	1.11	84.94	.99	110.01	1.00	128.99	1.13
(8) Balance available for additional return to A. T. & T. Co	56.64*	1.41*	12.06*	.30*	27.13	.67	26.73*	.52*	51.19*	1.18*	37.70*	.44*	131.21*	1.20*	656.65*	5.77*
Mountain States Telephone & Telegraph Co.:																
(1) License payment	100.00	2.13	100.00	2.07	100.00	2.10	100.00	1.90	100.00	1.95	100.00	.99	100.00	.75	100.00	.74
(2) Amount required to equal average I. B. T. Co. return on investment	13.46	.29	8.38	.17	10.59	.22	15.75	.30	3.30*	.06*	12.85	.13	63.07	.47	65.88	.49
(3) Loss on loans	6.08	.13	2.72	.06	1.85	.04	2.13	.04	1.89	.04	6.94	.07	43.93	.33	16.09	.12
(4) Loss on holding funds available for cash requirements	2.77	.06	1.31	.03	.75	.02	.81	.01	4.91	.10	28.95	.29	13.90	.10	6.87	.05
(5) Cost of furnishing telephone instruments	20.80	.44	22.82	.47	23.85	.50	27.58	.53	25.75	.50	......	......	......	......	......	......
(6) Balance	56.89	1.21	64.77	1.34	62.96	1.32	53.73	1.02	70.75	1.37	51.26	.50	20.90*	.15*	11.16	.08
(7) Cost of other services	46.18	.98	45.19	.94	43.36	.91	47.78	.91	48.25	.94	84.94	.84	110.01	.82	128.99	.96
(8) Balance available for additional return to A. T. & T. Co	10.71	.23	19.58	.40	19.60	.41	5.95	.11	22.50	.43	33.68*	.34*	130.91*	.97*	117.83*	.88*
New England Telephone & Telegraph Co.:																
(1) License payment	100.00	2.13	100.00	2.14	100.00	2.29	100.00	2.34	100.00	2.34	100.00	1.17	100.00	.89	100.00	.89
(2) Amount required to equal average I. B. T. Co. return on investment	3.39	.07	11.08	.24	59.35	1.36	1.63*	.04*	3.22*	.07*	2.20	.03	3.73	.03	25.40	.23
(3) Loss on loans	2.04	.04	11.24	.24	17.14	.39	5.46	.13	......	......	1.40	.02	7.81	.07	4.30	.04
(4) Loss on holding funds available for cash requirements	11.16	.24	13.87	.30	15.58	.36	12.92	.30	3.68	.09	6.13	.07	5.75	.05	13.95	.12
(5) Cost of furnishing telephone instruments	20.75	.44	22.08	.47	21.85	.50	22.49	.53	21.42	.50	......	......	......	......	......	......
(6) Balance	62.66	1.34	41.73	.89	13.92*	.32*	60.76	1.42	78.12	1.82	90.27	1.05	82.71	.74	56.35	.50
(7) Cost of other services	46.18	.98	45.19	.97	43.36	.99	47.78	1.12	48.25	1.13	84.94	.99	110.01	.99	128.99	1.14
(8) Balance available for additional return to A. T. & T. Co	16.48	.36	3.46*	.08*	57.28*	1.31*	12.98	.30	29.87	.69	5.33	.06	27.30*	.25*	72.64*	.64*
New Jersey Bell Telephone Company:																
(1) License payment	......	......	......	......	......	......	......	......	100.00	1.78	100.00	1.41	100.00	1.07	100.00	1.05
(2) Amount required to equal average I. B. T. Co. return on investment	......	......	......	......	......	......	......	......	10.88	.19	92.75	1.31	109.79	1.18	177.21	1.87
(3) Loss on loans	......	......	......	......	......	......	......	......	6.63	.11	19.09	.27	25.62	.27	18.30	.19
(4) Loss on holding funds available for cash requirements	......	......	......	......	......	......	......	......	21.79	.39	19.43	.27	9.90	.11	30.84	.33
(5) Cost of furnishing telephone instruments	......	......	......	......	......	......	......	......	28.12	.50	......	......	......	......	......	......
(6) Balance	......	......	......	......	......	......	......	......	32.58	.59	31.27*	.44*	45.31*	.49*	126.35*	1.34*
(7) Cost of other services	......	......	......	......	......	......	......	......	48.25	.86	84.94	1.20	110.01	1.18	128.99	1.36
(8) Balance available for additional return to A. T. & T. Co	......	......	......	......	......	......	......	......	15.67*	.27*	116.21*	1.64*	155.32*	1.67*	255.34*	2.70*
New York Telephone Company:																
(1) License payment	100.00	2.74	100.00	2.81	100.00	2.98	100.00	2.81	100.00	2.88	100.00	1.50	100.00	1.15	100.00	1.20
(2) Amount required to equal average I. B. T. Co. return on investment	20.27	.56	24.03	.08	27.94	.83	.48	.01	13.25	.38	22.47	.34	17.77	.21	49.83	.59

A. T. & T. Co.	......	......	......	......	......	......	......	......	15.67*	.27*	116.21*	1.64*	155.32*	1.67*	255.34*	2.70*
New York Telephone Company:																
(1) License payment	100.00	2.74	100.00	2.81	100.00	2.98	100.00	2.81	100.00	2.88	100.00	1.50	100.00	1.15	100.00	1.20
(2) Amount required to equal average I. B. T. Co. return on investment	20.27	.56	24.03	.08	27.94	.83	.48	.01	13.25	.38	22.47	.34	17.77	.21	49.83	.59
(3) Loss on loans	2.11	.06	7.66	.21	9.53	.29	5.85	.16	6.05	.17	3.05	.05	7.71	.09	6.30	.07
(4) Loss on holding funds available for cash requirements	12.75	.35	13.82	.39	11.26	.34	8.72	.24	7.33	.21	13.98	.21	8.78	.10	32.95	.40
(5) Cost of furnishing telephone instruments	16.15	.44	16.80	.47	16.84	.50	18.68	.53	17.41	.50	......	......	......	......	......	......
(6) Balance	48.72	1.33	37.69	1.06	34.43	1.02	66.27	1.87	55.96	1.62	60.50	.90	65.74	.75	10.92	.14
(7) Cost of other services	46.18	1.27	45.19	1.27	43.36	1.29	47.78	1.34	48.25	1.39	84.94	1.27	110.01	1.26	128.99	1.55
(8) Balance available for additional return to A. T. & T. Co.	2.54	.06	7.50*	.21*	8.93*	.27*	18.49	.53	7.71	.23	24.44*	.37*	44.27*	.51*	118.07*	1.41*

*Red figures.

American Telephone and Telegraph Company

Items shown in Exhibit — Reduced to Per Cents of the License Payment and to Amounts per Telephone Station, Years Ended December 31, 1923 to 1930, Inclusive

[fol. 4644]

	Year 1923		Year 1924		Year 1923		Year 1926		Year 1927		Year 1928		Year 1929		Year 1930	
	Per Cent	Per Sta.	Per Cent	Per Sta.	Per Cent	Per Sta.	Per Cent	Per Sta.	Per Cent	Per Sta.	Per Cent	Per Sta.	Per Cent	Per Sta.	Per Cent	Per Sta.
Northwestern Bell Telephone Company:																
(1) License payment	100.00	$2.22	100.00	$2.19	100.00	$2.24	100.00	$2.01	100.00	$2.00	100.00	$1.08	100.00	$.92	100.00	$.91
(2) Amount required to equal average I. B. T. Co. return on investment	33.84	.75	40.70*	.89*	41.54*	.93*	34.98*	.70*	22.70*	.46*	29.99*	.33*	40.76*	.38*	42.72	.39
(3) Loss on loans	......	......	......	......	4.15	.09	2.49	.05	.06	......	.53	.01	5.49	.05	15.42	.14
(4) Loss on holding funds available for cash requirements			......	......	39.40	.88	2.95	.06	.74	.02	6.46	.07	6.36	.06	63.33	.58
(5) Cost of furnishing telephone instruments	19.93	.44	21.58	.47	22.34	.50	26.15	.53	25.02	.50	......	......	......	......	......	......
(6) Balance	46.23	1.03	119.12	2.61	75.65	1.70	103.39	2.07	96.88	1.94	123.00	1.33	128.91	1.19	21.47*	.20*
(7) Cost of other services	46.18	1.08	45.19	.99	43.36	.97	47.78	.96	48.25	.97	84.94	.92	110.01	1.01	128.99	1.17
(8) Balance available for additional return to A. T. & T. Co.	.05	.00	73.93	1.62	32.29	.73	55.61	1.11	48.63	.97	38.06	.41	18.90	.18	150.46*	1.37*
Ohio Bell Telephone Company:																
(1) License payment	100.00	1.99	100.00	2.10	100.00	2.45	100.00	2.34	100.00	2.40	100.00	1.21	100.00	.91	100.00	.89
(2) Amount required to equal average I. B. T. Co. return on investment	152.87	3.05	93.37	2.04	22.59	.55	47.99	1.12	83.24	2.00	81.98	.99	84.49	.77	266.67	2.38
(3) Loss on loans	11.90	.24	14.84	.32	12.21	.30	8.98	.21	14.42	.35	4.59	.06	5.59	.05	6.18	.05
(4) Loss on holding funds available for cash requirements	2.88	.06	4.98	.11	11.24	.28	13.54	.32	9.61	.23	16.74	.23	14.67	.14	34.27	.31
(5) Cost of furnishing telephone instruments	22.18	.44	21.67	.47	20.47	.50	22.42	.53	20.94	.50	......	......	......	......	......	......
(6) Balance	89.83*	1.80*	34.86*	.76*	33.49	.82	7.07	.16	28.21*	.68*	5.31*	.07*	4.75*	.05*	207.12*	1.85*
(7) Cost of other services	46.18	.92	45.19	.98	43.36	1.06	47.78	1.12	48.25	1.16	84.94	1.02	110.01	1.01	128.99	1.15
(8) Balance available for additional return to A. T. & T. Co.	136.01*	2.72*	80.05*	1.74	9.87*	.24*	40.71*	.96*	76.46*	1.84*	90.25*	1.09*	114.76*	1.06*	336.11*	3.00*
Pacific Telephone and Telegraph Company (a):																
(1) License payment	100.00	2.36	100.00	2.40	100.00	2.60	100.00	2.39	100.00	2.45	100.00	1.24	100.00	.96	100.00	.93
(2) Amount required to equal average I. B. T. Co. return on investment	29.29	.69	41.19	.99	36.88	.96	25.02	.60	28.74	.71	70.11	.87	109.26	1.03	114.67	1.07
(3) Loss on loans	6.19	.15	16.63	.40	13.09	.34	17.05	.41	10.20	.25	14.47	.18	43.87	.42	10.32	.10
(4) Loss on holding funds available for cash requirements	21.19	.50	17.47	.42	16.93	.44	14.76	.35	10.06	.25	16.58	.21	13.41	.13	32.32	.30
(5) Cost of furnishing telephone instruments	18.78	.44	19.72	.47	19.25	.50	21.96	.53	20.50	.50	......	......	......	......	......	......
(6) Balance	24.55	.58	4.99	.12	13.85	.36	21.21	.50	30.50	.74	1.16*	.02*	66.54*	.64*	57.31*	.54*
(7) Cost of other services	46.18	1.09	45.19	1.08	43.36	1.13	47.78	1.14	48.25	1.18	84.94	1.05	110.01	1.06	128.99	1.20
(8) Balance available for additional return to A. T. & T. Co.	21.63*	.51*	40.20*	.96*	29.51*	.77*	26.57*	.64*	17.75*	.44*	86.10*	1.07*	176.53*	1.70*	186.30*	1.74*
Southern Bell Telephone and Telegraph Company (a):																
(1) License payment	100.00	2.63	100.00	2.56	100.00	2.56	100.00	2.35	100.00	2.33	100.00	1.17	100.00	.89	100.00	.89
(2) Amount required to equal average I. B. T. Co. return on investment	31.53	.83	27.15*	.69*	15.04*	.39*	17.51*	.41*	7.10*	.17*	......	......	6.71*	.06*	31.26*	.28*
(3) Loss on loans	16.07	.42	4.61	.12	6.10	.16	8.46	.20	6.78	.16	10.54	.12	30.10	.27	.17	.00
(4) Loss on holding funds available for cash requirements	4.50	.12	8.78	.23	10.32	.26	20.47	.48	12.69	.29	21.69	.25	8.92	.08	29.61	.26
(5) Cost of furnishing telephone instruments	16.85	.44	18.45	.47	19.58	.50	22.43	.53	21.49	.50	......	......	......	......	......	......
(6) Balance	31.05	.82	95.31	2.43	79.04	2.03	66.15	1.55	66.14	1.55	67.77	.80	67.69	.60	101.48	.91
(7) Cost of other services	46.18	1.22	45.19	1.15	43.36	1.11	47.78	1.12	48.25	1.13	84.94	.99	110.01	.98	128.99	1.15
(8) Balance available for additional return to A. T. & T. Co.	15.13*	.40*	50.12	1.28	35.68	.92	18.37	.43	17.89	.42	17.17*	.19*	42.32*	.38*	27.51*	.24*

(8) Balance available for additional return to A. T. & T. Co.	15.13*	.40*	50.12	1.28	35.68	.92	18.37	.43	17.89	.42	17.17*	19*	62 32*	[illegible]	[illegible]	[illegible]
Southern New England Telephone Company:																
(1) License payment	100.00	2.00	100.00	2.01	100.00	2.07	100.00	1.90	100.00	1.95	100.00	1 03	100 00	[illegible]	[illegible]	[illegible]
(2) Amount required to equal average I. B. T. Co. return on investment	.39*	.01*	2.63*	.05*	2.00	.04	1.47	.03	2.99	.06	20.32	21	20 16	[illegible]	[illegible]	[illegible]
(3) Loss on loans	5.53	.11	5.15	.10	7.55	.16	7.62	.14	4.83	.09	10.46	10	20 14	[illegible]	[illegible]	[illegible]
(4) Loss on holding funds available for cash requirements	3.54	.07	3.94	.08	2.23	.04	.83	.01	12.26	.24	16.46	17	15 68	[illegible]	[illegible]	[illegible]
(5) Cost of furnishing telephone instruments	22.12	.44	23.51	.47	24.21	.50	27.64	.53	25.72	.50						
(6) Balance	69.20	1.39	70.03	1.41	64.01	1.33	62.44	1.19	54.20	1.06	52.76	55	44 22	[illegible]	[illegible]	[illegible]
(7) Cost of other services	46.18	.92	45.19	.91	43.36	.90	47.78	.91	48.25	.94	84.94	87	110 01	[illegible]	[illegible]	[illegible]
(8) Balance available for additional return to A. T. & T. Co.	23.02	.47	24.84	.50	20.65	.43	14.66	.28	5.95	.12	32.18*	32*	65 79*	[illegible]	[illegible]	[illegible]

* Red Figures.

American Telephone and Telegraph Company

Items shown in Exhibit — Reduced to Per Cents of the License Payment and to Amounts per Telephone Station, Years Ended December 31, 1923 to 1930, Inclusive

	Year 1923		Year 1924		Year 1925		Year 1926		Year 1927		Year 1928		Year 1929		Year 1930	
	Per Cent	Per Sta.	Per Cent	Per Sta.	Per Cent	Per Sta.	Per Cent	Per Sta.	Per Cent	Per Sta.	Per Cent	Per Sta.	Per Cent	Per Sta.	Per Cent	Per Sta.
Southwestern Bell Telephone Co. (a)																
(1) License payment	100.00	$2.57	100.00	$2.56	100.00	$2.60	100.00	$2.28	100.00	$2.32	100.00	$1.16	100.00	$.91	100.00	$.91
(2) Amount required to equal average I. B. T. Co. return on investment	29.84*	.76*	36.67*	.94*	33.99*	.89*	24.36*	.56*	4.96*	.11*	9.01*	.11*	39.39*	.36*	6.78*	.06*
(3) Loss on loans	9.97	.26	2.84	.07	......	......	2.84	.06	3.45	.08	3.80	.04	4.44	.04	3.59	.03
(4) Loss on holding funds available for cash requirements	21.67	.56	5.13	.13	9.03	.23	15.70	.36	12.30	.28	22.45	.26	9.39	.09	30.53	.28
(5) Cost of furnishing telephone instruments	17.26	.44	18.43	.47	19.26	.50	23.[illegible]	.53	21.61	.50	......	......	......	......	......	......
(6) Balance	80.94	2.07	110.27	2.[illegible]	105.70	2.76	82.76	1.89	67.60	[illegible]	82.76	.97	125.56	1.14	72.66	.66
(7) Cost of other service	46.18	1.19	45.19	[illegible]	43.36	1.13	47.78	1.09	48.25	1.12	84.94	.99	110.01	.99	128.99	1.18
(8) Balance available for additional return to A. T. & T. Co.	34.76	.88	65.08	1.67	62.34	1.63	34.98	.80	19.35	.45	2.18*	.02*	15.55	.15	56.33*	.52*
Wisconsin Telephone Company																
(1) License payment	100.00	2.06	100.00	1.96	100.00	2.02	100.00	1.85	100.00	1.91	100.00	.96	100.00	.73	100.00	.72
(2) Amount required to equal average I. B. T. Co. return on investment	4.41	.09	12.59*	.25*	14.89*	.30*	3.02*	.06*	23.06	.44	36.29	.54	40.43	.29	108.18	.78
(3) Loss on loans	8.34	.17	1.25	.03	.78	.02	.30	.01	1.14	.02	4.51	.04	2.56	.02	11.58	.08
(4) Loss on holding funds available for cash requirements	12.22	.25	7.49	.15	9.09	.18	8.20	.15	7.46	.14	9.74	.10	13.93	.10	49.97	.36
(5) Cost of furnishing telephone instruments	21.52	.44	24.01	.47	24.83	.50	28.43	.53	26.31	.50	......	......	......	......	......	......
(6) Balance	53.51	1.11	79.84	1.56	80.19	1.62	66.09	1.22	42.03	.81	29.46	.28	43.08	.32	69.73*	.50*
(7) Cost of other services	46.18	.95	45.19	.89	43.36	.89	47.78	.88	48.25	.92	84.94	.82	110.01	.81	128.99	.93
(8) Balance available for additional return to A. T. & T. Co.	7.33	.16	34.65	.67	36.83	.74	18.31	.34	6.22*	.11*	55.48*	.54*	66.93*	.49*	198.72*	1.43*
Average for all Licensees																
(1) License payment	100.00	2.39	100.00	2.43	100.00	2.55	100.00	2.36	100.00	2.41	100.00	1.22	100.00	.95	100.00	.94
(2) Amount required to equal average I. B. T. Co. return on investment	22.83	.55	15.47	.38	17.09	.44	4.84	.11	12.41	.30	22.87	.28	26.70	.25	80.46	.76
(3) Loss on loans	6.38	.15	8.58	.21	8.77	.22	7.13	.17	5.78	.14	6.07	.08	17.42	.16	7.77	.07
(4) Loss on holding funds available for cash requirements	10.79	.26	10.89	.27	12.47	.32	11.48	.27	8.74	.21	16.58	.20	9.50	.09	31.29	.30
(5) Cost of furnishing telephone instruments	18.75	.44	19.72	.47	19.91	.50	22.29	.53	20.79	.50	......	......	......	......	......	......
(6) Balance	41.25	.99	45.34	1.10	41.76	1.07	54.26	1.28	52.28	1.26	54.48	.66	46.38	.45	19.52*	.19*
(7) Cost of other services	46.18	1.10	45.19	1.10	43.36	1.11	47.78	1.13	48.25	1.16	84.94	1.04	110.01	1.04	128.99	1.21
(8) Balance available for additional return to A. T. & T. Co.	4.93*	.11*	.15	.00	1.60*	.04*	6.48	.15	4.03	.10	30.46*	.38*	63.63*	.59*	148.51*	1.40*
Average for all Licensees Exclusive of Ill. Bell Tel. Co.																
(1) License payment	100.00	2.39	100.00	2.42	[illegible]0.00	2.56	100.00	2.36	100.00	2.42	100.00	1.23	100.00	.94	100.00	.94
(2) Amount required to equal average I. B. T. Co. return on investment	25.27	.60	17.10	.41	18.82	.48	5.32	.13	13.65	.33	25.15	.31	29.43	.28	88.68	.84
(3) Loss on loans	7.05	.17	9.49	.23	9.56	.24	7.56	.18	6.23	.15	6.50	.08	18.23	.17	8.55	.08
(4) Loss on holding funds available for cash requirements	11.48	.27	11.54	.28	12.82	.33	11.61	.27	8.62	.21	16.20	.20	9.84	.09	31.74	.30
(5) Cost of furnishing telephone instruments	18.57	.44	19.50	.47	19.62	.30	22.23	.53	20.72	.50	......	......	......	......	......	......
(6) Balance	37.63	.91	42.37	1.03	39.18	1.01	53.28	1.25	50.78	1.23	52.15	.64	42.50	.40	28.97*	.28*
(7) Cost of other services	46.18	1.10	45.19	1.09	43.36	1.11	47.78	1.13	48.25	[illegible].17	84.94	1.04	110.01	1.04	128.99	1.22
(8) Balance available for additional return to A. T. & T. Co.	8.55*	.19*	2.82*	.06*	4.18*	.10*	5.50	.12	2.53	.06	32.79*	.40*	67.51*	.64*	157.96*	1.50*

(a) Including Associated Companies.

* Red Figures.

Exhibit X-145

American Telephone and Telegraph Company

Return on Investment from License Contract Operations with Various Licensees During Years 1920 to 1922, Inclusive

	Year 1920			Year 1921			Year 1922		
	Investment	Return on Investment	Percent of return	Investment	Return on Investment	Percent of return	Investment	Return on Investment	Percent of return
Illinois Bell Telephone Company	$4,990,415	$723,666	14.50	$6,625,677	$1,025,035	15.47	$11,777,828	$1,138,666	9.67
Other Licensees (In United States)	227,995,126	19,301,125	8.47	230,415,063	18,490,090	8.02	215,635,432	17,153,660	7.95
Bell Telephone Company of Canada									
Long Lines Department	17,181,094	1,476,690	8.59	14,925,291	1,228,772	8.23	14,933,776	1,201,221	8.04
Total	$250,166,635	21,501,481	8.59	251,966,031	20,743,897	8.23	242,347,036	19,493,547	8.04

(Here follow side folios 4647, 4648, 4649 and 4650)

[fol. 4647]

American Telephone and Telegraph Company

Return on Investment from License Contract Operations with Various Licensees During Years 1923 to 1927, Inclusive

	Year 1923			Year 1924			Year 1925			Year 1926			Year 1927		
	Investment	Return on Investment	Percent of return	Investment	Return on Investment	Percent of return	Investment	Return on Investment	Percent of return	Investment	Return on Investment	Percent of return	Investment	Return on Investment	Percent of return
Ill. Bell Tel. Company	$5,351,528	1,007,964	18.84	5,598,120	1,060,190	18.94	10,329,898	1,341,187	12.98	14,935,979	1,443,828	9.67	12,833,307	1,421,516	11.08
Other Licensees (In U. S.)	215,528,004	18,464,035	8.57	265,937,824	21,663,818	8.15	324,209,492	26,460,566	8.16	263,062,767	20,877,229	7.94	265,425,622	22,924,717	8.64
Bell Tel. Co. of Canada	2,698,932	237,929	8.82	3,956,072	331,071	8.37	4,372,398	363,366	8.31	3,966,123	318,448	8.03	4,176,000	365,379	8.75
Long Lines Dept.	14,643,629	1,290,933	8.82	16,386,959	1,371,375	8.37	19,847,406	1,649,410	8.31	16,024,132	1,286,608	8.03	15,560,257	1,361,443	8.75
Total	$238,222,093	21,000,861	8.82	291,878,981	24,426,454	8.37	358,759,194	29,814,529	8.31	297,989,001	23,926,113	8.03	297,995,186	26,073,055	8.75

[fol. 4648]

Exhibit X-148

American Telephone and Telegraph Company

Separation of the License Payments of Illinois Bell Telephone Company, Chicago Division, of Other Licensee Companies (Including Illinois Bell Telephone Company, Exclusive of Chicago Division) and of Long Lines Department Into Component Part of Cost and Profit Based on Plaintiff's Exhibit A-170 and Underlying Exhibits Referred to Therein During Years 1923 to 1931, Inclusive

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec.31, 1929	Year Ended Dec. 31, 1930	Year Ended Dec. 31, 1931
Illinois Bell Telephone Company—Chicago Division:									
(1) License Payment	$1,724,251	$1,860,438	$1,987,535	$1,935,878	$2,085,720	$1,104,893	$931,296	$968,222	$931,652
(2) Loss On Loans (Temporary Financing)									
(3) Balance	1,725,251	1,860,438	1,987,535	1,935,878	2,085,720	1,104,893	931,296	968,222	931,652
(4) Loss On Holding Funds Available for Cash Requirements	97,797	111,178	170,576	161,078	146,374	150,395	44,003	176,497	146,965
(5) Balance	1,626,454	1,749,260	1,816,959	1,774,890	1,939,346	954,498	887,293	791,725	784,687
(6) Cost of Furnishing Telephone Instruments	327,965	378,626	433,185	425,880	445,618				
(7) Balance	1,298,489	1,370,634	1,383,774	1,348,920	1,493,728	954,498	887,293	791,725	784,687
(8) Cost of Other Services	786,618	804,982	863,921	945,063	1,008,746	987,332	1,047,691	1,220,008	1,137,913
(9) Balance Available for Additional Return to A. T. & T. Co. (b)	511,871	565,652	519,853	403 857	484,982	32,834*	160,398*	428,283*	353,226*
Other Licensee Companies (a):									
(1) License Payment	22,586,117	24,924,054	28,209,679	27,914,430	30,368,931	16,517,472	13,524,292	14,057,668	13,786,709
(2) Loss On Loans (Temporary Financing)	1,535,913	2,260,603	2,606,279	2,095,365	1,839,609	1,051,430	2,452,536	1,137,450	1,709,528
(3) Balance	21,049,204	22,663,451	25,603,400	25,819,065	28,529,322	15,466,042	11,071,756	12,920,218	12,077,181
(4) Loss on Holding Funds Available for Cash Requirements	2,176,557	2,415,593	3,109,740	2,715,307	2,140,720	2,163,372	854,012	3,284,224	2,979,941
(5) Balance	18,872,647	20,247,858	22,493,660	23,103,758	26,388,602	13,302,670	10,217,744	9,635,994	9,097,240
(6) Cost of Furnishing Telephone Instruments	4,170,618	4,819,599	5,488,891	6,119,261	6,322,601				
(7) Balance	14,702,029	15,428,259	17,004,769	16,984,497	20,066,001	13,302,670	10,217,744	9,635,994	9,097,240
(8) Cost of Other Services	11,500,804	12,691,173	13,883,575	15,068,684	16,383,155	16,015,262	17,040,605	20,432,398	19,366,058
(9) Balance Available for Additional Return to A. T. & T. Co. (b)	3,201,225	2,737,086	3,121,194	1,915,808	3,682,846	2,712,592*	6,822,861*	10,796,404*	10,268,818*
Long Lines Department:									
(1) License Payment	1,592,181	1,593,209	1,768,414	1,696,400	1,788,032	1,581,797	1,422,935	1,485,249	1,417,094
(2) Loss on Loans (Temporary Financing)									
(3) Balance	1,592,181	1,593,209	1,768,414	1,696,400	1,788,032	1,581,797	1,422,935	1,485,249	1,417,094
(4) Loss on Holding Funds Available for Cash Requirements	150,330	147,061	187,248	246,726	245,679	324,508	162,215	688,824	538,869
(5) Balance	1,441,851	1,446,148	1,581,166	1,449,674	1,542,353	1,257,289	1,260,720	796,425	878,225
(6) Cost of Furnishing Telephone Instruments	2,605	3,010	2,858	3,266	4,053				
(7) Balance	1,439,246	1,443,138	1,578,306	1,446,408	1,538,300	1,257,289	1,260,720	796,425	878,225
(8) Cost of Other Services	815,186	832,167	805,158	891,930	1,045,934	1,129,613	1,349,343	1,849,819	1,790,256
(9) Balance Available for Additional Return to A. T. & T. Co. (b)	624,060	610,971	773,150	554,478	492,366	127,676	88,623*	1,053,394*	912,031*
Totals:									
(1) License Payments	25,901,549	28,377,701	31,965,628	31,546,708	34,242,683	19,204,162	15,878,523	16,511,139	16,135,455
(2) Losses on Loans (Temporary Financing)	1,335,913	2,260,603	2,606,279	2,093,365	1,839,609	1,051,430	2,452,536	1,137,450	1,709,528
(3) Balance	24,365,636	26,117,098	29,359,349	29,451,343	32,403,074	18,152,732	13,425,987	15,373,689	14,425,927
(4) Losses on Holding Funds Available for Cash Requirements	2,424,684	2,673,832	3,467,564	3,123,111	2,532,773	2,638,275	1,060,230	4,149,545	3,665,775
(5) Balance	21,940,952	23,443,266	25,891,785	26,328,232	29,980,301	15,514,457	12,365,757	11,224,144	10,760,152
(6) Cost of Furnishing Telephone Instruments	4,501,188	5,201,235	5,924,934	6,548,407	6,772,272				

Totals:									
(1) License Payments	25,901,549	28,377,701	31,965,628	31,546,708	34,242,683	19,204,162	15,878,523	16,511,139	[illegible]
(2) Losses on Loans (Temporary Financing)	1,335,913	2,260,603	2,606,279	2,093,365	1,839,609	1,051,430	2,452,536	1,137,650*	[illegible]
(3) Balance	24,365,636	26,117,098	29,359,349	29,451,343	32,403,074	18,152,732	13,425,987	15,373,609	[illegible]
(4) Losses on Holding Funds Available for Cash Requirements	2,424,684	2,673,832	3,467,564	3,123,111	2,532,773	2,638,275	1,060,230	4,149,545	[illegible]
(5) Balance	21,940,952	23,443,266	25,891,785	26,328,232	29,980,301	15,514,457	12,365,757	11,224,144	[illegible]
(6) Cost of Furnishing Telephone Instruments	4,501,188	5,201,235	5,924,934	6,548,407	6,772,272				
(7) Balance	17,439,764	18,242,031	19,966,851	19,779,825	23,098,029	15,514,457	12,365,757	11,224,144	[illegible]
(8) Cost of Other Services	13,102,608	14,328,322	15,552,654	16,905,682	18,437,835	18,132,207	19,437,639	23,502,225	[illegible]
(9) Balance Available for Additional Return to A. T. & T. Co. (b)	4,337,156	3,913,709	4,414,[illegible]97	2,874,143	4,660,194	2,617,750*	7,071,882*	12,278,081*	[illegible]

[fol. 4649] * —Red Figures.

(a)—Including Illinois Bell Telephone Company, exclusive of Chicago Division.

(b)—"Balance Available For Additional Return to A. T. & T. Co." (Item 9) is the amount carried to corporate surplus of the A. T. & T. Co. from the license payments after deducting the allocated proportion of the total amount claimed by the A. T. & T. Co. to have been the cost of furnishing all license contract services. The cost of funds included in such total costs is the amount which the A. T. & T. Co. represents to be the amount paid by it currently on funds and other indebtedness, and from its capital and surplus. The cost of the funds includes dividends paid by the A. T. & T. Co. at the rate of 8% for the year 1920 and for the first six months of 1929 and at the rate of 9% thereafter.

(Here follows side folio 4650)

[fol. 4650]

Exhibit X-149

American Telephone and Telegraph Company

Return on Investment from License Contract Operations with Illinois Bell Telephone Company, Chicago Division, with other Licensee Companies (Including Illinois Bell Telephone Company Exclusive of Chicago Division), and with Long Lines Department, Computed from Plaintiff's Exhibit A-170 and Underlying Exhibits Referred to Therein During Years 1923 to 1927, Inclusive

	Year 1923			Year 1924			Year 1925		
	Investment	Return on Investment	Percent. of Return	Investment	Return on Investment	Percent. of Return	Investment	Return on Investment	Percent. of Return
Illinois Bell Telephone Company, Chicago Division	$4,678,961	$833,291	17.81%	$4,860,584	$898,555	18.49%	$6,014,058	$936,621	15.57%
Other Licensee Companies, including Illinois Bell Telephone Company, exclusive of Chicago Division	222,872,738	18,512,046	8.31	275,588,081	21,613,853	7.84	340,889,438	26,757,821	7.85
Long Lines Department	5,129,825	976,[illegible]2	19.03	4,557,292	923,084	20.26	5,000,376	1,119,669	22.39
Total	232,681,524	20,321,779	8.73	285,005,957	23,435,492	8.22	351,903,872	28,814,111	8.19

	Year 1926			Year 1927		
	Investment	Return on Investment	Percent. of Return	Investment	Return on Investment	Percent. of Return
Illinois Bell Telephone Company, Chicago Division	$5,744,440	$796,159	13.86%	$5,405,717	$855,839	15.83%
Other Licensee Companies, including Illinois Bell Telephone Company, exclusive of Chicago Division	278,058,708	20,989,486	7.55	278,338,096	22,821,655	8.20
Long Lines Department	6,492,347	997,839	15.37	6,580,896	943,857	14.34
Total	290,295,495	22,783,484	7.85	290,324,709	24,621,351	8.48

[fol. 4651]

Exhibit X-150

American Telephone and Telegraph Company

Return from License Contract Operations with Illinois Bell Telephone Company, Chicago Division, in Excess of the Average Return from License Contract Operations with Other Licensee Companies (Computed from Plaintiff's Exhibit A-170 and Underlying Exhibits Referred to Therein) During Years 1923 to 1927, Inclusive

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927
(1) Percent. of Return from License Contract Operations with Illinois Bell Telephone Company, Chicago Division	17.81%	18.49%	15.57%	13.86%	15.83%
(2) Percent. of Return from License Contract Operations with Other Licensee Companies	8.31%	7.84%	7.85%	7.55%	8.20%
(3) Investment by A. T. & T. Co. in connection with License Contract Operations, Illinois Bell Telephone Company, Chicago Division	$4,678,961	$4,860,584	$6,014,058	$5,744,440	$5,405,717
(4) Amount of Return from License Contract Operations with Illinois Bell Telephone Company, Chicago Division	833,291	898,555	936,621	796,159	855,839
(5) Amount of Return from License Contract Operations with Illinois Bell Telephone Company, Chicago Division, reduced to basis of average return from Other Licensee Companies (Item 2 times Item 3)	388,822	381,070	472,104	433,705	443,269
(6) Excess of Return from Illinois Bell Telephone Company, Chicago Division, Over Return based on Average of Other Licensee Companies	444,469	517,485	464,517	362,454	412,570

[fol. 4652]

EXHIBIT X-150—Continued

American Telephone and Telegraph Company

Cost of Other Services Charged to License Contract Operations Paid by Illinois Bell Telephone Company, Chicago Division, in Excess of the Average Payment of Cost of Other Services by Other Licensee Companies (Computed from Plaintiff's Exhibit A-170 and Underlying Exhibits Referred to Therein) During Years 1928 to 1931, Inclusive

	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930	Year Ended Dec. 31, 1931
(1) Balance of License Payment Available for Other Services—Illinois Bell Telephone Company, Chicago Division	$954,498	$887,293	$791,725	$784,687
(2) Cost of Other Services—Illinois Bell Telephone Company, Chicago Division	987,332	1,047,691	1,220,008	1,137,913
(3) Per Cent of Other Services Paid by Illinois Bell Telephone Company, Chicago Division	96.67%	84.69%	64.90%	68.96%
(4) Balance of License Payment Available for Other Services—Other Licensee Companies	13,302,670	10,217,744	9,635,994	9,097,240
(5) Cost of Other Services—Other Licensee Companies	16,015,262	17,040,605	20,432,398	19,366,058
(6) Per Cent of Other Services Paid by Other Licensee Companies	83.06%	59.96%	47.16%	46.98%
(7) Other Services Paid by Illinois Bell Telephone Company, Chicago Division, on Basis of Other Licensee Companies (Item 2 times Item 6)	820,078	628,196	575,356	534,592
(8) Excess of Actual Payment of Other Services by Illinois Bell Telephone Company, Chicago Division, over Average Payment of Other Licensee Companies (Item 1 minus Item 7)	$134,420	259,097	216,369	250,095

[fol. 4653]

EXHIBIT X–151

American Telephone and Telegraph Company

Return from License Contract Operations under Present Rates and Under Attacked Rates with Illinois Bell Telephone Company, Chicago Division, in Excess of the Average Return from License Contract Operations with Other Licensee Companies (Computed from Plaintiff's Exhibit A–170 and Underlying Exhibits Referred to Therein) During Years 1923 to 1931, Inclusive

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930	Year Ended Dec. 31, 1931
(1) Return under Present Revenues from Illinois Bell Telephone Company, Chicago Division, in Excess of Average Return from Other Licensee Companies.....	$444,469	$517,485	$464,517	$362,454	$412,570	$134,420	$259,097	$216,369	$250,095
(2) Decrease in Return from Illinois Bell Telephone Company, Chicago Division, due to Reduction in Revenues on account of Attacked Rates (b)............	24,746	98,330	96,467	90,924	87,952	43,614	33,692	33,039	27,265
(3) Return under Attacked Rates from Illinois Bell Telephone Company, Chicago Division, in Excess of Average Return from Other Licensee Companies.....	419,723	419,155	368,050	271,530	324,618	90,806	225,405	183,330	222,830

EXHIBIT X-151—Continued

American Telephone and Telegraph Company

Return from License Contract Operations under Present Rates and Under Attacked Rates with Illinois Bell Telephone Company, Chicago Division, in Excess of the Average Return from License Contract Operations with Other Licensee Companies (Computed from Plaintiff's Exhibit A-170 and Underlying Exhibits Referred to Therein) During Years 1923 to 1931, Inclusive

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930	Year Ended Dec. 31, 1931
(4) Return under Present Revenues from Illinois Bell Telephone Company, Chicago Division, in Excess of Average Return from Other Licensee Companies Prorated to Chicago Division Intrastate and Intrastate Exchange on Basis of License Payments (a):									
Chicago Division Intrastate	432,468	501,857	449,002	348,971	395,861	127,511	234,742	195,316	226,361
Chicago Division Intrastate Exchange	413,356	478,156	425,544	328,420	371,396	119,298	219,015	182,118	211,455
(5) Return under Attacked Rates from Illinois Bell Telephone Company, Chicago Division Intrastate and Intrastate Exchange, in Excess of Average Return from Other Licensee Companies (Item 4 minus Item 2):									
Chicago Division Intrastate	407,722	403,527	352,535	258,047	307,909	83,898	201,050	162,277	199,096
Chicago Division Intrastate Exchange	388,610	369,826	329,077	237,496	283,444	75,684	185,323	149,079	184,190

(a) License Payments were taken from Defendants' Interstate Separation.
(b) As shown by Plaintiff's Exhibit A-52.

[fol. 4654]

EXHIBIT X-153

Illinois Bell Telephone Company

Comparison of Cash Payments to Western Electric Company with Cash Obtained in Stock and Loans from American Telephone and Telegraph Company, Years 1923 to 1930, Inclusive.

Years Ended Dec. 31	Cash Payments to West. Elec. Co. (M. R. 14)	Cash Obtained from A.T. & T. Co. (a)	Percent of Cash Obtained from A.T. & T. Co. to Cash Paid West. Elec. Co.
1923	$9,949,635	$3,214,324*	32.31%*
1924	13,018,008	1,979,500 (b)	15.21
1925	18,925,404	12,920,322 (b)	68.27
1926	17,050,320	13,500,000	79.18
1927	19,655,678	17,980,335	91.48
1928	22,084,687	18,669,864 (b)	84.54
1929	21,894,924	10,931,203 (b)	49.93
1930	23,692,001	19,048,013 (b)	80.40
Total	$146,270,657	$91,814,913	62.77

*Red Figures.

(a) Information furnished by A. T. & T. Co. designated as City's Exhibit 142-C.

(b) Exclusive of Repayments of funds previously left with A. T. & T. Co.

[fol. 4655]

EXHIBIT X-154

Illinois Bell Telephone Company, Chicago Exchange

Mortality Study of Exchange Aerial Cable

	(A)	(B)	(C)	(D)	(E)	(F)
Age from Initial Installation Years	Percentage Survivors Unadjusted	Amount Placed Each Year	Percentage Retired	Expected Retirements	Expected Survivors First of Year	Percentage Survivors Adjusted to Books
0.........	....	2,248	1.258	28.28	....	....
1.........	98.742	2,146	2.729	58.56	2,119.00	98.740
2.........	96.013	2,049	2.992	61.31	1,967.31	96.074
3.........	93.021	1,956	3.226	63.10	1,819.49	93.26[illegible]
4.........	89.795	1,867	3.434	64.11	1,676.47	90.051
5.........	86.361	1,782	3.609	64.31	1,538.95	87.016
6.........	82.752	1,701	3.757	63.91	1,407.61	83.492
7.........	78.995	1,624	3.874	62.91	1,282.88	79.868
8.........	75.121	1,551	3.957	61.37	1,165.13	76.090
9.........	71.164	1,480	4.009	59.33	1,053.23	72.202
10.........	67.155	1,413	4.030	56.94	948.90	68.303
11.........	63.125	1,349	4.023	54.27	851.56	64.348
12.........	59.102	1,288	3.987	51.35	761.23	60.371
13.........	55.115	1,229	3.926	48.25	677.36	56.465
14.........	51.189	1,174	3.838	45.06	600.96	52.597
15.........	47.351	1,121	3.732	41.84	530.80	48.789
16.........	43.619	1,070	3.602	38.54	466.72	45.071
17.........	40.017	1,021	3.460	35.33	408.57	41.461
18.........	36.557	975	3.303	32.20	356.43	38.020
19.........	33.254	931	3.132	29.16	309.59	34.720
20.........	30.122	888	2.955	26.24	267.48	31.571
21.........	27.167	848	2.773	23.52	230.38	28.584
22.........	24.394	810	2.585	20.94	197.59	25.771
23.........	21.809	773	2.399	18.54	168.58	23.135
24.........	19.410	738	2.212	16.32	143.25	20.680
25.........	17.198	704	2.029	14.28	121.07	18.405
26.........	15.169	672	1.851	12.44	101.94	16.309

EXHIBIT X-154—Continued

Age from Initial Installation Years	(A) Percentage Survivors Unadjusted	(B) Amount Placed Each Year	(C) Percentage Retired	(D) Expected Retirements	(E) Expected Survivors First of Year	(F) Percentage Survivors Adjusted to Books
27	13.318	642	1.679	10.78	85.50	14.389
28	11.639	613	1.515	9.29	71.34	12.639
29	10.124	585	1.360	7.96	59.23	11.053
30	8.764	559	1.213	6.78	48.99	9.624
31	7.551	533	1.048	5.59	40.25	8.342
32	6.503	509	.978	4.98	33.10	7.273
33	5.525	486	.840	4.08	26.85	6.171
34	4.695	464	.721	3.35	21.78	5.266
35	3.964	442	.634	2.80	17.42	4.483
36	3.330	423	.543	2.30	14.09	3.791
37	2.787	403	.467	1.88	11.23	3.195
38	2.320	385	.400	1.54	8.93	2.677
39	1.920	367	.340	1.25	7.05	2.233
40	1.585	350	.285	1.00	5.55	1.852
41	1.295	335	.240	.80	4.34	1.530
42	1.055	320	.200	.64	3.38	1.257
43	.855	305	.170	.52	2.61	1.027
44	.685	293	.132	.39	2.01	.830
45	.553	278	.109	.30	1.54	.625
46	.444	265	.095	.25	1.18	.547
47	.349	253	.074	.19	.88	.434
48	.275	242	.059	.14	.67	.345
49	.216	231	.048	.11	.50	.270
50	.168	220	.038	.08	.37	.212
51	.130	210	.029	.06	.27	.166
52	.101	201	.024	.05	.20	.130
53	.077	192	.019	.04	.15	.101
54	.058	183	.014	.03	.11	.077
55	.044	174	.011	.02	.08	.059
56	.033	167	.008	.01	.06	.045
57	.025	159	.006	.01	.04	.034
58	.019	152	.005	.01	.03	.026
59	.014	145	.004	.01	.02	.019
60	.010	138	.003	.0	.01	.014
61	.007	132	.002	.0	.01	.010
62	.005	126	.001	.0	.01	.007
63	.004	120	.001	.0	.0	.006
64	.003	115	.001	.0	.0	.005
65	.002	110	.001	.0	.0	.003
66	.001	105	.001	.0	.0	.002
67	.000	100	.0	.0	.0	.001
68			100.000	1,219.65	21,642.26	0

1,552,088

(1) Expected Plant at beginning of Current Year 21,642.26
(2) Expected Retirements during Current Year 1,219.65
(3) Expected Ratio of Retirements to Plant .... .0564
(4) Sum of Book Costs at beginning of Years 1929, 1930 and 1931 .. $17,202,584
(5) Sum of Retirements per Books in Years 1929, 1930 and 1931 .. 935,262
(6) Ratio of Retirements to Plant per Books .... .0544

Col. A = Data from Graduated Life Table developed by the Company from its Mortality Study.

Col. B = Gross Additions to Plant each Year, expressed as Index Numbers, referred to the 67th year's Additions as 100 and 4.75% Rate of Growth per Year

Col. C = Differences between Successive Figures in Col. (A).

Col. D = Col. B x Col. C.

Col. E = Col. A x Col. B.

Col. F = A adjusted for the difference between the expected retirement ratio from rhe Life Table, Line (3), and the retirement ratio for the years 1929, 1930 and 1931 as shown by the books, Line (6) in accordance with the formula used by the Company. Indicated Average Life 15.5 Years.

EXHIBIT X-155

Illinois Bell Telephone Company, Chicago Division

Summary of Account 102, Reserve for Accrued Depreciation, Twenty-one Years, 1910 to 1930, Inclusive

Year	Credits to Reserve				Charges Against Reserve					
	Charges To Operating Expenses Acct. 608 (1)	Charges To Clearing Accounts (2)	Other Credits (3)	Total Credits (4)	Property Retired (Net) (5)	Extra-ordinary Repairs (6)	Other Debits (7)	Total Debits (8)	Net Increase in Reserve During Year (9)	Balance at End of Year (10)
1909....	......	......	......	......						$2,433,380 (a)
1910....	$1,286,782	......	......		$434,301	......	......	$434,301	$852,481	3,285,861
1911....	1,383,733	......	$63,252(b)	$1,446,985	348,018	......	......	348,018	1,098,967	4,384,828
1912....	1,722,946	......	......	1,722,946	891,950	$9,742	......	901,692	821,254	5,206,082
1913....	1,994,285	$54,264	2,523	2,051,072	782,611	258,653	......	1,041,264	1,009,808	6,215,890
1914....	2,338,692	64,920	209,940(c)	2,613,552	1,309,766	147,035	......	1,456,801	1,156,751	7,372,641
1915....	2,600,884	63,387	......	2,664,271	1,326,967	272,368	951	1,600,286	1,063,985	8,436,626
1916....	2,824,804	61,876	......	2,886,680	802,171	481,444	52,571(d)	1,336,186	1,550,494	9,987,120
1917....	3,138,184	84,192	......	3,222,376	985,066	307,045	......	1,292,111	1,930,265	11,917,385
1918....	3,102,839	57,038	418	3,160,295	581,557	......	......	581,557	2,578,738	14,496,123
1919....	3,415,077	49,632	......	3,464,709	610,793	......	15	610,808	2,853,901	17,350,024
1920....	3,421,535	75,471	......	3,497,006	537,899	5,044	4,474	547,417	2,949,589	20,299,613
1921....	3,369,849	83,223	4,649	3,457,721	611,572	......	......	611,572	2,846,149	23,145,762
1922....	3,739,870	92,511	551	3,832,932	892,672	1,412	......	894,084	2,938,848	26,084,610
1923....	4,480,954	109,080	141,355(e)	4,731,389	1,378,831	127,329	3,717	1,509,877	3,221,512	29,306,122
1924....	4,709,950	130,510	860	4,841,320	2,091,842	59,769	......	2,151,611	2,689,709	31,995,831
1925....	5,385,712	143,921	5,769	5,535,402	1,907,053	12,283	13,136	1,932,472	3,602,930	35,598,761
1926....	6,203,022	170,637	20,019	6,393,678	2,401,023	23,001	......	2,424,024	3,969,654	39,568,415

Exhibit X-155—Continued

Illinois Bell Telephone Company, Chicago Division

Summary of Account 102, Reserve for Accrued Depreciation, Twenty-one Years, 1910 to 1930, Inclusive

	Credits to Reserve				Charges Against Reserve					
Year	Charges To Operating Expenses Acct. 608 (1)	Charges To Clearing Accounts (2)	Other Credits (3)	Total Credits (4)	Property Retired (Net) (5)	Extra-ordinary Repairs (6)	Other Debits (7)	Total Debits (8)	Net Increase in Reserve During Year (9)	Balance at End of Year (10)
1927....	6,839,392	162,485	15,910	7,017,787	2,633,099	11,418	......	2,644,517	4,373,270	43,941,685
1928....	7,641,461	190,902	1,047	7,833,410	4,270,298	30,561	13,458	4,314,317	3,519,093	47,460,778
1929....	8,120,382	179,300	45,892	8,345,574	7,177,954	45,203	......	7,223,157	1,122,417	48,583,195
1930....	8,769,886	173,525	14,931	8,958,342	6,309,975	40,286*	......	6,269,689	2,688,653	51,271,848
Total...	$86,490,239	$1,946,874	$527,116	$87,677,447	$38,285,418	$1,752,021	$88,322	$40,125,761	$48,838,468	$488,342,580

* Red figures.

(a) The balance shown to be in the Depreciation Reserve of Dec. 31, 1909, is made up of the following items:

Chicago's estimated proportion of reserve carried on general books transferred to this account in 1911	$1,561,509
Amount transferred from reserve for Doubtful Account	35,800
" " " Surplus	810,476
Balance " " reserve for Depreciation of Automobiles	12,667
" " " " " " Horses	5,332
Miscellaneous items brought into this account	7,596

(b) Represents amount added to Depreciation Reserve in connection with plant purchased from the A. T. & T. Co.

(c) Includes $206,666 accrued depreciation on property purchased from A. T. & T. C9. (stated as the difference between the purchase price to Chicago Telephone Co. and book cost of A. T. & T. Co.) and $3,274 representing accrued depreciation on plant transferred from Suburban Division.

(d) Includes accrued depreciation amounting to $34,584 on plant transferred to Suburban Division and $17,987 transferred to Reserve for Intangible Capital.

(e) Includes balance in the Insurance and Casualty Reserve amounting to $137,394 transferred to Reserve for accrued depreciation against which all fire losses not covered by insurance policies will be charged hereafter.

[fol. 4657] **Illinois Bell Telephone Company, Chicago Division**

Summary of Account 102, Reserve for Accrued Depreciation, 1931

Balance December 31, 1930............			$51,271,094
Credits:			
Charges to Operating Expenses, (Acct. 608)	$9,146,268		
Charges to Clearing Accounts.......	162,383		
Other Credits	171*		
Total Credits		$9,308,480	
Charges:			
Property Retired (Net).............	$5,834,640		
Extraordinary Repairs (Net)........	12,170		
Other Debits	....		
Total Charges		5,846,810	
Net Increase in Reserve...............			3,461,670
Balance December 31, 1931...........			$54,732,764

*Red Figures.

[fol. 4658]

Exhibit X–156

Illinois Bell Telephone Company, Chicago Division

Summary of Depreciation Reserve 1909 to 1931, Inclusive

Year Ended Dec. 31	Amount Reserved For Depreciation		Charge To Depreciation Reserve			Net Increase In Depreciation Reserve			Balance In Depreciation Reserve	
	Amount (1)	% of Av. Plant (2)	Amount (3)	% of Av. Plant (4)	% of Amt. Reserved (5)	Amount (6)	% of Av. Plant (7)	% of Amt. Reserved (8)	Amount (9)	% of Total Plant (10)
1909	.....		.....						$2,433,380	10.32
1910	$1,286,782	5.26	$434,301	1.78	33.75	$852,481	3.49	66.25	3,285,861	12.98
1911	1,446,985	5.32	348,018	1.28	24.05	1,098,967	4.04	75.95	4,384,828	15.09
1912	1,722,946	5.57	901,692	2.91	52.33	821,254	2.65	47.67	5,206,082	15.85
1913	2,051,072	5.80	1,041,264	2.94	50.77	1,009,808	2.86	49.23	6,215,890	16.41
1914	2,613,552	6.41	1,456,801	3.57	55.74	1,156,751	2.84	44.26	7,372,641	16.87
1915	2,664,271	5.83	1,600,286	3.50	60.06	1,063,985	2.33	39.94	8,436,626	17.67
1916	2,886,680	5.78	1,336,186	2.67	46.29	1,550,494	3.10	53.71	9,987,120	19.13
1917	3,222,376	5.83	1,292,110	2.34	40.10	1,930,266	3.50	59.90	11,917,386	20.46
1918	3,160,295	5.21	581,557	.96	18.40	2,578,738	4.25	81.60	14,496,124	22.97
1919	3,464,709	5.33	610,809	.94	17.63	2,853,900	4.39	82.37	17,350,024	25.90
1920	3,497,006	5.02	547,417	.79	15.65	2,949,589	4.23	84.35	20,299,613	28.01
1921	3,457,721	4.61	611,572	.82	17.69	2,846,149	3.79	82.31	23,145,762	29.91
1922	3,832,932	4.75	894,084	1.10	23.33	2,988,848	3.64	76.67	26,084,610	30.44
1923	4,731,389	5.10	1,509,877	1.62	31.91	3,221,512	3.47	68.09	29,306,122	29.26
1924	4,841,320	4.64	2,151,611	2.04	44.44	2,689,709	2.58	55.56	31,995,831	28.83
1925	5,535,402	4.74	1,932,472	1.64	34.91	3,602,930	3.09	65.09	35,598,761	28.14
1926	6,393,678	4.84	2,424,024	1.82	37.91	3,969,654	3.00	62.09	39,568,415	28.08
1927	7,017,787	4.80(a)	2,644,517	1.81(a)	37.68	4,373,270	2.99(a)	62.32	43,941,685	28.67(a)
1928	7,833,410	4.90	4,314,317	2.68	55.08	3,519,093	2.20	44.92	47,460,778	27.88
1929	8,345,574	4.80	7,223,157	4.13	86.55	1,123,417	.65	13.45	48,583,195	26.60
1930	8,958,342	4.81	6,269,689	3.35	69.99	2,688,653	1.44	30.01	51,271,848	26.81
1931	9,308,480	4.78	5,846,810	3.00	62.81	3,461,670	1.78	37.19	54,733,518	28.01

(a) Based on Plant Account exclusive of receivers, transmitters and induction coils amounting to $2,471,561 acquired from A. T. & T. Co., and entered on the books in December, 1927. For the purpose of this statement this amount is included in 1928 and following years.

(Here follows Exhibit X–158, side folio 4659)

EXHIBIT X-158

Illinois Bell Telephone Company, Chicago Division

Comparison of Commission's Allowance for Maintenance and Depreciation with Actual Charges for Maintenance and Depreciation on Accruals Per Company's Books and Actual Charges for Retirements Per Company's Books

Item	1923	1924	1925	1926	1927	1928	1929	1930
1. Balance, Plant and Equipment in Service Dec. 31, 1922	$85,687,815	$85,687,815	$85,687,815	$85,687,815	$85,687,815	$85,687,815	$85,687,815	$85,687,815
2. Cumulative Average Retirements since Jan. 1, 1923—(Cumulative actual retirements to Jan. 1, each year, plus average retirements for current year)	1,956,622	6,298,666	11,722,788	18,156,841	24,736,436	33,921,215	46,919,556	60,351,977
3. Average Plant and Equipment Installed Prior to Dec. 31, 1922, remaining in service at end of period	83,731,193	79,389,149	73,965,027	67,530,974	60,951,379	51,766,600	38,768,259	25,335,838
4. Cumulative Average Gross Additions since Jan 1, 1923—(Cumulative actual gross additions to Jan. 1 each year, plus average gross additions for current year)	9,747,358	25,853,383	43,660,064	65,696,076	85,350,345	109,310,331	136,279,570	162,001,057
5. Total Average Plant and Equipment in Service Dec. 31	93,478,551	105,242,532	117,625,091	133,227,050	146,301,724	161,076,931	175,047,829	187,336,895
Commission's Allowance for Maintenance and Depreciation (a):								
6. 9.18% on Plant and Equipment in Service Dec. 31, 1922, less subsequent retirements (Item 3)	7,686,524	7,287,924	6,789,989	6,199,342	5,595,336	4,752,174	3,558,926	2,325,831
7. Plus 8¾% on Gross Additions Subsequent to Dec. 31, 1922 (Item 4)	852,899	2,262,173	3,820,259	5,748,411	7,468,158	9,564,657	11,924,467	14,175,095
8. Total	8,539,423	9,550,097	10,610,248	11,947,753	13,063,494	14,316,831	15,483,393	16,500,926
Comparison of Commission's Allowance with Company's Accruals:								
9. Commission's Allowance for Maintenance and Depreciation	8,539,423	9,550,097	10,610,248	11,947,753	13,063,494	14,316,831	15,483,393	16,500,926
10. Company's Actual Maintenance Charges (Accts. 601 to 607 and 610)	5,901,733	6,326,331	6,876,589	8,084,707	9,259,854	10,487,500	11,600,720	12,160,980
11. Amt. Available for Depreciation (Commission's Allowance)	2,637,690	3,223,766	3,733,659	3,863,046	3,803,640	3,829,331	3,882,673	4,339,946
12. Company's Actual Depreciation Accruals (Acct. 608)	4,480,954	4,709,950	5,385,712	6,203,022	6,839,392	7,641,461	8,120,382	8,769,886
13. Excess of Co.'s Depreciation Accruals over Commission's Allowance	1,843,264	1,486,184	1,652,053	2,339,976	3,035,752	3,812,130	4,237,709	4,429,940
14. Ratio of Excess (Item 13) to Average Plant and Equipment (Item 5)	1.97%	1.41%	1.40%	1.76%	2.07%	2.37%	2.42%	2.36%
15. Commission's Allowance for Depreciation (Item 11)	2,637,690	3,223,766	3,733,659	3,863,046	3,803,640	3,829,331	3,882,673	4,339,946
16. Depreciation Accruals Charged Clearing Accounts 701, 702, 703, 704	109,080	130,510	143,921	170,637	162,485	190,902	179,300	173,525
17. Other Miscellaneous Credits to Depreciation Reserve	141,355	860	5,769	20,019	15,910	1,047	45,892	14,931
18. Total Commission's Allowance and Other Credits	2,888,125	3,355,136	3,883,349	4,053,702	3,982,035	4,021,280	4,107,865	4,528,402
19. Net Charges to Depreciation Reserve—Co's. Books	1,509,877	2,151,611	1,932,472	2,424,024	2,644,517	4,314,317	7,223,157	6,269,689
20. Excess of Commission's Allowance (and Other Credits) over Actual Charges for Retirements	1,378,248	1,203,525	1,950,877	1,629,678	1,337,518	293,037*	3,115,292*	1,741,287*
21. Ratio of Excess (Item 20) to Average Plant and Equipment (Item 5)	1.47%	1.14%	.166%	1.22%	.91%	.18%*	1.78%*	.93%*

* Red Figures.

(a) The Illinois Commerce Commission, in its order of August 16, 1923, provided for the expense of Maintenance and Depreciation as follows: "(11) That a fair allowance to take care of maintenance and retirement charges for said property in use as of December 31, 1922, is $7,869,400, and that this sum, plus 8¾ per cent of all additions and betterments, will be sufficient and adequate to permit the Illinois Bell Telephone Company to properly maintain its Chicago property.". (The amount of $7,869,400 that was allowed by the Commission in respect to the property in service at Dec. 31, 1922, is equivalent to 9.18 per cent of the book value ($85,687,815) of that property.)

[fol. 4660] X-158

Illinois Bell Telephone Company—Chicago Division

Comparison of Commission's Allowance for Maintenance and Depreciation with Actual Charges for Maintenance and Depreciation Accruals per Company's Books and Actual Charges for Retirements per Company's Books for the Year 1931

Item	
1. Balance, Plant and Equipment In Service December 31, 1922	$85,687,815
2. Cumulative Average Retirements Since Jan. 1, 1923—(Cumulative Actual Retirements to Jan. 1st each year, plus average retirements for current year.)	73,321,371
3. Average Plant and Equipment Installed Prior to Dec. 31, 1922, Remaining in Service at End of period	12,366,444
4. Cumulative Average Gross Additions Since Jan. 1, 1923—(Cumulative Actual Gross Additions to Jan. 1st each year, plus average gross additions for current year)	182,242,504
5. Total Average Plant and Equipment in Service—Dec. 31st	194,608,948
Commission's Allowance for Maintenance and Depre. (a)	
6. 9.18% On Plant and Equipment in Service Dec. 31, 1922, less Subsequent Retirements (Item 3)	1,135,239
7. Plus 8¾% on Gross Additions Subsequent to Dec. 31, 1922 (Item 4)	15,946,224
8. Total	17,081,463
Comparison of Commission's Allowance with Company's Accruals:	
9. Commission's Allowance for Maintenance and Depreciation	17,081,463
10. Company's Actual Maintenance Charges (Accts. 601 to 607 and 610)	11,546,082
11. Amount Available for Depreciation (Commission's Allowance)	5,535,381
12. Company's Actual Depreciation Accruals (Acct. 608)	9,146,268
13. Excess of Company's Depreciation Accruals Over Commission's Allowance	3,610,887
14. Ratio of Excess (Item 13) to Average Plant and Equipment (Item 5)	1.86%
15. Commission's Allowance for Depreciation (Item 11)	5,535,381
16. Depreciation Accruals Charged Clearing Accounts 701, 702, 703, and 704	162,383
17. Other Miscellaneous Credits to Depreciation Reserve	171*
18. Total—Commission's Allowance and Other Credits	5,697,593
19. Net Charges to Depreciation Reserve—Company's Books	5,846,810
20. Excess of Commission's Allowance (And Other Credits) Over Actual Charges for Retirements	149,217*
21. Ratio of Excess (Item 20) to Average Plant and Equipment (Item 5)	.08%*

* Red Figures.

(a) See note on preceding page.

[fol. 4661]

Exhibit X-159

Illinois Bell Telephone Company—Chicago Division

mmary of Account 102—Reserve for Accrued Depreciation After Giving Effect to the Illinois Commerce Commission's Order Beginning October 1, 1923; Twenty-Two Years, 1910 to 1931, Inclusive

	Credits to Depreciation Reserve											
	Charges to Operating Expenses—Account 608		Charges to Clearing Accounts		Other Credits		Total Credits		Charges to Depreciation Reserve		Balance in Depreciation Reserve Dec. 31	
Year Ended Dec. 31	Amount (1)	% of Av. Plant (2)	Amount (3)	% of Av. Plant (4)	Amount (5)	% of Av. Plant (6)	Amount (7)	% of Av. Plant (8)	Amount (9)	% of Av. Plant (10)	Amount (11)	% of Total Plant (12)
1909											$2,433,380	10.32
1910	$1,286,782	5.26	....	....	....	...	$1,286,782	5.26	$434,301	1.78	3,285,861	12.98
1911	1,383,733	5.09	....	....	$63,252	.23	1,446,985	5.32	348,018	1.28	4,384,828	15.09
1912	1,722,946	5.57	....	....	....	...	1,722,946	5.57	901,692	2.91	5,206,082	15.85
1913	1,994,285	5.64	$54,264	.15	2,523	.01	2,051,072	5.80	1,041,264	2.94	6,215,890	16.41
1914	2,338,692	5.73	64,920	.16	209,940	.52	2,613,552	6.41	1,456,801	3.57	7,372,641	16.87
1915	2,600,884	5.69	63,387	.14	....	...	2,664,271	5.83	1,600,286	3.50	8,436,626	17.67
1916	2,824,804	5.65	61,876	.13	....	...	2,886,680	5.78	1,336,186	2.67	9,987,120	19.13
1917	3,138,184	5.68	84,192	.15	....	...	3,222,376	5.83	1,292,110	2.34	11,917,386	20.46
1918	3,102,839	5.11	57,038	.09	418	.01	3,160,295	5.21	581,557	.96	14,496,124	22.98
1919	3,415,077	5.25	49,632	.08	....	...	3,464,709	5.33	610,809	.94	17,350,024	25.90
1920	3,421,535	4.91	75,471	.11	....	...	3,497,006	5.02	547,417	.79	20,299,613	28.02
1921	3,369,849	4.49	83,223	.11	4,649	.01	3,457,721	4.61	611,572	.82	23,145,762	29.91
1922	3,739,870	4.60	92,511	.11	551	...	3,832,932	4.72	894,084	1.10	26,084,610	30.44
1923	3,851,705	4.12	109,080	.12	141,355	.15	4,102,140	4.39	1,509,877	1.62	28,676,873	28.64
1924	3,223,766	3.06	130,510	.12	860	...	3,355,136	3.19	2,151,611	2.04	29,880,398	26.92
1925	3,733,660	3.17	143,921	.12	5,769	...	3,883,350	3.30	1,932,472	1.64	31,831,276	25.16
1926	3,863,045	2.90	170,637	.13	20,019	.02	4,053,701	3.04	2,424,024	1.82	33,460,953	23.75
1927	3,803,640	2.60(a)	162,485	.11(a)	15,910	.01(a)	3,982,035	2.72(a)	2,644,517	1.81(a)	34,798,471	22.70(a)
1928	3,829,332	2.38	190,902	.12	1,047	...	4,021,281	2.50	4,314,317	2.68	34,505,435	20.27
1929	3,882,672	2.22	179,300	.10	45,892	.03	4,107,864	2.35	7,223,157	4.13	31,390,142	17.19
1930	4,339,945	2.32	173,525	.09	14,931	.01	4,528,401	2.42	6,269,689	3.35	29,648,854	15.50
1931	5,535,381*	2.84	162,383	.08	171*	...	5,697,593	2.92	5,846,810	3.00	29,499,637	15.10

(a) Based on Plant Account exclusive of receivers, transmitters, and induction coils, amounting to $2,471,561, acquired from A. T. & T. Co., and entered on the books in December, 1927. For the purpose of this statement this amount is included in 1928 and following years.

* Red figures.

(Here follows Exhibit X-160, side folio 4662)

[fol. 4662]

Exhibit X-160

Illinois Bell Telephone Company—Chicago Division

Comparison of Commission's Allowance for Depreciation (Based on Public Utilities Commission Order #9291, Effective January 1, 1921) with Depreciation Accruals as Per the Company's Books, and Actual Charges for Retirements as Per Company's Books

Item	1923	1924	1925	1926	1927	1928	1929	1930
Commission's Allowance for Depreciation: ($2,000,000 plus 4% of net additions)								
1. Average Plant and Equipment, end of year	$93,478,551	$105,242,532	$117,625,091	$133,227,050	$146,301,724	$161,076,931	$175,047,829	$187,336,895
2. Balance, Plant and Equipment, December 31, 1920	72,451,926	72,451,926	72,451,926	72,451,926	72,451,926	72,451,926	72,451,926	72,451,926
3. Average Net Additions for Period	21,026,625	32,790,606	45,173,165	60,775,124	73,849,848	88,625,005	102,595,903	114,884,969
4. Depreciation on Net Additions (4% on Item 3)	841,065	1,311,624	1,806,927	2,431,005	2,953,992	3,545,000	4,108,836	4,595,399
5. Depreciation Allowance on Existing Plant and Equipment	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
6. Total Depreciation Allowance	2,841,065	3,311,624	3,806,927	4,431,005	4,953,992	5,545,000	6,103,836	6,595,399
Comparison of Commission's Allowance with Company's Accruals:								
7. Commission's Allowance for Depreciation (Item 6)	2,841,065	3,311,624	3,806,927	4,431,005	4,953,992	5,545,000	6,103,836	6,595,399
8. Company's Actual Depreciation Accruals (Account 608)	4,480,954	4,709,950	5,385,712	6,203,022	6,839,392	7,641,461	8,120,382	8,769,886
9. Excess of Company's Depreciation Accruals Over Commission's Allowance	1,639,889	1,398,326	1,578,785	1,772,017	1,885,400	2,096,461	2,016,546	2,174,487
10. Ratio of Excess (Item 9) to Average Plant and Equipment (Item 1)	1.75%	1.33%	1.34%	1.33%	1.29%	1.30%	1.15%	1.16%
11. Commission's Allowance for Depreciation (Item 6)	2,841,065	3,311,624	3,806,927	4,431,005	4,953,992	5,545,000	6,103,836	6,595,399
12. Depreciation Accruals Charged Clearing Accounts 701, 702, 703, 704	109,080	130,510	143,921	170,637	162,485	190,902	179,300	173,525
13. Other Miscellaneous Credits to Depreciation Reserve	141,355	860	5,769	20,019	15,910	1,047	45,892	14,931
14. Total—Commission's Allowance and Other Credits	3,091,500	3,442,994	3,956,617	4,621,661	5,132,387	5,736,949	6,329,028	6,783,855
Net Charges to Depreciation Reserve—Company's Books	1,509,877	2,151,611	1,932,472	2,424,024	2,644,517	4,314,317	7,223,157	6,269,689
15. Excess of Commission's Allowance (and Other Credits) over Actual Charges for Retirements	1,581,623	1,291,383	2,024,145	2,197,637	2,487,870	1,422,632	894,429*	514,166
16. Ratio of Excess (Item 15) to Average Plant and Equipment (Item 1)	1.69%	1.23%	1.72%	1.65%	1.70%	.88%	.51%*	.27%

* Red figures.

[fol. 4663] Illinois Bell Telephone Company, Chicago Division

Comparison of Commission's Allowance for Depreciation (Based on Public Utilities Commission Order #9291, Effective January 1, 1921) with Depreciation Accruals as per the Company's Books, and Actual Charges for Retirements as per Company's Books for the Year 1921

Item	
Commission's Allowance for Depreciation: ($2,000,000 plus 4% of net additions)	
1. Average Plant and Equipment, End of Year	$194,708,348
2. Balance, Plant and Equipment, Dec. 31, 1920	72,451,026
3. Average Net Additions for Period	122,257,322
4. Depreciation on Net Additions (4% on Item 3)	4,890,293
5. Depreciation Allowance on Existing Plant and Equipment	2,000,000
6. Total Depreciation Allowance	6,890,293
Comparison of Commission's Allowance With Company's Accruals:	
7. Commission's Allowance for Depreciation (Item 6)	6,890,293
8. Company's Actual Depreciation Accruals* (Account 608)	9,341,260
9. Excess of Company's Depreciation Accruals Over Commission's Allowance	$2,450,967
10. Ratio of Excess (Item 9) to Average Plant and Equipment. (Item 1)	1.26%
11. Commission's Allowance for Depreciation (Item 6)	6,890,293
12. Depreciation Accruals Charged Clearing Accounts—701, 702, 703, 704	158,489
13. Other Miscellaneous Credits to Depreciation Reserve	370*
14. Total—Commission's Allowance and Other Credits	7,048,412
Net Charges to Depreciation Reserve—Company's Books	5,840,320
15. Excess of Commission's Allowance (And Other Credits) Over Actual Charges for Retirements	1,208,092
16. Ratio of Excess (Item 15) to Average Plant and Equipment) (Item 1)	.62%

* Red Figures.

[fol. 1664]

Exhibit X-162

Illinois Bell Telephone Company

Comparative Study of Balance in Account 103, Reserve for Amortization of Intangible Capital by Divisions, 1913 to 1931, Inclusive

Dec. 31	Chicago Division	Suburban Division	Ill. Division (Since Purchase)	Total	Ill. Division (Prior To Purchase)	Total
1913	......	.....	.....	......	$167	$167
1914	......	.....	.....	......	1,370	1,370
1915	$90	$96	.....	$90	3,247	3,337
1916	28,142	8,528	.....	36,670	4,248	40,918
1917	40,006	11,974	.....	51,980	5,250	57,230
1918	49,608	15,041	.....	64,649	16,385	81,034
1919	58,107	18,362	.....	76,469	33,640	110,109
1920	70,107	24,339	$381	94,827	16,509	111,336
1921	78,223	29,591	4,945	112,759	16,509	129,268
1922	85,021	47,922	375*	132,568	16,509	149,077
1923	107,085	68,610	6,347	182,042	16,509	198,551
1924	120,640	46,112	10,434	177,186	16,509	193,695
1925	135,148	53,204	7,698	196,050	16,509	212,559
1926	150,622	61,525	3,889	216,036	16,509	232,545
1927	166,834	68,571	6,265	241,670	16,509	258,179
1928	177,185	71,338	5,694	254,217	16,509	270,726
1929	188,375	76,836	8,875	274,086	16,509	290,595
1930	197,955	81,405	9,659	289,019	16,509	305,528
1931	208,971	80,997	10,321	300,289	16,509	316,798

* Red Figure.

fol. 4665].

EXHIBIT X-163

Illinois Bell Telephone Company

Comparative Study of Combined Balances of Accounts 102, Reserve for Accrued Depreciation, and 103, Reserve for Amortization of Intangible Capital by Divisions, 1913 to 1931, Inclusive

Dec. 31	Chicago Division	Suburban Division	Ill. Division (Since Purchase)	Total	Ill. Division (Prior to Purchase)	Total
1913	$6,215,890	$1,147,124	....	$7,363,014	$357,586	$7,720,600
1914	7,372,641	1,512,876	....	8,885,517	804,506	9,690,023
1915	8,436,716	1,826,451	....	10,263,167	1,188,493	11,451,660
1916	10,015,262	2,324,842	....	12,340,104	1,560,800	13,900,904
1917	11,957,392	2,961,324	....	14,918,716	1,969,925	16,888,641
1918	14,545,732	3,644,982	....	18,190,714	2,404,373	20,595,087
1919	17,408,131	4,320,342	....	21,728,473	2,958,094	24,686,567
1920	20,369,720	5,112,382	$48,550	25,530,652	3,504,340	29,034,992
1921	23,223,985	5,796,798	491,968	29,512,751	3,504,340	33,017,091
1922	26,169,631	6,357,699	995,570	33,522,900	3,504,340	37,027,240
1923	29,413,207	6,932,024	1,229,775	37,575,006	3,504,340	41,079,346
1924	32,116,471	7,277,070	1,517,901	40,911,442	3,504,340	44,415,782
1925	35,733,909	7,877,733	951,356	44,562,998	3,504,340	48,067,338
1926	39,719,037	8,766,676	905,709	49,391,422	3,504,340	52,895,762
1927	44,108,519	9,125,432	748,340	53,982,291	3,504,340	57,486,631
1928	47,637,963	9,902,970	1,938,108	59,479,041	3,504,340	62,983,381
1929	48,771,570	10,115,619	1,911,601	60,798,790	3,504,340	64,303,130
1930	51,469,803	10,220,746	2,276,200	63,966,749	3,504,340	67,471,089
1931	54,942,489	11,333,843	2,966,334	69,242,666	3,504,340	72,747,006

[fol. 4666]

EXHIBIT X-166

Illinois Bell Telephone Company

Combined Balances of Accounts 102, Reserve for Accrued Depreciation, and Account 103, Reserve for Amortization of Intangible Capital, Expressed as a Ratio of the Investment in Fixed Capital, 1913 to 1931, Inclusive

Dec. 31	Chicago Division (Per Cent)	Suburban Division (Per Cent)	Ill. Division (Since Purchase) (Per Cent)	Total (Per Cent)	Ill. Division (Prior to Purchase) (Per Cent)	Total (Per Cent)
1913	16.41	12.57	....	15.67	3.26	13.32
1914	16.87	15.07	....	16.53	6.92	14.83
1915	17.67	17.04	....	17.55	10.05	16.29
1916	19.18	18.80	....	19.11	12.72	18.09
1917	20.53	19.85	....	20.39	14.67	19.50
1918	23.05	23.11	....	23.07	16.97	22.14
1919	25.99	25.41	....	25.87	19.41	24.88
1920	28.11	27.21	.31	23.87	22.27	27.14
1921	30.01	28.70	2.96	25.84	21.09	28.91
1922	30.54	29.09	5.43	26.63	19.10	29.41
1923	29.37	28.87	5.95	25.94	16.94	28.36
1924	28.94	27.27	7.04	25.69	16.25	27.89
1925	28.25	25.63	3.96	24.59	14.59	26.52
1926	28.19	25.02	3.53	24.50	13.66	26.24
1927	28.78(a)	22.88(a)	2.77(a)	24.52(a)	12.97(a)	26.11(a)
1928	27.98	21.58	6.35	24.11	11.48	25.54
1929	26.70	19.96	5.75	22.81	10.54	24.12
1930	26.91	18.06	6.49	22.61	9.99	23.85
1931	28.11	19.16	8.24	23.83	9.73	25.03

(a) Based on Plant Account, exclusive of receivers, transmitters and induction coils, in the amounts shown hereunder, acquired from American Telephone and Telegraph Company and entered on the books in December, 1927. For the purpose of this statement these amounts are included in 1928 and following years.

Chicago Division	$2,471,561
Suburban "	613,380
Illinois "	411,337
	$3,496,278

(Here follow Extracts from Exhibits X-168 and X-169, side folios 4667 and 4668)

EXTRACTS FROM EXHIBIT X-168

Investment in Fixed Capital, 1913 to 1930

Illinois Bell Telephone Company, Chicago Division

Investment in Fixed Capital

(Balances in Plant and Equipment Accounts)

Eighteen Years—December 31, 1913, to December 31, 1930

		Dec. 31, 1913	Dec. 31, 1914	Dec. 31, 1915	Dec. 31, 1916	Dec. 31, 1917	Dec. 31, 1918	Dec. 31, 1919	Dec. 31, 1920	Dec. 31, 1921	Dec. 31, 1922
207	Right of Way	$99,986	$114,425	$137,222	$161,811	$183,298	$197,743	$210,135	$227,211	$232,642	$238,380
211	Land	584,236	700,704	1,031,611	1,132,502	1,256,478	1,270,516	1,301,483	1,330,026	1,332,249	1,349,641
212	Buildings	4,223,452	4,698,013	5,326,421	5,734,286	6,526,592	8,487,663	8,608,279	8,915,934	8,968,350	9,112,167
	Total Land & Buildings	4,807,688	5,398,717	6,358,032	6,866,788	7,783,070	9,758,179	9,909,762	10,245,960	10,300,599	10,461,808
221	Central Office Telephone Equipment	6,599,678	8,664,132	9,648,018	10,505,649	11,527,348	12,676,489	13,366,639	14,471,342	16,318,608	19,544,014
222	Other Equipment of Central Offices	129,417	158,262	183,943	217,193	289,488	339,708	570,800	728,944	769,297	831,991
	Total Central Office Equip.	6,729,095	8,822,394	9,831,961	10,722,842	11,816,836	13,016,197	13,937,439	15,200,286	17,087,905	20,376,005
231	Station Apparatus	2,928,661	3,344,678	3,652,280	4,176,627	4,654,497	4,963,177	5,672,093	6,250,344	6,885,329	7,825,806
232	Station Installations	2,534,071	2,751,948	2,862,272	3,150,666	3,372,430	3,547,093	3,990,562	4,548,098	4,992,585	5,496,833
233	Interior Block Wires	23,386	24,300	24,804	24,868	24,950	25,041	25,049	25,050	25,050	25,050
234	Private Branch Exchanges	1,421,372	1,641,391	1,827,548	2,032,800	2,304,454	2,539,443	2,898,386	3,333,011	3,969,477	4,484,459
235	Booths and Special Fitting	116,876	144,557	180,527	198,269	214,336	210,434	213,111	218,377	230,997	250,295
	Total Station Equipment	7,024,366	7,906,874	8,547,431	9,583,230	10,570,667	11,285,188	12,799,201	14,374,880	16,103,438	18,082,443
241	Exchange Pole Lines	1,579,024	1,615,506	1,641,062	1,705,228	1,727,551	1,727,427	1,739,243	1,823,420	1,868,777	2,036,343
242	Exchange Aerial Cable	1,667,832	1,884,622	1,998,796	2,178,867	2,362,359	2,417,850	2,524,849	2,653,945	2,683,334	2,890,689
243	Exchange Aerial Wire	1,236,849	1,219,847	1,252,018	1,305,485	1,302,339	1,368,915	1,495,177	1,612,997	1,775,425	1,971,818
244	Exchange Underground Conduit	5,084,356	5,614,423	6,079,943	6,689,113	7,606,538	7,839,159	8,091,231	8,541,286	8,707,243	9,133,335
245	Exchange Underground Cable	8,175,454	9,480,958	10,282,579	11,272,748	12,741,727	13,316,064	13,960,475	14,859,591	15,476,652	16,789,719
246	Exchange Submarine Cable	176	176	131	131	131	182	236	236	236	866
	Total Exchange Lines	17,743,691	19,815,532	21,254,529	23,151,572	25,740,645	26,669,597	27,811,211	29,491,475	30,511,667	32,822,770
251	Toll Pole Lines	85,603	95,553	93,133	88,507	83,231	85,198	82,637	83,669	83,142	85,413
252	Toll Aerial Cable	15,192	14,061	4,892	6,591	7,265	7,020	7,021	6,977	7,756	7,662
253	Toll Aerial Wire	141,238	145,308	131,203	131,932	116,186	117,065	120,532	122,038	123,696	123,983
254	Toll Underground Conduit	229,232	230,448	230,754	207,692	228,358	234,187	235,540	427,442	451,915	456,695
255	Toll Underground Cable	357,643	500,487	499,680	572,798	868,746	896,968	990,136	1,227,365	1,241,002	1,257,436
256	Toll Submarine Cable	....	....	....	....	....	....	....	....	....	....
	Total Toll Lines	828,908	985,857	959,662	1,007,520	1,303,786	1,340,438	1,435,866	1,867,491	1,907,511	1,931,189
261	Office Furniture and Fixtures	294,603	314,601	321,401	359,337	410,121	380,974	438,671	512,308	602,815	652,523
262	General Shop Equipment	6,968	7,499	7,803	7,934	11,403	....	....	....	....	....
263	General Store Equipment	8,525	9,261	10,163	11,787	13,951	14,848	15,515	16,729	15,521	18,080
264	General Stable & Garage Equip.	200,637	212,860	202,174	222,288	296,599	309,196	298,252	340,129	337,903	387,255
265	General Tools & Implements	131,062	108,937	114,718	110,358	114,328	120,011	133,813	140,521	161,562	229,622
	Total General Equipment	641,795	653,158	656,259	711,704	846,402	825,029	886,251	1,015,687	1,117,801	1,287,480
268	Interest During Construction	....	....	....	....	....	....	....	27,886	132,332	486,690
280	Unappraised Property Purchased	....	....	60*	....	....	....	....	....	....	....
274	Miscel. Construction Expend.	....	....	....	1,050	1,050	1,050	1,050	1,050	1,050	1,050
	Total Invest. in Fixed Capital	$37,875,529	$43,696,957	$47,745,036	$52,206,517	$58,245,754	$63,093,421	$66,990,915	$72,451,926	$77,394,945	$85,687,815

* Red Figures.

[fol. 4668]

EXTRACTS FROM EXHIBIT X-169

Gross Additions, Fixed Capital, 1913–1930

Illinois Bell Telephone Company, Chicago Division

Gross Additions to Fixed Capital

Eighteen Years, January 1, 1913, to December 31, 1930

		Year Ended Dec. 31, 1913	Year Ended Dec. 31, 1914	Year Ended Dec. 31, 1915	Year Ended Dec. 31, 1916	Year Ended Dec. 31, 1917	Year Ended Dec. 31, 1918	Year Ended Dec. 31, 1919	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
207	Right of Way	$22,477	$14,440	$22,796	$24,589	$21,487	$14,446	$12,392	$18,545	$9,155	$11,054
211	Land	64,283	116,468	330,907	126,814	123,977	22,647	30,966	28,543	2,223	17,391
212	Buildings	337,429	482,082	639,702	473,396	806,618	2,016,640	126,913	322,619	78,358	153,220
	Total Land and Buildings	401,712	598,550	970,609	600,210	930,595	2,039,287	157,879	351,162	80,581	170,611
221	General Office Tel. Equipment	1,083,707	2,268,689	1,694,681	1,020,747	1,363,738	1,242,131	765,119	1,160,137	1,919,703	3,381,340
222	Other Equipment of Central Offices	18,475	35,563	37,727	51,251	97,617	59,422	264,721	174,005	68,845	89,576
	Total Central Office Equipment	1,102,182	2,304,252	1,732,408	1,071,998	1,461,355	1,301,553	1,029,840	1,334,142	1,988,548	3,470,916
231	Station Apparatus	982,762	1,047,708	1,033,154	1,433,209	1,649,116	893,904	1,309,005	1,142,531	1,551,180	1,854,03
232	Station Installations	599,596	615,452	539,334	674,928	641,026	555,007	801,388	905,595	1,041,285	1,060,799
233	Interior Block Wires	3,335	913	504	64	82	91	8	1	....	....
234	Private Branch Exchanges	364,923	411,488	350,699	419,909	491,114	467,458	620,937	734,796	1,174,176	1,025,480
235	Booths and Special Fittings	53,025	48,715	38,483	38,206	34,629	15,562	21,358	26,138	26,653	43,072
	Total Station Equipment	2,003,641	2,124,276	1,962,174	2,566,316	2,815,967	1,932,022	2,752,696	2,809,061	3,793,294	3,983,390
241	Exchange Pole Lines	177,434	155,230	73,546	110,635	110,040	28,231	54,537	113,068	87,059	216,457
242	Exchange Aerial Cable	385,067	369,490	186,976	268,158	305,073	95,213	139,204	185,614	112,602	278,044
243	Exchange Aerial Wire	257,740	258,227	197,022	207,453	211,331	170,582	194,851	209,706	284,231	294,733
244	Exchange Underground Conduit	748,281	547,940	481,905	652,357	967,564	243,718	261,115	471,727	192,752	450,782
245	Exchange Underground Cable	1,723,884	1,722,885	1,173,412	1,199,568	1,811,999	689,502	815,689	1,096,810	747,049	1,522,254
246	Exchange Submarine Cable	350	....	....	....	....	51	54	....	....	630
	Total Exchange Lines	3,292,756	3,053,772	2,112,861	2,438,071	3,406,007	1,227,297	1,465,450	2,076,925	1,423,693	2,762,900
251	Toll Pole Lines	287	10,506	1,486	821	3,065	5,020	138	1,809	747	5,651
252	Toll Aerial Cable	2	601*	117	11	674	....	1	126	779	231
253	Toll Aerial Wire	252	6,113	5,171	4,301	12,780	2,211	360	1,900	1,930	4,870
254	Toll Underground Conduit	9	1,216	448	22,836*	21,707	5,835	1,368	196,021	20,354	4,780
255	Toll Underground Cable	1,244	144,077	3,686	74,045	296,804	28,787	98,208	238,808	16,241	18,814
256	Toll Submarine Cable	....	....	....	....	....	....	....	....	....	....
	Total Toll Lines	1,794	161,311	10,908	56,342	335,030	41,853	100,075	438,664	40,051	34,346
261	Office Furniture & Fixtures	56,174	34,020	23,546	50,798	66,711	18,906	70,433	90,183	115,185	71,647
262	General Shop Equipment	14,441	652	314	1,069	3,972	11,114*	....	....	....	....
263	General Store Equipment	2,237	1,072	902	1,637	5,168	2,333	988	1,691	790*	3,145
264	General Stable & Garage Equipment	68,608	39,839	10,369	56,591	104,672	55,888	37,620	93,306	37,086	74,881
265	General Tools & Implements	65,988	38,126	29,666	46,844	74,505	49,174	50,579	58,224	70,400	138,726
	Total General Equipment	207,448	113,709	64,797	156,939	255,028	115,187	159,620	243,404	221,881	288,399
268	Interest During Construction	....	....	....	....	....	....	....	27,886	104,446	354,358
280	Unappraised Property Purchased	....	....	....	60*	60	....	....	....	....	....
274	Miscellaneous Construction Expend.	....	....	....	....	1,050	....	....	....	....	....
	Total Gross Additions	7,032,010	8,370,310	6,876,493	6,915,575	9,225,469	6,671,645	5,677,952	7,299,789	7,661,649	11,075,974

* Red figures.

[fol. 4669]

EXHIBIT X-172

Illinois Bell Telephone Company

Investment in Fixed Capital by Operating Divisions

Year	Chicago Division	Suburban Division	Total	Illinois Division (Since Purchase)	Illinois Division (Prior to Purchase)	Total
1882			$558,363			
1883			621,607			
1884			653,743			
1885			732,388			
1886			805,319			
1887			977,035			
1888			1,131,342			
1889			1,302,625			
1890			1,734,213			
1891			2,310,620			
1892			3,415,023			
1893			4,051,039			
1894			4,236,764			
1895			4,617,325			
1896			4,920,717			
1897			5,200,947			
1898			5,829,966			
1899			7,271,140			
1900			9,222,174			
1901			11,488,027			
1902			13,507,057			
1903			16,076,502			
1904			17,260,420			
1905			18,997,898			
1906	(a)	(a)	22,451,956			
1907	$20,486,803	$6,323,426	26,810,229			
1908	21,953,833	6,238,560	28,192,393			
1909	23,577,644	6,400,999	29,978,643			

Exhibit X-172—Continued

Illinois Bell Telephone Company

Investment in Fixed Capital by Operating Divisions

Year	Chicago Division	Suburban Division	Total	Illinois Division (Since Purchase)	Illinois Division (Prior to Purchase)	Total
1910	25,324,424	7,184,762	32,509,186			
1911	29,053,544	7,884,294	36,937,838			
1912	32,840,911	8,565,739	41,406,650			
1913	37,875,529	9,125,461	47,000,990		(a)	
1914	43,696,957	10,041,707	53,738,665		$10,965,411	$57,966,401
1915	47,745,036	10,721,266	58,466,302		11,621,683	65,360,347
1916	52,206,517	12,368,209	64,574,726		11,823,940	70,290,242
1917	58,245,754	14,917,828	73,163,583		12,269,605	76,844,331
1918	63,093,421	15,771,160	78,864,581		13,424,303	86,587,885
1919	66,990,915	17,002,749	83,993,665		14,167,270	93,031,851
1920	72,451,926	18,791,050	91,242,976		15,243,227	99,236,891
1921	77,394,946	20,196,533	97,591,479	$15,733,737		106,976,713
1922	85,687,816	21,853,782	107,541,598	16,619,366		114,210,845
1923	100,145,419	24,013,873	124,159,292	18,349,842		125,891,440
1924	110,987,626	26,682,393	137,670,019	20,684,666		144,843,958
1925	126,493,467	30,734,606	157,228,073	21,561,707		159,231,726
1926	140,915,840	35,040,914	175,956,754	24,013,986		181,242,059
1927	155,753,236	40,499,306	196,252,542	25,656,024		201,612,778
1928	170,248,990	45,884,138	216,133,128	27,431,002		223,683,544
1929	182,657,561	50,668,467	233,326,028	30,518,836		246,651,964
1930	191,286,165	56,589,049	247,875,214	33,259,786		266,585,814
				35,073,009		282,948,223

(a) Data not available for earlier years.

EXHIBIT X-172

[fol. 4670]

Illinois Bell Telephone Company

Total Investment in Fixed Capital December 31, 1930

Chicago Division	[illegible]
Suburban Division	[illegible]
Illinois Division	[illegible]
	[illegible]

EXHIBIT X-175

Illinois Bell Telephone Company—Chicago Division

Summary of Account 102, Reserve for Accrued Depreciation After Giving Effect to the Public Utilities Commission's Order During the Entire Period from January 1, 1921, to December 31, 1931, Twenty-two Years, 1910 to 1931, Inclusive.

	Credits to Depreciation Reserve											
	Charges to Operating Expenses—Account 608		Charges to Clearing Accounts		Other Credits		Total Credits		Charges to Depreciation Reserve		Balance in Depreciation Reserve Dec. 31	
Year Ended Dec. 31	Amount (1)	% of Av. Plant (2)	Amount (3)	% of Av. Plant (4)	Amount (5)	% of Av. Plant (6)	Amount (7)	% of Av. Plant (8)	Amount (9)	% of Av. Plant (10)	Amount (11)	% of Total Plant (12)
1909	....	....	....	....	....	....			....	....	$2,433,380	10.32
1910	$1,286,782	5.26	....	....	....	....	$1,286,782	5.26	$434,301	1.78	3,285,861	12.98
1911	1,383,733	5.09	....	....	$63,252	.23	1,446,985	5.32	348,018	1.28	4,384,828	15.09
1912	1,722,946	5.57	....	....	....	....	1,722,946	5.57	901,692	2.91	5,206,082	15.85
1913	1,994,285	5.64	$54,264	.15	2,523	.01	2,051,072	5.80	1,041,264	2.94	6,215,890	16.41
1914	2,338,692	5.73	64,920	.16	209,940	.52	2,613,552	6.41	1,456,801	3.57	7,372,641	16.87
1915	2,600,884	5.69	63,387	.14	....	...	2,664,271	5.83	1,600,286	3.50	8,436,626	17.67
1916	2,824,804	5.65	61,876	.13	....	...	2,886,680	5.78	1,336,186	2.67	9,987,120	19.13
1917	3,138,184	5.68	84,192	.15	....	...	3,222,376	5.83	1,292,110	2.34	11,917,386	20.46
1918	3,102,839	5.11	57,038	.09	418	.01	3,160,295	5.21	581,557	.96	14,496,124	22.98
1919	3,415,077	5.25	49,632	.08	....	...	3,464,709	5.33	610,809	.94	17,350,024	25.90
1920	3,421,535	4.91	75,471	.11	....	...	3,497,006	5.02	547,417	.79	20,299,613	28.02
1921	2,103,331	2.80	83,223	.11	4,649	.01	2,191,203	2.92	611,572	.82	21,879,244	28.27
1922	2,351,000	2.89	92,511	.11	551	...	2,444,062	3.01	894,084	1.10	23,429,222	27.34
1923	2,841,065	3.04	109,080	.12	141,355	.15	3,091,500	3.31	1,509,877	1.62	25,010,845	24.97
1924	3,311,624	3.15	130,510	.12	860	...	3,442,994	3.27	2,151,611	2.04	26,302,228	23.70
1925	3,806,927	3.24	143,921	.12	5,769	...	3,956,617	3.36	1,932,472	1.64	28,326,373	22.39
1926	4,431,005	3.33	170,637	.13	20,019	.02	4,621,661	3.47	2,424,024	1.82	30,524,010	21.66
1927	4,953,992	3.39(a)	162,485	.11(a)	15,910	.01(a)	5,132,387	3.51(a)	2,644,517	1.81(a)	33,011,880	21.54(a)
1928	5,545,000	3.44	190,902	.12	1,047	...	5,736,949	3.56	4,314,317	2.68	34,434,512	20.23
1929	6,103,836	3.49	179,300	.10	45,892	.03	6,329,028	3.62	7,223,157	4.13	33,540,383	18.36
1930	6,595,399	3.52	173,525	.09	14,931	.01	6,783,855	3.62	6,269,689	3.35	34,054,549	17.80
1931	6,886,281	3.54	162,383	.08	171*	...	7,048,493	3.62	5,846,810	3.00	35,256,232	18.04

* Red figures.

(a) Based on Plant Account, exclusive of receivers, transmitters and induction coils amounting to $2,471,561 acquired from A. T. & T. Co. and entered in the books in December, 1927. For the purpose of this statement, this amount is included in 1928 and following years.

(Here follows Exhibit X-176, side folio 4672)

Exhibit X-176

Illinois Bell Telephone Company, City of Chicago

Details of Amounts Reserved for Depreciation and Charged to Operating Expense Account ⁎608, "Depreciation of Plant and Equipment," Eleven Years, 1921 to 1931, Inclusive

No.	Account Name	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931
212	Buildings	$223,379.50	$225,677.83	$230,800.94	$241,861.68	$267,650.42	$276,956.30	$284,716.61	$334,333.13	$353,532.35	$405,652.38	$397,720.78
221	C. O. Equipment	1,295,365.15	1,495,488.59	2,003,375.89	1,981,269.54	2,208,049.05	2,636,569.80	2,924,168.23	3,156,995.38	3,487,268.22	3,797,560.81	4,047,576.80
222	Other C. O. Equipment								96,467.14	111,396.08	124,135.32	116,606.93
231	Station Apparatus	463,462.45	514,455.38	585,153.58	570,752.31	634,399.36	693,801.90	762,878.94	1,089,166.20	1,148,120.46	1,182,551.18	1,154,229.81
232	" Installations											
238	Interior Block Wires											
234	Private Branch Exchanges	291,047.22	339,554.41	382,724.53	385,378.27	450,084.83	510,781.11	573,876.79	649,927.62	710,579.94	783,288.39	799,821.53
235	Booths & Special Fittings	17,852.06	19,108.67	21,109.26	23,609.57	29,797.16	34,697.10	39,656.22	24,205.27	28,868.54	36,257.62	48,533.50
241	Exchange Pole Lines	141,835.80	149,308.35	160,646.98	173,010.99	188,085.38	201,434.48	214,369.47	145,676.39	147,317.13	152,438.65	154,947.97
242	" Aerial Cable	133,501.98	138,940.69	150,398.42	198,103.77	228,768.31	268,893.00	298,816.36	266,025.20	280,700.86	329,977.07	336,837.64
243	" " Wire	88,332.52	96,490.32	106,224.86	145,724.14	162,879.47	179,983.52	193,992.99	141,986.74			
244	" Underground Conduit	206,339.24	211,956.91	222,641.36	239,394.42	260,947.84	290,997.89	327,661.63	322,851.25	357,424.75	382,945.42	405,970.69
245	" Underground Cable	410,447.09	431,909.52	471,739.42	671,911.41	769,525.09	878,694.71	969,428.48	1,154,172.29	1,189,265.57	1,188,336.83	1,267,281.37
246	" Submarine Cable	23.64	43.28	95.45	122.97	727.44	751.91	757.32	401.85	532.65	665.43	1,365.94
251	Toll Pole Lines	5,235.95	5,819.32	7,913.33	5,481.30	5,365.65	4,804.16	4,032.20	2,678.12	2,499.45	2,252.28	2,239.35
252	" Aerial Cable	259.38	330.41	506.61	335.06	296.33	284.37	8.08	143.61	347.10	965.14	973.77
253	" " Wire	4,792.57	5,195.89	6,747.98	4,764.26	4,574.43	3,812.14	3,181.62	2,946.65	2,740.26	3,476.84	2,414.52
254	" Underground Conduit	8,891.09	9,391.32	11,261.31	10,153.39	10,250.96	10,029.89	521.68	947.05	2,026.02	10,054.76	10,349.34
255	" " Cable	30,773.71	31,403.54	33,579.74	43,018.45	50,467.54	61,962.38	76,544.46	103,779.71	126,555.99	138,916.65	154,409.14
256	" Submarine Cable								1.20	202.69	328.75	323.50
261	Office Furniture and Fixtures	44,583.02	50,399.60	55,965.96	55,546.57	60,170.10	65,894.92	75,979.87	82,324.93	94,137.00	118,150.69	124,018.78
268	Interest During Construction					48,343.18	59,395.33	64,190.78	72,547.08	89,076.46	104,059.22	112,649.58
274	02–Property Rights							21.00	21.00	21.00	21.00	21.00
274	73–Wire Telephone					2,018.19	14,954.25	15,654.95	15,650.91	6,749.32	947.73	926.60
274	80–Picture Transmission						7,965.95	8,525.95	8,941.87	9,225.15	6,560.99	6,711.14
274	90–Photographic Apparatus						307.56	408.20	425.34	536.84	343.18	338.30
268 270 280		2,826.83	14,395.49	30,068.16	32,595.46	3,311.23	50.03					
	Adjustment of Prior Years				73,083.24*				31,155.49*	28,741.55*		
	Adjustment of Prior Years											
	Total	$3,369,849.20	$3,739,869.52	$4,480,953.78	$4,709,950.32	$5,385,711.96	$6,203,022.70	$6,839,391.83	$7,641,460.44	$8,120,382.28	$8,769,886.33	$9,146,267.98

* Red figures.

(a) Based on Depreciation Rates for individual plant accounts.

[fol. 4673]

Exhibit X-177

Illinois Bell Telephone Company, Chicago Division

Statement of Investment in Manual Central Office Buildings and Manual Central Office Equipment as Shown by the Company's Books as of December 31, 1929, and Company's Estimated Additions to Retirement at Dates Indicated in Plaintiff's Exhibit A-128

Year	Manual C. O. Buildings	Manual C. O. Equipment
Investment at Dec. 31,1929	$5,775,086	$31,081,262
Additions (estimated)		
1930	......	1,435,000
1931	152,000	1,587,000
1932	73,000	1,349,000
1933	187,000	1,264,000
1934	387,000	1,492,000
1935	887,000	941,000
1936	346,000	840,000
1937	466,000	729,000
1938	324,000	644,000
1939	337,000	459,000
1940	388,000	303,000
1941	......	206,000
1942	......	203,000
1943	411,000	85,000
1944	645,000	26,000(a)
1945	121,000	....
1946	74,000	....
1947	......	....
1948	......	....
1949	79,000	....
1950	......	....
1951	......	....
1952	......	....
1953	37,000	....
1954	95,000	....
1955	87,000	....
1956	75,000	....
1957	64,000	....
1958	31,000	....
1959	......	....
1960	58,000	....
1961	......	....
1962	......	....
1963	81,000	....
1964	158,000	....
1965	127,000	....
1966	47,000	....
1967	22,000	....
1968	97,000	....
1969	......	....
1970	32,000	....
1971	......	....
1972	......	....
1973	45,000	....
1974	62,000	....
1975	......	....
1976	......	....
1977	......	....
1978	......	....
1979	......	....
1980	......	....

(a) Year of estimated final retirement.

Year Investment at Dec. 31, 1929 Additions (estimated)	Manual C. O. Buildings $5,775,086	Manual C. O. Equipment $31,081,262
1981	....	....
1982	......	....
1983	......	....
1984	...... (a)	....
Total Additions	$5,995;000	$11,563,000

(a) Year of estimated final retirement.

[fol. 4674]

Exhibit X-179

Illinois Bell Telephone Company

Charges to Depreciation Reserve Expressed as a Ratio of the Amount Reserved for Depreciation in the Corresponding Year 1921 to 1931, inclusive

Year	Chicago Division	Suburban Division	Illinois Division	Entire Company
1921	17.69%	37.41%	54.08%	27.90%
1922	23.33	54.43	58.15	36.05
1923	31.91	59.33	80.79	45.12
1924	44.44	73.88	78.55	55.88
1925	34.91	38.20	142.53	56.81
1926	37.91	49.32	102,96	49.86
1927	37.68	82.73	110.20	57.01
1928	55.08	66.46	44.81	57.01
1929	86.55	91.45	101.75	55.42
1930	69.99	96.23	80.48	89.57
1931	62.81	60.67	64.31	76.63

[fol. 4675]

Exhibit X-180

Illinois Bell Telephone Company, Chicago Division

Company's Estimate of Gross Amount of Refunds to be Made to Its Subscribers if Commission's Order of 1923 is not Found to be Confiscatory, with Simple Interest at Five Per Cent to December 31, 1931

Year	Gross Amount	Total Interest
1923	$527,926	$213,301
1924	2,124,632	792,003
1925	2,181,614	704;313
1926	2,203,556	601,073
1927	2,221,798	495,141
1928	2,168,357	375,168
1929	2,060,444	253,693
1930	1,879,411	138,369
1931	1,632,466	38,372
Total	$17,000,204	$3,611,483

[fol. 4676]

Exhibit X-182

Illinois Bell Telephone Company, Chicago Division

Depreciation on Exchange Aerial Wire (Account 243), Eighteen Years, January 1, 1913, to December 31, 1930

Year (1)	Balance at Close of Year (2)	Average for Period (3)	Approximate Amount Reserved for Depreciation		Net Realized Depreciation (6)	Net Increase in Depreciation Reserve (7)	Depreciation Reserve Balance at Close of Year (8)
			% (4)	Amount (5)			
1912	$1,086,642	....	....	....	....	....	....
1913	1,236,849	$1,161,746(a)	12.5	$145,218	$114,510	$30,708	$30,708
1914	1,219,847	1,223,348(a)	12.5	152,919	226,898	73,979*	43,271*
1915	1,252,018	1,235,933(a)	12.5	154,492	90,940	63,552	20,281
1916	1,305,485	1,278,752(a)	12.5	159,844	107,878	51,966	72,247
1917	1,302,339	1,303,912(a)	12.5	162,989	158,981	4,008	76,255
1918	1,368,915	1,335,627(a)	12.5	166,953	51,467	115,486	191,741
1919	1,495,177	1,432,046(a)	9.0	128,884	22,662	106,222	297,963
1920	1,612,997	1,524,087(a)	9.0	137,168	61,577	75,591	373,554
1921	1,775,425	1,698,702(b)	5.2	88,333	46,062	42,271	415,825
1922	1,971,818	1,855,583(b)	5.2	96,490	57,923	38,567	454,392
1923	2,224,745	2,042,786(b)	5.2	106,225	109,816	3,591*	450,801
1924	2,484,277	2,350,389(b)	6.2	145,724	129,220	16,504	467,305
1925	2,770,430	2,627,088(b)	6.2	162,879	93,829	69,050	536,355
1926	3,031,139	2,902,960(b)	6.2	179,984	154,750	25,234	561,589
1927	3,234,221	3,128,919(b)	6.2	193,993	170,502	23,491	585,080
1928	3,383,408	3,302,017(b)	4.3	141,987	132,636	9,351	594,431
1929	3,678,692	3,537,515(b)	....	....	....	....	594,431
1930	3,870,616	3,784,406(b)	....	....	....	....	594,431

* Red figures.

(a) Averages based on balance at beginning and close of each year.
(b) Averages based on the average of 12 monthly averages as used by the Company.

[fol. 4677]

EXHIBIT X-185

Illinois Bell Telephone Company, City of Chicago

Manual Central Office Equipment

Comparative Study of Per Cent Condition or Present Value as of December 31, 1930, Expressed as a Percentage of Value When New as Determined by Average Life Method and as Determined by the Company.

Name of Exchange (1)	Book Cost (2)	Year of Original Installation (3)	Estimated Year of Retirement (4)	Age at Dec. 31, 1930 (Years) (5)	Est. Total Life (Years) (6)	Percent of Total Life Remaining At 12/21/30 (7)	Percent Condition After Salvage Adjustment (a) (8)	Percent Condition Determined By Company (9)
Austin	$1,358,408.21	1917	1937	6.97	10.45	33.30	39.97	94.90
Belmont	1,274,861.64	1912	1938	8.63	11.49	24.89	32.40	94.18
Beverly	599,362.79	1914	1940	5.62	9.93	43.40	49.06	93.87
Calumet	1,117,015.54	1900	1933	9.48	11.40	16.84	25.16	92.93
Canal	699,017.17	1902	1932	8.73	9.68	9.81	18.83	91.03
Dearborn	1,259,779.00	1921	1931	7.53	8.01	5.99	15.39	94.21
Delaware	441,407.82	1900	1931	12.99	13.37	2.84	12.56	89.67
Douglas	349,840.33	1903	1937	12.77	17.52	27.11	34.40	90.56
Edgewater	1,483,087.56	1907	1940	9.52	18.07	47.32	52.59	92.28
Humboldt	1,180,772.24	1905	1933	9.39	10.89	13.77	22.39	93.28
Hyde Park	2,008,300.51	1915	1934	8.30	11.31	26.61	33.95	93.10
Irving	1,354,558.72	1914	1942	7.58	14.27	46.88	52.19	94.96
Kedzie	1,313,501.47	1906	1936	9.06	12.21	25.80	33.22	93.21
Kildare	1,389,056.24	1917	1943	5.75	13.20	56.44	60.80	95.13
La Fayette	579,612.15	1918	1936	7.03	9.48	25.84	33.26	94.02
Lakeview	2,047,533.64	1901	1935	8.68	11.15	22.15	29.94	92.21
Lawndale	1,277,669.54	1910	1936	9.77	12.30	20.57	28.51	93.88
Lincoln	1,011,296.07	1903	1933	8.89	10.43	14.77	23.29	94.60
Merrimac	669,837.86	1926	1944	3.70	11.14	66.79	70.11	96.25
Monroe	861,100.19	1899	1932	11.77	12.62	6.74	16.07	92.34
New Castle	283,049.20	1923	1942	3.75	9.76	61.58	65.42	96.05
Oakland	1,160,547.75	1901	1937	11.95	17.27	30.80	37.72	91.11
Prospect	1,230,408.87	1915	1939	6.73	11.03	38.98	45.08	94.23

Pullman	523,254.43	1916	1939	7.53	10.01	24.78	32.30	94.51
Rogers Park	1,654,175.48	1915	1935	5.86	7.95	26.29	33.66	94.77
South Chicago	1,055,313.39	1917	1938	6.27	12.74	50.78	55.78	94.03
Stewart	1,684,676.73	1944	1941	6.05	11.83	48.86	53.97	94.35
Wentworth	969,823.48	1901	1934	11.86	14.73	19.48	27.53	92.24
West	723,477.66	1901	1932	11.16	12.40	10.00	19.00	90.87
Yards	712,796.51	1901	1934	11.76	14.85	20.81	28.73	92.45
Total	$32,273,542.19	....	....	8.15	11.54	29.38	36.44	93.49
Tandem (Main)	328,302.59	....	....	....	....	....	....	86.81
Franklin Bldg. (Transfer)	27,509.66	....	....	....	....	....	....	94.21
Total	$32,629,354.44	....	....	....	....	....	....	93.43
Less Adjustment for obsolete call circuit equipment not in use								1.77
Adjusted Total		....	....	....	....	....	....	91.66

(a) The Company estimates salvage value at 10%.

[fol. 4678]

Exhibit X-186

Illinois Bell Telephone Company, City of Chicago

Buildings

Comparative Study of Per Cent Condition, or Present Value as of December 31, 1930, Expressed as a Percentage of Value When New as Determined by Age, Life Method, and as Determined by the Company.

Name of Building (1)	Book Cost (2)	Year of Original Installation (3)	Estimated Year of Retirement (4)	Age at Dec. 31, 1930 (Years) (5)	Est. Total Life (Years) (6)	Percent of Total Life Remaining At 12/21/30 (7)	Percent Condition After Salvage Adjustment (a) (8)	Percent Condition Determined By Company (9)
Austin	$209,428.98	1916	1977	9.96	36.17	72.46	77.97	94.261
Belmont	149,473.05	1912	1938	13.97	18.71	25.33	40.26	92.403
Beverly	135,107.37	1914	1980	8.11	37.46	78.35	82.68	96.968
Calumet (Old)	21,231.79	1900	1933	15.69	17.67	11.21	28.97	67.744
Calumet (New)	154,658.91	1916	1933	13.59	16.07	15.43	32.34	95.987
Canal	117,971.16	1902	1932	10.86	12.25	11.35	29.08	89.564
Delaware	68,420.51	1900	1931	23.60	24.07	1.95	21.56	85.571
Douglas	45,824.16	1903	1937	19.52	27.50	29.02	43.22	78.621
Edgewater	190,044.90	1907	1940	14.03	23.43	40.12	52.10	89.987
Humboldt	140,461.05	1905	1933	14.25	16.43	13.27	30.62	95.853
Hyde Park	268,173.77	1915	1974	11.76	38.47	69.43	75.54	94.016
Irving	170,602.44	1914	1942	10.90	17.12	36.33	49.06	90.550
Kedzie	226,634.45	1906	1936	11.53	16.78	31.29	45.03	91.728
Kildare	234,257.20	1917	1983	9.89	38.41	74.25	79.40	92.620
La Fayette	121,273.73	1917	1976	13.15	33.29	60.50	68.40	96.132
Lakeview (Old)	69,503.56	1901	1935	18.96	23.27	18.52	34.82	88.499
Lakeview (New)	153,266.83	1915	1975	15.50	32.60	52.45	61.96	90.173
Lawndale	190,962.96	1909	1936	12.98	16.65	22.04	37.63	93.441
Lincoln	180,532.02	1908	1933	12.45	14.83	16.05	32.84	92.396
Main	452,966.99	1888	1932	25.82	27.12	4.79	23.83	75.782
Merrimac	238,297.17	1926	1984	4.47	34.27	86.96	89.57	98.286
Monroe	174,508.78	1899	1932	13.88	15.32	9.40	27.52	90.375
Morrell Park	58,228.48	1897	1932	19.00	20.44	7.05	25.64	77.509
Oakland	151,726.54	1895	1937	14.63	20.74	29.46	43.57	78.004
Prospect	186,688.81	1915	1939	8.93	12.39	27.93	42.34	97.330
Pullman	112,648.39	1916	1979	10.40	37.97	72.61	78.09	96.791

Rogers Park	202,634.30	1915	1975	9.41	36.27	74.06	79.25	95.878
South Chicago	171,139.03	1917	1978	9.54	34.57	72.40	77.92	96.632
Stewart	242,025.27	1914	1941	7.44	13.78	46.01	56.81	96.165
Toll	530,286.07	1908	1932	20.09	21.48	6.47	25.18	83.053
Wentworth	116,751.19	1901	1934	21.69	25.05	13.41	30.73	84.209
West	199,548.44	1900	1932	14.22	15.65	9.14	27.31	85.966
Yards	139,514.91	1901	1934	13.20	16.51	20.05	36.04	84.766
Total	5,824,793.21	....	....	13.75	21.35	35.60	48.48	91.471
Bell	2,266,722.93	1912	....	......	......	......	......	......
Franklin	3,726,740.78	1917	....	......	......	......	......	......
Harrison St. Whse	389,931.09	1910	....	......	......	......	......	......
Longbeach	372,527.71	1927	....	......	......	......	......	......
New Castle	80,464.18	1928	....	......	......	......	......	......
Superior	744,052.25	1924	....	......	......	......	......	......
Wabash (Old)	504,145.87	1911	....	......	......	......	......	......
Wabash (New)	762,603.64	1911	....	......	......	......	......	......
Grand Total	$14,671,981.66	....	....	......	......	......	......	93.65

(a) The company estimates salvage value at 20%.

(Here follows Exhibit X-187, side folio 4679)

[fol. 4679]

EXHIBIT X-187

Ratio of Balance in Reserve for Accrued Depreciation to Total Investment in Plant and Equipment at December 31st of Each Year, 1913 to 1930, Inclusive

	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
1. American Tel. & Tel. Co.	10.2	11.3	12.4	13.6	14.9	15.1	17.1	17.2	16.7	22.2	22.4	22.3	23.2	23.1	16.4	16.5	15.1	14.2
2. Bell Tel. Co. of Nevada	5.6	1.8	3.9	7.3	10.5	14.7	18.1	18.0	21.1	22.2	24.7	28.1	28.9	27.2	25.9	20.4	11.4	6.9
3. Bell Tel. Co. of Penna.	13.6	15.0	17.0	18.9	20.0	20.1	22.2	23.9	25.0	25.2	22.7	18.5	16.5	15.9	16.1	16.3	16.9	16.0
4. Ches. & Potomac Tel. Co. of Baltimore City	14.3	15.0	16.8	18.7	20.5	19.9	21.0	22.2	23.6	24.1	22.8	20.4	18.9	18.3	18.9	19.6	20.4	19.6
5. Ches. & Potomac Tel. Co. (New York)	16.2	17.5	20.6	23.0	22.2	14.4	21.7	22.5	22.3	24.1	24.5	23.8	23.7	23.1	22.8	23.9	24.1	19.6
6. Ches. & Potomac Tel. Co. of Virginia	11.2	8.8	8.1	9.6	10.6	9.6	6.8	9.7	11.0	12.5	14.0	13.3	13.8	15.0	15.7	16.7	16.8	11.9
7. Ches. & Potomac Tel. Co. of W. Virginia	....	....	....	....	14.6	11.9	11.1	12.3	13.3	13.1	13.1	12.8	10.1	10.3	11.4	10.3	9.8	11.0
8. Cincinnati & Sub. Bell Tel. Co.	....	....	....	....	....	....	....	....	....	....	....	27.8	26.0	26.6	26.8	27.3	28.7	24.8
9. Cumberland Tel. & Tel. Co. of Kentucky	12.6	12.0	11.5	11.5	12.4	13.5	15.0	16.4	18.1	20.8	22.0	20.3	19.0	....	....	....	....	....
10. Delaware & Atlantic Tel. & Tel. Co.	....	....	....	....	....	....	....	....	....	....	....	12.1	9.8	10.0	....	....	....	....
11. Diamond State Tel. Co.	....	....	....	....	....	....	....	....	....	....	....	25.8	26.6	26.9	26.4	24.4	12.8	12.4
12. Home Tel. & Tel. Co. of Spokane, Wash.	....	....	....	....	....	....	....	....	....	....	....	30.2	30.8	21.0	18.3	19.3	19.3	20.2
13. Illinois Bell Tel. Co.	15.7	16.5	17.6	19.1	20.3	23.0	25.8	23.8	25.7	26.5	25.8	25.6	24.5	24.4	24.0	24.0	22.7	22.5
14. Indiana Bell Tel. Co.	....	....	....	....	....	....	....	15.0	6.2	6.3	7.1	8.0	8.5	10.0	10.9	8.6	9.9	8.7
15. Inter Mountain Tel. Co.	....	....	....	....	....	....	....	....	....	6.9	8.7	3.2	....	....	4.3	6.6	9.0	10.6
16. Michigan Bell Tel. Co.	16.4	17.2	17.9	19.8	18.5	17.5	18.2	19.0	19.0	18.9	17.1	17.8	16.2	14.9	12.9	12.1	12.2	12.2
17. Mountain States Tel. Co.	9.7	7.9	8.2	8.6	9.0	9.6	12.1	14.3	16.2	18.5	20.7	22.6	24.3	25.7	26.4	26.1	22.8	22.7
18. New England Tel. & Tel. Co.	17.2	18.0	20.3	21.4	21.6	24.2	26.5	27.7	27.1	26.3	25.0	22.1	21.5	20.6	20.2	20.6	20.4	19.4
19. New York Tel. Co.	15.6	16.9	19.6	22.0	24.0	25.6	27.7	29.2	29.3	29.0	27.4	25.0	25.2	25.5	26.4	26.8	25.7	25.0
20. Northwestern Bell Tel. Co.	9.5	9.1	9.6	11.5	13.4	15.7	16.6	16.8	18.8	20.5	23.1	25.0	26.5	27.7	27.2	25.9	24.8	23.8
21. Ohio Bell Tel. Co.	7.8	8.0	8.5	10.1	11.1	13.6	15.3	7.5	8.9	11.2	12.0	12.4	12.2	10.7	9.7	9.3	10.1	10.1
22. Pacific Tel. & Tel. Co.	10.3	11.1	11.8	13.2	15.4	18.1	20.3	22.2	23.7	24.1	22.6	21.2	20.7	19.8	19.2	19.3	18.0	18.2
23. Southern Bell Tel. & Tel. Co. (of N. Y.)	8.6	9.8	11.5	14.0	16.6	18.4	19.7	21.4	21.8	22.6	22.7	22.8	21.2	17.3	14.9	13.9	12.6	12.9
24. Sou. Calif. Tel. Co.	....	....	....	....	11.2	13.7	17.1	19.9	19.1	15.6	9.6	7.2	6.5	8.0	9.3	11.7	12.8	12.8
25. Sou. New Eng. Tel. Co.	....	....	....	....	....	....	....	....	....	....	....	27.7	26.7	26.7	26.1	24.7	21.9	18.7
26. Southwest. Bell Tel. Co. (Mo. Corp.)	4.1	7.0	9.6	12.1	13.6	15.7	18.5	20.7	21.7	22.1	22.1	22.3	20.1	17.8	14.7	14.7	15.4	15.9
27. Texas Tel. Co.	....	....	....	....	....	0.7	2.3	2.6	3.8	4.7	6.4	7.5	10.5	12.1	15.4	....	....	....
28. Wis. Tel. Co.	28.9	31.0	33.9	34.3	32.9	33.9	35.6	34.2	33.2	27.6	28.0	25.8	24.9	25.7	25.5	25.8	25.3	21.6
29. Long Lines Div. (A. T. & T.)	....	....	....	....	....	....	....	17.2	17.2	16.7	17.2	17.1	16.5	17.1	16.6	16.5	15.8	14.4
Illinois Bell Tel. Co.																		
30. Chicago Division	16.4	16.9	17.7	19.1	20.5	23.0	25.9	28.0	29.9	30.4	29.3	28.8	28.1	28.1	28.2	27.9	26.6	26.8
31. Suburban Division	12.6	15.1	17.0	18.7	19.8	23.0	25.3	27.1	28.6	28.9	28.6	27.1	25.5	24.8	22.4	21.4	19.8	17.9
32. Illinois Division	....	....	....	....	....	....	....	.3	2.9	5.4	5.9	7.0	3.9	3.5	2.7	6.3	5.7	6.5
33. Entire Company	15.7	16.5	17.6	19.1	20.3	23.0	25.8	23.8	25.7	26.5	25.8	25.6	24.5	24.4	24.0	24.0	22.7	22.5
Chicago Div. Based on																		
34. (A) P. U. C. Order 1921 to 1930	....	....	....	....	....	....	....	....	28.3	27.3	25.0	23.7	22.4	21.7	21.2	20.2	18.4	17.8
35. (B) P. U. C. Order 1921 to 10/1/1923 and Ill. C. C. Order to 1930	....	....	....	....	....	....	....	....	28.3	27.3	24.8	23.5	22.1	21.0	19.9	18.0	15.1	13.5
36. (C) Ill. C. C. Order 10/1/1923 to 1930	....	....	....	....	....	....	....	....	....	....	28.6	26.9	25.2	23.8	22.3	20.3	17.2	15.5

[fol. 4680]

Exhibit X-188

Illinois Bell Telephone Company, Chicago Division

Investment in Central Office Telephone Equipment at December 31, 1923, to 1931, Incl., and April 30, 1932

Year	Manual Central Office Equipment (Code 7c)	Repeater & Telegraph Equipment (Code 307c)(a)	Dial Cent. Office Equipment (Code 97c)	Step by Step Equipment (Official Board and Harrison Street Warehouse) (Code 87c)(b)	Total (Acct. 221)
1923	22,401,087	....	5,064,290	....	27,465,377
1924	24,768,279	....	5,081,564	....	29,849,843
1925	28,596,174	....	7,233,994	....	35,830,168
1926	32,985,481	....	8,143,909	....	41,129,390
1927	35,962,474	....	8,534,219	79	44,496,772
1928	34,928,811	2,694,827	13,077,841	193,543	50,895,022
1929	34,886,288	3,095,618	16,767,542	200,781	54,950,229
1930	36,365,331	3,739,071	17,032,812	220,643	57,357,857
1931	35,463,155	3,724,759	20,668,494	219,759	60,076,167
1st. 4 mos. 1932	35,652,246	3,760,571	20,761,295	219,999	60,394,111

(a) Carried in Code 7c prior to April 1, 1928.
(b) Dial Equipment.

(Here follow side folios 4681-4686)

[fol. 4681]

EXHIBIT X-189

Illinois Bell Telephone Company—Chicago Division

Comparison of Gross Additions and Retirements of Manual Central Office Telephone Equipment for the Years 1930 and 1931 with the Company's Estimates Shown on the 1929 Study

	1930						1931						Total 1930 and 1931	
Office (1)	Actual Gross Additions (2)	Actual Retirements (3)	Actual Net Additions Column 2-3 (4)	Estimated Gross Additions (5)	Estimated Retirements (6)	Net Additions Column 5-6 (7)	Actual Gross Additions (8)	Actual Retirements (9)	Actual Net Additions Column 9-10 (10)	Estimated Gross Additions (11)	Estimated Retirements (12)	Estimated Net Additions Column 12-13 (13)	Actual Net Additions 1930 & 1931 Column 4 & 10 (14)	Estimated Net Additions 1930 & 1931 Column 7 & 13 (15)
Austin	84,475	21,605	62,870	87,300	900	86,400	36,671	2,707	33,964	103,100	6,600	96,500	96,834	182,900
Belmont	50,917	5,164	45,753	83,300	800	82,500	19,040	9,183	9,857	103,600	6,500	97,100	55,610	179,600
Beverly	47,249	5,341	41,908	76,500	300	76,200	11,614	5,463	6,151	83,300	2,500	80,800	48,059	157,000
Calumet	20,255	4,698	15,557	....	700	700*	19,701	2,721	16,980	7,700	5,800	1,900	32,537	1,200
Canal	10,919	3,160	7,759	10,000	400	9,600	11,542	1,869	9,673	13,500	3,500	10,000	17,432	19,600
Dearborn	....	....	....	....	....	....	....	1,259,779	1,259,779*	....	1,259,779	1,259,779*	1,259,779*	1,259,779
Delaware	1,460	14,836	13,376*	....	....	....	....	441,408	441,408*	....	441,408	441,408*	454,784*	441,408*
Douglas	591	196	395	....	200	200*	5,045	5,116	71*	....	1,800	1,800*	324	2,000*
Edgewater	17,670	28,285	10,615*	....	900	900*	1,723	6,236	4,513*	....	7,800	7,800*	15,128*	8,700*
Humboldt	41,211	86,918	45,707*	23,400	700	22,700	4,389*	58,763*	54,374	37,500	6,300	31,200	8,667	53,900
Hyde Park	47,124	16,646	30,478	102,700	1,200	101,500	129,566	28,195	101,371	88,300	10,300	78,000	131,849	179,500
Irving	102,858	5,003	97,855	68,000	700	67,300	21,323	13,575	7,748	85,600	6,500	79,100	105,603	146,400
Kedzie	122,411	16,884	105,527	36,000	700	35,300	14,527	8,515	6,012	51,100	6,200	44,900	111,539	80,200
Kildare	68,059	2,956	65,103	110,000	800	109,200	140,412	1,3671	126,741	121,000	7,200	113,800	191,844	223,000
Lafayette	75,165	8,577	66,588	37,400	300	37,100	8,716	2,820	5,896	41,000	2,800	38,200	72,484	75,300
Lakeview	76,005	16,165	59,840	82,500	1,200	81,300	30,568	10,195	20,373	82,200	10,200	72,000	80,213	153,300
Lawndale	25,616	6,502	19,114	39,400	800	38,600	10,205	4,789	5,416	48,700	6,300	42,400	24,530	81,000
Lincoln	57,365	9,624	47,741	28,800	600	28,200	11,778	3,966	7,812	35,600	5,000	30,600	55,553	58,800
Merrimac	59,735	10,345	49,390	61,300	400	60,900	23,378	3,244	20,134	71,000	3,100	67,900	69,524	128,800
Monroe	28,007	9,255	18,752	12,700	500	12,200	5,371	1,598	3,773	18,200	4,400	13,800	22,525	26,000
Newcastle	59,873	5,203	54,670	31,600	200	31,400	4,053	1,172	2,881	37,500	1,000	36,500	57,551	67,900
Oakland	17,941	23,051	5,110*	....	700	700*	16,738	2,265	14,473	....	6,100	6,100*	9,363	6,800*
Prospect	40,083	12,905	27,178	103,000	700	102,300	9,723	7,069	2,654	117,000	6,200	110,800	29,832	213,100
Pullman	26,462	9,862	16,600	42,200	300	41,900	10,440	1,284	9,156	55,200	2,600	52,600	25,756	94,500
Rogers Park	256,892	12,704	244,188	104,500	1,000	103,500	3,068	21,367	18,299*	129,500	7,800	121,700	225,889	225,200
South Chicago	83,303	6,898	76,405	115,000	600	114,400	92,626	21,863	70,763	112,400	5,100	107,300	147,168	221,700
Stewart	77,426	21,979	55,447	179,400	1,000	178,400	6,811	3,575	3,236	144,000	8,000	136,000	58,683	314,400
Wentworth	21,885	590	21,295	....	600	600*	27,266	7,218	20,048	....	5,000	5,000*	41,343	5,600*
West	26,703	12,088	14,615	....	400	400*	10,478	5,381	5,097	....	3,700	3,700*	19,712	4,100*
Yards	23,430	1,371	22,059	....	400	400*	12,310	1,986	10,324	....	3,700	3,700*	32,383	4,100*
Total	1,571,090	378,811	1,192,279	1,435,000	18,000	1,417,000	690,304	1,839,467	1,149,163*	1,587,000	1,853,187*	266,187*	43,116	1,159,813

* Red Figures.

EXTRACTS FROM EXHIBIT X-192

FORM S. N. 152 M (1)
This Copy for
Mr. F. T. Saxton

ASSOCIATED OPERATING COMPANIES.
(Excludes American Tel.and Tel.Co.,Long Lines Dept.)
Name of Company.

MONTHLY REPORT No. 1.

CR 51 A

CONDENSED SUMMARY OF REPORTS FOR DECEMBER, 1931.

(The figures on this report are not arranged in exact accordance with the book accounts prescribed by the Interstate Commerce Commission and this fact should be recognized in using or quoting them.)

	BALANCE SHEET	a At End of Month	b Increase over Last Month	Increase over Dec. 31 Last c Amount	d Percent		
	ASSETS						
1	Intangible Capital	13 154 993	243 755	170 911	1	3	1
2	Plant	3 682 455 044	3 503 839	137 053 591	3	9	2
3	Construction Work in Progress	63 992 725	2 483 555	10 339 497	13	9	3
4	General Equipment	67 153 655	419 129	3 621 093	5	1	4
5	Materials and Supplies	15 971 421	983 624	2 801 121	14	9	5
6	Investments	98 966 815	1 367 244	7 723 713	8	5	6
7	Cash and Deposits and Temporary Investments	35 061 779	598 762	4 803 368	15	9	7
8	Receivables, etc.	153 485 449	1 751 191	720 230		5	8
9	**Total**	4 130 241 881	1 821 213	131 927 820	3	3	9
	LIABILITIES						
10	Common Stock (Including Installments $)	1 954 278 000	0	176 392 800	9	9	10
11	Preferred Stock	162 033 300	0	28 222 847	14	8	11
12	Funded Debt	498 955 925	577 085	72 240 802	12	6	12
13	Advances from System Corporations	313 341 444	26 509 982	6 532 496	2	0	13
14	Bills Payable	89 138 070	7 480 424	16 679 988	23	0	14
15	**Total Capital Obligations**	3 017 746 739	33 413 321	86 076 643	2	9	15
16	Other Payables, etc.	154 061 462	29 239 446	3 860 610	2	6	16
17	Reserves for Depreciation	724 156 807	1 189 506	42 297 581	6	2	17
18	Surplus	234 276 873	1 163 156	307 014		1	18
19	**Total**	4 130 241 881	1 821 213	131 927 820	3	3	19

	EARNINGS AND EXPENSES	e This Month	f Increase over Last Month	g Increase over Same Month Last Year	h 12 Months This Year	Increase over Same Period Last Year i Amount	j Percent		
20	Exchange Revenues	60 743 277	944 768	1 221 307	725 423 909	5 691 046		8	20
21	Toll Revenues	18 899 850	527 565	1 996 511	239 831 733	16 122 060	6	3	21
22	Miscellaneous Operating Revenues	2 615 909	50 383	111 788	31 557 984	45 561		1	22
23	**Total Telephone Revenues**	82 259 036	1 522 716	3 329 606	996 813 626	21 858 667	2	1	23
24	Traffic Expenses	15 007 200	410 911	1 992 199	186 073 687	22 754 214	10	9	24
25	Commercial Expenses	8 823 888	213 590	36 006	100 732 954	2 664 397	2	6	25
26	General and Miscellaneous Expenses	3 891 492	209 244	22 971	45 397 981	1 124 300	2	5	26
27	Other Operation Expenses	3 262 473	48 532	515 656	39 636 145	248 025		6	27
28	**Total Operation Expenses**	30 985 053	785 213	2 448 878	371 840 767	24 542 336	6	2	28
29	Current Maintenance	15 134 333	1 783 638	1 054 008	164 338 102	11 504 622	6	5	29
30	Depreciation	14 709 712	16 519	382 327	173 832 644	8 567 791	5	2	30
31	Taxes	6 320 859	439 729	288 601	84 990 249	3 120 710	3	8	31
32	**Total Telephone Expenses**	67 149 957	2 145 641	2 831 958	795 001 762	24 349 457	3	0	32
33	**Net Telephone Earnings**	15 109 079	622 925	497 648	201 811 864	2 490 790	1	2	33
34	Sundry Net Earnings	1 118 765	315 617	83 701	11 795 843	173 004	1	4	34
35	**Total Net Earnings**	16 227 844	307 308	581 349	213 607 707	2 317 786	1	1	35
36	Interest Deductions	4 058 951	23 014	323 867	48 852 211	2 814 563	5	4	36
37	**Balance Net Profits**	12 168 893	330 322	257 482	164 755 496	5 132 349	3	2	37
38	Dividends* (Preferred %	855 903	1	164 634	10 270 736	1 975 703	16	1	38
39	(Common %	12 262 951	2	1 292 778	145 087 986	16 425 407	12	8	39
40	**Total Dividends**	13 118 854	1	1 128 144	155 358 722	14 449 704	10	3	40
41	**Undivided Profits**	949 961	330 321	1 385 626	9 396 774	9 317 355	49	8	41

	PERCENTAGES. (Annual Basis)	k This Month	l Last Month	m Same Month Last Year	n 12 Months This Year	o Same Period Last Year	
42	Total Tel. Rev. (Incl. Acc. & Dir.) to Av. Plant in Service	26.28 %	25.82 %	28.45 %	26.98 %	29.29 %	42
43	Operation Expenses to Telephone Revenues	37.67 %	37.41 %	39.06 %	37.30 %	38.91 %	43
44	Telephone Expenses to Telephone Revenues	81.63 %	80.51 %	81.77 %	79.75 %	80.43 %	44
45	Current Maintenance to Average Plant in Service	4.93 %	4.36 %	5.49 %	4.54 %	5.16 %	45
46	Depreciation to Average Plant in Service (Incl. Office Fur. & Fix.)	4.75 %	4.75 %	4.82 %	4.76 %	4.81 %	46
47	Net Telephone Earnings to Average Plant in Service	4.93 %	5.14 %	5.30 %	5.58 %	5.85 %	47
48	Bal. Net Prof. (after Pref. Dividend) to Av. Com. Stock	6.95 %	7.15 %	7.70 %	8.02 %	8.68 %	48

*On monthly accrual basis.

Date issued January 30, 1932.
Should be issued not later than 20th.

C. A. Heiss.
Comptroller. ~~General Auditor~~

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p 1

EXTRACTS FROM EXHIBIT X-193
AMERICAN TELEPHONE AND TELEGRAPH COMPANY

EARNINGS ON CAPITAL STOCK

Per Cent on Capital Stock (4 sheets)

	1918	1919	1920	1921	1922	1923
Dividends from Associated Oper. Cos.	6.35	6.76	6.96	7.06	6.82	6.60
Proportion of Associated Operating Cos. Undivided Profits	*.44	*.68	*2.42	1.36	1.91	1.27
Interest from Associated Operating Cos.	1.44	2.05	2.68	2.60	1.64	1.14
4-1/2%	2.91	3.34	3.96	4.07	3.62	3.30
Long Lines Net	1.84	2.82	3.43	3.04	2.92	2.51
Dividends Bell of Canada and Western Electric Company, Inc.	.86	.86	.91	.83	.72	.82
Other Revenue	.41	.55	.50	.41	.56	.87
Total	13.37	15.70	16.02	19.37	18.19	16.51
Total Expenses	1.46	**1.73	2.26	2.75	2.47	2.00
Interest	2.37	3.58	4.22	3.99	2.60	1.89
Net	9.54	10.39	9.54	12.63	13.12	12.62
Less Proportion of Associated Oper. Cos. Undivided Profits	*.44	*.68	*2.42	1.36	1.91	1.27
Actual	9.98	11.07	11.96	11.27	11.21	11.35

Assuming that Expenses of American Telephone and Telegraph Company, General Department are paid from the 4-1/2%, the 9% dividend (8% prior to June, 1921) is derived from the following sources.

	Per Cent Earned on Capital Stock					
	1918	1919	1920	1921	1922	1923
From Dividends from Associated Oper. Cos.	51.41	46.14	43.02	46.26	60.38	49.85
From Interest from Associated Oper. Cos.	11.68	13.99	16.56	17.04	11.87	8.61
From 4-1/2 per cent (less expenses)	11.69	*10.99	10.51	8.65	8.33	9.82
From Long Lines Department Net	14.92	19.25	21.20	19.92	21.15	18.96
From Dividends from Bell T. Co. of Canada and Western Electric Company, Inc.	6.97	5.88	5.62	5.44	-5.21	6.19
From Other Revenue	3.33	3.75	3.09	2.69	4.06	6.57
Total	100.00	100.00	100.00	100.00	100.00	100.00

ASSOCIATED OPERATING COMPANIES
(Excludes American Tel.and Tel.Co., Long Lines Dept.)

	% Net Telephone Earnings to Plant	% Net Telephone Earnings to Depreciated Plant	Balance Net Profit (after Pref. Dividend) to Average Common Stock
1918	4.47	5.57	6.08
1919	4.37	5.59	5.83
1920	3.78	4.92	4.66
1921	5.32	6.97	8.15
1922	5.69	7.49	8.74
1923	5.36	7.04	8.34

** Excludes $1,552,180 Central Union Item.
* Red figures

Date issued - February 7, 1924.

C. A. Heiss,
Comptroller
4683

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X- 193 P 2

409

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

EARNINGS ON CAPITAL STOCK

Per Cent on Capital Stock

	1919	1920	1921	1922	1923	1924
Dividends from Associated Operating Companies	6.76	6.96	7.06	6.82	6.60	7.07
Proportion of Associated Operating Companies Undivided Profits	**.68	**2.42	1.36	1.91	1.27	.61
Interest from Associated Operating Companies	2.05	2.68	2.60	1.64	1.14	1.32
4-1/2%	3.34	3.96	4.07	3.62	3.30	3.25
Long Lines Net	2.82	3.43	3.04	2.92	2.51	2.30
Dividends Bell of Canada and Western Electric Company, Inc.	.86	.91	.83	.72	.82	.74
Other Revenue	.55	.50	.41	.56	.87	.71
Total	15.70	16.02	19.37	18.19	16.51	16.00
Total Expenses	* 1.73	2.26	2.75	2.47	2.00	2.03
Interest	3.58	4.22	3.99	2.60	1.89	2.05
Net	10.39	9.54	12.63	13.12	12.62	11.92
Less Proportion of Associated Operating Companies' Undivided Profits	**.68	**2.42	1.36	1.91	1.27	.61
Actual	11.07	11.96	11.27	11.21	11.35	11.31

Assuming that Expenses of American Telephone and Telegraph Company, General Department are paid from the 4-1/2%, the 9% Dividend (8% prior to June, 1921) is derived from the following sources.

	Per Cent Earned on Capital Stock					
	1919	1920	1921	1922	1923	1924
From Dividends from Associated Operating Cos.	46.14	43.02	46.26	49.38	49.85	52.92
From Interest from Associated Operating Cos.	13.99	16.56	17.04	11.87	8.61	9.88
From 4-1/2% (less expenses)	*10.99	10.51	8.65	8.33	9.82	9.13
From Long Lines Department Net	19.25	21.20	19.92	21.15	18.96	17.22
From Dividends from Bell Tel.Co. of Canada and Western Electric Company, Inc.	5.88	5.62	5.44	5.21	6.19	5.54
From Other Revenue	3.75	3.09	2.69	4.06	6.57	5.31
Total	100.00	100.00	100.00	100.00	100.00	100.00

ASSOCIATED OPERATING COMPANIES

(Excludes American Tel.and Tel.Co., Long Lines Dept.)

	% Net Telephone Earnings to Average Plant in Service	Balance Net Profit (after Pref. Dividend) to Average Common Stock
1919	4.37	5.83
1920	3.78	4.66
1921	5.32	8.15
1922	5.69	8.74
1923	5.36	8.34
1924	5.32	7.93

* Excludes $1,552,150 Central Union Item.

** Red figures

Date issued - February 5, 1925.

C. A. Heiss,
Comptroller.

4684

This Copy for
Mr.____________

X-193
p 7

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
EARNINGS ON CAPITAL STOCK

Per Cent on Capital Stock

	1924	1925	1926	1927	1928	1929
Dividends from Associated Operating Cos. .	7.07	7.4[illegible]	8.45	8.30	8.98	8.71
Proportion of Associated Operating Companies' Undivided Profits	.61	1.80	2.31	1.94	2.53	2.46
Interest from Associated Operating Cos. .	1.32	1.55	1.04	1.16	.89	1.15
Licensee Revenue	3.33	3.31	3.05	2.97	1.49	1.10
Long Lines Net	2.30	2.48	2.31	2.11	2.51	2.51
Dividends Bell Tel. Co. of Canada and Western Electric Company, Inc.	74	.74	.88	.79	1.05	1.88
Other Revenue	.63	.61	.51	.37	.46	.66
Total	16.00	17.98	18.55	17.64	17.91	18.47
Total Expenses	2.03	2.02	2.06	1.95	1.41	1.27
Interest	2.05	2.37	2.23	1.99	1.86	2.07
Net	11.92	13.59	14.26	13.70	14.64	15.13
Less Proportion of Associated Operating Companies' Undivided Profits	.61	1.80	2.31	1.94	2.53	2.46
Actual	11.31	11.79	11.95	11.76	12.11	12.67

Assuming that Expenses of American Telephone and Telegraph Company,
General Department are paid from Licensee Revenue, the
9% Dividend is derived from the following sources.

Per Cent

	1924	1925	1926	1927	1928	1929
From Dividends from Associated Oper. Cos..	52.92	52.89	59.61	60.36	64.26	59.12
From Interest from Associated Oper. Cos. .	9.88	10.98	7.36	8.42	6.35	7.79
Licensee Revenue (less Expenses)	9.73	9.12	6.98	7.42	.57	1.17
From Long Lines Department Net	17.22	17.48	16.24	15.38	17.98	17.05
From Dividends from Bell Tel.Co. of Canada and Western Electric Company, Inc. . . .	5.54	5.26	6.21	5.74	7.53	12.72
From Other Revenue	4.71	4.27	3.60	2.68	3.31	4.49
Total	100.00	100.00	100.00	100.00	100.00	100.00

ASSOCIATED OPERATING COMPANIES
(Excludes American Tel. and Tel. Co., Long Lines Dept.)

	% Net Telephone Earnings to Average Plant in Service	Balance Net Profits (after Pref. Dividend) to Average Common Stock
1924	5.32	7.93
1925	5.94	9.23
1926	6.28	9.88
1927	6.13	9.63
1928	6.47	10.19
1929	6.52	10.21

Date issued - January 29, 1930.

C. A. Heiss,
Comptroller.

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Mr. ________

X-193
p 9

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
EARNINGS ON CAPITAL STOCK

Per Cent on Capital Stock

	1927	1928	1929	1930	1931
Dividends from Associated Operating Cos. . . .	8.30	8.98	8.71	7.79	7.50
Proportion of Associated Operating Companies' Undivided Profits	1.94	2.53	2.46	1.08	.46
Interest from Associated Operating Cos.	1.16	.89	1.15	1.09	.78
Licensee Revenue	2.97	1.49	1.10	.95	.80
Long Lines Net	2.11	2.51	2.51	1.95	1.56
Dividends Bell Tel. Co. of Canada and Western Electric Company, Inc.	.79	1.05	1.68	1.54	.64
Other Revenue	.37	.46	.66	.66	.64
Total	17.64	17.91	18.47	15.06	12.38
Total Expenses	1.95	1.41	1.27	1.49	1.19
Interest	1.99	1.86	2.07	2.05	1.66
Net	13.70	14.64	15.13	11.52	9.51
Less Proportion of Associated Operating Companies' Undivided Profits	1.94	2.53	2.46	1.08	.46
Actual	11.76	12.11	12.67	10.44	9.05

Assuming that Expenses of American Telephone and Telegraph Company, General Department are paid from Licensee Revenue, the 9% Dividend is derived from the following sources.

	Per Cent				
	1927	1928	1929	1930	1931
From Dividends from Associated Oper. Cos. . . .	60.36	64.26	59.12	62.38	69.82
From Interest from Associated Oper. Cos. . . .	8.42	6.35	7.79	8.71	7.32
Licensee Revenue (less Expenses)	7.42	.57	*	* 4.34	* 3.61
From Long Lines Department Net	15.36	17.98	17.05	15.64	14.55
From Dividends from Bell Tel. Co. of Canada and Western Electric Co., Inc.	5.74	7.53	12.72	12.30	5.93
From Other Revenue	2.68	3.31	4.49	5.31	5.99
Total	100.00	100.00	100.00	100.00	100.00

ASSOCIATED OPERATING COMPANIES
(Excludes American Tel. and Tel. Co., Long Lines Dept.)

	% Net Telephone Earnings to Average Plant in Service	Balance Net Profits (after Pref. Dividend) to Average Common Stock
1927	6.13	9.63
1928	6.47	10.19
1929	6.52	10.21
1930	5.64	8.68
1931	5.58	8.02

Date issued - January 28, 1932.

C. A. Heiss
Comptroller. S

* Red Figures

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[fol. 4687] EXTRACTS FROM EXHIBIT X-194

195 Broadway Corporation

Month of December, 1923

Balance Sheet

Liabilities:	At End of Month
Capital Stock (Authorized $5,000,000)	$3,000,000.00
6% Mortgage Loan Prudential Insurance Company—Due May 1, 1925	8,400,000.00
Accounts payable	37,657.25
Taxes Accrued Not Due	19,150.50
Interest Accrued Not Due	82,600.00
Other Accrued Liabilities Not Due	2,421.16
Other Deferred Credits	133,405.99
Reserves—Depreciation of Machinery, etc.	360,024.11
—Amortization of Fulton Street Wing and Leasehold	130,670.32
Undivided Profits 1923	0
Surplus	50,000.00
Total Liabilities	$12,215,929.33

[fol. 4688] EXTRACTS FROM EXHIBIT X-194

195 Broadway Corporation

Month of December, 1925

Balance Sheet

Liabilities:	At End of Month
Capital Stock (Authorized $5,000,000)	$3,000,000.00
5% Mortgage Loan Prudential Insurance Company, due May 1, 1930	8,000,000.00
Accounts Payable	21,773.44
Taxes Accrued Not Due	34,142.00
Interest Accrued Not Due	65,555.55
Other Accrued Liabilities Not Due	6,088.14
Other Deferred Credits	2,013.91
Reserves—	
Depreciation of Bldg., Machinery, etc.	574,186.98
Amortization of Fulton Street Wing and Leasehold	166,307.68
Undivided Profits 1925	0
Surplus	50,000.00
Total Liabilities	$11,920,067.70

[fol. 4689]

EXTRACTS FROM EXHIBIT X-194

195 Broadway Corporation

Balance Sheet

December 31, 1928 and 1929

Liabilities:	Dec. 31, 1928	Dec. 31, 1929
Capital Stock (Authorized $5,000,000)	$3,000,000.00	$3,000,000.00
5% Mortgage Loan Prudential Insurance Co., due May 1, 1930	7,700,000.00	7,600,000.00
Notes Payable to Pension Fund Trustee	21,389.80	32,970.50
Accounts Payable	24,192.89	71,883.70
Taxes Accrued Not Due	34,000.00	16,000.00
Interest Accrued Not Due	63,097.20	62,277.80
Other Accrued Liabilities Not Due	5,777.90	5,812.53
Other Deferred Credits	252.43	13,269.26
Reserves—		
Depreciation of Building, Machinery, etc.	952,895.61	1,078,437.08
Amortization of Fulton Street Wing and Leasehold	219,763.72	237,582.40
Surplus	50,000.00	50,000.00
Total Liabilities	$12,071,369.55	$12,168,233.27

[fol. 4690]

EXTRACTS FROM EXHIBIT X-194

195 Broadway Corporation

Balance Sheet

December 31, 1930

Liabilities	(a) Dec. 31, 1930
Capital Stock (Authorized $5,000,000)	$3,000,000.00
5% Mortgage Loan—Prudential Insurance Co.—Due May 1, 1930	0
5-¼% Mortgage Loan—American Tel. and Tel. Co.—Due May 1, 1935	7,500,000.00
Notes Payable to Pension Fund Trustee	45,691.23
Accounts Payable	51,425.68
Taxes Accrued Not Due	18,000.00
Interest Accrued Not Due	64,531.27
Other Accrued Liabilities Not Due	7,644.53
Other Deferred Credits	9,514.35
Reserves—	
Depreciation of Building, Machinery, etc.	1,174,159.61
Amortization of Fulton Street Wing and Leasehold	0
Surplus	46,118.02
Total Liabilities	$11,917,084.69

(a) Before consolidation.

[fol. 4691]

EXTRACTS FROM EXHIBIT X-196

205 Broadway Corporation

Balance Sheet December 31, 1927

	Liabilities:	At End
25	Capital Stock (Authorized $2,500,000)	2,500,000.00
26	5% Mortgage—Prudential Ins. Co., due July 1, 1931	5,900,000.00

[fol. 4692] EXTRACTS FROM EXHIBIT X-196

205 Broadway Corporation

Balance Sheet December 31, 1928

Liabilities:	At End of Month
25 Capital Stock (Authorized $2,500,000)	2,500,000.00
26 5% Mortgage—Prudential Ins. Co., due July 1, 1931	5,800,000.00

[fol. 4693] EXTRACTS FROM EXHIBIT X-197

205 Broadway Building, December 31, 1924

Occupancy

Tenants	Area Occupied (Square Feet)
American Tel. and Tel. Co.—General Dept	139,685
" " " " " —Long Lines Dept	53,690
Western Electric Company, Inc	33,643
Bell Tel. Securities Co., Inc	990
Benedict Brothers	2,225
New York Telephone Company (Booths)	371
Cafeteria	22,148
Ground Floor Centre (Vacant)	798
Roof	6,031
Total	259,581

[fol. 4694] 205 Broadway Corporation, December, 1925

Occupancy 205 Broadway Building

Tenants	Square Feet Last of Month	Per Cent of Total
Amer. Tel. and Tel. Co.—Genl. Dept	140,515	53.84
Amer. Tel. and Tel. Co.—L. L. Dept	54,072	20.72
Western Electric Company, Inc	32,455	12.44
Bell. Tel. Securities Co., Inc	968	.37
Bell Telephone Laboratories, Inc	498	.19
Benedict Brothers	2,225	.85
New York Tel. Co. (Booths)	371	.14
Cafeteria	22,148	8.49
Ground Floor Center (b)	798	.30
Roof	6,553	2.51
205 Broadway Corp.—Manager	383	.15
Total	260,986	100.00

[fol. 4695] 205 Broadway Corporation, December, 1926

Occupancy 205 Broadway Building

Tenants	Square Feet Last of Month	Per Cent of Total
American T. and T. Co.—General Dept	189,658	72.65
" " " " " —Long Lines Dept	3,876	1.48
Western Electric Company, Inc	33,496	12.83
Bell Tel. Securities Company	968	.37
Bell Tel. Laboratories, Inc	498	.19
Benedict Brothers	2,225	.85
New York Tel. Co. (Booths)	371	.14
Cafeteria	22,148	8.48
Ground Floor Center	920	.35
Roof	6,553	2.51
205 Broadway Corporation—Manager	395	.15
Total	261,108	100.00

[fol. 4696]

EXTRACTS FROM EXHIBIT X-198

Occupancy Report

195 and 205 Broadway Buildings as of December 31, 1927

Tenants	Dec. 31, 1927, Square Feet	Per Cent of Total
American Tel. and Tel. Co.—General	366,834	56.23
" " " " " —Subleased	0	0
" " " " " —Long Lines	8,188	1.20
Western Electric Company, Inc.	112,149	17.19
Western Union Telegraph Company	112,497	17.25
Bell Telephone Securities Company	1,713	.26
Bell Telephone Laboratories, Inc.	498	.08
Benedict Brothers	2,225	.34
New York Telephone Co. (Booths)	1,363	.21
Ground Floor Centre	1,970	.30
Roof	6,553	1.00
195 Broadway Corporation—Manager	5,117	.78
205 " " — "	635	.10
205 " " —Restaurant	28,336	4.34
Other	4,278	.66
Vacant	0	0
Total	652,356	100.00

[fol. 4697]

Occupancy Report

195 and 205 Broadway Building as of December 31, 1928

Tenants	Dec. 31, 1928, Square Feet	Per Cent of Total
American Tel. and Tel. Co.—General	365,244	55.99
" " " " " —Long Lines	8,188	1.26
Western Electric Company, Inc.	112,513	17.25
Western Union Telegraph Company	113,583	17.41
Bell Telephone Securities Company, Inc.	1,713	.26
Bell Telephone Laboratories, Inc.	498	.08
Benedict Brothers	2,225	.34
New York Tel. Co. (Booths)	1,363	.21
Ground Floor Centre	1,970	.30
Roof	6,553	1.00
195 Broadway Corporation—Manager	5,257	.80
205 " " — "	635	.10
205 " " —Restaurant	28,336	4.34
Other	4,278	.66
Vacant	0	0
Total	652,356	100.00

[fol. 4698]

Occupancy Report

195 and 205 Broadway Buildings as of December 31, 1929

Tenants	Dec. 31, 1929, Square Feet	Per Cent of Total
American Tel. and Tel. Co.—General	366,691	56.19
" " " " " —Long Lines	8,617	1.32
Western Electric Company, Inc.	114,191	17.50
Western Union Telegraph Company	113,196	17.34
Bell Telephone Securities Company	.....	....

Tenants	Dec. 31, 1929, Square Feet	Per Cent of Total
Bell Telephone Laboratories, Inc.	498	.08
Benedict Bros.	2,225	.34
New York Tel. Co. (Booths)	1,363	.21
Ground Floor Centre	1,970	.30
Roof	6,553	1.00
195 Broadway Corporation—Manager	4,761	.73
205 " " — "	700	.11
205 " " —Restaurant	28,336	4.34
Other	3,515	.54
Vacant	......	....
Total	652,616	100.00

[fol. 4699] Occupancy Report

195 and 205 Broadway Buildings as of December 31, 1930

Tenants	Dec. 31, 1930, Square Feet	Per Cent of Total
American Tel. and Tel. Co.—General	426,659	65.38
" " " " " —Long Lines	10,276	1.57
Western Electric Company, Inc.	154,760	23.71
Western Union Telegraph Company	9,448	1.44
Bell Telephone Securities Company	......	....
Bell Telephone Laboratories, Inc.	620	.13
Benedict Bros.	2,225	.34
New York Tel. Co. (Booths)	1,363	.21
Ground Floor Centre	1,970	.30
Roof	6,553	1.01
195 Broadway Corporation—Manager	5,999	.92
205 " " — "	657	.10
205 " " —Restaurant	28,401	4.35
Other	3,515	.34
Vacant	......	....
Total	652,616	100.00

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Mr._________________

EXTRACTS FROM EXHIBIT X-200

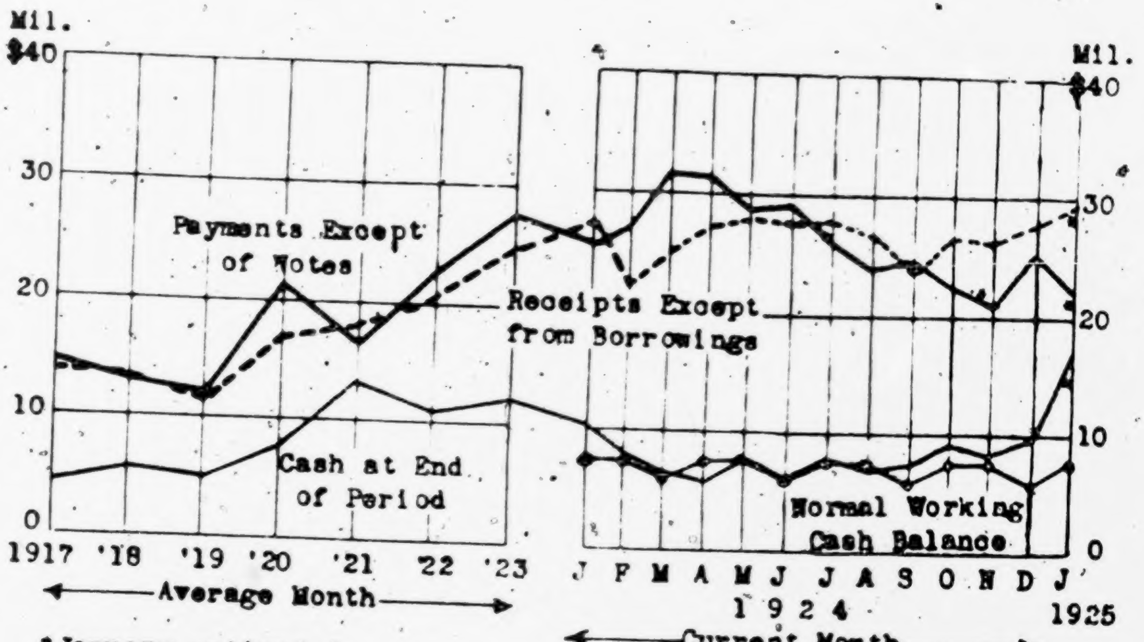
Comptroller's Report No. 7.14

X-200
P-18

WESTERN ELECTRIC COMPANY,
Incorporated

CASH ESTIMATE FOR MONTH OF JANUARY 1925.

It is estimated that the cash balance at January 31, 1925 will be $16,927,000 or an increase of $7,109,000 since December 31, 1924.



←Current Month→

*January estimated

	a January 1925 Estimated	b December 1924 Actual	
Summary.			
Current Payments - - - - - - - - - - - -	$21,047,000	$21,695,000	1
Other Payments - - - - - - - - - - - - -	1,100,000	3,482,000	2
Total Payments Except of Borrowings (1 + 2) - - - - - - -	22,147,000	25,175,000	3
Total Receipts Except from Borrowings-	29,256,000	27,819,000	4
Receipts from Sale of Bonds- - - - - -	0	0	5
Borrowings from A.T. & T. Co. (Net)-	0	0	6
Borrowings from Banks (Net)- - - - -	0	1,000,000	7
Total (6 + 7)- - - - - - - - - -	0	1,000,000	8
Net Borrowings (5 + 8) - - - - - - - -	0	1,000,000	9
Total (4 + 9)- - - - - - - - - -	29,256,000	26,819,000	10
Receipts Exceed Payments (10 - 3)- - -	7,109,000	1,644,000	11
Cash and Deposits.			
Beginning of Period- - - - - - - - -	9,818,000	8,174,000	12
End of Period - - - - - - - - - - -	16,927,000	9,818,000	13
Normal Working Cash Balance - - - -	7,500,000	6,000,000	14
Cash Over Normal (13 - 14) - - -	9,427,000	3,818,000	15

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EXHIBIT X-200
-2-
CM-7.14

X-200
P-19

	a January 1925 Estimated	b December 1924 Actual	c Change (a-b)		d Per Cent Over Estimated Last Month	e Total Twelve Months 1924	
Analysis of Payments.							
Pay Rolls	$6,318,000	$7,683,000	$1,365,000	-	[5]	$103,942,000	1
Metals	2,626,000	2,201,000	425,000	+	5	35,065,000	2
Manufacturing Plant (Outside Manufactures Only)	641,000	483,000	158,000	+	-	7,959,000	3
Poles	455,000	448,000	7,000	+	0	6,189,000	4
Taxes	74,000	253,000	179,000	-	[7]	2,126,000	5
Interest	0	0			0	1,514,000	6
Other Current Vouchers Including Own Manufactures	10,933,000	10,625,000	308,000	+	1	146,296,000	7
Total Current Payments (1 to 7)	21,047,000	21,693,000	646,000	-	-	303,091,000	8
Dividends on Common Stock to A. T. & T. Co.	0	1,228,000	1,228,000	-	0	4,914,000	9
Dividends on Common Stock to Others	0	22,000	22,000	-	0	86,000	10
Dividends on Preferred Stock	0	432,000	432,000	-	0	1,728,000	11
International Telephone Sales and Engineering Corporation	1,100,000	1,800,000	700,000	-	11	6,850,000	12
Total Other Payments (9 to 12)	1,100,000	3,482,000	2,382,000	-	6	13,578,000	13
Grand Total (8 + 13)	22,147,000	25,175,000	3,028,000	-	1	316,669,000	14
Analysis of Receipts.							
Collections from Bell Telephone Companies	22,094,000	20,049,000	2,045,000	+	[2]	230,510,000	15
Collections from Others	7,162,000	7,770,000	608,000	-	[7]	86,150,000	16
Total Current Receipts (15 + 16)	29,256,000	27,819,000	1,437,000	+	[3]	316,660,000	17
Receipts from Sale of Bonds	0	0	0		0	32,774,000	18
Borrowings from A. T. & T. Co. (Net)	0	0	0		0	[6,000,000]	19
Borrowings from Banks (Net)	0	[1,000,000]	1,000,000	+	-	[29,000,000]	20
Total (19 + 20)	0	[1,000,000]	1,000,000	+	-	[35,000,000]	21
Net Borrowings (18 + 21)	0	[1,000,000]	1,000,000	+	-	[2,226,000]	22
Total Receipts (17 + 22)	29,256,000	26,819,000	2,437,000	+	-	314,434,000	23

Bank Deposits 29f bear interest as follows:

	f At End of Preceding Month
Cash and Deposits.	
Cash on Hand	$ 320,000
Deposits in N.Y.C. Banks	7,374,000
Deposits in Chicago Banks	1,501,000
Deposits in Other Principal Depositories	623,000
Total (25 to 28)	9,498,000
Total Cash Deposits (24 + 29)	9,818,000

	g At End of Preceding Month	
At 4% per Annum	$ 0	24
At 3% per Annum	3,000	25
At 2-1/2% per Annum	386,000	26
At 2-1/4% per Annum	0	27
At 2% per Annum	9,034,000	28
At 0% per Annum	75,000	29
Total Bank Deposits (24 to 29)	9,498,000	30
Normal Cash Balance	6,000,000	31
Average Daily Cash Balance for Month	7,703,000	32
Non-Interest Bearing Cash 29g to Total 30g	1%	33
Normal Cash Balance 31g to Current Payments 8b	27.7%	34
Average Daily Balance 32g to Current Payments 8b	35.5%	35

☐ Indicates negative figures.

Date Issued 1925
Should be issued not later than 12th working day.

R. Gregory
Comptroller.

4701

Copy to President,
Vice President (HAH),
Treasurer,
Comptroller (A.T. & T. Co.),
Assistant to President,
Assistant Treasurers (HHR & GBP), Chief Statistician.
Comptroller,
Assistant Comptroller

4097

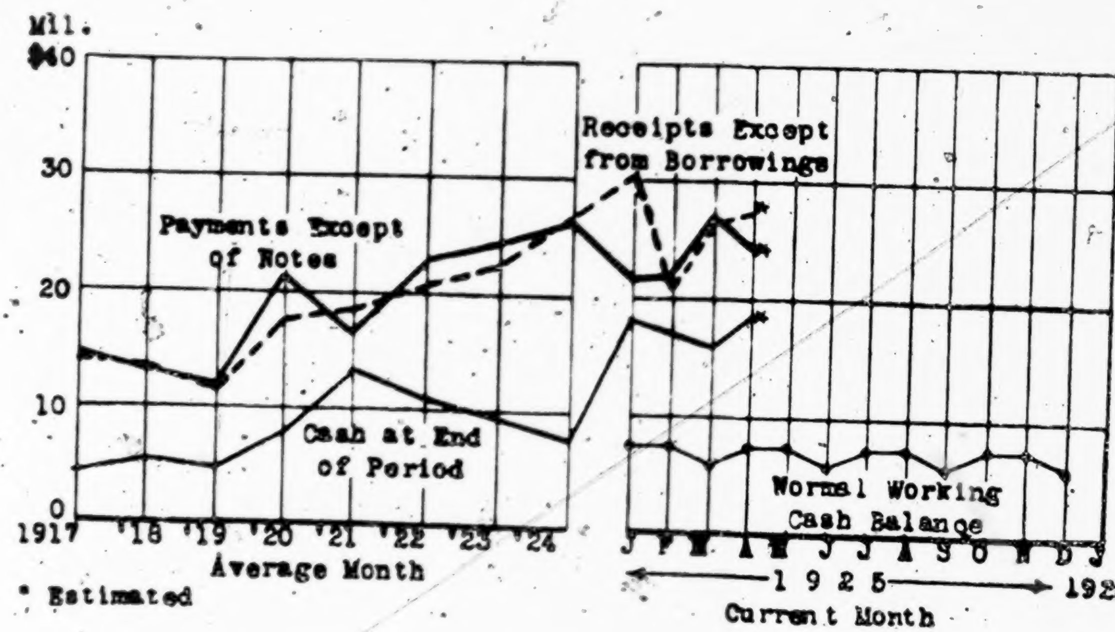
This Copy for
Mr.______________________

Comptroller's Report No. 7.14
L-200
P-20

WESTERN ELECTRIC COMPANY,
Incorporated

CASH ESTIMATE FOR MONTH OF APRIL 1925.

The estimated receipts and payments for the month of April indicate that the cash balance including special cash deposits at April 30, 1925 will be $18,984,000, an increase of $9,064,000 since December 31, 1924.



Summary.	a April 1925 Estimated	b March 1925 Actual	c Total Four Months	
Current Payments - - - - - - - - - -	$23,742,000	$25,408,000	$90,818,000	1
Other Payments - - - - - - - - - - -	650,000	2,232,000	4,782,000	2
Total Payments Except of Borrowings (1 + 2) - - - - -	24,392,000	27,640,000	95,600,000	3
Total Receipts Except from Borrowings	27,269,000	26,597,000	104,664,000	4
Receipts Exceed Payments (4 - 3) - -	2,877,000	1,043,000	9,064,000	5
Cash and Deposits.				
Beginning of Period - - - - - - -	16,107,000	17,150,000	9,920,000	6
End of Period - - - - - - - - - -	18,984,000	16,107,000	18,984,000	7
Normal Working Cash Balance - - - -	7,500,000	6,000,000	7,500,000	8
Cash Over Normal (7 - 8) - - - - -	11,484,000	10,107,000	11,484,000	9

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CM-7.14

K-200
P.21

	a	b	c	d	e	
	April 1925 Estimated	March 1925 Actual	Change (a-b)	Per Cent Over Estimated Last Month	Total Three Months 1925	
Analysis of Payments.						
Pay Rolls	$7,049,000	$6,361,000	$ 688,000 +	.8	$18,650,000	1
Metals	3,250,000	4,041,000	791,000 -	$\boxed{1.6}$	9,630,000	2
Manufacturing Plant (Outside Manufactures Only)	684,000	445,000	239,000 +	$\boxed{14.8}$	1,349,000	3
Poles	480,000	460,000	20,000 +	.0	1,406,000	4
Taxes	319,000	1,394,000	1,075,000 -	3.8	1,453,000	5
Bell Telephone Laboratories, Inc.	825,000	828,000	3,000 -	$\boxed{1.0}$	1,643,000	6
Interest	0	875,000	875,000 -	.0	875,000	7
Other Current Vouchers Including Own Manufactures	11,135,000	11,004,000	131,000 +	$\boxed{2.1}$	32,070,000	8
Total Current Payments (1 to 8)	23,742,000	25,408,000	1,666,000 -	$\boxed{1.0}$	67,076,000	9
Dividends on Common Stock to A. T. & T. Co.	0	1,228,000	1,228,000 -	.0	1,228,000	10
Dividends on Common Stock to Others	0	22,000	22,000 -	.0	22,000	11
Dividends on Preferred Stock	0	432,000	432,000 -	.0	432,000	12
International Telephone Sales and Engineering Corporation	650,000	550,000	100,000 +	27.5	2,450,000	13
Total Other Payments (10 to 13)	650,000	2,232,000	1,582,000 -	6.7	4,132,000	14
Grand Total (9 + 14)	24,392,000	27,640,000	3,248,000 -	$\boxed{1.4}$	71,208,000	15
Analysis of Receipts.						
Collections from Bell Telephone Companies	19,868,000	18,634,000	1,234,000 +	2.8	55,448,000	16
Collections from Others	7,401,000	7,963,000	562,000 -	$\boxed{9.6}$	21,947,000	17
Total Current Receipts (16 + 17)	27,269,000	26,597,000	672,000 +	$\boxed{.9}$	77,395,000	18
Receipts Exceed Payments (18 - 15)	2,877,000	$\boxed{1,043,000}$	3,920,000 +	- -	6,187,000	19

Bank Deposits 28f bear interest as follows:

	f
	At End of Preceding Month
Cash and Deposits.	
Cash on Hand	$ 475,000
Deposits in N.Y.C. Banks	6,424,000
Deposits in Chicago Banks	43,000
Deposits in Other Principal Depositories.	
Certificates of Deposit	7,000,000
Special Account	1,004,000
Other	1,161,000
Total (21 to 27)	15,632,000
Total Cash and Deposits (20 + 28)	16,107,000

	g	
	At End of Preceding Month	
At 3-1/2% per Annum.		20
Certificates of Deposit	$ 5,000,000	21
At 3% per Annum.		22
Certificates of Deposit	2,000,000	23
Special Account	1,004,000	24
Other	3,000	25
At 2-1/2% per Annum	507,000	26
At 2% per Annum	7,052,000	27
At 0% per Annum	66,000	28
Total Bank Deposits (20 to 28)	15,632,000	29
Normal Cash Balance	6,000,000	30
Average Daily Cash Balance For Month	12,781,000	31
Non-Interest Bearing Cash 28g to Total 29g	.4%	32
Normal Cash Balance 30g to Current Payments 9b	23.6%	33
Average Daily Balance 31g to Current Payments 9b	50.3%	34

☐ Indicates negative figures.

Date Issued ____________________

*Should be issued not later than 12th working day.

T. K. Stevenson

Assistant Comptroller.

4703

Copy to: President,
Vice President (HAH),
Treasurer,
Assistant to President,
Comptroller (A.T. & T. Co.),
Assistant Treasurers (HHR & GRP),
Comptroller,
Assistant Comptroller,
Chief Statistician.

K-200
P-22

This Copy for
Mr.________

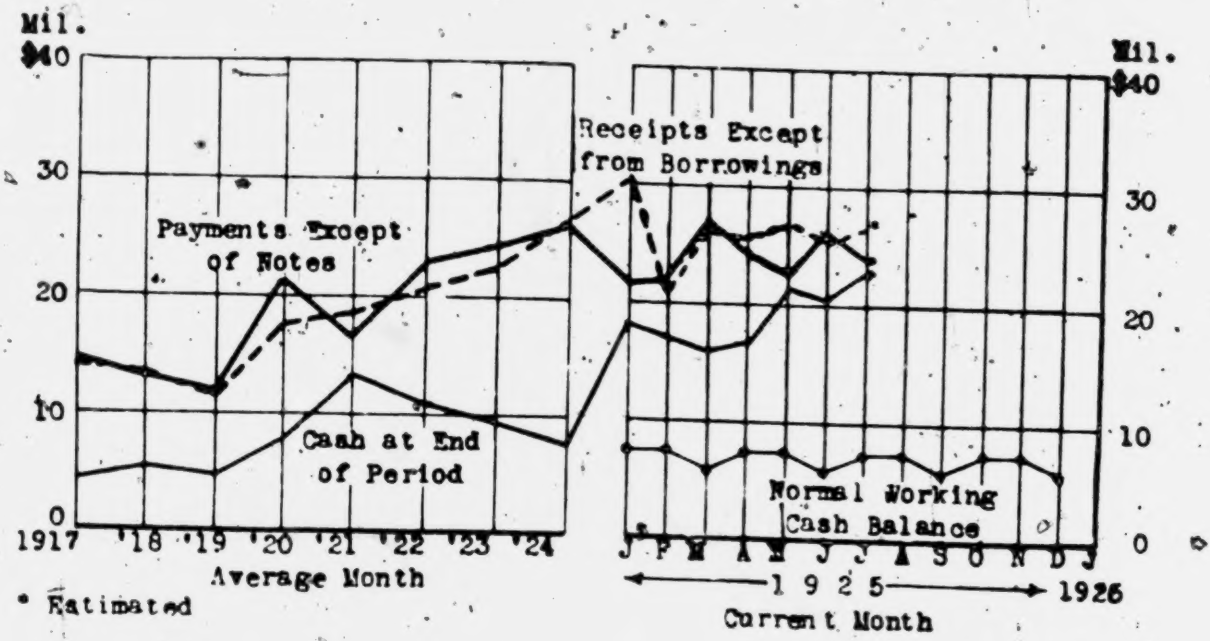
EXHIBIT X-200

Comptroller's Report No. 7.14

WESTERN ELECTRIC COMPANY,
Incorporated

CASH ESTIMATE FOR MONTH OF JULY 1925.

The estimated receipts and payments for the month of July indicate that the cash balance including special cash deposits at July 31, 1925 will be $23,076,000, an increase of $13,156,000 since December 31, 1924.



• Estimated

Summary.

	a July 1925 Estimated	b June 1925 Actual	c Total Seven Months	
Current Payments - - - - - - - - - - -	$23,470,000	$24,383,000	$161,555,000	1
Other Payments - - - - - - - - - - - -	900,000	2,082,000	8,114,000	2
Total Payments Except of Borrowings (1 + 2) - - - - -	24,370,000	26,465,000	169,669,000	3
Total Receipts Except from Borrowings	26,704,000	25,968,000	182,825,000	4
Receipts Exceed Payments (4 - 3) - -	2,334,000	497,000	13,156,000	5
Cash and Deposits.				
Beginning of Period - - - - - - - -	20,742,000	21,239,000	9,920,000	6
End of Period - - - - - - - - - - -	23,076,000	20,742,000	23,076,000	7
Normal Working Cash Balance- - - -	7,500,000	6,000,000	7,500,000	8
Cash Over Normal (7 - 8)- - - -	15,576,000	14,742,000	15,576,000	9

E-200
P-23

CM-7.14

	a July 1925 Estimated	b June 1925 Actual	c Change (a-b)		d Per Cent Over Esti- mated Last Month	e Total Six Months 1925	
Analysis of Payments.							
Pay Rolls	$6,564,000	$6,257,000	$ 307,000	+	$\boxed{.6}$	$38,172,000	1
Metals	3,279,000	3,446,000	167,000	-	$\boxed{1.5}$	19,103,000	2
Manufacturing Plant (Outside Manufactures Only)	580,000	570,000	10,000	+	13.2	3,226,000	3
Poles	545,000	621,000	76,000	-	$\boxed{21.7}$	2,992,000	4
Taxes	72,000	640,000	568,000	-	7.0	2,411,000	5
Bell Telephone Laboratories, Inc.	825,000	1,119,000	294,000	-	12.8	4,004,000	6
Interest	0	0	0		.0	875,000	7
Other Current Vouchers Including Own Manufactures	11,605,000	11,730,000	125,000	-	$\boxed{2.7}$	67,302,000	8
Total Current Payments (1 to 8)	23,470,000	24,383,000	913,000	-	$\boxed{1.2}$	138,085,000	9
Dividends on Common Stock to A.T. & T.Co.	0	1,228,000	1,228,000	-	.0	2,456,000	10
Dividends on Common Stock to Others	0	22,000	22,000	-	.0	44,000	11
Dividends on Preferred Stock	0	432,000	432,000	-	.0	864,000	12
Loan to Bell Telephone Laboratories, Inc.	200,000	0	200,000	+	.0	0	13
International Telephone Sales and Engineering Corporation	700,000	400,000	300,000	+	- -	3,850,000	14
Total Other Payments (10 to 14)	900,000	2,082,000	1,182,000	-	14.4	7,214,000	15
Grand Total (9 + 15)	24,370,000	26,465,000	2,095,000	-	- -	145,299,000	16
Analysis of Receipts.							
Collections from Bell Telephone Companies	19,319,000	18,373,000	946,000	+	$\boxed{.1}$	112,472,000	17
Collections from Others	7,385,000	7,595,000	210,000	-	$\boxed{2.2}$	43,649,000	18
Total Current Receipts (17 + 18)	26,704,000	25,968,000	736,000	+	$\boxed{.7}$	156,121,000	19
Receipts Exceed Payments (19-16)	2,334,000.	$\boxed{497,000}$	2,831,000	+	- -	10,822,000	20

Cash and Deposits.	f End of Preceding Month
Cash on Hand	$ 312,000
Deposits in N.Y.C. Banks	3,079,000
Deposits in Chicago Banks.	
Certificates of Deposit	3,000,000
Other	1,473,000
Deposits in Other Principal Depositories.	
Special Bank Accounts	4,000,000
Certificates of Deposit	7,000,000
Other	1,878,000
Total (22 to 30)	20,430,000
Total Cash and Deposits (21 + 31)	20,742,000

Bank Deposits 31f bear interest as follows:

	g At End of Preceding Month	
At 3-1/2% per Annum.		21
Certificates of Deposit		22
and Special Bank Accounts	$14,000,000	23
At 3% per Annum	3,000	24
At 2-1/2% per Annum	1,087,000	25
At 2 % per Annum	5,250,000	26
At 0 % per Annum	90,000	27
		28
Total Bank Deposits (23 to 27)	20,430,000	29
		30
		31
Normal Cash Balance	6,000,000	32
Average Daily Cash Balance for Month	17,369,000	33

Non-Interest Bearing Cash 27g to Total 29g	.4%	34
Normal Cash Balance 32g to Current Payments 9b	24.6%	35
Average Daily Balance 33g to Current Payments 9b	71.2%	36

☐ Indicates negative figures.

Date Issued JUL 1 1925
Should be issued not later than 12th working day.

T. K. Stevenson
Assistant Comptroller

Copy to: President,
Vice President (HAH),
Treasurer,
Assistant to President,
Comptroller, (A.T. & T.Co.),
Assistant Treasurers (HHR & GBP),
Comptroller,
Assistant Comptrollers,
Chief Statistician.

4705

This Copy for
Mr. ____________

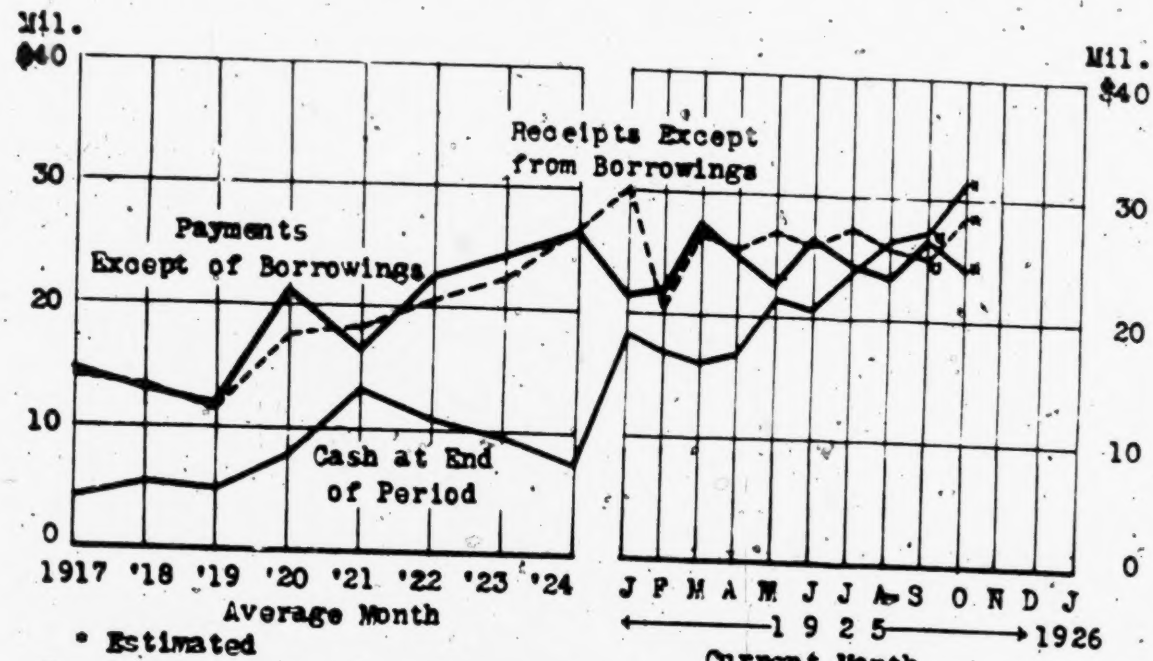
Comptroller's Report No. 7.14

K-200
P-24

WESTERN ELECTRIC COMPANY,
Incorporated

CASH ESTIMATE FOR MONTH OF OCTOBER 1925.

The excess of estimated receipts over estimated payments of $4,532,000 indicates that the cash balance including special cash deposits at October 31st, will be $31,731,000, an increase of $21,811,000 since December 31, 1924.



* Estimated

U Figures exclude the transactions in connection with the sale of the International Western Electric Company, Incorporated.

Summary.	a October 1925 Estimated	b September 1925 Actual	c Total Ten Months	
Current Payments	$23,380,000	$24,643,000	$231,607,000	1
Other Payments	800,000	29,168,000	39,482,000	2
Total Payments Except of Borrowings (1 + 2)	24,180,000	53,811,000	271,089,000	3
Total Receipts Except from Borrowings	28,712,000	54,433,000	292,900,000	4
Borrowings from A. T. & T. Company on September 15th at 3 1/2%	0	15,000,000	15,000,000	5
Payments of Borrowings from A. T. & T. Company on September 30th	0	15,000,000	15,000,000	6
Net Receipts from Borrowings (5 - 6)	0	0	0	7
Total Receipts (4 + 7)	28,712,000	54,433,000	292,900,000	8
Receipts Exceed Payments (8 - 3)	4,532,000	622,000	21,811,000	9
Cash and Deposits.				
Beginning of Period	27,199,000	26,577,000	9,920,000	10
End of Period	31,731,000	27,199,000	31,731,000	11

4102

P-25

- 2 -
CM-7.14

	a October 1925 **Estimated**	b September 1925 **Actual**	c **Change** (a–b)	d Per Cent Over Esti- mated Last **Month**	e Total Nine Months **1925**	
Analysis of Payments.						
Pay Rolls	$6,245,000	$6,136,000	$ 109,000+	.2	$57,008,000	1
Metals	3,545,000	3,549,000	4,000–	$\boxed{.5}$	28,879,000	2
Manufacturing Plant (Outside Manufactures Only)	585,000	587,000	2,000–	$\boxed{2.9}$	4,806,000	3
Poles	549,000	590,000	41,000–	$\boxed{13.1}$	4,758,000	4
Taxes	51,000	716,000	665,000–	3.8	3,168,000	5
Bell Telephone Laboratories, Incorporated	750,000	608,000	142,000+	21.6	6,181,000	6
Interest	0	897,000	897,000–	.0	1,772,000	7
Other Current Vouchers Including Own Manufactures	11,655,000	11,560,000	95,000+	$\boxed{1.0}$	101,656,000	8
Total Current Payments (1 to 8)	23,380,000	24,643,000	1,263,000–	.0	208,227,000	9
Redemption to 7% Preferred Stock	0	27,148,000	27,148,000–	.0	27,148,000	10
Dividends on Common Stock to A. T. & T. Co.	0	1,229,000	1,229,000–	.0	3,687,000	11
Dividends on Common Stock to Others	0	21,000	21,000–	.0	63,000	12
Dividends on Preferred Stock	0	370,000	370,000–	.0	1,234,000	13
Loan to Bell Telephone Laboratories, Incorporated	100,000	0	100,000+	.0	200,000	14
International Telephone Sales and Engineering Corporation	700,000	400,000	300,000+	- -	6,350,000	15
Total Other Payments (10 to 15)	800,000	29,168,000	28,368,000–	1.0	38,682,000	16
Grand Total (9 + 16)	24,180,000	53,811,000	29,631,000–	.6	246,909,000	17
Analysis of Receipts.						
Sale of International Western Electric Co., Inc.	0	29,307,000	29,307,000–	$\boxed{1.0}$	29,307,000	18
Collections from Bell Telephone Companies	21,309,000	17,210,000	4,099,000+	$\boxed{.1}$	167,217,000	19
Collections from Others	7,403,000	7,916,000	513,000–	$\boxed{4.3}$	67,664,000	20
Total Current Receipts (18 to 20)	28,712,000	54,433,000	25,721,000–	$\boxed{1.2}$	264,188,000	21
Borrowings from A.T. & T.Co. on Sept. 15th at 3-1/2%	0	15,000,000	15,000,000–	.0	15,000,000	22
Payments of above Borrowings from A. T. & T.Co. on Sept. 30th	0	15,000,000	15,000,000–	.0	15,000,000	23
Net Receipts from Borrowings (22 – 23)	0	0	0	.0	0	24
Total Receipts (21 + 24)	28,712,000	54,433,000	25,721,000–	$\boxed{1.2}$	264,188,000	25
Receipts Exceed Payments (25 – 17)	4,532,000–	622,000	3,910,000+	- -	17,279,000	26

Cash and Deposits.	f End of Preceding **Month**
Cash on Hand	$ 800,000
Deposits in N. Y. C. Banks	19,820,000
Deposits in Chicago Banks	1,797,000
Deposits in Other Principal Depositories	
Special Bank Account	2,028,000
Other	2,754,000
Total (28 to 32)	26,399,000
Total Cash and Deposits (27 + 33)	27,199,000

Bank Deposits 33f bear interest as follows:

At 3-1/2% per Annum.	g At End of Preceding **Month**	
		27
Special Bank Account	$ 2,028,000	28
At 3% per Annum	4,000	29
At 2-1/2% per Annum	1,833,000	30
At 2% per Annum	22,458,000	31
At 0% per Annum	76,000	32
Total Bank Deposits (28 to 32)	26,399,000	33
Normal Cash Balance	6,000,000	34
Average Daily Cash Balance for Month	16,921,000	35

Non-Interest Bearing Cash 32g to Total 33g	.3%	36
Normal Cash Balance 34g to Current Payments 9b	24.4	37
Average Daily Balance 35g to Current Payments 9b	68.7	38

☐ Indicates negative figures.

Copy to;

President,
Vice President (HAM),
Treasurer,
Assistant to President,

Comptroller (A.T. & T.Co.),
Assistant Treasurers (HHR & GHP),
Comptroller,
Assistant Comptroller,
Chief Statistician.

Date Issued OCT 16 1925
Should be issued not later than 12th working day.

RHGregory
Comptroller.

4707

(X-206-10-SHEETS)
(1923 TO 1930)

EXHIBIT X-206

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
CASH STATEMENT FOR YEARS 1922 AND 1923

P-1

	1922	1923	Increase
Receipts - General Department:			
Capital Stock Installments	$104,519,389.20	$ 15,548,705.50	$ 88,970,683.70*
A. T. and T. Co. 5-1/2% Deb. Bonds 1943.	0	94,750,000.00	94,750,000.00
Int. A.T.& T.Co. " " "	0	213,888.89	213,888.89
Associated Companies -			
Under License Contracts	21,667,603.49	24,309,416.88	2,641,813.39
Interest	9,927,081.78	9,660,795.92	266,285.86*
Dividends	44,481,269.42	54,346,258.93	9,864,989.51
Notes Paid	70,645,518.82	92,163,390.78	21,517,871.96
Loans Paid	16,698,832.99	31,984,092.40	15,085,259.41
Notes Sold	15,800,000.00	0	15,800,000.00*
Loans on Open Account	45,188,803.17	29,255,563.77	15,933,239.40*
Taxes Reimbursed	6,178,315.22	7,937,902.84	1,759,587.62
Bonds Sold - New Eng. T.& T.Co. 4% 1930.	352,216.00	0	352,216.00*
U.S. Liberty Loan 3-1/2%	22,466.22	0	22,466.22*
Home L.D.T.Co. 1st Mtg.5s	0	2,271,410.00	2,271,410.00
Bonds Retired - Western Elec. 1st Mtg.5s	647,000.00	0	647,000.00*
Bonds Called - Bell T.Co.of Pa.1st Mtg.7s	0	1,593,150.00	1,593,150.00
Notes Called - S.W.Bell T.Co. 7% Conv.	0	1,575,900.00	1,575,900.00
Notes Retired - Ohio State T.Co.Conv. 7s	631,100.00	0	631,100.00*
Stocks Sold	600,000.00	3,671,777.50	3,071,777.50
Stocks Called - Mich.State T.Co. - Pref.	0	2,183,700.00	2,183,700.00
Atlantic and Pacific T.and T.Co.	156,727.72	0	156,727.72*
Long Lines Department -			
Account Net Earnings	17,277,195.83	18,137,678.49	860,482.66
Proportion Genl. Dept. Expense	1,422,856.73	1,592,180.55	169,323.82
Miscellaneous	164,339.81	383,690.03	219,350.22
Taxes Reimbursed	1,843,865.57	2,845,409.35	1,001,543.78
Trustees Emp. 2nd Stock Pur. Plan -			
Payments	1,901,680.49	0	1,901,680.49*
Dividends	646,913.25	0	646,913.25*
Sale of Rights	50,115.00	0	50,115.00*
A.T. and T.Co. Stock Sold	8,780,876.59	0	8,780,[illegible]76.59*
Employees' Subn. Agree. Forms S.N. 345C	8,341,443.66	0	8,341,443.66*
Employees' Stock Plan, May 1, 1921 Payts.	30,142,790.52	16,851,714.41	13,291,076.11*
Cameron Blaikie and Company	3,406,346.25	0	3,406,346.25*
Temporary Cash Loans Paid -			
Government Obligations	191,745,457.73	226,565,614.23	34,820,156.50
Interest Government Obligations	4,550,424.75	3,839,089.05	711,335.70*
Certificates of Deposit Paid	18,200,000.00	20,000,000.00	1,800,000.00
Interest Certificates of Deposit	84,621.47	146,503.42	61,881.95
Bankers' Acceptances Sold	0	3,187,249.82	3,187,249.82
Bond Conversions -			
Premiums	1,879,806.00	647,706.00	1,232,1[illegible].00*
Adjustments	146,095.72	24,189.50	121,906.22*
Federal Income Tax Withheld	13,373.03	13,077.50	295.53*
Interest on Bank Deposits	652,567.23	562,318.87	90,248.36*
Miscellaneous Receipts	1,380,000.35	1,182,562.23	197,438.12*
Total Receipts	630,347,094.01	667,444,936.86	37,097,842.85
Cash and Deposits January 1st, A.M.	28,623,112.94	25,543,216.96	3,079,895.98*
Total	$658,970,206.95	$692,988,153.82	$ 34,017,946.87

* Red figures

4708

K-206 P-2

Disbursements - General Department:	1922	1923	Increase
Allotments (Except Instruments,	$158,316,807.04	$296,721,371.93	$138,404,564.89
Western Elec.Co. (Incl.Instru. Allot.)	6,429,464.57	6,897,035.78	467,571.21
Dividends	51,299,991.00	69,155,057.73	17,855,066.73
Interest	16,781,619.40	13,194,483.16	3,587,136.24*
Taxes (Incl. Payments for Assoc. Cos., and Long Lines Dept.)	9,059,122.48	13,419,165.10	4,360,042.62
Payroll	4,611,995.05	5,371,299.36	759,304.31
Vouchers (Expenses, etc.)	3,940,882.73	4,875,232.11	934,349.38
Bond Conversions - Adjustment	135,806.44	38,762.81	97,043.63*
Stocks Purchased (Except Allotment)	13,351,161.78	170,942.23	13,180,219.55*
Notes Purchased -			
A.T.& T.Co. 6% Notes 1922 Reacquired	15,068,601.72	0	15,068,601.72*
Southwestern Bell T.Co. Conv. 7s	0	1,578,761.81	1,578,761.81
Notes Retired -			
A.T. & T.Co. 6% Notes 1922	34,111,700.00	378,500.00	33,733,200.00*
A.T. & T.Co. 6% Notes 1924	0	9,562,109.33	9,562,109.33
Bonds Purchased -			
Bell Tel.Co. of Pa. 1st Mtg. 7s	52,988.13	1,542,694.51	1,489,706.38
Michigan State T.Co. 1st Mtg. 5s	1,042,518.14	1,124,444.70	81,926.56
Western Electric Co. 1st Mtg. 5s	647,725.64	0	647,725.64*
Western T.and T.Co. Coll. Tr. 5s	14,175.00	0	14,175.00*
L.L.Bonds Purch.for State Indus.Comm.	27,434.69	0	27,434.69*
For Account of Ill. Bell Tel. Co. - Chicago Tel. Co. 1st Mtg. 5s	0	2,391,353.75	2,391,353.75
Temporary Cash Invest. - Gov. Oblig. - (Including Interest Accrued when Bought)	250,453,262.23	178,846,687.21	71,606,575.02*
Certificates of Deposit	18,200,000.00	0	18,200,000.00*
Bank Acceptances Purchased	0	3,679,894.47	3,679,894.47
Employees' Stock Payments May 1,1921 Plan - General Department	1,004,355.46	436,678.57	567,676.89*
Employees' Subs.Agree. Form S.H. 545C	8,294,500.00	0	8,294,500.00*
Construction Bway.and Fulton St.Bldg.	3,342,470.59	519,331.02	2,823,139.57*
Old Colony Trust Co. Trustees Sinking Fund Collateral Trust 5s	799,686.28	800,00 .00	313.72
Kidder, Peabody & Co. Special Payment	1,171,945.00	0	1,171,945.00*
Bell Tel. Sec.Co.on Acct.under Agree.	600,000.00	0	600,000.00*
Loan to Bell Tel. Sec. Co., Inc.	3,480,000.00	5,310,000.00	1,830,000.00
Loan to West. Elec. Co., Inc.	12,000,000.00	15,000,000.00	3,000,000.00
Cameron Blaikie and Company	1,700,806.65	0	1,700,806.65*
Pacific Tel. and Tel.Co.(Spec.Deposit).	7,510,000.00	0	7,510,000.00*
Central Union Tel. Co. Payment Loans in Open Account	0	2,724,239.68	2,724,239.68
Special Deposits	0	30,000,000.00	30,000,000.00
Total Disbursements	633,426,989.79	668,738,134.59	35,311,144.80
Cash and Bank Deposits December 31st, I.M.	25,543,216.96	24,250,019.23	1,293,197.73*
Total	$658,970,206.95	$692,988,153.82	$ 34,017,946.87
Cash and Bank Deposits - General Dept.	$ 25,543,216.96	$ 24,250,019.23	$ 1,293,197.73*
Cash and Bank Deposits - Long Lines Dept.	974,330.42	967,720.87	6,609.55*
Total	$ 26,517,547.38	$ 25,217,740.10	$ 1,299,807.28*

* Red figures

EXHIBIT X-206 Exh. X-206

P-3

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

CASH STATEMENT FOR YEARS 1924 AND 1925

	1924	1925	Increase
Receipts - General Department:			
Capital Stock Subscriptions	$144,307,329.68	$ 8,40[illegible]	[illegible]*
5% Debentures 1960 Sold	0	114,375,000.00	[illegible]
Interest on 5% Debentures 1960 Sold	0	364,583.33	[illegible],58[illegible]
A.T. and T.Co. 7-Year 6% Convertible Bonds 1925 Sold	1,927,520.40	0	1,927,52[illegible]*
Associated Companies -			
Under License Contracts	26,754,491.95	30,197,269.96	3,442,778.01
Interest	12,039,233.87	15,314,972.05	3,275,738.18
Dividends	63,924,163.15	75,305,180.45	11,381,017.30
Notes Paid	110,711,828.22	192,937,355.86	82,225,527.64
Loans Paid	73,147,000.00	5,035,000.00	68,112,000.00*
Loans on Open Account	48,056,229.31	19,240,678.00	28,815,551.31*
Northwestern Bell Tel. Co. - Deposit Purchase of Bonds	0	600,000.00	600,000.00
Sale of Indianapolis Building	0	509,267.36	509,267.36
Taxes Reimbursed	8,341,443.61	9,875,295.45	1,533,851.84
Bonds Sold -			
Home Long Distance Tel. Co. 5s 1932	673,266.25	212,050.00	461,216.25*
New England Tel.and Tel.Co. 4s 1930	168,103.75	0	168,103.75*
Northwestern Bell Tel. Co. 7s 1941	2,508,334.42	0	2,508,334.42*
Chesapeake and Potomac Tel. Co. of Virginia 5s 1943	781,199.91	50,597.50	730,602.41*
Kansas City Telephone Company 5s 1938	0	10,000,000.00	10,000,000.00
Bonds Called -			
Michigan State Tel. Co. 5s 1924	2,243,000.00	0	2,243,000.00*
Northwestern Bell Tel. Co. 7s 1941	0	3,421,617.50	3,421,617.50
Stocks Sold	300.00	181,002.25	180,702.25
Long Lines Department -			
Account Net Earnings	18,660,416.09	22,655,342.79	3,994,926.70
Proportion General Department Expense	1,593,208.70	1,768,414.44	175,205.74
Advances Paid	0	3,721,834.72	3,721,834.72
Miscellaneous	424,001.33	392,328.83	31,672.50*
Taxes Reimbursed	2,740,806.76	3,215,195.47	474,388.71
Employees' Stock Plan, May 1, 1921 Pymts.	15,733,861.31	18,130,265.67	2,396,404.36
Temporary Investments -			
United States Obligations	243,596,821.94	363,891,024.34	120,294,202.40
State and Municipal Obligations	36,740,197.39	42,959,178.59	6,218,981.20
Special Deposits	13,037,808.22	36,500,000.00	23,462,191.78
Bank Acceptances	5,503,291.46	995,821.57	4,507,469.89*
Interest on Temporary Investments	5,328,486.93	6,291,159.01	962,672.08
Bond Conversions -			
Premiums	674,672.00	569,968.00	104,704.00*
Adjustments	19,417.41	14,082.16	5,335.25*
Federal Income Tax Withheld	17,831.27	15,462.54	2,368.73*
Interest on Bank Deposits	526,592.35	451,316.55	75,275.80*
Miscellaneous	2,287,587.96	2,175,287.55	112,300.41*
Temporary Investments for Bell Tel. Co. of Canada	0	8,442,052.68	8,442,052.68
Total Receipts	842,468,445.64	998,213,303.54	155,744,857.90
Cash and Bank Deposits January 1st, A.M.	24,250,019.23	23,010,625.17	1,239,394.06*
Total	$866,718,464.87	$1,021,223,928.71	$154,505,463.84

* Red [illegible]

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~~Sheet No. 2.~~

Disbursements - General Department:	1924	1925	Increase
Allotments (Except Instruments)	$349,594,395.96	$ 371,023,923.97	$ 21,429,528.01
Loans Made to -			
Bell Telephone Securities Co., Inc.	6,100,000.00	7,000,000.00	900,000.00
Bell Telephone Laboratories, Inc. . . .	0	1,300,000.00	1,300,000.00
Western Electric Company, Inc.	38,500,000.00	15,000,000.00	23,500,000.00*
Central Union Telephone Company	130,000.00	354,700.00	224,700.00
205 Broadway Corporation	490,000.00	0	490,000.00*
Loans Paid -			
Bell Telephone Company of Canada . . .	255,203.76	0	255,203.76*
Western Elec.Co.,Inc., (Incl. Instrument Allotment)	7,567,957.15	7,010,478.82	557,478.33*
Dividends	70,190,318.25	81,354,258.00	11,163,939.75
Interest	16,808,469.19	19,181,547.98	2,373,078.79
Taxes (Incl. Payments for Associated Companies and Long Lines Department) .	13,765,239.26	17,409,397.72	3,644,158.46
Payroll	6,025,281.70	6,588,698.72	563,417.02
Vouchers (Expenses, etc.)	6,218,897.14	6,256,716.03	37,818.89
Bond Conversion - Adjustments	72,976.41	72,142.13	834.28*
Stocks Purchased (Except Allotment) . . .	2,835,341.36	2,220,778.83	614,562.53*
Bonds Purchased -			
Michigan State Tel. Co. 5s 1924	71,489.09	0	71,489.09*
Northwestern Bell Tel. Co. 7s 1941 . .	5,623,048.87	593,341.67	5,029,707.20*
Northwestern Bell Tel. Co. 7s 1941 - for account of Northwestern B.T.Co. .	0	342,827.28	342,827.28
Notes Retired -			
American Tel.and Tel.Co. - 6s 1922 . .	7,300.00	12,800.00	5,500.00
" " " - 6s 1924 . .	30,420,951.85	38,500.00	30,382,451.85*
Bonds Retired -			
American Tel.and Tel.Co. - 6s 1925 . .	0	721,400.00	721,400.00
Sinking Fund -			
Collateral Trust 5s 1946	800,000.00	800,000.00	0
Debenture 5s 1960	0	625,000.00	625,000.00
Debenture Bonds 5-1/2s 1943	1,000,000.00	1,000,000.00	0
Temporary Investments -			
United States Obligations	229,207,324.93	367,040,175.36	137,832,850.43
State and Municipal Obligations	42,266,490.88	43,857,995.47	1,591,504.59
Bank Acceptances	5,998,705.72	0	5,998,705.72*
Special Deposits	6,500,000.00	33,000,000.00	26,500,000.00
Interest on Temporary Investments	2,836,595.03	3,584,250.39	747,655.36
Employees' Stock Payments May 1, 1921 Plan - General Department	390,636.10	437,602.49	46,966.39
Expenditures Account Construction B'way and Fulton Street Building	31,217.05	13,762.50	17,454.55*
Temporary Investments for Bell Telephone Company of Canada	0	8,442,052.68	8,442,052.68
Total Disbursements	843,707,839.70	995,282,350.04	151,574,510.34
Cash and Bank Deposits, December 31st, P.M.	23,010,625.17	25,941,578.67	2,930,953.50
Total	$866,718,464.87	$1,021,223,928.71	$154,505,463.84
Cash and Bank Deposits - General Dept. . .	$ 23,010,625.17	$ 25,941,578.67	$ 2,930,953.50
Cash and Bank Deposits - Long Lines Dept. .	521,267.10	924,464.79	403,197.69
Total .	$ 23,531,892.27	$ 26,866,043.46	$ 3,334,151.19

* Red figures

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P-5

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
CASH STATEMENT FOR THE YEARS 1926 AND 1927

	1926	1927	Increase
Receipts - General Department:			
Capital Stock Subscriptions	$ 149,160,926.65	$ 7,089,982.75	$142,070,943.90*
Capital Stock Sub. - Suspense Acct. . .	78,814,715.63	811,850.16	78,002,865.47*
Capital Stock - Unsubscribed - Sold . .	655,737.88	2,362,754.86	1,707,016.98
Notes Sold to Trustee of Pension Fund .	0	624,269.48	624,269.48
Associated Companies -			
Under License Contracts	29,874,972.22	32,484,602.21	2,609,629.99
Interest	11,839,186.07	13,300,383.98	1,461,197.91
Dividends	91,942,249.46	147,872,183.64	55,929,934.18
Loans Paid	201,576,516.61	186,258,076.60	15,318,440.01*
Endorsed Notes Sold	19,450,000.00	23,100,000.00	3,650,000.00
Loans on Open Account	7,279,964.00	14,688,596.54	7,408,632.64
Taxes Reimbursed	14,290,363.21	17,880,085.74	3,589,722.53
Dissolution Broadcasting Co.of Amer..	0	139,201.59	139,201.59
Bonds Sold -			
A.T.& T.Co.Coll.Tr.5% Gold Bonds 1946	0	197,307.64	197,307.64
Ches.& Pot.Tel.Co.of Va. 5s 1943 . .	23,558.75	0	23,558.75*
Home L.D.T.Co.(San Francisco)5s 1932.	205,217.50	221,692.50	16,475.00
Kansas City Tel. Co. 5s 1938	13,916,226.48	0	13,916,226.48*
Bonds Called -			
Cuyahoga Tel. Co. 7s 1941	74,520.00	0	74,520.00*
United States Tel. Co. 7s 1941 . . .	49,680.00	0	49,680.00*
Stocks Sold	52,314.00	142,000.00	89,686.00
Long Lines Department -			
Account Net Earnings	22,457,385.36	23,090,833.89	633,448.53
Proportion Genl. Dept. Expense . . .	1,696,400.10	1,788,032.45	91,632.35
Advances Paid	2,236,635.00	3,200,000.00	963,365.00
Taxes Reimbursed	3,451,969.83	3,683,810.84	231,841.01
Account Service Pensions	0	339,995.40	339,995.40
Miscellaneous	76,409.21	83,574.21	7,165.00
Employees' Stock Plan - Payments . . .	18,891,387.58	24,456,637.48	5,565,249.90
Temporary Investments -			
United States Obligations	301,583,460.01	324,915,926.43	23,332,466.42
State and Municipal Obligations . . .	37,940,156.23	42,209,176.88	4,269,020.65
Special Deposits	15,000,000.00	3,000,000.00	12,000,000.00*
Other Securities	0	1,460,466.25	1,460,466.25
Interest on Temporary Investments . .	5,936,934.58	5,183,186.30	753,798.28*
Deposits for Temporary Investment -			
Bell Tel. Co. of Penna.	0	6,118,221.18	6,118,221.18
Illinois Bell Tel. Co.	0	2,043,654.23	2,043,654.23
New England Tel. and Tel. Co.	0	4,189,898.73	4,189,898.73
Northwestern Bell Tel. Co.	0	12,479,688.42	12,479,688.42
Federal Income Tax Withheld	19,181.79	19,124.95	56.84*
Interest on Bank Deposits	458,928.52	448,817.98	10,110.54*
Sale of Broadway and Fulton St. Bldg. .	11,557,602.92	0	11,557,602.92*
Sinking Fund Deposits Withdrawn	362,837.18	1,275,331.41	912,494.23
Miscellaneous	1,799,799.08	1,124,617.30	675,181.78*
Total Receipts	1,042,675,282.85	908,283,979.54	134,391,303.31*
Cash and Bank Deposits, Jan. 1st, A.M. .	25,941,578.67	20,946,999.12	4,994,579.55*
Total	$1,068,616,861.52	$929,230,978.66	$139,385,882.86*

* Red figures

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	1926	1927	Increase
Disbursements - General Department:			
Allotment (Except Instruments)	$ 363,023,478.65	$347,836,796.24	$ 15,186,682.41 *
Loans Made To -			
Bell Tel. Securities Co.	9,125,000.00	4,100,000.00	5,025,000.00*
Broadcasting Co. of America, Inc.	175,000.00	0	175,000.00*
Central Union Tel. Co.	185,000.00	215,000.00	30,000.00
205 Broadway Corporation	10,357,602.92	0	10,357,602.92*
W.E. Co., Inc. (Incl. Instru. Allot.)	6,879,339.40	6,944,552.59	65,213.19
Dividends	86,032,849.50	97,632,357.75	11,599,508.25
Interest	22,084,048.67	21,809,551.67	274,497.00*
Taxes (Incl. Payments for Associated Companies and L.L. Department)	20,036,949.49	22,971,461.89	2,934,512.40
Payroll	7,719,587.81	8,287,388.75	567,800.94
Vouchers (Expenses, etc.)	7,469,310.37	8,174,298.32	704,987.95
Stocks Purchased (Except Allotment)	4,450,914.00	801,467.45	3,649,446.55 *
Bonds Purchased -			
A.T.& T.Co.Coll.Tr.5% Gold Bonds,1946	0	197,640.14	197,640.14
Cuyahoga Tel. Co. 5s 1941	74,677.34	0	74,677.34*
Kansas City Tel. Co. 5s 1938	10,000,000.00	0	10,000,000.00*
United States Tel. Co. 5s 1941	49,814.98	0	49,814.98*
Notes Retired -			
American T.and T.Co. - 6s 1922	2,000.00	500.00	1,500.00*
" " " - 6s 1924	5,100.00	0	5,100.00*
Bonds Retired -			
American T.and T.Co. - 6s 1925	121,400.00	16,800.00	104,600.00*
Sinking Fund -			
Collateral Trust 5s 1946	800,000.00	800,000.00	0
Debenture 5s 1960	1,250,000.00	1,250,000.00	0
Debenture 5-1/2s 1943	1,000,000.00	1,000,000.00	0
Temporary Investments -			
United States Obligations	343,137,760.65	299,329,652.87	43,808,107.78*
State and Municipal Obligations	43,038,606.97	34,447,476.06	8,591,130.91 *
Special Deposits	18,000,000.00	0	18,000,000.00*
Other Securities	0	1,471,710.75	1,471,710.75
Interest on Temp. Investments	3,844,334.52	2,820,690.02	1,023,644.50*
Deposits for Temporary Investments -			
Bell Tel. Co. of Penna.	0	6,118,221.18	6,118,221.18
Illinois Bell Tel. Co.	0	2,043,654.23	2,043,654.23
New England Tel. and Tel. Co.	0	4,189,898.75	4,189,898.75
Northwestern Bell Tel. Co.	0	12,479,688.42	12,479,688.42
Capital Stock Subscriptions -			
Suspense Account	78,807,087.13	813,587.42	77,993,499.71*
Endorsed Notes Repurchased from W.E. Co., Inc.	10,000,000.00	23,100,000.00	13,100,000.00
Bankers Trust Co. Trustee of Pen. Fund		624,269.48	624,269.48
Total Disbursements	1,047,669,862.40	909,476,663.98	138,193,198.42*
Cash and Bank Deposits, Dec. 31st P. M.	20,946,999.12	19,754,314.68	1,192,684.44*
Total	$1,068,616,861.52	$929,230,978.66	$139,385,882.86*
General Department -			
Cash and Bank Deposits	$ 20,946,999.12	$ 19,754,314.68	$ 1,192,684.44*
Special Deposits	3,000,000.00	0	3,000,000.00*
Long Lines Department -			
Cash and Bank Deposits	842,174.18	1,059,718.91	217,544.73
Total	$ 24,789,173.30	$ 20,814,033.59	$ 3,975,139.71*

* Red figures

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
CASH STATEMENT FOR YEARS 1928 AND 1929

	1928	1929	Increase
eral Department -			
Balance beginning of year	$ 19,734,314.68	$ 19,343,176.26	$ 391,138.42*
Receipts -			
Capital Stock Subscriptions	182,410,723.79	8,333,065.76	174,077,658.03*
Capital Stock Subscriptions - Suspense Account	125,403,691.21	4,097,644.39	121,306,046.82*
Capital Stock - Unsubscribed - Sold .	3,812,941.00	0	3,812,941.00*
4-1/2% Conv.Bonds, 1939 - Subscrip. .	0	218,616,216.70	218,616,216.70
4-1/2% Conv.Bonds, 1939 - (Unsubscribed) - Sold	0	2,094,345.00	2,094,345.00
Bond Conversion Receipts	0	661,880.07	661,880.07
Loans from Banks	0	9,000,000.00	9,000,000.00
Notes Sold to Trustee of Pension Fund	7,785,642.10	1,462,691.90	6,322,950.20*
Associated Companies:			
Under License Contracts	17,623,785.16	14,455,588.31	3,168,196.85*
Interest	11,331,418.32	15,665,245.72	4,333,827.40
Dividends	119,044,675.80	140,914,604.60	21,869,928.80
Loans Paid	117,319,703.30	137,735,137.11	20,415,433.81
On Open Account	6,060,892.56	7,302,805.67	1,241,913.11
Endorsed Notes Sold	22,392,810.15	11,900,000.00	10,492,810.15*
Taxes Reimbursed	18,912,222.11	18,139,052.80	773,169.31*
Loans Paid by Bell Tel. Sec. Co. .	0	10,500,000.00	10,500,000.00
Loans Paid by 195 Broadway Corp. .	0	100,000.00	100,000.00
Loans Paid by W. E. Co., Inc. . . .	0	49,301,000.00	49,301,000.00
A.T.& T.Co.Note Sold to N.Y. T.Co..	71,661,238.91	0	71,661,238.91*
Instruments Sold	1,232,381.83	0	1,232,381.83*
Long Lines Department -			
Account Net Earnings	50,001,188.80	53,436,650.26	3,435,461.46
Proportion General Dept. Expense .	1,581,796.77	1,422,934.68	158,862.09*
Advances Paid	3,500,000.00	4,180,000.00	680,000.00
Taxes Reimbursed	3,976,184.90	4,207,751.28	231,566.38
Account Service Pensions	584,798.78	814,376.42	229,577.64
Instruments Sold	18,165.56	0	18,165.56*
Miscellaneous	131,366.58	263,906.51	132,539.93
Bonds Sold -			
Home L.D.T.Co.(S.F.) 5s, 1932 . . .	177,180.00	180,700.00	3,520.00
Stocks Sold	1,102,869.50	3,214,737.40	2,111,867.90
Temporary Investments -			
United States Obligations	327,336,980.71	405,657,202.88	78,320,222.17
State and Municipal Obligations . .	32,826,429.47	16,735,000.00	16,091,429.47*
Special Deposits	0	20,000,000.00	20,000,000.00
Interest	6,038,968.42	5,982,884.69	56,083.73*
Deposits for Temporary Investment:			
Wisconsin Telephone Company	0	406,217.48	406,217.48
Northwestern Bell Tel. Co.	13,484,881.67	0	13,484,881.67*
Employees' Stock Plan	30,359,776.22	41,486,453.80	11,126,677.58
Interest on Bank Deposits	488,680.57	518,486.82	29,806.25
Federal Income Tax Withheld	18,092.64	15,943.92	2,148.72*
Sinking Fund Deposits Withdrawn . . .	2,250,000.00	813,412.35	1,436,587.65*
Collateral Deposit - Equitable Tr.Co.	0	2,913,676.00	2,913,676.00
Miscellaneous	976,044.78	1,256,308.34	280,263.56
Total Receipts . .	$1,180,146,531.59	$1,212,946,143.55	$ 32,799,611.96
Carried Forward . .	$1,199,880,846.27	$1,232,289,319.81	$ 32,408,473.54

* Red figures

K-206 Sheet No. 2. F-8

	1928	1929	Increases
Brought Forward	$1,199,899,846.27	$1,232,308,319.81	$ 32,408,473.54
Disbursements -			
Allotment	389,093,171.91	438,320,539.81	49,227,367.90
Loans Made To -			
Bell Tel. Securities Co.	5,200,000.00	17,550,000.00	12,350,000.00
Central Union Telephone Company	23,000.00	0	23,000.00*
205 Broadway Corporation	150,000.00	0	150,000.00*
Bell Tel. Laboratories, Inc.	0	500,000.00	500,000.00
Western Electric Co., Inc.	3,500,000.00	66,000,000.00	62,500,000.00
Capital Stock Subscriptions -			
Suspense Account	125,393,429.68	4,108,664.27	121,284,765.41*
4-1/2% Conv.Bonds, 1939 - Refunds			
and Adjustments	0	602,225.33	602,225.33
Western Electric Co., Inc.	1,016,199.40	0	1,016,199.40*
Bell Tel. Laboratories, Inc.	2,554,982.90	3,541,666.45	986,683.55
Bank Loans Paid	0	9,000,000.00	9,000,000.00
Dividends	103,672,113.75	117,352,685.25	13,680,571.50
Interest	22,336,725.56	23,054,194.55	717,468.99
Taxes (Incl. Payments for Associated			
Companies and L. L. Department)	24,330,386.57	22,843,196.22	1,487,190.35*
Payroll	9,143,101.83	9,769,632.65	626,530.82
Vouchers (Expenses, etc.)	5,693,144.42	6,718,455.78	1,025,311.36
Stocks Purchased (Except Allotment)	12,138,579.93	49,204,464.80	37,065,884.87
Funded Debt Retired -			
6% Notes 1924	600.00	0	600.00*
6% Convertible Bonds, 1925	13,300.00	1,800.00	11,500.00*
4% Coll.Trust Bonds, 1929	a) 3,120,898.14	74,424,000.00	71,303,101.86
Payments to European Banks in			
connection with Collateral Trust 4s,			
1929, matured	0	222,567.75	222,567.75
Sinking Funds -			
Collateral Trust 5s, 1946	800,000.00	800,000.00	0
Debenture 5s, 1960	1,250,000.00	1,250,000.00	0
Debenture 5-1/2s, 1943	1,000,000.00	1,000,000.00	0
Temporary Investments -			
United States Obligations	387,654,603.38	306,727,517.66	80,927,085.72*
State and Municipal Obligations	56,531,339.00	30,942,732.23	25,588,606.77*
Special Deposits	0	20,000,000.00	20,000,000.00
New England Tel.and Tel.Co. 4s,1930	0	396,120.00	396,120.00
Interest	3,455,573.77	2,880,718.17	574,855.60*
Deposits for Temporary Investments -			
Wisconsin Telephone Company	0	404,217.45	404,217.45
Northwestern Bell Tel. Co.	13,484,881.67	0	13,484,881.67*
Payments to Trustee of Pension Fund			
(Including Interest)	7,785,642.10	1,462,691.90	6,322,950.20*
Temporary Deposits Repaid to Central			
Union Tel. Co.	1,194,996.00	3,654,066.78	2,459,070.78
Total Disbursements	$1,180,536,670.01	$1,212,734,157.05	$ 32,197,487.04
Balance end of year	$ 19,363,176.26	$ 19,574,162.78	$ 210,986.52
L. L. Lines Department -			
Balance end of year	1,332,091.17	1,221,785.12	110,306.05*
Total	$ 20,695,267.43	$ 20,795,947.88	$ 100,680.45

a) Reacquired in anticipation of maturity.

* Red figures

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
CASH STATEMENT FOR YEARS 1929 AND 1930

	1929	1930	Increase
General Department -			
Current Cash Balance beginning of year	$ 19,363,176.26	$ 19,574,162.76	$ 210,986.50
Receipts -			
Capital Stock Subscriptions	8,333,065.76	251,106,052.36	242,772,986.60
Capital Stock Subscriptions - Suspense Account	4,097,644.39	0	4,097,644.39*
Capital Stock - Unsubscribed - Sold	0	3,228,900.00	3,228,900.00
4-1/2% Conv. Bonds, 1939 - Subscription	218,616,216.70	0	218,616,216.70*
4-1/2% Conv. Bonds, 1939 - (Unsubscribed) - Sold	2,094,345.00	303,165.25	1,791,179.75*
Bond Conversion Receipts	661,880.07	163,853,050.41	163,191,170.34
4-1/2% Conv. Bonds, 1939 - Suspense Account	0	2,773.50	2,773.50
Loans from Banks	9,000,000.00	16,000,000.00	7,000,000.00
Proceeds 35-Year 5% Gold Debenture Bonds	0	146,687,500.00	146,687,500.00
Notes Sold to Trustee of Pension Fund	1,462,691.90	1,672,610.11	209,918.21
Associated Companies -			
Under License Contracts	14,659,588.31	15,235,889.63	576,301.32
Interest	15,885,245.72	20,400,857.49	4,515,611.77
Dividends	140,914,604.60	147,990,867.57	7,076,262.97
Loans Paid	137,735,337.11	230,385,771.73	92,650,434.62
On Open Account	7,302,805.67	23,522,185.00	16,219,379.33
Endorsed Notes Sold	11,900,000.00	0	11,900,000.00*
Taxes Reimbursed	18,139,052.80	18,903,431.90	764,379.10
Loans Paid by Bell Tel. Securities Co.	10,500,000.00	16,150,000.00	5,650,000.00
Loans Paid by 195 Broadway Corporation	100,000.00	0	100,000.00*
Loans Paid by Western Electric Company, Inc.	49,501,000.00	50,499,000.00	998,000.00
Long Lines Department -			
Account Net Earnings	33,426,638.26	28,899,007.40	4,527,630.86*
Proportion General Department Expense	1,422,934.68	1,485,249.55	62,314.87
Advances Paid	4,150,000.00	2,325,000.00	1,825,000.00*
Taxes Reimbursed	4,207,791.28	4,202,180.07	5,611.21*
Account Service Pensions	814,376.42	956,283.36	141,906.94
Miscellaneous	263,906.51	328,047.71	64,141.20
Bonds Sold -			
Home L.D.T.Co. (S.F.) 5s, 1932	180,700.00	233,476.00	52,776.00
A.T. and T.Co. Coll. Tr. 5% Gold Bonds Account Sinking Fund	0	790,650.00	790,650.00
Stocks Sold	3,214,737.60	31,467,895.00	28,253,157.40
Bonds Paid -			
New England Tel. and Tel.Co. Debenture 4s	0	400,000.00	400,000.00
Temporary Investments -			
United States Obligations	405,657,202.88	412,696,260.63	7,039,057.75
State and Municipal Obligations	34,735,000.00	141,983,356.20	107,248,356.20
Special Deposits	20,000,000.00	52,047,004.77	32,047,004.77
Interest	5,982,884.69	8,375,023.03	2,392,138.34
Deposits for Temporary Investments -			
Wisconsin Telephone Company	406,217.45	0	406,217.45*
Employees' Stock Plan -			
Payroll Deductions	41,696,453.50	55,046,583.20	13,350,129.70
Assignment of Dividends	0	1,448,506.79	1,448,506.79
Special Stock Offer	0	87,241.00	87,241.00
Interest on Bank Deposits	518,486.82	459,096.44	59,390.38*
Federal Income Tax Withheld	15,943.92	21,616.89	5,672.97
Sinking Fund Deposits Withdrawn	813,412.35	713,921.76	99,490.59*
Collateral Deposit - Equitable Trust Company	2,913,676.00	0	2,913,676.00*
Repayment by Trustee of Security Deposit for payment of 6% Collateral Trust Bonds, 1929	0	111,480.00	111,480.00
Miscellaneous	1,835,303.36	1,911,430.18	76,126.82
Total Receipts	$1,212,945,143.55	$1,849,718,412.93	$636,773,269.38
Carried Forward	$1,232,308,319.81	$1,869,292,575.69	$636,984,255.88

* Red figures

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	1929	1930	Increase
Brought Forward	$1,232,308,319.81	$1,869,292,575.69	$636,984,255.88
Disbursements -			
Allotment	438,320,539.81	524,923,628.69	86,603,088.88
Loans Made To -			
Bell Telephone Securities Co.	17,550,000.00	11,050,000.00	6,500,000.00*
Bell Telephone Laboratories, Inc.	500,000.00	1,350,000.00	850,000.00
Western Electric Company, Inc.	66,000,000.00	64,000,000.00	2,000,000.00*
Cuban American Tel. and Tel. Co.	0	90,500.00	90,500.00
Capital Stock Subscriptions - Suspense Account	4,108,664.27	0	4,108,664.27*
4-1/2 Conv. Bonds, 1939 - Refunds and Adjustments	602,225.33	0	602,225.33*
Bell Telephone Laboratories, Inc.	3,541,666.45	6,006,794.00	2,465,127.55
Bank Loans Paid	9,000,000.00	16,000,000.00	7,000,000.00
Dividends	117,352,685.25	135,637,818.75	18,285,133.50
Interest	23,054,194.55	30,362,306.23	7,308,111.68
Taxes (Incl. Payments for Associated Companies and [illegible] Department)	22,843,196.22	24,362,051.04	1,518,854.82
Payroll	9,769,632.65	11,068,841.19	1,299,208.54
[illegible] Expenses, etc.	6,718,455.78	10,344,025.01	3,625,569.23
Stock Purchased (Except Allotment)	49,204,464.80	38,927,298.75	10,277,166.05*
Funded Debt Reacquired -			
American Tel. and Tel. Co. Conv. 6s, 1925	1,800.00	5,000.00	3,200.00
American Tel. and Tel. Co. Coll. Tr. 4s, 1929	74,424,000.00	190,000.00	74,234,000.00*
American Tel. and Tel. Co. Coll. Tr. 5s, 1946	0	1,597,668.91	1,597,668.91
American Tel. and Tel. Co. Conv. 4-1/2s, 1933	0	28,600.00	28,600.00
Western Tel. and Tel. Co. Coll. Tr. 5s, 1932	0	487,375.61	487,375.61
Payment to European Banks in connection with Collateral Trust 4s, 1929, matured	222,567.75	0	222,567.75*
Sinking Funds -			
Collateral Trust 5s, 1946	800,000.00	800,000.00	0
Debenture 5s, 196	1,250,000.00	1,250,000.00	0
Debenture 5-1/2s, 1943	1,[illegible]00,000.00	1,[illegible]00,000.00	0
Temporary Investments -			
United States Obligations	306,727,517.66	643,954,064.55	337,226,546.89
State and Municipal Obligations	30,942,732.23	183,111,751.71	152,169,019.48
Special Deposits	20,000,000.00	110,550,000.00	90,550,000.00
New England Tel. and Tel. Co. 4s, 193	396,120.00	0	396,120.00*
Interest	2,880,718.17	3,859,361.55	978,643.38
Deposits for Temporary Investments - Wisconsin Telephone Company	406,217.45	0	406,217.45*
Payment to Trustee of Pension Fund (Incl. Interest)	1,442,691.90	1,672,610.11	229,918.21
Temporary Deposits Repaid to Central Union Tel. Co.	3,654,066.78	0	3,654,066.78*
Deposit with Trustee as Security for Payment of 4% Coll. Tr. Bonds, 1929, Outstanding	0	144,120.00	144,120.00
Collateral Deposit - Equitable Trust Co.	0	2,913,676.00	2,913,676.00
195 Broadway Corporation Mortgage	0	7,500,000.00	7,500,000.00
Total Disbursements	$1,212,734,157.05	$1,833,187,491.90	$620,453,334.85
Current Cash Balance end of year	$ 19,574,162.76	$ 36,105,083.79	$ 16,530,921.03
Special Deposit - For Matured Funded Debt	0	32,640.00	32,640.00
General Department - Total Balance end of year	$ 19,574,162.76	$ 36,137,723.79	$ 16,563,561.03
Long Lines Department -			
Balance end of year	1,221,785.12	916,296.32	305,488.80*
Total	$ 20,795,947.88	$ 37,054,020.11	$ 16,258,072.23

* Red figures

EXHIBIT X-207

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

STATEMENT OF TELEPHONE OPERATING REVENUES SHOWING SEPARATELY:

1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. HOLDING COMPANY OPERATIONS

SCHEDULE 310 OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 192[illegible]

I.C.C. Classification

Account Number	Title	Total for Company	Long Lines Department Operations (See "Note")	License Contract Operations	Con Mis Nc C Op
	I. Exchange Service Revenues				
500	Subscribers' station revenues	$ 0	$ 0	$ 0	
501	Public pay station revenues	0	0	0	
503	Service stations	0	0	0	
504	Private exchange lines	0	0	0	
505	Minor rents of exchange plant	0	0	0	
506	Other exchange revenues	0	0	0	
502	Miscellaneous exchange service revenues	0	0	0	
	Total exchange service revenues	0	0	0	
	II. Toll Service Revenues				
510	Message tolls	29,317,465	29,317,465	0	
512	Leased toll lines	1,076,273	1,076,273	0	
513	Telegraph tolls	0	0	0	
514	Telegraph service on toll lines	7,065,460	7,065,460	0	
515	Minor rents of toll plant	675,318	675,318	0	
516	Other toll line revenue	1,941	1,941	0	
511	Miscellaneous toll line revenues	8,818,992	8,818,992	0	
	Total toll service revenues	38,136,457	38,136,457	0	
	III. Miscellaneous Operating Revenues				
520	Messenger service	624	624	0	
521	Telegraph commissions	0	0	0	
522	Other telegraph service charges	0	0	0	
523	Advertising and directory	0	0	0	
524	Rents from other operating property	0	0	0	
525	Other miscellaneous revenue	217,848	217,848	0	
	Miscellaneous direct revenues	218,472	218,472	0	
526	Licensee revenue - Cr.	17,675,696	0	17,675,696	
527	Licensee revenue - Dr.	0	0	0	
	Total miscellaneous operating revenues	17,894,168	218,472	17,675,696	
	Total	56,030,625	38,354,929	17,675,696	
	Long Lines 4-1/2% payment for services of the character furnished under License Contracts				

EXHIBIT X-207

Sheet No. 2.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
STATEMENT OF TELEPHONE OPERATING REVENUES SHOWING SEPARATELY:
1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. HOLDING COMPANY OPERATIONS

SCHEDULE 310 OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 192[illegible]

I.C.C. Classification

Title	Total for Company	Long Lines Department Operations (See "Note")	License Contract Operations	Holding Company (Incl. Miscellaneous Non-License Contract) Operations.
I. Exchange Service Revenues				
ribers' station revenues	$ 0	$ 0	$ 0	0
c pay station revenues	0	0	0	0
ce stations	0	0	0	0
te exchange lines	0	0	0	0
rents of exchange plant	0	0	0	0
exchange revenues	0	0	0	0
llaneous exchange service revenues	0	0	0	0
Total exchange service revenues	0	0	0	0
II. Toll Service Revenues	0	0	0	0
ge tolls	29,317,465	29,317,465		
d toll lines	1,076,273	1,076,273	0	0
raph tolls	0	0	0	0
raph service on toll lines	7,065,460	7,065,460	0	0
rents of toll plant	675,318	675,318	0	0
toll line revenue	1,941	1,941	0	0
llaneous toll line revenues	8,818,992	8,818,992	0	0
Total toll service revenues	38,136,457	38,136,457	0	0
III. Miscellaneous Operating Revenues			0	0
nger service	624	624	0	0
raph commissions	0	0	0	0
telegraph service charges	0	0	0	0
tising and directory	0	0	0	0
from other operating property	0	0	0	0
miscellaneous revenue	217,848	217,848	0	0
Miscellaneous direct revenues	218,472	218,472	0	0
see revenue - Cr.	17,675,696	0	17,675,696	0
see revenue - Dr.	0	0	0	0
Total miscellaneous operating revenues	17,894,168	218,472	17,675,696	0
Total	56,030,625	38,354,929	17,675,696	0

Total miscellaneous operating revenues	17,894,168	218,472	17,675,696
Total	56,030,625	38,354,929	17,675,696
Long Lines 4-1/2% payment for services of the character furnished under License Contracts	x x x	1,303,462 *	1,303,462
Grand Total	$56,030,625	$37,051,467	$18,979,158

Note: Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department.

* Red figure

December 3, 1931.

Total miscellaneous operating revenues	17,894,168	218,472	17,675,696	0
Total	56,030,625	38,354,929	17,675,696	0
Lines 4-1/2% payment for services of the character rnished under License Contracts	x x x	1,303,462 *	1,303,462	0
Grand Total	$56,030,625	$37,051,467	$18,979,158	0

Note: Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department.

* Red figure

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY

STATEMENT OF TELEPHONE OPERATING REVENUES SHOWING SEPARATELY:

1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS)
3. HOLDING COMPANY OPERATIONS)

SCHEDULE 310 OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1921

I.C.C. Classification

Account Number	Title	Total for Company	Long Lines Department Operations (See "Note")	License Contract Operations
	I. Exchange Service Revenues			
500	Subscribers' station revenues	$ 0	$ 0	$ 0
501	Public pay station revenues	0	0	0
503	Service stations	0	0	0
504	Private exchange lines	0	0	0
505	Minor rents of exchange plant	0	0	0
506	Other exchange revenues	0	0	0
502	Miscellaneous exchange service revenues	0	0	0
	Total exchange service revenues	0	0	0
	II. Toll Service Revenues			
510	Message tolls	28,437,121	28,437,121	0
512	Leased toll lines	1,166,734	1,166,734	0
513	Telegraph tolls	0	0	0
514	Telegraph service on toll lines	7,656,250	7,656,250	0
515	Minor rents of toll plant	804,513	804,513	0
516	Other toll line revenues	891	891	0
511	Miscellaneous toll line revenues	9,628,388	9,628,388	0
	Total toll service revenues	38,065,509	38,065,509	0
	III. Miscellaneous Operating Revenues			
520	Messenger service	283	283	0
521	Telegraph commissions	0	0	0
522	Other telegraph service charges	0	0	0
523	Advertising and directory	0	0	0
524	Rents and other operating property	0	0	0
525	Other miscellaneous revenue	225,788	225,788	0
	Miscellaneous direct revenues	226,071	226,071	0
526	Licensee revenue - Cr.	19,976,959	0	19,976,959
527	Licensee revenue - Dr.	0	0	0
	Total miscellaneous operating revenues	20,203,030	226,071	19,976,959
	Total	58,268,539	38,291,580	19,976,959
	Long Lines 4-1/2% payment for services of the character furnished under License Contracts	x x x	1,257,851 *	1,257,851
	Grand Total	$58,268,539	$37,033,729	$21,234,810

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
STATEMENT OF TELEPHONE OPERATING REVENUES SHOWING SEPARATELY:
1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS)
3. HOLDING COMPANY OPERATIONS)

SCHEDULE 310 OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1921

I.C.C. Classification

Title	Total for Company	Long Lines Department Operations (See "Note")	License Contract Operations	Holding Company (Incl. Miscellaneous Non-License Contract) Operations
I. Exchange Service Revenues				
ribers' station revenues	$ 0	$ 0	$ 0	0
e pay station revenues	0	0	0	0
ce stations	0	0	0	0
te exchange lines	0	0	0	0
rents of exchange plant	0	0	0	0
exchange revenues	0	0	0	0
llaneous exchange service revenues	0	0	0	0
Total exchange service revenues	0	0	0	0
II. Toll Service Revenues				
ge tolls	28,437,121	28,437,121	0	0
d toll lines	1,166,734	1,166,734	0	0
raph tolls	0	0	0	0
raph service on toll lines	7,656,250	7,656,250	0	0
rents of toll plant	804,513	804,513	0	0
toll line revenues	891	891	0	0
llaneous toll line revenues	9,628,388	9,628,388	0	0
Total toll service revenues	38,065,509	38,065,509	0	0
III. Miscellaneous Operating Revenues				
nger service	283	283	0	0
raph commissions	0	0	0	0
telegraph service charges	0	0	0	0
tising and directory	0	0	0	0
and other operating property	0	0	0	0
miscellaneous revenue	225,788	225,788	0	0
Miscellaneous direct revenues	226,071	226,071	0	0
see revenue - Cr.	19,976,959	0	19,976,959	0
see revenue - Dr.	0	0	0	0
Total miscellaneous operating revenues	20,203,030	226,071	19,976,959	0
Total	58,268,539	38,291,580	19,976,959	0
Lines 4-1/2% payment for services of the character nished under License Contracts	x x x	1,257,851 *	1,257,851	0

524	Rents and other operating property	0	0	0
525	Other miscellaneous revenue	225,788	225,788	0
	Miscellaneous direct revenues	226,071	226,071	0
526	Licensee revenue - Cr.	19,976,959	0	19,976,959
527	Licensee revenue - Dr.	0	0	0
	Total miscellaneous operating revenues	20,203,030	226,071	19,976,959
	Total	58,268,539	38,291,580	19,976,959
	Long Lines 4-1/2% payment for services of the character furnished under License Contracts	x x x	1,257,851 *	1,257,851
	Grand Total	$58,268,539	$37,033,729	$21,234,810

Note: Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department.

* Red figures

December 3, 1931.

and other operating property	0	0	0	0
miscellaneous revenue	225,788	225,788	0	0
Miscellaneous direct revenues	226,071	226,071	0	0
see revenue - Cr.	19,976,959	0	19,976,959	0
see revenue - Dr.	0	0	0	0
Total miscellaneous operating revenues	20,203,030	226,071	19,976,959	0
Total	58,268,539	38,291,580	19,976,959	0
Lines 4-1/2% payment for services of the character nished under License Contracts	x x x	1,257,851*	1,257,851	0
Grand Total	$58,268,539	$37,033,729	$21,234,810	0

Note: Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department.

* Red figures

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
STATEMENT OF TELEPHONE OPERATING REVENUES SHOWING SEPARATELY;
1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. HOLDING COMPANY OPERATIONS
SCHEDULE 310 OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1922

I.C.C. Classification Account Number	Title	Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations	Holding Company (Incl. Miscellaneous Non-License Contract Operations) (See Note B)
	I. Exchange Service Revenues				
500	Subscribers' station revenues	$ 0	$ 0	$ 0	$ 0
501	Public pay station revenues	0	0	0	0
503	Service stations	0	0	0	0
504	Private exchange lines	0	0	0	0
505	Minor rents of exchange plant	0	0	0	0
506	Other exchange revenues	0	0	0	0
502	Miscellaneous exchange service revenues	0	0	0	0
	Total exchange service revenues	0	0	0	0
	II. Toll Service Revenues				
510	Message tolls	33,027,378	33,027,378	0	0
512	Leased toll lines	1,282,268	1,282,268	0	0
513	Telegraph tolls	0	0	0	0
514	Telegraph service on toll lines	8,196,628	8,196,628	0	0
515	Minor rents of toll plant	944,979	944,979	0	0
516	Other toll line revenues	835	835	0	0
511	Miscellaneous toll line revenues	10,424,710	10,424,710	0	0
	Total toll service revenues	43,452,088	43,452,088	0	0
	III. Miscellaneous Operating Revenues				
520	Messenger service	0	0	0	0
521	Telegraph commissions	0	0	0	0
522	Other telegraph service charges	0	0	0	0
523	Advertising and directory	0	0	0	0
524	Rents from other operating property	0	0	0	0
525	Other miscellaneous revenue	205,199	200,183	0	5,016
	Miscellaneous direct revenues	205,199	200,183	0	5,016
526	Licensee revenue - Cr.	21,667,603	0	21,667,603	0
527	Licensee revenue - Dr.	0	0	0	0
	Total miscellaneous operating revenues	21,872,802	200,183	21,667,603	5,016
	Total	65,324,890	43,652,271	21,667,603	5,016
	Long Lines 4-1/2% payment for services of the character furnished under License Contracts	x x x	1,422,857*	1,422,857	0
	Adjustment for facilities furnished by the Long Lines Department for public demonstration purposes and radio broadcasting operations	x x x	2,054	0	2,054*
		x x x	1,420,803*	1,422,857	2,054*
	Grand Total	$65,324,890	$42,231,468	$23,090,460	$2,962

Notes: A Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department.

* Red figure

B The column "Holding Company (Including Miscellaneous Non-License Contract) Operations" includes total revenues of Radio Broadcasting Operations (Station WEAF) for which separate subsidiary accounts were maintained.

December 3, 1931.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
STATEMENT OF TELEPHONE OPERATING REVENUES SHOWING SEPARATELY:
1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. HOLDING COMPANY OPERATIONS

SCHEDULE 310 OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1925

I.C.C. Classification Account Number	Title	Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations	Holding Company (Incl. Miscellaneous Non-License Contract) Operations (See Note B)
	I. Exchange Service Revenues				
500	Subscribers' station revenues	$ 0	$ 0	$ 0	$ 0
501	Public pay station revenues	0	0	0	0
503	Service stations	0	0	0	0
504	Private exchange lines	0	0	0	0
505	Minor rents of exchange plant	0	0	0	0
506	Other exchange revenues	0	0	0	0
502	Miscellaneous exchange service revenues	0	0	0	0
	Total exchange service revenues	0	0	0	0
	II. Toll Service Revenues				
510	Message tolls	36,129,600	36,129,600	0	0
512	Leased toll lines	1,388,670	1,388,670	0	0
513	Telegraph tolls	0	0	0	0
514	Telegraph service on toll lines	8,779,619	8,779,619	0	0
515	Minor rents of toll plant	909,842	909,842	0	0
516	Other toll line revenues	1,497	1,497	0	0
511	Miscellaneous toll line revenues	11,099,630	11,099,630	0	0
	Total toll service revenues	47,229,230	47,229,230	0	0
	III. Miscellaneous Operating Revenues				
520	Messenger service	0	0	0	0
521	Telegraph commissions	0	0	0	0
522	Other telegraph service charges	0	0	0	0
523	Advertising and directory	0	0	0	0
524	Rents from other operating property	0	0	0	0
525	Other miscellaneous revenue	302,137	160,878	0	141,259
	Miscellaneous direct revenues	302,137	160,878	0	141,259
526	Licensee revenue - Cr.	24,309,368	0	24,309,368	0
527	Licensee revenue - Dr.	0	0	0	0
	Total miscellaneous operating revenues	24,611,505	160,878	24,309,368	141,259
	Total	71,840,735	47,390,108	24,309,368	141,259
	Long Lines 4-1/2% payment for services of the character furnished under License Contracts	x x x	1,392,181*	1,392,181	0
	Adjustment for facilities furnished by the Long Lines Department for public demonstration purposes and radio broadcasting operations	x x x	17,210	[illegible]*	[illegible]
		x x x	1,574,971*	1,584,561	[illegible]
	Grand Total	$71,840,735	$45,815,137	$25,893,929	$131,669

Notes: A Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department.

B The column "Holding Company (Including Miscellaneous Non-License Contract) Operations" includes total revenues of Radio Broadcasting Operations (Station WEAF) for which separate subsidiary accounts were maintained.

* Red figure

August 25, 1931.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY

SUMMARY STATEMENT OF TOTAL REVENUES AND EXPENSES SHOWING SEPARATELY:
1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS) (PARTLY ESTIMATED)
3. HOLDING COMPANY OPERATIONS)

YEAR 1931

	Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations (Partly Estimated)*	Holding Company (Incl. Miscellaneous Non-License Contract) Operations (Partly Estimated)* (See Note B)
Revenues:				
Operating	$ 71,840,735	$45,815,137	$25,893,929	$ 131,669
Non-operating:				
Interest on Cash and Temporary Investments	2,741,906	32,909	2,707,687	1,310
Interest on Advances (Temporary Financing of Licensee Companies)	7,605,608	0	7,605,608	0
Other Interest	2,650,643	125,875	0	2,524,768
Dividends	54,078,663	0	0	54,078,663
Royalties, Rents and Miscellaneous	373,406	40,326	201,405	131,675
	$139,290,961	$46,014,247	$36,408,629	$56,868,085
Expenses:				
Maintenance - Repairs and Depreciation	$ 14,365,825	$10,838,572	$ 3,479,142	$ 48,111
Traffic	9,316,492	9,233,290	0	83,202
Commercial - Advertising	965,907	322,888	607,639	35,380
General and Miscellaneous	9,549,162	675,139	8,921,881	47,858 **
Uncollectible Operating Revenues	644,404	644,404	0	0
Taxes	6,581,947	3,378,879	3,184,047	19,021
Rents	2,361,246	2,111,872	218,203	31,171
Other Miscellaneous Deductions	116,040	114,699	0	1,361
Interest and Dividend Payments	76,972,125	7,814,262	16,365,858	52,792,005
Adjustment for "Holding Company" estimated expenses jointly incurred with "License Contract Operations"	x x x	x x x	1,000,000 **	1,000,000
	$120,873,168	$35,134,005	$31,776,770	$53,962,393
Amount transferred to credit of Corporate Surplus	$ 18,417,793	$10,880,242	$ 4,631,859	$ 2,905,692

* The column "License Contract Operations" includes certain items which may be considered in part "Holding Company" items. (See adjustment for "Holding Company" portion).

** Red figures.

Notes. a Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department. The item appearing opposite Interest and Dividend Payments represents an apportionment to that Department.

b The column "Holding Company (Including Miscellaneous Non-License Contract) Operations" includes total revenues and expenses of Radio Broadcasting Operations (Station WEAF) for which separate subsidiary accounts were maintained.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
STATEMENT OF TELEPHONE OPERATING REVENUES SHOWING SEPARATELY:
1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. HOLDING COMPANY OPERATIONS

SCHEDULE 310 OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1924

Account Number	Classification Title	Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations	Holding Company (Incl. Miscellaneous Non-License Contract Operations (See Note B)
	I. Exchange Service Revenues				
500	Subscribers' station revenues	$ 0	$ 0	$ 0	$ 0
501	Public pay station revenues		0		0
[illegible]	Service stations		0		0
[illegible]	Private exchange lines		0		0
505	Minor rents of exchange plant		0	0	0
506	Other exchange revenues	0	0	0	
	Miscellaneous exchange service revenues		0	0	
	Total exchange service revenues	0	0	0	
	II. Toll Service Revenues				
[illegible]	Message tolls	36,355,117	36,355,117	0	0
[illegible]	Leased toll lines	1,599,817	1,599,817	0	0
[illegible]	Telegraph tolls		0	0	0
[illegible]	Telegraph service on toll lines	8,642,434	8,642,434	0	0
[illegible]	Minor rents of toll plant	1,691,457	1,691,457	0	0
[illegible]	Other toll line revenue	1,780	1,780	0	0
[illegible]	Miscellaneous toll line revenues	11,935,488	11,935,488	0	0
	Total toll service revenues	48,290,605	48,290,605	0	0
	III. Miscellaneous Operating Revenues				
	[illegible] service		0		
	[illegible]		0		
	[illegible] telegraph service charges		0		
	Advertising and directory	0	0		
	Rents from other operating property	0	0		
[illegible]	Other miscellaneous revenues	438,009	153,413	0	284,596
	Miscellaneous direct revenues	438,009	153,413	0	284,596
	License revenue - Cr.	26,784,492	0	26,784,492	
	License revenue - Dr.		0	0	
	Total miscellaneous operating revenues	27,222,501	153,413	26,784,492	284,596
	Total	75,513,106	48,444,018	26,784,492	284,596
	Long Lines Dept. payment for services of the character furnished under license contracts	x x x	1,593,209 **	1,593,209	
	Payment for facilities furnished by the Long Lines Department for demonstration purposes and radio broadcasting operations	x x x	134,114	74,308 **	59,806
		x x x	1,459,095 **	1,518,901	59,806
	Grand total	$75,513,106	$46,984,923	$26,303,393	$224,790

Note (A). Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department.

(B) The "Slumn" Holding Company (Including Miscellaneous Non-License Contract Operations" includes total revenues of Radio Broadcasting Operations Station WEAF for which separate subsidiary accounts were maintained.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY

SUMMARY STATEMENT OF TOTAL REVENUES AND EXPENSES SHOWING SEPARATELY:
1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. HOLDING COMPANY OPERATIONS } (PARTLY ESTIMATED)

YEAR 1924

	Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations (Partly Estimated)*	Holding Company (Incl. Miscellaneous Non-License Contract) Operations (Partly Estimated)* (See Note B)
Revenues:				
Operating	$ 75,513,106	$46,984,923	$28,303,393	$ 224,790
Non-operating:				
Interest on Cash and Temporary Investments	2,488,456	34,014	2,453,058	1,382
Interest on Advances (Temporary Financing of Licensee Companies)	10,304,623	0	10,304,494	129
Other Interest	1,777,794	188,732	0	1,589,062
Dividends	63,559,326	0	0	63,559,326
Royalties, Rents and Miscellaneous	439,533	33,890	256,503	149,140
	$154,082,836	$47,241,559	$41,317,448	$65,523,829
Expenses:				
Maintenance - Repairs and Depreciation	$ 15,485,471	$11,463,045	$ 3,974,949	$ 47,477
Traffic	8,839,110	8,696,004	0	143,106
Commercial - Advertising	1,079,007	352,025	665,992	60,990
General and Miscellaneous	10,334,441	670,583	9,594,910	68,948
Uncollectible Operating Revenues	641,646	641,151	0	495
Taxes	7,597,587	3,848,559	3,739,091	9,937
Rents	2,375,428	2,240,693	110,769	23,966
Other Miscellaneous Deductions	110,783	93,505	0	17,278
Interest and Dividend Payments	87,491,269	9,026,747	19,993,711	58,470,811
Adjustment for "Holding Company" estimated expenses jointly incurred with "License Contract Operations"	x x x	x x x	1,200,000**	1,200,000
	$133,954,742	$37,032,312	$36,879,422	$60,043,008
Amount transferred to credit of Corporate Surplus	$ 20,128,094	$10,209,247	$ 4,438,026	$ 5,480,821

* The column "License Contract Operations" includes certain items which may be considered in part "Holding Company" items. (See adjustment for "Holding Company" portion).

** Red figures.

Notes: A Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department. The item appearing opposite Interest and Dividend Payments represents an apportionment to that Department.

B The column "Holding Company (including Miscellaneous Non-License Contract) Operations" includes total revenues and expenses of Radio Broadcasting Operations (Station WEAF) for which separate subsidiary accounts were maintained.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
STATEMENT OF TELEPHONE OPERATING REVENUES SHOWING SEPARATELY
1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. HOLDING COMPANY OPERATIONS

SCHEDULE 310 OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1928

Account Number	I.C.C. Classification Title	Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations	Holding Company (Incl. Miscellaneous Non-License Contract) Operations (See Note B)
	I. Exchange Service Revenues				
500	Subscribers' station revenues	$ 0	$ 0	$ 0	$ 0
501	Public pay station revenues	0	0	0	0
503	Service stations	0	0	0	0
504	Private exchange lines	0	0	0	0
505	Minor rents of exchange plant	0	0	0	0
506	Other exchange revenues	0	0	0	0
508	Miscellaneous exchange service revenues	0	0	0	0
	Total exchange service revenues	0	0	0	0
	II. Toll Service Revenues				
510	Message tolls	40,859,653	40,859,653	0	0
512	Leased toll lines	1,841,652	1,841,652	0	0
513	Telegraph tolls	0	0	0	0
514	Telegraph service on toll lines	10,223,246	10,223,246	0	0
515	Minor rents of toll plant	2,096,687	2,096,687	0	0
516	Other toll line revenue	15,465	15,465	0	0
511	Miscellaneous toll line revenues	14,177,050	14,177,050	0	0
	Total toll service revenues	55,036,703	55,036,703	0	0
	III. Miscellaneous Operating Revenues				
520	Messenger service	0	0	0	0
521	Telegraph commissions	0	0	0	0
522	Other telegraph service charges	0	0	0	0
523	Advertising and directory	0	0	0	0
524	Rents from other operating property	0	0	0	0
525	Other miscellaneous revenue	1,300,707	204,595	0	1,096,112
	Miscellaneous direct revenues	1,300,707	204,595	0	1,096,112
526	Licensee revenue - Cr.	30,197,214	0	30,197,214	0
527	Licensee revenue - Dr.	0	0	0	0
	Total miscellaneous operating revenues	31,497,921	204,595	30,197,214	1,096,112
	Total	86,534,624	55,241,298	30,197,214	1,096,112
	Long Lines 4-1/2% payment for services of the character furnished under Licensee Contracts	x x x	[illegible]	1,768,414	0
	Adjustment for facilities furnished by the Long Lines Department for public demonstration purposes and radio broadcasting operations	x x x	270,067	[illegible]	[illegible]
		x x x	[illegible]	1,735,598	[illegible]
	Grand Total	$86,534,624	$53,742,951	$31,932,812	$ 858,861

Notes: A. Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department.

B. The column "Holding Company (Including Miscellaneous Non-License Contract) Operations" includes total revenues of Radio Broadcasting Operations (Station WEAF) for which separate subsidiary accounts were maintained.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY

SUMMARY STATEMENT OF TOTAL REVENUES AND EXPENSES SHOWING SEPARATELY:
1. LONG LINES DEPARTMENT OPERATIONS.
2. LICENSE CONTRACT OPERATIONS } (PARTLY ESTIMATED)
3. HOLDING COMPANY OPERATIONS }

YEAR 1925

	Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations (Partly Estimated)*	Holding Company (Incl. Miscellaneous Non-License Contract) Operations (Partly Estimated)* (See Note B)
Revenues:				
Operating	$ 86,534,624	$53,742,951	$31,932,812	$ 858,861
Non-Operating:				
Interest on Cash and Temporary Investments	2,433,990	34,673	2,397,449	1,868
Interest on Advances (Temporary Financing of Licensee Companies)	13,936,407	0	13,935,738	669
Other Interest	1,596,685	285,579	0	1,311,106
Dividends	75,395,527	0	0	75,395,527
Royalties, Rents and Miscellaneous	561,680	35,734	261,923	264,023
	$180,458,913	$54,098,937	$48,527,922	$77,832,054
Expenses:				
Maintenance - Repairs and Depreciation	$ 17,859,534	$13,284,612	$ 4,512,620	$ 62,302
Traffic	8,913,894	8,593,121	0	320,773
Commercial - Advertising	1,388,794	541,908	712,368	134,518
General and Miscellaneous	11,309,060	718,290	10,511,040	79,730
Uncollectible Operating Revenues	694,432	693,552	0	880
Taxes	8,344,901	4,184,289	4,151,356	9,256
Rents	2,851,029	2,514,184	218,403	120,442
Other Miscellaneous Deductions	60,934	59,675	0	1,261
Interest and Dividend Payments	102,675,713	9,951,263	24,862,012	67,862,436
Adjustment for "Holding Company" estimated expenses jointly incurred with "License Contract Operations"	x x x	x x x	1,400,000 **	1,400,000
	$154,098,293	$40,540,894	$43,565,799	$69,991,600
Amount transferred to credit of Corporate Surplus	$ 26,360,620	$13,558,043	$ 4,962,123	$ 7,840,454

* The column "License Contract Operations" includes certain items which may be considered in part "Holding Company" items. (See adjustment for "Holding Company" portion).

** Red figure

Notes: A. Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department. The item appearing opposite Interest and Dividend Payments represents an apportionment to that Department.

B. The column "Holding Company (including Miscellaneous Non-License Contract) Operations" includes total revenues and expenses of Radio Broadcasting Operations (Station WEAF) for which separate subsidiary accounts were maintained.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
STATEMENT OF TELEPHONE OPERATING REVENUES SHOWING SEPARATELY
1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. HOLDING COMPANY OPERATIONS

SCHEDULE 310 OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1926

I.C.C. Classification Account Number	Title	Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations	Holding Company (Incl. Miscellaneous Non-License Contract) Operations (See Note B)
	I. Exchange Service Revenues				
500	Subscribers' station revenues	$ 0	$ 0	$ 0	$ 0
501	Public pay station revenues	0	0	0	0
503	Service stations	0	0	0	0
504	Private exchange lines	0	0	0	0
505	Minor rents of exchange plant	0	0	0	0
506	Other exchange revenues	0	0	0	0
507	Miscellaneous exchange service revenues		0	0	0
	Total exchange service revenues	0	0	0	0
	II. Toll Service Revenues				
510	Message tolls	43,206,941	43,206,941	0	0
512	Leased toll lines	2,674,968	2,674,968	0	0
513	Telegraph tolls	0	0	0	0
514	Telegraph service on toll lines	12,261,270	12,261,270	0	0
515	Minor rents of toll plant	2,641,653	2,641,653	0	0
516	Other toll line revenues	18,094	18,094	0	0
511	Miscellaneous toll line revenues	17,595,985	17,595,985	0	0
	Total toll service revenues	60,802,926	60,802,926	0	0
	III. Miscellaneous Operating Revenues				
520	Messenger service	0	0	0	0
521	Telegraph commissions	0	0	0	0
522	Other telegraph service charges	0	0	0	0
523	Advertising and directory	0	0	0	0
524	Rents from other operating property		0	0	
525	Other miscellaneous revenue	670,696	65,573	0	605,123
	Miscellaneous direct revenues	670,696	65,573	0	605,123
526	Licensee revenue - Cr.	29,850,303	0	29,850,303	
527	Licensee revenue - Dr.		0		
	Total miscellaneous operating revenues	30,520,999	65,573	29,850,303	605,123
	Total	91,323,925	60,868,499	29,850,303	605,123
	Long Lines payment for services of the character furnished under license contracts	x x x	[illegible]	1,696,400	
	Adjustment for facilities furnished by the Long Lines Department for public demonstration purposes and radio broadcasting operations	x x x	70,708	1,677	[illegible]
		x x x	[illegible]	1,698,077	[illegible]
	Grand Total	$91,323,925	$59,242,807	$31,548,380	$532,738

Notes: A. Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department.

B. The column "Holding Company (including Miscellaneous Non-License Contract Operations)" includes total revenues of Radio Broadcasting Operations (Station WEAF) for which separate subsidiary accounts were maintained.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY

SUMMARY STATEMENT OF TOTAL REVENUES AND EXPENSES SHOWING SEPARATELY: 1. LONG LINES DEPARTMENT OPERATIONS, 2. LICENSE CONTRACT OPERATIONS, 3. HOLDING COMPANY OPERATIONS (PARTLY ESTIMATED)

YEAR 1926

	Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations (Partly Estimated)*	Holding Company (Incl. Miscellaneous Non-License Contract) Operations (Partly Estimated)* (See Note B)
Revenues:				
Operating	$ 91,323,925	$50,242,807	$31,548,380	$ 532,738
Non-operating:				
Interest on Cash and Temporary Investments	2,604,888	36,248	2,639,122	9,518
Interest on Advances (Temporary Financing of Licensee Companies)	10,628,978	0	10,622,988	5,990
Other Interest	841,343	408,025	0	435,318
Dividends	91,963,935	0	0	91,963,935
Royalties, Rents and Miscellaneous	467,897	118,944	0	348,955
	$197,910,966	$50,806,024	$44,810,490	$93,294,452
Expenses:				
Maintenance - Repairs and Depreciation	$ 20,480,769	$15,282,263	$ 5,175,876	$ 22,630
Traffic	10,190,580	9,997,257	0	193,273
Commercial - Advertising	1,506,064	667,471	834,223	94,370
General and Miscellaneous	12,768,026	750,711	11,966,027	51,288
Uncollectible Operating Revenues	741,968	728,468	0	13,500
Taxes	8,042,783	4,632,214	3,408,795	1,774
Rents	5,046,623	3,862,287	1,097,221	87,115
Other Miscellaneous Deductions	112,816	111,358	0	1,458
Interest and Dividend Payments	108,437,332	11,066,553	20,352,648	77,018,131
Adjustment for "Holding Company" estimated expenses jointly incurred with "License Contract Operations"	x x x	x x x	1,600,000**	1,600,000
	$167,416,911	$47,098,582	$41,234,790	$79,083,539
Amount transferred to credit of Corporate Surplus	$ 30,494,055	$12,707,442	$ 3,575,700	$14,210,913

* The column "License Contract Operations" includes certain items which may be considered in part "Holding Company" items. (See adjustment for "Holding Company" portion).

** Red figure

Notes: A. Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department. The item appearing opposite Interest and Dividend Payments represents an apportionment to that Department.

B. The column "Holding Company (including miscellaneous Non-License Contract) Operations" includes total revenues and expenses of Radio Broadcasting Operations (Station WEAF) for which separate subsidiary accounts were maintained.

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Sheet No. 1.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
STATEMENT OF TELEPHONE OPERATING REVENUES SHOWING SEPARATELY:
1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. HOLDING COMPANY OPERATIONS
SCHEDULE 310 OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1927

I.C.C. Classification Account Number	Title	Total for Company	Long Lines Department Operations (See "Note")	License Contract Operations	Holding Company (Incl. Miscellaneous Non-License Contract) Operations
	Exchange Service Revenues				
	Subscribers' station revenues	$	$	$ 0	$ [illegible]
	Public pay station revenues			0	[illegible]
	Service stations				
	Private exchange lines			0	[illegible]
	Rent of exchange plant			[illegible]	[illegible]
	Local exchange revenue			[illegible]	[illegible]
	Miscellaneous exchange service revenues			[illegible]	[illegible]
	Total exchange service revenues			[illegible]	[illegible]
	Toll Service Revenues				
	Message tolls	[illegible]	[illegible]		
	[illegible] line	[illegible]	[illegible]		[illegible]
	[illegible]				
	[illegible] service [illegible]	[illegible],284,158	[illegible]		
	[illegible] of toll [illegible]	3,54[illegible]	3,[illegible]		
	Other toll line revenues	84,55[illegible]	84,55[illegible]		
	Miscellaneous toll line revenues	[illegible],67[illegible]	[illegible],67[illegible]		
	Total toll service revenues	[illegible]	[illegible]		
	Miscellaneous Operating Revenues				
	[illegible] service				
	Telegraph commissions				
	[illegible]				
	[illegible] and directory				
	Rent from other operating property				
	Miscellaneous revenue	[illegible]	[illegible]		
	Total miscellaneous direct revenues	57,9[illegible]	5[illegible],9[illegible]		
	License revenue - Cr.	[illegible]		32,454,652	
	License revenue - Dr.				
	Total miscellaneous operating revenues	3[illegible],84	5[illegible]	32,454,652	
	[illegible]	[illegible]	[illegible]	32,454,652	
	[illegible] payment for services [illegible] contract [illegible] under license contract	[illegible]	[illegible]	1,7[illegible],032	
	Grand Total	499,86[illegible],79[illegible]	[illegible]65,624,[illegible]	[illegible]34,242,684	

Note: Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY

SUMMARY STATEMENT OF TOTAL REVENUES AND EXPENSES SHOWING SEPARATELY:
1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS (PARTLY ESTIMATED)
3. HOLDING COMPANY OPERATIONS

YEAR 1927

	Total for Company	Long Lines Department Operations (See "Note")	License Contract Operations (Partly Estimated)*	Holding Company (Incl. Miscellaneous Non-License Contract) Operations (Partly Estimated)*
Revenues:				
Operating	$ 99,866,791	$65,624,107	$34,242,684	$ 0
Non-operating:				
Interest on Cash and Temporary Investments	2,329,462	36,238	2,293,011	213
Interest on Advances (Temporary Financing of Licensee Companies)	11,924,000	0	11,922,800	1,200
Other Interest	1,744,934	466,379	0	1,278,555
Dividends	147,895,600	0	10,280	147,885,320
Royalties, Rents and Miscellaneous	702,903	97,051	0	605,852
	$264,463,690	$66,223,775	$48,468,775	$149,771,140
Expenses:				
Maintenance - Repairs and Depreciation	$ 23,363,562	$18,027,420	$ 5,335,869	$ 273
Traffic	11,368,484	11,368,484	0	0
Commercial - Advertising	1,643,556	888,645	754,911	0
General and Miscellaneous	14,770,151	1,184,063	13,557,489	28,599
Uncollectible Operating Revenues	833,609	830,590	0	3,019
Taxes	7,777,411	4,295,118	3,340,070	142,223
Rents	6,249,851	5,044,915	1,201,017	3,919
Other Miscellaneous Deductions	134,306	132,742	0	1,564
Interest and Dividend Payments	119,148,919	13,344,639	20,442,471	85,361,809
Adjustment for "Holding Company" estimated expenses jointly incurred with "License Contract Operations"	x x x	x x x	1,800,000**	1,800,000
	$185,289,849	$55,116,616	$42,831,827	$ 87,341,406
Amount transferred to credit of Corporate Surplus	$ 79,173,841	$11,107,159	$ 5,636,948	$ 62,429,734

* The column "License Contract Operations" includes certain items which may be considered in part "Holding Company" items. (See adjustment for "Holding Company" portion).

** Red figure.

Note: Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department. The item appearing opposite Interest and Dividend Payments represents an apportionment to that Department.

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Sheet No. 1.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
STATEMENT OF TELEPHONE OPERATING REVENUES SHOWING SEPARATELY:
1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. HOLDING COMPANY OPERATIONS

SCHEDULE 310 OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1928

I.C.C. Classification Account Number	Title	Total for Company	Long Lines Department Operations (See "Note")	License Contract Operations	Holding Company (Incl. Miscellaneous Non-License Contract) Operations
	I. Exchange Service Revenues				
500	Subscribers' station revenues	$ 0	$ 0	$ 0	$ 0
501	Public pay station revenues	0	0	0	0
503	Service stations	0	0	0	0
504	Private exchange lines	0	0	0	0
505	Minor rents of exchange plant	0	0	0	0
506	Other exchange revenues	0	0	0	0
502	Miscellaneous exchange service revenues	0	0	0	0
	Total exchange service revenues	0	0	0	0
	II. Toll Service Revenues				
510	Message tolls	58,769,659	58,769,659	0	0
512	Leased toll lines	4,940,566	4,940,566	0	0
513	Telegraph tolls	0	0	0	0
514	Telegraph service on toll lines	15,555,789	15,555,789	0	0
515	Minor rents of toll plant	3,503,675	3,503,675	0	0
516	Other toll line revenue	78,364	78,364	0	0
511	Miscellaneous toll line revenues	24,078,374	24,078,374	0	0
	Total toll service revenues	82,848,033	82,848,033	0	0
	III. Miscellaneous Operating Revenues				
520	Messenger service	0	0	0	0
521	Telegraph commissions	0	0	0	0
522	Other telegraph service charges	0	0	0	0
523	Advertising and directory	0	0	0	0
524	Rents from other operating property	0	0	0	0
525	Other miscellaneous revenue	113,428	113,428	0	0
	Miscellaneous direct revenues	113,428	113,428		0
526	Licensee revenue - Cr.	17,622,365	0	17,622,365	0
527	Licensee revenue - Dr.	0	0	0	0
	Total miscellaneous operating revenues	17,735,793	113,428	17,622,365	0
	Total	100,583,826	82,961,461	17,622,365	0
	Long lines 2% payment for services of the character furnished under License Contracts	x x x	1,581,797**	1,581,797	0
	Grand Total	$100,583,626	$81,379,664	$19,204,162	0

Note: Separate subsidiary accounts are currently maintained recording the results of operations of the Long lines Department.

** Red figure

ust 25, 1931.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY

SUMMARY STATEMENT OF TOTAL REVENUES AND EXPENSES SHOWING SEPARATELY:

1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. HOLDING COMPANY OPERATIONS (PARTLY ESTIMATED)

YEAR 1928

	Total for Company	Long Lines Department Operations (See "Note")	License Contract Operations (Partly Estimated)*	Holding Company (Incl. Miscellaneous Non-License Contract Operations (Partly Estimated)*
Revenues:				
Operating	$100,583,826	$81,379,664	$19,204,162	$ 0
Non-operating:				
Interest on Cash and Temporary Investments	3,889,847	43,160	3,846,167	520
Interest on Advances (Temporary Financing of Licensee Companies)	10,761,911	0	10,760,692	1,219
Other Interest	788,681	523,178	0	265,503
Dividends	119,176,197	0	0	119,176,197
Royalties, Rents and Miscellaneous	581,517	61,087	0	520,430
	$235,781,979	$82,007,089	$33,811,021	$119,963,869
Expenses:				
Maintenance - Repairs and Depreciation	$ 22,613,430	$22,519,336	$ 92,646	$ 404
Traffic	13,452,795	13,452,795	0	0
Commercial - Advertising	2,090,049	1,098,774	991,275	0
General and Miscellaneous	16,261,163	1,519,012	14,677,982	64,169
Uncollectible Operating Revenues	923,054	923,054	0	0
Taxes	7,741,067	6,068,856	1,671,872	339
Rents	7,274,602	5,978,064	1,292,015	4,523
Other Miscellaneous Deductions	135,800	134,272	0	1,528
Interest and Dividend Payments	125,918,998	15,179,436	18,551,426	92,188,136
Adjustment for "Holding Company" estimated expenses jointly incurred with "License Contract Operations"	x x x	x x x	2,000,000 **	2,000,000
	$196,432,928	$66,895,551	$35,278,226	$ 94,259,169
Amount transferred to credit of Corporate Surplus	$ 39,349,051	$15,111,538	$ 1,467,205 **	$ 25,704,699

* The column "License Contract Operations" includes certain items which may be considered in part "Holding Company" items. (See adjustment for "Holding Company" portion).

** Red figure

Note: Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department. The item appearing opposite Interest and Dividend Payments represents an apportionment to that Department.

August 25, 1931.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
STATEMENT OF TELEPHONE OPERATING REVENUES SHOWING SEPARATELY:
1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. HOLDING COMPANY OPERATIONS

SCHEDULE 310 OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1929

I.C.C. Classification Account Number	I.C.C. Classification Title	Total for Company	Long Lines Department Operations (See "Note")	License Contract Operations	Holding Company (Incl. Miscellaneous Non-License Contract) Operations
	I. Exchange Service Revenues				
500	Subscribers' station revenues	$ 0	$ 0	$ 0	$ 0
501	Public pay station revenues	0	0	0	0
503	Service stations	0	0	0	0
504	Private exchange lines	0	0	0	0
505	Minor rents of exchange plant	0	0	0	0
506	Other exchange revenues	0	0	0	0
507	Miscellaneous exchange service revenues	0	0	0	0
	Total exchange service revenues	0	0	0	0
	II. Toll Service Revenues				
510	Message tolls	68,703,270	68,703,270	0	0
512	Leased toll lines	6,574,353	6,574,353	0	0
513	Telegraph tolls	0	0	0	0
514	Telegraph service on toll lines	18,025,257	18,025,257	0	0
515	Minor rents of toll plant	3,948,388	3,948,388	0	0
516	Other toll line revenues	60,307	60,307	0	0
511	Miscellaneous toll line revenues	28,606,305	28,606,305	0	0
	Total toll service revenues	97,311,575	97,311,575	0	0
	III. Miscellaneous Operating Revenues				
520	Messenger service	0	0	0	0
521	Telegraph commissions	0	0	0	0
522	Other telegraph service charges	0	0	0	0
523	Advertising and directory	0	0	0	0
524	Rents from other operating property	0	0	0	0
525	Other miscellaneous revenue	123,078	123,078	0	0
	Miscellaneous direct revenues	123,078	123,078	0	0
526	Licensee revenue - Cr.	14,455,588	0	14,455,588	0
527	Licensee revenue - Dr.	0	0	0	0
	Total miscellaneous operating revenues	14,578,666	123,078	14,455,588	0
	Total	111,890,241	97,434,653	14,455,588	0
	Long Lines 1-1/2% payment for services of the character furnished under License Contracts	x x x	1,422,935**	1,422,935	0
	Grand Total	$111,890,241	$96,011,718	$15,878,523	0

Note: Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department.

** Red figure

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY

SUMMARY STATEMENT OF TOTAL REVENUES AND EXPENSES SHOWING SEPARATELY:

1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. HOLDING COMPANY OPERATIONS) (PARTLY ESTIMATED)

YEAR 1929

	Total for Company	Long Lines Department Operations (See "Note")	License Contract Operations (Partly Estimated)*	Holding Company (Incl. Miscellaneous Non-License Contract Operations (Partly Estimated)*
Revenues:				
Operating	$111,890,241	$96,011,718	$15,878,523	$ 0
Non-operating:				
Interest on Cash and Temporary Investments	3,398,789	48,619	3,348,668	1,502
Interest on Advances (Temporary Financing of Licensee Companies)	14,558,416	0	14,554,437	3,979
Other Interest	3,605,830	1,083,275	0	2,522,555
Dividends	140,911,591	0	0	140,911,591
Royalties, Rents and Miscellaneous	1,331,040	66,162	0	1,264,878
	$275,695,907	$97,209,774	$33,781,628	$144.704,505
Expenses:				
Maintenance - Repairs and Depreciation	$ 28,201,651	$28,071,437	$ 128,914	$ 1,300
Traffic	15,568,666	15,568,666	0	0
Commercial - Advertising	2,825,029	1,413,503	1,300,076	111,450
General and Miscellaneous	18,448,517	1,906,059	16,395,210	147,248
Uncollectible Operating Revenues	1,100,117	1,100,117	0	0
Taxes	6,636,745	5,618,032	1,018,102	611
Rents	8,898,297	7,581,167	1,308,046	9,084
Other Miscellaneous Deductions	194,013	192,435	0	1,578
Interest and Dividend Payments	144,011,885	19,559,181	21,743,599	102,709,105
Adjustment for "Holding Company" estimated expenses jointly incurred with "License Contract Operations"	x x x	x x x	2,250,000 **	2,250,000
	$225,884,920	$81,010,597	$39,643,947	$105,230,376
Amount transferred to credit of Corporate Surplus	$ 49,810,987	$16,199,177	$ 5,862,319 **	$ 39,474,129

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* The column "License Contract Operations" includes certain items which may be considered in part "Holding Company" items. (See adjustment for "Holding Company" portion.)

** Red figures

Note: - Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department. The item appearing opposite Interest and Dividend Payments represents an apportionment to that Department.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

STATEMENT OF TELEPHONE OPERATING REVENUES SHOWING SEPARATELY:

1. LONG LINES DEPARTMENT OPERATION.
2. LICENSE CONTRACT OPERATIONS
3. HOLDING COMPANY OPERATIONS

SCHEDULE 310 OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1930

I.C.C. Classification Account Number	Title	Total for Company	Long Lines Department Operations (See "Note")	License Contract Operations	Holding Company (Incl. Miscellaneous Non-License Contract Operations
	I. Exchange Service Revenues				
500	Subscribers' station revenues	$ 0	$ 0	$ 0	
501	Public pay station revenues	0	0	0	0
503	Service stations		0	0	0
504	Private exchange lines	0	0	0	0
505	Minor rents of exchange plant		0		0
506	Other exchange revenues	0	0	0	0
508	Miscellaneous exchange service revenues	0	0	0	0
	Total exchange service revenues	0	0	0	0
	II. Toll Service Revenues				
510	Message tolls	68,601,594	68,601,594	0	0
512	Leased toll lines	7,330,965	7,330,965	0	0
513	Telegraph tolls	0	0	0	0
514	Telegraph service on toll lines	18,333,671	18,333,671	0	0
515	Minor rents of toll plant	5,172,576	5,172,576	0	0
516	Other toll line revenues	35,648	35,648	0	0
511	Miscellaneous toll line revenues	30,872,800	30,872,800	0	0
	Total toll service revenues	99,474,394	99,474,394	0	0
	III. Miscellaneous Operating Revenues				
520	Messenger service	0	0	0	
521	Telegraph commissions	0	0	0	
522	Other telegraph service charges	0		0	0
523	Advertising and directory	–	0	0	0
524	Rents from other operating property	0	0	0	0
525	Other miscellaneous revenue	60,581	60,581	0	0
	Miscellaneous direct revenues	60,581	60,581	0	0
526	Licensee revenue - Dr.	15,025,890	0	15,025,890	0
527	Licensee revenue - Cr.				0
	Total miscellaneous operating revenues	15,086,471	60,581	15,025,890	0
	Total	114,560,865	99,534,975	15,025,890	0
	Long Lines 1-1/2% payment for services of the character furnished under License Contracts	0 x x x	1,485,249 *	1,485,249	0
	Grand Total	$114,560,865	$98,049,726	$16,511,139	

Note: Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department.

* Red figure

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY

SUMMARY STATEMENT OF TOTAL REVENUES AND EXPENSES SHOWING SEPARATELY:
1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS (PARTLY ESTIMATED)
3. HOLDING COMPANY OPERATIONS

YEAR 1930

	Total for Company	Long Lines Department Operations (See "Note")	License Contract Operations (Partly Estimated)*	Holding Company (Incl. Miscellaneous Non-License Contract) Operations (Partly Estimated)*
Revenues:				
Operating	$114,560,865	$98,049,726	$16,511,139	$ 0
Non-operating:				
Interest on Cash and Temporary Investments	6,917,210	48,862	2,951,996	3,916,388
Interest on Advances (Temporary Financing of Licensee Companies)	16,471,293	0	16,464,163	7,130
Other Interest	4,638,358	1,676,836	0	2,961,822
Dividends	148,178,884	0	0	148,178,886
Royalties, Rents and Miscellaneous	1,248,258	84,648	0	1,141,290
	$292,014,870	$99,862,092	$35,927,298	$156,225,480
Expenses:				
Maintenance - Repairs and Depreciation	$ 33,161,384	$33,006,638	$ 153,800	$ 946
Traffic	16,463,228	16,463,229	0	0
Commercial - Advertising	2,950,024	1,513,527	1,305,662	130,855
General and Miscellaneous	23,379,677	2,246,054	20,652,452	481,171
Uncollectible Operating Revenues	1,240,846	1,243,336	0	2,490**
Taxes	4,829,862	3,836,186	988,898	4,828
Rents	11,738,887	10,376,092	1,373,070	7,726
Other Miscellaneous Deductions	250,477	249,051	0	1,426
Interest and Dividend Payments	171,673,851	24,417,353	23,186,340	122,059,988
Adjustment for "Holding Company" estimated expenses jointly incurred with "License Contract Operations"	x x x	x x x	2,500,000**	2,500,000
	$263,708,236	$93,351,415	$47,162,422	$125,194,399
Amount transferred to credit of Corporate Surplus	$ 28,306,634	$ 6,510,677	$11,235,124 **	$ 31,031,081

* The column "License Contract Operations" includes certain items which may be considered in part "Holding Company" items. (See adjustment for "Holding Company" portion).

** Red figures

Note: Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department. The item appearing opposite Interest and Dividend Payments represents an apportionment to that Department.

August 25, 1931.

EXHIBIT X-207

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

STATEMENT OF TELEPHONE OPERATING REVENUES SHOWING SEPARATELY:

1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. PERMANENT INVESTMENTS IN LICENSEE COMPANIES
4. OTHER ACTIVITIES

SCHEDULE 310 OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1931

I.C.C. Classification				
Account Number	Title	Total for Company	Long Lines Department Operations (See Note A)	License Contrac Operatio
	I. Exchange Service Revenues			
500	Subscribers' station revenues	$ 0	$ 0	$
501	Public pay station revenues	0	0	
503	Service stations	0	0	
504	Private exchange lines	0	0	
505	Minor rents of exchange plant	0	0	
506	Other exchange revenues	0	0	
502	Miscellaneous exchange service revenues	0	0	
	Total exchange service revenues	0	0	
	II. Toll Service Revenues			
510	Message tolls	65,578,736	65,578,736	
512	Leased toll lines	6,704,285	6,704,285	
513	Telegraph tolls	0	0	
514	Telegraph service on toll lines	16,720,444	16,720,444	
515	Minor rents of toll plant	5,435,781	5,435,791	
516	Other toll line revenues	19,806	19,806	
511	Miscellaneous toll line revenues	28,880,316	28,880,316	
	Total toll service revenues	94,459,052	94,459,052	
	III. Miscellaneous Operating Revenues			
520	Messenger service	0	0	
521	Telegraph commissions	0	0	
522	Other telegraph service charges	0	0	
523	Advertising and directory	42,760	0	
524	Rents from other operating property	0	0	
525	Other miscellaneous revenue	97,788	97,788	
	Miscellaneous direct revenues	140,548	97,788	
526	Licensee revenue - Cr.	14,718,361	0	14,718,36
527	Licensee revenue - Dr.	0	0	
	Total miscellaneous operating revenues	14,858,909	97,788	14,718,36
	Total	109,317,961	94,556,840	14,718,36
	Long Lines 1-1/2% payment for services of the character furnished under License Contracts	x x x x	1,417,094 *	1,417,09

Sheet No. 2.

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EXHIBIT X-207

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

STATEMENT OF TELEPHONE OPERATING REVENUES SHOWING SEPARATELY:

1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. PERMANENT INVESTMENTS IN LICENSEE COMPANIES
4. OTHER ACTIVITIES

SCHEDULE 310 OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1931

Classification Title	Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations	Permanent Investments in Licensee Companies	Other Activities
ge Service Revenues					
	$ 0	$ 0	$ 0	$ 0	$ 0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
evenues	0	0	0	0	0
nues	0	0	0	0	0
rvice Revenues					
	65,578,736	65,578,736	0	0	0
	6,704,285	6,704,285	0	0	0
	0	0	0	0	0
	16,720,444	16,720,444	0	0	0
	5,435,781	5,435,781	0	0	0
	19,806	19,806	0	0	0
	28,880,316	28,880,316	0	0	0
	94,459,052	94,459,052	0	0	0
aneous Operating Revenues					
	0	0	0	0	0
	0	0	0	0	0
	0	0	0	0	0
	42,760	0	0	0	42,760
rty	0	0	0	0	0
	97,788	97,788	0	0	0
ss	140,548	97,788	0	0	42,760
	14,718,361	0	14,718,361	0	0
	0	0	0	0	0
revenues	14,858,909	97,788	14,718,361	0	42,760
	109,317,961	94,556,840	14,718,361	0	42,760
vices of the character ts	x x x x	1,417,094.*	1,417,094	0	0

526	Licensee revenue - Cr.	14,718,361	0	14,718,361
527	Licensee revenue - Dr.	0	0	0
	Total miscellaneous operating revenues	14,858,909	97,788	14,718,361
	Total	109,317,961	94,556,840	14,718,361
	Long Lines 1-1/2% payment for services of the character furnished under License Contracts	x x x x	1,417,094*	1,417,094
	Grand Total	$109,317,961	$93,139,746	$16,135,455

Note A. - Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department.

* Red figure

	14,718,361	0	14,718,361	0	0
ing revenues	0	0	0	0	0
	14,858,909	97,788	14,718,361	0	42,760
	109,317,961	94,556,840	14,718,361	0	42,760
ervices of the character acts	x x x x	1,417,094 *	1,417,094	0	0
el	$109,317,961	$93,139,746	$16,135,455	$ 0	$42,760

Note A. Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department.

* Red figure

Sheet No. 3.

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EXHIBIT X-208

AMERICAN TELEPHONE AND TELEGRAPH COMPANY
[illegible] OF TELEPHONE OPERATING EXPENSES SHOWING SEPARATELY

1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. HOLDING COMPANY OPERATIONS

SCHEDULE 320 OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1920

I.C.C. Classification					
Account Number	Title	Total for Company	Long Lines Department Operations (See "Note")	License Contract Operations *	Holding Company (Incl. Miscellaneous Non-License Contract) Operations
	I. Maintenance Expenses				
601	Supervision of maintenance	$ 1,253,560	$ 1,253,560		
602	Repairs of aerial plant	3,323,507	3,323,507	0	0
603	Repairs of underground plant	243,791	243,791	0	0
604	Repairs of central office equipment	1,012,763	869,013	143,750	0
605	Repairs of station equipment	629,641	212,931	416,710	0
606	Repairs of buildings and grounds	39,807	39,807	0	0
607	Station removals and changes	22,921	22,921	0	0
608	Depreciation of plant and equipment	5,269,258	3,479,460	1,789,798	0
609	Extraordinary depreciation		0	0	0
610	Other maintenance expenses	49,210	32,941	16,269	0
611	Repairs charged to reserves - Cr.	635,663	635,663	0	0
	Total maintenance expenses	11,208,795	8,842,268	2,366,527	0
	II. Traffic Expenses				
621	Traffic superintendence	909,279	909,279	0	0
622	Service inspection	241,263	241,263	0	0
623	Clerical operating wages	188,544	188,544	0	0
62[illegible]	Central office superintendence	1,339,086	1,339,086	0	0
624	Operators' wages	5,865,724	5,865,724	0	0
626	Rest and lunchrooms	238,524	238,524	0	0
627	Operators' Schooling	530,318	530,318	0	0
628	Transmission power	260,518	260,518	0	0
629	Central office stationery and printing	133,773	133,773	0	0
63[illegible]	Messenger service	1,161	1,161	0	0
63[illegible]	Miscellaneous central office expenses	161,302	161,302	0	0
625	Central office supplies and expenses	1,325,596	1,325,596	0	0
632	Pay station expenses	1,864	1,864	0	0
633	Other traffic expenses	413,082	413,082	0	0
	Total traffic expenses	8,945,352	8,945,352	0	0
	III. Commercial Expenses				
640	Commercial administration	273,508	273,508	0	0
642	Advertising	373,436	7,039	366,397	0
643	Canvassing	0	0	0	0
644	Sublicensee relations	0	0	0	0
641	Promotion expenses	Cr373,436	7,039	366,397	0
646	Revenue accounting	29,324	29,324	0	0
647	Revenue collecting	9,859	9,859	0	0
648	Pay station commissions	0	0	0	0
645	Collection expenses	39,183	39,183	0	0
649	Directory expenses	0	0	0	0
650	Other commercial expenses	0	0	0	0
	Total commercial expenses	686,127	319,730	366,397	0
	IV. General and Miscellaneous Expenses				
661	Salaries of general officers	611,999	35,147	576,852	0
662	Salaries of general office clerks	2,494,607	97,035	2,397,572	0
660	General office salaries	3,106,606	132,182	2,974,424	0
664	Expenses of general officers and clerks	385,191	13,304	371,887	0
665	General office stationery and printing	311,337	3,689	307,648	0
666	Other general office supplies and expenses	334,382	27,704	306,678	0
663	General office supplies and expenses	1,030,910	44,697	986,213	0
667	General law expenses	539,112	131,396	407,716	0
668	Insurance	22,089	20,775	1,314	0
669	Accidents and damages	27,392	27,392	0	0
670	Law expenses connected with damages	4,983	4,983	0	0
672	Relief department and pensions	362,033	224,271	137,762	0
673	Telephone franchise requirements	248	248	0	0
674	Amortization of franchises and patents	0	0	0	0
675	Other general expenses	1,893,787	13,129	1,880,658	0
676	Telephone franchise requirements - Cr.	0	0	0	0
-671	Miscellaneous general expenses	2,256,068	237,648	2,018,420	0
	Total general expenses	6,987,160	599,073	6,388,087	0
	Adjustment for telephone service furnished by Long Lines	x x x	[illegible]	49,345	
	Grand Total	$27,827,434	$18,657,078	$9,170,356	

* The column "License Contract Operations" includes certain items which may be considered in part "Holding Company" items. (See adjustment for "Holding Company" portion under Account Number [illegible], Sheet No. 4).

Note: Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
STATEMENT OF TELEPHONE OPERATING EXPENSES SHOWN SEPARATELY
1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. HOLDING COMPANY OPERATIONS
SCHEDULE 32 OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1941

I.C.C. Classification					
Account Number	Title	Total for Company	Long Lines Department Operations (See "Note")	License Contract Operations *	Holding Company (Incl. Miscellaneous Non-License Contract) Operations
	I. Maintenance Expenses				
[illegible]	Supervision of maintenance	$ 905,397	$ 905,397	$ 0	$ 0
[illegible]	Repairs of aerial plant	3,060,640	3,060,640	0	0
[illegible]	Repairs of underground plant	273,152	273,152	0	0
[illegible]	Repairs of central office equipment	1,299,319	1,096,572	202,747	0
[illegible]	Repairs of station equipment	840,448	278,180	562,268	0
[illegible]	Repairs of buildings and grounds	45,587	25,786	19,801	0
[illegible]	Station removals and changes	29,270	29,270	0	0
[illegible]	Depreciation of plant and equipment	5,668,772	3,635,858	2,032,914	0
[illegible]	Extraordinary depreciation	0	0	0	0
[illegible]	Other maintenance expenses	78,434	78,434	0	0
[illegible]	[illegible] charged to reserves - Cr.	577,300	577,300	0	0
	Total maintenance expenses	11,643,719	8,825,969	2,817,750	0
	II. Traffic Expenses				
[illegible]	Traffic superintendence	982,562	982,562	0	0
[illegible]	Service inspection	219,933	219,933	0	0
[illegible]	General operating wages	235,915	235,915	0	0
[illegible]	Central office superintendence	1,438,410	1,438,410	0	0
[illegible]	Operators' wages	5,553,171	5,553,171	0	0
[illegible]	Rest and lunch rooms	194,777	194,777	0	0
[illegible]	Operators' schooling	175,706	175,706	0	0
[illegible]	[illegible] power	330,685	330,685	0	0
[illegible]	Central office stationery and printing	80,360	80,360	0	0
[illegible]	Messenger service	1,304	1,304	0	0
[illegible]	Miscellaneous central office expenses	181,825	181,825	0	0
[illegible]	Central office supplies and expenses	964,659	964,659	0	0
[illegible]	Pay station expenses	1,639	1,639	0	0
[illegible]	Other traffic expenses	246,850	246,850	0	0
	Total traffic expenses	8,204,729	8,204,729	0	0
	III. Commercial Expenses				
[illegible]	Commercial administration	255,555	255,555	0	0
[illegible]	Advertising	605,715	24,648	581,067	0
[illegible]	Canvassing	0	0	0	0
[illegible]	[illegible] relations	0	0	0	0
[illegible]	[illegible] expenses	605,715	24,648	581,067	0
[illegible]	Revenue accounting	34,344	34,344	0	0
[illegible]	Revenue collecting	8,666	8,666	0	0
[illegible]	[illegible] commissions		0	0	0
[illegible]	[illegible] expenses	43,010	43,010	0	0
[illegible]	[illegible] expenses		0	0	0
[illegible]	Other commercial expenses		0	0	0
	Total commercial expenses	904,28[illegible]	323,213	581,067	0
	IV. General and Miscellaneous Expenses				
[illegible]	Salaries of general officers	627,420	40,332	587,088	0
[illegible]	Salaries of general office clerks	3,368,752	110,816	3,257,936	0
[illegible]	General office salaries	3,996,172	151,148	3,845,024	0
[illegible]	Expenses of general officers and [illegible]	430,809	12,293	418,516	0
[illegible]	General office stationery and printing	422,104	4,648	407,456	0
[illegible]	[illegible] general office supplies and expenses	463,475	11,067	452,388	0
[illegible]	General office supplies and expenses	1,306,368	28,028	1,278,360	0
[illegible]	General law expenses	[illegible]	137,540	[illegible]	0
[illegible]	Insurance	27,745	24,955	2,790	
[illegible]	Accidents and damages	26,814	26,614	0	0
[illegible]	Law expenses connected with damages	3,365	3,365	0	0
[illegible]	Relief department and pensions	391,580	241,680	149,900	0
[illegible]	Telephone franchise requirements	867	867	0	0
[illegible]	Amortization of franchises and patents	0	0	0	0
[illegible]	Other general expenses	1,363,408	84,327	1,728,547	1,550,734
[illegible]	Telephone franchise requirements - Cr.		0	0	
[illegible]	Miscellaneous general expenses	3,755,855	326,874	1,878,247	1,550,734
	Total general expenses	9,651,581	698,744	7,404,103	1,550,734
	[illegible] for telephone service furnished by Long Lines	x x x	[illegible],642	3,642	0
	Grand Total	$30,404,309	$18,049,013	$10,804,562	$1,550,734

* The column "License Contract Operations" includes certain items which may be considered in part "Holding Company" items. (See adjustment for "Holding Company" portion under Account Number [illegible], Sheet No. 4).

Note: Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department.

Sheet No. 3.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY

STATEMENT OF TELEPHONE OPERATING EXPENSES SHOWING SEPARATELY:

1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. HOLDING COMPANY OPERATIONS

SCHEDULE 320 OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1922

I.C.C. Classification Account Number	Title	Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations*	Holding Company (Incl. Miscellaneous Non-License Contract) Operations* (See Note B)
	I. Maintenance Expenses				
[illegible]	Supervision of maintenance	$ 1,017,102	$ 1,016,867	$ 0	$ 235
-	Repairs of aerial plant	3,643,826	3,643,826	0	0
603	Repairs of underground plant	261,604	261,604	0	0
604	Repairs of central office equipment	1,316,925	1,151,232	162,707	2,986
[illegible]	Repairs of station equipment	1,050,097	192,452	857,645	0
606	Repairs of buildings and grounds	147,793	36,355	111,438	0
607	Station removals and changes	34,377	34,377	0	0
[illegible]	Depreciation of plant and equipment	6,356,471	4,116,558	2,239,883	0
609	Extraordinary depreciation	0	0	0	0
610	Other maintenance expenses	63,732	63,732	0	0
611	Repairs charged to reserves - Cr.	956,689	956,689	0	0
	Total maintenance expenses	12,935,238	9,560,344	3,371,673	3,221
	II. Traffic Expenses				
621	Traffic superintendence	1,115,378	1,114,108	0	1,270
622	Service inspection	152,596	152,598	0	0
623	Clerical operating wages	181,076	181,076	0	0
620	Central office superintendence	1,449,052	1,447,762	0	1,270
624	Operators' wages	5,692,729	5,690,597	0	2,132
626	Rest and lunch rooms	129,702	129,702	0	0
627	Operators' schooling	207,083	207,083	0	0
628	Transmission power	379,114	379,114	0	0
629	Central office stationery and printing	101,606	101,606	0	0
630	Messenger service	0	0	0	0
631	Miscellaneous central office expenses	192,448	192,418	0	30
625	Central office supplies and expenses	1,009,953	1,009,923	0	30
632	Pay station expenses	1,823	1,823	0	0
633	Other traffic expenses	375,970	368,590	0	7,380
	Total traffic expenses	8,529,527	8,518,715	0	10,812
	III. Commercial Expenses				
641	Commercial administration	272,260	272,132	0	128
642	Advertising	558,714	3,247	553,932	1,535
643	Canvassing	1,155	0	0	1,155
644	Sub-licensee relations	0	0	0	0
[illegible]	Promotion expenses	559,869	3,247	553,932	2,690
646	Revenue accounting	40,699	40,699	0	0
647	Revenue collecting	9,174	9,174	0	0
648	Pay station commissions	0	0	0	0
645	Collection expenses	49,873	49,873	0	0
649	Directory expenses	0	0	0	0
650	Other commercial expenses	0	0	0	0
	Total commercial expenses	882,002	325,252	*553,932	2,818
	IV. General and Miscellaneous Expenses				
661	Salaries of general officers	659,961	33,915	623,273	2,773
662	Salaries of general office clerks	3,873,882	112,006	3,761,876	0
663	General office salaries	4,533,843	145,921	*4,385,149	2,773
664	Expenses of general officers and clerks	400,423	10,702	389,671	50
665	General office stationery and printing	427,897	4,840	422,633	424
666	Other general office supplies and expenses	559,065	15,182	543,447	436
[illegible]	General office supplies and expenses	1,387,385	30,724	1,355,751	910
[illegible]	General law expenses	539,638	125,882	413,756	0
668	Insurance	34,067	28,887	5,180	0
669	Accidents and damages	22,295	22,295	0	0
670	Law expenses connected with damages	7,330	7,330	0	0
672	Relief department and pensions	505,663	290,399	215,264	0
673	Telephone franchise requirements	738	738	0	0
674	Amortization of franchises and patents	0	0	0	0
675	Other general expenses	3,141,192	96,210	1,494,919	1,550,063
676	Telephone franchise requirements - Cr.	0	0	0	0
677	Miscellaneous general expenses	3,647,593	387,347	1,710,183	1,550,063
	Total general expenses	10,172,151	748,386	7,870,019	1,553,746
	Adjustment for telephone service furnished by Long Lines	x x x	-2,669 *	2,669	0
	Grand Total	$32,518,918	$19,150,028	$11,798,293	$1,570,597

* The column "License Contract Operations" includes certain items which may be considered in part "Holding Company" items. (See adjustment for "Holding Company" portion under Account Number "[illegible]", Sheet No. 4).

Notes: A Separate subsidiary accounts are currently maintained record[illegible] the results of operations of the Long [illegible]es Department.

B The column "Holding Company (including Miscellaneous Non-License Contract) Operations" includes total revenues and expenses of the Radio Broadcasting Operations (Station WEAF) for which separate subsidiary accounts were maintained.

* Red figure

[illegible] 5, 1931.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY

STATEMENT OF TELEPHONE OPERATING EXPENSES SHOWING SEPARATELY

1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSEE CONTRACT OPERATIONS
3. HOLDING COMPANY OPERATIONS (PARTLY ESTIMATED)

SCHEDULE 320 OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1933

Account Number	I.C.C. Classification Title	Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations (Partly Estimated)	Holding Company (Incl. Miscellaneous Non-License Contract) Operations* (Partly Estimated) (See Note B)
	I. Maintenance Expenses				
601	Supervision of maintenance	$ 1,023,304	$ 1,021,011	$ 0	$ 2,293
602	Repairs of aerial plant	3,814,854	3,814,854	0	0
603	Repairs of underground plant	256,569	256,569	0	0
604	Repairs of central office equipment	1,637,785	1,428,816	208,969	0
605	Repairs of station equipment	1,027,802	150,348	877,454	0
606	Repairs of buildings and grounds	138,191	72,879	50,052	15,260
607	Station removals and changes	28,626	28,624	0	0
608	Depreciation of plant and equipment	6,880,516	4,527,382	2,342,687	10,467
609	Extraordinary depreciation	0	0	0	0
610	Other maintenance expenses	98,849	78,758	0	20,091
611	Repairs charged to reserves - Cr.	540,671	540,671	0	0
	Total maintenance expenses	14,365,825	10,838,572	3,479,142	48,111
	II. Traffic Expenses				
621	Traffic superintendence	1,330,069	1,318,202	0	11,867
622	Service inspection	123,429	123,429	0	0
623	Clerical operating wages	156,694	156,694	0	0
620	Central office superintendence	1,610,192	1,598,325	0	11,867
624	Operators' wages	6,125,376	6,111,111	0	14,265
626	Rest and lunch rooms	139,752	139,752	0	0
627	Operators' schooling	306,361	306,361	0	0
628	Transmission power	394,844	393,899	0	945
629	Central office stationery and printing	107,892	107,892	0	0
630	Messenger service	0	0	0	0
631	Miscellaneous central office expenses	211,750	211,750	0	0
625	Central office supplies and expenses	1,160,599	1,159,654	0	945
632	Pay station expenses	1,897	1,897	0	0
633	Other traffic expenses	418,428	362,303	0	56,125
	Total traffic expenses	9,316,492	9,233,290	0	83,202
	III. Commercial Expenses				
640	Commercial administration	268,898	267,115	0	1,783
642	Advertising	630,137	3,309	607,639	19,189
643	Canvassing	13,703	0		13,703
644	Sublicensee relations	0	0	0	0
641	Promotion expenses	643,840	3,309	607,639	32,892
646	Revenue accounting	42,165	42,165	0	0
647	Revenue collecting	10,299	10,299	0	0
648	Pay station commissions	0	0	0	0
645	Collection expenses	52,464	52,464	0	0
649	Directory expenses	0	0	0	0
650	Other commercial expenses	705	0	0	705
	Total commercial expenses	965,907	322,888	607,639	35,380
	IV. General and Miscellaneous Expenses				
661	Salaries of general officers	746,927	30,562	697,988	12,376
662	Salaries of general office clerks	4,296,685	102,408	4,16[illegible],577	31,700
660	General office salaries	5,037,612	132,971	4,860,565	44,076
664	Expenses of general officers and clerks	476,562	12,338	462,371	1,853
665	General office stationery and printing	365,270	3,905	358,896	2,449
66	Other general office supplies and expenses	621,080	16,050	596,889	8,141
663	General office supplies and expenses	1,462,912	32,293	1,418,156	12,463
667	General law expenses	615,383	117,942	497,441	0
668	Insurance	33,064	24,139	8,795	130
669	Accidents and damages	48,337	48,337	0	0
670	Law expenses connected with damages	8,194	8,194	0	0
672	Relief department and pensions	588,230	329,337	256,893	
673	Telephone franchise requirements	498	498	0	0
674	Amortization of franchises and patents	0	0	0	
675	Other general expenses	1,754,932	72,517	1,787,011	105,596**
676	Telephone franchise requirements - Cr.	0	0	0	
71	Miscellaneous general expenses	2,342,600	403,352	2,045,904	[illegible]**
	Total general expenses	9,549,162	767,228	9,830,661	[illegible]**
	Adjustment for telephone service furnished by Long Lines	x x x	9[illegible],089**	91,020	1,069
	Grand Total	$34,197,356	$21,069,659	$13,0[illegible]8,662	$118,835

* The column "License Contract Operations" includes certain items which may be considered in part "Holding Company" item. (See adjustment for "Holding Company" portion under Account Number [illegible], Sheet No. 2.)

** Red figures.

Notes: A. Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department.

B. The column "Holding Company (Including Miscellaneous Non-License Contract Operations)" includes [illegible] of radio broadcasting [illegible] station [illegible] subsidiary [illegible]

[illegible]

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
STATEMENT OF TELEPHONE OPERATING EXPENSES SHOWING SEPARATELY:
1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. HOLDING COMPANY OPERATIONS (PARTLY ESTIMATED)
SCHEDULE 320 OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1924

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I.C.C. Classification Account Number	Title	Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations (Partly Estimated)	Holding Company (Incl. Miscellaneous Non-License Contract) Operations* (Partly Estimated) (See Note B)
	I. Maintenance Expenses				
601	Supervision of maintenance	$ 1,092,504	$ 1,088,439	$ 0	$ 4,065
602	Repairs of aerial plant	4,571,917	4,571,917	0	0
603	Repairs of underground plant	239,250	239,250	0	0
604	Repairs of central office equipment	1,629,047	1,432,075	196,972	0
605	Repairs of station equipment	1,291,387	159,486	1,131,901	0
606	Repairs of buildings and grounds	100,959	66,497	34,304	158
607	Station removals and changes	33,623	33,623	0	0
608	Depreciation of plant and equipment	8,027,396	5,393,757	2,611,772	21,867
609	Extraordinary depreciation	0	0	0	0
610	Other maintenance expenses	68,638	47,251	0	21,387
611	Repairs charged to reserves - Cr.	1,569,250	1,569,250	0	0
	Total maintenance expenses	15,485,471	11,463,045	3,974,949	47,477
	II. Traffic Expenses				
621	Traffic superintendence	1,347,876	1,334,598	0	13,278
622	Service inspection	119,394	119,394	0	0
623	Clerical operating wages	134,293	134,293	0	0
[illegible]	Central office superintendence	1,601,563	1,588,285	0	13,278
624	Operators' wages	6,008,603	5,977,520	0	31,083
[illegible]	Rest and lunch rooms	78,364	78,364	0	0
[illegible]	Operators' schooling	337,809	337,809	0	0
[illegible]	Transmission power	383,895	376,054	0	7,841
[illegible]	Central office stationery and printing	95,317	95,317	0	0
[illegible]	Messenger service	0	0	0	0
[illegible]	Miscellaneous central office expenses	216,876	216,876	0	0
[illegible]	Central office supplies and expenses	1,112,261	1,104,420	0	7,841
632	Pay station expenses	937	937	0	0
633	Other traffic expenses	115,746	24,842	0	90,904
	Total traffic expenses	8,839,110	8,696,004	0	143,106
	III. Commercial Expenses				
[illegible]	Commercial administration	294,451	292,499	0	1,952
642	Advertising	693,322	4,016	665,992	23,314
643	Canvassing	25,753	0	0	25,753
644	Sublicensee relations	0	0	0	0
[illegible]	Promotion expenses	719,075	4,016	665,992	49,067
646	Revenue accounting	44,851	44,851	0	0
647	Revenue collecting	8,659	8,659	0	0
648	Pay station commissions	0	0	0	0
[illegible]	Collection expenses	55,510	55,510	0	0
649	Directory expenses	0	0	0	0
[illegible]	Other commercial expenses	9,971	0	0	9,971
	Total commercial expenses	1,079,007	352,025	665,992	60,990
	IV. General and Miscellaneous Expenses				
[illegible]	Salaries of general officers	814,596	38,859	763,763	11,974
[illegible]	Salaries of general office clerks	4,921,782	107,147	4,776,065	38,570
[illegible]	General office salaries	5,736,379	146,006	5,539,828	50,545
664	Expenses of general officers and clerks	454,062	11,771	439,890	2,401
[illegible]	General office stationery and printing	402,441	5,119	395,305	2,017
666	Other general office supplies and expenses	660,175	17,259	638,890	4,026
663	General office supplies and expenses	1,517,678	34,849	1,466,085	16,744
667	General law expenses	588,974	134,394	454,580	0
[illegible]	Insurance	50,523	35,985	14,263	275
669	Accidents and damages	21,091	21,091	0	0
[illegible]	Law expenses connected with damages	963	963	0	0
672	Relief department and pensions	531,889	317,004	214,885	0
673	Telephone franchise requirements	556	556	0	0
674	Amortization of franchises and patents	0	0	0	0
675	Other general expenses	1,886,388	77,640	1,808,748	0
676	Telephone franchise requirements - Cr.	0	0	0	0
[illegible]	Miscellaneous general expenses	2,418,833	395,200	2,023,633	0
	Total general expenses	10,334,441	768,488	9,496,389	67,564
	Adjustment for telephone service furnished by Long Lines	* * *	**	96,521	1,384
	Grand Total	$35,738,029	$21,161,657	$14,235,651	$320,521

* The column "License Contract Operations" includes certain items which may be considered in part "Holding Company" items. (See adjustment for "Holding Company" portion under Account Number "[illegible]", Sheet No. 3.

Notes A. Separate subsidiary accounts are currently maintained reporting the results of operations of the Long Lines Department.

B. The column "Holding Company (Including Miscellaneous Non-License Contract Operations" includes total expenses of Radio Broadcasting operations (Station [illegible]) for which separate subsidiary accounts were maintained.

August 25, 1931.

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[illegible] TELEPHONE AND TELEGRAPH COMPANY

STATEMENT — TELEPHONE OPERATING [illegible]
1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. HOLDING COMPANY OPERATIONS (PARTLY ESTIMATED)

SCHEDULE 38C OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1925

I.C.C. Classification Account Number	Title	Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations (Partly Estimated)	Holding Company (incl. Miscellaneous Non-License Contract) Operations* (Partly Estimated) (See Note B)
	I. Maintenance Expenses				
601	Supervision of maintenance	$ 1,006,323	$ 1,004,076	$ 0	$ 2,247
602	Repairs of aerial plant	4,319,506	4,319,506	0	0
603	Repairs of underground plant	254,824	254,824	0	0
604	Repairs of central office equipment	1,701,195	1,465,337	235,858	0
605	Repairs of station equipment	1,563,213	185,334	1,377,879	0
606	Repairs of buildings and grounds	64,051	41,521	22,356	174
607	Station removals and changes	31,027	31,027	0	0
608	Depreciation of plant and equipment	9,745,602	6,834,553	2,876,527	34,522
609	Extraordinary depreciation	0	0	0	0
610	Other maintenance expenses	58,678	33,319	0	25,359
611	Repairs charged to reserves - Cr.	884,885	884,885	0	0
	Total maintenance expenses	17,859,534	13,284,612	4,512,620	62,302
	II. Traffic Expenses				
621	Traffic superintendence	1,216,939	1,202,933	0	16,006
622	Service inspection	118,574	118,574	0	0
623	Clerical operating wages	94,775	94,775	0	0
62[illegible]	Central office superintendence	1,452,288	1,416,282	0	16,006
624	Operators' wages	5,816,102	5,779,144	0	36,958
626	Rest and lunch rooms	84,312	84,312	0	0
627	Operators' schooling	403,756	403,756	0	0
62[illegible]	Transmission power	465,869	460,783	0	5,106
629	Central office stationery and printing	105,401	105,401	0	0
630	Messenger service	0	0	0	0
631	Miscellaneous central office expenses	209,464	209,484	0	0
625	Central office supplies and expenses	1,268,842	1,263,736	0	5,106
632	Pay station expenses	161	161	0	0
633	Other traffic expenses	396,501	133,798	0	262,753
	Total traffic expenses	8,912,894	8,593,121	0	320,773
	III. Commercial Expenses				
64[illegible]	Commercial administration	296,369	291,438	0	4,931
64[illegible]	Advertising	874,400	137,882	712,368	24,150
643	Canvassing	89,116	54,604		34,512
644	Sublicensee relations	0	0		
64[illegible]	Promotion expenses	963,516	192,486	712,368	56,668
646	Revenue accounting	50,225	50,225		
647	Revenue collecting	7,759	7,759		
648	Pay station commissions	0	0		0
64[illegible]	Collection expenses	57,984	57,984		
649	Directory expenses	0	0		
65[illegible]	Other commercial expenses	7[illegible],925	0		7[illegible],925
	Total commercial expenses	1,366,794	541,906	712,368	124,518
	IV. General and Miscellaneous Expenses				
661	Salaries of general officers	994,686	55,913	924,474	14,299
662	Salaries of general office clerks	5,329,630	109,268	5,173,045	47,317
66[illegible]	General office salaries	6,324,316	165,181	6,097,519	61,616
664	Expenses of general officers and clerks	51[illegible],413	12,766	498,014	4,633
66[illegible]	General office stationery and printing	394,567	5,712	386,896	1,959
6[illegible]	Other general office supplies and expenses	746,072	2[illegible],[illegible]4	718,151	7,[illegible]97
6[illegible]	General office supplies and expenses	1,6[illegible]6,[illegible]62	36,502	1,6[illegible],[illegible]61	14,[illegible]9
[illegible]	General law expenses	704,575	129,515	575,06[illegible]	
[illegible]	[illegible]	45,234	32,[illegible]66	1[illegible],[illegible]67	[illegible]
669	Accidents and damages	21,215	21,215		
67[illegible]	Law expenses connected with damages	1,512	1,512		
67[illegible]	Relief department and pensions	568,792	341,815	2[illegible],97[illegible]	
674	Telephone franchise requirements	338	338		
67[illegible]	Amortization of franchises and patents	0			
675	Other general expenses	1,[illegible]			
676	Telephone franchise requirements		[illegible]	[illegible]	
67[illegible]	Miscellaneous general expenses	2,[illegible],1[illegible]6	42[illegible],22[illegible]	2,11[illegible],[illegible]	
	Total general expenses	11,[illegible]	6[illegible],311	1[illegible],[illegible],[illegible]	[illegible]
	Adjustment for telephone service [illegible] by Long Lines	[illegible]	[illegible]**	1[illegible]	[illegible]
	Grand Total	$3[illegible],[illegible]	$23,1[illegible],[illegible]	$15,7[illegible]	[illegible]

* The column "License Contract Operations" includes certain items which may be considered in part "Holding Company" items. (See adjustment for "Holding Company" portion in [illegible] account [illegible], Sheet No. 3.)

** Red figure

Notes: [illegible] ... accounts were [illegible] ... recording the results of operations of the Long Lines Department.

The column [illegible] ... Operations [illegible] as total [illegible] of ... for [illegible] ... accounts were [illegible].

[illegible] 1931.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY

STATEMENT OF TELEPHONE OPERATING EXPENSES SHOWING SEPARATELY

1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. HOLDING COMPANY OPERATIONS (PARTLY ESTIMATED)

SCHEDULE 320 OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1926

I.C.C. Classification Account Number	Title	Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations (Partly Estimated)	Holding Company (Incl. Miscellaneous Non-License Contract) Operations* (Partly Estimated) (See Note B)
	I. Maintenance Expenses				
601	Supervision of maintenance	$ 969,149	$ 968,422	$ 0	$ 727
602	Repairs of aerial plant	4,474,289	4,474,280	0	0
603	Repairs of underground plant	317,485	317,485	0	0
604	Repairs of central office equipment	1,952,421	1,739,858	212,563	0
605	Repairs of station equipment	2,081,139	259,892	1,821,247	0
606	Repairs of buildings and grounds	227,197	73,240	152,969	988
607	Station removals and changes	40,442	40,442	0	0
608	Depreciation of plant and equipment	10,719,459	7,719,760	2,989,097	10,602
609	Extraordinary depreciation	0	0	0	0
610	Other maintenance expenses	53,593	43,280	0	10,313
611	Repairs charged to reserves - Cr.	354,425	354,425	0	0
	Total maintenance expenses	20,480,769	15,282,263	5,175,876	22,630
	II. Traffic Expenses				
621	Traffic superintendence	1,450,048	1,444,629	0	5,419
622	Service inspection	141,210	141,210	0	0
623	Clerical operating wages	91,208	91,208	0	0
62.	Central office superintendence	1,682,466	1,677,047	0	5,419
624	Operators' wages	7,082,069	7,067,920	0	14,149
626	Rest and lunch rooms	86,397	86,397	0	0
627	Operators' schooling	592,809	592,809	0	0
628	Transmission power	558,349	555,918	0	2,431
629	Central office stationery and printing	126,699	126,699	0	0
630	Messenger service	0		0	0
631	Miscellaneous central office expenses	290,961	290,961	0	0
62.	Central office supplies and expenses	1,657,215	1,654,784	0	2,431
632	Pay station expenses	160	160	0	0
633	Other traffic expenses	**	**	0	171,474
	Total traffic expenses	10,190,530	9,997,257	0	193,273
	III. Commercial Expenses				
641	Commercial administration	308,522	305,743	0	2,779
642	Advertising	1,030,227	184,862	634,223	11,542
643	Canvassing	117,875	93,848	0	24,027
644	Sublicensee relations	0	0	0	0
64.	Promotion expenses	1,148,102	478,510	634,223	35,369
646	Revenue accounting	75,277	75,277	0	0
647	Revenue collecting	7,941	7,941	0	0
648	Pay station commissions	0	0	0	0
64.	Collection expenses	83,218	83,218	0	0
649	Directory expenses	0	0	0	0
650	Other commercial expenses	56,222	0	0	56,222
	Total commercial expenses	1,596,064	667,471	634,223	94,370
	IV. General and Miscellaneous expenses				
661	Salaries of general officers	1,076,824	43,072	1,019,014	14,536
662	Salaries of general office clerks	6,033,287	111,449	5,900,484	21,354
663	General office salaries	7,109,911	154,521	6,919,498	35,892
664	Expenses of general officers and clerks	521,733	7,570	510,812	3,351
665	General office stationery and printing	453,556	5,546	444,762	3,248
666	Other general office supplies and expenses	908,645	20,944	880,335	7,366
663	General office supplies and expenses	1,883,934	34,060	1,835,909	13,965
667	General law expenses	750,293	143,486	606,807	0
668	Insurance	47,084	41,309	5,765	10
669	Accidents and damages	41,497	41,497	0	0
670	Law expenses connected with damages	6,030	6,030	0	0
672	Relief department and pensions	658,586	171,865	486,721	0
673	Telephone franchise requirements	887	887	0	0
674	Amortization of franchises and patents	0	0	0	0
675	Other general expenses	2,269,804	71,885	2,197,919	0
676	Telephone franchise requirements	0	0	0	0
677	Miscellaneous general expenses	2,929,277	444,627	2,484,840	0
	Total general expenses	12,768,026	665,546	11,654,619	49,067
	Adjustment for telephone service furnished by Long Lines	x x x	**	113,400	1,441
	Grand Total	45,035,389	26,097,704	17,670,126	361,561

* The column "License Contract Operations" includes certain items which may be considered in part "Holding Company" items. (See adjustment for "Holding Company" portion under Account Number "6", Sheet No. 3).

Notes: A Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department.

B The column "Holding Company (including "Miscellaneous Non-License Contract) Operations" includes total expenses of Radio Broadcasting Operations (Station ... for which separate subsidiary accounts are [illegible]

STATEMENT OF TELEPHONE OPERATING EXPENSES SHOWING SEPARATELY:
1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. HOLDING COMPANY OPERATIONS } (PARTLY ESTIMATED)

SCHEDULE 380 OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1927

I.C.C. Classification					
Account Number	Title	Total for Company	Long Lines Department Operations (See "Note")	License Contract Operations (Partly Estimated)	Holding Company (Incl. Miscellaneous Non-License Contract) Operations* (Partly Estimated)
	I. Maintenance Expenses				
601	Supervision of maintenance	$ 1,143,317	$ 1,143,317	$ 0	$ 0
602	Repairs of aerial plant	5,051,553	5,051,553	0	0
603	Repairs of underground plant	483,422	483,422	0	0
604	Repairs of central office equipment	2,349,340	2,072,825	276,515	0
605	Repairs of station equipment	2,130,841	340,543	1,790,299	0
606	Repairs of buildings and grounds	196,858	157,429	39,343	84
607	Station removals and changes	42,829	42,829	0	0
608	Depreciation of plant and equipment	12,667,833	9,437,934	3,229,712	187
609	Extraordinary depreciation	0	0	0	0
610	Other maintenance expenses	93,900	93,900	0	0
611	Repairs charged to reserves - Cr.	776,331	776,331	0	0
	Total maintenance expenses	23,363,562	18,027,480	5,335,869	273
	II. Traffic Expenses				
621	Traffic superintendence	1,645,520	1,645,520	0	0
622	Service inspection	204,783	204,783	0	0
623	Clerical operating wages	83,424	83,424	0	0
620	Central office superintendence	1,933,727	1,933,727	0	0
624	Operators' wages	8,139,583	8,139,583	0	0
626	Rest and lunch rooms	62,107	62,107	0	0
627	Operators' schooling	604,255	604,255	0	0
628	Transmission power	766,292	766,292	0	0
629	Central office stationery and printing	155,755	155,755	0	0
630	Messenger service	0	0	0	0
631	Miscellaneous central office expenses	350,176	350,176	0	0
625	Central office supplies and expenses	1,938,585	1,938,585	0	0
632	Pay station expenses	133	133	0	0
633	Other traffic expenses			0	0
	Total traffic expenses	11,368,484	11,368,484	0	0
	III. Commercial Expenses				
640	Commercial administration	308,501	308,501	0	0
642	Advertising	1,051,298	296,387	754,911	0
643	Canvassing	134,480	134,489	0	0
644	Sublicensee relations	0	0	0	0
641	Promotion expenses	1,183,787	430,876	754,911	0
646	Revenue accounting	92,634	92,634	0	0
647	Revenue collecting	6,634	6,634	0	0
648	Pay station commissions	0	0	0	0
645	Collection expenses	99,268	99,268	0	0
649	Directory expenses	0	0	0	0
650	Other commercial expenses	0	0	0	0
	Total commercial expenses	1,643,556	888,445	754,911	0
	IV. General and Miscellaneous Expenses				
661	Salaries of general officers	1,178,334	45,621	1,115,679	16,734
662	Salaries of general office clerks	6,450,110	124,955	6,295,466	9,469
660	General office salaries	7,608,444	170,576	7,411,665	26,203
664	Expenses of general officers and clerks	586,642	9,456	576,476	710
665	General office stationery and printing	487,489	7,637	479,452	0
666	Other general office supplies and expenses	879,84[illegible]	23,277	855,069	1,464
663	General office supplies and expenses	1,953,971	40,570	1,911,227	2,174
667	General law expenses	730,677	156,081	512,596	0
668	Insurance	66,670	54,926	9,744	0
669	Accidents and damages	48,874	48,874	0	0
670	Law expenses connected with damages	8,362	8,362	0	0
672	Relief department and pensions	1,270,956	736,204	[illegible]	0
673	Telephone franchise requirements	671	671		0
674	Amortization of franchise and patents	0	0		0
675	Other general expenses	3,063,506	12,108	[illegible]	0
676	Telephone franchise requirements - Cr.	0	0		0
671	Miscellaneous general expenses	4,355,133	808,981	[illegible]	0
	Total general expenses	14,770,151	[illegible]	13,45[illegible],364	28,377
	Adjustment for telephone service furnished by Long Lines	x x x	[illegible]	[illegible]	[illegible]
	Grand Total	$51,145,753	$31,4[illegible]	[illegible]	[illegible]

* The column "License Contract Operations" includes certain items which may be considered in part "Holding Company" items. [illegible]

Note: [illegible]

STATEMENT OF [illegible] OPERATING EXPENSES SHOWING [illegible]
1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS) (PARTLY - ESTIMATED)
3. HOLDING COMPANY OPERATIONS)
SCHEDULE 320 OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1928

I.C.C. Classification Account Number	Title.	Total for Company	Long Lines Department Operations (See "Note")	License Contract Operations (Partly estimated)	Holding Company (incl. Miscellaneous Non-License Contract) Operations* (Partly Estimated)
	I. **Maintenance Expense**				
601	Supervision of maintenance	$ 1,484,582	$ 1,484,582	$ 0	$ 0
602	Repairs of aerial plant	6,256,154	6,256,154	0	
603	Repairs of underground plant	766,838	766,838	0	
604	Repairs of central office equipment	2,842,316	2,842,316	0	0
605	Repairs of station equipment	487,137	487,137	0	0
606	Repairs of buildings and grounds	287,501	270,393	16,916	192
607	Station removals and changes	66,012	66,012	0	0
608	Depreciation of plant and equipment	11,402,505	11,325,483	76,730	292
609	Extraordinary depreciation	0	0	0	0
610	Other maintenance expenses	73,768	73,768	0	0
611	Repairs charged to reserves - Cr.	1,053,375	1,053,375	0	0
	Total maintenance expenses	22,613,458	22,519,328	93,646	484
	II. **Traffic Expenses**				
621	Traffic superintendence	1,929,507	1,929,507	0	0
622	Service inspection	229,369	229,369	0	0
623	Clerical operating wages	93,398	93,398	0	0
620	Central office superintendence	2,252,274	2,252,274	0	0
624	Operators' wages	9,056,308	9,056,308	0	0
626	Rest and lunch rooms	62,173	62,173	0	0
627	Operators' schooling	750,414	750,414	0	0
628	Transmission power	1,086,908	1,086,908	0	0
629	Central office stationery and printing	175,645	175,645	0	0
630	Messenger service	0	0	0	0
631	Miscellaneous central office expenses	435,856	435,856	0	0
625	Central office supplies and expenses	2,510,996	2,510,996	0	0
632	Pay station expenses	0	0	0	0
633	Other traffic expenses	[illegible]**	[illegible]**	0	0
	Total traffic expenses	13,452,755	13,452,755	0	
	III. **Commercial Expenses**				
640	Commercial administration	422,105	422,105	0	
642	Advertising	1,365,142	373,867	991,275	
643	Canvassing	193,595	193,595	0	
644	Sublicensee relations	0		0	
641	Promotion expenses	1,558,737	567,462	991,275	
646	Revenue accounting	102,458	102,458	0	
647	Revenue collecting	6,749	6,749	0	
648	Pay station commissions	0	0	0	
645	Collection expenses	109,207	109,207		
649	Directory expenses	0	0		0
650	Other commercial expenses		0		
	Total commercial expenses	2,[illegible]49	1,[illegible]98,774	991,275	
	IV. **General and Miscellaneous Expenses**				
661	Salaries of general officers	1,193,070	46,191	1,126,669	20,210
662	Salaries of general office clerks	7,156,329	139,412	6,9[illegible],768	36,[illegible]49
66[illegible]	General office salaries	6,349,399	185,6[illegible]3	6,1[illegible]7,437	56,359
664	Expenses of general officers and clerks	611,201	9,632	596,733	4,836
665	General office stationery and printing	531,067	7,460	522,779	828
666	Other general office supplies and expenses	959,402	22,951	934,931	1,520
663	General office supplies and expenses	2,1[illegible]1,670	90,042	2,[illegible]54,445	7,184
667	General law expenses	843,077	196,736	646,341	
668	Insurance	75,572	68,694	6,878	
669	Accidents and damages	34,957	34,957	0	0
670	Law expenses connected with damages	4,729	4,729		
672	Relief department and pensions	1,562,929	1,149,398	513,531	0
673	Telephone franchise requirements	746	746		
674	Amortization of franchises and patents	0			
675	Other general expenses			0	
676	Telephone franchise requirements - Cr.	3,288,084	46,455	3,241,[illegible]9	
671	Miscellaneous general expenses	4,851,759	[illegible]	3,75[illegible]	
	Total general expenses	16,261,163	1,627,36[illegible]	14,57[illegible],256	[illegible]3,545
	Adjustment for telephone service furnished by Long Lines	x x x	[illegible]**	[illegible]7,723	
	Grand Total	$51,417,425	$36,5[illegible]9,869	$15,782,903	$4,[illegible]

* The column "License Contract Operations" includes certain items which may be considered in part "Holding Company" items. (See adjustment for "Holding Company" portion under Account Number "x", Sheet No. 3.

* [illegible] figures

Note: Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
STATEMENT OF TELEPHONE OPERATING EXPENSES SHOWING SEPARATELY:
1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. HOLDING COMPANY OPERATIONS (PARTLY ESTIMATED)
SCHEDULE 320 OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1929

I.C.C. Classification Account Number	Title	Total for Company	Long Lines Department Operations (See "Note*")	License Contract Operations (Partly Estimated)	Holding Company (Incl. Miscellaneous Non-License Contract) Operations* (Partly Estimated)
	I. Maintenance Expenses				
601	Supervision of maintenance	$ 1,881,223	$ 1,881,223	0	0
602	Repairs of aerial plant	7,965,457	7,965,457	0	0
603	Repairs of underground plant	864,203	864,203	0	0
604	Repairs of central office equipment	4,050,362	4,050,362	0	0
605	Repairs of station equipment	691,284	691,286	0	0
606	Repairs of buildings and grounds	268,883	221,187	47,151	545
607	Station removals and changes	83,333	83,333	0	0
608	Depreciation of plant and equipment	13,948,751	13,866,233	81,763	755
609	Extraordinary depreciation	0	0	0	0
610	Other maintenance expenses	51,963	51,963	0	0
611	Repairs charged to reserves - Cr.	1,603,810	1,603,810	0	0
	Total maintenance expenses	28,201,651	28,071,437	128,914	1,300
	II. Traffic Expenses				
621	Traffic superintendence	2,346,336	2,346,336	0	0
622	Service inspection	279,903	279,903	0	0
623	Clerical operating wages	106,859	106,859	0	0
620	Central office superintendence	2,733,098	2,733,098	0	0
624	Operators' wages	9,973,893	9,973,893	0	0
626	Rest and lunch rooms	79,710	79,710	0	0
627	Operators' schooling	953,934	953,934	0	0
628	Transmission power	1,189,751	1,189,751	0	0
629	Central office stationery and printing	207,141	207,141	0	0
630	Messenger service	0	0	0	0
631	Miscellaneous central office expenses	669,184	669,184	0	0
625	Central office supplies and expenses	3,099,720	3,099,720	0	0
632	Pay station expenses	0	0	0	0
633	Other traffic expenses	[illegible] **	[illegible] **	0	0
	Total traffic expenses	15,568,666	15,568,666	0	0
	III. Commercial Expenses				
641	Commercial administration	508,254	508,254	0	0
642	Advertising	1,917,582	506,056	1,300,076	111,450
643	Canvassing	287,757	287,757	0	0
644	Sublicensee relations	0	0	0	0
645	Promotion expenses	2,205,339	793,813	1,300,076	111,450
646	Revenue accounting	103,314	103,314	0	0
647	Revenue collecting	8,122	8,122	0	0
648	Pay station commissions	0	0	0	0
645	Collection expenses	111,436	111,436	0	0
649	Directory expenses	0	0	0	0
650	Other commercial expenses	0		0	0
	Total commercial expenses	2,8[illegible]5,029	1,413,5[illegible]3	1,300,076	111,450
	IV. General and Miscellaneous Expenses				
661	Salaries of general officers	1,251,801	49,819	1,159,656	42,326
662	Salaries of general office clerks	7,658,723	139,6[illegible]1	7,443,529	75,573
663	General office salaries	8,910,524	189,44[illegible]	8,6[illegible]3,185	117,[illegible]99
664	Expenses of general officers and clerks	655,174	11,514	626,831	16,629
665	General office stationery and printing	62[illegible],451	6,1[illegible]6	614,242	3,[illegible]03
[illegible]	Other general office supplies and expenses	1,[illegible]9[illegible],885	2[illegible],774	1,[illegible]6[illegible],4[illegible]3	[illegible]6,668
[illegible]	General office supplies and expenses	2,374,510	43,394	2,3[illegible]4,496	[illegible]6,6[illegible]
667	General law expenses	76[illegible],149	21[illegible],241	541,908	0
668	Insurance	61,362	52,688	6,674	0
669	Accidents and damages	54,702	49,578	5,124	0
[illegible]	Law expenses connected with damages	8,01[illegible]	8,010	0	0
[illegible]	Relief department and pensions	1,997,[illegible]31	[illegible],397,463	589,766	0
[illegible]	Telephone franchise requirements	829	829	0	
674	Amortization of franchises and patents		0		
675	Other general expenses	4,281,2[illegible]	8[illegible],96[illegible]	4,[illegible],24[illegible]	
676	Telephone franchise requirements - Cr.				
67[illegible]	Miscellaneous general expenses	6,279,26[illegible]	1,479,252	4,3[illegible]	
	Total general expenses	18,448,517	2,[illegible]4[illegible],603	1[illegible],[illegible]63,395	144,51[illegible]
	Adjustment for telephone service furnished by Long Lines	x x x	134,544 **	1[illegible]1,31[illegible]	[illegible]
	Grand Total	465,343,863	266,959,66[illegible]	17,8[illegible]4,[illegible]	[illegible]

** The column "License Contract Operations" includes certain items which may be considered in part "Holding Company" items. See adjustment for "Holding Company" portion under account under [illegible], sheet No. 3.

**

Note: Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
[illegible] OF TELEPHONE OPERATING EXPENSES SHOWING SEPARATELY:
1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. HOLDING COMPANY OPERATIONS } (PARTLY ESTIMATED)
SCHEDULE [illegible] INTERSTATE COMMERCE COMMISSION - YEAR 1930

I.C.C. Classification Account Number	Title	Total for Company	Long Lines Department Operations (See "Note")	License Contract Operations* (Partly Estimated)	Holding Company (Incl. Miscellaneous Non-License Contract) Operations* (Partly Estimated)
	I. Maintenance Expenses				
601	Supervision of maintenance	$ 2,343,250	$ 2,348,220	0	0
602	Repairs of aerial plant	6,000,521	6,000,521	0	0
603	Repairs of underground plant	1,008,983	1,008,983	0	0
604	Repairs of central office equipment	5,507,027	5,507,028	0	0
605	Repairs of station equipment	726,880	726,880	0	0
606	Repairs of buildings and grounds	305,880	330,334	65,304	180
607	Station removals and changes	97,406	97,604	0	0
608	Depreciation of plant and [illegible]	17,947,132	17,857,880	88,494	784
609	Extraordinary depreciation	0	0	0	0
610	Other maintenance expenses	140,441	140,441	0	0
611	Repairs charged to reserves - Cr.	1,000,220	1,000,220	0	0
	Total maintenance expenses	33,161,306	33,006,836	153,800	964
	II. Traffic Expenses				
621	Traffic superintendence	2,652,731	2,652,731	0	0
622	Service inspection	304,849	304,848	0	0
623	Clerical operating wages	155,171	155,171	0	0
620	Central office superintendence	3,112,730	3,112,730	0	0
624	Operators' wages	10,628,262	10,628,262	0	0
626	Rest and lunch rooms	79,455	79,436	0	0
627	Operators' schooling	632,555	632,555	0	0
628	Transmission power	1,189,426	1,189,426	0	0
629	Central office stationery and printing	140,284	140,284	0	0
630	Messenger service	0	0	0	0
631	Miscellaneous central office expenses	921,781	921,781	0	0
625	Central office supplies and expenses	1,943,685	1,941,685	0	0
632	Pay station expenses	0		0	0
633	Other traffic expenses			0	0
	Total traffic expenses	16,463,326	16,463,828	0	0
	III. Commercial Expenses				
640	Commercial administration	512,577	512,577	0	0
641	Advertising	1,877,909	341,452	1,305,442	130,835
642	Canvassing	360,914	360,914	0	0
	Sublicensee relations	0	0	0	0
641	Promotion expenses	2,328,663	892,366	1,305,442	130,835
64	Revenue accounting	98,614	98,614	0	0
6?	Revenue collecting	9,970	9,970	0	0
64	Pay station commissions	0	0	0	0
648	Collection expenses	108,584	108,584	0	0
64	Directory expenses	0	0	0	0
	Other commercial expenses	0	0	0	0
	Total commercial expenses	2,950,024	1,513,327	1,305,442	130,835
	IV. General and Miscellaneous Expenses				
661	Salaries of general officers	1,343,414	73,901	1,232,801	56,712
662	Salaries of general office clerks	8,778,377	181,114	8,482,118	115,143
663	General office salaries	10,121,791	255,017	9,714,919	171,855
664	Expenses of general officers and clerks	610,171	14,434	572,823	22,914
665	General office stationery and printing	729,162	10,753	708,236	10,173
666	Other general office supplies and expenses	1,248,413	29,064	1,207,655	11,694
	General office supplies and expenses				
667	General law expenses	2,581,746	54,251	2,482,514	44,981
668	Insurance	669,911	278,329	391,582	0
669	Accidents and damages	85,225	63,390	21,835	0
67	Law expenses connected with damages	82,637	82,637	0	0
672	Relief department and pensions	6,382	6,382		0
673	Telephone franchise requirements	2,253,507	1,596,850	656,657	0
674	Amortization of franchises and patents	84	84		0
675	Other general expenses			0	0
676	Telephone franchise requirements - [illegible]	7,351,594	62,958	7,026,990	261,646
67	Miscellaneous general expenses	1,6[illegible],985	1,6[illegible],692	0	0
	Total general expenses	23,379,677	2,4[illegible],698	7,683,647	261,646
	Adjustment for telephone service furnished			2[illegible],5[illegible],407	470,482
	by Long Lines			151,955	-,689
	Grand Total	$75,954,315	$53,219,447	$2[illegible],[illegible],914	$812,952

* The column "License Contract Operations" includes certain items which may be considered in part [illegible] holding company items [illegible] adjustment for [illegible] company portion [illegible]

Note. Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department.

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Sheet No.

K-208

P-12

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

STATEMENT OF TELEPHONE OPERATING EXPENSES SHOWING SEPARATELY,

1. LONG LINES DEPARTMENT OPERATIONS
2. LICENSE CONTRACT OPERATIONS
3. PERMANENT INVESTMENTS IN LICENSEE COMPANIES
4. OTHER ACTIVITIES

SCHEDULE 320 OF REPORT TO THE INTERSTATE COMMERCE COMMISSION - YEAR 1931

I.C.C. Classification Account Number	Title	Total for Company	Long Lines Department Operations (See Note A)	License Contract Operations (Partly estimated)*	Permanent Investments in Licensee Companies*	Other Activities (Partly estimated)*
	I. Maintenance Expenses					
601	Supervision of maintenance	$ 2,156,733	$ 2,156,733	0	0	0
602	Repairs of aerial plant	3,705,682	3,705,682	0	0	0
603	Repairs of underground plant	794,179	794,179	0	0	0
604	Repairs of central office equipment	5,043,730	5,043,730	0	0	0
605	Repairs of station equipment	572,671	572,671	0	0	0
606	Repairs of buildings and grounds	449,785	422,693	26,997	0	95
607	Station removals and changes	105,536	105,536	0	0	0
608	Depreciation of plant and equipment	19,312,299	19,215,170	96,204	0	925
609	Extraordinary depreciation	0	0	0	0	0
610	Other maintenance expenses	165,678	165,678	0	0	0
611	Repairs charged to reserves - Cr.	310,362	310,362	0	0	0
	Total maintenance expenses	31,995,931	31,871,710	123,201	0	1,020
	II. Traffic Expenses					
621	Traffic superintendence	2,417,708	2,417,708	0	0	0
622	Service inspection	218,159	218,159	0	0	0
623	Clerical operating wages	124,492	124,492	0	0	0
620	Central office superintendence	2,760,359	2,760,359	0	0	0
624	Operators' wages	8,874,548	8,874,548	0	0	0
[illegible]	Rest and lunch rooms	59,876	59,876	0	0	0
627	Operators' schooling	126,396	126,396	0	0	0
628	Transmission power	1,279,238	1,279,238	0	0	0
629	Central office stationery and printing	149,432	149,432	0	0	0
630	Messenger service	0	0	0	0	0
631	Miscellaneous central office expenses	954,975	954,975	0	0	0
625	Central office supplies and expenses	2,569,917	2,569,917	0	0	0
632	Pay station expenses	0	0	0	0	0
633	Other traffic expenses	335,809 *	335,809 *	0	0	0
	Total traffic expenses	13,869,015	13,869,015	0	0	0
	III. Commercial Expenses					
640	Commercial administration	453,569	453,569	0	0	0
642	Advertising	1,852,703	478,892	1,263,035	0	110,776
[illegible]	Canvassing	368,658	368,658	0	0	0
[illegible]	Subscribers' relations	0	0	0	0	0
[illegible]	Promotion expenses	2,221,361	847,550	1,263,035	0	110,776
[illegible]	Revenue accounting	85,893	85,893	0	0	0
[illegible]	Revenue collecting	9,798	9,798	0	0	0
[illegible]	Pay station commissions	0	0	0	0	0
[illegible]	Collection expenses	95,691	95,691	0	0	0
649	Directory expenses	304	304	0	0	0
[illegible]	Other commercial expenses	0	0	0	0	0
	Total commercial expenses	2,770,925	1,397,114	1,263,035	0	110,776
	IV. General and Miscellaneous Expenses					
[illegible]	Salaries of general officers	1,520,401	86,806	1,386,495	0	47,100
662	Salaries of general office clerks	8,078,186	197,624	7,749,961	0	130,601
660	General office salaries	9,598,587	284,430	9,136,456	0	177,701
[illegible]	Expenses of general officers and clerks	442,542	7,731	413,710	0	21,101
[illegible]	General office stationery and printing	510,017	10,781	492,856	0	6,380
666	Other general office supplies and expenses	1,126,296	33,224	1,078,996	0	14,076
663	General office supplies and expenses	2,078,855	51,736	1,985,562	0	41,557
667	General law expenses	981,319	279,949	701,370	0	0
668	Insurance	86,593	76,301	10,292	0	0
669	Accidents and damages	37,692	37,682	10	0	0
670	Law expenses connected with damages	4,446	4,446	0	0	0
672	Relief department and pensions	2,186,007	1,469,678	716,329	0	0
673	Telephone franchise requirements	855	855	0	0	0
674	Amortization of franchises and patents	0	0	0	0	0
675	Other general expenses	6,010,545	79,886	5,930,659	0	0
676	Telephone franchise requirements - Cr.	0	0	0	0	0
671	Miscellaneous general expenses	8,197,407	1,550,419	6,646,988	0	0
	Total general expenses	20,984,899	2,284,963	18,480,678	0	219,258
	Adjustment for telephone service furnished by Long Lines	x x x	178,085*	174,643	0	3,442
	Grand Total	$69,620,770	$49,244,717	$20,041,557	0	$334,496

* The column "License Contract Operations" includes certain items of costs which may be considered allocable in part under "Permanent Investments in Licensee Companies" or under "Other Activities". These items comprise the costs incurred jointly for License Contract services and for other operations of the company. (See adjustment in respect of such items under Account Number "#", Sheet No. 1.)

Note A. Separate subsidiary accounts are currently maintained recording the results of operations of the Long Lines Department.

* Red figures

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EXTRACTS FROM EXHIBIT X-211

BELL TELEPHONE LABORATORIES
INCORPORATED
COMMERCIAL RELATIONS DEPARTMENT

REPORT M-8.00

March 14, 1925.

BALANCE SHEET
December 31, 1924

(X-211 - 5-SHEETS)
(1924, 1925, 1929, 1930)

P. 1

ASSETS

PLANT INVESTMENT		
PERMANENT PLANT COST OF LAND, BUILDINGS AND PERMANENT FIXTURES	-	
GENERAL EQUIPMENT COST OF OFFICE FURNITURE AND FIXTURES, MACHINERY AND TOOLS	-	
PLANT IN PROCESS COST OF PLANT IN PROCESS OF CONSTRUCTION AND NOT READY FOR SERVICE	-	-
MERCHANDISE INVESTMENT		
STOCK MATERIALS VALUE OF MATERIALS AND SUPPLIES IN STOREROOMS	-	
WORK IN PROCESS COST OF WORK GENERALLY BILLABLE THE FOLLOWING MONTH.	-	-
CASH WORKING CAPITAL CASH ON HAND AND IN BANK		$100,000.00
ACCOUNTS RECEIVABLE CURRENT ACCOUNTS WITH CUSTOMERS AND EMPLOYEES		-
DEFERRED DEBIT ITEMS		
GUARANTEE DEPOSITS GUARANTEE DEPOSIT REQUIRED BY WORKMEN'S COMPENSATION LAW AND OTHER DEPOSITS TO GUARANTEE PERFORMANCE OF CONTRACTS	-	
PREPAYMENTS ADVANCE PAYMENTS FOR RENT AND INSURANCE	-	-
TOTAL ASSETS		$100,000.00

LIABILITIES

CAPITAL STOCK PAR VALUE OF COMMON STOCK		$100,000.00
NOTES PAYABLE BORROWINGS		-
ACCOUNTS PAYABLE CURRENT ACCOUNTS OF MISCELLANEOUS NATURE, GENERALLY PAYABLE THE FOLLOWING MONTH		-
ACCRUED LIABILITIES NOT DUE INTEREST AND TAXES PAYABLE IN A SUBSEQUENT PERIOD		-
RESERVES		
DEPRECIATION ON PLANT DEPRECIATION ON PERMANENT AND GENERAL PLANT EQUIPMENT	-	
EMPLOYEES' BENEFIT FUND APPROPRIATIONS IN ACCORDANCE WITH EMPLOYEES' BENEFIT FUND PLAN	-	-
TOTAL LIABILITIES		$100,000.00

COPIES TO President
Executive Vice President
Vice President
Comptroller, A.T.& T.Co.
Comptroller, W.E.Co.

Bmoore
GENERAL AUDITOR

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BELL TELEPHONE LABORATORIES
INCORPORATED
COMMERCIAL RELATIONS DEPARTMENT

EXHIBIT X-211

REPORT M-8 00
[illegible] 1[illegible], 19[illegible].

K-211

P-2

BALANCE SHEET

January 1, 1925.

ASSETS

PLANT INVESTMENT		
PERMANENT PLANT		
COST OF LAND, BUILDINGS AND PERMANENT FIXTURES	$2,650,000.00	
GENERAL EQUIPMENT		
COST OF OFFICE FURNITURE AND FIXTURES, MACHINERY AND TOOLS	2,391,969.32	
PLANT IN PROCESS		
COST OF PLANT IN PROCESS OF CONSTRUCTION AND NOT READY FOR SERVICE	209,906.14	$5,251,875.46
MERCHANDISE INVESTMENT		
STOCK MATERIALS		
VALUE OF MATERIALS AND SUPPLIES IN STOREROOMS	$132,785.00	
WORK IN PROCESS		
COST OF WORK GENERALLY BILLABLE THE FOLLOWING MONTH	369,362.00	502,147.00
CASH WORKING CAPITAL		
CASH ON HAND AND IN BANK		100,000.00
ACCOUNTS RECEIVABLE		
CURRENT ACCOUNTS WITH CUSTOMERS AND EMPLOYEES		15,506.32
DEFERRED DEBIT ITEMS		
GUARANTEE DEPOSITS		
GUARANTEE DEPOSIT REQUIRED BY WORKMEN'S COMPENSATION LAW AND OTHER DEPOSITS TO GUARANTEE PERFORMANCE OF CONTRACTS		
PREPAYMENTS		
ADVANCE PAYMENTS FOR RENT AND INSURANCE	$6,656.51	6,656.51
TOTAL ASSETS		$5,876,185.29

LIABILITIES

CAPITAL STOCK		
PAR VALUE OF COMMON STOCK		$100,000.00
NOTES PAYABLE		
BORROWINGS		4,552,146.08
ACCOUNTS PAYABLE		
CURRENT ACCOUNTS OF MISCELLANEOUS NATURE, GENERALLY PAYABLE THE FOLLOWING MONTH		127,199.56
ACCRUED LIABILITIES NOT DUE		
INTEREST AND TAXES PAYABLE IN A SUBSEQUENT PERIOD		
RESERVES		
DEPRECIATION ON PLANT		
DEPRECIATION ON PERMANENT AND GENERAL PLANT EQUIPMENT	$1,096,839.65	
EMPLOYEES' BENEFIT FUND		
APPROPRIATIONS IN ACCORDANCE WITH EMPLOYEES' BENEFIT FUND PLAN	-	1,096,839.65
TOTAL LIABILITIES		$5,876,185.29

COPIES TO
President
Executive Vice President
Vice President
Comptroller, A.T.&T.Co.
Comptroller, W.E.Co.

GENERAL AUDITOR

[fol. 4752]

The assets appearing on the balance sheet of the Bell Telephone Laboratories, Inc., as of January 1, 1925, were carried upon the books of the Western Electric Company prior to such transfer in the following amounts:

*Permanent Plant	$1,001,554
*General Equipment	830,972
*Plant in Process	209,906
*Total Plant	2,042,432
Stock Materials Work in Process	502,147
Accounts Receivable	15,506
Prepayments	6,657
	2,566,742
Less Accounts Payable	127,200
Total	$2,439,542

The West Street plant was sold by the Western Electric Company to the Bell Telephone Laboratories on the following bases:

Permanent Plant on the Basis of Appraisal by Horace S. Ely and Company.

General Equipment at cost as carried on the books of the Western Electric Company less depreciation determined by the application of the following rates to such face value:

Machinery, Furniture and Fixtures	45%
Small Tools	75
Plant in Process	At cost at which carried on the books of the Western Electric Company.

* Book cost less reserves for depreciation.

September 25, 1931.

[fol. 4753]

EXHIBIT X-217

American Telephone and Telegraph Company

Miscellaneous Non-Operating Revenues (Account 316)

Year 1923

Restaurant activities:	
Soda shop	$ 9,859
Cafeteria	18,902
Bake shop	3,420
Total	$ 32,181
Royalties from Western Electric Company on sales of special commercial products	94,977
Radio broadcasting license fees	2,500
Miscellaneous Long Lines items	4,478
Other miscellaneous minor items	184
Total	$134,320

September 21, 1931.

[fol. 4754] American Telephone and Telegraph Company

Miscellaneous Non-Operating Revenues (Account 316)

Year 1924

Restaurant activities:	
Soda shop	$13,484
Cafeteria	35,955
Bake shop	5,334
Total	$54,773
Royalties from Western Electric Company on sales of special commercial products	67,677
Radio broadcasting license fees	45,859
Miscellaneous Long Lines items	7,821
Other miscellaneous minor items	243
Total	$176,373

September 21, 1931.

[fol. 4755] American Telephone and Telegraph Company

Miscellaneous Non-Operating Revenues (Account 316)

Year 1925

Restaurant activities:	
Soda shop	$12,151
Cafeteria	33,039
Bake Shop	5,213
Total Restaurant Activities	$50,403
Western Electric Company—royalties and analogous items:	
Electrical recording of sound for the making of phonograph records	$9,590
Mechanical reproduction of sound from phonograph records	33,333
For exclusive license granted under patents for telephone appliances	5,239
Sales by Western Electric Company of special commercial products	82,797
Total from Western Electric Company	$130,959
Radio broadcasting license fees	$81,557
Judgment for infringement of patents by the Radio Audion Co. and De Forest Radio Tel. and Tel. Co.	20,697
Miscellaneous Long Lines items	9,620
Other miscellaneous minor items	107
Total	$293,343

September 21, 1931.

[fol. 4756] American Telephone and Telegraph Company

Miscellaneous Non-Operating Revenues (Account 316)

Year 1926

Western Electric Company—royalties and analogous items:	
Electrical recording of sound for the making of phonograph records	$10,513
Mechanical reproduction of sound from phonograph records	83,132
Sales by Western Electric Company of special commercial products	77,417
Total from Western Electric Company	$171,062
Radio broadcasting license fees	89,917
Difference between interest collected from the makers and interest paid to the purchasers of securities temporarily sold under option agreements:	

Option Agreements With	Description of Securities	
Western Electric Company	Kansas City Tel. Co. 5% Bonds 1932	18,973
	Pacific Tel. and Tel. Co. 6% Demand Notes	26,156
New England Tel. and Tel. Co.	Pacific Tel. and Tel. Co. 6% Demand Notes	24,934

Miscellaneous Long Lines items	27,779
Other miscellaneous minor items	301
Total	$359,122

September 21, 1931.

[fol. 4757] American Telephone and Telegraph Company

Miscellaneous Non-Operating Revenues (Account 316)

Year 1927

Western Electric Company—royalties and analogous items:	
Electrical recording of sound for the making of phonograph records	$19,224
Mechanical reproduction of sound from phonograph records	148,538
Recording and reproducing sound in timed relation with the taking and projection of pictures	29,883
Singer patent (linemen's shields)	442
For exclusive license granted under patents for telephone appliances	33,489
Sales by Western Electric Company of special commercial products	203,223
Total from Western Electric Company	$434,799
Atlantic Precision Company—royalty	1,167
Radio broadcasting license fees	104,460
Excess of 1.13% received on the 5.88% notes of the Pacific Tel. and Tel. Co., temporarily sold to the Western Electric Company on a 4.75% basis under option agreement	39,927
Miscellaneous Long Lines items	51,452
Other miscellaneous minor items	175
Total	$631,980

September 21, 1931.

[fol. 4758] American Telephone and Telegraph Company

Miscellaneous Non-Operating Revenues (Account 316)

Year 1928

Western Electric Company—royalties and analogous items:	
Electrical recording of sound for the making of phonograph records	$24,646
Mechanical reproduction of sound from phonograph records	138,102
Recording and reproducing sound in timed relation with the taking and projection of pictures	43,010
Singer patent (linemen's shields)	1,212
For exclusive license granted under patents for telephone appliances	16,250
Sales by Western Electric Company of special commercial products	218,298
Total from Western Electric Company	$441,518
Atlantic Precision Company—royalty	579
Radio broadcasting license fees	63,796
Miscellaneous Long Lines items	8,504
Other miscellaneous minor items	135
Total	$514,532

September 21, 1931.

[fol. 4759] American Telephone and Telegraph Company

Miscellaneous Non-Operating Revenues (Account 316)

Year 1929

Western Electric Company—royalties and analogous items:	
Electrical recording of sound for the making of phonograph records	$21,307
Mechanical reproduction of sound from phonograph records	36,288
Recording and reproducing sound in timed relation with the taking and projection of pictures	245,146
Singer patent (linemen's shields)	1,641
Trailer and winch equipment	479
For exclusive license granted under patents for telephone appliances	11,775
Sales by Western Electric Company of special commercial products	899,934
Total from Western Electric Company	$1,216,570
Royalties received from:	
Atlantic Precision Company	1,369
Stromberg-Carlson Telephone Manufacturing Company	711
Radio broadcasting license fees	14,451
Excess of .55% received on 5.88% notes of the Michigan Bell Telephone Company temporarily sold to the Southern Bell Tel. and Tel. Co. on a 5.33% basis under option agreement	10,038
Miscellaneous Long Lines items	13,738
Other miscellaneous minor items	159
Total	$1,257,036

September 21, 1931.

[fol. 4760] American Telephone and Telegraph Company

Miscellaneous Non-Operating Revenues (Account 316)

Year 1930

Western Electric Company—royalties and analogous items:	
Electrical recording of sound for the making of phonograph records	$26,372
Mechanical reproduction of sound from phonograph records	35,715
Recording and reproducing sound in timed relation with the taking and projection of pictures	526,242
Singer patent (linemen's shields)	1,849
Trailer and winch equipment	2,032
Carbon monoxide detectors	36
Deflection dynometers	24
For exclusive license granted under patents for telephone appliances	20,000
Sales by Western Electric Company of special commercial products	514,653
Total from Western Electric Company	$1,126,923
Royalties received from:	
Atlantic Precision Company	957
Cameron Surgical Specialty Company	357
Radio Products Company	401
Stromberg-Carlson Telephone Manufacturing Company	720
Supreme Instruments Corporation	798
Radio broadcasting license fees (net refund)	500*
Excess of .55% received on 5.88% notes of the Michigan Bell Telephone Company temporarily sold to the Southern Bell Tel. and Tel. Co. on a 5.33% basis under option agreement	13,846
Miscellaneous Long Lines items	32,980
Other miscellaneous minor items	57
Total	$1,176,539

*Red figure.

September 21, 1931.

[fol. 4761]

EXHIBIT X-220

Trust Agreement

Pension Fund

American Telephone and Telegraph Company and Bankers Trust Company, Trustee

Dated December 31, 1927

[fol. 4762] This agreement, dated as of the thirty-first day of December, 1927, by and between American Telephone and Telegraph Company, a corporation organized under the laws of the State of New York (hereinafter called the "Company"), party of the first part, and Bankers Trust

Company, a corporation organized under the laws of said State and having its principal place of business in the City of New York, in said State (hereinafter called the "Trustee"), party of the second part, Witnesseth:

Whereas, the Company has established a plan for the payment of pensions to its employees, entitled "Plan for Employees' Pensions, Disability Benefits and Death Benefits", which became effective January 1, 1913, a copy of which, including all modifications thereof, is attached hereto (which Plan, together with all modifications heretofore or hereafter made and all substitutions therefor, is hereinafter designated as "the Plan"); and

Whereas, for the purpose of establishing a fund to provide for the payment of service pensions under the Plan, the Company has paid to the Trustee the sum of —— dollars ($——), the receipt of which is hereby acknowledged, and may hereafter from time to time make further payments to the Trustee for said purpose (said payment and all additions thereto and accumulations thereon being hereinafter referred to as the "Pension Fund");

Now, therefore, in consideration of the premises, it is agreed between the parties hereto that the Pension Fund shall be held, managed and disposed of by the Trustee, subject to the following terms and conditions:

[fol. 4763] 1. The Trustee accepts the trust created hereunder, and agrees to be bound by all the terms of this instrument.

2. The Pension Fund shall be held by the Trustee solely for the purpose of the payment, by purchase of annuities or by payment in any other manner, as the Company may from time to time direct, of service pensions granted by the Company under the Plan to employees who are entitled thereunder to such service pensions.

3. The Pension Fund shall be invested and kept invested by the Trustee in such manner as the Company may from time to time in writing addressed to the Trustee direct, and, in the absence of any such direction as to any part of the Pension Fund, such part shall be temporarily invested in such manner as the Trustee may determine, with due regard to safety of principal and income, but free from any limitations imposed by law as to the manner of investing trust funds. The Company may direct the Trustee to in-

vest all or any part of the Pension Fund in any bonds or notes, whether secured or unsecured, of the Company, or of any Associated or subsidiary company of the Bell System. The Trustee shall not be required to register in its name as Trustee any securities payable to bearer.

4. The Trustee shall regularly and promptly collect the income from the Pension Fund and shall make payments, in discharge of service pension obligations created by the Plan, from time to time, from the income of the Pension Fund if sufficient for such purposes, and to the extent that such income is insufficient therefor, from the principal of the Pension Fund, in such amounts and in such manner as may be directed in writing by the Company, and upon vouchers stating that such payments are made in discharge of service pension obligations of the Company under the Plan; but the obligation of the Trustee to make payments hereunder shall not be for an amount in excess of the realizable value of the Pension Fund at the time.

[fol. 4764] The Trustee shall not be required to make any such payments in cash unless there shall, at the time, be in the Pension Fund an amount of cash sufficient for the purpose. In case of such a deficiency in cash the Company shall give to the Trustee such directions as to the disposition of securities forming a part of the Pension Fund as will provide the amount of cash necessary for such payments.

5. The Trustee shall have full power to sell and transfer any securities constituting a part of the Pension Fund, but only, except in the case of temporary investments authorized by Section 3 hereof, with the consent in writing of the Company. Any corporation whose securities form a part of the Pension Fund shall incur no liability for making transfer thereof on its books, on account of the absence of consent of the Company, if it is furnished with a statement signed by the Trustee to the effect that such securities are temporary investments under the provisions of Section 3 hereof. The Trustee shall not be liable for any depreciation in the value of the Trust Fund, if the directions of the Company as to investment and reinvestment are complied with, nor for any depreciation in the value of temporary investments authorized under Section 3 hereof if such temporary investments shall have been made by the Trustee in good faith.

6. The Trustee shall keep accurate and detailed records of its transactions hereunder, and all its accounts, books and records relating thereto shall be open at all reasonable times to the inspection of the Company. The Trustee shall from time to time make such reports, and furnish such information, concerning the trust, to the Company as it may in writing request.

[fol. 4765] 7. The Trustee shall not be liable for the proper application of any part of the Pension Fund if payments are made by it in accordance with directions of the Company.

8. Whenever the Trustee is required or authorized to take any action hereunder upon the request, direction or authorization of the Company, such request, direction or authorization shall be a sufficient protection to the Trustee if contained in a writing signed by the President of the Company, or by any person authorized by resolution of its Board of Directors or Executive Committee to sign such writing.

9. The Trustee shall not be liable hereunder in any respect, except for its own negligence or wilful misconduct.

The Company will indemnify and hold harmless the Trustee of and from any liability or expense in connection with or arising out of any payment out of or disposition of the Pension Fund made by the Trustee to the Company or upon the order of the Company.

10. The Trustee shall be entitled to reasonable compensation for its services hereunder, and such compensation and all of the reasonable expenses of the Trustee incurred in the discharge of the trust, as well as any taxes that may be lawfully assessed on or in respect of the Pension Fund shall be paid by the Company and shall not be a charge against the Pension Fund, unless the Company shall default in such payment.

If the Company shall default in any such payment, such compensation and expenses of the Trustee and taxes shall be a charge against the Pension Fund. The Trustee may assume that any taxes assessed on or in respect of the Pension Fund are lawfully assessed unless the Company shall in writing advise the Trustee that, in the opinion of counsel [fol. 4766] for the Company, such taxes are unlawfully assessed. In the event that the Company shall so advise the Trustee, the Trustee will, if so requested by the Company, contest the validity of such taxes in any manner deemed appropriate by it or its counsel, but at the expense of the Company; or the Company may itself contest the validity of any such taxes in any manner deemed appropriate by the Trustee or its counsel. The word "taxes" in this Section 10 shall be deemed to include any interest or penalties that may be levied or imposed in respect of any taxes lawfully assessed.

11. The Trustee may resign at any time upon sixty days' notice in writing to the Company.

12. The Trustee may be removed by the Company at any time upon sixty days' notice in writing to the Trustee.

13. In case of a vacancy in the office of the Trustee arising from any cause whatever, the Company shall, by resolution of its Board of Directors or Executive Committee, forthwith appoint a successor trustee or trustees.

In the case of an appointment of a new trustee hereunder title to, and possession of, the Pension Fund and all accounts, books and records relating thereto shall forthwith be vested in the successor trustee, without any further action on the part of the predecessor trustee, but such predecessor trustee shall execute all instruments, and do all acts, that may be necessary or may be requested by the Company or such successor trustee to vest in the successor trustee all of the Pension Fund, and all accounts, books and records relating thereto.

[fol. 4767] 14. This trust shall be terminated by the happening of the earlier in point of time of either of the following events: (a) the expiration of ten years from the execution and delivery of this instrument; or (b) the death of the survivor of —— ——, of —— ——, and —— ——, of ——.

15. This instrument may be cancelled and the trust created hereby revoked, at any time by the Company, by giving notice thereof in writing to the Trustee, provided that the trust shall not be revoked except upon the expiration of fifteen months from the receipt of such notice by the Trustee.

16. Upon the termination or revocation of this agreement, the Trustee shall forthwith transfer and deliver to the Company, or upon its written order, all moneys and securities in its custody or possession and forming a part of the Pension Fund, and shall make such accounting of its trusteeship hereunder as the Company may require. Unless otherwise required by the Company, the Trustee, upon the termination or revocation of this trust, shall account by filing a statement of its accounts with the Company and paying over the Pension Fund as directed by the Company, and such statement of account, when approved by the Company, shall operate as a full and final discharge of the Trustee.

17. The term "Company" shall include its successors in business, and the term "Trustee" shall apply to any trustee acting hereunder.

18. Any Associated Company of the Bell System, so-called, or any subsidiary or affiliated or connecting company, which has established a plan providing for the pay- [fol. 4768] ment of service pensions to its employees, may, upon the execution and delivery to the Trustee of an instrument, substantially in the form hereto attached and marked "A", and upon the approval in writing of the Company, make payments to the Trustee for the purpose of establishing a trust fund to meet its service pension obligations under such plan, and thereupon such trust fund shall be held by the Trustee for said purpose, and subject to the same provisions and conditions as are herein set forth with respect to the Pension Fund. Wherever in this instrument, except in the first and last sentences of this paragraph, the name of the American Telephone and Telegraph Company or the designation "the Company" appears, the name of such other company shall be construed as substituted with respect to the trust fund established by it. Separate accounts and records shall be kept by the Trustee for each such trust fund, and payments directed by any such corporation shall be made only from the trust fund established by it. Unless specific instructions are given to the Trustee in writing by any such company as to the manner of investing and reinvesting its trust fund, investment thereof shall be made in the manner provided in this instrument for the investment of the Pension Fund of the American Telephone

and Telegraph Company, and all or any part of the trust fund of any such company may be invested in the bonds or notes, whether secured or unsecured, of the company, of the American Telephone and Telegraph Company or of any other Associated or subsidiary company of the Bell System.

In Witness Whereof, the parties hereto have caused their respective corporate names to be hereunto subscribed by [fol. 4769] their respective Presidents or Vice Presidents, and their respective corporate seals to be hereunto affixed, duly attested by their respective Secretaries or Assistant Secretaries, the — day of ——, 1927.

American Telephone and Telegraph Company, by —— ——, President. Attest: —— ——, Secretary. Bankers Trust Company, by —— ——, Vice-President. Attest: —— ——, Assistant Secretary.

[fol. 4770]

Exhibit No. X-221

Trust Agreement, Pension Fund, Dated Dec. 31, 1927

This agreement, dated as of the thirty-first day of December, 1927, by and between —— ——, a corporation organized under the laws of the State of ——, (hereinafter called the "Company"), party of the first part, and Bankers Trust Company, a corporation organized under the laws of the State of New York and having its principal place of business in the City of New York, in said State (hereinafter called the "Trustee"), party of the second part, witnesseth:

Whereas, the American Telephone and Telegraph Company (hereinafter called the "American Company"), entered into an agreement, dated as of December 31, 1927, with the Trustee, providing for the establishment of a trust fund as a Pension Fund, a copy of which agreement is attached hereto and marked "A"; and

Whereas, Section 18 of said agreement is as follows:

"18. Any Associated Company of the Bell System, so-called, or any subsidiary or affiliated or connecting company, which has established a plan providing for the payment of service pensions to its employees, may, upon the execution and delivery to the Trustee of an instrument, substantially in the form hereto attached and marked 'A', and upon the approval in writing of the Company, make payments to the Trustee for the purpose of establishing a trust fund to meet its service pension obligations under such plan, and thereupon such trust fund shall be held by the Trustee for said purpose, and subject to the same provisions and conditions as are herein set forth with respect to the Pension Fund. Wherever in this instrument, except in the first and last sentences of this paragraph, the name of the American Telephone and Telegraph Company or the designation 'the Company' appears, the name of such other company shall be construed as substituted with respect to the trust fund established by it. Separate accounts and records shall be kept by the Trustee for each such trust fund, and payments directed by any such corporation shall be made only from the trust fund established by it. Unless specific instructions are given to the Trustee in writing by any such company as to the manner of investing and reinvesting its trust fund, investment thereof shall be made in the manner provided in this instrument for the investment of the Pension Fund of the American Telephone and Telegraph Company, and all or any part of the trust fund of any such company may be invested in the bonds or notes, [fol. 4771] whether secured or unsecured, of the company, of the American Telephone and Telegraph Company ~~or~~ of any other Associated or subsidiary company of the Bell System'';

and

Whereas, the Company is an Associated Company of the Bell System, or a subsidiary or affiliated or connecting company, and has established a plan providing for the payment of service pensions to its employees, entitled "Plan for Employees' Pensions, Disability Benefits and Death Benefits", which became effective —— —, 19—, a copy of which, including all modifications thereof, is attached hereto (which Plan, together with all modifications hereto or hereafter made and all substitutions therefor, is hereinafter designated as "the Plan"); and

Whereas, the Company, with the approval of said American Telephone and Telegraph Company, which approval is indorsed hereon, for the purpose of establishing a trust fund as a Pension Fund to meet its service pension obligations under the Plan, has paid to the Trustee the sum of — dollars ($—), the receipt of which is hereby acknowledged, and may hereafter from time to time make further payments to the Trustee for said purpose (said payment and all additions thereto and accumulations thereon being hereinafter referred to as the "Pension Fund");

Now, therefore, in consideration of the premises, it is agreed between the parties hereto that the Pension Fund shall be held, managed and disposed of by the Trustee subject to the terms and conditions of said contract between the American Company and the Trustee, and subject particularly to the provisions of said Section 18; and that the provisions of said contract shall in all respects be applicable to the Pension Fund, except that the name of this Company shall be substituted with respect to the Pension Fund for the name or designation of the American Company wherever, other than in the first and last sentences of [fol. 4772] said Section 18, the name or designation of the American Company appears in said contract.

In witness whereof the parties hereto have caused their respective corporate names to be hereunto subscribed by their respective Presidents or Vice Presidents, and their respective corporate seals to be hereunto affixed, duly attested by their respective Secretaries or Assistant Secretaries, the — day of ——, 1927.

—— ——, by —— ——, President. Attest: —— ——, Secretary. Bankers Trust Company, by —— ——, Vice-President. Attest: —— ——, Assistant Secretary.

Approved.

American Telephone and Telegraph Company, by —— ——, President. Attest: —— ——, Secretary.

[fol. 4773] Exhibit X-222

Memorandum Relative to Actuarial Determination of Accrual Charges for Service Pensions on the Full Service Basis

American Telephone and Telegraph Company, Comptroller's Department, Chief Statistician's Division, New York, February, 1929

[fol. 4774] Memorandum Relative to Actuarial Determination of Accrual Charges for Service Pensions on the Full Service Basis

This memorandum is intended to set forth briefly the procedure followed in the actuarial determination of annual accrual charges in respect of Service Pensions on the "full service basis" of accruals, a basis which operates to distribute pension costs throughout the entire service of employees from date of employment until ultimate date of retirement.

The determination of accrual charges depends upon the following fundamental considerations which are consistent with the terms of the Employees' Benefit Plan governing Service Pensions, and with the related financial program for spreading such pension costs over the entire service of employees:

(a). That future separations of employees from the telephone service, and the future salary progress of employees who remain in the service, will presumably be in substantial agreement with actual Bell System experience in these rspects in the recent past;

(b) That the then full estimated present worth of Service Pensions granted to employees in accordance with the provisions of the Employees' Benefit Plan shall have been accumulated at the time these employees are retired; and

(c) That the unexpended balance in the Pension Fund will be credited annually with appropriate interest earnings.

In order to explain the actuarial procedure, it is desirable (1) to enumerate the basic actuarial factors which are [fol. 4775] involved in the above considerations, (2) to explain the methods by which, through the analysis of past experience, these basic actuarial factors are evaluated, (3) to indicate the methods involved in the determination of the rates of accrual, and (4) to describe the manner in which the amount of the annual accrual charge is determined by application of these rates. These subjects are presented in the sections which follow:

I. Basic Actuarial Factors:

The basic actuarial factors which are involved in the above considerations may be listed as follows:

(1) Future Separation from Service.—Since accrual charges are designed to provide Service Pensions for only those employees who continue in the telephone service until retirement on Service Pensions, it is necessary to estimate in advance the number who will separate from the service in the future by reason of withdrawal, death or disability retirement prior to retirement on such pensions.

(2) Future Wage Payments.—In order that pension expense may be related to total payrolls, an estimate of the aggregate future wage payments, by years, to all employees is required.

(3) Amount of Pensions.—Under the terms of the Employees' Benefit Plan, pensions are computed on the basis of employees' wages during the ten years preceding retirement. Hence, in order to determine the average amount [fol. 4776] of pensions to be received by employees who remain in service until they are retired, it is necessary to estimate the final ten-year average wage payments to this group.

(4) Present Worth of Pensions.—In order that the amounts set aside each year shall produce, at the time employees are retired on esrvice pensions, the then full estimated present worth of the pensions to which they are then entitled, it is also necessary to take into consideration the probable period during which pension payments will be continued after these employees are retired.

(5) Interest Rates.—Since pension accruals are to be held in an interest-bearing fund prior to their disbursement, it is necessary to recognize the future interest earnings upon this fund. In view of the fact, however, that

these accruals relate to obligations some of which may not mature for 40 or 50 years, it is desirable that the interest rate used in accrual computations be sufficiently moderate that its realization over the entire period is practically assured. For this reason, and to keep in line with sound insurance practice in regard to funds of this character, Bell System pension accruals have been computed on the basis of interest at the rate of 4%.

II. Evaluation of Basic Factors:

It will be noted that the above factors consist mainly of such uncertain elements as labor turnover, rates of death [fol. 4777] and retirement, and rates of salary advancement. The logical basis for the evaluation of probabilities of this character is the past experience of a large group constituting a representative cross-section of telephone employees. As a matter of fact, the study of past experience has included all employees of Bell System Companies.

Careful investigation of this experience has shown that in order to secure reasonable homogeneity, it is desirable not only to consider male and female employees separately but also to divide each of these groups into smaller groups dependent upon the age of employees at entry into the telephone service. Having so classified the employees into homogeneous groups, the basic actuarial factors have been evaluated and pension costs have been determined separately for each group. Since the principles underlying the analysis of all these groups are identical, it will serve the purpose of the present discussion to select one such group and to follow through in detail the steps necessary in determining the required pension accrual. Throughout this section of the memorandum, therefore, the discussion and illustration of methods will be confined to male employees who enter the telephone service at age 25.

(1) Future Separations from Service.—The first step in the analysis of pension costs for male employees who enter the telephone service at age 25 consists in the determination of the expected service history of a hypothetical group of made employees who enter service simultaneously at that [fol. 4778] age. The probable service experience of such a group from the date of employment until the last survivors are retired on pensions is determined upon the basis

of average past Bell System experience in the following way.

The annual census of Bell System employees taken as of December, 1924, for example, shows 884 male employees between ages 25 and 26 in their first year of service. These employees were, on the average, 25½ years of age and their average length of service at that date was about six months. The census taken one year later, at the end of 1925, shows 496 male employees between ages 26 and 27 in their second year of service and, since these employees were the only survivors of the first group, it is clear that 884 minus 496, or 388 employees separated during the service period ½ to 1½ years. Hence, the actual rate of separation experienced during 1925 by employees averaging 25½ years of age and one-half year of service at the beginning of that period was 388/884 or 0.439. It is apparent, furthermore, that by repeating the above procedure it is possible to determine from the same two census the experienced rates of separation for—

Age 26½, from term of service 1½ to 2½ years,
" 27½ " " " " 2½ to 3½ years,
" 28½ " " " " 3½ to 4½ years,

and so on.

It is evident that an analysis of census data in the above manner will provide a record of annual separation rates [fol. 4779] applicable to the assumed group of employees throughout their entire period of service. However, beginning with the first year of eligibility for retirement under the Employees' Benefit Plan, separations from the group were analyzed separately by causes. Past experience indicates that there are practically no withdrawals by reason of resignation or dismissal among employees who have qualified for retirement, so the total separations from these groups are made up of deaths, Service Pension retirements, and retirements on account of disability. Full information in regard to these cases is available, and by classifying and relating these data to the corresponding numbers in active service as shown by the Employees' Census, the actual rate of separation experienced during the year for each cause may be determined.

It is obvious that if an analysis of this character is limited to the separation rates occurring within any single calendar year, such as 1926 for example, a somewhat erratic behavior may result from accidental fluctuations peculiar to that year. In order to minimize the effect of such fluctuations, therefore, it is desirable to combine the experience of several recent calendar years. For example, in the case of the pension accruals determined for 1928, separation rates were developed not only from experience during 1926 but also from the experience of each of the four preceding [fol. 4780] years. The average rates for the five-year period were then determined and any fluctuations still remaining, due to limited data or to abnormal conditions in particular years, were eliminated by fitting smooth curves to the observed rates.

Having determined the probable rates of separation for male employees entering the service at age 25, it was then possible to construct the expected service history of a hypothetical group of such entrants. Assuming an initial group of 10, 000 male employees at age 25½ in the middle of their first year of service, the total number of separations during the following year was obtained by applying to the number of employees at the beginning of the year the graduated separation rate for year of service ½ to 1½. The number of employees remaining in service at year of service 1½ was then obtained by subtracting the expected separations, as determined above, from the number in service at the beginning of that year. Successive application of the graduated separation rates in this manner resulted in the probable service history of the hypothetical group from the middle of the first year of service up to the year during which the survivors would become eligible for retirement on service pensions, that is, up to the thirtieth year of service.

From this point on, the number in service at the beginning of each year was multiplied successively by the graduated [fol. 4781] rates of death, disability retirement, and Service Pension retirement. The indicated separations during the year due to those causes were then added together and the total was subtracted from the number at the beginning of the year to obtain the expected number remaining at the beginning of the following year. This procedure was continued up to year of service 40, at which time all of the employees remaining were assumed to be retired, since they would then have attained the retirement age of 65.

A summary of the service history determined in this manner is shown on the following page. This service history indicates that out of 10,000 employees in their first year of service 1,463 remain until they are retired on Service Pensions; and that while the age at retirement ranges from 55 to 65 years, the great majority of cases will occur at age 65.

In this connection, it may be of interest to note that the above described method of developing the probable service histories of telephone employees is similar in principle to the methods employed by life insurance companies in constructing mortality tables on the basis of their records of insured lives, and that the latter tables are utilized in the determination of insurance premiums and reserves in much the same manner that service histories are used in the determination of pension costs.

[fol. 4782] Development of Probable Service History

Male Employees Entering Service at Age 25

(1)	(2)	(3)	(4)	(5)	(6)
			Separation from service during term t — ½ to t + ½		
Year of service t	Age at beginning of year x	Number in service at middle of year	Service Pension retirements	Withdrawals, deaths, and disability retirements	Total (4)+(5)
1	25	10,000	....	4,288	4,288
2	26	5,712	....	1,089	1,089
3	27	4,623	....	536	536
4	28	4,087	....	360	360
5	29	3,727	....	264	264
6	30	3,463	....	203	203
7	31	3,260	....	162	162
8	32	3,098	....	132	132
9	33	2,966	....	110	110
10	34	2,856	....	93	93
11	35	2,763	....	80	80
12	36	2,683	....	69	69
13	37	2,614	....	60	60
14	38	2,554	....	53	53
15	39	2,501	....	48	48
16	40	2,453	....	43	43
17	41	2,410	....	39	39
18	42	2,371	....	37	37
19	43	2,334	....	34	34
20	44	2,300	....	32	32
21	45	2,268	....	31	31
22	46	2,237	....	29	29
23	47	2,208	....	28	28
24	48	2,180	....	29	29

(1)	(2)	(3)	(4)	(5)	(6)
			Separation from service during term $t - \frac{1}{2}$ to $t + \frac{1}{2}$		
Year of service t	Age at beginning of year x	Number in service at middle of year	Service Pension retirements	Withdrawals, deaths, and disability retirements	Total (4) + (5)
25	49	2,151	....	30	30
26	50	2,121	....	32	32
27	51	2,089	....	35	35
28	52	2,054	....	38	38
29	53	2,016	....	41	41
30	54	1,975	16	36	52
31	55	1,923	33	39	72
32	56	1,851	33	43	76
33	57	1,775	34	45	79
34	58	1,696	36	48	84
35	59	1,612	84	50	134
36	60	1,478	62	52	114
37	61	1,364	48	54	102
38	62	1,262	38	56	94
39	63	1,168	32	59	91
40	64	1,077	1,047	30	1,077
Total			1,463	8,537	10,000

[fol. 4783] (2) Future Wage Payments.—Having determined the manner in which the number of employees in the assumed initial group will decrease as the term of service advances, the next important problem was to determine the probable yearly wage payments to the group throughout the entire period covered by the service history. Here, again recourse was had to the data provided by the annual census of Bell System employees. The average wage paid to employees of the group under consideration was determined for each year of service and, as in the case of the separation rates, these amounts were fitted with a smooth curve to eliminate chance fluctuations, due to limited data or unusual cases. The resultant graduated wage scale was reasonably assumed to represent the average rate of salary advancement for employees of the group in question. It is recognized that in actual practice there will undoubtedly be some cases where the wage history of individuals will differ substantially from the scale so determined; but such cases do not preclude the use of an average scale for the group as a whole, since similar abnormal cases enter into and are reflected by the data from which the scale is developed.

Total wage payments to the group during each year of service were obtained by multiplying the average wage rate at the middle of the year by the number of employees in service at that time. The results of these computations for [fol. 4784] the group under consideration are shown in Column (5) of the table on the following page.

It should be appreciated, in this connection, that the wage scale determined in the above manner is based upon actual current wage levels and is intended to show only the relationship between the current average wages of employees in various terms of service. In other words, the scale indicates merely the average rate of wage increase associated with advancing service, as evidenced by an actual cross-section of current wage payments. No attempt is made to provide for the possibility of future increases or decreases at all years of service due to any change in general wage levels resulting from basic economic changes within or without the telephone business, since no basis is available for predicting the time, extent, or direction of such change.

(3) Amount of Pensions.—The Probable Service History on page 9 shows in Column (4) the Service Pension retirements occurring at ages 55 to 65, inclusive, for periods of service ranging from 30 to 40 years. Considering, for example, the 84 employees retired between completed years of service 34½ to 35½, it may be assumed that these retirements occur, on the average, at the middle of the period; that is, upon completion of exactly 35 years of service. Column (4) of the table on page 12 indicates that the av-

[fol. 4785]

Determination of Total Wage Payments

Male Employees Entering Service at Age 25

(1) Year of service t	(2) Age at beginning of year x	(3) Number in service at middle of year	(4) Average yearly wage	(5) Total wage payments during year (3) x (4)
1	25	10,000	$1,377	$13,770,000
2	26	5,712	1,604	9,162,048
3	27	4,623	1,779	8,224,317
4	28	4,087	1,902	7,773,474
5	29	3,727	1,998	7,446,546
6	30	3,463	2,081	7,206,503
7	31	3,260	2,155	7,025,300
8	32	3,098	2,225	6,893,050
9	33	2,966	2,292	6,798,072
10	34	2,856	2,356	6,728,736
11	35	2,763	2,420	6,686,460
12	36	2,683	2,484	6,664,572
13	37	2,614	2,547	6,657,858
14	38	2,554	2,611	6,668,494
15	39	2,501	2,674	6,687,674
16	40	2,453	2,738	6,716,314
17	41	2,410	2,800	6,748,000

(1) Year of service t	(2) Age at beginning of year x	(3) Number in service at middle of year	(4) Average yearly wage	(5) Total wage payments during year (3) x (4)
18	42	2,371	2,861	6,783,431
19	43	2,334	2,921	6,817,614
20	44	2,300	2,980	6,854,000
21	45	2,268	3,038	6,890,184
22	46	2,237	3,095	6,923,515
23	47	2,208	3,150	6,955,200
24	48	2,180	3,205	6,986,900
25	49	2,151	3,258	7,007,958
26	50	2,121	3,309	7,018,389
27	51	2,089	3,358	7,014,862
28	52	2,054	3,405	6,993,870
29	53	2,016	3,450	6,955,200
30	54	1,975	3,493	6,898,675
31	55	1,923	3,533	6,793,959
32	56	1,851	3,570	6,608,070
33	57	1,775	3,605	6,398,875
34	58	1,696	3,637	6,168,352
35	59	1,612	3,667	5,911,204
36	60	1,478	3,694	5,459,732
37	61	1,364	3,717	5,069,988
38	62	1,262	3,738	4,717,356
39	63	1,168	3,755	4,385,840
40	64	1,077	3,769	4,059,213

[fol. 4786] erage wage to these individuals for the 10 years preceding retirement ranges from $3,309 during the 26th year of service to $3,667 during the 35th year, the average for the 10-year period being $3,503. Since the Employees' Benefit Plan provides that pensions shall be computed at the rate of 1% of the average annual wage for the 10 years preceding retirement, multiplied by the number of years in the employee's term of service, the average pension payable to the 84 employees retired after 35 years of service would be 35% (1% for each completed year of service) of $3,503, or $1,226 yearly. Proceeding in this manner, the average pensions to groups retired in each year of service after the 30th were determined. These amounts are shown in Column (4) of the table on page 15.

(Note.—The Employees' Benefit Plan provides that the minimum Service Pension shall be $30 per month. Therefore, in computing the amount of pensions for employees who will be retired after relatively short periods of service, the average wage scale was modified to give recognition to this provision.)

(4) Present Worth of Pensions.—The present worth of a pension to an employee upon retirement is dependent upon (1) the amount of the annual pension payments, and (2) the duration of life of the employee after retirement. There is, of course, no method available for determining the future lifetime of a particular individual; but, where homogeneous groups are concerned, it is possible to esti- [fol. 4787] mate with considerable accuracy the average remaining lifetime of the members of the group. Insurance companies make practical use of this principle in the sale of life annuities to individuals, the premiums for such annuities being computed upon the basis of the same average rates of mortality that determine the expectation of life corresponding to the attained age of the applicant. Furthermore, since the total cost of an annuity issued by an insurance company is payable either before or at the time the annuity starts, proper allowance is made in the premium for the interest that will be earned on this amount prior to the time that it is paid back to the annuitant.

In estimating pension costs in the Bell System, the present worth of pensions starting at various ages has been computed on the basis of the same mortality and interest rates used by a number of the leading life insurance companies; namely, American Annuitants' mortality and interest at the rate of 4%. Returning to consideration of the 84 employees retired at age 60 after 35 years of service, the average expectation of life of a man aged 60 is 15.40 years and the single premium or lump sum cost of a yearly annuity of one thousand dollars to such an individual is [fol. 4788] $10,696.18. Hence, the total cost of providing average pensions of $1,226 to this group would be 84 x 10,696.18 x 1226/1000 or $1,101,535.

The present worth at time of granting of the pensions to the groups retiring at each age between 55 and 65 was determined in the manner described above. The results of these computations are shown in Column (7) of the following table.

Determination of Present Worth of Pensions at Time of Granting

Male Employees Entering Service at Age 25

(1) Year of service	(2) Age at end of year	(3) Service Pension retirements at age	(4) Average yearly pension	(5) Total amount of pensions granted	(6) Annuity factor for age	(7) Present Worth of pensions at granting
t	x	x		(3)x(4)	x	(5)x(6)
30	55	16	$983	$15,728	12.22729	$192,311
31	56	33	1,031	34,023	11.92476	405,716
32	57	33	1,080	35,640	11.62003	414,138
33	58	34	1,128	38,352	11.31353	433,897
34	59	36	1,177	42,372	11.005[illegible]6	466,323
35	60	84	1,226	102,984	10.69618	1,101,535
36	61	62	1,275	79,050	10.38641	821,046
37	62	48	1,324	63.552	10.07614	640,359
38	63	38	1,372	52,136	9.76591	509,155
39	64	32	1,420	45,440	9.45609	429,685
40	65	1,047	1,467	1,535,949	9.14729	14,049,771

(5) Interest Factor.—The computations thus far, in connection with the expected service history of male employees entering the service at age 25, have resulted in, first, the total yearly wage payments to the survivors of the initial [fol. 4789] group and, second, the total cost of pensions to the survivors of the group who are retired in accordance with the Service Pension provisions of the Plan. Since this service table may be accepted as being reasonably indicative of the probable future experience of such a group, it is clear that the expense of pensions can be distributed as a level percentage of the payrolls over the entire period of service, instead of leaving the entire charge to be met at the time the employees are retired. In order to give recognition to the interest accretions on accruals set aside prior to the time pensions are granted, it is obviously necessary to equate wage payments and pension costs to a common date on the basis of the 4% interest rate used in the computation of accruals. For convenience, these amounts have been expressed in terms of their present worths at entry, that is, as of the beginning of the first year of service.

Column (4) of the table on page 17 shows the discount factors for expressing amounts payable at the middle of each year of service in terms of their present worth as of the beginning of the first year. The factor of .25843409 at the middle of the 35th year, for example, means that a present fund of this amount would accumulate to 1.00 at the end of 34½ years, if credited with interest at the rate of 4%, compounded annually. The present worth, as defined above, of each annual payroll is obtained by multiply-

[fol. 4790]

X-222

Determination of Rate of Accrual

Male Employees Entering Service at Age 25

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Wage Payments			Pension Payments		
Year of service t	Age at beginning of year x	Total during year	Discount factor $(1.04)^{-t+\frac{1}{2}}$	Present worth at entry (3) x (4)	Present worth at granting	Discount factor $(1.04)^{-t}$	Present worth at entry (6) x (7)
1	25	$13,770,000	.98058063	$13,502,596	....	....	....
2	26	9,162,048	.94286604	8,638,584	....	....	....
3	27	8,224,317	.90660196	7,456,182	....	....	....
4	28	7,773,474	.87173266	6,776,391	....	....	....
5	29	7,446,546	.83820447	6,241,728	....	....	....
6	30	7,206,503	.80596584	5,808,195	....	....	....
7	31	7,025,300	.77496716	5,444,377	....	....	....
8	32	6,893,050	.74516072	5,136,430	....	....	....
9	33	6,798,072	.71650070	4,870,823	....	....	....
10	34	6,728,736	.68894298	4,635,715	....	....	....
11	35	6,686,460	.66244517	4,429,413	....	....	....
12	36	6,664,572	.63696651	4,245,109	....	....	....
13	37	6,657,858	.61246780	4,077,724	....	....	....
14	38	6,668,494	.58891135	3,927,152	....	....	....
15	39	6,687,674	.56626091	3,786,968	....	....	....
16	40	6,716,314	.54448164	3,656,910	....	....	....
17	41	6,748,000	.52354005	3,532,848	....	....	....
18	42	6,783,431	.50340389	3,414,806	....	....	....
19	43	6,817,614	.48404220	3,300,013	....	....	....
20	44	6,854,000	.46542519	3,190,024	....	....	....
21	45	6,890,184	.44752423	3,083,524	....	....	....
22	46	6,923,515	.43031175	2,979,270	....	....	....
23	47	6,955,200	.41376130	2,877,793	....	....	....
24	48	6,986,900	.39784740	2,779,720	....	....	....

25	49	7,007,958	.38254558	2,680,863			
26	50	7,018,389	.36783229	2,581,590			
27	51	7,014,862	.35368489	2,481,051			
28	52	6,993,870	.34008163	2,378,487			
29	53	6,955,200	.32700156	2,274,361			
30	54	6,898,675	.31442458	2,169,113			
31	55	6,793,959	.30233133	2,054,027	$192,311	.30831867	$59,293
32	56	6,608,070	.29070320	1,920,987	405,716	.29646026	120,279
33	57	6,398,875	.27952231	1,788,628	414,138	.28505794	118,053
34	58	6,168,352	.26877145	1,657,877	433,897	.27409417	118,929
35	59	5,911,204	.25843409	1,527,657	466,323	.26355209	122,900
36	60	5,459,732	.24849431	1,356,712	1,101,535	.25341547	279,146
37	61	5,069,988	.23893684	1,211,407	821,046	.24366872	200,063
38	62	4,717,356	.22974696	1,083,798	640,359	.23429685	150,034
39	63	4,385,840	.22091054	968,878	509,155	.22528543	114,705
40	64	4,059,213	.21241399	862,234	429,685	.21662061	93,079
					14,049,771	.20828904	2,926,413
Total				$146,789,965			$4,302,894

$$\text{Accrual rate} = \frac{4{,}302{,}894}{146{,}789{,}965} = .029313271$$

[fol. 4791] ing corresponding items in Columns (3) and (4), and the total present worth of these payments is seen to be $146,789,965. Similarly the present worth of the pensions granted in each year of service is obtained by multiplying the present worth as of time of granting by the discount factor for the full period of service. For example, the present worth of the 84 pensions granted to employees with 35 years of service is $1,101,535 and the discount factor for 35 full years is .25341547; therefore, the present worth at entry of the pensions granted to these employees is,

$1,101,535 × .25341547 = $279,146

Similar computations for the groups retired at each age between 55 and 65 indicate, as shown by Column (8) of the table on page 17, that the total present worth at entry of all service pensions granted to the members of the assumed group who are ultimately retired amounts to $4,302,894.

III. Determination of Rates of Accrual:

Having determined the present worth at entry of all pension payments and all wage payments to the group under consideration, the accrual rate may be obtained by dividing the former of these amounts by the latter:

4,302,894/146,789,965 = .029313271 = accrual rate.

In other words, if 2.9313271% of the annual payroll to male employees entering at age 25 is set aside each year [fol. 4792] beginning with the year of entrance and credited with interest at the rate of 4% annually, the accumulated amounts will be just sufficient (presuming that all assumptions were realized) to provide the present worth at granting of the pensions to the employees retired out of this group at each of the ages between 55 and 65. The figure of 2.9313271% is known as the rate of accrual for male employees entering at 25 years of age. The results of the application of this rate of accrual throughout the active service of the group under consideration are shown in the table on page 20. Annual gross accruals and interest credits appear in Columns (4) and (5), respectively. Assuming, for purpose of this illustration that the present worth of pensions at time of granting are segregated each year as pensions are granted, the balance remaining in the fund in respect of active employees is shown in Column (7).

By repeating the foregoing procedure it would be possible to determine a series of such rates of accrual for male employees, one rate for each possible age at entry, and a similar series of rates for female employees, one rate for each possible age at entry. This would result in an aggregate of some 60 rates of accrual. Investigation has shown, however, that no appreciable loss in accuracy will result by combining the ages at entry into five-year groups. For example, the experience for male employees entering at each of the five ages between 15 and 19, inclusive, can properly be combined and a single service history and corresponding rate of accrual developed for that group. On this basis, six such age at entry groups and corresponding

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Progress of Pension Fund

Male Employees Entering Service at Age 25

(1) Year of service t	(2) Age at beginning of year x	(3) Wage payments during year	(4) Gross Accruals (3) x 2.9313271%	(5) Interest credit during yr.	(6) Present worth of pensions at granting	(7) Pension Fund in respect of Active Employees (end of year)
1	25	$13,770,000	$403,644	$7,994		$411,638
2	26	9,162,048	268,570	21,784		701,992
3	27	8,224,317	241,082	32,854		975,928
4	28	7,773,474	227,866	43,550		1,247,344
5	29	7,446,546	218,283	54,217		1,519,844
6	30	7,206,503	211,246	64,977		1,796,067
7	31	7,025,300	205,935	75,921		2,077,923
8	32	6,893,050	202,058	87,118		2,367,099
9	33	6,798,071	199,274	98,630		2,665,003
10	34	6,728,736	197,241	110,506		2,972,750
11	35	6,686,460	196,002	122,792		3,291,544
12	36	6,664,572	195,360	135,531		3,622,435
13	37	6,657,858	195,163	148,762		3,966,360
14	38	6,668,494	195,475	162,526		4,324,361
15	39	6,687,674	196,038	176,857		4,697,256
16	40	6,716,314	196,877	191,789		5,085,922
17	41	6,748,000	197,806	207,[illegible]54		5,491,082
18	42	6,783,431	198,844	223,581		5,913,507
19	43	6,817,614	199,846	240,498		6,353,851
20	44	6,854,000	200,913	258,133		6,812,897
21	45	6,890,184	201,974	276,516		7,291,387
22	46	6,923,515	202,951	295,675		7,790,013
23	47	6,955,200	203,880	315,638		8,309,531
24	48	6,986,900	204,809	336,437		8,850,777
25	49	7,007,958	205,426	358,09[illegible]		9,414,302

26	50	7,018,389	205,732	380,646	....	10,000,680
27	51	7,014,862	205,628	404,099	....	10,610,407
28	52	6,993,870	205,013	428,476	....	11,243,896
29	53	6,955,200	203,880	453,793	....	11,901,569
30	54	6,898,675	202,223	480,068	$192,311	12,391,549
31	55	6,793,959	199,153	499,606	405,716	12,684,592
32	56	6,608,070	193,704	511,220	414,138	12,975,378
33	57	6,398,875	187,572	522,730	433,897	13,251,783
34	58	6,168,352	180,814	533,652	466,323	13,499,926
35	59	5,911,204	173,277	543,429	1,101,535	13,115,097
36	60	5,459,732	160,043	527,773	821,046	12,981,867
37	61	5,069,988	148,618	522,218	640,359	13,012,344
38	62	4,717,356	138,281	523,232	509,155	13,164,702
39	63	4,385,840	128,563	529,134	429,685	13,392,714
40	64	4,059,213	118,989	538,068	14,049,771	0
Total		....	$8,018,053	$11,445,883	$19,463,936	....

* Interest at 4% for one year on balance in fund at beginning of year plus interest for one-half year on current accrual.

[fol. 4794] rates of accrual have been developed for male employees, these groups ranging from ages 15-19, inclusive, up to ages 40-44, inclusive; similarly, six such groups and rates of accrual were developed for female employees.

In the determination of these twelve rates of accrual for use in the calculation of accrual charges in 1928, the basic actuarial factors were derived from average Bell System experience during the five-year period, 1922-1926, inclusive. No attempt was made to compute separate rates on the basis of the experience of individual Companies, since experience for the Bell System as a whole furnishes a broader and more representative basis for appraising fundamental conditions and tendencies in the telephone industry, affecting periods as long as those involved in the computation of pension costs, than does the experience of a single Company.

IV. Determination of Final Accrual Charges:

In order to determine the 1928 pension accrual for individual Companies, it was necessary to obtain the actual payroll of each Company at the beginning of 1928, classified according to the age at entry groups for which accrual rates had been computed. A special tabulation of the Employees' Census as of December, 1927 indicated the distribution in each Company of aggregate wages by age within each term of service. From this tabulation the distribution of wages by age at entry groups was determined, corresponding rates of accrual were applied, and a resulting composite rate of accrual calculated for each Company. Assuming that, in each Company, the age at entry distribu- [fol. 4795] tion of the payroll would continue unchanged throughout the ensuing year, the application of the composite accrual rates to the current payroll resulted in the required pension accruals for the year 1928.

V. Conclusion:

In view of the preceding discussion of the methods employed in determining pension accrual charges, it is evident that the accuracy of these amounts is dependent upon the correspondence of future experience as to rates of separation and rates of salary advancement within each Company with recent Bell System experience in regard to these factors. As pointed out previously, the use of an average wage scale involves merely the assumption of a definite relationship between wages in the various terms of service, and is in no way inconsistent with actual differences in wage levels as between various Companies. In the matter of separation rates, the future experience of the individual Companies may vary to some extent from the average, but this can be readily ascertained by yearly comparisons, and persistent tendencies toward lower or higher rates can be recognized by appropriate adjustment of future rates of accrual.

It should be appreciated, in this connection, that accrual rates such as those discussed in the preceding sections are not final in the sense that they are to be continuously applied to the future payrolls of present employees throughout their remaining period of service. On the contrary, it is anticipated that yearly analyses will be made of the separation and wage rates involved in these accruals and that the future amounts charged to expense will reflect any adjustments in present basic rates that additional experience indicates as necessary.

[fol. 4796] EXHIBIT X-224

Illinois Bell Telephone Company

Date: —— —, ——.

To —— ——:

I hereby certify that the following is a true copy of resolution duly adopted by the Board of Directors of the Illinois Bell Telephone Company at a regular meeting duly called and held on December 28, 1927 at which meeting a quorum was present.

A. R. Bone, Secretary.

Whereas: The Employees' Benefit Fund Committee, by unanimous resolution passed December 24, 1927, adopted the following memorandum:

"In order more effectually to carry out the purpose expressed in the 'Plan for Employees' Pensions, Disability

Benefits and Death Benefits,' in effect, January 1, 1913, as amended, certain modifications of said plan with respect to service pensions seem desirable both from the standpoint of the company and from that of its active and retired employees. (The terms 'service pensions' and 'retired employees' refer, respectively, to the pensions and the recipients of pensions under subsections (a) and (b) of paragraph one of Section 5 of said plan). Such modifications are as follows:

1. Effective January 1, 1927, the undertaking of the company to pay service pensions shall not be limited by the conditions expressed in section 11 of said plan with respect to employees to whom service pensions have heretofore been granted under said plan, and with respect to employees who are now entitled to retire on pension at their own request thereunder, and also with respect to employees who shall hereafter become entitled to retire on pension under said plan as it may be in effect from time to time.

2. In order to meet the obligations of the Company to pay service pensions under said plan granted after January 1, 1927, a pension fund shall be established and segregated from the assets of the company, and be held and disbursed only for service pension purposes by a trustee or trustees to be appointed by the president of the company under an agreement defining the terms upon which such fund shall be held and administered, all subject to the approval of the Executive Committee or the Board of Directors. In case of termination of said plan, or in case of revocation or other termination of said Trust, the company shall preserve the integrity of the pension fund as a Trust Fund to be applied solely to service pension purposes in the manner which in its judgment shall enable it to meet its service pension obligations most effectively.:

3. For employees with 15 years or more service, there shall be charged to operating expenses and paid into said pension fund each year starting with 1927 amounts which actuarially determined and with allowance for interest accretions, will produce, at the times such employees become eligible to retire on pension at their own request under said plan, the full estimated present worth of the service pensions to which they are then entitled,

[fol. 4797] 4. Until arrangements, if such are deemed advisable, approved by the Board of Directors are made for annuities corresponding to pensions heretofore or hereafter granted, disbursements for service pensions granted prior to January 1, 1927, shall be charged directly to the employees' benefit reserve. If annuities are acquired with respect to service pensions granted prior to January 1, 1927, such annuities shall be purchased from corporate assets, with corresponding reduction in the employees' benefit reserve of the company. Until annuities are acquired therefor, service pensions granted after January 1, 1927 shall be paid from the pension fund, and the purchase price of such annuities, if and when acquired, shall likewise be paid from said fund.

5. All provisions of said plan inconsistent with this memorandum shall be cancelled, but, except as modified by this memorandum, said plan shall continue in effect, the granting of service pensions shall continue as heretofore, and disbursements for benefits other than service pensions shall continue in accordance with present practices.

Employers Benefit Fund Committee, by W. E. Crosley, Secretary.

Approved.

W. R. Abbott, President."

Therefore, be it resolved: That said memorandum and the modifications of said plan therein contained be approved; that the company hereby assume the obligations set forth in said memorandum, and that the President of the company be authorized to do or cause to be done all things necessary or incidental to put into effect, as of January 1, 1927, the recommendations contained in said memorandum.

The President read to the meeting forms of Trust Agreement between the Company and Bankers Trust Company, Trustee, and between said Trustee and the American Telephone and Telegraph Company, providing for the establishing and holding of a trust fund as a Pension Fund, to be established under resolution adopted at this meeting and recommended that its execution be authorized.

Upon motion duly made and seconded, it was

Resolved: That the execution of said agreement, on behalf of this Company, in substantially the form submitted, but with any modifications as to detail that may be approved by the President and General Counsel, be hereby authorized; and the Secretary be directed to file a copy of said agreement as executed with the minutes of this meeting; and

Resolved Further: That the President be and he is authorized to agree upon a reasonable compensation to be paid the Trustee for its services under said agreement, and

Resolved further: That the execution from time to time of the unsecured promissory notes of this Company and their sale to the Trustee of the Company's Pension Fund for cash at the face value thereof be hereby authorized; such notes to be payable to bearer or otherwise on demand or at a period not exceeding ten (10) years from date, to [fol. 4798] bear interest at a rate not exceeding five and one-half per cent (5½%) per annum, payable semi-annually, and to be executed by the president or a vice president and the treasurer of the Company, provided that the aggregate face value of such notes at any time outstanding shall not exceed the amount then held in said pension fund, by said trustee.

The President stated that in connection with the establishment of the Pension Fund under the Plan for Employees' Pensions, Disability Benefits and Death Benefits, the Board of Directors on December 28, 1927, approved a report of the Employees' Benefit Fund Committee recognizing the desirability of advance provision against Service Pensions to be granted in the future, and providing that "for employees with 15 years or more of service, there shall be charged to operating expenses and paid into the said Pension Fund each year starting with 1927 amounts which, actuarially determined and with allowance for interest accretions, will produce, at the times such employees become eligible to retire on pension at their own request under said Plan, the full estimated present worth of the Service Pensions to which they are then entitled," and that upon further consideration of the matter, it now seems desirable that the Company should extend this undertaking and provide for Service Pensions over the full period of service instead of beginning at the end of the fifteenth year of service.

Whereupon, on motion, it was

Resolved: That said recommendation of the President be approved, and that the officers be authorized and directed to provide for Service Pensions over the full period of service of employees, instead of beginning at the end of the fifteenth year of service, and on this basis to charge to the appropriate accounts and pay into the Pension Fund each year, starting with January 1, 1928, amounts which, with allowance for interest accretions, will produce, at the times employees retire on service pensions under said Plan, the full estimated present worth at that time of the Service Pensions to which they are then entitled under said Plan.

[fol. 4799] EXHIBIT X-225

American Telephone and Telegraph Company

Funds of Associated Companies Temporarily Placed with American Tel. and Tel. Co. Until Required by Them (Average), Years 1923 to 1930

	Total All Companies, Daily Average	Illinois Bell Tel. Co., Daily Average
1923	$11,900,210	$5,720,639
1924	29,339,760	6,961,314
1925	15,632,046	474,875
1926	7,057,854	....
1927	5,324,907	3,098,840
1928	1,298,549	9,644
1929	999,625	97,222
1930	9,808,864	9,779,906

September 24, 1931.

[fol. 4800]

EXHIBIT X-226

Western Electric Company, Incorporated

Analysis of 1925 Cost of Sales

(Dollars in Thousands)

	Grand Total	Manufacturing Department	Installation Department	Sales Department (Including Supply Department)	Headquarters
Beginning Inventory	$67,953	$28,542	$371	$38,564	$476
Additions:					
Productive Labor:					
Direct	38,087	22,689	12,027	3,371	....
Indirect	2,423	1,511	838	74	....
Total	40,510	24,200	12,865	3,445	....
Expenses (Manufacturing, Installation, Distributing, Distributing Shops, General and Federal Taxes):					
Salaries and Wages	34,892	16,733	4,696	10,498	2,965
Depreciation of Plant	5,452	4,638	280	483	51
Taxes	4,629	896	13	841	2,879
Rent	2,668	299	249	1,655	465
Repairs Other	18,087	9,451	3,100	4,527	1,009
Total	65,728	32,017	8,338	18,004	7,369
Packing, Converting and Repairing, Junking, etc.	2,793	....	....	2,793	....
Transportation Not Charged to Expense	7,554	....	....	7,554	....
Development	9,744	466	805	517	7,956

Materials Purchased Less Process Scrap Sold	164,477	50,297	....	112,926	1,254
Extraordinary Reserve Against Plant	2,168	....	....	....	2,168
Addition to Employees' Benefit Fund	3,500	....	....	....	3,500
Pension Fund Under Agreement with Graybar Electric Company, Inc.	1,400	....	....	....	1,400
Total Beginning Inventory and Additions	365,827	135,522	22,379	183,803	24,123
Less:					
Production of Plant Items and Elimination of Costs not applicable to Sales	20,691	13,158	1,215	2,342	3,976
Operating Interest and Other Income Received	1,551	32	6	374	1,139
Unbilled Equipment Specifications and Installation Included in Receivables	956	....	956	....	....
Inventory of Supply Department Sold to Graybar Electric Company, Inc.	4,490	....	....	4,490	....
Ending Inventory	55,990	26,712	192	30,255	(1,169)*
Total Deductions	83,678	39,902	2,369	37,461	3,946
Net Cost of Sales	282,149	95,620	20,010	146,342	20,177

* Represents depreciation for overstocks applicable to total inventories, but placed on Headquarters' books.

Western Electric Company, Incorporated

Analysis of 1930 Cost of Sales

(Dollars in Thousands)

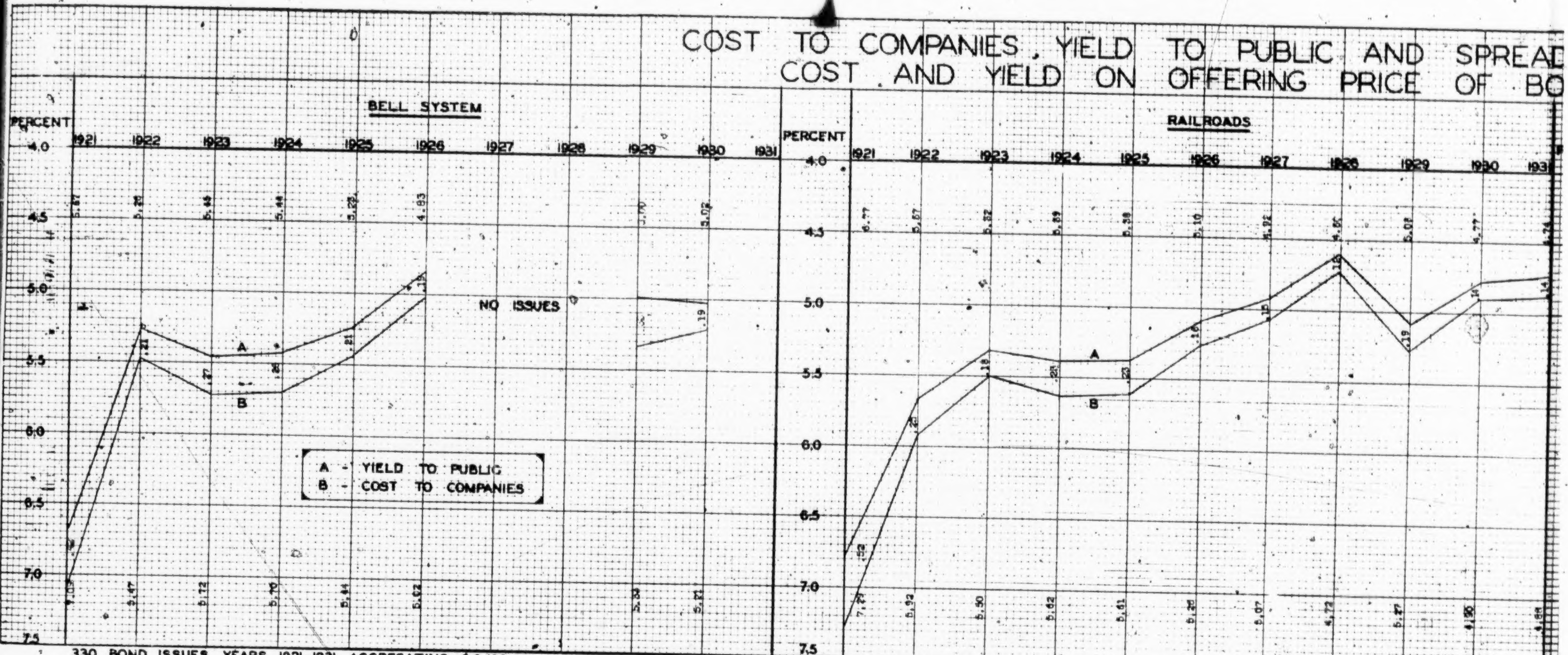
[fol. 4801]

	Grand Total	Manufacturing Department	Installation Department	Telephone Sales Department	Headquarters
Beginning Inventory	$95,940	$51,414	$3,941	$40,435	$150
Additions:					
Productive Labor:					
Direct	73,323	42,354	25,358	5,611	0
Indirect	9,773	5,634	2,914	1,495	0
Total	83,096	47,718	28,272	7,106	0
Expenses (Manufacturing, Installation, Merchandising, Distributing Shops, General and Federal Taxes):					
Salaries and Wages	51,967	34,733	3,532	9,808	3,894
Depreciation of Plant	13,136	12,239	250	583	64
Taxes	2,447	616	......	304	1,527
Rent	2,828	698	247	1,230	653
Repairs	6,959	6,610	87	262	......
Other	23,653	5,776	5,940	10,880	1,057
Total	100,990	60,672	10,056	23,067	7,195
Less Transportation in Selling Prices	2,573	......	......	2,573	......
Total Excluding Transportation	98,417	60,672	10,056	20,494	7,195
Development	14,370	0	954	0	13,416

Materials Purchased Less Process Scrap Sold	161,752	71,685	....	87,274	2,793
Total Transportation Billed	10,428	168	....	10,260	....
Total Beginning Inventory and Additions	464,003	231,657	43,223	165,569	23,554
Less:					
Production of Plant Items and Elimination of Costs not applicable to Sales	27,893	22,783	1,454	3,423	233
Operating Interest Received	888	54	2	846	(14)
Ending Inventory	86,678	39,103	3,236	44,341	(2)
Total Deductions	115,459	61,940	4,692	48,610	217
Net Cost of Sales	348,544	169,717	38,531	116,959	23,337

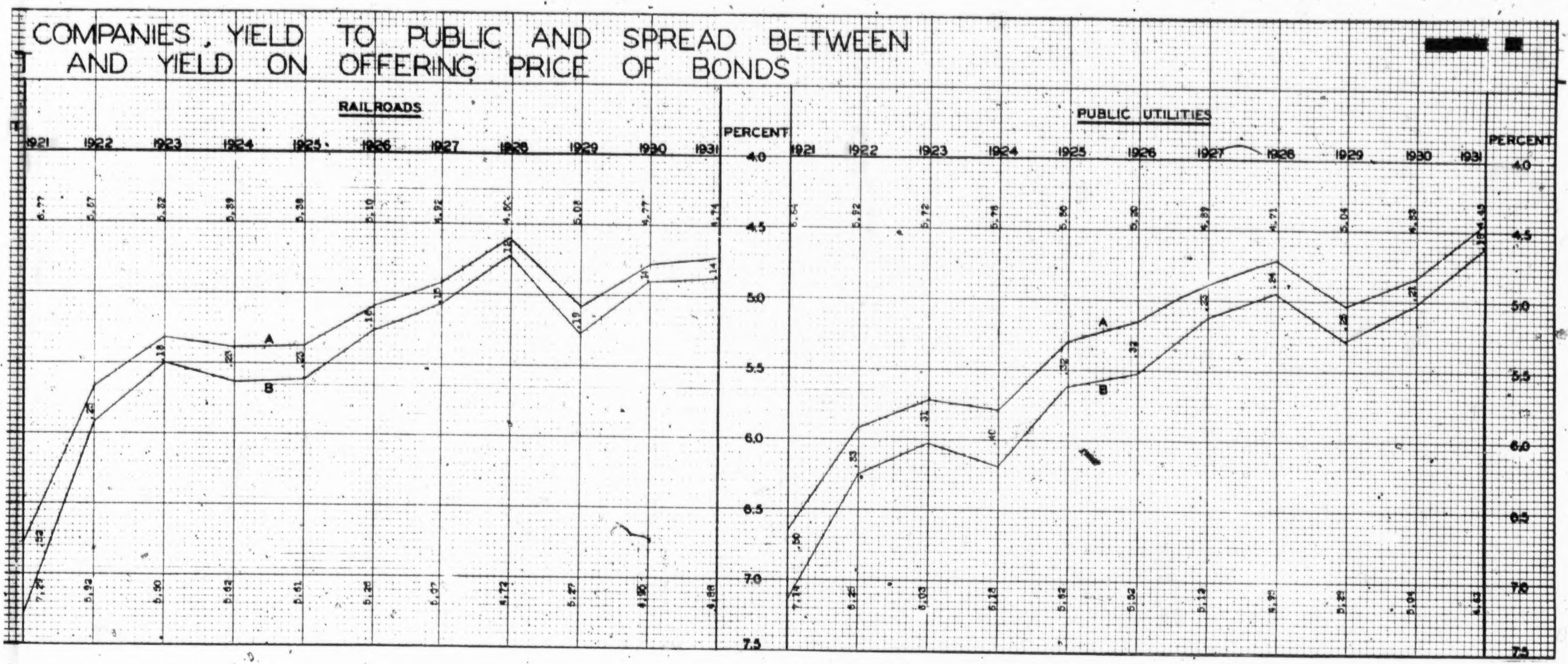
(Here follow Exhibits X-227 and X-228, side folios 4802 and 4803)

EXHIBIT X-227



330 BOND ISSUES YEARS 1921-1931 AGGREGATING $6,138,000,000.

EXHIBIT X-227



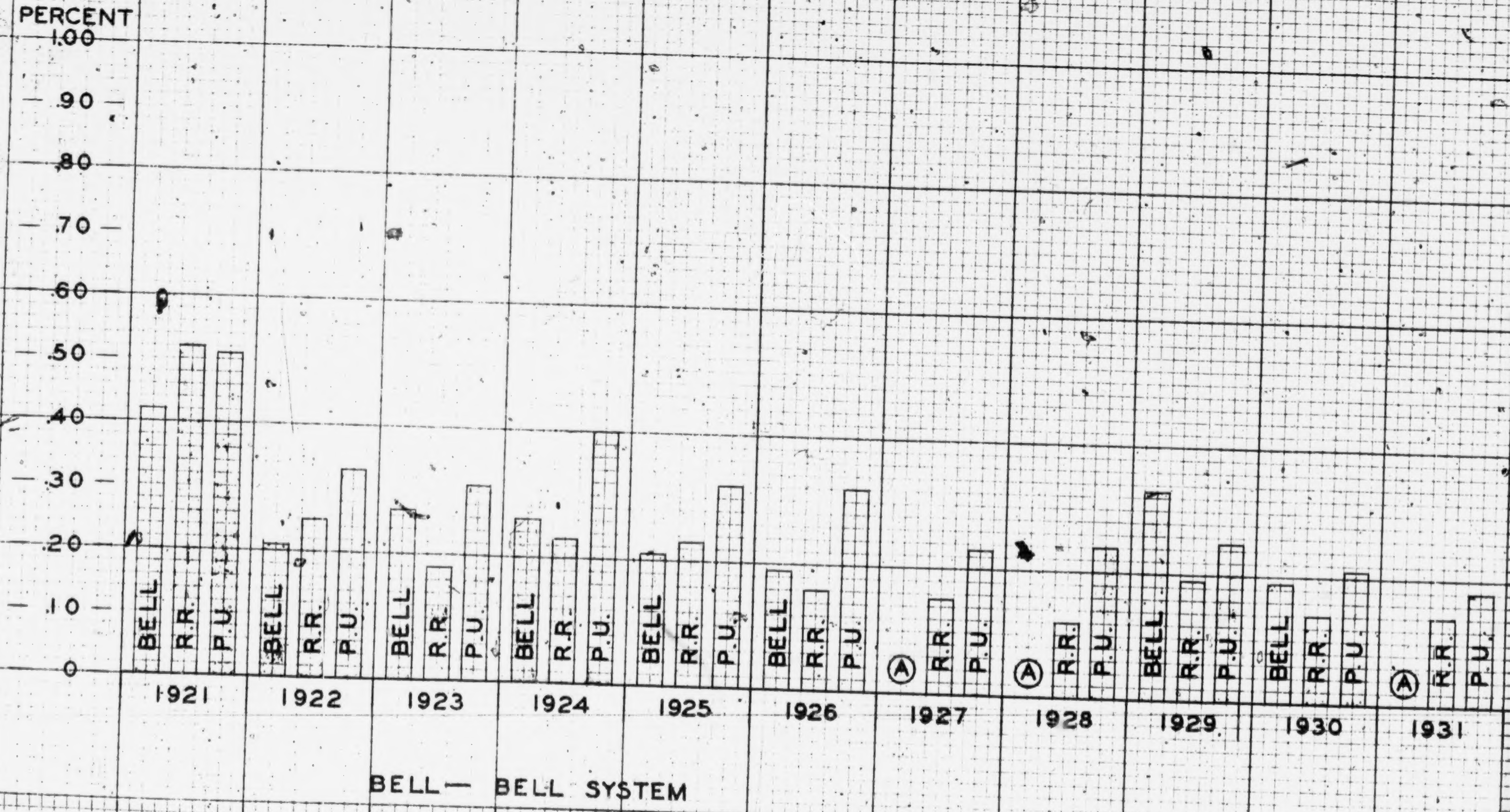
COMPANIES, YIELD TO PUBLIC AND SPREAD BETWEEN
T AND YIELD ON OFFERING PRICE OF BONDS [redacted]

EXHIBIT X-228

SPREAD BETWEEN ANNUAL COST TO COMPANY AND YIELD ON PUBLIC OFFERING PRICE

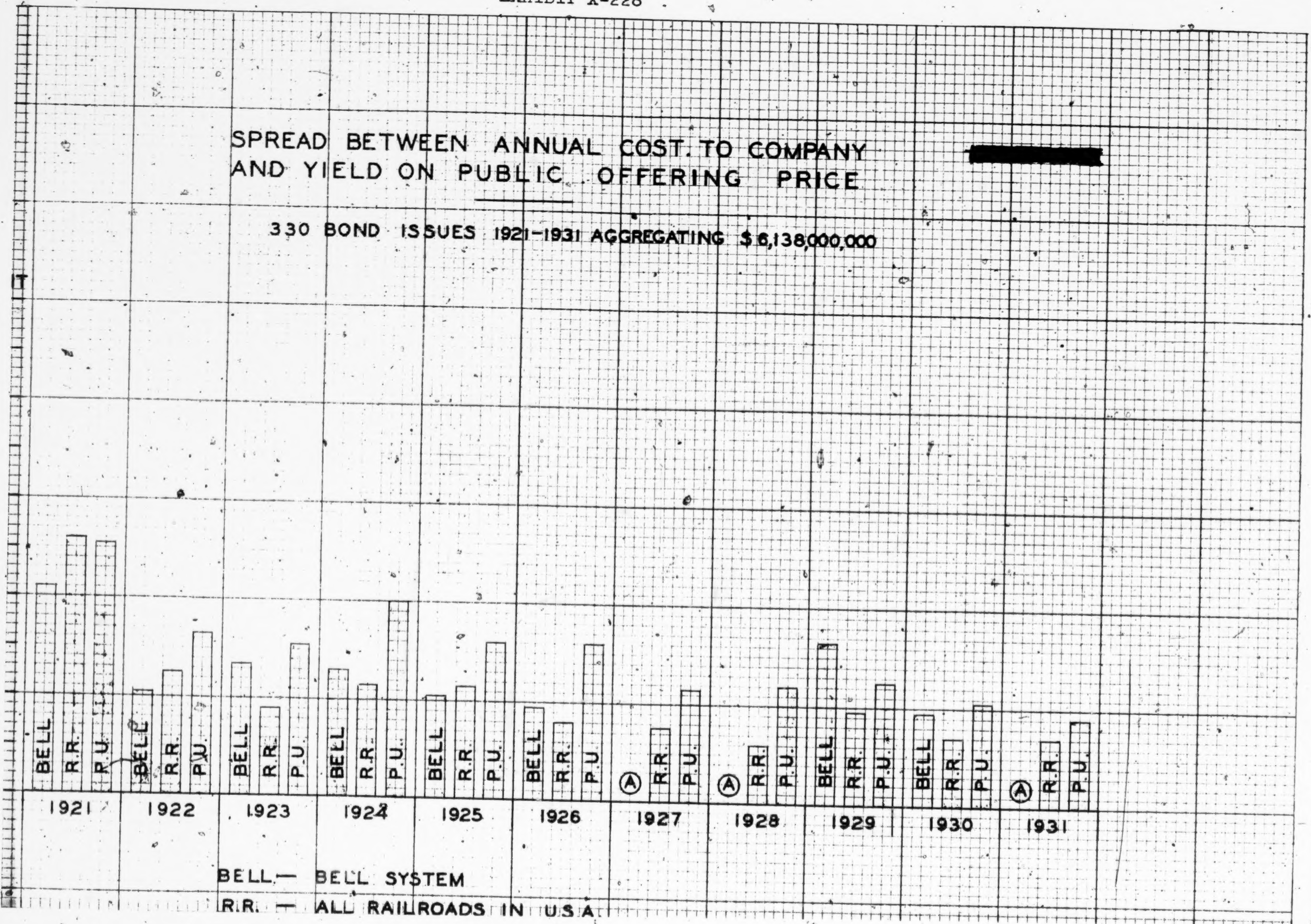
[redacted]

330 BOND ISSUES 1921-1931 AGGREGATING $6,138,000,000



BELL— BELL SYSTEM

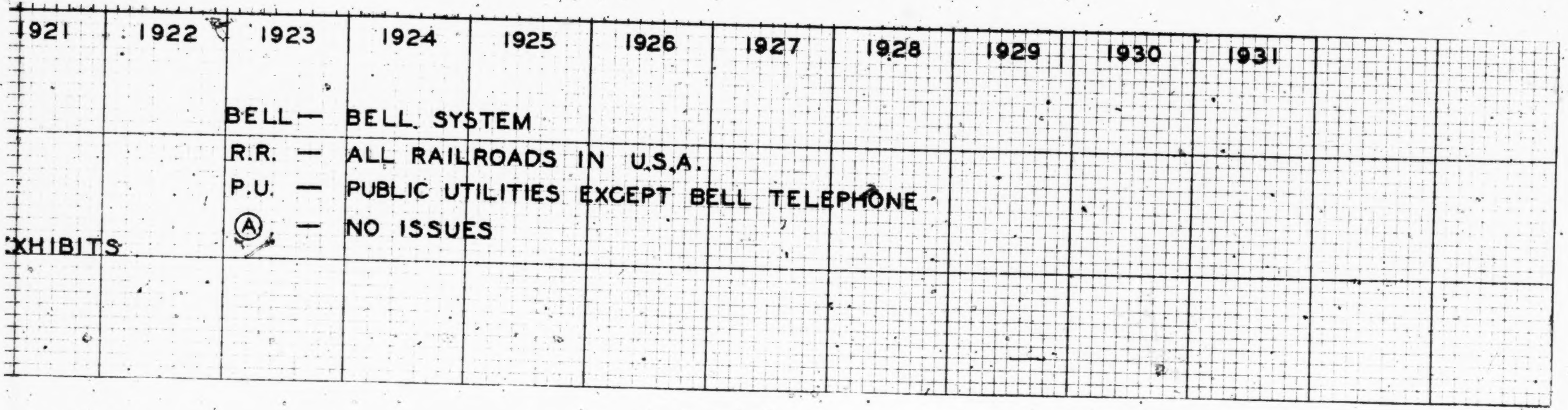
EXHIBIT X-228



SPREAD BETWEEN ANNUAL COST TO COMPANY AND YIELD ON PUBLIC OFFERING PRICE [redacted]

330 BOND ISSUES 1921-1931 AGGREGATING $6,138,000,000

BELL — BELL SYSTEM
R.R. — ALL RAILROADS IN U.S.A.


1921
1922
1923
1924
1925
1926
1927
1928
1929
1930
1931
BELL — BELL SYSTEM
R.R. — ALL RAILROADS IN U.S.A.
P.U. — PUBLIC UTILITIES EXCEPT BELL TELEPHONE
Ⓐ — NO ISSUES
XHIBITS

[fol. 4804]

EXHIBIT X-229

Comparative Statement Showing Cost to Companies and Yield to Public on Bonds Issued by Bell System, Railroads, and Public Utilities (Other Than Bell System)

Average for Each Year, 1921 to 1931, Inclusive

Year	Cost to Company			Yield to Public			Spread Between Average Cost to Company and Average Yield to Public		
	Bell System %	Railroads %	Public Utilities* %	Bell System %	Railroads %	Public Utilities* %	Bell System %	Railroads %	Public Utilities %
1921	7.09	7.29	7.14	6.67	6.77	6.64	.42	.52	.50
1922	5.47	5.92	6.25	5.26	5.67	5.92	.21	.25	.33
1923	5.72	5.50	6.03	5.45	5.32	5.72	.27	.18	.31
1924	5.70	5.62	6.18	5.44	5.39	5.78	.26	.23	.40
1925	5.44	5.61	5.62	5.23	5.38	5.30	.21	.23	.32
1926	5.02	5.26	5.52	4.83	5.10	5.20	.19	.16	.32
1927	....	5.07	5.12	....	4.92	4.89	...	.15	.23
1928	....	4.72	4.95	....	4.60	4.71	...	.12	.24
1929	5.33	5.27	5.29	5.00	5.08	5.04	.33	.19	.25
1930	5.21	4.90	5.04	5.02	4.77	4.83	.19	.13	.21
1931	....	4.88	4.63	....	4.74	4.45	...	.14	.18
Average—Years 1921 to 1931	5.62	5.40	5.43	5.37	5.20	5.14	.25	.20	.29
Average—Years 1923 to 1931	5.44	5.14	5.27	5.22	4.97	5.01	.22	.17	.26

* Includes Issues reported by State Public Service Commissions—Aggregating for period 1921–1931 .... $1,754,129,000

(Here follows Exhibit X-231, side folios 4805, 4806, 4807, 4808, 4809 and 4810)

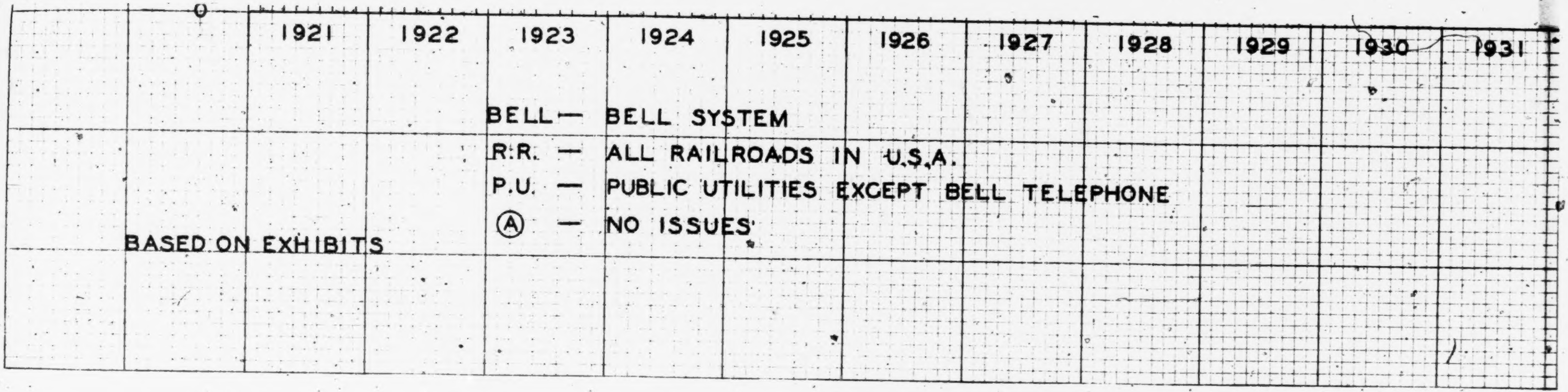
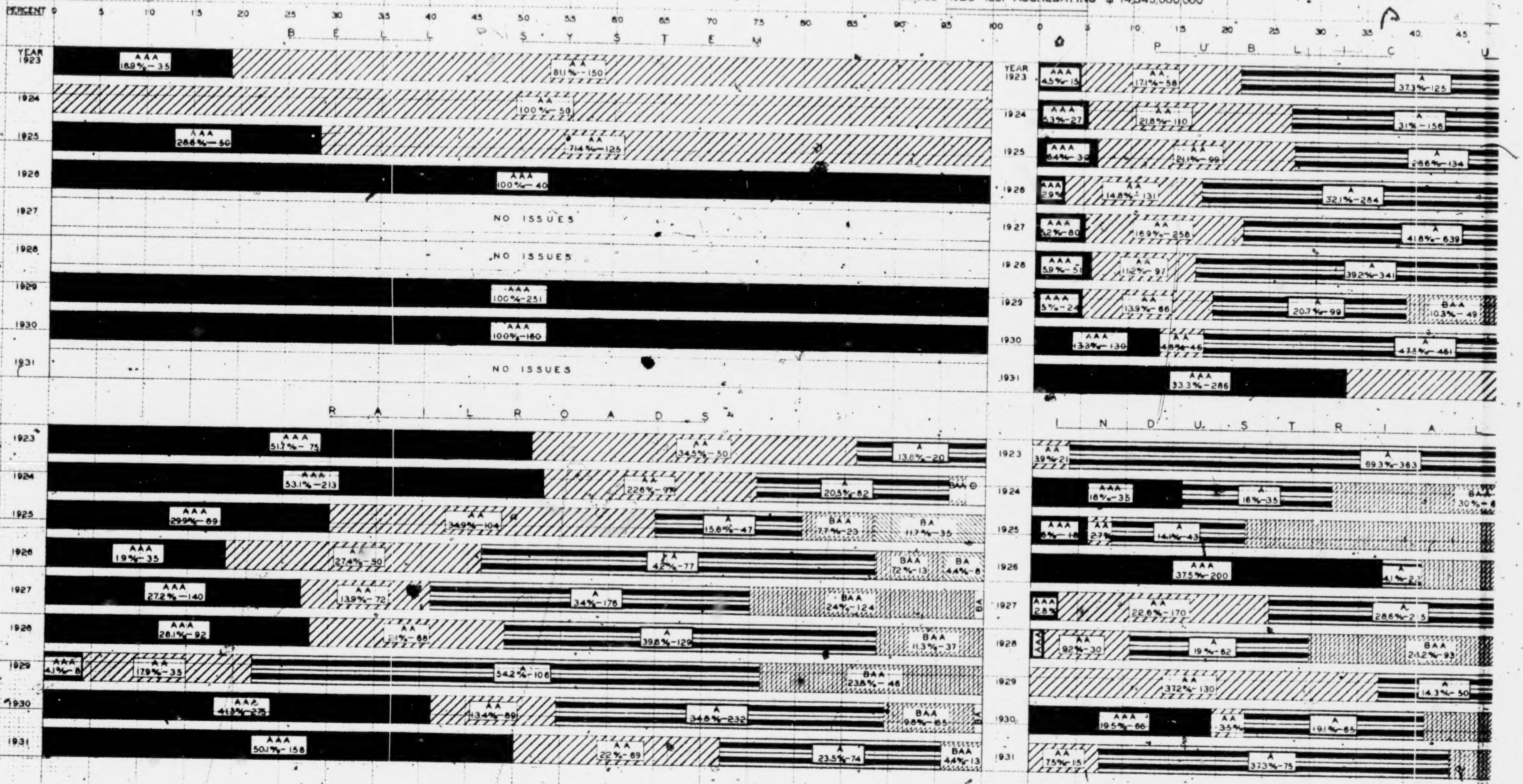

0
1921
1922
1923
1924
1925
1926
1927
1928
1929
1930
1931
BELL — BELL SYSTEM
R.R. — ALL RAILROADS IN U.S.A.
P.U. — PUBLIC UTILITIES EXCEPT BELL TELEPHONE
Ⓐ — NO ISSUES
BASED ON EXHIBITS

EXHIBIT X-231

BONDS GROUPED BY RATINGS (MOODY'S) SHOWING AMOUNT IN EACH GROUP AND ITS PROPORTION TO TOTAL OFFERING

878 ISSUES 1923-1931 AGGREGATING $ 14,345,000,000



AGGREGATE AMOUNT ISSUED DURING NINE YEAR PERIOD

BELL SYSTEM	$ 861,000,000	6.00%
RAILROADS	3,046,883,000	21.24
PUBLIC UTILITIES	6,892,272,200	48.04
INDUSTRIALS & OTHERS	3,544,730,300	24.72
TOTAL	$14,344,885,500	100.00%

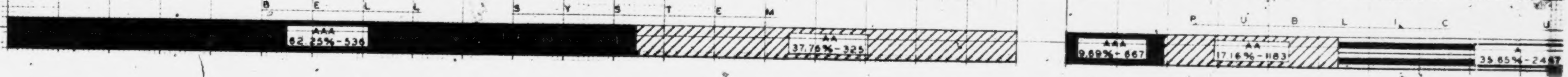
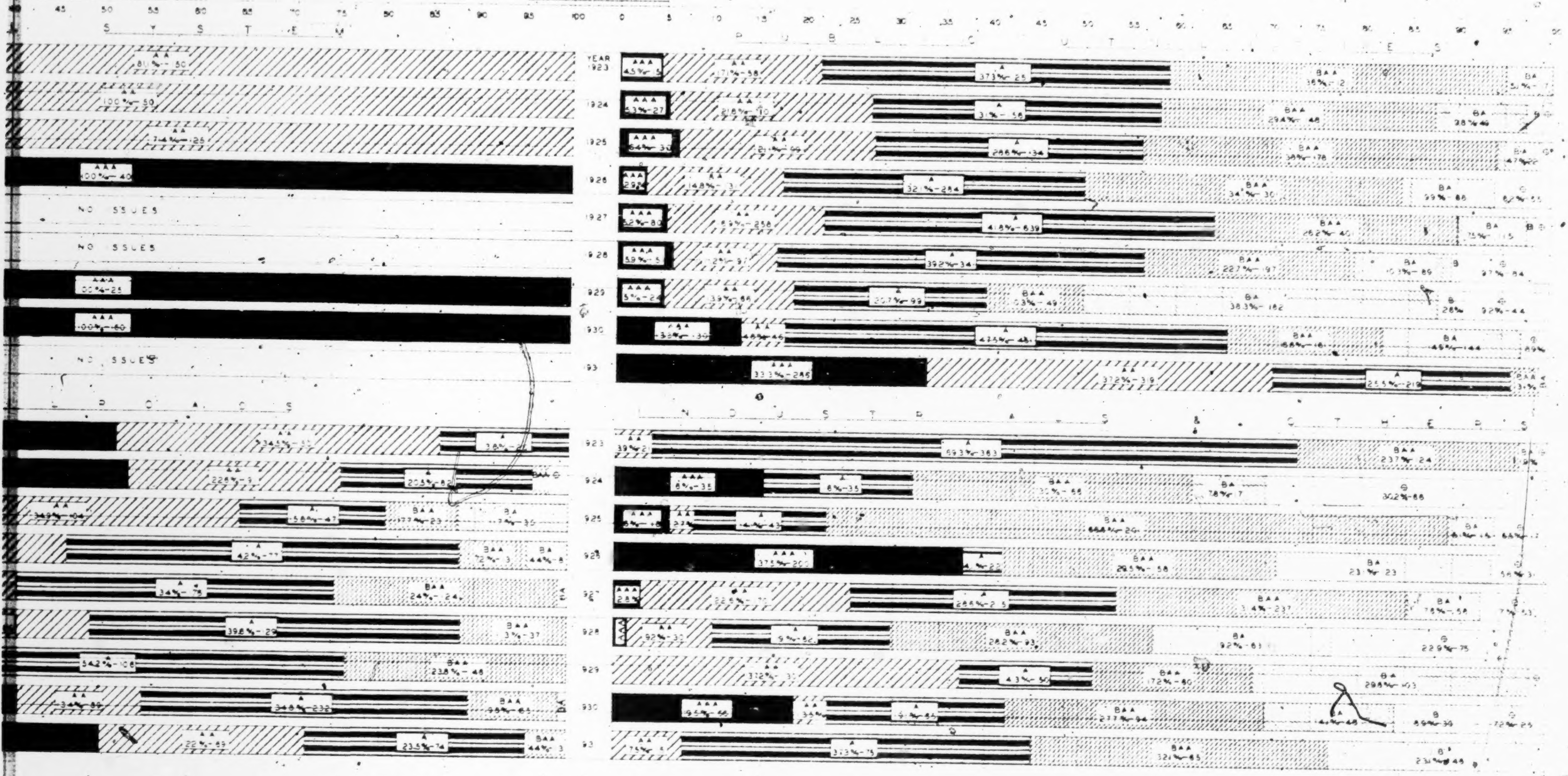


EXHIBIT X-231

CHART

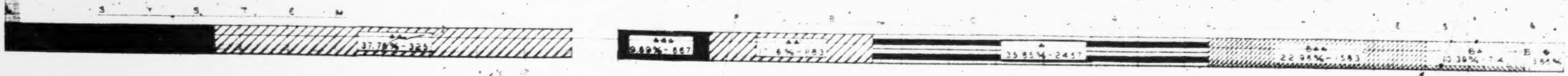
BONDS GROUPED BY RATINGS (MOODY'S) SHOWING AMOUNT IN EACH GROUP AND ITS PROPORTION TO TOTAL OFFERING

878 ISSUES 1923-1931 AGGREGATING $14,345,000,000

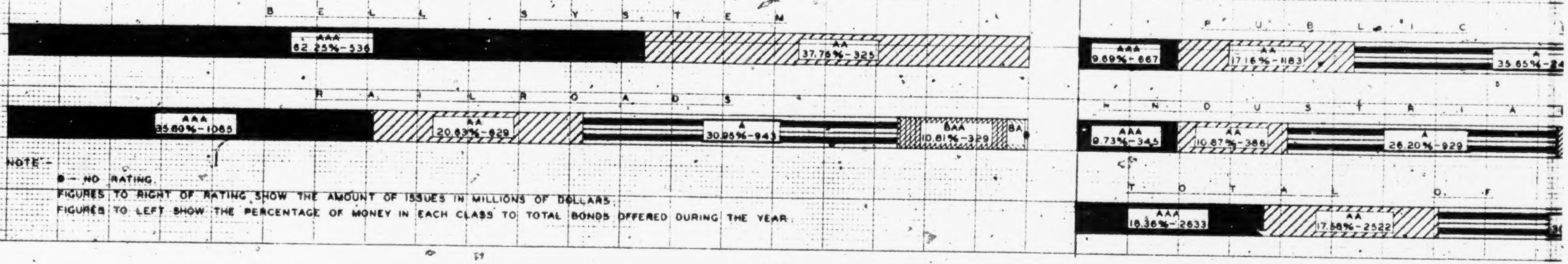


AGGREGATE AMOUNT ISSUED DURING NINE YEAR PERIOD

BELL SYSTEM	$ [illegible]	6.00%
RAILROADS	3,044,883,000	21.24
PUBLIC UTILITIES	6,882,272,200	48.04
INDUSTRIALS & OTHERS	3,544,730,300	24.72
TOTAL	$14,344,885,500	100.00%



PUBLIC UTILITIES	6,892,272,200	48.04
INDUSTRIALS & OTHERS	3,544,730,300	24.72
TOTAL	$14,344,685,500	100.00%

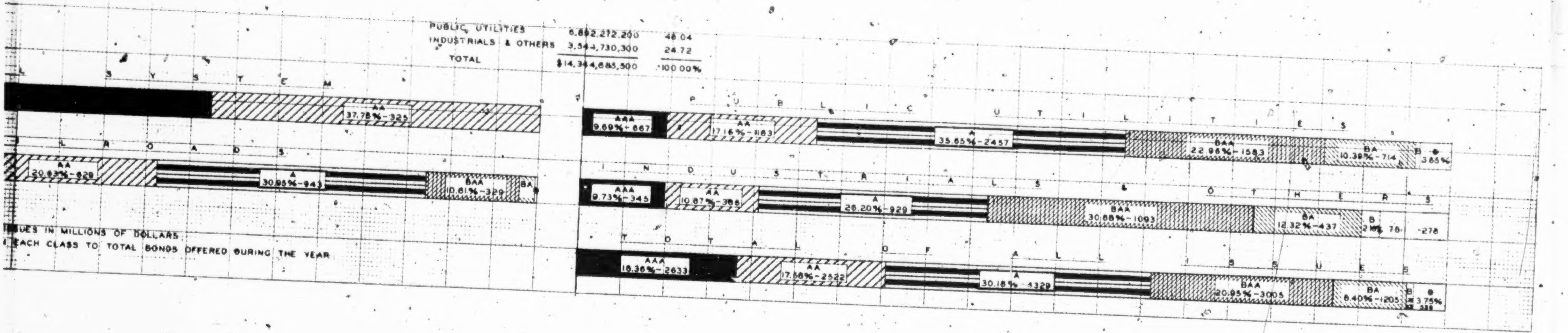


NOTE:-

● – NO RATING.

FIGURES TO RIGHT OF RATING SHOW THE AMOUNT OF ISSUES IN MILLIONS OF DOLLARS.

FIGURES TO LEFT SHOW THE PERCENTAGE OF MONEY IN EACH CLASS TO TOTAL BONDS OFFERED DURING THE YEAR.


PUBLIC UTILITIES 6,892,272,200 48.04
INDUSTRIALS & OTHERS 3,544,730,300 24.72
TOTAL $14,344,685,500 100.00%
L SYSTEM
AA 37.78%-325
LROADS
AA 20.83%-829
A 30.95%-943
BAA 10.81%-329
BA
UES IN MILLIONS OF DOLLARS
EACH CLASS TO TOTAL BONDS OFFERED DURING THE YEAR
PUBLIC UTILITIES
AAA 9.69%-667
AA 17.16%-1183
A 35.65%-2457
BAA 22.98%-1583
BA 10.38%-714
B
3.65%
INDUSTRIALS & OTHERS
AAA 9.73%-345
AA 10.87%-386
A 26.20%-929
BAA 30.88%-1093
BA 12.32%-437
B
2.18% 78
-278
TOTAL OF ALL ISSUES
AAA 18.36%-2633
AA 17.58%-2522
A 30.18%-4329
BAA 20.95%-3005
BA 8.40%-1205
B
3.75%
538

[fol. 4806]

Exhibit X-232

Comparative Summary Showing Amount Offered and Proportion of Total Offerings of Bell System, Railroad, Public Utility (Other Than Bell System) and Industrial and Other Bond Issues of $5,000,000 and Over, Issued During Years 1923 to 1931, Inclusive, Grouped According to Investment Rating at Time of Public Offering

Year	Rating	Bell System		Railroads		Public Utilities (Other Than Bell System)		Industrial and Others	
		Amount Offered (1)	Per Cent of Total Offering (2)	Amount Offered (3)	Per Cent of Total Offering (4)	Amount Offered (5)	Per Cent of Total Offering (6)	Amount Offered (7)	Per Cent of Total Offering (8)
1923	Aaa	$35,000,000	18.92	$74,947,000	51.70	$15,000,000	4.47		
	Aa	150,000,000	81.08	50,024,000	34.51	57,500,000	17.13	$20,500,000	3.92
	A			20,000,000	13.79	125,300,000	37.33	362,500,000	69.31
	Baa					120,696,600	35.95	124,000,000	23.71
	Ba					17,192,000	5.12	10,000,000	1.91
	No rating							6,000,000	1.15
	Total	185,000,000	100.00	144,971,000	100.00	335,688,600	100.00	523,000,000	100.00
1924	Aaa			213,000,000	53.09	26,500,000	5.26	35,000,000	16.02
	Aa	50,000,000	100.00	90,604,000	22.58	109,874,000	21.82		
	A			82,292,000	20.52	156,000,000	30.98	35,000,000	16.02
	Baa			7,000,000	1.74	147,900,000	29.37	65,500,000	29.98
	Ba					49,300,000	9.79	17,000,000	7.78
	B					9,000,000	1.79		
	No Rating			8,300,000	2.07	5,000,000	.99	66,000,000	30.20
	Total	50,000,000	100.00	401,196,000	100.00	503,574,000	100.00	218,500,000	100.00
1925	Aaa	50,000,000	28.57	89,333,500	29.90	30,000,000	6.41	18,000,000	5.98
	Aa	125,000,000	71.43	104,420,000	34.94	98,500,000	21.05	8,000,000	2.66
	A			47,075,000	15.75	133,937,000	28.62	42,500,000	14.12
	Baa			23,000,000	7.70	178,000,000	38.04	200,587,000	66.64
	Ba			35,000,000	11.71	22,000,000	4.70	15,410,000	5.12
	No rating					5,500,000	1.18	16,500,000	5.48
	Total	175,000,000	100.00	298,828,500	100.00	467,937,000	100.00	300,997,000	100.00
1926	Aaa	40,000,000	100.00	34,632,000	19.00	25,000,000	2.83	200,000,000	37.49
	Aa			50,000,000	27.43	130,800,000	14.82		
	A			76,500,000	41.96	283,635,000	32.12	22,000,000	4.12
	Baa			13,156,000	7.22	301,000,000	34.09	157,500,000	29.53
	Ba			8,000,000	4.39	87,500,000	9.91	123,000,000	23.05
	No rating					55,000,000	6.23	31,000,000	5.81
	Total	40,000,000	100.00	182,288,000	100.00	882,935,000	100.00	533,500,000	100.00

[fol. 4807]

Year	Rating	Bell System Amount Offered (1)	Per Cent of Total Offering (2)	Railroads Amount Offered (3)	Per Cent of Total Offering (4)	Public Utilities Amount Offered (5)	Per Cent of Total Offering (6)	Industrial and Others Amount Offered (7)	Per Cent of Total Offering (8)
1927	Aaa			$140,432,000	27.15	$80,000,000	5.23	$21,000,000	2.79
	Aa			71,801,000	13.89	257,800,000	16.85	170,000,000	22.58
	A			176,000,000	34.03	639,448,000	41.80	215,000,000	28.55
	Baa			123,942,000	23.97	401,412,000	26.24	236,500,000	31.41
	Ba			5,000,000	.96	115,000,000	7.52	57,500,000	7.63
	B					6,500,000	.43		
	No rating					29,500,000	1.93	53,000,000	7.04
	Total			517,175,000	100.00	1,529,660,000	100.00	753,000,000	100.00
1928	Aaa			91,561,500	28.08	51,415,100	5.92	5,000,000	1.53
	Aa			68,400,000	20.97	97,218,000	11.20	30,000,000	9.16
	A			129,142,000	39.60	340,619,400	39.24	62,150,000	18.97
	Baa			37,000,000	11.35	197,400,000	22.74	90,500,000	28.23
	Ba					89,100,000	10.27	63,000,000	19.23
	B					8,000,000	.92		
	No rating					84,300,000	9.11	75,000,000	22.88
	Total			326,103,500	100.00	868,052,500	100.00	325,650,000	100.00
1929	Aaa	$251,000,000	100.00	8,000,000	4.11	24,016,000	5.04		
	Aa			34,784,000	17.85	66,000,000	13.86	130,000,000	37.22

	Total			326,103,500	100.00	868,052,500	100.00	325,650,000	100.00
1929	Aaa	$251,000,000	100.00	8,000,000	4.11	24,016,000	5.04		
	Aa			34,784,000	17.85	66,000,000	13.86	130,000,000	37.22
	A			105,695,000	54.24	98,700,000	20.72	50,000,000	14.31
	Baa			46,392,000	23.80	48,800,000	10.25	60,000,000	17.18
	Ba					182,250,000	38.27	103,300,000	29.57
	B					12,500,000	2.62		
	No rating					44,000,000	9.24	6,009,000	1.72
	Total	251,000,000	100.00	194,871,000	100.00	476,266,000	100.00	349,300,000	100.00
1930	Aaa	160,000,000	100.00	274,576,000	41.26	129,500,000	13.36	66,000,000	19.44
	Aa			89,088,000	13.39	46,279,000	4.77	12,000,000	3.53
	A			231,859,000	34.83	460,564,500	47.50	65,000,000	19.15
	Baa			65,000,000	9.77	161,000,000	16.60	94,000,000	27.69
	Ba			5,000,000	.75	144,115,600	14.86	47,931,000	14.12
	B							30,000,000	8.84
	No rating					28,200,000	2.91	24,500,000	7.23
	Total	160,000,000	100.00	665,523,000	100.00	969,659,100	100.00	339,431,000	100.00

[fol. 4808]

Exhibit X-232

Comparative Summary Showing Amount Offered and Proportion of Total Offerings of Bell System, Railroad, Public Utility (Other Than Bell System) and Industrial and Other Bond Issues of $5,000,000 and Over, Issued During Years 1923 to 1931, Inclusive, Grouped According to Investment Rating at Time of Public Offering

Year	Rating	Bell System		Railroads		Public Utilities (Other Than Bell System)		Industrials and Others	
		Amount Offered (1)	Per Cent of Total Offering (2)	Amount Offered (3)	Per Cent of Total Offering (4)	Amount Offered (5)	Per Cent of Total Offering (6)	Amount Offered (7)	Per Cent of Total Offering (8)
1931	Aaa								
	Aa			$158,301,000	50.11	$286,000,000	33.31		
	A			69,483,000	21.99	319,000,000	37.16	$15,000,000	7.45
	Baa			74,200,000	23.49	219,000,000	25.51	75,000,000	37.25
	Ba			13,943,000	4.41	26,500,000	3.09	64,752,300	32.16
	B					8,000,000	.93		
	No rating							46,600,000	23.14
	Total								
				315,927,000	100.60	858,500,000	100.00	201,352,300	100.00
	Average Years, 1923–1931, Inclusive								
	Aaa								
	Aa	536,000,000	62.25	1,084,783,000	35.60	667,431,100	9.69	345,000,000	9.73
	A	325,000,000	37.75	628,604,000	20.63	1,182,971,000	17.16	385,500,000	10.87
	Baa			942,763,000	30.95	2,457,203,900	35.65	929,150,000	26.20
	Ba			329,435,000	10.81	1,582,708,600	22.96	1,093,339,300	30.88
	B			53,000,000	1.74	714,457,600	10.37	437,141,000	12.32
	No rating					36,000,000	.52	76,600,000	2.16
				8,300,000	.27	251,500,000	3.65	278,000,000	7.84
	Total	861,000,000	100.00	3,046,883,000	100.00	6,892,372,200	100.00	3,544,730,300	100.00
	Recapituation								
Bell System		861,000,000	6.00						
Railroads		3,046,883,000	21.24						
Public Utilities		6,892,272,200	48.04						
Industrials and Others		3,544,730,300	24.72						
Total		14,344,885,500	100.00						

(Here follows Exhibit X-233, side folios 4809 and 4810).

EXHIBIT X-233

SPREAD BETWEEN ANNUAL COST TO COMPANY AND YIELD ON

271 BOND ISSUES 1923-1931 AGGREGATING $5,184,000,000 GROUPE

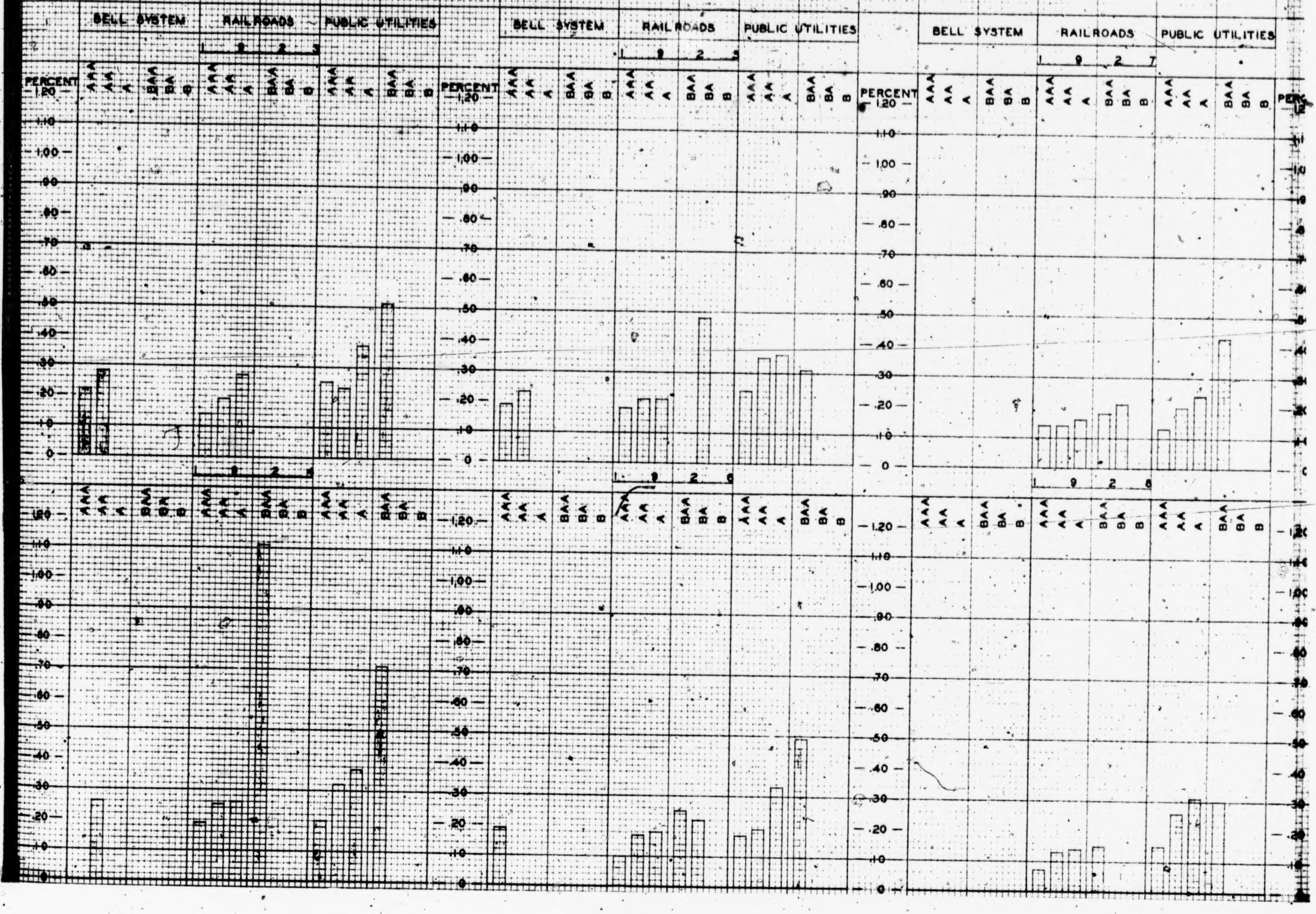


EXHIBIT X-233

ANNUAL COST TO COMPANY AND YIELD ON PUBLIC OFFERING PRICE

[redacted]

ND ISSUES 1923—1931 AGGREGATING $5,184,000,000 GROUPED BY RATINGS (MOODY'S)

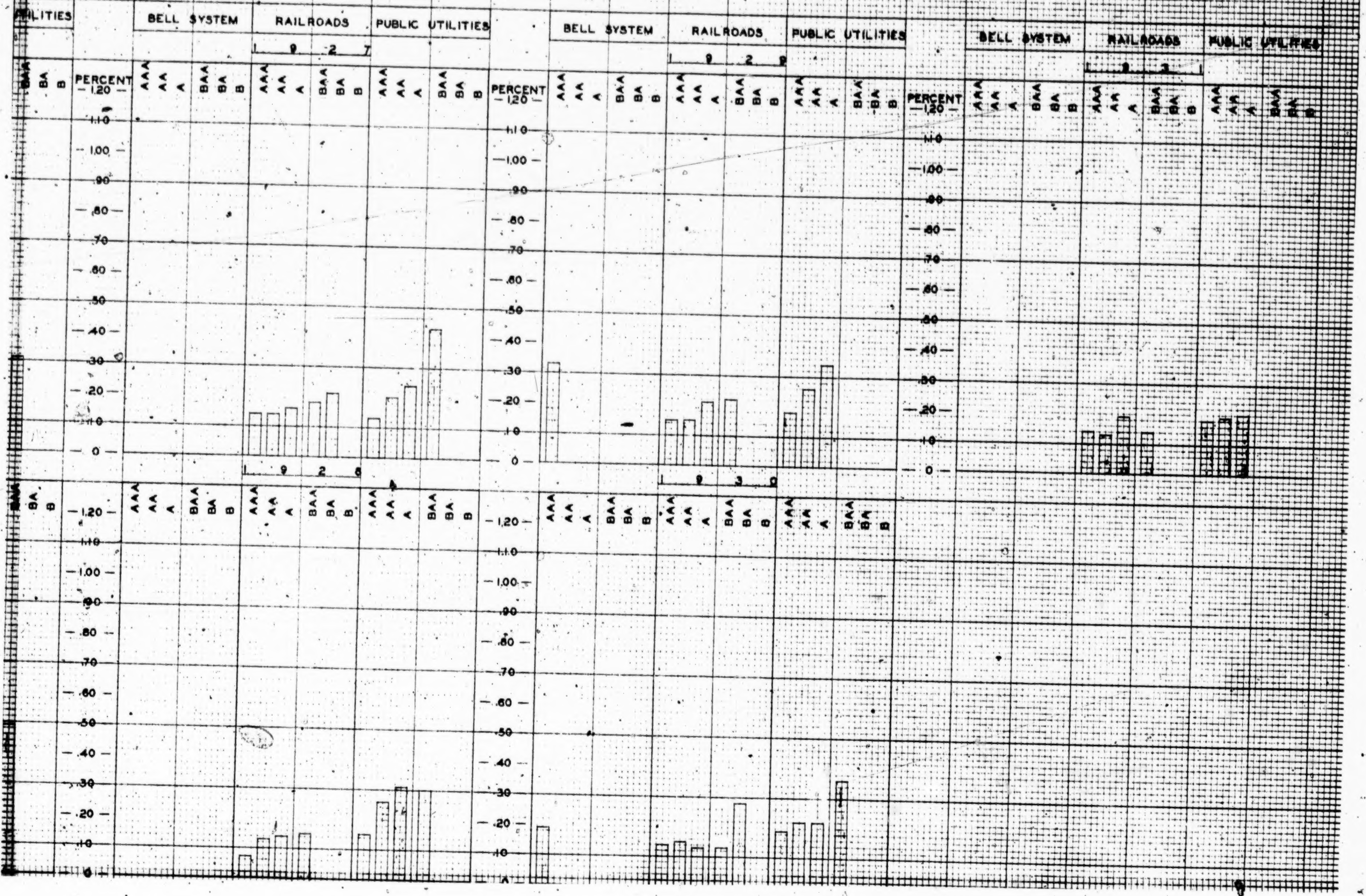
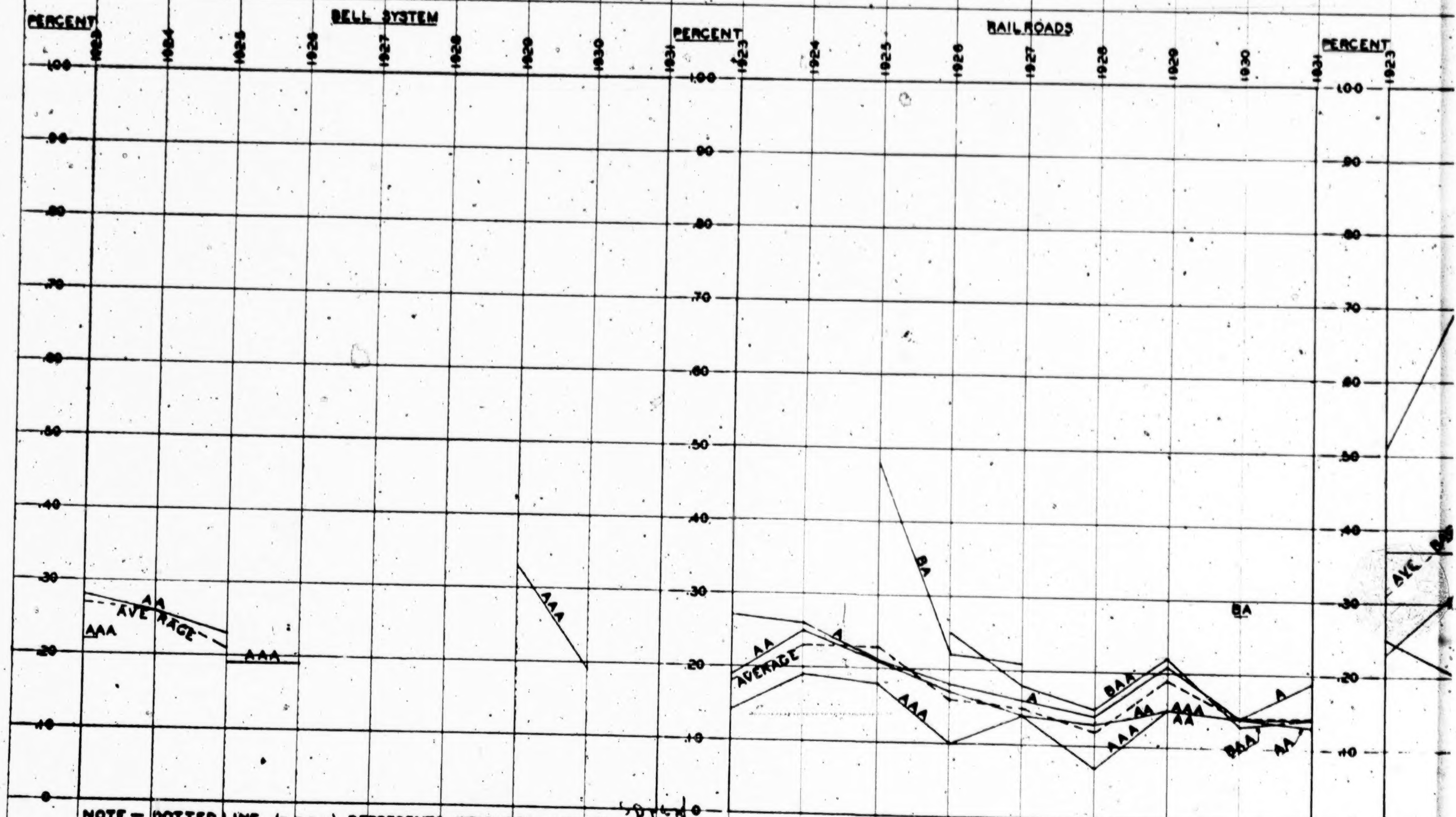


EXHIBIT X-234

TREND OF SPREAD BETWEEN ANNUAL COST TO COMPANY AND YIELD ON PUBLIC OFFERING PRICE

271 BOND ISSUES 1923-1931 AGGREGATING $5,184,000,000 GROUPED BY RATINGS (MOO



NOTE — DOTTED LINE (- - -) REPRESENTS WEIGHTED AVERAGE spread YIELD OF ALL CLASSES

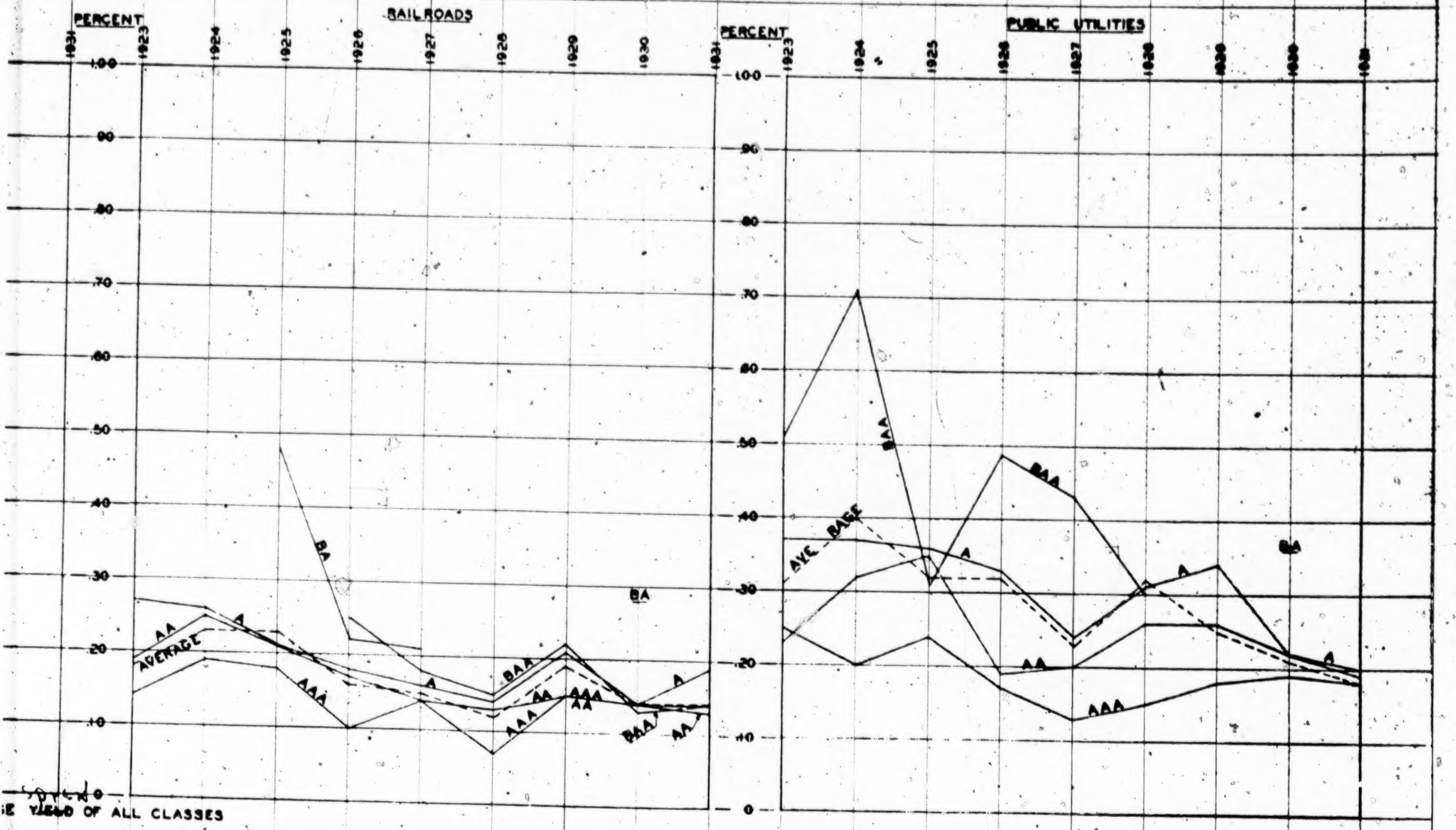
BASED ON EXHIBITS

EXHIBIT X-234

TREND OF SPREAD BETWEEN ANNUAL COST TO COMPANY AND YIELD ON PUBLIC OFFERING PRICE

Exhibit No. X234

BOND ISSUES 1923-1931 AGGREGATING $5,184,000,000 GROUPED BY RATINGS (MOODY'S)



E YIELD OF ALL CLASSES

5

[fol. 4811]

EXHIBIT X-235

Cost of Money to Bell System, Railroad and Public Utility Companies, and Yield to Public on Bonds Issued in Years 1923 to 1931, Inclusive Classified According to Investment Rating when Issued

		Cost to Companies			Yield to Public (On Offering Price)			Spread Between Average Cost to Companies and Average Yield to Public		
Year	Ratings	Bell System	Railroads	Public Utilities	Bell System	Railroads	Public Utilities	Bell System	Railroads	Public Utilities
		%	%	%	%	%	%	%	%	%
1923	Aaa	5.33	5.24	5.77	5.11	5.10	5.52	.22	.14	.25
	Aa	5.81	5.47	5.68	5.53	5.28	5.45	.28	.19	.23
	A	....	6.52	6.42	....	6.25	6.05	...	.27	.37
	Baa	....	....	6.62	....	....	6.11	...	...	.51
	Average	5.72	5.50	6.03	5.45	5.32	5.72	.27	.18	.31
1924	Aaa	....	5.28	5.20	....	5.09	5.00	...	.19	.20
	Aa	5.70	5.77	5.67	5.44	5.52	5.35	.26	.25	.32
	A	....	6.16	6.20	....	5.90	5.83	...	.26	.37
	Baa	....	8.11	7.15	....	7.00	6.44	...	1.11	.71
	Not rated	....	5.03	....	....	4.92	....	...	.11	...
	Average	5.70	5.62	6.18	5.44	5.39	5.78	.26	.23	.40
1925	Aaa	5.19	5.17	5.24	5.00	4.99	5.00	.19	.18	.24
	Aa	5.55	5.43	5.70	5.32	5.22	5.35	.23	.21	.35
	A	....	6.06	5.93	....	5.85	5.57	...	.21	.36
	Baa	....	....	6.86	....	....	5.55	...	...	.31
	Ba	....	6.75	....	....	6.27	....	...	.48	...
	Average	5.44	5.61	5.62	5.23	5.38	5.30	.21	.23	.32

EXHIBIT X-235—Continued

Cost of Money to Bell System, Railroad and Public Utility Companies, and Yield to Public on Bonds Issued in Years 1923 to 1931, Inclusive Classified According to Investment Rating when Issued

Year	Ratings	Cost to Companies Bell System	 Railroads	 Public Utilities	Yield to Public (On Offering Price) Bell System	 Railroads	 Public Utilities	Spread Between Average Cost to Companies and Average Yield to Public Bell System	 Railroads	 Public Utilities
		%	%	%	%	%	%	%	%	%
1926	Aaa	5.02	4.75	5.08	4.83	4.65	4.91	.19	.10	.17
	Aa	....	5.08	5.23	....	4.91	5.04	...	.17	.19
	A	....	5.43	5.42	....	5.25	5.09	...	.18	.33
	Baa	....	5.55	6.07	....	5.30	5.58	...	.25	.49
	Ba	....	6.63	....	....	6.41	....	...	.22	...
	Average	5.02	5.26	5.52	4.83	5.10	5.20	.19	.16	.32
1927	Aaa	....	4.74	4.88	....	4.60	4.75	...	.14	.13
	Aa	....	4.80	4.96	....	4.66	4.76	...	.14	.20
	A	....	5.12	5.15	....	4.96	4.91	...	.16	.24
	Baa	....	5.47	5.96	....	5.29	5.53	...	.18	.43
	Ba	....	6.32	....	....	6.11	....	...	.21	...
	Average	....	5.07	5.12	....	4.92	4.89	...	.15	.23
1928	Aaa	....	4.41	4.58	....	4.34	4.43	...	.07	.15
	Aa	....	4.59	4.91	....	4.46	4.65	...	.13	.26
	A	....	4.81	5.25	....	4.67	4.94	...	.14	.31
	Baa	....	5.25	5.57	....	5.10	5.27	...	.15	.30
	Not rated	....	....	5.07	....	....	4.84	...	...	.23
	Average	....	4.72	4.95	....	4.60	4.71	...	.12	.24

1929	Aaa	5.33	4.82	4.93	5.00	4.67	4.75	.33	.15	.18
	Aa	....	5.00	5.40	....	4.85	5.14	...	.15	.26
	A	....	5.14	5.73	....	4.93	5.39	...	.21	.34
	Baa	....	5.93	....	....	5.71	....	...	.22	...
	Average	5.33	5.27	5.29	5.00	5.08	5.04	.33	.19	.25
1930	Aaa	5.21	4.80	4.88	5.02	4.66	4.69	.19	.14	.19
	Aa	....	4.85	4.94	....	4.72	4.72	...	.13	.22
	A	....	4.93	5.09	....	4.79	4.87	...	.14	.22
	Baa	....	5.32	6.40	....	5.19	6.04	...	.13	.36
	Ba	....	5.51	....	....	5.23	....	...	.28	...
	Average	5.21	4.91	5.04	5.02	4.77	4.83	.19	.14	.21
1931	Aaa	....	4.70	4.52	....	4.56	4.34	...	.14	.18
	Aa	....	4.75	4.74	....	4.62	4.55	...	.13	.19
	A	....	5.40	4.93	....	5.21	4.73	...	.19	.20
	Baa	....	4.94	....	....	4.80	....	...	.14	...
	Average	....	4.88	4.63	....	4.74	4.45	...	.14	.18

The average shown for each year is the weighted average based on the total issued during the year.

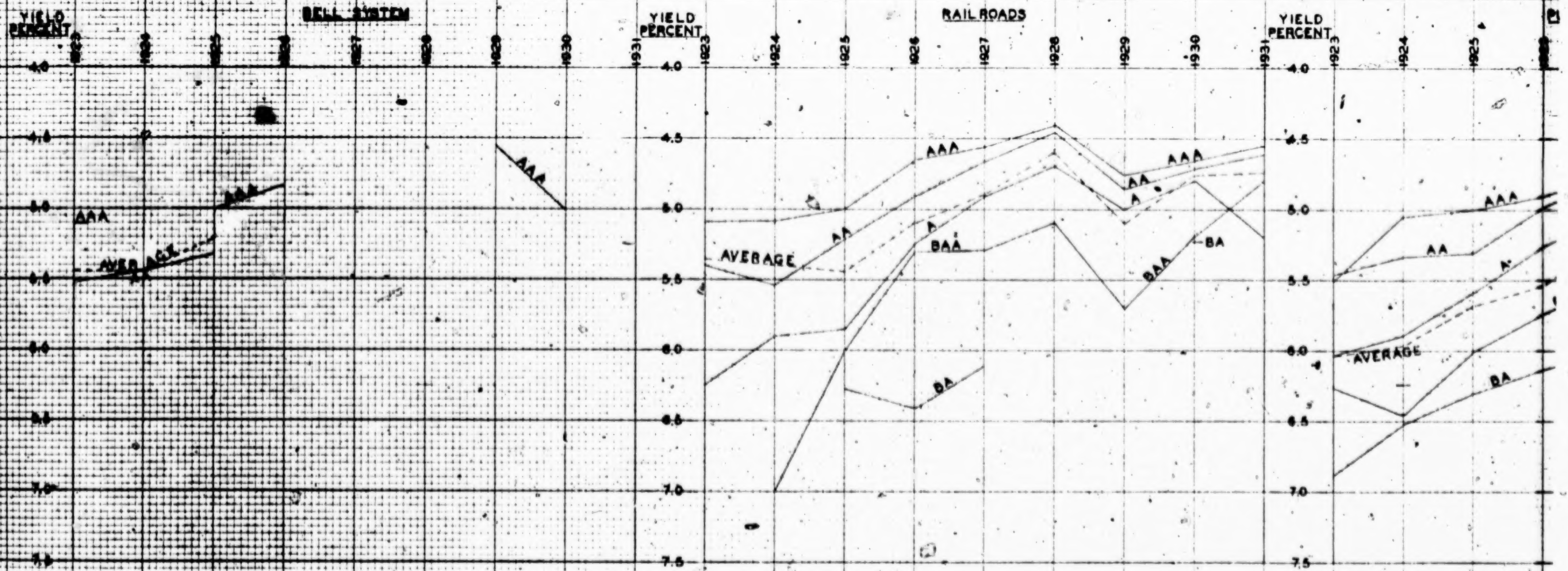
(Here follows Exhibit X-236; side folio 4812)

EXHIBIT X-236

TREND OF WEIGHTED AVERAGES OF BOND YIELDS
OFFERING PRICE GROUPED BY RATINGS

(INVERTED SCALE)

829 ISSUES 1923-1931 AGGREGATING $13,809,000,000



720 ISSUES 1923-1931 AGGREGATING $11,347,000,000
EXCLUDING CONVERTIBLES AND ISSUES WITH STOCK PURCHA

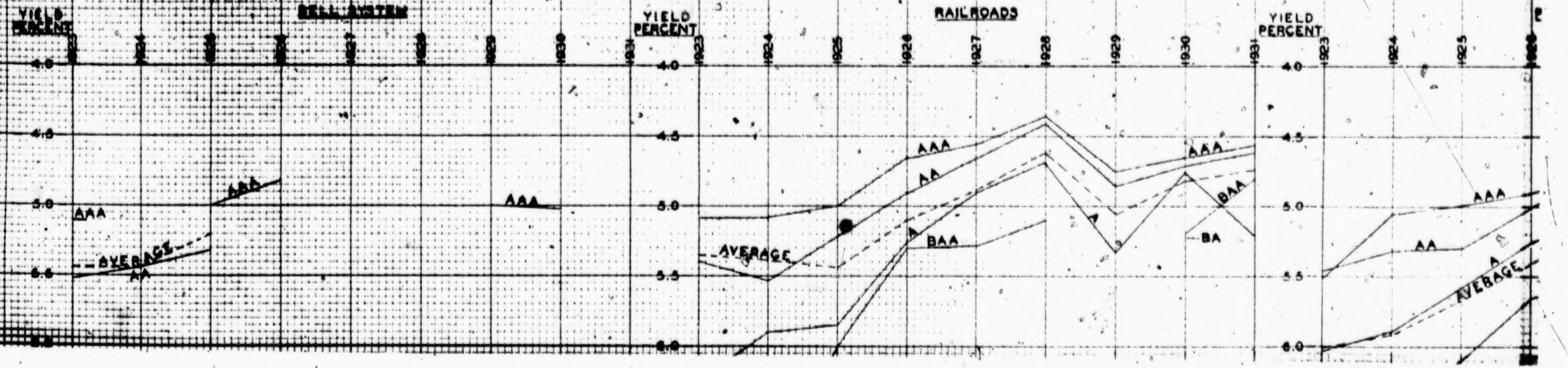


EXHIBIT X-236

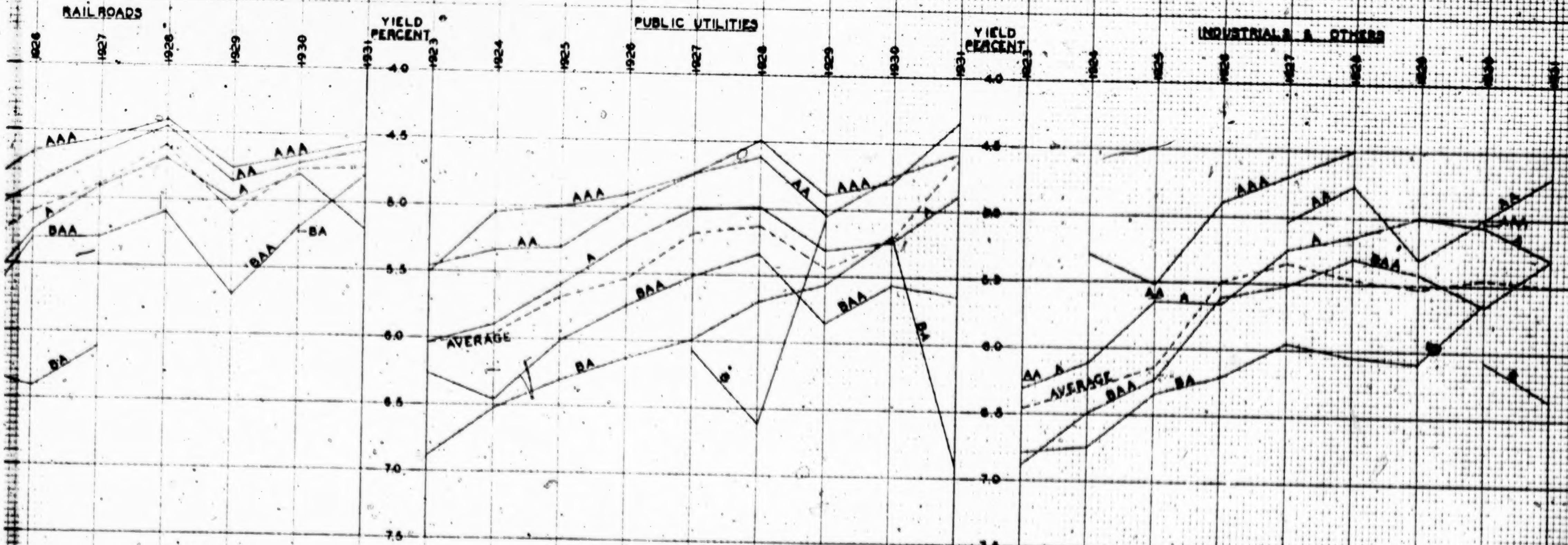
X-236

[redacted]

TREND OF WEIGHTED AVERAGES OF BOND YIELDS ON PUBLIC OFFERING PRICE GROUPED BY RATINGS (MOODY'S)

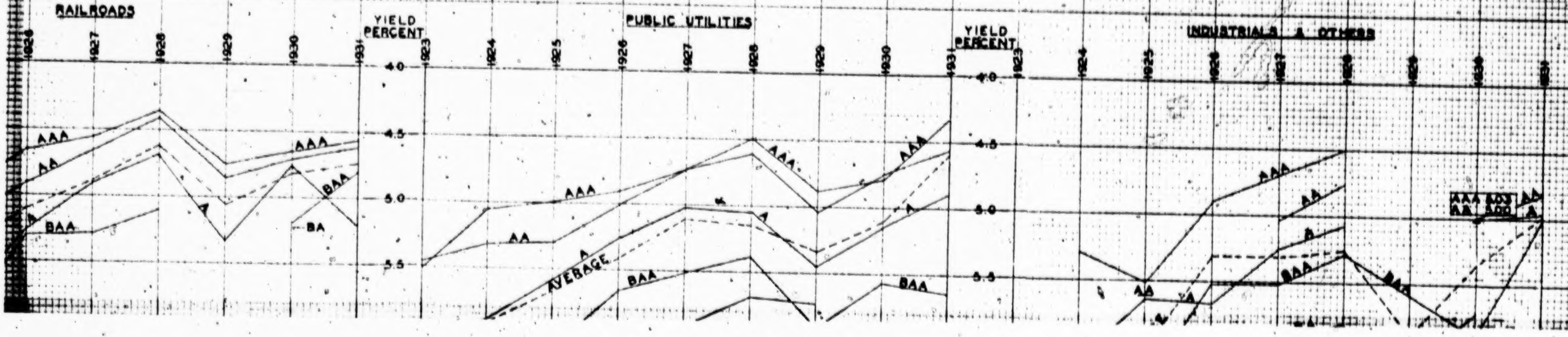
(INVERTED SCALE)

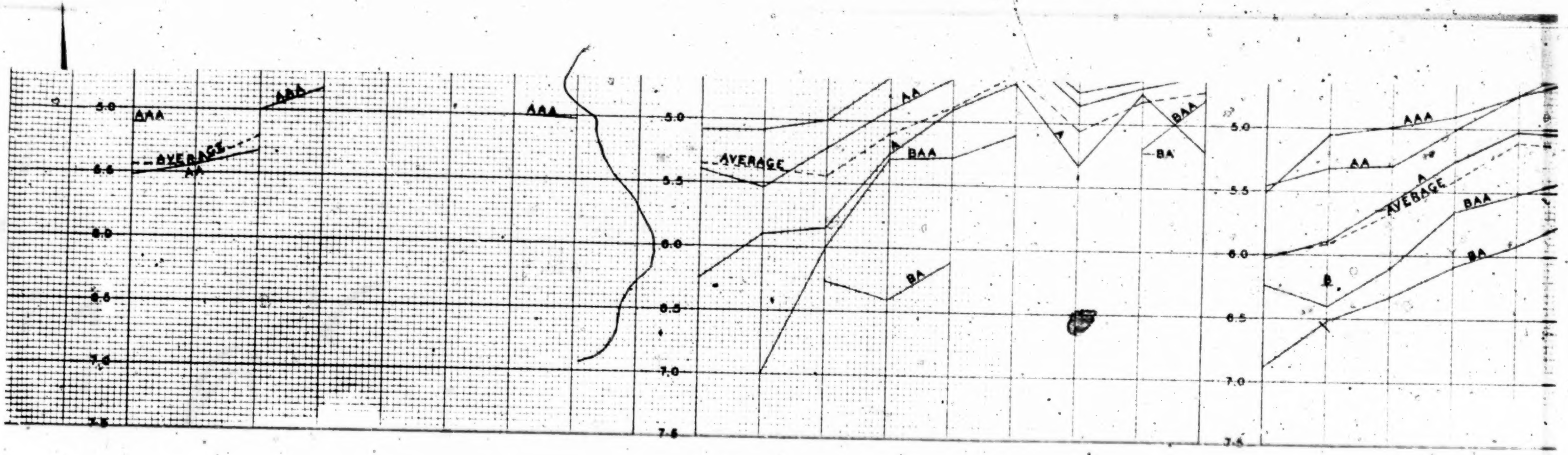
829 ISSUES 1923-1931 AGGREGATING $13,809,000,000



720 ISSUES 1923-1931 AGGREGATING $11,347,000,000

EXCLUDING CONVERTIBLES AND ISSUES WITH STOCK PURCHASE WARRANTS

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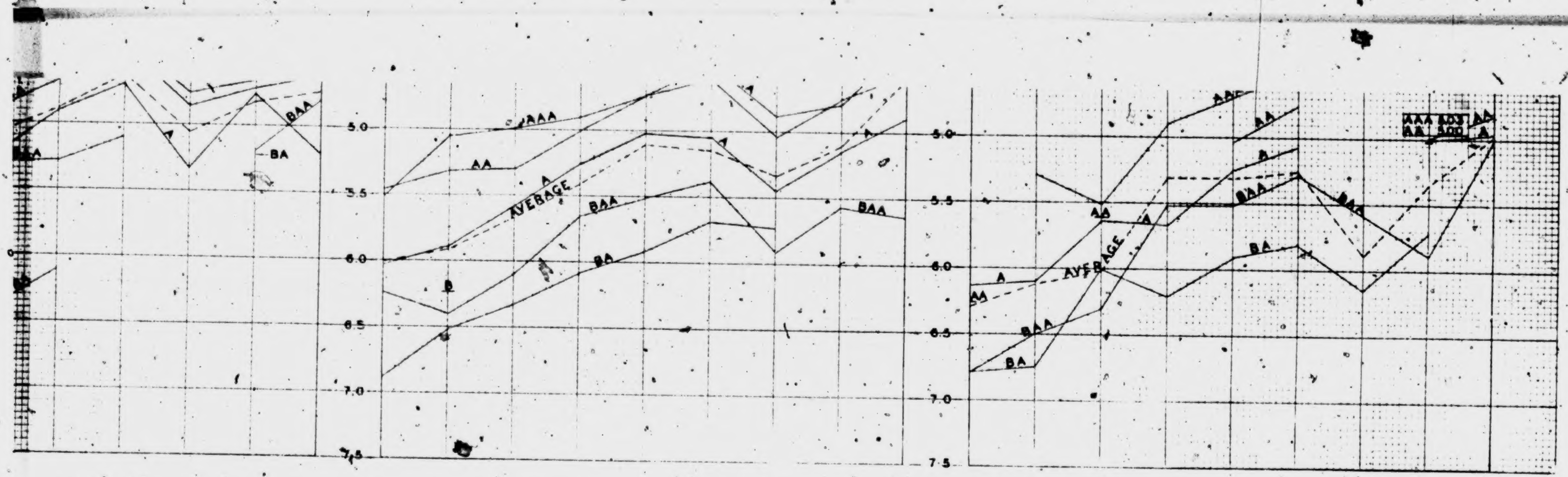
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AA 5.00
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A

6

[fol. 4813]

Exhibit X-237

Average Yield on Bonds Sold During Years 1923 to 1931, Inclusive, Classified According to Investment Rating when Issued

Bell System, Railroads, Public Utilities, Industrials and Others

(Includes Issues of $5,000,000 or Over. Yield Based on Offering Price)

Showing Average Yield on Bonds Issued Without Convertible Features or Stock Purchase Warrants Compared with Yield on Bonds Having Such Provisions

		Bond Issues Other Than Convertibles or Issues with Stock Purchase Warrants (720 Issues Aggregating $11,347,000,000)				Bond Issues Including Convertibles and Issues with Stock Purchase Warrants (829 Issues Aggregating $13,809,000,000)			
Year	Ratings	Bell System (a)	Railroads (a)	Public Utilities (a)	Industrials and Others (a)	Bell System (b)	Railroads (b)	Public Utilities (b)	Industrials and Others (b)
		%	%	%	%	%	%	%	%
1923	Aaa	5.11	5.09	5.52	....	5.11	5.09	5.52	....
	Aa	5.52	5.40	5.47	6.26	5.52	5.40	5.47	6.26
	A	....	6.25	6.03	6.18	....	6.25	6.03	6.31
	Baa	....	....	6.24	6.79	....	....	6.26	6.88
	Ba	....	....	6.88	6.78	....	....	6.88	6.78
	Not rated	....	....	....	7.00	....	....	....	7.00
	Average	5.44	5.36	6.01	6.29	5.44	5.36	6.04	6.46
1924	Aaa	....	5.08	5.05	5.29	....	5.08	5.05	5.29
	Aa	5.44	5.33	5.33	....	5.44	5.53	5.35	....
	A	....	5.90	5.88	6.10	....	5.90	5.88	6.12
	Baa	....	7.00	6.40	6.50	....	7.00	6.46	6.48
	Ba	....	....	6.52	6.75	....	....	6.52	6.75
	B	....	....	6.24	....	....	....	6.24	....
	Not rated	....	4.92	6.77	6.15	....	4.92	6.77	6.67
	Average	5.44	5.39	5.92	6.13	5.44	5.39	5.96	6.31

Exhibit X-237—Continued

Average Yield on Bonds Sold During Years 1923 to 1931, Inclusive, Classified According to Investment Rating when Issued

Bell System, Railroads, Public Utilities, Industrials and Others

(Includes Issues of $5,000,000 or Over. Yield Based on Offering Price)

Showing Average Yield on Bonds Issued Without Convertible Features or Stock Purchase Warrants Compared with Yield on Bonds Having Such Provisions

		Bond Issues Other Than Convertibles or Issues with Stock Purchase Warrants (720 Issues Aggregating $11,347,000,000)				Bond Issues Including Convertibles and Issues with Stock Purchase Warrants (829 Issues Aggregating $13,809,000,000)			
Year	Ratings	Bell System (a)	Railroads (a)	Public Utilities (a)	Industrials and Others (a)	Bell System (b)	Railroads (b)	Public Utilities (b)	Industrials and Others (b)
		%	%	%	%	%	%	%	%
923	Aaa	5.00	5.00	5.00	5.52	5.00	5.00	5.00	5.52
	Aa	5.32	5.22	5.31	5.63	5.32	5.21	5.31	5.63
	A	....	5.85	5.58	5.64	....	5.85	5.58	5.64
	Baa	....	6.00	6.11	6.30	....	6.00	6.00	6.23
	Ba	....	6.27	6.33	6.00	....	6.27	6.32	6.34
	Not rated	....	....	6.00	....	....	....	6.00	6.00
	Average	5.22	5.44	5.67	6.02	5.22	5.44	5.68	6.14
1926	Aaa	4.83	4.65	4.91	4.90	4.83	4.65	4.91	4.90
	Aa	....	4.91	4.99	....	....	4.91	4.99	....
	A	....	5.25	5.26	5.67	....	5.25	5.26	5.66
	Baa	....	5.30	5.66	5.52	....	5.30	5.74	5.60
	Ba	....	6.41	6.09	6.22	....	6.41	6.14	6.21
	Not rated	....	....	6.32	5.78	....	....	6.54	5.76
	Average	4.83	5.10	5.42	5.31	4.83	5.10	5.54	5.49

1927	Aaa	....	4.56	4.74	4.70	....	4.56	4.74	4.70
	Aa	....	4.66	4.74	5.03	....	4.66	4.74	5.03
	A	....	4.92	5.01	5.25	....	4.92	5.01	5.25
	Baa	....	5.29	5.51	5.52	....	5.29	5.52	5.52
	Ba	....	6.11	5.93	5.93	....	6.11	5.98	5.95
	B	....	....	....	....	....	....	6.07	....
	Not rated	....	....	....	5.66	....	....	5.70	5.66
	Average	....	4.88	5.12	5.31	....	4.88	5.18	5.35
1928	Aaa	....	4.36	4.49	4.50	....	4.41	4.49	5.50
	Aa	....	4.42	4.61	4.76	....	4.46	4.61	5.76
	A	....	4.68	5.05	5.07	....	4.68	4.99	5.15
	Baa	....	5.10	5.38	5.28	....	5.10	5.34	5.32
	Ba	....	....	5.69	5.81	....	....	5.69	6.05
	B	....	....	....	....	....	....	6.61	....
	Not rated	....	....	5.47	5.49	....	....	5.44	5.77
	Average	....	4.62	5.10	5.26	....	4.60	5.13	5.47
[fol. 4814] 1929	Aaa	5.00	4.77	4.89	....	4.56	4.77	4.89	....
	Aa	....	4.86	5.04	....	....	4.86	5.01	5.32
	A	....	5.33	5.45	....	....	5.00	5.31	5.00
	Baa	....	....	5.92	5.58	....	5.71	5.85	5.42
	Ba	....	....	5.73	6.15	....	....	5.56	6.09
	B	....	....	....	....	....	....	5.06	....
	Not rated	....	....	5.75	....	....	....	5.78	6.10
	Average	5.00	5.06	5.34	5.87	4.56	5.10	5.44	5.53
1930	Aaa	5.02	4.65	4.78	5.03	5.02	4.65	4.78	5.03
	Aa	....	4.72	4.75	5.00	....	4.72	4.75	5.00
	A	....	4.77	5.15	5.01	....	4.79	5.23	5.07
	Baa	....	5.19	5.56	5.89	....	5.19	5.56	5.65
	Ba	....	5.23	....	5.72	....	5.23	5.20	5.63
	B	....	....	....	....	....	....	....	6.07
	Not rated	....	....	....	6.50	....	....	6.22	6.14
	Average	5.02	4.82	5.12	5.35	5.02	4.76	5.22	5.46

Exhibit X-237—Continued

Average Yield on Bonds Sold During Years 1923 to 1931, Inclusive, Classified According to Investment Rating when Issued

Bell System, Railroads, Public Utilities, Industrials and Others

(Includes Issues of $5,000,000 or Over. Yield Based on Offering Price)

Showing Average Yield on Bonds Issued Without Convertible Features or Stock Purchase Warrants Compared with Yield on Bonds Having Such Provisions

Year	Ratings	Bond Issues Other Than Convertibles or Issues with Stock Purchase Warrants (720 Issues Aggregating $11,347,000,000)				Bond Issues Including Convertibles and Issues with Stock Purchase Warrants (829 Issues Aggregating $13,809,000,000)			
		Bell System (a)	Railroads (a)	Public Utilities (a)	Industrials and Others (a)	Bell System (b)	Railroads (b)	Public Utilities (b)	Industrials and Others (b)
		%	%	%	%	%	%	%	%
1931	Aaa	....	4.56	4.33	....	....	4.56	4.33	....
	Aa	....	4.62	4.57	4.68	....	4.62	4.57	4.68
	A	....	5.21	4.89	4.94	....	5.21	4.89	5.31
	Baa	....	4.80	5.67	5.09	....	4.80	5.67	5.30
	Ba	....	....	....	....	....	....	6.95	....
	B	....	....	....	....	....	....	....	6.36
	Not rated	....	....	....	....	....	....	....	....
	Average	....	4.74	4.59	4.97	....	4.74	4.61	5.50
Average: Years 1923–1931 Inclusive									
	Aaa	5.00	4.76	4.61	4.98	4.80	4.75	4.61	4.98
	Aa	5.43	4.97	4.87	5.10	5.43	4.95	4.87	5.17
	A	....	5.13	5.24	5.64	....	5.07	5.22	5.67
	Baa	....	5.32	5.74	5.79	....	5.38	5.76	5.85
	Ba	....	6.18	6.05	6.12	....	6.18	5.78	6.10
	B	....	....	6.24	....	....	....	5.88	6.25
	Not rated	....	4.92	5.76	5.78	....	4.92	5.89	6.11
	Average	5.22	4.99	5.25	5.58	5.03	4.98	5.31	5.71

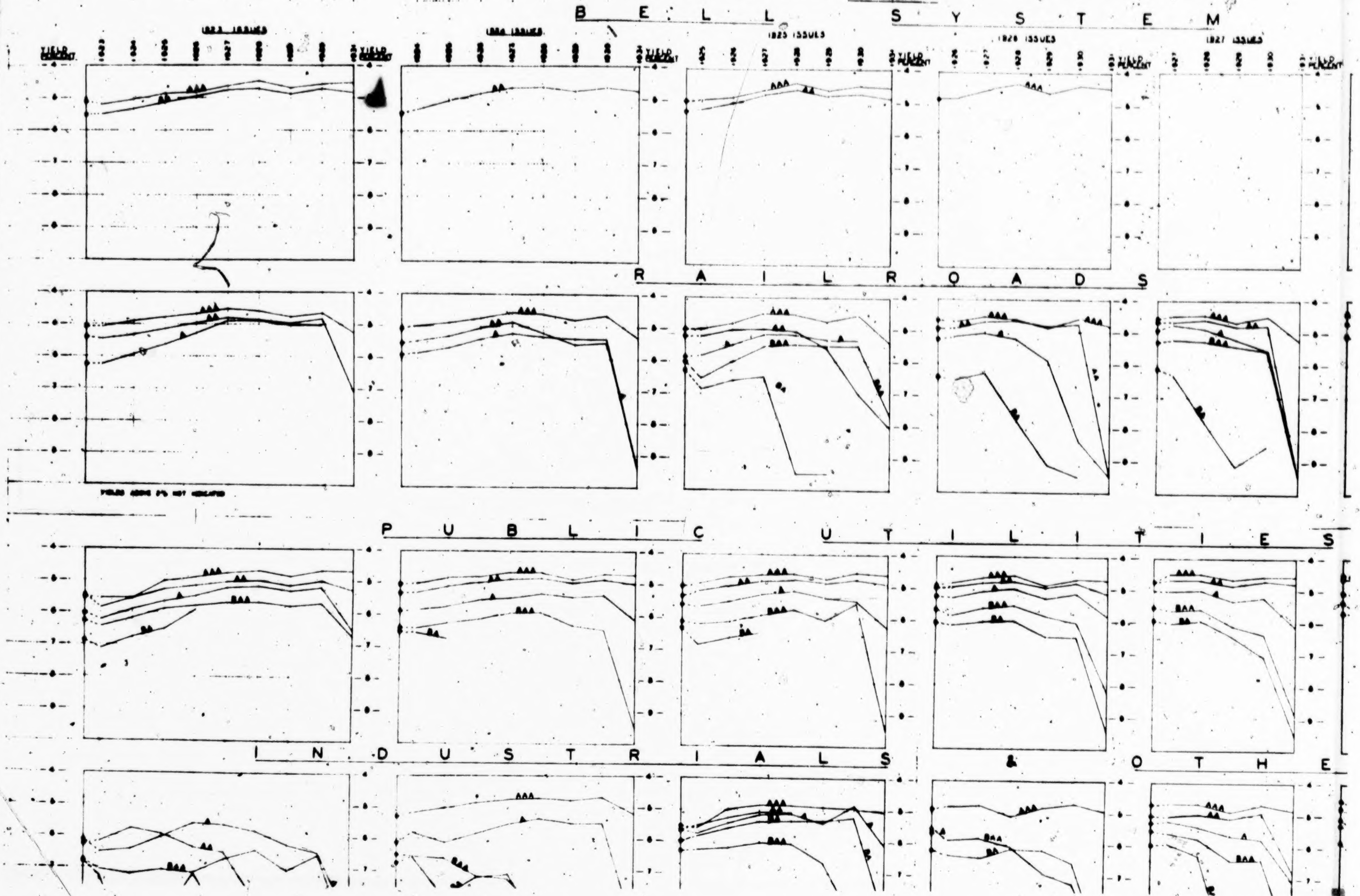
(a) For number of issues and amount, see part one of Exhibits.
(b) For number of issues and amount, see part three of Exhibits.

(Here follows Exhibit X-238, side folio 4815)

EXHIBIT X-238

TREND OF AVERAGES OF BOND YIELDS ON RESALE FROM DATE OF ISSUE TO 1931 GROUPED BY RATINGS (MOODY'S) ON PUBLIC OFFERING

(INVERTED SCALE)

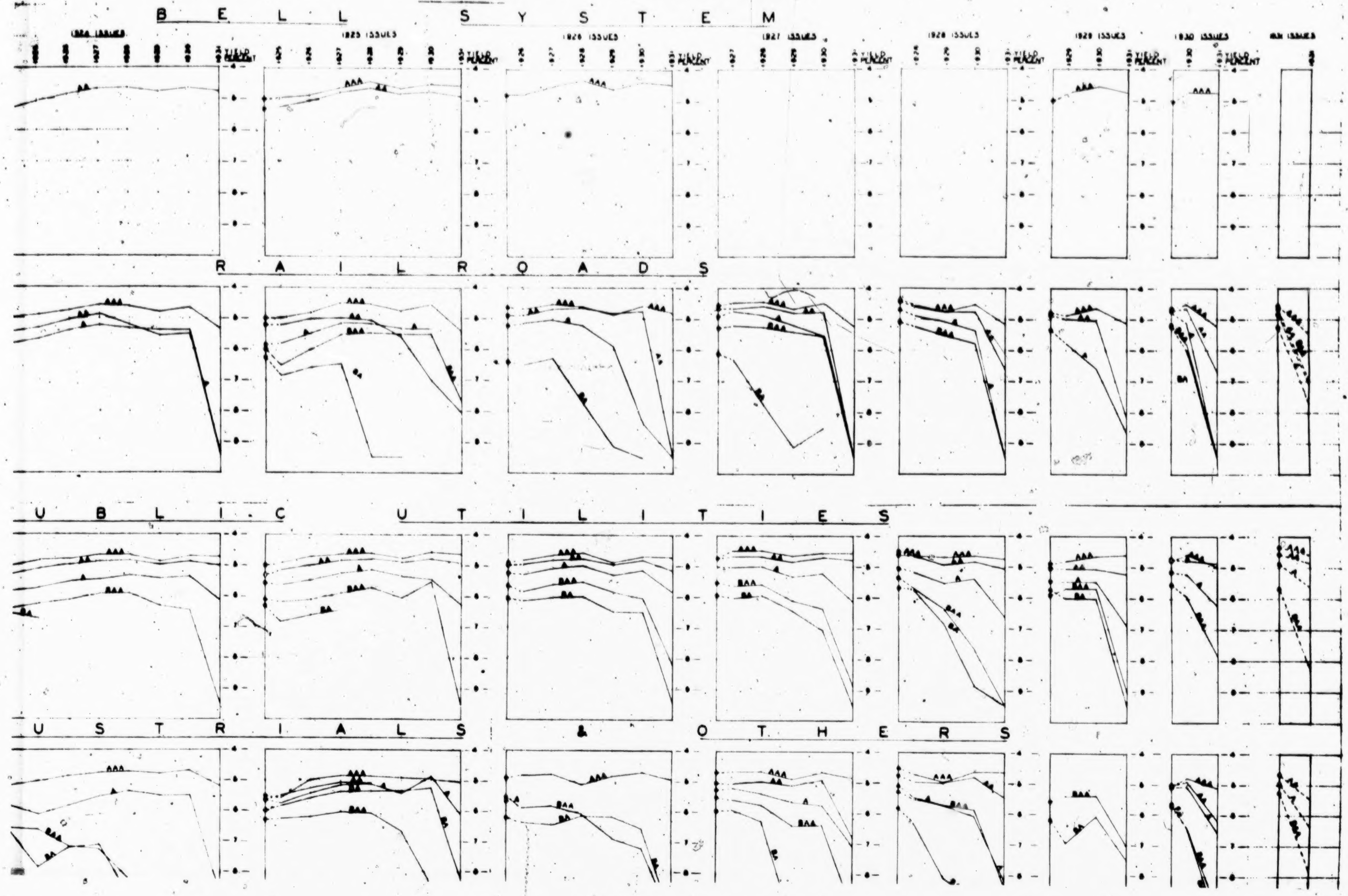


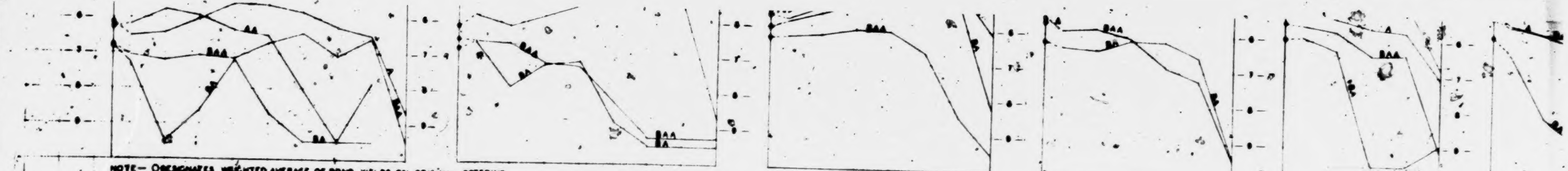
X238

EXHIBIT X-238

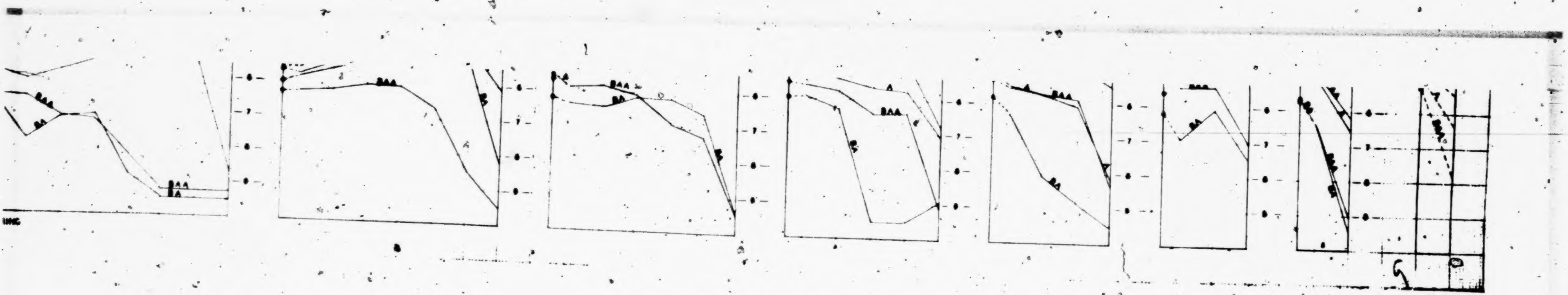
TREND OF AVERAGES OF BOND YIELDS ON RESALE FROM DATE OF ISSUE TO 1931 GROUPED BY RATINGS (MOODY'S) ON PUBLIC OFFERING

(INVERTED SCALE)





NOTE— O DESIGNATES WEIGHTED AVERAGE OF BOND YIELDS ON ORIGINAL OFFERING
YIELDS ABOVE 9% NOT INDICATED
BASED ON EXHIBITS



4815

[fol. 4816]

EXHIBIT X-239

Average Bond Yields Based on Resale Prices During Each Year, 1923 to 1931, Inclusive

Bell System, Railroads, Public Utilities; Industrials

(Based on High and Low Market Prices of Issues of $5,000,000 and Over)

Issues During Each Year Shown Separately and Classified According to Investment Rating at Time of Public Offering

Year of Resale	Rating at Time of Public Offering	Issues Offered in 1923				Issues Offered in 1924				Issues Offered in 1925			
		Bell System	Rail-roads	Public Utilities	Industrials and Others	Bell System	Rail-roads	Public Utilities	Industrials and Others	Bell System	Rail-roads	Public Utilities	Industrials and Others
1923	Aaa	5.20	5.09	5.55	....								
	Aa	5.50	5.44	5.84	6.18								
	A	....	6.25	6.22	6.51								
	Baa	....	....	6.44	7.06								
	Ba	....	....	7.12	7.27								
1924	Aaa	5.05	4.90	5.56	....	....	5.00	5.03	5.16				
	Aa	5.35	5.33	5.55	5.76	5.33	5.46	5.32	....				
	A	....	5.95	5.90	6.41	....	5.84	5.85	5.77				
	Baa	....	....	6.18	7.19	....	....	6.42	6.54				
	Ba	....	....	6.74	9.59	....	....	6.56	6.55				
1925	Aaa	4.88	4.78	5.01	....	....	4.90	4.84	5.01	4.95	4.98	4.93	5.59
	Aa	5.14	5.15	5.28	5.96	5.08	5.32	5.12	....	5.23	5.21	5.15	5.50
	A	....	5.61	5.65	6.02	....	5.67	5.73	6.11	....	5.82	5.65	5.76
	Baa	....	....	5.89	7.05	....	....	6.26	6.61	....	6.53	6.18	6.26
	Ba	....	....	6.51	8.61	....	....	6.73	7.84	....	6.86	6.83	5.85
1926	Aaa	4.83	4.67	4.89	....	....	4.76	4.82	4.85	4.86	4.82	4.72	4.97
	Aa	4.96	4.96	5.15	6.35	4.86	5.06	4.96	....	5.03	5.02	4.99	5.25
	A	....	5.29	5.49	5.66	....	5.40	5.53	5.83	....	5.49	5.47	5.42
	Baa	....	....	5.79	7.13	....	....	6.13	7.18	....	6.00	6.12	6.20
	Ba	....	....	5.91	7.14	....	....	....	7.20	....	6.59	6.61	5.58

X-239

X-239 contains the data on which X-238 is based

EXHIBIT X-239—Continued

Year of Resale	Rating at Time of Public Offering	Issues Offered in 1923				Issues Offered in 1924				Issues Offered in 1925			
		Bell System	Railroads	Public Utilities	Industrials and Others	Bell System	Railroads	Public Utilities	Industrials and Others	Bell System	Railroads	Public Utilities	Industrials and Others
1927	Aaa	4.64	4.51	4.75	....	....	4.58	4.67	4.74	4.62	4.50	4.64	4.84
	Aa	4.76	4.80	5.05	6.49	4.69	4.87	4.87	....	4.76	4.98	4.85	5.06
	A	....	4.90	5.23	5.62	....	5.22	5.46	5.54	....	5.18	5.26	5.15
	Baa	....	....	5.69	6.67	....	....	5.93	7.27	....	5.52	5.91	6.00
	Ba	....	....	....	8.70	....	....	....	11.14	....	6.49	6.44	5.34
1928	Aaa	4.48	4.58	4.68	....	....	4.62	4.66	4.71	4.41	4.55	4.60	4.86
	Aa	4.72	4.84	5.00	8.05	4.68	5.05	4.85	....	4.63	5.07	4.80	5.07
	A	....	4.87	5.19	5.82	....	5.32	5.33	5.34	....	5.19	5.15	5.13
	Baa	....	....	5.67	6.40	....	....	5.93	8.25	....	5.49	5.73	6.06
	Ba	....	....	....	9.57	....	....	....	8.82	....	9.22	....	5.34
1929	Aaa	4.69	4.76	4.87	....	....	4.80	4.88	4.77	4.67	4.77	4.77	4.91
	Aa	4.88	4.95	5.15	9.39	4.78	5.53	4.98	....	4.83	5.60	4.91	....
	A	....	5.01	5.32	6.26	....	5.38	5.44	5.50	....	5.34	5.35	5.42
	Baa	....	....	5.79	7.07	....	....	6.33	15.19	....	5.52	6.06	6.62
	Ba	....	....	....	10.66	....	....	....	10.28	....	11.68	....	5.35
[fol. 4817]													
1930	Aaa	4.58	4.65	4.71	....	....	4.65	4.71	4.68	4.51	4.56	4.57	4.93
	Aa	4.71	4.81	5.02	7.81	4.67	5.51	4.88	....	4.76	7.05	4.79	....
	A	....	5.03	5.23	6.50	....	5.38	5.37	5.50	....	5.35	5.44	4.84
	Baa	....	....	5.73	6.56	....	....	6.45	23.69	....	5.53	5.52	8.45
	Ba	....	....	....	17.45	....	....	....	16.28	....	....	....	5.22
1931	Aaa	4.54	5.26	4.70	....	....	5.32	4.72	5.18	4.56	5.42	4.64	5.04
	Aa	4.86	7.10	5.28	....	4.78	9.23	5.02	....	4.90	8.03	4.94	....
	A	....	....	6.56	8.71	....	13.22	6.14	8.76	....	....	6.33	6.11
	Baa	....	....	6.75	13.25	....	....	9.31	30.45	....	7.71	9.85	12.48
	Ba	....	....	....	....	....	....	....	26.75	....	....	....	8.27

		Issues Offered in 1926				Issues Offered in 1927				Issues Offered in 1928			
1926	Aaa	4.83	4.70	4.84	4.81								
	Aa	....	4.92	4.96	....								
	A	....	5.18	5.30	5.69								
	Baa	....	....	5.84	5.88								
	Ba	....	6.51	6.14	6.36								
1927	Aaa	4.56	4.55	4.66	4.77	....	4.47	4.49	4.66				
	Aa	....	4.70	4.82	....	....	4.67	4.69	5.06				
	A	....	5.05	5.08	....	....	4.76	5.02	5.21				
	Baa	....	....	5.61	5.84	....	5.22	5.61	5.57				
	Ba	....	6.30	6.03	6.42	....	6.30	6.01	5.92				
1928	Aaa	4.34	4.61	4.59	5.10	....	4.45	4.47	4.65	....	4.56	4.64	4.68
	Aa	....	4.66	4.78	....	....	4.60	4.67	4.99	....	4.60	4.64	4.94
	A	....	5.23	5.01	....	....	4.89	5.00	5.38	....	4.90	5.19	5.44
	Baa	....	....	5.53	6.08	....	5.26	5.58	5.91	....	5.24	5.69	5.50
	Ba	....	7.75	6.01	6.13	....	7.75	5.93	6.28	....	....	5.72	6.28
1929	Aaa	4.60	4.88	4.88	4.83	....	4.68	4.65	4.88	....	4.73	4.68	4.96
	Aa	....	4.84	4.96	....	....	4.81	4.83	5.10	....	4.73	4.91	4.95
	A	....	5.89	5.29	....	....	5.20	5.31	5.63	....	5.08	5.51	5.71
	Baa	....	....	5.85	6.82	....	5.42	6.10	6.51	....	5.51	6.35	5.72
	Ba	....	9.13	6.49	6.17	....	9.13	6.41	9.16	....	....	6.84	8.05
1930	Aaa	4.40	4.60	4.70	4.71	....	4.50	4.55	4.65	....	4.51	4.64	4.62
	Aa	....	4.76	4.81	....	....	4.78	4.70	4.91	....	4.74	4.82	4.77
	A	....	8.31	5.13	....	....	5.54	5.22	5.74	....	5.36	5.39	6.07
	Baa	....	....	6.07	7.26	....	5.57	6.38	6.62	....	5.79	7.65	5.84
	Ba	....	....	6.49	6.59	....	8.50	7.03	10.84	....	....	8.83	8.83

[fol. 4818]

Exhibit X-239—Continued

Year of Resale	Rating at Time of Public Offering	Issues Offered in 1926				Issues Offered in 1927				Issues Offered in 1928			
		Bell System	Rail-roads	Public Utilities	Industrials and Others	Bell System	Rail-roads	Public Utilities	Industrials and Others	Bell System	Rail-roads	Public Utilities	Industrials and Others
1931	Aaa	4.49	4.83	4.73	4.94	....	5.27	4.56	4.85	....	5.16	4.72	4.61
	Aa	....	9.29	5.15	....	....	9.08	4.78	6.81	....	6.62	5.07	5.46
	A	....	9.40	5.86	....	....	9.30	6.16	7.10	....	16.92	6.63	8.17
	Baa	....	....	8.18	11.83	....	9.06	8.84	9.91	....	15.45	11.19	8.36
	Ba	....	....	11.01	12.20	....	....	11.47	8.90	....	....	13.67	12.97
		Issues Offered in 1929				Issues Offered in 1930				Issues Offered in 1931			
1929	Aaa	4.76	4.87	4.82	....								
	Aa	....	4.98	5.06	....								
	A	....	5.78	5.47	....								
	Baa	....	....	5.70	....								
	Ba	....	....	6.03	6.93								
1930	Aaa	4.58	4.64	4.65	....	4.73	4.53	4.67	4.79				
	Aa	....	5.06	5.06	....	....	4.65	4.74	4.88				
	A	....	6.60	5.47	....	....	5.12	5.22	5.05				
	Baa	....	....	5.70	5.37	....	5.81	5.94	6.42				
	Ba	....	....	6.03	14.04	....	6.02	....	6.42				
1931	Aaa	4.74	5.14	4.61	....	4.75	5.20	4.98	5.10	....	5.42	4.59	....
	Aa	....	10.81	5.22	....	....	6.69	4.87	6.20	....	6.88	4.85	5.47
	A	....	8.67	6.90	....	....	13.66	6.25	6.57	....	7.66	5.61	7.38
	Baa	....	....	9.07	7.05	....	10.23	7.89	9.11	....	7.09	8.30	7.81
	Ba	....	....	10.36	7.49	....	....	....	11.00	....	....	....	....

Note.—This statement includes all issues on which ratings are given (except convertibles and issues with stock purchase warrants). See Exhibits.

(Here follows Exhibit X-240, side folio 4819)

EXHIBIT X-240

TREND OF AVERAGES OF BOND YIELDS ON RESALE FROM DATE OF ISS
TO 1931 GROUPED BY RATINGS (MOODY'S) IN YEAR OF RESALE

(INVERTED SCALE)

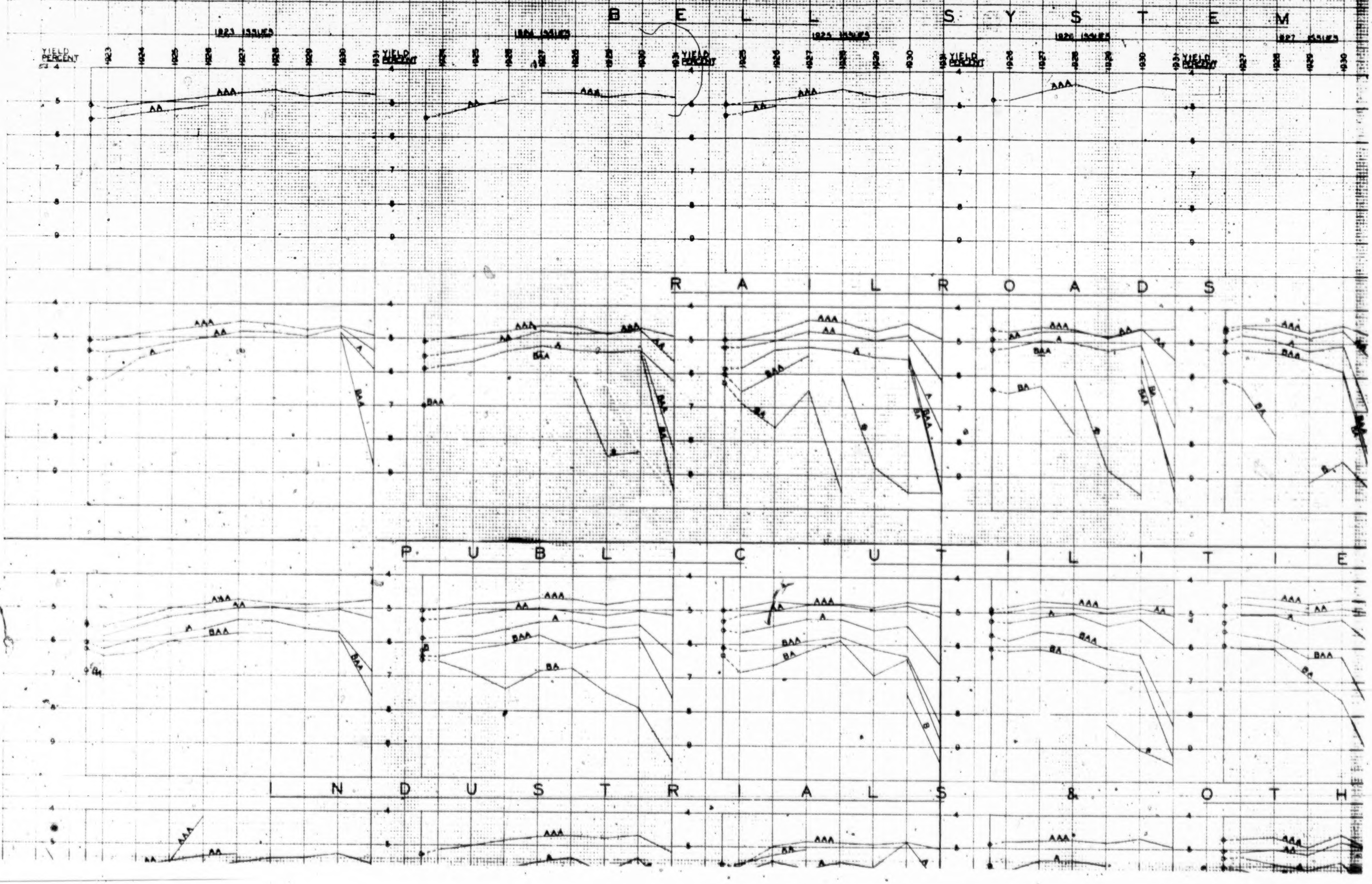


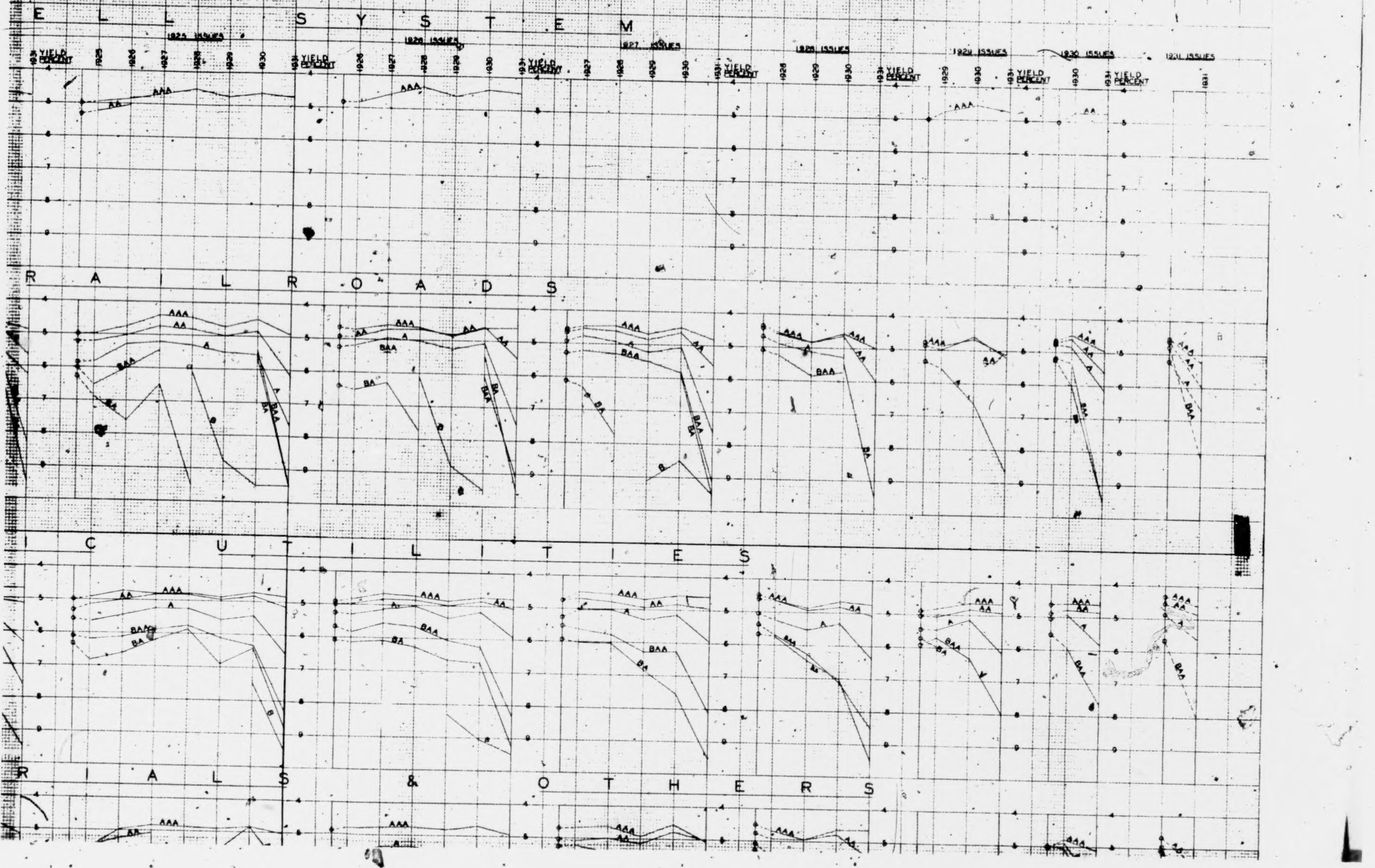
EXHIBIT X-240

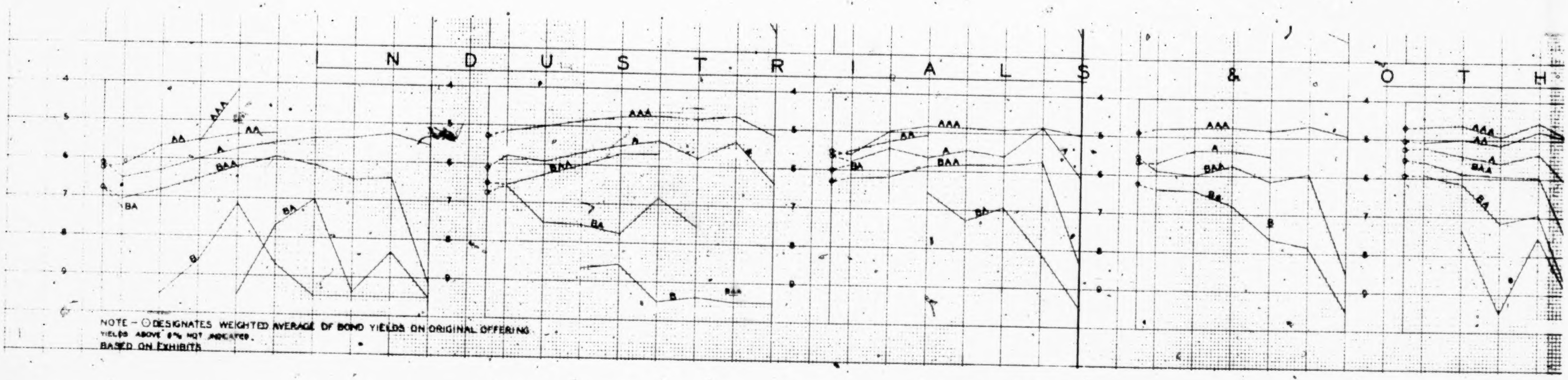
X 240

[redacted]

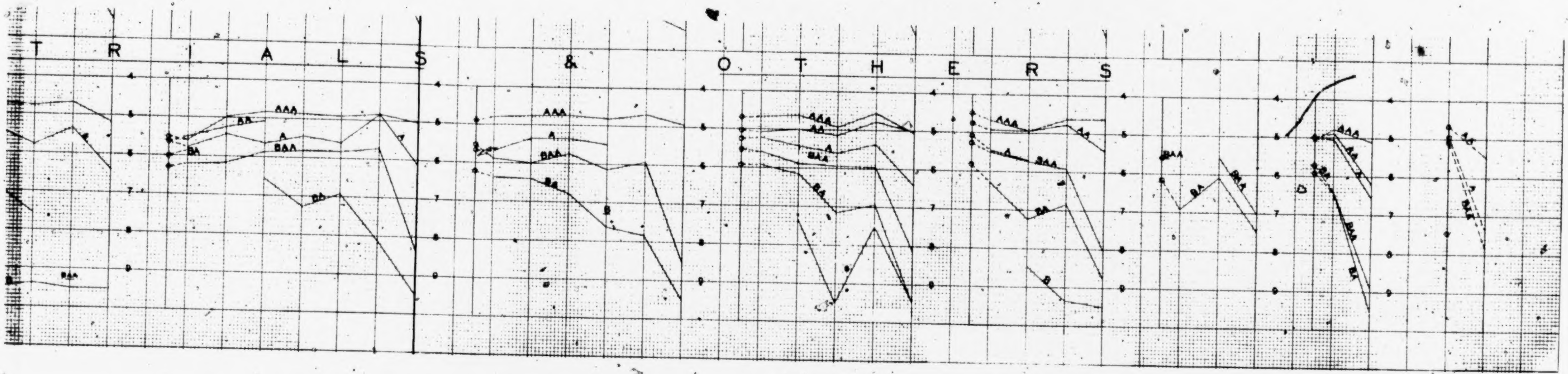
ERAGES OF BOND YIELDS ON RESALE FROM DATE OF ISSUE
31 GROUPED BY RATINGS (MOODY'S) IN YEAR OF RESALE

(INVERTED SCALE)





NOTE – ○ DESIGNATES WEIGHTED AVERAGE OF BOND YIELDS ON ORIGINAL OFFERING
YIELDS ABOVE 9% NOT INDICATED.
BASED ON EXHIBITS



4819

[fol. 4820]

EXHIBIT X-241

Average Bond Yields Based on Resale Prices During Each Year, 1923 to 1931, Inclusive

Bell System, Railroads, Public Utilities, Industrials

(Based on High and Low Market Prices of Issues of $5,000,000 and Over)

Page 1

Issues During Each Year are Shown Separately and are Classified According to Current Investment Rating in Years of Resale Irrespective of Rating at Time of Original Offering

Year of Resale	Rating in Year of Resale	Issues Offered in 1923				Issues Offered in 1924				Issues Offered in 1925			
		Bell System	Rail-roads	Public Utilities	Industrials and Others	Bell System	Rail-roads	Public Utilities	Industrials and Others	Bell System	Rail-roads	Public Utilities	Industrials and Others
1923	Aaa	5.20	5.09	5.55	....								
	Aa	5.50	5.44	5.84	6.18								
	A	....	6.25	6.23	6.51								
	Baa	....	....	6.44	7.06								
	Ba	....	....	7.12	7.27								
	B	....	....	....	....								
1924	Aaa	5.05	4.90	5.31	....	....	5.00	5.03	5.16				
	Aa	5.35	5.35	5.55	5.67	5.33	5.46	5.32	5.77				
	A	....	5.61	5.95	6.31	....	5.84	5.85	....				
	Baa	....	....	6.35	6.82	....	....	6.42	6.54				
	Ba	....	....	....	....	....	....	6.56	6.55				
	B	....	....	....	9.59	....	....	....	....				
1925	Aaa	4.96	4.78	5.01	5.54	....	4.89	4.84	5.01	4.95	4.98	4.93	5.59
	Aa	5.24	5.16	5.27	5.52	5.08	5.32	5.14	....	5.23	5.21	5.15	5.50
	A	....	5.37	5.78	5.99	....	5.67	5.81	5.92	....	5.82	5.66	5.79
	Baa	....	....	5.99	6.50	....	....	6.18	6.25	....	6.53	6.18	6.20
	Ba	....	....	6.88	....	....	....	6.89	7.51	....	6.86	6.83	5.85
	B	....	....	....	8.61	....	....	....	....	....	....	....	....

EXHIBIT X-241—Continued

Year of Resale	Rating in Year of Resale	Issues Offered in 1923				Issues Offered in 1924				Issues Offered in 1925			
		Bell System	Rail-roads	Public Utilities	Industrials and Others	Bell System	Rail-roads	Public Utilities	Industrials and Others	Bell System	Rail-roads	Public Utilities	Industrials and Others
1926	Aaa	4.84	4.67	4.89	4.17	4.86	4.76	4.82	4.85	4.86	4.75	4.72	4.97
	Aa	5.08	5.02	5.12	5.36	....	5.06	5.00	....	5.03	5.01	4.99	5.25
	A	....	....	5.61	5.72	....	5.35	5.58	5.69	....	5.28	5.46	5.42
	Baa	....	....	5.86	6.18	....	....	6.03	6.00	....	6.00	6.12	6.16
	Ba	....	....	....	9.42	....	....	7.35	7.53	....	7.59	6.61	....
	B	....	....	....	7.14	....	....	....	8.66	....	....	....	....
1927	Aaa	4.72	4.51	4.75	....	4.69	4.61	4.67	4.74	4.69	4.40	4.80	4.84
	Aa	....	4.82	5.02	5.30	....	4.77	4.95	....	....	4.74	4.82	5.06
	A	....	....	5.36	5.54	....	5.22	5.35	5.48	....	5.21	5.26	5.63
	Baa	....	....	5.76	5.91	....	5.39	5.73	5.70	....	5.46	5.88	5.84
	Ba	....	....	....	7.68	....	....	6.81	7.74	....	6.49	6.20	6.55
	B	....	....	....	8.70	....	....	....	11.14	....	....	....	....
1928	Aaa	4.64	4.58	4.85	....	4.68	4.62	4.69	4.71	4.52	4.45	4.78	4.86
	Aa	....	4.84	4.96	....	....	4.84	5.06	....	....	4.81	4.81	....
	A	....	....	5.38	5.41	....	5.32	5.33	5.35	....	5.30	5.26	5.44
	A	....	....	5.38	5.41	....	5.32	5.33	5.35	....	5.30	5.26	5.44
	Baa	....	....	5.76	6.10	....	....	6.14	5.66	....	....	5.75	5.83
	Ba	....	....	....	6.99	....	....	6.73	6.81	....	9.22	5.87	7.27
	B	....	....	....	9.57	....	6.10	....	10.98	....	6.09	....	....
[fol. 4821] 1929	Aaa	4.82	4.76	4.87	....	4.78	4.84	4.84	4.77	4.73	4.75	4.89	4.91
	Aa	....	4.96	5.11	....	....	4.83	5.16	....	....	4.99	4.95	....
	A	....	....	5.60	5.39	....	5.37	5.53	5.79	....	5.49	5.55	5.60
	Baa	....	....	....	6.47	....	....	5.88	....	....	....	6.10	5.83
	Ba	....	....	....	9.39	....	....	7.41	10.28	....	....	6.91	6.94
	B	....	....	....	10.66	....	8.43	....	10.88	....	8.80	....	....

1930	Aaa	4.67	4.64	4.84	....	4.67	4.66	4.68	4.68	4.63	4.47	4.73	4.84
	Aa	....	4.69	5.03	....	....	4.73	5.02	....	....	4.85	4.84	....
	A	....	4.85	5.70	5.28	....	5.33	5.42	5.34	....	5.53	5.[illegible]	4.84
	Baa	....	4.89	5.80	6.44	....	5.21	5.81	20.63	....	5.42	6.33	5.73
	Ba	....	....	....	8.33	....	5.37	7.89	....	....	5.59	6.41	8.12
	B	....	....	....	17.45	....	8.33	....	16.89	....	19.07	7.46	....
1931	Aaa	4.75	4.93	4.74	....	4.78	4.90	4.70	5.18	4.73	4.95	4.84	5.04
	Aa	....	5.39	5.28	....	....	5.67	5.15	....	....	6.18	5.18	....
	A	....	5.93	6.89	5.56	....	6.27	6.33	6.39	....	7.71	6.58	6.11
	Baa	....	8.79	7.61	9.18	....	8.31	7.61	....	....	12.27	8.32	8.36
	Ba	....	....	....	10.78	....	16.48	13.01	8.04	....	10.61	8.87	14.50
	B	....	....	....	28.10	....	....	....	38.31	....	....	31.10	....
			Issues Offered in 1926				Issues Offered in 1927				Issues Offered in 1928		
1926	Aaa	4.83	4.70	4.84	4.81								
	Aa	....	4.92	4.96	....								
	A	....	5.18	5.30	5.69								
	Baa	....	....	5.84	5.88								
	Ba	....	6.51	6.14	6.36								
	B	....	....	....	....								
1927	Aaa	4.56	4.55	4.66	4.77	....	4.47	4.49	4.66				
	Aa	....	4.69	4.82	....	....	4.54	4.69	5.06				
	A	....	4.96	5.13	5.36	....	4.76	5.02	5.21				
	Baa	....	5.39	5.54	5.99	....	5.23	5.61	5.56				
	Ba	....	6.30	6.08	6.40	....	6.30	6.01	5.92				
	B	....	....	....	....	....	....	....	....				
1928	Aaa	4.34	4.61	4.72	4.75	....	4.45	4.54	4.64	....	4.56	4.64	4.68
	Aa	....	4.66	4.84	....	....	4.60	4.78	4.99	....	4.60	4.64	4.94
	A	....	5.02	5.02	5.37	....	4.91	5.01	5.41	....	4.90	5.24	5.44
	Baa	....	....	5.65	5.76	....	5.29	5.77	5.88	....	5.24	5.69	5.50
	Ba	....	7.75	6.27	6.77	....	7.75	6.02	6.14	....	....	5.72	6.28
	B	....	6.10	....	....	....	....	....	7.31	....	....	....	....

[fol. 4822]

EXHIBIT X-241—Continued

Year of Resale	Rating in Year of Resale	Issues Offered in 1926				Issues Offered in 1927				Issues Offered in 1928			
		Bell System	Rail-roads	Public Utilities	Industrials and Others	Bell System	Rail-roads	Public Utilities	Industrials and Others	Bell System	Rail-roads	Public Utilities	Industrials and Others
1929	Aaa	4.60	4.85	4.86	4.83	....	4.68	4.69	4.91	....	4.82	4.87	4.96
	Aa	....	4.84	4.99	....	....	4.85	4.96	5.14	....	4.82	4.92	4.95
	A	....	5.27	5.38	5.49	....	5.23	5.30	5.60	....	5.11	5.51	5.70
	Baa	....	....	5.35	6.13	....	5.50	6.29	6.15	....	5.84	6.27	5.72
	Ba	....	....	6.66	7.64	....	....	6.83	7.16	....	....	6.47	7.23
	B	....	8.77	8.29	....	....	9.13	....	20.71	....	....	....	8.47
1930	Aaa	4.40	4.61	4.74	4.70	....	4.46	4.57	4.54	....	4.55	4.64	4.62
	Aa	....	4.59	4.86	....	....	4.62	4.81	4.79	....	4.61	4.83	4.77
	A	....	5.08	5.18	....	....	5.07	5.17	5.37	....	5.27	5.32	....
	Baa	....	6.08	6.26	5.93	....	5.81	6.31	5.97	....	5.71	7.11	5.91
	Ba	....	5.45	6.72	7.82	....	4.88	7.54	6.86	....	5.47	7.02	6.84
	B	....	18.67	9.04	....	....	8.50	....	7.49	....	....	....	9.37
1931	Aaa	4.49	4.58	4.78	4.94	....	4.81	4.59	5.08	....	4.99	4.72	4.61
	Aa	....	5.50	5.06	....	....	5.60	4.96	5.04	....	6.01	5.07	5.46
	A	....	7.55	5.94	....	....	7.60	5.96	6.43	....	....	6.38	....
	Baa	....	10.33	8.36	8.55	....	9.90	8.18	8.16	....	....	8.48	8.08
	Ba	....	12.25	9.55	13.31	....	11.87	11.97	10.05	....	16.43	13.30	8.79
	B	....	....	19.46	....	....	....	....	14.35	....	....	13.58	14.97

			Issues Offered in 1929				Issues Offered in 1930				Issues Offered in 1931		
1929	Aaa	4.76	[illegible]	4.82	....								
	Aa	....	4.98	5.06	....								
	A	....	5.78	5.47	....								
	Baa	....	....	5.70	....								
	Ba	....	....	5.98	6.93								
	B	....	....	....	....								
1930	Aaa	4.58	4.64	4.64	....	4.73	4.48	4.59	4.79				
	Aa	....	4.59	4.82	....	....	4.60	4.78	4.88				
	A	....	6.60	5.14	....	....	4.84	4.92	5.05				
	Baa	....	5.54	6.29	5.37	....	5.33	5.93	6.42				
	Ba	....	....	....	6.07	....	6.02	....	6.42				
	B	....	....	....	....	....	....	....	....				
1931	Aaa	4.74	5.14	4.66	....	4.74	4.94	4.61	5.10	....	5.20	4.59	....
	Aa	....	5.20	4.93	....	....	5.59	4.87	6.20	....	5.98	4.85	5.47
	A	....	8.68	6.18	....	....	6.17	5.83	6.57	....	6.68	5.61	7.38
	Baa	....	....	8.00	7.05	....	9.27	7.67	8.97	....	8.07	7.99	7.81
	Ba	....	16.42	10.29	7.49	....	18.12	8.37	10.52	....	....	....	....
	B	....	....	....	....	....	....	....	....	....	....	....	....

(Here follows Exhibit X-242, side folio 4823)

EXHIBIT X-242

TREND OF AVERAGES OF BOND YIELDS ON RESALE FROM DATE OF ISSUE TO 1931 GROUPED BY RATINGS (MOODYS) IN YEAR OF RESALE

(INVERTED SCALE)

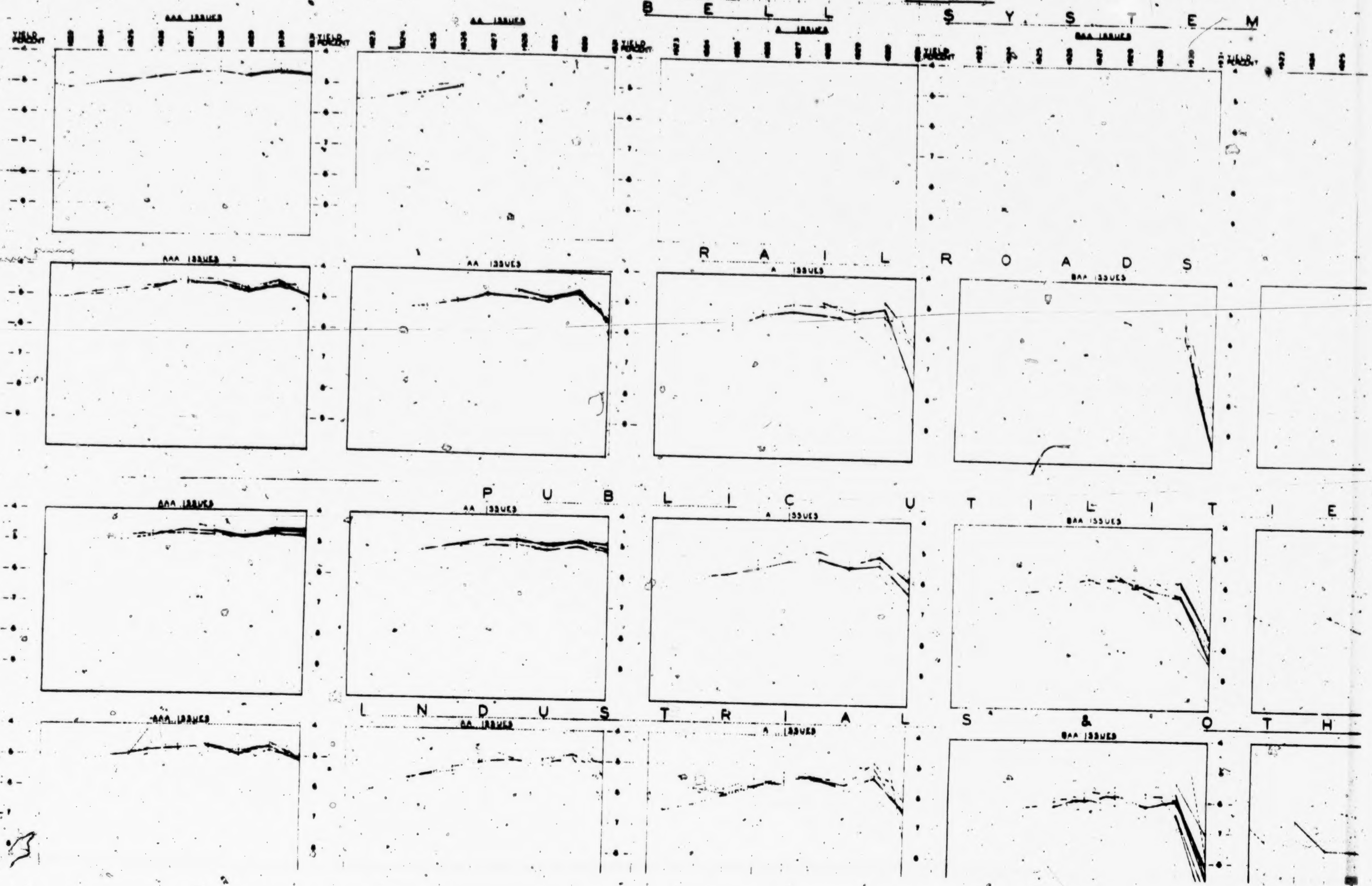
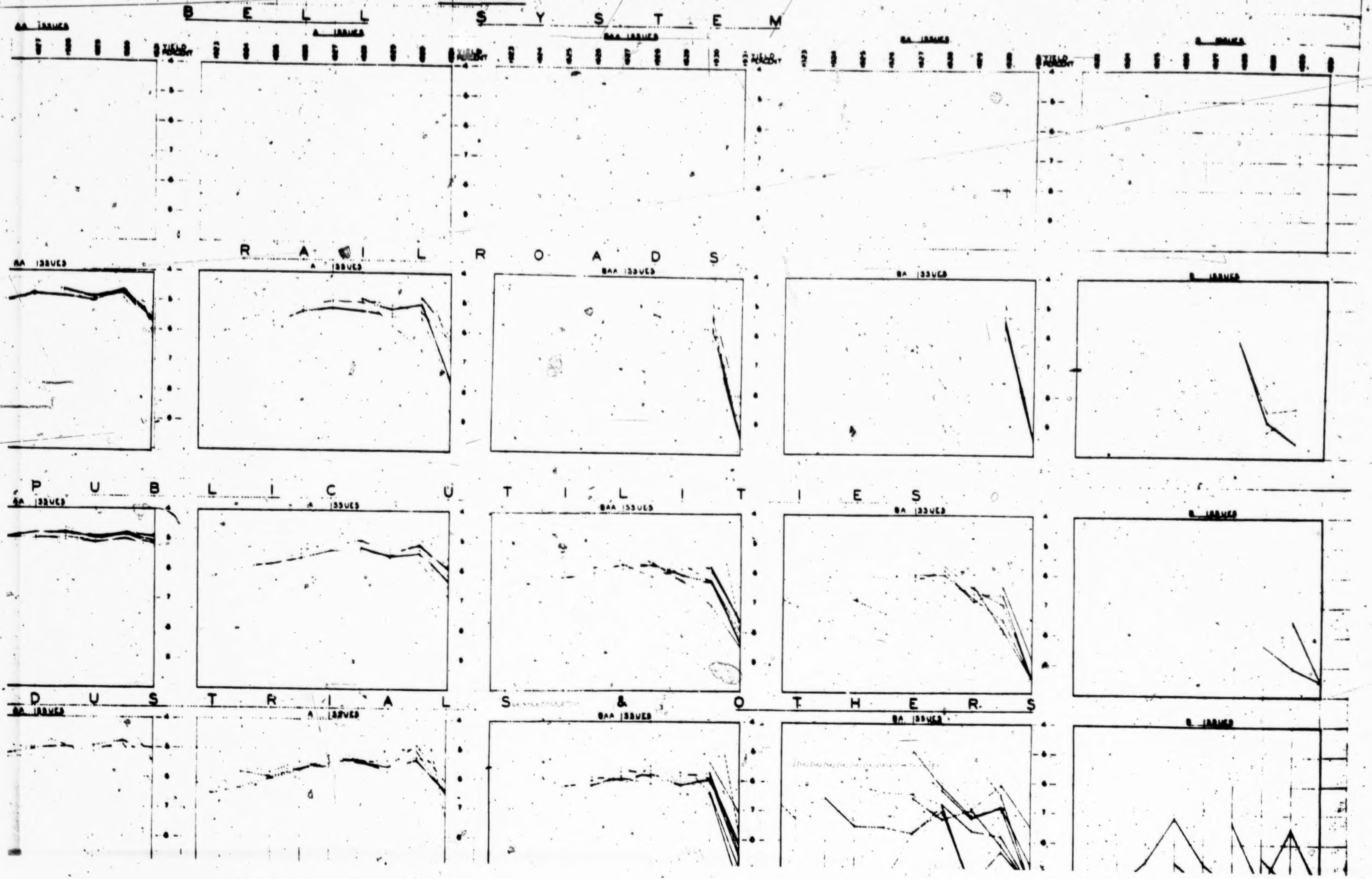


EXHIBIT X-242

Exhibit No. X 242

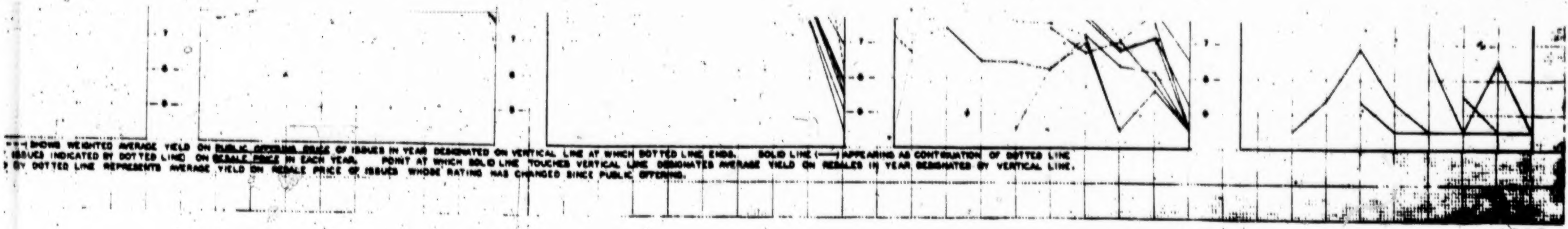
TREND OF AVERAGES OF BOND YIELDS ON RESALE FROM DATE OF ISSUE TO 1931 GROUPED BY RATINGS (MOODYS) IN YEAR OF RESALE

(INVERTED SCALE)



BASED ON EXHIBIT.
YIELDS ABOVE 9% NOT INDICATED

NOTE- BEGINNING OF DOTTED LINE (- - - -) SHOWS WEIGHTED AVERAGE YIELD ON PUBLIC OFFERING PRICE OF ISSUES IN YEAR DESIGNATED ON VERTICAL LINE AT WHICH DOTTED LINE ENDS. SOLID LINE (——) APPEARING AS CONTINUATION OF DOTT
SHOWS AVERAGE YIELD (OF ISSUES INDICATED BY DOTTED LINE) ON RESALE PRICE IN EACH YEAR. POINT AT WHICH SOLID LINE TOUCHES VERTICAL LINE DESIGNATES AVERAGE YIELD ON RESALES IN YEAR DESIGNATED BY VERTIC
SOLID LINE NOT PRECEDED BY DOTTED LINE REPRESENTS AVERAGE YIELD ON RESALE PRICE OF ISSUES WHOSE RATING HAS CHANGED SINCE PUBLIC OFFERING.



---- SHOWS WEIGHTED AVERAGE YIELD ON PUBLIC OFFERING PRICE OF ISSUES IN YEAR DESIGNATED ON VERTICAL LINE AT WHICH DOTTED LINE ENDS. SOLID LINE (——) APPEARING AS CONTINUATION OF DOTTED LINE
ISSUES INDICATED BY DOTTED LINE ON RESALE PRICE IN EACH YEAR. POINT AT WHICH SOLID LINE TOUCHES VERTICAL LINE DESIGNATES AVERAGE YIELD ON RESALES IN YEAR DESIGNATED BY VERTICAL LINE.
BY DOTTED LINE REPRESENTS AVERAGE YIELD ON RESALE PRICE OF ISSUES WHOSE RATING HAS CHANGED SINCE PUBLIC OFFERING.

4823

[fol. 4824]

EXHIBIT X-243

Average Yield on Resale of Bonds, 1923 to 1931, Inclusive

Yields on Cumulative Classification (According to Investment Rating), Showing Average Yield in Each Year on All Bonds of the Same Class Issued in 1923 and in Subsequent Years to and Including the Indicated Year of Resale

Year of Issue	Average Yield 1923	1924	1925	1926	1927	1928	1929	1930	1931
Aaa Issues:				Bell System					
1923	5.20	5.05	4.96	4.84	4.72	4.64	4.82	4.67	4.75
1924	....	....	....	....	4.69	4.68	4.78	4.67	4.78
1925	....	....	4.95	4.86	4.69	4.52	4.75	4.63	4.73
1926	....	....	....	4.83	4.56	4.34	4.60	4.40	4.49
1927	....	....	....	....	....	....	....	....	....
1928	....	....	....	....	....	....	....	....	....
1929	....	....	....	....	....	....	4.76	4.58	4.74
1930	....	....	....	....	....	....	....	4.73	4.74
1931	....	....	....	....	....	....	....	....	....
Average	5.20	5.05	4.96	4.84	4.69	4.57	4.76	4.64	4.72
Aa Issues:									
1923	5.50	5.35	5.24	5.08	....	....	....	....	....
1924	....	5.33	5.08	4.86	....	....	....	....	....
1925	....	....	5.23	5.03	....	....	....	....	....
1926	....	....	....	....	....	....	....	....	....
1927	....	....	....	....	....	....	....	....	....
1928	....	....	....	....	....	....	....	....	....
1929	....	....	....	....	....	....	....	....	....
1930	....	....	....	....	....	....	....	....	....
1931	....	....	....	....	....	....	....	....	....
Average	5.50	5.35	5.18	4.99	....	....	....	....	....
Aaa Issues:				Railroads					
1923	5.09	4.90	4.78	4.67	4.51	4.58	4.76	4.64	4.93
1924	....	5.00	4.89	4.76	4.61	4.62	4.84	4.66	4.90
1925	....	....	4.98	4.75	4.40	4.45	4.73	4.47	4.95
1926	....	....	....	4.70	4.55	4.61	4.85	4.61	4.58
1927	....	....	....	....	4.47	4.45	4.68	4.46	4.81
1928	....	....	....	....	....	4.56	4.82	4.55	4.99
1929	....	....	....	....	....	....	4.87	4.64	5.14
1930	....	....	....	....	....	....	....	4.48	4.94
1931	....	....	....	....	....	....	....	....	5.20
Average	5.09	4.97	4.88	4.73	4.53	4.55	4.77	4.56	4.93

[fol. 4825]

Year of Issue	1923	1924	1925	1926	1927	1928	1929	1930	1931
Aa Issues:									
1923	5.44	5.35	5.16	5.02	4.82	4.84	4.96	4.69	5.39
1924	....	5.46	5.32	5.06	4.77	4.84	4.83	4.73	5.67
1925	....	....	5.21	5.01	4.74	4.81	4.99	4.85	6.18
1926	....	....	....	4.92	4.69	4.66	4.84	4.59	5.50
1927	....	....	....	....	4.54	4.60	4.85	4.62	5.60
1928	....	....	....	....	....	4.60	4.82	4.61	6.01
1929	....	....	....	....	....	....	4.98	4.59	5.20
1930	....	....	....	....	....	....	....	4.60	5.59
1931	....	....	....	....	....	....	....	....	5.98
Average	5.44	5.42	5.24	5.02	4.73	4.76	4.92	4.67	5.72

NOTE.—This statement includes issues of $5,000,000 and over during period shown, except convertibles and issues with stock purchase warrants.

Exhibit X–243

Average Yield

Bell System

Year of Issue	1923	1924	1925	1926	1927	1928	1929	1930	1931
A Issues:									
1923	6.25	5.61	5.37	....	....	....	....	4.85	5.93
1924	....	5.84	5.67	5.35	5.22	5.32	5.37	5.33	6.27
1925	....	....	5.82	5.28	5.21	5.30	5.49	5.53	7.71
1926	....	....	....	5.18	4.96	5.02	5.27	5.08	7.55
1927	....	....	....	....	4.76	4.91	5.23	5.07	7.60
1928	....	....	....	....	....	4.90	5.11	5.27	....
1929	....	....	....	....	....	....	5.78	6.60	8.68
1930	....	....	....	....	....	....	....	4.84	6.17
1931	....	....	....	....	....	....	....	....	6.68
Average	6.25	5.77	5.64	5.27	4.99	5.07	5.33	5.29	7.10
Baa Issues:									
1923	....	....	....	....	....	....	....	4.89	8.79
1924	....	....	....	....	5.39	....	....	5.21	8.31
1925	....	....	6.53	6.00	5.46	....	....	5.42	12.27
1926	....	....	....	....	5.39	....	....	6.08	10.33
1927	....	....	....	....	5.23	5.29	5.50	5.81	9.90
1928	....	....	....	....	....	5.24	5.84	5.71	....
1929	....	....	....	....	....	....	....	5.54	....
1930	....	....	....	....	....	....	....	5.33	9.27
1931	....	....	....	....	....	....	....	....	8.07
Average	....	....	6.53	6.00	5.32	5.27	5.58	5.53	9.39
[fol. 4826]									
Ba Issues:									
1923	....	....	....	....	....	....	....	....	....
1924	....	....	....	....	....	....	....	5.37	16.48
1925	....	....	6.86	7.59	6.49	9.22	....	5.59	10.61
1926	....	....	....	6.51	6.30	7.75	....	5.45	12.25
1927	....	....	....	....	6.30	7.75	....	4.88	11.87
1928	....	....	....	....	....	....	....	5.47	16.43
1929	....	....	....	....	....	....	....	....	16.42
1930	....	....	....	....	....	....	....	6.02	18.12
1931	....	....	....	....	....	....	....	....	....
Average	....	....	6.86	6.56	6.40	7.55	....	5.39	15.66
B Issues:									
1923	....	....	....	....	....	....	....	....	....
1924	....	....	....	....	....	6.10	8.43	8.33	....
1925	....	....	....	....	....	6.09	8.80	19.07	....
1926	....	....	....	....	....	6.10	8.77	18.67	....
1927	....	....	....	....	....	....	9.13	8.50	....
1928	....	....	....	....	....	....	....	....	....
1929	....	....	....	....	....	....	....	....	....
1930	....	....	....	....	....	....	....	....	....
1931	....	....	....	....	....	....	....	....	....
Average	....	....	....	....	....	6.10	8.78	13.84	....

Note.—This statement includes issues of $5,000,000 and over during period shown, except convertibles and issues with stock purchase warrants.

EXHIBIT X-243—Continued

Year of Issue	1923	1924	1925	1926	1927	1928	1929	1930	1931
					Public Utilities				
Aaa Issues:									
1923.....	5.55	5.31	5.01	4.89	4.75	4.85	4.87	4.84	4.74
1924.....	....	5.03	4.84	4.82	4.67	4.69	4.84	4.68	4.70
1925.....	....	....	4.93	4.72	4.80	4.78	4.89	4.73	4.84
1926.....	....	....	....	4.84	4.66	4.72	4.86	4.74	4.78
1927.....	....	....	....	....	4.49	4.54	4.69	4.57	4.59
1928.....	....	....	....	....	....	4.64	4.87	4.64	4.72
1929.....	....	....	....	....	....	....	4.82	4.64	4.66
1930.....	....	....	....	....	....	....	....	4.59	4.61
1931.....	....	....	....	....	....	....	....	....	4.59
Average..	5.55	5.12	4.90	4.82	4.65	4.67	4.81	4.66	4.66
[fol. 4827] Aa Issues:									
1923.....	5.84	5.55	5.27	5.12	5.02	4.96	5.11	5.03	5.28
1924.....	....	5.32	5.[illegible]4	5.00	4.95	5.06	5.16	5.02	5.15
1925.....	....	....	5.15	4.99	4.82	4.81	4.95	4.84	5.18
1926.....	....	....	....	4.96	4.82	4.84	4.99	4.86	5.06
1927.....	....	....	....	....	5.69	4.78	4.96	4.81	4.96
1928.....	....	....	....	....	....	4.64	4.92	4.83	5.07
1929.....	....	....	....	....	....	....	5.06	4.82	4.93
1930.....	....	....	....	....	....	....	....	4.78	4.87
1931.....	....	....	....	....	....	....	....	....	4.85
Average..	5.84	5.39	5.18	5.01	4.84	4.86	5.02	4.87	5.02
A Issues:									
1923.....	6.23	5.95	5.78	5.61	5.36	5.38	5.60	5.70	6.89
1924.....	....	5.85	5.81	5.58	5.35	5.31	5.53	5.42	6.33
1925.....	....	....	5.66	5.46	5.26	5.26	5.55	5.43	6.58
1926.....	....	....	....	5.30	5.13	5.02	5.38	5.18	5.94
1927.....	....	....	....	....	5.02	5.01	5.30	5.17	5.96
1928.....	....	....	....	....	....	5.24	5.51	5.32	6.38
1929.....	....	....	....	....	....	....	5.47	5.14	6.18
1930.....	....	....	....	....	....	....	....	4.92	5.83
1931.....	....	....	....	....	....	....	....	....	5.61
Average..	6.23	5.90	5.75	5.47	5.15	5.13	5.44	5.24	6.08
Baa Issues:									
1923.....	6.44	6.35	5.99	5.86	5.76	5.76	....	5.80	7.61
1924.....	....	6.42	6.18	6.03	5.73	6.14	5.88	5.81	7.61
1925.....	....	....	6.18	6.12	5.88	5.75	6.10	6.33	8.32
1926.....	....	....	....	5.84	5.54	5.65	6.08	6.26	8.36
1927.....	....	....	....	....	5.61	5.77	6.29	6.31	8.18
1928.....	....	....	....	....	....	5.69	6.27	7.11	8.48
1929.....	....	....	....	....	....	....	5.70	6.29	8.00
1930.....	....	....	....	....	....	....	....	5.93	7.67
1931.....	....	....	....	....	....	....	....	....	7.99
Average..	6.44	6.39	6.16	5.97	5.66	5.76	6.18	6.28	8.12

NOTE.—This statement includes issues of $5,000,000 and over during period shown, except convertibles and issues with stock purchase warrants.

[fol. 4828]

EXHIBIT X-243—Continued

Year of Issues	1923	1924	1925	1926	1927	1928	1929	1930	1931
Ba Issues:									
1923	7.12	....	6.88	....	....	....	....	....	....
1924	....	6.56	6.89	7.35	6.81	6.73	6.41	7.89	13.01
1925	....	....	6.83	6.61	6.20	5.87	6.91	6.41	8.87
1926	....	....	....	6.14	6.08	6.27	6.66	6.72	9.55
1927	....	....	....	....	6.01	6.02	6.83	7.54	11.97
1928	....	....	....	....	....	5.72	6.47	7.02	13.30
1929	....	....	....	....	....	....	5.98	....	10.29
1930	....	....	....	....	....	....	....	....	8.37
1931	....	....	....	....	....	....	....	....	....
Average	7.12	6.56	6.88	6.36	6.18	6.06	6.81	7.34	11.48
B Issues:									
1923	....	....	....	....	....	....	....	....	....
1924	....	....	....	....	....	....	....	....	....
1925	....	....	....	....	....	....	....	7.46	31.10
1926	....	....	....	....	....	....	8.29	9.04	19.46
1927	....	....	....	....	....	....	....	....	....
1928	....	....	....	....	....	....	....	....	13.58
1929	....	....	....	....	....	....	....	....	....
1930	....	....	....	....	....	....	....	....	....
1931	....	....	....	....	....	....	....	....	....
Average	....	....	....	....	....	....	8.29	8.52	20.40
Industrials									
Aaa Issues:									
1923	....	....	5.54	4.17	....	....	....	....	....
1924	....	5.16	5.01	4.85	4.74	4.71	4.77	4.68	5.18
1925	....	....	5.59	4.97	4.84	4.86	4.91	4.84	5.04
1926	....	....	....	4.81	4.77	4.75	4.83	4.70	4.94
1927	....	....	....	....	4.66	4.64	4.91	4.54	5.08
1928	....	....	....	....	....	4.68	4.96	4.62	4.61
1929	....	....	....	....	....	....	....	....	....
1930	....	....	....	....	....	....	....	4.79	5.10
1931	....	....	....	....	....	....	....	....	....
Average	....	5.16	5.38	4.73	4.74	4.72	4.88	4.73	5.01

[fol. 4829]

Year of Issues	1923	1924	1925	1926	1927	1928	1929	1930	1931
Aa Issues:									
1923	6.18	5.67	5.52	5.36	5.30	....	....	....	....
1924	....	....	....	....	....	....	....	....	....
1925	....	....	5.50	5.25	5.06	....	....	....	....
1926	....	....	....	....	....	....	....	....	....
1927	....	....	....	....	5.06	4.99	5.14	4.79	5.04
1928	....	....	....	....	....	4.94	4.95	4.77	5.46
1929	....	....	....	....	....	....	....	....	....
1930	....	....	....	....	....	....	....	4.88	6.20
1931	....	....	....	....	....	....	....	....	5.47
Average	6.18	5.67	5.51	5.30	5.10	4.98	5.09	4.81	5.55
A Issues:									
1923	6.51	6.31	5.99	5.72	5.54	5.41	5.39	5.28	5.56
1924	....	5.77	5.92	5.69	5.48	5.35	5.79	5.34	6.39

NOTE.—This statement includes issues of $5,000,000 and over during period shown, except convertibles and issues with stock purchase warrants.

EXHIBIT X-243—Continued

Year of Issues	1923	1924	1925	1926	1927	1928	1929	1930	1931
1925	....	....	5.79	5.42	5.63	5.44	5.60	4.84	6.11
1926	....	....	....	5.69	5.36	5.37	5.49	....	....
1927	....	....	....	....	5.21	5.41	5.60	5.37	6.43
1928	....	....	....	....	....	5.44	5.70	....	....
1929	....	....	....	....	....	....	....	....	....
1930	....	....	....	....	....	....	....	5.05	6.57
1931	....	....	....	....	....	....	....	....	7.38
Average	6.51	6.25	5.92	5.63	5.38	5.41	5.61	5.25	6.43
Baa Issues:									
1923	7.06	6.82	6.50	6.18	5.91	6.10	6.47	6.44	9.18
1924	....	6.54	6.25	6.00	5.70	5.66	....	20.63	....
1925	....	....	6.20	6.16	5.84	5.82	5.83	5.73	8.36
1926	....	....	....	5.88	5.99	5.76	6.13	5.93	8.55
1927	....	....	....	....	5.56	5.88	6.15	5.97	8.16
1928	....	....	....	....	....	5.50	5.72	5.91	8.08
1929	....	....	....	....	....	....	....	5.37	7.05
1930	....	....	....	....	....	....	....	6.42	8.97
1931	....	....	....	....	....	....	....	....	7.81
Average	7.06	6.74	6.33	6.08	5.81	5.81	6.09	6.81	8.37
[fol. 4830]									
Ba Issues:									
1923	7.27	....	....	9.42	7.68	6.99	9.39	8.33	10.78
1924	....	6.55	7.51	7.53	7.74	6.81	10.28	....	8.04
1925	....	....	5.85	....	6.55	7.27	6.94	8.12	14.50
1926	....	....	....	6.36	6.40	6.77	7.64	7.82	13.31
1927	....	....	....	....	5.92	6.14	7.16	6.86	10.05
1928	....	....	....	....	....	6.28	7.23	6.84	8.79
1929	....	....	....	....	....	....	6.93	6.07	7.49
1930	....	....	....	....	....	....	....	6.42	10.52
1931	....	....	....	....	....	....	....	....	....
Average	7.27	6.55	7.18	7.57	6.65	6.52	7.77	7.34	11.03
B Issues:									
1923	....	9.59	8.61	7.14	8.70	9.57	10.66	17.45	28.10
1924	....	....	....	8.66	11.14	10.98	10.88	16.89	38.31
1925	....	....	....	....	....	....	....	....	....
1926	....	....	....	....	....	....	....	....	....
1927	....	....	....	....	....	7.31	20.71	7.49	14.35
1928	....	....	....	....	....	....	8.47	9.37	14.97
1929	....	....	....	....	....	....	....	....	....
1930	....	....	....	....	....	....	....	....	....
1931	....	....	....	....	....	....	....	....	....
Average	....	9.59	8.61	8.15	10.32	9.52	12.99	12.14	23.34

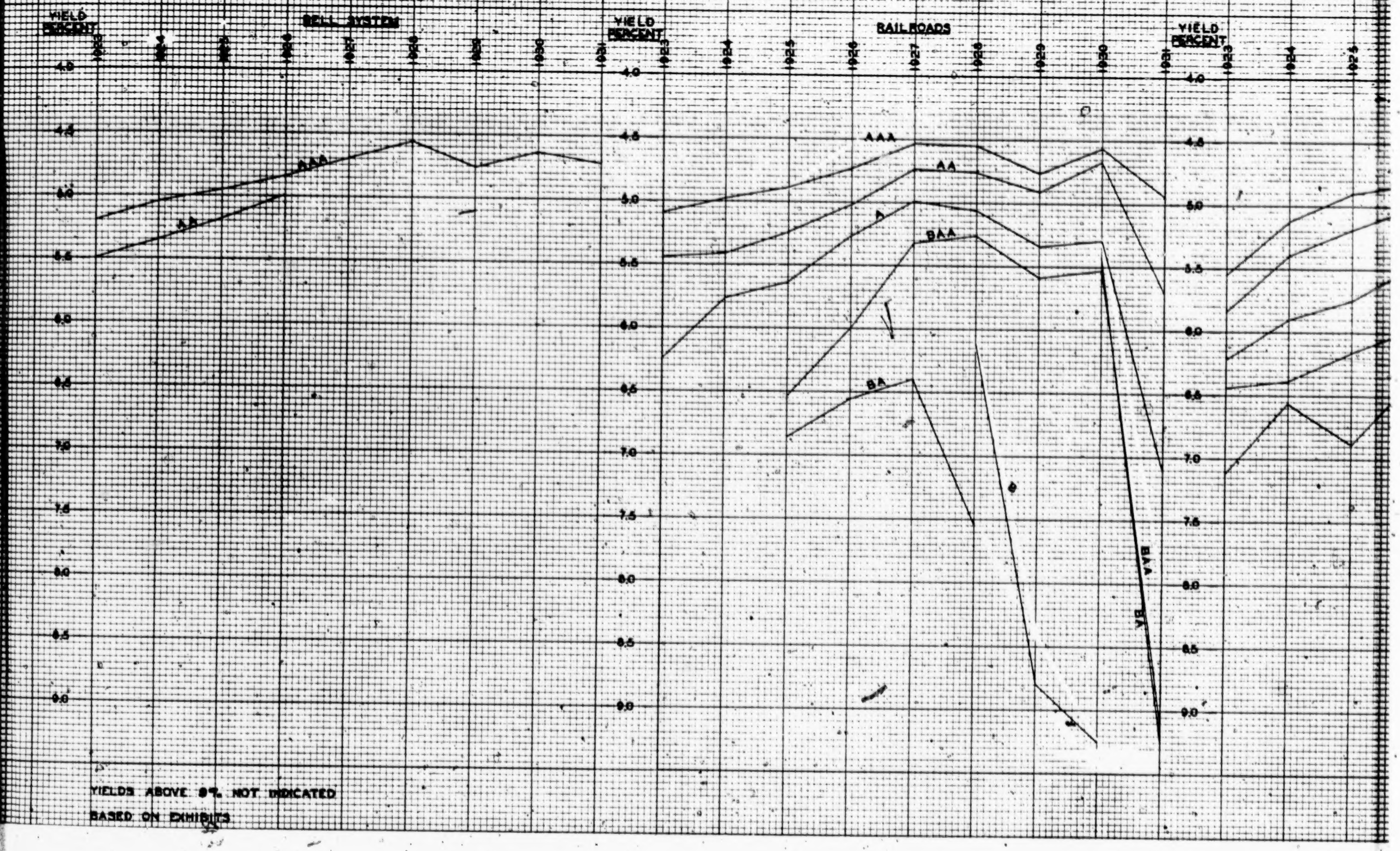
NOTE.—This statement includes issues of $5,000,000 and over during period shown, except convertibles and issues with stock purchase warrants.

(Here follow Exhibits X-244, X-245, and X-246, side folios 4831-4833)

EXHIBIT X-244

TREND OF AVERAGES OF YIELDS OF BONDS ISSUED IN YEA
EACH YEAR GROUPED BY RATINGS (MOODY'S) IN

(INVERTED SCALE)



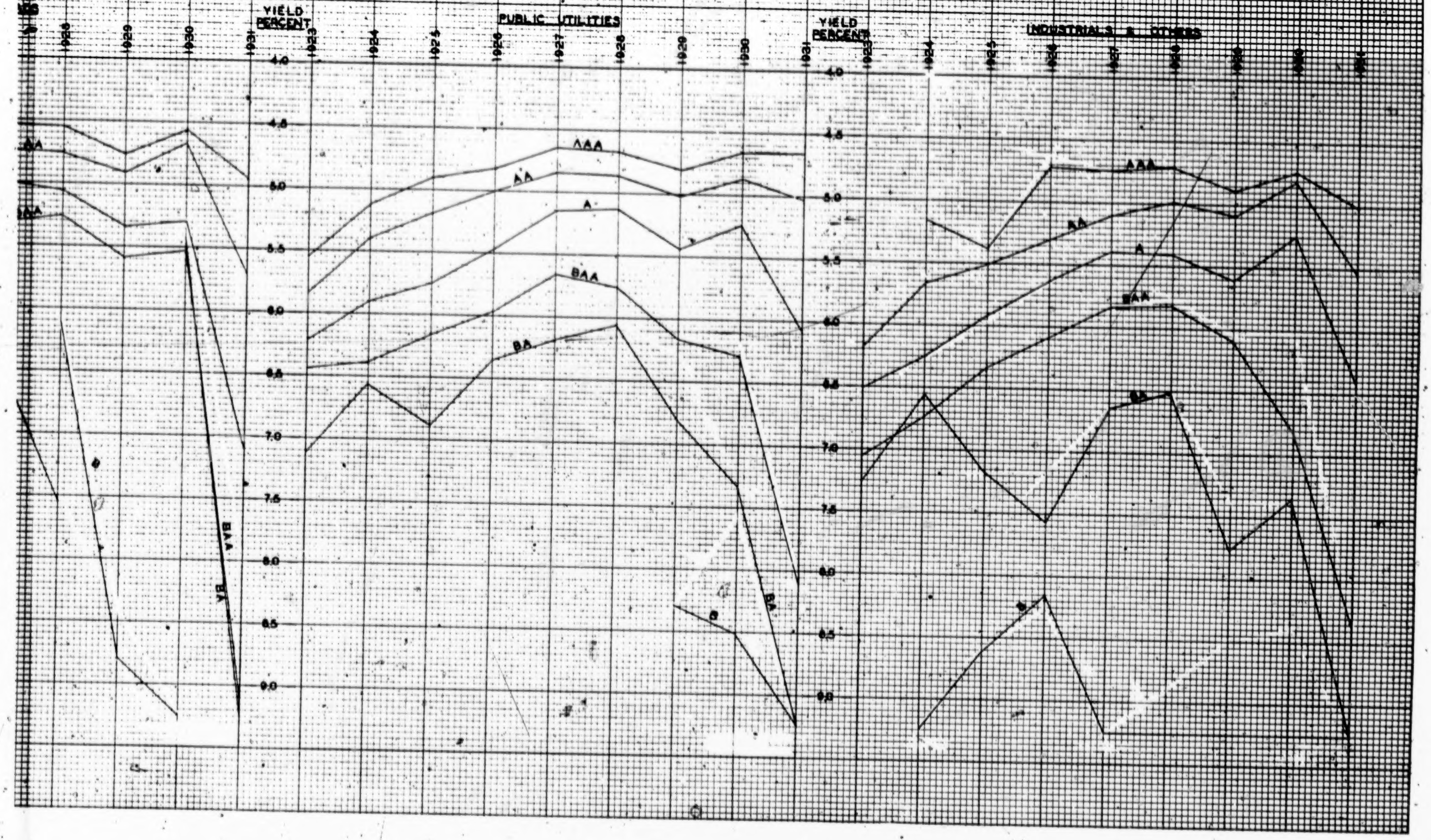
YIELDS ABOVE 9% NOT INDICATED

BASED ON EXHIBITS

EXHIBIT X-244

S OF YIELDS OF BONDS ISSUED IN YEARS 1923 TO 1931 RESOLD IN
R GROUPED BY RATINGS (MOODY'S) IN YEAR OF RESALE
(INVERTED SCALE)

[redacted]



[fol. 4832]

Exhibit X-245

Weighted Average Yield on Resale of Bonds, 1923 to 1931, Inclusive

Showing Weighted Average Yield on Each Class, Including Resales of All Bonds Issued from 1923 to Year of Resale

Year of Resale and Yield

Rating in Year of Resale	1923		1924		1925		1926		1927		1928		1929		1930		1931	
	Issues	Av. Yield	Issues	Av. Yield	Issues	Av. Yield	Issues	Av. Yield	Issues	Av. Yield	Issues	Av. Yield	Issues	Av. Yield	Issues	Av. Yield	Issues	Av. Yield
Aaa																		
Bell System	1	5.20	1	5.05	3	4.96	4	4.84	7	4.69	7	4.57	8	4.76	10	4.64	10	4.72
Railroads	6	5.09	17	4.97	22	4.88	24	4.73	32	4.53	39	4.55	42	4.77	37	4.56	33	4.93
Public Utilities	1	5.55	3	5.12	4	4.90	6	4.82	11	4.65	31	4.67	30	4,81	31	4.66	37	4.66
Industrials	..	....	1	5.16	3	5.38	6	4.73	7	4.74	7	4.72	8	4.88	10	4.73	10	5.01
Aa																		
Bell System	2	5.50	3	5.35	3	5.18	3	4.99	..	....	..	....	..	....	..	....	..	....
Railroads	5	5.44	11	5.42	18	5.24	21	5.02	23	4.73	25	4.76	25	4.92	37	4.67	43	5.72
Public Utilities	2	5.84	14	5.39	24	5.18	34	5.01	47	4.84	46	4.86	66	5.02	62	4.87	75	5.02
Industrials	2	6.18	1	5.67	2	5.51	2	5.30	6	5.10	5	4.98	4	5.09	4	4.81	4	5.55
A																		
Bell System	..	....	..	....	..	....	..	....	..	....	..	....	..	....	..	....	..	....
Railroads	1	6.25	7	5.77	9	5.64	14	5.27	17	4.99	22	5.07	25	5.33	20	5.29	18	7.10
Public Utilities	11	6.23	32	5.90	44	5.75	63	5.47	80	5.15	104	5.13	102	5.44	115	5.24	121	6.08
Industrials	10	6.51	10	6.25	12	5.92	11	5.63	14	5.38	20	5.41	18	5.61	10	5.25	10	6.43
Baa																		
Bell System	..	....	..	....	..	....	..	....	..	....	..	....	..	....	..	....	..	....
Railroads	..	....	..	....	1	6.53	1	6.00	8	5.32	5	5.27	4	5.58	24	5.53	20	9.39
Public Utilities	6	6.44	20	6.39	34	6.16	49	5.97	63	5.66	54	5.76	43	6.18	65	6.28	73	8.12
Industrials	6	7.06	10	6.74	19	6.33	29	6.08	35	5.81	35	5.81	33	6.09	38	6.81	34	8.37
Ba																		
Bell System	..	....	..	....	..	....	..	....	..	....	..	....	..	....	..	....	..	....
Railroads	..	....	..	....	1	6.86	3	6.56	4	6.40	4	7.55	..	....	9	5.39	16	15.66
Public Utilities	1	7.12	4	6.56	5	6.88	10	6.36	13	6.18	19	6.06	21	6.81	23	7.34	32	11.48
Industrials	1	7.27	1	6.55	5	7.17	8	7.57	12	6.65	17	6.52	15	7.77	20	7.34	26	11.03
B																		
Bell System	..	....	..	....	..	....	..	....	..	....	..	....	..	....	..	....	..	....
Railroads	..	....	..	....	..	....	..	....	..	....	3	6.10	6	8.78	4	13.84	..	....
Public Utilities	..	....	..	....	..	....	..	....	..	....	..	....	1	8.29	3	8.52	4	20.40
Industrials	..	....	1	9.59	1	8.61	3	8.15	3	10.32	6	9.52	7	12.99	7	12.14	7	23.34

[a] This statement includes all issues of $5,000,000 and over, except convertibles and bonds issued with stock purchase warrants.

EXHIBIT X-246

RANGE OF AVERAGES OF BOND YIELDS ON PUBLIC OFFERING PRICE GROUPED BY RATINGS (MOODY'S)

(INVERTED SCALE)

829 ISSUES 1923-1931 AGGREGATING $13,809,000,000

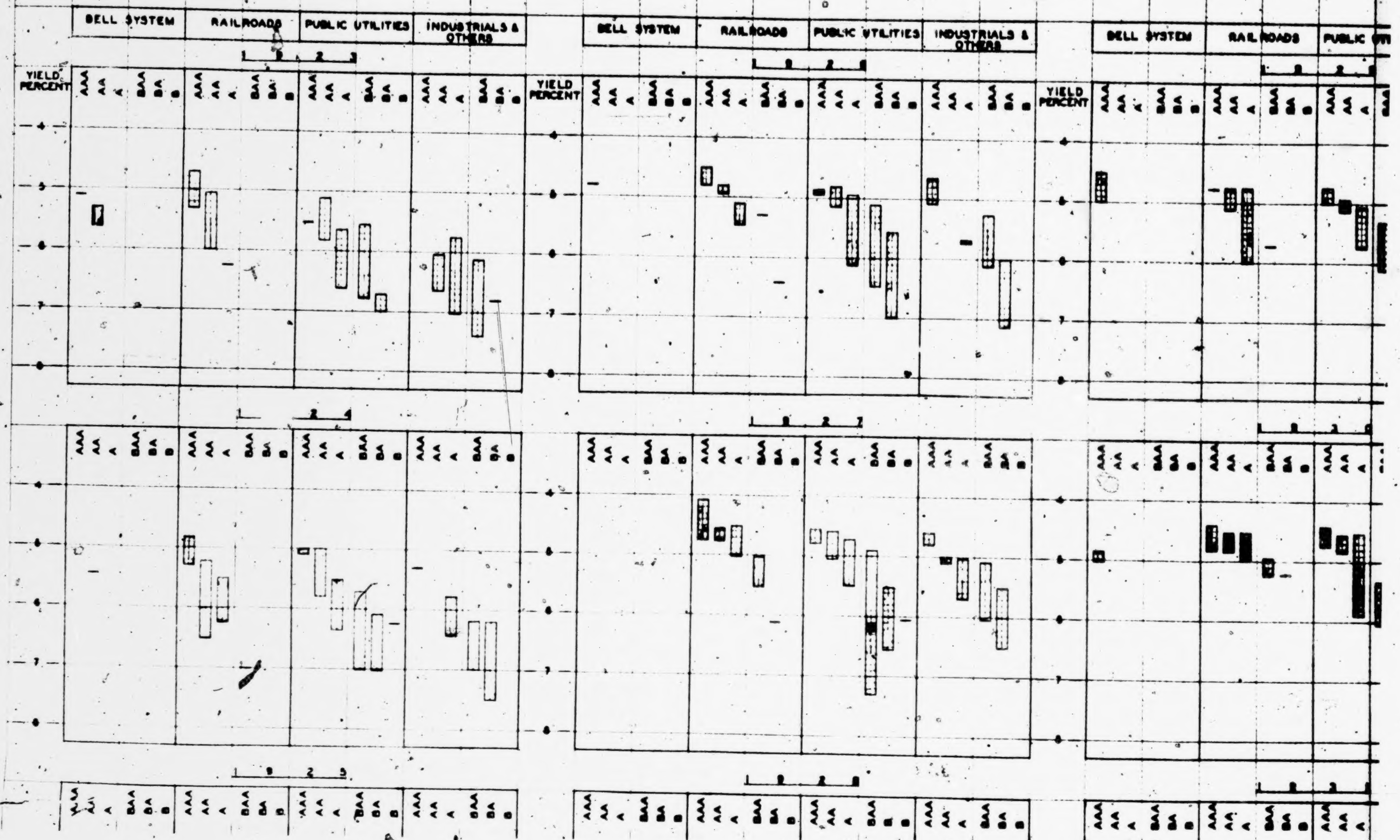
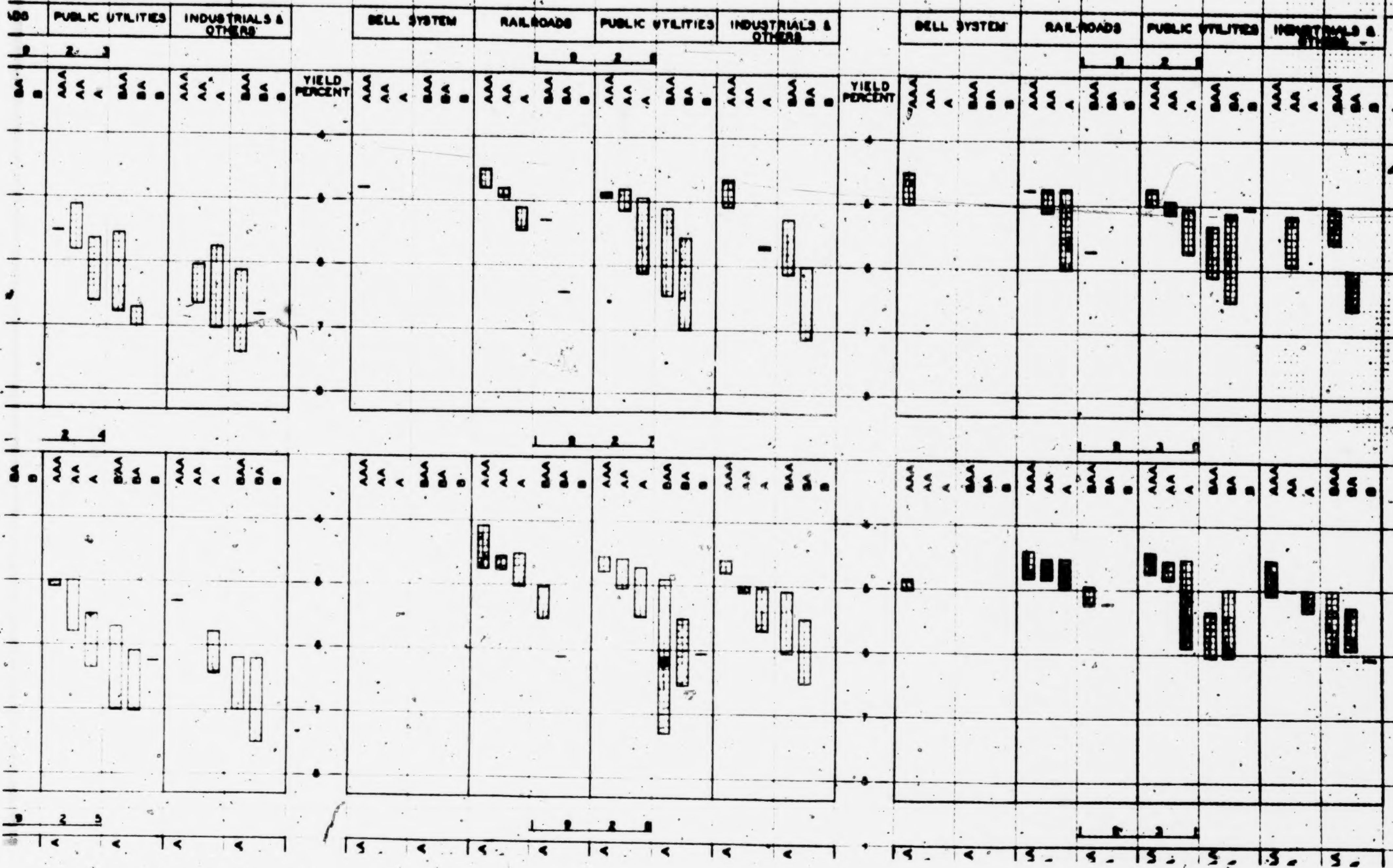


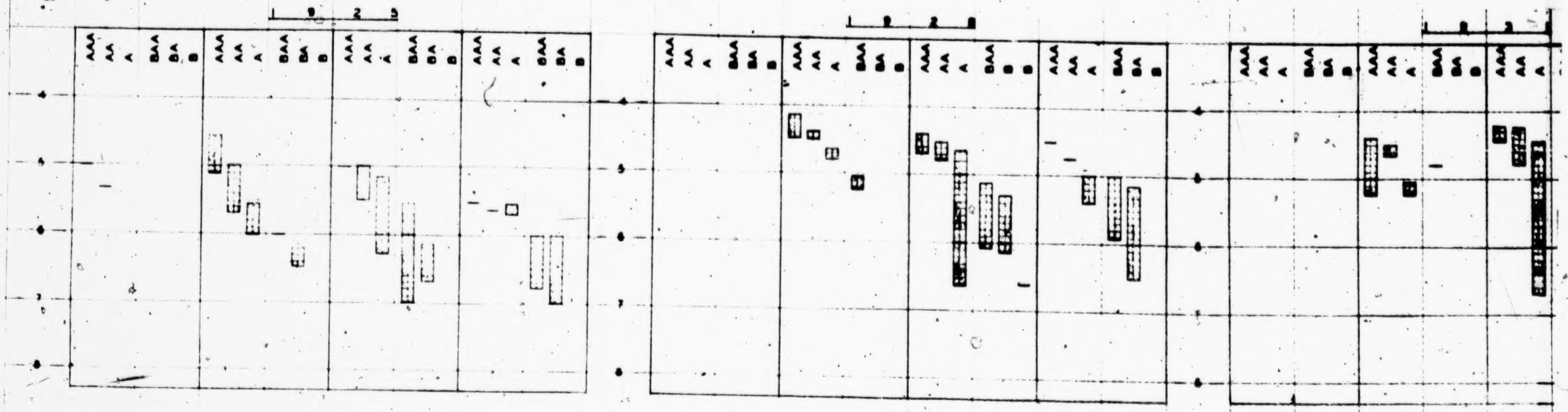
EXHIBIT X-246

RANGE OF AVERAGES OF BOND YIELDS ON PUBLIC OFFERING PRICE GROUPED BY RATINGS (MOODY'S)

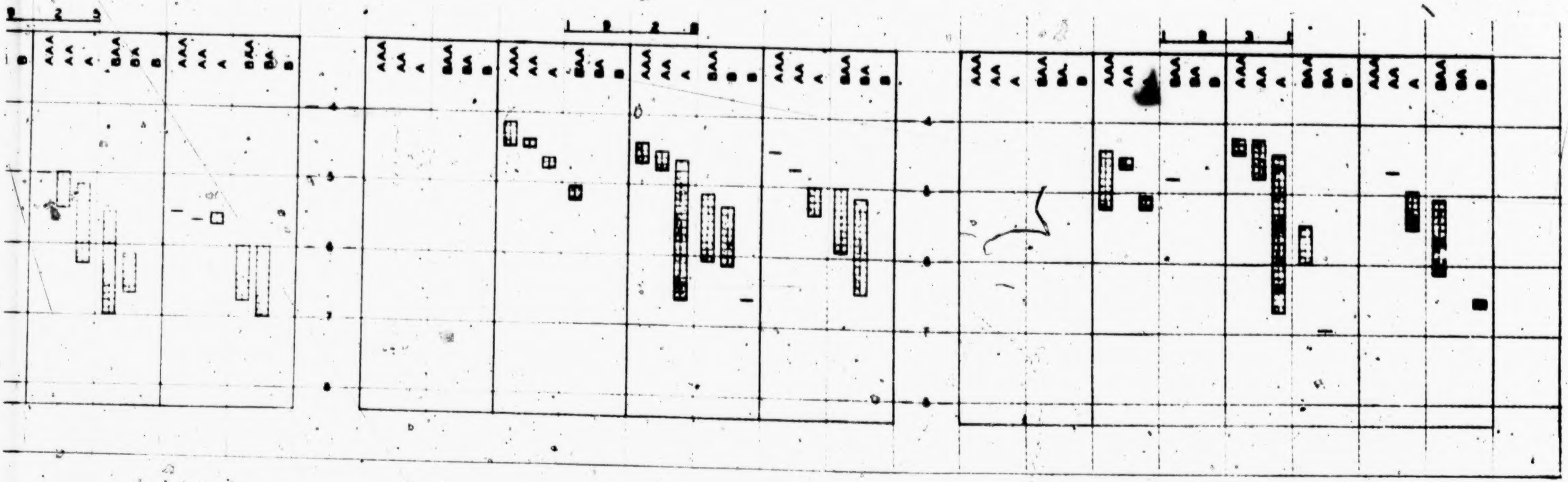
(INVERTED SCALE)

829 ISSUES 1923-1931 AGGREGATING $13,809,000,000





BASED ON EXHIBITS


AAA
AA
A
BAA
BA
B
1
2
3

[fol. 4834]

EXHIBIT X-247

Range of Averages of Yields on Public Offering Price of Bonds Grouped by Investment Ratings (Moody's), 1923 to 1931, Inclusive

Showing the Highest Average Yield on Any Issue Within Its Class and the Lowest Average Yield on Any Issue Within Its Class, based on Offering Price (Includes Convertible Issues and Issues with Stock Purchase Warrants)

	Issues Offered in 1923								Issues Offered in 1924							
	Bell System		Railroads		Public Utilities		Industrials and Others		Bell System		Railroads		Public Utilities		Industrials and Others	
Rating	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.
Aaa	5.11	5.11	5.32	4.70	5.52	5.52	....	....	5.44	5.44	5.30	4.82	5.10	5.00	5.29	5.29
Aa	5.63	5.31	6.00	5.05	5.82	5.12	6.64	6.04	....	....	6.51	5.23	5.79	5.00	....	....
A	....	....	6.25	6.25	6.62	5.63	7.02	5.75	....	....	6.25	5.50	6.35	5.52	6.44	5.77
Baa	....	....	....	....	6.78	5.55	7.39	6.13	....	....	7.00	7.00	7.02	5.71	6.99	6.18
Ba	....	....	....	....	7.00	6.71	6.78	6.78	....	....	4.92	4.92	7.03	6.08	7.50	6.20
B	....	....	....	....	....	....	....	....	....	....	....	....	6.24	6.24	....	....
	Issues Offered in 1925								Issues Offered in 1926							
Aaa	5.00	5.00	5.12	4.55	5.00	5.00	5.52	5.52	4.83	4.83	4.81	4.51	4.95	4.85	5.08	4.65
Aa	5.32	5.32	5.69	4.96	5.50	4.97	5.63	5.63	....	....	4.95	4.82	5.15	4.80	....	....
A	....	....	6.02	5.56	6.28	5.16	5.70	5.53	....	....	5.46	5.11	6.12	4.95	5.73	5.67
Baa	....	....	6.00	6.00	7.00	5.53	6.77	6.00	....	....	5.30	5.30	6.47	5.11	6.12	5.26
Ba	....	....	6.47	6.20	6.69	6.13	7.00	6.00	....	....	6.41	6.41	6.98	5.57	7.14	6.00
	Issues Offered in 1927								Issues Offered in 1928							
Aaa	....	....	4.76	4.07	4.78	4.55	4.81	4.60	....	....	4.50	4.14	4.69	4.40	4.50	4.50
Aa	....	....	4.76	4.55	5.06	4.58	5.12	5.00	....	....	4.51	4.38	4.80	4.52	4.76	4.76
A	....	....	5.03	4.51	5.50	4.71	5.70	5.04	....	....	4.80	4.65	6.54	4.64	5.40	4.99
Baa	....	....	5.53	5.01	7.30	4.90	6.04	5.09	....	....	5.23	5.04	6.07	5.12	5.93	5.00
Ba	....	....	6.11	6.11	6.55	5.61	6.50	5.50	....	....	....	....	6.15	5.30	6.50	5.14
B	....	....	....	....	6.07	6.07	....	....	....	....	....	....	6.61	6.61	....	....

Exhibit X-247—Continued

Rating	Issues Offered in 1923								Issues Offered in 1924							
	Bell System		Railroads		Public Utilities		Industrials and Others		Bell System		Rairoads		Public Utilities		Industrials and Others	
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.
			Issues Offered in 1929								Issues Offered in 1930					
Aaa	5.00	4.50	4.77	4.77	5.00	4.75	....	....	5.03	4.86	4.81	4.40	4.75	4.41	5.08	4.53
Aa	....	....	5.11	4.75	5.14	4.95	5.93	5.14	....	....	4.86	4.65	4.85	4.56	5.00	5.00
A	....	....	6.00	4.75	5.75	5.06	5.00	5.00	....	....	4.99	4.51	5.89	4.53	5.35	5.00
Baa	....	....	5.71	5.71	6.11	5.32	5.58	5.05	....	....	5.26	4.96	6.04	5.35	5.97	5.00
Ba	....	....	....	....	6.50	5.11	6.62	6.00	....	....	5.23	5.23	6.04	5.00	5.93	5.26
B	....	....	....	....	5.06	5.06	....	....	....	....	....	....	....	....	....	....
			Issues Offered in 1931													
Aaa	....	....	5.25	4.40	4.45	4.22	....	....								
Aa	....	....	4.67	4.59	4.78	4.23	4.68	4.68								
A	....	....	5.35	5.05	6.70	4.44	5.50	4.94								
Baa	....	....	4.80	4.80	6.00	5.46	6.13	5.07								
Ba	....	....	....	....	6.95	6.95	6.[illegible]	6.47								
B	....	....	....	....	....	....	....	....								

(Here follows Exhibits X-248, 249 and 250, side folios 4835-4840)

EXHIBIT A-248

RANGE OF AVERAGES OF HIGH AND LOW BOND YIELDS ON RESALE FROM DA
OF ISSUE TO 1931 GROUPED BY RATINGS MOODY'S, IN YEAR OF RESAI

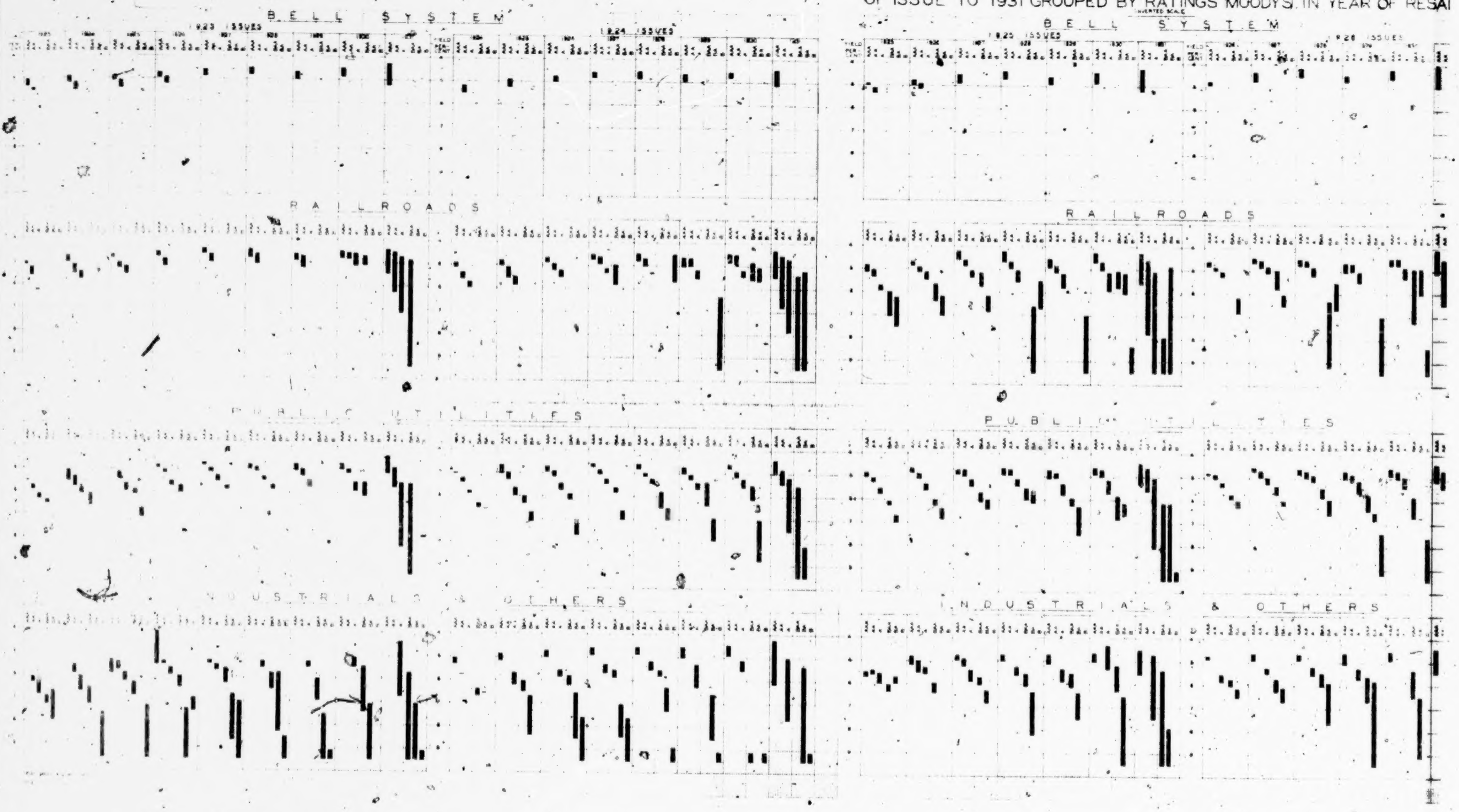
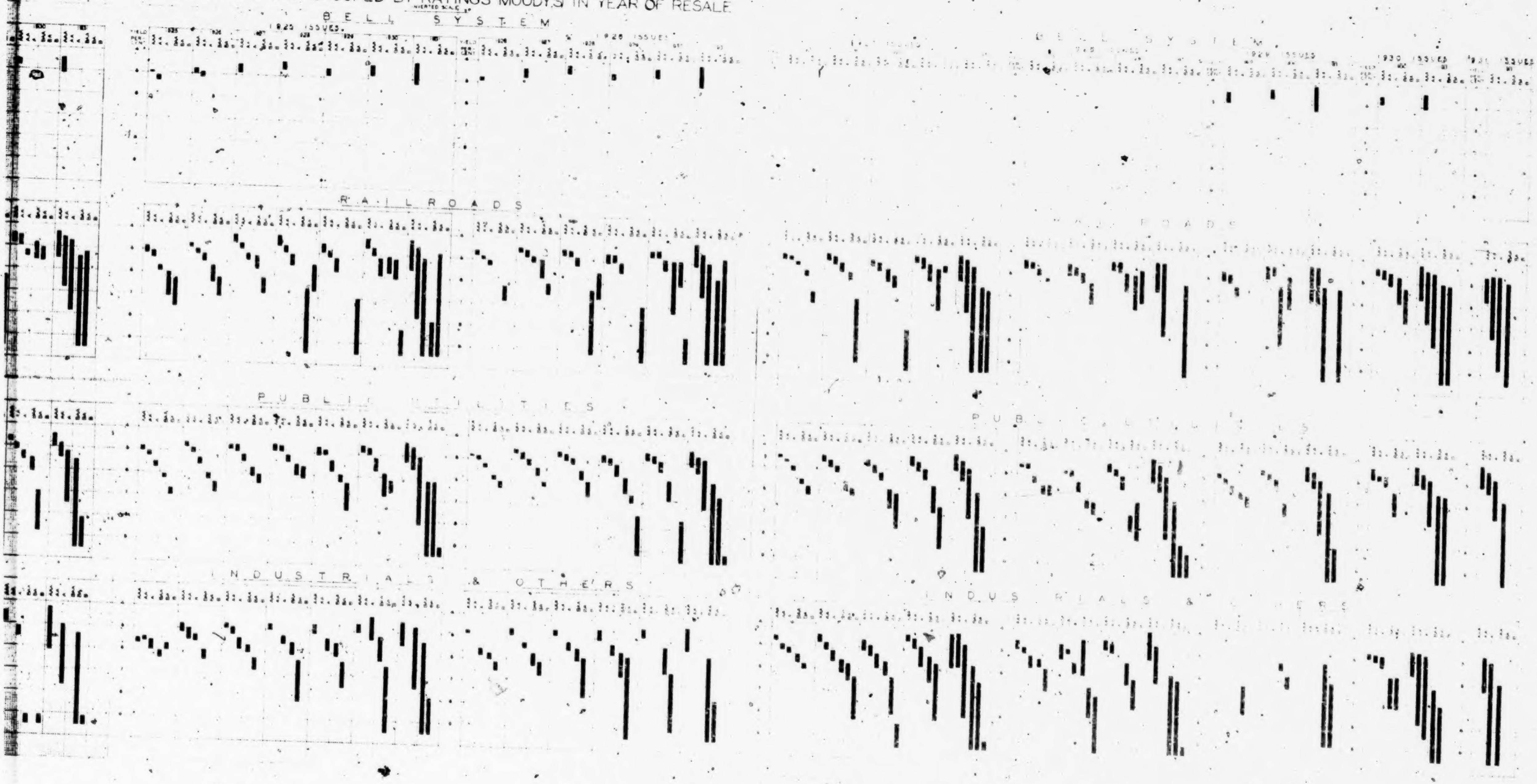


EXHIBIT X-248

RANGE OF AVERAGES OF HIGH AND LOW BOND YIELDS ON RESALE FROM DATE OF ISSUE TO 1931 GROUPED BY RATINGS MOODY'S IN YEAR OF RESALE



[fol. 4836]

Exhibit X-249

Range of Averages of High and Low Bond Yields on Resale Prices Grouped by Investment Rating (Moody's) In Year of Resale, 1923 to 1931, Inclusive

Showing an Average of the Highest Yields Established During the Year on All Issues in Each Class Compared with an Average of the Lowest Yields Established on All Issues in the Class

Bell System

Issues Offered In 1923

	Aaa		Aa		A		Baa		Ba		B	
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.
1923	5.35	5.05	5.56	5.44	....	....	....	....	....	....	....	....
1924	5.20	4.90	5.54	5.17	....	....	....	....	....	....	....	....
1925	5.09	4.83	5.41	5.07	....	....	....	....	....	....	....	....
1926	4.93	4.73	5.23	4.93	....	....	....	....	....	....	....	....
1927	....	....	4.87	4.58	....	....	....	....	....	....	....	....
1928	....	....	4.80	4.49	....	....	....	....	....	....	....	....
1929	....	....	4.99	4.66	....	....	....	....	....	....	....	....
1930	....	....	4.86	4.48	....	....	....	....	....	....	....	....
1931	....	....	5.22	4.28	....	....	....	....	....	....	....	....

Issues Offered In 1925

	Aaa		Aa		A		Baa		Ba		B	
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.
1925	4.99	4.91	5.35	5.12	....	....	....	....	....	....	....	....
1926	4.97	4.75	5.15	4.91	....	....	....	....	....	....	....	....
1927	4.88	4.50	....	....	....	....	....	....	....	....	....	....
1928	4.69	4.36	....	....	....	....	....	....	....	....	....	....
1929	4.92	4.58	....	....	....	....	....	....	....	....	....	....
1930	4.88	4.39	....	....	....	....	....	....	....	....	....	....
1931	5.21	4.26	....	....	....	....	....	....	....	....	....	....

Issues Offered In 1927
None

Issues Offered In 1929

	Aaa		Aa		A		Baa		Ba		B	
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.
1929	5.01	4.51	....	....	....	....	....	....	....	....	....	....
1930	4.78	4.39	....	....	....	....	....	....	....	....	....	....
1931	5.31	4.17	....	....	....	....	....	....	....	....	....	....

Issues Offered In 1931
None

Issues Offered In 1924

	Aaa		Aa		A		Baa		Ba	
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.
1924	....	....	5.48	5.18	....	....	....	....	....	....
1925	....	....	5.26	4.90	....	....	....	....	....	....
1926	....	....	4.98	4.75	....	....	....	....	....	....
1927	4.82	4.57	....	....	....	....	....	....	....	....
1928	4.85	4.52	....	....	....	....	....	....	....	....
1929	4.93	4.64	....	....	....	....	....	....	....	....
1930	4.79	4.55	....	....	....	....	....	....	....	....
1931	5.11	4.45	....	....	....	....	....	....	....	....

Issues Offered In 1926

	Aaa		Aa		A		Baa		Ba	
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.
1926	4.91	4.75	....	....	....	....	....	....	....	....
1927	4.76	4.36	....	....	....	....	....	....	....	....
1928	4.53	4.16	....	....	....	....	....	....	....	....
1929	4.74	4.47	....	....	....	....	....	....	....	....
1930	4.61	4.20	....	....	....	....	....	....	....	....
1931	4.97	4.01	....	....	....	....	....	....	....	....

Issues Offered In 1928
None

Issues Offered In 1930

	Aaa		Aa		A		Baa		Ba	
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.
1930	4.90	4.56	....	....	....	....	....	....	....	....
1931	5.09	4.40	....	....	....	....	....	....	....	....

Railroads

Issues Offered In 1923

	Aaa		Aa		A		Baa		Ba		B	
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.
1923	5.14	5.04	5.62	5.25	6.27	6.23	....	....	....	....	....	....
1924	5.07	4.73	5.55	5.14	5.77	5.45	....	....	....	....	....	....
1925	4.86	4.69	5.31	5.02	5.55	5.19	....	....	....	....	....	....
1926	4.77	4.57	5.18	4.86	....	....	....	....	....	....	....	....
1927	4.63	4.40	4.99	4.65	....	....	....	....	....	....	....	....
1928	4.77	4.39	5.07	4.62	....	....	....	....	....	....	....	....
1929	4.91	4.62	5.22	4.70	....	....	....	....	....	....	....	....
1930	4.80	4.49	4.83	4.55	5.12	4.58	5.09	4.69	....	....	....	....
1931	5.47	4.39	6.27	4.51	7.16	4.71	12.74	4.83	....	....	....	....

[fol. 4837]

Issues Offered In 1925

	Aaa		Aa		A		Baa		Ba		B	
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.
1925	5.15	4.81	5.36	5.06	5.94	5.71	7.06	6.00	7.50	6.22	....	....
1926	4.86	4.65	5.13	4.90	5.45	5.11	6.38	5.63	7.02	6.17	....	....
1927	4.58	4.21	4.87	4.61	5.35	5.06	5.76	5.16	6.85	6.15	....	....
1928	4.68	4.22	4.95	4.68	5.53	5.07	....	....	11.83	6.62	6.68	5.51
1929	4.9	4.54	5.15	4.84	5.80	5.18	....	....	....	....	10.62	6.99
1930	4.68	4.26	5.03	4.67	5.93	5.13	5.79	5.06	6.05	5.14	29.77	8.37
1931	5.63	4.28	7.80	4.56	10.33	5.09	16.62	7.93	16.37	4.86	....	....

Issues Offered In 1927

	Aaa		Aa		A		Baa		Ba		B	
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.
1927	4.60	4.34	4.63	4.46	4.84	4.69	5.36	5.09	6.55	6.06	....	....
1928	4.62	4.28	4.78	4.42	5.12	4.70	5.47	5.10	9.20	6.31	....	....
1929	4.84	4.52	5.03	4.66	5.53	4.93	5.77	5.22	....	....	10.63	7.64
1930	4.65	4.27	4.89	4.35	5.47	4.66	6.75	4.87	5.05	4.72	8.50	8.50
1931	5.40	4.22	6.80	4.41	10.47	4.73	14.17	5.64	17.93	5.80	....	....

Issues Offered In 1929

	Aaa		Aa		A		Baa		Ba		B	
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.
1929	5.09	4.66	5.18	4.78	6.02	5.54	....	....	....	....	....	....
1930	4.93	4.35	4.80	4.38	7.06	5.05	6.28	4.81	....	....	....	....

Issues Offered In 1924

	Aaa		Aa		A		Baa		Ba	
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.
1924	5.10	4.91	5.60	5.33	5.97	5.72	....	....	....	....
1925	5.02	4.77	5.55	5.09	5.85	5.49	....	....	....	....
1926	4.86	4.66	5.21	4.91	5.49	5.20	....	....	....	....
1927	4.73	4.49	4.92	4.62	5.31	5.13	5.81	4.97	....	....
1928	4.79	4.45	4.99	4.68	5.34	5.29	....	....	....	....
1929	5.03	4.64	5.01	4.65	5.55	5.18	....	....	....	....
1930	4.85	4.46	5.06	4.51	5.47	5.20	5.59	4.83	5.66	5.08
1931	5.48	4.32	6.79	4.55	7.83	4.70	11.22	5.41	27.72	5.21

Issues Offered In 1926

	Aaa		Aa		A		Baa		Ba	
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.
1926	4.81	4.59	4.99	4.86	5.28	5.07	....	....	6.85	6.18
1927	4.67	4.43	4.87	4.53	5.10	4.82	5.81	4.97	6.55	6.06
1928	4.77	4.47	4.79	4.54	5.22	4.82	....	....	9.20	6.31
1929	5.06	4.64	5.02	4.67	5.50	5.04	....	....	....	....
1930	4.75	4.47	4.76	4.43	5.33	4.83	7.28	4.88	6.03	4.88
1931	5.08	4.08	6.48	4.52	10.16	4.95	15.00	5.66	17.95	4.75

Issues Offered In 1928

	Aaa		Aa		A		Baa		Ba	
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.
1928	4.76	4.35	4.75	4.45	5.06	4.74	5.33	5.16	....	....
1929	5.04	4.50	5.04	4.61	5.34	4.88	6.33	5.36	....	....
1930	4.77	4.35	4.85	4.37	5.70	4.85	6.51	4.92	6.22	4.73
1931	5.66	4.31	7.67	4.36	....	....	....	....	27.50	5.36

Issues Offered In 1930

	Aaa		Aa		A		Baa		Ba	
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.
1930	4.67	4.30	4.82	4.30	5.13	4.55	5.92	4.73	6.81	[illegible]

Exhibit X-249

Range of Averages of High and Low Bond Yields on Resale Prices Grouped by Investment Rating (Moody's) In Year of Resale, 1923 to 1931, Inclusive

Showing an Average of the Highest Yields Established During the Year on All Issues in Each Class Compared with an Average of the Lowest Yields Established on All Issues in the Class

Bell System

Issues Offered In 1923

	Aaa		Aa		A		Baa		Ba		B	
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.
	5.35	5.05	5.56	5.44								
	5.20	4.90	5.54	5.17								
	5.09	4.83	5.41	5.07								
	4.93	4.73	5.23	4.93								
			4.87	4.58								
			4.80	4.49								
			4.99	4.66								
			4.86	4.48								
			5.22	4.28								

Issues Offered In 1924

	Aaa		Aa		A		Baa		Ba		B	
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L
1924			5.48	5.18								
1925			5.26	4.90								
1926			4.98	4.75								
1927	4.82	4.57										
1928	4.85	4.52										
1929	4.93	4.64										
1930	4.79	4.55										
1931	5.11	4.45										

Issues Offered In 1925

	Aaa H.	Aaa L.	Aa H.	Aa L.	A H.	A L.	Baa H.	Baa L.	Ba H.	Ba L.	B H.	B L.
	4.99	4.91	5.35	5.12								
	4.97	4.75	5.15	4.91								
	4.88	4.50										
	4.60	4.36										
	4.92	4.58										
	4.88	4.39										
	5.21	4.26										

Issues Offered In 1926

	Aaa H.	Aaa L.	Aa H.	Aa L.	A H.	A L.	Baa H.	Baa L.	Ba H.	Ba L.	B H.	B L.
1926	4.91	4.75										
1927	4.76	4.36										
1928	4.53	4.16										
1929	4.74	4.47										
1930	4.61	4.20										
1931	4.97	4.01										

Issues Offered In 1927

None

Issues Offered In 1928

None

Issues Offered In 1929

	Aaa H.	Aaa L.	Aa H.	Aa L.	A H.	A L.	Baa H.	Baa L.	Ba H.	Ba L.	B H.	B L.
	[illegible].01	4.51										
	4.78	4.39										
	5.31	4.17										

Issues Offered In 1930

	Aaa H.	Aaa L.	Aa H.	Aa L.	A H.	A L.	Baa H.	Baa L.	Ba H.	Ba L.	B H.	B L.
1930	4.90	4.56										
1931	5.09	4.40										

Issues Offered In 1931

None

Railroads

Issues Offered In 1923

	Aaa H.	Aaa L.	Aa H.	Aa L.	A H.	A L.	Baa H.	Baa L.	Ba H.	Ba L.	B H.	B L.
	5.14	5.04	5.62	5.25	6.27	6.23						
	5.07	4.73	5.55	5.14	5.77	5.45						
	4.86	4.69	5.31	5.02	5.55	5.19						
	4.77	4.57	5.18	4.86								
	4.63	4.40	4.99	4.65								
	4.77	4.39	5.07	4.62								
	4.91	4.62	5.22	4.70								
	4.80	4.49	4.83	4.55	5.12	4.58	5.09	4.69				
	5.47	4.39	6.27	4.51	7.16	4.71	12.74	4.83				

Issues Offered In 1924

	Aaa H.	Aaa L.	Aa H.	Aa L.	A H.	A L.	Baa H.	Baa L.	Ba H.	Ba L.	B H.	B L.
1924	5.10	4.01	5.60	5.33	5.97	5.72						
1925	5.02	4.77	5.55	5.09	5.85	5.49						
1926	4.86	4.66	5.21	4.91	5.49	5.20						
1927	4.73	4.49	4.92	4.62	5.31	5.13	5.81	4.97				
1928	4.79	4.45	4.99	4.68	5.34	5.29						
1929	5.03	4.64	5.01	4.65	5.55	5.18					6.69	5.51
1930	4.85	4.46	5.06	4.51	5.47	5.20	5.59	4.83	5.66	5.08	10.54	6.35
1931	5.48	4.32	6.79	4.55	7.83	4.70	11.22	5.41	27.72	5.21	8.33	8.33

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Issues Offered In 1925

	Aaa H.	Aaa L.	Aa H.	Aa L.	A H.	A L.	Baa H.	Baa L.	Ba H.	Ba L.	B H.	B L.
	5.15	4.81	5.36	5.06	5.94	5.71	7.06	6.00	7.50	6.22		
	4.86	4.65	5.13	4.90	5.45	5.11	6.38	5.63	7.02	6.17		
	4.58	4.21	4.87	4.61	5.35	5.06	5.76	5.16	6.85	6.15		
	4.68	4.22	4.95	4.68	5.53	5.07			11.83	6.62	6.68	5.51
	4.9	4.54	5.15	4.84	5.80	5.18					10.62	6.99
	4.68	4.26	5.03	4.67	5.93	5.13	5.79	5.06	6.05	5.14	29.77	8.37
	5.63	4.28	7.80	4.56	10.33	5.09	16.62	7.93	16.37	4.86		

Issues Offered In 1926

	Aaa H.	Aaa L.	Aa H.	Aa L.	A H.	A L.	Baa H.	Baa L.	Ba H.	Ba L.	B H.	B L.
1926	4.81	4.59	4.99	4.86	5.28	5.07			6.8[illegible]	6.18		
1927	4.67	4.43	4.87	4.53	5.10	4.82	5.81	4.97	6.55	6.06		
1928	4.77	4.47	4.79	4.54	5.22	4.82			9.20	6.31		
1929	5.06	4.64	5.02	4.67	5.50	5.04					6.69	5.51
1930	4.75	4.47	4.76	4.43	5.33	4.83	7.28	4.88	6.03	4.88	10.55	7.00
1931	5.08	4.08	6.48	4.52	10.16	4.95	15.00	5.66	17.95	4.75	29.00	8.35

Issues Offered In 1927

	Aaa H.	Aaa L.	Aa H.	Aa L.	A H.	A L.	Baa H.	Baa L.	Ba H.	Ba L.	B H.	B L.
	4.66	4.34	4.63	4.46	4.84	4.69	5.36	5.09	6.55	6.06		
	4.62	4.28	4.78	4.42	5.12	4.70	5.47	5.10	9.20	6.31		
	4.84	4.52	5.03	4.66	5.53	4.93	5.77	5.22			10.63	7.64
	4.65	4.27	4.89	4.35	5.47	4.66	6.75	4.87	5.05	4.72	8.50	8.50
	5.40	4.22	6.80	4.41	10.47	4.73	14.17	5.64	17.93	5.80		

Issues Offered In 1928

	Aaa H.	Aaa L.	Aa H.	Aa L.	A H.	A L.	Baa H.	Baa L.	Ba H.	Ba L.	B H.	B L.
1928	4.76	4.35	4.75	4.45	5.06	4.74	5.33	5.16				
1929	5.04	4.50	5.04	4.61	5.34	4.88	6.33	5.36				
1930	4.77	4.35	4.85	4.37	5.70	4.85	6.51	4.92	6.22	4.73		
1931	5.66	4.31	7.67	4.36					27.50	5.36		

Issues Offered In 1929

Issues Offered In 1930

1931	5.40	4.22	6.80	4.41	10.47	4.73	14.17	5.64	17.93	5.80	.....	.....

Issues Offered In 1929

1929	5.09	4.66	5.18	4.78	6.02	5.54	.....	.....	.....	.....	.....	.....
1930	4.93	4.35	4.80	4.38	7.96	5.25	6.28	4.81	.....	.....	.....	.....
1931	5.98	4.30	6.06	4.35	12.09	5.26	.....	.....	27.50	5.34	.....	.....

Issues Offered In 1931

1931	5.77	4.63	7.39	4.57	8.81	4.56	11.26	4.89	.....	.....	.....	.....

Public Utilities

Issues Offered In 1923

1923	5.55	5.55	5.91	5.76	6.33	6.13	6.52	6.37	7.12	7.12	.....	.....
1924	5.56	5.06	5.77	5.33	6.08	5.81	6.63	6.06	.....	.....	.....	.....
1925	5.02	5.00	5.43	5.11	5.94	5.62	6.10	5.88	7.08	6.68	.....	.....
1926	4.96	4.82	5.18	5.05	5.71	5.51	6.02	5.70	.....	.....	.....	.....
1927	4.82	4.69	5.11	4.94	5.49	5.24	5.84	5.68	.....	.....	.....	.....
1928	4.96	4.75	5.06	4.87	5.47	5.28	5.84	5.67	.....	.....	.....	.....
1929	5.02	4.72	5.25	4.96	5.72	5.46	.....	.....	.....	.....	.....	.....
1930	4.96	4.71	5.12	4.93	5.89	5.51	6.11	5.50	.....	.....	.....	.....
1931	5.12	4.37	5.71	4.86	8.28	5.51	9.68	5.55	.....	.....	.....	.....

1931	5.66	4.31	7.67	4.36	.....	.....	.....	.....	27.50	5.36	.....

Issues Offered In 1930

1930	4.67	4.30	4.82	4.39	5.13	4.55	5.92	4.73	6.81	5.23	.....
1931	5.70	4.17	6.76	4.42	7.84	4.51	13.54	5.01	31.16	5.08	.....

Issues Offered In 1924

1924	5.03	5.03	5.42	5.21	5.91	5.78	6.51	6.33	6.56	6.56	.....
1925	5.03	4.66	5.28	5.00	5.97	5.65	6.32	6.04	7.09	6.70	.....
1926	4.93	4.72	5.10	4.90	5.73	5.43	6.16	5.90	7.68	7.03	.....
1927	4.74	4.60	5.04	4.86	5.47	5.24	5.84	5.61	7.01	6.61	.....
1928	4.80	4.59	5.13	4.98	5.43	5.23	6.49	5.79	6.97	6.43	.....
1929	4.97	4.71	5.27	5.05	5.67	5.39	6.40	5.37	7.90	6.92	.....
1930	4.77	4.58	5.15	4.88	5.60	5.23	6.11	5.50	8.78	7.00	.....
1931	4.99	4.42	5.46	4.83	7.48	5.18	9.68	5.55	17.85	8.16	.....

5.40	4.22	6.80	4.41	10.47	4.73	14.17	5.64	17.93	5.80	.....	.....

Issues Offered In 1929

5.09	4.66	5.18	4.78	6.02	5.54	.....	.....	.....	.....	.....	.....
4.93	4.35	4.80	4.38	7.96	5.25	6.28	4.81	.....	.....	.....	.....
5.98	4.30	6.06	4.35	12.09	5.26	.....	.....	27.50	5.34	.....	.....

Issues Offered In 1931

5.77	4.63	7.39	4.57	8.81	4.56	11.26	4.89	.....	.....	.....	.....

Public Utilities

Issues Offered In 1923

5.55	5.55	5.91	5.76	6.33	6.13	6.52	6.37	7.12	7.12	.....	.....
5.56	5.06	5.77	5.33	6.08	5.81	6.63	6.06	.....	.....	.....	.....
5.02	5.00	5.43	5.11	5.94	5.62	6.10	5.88	7.08	6.68	.....	.....
4.96	4.82	5.18	5.05	5.71	5.51	6.02	5.70	.....	.....	.....	.....
4.82	4.69	5.11	4.94	5.49	5.24	5.84	5.68	.....	.....	.....	.....
4.96	4.75	5.06	4.87	5.47	5.28	5.84	5.67	.....	.....	.....	.....
5.02	4.72	5.25	4.96	5.72	5.46	.....	.....	.....	.....	.....	.....
4.96	4.71	5.12	4.93	5.89	5.51	6.11	5.50	.....	.....	.....	.....
5.12	4.37	5.71	4.86	8.28	5.51	9.68	5.55	.....	.....	.....	.....

1931	5.66	4.31	7.67	4.36	.....	.....	.....	.....	27.50	5.36	.....	.....

Issues Offered In 1930

1930	4.67	4.30	4.82	4.39	5.13	4.55	5.92	4.73	6.81	5.23	.....	.....
1931	5.70	4.17	6.76	4.42	7.84	4.51	13.54	5.01	31.16	5.08	.....	.....

Issues Offered In 1924

1924	5.03	5.03	5.42	5.21	5.91	5.78	6.51	6.33	6.56	6.56	.....	.....
1925	5.03	4.66	5.28	5.00	5.97	5.65	6.32	6.04	7.09	6.70	.....	.....
1926	4.93	4.72	5.10	4.90	5.73	5.43	6.16	5.90	7.68	7.03	.....	.....
1927	4.74	4.60	5.04	4.86	5.47	5.24	5.84	5.61	7.01	6.61	.....	.....
1928	4.80	4.59	5.13	4.98	5.43	5.23	6.49	5.79	6.97	6.43	.....	.....
1929	4.97	4.71	5.27	5.05	5.67	5.39	6.40	5.37	7.90	6.92	.....	.....
1930	4.77	4.58	5.15	4.88	5.60	5.23	6.11	5.50	8.78	7.00	.....	.....
1931	4.99	4.42	5.46	4.83	7.48	5.18	9.68	5.55	17.85	8.16	.....	.....

Exhibit X-249—Continued

Range of Averages of High and Low Bond Yields on Resale Prices Grouped by Investment Rating (Moody's). In Year of Resale, 1923 to 1931, Inclusive

Showing an Average of the Highest Yields Established During the Year on All Issues in Each Class Compared with an Average of the Lowest Yields Established on All Issues

[fol. 4838]

	Aaa		Aa		A		Baa		Ba		B	
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.
					Issues Offered In 1925							
1925	5.03	4.84	5.25	5.06	5.77	5.54	6.26	6.09	6.98	6.69	.....	.....
1926	4.83	4.61	5.09	4.88	5.60	5.32	6.27	5.98	6.84	6.39	.....	.....
1927	4.90	4.69	4.96	4.69	5.42	5.11	6.09	5.67	6.40	6.00	.....	.....
1928	4.91	4.65	4.93	4.69	5.40	5.11	6.00	5.50	6.15	5.61	.....	.....
1929	5.07	4.72	5.06	4.84	5.78	5.31	6.26	5.94	7.52	6.31	.....	.....
1930	4.88	4.59	4.99	4.68	5.72	5.14	6.84	5.83	6.68	6.15	7.46	7.46
1931	5.29	4.39	5.60	4.75	8.10	5.06	10.53	6.12	11.61	6.14	45.00	17.21
					Issues Offered In 1927							
1927	4.56	4.43	4.75	4.63	5.14	4.91	5.73	5.49	6.19	5.82		
1928	4.69	4.40	4.93	4.62	5.16	4.86	5.99	5.54	6.21	5.84	.....	.....
1929	4.85	4.54	5.14	4.78	5.47	5.11	6.71	5.88	7.62	6.05	.....	.....
1930	4.79	4.35	5.02	4.60	5.41	4.92	6.91	5.70	8.49	6.60	.....	.....
1931	4.96	4.21	5.42	4.50	7.09	4.84	10.44	5.91	16.52	7.43	.....	.....
					Issues Offered In 1929							
1929	4.93	4.71	5.21	4.91	5.67	5.28	5.87	5.53	6.23	5.73	.....	.....
1930	4.75	4.53	4.96	4.69	5.36	4.93	6.60	5.98	.....	.....	.....	.....
1931	4.99	4.33	5.31	4.56	7.41	4.95	10.54	5.47	12.61	7.97	.....	.....
					Issues Offered In 1931							
1931	5.09	4.09	5.35	4.36	6.51	4.72	10.26	5.72	.....	.....	.....	.....

	Aaa		Aa		A		Baa		
	H.	L.	H.	L.	H.	L.	H.	L.	
					Issues Offered In 1926				
1926	4.88	4.81	5.05	4.87	5.39	5.21	5.93	5.74	
1927	4.74	4.55	4.95	4.68	5.27	4.99	5.71	5.37	
1928	4.84	4.60	4.98	4.71	5.16	4.88	5.85	5.45	
1929	5.04	4.69	5.14	4.84	5.65	5.12	6.43	5.72	
1930	4.90	4.57	5.03	4.69	5.41	4.95	6.71	5.82	
1931	5.13	4.42	5.44	4.69	7.04	4.84	10.84	5.88	1
					Issues Offered In 1928				
1928	4.70	4.57	4.76	4.53	5.40	5.07	5.89	5.50	
1929	4.94	4.80	5.09	4.77	5.75	5.27	6.50	6.04	
1930	4.84	4.44	4.97	4.68	5.61	5.03	7.49	6.74	
1931	5.22	4.23	5.67	4.47	7.78	4.98	10.88	6.07	1
					Issues Offered In 1930				
1930	4.83	4.34	4.90	4.66	5.16	4.68	6.46	5.40	
1931	5.01	4.20	5.19	4.54	6.86	4.80	9.91	5.44	1

Industrials

	Aaa		Aa		A		Baa		Ba		B	
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.
					Issues Offered In 1923							
1923	.....	.....	6.30	6.06	6.82	6.21	7.26	6.87	7.93	6.62	.....	.....
1924	.....	.....	5.86	5.48	6.63	5.98	7.19	6.46	11.68	7.51	.....	.....
1925	5.86	5.23	5.70	5.34	6.19	5.79	6.79	6.21	10.01	7.21	.....	.....
1926	5.46	2.89	5.44	5.28	5.88	5.56	6.43	5.93	11.55	7.30	7.43	6.86
1927	.....	.....	5.38	5.23	5.67	5.42	6.23	5.59	8.67	6.70	10.38	7.02
1928	.....	.....	.....	.....	5.56	5.27	6.46	5.74	8.27	5.73	10.64	8.50
1929	.....	.....	.....	.....	5.52	5.26	6.95	5.99	11.25	7.53	11.09	10.23
1930	.....	.....	.....	.....	5.48	5.08	7.41	5.46	9.58	7.08	17.45	17.45
1931	.....	.....	.....	.....	6.75	4.38	12.64	5.71	14.50	7.06	29.50	26.70
[fol. 4839]					Issues Offered In 1925							
1925	5.70	5.49	5.59	5.42	5.97	5.55	6.35	6.05	6.00	5.71	.....	.....
1926	5.17	4.78	5.50	5.01	5.57	5.27	6.37	5.95	.....	.....	.....	.....
1927	4.95	4.74	5.23	4.89	5.88	5.39	5.97	5.71	6.83	6.28	.....	.....
1928	5.00	4.72	.....	.....	5.62	5.26	6.08	5.57	8.20	6.34	.....	.....
1929	5.12	4.71	.....	.....	5.87	5.33	6.14	5.53	7.52	6.37	.....	.....
1930	5.02	4.65	.....	.....	5.35	4.33	6.28	5.18	9.71	6.53	.....	.....
1931	5.57	4.51	.....	.....	7.50	4.72	11.32	5.40	21.13	7.88	.....	.....
					Issues Offered In 1927							
1927	4.77	4.55	5.19	4.94	5.34	5.08	5.74	5.39	6.03	5.81		
1928	4.81	4.47	5.15	4.83	5.64	5.19	6.17	5.59	6.52	5.77	8.26	6.34
1929	5.16	4.66	5.39	4.90	5.92	5.28	6.54	5.76	7.99	6.33	33.00	8.42
1930	4.70	4.38	5.02	4.57	5.82	4.93	6.54	5.39	8.05	5.66	7.49	7.49
1931	5.84	4.31	5.80	4.28	8.08	4.78	10.61	5.72	13.64	6.46	17.97	10.72
					Issues Offered In 1929							
1929	.....	.....	.....	.....	.....	.....	.....	.....	7.58	6.29		
1930	.....	.....	.....	.....	.....	.....	5.54	5.20	6.37	5.78	.....	.....
1931	.....	.....	.....	.....	.....	.....	8.92	5.19	8.93	6.06	.....	.....
					Issues Offered In 1931							
1931	.....	.....	6.27	4.67	9.83	4.94	9.72	5.90	.....	.....	.....	.....

	Aaa		Aa		A		Baa		
	H.	L.	H.	L.	H.	L.	H.	L.	
					Issues Offered In 1924				
1924	5.29	5.04	.....	.....	5.77	5.77	6.69	6.39	
1925	5.17	4.85	.....	.....	6.17	5.67	6.49	6.04	
1926	4.99	4.71	.....	.....	5.84	5.56	6.21	5.80	
1927	4.90	4.59	.....	.....	5.68	5.29	5.86	5.55	
1928	4.86	4.56	.....	.....	5.53	5.16	5.79	5.54	
1929	5.00	4.54	.....	.....	6.29	5.29	12.53	8.03	1
1930	4.90	4.47	.....	.....	5.57	5.11	24.18	17.07	2
1931	6.13	4.24	.....	.....	7.71	5.08	.....	.....	1
					Issues Offered In 1926				
1926	4.86	4.75	.....	.....	5.86	5.53	6.02	5.74	
1927	4.91	4.63	.....	.....	5.48	5.25	6.26	5.72	
1928	4.88	4.64	.....	.....	5.56	5.19	6.03	5.49	
1929	5.07	4.59	.....	.....	5.72	5.26	6.69	5.57	
1930	4.90	4.51	.....	.....	.....	.....	6.53	5.32	
1931	5.47	4.42	.....	.....	.....	.....	11.37	5.73	1
					Issues Offered In 1928				
1928	4.88	4.48	5.08	4.80	5.72	5.17	5.69	5.31	
1929	5.31	4.62	5.07	4.83	5.95	5.46	6.03	5.41	
1930	4.86	4.38	5.00	4.55	.....	.....	6.41	5.40	
1931	5.25	3.97	6.32	4.61	.....	.....	10,24	5.92	1
					Issues Offered In 1930				
1930	4.92	4.66	5.06	4.71	5.31	4.79	7.11	5.72	
1931	5.65	4.55	7.82	4.59	8.44	4.70	11.73	6.31	1

Note.—This statement includes all issues of $5,000,000 and over except convertibles and bonds issued with stock purchase warrants.

Exhibit X-249—Continued

Range of Averages of High and Low Bond Yields on Resale Prices Grouped by Investment Rating (Moody's) In Year of Resale, 1923 to 1931, Inclusive

ving an Average of the Highest Yields Established During the Year on All Issues in Each Class Compared with an Average of the Lowest Yields Established on All Issues in the Class

Aaa		Aa		A		Baa		Ba		B	
I.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.
Issues Offered In 1925											
03	4.84	5.25	5.06	5.77	5.54	6.26	6.09	6.98	6.69	.....	.....
83	4.61	5.09	4.88	5.60	5.32	6.27	5.98	6.84	6.39	.....	.....
90	4.69	4.96	4.69	5.42	5.11	6.09	5.67	6.40	6.00	.....	.....
91	4.65	4.93	4.69	5.40	5.11	6.00	5.50	6.15	5.61	.....	.....
07	4.72	5.06	4.84	5.78	5.31	6.26	5.94	7.52	6.31	.....	.....
88	4.59	4.99	4.68	5.72	5.14	6.84	5.83	6.68	6.15	7.46	7.46
29	4.39	5.60	4.75	8.10	5.06	10.53	6.12	11.61	6.14	45.00	17.21
Issues Offered In 1027											
56	4.43	4.75	4.63	5.14	4.91	5.73	5.49	6.19	5.82	.....	.....
69	4.40	4.93	4.62	5.16	4.86	5.99	5.54	6.21	5.84	.....	.....
85	4.54	5.14	4.78	5.47	5.11	6.71	5.88	7.62	6.05	.....	.....
79	4.35	5.02	4.60	5.41	4.92	6.91	5.70	8.49	6.60	.....	.....
96	4.21	5.42	4.50	7.09	4.84	10.44	5.91	16.52	7.43	.....	.....
Issues Offered In 1929											
)3	4.71	5.21	4.91	5.67	5.28	5.87	5.53	6.23	5.73	.....	.....
75	4.53	4.96	4.69	5.36	4.93	6.60	5.98	.....	.....	.....	.....
)9	4.33	5.31	4.56	7.41	4.95	10.54	5.47	12.61	7.97	.....	.....
Issues Offered In 1931											
)9	4.09	5.35	4.36	6.51	4.72	10.26	5.72	.....	.....	.....	.....

	Aaa		Aa		A		Baa		Ba		B	
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.
Issues Offered In 1926												
1926	4.88	4.81	5.05	4.87	5.39	5.21	5.93	5.74	6.28	6.01	.....	.....
1927	4.74	4.55	4.95	4.68	5.27	4.99	5.71	5.37	6.18	5.98	.....	.....
1928	4.84	4.60	4.98	4.71	5.16	4.88	5.85	5.45	6.60	5.94	.....	.....
1929	5.04	4.69	5.14	4.84	5.65	5.12	6.43	5.72	6.84	6.49	9.20	7.39
1930	4.90	4.57	5.03	4.69	5.41	4.95	6.71	5.82	6.73	6.70	10.49	7.60
1931	5.13	4.42	5.44	4.69	7.04	4.84	10.84	5.88	12.63	6.48	28.62	10.31
Issues Offered In 1928												
1928	4.70	4.57	4.76	4.53	5.40	5.07	5.89	5.50	5.97	5.48	.....	.....
1929	4.94	4.80	5.09	4.77	5.75	5.27	6.50	6.04	6.76	6.19	.....	.....
1930	4.84	4.44	4.97	4.68	5.61	5.03	7.49	6.74	7.89	6.14	.....	.....
1931	5.22	4.23	5.67	4.47	7.78	4.98	10.88	6.07	18.56	8.05	18.72	8.45
Issues Offered In 1930												
1930	4.83	4.34	4.90	4.66	5.16	4.68	6.46	5.40	.....	.....	.....	.....
1931	5.01	4.20	5.19	4.54	6.86	4.80	9.91	5.44	11.18	5.56	.....	.....

Industrials

Aaa		Aa		A		Baa		Ba		B	
I.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.
Issues Offered In 1923											
.	.....	6.30	6.06	6.82	6.21	7.26	6.87	7.93	6.62	.....	.....
..	.....	5.86	5.48	6.63	5.98	7.19	6.46	11.68	7.51	.....	.....
36	5.23	5.70	5.34	6.19	5.79	6.79	6.21	10.01	7.21	.....	.....
16	2.89	5.44	5.28	5.88	5.56	6.43	5.93	11.55	7.30	7.43	6.86
.	.....	5.38	5.23	5.67	5.42	6.23	5.59	8.67	6.70	10.38	7.02
.	.....	.....	.....	5.56	5.27	6.46	5.74	8.27	5.73	10.64	8.50
.	.....	.....	.....	5.52	5.26	6.95	5.99	11.25	7.53	11.09	10.23
.	.....	.....	.....	5.48	5.08	7.41	5.46	9.58	7.08	17.45	17.45
.	.....	.....	.....	6.75	4.38	12.64	5.71	14.50	7.06	29.50	26.70
Issues Offered In 1925											
0	5.49	5.59	5.42	5.97	5.55	6.35	6.05	6.00	5.71	.....	.....
7	4.78	5.50	5.01	5.57	5.27	6.37	5.95	.....	.....	.....	.....
5	4.74	5.23	4.89	5.88	5.39	5.97	5.71	6.83	6.28	.....	.....
0	4.72	.....	.....	5.62	5.26	6.08	5.57	8.20	6.34	.....	.....
2	4.71	.....	.....	5.87	5.33	6.14	5.53	7.52	6.37	.....	.....
2	4.65	.....	.....	5.35	4.33	6.28	5.18	9.71	6.53	.....	.....
7	4.51	.....	.....	7.50	4.72	11.32	5.40	21.13	7.88	.....	.....
Issues Offered In 1927											
7	4.55	5.19	4.94	5.34	5.08	5.74	5.39	6.03	5.81	.....	.....
1	4.47	5.15	4.83	5.64	5.19	6.17	5.59	6.52	5.77	8.26	6.34
6	4.66	5.39	4.90	5.92	5.28	6.54	5.76	7.99	6.33	33.00	8.42
0	4.38	5.02	4.57	5.82	4.93	6.54	5.39	8.05	5.66	7.49	7.49
4	4.31	5.80	4.28	8.08	4.78	10.61	5.72	13.64	6.46	17.97	10.72
Issues Offered In 1929											
.	.....	.....	.....	.....	.....	.....	.....	7.58	6.29	.....	.....
.	.....	.....	.....	.....	.....	5.54	5.20	6.37	5.78	.....	.....
.	.....	.....	.....	.....	.....	8.92	5.19	8.93	6.06	.....	.....
Issues Offered In 1931											
.	.....	6.27	4.67	9.83	4.94	9.72	5.90	.....	.....	.....	.....

	Aaa		Aa		A		Baa		Ba		B	
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.
Issues Offered In 1924												
1924	5.29	5.04	.....	.....	5.77	5.77	6.69	6.39	6.55	6.55	.....	.....
1925	5.17	4.85	.....	.....	6.17	5.67	6.49	6.04	8.35	6.68	.....	.....
1926	4.99	4.71	.....	.....	5.84	5.56	6.21	5.80	8.52	6.55	9.69	7.62
1927	4.90	4.59	.....	.....	5.68	5.29	5.86	5.55	8.44	7.04	13.54	8.73
1928	4.86	4.56	.....	.....	5.53	5.16	5.79	5.54	7.33	6.30	13.10	8.87
1929	5.00	4.54	.....	.....	6.29	5.29	12.53	8.03	18.13	10.28	.....	.....
1930	4.90	4.47	.....	.....	5.57	5.11	24.18	17.07	22.10	11.70	.....	.....
1931	6.13	4.24	.....	.....	7.71	5.08	.....	.....	10.70	5.38	49.84	26.79
Issues Offered In 1926												
1926	4.86	4.75	.....	.....	5.86	5.53	6.02	5.74	6.55	6.16	.....	.....
1927	4.91	4.63	.....	.....	5.48	5.25	6.26	5.72	6.71	6.10	.....	.....
1928	4.88	4.64	.....	.....	5.56	5.19	6.03	5.49	7.67	5.88	.....	.....
1929	5.07	4.59	.....	.....	5.72	5.26	6.69	5.57	9.48	5.80	.....	.....
1930	4.90	4.51	.....	.....	.....	.....	6.53	5.32	9.14	6.49	.....	.....
1931	5.47	4.42	.....	.....	.....	.....	11.37	5.73	18.94	7.68	.....	.....
Issues Offered In 1928												
1928	4.88	4.48	5.08	4.80	5.72	5.17	5.69	5.31	6.80	5.77	.....	.....
1929	5.31	4.62	5.07	4.83	5.95	5.46	6.03	5.41	7.91	6.55	9.99	6.95
1930	4.86	4.38	5.00	4.55	.....	.....	6.41	5.40	7.52	6.17	9.37	9.37
1931	5.25	3.97	6.32	4.61	.....	.....	10.24	5.92	11.43	6.16	17.55	12.40
Issues Offered In 1930												
1930	4.92	4.66	5.06	4.71	5.31	4.79	7.11	5.72	7.16	5.69	.....	.....
1931	5.65	4.55	7.82	4.59	8.44	4.70	11.73	6.21	14.04	6.99	.....	.....

nent includes all issues of $5,000,000 and over except convertibles and bonds issued with stock purchase warrants.

[fol. 4841]

EXHIBIT X-251

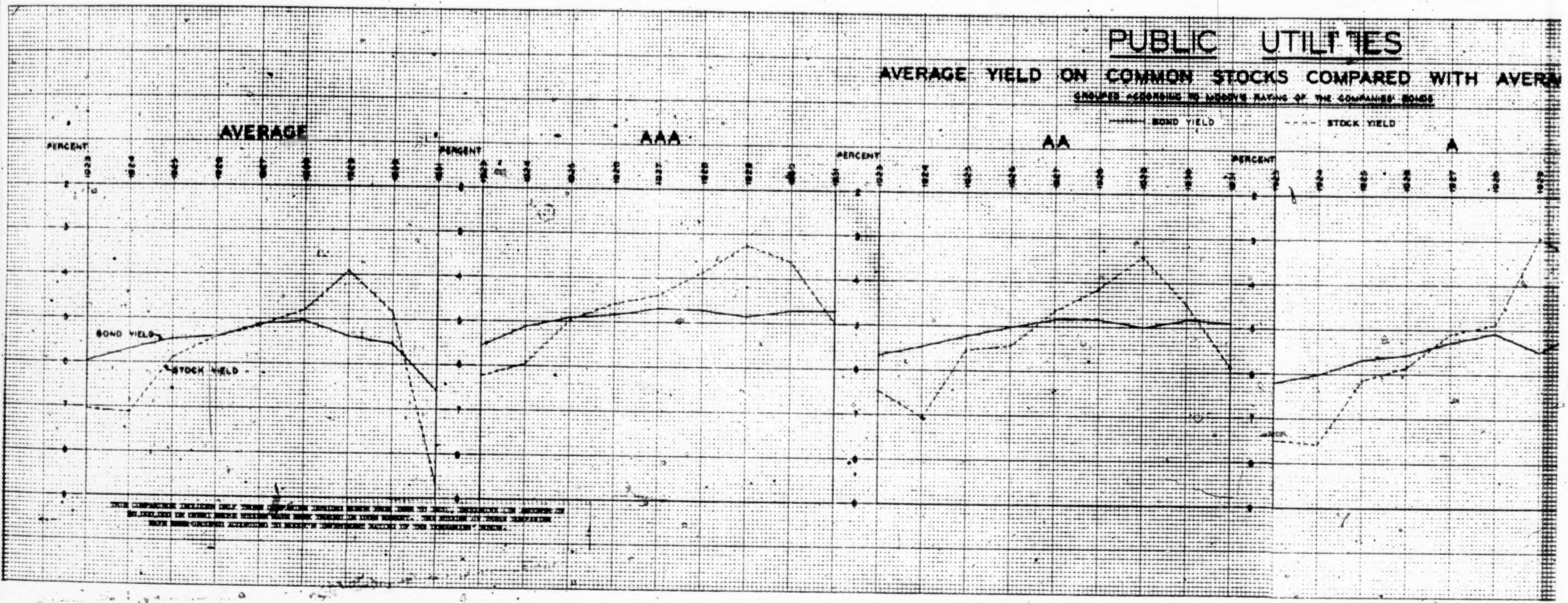
Public Utilities

Average Yield on Common Stocks Compared with Average Yield on Bonds

This comparison includes only those companies issuing bonds from 1923 to 1931, inclusive (in amounts of $5,000,000 or over) whose stocks have been traded in open market. The stocks of these companies have been grouped according to the investment rating of the companies' bonds.

		Stocks				Bonds				
Year	Rating	Number of Issues	Average Yield on High Price	Average Yield on Low Price	Average Yield	Number of Issues	Average Yield on High Price	Average Yield on Low Price	Average Yield	Excess of Average Stock Yield Over Average Bond Yield
1923	Aaa	1	6.11	6.35	6.23	1	5.55	5.55	5.55	.68
	Aa	1	6.25	6.67	6.46	1	5.52	5.82	5.67	.79
	A	3	6.95	8.05	7.50	3	6.02	6.39	6.20	1.30
	Total	5	6.64	7.43	7.04	5	5.82	6.11	5.97	1.07
1924	Aaa	2	5.13	6.79	5.96	3	5.04	5.20	5.12	.84
	Aa	5	6.44	7.68	7.06	8	5.31	5.60	5.46	1.60
	A	4	7.09	8.03	7.56	9	5.96	6.07	6.02	1.54
	Baa	1	5.72	10.23	7.98	1	6.26	6.54	6.40	1.58
	Total	12	6.38	7.86	7.12	21	5.60	5.79	5.70	1.42
1925	Aaa	2	4.57	5.33	4.96	3	4.77	5.02	4.90	.06
	Aa	7	4.84	6.23	5.54	13	5.10	5.34	5.22	.32
	A	10	5.10	7.18	6.14	14	5.55	5.82	5.69	.45
	Baa	3	5.31	7.65	6.48	3	5.93	6.06	5.99	.49
	Total	22	5.00	6.77	5.89	33	5.34	5.58	5.46	.43

EXHIBIT X-250



PUBLIC UTILITIES

AVERAGE YIELD ON COMMON STOCKS COMPARED WITH AVERA

GROUPED ACCORDING TO MOODY'S RATING OF THE COMPANIES' BONDS

EXHIBIT X-250

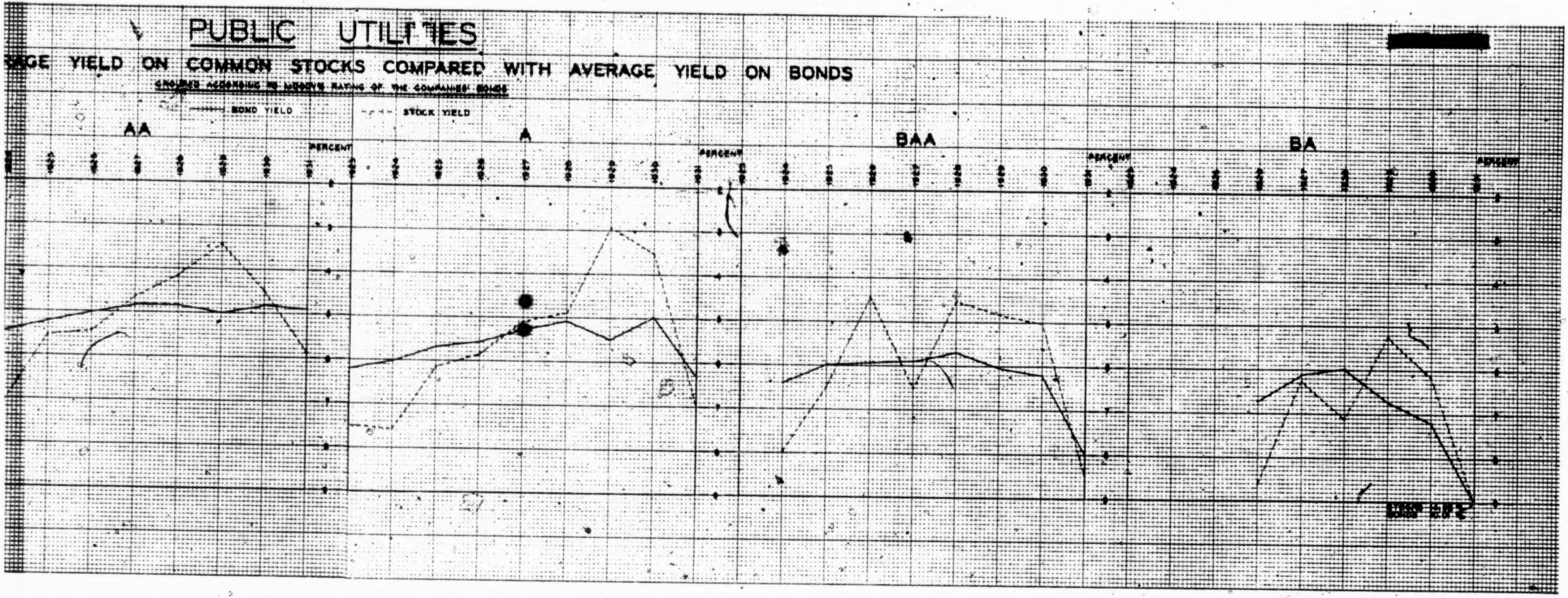


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EXHIBIT X-251—Continued

Year	Rating	Stocks: Number of Issues	Stocks: Average Yield on High Price	Stocks: Average Yield on Low Price	Stocks: Average Yield	Bonds: Number of Issues	Bonds: Average Yield on High Price	Bonds: Average Yield on Low Price	Bonds: Average Yield	Excess of Average Stock Yield Over Average Bond Yield*
1926	Aaa	2	4.41	4.75	4.58	5	4.77	4.91	4.84	− .26
	Aa	9	4.95	5.91	5.43	17	4.92	5.13	5.02	.41
	A	9	5.32	6.38	5.85	18	5.46	5.70	5.58	.27
	Baa	6	3.08	5.79	4.44	9	5.81	6.07	5.94	−1.50
	Ba	1	6.66	10.58	8.62	1	6.64	6.82	6.73	1.89
	Total	27	4.68	6.13	5.41	50	5.29	5.52	5.41	...
1927	Aaa	4	3.72	5.01	4.38	8	4.60	4.77	4.69	− .31
	Aa	8	4.03	5.28	4.65	20	4.76	4.93	4.84	− .19
	A	15	4.46	5.74	5.10	29	5.14	5.44	5.29	− .19
	Baa	4	5.54	7.49	6.52	4	5.70	6.10	5.90	.62
	Ba	2	5.03	7.48	6.25	1	5.95	6.30	6.12	.13
	Total	33	4.43	5.86	5.14	62	5.00	5.25	5.12	.02
1928	Aaa	8	3.23	4.52	3.87	18	4.59	4.83	4.71	− .84
	Aa	6	3.47	4.81	4.14	13	4.72	4.94	4.83	− .69
	A	15	4.24	5.53	4.89	25	4.93	5.23	5.08	− .19
	Baa	5	3.98	5.03	4.51	8	5.53	5.86	5.70	−1.19
	Ba	5	4.95	9.29	7.12	5	5.77	6.22	5.99	1.13
	Total	39	3.97	5.63	4.80	69	4.91	5.18	5.04	− .24

[fol. 4842]

1929	Aaa	8	2.13	4.37	3.25	18	4.70	5.00	4.85	−1.60
	Aaa	9	2.44	4.40	3.42	19	4.85	5.15	5.00	−1.58
	A	6	2.39	3.45	2.92	16	5.12	5.87	5.50	−2.57
	Baa	7	3.04	6.57	4.81	9	5.82	6.27	6.05	−1.24
	Ba	7	2.88	7.62	5.25	7	6.35	7.11	6.73	−1.48
	Total	37	2.56	5.26	3.91	69	5.15	5.62	5.39	−1.48
1930	Aaa	4	2.42	4.82	3.62	9	4.54	4.88	4.71	−1.09
	Aa	8	3.16	5.78	4.47	25	4.68	4.97	4.82	− .35
	A	6	2.56	4.44	3.51	10	4.81	5.13	4.97	−1.46
	Baa	14	3.52	6.51	5.02	21	5.60	6.79	6.20	−1.18
	Ba	10	3.57	8.73	6.15	11	6.14	8.25	7.20	−1.05
	Total	42	3.22	6.45	4.84	76	5.15	5.96	5.55	− .71
1931	Aaa	5	3.19	6.74	4.97	14	4.34	5.08	4.71	.26
	Aa	8	4.36	7.36	5.86	27	4.48	5.30	4.89	.97
	A	10	3.54	10.35	6.95	16	4.93	7.70	6.31	.64
	Baa	16	4.21	12.71	8.46	26	5.74	10.30	8.02	.44
	Ba	11	4.38	24.34	14.36	13	6.42	13.55	10.01	4.35
	Total	50	4.04	13.34	8.69	96	5.10	8.09	6.59	2.10

* Minus signs preceding figures given in this column indicates excess of average bond yields over average stock yields.

(Here follows Exhibit X-252, side folio 4843)

EXHIBIT X-252

SOURCE OF FUNDS INVESTED IN F

PUBLIC UTILITIES OPERATING IN CITY OF C

FIXED CAPITAL EQUALS 100 PERCENT

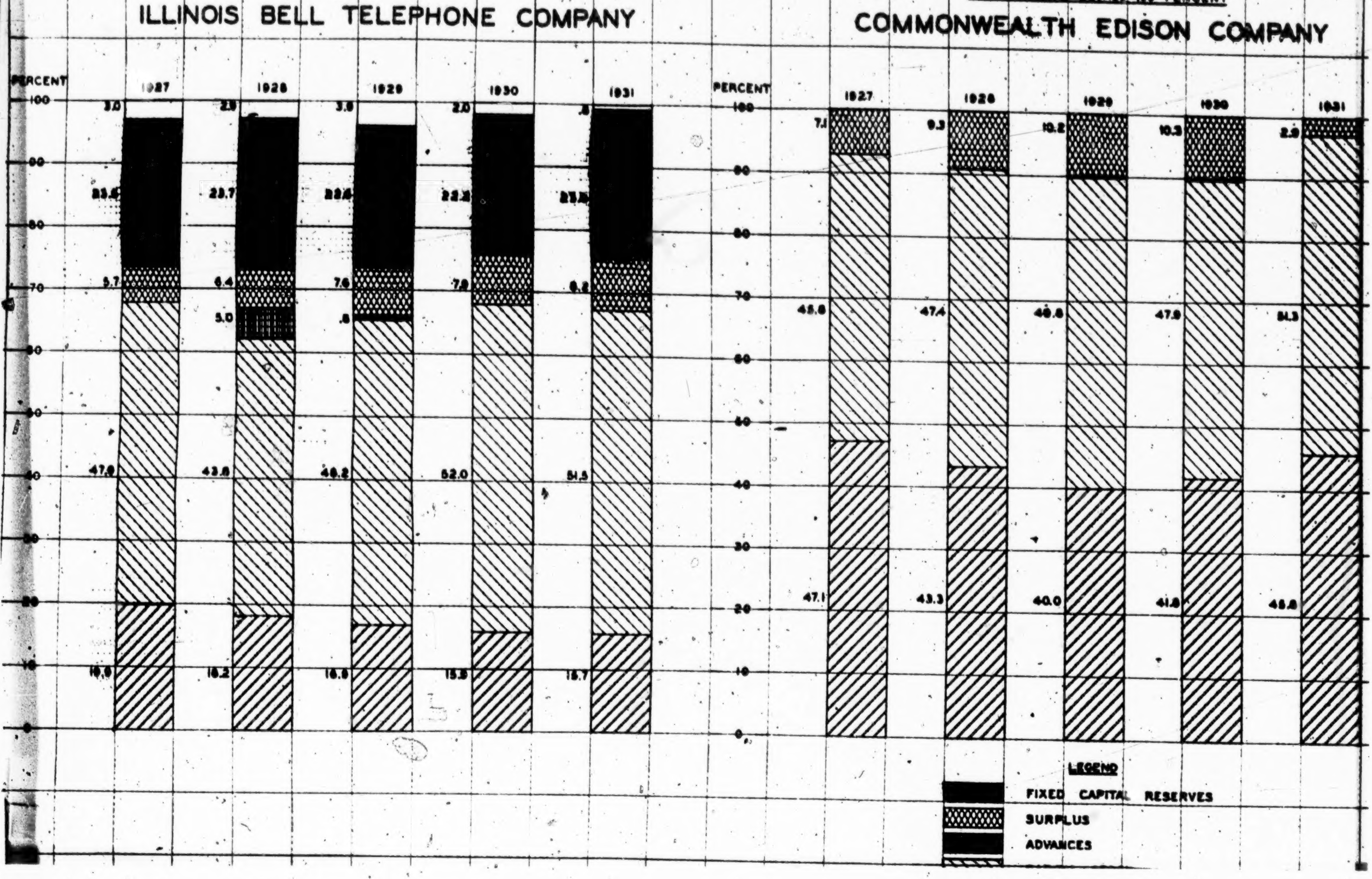

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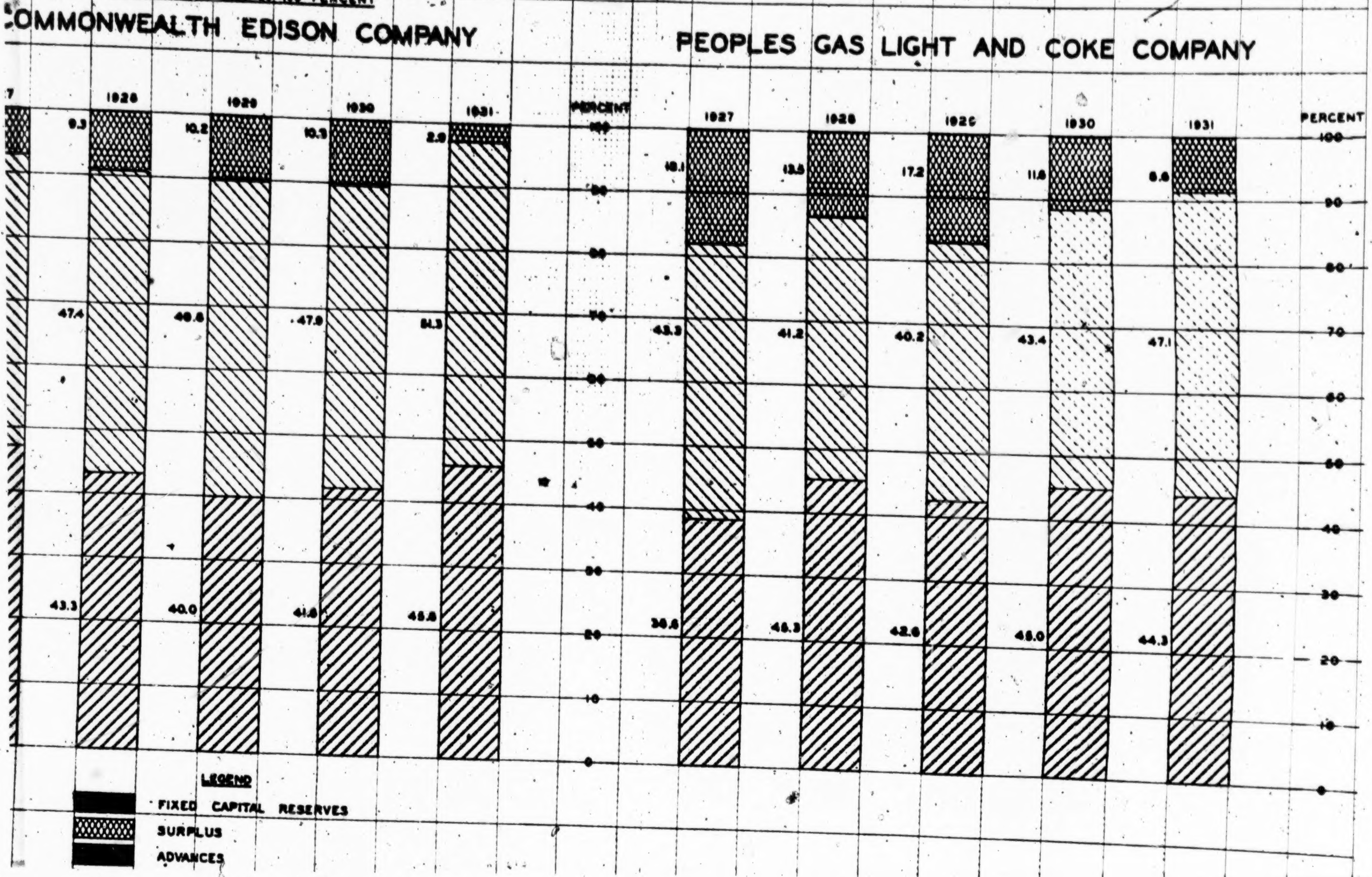
EXHIBIT X-252

Exhibit No. X VI ✓

UNDS INVESTED IN FIXED CAPITAL

UTILITIES OPERATING IN CITY OF CHICAGO

FIXED CAPITAL EQUALS 100 PERCENT



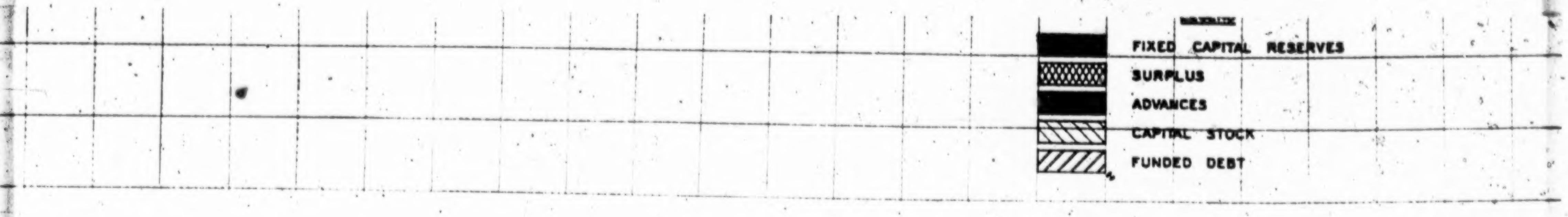

FIXED CAPITAL RESERVES
SURPLUS
ADVANCES
CAPITAL STOCK
FUNDED DEBT

EXHIBIT X-253

Source of Funds Invested in Fixed Capital

Illinois Bell Telephone Company

The following table shows the amount of fixed capital as of the close of each year and the funds used or available for investment therein; also the ratio of each class of funds to total fixed capital.

	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930	Year Ended Dec. 31, 1931
Fixed Capital	$229,437,632	$251,082,140	$269,611,218	$288,385,068	$291,263,558
Funds Available:					
Funded Debt	45.625.229	45,711,395	45,709,361	45,833,026	45,815,529
Capital Stock	110.004.168	110.004.168	130,037,668	150,004,168	150,004,168
Sub-Total	155.629.397	155.715.563	175,747,029	195,837,194	195,819,697
Advances	....	12.400.000	2,200,000	....	....
		168.115.563	177,947,029		
Surplus	12.979.812	16,150,654	20,364,126	22,907,655	23,767.381
	168.609.209	184.266.217	198.311.155	218.744.849	219.587.078
Capital Reserves	53.982.291	59,479.040	60,798,791	63.966.749	69,242.667
Total	222,591.500	243.745.257	259.109.946	282,711.598	288.829.745

Ratio to Fixed Capital

	%	%	%	%	%
Funded Debt	19.89	18.21	16.95	15.89	15.73
Capital Stock	47.94	43.81	48.23	52.02	51.50
Sub-Total	67.83	62.02	65.18	67.91	67.23
Advances	....	4.94	.82	....	....
		66.96	66.00		
Surplus	5.66	6.43	7.55	7.94	8.16

Exhibit X-253—Continued

Source of Funds Invested in Fixed Capital

Illinois Bell Telephone Company

The following table shows the amount of fixed capital as of the close of each year and the funds used or available for investment therein; also the ratio of each class of funds to total fixed capital.

	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930	Year Ended Dec. 31, 1931
	%	%	%	%	%
	73.49	73.39	73.55	75.85	75.39
Capital Reserves	23.53	23.69	22.55	22.18	23.77
Total	97.02	97.08	96.10	98.03	99.16

The proceeds of bonds, capital stock, advances, surplus and capital reserves were exhausted during each year, leaving a balance of fixed capital requirements supplied from other sources.

Fixed Capital from other sources	6.846.132	7,336,883	10,501,272	5,673,470	2,433,813

Ratio to Fixed Capital

	%	%	%	%	%
Fixed Capital from other sources	2.98	2.92	3.90	1.97	.84

[fol. 4845]

Fixed Capital	$242,430,263	$264,487,647	$286,736,277	$302,137,487	$309,856,376
Funds Available:					
Funded Debt	114.225.758	114.460.750	114.692,710	126,212.140	141,852,990
Capital Stock	111.088.000	125.516.800	142,792,438	144,735,888	158,982,622
Sub-Total	225.313.758	239.977.550	257.485.148	270,948.028	300,835,612
Surplus	28.866.193	35.143.065	40,794,815	46,031,880	49,903,398
	254.179.951	275.120.615	298.279.963	316,979,908	350.739.010
Capital Reserves	35.110.874	40.213.507	44.873.569	47,389,487	49,814,787
Total	289.290.825	315.334.122	343.153.532	364.369.395	400,553,797

Ratio to Fixed Capital

	%	%	%	%	%
Funded Debt	47.12	43.28	40.00	41.77	45.78
Capital Stock	45.82	47.46	49.80	47.90	51.31
Sub-Total	92.94	90.74	89.80	89.67	97.09
Surplus	11.91	13.28	14.23	15.24	16.10
	104.85	104.02	104.03	104.91	113.19
Capital Reserves	14.48	15.20	15.65	15.68	16.08
Total	119.33	119.22	119.68	120.59	129.27

If, for the purposes of comparison, it be assumed that after exhausting proceeds of bonds and stock the company employed its surplus moneys to complete its requirements for fixed capital, the following may be considered as showing the portion so used and the balance not required for this purpose.

Surplus Invested in Fixed Capital	17,116,505	24,510,097	29,251,129	31,189,459	9,020,764
Balance of Surplus Not Invested	11,749,688	10,632,968	11,543,686	14,842,421	40,882,634
Total Surplus (as above)	28,866,193	35,143,065	40,794,815	46,031,880	49,903,398

Ratio to Fixed Capital of Amounts Shown Above

	%	%	%	%	%
Surplus Invested in Fixed Capital	7.06	9.26	10.20	10.33	2.91
Balance of Surplus Not Invested	4.85	4.02	4.03	4.91	13.19
Total Surplus (as above)	11.91	13.28	14.23	15.24	16.10

[fol. 4846]

Fixed Capital	$118,362,414	$137,136,641	$141,324,983	$144,449,952	$146,824,593
Funds Available:					
Funded Debt	45,759,464	62,094,971	60,141,605	64,981,260	65,016,799
Capital Stock	51,210,000	56,497,700	56,876,700	62,780,400	69,149,300
Sub-Total	96,969,464	118,592,671	117,018,305	127,761,660	134,166,099

Exhibit X-253—Continued

Source of Funds Invested in Fixed Capital

Commonwealth Edison Company

The following table shows the amount of fixed capital as of the close of each year and the funds used or available for investment therein; also the ratio of each class of funds to total fixed capital.

	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930	Year Ended Dec. 31, 1931
Surplus	22,599,998	23,399,756	24,995,994	26,689,263	29,480,426
Sub-Total	119,569,462	141,992,427	142,014,299	154,450,923	163,645,525

Peoples Gas Light and Coke Company

Capital Reserves	14,410,166	13,935,956	15,082,305	16,209,153	17,806,317
Total	133,979,628	155,928,383	157,096,604	170,660,076	181,452,842

Ratio to Fixed Capital

	%	%	%	%	%
Funded Debt	38.66	45.28	42.56	44.99	44.28
Capital Stock	43.27	41.20	40.26	43.46	47.10
Sub-Total	81.93	86.48	82.82	88.45	91.38
Surplus	19.09	17.06	17.69	18.48	20.08
Sub-Total	101.02	103.54	100.51	106.93	111.46
Capital Reserves	12.18	10.17	10.67	11.22	12.13
Total	113.20	113.71	111.18	118.15	123.59

If, for the purposes of comparison, it be assumed that after exhausting proceeds of bonds and stock the company employed its surplus moneys to complete its requirements for fixed capital, the following may be considered as showing the portion so used and the balance not required for this purpose.

Surplus Invested in Fixed Capital	21,392,950	18,543,970	24,306,678	16,688,292	12,659,494
Balance of Surplus Not Invested	1,207,048	4,855,786	689,316	10,000,971	16,820,932
Total Surplus (as above)	22,599,998	23,399,756	24,995,994	26,689,263	29,480,426

Ratio of Fixed Capital of Amounts Shown Above

	%	%	%	%	%
Surplus Invested in Fixed Capital	18.07	13.52	17.18	11.55	8.62
Balance of Surplus Not Invested	1.02	3.54	.51	6.93	11.46
Total Surplus (as above)	19.09	17.06	17.69	18.48	20.08

(Here follow Exhibits X-254 and X-255, side folios 4847 and 4848)

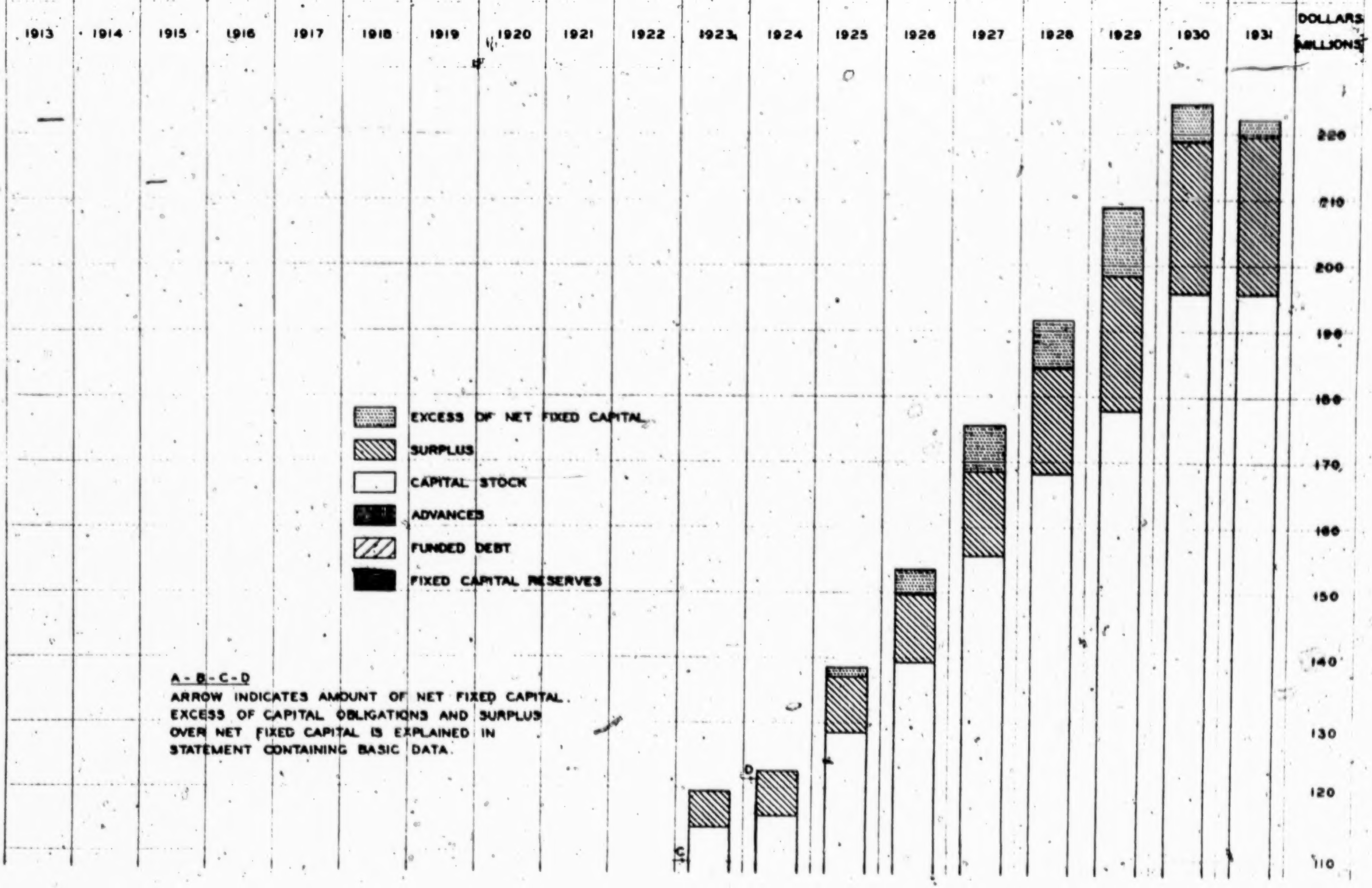
EXHIBIT X-254.

ILLINOIS BELL TELEPHONE COMPANY.

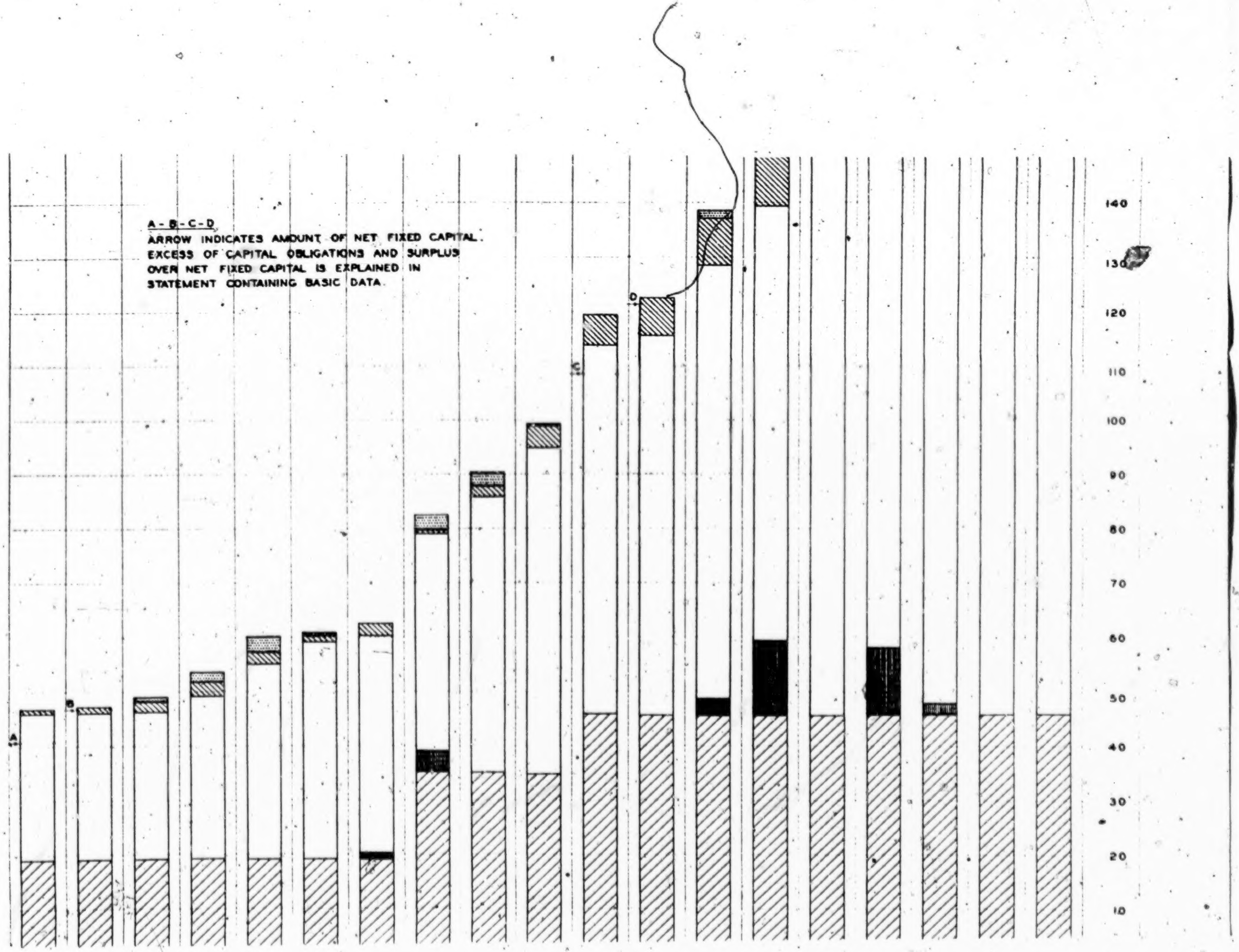
X-254

SOURCE OF FUNDS INVESTED IN FIXED CAPITAL.

AS OF DEC. 31
1913 - 1931



A-B-C-D
ARROW INDICATES AMOUNT OF NET FIXED CAPITAL.
EXCESS OF CAPITAL OBLIGATIONS AND SURPLUS OVER NET FIXED CAPITAL IS EXPLAINED IN STATEMENT CONTAINING BASIC DATA.


A - B - C - D
ARROW INDICATES AMOUNT OF NET FIXED CAPITAL.
EXCESS OF CAPITAL OBLIGATIONS AND SURPLUS
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STATEMENT CONTAINING BASIC DATA.
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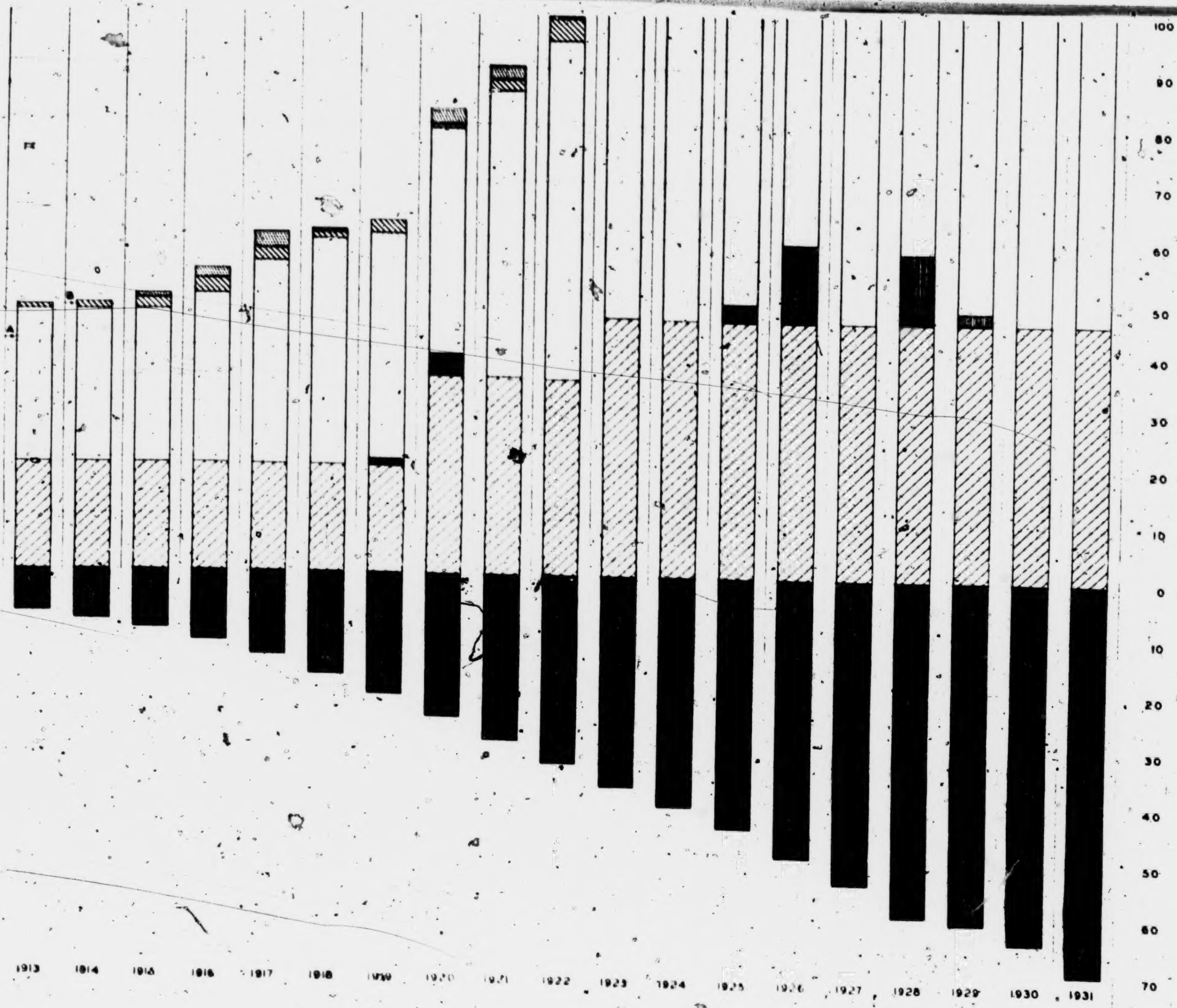
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1929
1930
1931

4847

[fol. 4848]

Exhibit X-255.

Illinois Bell Telephone Company—Entire Company

Investment in Fixed Capital Compared with Total Capital Obligations and Surplus, Years 1913 to 1931, Inclusive

Year	Fixed Capital and Construction Work in Progress (1)	Fixed Capital Reserves (2)	Net Fixed Capital (3)	Capital Stock Incl. Installments and Premiums (4)	Funded Debt Less Unamortized Discount & Expense (5)	Advances from System Corporations (6)	Surplus and Undivided Profits (7)	Total Capital Obligations and Surplus (8)
1913	$48,297,901.85	$7,363,013.96	$40,934,887.89	$27,000,000.00	$19,021,500.00	$..............	$797,786.36	$46,819,286.36(a)
1914	55,594,372.77	8,885,516.74	46,708,856.03	27,000,000.00	19,049,950.00	....	1,178,913.86	47,228,863.86(b)
1915	59,286,403.45	10,263,166.87	49,023,236.58	27,000,000.00	19,233,417.00	....	1,960,937.07	48,193,454.07
1916	66,018,652.52	12,340,103.62	53,678,548.90	30,002,486.25	19,176,417.00	....	2,599,392.67	51,778,295.92
1917	75,235,842.57	14,918,715.87	60,317,126.70	36,002,911.25	19,092,500.00	....	2,161,650.76	57,257,062.01
1918	79,167,763.53	18,190,713.32	60,977,050.21	40,002,911.25	19,046,500.00	....	1,334,856.11	60,384,267.36
1919	84,277,239.05	21,728,473.17	62,548,765.88	40,002,911.25	19,039,000.00	1,272,230.95	2,256,957.95	62,571,100.15
1920	108,106,035.27	25,530,653.11	82,575,382.16	40,002,911.25	35,087,179.39	4,000,000.00	631,822.55	79,721,913.19
1921	119,845,994.69	29,512,750.49	90,333,244.20	50,002,911.25	35,087,179.39	....	2,636,047.76	87,726,138.40
1922	132,819,763.55	33,522,899.74	99,296,863.81	60,002,911.25	34,884,179.39	....	3,961,666.46	98,848,757.10
1923	146,026,723.12	37,575,004.90	108,451,718.22	68,020,431.25	45,912,143.39	....	5,600,326.89	119,532,901.53(c)
1924	162,257,573.05	40,911,442.25	121,346,130.80	70,002,911.25	45,671,929.82	....	6,809,971.07	122,484,812.14(d)
1925	183,098,496.99	44,562,997.74	138,535,499.25	80,003,433.25	45,485,979.84	3,000,000.00	8,555,923.08	137,045,336.17
1926	203,031,896.76	49,391,421.97	153,640,474.79	80,003,433.25	45,499,562.91	13,800,000.00	10,450,438.98	149,753,435.14
1927	229,437,632.60	53,982,290.58	175,455,342.02	110,004,168.35	45,625,228.79	....	12,979,812.30	168,609,209.34
1928	251,082,142.85	59,479,040.45	191,603,102.40	110,004,168.25	45,711,394.67	12,400,000.00	16,150,653.76	184,266,216.68
1929	269,611,218.14	60,798,790.47	208,812,427.67	130,037,668.25	45,709,360.55	2,200,000.00	20,364,125.83	198,311,154.63
1930	288,385,068.33	63,966,748.92	224,418,319.41	150,004,168.25	45,833,026.43	....	22,907,654.85	218,744,849.53
1931	291,263,557.79	69,242,666.58	222,020,891.21	150,004,168.25	45,815,529.39	....	23,767,381.21	219,587,078.85

(a) The excess ($5,884,398) of the total capital obligations and surplus over the net fixed capital is more than offset by Advances made by the Illinois Bell Telephone Company to System Corporations amounting to $7,390,100.

(b) The excess ($520,008) of the total capital obligations and surplus over the net fixed capital is more than offset by the investment of slightly over $2,000,000 in Bills Receivable. This investment represents an increase of more than $1,500,000 over the preceding year.

(c) The excess ($11,081,184) of the total capital obligations and surplus over net fixed capital is accounted for by the investment of a little more than $11,000,000 in Marketable Securities.

(d) The excess ($1,138,681) of the total capital obligations and surplus over the net fixed capital is more than offset by an increase of approximately $2,500,000 in Accounts Receivable from System Corporations as compared with the previous year.

[fol. 4849]

Exhibit X-256

Average Cost of Funds Used in Business

Illinois Bell Telephone Company
(As Shown in Exhibit)

Item	1923	1924	1925	1926	1927	1927	1929	1930
Capital Stock, Premiums, Installments and Surplus	7.37	7.30	7.16	7.10	7.11	7.03	6.91	6.94
Funded Debt (Net after Adjustments of Unamortized Debt Discount and Expense	5.34	5.71	5.70	5.68	5.67	5.65	5.64	5.62
Miscellaneous Interest Bearing Loans	5.88	6.00	5.84	5.89	5.93	5.80	5.77	5.68
Total	6.60	6.70	6.62	6.58	6.69	6.62	6.53	6.61
Commonwealth Edison Company								
Capital Stock, Premiums, Installments and Surplus	6.73	6.68	6.61	6.48	6.34	6.20	6.02	5.98
Funded Debt (Net after Adjustments of Unamortized Debt Discount and Expense	5.87	5.69	5.20	5.48	5.44	5.15	5.11	5.20
Miscellaneous Interest Bearing Loans	....	....	....	....	....	....	....	....
Total	6.35	6.23	5.99	6.05	5.80	5.76	5.65	5.68
Peoples Gas Light and Coke Company								
Capital Stock, Premiums, Installments and Surplus	4.45	4.77	5.36	5.62	5.43	5.54	5.55	5.59
Funded Debt (Net after Adjustments of Unamortized Debt Discount and Expense	5.11	5.39	5.22	5.24	5.14	5.30	5.13	5.25
Miscellaneous Interest Bearing Loans	....	....	....	....	....	....	....	....
Total	4.72	5.05	5.29	5.33	5.31	5.42	5.37	5.44

[fol. 4850]

Exhibit X-257

Average Yield on Bonds of Illinois Bell Telephone Company and on Bonds of Other Public Utilities Operating in Chicago (Exclusive of Transportation Companies), Years 1923 to 1931

	Year of Issue	Yield on Offering Price	Average Yield on Resale Price 1923 Av. Yield	1924 Av. Yield	1925 Av. Yield	1926 Av. Yield	1927 Av. Yield	1928 Av. Yield	1929 Av. Yield	1930 Av. Yield	1931 Av. Yield
Illinois Bell Telephone Company:											
1st & Ref. 5's 1956	1923	5.31	5.37	5.27	5.04	4.86	4.72	4.71	4.81	4.68	4.77
Commonwealth Edison Company:											
1st Mtg. Col. 5's, 1953	1923	5.52	5.55	5.31	5.01	4.89	4.76	4.69	4.87	4.71	4.71
" " " " 1954	1924	5.10	....	5.05	5.00	4.86	4.66	4.66	4.97	4.66	4.66
" " " 4½'s, 1956	1926	4.95	....	....	....	4.85	4.58	4.51	4.73	4.61	4.68
" " " 4½'s 1957	1927	4.75	....	....	....	....	4.49	4.52	4.76	4.66	4.64
" " " 4½'s, 1960	1930	4.65	....	....	....	....	....	....	....	4.55	4.73
" " " 4's, 1981	1931	4.27	....	....	....	....	....	....	....	....	4.84
Average Yield on Com. Edison Issues	....	....	5.55	5.18	5.01	4.87	4.62	4.60	4.83	4.64	4.71

Peoples Gas Light & Coke Company:											
Refunding 5's, 1947	1897	....	5.74	5.60	5.22	4.97	4.75	4.61	4.77	4.77	4.84
1st Consol. 6's, 1943	1893	....	5.51	5.47	5.25	4.91	4.72	4.69	4.86	4.70	4.86
1st & Ref. 4's, 1981	1931	4.29	....	....	....	....	....	....	....	....	4.77
Average Yield on Peoples Gas Light & Coke Company Issues	....	....	5.62	5.54	5.24	4.94	4.74	4.65	4.82	4.74	4.83

Dividends on Common Stocks (Including Payments as Interest on Stock Subscription Installments), Computed as an Average Rate on the Total Par Amount of Outstanding Stock, Premiums, Installments and Surplus

Capital Stock (Common) including premiums, installments and corporate surplus of companies:											
Illinois Bell Telephone Company	....	....	7.37	7.30	7.16	7.10	7.11	7.03	6.91	6.94	....
Commonwealth Edison Co.	....	....	6.73	6.68	6.61	6.48	6.34	6.20	6.02	5.98	....
Peoples Gas Light & Coke Co.	....	....	4.45	4.77	5.36	5.62	5.43	5.54	5.55	5.59	....

All dividend rates and interest on installments were 8% except dividend rates on Peoples Gas stock which was 6% in 1923 and 7% in 1924

Rates computed on par value ($100) regardless of market value.

[fol. 4851]

EXHIBIT X-258

Average Yield on Bonds Issued by Illinois Public Utilities (Other Than Bell System) Compared with Average Yield on all Public Utility Bond Issues (Other Than Bell System) in United States During Years 1921 to 1931, Inclusive

Yield is based on offering price of all bonds, notes and debentures, (except issues of Bell System) in amounts of $5,000,000 and over, maturing in 3 years or more from date of issue.

Year	Illinois Public Utility Issues (Authorized by Illinois Commerce Commission) Average Yield	All Public Utility Issues in U. S. (As above noted) Average Yield	Average Yield on All Issues in Excess of Average Yield On Illinois Issues Excess
1921....	6.75	7.02	.27
1922....	6.00	6.18	.18
1923....	5.81	6.04	.23
1924....	5.78	5.96	.18
1925....	5.56	5.68	.12
1926....	5.33	5.54	.21
1927....	5.01	5.18	.17
1928....	4.88	5.13	.25
1929....	5.39	5.44	.05
1930....	4.85	5.22	.37
1931....	4.38	4.61	.23
Av'ge, 1921-1931	5.00	5.31	.31

[fol. 4852]

EXHIBIT X-259

American Telephone and Telegraph Company Common Stock

High and Low Selling Prices and Yields 1901-1919

Year	Price	Dividend rate %	Yield	Average Yield
1901—H	167¾	7½	4.47	4.61½
L	157½		4.76	
1902—H	186	7½	4.03	4.34½
L	160¾		4.66	
1903—H	169	7½	4.44	5.41½
L	117¼		6.39	
1904—H	149½	7½	5.02	5.60½
L	121		6.19	
1905—H	148½	7½	5.05	5.38½
L	131		5.72	
1906—H	144⅝	7¾	5.36	5.66
L	130		5.96	
1907—H	133	8	6.01	7.55
L	88		9.09	
1908—H	132⅝	8	6.03	6.97½
L	101		7.92	
1909—H	145⅛	8	5.51	5.95½
L	125		6.40	
1910—H	143⅜	8	5.58	5.94½
L	126¾		6.31	
1911—H	153⅛	8	5.22	5.65
L	131½		6.08	

Years	Price	Dividend rate %	Yield	Average Yield
1912—H	149⅛	8	5.36	5.58½
L	137⅝		5.81	
1913—H	130	8	5.15	6.71
L	110		7.27	
1914—H	124¼	8	6.44	6.73
L	114		7.02	
1915—H	130¼	8	6.14	6.51½
L	116		6.89	
1916—H	134½	8	5.95	6.22½
L	123⅛		6.50	
1917—H	128½	8	6.22	7.28½
L	95¾		8.35	
1918—H	109¼	8	7.32	8.07
L	90⅝		8.82	
1919—H	108⅝	8	7.36	7.89
L	95		8.42	

[fol. 4853]

X-259

American Telephone and Telegraph Company Common Stock

High and Low Selling Prices and Yields, 1920-1931

Years	Price	Dividend rate %	Yield	Average Yield
1920—H	100⅜	8	7.97	8.32½
L	92⅛		8.68	
1921—H	119½	8½	7.11	7.99½
L	95¾		8.88	
1922—H	128¼	9	7.02	7.44
L	114½		7.86	
1923—H	128¾	9	6.99	7.27½
L	119⅛		7.56	
1924—H	134¾	9	6.68	7.05½
L	121⅛		7.43	
1925—H	145	9	6.20	6.54½
L	130⅝		6.89	
1926—H	151	9	5.96	6.20
L	139⅝		6.44	
1927—H	185½	9	4.85	5.44
L	149¼		6.03	
1928—H	211	9	4.26	4.74½
L	172		5.23	
1929—H	310¼	9	2.90	3.78
L	193¼		4.66	
1930—H	274¼	9	3.28	4.28
L	170⅜		5.28	
1931—H	201¾	9	4.46	6.24½
L	112⅛		8.03	

(Here follows Exhibit X-260, side folio 4854)

7.

Exhibit X-200

Yields and Average Yields on High and Low Market Prices of Common Stocks of Bell System Companies Sold on Exchanges During Years 1921-1931, Inclusive

	Cincinnati & Suburban B. T. Co.*				Mountain States T. & T. Co.				Pacific Tel. & Tel. Co.				New England Tel. & Tel. Co.				Southern New England Tel. Co.			
	Dividend Rate %	High Low	Yield	Average Yield	Dividend Rate %	High Low	Yield	Average Yield	Dividend Rate %	High Low	Yield	Average Yield	Dividend Rate %	High Low	Yield	Average Yield	Dividend Rate %	High Low	Yield	Average Yield
1921	8	70½	5.67	6.19½	7	96 bid	7.29	7.29	0	58	0	0	8	112¾	7.09	7.73½	8	112	7.14	7.63
		59½	6.72							38¼				95½	8.38			98½	8.12	
1922	8	75	5.33	5.86½	7	103	6.80	6.80	0	68	0	0	8	125	6.40	6.88½	8	129½	6.18	6.51
		62½	6.40							55				108½	7.37			117	6.84	
1923	8	75	5.33	5.63	7	104 bid	6.73	6.73	0	95	0	0	8	122	6.56	6.91½	8	132½	6.04	6.22
		67½	5.93							67				110	7.27			125	6.40	
1924	8	83	4.82	5.22½	7	108 bid	6.48	6.48	0	95½	0	0	8	115½	6.93	7.54½	8	141	5.67	6.02
		71	5.63							85				98	8.16			125½	6.37	
1925	8	94	4.25	[illegible]75	7	110½	6.33	6.33	6	118	5.08	5.73	6	122½	4.90	5.48	8	147½	5.42	5.62
		76½	5.25			bid				94	6.38			99	6.06			137½	5.82	
1926	8	93	4.30	4.62	7¼	133	5.45	5.96	7	135	5.18	5.60½	8	118¾	6.74	6.99	8	157	5.10	5.31
		81	4.94			112	6.47			116	6.03			110¾	7.24			145	5.52	
1927	9	117½	3.83	4.41	8	155	5.16	5.50	7	162	4.32	4.98	8	140	5.71	6.32	8	174½	4.58	4.91
		90¼	4.99			137	5.84			124	5.64			115¾	6.93			152¾	5.24	
1928	9	128	3.52	4.00½	8	161	4.97	5.11½	7	169	4.14	4.48½	8	159¾	5.25	5.52½	8	175	4.57	4.78½
		100¼	4.49			152	5.26			145	4.83			138	5.80			160	5.00	
1929	9	130	3.46	3.88	8	165	4.85	4.92½	7	220	3.18	4.26	8	175	4.57	5.25	8	170¼	4.69	4.70
		104¾	4.30			160	5.00			131	5.34			135	5.93			170	4.71	
1930	9	119	3.78	4.36	8	149½	5.35	5.61½	7	178	3.93	5.02	8	160⅞	4.97	5.64½	8	175¼	4.56	4.78
		91	4.94			136	5.88			114½	6.11			126½	6.32			160	5.00	
1931	9	103½	4.35	5.86½	8	149¼	5.36	6.31½	7	131¾	5.31	6.41	8	143	5.59	7.00½	8	177¼	4.51	5.78
		61	7.38			110	7.27			93¼	7.51			95	8.42			113¼	7.05	

* Par Value $50.00

[fol. 4855]

EXTRACTS FROM EXHIBIT X-261

Summary of Sales of Bell System Bond Issues in Amounts of $5,000,000 and Over During Years 1921 to 1931, Inclusive Showing Cost of Money to Companies as Per Records of Interstate Commerce Commission and Yield to Public

Year	Amount Offered (1)	Proceeds to Company (2)	Annual Cost to Company (3)	Average Cost to Company (Per cent) (4)	Proceeds on Basis of Price to Public (5)	Annual Cost on Basis of Price to Public (6)	Average Yield to Public (Per cent) (7)	Spread Between Average Cost to Company and Average Yield to Public (Per cent) (8)
1921........	$80,000,000	$73,983,000	$5,245,016	7.09	$77,450,000	$5,165,880	6.67	0.42
1922........	60,000,000	55,825,000	3,054,678	5.47	57,625,000	3,032,200	5.26	.21
1923........	185,000,000	174,175,000	9,962,978	5.72	180,600,000	9,836,111	5.45	.27
1924........	50,000,000	45,000,000	2,565,000	5.70	46,750,000	2,543,200	5.44	.26
1925........	175,000,000	162,875,000	8,864,963	5.44	168,750,000	8,817,500	5.23	.21
1926........	40,000,000	36,600,000	1,837,320	5.02	37,800,000	1,825,740	4.83	.19
1927........	....	....	....	....	....	....	....	....
1928........	....	....	....	....	....	....	....	....
1929........	32,000,000	31,120,000	1,658,696	5.33	32,000,000	1,600,000	5.00	.33
1930........	160,000,000	154,750,000	8,055,950	5.21	159,500,000	8,005,425	5.02	.19
1931........	....	....	....	....	....	....	....	....
1921-1931 inc.	782,000,000	734,328,000	41,244,601	5.62	760,475,000	40,826,056	5.37	.25
1923-1931 inc.	642,000,000	604,520,000	32,944,907	5.44	625,400,000	32,627,976	5.22	.22

Extracts from Exhibit X-261—Continued

[fol. 4856] Summary of Sales of Railroad Bond Issues in Amounts of $5,000,000 and Over During Years 1921 to 1931, Inclusive Showing Cost of Money to Companies as Per Records of Interstate Commerce Commission, and Yield to Public

Year	Amount Offered (1)	Proceeds to Company (2)	Annual Cost to Company (3)	Average Cost to Company (Per cent) (4)	Proceeds on Basis of Price to Public (5)	Annual Cost on Basis of Price to Public (6)	Average Yield to Public (Per cent) (7)	Spread Between Average Cost to Company and Average Yield to Public (Per cent) (8)
1921........	$334,655,000	$309,712,100	$22,570,899	7.29	$324,984,250	$22,014,178	6.77	.52
1922........	280,811,300	259,889,845	15,394,305	5.92	269,846,809	15,291,300	5.67	.25
1923........	132,697,000	124,190,929	6,827,332	5.50	127,922,530	6,808,724	5.32	.18
1924........	400,196,000	376,427,085	21,138,555	5.62	388,975,240	20,959,285	5.39	.23
1925........	281,828,500	265,149,447	14,885,624	5.61	273,401,425	14,720,550	5.38	.23
1926........	182,288,000	172,438,820	9,078,569	5.26	177,205,520	9,033,970	5.10	.16
1927........	474,489,000	445,760,136	22,620,469	5.07	457,888,161	22,534,896	4.92	.15
1928........	338,925,000	323,447,373	15,258,504	4.72	331,336,083	15,227,797	4.60	.12
1929........	202,505,000	193,538,865	10,206,783	5.27	198,636,490	10,086,391	5.08	.19
1930........	657,889,000	621,662,503	30,526,955	4.90	637,683,935	30,389,379	4.77	.14
1931........	315,927,000	301,381,550	14,705,804	4.88	308,878,448	14,629,416	4.74	.14
1921-1931 inc.	3,602,210,800	3,393,608,653	183,213,799	5.40	3,496,758,891	181,695,886	5.20	.20
1923-1931 inc.	2,986,744,500	2,824,006,708	145,248,595	5.14	2,901,927,832	144,390,408	4.97	.17

Note: In cases where bonds were issued without public offering (account issued for exchange under reorganization plan, placed privately or otherwise disposed of without public offering) the amount of the issues are not included in the above statement. There are included only issues on which the cost to company and yield on offering price can be compared.

[fol. 4857]

Summary of Sales of Public Utility Bond Issues (Other Than Bell System) in Amounts of $5,000,000 and Over During Years 1921 to 1931, Inclusive, Showing Cost of Money to Companies as Per Records of State Public Service Commissions, and Yield to Public

Year	Amount Offered (1)	Proceeds to Company (2)	Annual Cost to Company (3)	Average Cost to Company (Per cent) (4)	Proceeds on Basis of Price to Public (5)	Annual Cost on Basis of Price to Public (6)	Average Yield to Public (Per cent) (7)	Spread Between Average Cost to Company and Average Yield to Public (Per cent) (8)
1921........	$91,840,000	$84,612,400	$6,046,443	7.14	$82,367,500	$5,469,239	6.64	.50
1922........	106,711,000	98,857,590	6,174,579	6.25	103,229,920	6,109,217	5.92	.33
1923........	115,908,000	107,576,448	6,487,359	6.03	109,580,300	6,266,851	5.72	.31
1924........	170,000,000	158,448,000	9,795,679	6.18	166,967,500	9,643,419	5.78	.40
1925........	131,300,000	125,597,000	7,059,068	5.62	130,497,000	6,913,167	5.30	.32
1926........	184,250,000	172,451,801	9,520,771	5.52	180,437,500	9,380,982	5.20	.32
1927........	334,648,000	315,014,233	16,118,251	5.12	325,905,435	15,929,631	4.89	.23
1928........	140,472,000	121,170,409	5,997,951	4.95	135,182,535	6,366,338	4.71	.24
1929........	30,500,000	28,860,000	1,525,421	5.29	29,925,000	1,509,008	5.04	.25
1930........	121,000,000	113,701,291	5,736,179	5.04	117,555,000	5,679,028	4.83	.21
1931........	327,500,000	308,213,027	14,272,337	4.63	318,147,500	14,149,760	4.45	.18
Average Years 1921 to 1931, Inclusive...	1,754,129,000	1,634,502,199	88,734,038	5.43	1,699,795,190	87,416,640	5.14	.29
Average Years 1923 to 1931, Inclusive...	1,555,578,000	1,451,032,209	76,513,016	5.27	1,514,197,770	75,838,184	5.01	.26

Note: In cases where bonds were issued without public offering (account issued for exchange under reorganization plan, placed privately or otherwise disposed of without public offering) the amount of the issues are not included in the above statement. There are included only issues on which the cost to company and yield on offering price can be compared.

EXTRACTS FROM EXHIBIT X-261—Continued

[fol. 4858]

Summary of Sales of Bell System Bond Issues

In Amounts of $5,000,000 and over during Years 1923 to 1931, Inslusive, Grouped According to Ratings (Moody's), Showing Cost of Money to Companies (As Per Records of Interstate Commerce Commission) and Yield to Public

Year	Classes By Rating	Number of Issues	Proceeds to Company	Annual Cost to Company	Average Cost to Company (Per Cent)	Proceeds on Basis of Price to Public	Annual Cost on Basis of Price to Public	Average Yield to Public (Per Cent)	Spread Between Average Cost to Company and Average Yield to Public (Per Cent)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1923	Aaa	1	$33,425,000	$1,781,553	5.33	$34,475,000	$1,761,673	5.11	.22
	Aa	2	140,750,000	8,181,425	5.81	146,125,000	8,074,438	5.53	.28
	Total—All Classes	3	174,175,000	9,962,978	5.72	180,600,000	9,836,111	5.45	.27
1924	Aa	1	45,000,000	2,565,000	5.70	46,750,000	2,543,200	5.44	.26
1925	Aaa	1	48,500,000	2,517,150	5.19	50,000,000	2,500,000	5.00	.19
	Aa	1	114,375,000	6,347,813	5.55	118,750,000	6,317,500	5.32	.23
	Total—All Classes	2	162,875,000	8,864,963	5.44	168,750,000	8,817,500	5.23	.21
1926	Aaa	1	36,600,000	1,837,320	5.02	37,800,000	1,825,740	4.83	.19
1929	Aaa	1	31,120,000	1,658,696	5.33	32,000,000	1,600,000	5.00	.33
1930	Aaa	2	154,750,000	8,055,950	5.21	159,500,000	8,005,425	5.02	.19
Average Years 1923 to 1931, Inclusive									
	Aaa	6	304,395,000	15,850,669	5.21	313,775,000	15,692,838	5.00	.21
	Aa	4	300,125,000	17,094,238	5.70	311,625,000	16,935,138	5.43	.27
	Total—All Classes	10	604,520,000	32,944,907	5.45	625,400,000	32,627,976	5.22	.23

No sales of Bell System bond issues are reported in 1927, 1928 and 1931.

[fol. 4859]

Summary of Sales of Railroad Bond Issues

In Amounts of $5,000,000 and Over During Years 1923 to 1931, Inclusive, Grouped According to Ratings (Moody's), Showing Cost of Money to Companies (As Per Records of Intersate Commerce Commission), and Yield to Public

Year	Classes By Rating	Number of Issues	Proceeds to Company	Annual Cost to Company	Average Cost to Company (Per Cent)	Proceeds on Basis of Price to Public	Annual Cost on Basis of Price to Public	Average Yield to Public (Per Cent)	Spread Between Average Cost to Company and Average Yield to Public (Per Cent)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1923	Aaa	6	$70,858,429	$3.713.014	5.24	$72,745,030	$3,706,869	5.10	.14
	Aa	3	34,732,500	1,901,598	5.47	35,877,500	1,895,605	5.28	.19
	A	1	18,600,000	1.212.720	6.52	19,300,000	1,206,250	6.25	.27
	Total—All Classes	10	124,190,929	6.827.332	5.50	127,922,530	6,808,724	5.32	.18
1924	Aaa	10	196,732,500	10.383.028	5.28	202,712,500	10,315,905	5.09	.19
	Aa	8	87,803,650	5.064.445	5.77	90,736,770	5,011,399	5.52	.25
	A	5	77,167,435	4.750.556	6.16	80,101,470	4,727,496	5.90	.26
	Baa	1	6,475,000	525.123	8.11	7,000,000	490,000	7.00	1.11
	No rating	1	8,258,500	415.403	5.03	8,424,500	414,485	4.92	.11
	Total—All Classes	25	376,437,085	21.138.555	5.62	388,975,240	20,959,285	5.39	.23
1925	Aaa	5	88,171,558	4.561.679	5.17	90,797,625	4,535,072	4.99	.18
	Aa	7	99,123,389	5.378.088	5.43	102,087,050	5,328,613	5.22	.21
	A	3	45,004,500	2.727.446	6.06	46,416,750	2,717,083	5.85	.21
	Ba	2	32,850,000	2.218.411	6.75	34,100,000	2,139,782	6.27	.48
	Total—All Classes	17	265,149,447	14.885.624	5.61	273,401,425	14,720,550	5.38	.23
1926	Aaa	4	33,985,000	1.619.866	4.75	34,697,800	1,614,832	4.65	.10
	Aa	2	46,502,500	2.360.607	5.08	47,875,000	2,351,482	4.91	.17
	A	5	71,730,000	3.895.245	5.43	73,902,500	3,884,151	5.25	.18
	Baa	1	12,761,320	708.253	5.55	13,090,220	693,781	5.30	.25
	Ba	1	7,460,000	494,598	6.63	7,640,000	489,724	6.41	.22
	Total—All Classes	13	172,438,820	9.078.569	5.26	177,205,520	9,033,970	5.10	.16

EXTRACTS FROM EXHIBIT X-261—Continued

Summary of Sales of Railroad Bond Issues

In Amounts of $5,000,000 and Over During Years 1923 to 1931, Inclusive, Grouped According to Ratings (Moody's), Showing Cost of Money to Companies (As per Records of Interstate Commerce Commission) and Yield to Public

Year (1)	Classes By Rating (2)	Number of Issues (3)	Proceeds to Company (4)	Annual Cost to Company (5)	Average Cost to Company (Per Cent) (6)	Proceeds on Basis of Price to Public (7)	Annual Cost on Basis of Price to Public (8)	Average Yield to Public (Per Cent) (9)	Spread Between Average Cost to Company and Average Yield to Public (Per Cent) (10)
1927	Aaa	7	115,355,306	5,463,209	4.74	118,255,046	5,442,781	4.60	.14
	Aa	4	67,749,675	3,248,750	4.80	69,444,700	3,239,779	4.66	.14
	A	3	144,907,500	7,422,550	5.12	148,920,000	7,393,776	4.96	.16
	Baa	4	112,922,655	6,181,020	5.47	116,330,915	6,156,879	5.29	.18
	Ba	1	4,825,000	304,940	6.32	4,937,500	301,681	6.11	.21
	Total—All Classes	19	445,760,136	22,620,469	5.07	457,888,161	22,534,896	4.92	.15
1928	Aaa	7	75,002,000	3,308,417	4.41	76,443,160	3,317,093	4.34	.07
	Aa	2	67,291,500	3,085,705	4.59	68,926,500	3,075,105	4.46	.13
	A	6	145,808,873	7,007,368	4.81	149,633,923	6,982,553	4.67	.14
	Baa	2	35,345,000	1,857,014	5.25	36,332,500	1,853,046	5.10	.15
	Total—All-Classes	17	323,447,373	15,258,504	4.72	331,336,083	15,227,797	4.60	.12
[fol. 4860]									
1929	Aaa	2	$14,288,640	$689,040	4.82	$14,639,490	$684,016	4.67	.15
	Aa	2	32,475,200	1,624,900	5.00	33,369,800	1,620,435	4.85	.15
	A	4	102,702,625	5,279,350	5.14	105,395,000	5,199,182	4.93	.21
	Baa	1	44,072,400	2,613,493	5.93	45,232,200	2,582,758	5.71	.22
	Total—All Classes	9	193,538,865	10,206,783	5.27	198,636,490	10,086,391	5.08	.19

1930	Aaa	15	253,160,908	12,152,867	4.89	259,971,165	12,085,630	4.66	.14
	Aa	5	83,795,520	4,068,020	4.85	85,887,720	4,057,200	4.72	.13
	A	10	218,418,575	10,768,792	4.93	224,075,050	10,729,602	4.79	.14
	Baa	2	61,450,000	3,270,730	5.32	62,825,000	3,259,370	5.19	.13
	Ba	1	4,837,500	266,546	5.51	4,925,000	257,577	5.23	.28
	Total—All Classes	33	621,662,503	30,526,955	4.91	637,683,935	30,389,379	4.77	.14
1931	Aaa	5	152,588,500	7,164,601	4.70	156,277,020	7,130,529	4.56	.14
	Aa	4	66,178,340	3,140,794	4.75	67,818,000	3,135,640	4.62	.13
	A	2	69,090,000	3,732,288	5.40	70,945,000	3,699,002	5.21	.19
	Baa	1	13,524,710	668,121	4.94	13,838,428	664,245	4.80	.14
	Total—All Classes	12	301,381,550	14,705,804	4.88	308,878,448	14,629,416	4.74	.14
Average Years 1923 to 1931, Inclusive:									
	Aaa	61	1,000,142,841	49,055,721	4.90	1,026,538,836	48,832,727	4.76	.14
	Aa	37	585,652,274	29,872,907	5.10	602,023,040	29,715,258	4.94	.16
	A	39	893,429,508	46,796,315	5.24	918,689,693	46,539,095	5.07	.17
	Baa	12	286,551,085	15,823,754	5.52	294,649,263	15,700,079	5.33	.19
	Ba	5	49,972,500	3,284,495	6.57	51,602,500	3,188,764	6.18	.39
	No Rating	1	8,258,500	415,403	5.03	8,424,500	414,485	4.92	.11
	Total-All Classes	155	2,824,006,708	145,248,595	5.14	2,901,927,832	144,390,408	4.97	.17

[fol. 4861]

1923	Aaa	1	$13,350,000	$770,295	5.77	$13,875,000	$765,900	5.52	.25
	Aa	4	48,773,520	2,772,463	5.68	50,242,800	2,740,681	5.45	.23

EXTRACTS FROM EXHIBIT X-261—Continued

Summary of Sales of Public Utility Bond Issues (Other Than Bell System)

In Amounts of $5,000,000 and over during Years 1923 to 1931, Inclusive, Showing Cost of Money to Companies (As per Records of State Public Service Service Commissions) and Yield to Public by Groups Arranged According to Investment Ratings

Year (1)	Classes By Rating (2)	Number of Issues (3)	Proceeds to Company (4)	Annual Cost to Company (5)	Average Cost to Company (Per Cent) (6)	Proceeds on Basis of Price to Public (7)	Annual Cost on Basis of Price to Public (8)	Average Yield to Public (Per Cent) (9)	Spread Between Average Cost to Company and Average Yield to Public (Per Cent) (10)
	A	4	31,600,000	2,028,015	6.42	30,687,500	1,857,518	6.05	.37
	Baa	2	13,852,928	916,586	6.62	14,775,000	902,752	6.11	.51
	Total—All Classes	11	107,576,448	6,487,359	6.03	109,580,300	6,266,851	5.72	.31
1924	Aaa	1	11,155,000	580,060	5.20	11,500,000	575,000	5.00	.20
	Aa	3	47,625,000	2,699,851	5.67	49,250,000	2,635,700	5.35	.32
	A	7	64,386,000	3,993,733	6.20	67,355,000	3,929,712	5.83	.37
	Baa	5	35,282,000	2,522,035	7.15	38,862,500	2,503,007	6.44	.71
	Total—All Classes	16	158,448,000	9,795,679	6.18	166,967,500	9,643,419	5.78	.40
1925	Aaa	1	29,100,000	1,524,840	5.24	30,000,000	1,500,000	5.00	.24
	Aa	4	80,125,000	4,570,683	5.70	83,345,000	4,459,791	5.35	.35
	A	1	5,922,000	351,175	5.93	6,237,000	347,400	5.57	.36
	Baa	2	10,450,000	612,370	5.86	10,915,000	605,976	5.55	.31
	Total—All Classes	8	125,597,000	7,059,068	5.62	130,497,000	6,913,167	5.30	.32
1926	Aaa	2	23,525,000	1,195,525	5.08	24,200,000	1,187,650	4.91	.17
	Aa	4	34,135,000	1,784,176	5.23	35,360,000	1,782,637	5.04	.19
	A	5	66,116,801	3,585,500	5.42	68,677,500	3,498,373	5.09	.33
	Baa	5	48,675,000	2,955,570	6.07	52,200,000	2,912,322	5.58	.49
	Total—All Classes	16	172,451,801	9,520,771	5.52	180,437,500	9,380,982	5.20	.32

1927	Aaa	1	14,100,000	688,680	4.88	14,400,000	684,000	4.75	.13
	Aa	5	96,433,064	4,783,190	4.96	99,698,250	4,748,714	4.76	.20
	A	9	191,259,391	9,858,395	5.15	197,739,685	9,718,416	4.91	.24
	Baa	2	13,321,778	788,586	5.96	14,067,500	778,501	5.53	.43
	Total—All Classes	17	315,014,233	16,118,251	5.12	325,905,435	15,929,631	4.89	.23
[f4l. 4861a] 1928	Aaa	2	$36,201,214	$1,658,786	4.58	$37,300,000	$1,651,050	4.43	.15
	Aa	4	36,011,245	1,769,931	4.91	46,757,280	2,176,266	4.65	.26
	A	3	21,802,920	1,145,530	5.25	22,855,255	1,129,506	4.94	.31
	Baa	1	9,200,000	512,440	5.57	9,600,000	505,920	5.27	.30
	No Rating	2	17,955,000	911,264	5.07	18,670,000	903,596	4.84	.23
	Total—All Classes	12	121,170,409	5,997,951	4.95	135,182,535	6,366,338	4.71	.24
1929	Aaa	1	10,185,000	502,121	4.93	10,500,000	498,750	4.75	.18
	Aa	1	14,175,000	765,450	5.40	14,700,000	755,580	5.14	.26
	A	1	4,500,000	257,850	5.73	4,725,000	254,678	5.39	.34
	Total—All Classes	3	28,860,000	1,525,421	5.29	29,925,000	1,509,008	5.04	.25
1930	Aaa	3	36,913,791	1,801,758	4.88	38,187,500	1,789,647	4.69	.19
	Aa	4	23,375,000	1,154,725	4.94	24,125,000	1,138,700	4.72	.22
	A	4	48,662,500	2,475,696	5.09	50,267,500	2,450,191	4.87	.22
	Baa	1	4,750,000	304,000	6.40	4,975,000	300,490	6.04	.36
	Total—All Classes	9	113,701,291	5,736,179	5.04	117,555,000	5,679,028	4.83	.21
1931	Aaa	5	196,486,027	8,872,228	4.52	202,690,000	8,788,152	4.34	.18
	Aa	4	54,977,000	2,603,179	4.74	56,657,500	2,577,908	4.55	.19
	A	3	56,750,000	2,796,930	4.93	58,800,000	2,783,700	4.73	.20
	Total—All Classes	12	308,213,027	14,272,337	4.63	318,147,500	14,149,760	4.45	.18

EXTRACTS FROM EXHIBIT X-261—Continued

Summary of Spread of Public Utility Bond Issues (Other Than Bell System)—Continued

Year (1)	Classes By Rating (2)	Number of Issues (3)	Proceeds to Company (4)	Annual Cost to Company (5)	Average Cost to Company (Per Cent) (6)	Proceeds on Basis of Price to Public (7)	Annual Cost on Basis of Price to Public (8)	Average Yield to Public (Per Cent) (9)	Spread Between Average Cost to Company and Average Yield to Public (Per Cent) (10)
Average Years 1923 to 1931, Inclusive:									
	Aaa								
	Aa	17	371 016 062	17 593 693	4 74	382 652 500	17 440 149	4 56	18
	A	30	435 629 829	22 903 648	5 26	460 135 830	23 015 977	5 00	26
	Baa	37	490 999 612	26 492 824	5 40	507 344 440	25 969 494	5 12	28
	Ba	18	135 431 706	8 611 587	6 36	145 395 000	8 508 968	5 55	51
	No Rating	2	17 955 000	911 264	5 07	18 670 000	903 596	4 84	23
	Total—All Classes	104	1 451 032 209	76,513 016	5 27	1 514 197 770	75 838 184	5 01	26

[fol. 4862]

Bell System Companies

Summary Showing Weighted Average Yield on Bell System Long Term Bond Issues of $5,000,000 or Over, Sold During Years 1923 to 1931, Inclusive, Grouped According to Their Investment Ratings at Time of Public Offering

Part One. Bond Issues Other Than Convertibles or Issues with Stock Purchase Warants

Year	Number of Issues	Amount Offered	Weighted Average Yield to Public (Per cent)	Range High Yield (Per cent)	Range Low Yield (Per cent)
1923:					
Class Aaa	1	$35,000,000	5.11	5.11	5.11
Class Aa	2	150,000,000	5.52	5.63	5.31
Total	3	185,000,000	5.44		
1924:					
Class Aa	1	50,000,000	5.44	5.44	5.44
1925:					
Class Aaa	1	50,000,000	5.00	5.00	5.00
Class Aa	1	125,000,000	5.32	5.32	5.32
Total	2	175,000,000	5.22		
1926:					
Class Aaa	1	40,000,000	4.83	4.83	4.83
1929:					
Class Aaa	1	32,000,000	5.00	5.00	5.00
1930:					
Class Aaa	2	160,000,000	5.02	5.03	4.86
Average Years 1923-1931, Inclusive:					
Class Aaa	6	$317,000,000	5.00	5.11	4.83
Class Aa	4	325,000,000	5.43	5.63	5.31
Total All Classes	10	$642,000,000	5.22		

Note: No issues in years 1927, 1928 and 1931.

[fol. 4863]

Bell System Companies

Part Two—Convertible Issues and Issues with Stock Purchase Warrants

Year	Number of Issues	Amount Offered	Weighted Average Yield to Public (Per cent)	Range High Yield (Per cent)	Range Low Yield (Per cent)
1929:					
Class Aaa	1	$219,000,000	4.50	4.50	4.50

[fol. 4864]

Bell System Companies

Part Three—Bond Issues Including Convertibles and Issues with Stock Purchase Warrants

Year	Number Issues	Offered	Weighted Average Yield (Per cent)	Range High (Per cent)	Range Low (Per cent)
1923:					
Class Aaa	1	$35,000,000	5.11	5.11	5.11
Class Aa	2	150,000,000	5.52	5.63	5.31
Total	3	185,000,000	5.44		
1924:					
Class Aa	1	50,000,000	5.44	5.44	5.44
1925:					
Class Aaa	1	50,000,000	5.00	5.00	5.00
Class Aa	1	125,000,000	5.32	5.32	5.32
Total	2	175,000,000	5.22		
1926:					
Class Aaa	1	40,000,000	4.83	4.83	4.83
1929:					
Class Aaa	2	251,000,000	4.56	5.00	4.50
1930:					
Class Aaa	2	160,000,000	5.02	5.03	4.86
Average Years 1923-1931, Inclusive:					
Class Aaa	7	$536,000,000	4.80	5.11	4.50
Class Aa	4	325,000,000	5.43	5.63	5.31
Total	11	$861,000,000	5.03		

Note: No issues in years 1927, 1928 and 1931.

[fol. 4865]

Railroads

Summary Showing Weighted Average Yield on Railroad Long Term Bond Issues of $5,000,000 or Over Sold During Years 1923 to 1931, Inclusive, Grouped According to Their Investment Ratings at Time of Public Offering

Part One—Bond Issues Other Than Convertibles or Issues with Stock Purchase Warrants

Year	Number of Issues	Amount Offered	Weighted Average Yield to Public (Per cent)	Range High Yield (Per cent)	Range Low Yield (Per cent)
1923:					
Class Aaa	6	$74,947,000	5.09	5.32	4.70
Class Aa	5	50,024,000	5.40	6.00	5.05
Class A	1	20,000,000	6.25	6.25	6.25
Total	12	144,971,000	5.36		

Year	Number of Issues	Amount Offered	Weighted Average Yield to Public (Per cent)	Range	
				High Yield (Per cent)	Low Yield (Per cent)
1924:					
Class Aaa	11	213,000,000	5.08	5.30	4.82
Class Aa	7	90,604,000	5.53	6.51	5.23
Class A	5	82,292,000	5.90	6.25	5.50
Class Baa	1	7,000,000	7.00	7.00	7.00
No rating	1	8,300,000	4.92	4.92	4.92
Total	25	401,196,000	5.38		
1925:					
Class Aaa	4	89,333,500	5.00	5.12	4.55
Class Aa	7	104,420,000	5.22	5.69	4.96
Class A	3	47,075,000	5.85	6.02	5.56
Class Baa	1	23,000,000	6.00	6.00	6.00
Class Ba	2	35,000,000	6.27	6.47	6.20
Total	17	298,828,500	6.44		
1926:					
Class Aaa	4	34,632,000	4.65	4.81	4.51
Class Aa	2	50,000,000	4.91	4.95	4.82
Class A	5	76,500,000	5.25	5.46	5.11
Class Baa	1	13,156,000	5.30	5.30	5.30
Class Ba	1	8,000,000	6.41	6.41	6.41
Total	13	182,288,000	5.10		
[fol. 4866]					
1927:					
Class Aaa	9	140,432,000	4.56	4.76	4.07
Class Aa	4	71,801,000	4.66	4.76	4.55
Class A	6	176,000,000	4.92	5.03	4.51
Class Baa	4	123,942,000	5.29	5.53	5.01
Class Ba	1	5,000,000	6.11	6.11	6.11
Total	24	517,175,000	4.88		
1928:					
Class Aaa	5	61,697,000	4.36	4.50	4.14
Class Aa	2	39,000,000	4.42	4.50	4.38
Class A	3	129,142,000	4.68	4.80	4.65
Class Baa	2	37,000,000	5.10	5.23	5.04
Total	12	266,839,000	4.62		
1929:					
Class Aaa	1	8,000,000	4.77	4.77	4.77
Class Aa	2	34,784,000	4.86	5.11	4.76
Class A	3	33,360,000	5.33	6.00	5.03
Total	6	76,144,000	5.06		
1930:					
Class Aaa	16	$274,576,000	4.65	4.81	4.40
Class Aa	5	89,088,000	4.72	4.86	4.65
Class A	8	136,600,000	4.77	4.99	4.51
Class Baa	2	65,000,000	5.19	5.26	4.96
Class Ba	1	5,000,000	5.23	5.23	5.23
Total	32	570,264,000	4.82		

Year	Number of Issues	Amount Offered	Weighted Average Yield to Public (Per cent)	Range	
				High Yield (Per cent)	Low Yield (Per cent)
1931:					
Class Aaa....	5	158,301,000	4.56	5.25	4.40
Class Aa.....	4	69,483,000	4.62	4.67	4.50
Class A......	2	74,200,000	5.21	5.25	5.05
Class Baa....	1	13,943,000	4.80	4.80	4.80
Total......	12	315,927,000	4.74		
Average Years 1923 to 1931, Inclusive:					
Class Aaa....	60	1,054,918,500	4.76	5.32	4.07
Class Aa.....	38	599,204,000	4.97	6.51	4.38
Class A......	36	775,169,000	5.13	6.25	4.51
Class Baa....	12	283,041,000	5.32	7.00	4.80
Class Ba.....	5	53,000,000	6.18	6.47	5.23
No rating......	1	8,300,000	4.92	4.92	4.92
Total......	152	2,773,632,500	4.99		

[fol. 4867]

Part Two—Convertible Issues and Issues with Stock Purchase Warrants

1928:					
Class Aaa....	1	$29,864,500	4.50	4.50	4.50
Class Aa.....	1	29,400,000	4.51	4.51	4.51
Total......	2	59,264,500	4.50		
1929:					
Class A......	1	72,335,000	4.75	4.75	4.75
Class Baa....	1	46,392,000	5.71	5.71	5.71
Total......	2	118,727,000	5.12		
1930:					
Class A......	2	95,250,000	4.82	4.82	4.82
Average Years 1923 to 1931, Inclusive:					
Class Aaa....	1	$29,864,500	4.50	4.50	4.50
Class Aa.....	1	29,400,000	4.51	4.51	4.51
Class A......	3	167,594,000	4.79	4.82	4.75
Class Baa....	1	46,392,000	5.71	5.71	5.71
Total......	6	$273,250,000	4.88		

[fol. 4868]

Part Three—Bond Issues Including Convertibles or Issues with Stock Purchase Warrants

1923:					
Class Aaa....	6	$74,947,000	5.09	5.32	4.70
Class Aa.....	5	50,024,000	5.40	6.00	5.05
Class A......	1	20,000,000	6.25	6.25	6.25
Total......	12	144,971,000	5.36		

Year	Number of Issues	Amount Offered	Weighted Average Yield to Public (Per cent)	Range	
				High Yield (Per cent)	Low Yield (Per cent)
1924:					
Class Aaa....	10	$213,000,000	5.08	5.30	4.82
Class Aa.....	7	90,604,000	5.53	6.51	5.23
Class A......	5	82,292,000	5.90	6.25	5.50
Class Baa....	1	7,000,000	7.00	7.00	7.00
No rating....	1	8,300,000	4.92	4.92	4.92
Total......	24	401,196,000	5.39		
1925:					
Class Aaa....	4	89,333,500	5.00	5.12	4.55
Class Aa.....	7	104,420,000	5.21	5.69	4.96
Class A......	3	47,075,000	5.85	6.02	5.56
Class Baa....	1	23,000,000	6.00	6.00	6.00
Class Ba.....	2	35,000,000	6.27	6.47	6.20
Total......	17	298,828,500	5.44		
1926:					
Class Aaa....	4	34,632,000	4.65	4.81	4.51
Class Aa.....	2	50,000,000	4.91	4.95	4.82
Class A......	5	76,500,000	5.25	5.46	5.11
Class Baa....	1	13,156,000	5.30	5.30	5.30
Class Ba.....	1	8,000,000	6.41	6.41	6.41
Total......	13	182,288,000	5.10		
[fol. 4869]					
1927:					
Class Aaa....	9	140,432,000	4.56	4.76	4.07
Class Aa.....	4	71,801,000	4.66	4.76	4.55
Class A......	6	176,000,000	4.92	5.03	4.51
Class Baa....	4	123,942,000	5.29	5.53	5.01
Class Ba.....	1	5,000,000	6.11	6.11	6.11
Total......	24	517,175,000	4.88		
1928:					
Class Aaa......	6	91,561,500	4.41	4.50	4.14
Class Aa......	1	68,400,000	4.46	4.51	4.38
Class A......	3	129,142,000	4.68	4.80	4.65
Class Baa....	2	37,000,000	5.10	5.23	5.04
Total......	12	326,103,500	4.60		
1929:					
Class Aaa....	1	8,000,000	4.77	4.77	4.77
Class Aa.....	2	34,784,000	4.85	5.11	4.75
Class A......	4	105,695,000	5.00	6.00	4.75
Class Baa....	1	46,392,000	5.71	5.71	5.71
Total......	8	194,871,000	5.10		
1930:					
Class Aaa....	16	274,576,000	4.65	4.81	4.40
Class Aa.....	5	89,088,000	4.72	4.86	4.65
Class A......	10	231,859,000	4.79	4.99	4.51
Class Baa....	2	65,000,000	5.19	5.26	4.96
Class Ba.....	1	5,000,000	5.23	5.23	5.23
Total......	34	665,523,000	4.76		

Year	Number of Issues	Amount Offered	Weighted Average Yield to Public (Per cent)	Range	
				High Yield (Per cent)	Low Yield (Per cent)
1931:					
Class Aaa....	5	$158,301,000	4.56	5.25	4.40
Class Aa.....	4	69,483,000	4.62	4.67	4.59
Class A......	2	74,200,000	5.21	5.25	5.05
Class Baa....	1	13,943,000	4.80	4.80	4.80
Total......	12	315,927,000	4.74		
Average Years 1923-1931, Inclusive:					
Class Aaa....	61	1,084,783,000	4.75	5.32	4.07
Class Aa.....	39	628,604,000	4.95	6.51	4.38
Class A......	39	942,763,000	5.07	6.25	4.51
Class Baa....	13	329,433,000	5.38	7.00	4.80
Class Ba.....	5	53,000,000	6.18	6.47	5.23
No rating....	1	8,300,000	4.92	4.92	4.92
Total All Classes..	158	3,046,883,000	4.98		

[fol. 4870]

Public Utilities

Summary Showing Weighted Average Yield on Public Utility (Other than Bell System) Long Term Bond Issues of $5,000,000 or Over Sold During Years 1923 to 1931, Inclusive, Grouped According to Their Investment Ratings at Time of Public Offering

Part One—Bond Issues Other Than Convertibles or Issues with Stock Purchase Warrants

Year	Number of Issues	Amount Offered	Weighted Average Yield to Public (Per cent)	Range	
				High Yield (Per cent)	Low Yield (Per cent)
1923:					
Class Aaa....	1	$15,000,000	5.52	5.52	5.52
Class Aa.....	5	57,500,000	5.47	5.82	5.12
Class A......	14	125,300,000	6.03	6.62	5.63
Class Baa....	9	87,926,000	6.24	6.54	6.11
Class Ba.....	2	17,192,000	6.88	7.00	6.71
Total......	31	302,918,600	6.01		
1924:					
Class Aaa....	2	26,500,000	5.05	5.10	5.00
Class Aa.....	10	109,874,000	5.33	5.79	5.00
Class A......	17	156,000,000	5.88	6.35	5.52
Class Baa....	16	126,700,000	6.40	7.02	5.71
Class Ba.....	5	49,300,000	6.52	7.03	6.08
Class B......	1	9,000,000	6.24	6.24	6.24
No Rating...	1	5,000,000	6.77	6.77	6.77
Total......	52	482,374,000	5.92		

Year	Number of Issues	Amount Offered	Weighted Average Yield to Public (Per cent)	Range	
				High Yield (Per cent)	Low Yield (Per cent)
1925:					
Class Aaa....	1	30,000,000	5.00	5.00	5.00
Class Aa.....	6	98,500,000	5.31	5.50	4.97
Class A......	15	133,937,000	5.58	6.28	5.16
Class Baa....	15	131,200,000	6.11	7.00	5.53
Class Ba.....	2	16,000,000	6.33	6.69	6.13
No Rating...	1	5,500,000	6.00	6.00	6.00
Total......	40	415,137,000	5.67		
[fol. 4871]					
1926:					
Class Aaa....	2	25,000,000	4.91	4.95	4.85
Class Aa.....	11	130,800,000	4.99	5.15	4.80
Class A......	22	283,635,000	5.26	6.12	4.95
Class Baa....	21	223,500,000	5.66	6.47	5.11
Class Ba.....	7	60,800,000	6.09	6.65	5.75
No Rating...	1	25,000,000	6.32	6.32	6.32
Total......	64	748,735,000	5.42		
1927:					
Class Aaa....	3	80,000,000	4.74	4.78	4.55
Class Aa.....	14	257,800,000	4.74	5.06	4.58
Class A......	31	614,448,000	5.01	5.50	4.71
Class Baa....	26	344,412,000	5.51	7.30	4.90
Class Ba.....	5	90,000,000	5.93	6.04	5.61
Total......	79	1,386,660,000	5.12		
1928:					
Class Aaa....	3	$51,415,100	4.49	4.69	4.40
Class Aa.....	8	97,218,000	4.61	4.80	4.52
Class A......	20	229,708,000	5.05	6.54	4.64
Class Baa....	9	167,400,000	5.38	6.07	5.12
Class Ba.....	10	89,100,000	5.69	6.15	5.30
No Rating...	7	70,800,000	5.47	6.05	4.58
Total......	57	705,641,100	5.15		
1929:					
Class Aaa....	2	24,016,000	4.89	5.00	4.75
Class Aa.....	6	66,000,000	5.04	5.14	4.95
Class A......	9	73,700,000	5.45	5.75	5.06
Class Baa....	3	34,300,000	5.92	6.11	5.32
Class B......	1	5,500,000	5.73	5.73	5.73
No Rating...	1	6,000,000	5.75	5.75	5.75
Total......	22	209,516,000	5.34		
[fol. 4871a]					
1930:					
Class Aaa....	7	129,500,000	4.78	5.10	4.41
Class Aa.....	4	46,279,000	4.75	4.85	4.56
Class A......	27	400,564,500	5.15	5.89	4.53
Class Baa....	13	147,000,000	5.56	6.04	5.35
Total......	51	723,343,500	5.12		

Year	Number of Issues	Amount Offered	Weighted Average Yield to Public (Per cent)	Range High Yield (Per cent)	Range Low Yield (Per cent)
1931:					
Class Aaa....	8	286,000,000	4.33	4.45	4.22
Class Aa.....	16	319,000,000	4.57	4.78	4.23
Class A......	12	219,000,000	4.89	6.70	4.44
Class Baa....	3	26,500,000	5.67	6.00	5.46
Total......	39	850,500,000	4.59		
Average Years 1923-1931, Inclusive:					
Class Aaa....	29	667,431,100	4.61	5.52	4.22
Class Aa.....	80	1,182,971,000	4.87	5.82	4.23
Class A......	167	2,236,292,500	5.24	6.70	4.44
Class Baa....	112	1,288,938,600	5.77	7.30	4.90
Class Ba.....	32	327,892,000	6.05	7.03	5.30
Class B......	1	9,000,000	6.24	6.24	6.24
No Rating...	11	112,300,000	5.76	6.77	4.58
Total All Classes..	432	5,824,825,200	5.25		

[fol. 4872]

Public Utilities

Part Two—Convertible Issues and Issues with Stock Purchase Warrants

Year	Number of Issues	Amount Offered	Weighted Average Yield to Public (Per cent)	Range High Yield (Per cent)	Range Low Yield (Per cent)
1923:					
Class Baa....	4	$32,770,000	6.32	6.78	5.55
1924:					
Class Baa....	3	21,200,000	6.82	6.82	6.82
1925:					
Class Baa.....	3	46,800,000	5.69	6.22	5.50
Class Ba.....	1	6,000,000	6.28	6.28	6.28
Total......	4	52,800,000	5.75		
1926:					
Class Baa....	2	77,500,000	5.97	6.32	5.91
Class Ba.....	4	26,700,000	6.24	6.98	5.57
No Rating...	3	30,000,000	6.72	7.00	6.25
Total......	9	134,200,000	6.19		
1927:					
Class A......	1	25,000,000	5.13	5.13	5.13
Class Baa....	2	57,000,000	5.55	5.76	5.08
Class Ba.....	3	25,000,000	6.14	6.55	5.73
Class B......	1	6,500,000	6.07	6.07	6.07
No Rating...	2	29,500,000	5.70	6.57	5.28
Total......	9	143,000,000	5.64		

Year	Number of Issues	Amount Offered	Weighted Average Yield to Public (Per cent)	Range	
				High Yield (Per cent)	Low Yield (Per cent)
[fol. 4873]					
1928:					
Class A	4	110,911,400	4.85	5.24	4.73
Class Baa	1	30,000,000	5.13	5.13	5.13
Class B	1	8,000,000	6.61	6.61	6.61
No Rating	2	13,500,000	5.22	6.54	5.61
Total	8	162,411,400	5.02		
1929:					
Class A	1	25,000,000	4.90	4.90	4.90
Class Baa	2	14,500,000	5.70	5.80	5.58
Class Ba	8	176,750,000	5.56	6.50	5.11
Class B	1	12,500,000	5.06	5.06	5.06
No Rating	2	38,000,000	5.78	6.26	5.54
Total	14	266,750,000	5.51		
1930:					
Class A	3	60,000,000	5.81	5.86	5.76
Class Baa	2	14,000,000	5.54	5.60	5.50
Class Ba	3	144,115,600	5.20	6.25	5.00
No Rating	4	28,200,000	6.22	6.33	6.00
Total	11	246,315,600	5.47		
1931:					
Class Ba	1	8,000,000	6.95	6.95	6.95
Average Years 1923-1931, Inclusive:					
Class A	9	220,911,400	5.14	5.86	4.73
Class Baa	19	293,770,000	5.83	6.82	5.08
Class Ba	20	386,565,600	5.55	6.98	5.00
Class B	3	27,000,000	5.76	6.61	5.06
No Rating	12	139,200,000	6.00	7.00	5.28
Total All Classes	63	1,067,447,000	5.61		

[fol. 4874]

Public Utilities

Part Three—Bond Issues Including Convertibles or Issues with Stock Purchase Warrants

Year	Number of Issues	Amount Offered	Weighted Average Yield to Public (Per cent)	Range	
				High Yield (Per cent)	Low Yield (Per cent)
1923:					
Class Aaa	1	$15,000,000	5.52	5.52	5.52
Class Aa	5	57,500,000	5.47	5.82	5.12
Class A	14	125,300,000	6.03	6.62	5.63
Class Baa	13	120,696,600	6.26	6.78	5.55
Class Ba	2	17,192,000	6.88	7.00	6.71
Total	35	335,688,600	6.04		

Year	Number of Issues	Amount Offered	Weighted Average Yield to Public (Per cent)	Range	
				High Yield (Per cent)	Low Yield (Per cent)
1924:					
Class Aaa....	2	26,500,000	5.05	5.10	5.00
Class Aa.....	10	109,874,000	5.33	5.79	5.00
Class A......	17	156,000,000	5.88	6.35	5.52
Class Baa....	19	147,900,000	6.46	7.02	5.71
Class Ba.....	5	49,300,000	6.52	7.03	6.08
Class B......	1	9,000,000	6.24	6.24	6.24
No Rating...	1	5,000,000	6.77	6.77	6.77
Total......	55	503,574,000	5.96		
1925:					
Class Aaa....	1	30,000,000	5.00	5.00	5.00
Class Aa.....	6	98,500,000	5.31	5.50	4.97
Class A......	15	133,937,000	5.58	6.28	5.16
Class Baa....	18	178,000,000	6.00	7.00	5.53
Class Ba.....	2	22,000,000	6.32	6.69	6.13
No Rating...	1	5,500,000	6.00	6.00	6.00
Total......	43	467,937,000	5.68		
[fol. 4875]					
1926:					
Class Aaa....	2	25,000,000	4.91	4.95	4.85
Class Aa.....	11	130,800,000	4.99	5.15	4.80
Class A......	22	283,635,000	5.26	6.12	4.95
Class Baa....	23	301,000,000	5.74	6.47	5.11
Class Ba.....	11	87,500,000	6.14	6.98	5.57
No Rating...	3	55,000,000	6.54	7.00	6.25
Total......	72	882,935,000	5.54		
1927:					
Class Aaa....	3	880,000,000	4.74	4.78	4.55
Class Aa.....	14	257,800,000	4.74	5.06	4.58
Class A......	32	639,448,000	5.01	5.50	4.71
Class Baa....	28	401,412,000	5.52	7.30	4.90
Class Ba.....	8	115,000,000	5.98	6.55	5.61
Class B......	1	6,500,000	6.07	6.07	6.07
No Rating...	2	29,500,000	5.70	6.57	5.28
Total......	88	1,529,660,000	5.18		
1928:					
Class Aaa....	3	51,415,100	4.49	4.69	4.40
Class Aa.....	8	97,218,000	4.61	4.80	4.52
Class A......	24	340,619,400	4.99	6.54	4.64
Class Baa....	10	197,400,000	5.34	6.07	5.21
Class Ba.....	10	89,100,000	5.69	6.15	5.30
Class B......	1	8,000,000	6.61	6.61	6.61
No Rating...	9	84,300,000	5.44	5.54	4.58
	65	868,052,500	5.13		
1929:					
Class Aaa....	2	24,016,000	4.89	5.00	4.75
Class Aa.....	6	66,000,000	5.04	5.14	4.95
Class A......	10	98,700,000	5.31	5.75	5.06
Class Baa....	5	48,800,000	5.85	6.11	5.32
Class Ba.....	9	182,250,000	5.56	6.50	5.11
Class B......	1	12,500,000	5.06	5.06	5.06
No Rating...	3	44,000,000	5.78	6.26	5.54
Total......	36	476,266,000	5.44		

[fol. 4876]

Year	Number of Issues	Amount Offered	Weighted Average Yield to Public (Per cent)	Range High Yield (Per cent)	Range Low Yield (Per cent)
1930:					
Class Aaa....	7	129,500,000	4.78	4.75	4.41
Class Aa.....	4	46,279,000	4.75	4.85	4.56
Class A......	30	460,564,500	5.23	5.89	4.53
Class Baa....	12	161,000,000	5.56	6.04	5.35
Class Ba.....	3	144,115,600	5.20	6.04	5.00
No Rating...	3	28,200,000	6.22	6.33	6.00
Total......	59	969,659,100	5.22		
1931:					
Class Aaa....	8	286,000,000	4.33	4.45	4.22
Class Aa.....	16	319,000,000	4.57	4.78	4.23
Class A......	12	219,000,000	4.89	6.70	4.44
Class Baa....	3	26,500,000	5.67	6.00	5.46
Class Ba.....	1	8,000,000	6.95	6.95	6.95
Total......	40	8580,50,000	4.61		
Average Years 1923 to 1931, Inclusive:					
Class Aaa....	29	667,431,100	4.61	5.52	4.22
Class Aa.....	80	1,182,971,000	4.87	5.82	4.23
Class A......	176	2,457,203,900	5.22	6.70	4.44
Class Baa....	131	1,582,708,600	5.76	7.30	4.90
Class Ba.....	50	714,457,600	5.78	7.03	5.00
Class B......	4	36,000,000	5.88	6.61	5.06
No Rating...	22	251,500,000	5.89	7.00	4.58
Total All Classes..	492	6,892,272,200	5.31		

[fol. 4877]

Industrials and Others

Summary Showing Weighted Average Yield on Industrial Long Term Bond Issues of $5,000,000 or Over Sold During the Years 1923 to 1931, Inclusive, Grouped According to their Investment Ratings at Time of Public Offering

Part One—Bond Issues Other Than Convertibles or Issues with Stock Purchase Warrants

Year	Number of Issues	Amount Offered	Weighted Average Yield to Public (Per cent)	Range High Yield (Per cent)	Range Low Yield (Per cent)
1923:					
Class Aa.....	3	$20,500,000	6.26	6.64	6.04
Class A......	10	281,500,000	6.13	6.99	5.84
Class Baa....	7	74,000,000	6.79	7.39	6.13
Class Ba.....	1	10,000,000	6.78	6.78	6.78
No Rating....	1	6,000,000	7.00	7.00	7.00
Total......	22	392,000,000	6.29		

Year	Number of Issues	Amount Offered	Weighted Average Yield to Public (Per cent)	Range: High Yield (Per cent)	Range: Low Yield (Per cent)
1924:					
Class Aaa	1	35,000,000	5.20	5.20	5.20
Class A	2	30,000,000	6.00	6.44	5.77
Class Baa	4	53,500,000	6.50	6.90	6.18
Class Ba	3	17,000,000	6.98	7.50	6.20
No Rating	3	26,000,000	6.15	6.97	5.52
Total	13	161,500,000	6.13		
1925:					
Class Aaa	1	18,000,000	5.52	5.52	5.52
Class Aa	1	8,000,000	5.63	5.63	5.63
Class A	3	42,500,000	5.64	5.70	5.53
Class Baa	11	99,587,000	6.30	6.77	6.00
Class Ba	1	5,000,000	6.00	6.00	6.00
Total	17	173,087,000	6.02		
1926:					
Class Aaa	3	200,000,000	4.90	5.08	4.85
Class A	1	10,000,000	5.67	5.67	5.67
Class Baa	13	135,500,000	5.52	6.12	5.26
Class Ba	4	43,000,000	6.22	6.50	6.00
No Rating	2	26,000,000	5.78	5.87	5.75
Total	23	414,500,000	5.31		
1927:					
Class Aaa	2	21,000,000	4.70	4.81	4.60
Class Aa	4	170,000,000	5.03	5.12	5.00
Class A	7	215,000,000	5.25	5.70	5.04
Class Baa	14	191,500,000	5.54	6.04	5.24
Class Ba	6	51,000,000	5.93	6.50	5.50
No Rating	4	53,000,000	5.66	6.62	5.33
Total	37	701,500,000	5.34		
1928:					
Class Aaa	1	35,000,000	4.50	4.50	4.50
Class Aa	1	30,000,000	4.76	4.76	4.76
Class A	3	30,000,000	5.07	5.24	4.90
Class Baa	7	76,000,000	5.28	5.91	5.00
Class Ba	2	25,000,000	5.81	6.03	5.63
No Rating	6	40,500,000	5.40	5.75	5.25
Total	20	224,500,000	5.26		
1929:					
Class Baa	1	25,000,000	5.58	5.58	5.58
Class Ba	2	26,500,000	6.15	6.62	6.00
Total	3	51,500,000	5.87		
1930:					
Class Aaa	2	63,000,000	5.03	5.08	4.93
Class Aa	1	12,000,000	5.00	5.00	5.00
Class A	2	40,000,000	5.01	5.06	5.00
Class Baa	4	54,000,000	5.80	5.97	5.63
Class Ba	2	14,000,000	5.72	5.93	5.56
No Rating	1	5,000,000	6.50	6.50	6.50
Total	12	188,000,000	5.35		

[fol. 4878]

Year	Number of Issues	Amount Offered	Weighted Average Yield to Public (Per cent)	Range: High Yield (Per cent)	Range: Low Yield (Per cent)
1931:					
Class Aa.	1	15,000,000	4.68	4.68	4.68
Class A.	1	25,000,000	4.94	4.94	4.94
Class Baa. . . .	2	45,000,000	5.09	5.24	5.07
Total.	4	85,000,000	4.97		
Average Years 1923-1931, Inclusive:					
Class Aaa. . . .	10	345,000,000	4.98	5.52	4.50
Class Aa.	11	255,500,000	5.10	6.64	4.68
Class A.	30	683,000,000	5.[illegible]	6.99	4.94
Class Baa. . . .	64	754,087,000	5.80	7.39	5.00
Class Ba.	22	188,500,000	6.11	7.50	5.50
No Rating. . .	17	165,500,000	5.78	7.00	5.33
Total All Classes. .	154	2,391,587,000	5.58		

[fol. 4879]

Part Two—Convertible Issues and Issues with Stock Purchase Warrants

Year	Number of Issues	Amount Offered	Weighted Average Yield to Public (Per cent)	Range: High Yield (Per cent)	Range: Low Yield (Per cent)
1923:					
Class A.	2	$81,000,000	6.93	7.02	5.75
Class Baa. . . .	1	50,000,000	7.00	7.00	7.00
Total.	3	131,000,000	6.95		
1924:					
Class A.	1	$5,000,000	6.26	6.26	6.26
Class Baa. . . .	1	12,000,000	6.41	6.41	6.41
No Rating. . .	1	40,000,000	7.00	7.00	7.00
Total.	3	57,000,000	6.81		
1925:					
Class Baa. . . .	4	101,000,000	6.15	6.66	6.10
Class Ba.	2	10,410,000	6.50	7.00	6.03
No Rating. . .	1	16,500,000	7.00	7.00	7.00
Total.	7	127,910,000	6.29		
1926:					
Class A.	1	12,000,000	5.73	5.73	5.73
Class Baa. . . .	2	22,000,000	6.09	6.10	6.07
Class Ba.	4	80,000,000	6.20	7.14	6.00
No Rating. . .	1	5,000,000	5.70	5.70	5.70
Total.	8	119,000,000	6.11		
1927:					
Class Baa. . . .	4	45,000,000	5.53	5.80	5.40
Class Ba.	1	6,500,000	6.12	6.12	6.12
Total.	5	51,500,000	5.60		
1928:					
Class A.	2	23,150,000	5.28	5.40	5.24
Class Baa. . . .	2	14,500,000	5.61	5.93	5.37
Class Ba.	4	38,000,000	6.21	6.50	5.14
No Rating. . .	2	25,500,000	6.30	6.50	6.00
Total.	10	101,150,000	5.94		

Year	Number of Issues	Amount Offered	Weighted Average Yield to Public (Per cent)	Range	
				High Yield (Per cent)	Low Yield (Per cent)
1929:					
Class Aa	2	130,000,000	5.32	5.93	5.14
Class A	1	50,000,000	5.00	5.00	5.00
Class Baa	2	35,000,000	5.31	5.50	5.05
Class Ba	5	76,800,000	6.08	6.20	6.00
No Rating	1	6,000,000	6.10	6.10	6.10
Total	11	297,800,000	5.47		
[fol. 4880]					
1930:					
Class A	2	25,000,000	5.17	5.35	5.05
Class Baa	3	40,000,000	5.34	5.63	5.00
Class Ba	2	36,931,000	5.60	5.84	5.26
Class B	1	30,000,000	6.07	6.07	6.07
No Rating	3	19,500,000	6.13	6.31	5.60
Total	11	151,431,000	5.63		
1931:					
Class A	1	$50,000,000	5.50	5.50	5.50
Class Baa	3	19,752,300	5.78	6.13	5.33
Class B	3	46,600,000	6.36	6.60	6.47
Total	7	116,352,300	5.90		
Average Years 1923-1931, Inclusive:					
Class Aa	2	130,000,000	5.32	5.93	5.14
Class A	10	246,150,000	5.87	7.02	5.00
Class Baa	22	339,252,300	5.97	7.00	5.00
Class Ba	18	248,641,000	6.09	7.14	5.14
Class B	4	76,600,000	6.25	6.60	6.07
No Rating	9	112,500,000	6.60	7.00	5.60
Total All Classes	65	1,153,143,300	5.97		

[fol. 4881] Part Three—Bond Issues Including Convertibles and Issues with Stock Purchase Warrants

1923:					
Class Aa	3	$20,500,000	6.26	6.64	6.04
Class A	12	362,500,000	6.31	7.02	5.75
Class Baa	9	124,000,000	6.88	7.39	6.13
Class Ba	1	10,000,000	6.78	6.78	6.78
No Rating	1	6,000,000	7.00	7.00	7.00
Total	26	523,000,000	6.46		
1924:					
Class Aaa	1	35,000,000	5.29	5.29	5.29
Class A	3	35,000,000	6.12	6.44	5.77
Class Baa	5	65,500,000	6.48	6.99	6.18
Class Ba	3	17,000,000	6.68	7.50	6.20
No Rating	4	66,000,000	6.67	7.00	5.52
Total	16	218,500,000	6.31		

Year	Number of Issues	Amount Offered	Weighted Average Yield to Public (Per cent)	Range	
				High Yield (Per cent)	Low Yield (Per cent)
1925:					
Class Aaa	1	18,000,000	5.52	5.52	5.52
Class Aa	1	8,000,000	5.63	5.63	5.63
Class A	3	42,500,000	5.64	5.70	5.53
Class Baa	15	200,587,000	6.23	6.77	6.00
Class Ba	3	15,410,000	6.34	7.00	6.00
No Rating	1	16,500,000	7.00	7.00	7.00
Total	24	300,997,000	6.14		
1926:					
Class Aaa	3	200,000,000	4.90	5.08	4.65
Class A	2	22,000,000	5.66	5.73	5.67
Class Baa	15	157,500,000	5.60	6.12	5.26
Class Ba	8	123,000,000	6.21	7.14	6.00
No Rating	3	31,000,000	5.76	5.87	5.70
Total	31	533,500,000	5.49		
1927:					
Class Aaa	2	$21,000,000	4.70	4.81	4.60
Class Aa	4	170,000,000	5.03	5.12	5.00
Class A	7	215,000,000	5.25	5.70	5.04
Class Baa	18	236,500,000	5.53	6.04	5.09
Class Ba	7	57,500,000	5.95	6.50	5.50
No Rating	4	53,000,000	5.66	6.62	5.33
Total	42	753,000,000	5.36		
[fol. 4882] 1928:					
Class Aaa	1	5,000,000	4.50	4.50	4.50
Class Aa	1	30,000,000	4.76	4.76	4.76
Class A	5	62,150,000	5.15	5.40	4.99
Class Baa	10	90,500,000	5.32	5.93	5.00
Class Ba	7	63,000,000	6.05	6.50	5.14
No Rating	8	75,000,000	5.77	6.50	5.25
Total	32	325,650,000	5.47		
1929:					
Class Aa	2	130,000,000	5.32	5.93	5.14
Class A	1	50,000,000	5.00	5.00	5.00
Class Baa	3	60,000,000	5.42	5.58	5.05
Class Ba	7	103,300,000	6.09	6.62	6.00
No Rating	1	6,000,000	6.10	6.10	6.10
Total	14	349,300,000	5.53		
1930:					
Class Aaa	2	66,000,000	5.03	5.08	4.53
Class Aa	1	12,000,000	5.00	5.00	5.00
Class A	4	65,000,000	5.07	5.35	5.00
Class Baa	7	94,000,000	5.65	5.97	5.00
Class Ba	4	47,931,000	5.63	5.93	5.26
Class B	1	30,000,000	6.07	6.07	6.07
No Rating	4	24,500,000	6.24	6.50	5.60
Total	23	339,431,000	5.47		

Year	Number of Issues	Amount Offered	Weighted Average Yield to Public (Per cent)	Range. High Yield (Per cent)	Range. Low Yield (Per cent)
1931:					
Class Aa	1	15,000,000	4.68	4.68	4.68
Class A	2	75,000,000	5.31	5.50	4.94
Class Baa	5	64,752,300	5.30	6.13	5.07
Class B	3	46,600,000	6.36	6.60	6.47
Total	11	201,352,300	5.50		
Average Years 1923-1931, Inclusive:					
Class Aaa	10	345,000,000	4.98	5.52	4.50
Class Aa	13	385,500,000	5.17	6.04	4.76
Class A	39	929,150,000	5.67	7.02	4.94
Class Baa	87	1,093,339,300	5.85	7.30	5.00
Class Ba	40	437,141,000	6.10	7.50	5.14
Class B	4	76,600,000	6.25	6.60	6.07
No Rating	26	278,000,000	6.11	7.00	5.25
Grand Total All Classes	219	3,544,730,300	5.71		

(Here follows side folio 4883)

[fol. 4883] Sales of Bell System Bond Issues in Amounts of $5,000,000 and Over Issued During the Years 1921 to 1931, Inclusive, Showing Cost of Money to Companies as per Roo Commission and Yield to Public

Date Sold	Company	Issue	Date Of Issue	Maturity	Amount Sold (1)	Price To Company (2)	Cost To Co.% (3)	Proceeds To Company (4)	Annual Cost To Company (5)	Price To Public (6)	Yield To Public % (7)	Pr Ba T
1921								Col. 1 x Col. 2	Col. 4 x Col. 3			Col
Feb.	Northwestern Bell Tel. Co	20 Yr. Ser. A 1st Gold 7s	2/1/21	2/1/1941	$30,000,000	91.61	7.65	$27,483,000	$2,157,416	96.50	7.34	$28
Nov.	New York Tel. Co	20 Yr. Ref. Gold 6s, Ser. A	10/1/21	10/1/1941	50,000,000	93.	6.64	46,500,000	3,087,600	97	6.27	48
							7.09	73,983,000	5,245,016		6.67	77
1922												
May	Pacific Tel. & Tel. Co	Ref. Gold 5s, Ser. A	5/1/22	5/1/1952	25,000,000	91	5.62	22,750,000	1,278,550	94	5.41	23
June	New England Tel. & Tel. Co	First Gold 5s, Ser. A	6/1/22	6/1/1952	35,000,000	94.50	5.37	33,075,000	1,776,128	97.50	5.16	34
							5.47	55,825,000	3,054,678		5.26	57
1923												
Jan.	Bell Telephone Co. of Pa	First & Ref. Gl. 5s, Ser. B	1/1/23	1/1/1948	35,000,000	95.50	5.33	33,425,000	1,781,553	98.50	5.11	34
June	Ill. Bell Tel. Co	First & Ref. Gl. 5s, Ser. A	6/1/23	6/1/1956	50,000,000	92.	5.53	46,000,000	2,543,800	95.25	5.31	47
Nov.	American Tel. & Tel. Co	S. F. Deb. Gold 5½s	11/1/23	11/1/1943	100,000,000	94.75	5.95	94,750,000	5,637,625	98.50	5.63	98
							5.72	174,175,000	9,962,978		5.45	180
1924												
Jan.	Southwestern Bell Tel. Co	First & Ref. Gl. 5s, Ser. A	2/1/24	2/1/1954	50,000,000	90	5.70	45,000,000	2,565,000	93.50	5.44	46
1925												
Jan.	American Tel. & Tel. Co	S. F. Gold Deb. 5s	1/1/25	1/1/1960	125,000,000	91.50	5.55	114,375,000	6,347,813	95	5.32	118
Sept.	Bell Telephone Co. of Pa	First & Ref. Gl. 5s, Ser. C	10/1/25	10/1/1960	50,000,000	97	5.19	48,500,000	2,517,150	100	5.00	50
							5.44	162,875,000	8,864,963		5.23	108,
1926												
May	New England Tel. & Tel. Co	First Gold 4½s, Ser. B	5/1/26	5/1/1961	40,000,000	91.50	5.02	36,600,000	1,837,320	94.50	4.83	37
1929												
Oct.	Sou. Bell Tel. & Tel. Co	First 5s, 1941	1/2/11	1/1/1941	32,000,000	97.25	5.33	31,120,000	1,658,696	100	5.00	32
1930												
Jan.	American Tel. & Tel. Co	Debenture Gold 5s	2/1/30	2/1/1965	150,000,000	96.50	5.22	144,750,000	7,555,950	99.50	5.03	149,
May	Sou. New England Tel. Co	Debenture Gold 5s	6/2/30	6/1/1970	10,000,000	100		10,000,000	500,000	102.50	4.86	10,
							5.21	154,750,000	8,055,950	102.50	5.02	159,
	Average, Years 1921 1931, Inclusive						5.62	734,328,000	41,244,601		5.37	700,
	Average, Years 1923 1931, Inclusive						5.44	604,520,000	32,944,907		5.22	625,

NOTE. No Sales of Bell System Bonds in Years 1927, 1928 and 1931.

Issues in Amounts of $5,000,000 and Over Issued During the Years 1921 to 1931, Inclusive, Showing Cost of Money to Companies as per Records of Interstate Commerce Commission and Yield to Public

Issue	Date Of Issue	Maturity	Amount Sold (1)	Price To Company (2)	Cost To Co. % (3)	Proceeds To Company (4)	Annual Cost To Company (5)	Price To Public (6)	Yield To Public % (7)	Proceeds On Basis Of Pr. To Public (8)	Annual Cost On Basis Of Pr. To Public (9)
						Col. 1 x Col. 2	Col. 4 x Col. 3			Col. 1 x Col. 6	Col. 8 x Col. 7
Ser. A 1st Gold 7s	2/1/21	2/1/1941	$30,000,000	91.61	7.65	$27,483,000	$2,157,416	96.50	7.34	$28,950,000	$2,124,930
Ref. Gold 6s, Ser. A	10/1/21	10/1/1941	50,000,000	93	6.64	46,500,000	3,087,600	97	6.27	48,500,000	3,040,950
					7.09	73,983,000	5,245,016		6.67	77,450,000	5,165,880
ld 5s, Ser. A	5/1/22	5/1/1952	25,000,000	91	5.62	22,750,000	1,278,550	94	5.41	23,500,000	1,271,350
old 5s, Ser. A	6/1/22	6/1/1952	35,000,000	94.50	5.37	33,075,000	1,776,128	97.50	5.16	34,125,000	1,760,850
					5.47	55,825,000	3,054,678		5.26	57,625,000	3,032,209
Ref. Gl. 5s, Ser. B	1/1/23	1/1/1948	35,000,000	95.50	5.33	33,425,000	1,781,553	98.50	5.11	34,475,000	1,761,673
Ref. Gl. 5s, Ser. A	6/1/23	6/1/1956	50,000,000	92	5.53	46,000,000	2,543,800	95.25	5.31	47,625,000	2,528,888
eb. Gold 5½s	11/1/23	11/1/1943	100,000,000	94.75	5.95	94,750,000	5,637,625	98.50	5.63	98,500,000	5,545,550
					5.72	174,175,000	9,962,978		5.45	180,600,000	9,836,111
Ref. Gl. 5s, Ser. A	2/1/24	2/1/1954	50,000,000	90	5.70	45,000,000	2,565,000	93.50	5.44	46,750,000	2,543,200
ld Deb. 5s	1/1/25	1/1/1960	125,000,000	91.50	5.55	114,375,000	6,347,813	95	5.32	118,750,000	6,317,500
Ref. Gl. 5s, Ser. C	10/1/25	10/1/1960	50,000,000	97	5.19	48,500,000	2,517,150	100	5.00	50,000,000	2,500,000
					5.44	162,875,000	8,864,963		5.23	168,750,000	8,817,500
ld 4½s, Ser. B	5/1/26	5/1/1961	40,000,000	91.50	5.02	36,600,000	1,837,320	94.50	4.83	37,800,000	1,825,740
1941	1/2/41	1/1/1941	32,000,000	97.25	5.33	31,120,000	1,658,696	100	5.00	32,000,000	1,600,000
re Gold 5s	2/1/30	2/1/1965	150,000,000	96.50	5.22	144,750,000	7,555,950	99.50	5.03	149,250,000	7,507,275
re Gold 5s	6/2/30	6/1/1970	10,000,000	100		10,000,000	500,000	102.50	4.88	10,250,000	498,150
					5.21	154,750,000	8,055,950	102.50	5.02	159,500,000	8,005,425
					5.62	734,328,000	41,214,601		5.37	760,475,000	40,826,056
re 1927, 1928 and 1931					5.44	604,520,000	32,944,907		5.22	625,400,000	32,627,976

[fol. 4884] Public Offerings of Long Term Bond Issues of $5,000,000 or Over During the Years 1923 to 1931 Inclusive of Railroads Grouped According to Investment Rating (Moody's) at Time of Public Offering

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering		Weighted Average Yield %	% of Total Offerings
				Price	Yield %		
			Issues Offered in 1923				
				Rating Aaa			
Illinois Central Railroad Ref. m. 5s	1955	$13,447,000	5	99	5.06	....	....
New York, Lackawanna & Western Ry. Co. 1st & Ref. 4½'s "B"	1973	10,000,000	4½	96¼	4.70	....	....
Cleveland Union Terminals Co. 1st 5's "B"	1973	5,000,000	5	94½	5.31	....	....
Louisville & Nashville RR. 1st & Ref. M. 5's "B"	2003	14,000,000	5	95½	5.24	....	....
Union Pacific RR. 1st & Ref. M. 5's	2008	20,000,000	5	99½	5.03	....	....
St. Paul Union Depot Co. 1st & Ref. 5's "A"	1972	12,500,000	5	94½	5.32	....	....
Total, Aaa		74,947,000		....	....	5.09	51.70
				Rating Aa			
New York, Chgo. & St. Louis RR. 2nd. & Imp. M. 6's "A", "B" & "C"	1931	7,274,000	6	100	6.00	....	....
Northern Pacific Ry. Co. Ref. & Imp. M. 5's "D"	2047	10,000,000	5	99	5.05	....	....
Pere Marquette Ry. 1st M. 5's "A"	1956	12,500,000	5	93¾	5.40	....	....
Chicago & Northwestern Ry. 1st & Ref. M. 5's	2037	15,250,000	5	93½	5.35	....	....
Virginian Ry. Co. 1st 5's "A"	1962	5,000,000	5	94	5.37	....	....
Total, Aa		50,024,000		....	....	5.40	34.51
				Rating A			
Southern Ry. Co. Gen. M. 6's	1956	20,000,000	6	96½	6.25	6.25	13.79
Total, Year 1923		144,971,000		....	....	5.36	100.00

Public Offerings of Long Term Bond Issues of $5,000,000 or Over During the Years 1923 to 1931 Inclusive of Railroads Grouped According to Investment Rating (Moody's) at Time of Public Offering

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering		Weighted Average Yield %	% of Total Offerings
				Price	Yield %		
				Issues Offered In 1924 Rating Aaa			
Chicago Union Station Co., 1st M. 5's "B"	1934	$7.000.000	5	97¾	5 13	....	....
Lehigh Valley Harbor Term. Ry. Co., 1st 5's	1954	10.000.000	5	95½	5 30	....	....
Chicago Burlington & Quincy R. R. Co., 1st & Ref. M. 5's "A"	1971	10.000.000	5	98	5 11	....	....
Philadelphia, Baltimore & Wash. R. R. Co., Gen. M. 5's "B"	1974	10.000.000	5	99	5 05	....	....
Cleveland Union Terminals Co., 1st M. 5's "B"	1973	10.000.000	5	97	5 17	....	....
Lehigh Valley R. R. Co., Gen. Cons. M. 5's	2003	12.000.000	5	99¼	5 03	....	....
Baltimore & Ohio R. R. Co., 1st M. 5's	1948	75.000.000	5	98½	5 11	....	....
Louisville & Nashville R. R. Co., 1st & Ref. M. 4½'s "C"	2003	16.000.000	4½	93½	4 82	....	....
Pennsylvania R. R. Co., Sec. 5's	1964	50.000.000	5	98½	5 09	....	....
Norfolk & Western Ry. Co., Div. 1st Lien & Gen. M. 4's	1944	6.000.000	4	89¾	4 83	....	....
Chicago Union Station Co., Guar. 5's	1944	7.000.000	5	98½	5 12	....	....
Total, Aaa		213.000.000	....	....	....	5 08	53 09
				Rating Aa			
Chicago, Milwaukee & St. Paul Ry. Co., Gen. Coll. 6's	1934	14.000.000	6	96¼	6 51	....	....
Central of Georgia Ry. Co., Ref. & Gen. M. 5½'s "B"	1959	5.000.000	5½	97	5 70	....	....
Illinois Central and Chicago, St. Louis & New Orleans R. R. Co., 1st Ref. M. 5's "A"	1963	11.604.000	5	94¼	5 35	....	....
[fol. 4885]							
Cleveland, Cincinnati, Chgo. & St. Louis Ry., Ref. & Imp. 5's "D"	1963	20.000.000	5	94½	5 34	....	....
Great Northern Ry. Co., Gen. M. 5's "G"	1973	15.000.000	5	92½	5 44	....	....
Virginian Ry. Co., 1st M. 5's "A"	1962	10.000.000	5	96	5 24	....	....
Florida East Coast Ry. Co., 1st & Ref. M. 5's "A"	1974	15.000.000	5	96	5 23	....	....
Total Aa		90.604.000	....	....	....	5 53	22 58

Rating A							
St. Louis & San Francisco Ry. Co., Prior Lien M. 5½'s "D"	1942	8,500,000	5½	92	6.25	....	......
Baltimore & Ohio R. R. Co., Ref. & Gen. M. 6's "C"	1995	35,000,000	6	100	6.00	....	......
New Orleans, Texas & Mexico Ry. Co., 1st M. 5½'s "A"	1954	7,734,000	5½	99	5.57	....	......
New York, Chicago & St. Louis R. R. Co., Ref. M.	1974	26,058,000	5½	94½	5.84	....	......
Texas Pacific & Mo. Pac. Term. R. R. of New Orleans, 1st 5's "A"	1964	5,000,000	5½	100	5.50	....	......
Total, A		82,292,000	...	.....	....	5.90	20.52
Issues Offered in 1924 Rating Baa							
Florida Western & Northern R. R. Co., 1st M. 7's "A"	1934	$7,000,000	7	100	7.00	7.00	1.74
Not Rated							
Northern Central Ry. Co., Gen. & Ref. M. 5's "A"	1974	8,300,000	5	101½	4.92	4.92	2.07
Total, Year 1924		401,196,000	...	.....	....	5.38	100.
Issues Offered In 1925 Rating Aaa							
Pittsburgh, Cincinnati, Chgo. & St. Louis R. R., Gen. M. 5's "B"	1975	26,000,000	5	99	5.05	....	......
Southern Pacific R. R. Co., 1st & Ref. M. 4's	1955	6,425,500	4	91	4.55	....	......
Kansas City Terminal Ry. Co., 1st M. 4's	1960	16,908,000	4	86½	4.80	....	......
Central Pacific Ry., Guar. 5's	1960	40,000,000	5	98	5.12	....	......
Total, Aaa		89,333,500	...	.....	....	5.00	29.90
Rating Aa							
Chicago & Western Indiana, 1st & Ref. 5½'s "A"	1962	16,092,000	5½	97	5.70	....	......
Baltimore & Ohio R. R. Co., 1st M. 5's	1950	45,000,000	5	98	5.14	....	......
Florida East Coast Ry., 1st & Ref. M. 5's "A"	1974	15,000,000	5	94¾	5.30	....	......
Illinois Central & Chgo., St. Louis & New Orleans Jt., 1st & Ref. M. 5's "A"	1963	7,094,000	5	100	5.00	....	......

Public Offerings of Long Term Bond Issues of $5,000,000 or Over During the Years 1923 to 1931 Inclusive of Railroads Grouped According to Investment Rating (Moody's) at Time of Public Offering

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering		Weighted Average Yield %	% of Total Offerings
				Price	Yield %		
				Rating Aa			
Virginian Ry. Co., 1st M. 5's "A"	1962	7,500,000	5	98	5.12	....	....
Minneapolis, St. Paul & Saulte Ste. Marie, 1st Cons. 5's "A"	1938	8,136,000	5	99½	5.05	....	....
Old Colony R. R., 1st M. 5's "B"	1945	5,598,000	5	100½	4.96	....	....
Total, Aa		104,420,000	....	....	....	5.22	34.94
				Rating A			
Wabash Ry. Co., Gen. 5½'s "A"	1975	12,500,000	5½	96	5.74	....	....
Missouri Pacific R. R., 1st & Ref. 6's "E"	1955	25,000,000	6	99¾	6.02	....	....
New York, Chgo. & St. Louis R. R. Co., Ref. M. 5½'s "B"	1975	9,575,000	5½	99	5.56	....	....
Total, A		47,075,000	....	....	....	5.85	15.75

[fol. 4886]

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Price	Yield %	Weighted Average Yield %	% of Total Offerings
				Rating Baa			
New York, New Haven & Hartford R. R., Sec. 6's	1940	$23,000,000	6	100	6.00	6.00	7.70
				Rating Ba			
Seaboard All Florida Ry. Co., 1st M. 6's "A"	1935	25,000,000	6	98½	6.20		
Seaboard Air Line Ry. Co., 1st & Cons. M. 6's "A"	1945	10,000,000	6	94¾	6.47	....	....
Total, Ba		35,000,000	....	....	....	6.27	11.71
Total, Year 1925		298,828,500	....	....	....	5.44	100

			Issues Offered in 1926 Rating Aaa				
Chicago & Northwestern Ry. Co., Gen. M. 4¾'s	1987	18.632.000	4¾	102½	4.63		
Norfolk & Western Ry. Co., Div. 1st Lien & Gen. M. 4's	1944	6.000.000	4	93¾	4.51		
Cleveland Union Terminals Co., 1st M. 5's "B"	1973	5.000.000	5	103½	4.81		
Indiana Harbor Belt R. R., Gen. M. 4½'s	1957	5.000.000	4½	96	4.75		
Total, Aaa		34.632.000				4.65	19.00
			Rating Aa				
Great Northern Ry. Co., Gen. M. 4½'s "D"	1976	15.000.000	4½	94	4.82		
Illinois Central 40 Year 4¾'s	1966	35.000.000	4¾	96½	4.95		
Total, Aa		50.000.000				4.91	27.43
			Rating A				
Baltimore & Ohio R. R. Co., Ref. & G. M. 5's "D"	2000	30.000.000	5	95½	5.24		
Florida East Coast Ry. Co. 1st & Ref. 5's "A"	1974	15.000.000	5	98	5.11		
Texarkana & Ft. Smith Ry. 1st M. 5½'s "A"	1950	10.000.000	5½	100½	5.46		
International Great Nor. R. R. Co., 1st M. 5's "B"	1956	6.000.000	5	95	5.34		
Wabash Railway Co. Gen. M. 5's "B"	1976	15.500.000	5	95½	5.26		
Total, A		76.500.000				5.25	41.96
			Issues Offered in 1926 Rating Aaa				
Missouri Pacific R. R. Co., Sec. 5¼'s	1931 1956	$13.156.000	5¼	99½	5.30	5.30	7.22
			Rating Ba				
Seaboard Air Line Ry. 1st Cons. M. 6's "A"	1945	8.000.000	6	95½	6.41	6.41	4.39
Total, Year 1926		182.288.000				5.10	100.

Public Offerings of Long Term Bond Issues of $5,000,000 or Over During the Years 1923 to 1931 Inclusive of Railroads Grouped According to Investment Rating (Moody's) at Time of Public Offering

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering		Weighted Average Yield %	% of Total Offerings
				Price	Yield %		
			Issues Offered in 1927 Rating Baa				
Chicago, Burlington & Quincy R. R. 1st & Ref. M. 4½'s "B"	1977	30.000.000	4½	[illegible]	4.65	....	....
Northern Central Ry. Co. Gen. & Ref. M. 4½'s "A"	1974	5.231.000	4½	[illegible]¼	4.70	....	....
Pennsylvania, Ohio & Detroit R. R. 1st & Ref. M. 4½'s "A"	1977	22.000.000	4½	95	4.76	....	....
Atlantic Coast Line Gen. Unif. 4½'s "A"	1964	8.809.000	4½	98	4.61	....	....
Union Pacific R. R. Co. 4½'s	1967	26.835.000	4½	97¼	4.65	....	....
[fol. 4887]							
Southern Pacific Co. (Oregon Lines) 1st M. 4½'s "A"	1977	$20.000.000	4½	100½	4.47	....	....
Morris & Essex R. R. Co. 1st Ref. M. 3½'s	2000	9.871.000	3½	85	4.15	....	....
Central R. R. of New Jersey Gen. M. 4's	1987	5.000.000	4	98½	4.07	....	....
Lehigh Valley R. R. Co. Gen. Cons. M. 4's	2003	12,686,000	4	92¾	4.33	....	....
Total, Aaa		140.432.000	...	.....	....	4.56	27.15
				Rating Aa			
Chicago & Northwestern Ry. Co. 1st & Ref. M. 4½'s	2037	20.572.000	4½	95	4.74	....	....
Illinois Central R. R. & Chgo., St. Louis & New Orleans Joint 1st & Ref. 4½'s "C"	1963	17.350.000	4½	97½	4.64	....	....
Mobile & Ohio R. R. Co., Ref. & Impt. M. 4½'s	1977	13.879.000	4½	95	4.76	....	....
Great Northern Ry. Co. Gen. M. 4½'s "E"	1977	20.000.000	4½	99	4.55	....	....
Total, Aa		71.801.000	...	.....	....	4.66	13.89

			Rating A				
Missouri Pacific R. R. Co. 1st & Ref. M. 5's "F"	1977	$95,000,000	5	100	5.00		
Texas & Pacific Ry. Gen. & Ref. M. 5's "B"	1977	16,000,000	5	99½	5.03		
Chicago, R. I. & Pacific Ry. Co. Sec. 4½'s "A"	1952	40,000,000	4½	95	4.85		
International Great Northern R. R. Co., 1st M. 5's "C"	1956	5,500,000	5	101¾	4.89		
Missouri, Kansas & Texas R. R. Co. Prior Lien M. 4½'s "D"	1978	13,600,000	4½	99¾	4.51		
New Orleans Texas & Mexico Ry. Co. 1st M. 4½'s "D"	1956	5,900,000	4½	98	4.63		
Total A		176,000,000				4.92	34.03
			Rating Baa				
Erie R. R. Co., Impt. M. 5's	1967	50,000,000	5	94½	5.33		
Western Maryland Ry. Co. 1st & Ref. M. 5½'s "A"	1977	12,000,000	5½	99½	5.53		
Boston & Me. R. R., 1st M. 5's "AC"	1967	30,942,000	5	93¼	5.41		
New York, New Haven & Hartford R. R. Co., 1st & Ref. M. 4½'s	1967	31,000,000	4½	91¼	5.01		
Total Baa		123,942,000				5.29	23.97
			Rating Ba				
Seaboard Air Line Ry. 1st & Cons. M. 6's "A"	1945	5,000,000	6	98¾	6.11	6.11	96
Total, Year 1927		517,175,000				4.88	100
			Issues Offered in 1928				
			Rating Aaa				
Alabama Great Southern R. R. Co., 1st Cons. M. 4's "B"	1943	5,206,000	4	98¼	4.15		
Cleveland Union Terminals Co. 1st M. 4½'s "C"	1977	5,000,000	4½	102	4.40		
Nashville, Chattanooga & St. Louis Ry. 1st M. 4's "A"	1978	16,800,000	4	97	4.14		
Union Pacific R. R. Co., 4's	1968	20,000,000	4	92¾	4.39		
Atchison, Topeka & Santa Fe Ry. 1st & Ref. 4½'s "A"	1962	14,691,000	4½	100	4.50		
Total, Aaa		61,697,000				4.36	23.12

Public Offerings of Long Term Bond Issues of $5,000,000 or Over During the Years 1923 to 1931 Inclusive of Railroads Grouped According to Investment Rating (Moody's) at Time of Public Offering

[fol. 4888]

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering		Weighted Average Yield %	% of Total Offerings
				Price	Yield %		
			Rating Aa				
Cleveland, Cinn., Chgo. & St. Louis Ry. Co., Ref. & Impt. M. 4½'s "E"	1977	15,000,000	4½	100	4.50	....	......
Chicago, Milwaukee & St. Paul Ry. Co. Gen. M. 4½'s "E"	1989	24,000,000	4½	102½	4.38	....	......
Total, Aa		39,000,000	...	.....	....	4.42	14.61
			Issues Offered in 1928 Rating A				
St. Louis & San Francisco Ry. Co., Cons. M. 4½'s	1978	$100,000,000	4½	97	4.65	....	......
Wabash Ry. Co. Gen. M. 4½'s "C"	1978	17,867,000	4½	95½	4.74	....	......
New York, Chgo. & St. Louis R. R. Co., Ref. M. 4½'s	1978	11,275,000	4½	94¼	4.80	....	......
Total, A		129,142,000	...	.....	....	4.68	48.40
			Rating Baa				
Denver & Rio Grande Western R. R. Ref. & Impt. M. 5's "B"	1978	12,000,000	5	96	5.23	....	......
Missouri Pacific R. R. Co., 1st & Ref. M. 5's "G"	1978	25,000,000	5	99¼	5.04	....	......
Total, Baa		37,000,000	...	.....	....	5.10	13.87
Total, (Exclusive of Convertibles)		266,839,000	...	.....	....	4.62	100

	Rating				Convertibles			
Atchison, Topeka & Santa Fe Ry. Com. Deb. 4½'s	Aaa	1948	29,864,500	4½	100	4.50	4.50	50.39
Southern Pacific Co., 40 Yr. 4½'s	Aa	1968	29,400,000	4½	99¾	4.51	4.51	49.61
Total Convertibles			59,264,500	....	.....	....	4.50	100
					Issues Offered in 1929 Rating Aaa			
Terminal R. R. Assn. of St. Louis 4's		1953	8,000,000	4	89	4.77	4.77	10.50
					Rating Aa			
Chesapeake & Ohio Ry. Co. Ref. & Imp. M. 4½'s "A"		1993	24,784,000	4½	95	4.75	....	......
Central of Georgia Ry. Co. Ref. & Gen. M. 5's "C"		....	10,000,000	5	98¼	5.11	....	......
Total, Aa			34,784,000	...	.....	....	4.86	45.69
					Rating A			
The Texas & Pacific Ry. Co. Gen. & Ref. M. 5's "C"		1979	$20,000,000	5	99½	5.03	....	......
Seaboard Air Line Ry., 1st Ext. M. 6's		1934	5,360,000	6	100	6.00	....	......
Minneapolis, St. Paul & Saulte Ste. Marie R. R. Co., 1st Ref. M. 5½'s "B"		....	8,000,000	5½	97½	5.65	....	......
Total, A			33,360,000	...	.....	....	5.33	43.81
Total, (Exclusive of Convertibles)			76,144,000	...	.....	....	5.06	100.
	Rating				Convertibles			
Chicago, & Northwestern Ry. Co., 4¾'s "A"	A	1949	72,335,000	4¾	100	4.75	4.75	60.93
Missouri Pacific R. R. Co., Conv. 5½'s "A"	Baa	1949	46,392,000	5½	97½	5.71	5.71	39.07
Total Convertibles			118,727,000	...	.....	....	5.12	100.

Public Offerings of Long Term Bond Issues of $5,000,000 or Over During the Years 1923 to 1931 Inclusive of Railroads Grouped According to Investment Rating (Moody's) at Time of Public Offering

[fol. 4889]

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering Price	Original Public Offering Yield %	Weighted Average Yield %	% of Total Offerings
			Issues Offered in 1930 Rating Aaa				
Louisville & Nashville R. R. Co., Unif. M. 4's	1940	5,000,000	4	94½	4.67		
Cleveland Union Terminals Co., 1st M. 4½'s "C"	1977	18,000,000	4½	98	4.60		
Delaware & Hudson Co., 1st & Ref. M. 4's	1943	10,000,000	4	93	4.73		
Sou. Pacific Co., (Oregon Lines) 1st M. 4½'s "A"	1977	41,294,000	4½	97½	4.63		
New York Central (Boston & Albany) Impt. 4¼'s	1978	5,700,000	4¼	93	4.61		
Cincinnati Union Terminal Co., 1st M. 4½'s "A"	2020	12,000,000	4½	102¼	4.40		
Cleveland & Pittsburgh R. R. Co., Gen. & Ref. M. 4½'s "A"	1977	7,182,000	4½	100½	4.47		
Pittsburgh, Cinn., Chgo. & St. Louis R. R. Co., Gen. M. 4½'s "C"	1977	23,735,000	4½	100½	4.47		
Pennsylvania R. R. Co., Deb. 4½'s	1970	60,000,000	4½	94½	4.81		
Louisville & Nashville R. R. Co., 1st & Ref. M. 4½'s "C"	2003	15,000,000	4½	95	4.74		
Morris & Essex R. R. Const. M. 4½'s "B"	1955	15,000,000	4½	96½	4.74		
Morris & Essex R. R. Const. M. 4½'s "A"	1955	10,000,000	5	103½	4.76		
Chicago & Northwestern Ry. Co., Gen. M. 4¾'s	1987	5,031,000	4¾	103	4.60		
Cleveland, Cinn., Chgo. & St. Louis Ry. Ref. & Impt. M. 4½'s "E"	1977	24,000,000	4½	98	4.60		
Michigan Central R. R. Co., Ref. & Impt. M. 4½'s "C"	1979	7,634,000	4½	98½	4.58		
Reading Co., Ref. M. 4½'s "B"	1997	15,000,000	4½	99½	4.52		
Total, Aaa		274,576,000	....	....	....	4.65	48.15
			Issues Offered in 1930 Rating Aa				
Chesapeake & Ohio Ry. Co. Ref. & Impt. M. 4½'s "B"	1995	$35,088,000	4½	94	4.80		
Chicago, Milwaukee & St. Paul Ry. Co. Gen. M. 4¾'s "F"	1989	15,000,000	4¾	100½	4.72		
Virginian Ry. Co. 1st M. 4½'s "B"	1962	5,000,000	4½	97	4.68		

Great Northern Ry. Co., Gen. M. 4½'s "E"		1977	20,000,000	4½	97	4.66	....	......
Pere Marquette Ry. Co., 1st M. 4½'s "C"		1980	14,000,000	4½	97	4.65	....	......
Total, Aa			89,088,000	...	.....	....	4.72	15.62
					Rating A			
Missouri Pacific R. R. Co., 1st & Ref. M. 5's "H"		1980	25,000,000	5	100¼	4.99	....	......
Colorado & Sou. Ry. Co., Gen. M. 4½'s "A"		1980	20,000,000	4½	95¼	4.75	....	......
Pittsburg & W. Va. Ry. Co., 1st M. 4½'s "C"		1960	6,000,000	4½	94½	4.85	....	......
Chicago & Northwestern Ry. Co., 1st & Ref. M. 4½'s "C"		2037	12,000,000	4½	99¾	4.51	....	......
New York, Chgo. & St. Louis R. R. Co., Ref. M. 4½'s		1978	12,000,000	4½	97½	4.63	....	......
Wabash Ry. Co., Ref. & Gen. M. 5's "D"		1980	15,000,000	5	100½	4.97	....	......
New York, Chgo. & St. Louis R. R. Co., Ref. M. 4½'s "C"		1978	36,600,000	4½	97¾	4.62	....	......
St. Louis & San Francisco Ry. Co., Cons. M. 4½'s "A"		1978	10,000,000	4½	92¾	4.89	....	......
Total, A			136,600,000	...	.....	....	4.77	23.95
					Rating Baa			
Boston & Maine R. R., 1st M. 5's		1955	15,000,000	5	100½	4.96	[illegible]	......
Erie R. R. Co., Ref. & Impt. M. 5's		1975	50,000,000	5	95½	5.26	[illegible]	......
Total, Baa			65,000,000	...	.....	....	5.19	11.40
					Rating Ba			
Mobile & Ohio R. R. Co., Sec. 5's		1938	5,000,000	5	98½	5.23	5.23	.88
Total, (Exclusive of Convertibles)			570,264,000	...	.....	....	4.82	100.

[fol. 4890]

	Rating				Convertibles Offered in 1930			
Chicago, Rock Island & Pacific R. R. Co., Conv. 4½'s	A	1960	$32,228,000	4½	95	4.82	....	......
Baltimore & Ohio R. R. Co., Conv. 4½'s	A	1960	63,031,000	4½	95	4.82	....	......
Total Convertibles			95,259,000	...	.....	....	4.82	100.

Public Offerings of Long Term Bond Issues of $5,000,000 or Over During the Years 1923 to 1931 Inclusive of Railroads Grouped According to Investment Rating (Moody's) at Time of Public Offering

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering Price	Original Public Offering Yield %	Weighted Average Yield %	% of Total Offerings
			Issues Offered in 1931				
			Rating Aaa				
Philadelphia, Balt. & Wash. R. R. Co., Gen. M. "C"	1977	11,301,000	4½	102	4.40		
Pennsylvania R. R. Co., Gen. M. "D"	1981	50,000,000	4¼	96½	4.42		
Louisville & Nashville R. R. Co., Secured 5's	1941	10,000,000	5	98	5.25		
Cincinnati Union Terminal Co., 1st M. "B"	2020	12,000,000	5	97.5	5.12		
New York Central Ref. & Imp. M. "A"	2013	75,000,000		100	4.50		
Total Aaa		158,301,000				4.56	50.11
			Rating Aa				
Cleveland, Cincinnati, Chgo. & St. Louis Ry. Co., R. & Imp. M. "E"	1977	5,000,000	4½	100	4.50		
Pennsylvania, Ohio & Detroit R. R. Co., 1st & Ref. M. "A"	1977	6,483,000	4½	100	4.50		
Pere Marquette Ry. Co., 1st M. "C"	1980	8,000,000	4½	99½	4.52		
Southern Pacific Co	1981	50,000,000	4½	96¾	4.67		
Total Aa		69,483,000				4.62	21.99
			Rating A				
Missouri Pacific R. R. Co., 1st & Ref. M. 5's "I"	1981	61,200,000	5	95	5.25		
Texas & Pacific Ry. Co., Gen. & Ref. M. "D"	1980	13,000,000	5	98½	5.05		
Total A		74,200,000				5.21	23.49
			Rating Baa				
Boston & Maine R. R. Co., 1st M. 4¾'s	1961	13,943,000	4¾	99¼	4.80	4.80	4.41

				Rating Ba			
St. Louis & San Francisco Ry. Cons. M. "B"s *	1936	10,000,000					
Total Year 1931		315,927,000				4.74	100.
Average, Years 1923 to 1931, Inclusive, Exclusive of Convertibles:							
Class Aaa		$1,054,918,500				4.76	38.03
Class Aa		599,204,000				4.97	21.60
Class A		775,169,000				5.13	27.95
Class Baa		283,041,000				5.32	10.20
Class Ba		53,000,000				6.18	1.91
No Rating		8,300,000				4.92	.30
Total, exclusive of Convertibles		2,773,632,500				4.99	100
Convertibles:							
Class Aaa		29,864,500				4.50	10.93
Class Aa		29,400,000				4.51	10.76
Class A		167,594,000				4.79	61.33
Class Baa		46,392,000				5.71	16.98
Total, Convertibles		273,250,000				4.88	100
Total—All Classes (Including Convertibles)		3,046,883,000				4.98	

* Placed privately—not included in totals.

[fol. 4891]

Sales of Railroad Bond Issues

In Amounts of $5,000,000 and Over During Years 1923 to 1931, Inclusive, Grouped According to Ratings (Moody's), Showing Cost of Money to Companies as Per Records of Interstate Commerce Commission, and Yield to Public

Company	Maturity	Amount Offered	Interest Rate	Price to Company	Cost to Company (%)	Weighted Average Cost
			Issues Offered in 1923			
Rating Aaa						
Illinois Central	1955	$13.447.000	5	96.125	5.25	....
New York, Lackawanna & Western	1973	10.000.000	4½	95.00	4.76	....
Cleveland Union Terminal Co	1973	5.000.000	5	91.50	5.50	....
Louisville & Nashville R. R. Co	2003	14.000.000	5	93.00	5.38	....
Union Pacific R. C. Co	2008	20.000.000	5	97.00	5.16	....
St. Paul Union Depot Co	1972	12.500.000	5	91.50	5.50	....
Total, Aaa		74.947.000	....	....	....	5.24
Rating Aa						
Northern Pacific Ry. Co	2047	10.000.000	5	96.50	5.18	....
Pere Marquette Ry	1956	12.500.000	5	90.25	5.66	....
Chicago & Northwestern Ry	2037	15.250.000	5	90.50	5.53	....
Total, Aa		37.750.000	....	....	....	5.47
Rating A						
Southern Ry. Co	1956	20.000.000	6	93.00	6.52	6.52
Total, Year 1923		132.697.000	....	....	....	5.50

[fol. 4892]

Company	Maturity	Amount Offered	Interest Rate	Price to Company	Cost to Company (%)	Weighted Average Cost
			Issues Offered in 1924			
Rating Aaa						
Chicago Union Station Co	1934	$7.000.000	5.00	94.75	5.32	....
Lehigh Valley Harbor Term. Ry. Co	1954	10.000.000	5.00	92.50	5.51	....
Chicago, Burlington & Quincy R. R. Co	1971	40.000.000	5.00	95.00	5.29	....

Philadelphia, Baltimore & Wash. R. R. Co	1974	10.000.000	5.00	96.00	5.23	....
Cleveland Union Terminal Co	1973	10.000.000	5.00	94.00	5.35	....
Lehigh Valley R. R. Co	2003	12.000.000	5.00	96.50	5.18	....
Baltimore & Ohio R. R. Co	1948	75.000.000	5.00	95.50	5.33	....
Louisville Nashville R. R. Co	2003	16.000.000	4.50	91.50	4.93	....
Pennsylvania R. R. Co	1964	50.000.000	5.00	95.50	5.27	....
Chicago Union Station Co	1944	7.000.000	5.00	96.50	5.29	....
Total, Aaa		207.000.000	....	....	....	5.28
Rating Aa						
Chicago, Milwaukee & St. Paul Ry. Co.	1934	14.000.000	6.00	92.25	7.10	....
Central of Georgia Ry. Co	1959	5.000.000	5.50	94.00	5.91	....
Ill. Cent. & Chgo. St. Louis & New Orleans Jt	1963	11.604.000	5.00	91.25	5.55	....
Cleveland, Cincinnati, Chicago & St. Louis	1963	20.000.000	5.00	91.50	5.53	....
Great Northern Ry	1973	15.000.000	5.00	90.00	5.60	....
Virginian Ry. Co	1962	10.000.000	5.00	93.00	5.44	....
Virginian Ry. Co	1962	5.000.000	5.00	91.00	5.57	....
Florida East Coast Ry. Co.	1974	15.000.000	5.00	93.00	5.41	....
Total, Aa		95.604.000	....	....	....	5.77
Rating A						
St. Louis & San Francisco Ry. Co	1942	8.500.000	5.50	88.50	6.62	....
Baltimore & Ohio R. R. Co	1995	35.000.000	6.00	96.50	6.22	....
New Orleans, Texas & Mexico Ry. Co	1954	7.734.000	5.50	95.00	5.93	....
New York, Chicago & St. Louis	1974	26.058.000	5.50	90.75	6.09	....
Tex. Pac. & Mo. Pac. Term. R. R. of New Orleans	1964	5.000.000	5.50	97.50	5.66	....
Total, A		82.292.000	....	....	....	6.16
Rating Baa						
Florida Western & Northern	1934	7.000.000	7.00	92.50	8.11	....
Total, Baa		7.000.000	....	....	....	8.11

Sales of Railroad Bond Issues—Continued

Company	Maturity	Amount Offered	Interest Rate	Price to Company	Cost to Company (%)	Weighted Average Cost
No Rating						
Northern Central Ry. Co	1974	8,300,000	5.00	99.50	5.03	5.03
Total, Year 1924		400,196,000	....	....	....	5.62
[fol. 4893]			Issues Offered in 1925			
Rating Aaa						
Norfolk & Western Ry. Co.	1944	$6,000,000	4.00	88.00	4.98	....
Pittsburgh, Cincinnati, Chicago & St. L. R. R.	1975	26,000,000	5.00	96.00	5.23	....
Southern Pacific R. R. Co	1955	6,425,500	4.00	88.50	4.73	....
Kansas City Terminal Ry. Co	1960	16,908,000	4.00	84.25	4.96	....
Central Pacific Ry	1960	40,000,000	5.00	95.00	5.31	....
Total, Aaa		95,333,500	....	....	....	5.17
Rating Aa						
Chicago & Western Indiana	1962	16,092,000	5.50	93.75	5.92	....
Baltimore & Ohio R. R.	1950	45,000,000	5.00	95.00	5.37	....
Florida East Coast Ry. Co	1974	15,000,000	5.00	91.75	5.49	....
Ill. Cent. & C. St. L. & N. O. R. R	1963	7,094,000	5.00	97.50	5.15	....
Virginian Ry. Co	1962	7,500,000	6.00	95.50	6.28	....
Minn. St. Paul & S. S. M. Ry. Co	1938	8,136,000	5.00	97.83	5.23	....
Old Colony R. R	1945	5,598,000	5.00	98.00	5.16	....
Total, Aa		104,420,000	....	....	....	5.43
Rating A						
Wabash Ry. Co	1975	12,500,000	5.50	93.00	5.94	....
Missouri Pacific R. R	1955	25,000,000	6.00	96.75	6.24	....
N. Y., Chgo. & St. Louis R. R. Co	1975	9,575,000	5.50	96.00	5.74	....
Total, A		47,075,000	....	....	....	6.06

Rating Ba						
Seaboard All Florida Ry. Co	1935	25,000,000	6.00	94.50	6.77	....
Seaboard Airline Ry. Co	1945	10,000,000	6.00	92.25	6.71	....
Total, Ba		35,000,000	....	.....	....	6.75
Total, Year 1925		281,828,500	....	.....	....	5.61
[fol. 4894]						
			Issues Offered in 1926			
Rating Aaa						
Chicago & Northwestern Ry. Co	1987	$18,632,000	4.75	100.00	4.75	....
Norfolk & Western Ry. Co	1944	6,000,000	4.00	92.55	4.61	....
Cleveland Union Terminal Co	1973	5,000,000	5.00	101.50	4.92	....
Indiana Harbor Belt R. R.	1957	5,000,000	4.50	94.50	4.85	....
Total, Aaa		34,632,000	....	.....	....	4.75
Rating Aa						
Great Northern Ry. Co.	1976	15,000,000	4.50	91.50	4.96	....
Ill. Central R. R.	1966	35,000,000	4.75	93.65	5.12	....
Total, Aa		50,000,000	....	.....	....	5.08
Rating A						
Baltimore & Ohio R. R. Co	2000	30,000,000	5.00	92.50	5.41	....
Florida East Coast Ry. Co.	1974	15,000,000	5.00	95.00	5.29	....
Texarkana & Ft. Smith Ry	1950	10,000,000	5.50	97.50	5.69	....
International Grt. Northern R. R. Co	1956	6,000,000	5.00	92.75	5.49	....
Wabash Ry. Co	1976	15,500,000	5.00	93.00	5.41	....
Total, A		76,500,000	....	.....	....	5.43
Rating Baa						
Missouri Pacific R. R	1931–1956	13,156,000	5.25	97.00	5.55	....
Total, Baa		13,156,000	....	.....	....	5.55

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Sales of Railroad Bond Issues—Continued

Company	Maturity	Amount Offered	Interest Rate	Price to Company	Cost to Company (%)	Weighted Average Cost
			Issues Offered in 1927			
Rating Ba						
Seaboard Air Line	1945	8.000.000	6.00	93.25	6.63	6.63
Total, Year 1926		182.288.000	....	....	....	5.26

[fol. 4895]

Company	Maturity	Amount Offered	Interest Rate	Price to Company	Cost to Company (%)	Weighted Average Cost
Rating Aaa						
Chicago, Burlington & Quincy R. R. Co	1977	$30.000.000	4.50	94.50	4.79	....
Northern Central Ry. Co	1974	5.231.000	4.50	94.25	4.81	....
Pennsylvania, Ohio & Detroit R. R	1977	22.000.000	4.50	92.50	4.90	....
Atlantic Coast Line R. R. Co	1964	8.809.000	4.50	96.00	4.73	....
Union Pacific R. R. Co	1967	26.835.000	4.50	94.75	4.80	....
Southern Pacific Co	1977	20.000.000	4.50	98.00	4.60	....
Morris & Essex R. R. Co	2000	9.871.000	3.50	83.50	4.23	....
Total, Aaa		122.746.000	....	....	....	4.74
Rating Aa						
Chicago & Northwestern Ry. Co	2037	20.572.000	4.50	92.50	4.87	....
Ill. Cen. R. R. & Chgo. St. L. & N. O. R. R.	1963	17.350.000	4.50	95.00	4.79	....
Mobile & Ohio R. R. Co.	1977	13.879.000	4.50	92.50	4.90	....
Great Northern Ry. Co	1977	20.000.000	4.50	97.00	4.65	....
Total, Aa		71.801.000	....	....	....	4.80
Rating A						
Missouri Pacific R. R. Co	1977	95.000.000	5.00	97.25	5.15	....
Texas & Pacific Ry	1977	16.000.000	5.00	97.00	5.17	....
Chicago, Rock Island & Pacific Ry.	1952	40.000.000	4.50	92.50	5.03	....
Total, A		151.000.000	....	....	....	5.12

Rating Baa						
Erie R. R. Co	1967	50.000.000	5.00	91.50	5.53	....
Western Maryland Ry. Co.	1977	12.000.000	5.50	96.50	5.71	....
Boston & Maine R. R	1967	30.942.000	5.00	90.25	5.61	....
New York, New Haven & Hartford	1967	31.000.000	4.50	89.25	5.14	....
Total, Baa		123.942.000	....	.....	....	5.47
Rating Ba						
Seaboard Air Line Ry	1945	5.000.000	6.00	96.50	6.32	6.32
Total, Year 1927		474.489.000	....	.....	....	5.07

[fol. 4896]

Issues Offered in 1928

Rating Aaa						
Central R. R. Co. of New Jersey	1987	$5.000.000	4.00	96.50	4.16	....
Lehigh Valley R. R. Co	2003	12.686.000	4.00	90.75	4.43	....
Alabama Great Southern	1943	5.206.000	4.00	97.00	4.26	....
Cleveland Union Terminals Co	1977	5.000.000	4.50	100.00	4.50	....
Nashville, Chattanooga & St. L. Ry.	1978	16.800.000	4.00	95.50	4.22	....
Union Pacific R. R. Co	1968	20.000.000	4.00	90.50	4.51	....
Atchison, Topeka & Santa Fe	1962	14.691.000	4.50	98.50	4.59	....
Total, Aaa		79.383.000	....	.....	....	4.41
Rating Aa						
Cleveland, Cincinnati, Chicago & St. L. Ry. Co.	1977	15.000.000	4.50	98.00	4.60	....
Chicago, Milwaukee & St. Paul	1989	24.000.000	4.50	100.00	4.50	....
Southern Pacific (Conv.)	1968	29.400.000	4.50	97.25	4.65	....
Total, Aa		68.400.000	....	.....	....	4.59

Sales of Railroad Bond Issues—Continued

Company	Maturity	Amount Offered	Interest Rate	Price to Company	Cost to Company (%)	Weighted Average Cost
Rating A						
New Orleans, Texas & Mexico Ry	1956	5.900.000	4.50	95.75	4.77	....
Missouri-Kansas-Texas R. R. Co	1978	13.600.000	4.50	97.25	4.64	....
International Great Northern	1956	5.500.000	5.00	99.50	5.03	....
Wabash Ry. Co	1978	17.867.000	4.50	93.00	4.87	....
St. Louis-San Francisco Ry. Co	1978	100.000.000	4.50	94.50	4.79	....
New York, Chicago & St. Louis R. R. Co	1978	11.275.000	4.50	91.75	4.95	....
Total, A		154.142.000	....	......	....	4.81
Rating Baa						
Denver & Rio Grande Western	1978	12.000.000	5.00	93.50	5.37	....
Mo. Pacific R. R. Co.	1978	25.000.000	5.00	96.50	5.20	....
Total, Baa		37.000.000	....	......	....	5.25
Total, Year 1928		338.925.000	....	......	....	4.72

[fol. 4897]

Issues Offered in 1929

Company	Maturity	Amount Offered	Interest Rate	Price to Company	Cost to Company (%)	Weighted Average Cost
Rating Aaa						
Terminal R. R. Assn. of St. Louis	1953	8.000.000	4.00	87.00	[illegible]	....
Michigan Central	1979	7.634.000	4.50	96.00	4.72	....
Total, Aaa		15.634.000	....	......	....	4.82
Rating Aa						
Chesapeake & Ohio Ry. Co	1993	24.784.000	4.50	92.50	4.88	....
Central of Georgia Ry. Co	1959	10.000.000	5.00	95.50	5.30	....
Total, Aa		34.784.000	....	......	....	5.00

Rating A						
Texas & Pacific Ry. Co.	1979	20,000,000	5.00	96.75	5.18	....
Seaboard Air Line Ry.	1934	5,360,000	6.00	97.50	6.59	....
Minn. St. Paul & S. S. M. R. R. Co.	1978	8,000,000	5.50	95.00	5.81	....
Chicago & Northwestern (Conv.)	1949	72,335,000	4.75	97.50	4.95	....
Total, A		105,695,000	....	......	....	5.14
Rating Baa						
Missouri Pacific R. R. Co.	1949	46,392,000	5.50	95.00	5.93	5.93
Total, Year 1929		202,505,000	......	......	....	5.27

[fol. 4898]

Issues Offered in 1930

Rating Aaa						
Louisville & Nashville R. R. Co.	1940	$5,000,000	4.00	92.50	4.94	....
Cleveland Union Terminal Co.	1977	18,000,000	4.50	95.75	4.72	....
Delaware & Hudson R. R. Corp.	1943	10,000,000	4.00	90.50	4.00	....
Southern Pacific Co.	1977	41,294,000	4.50	95.00	4.77	....
New York Central (Boston & Albany)	1978	5,700,000	4.25	91.00	4.73	....
Cincinnati Union Terminal Co.	2020	12,000,000	4.50	100.00	4.50	....
Cleveland & Pittsburgh R. R. Co.	1977	7,182,000	4.50	98.25	4.59	....
P. C. C. & St. L.	1977	23,735,000	4.50	98.25	4.59	....
Louisville & Nashville R. R. Co.	2003	15,000,000	4.50	92.50	4.88	....
Morris & Essex R. R. Co.	1955	15,000,000	4.50	94.25	4.90	....
Morris & Essex R. R. Co.	1955	10,000,000	5.00	101.25	4.91	....
Pennsylvania R. R. Co.	1970	60,000,000	4.50	92.50	4.96	....
Chicago & Northwestern	1987	5,031,000	4.75	100.50	4.72	....
Cleveland, Cincinnati, Chicago & St. L.	1977	24,000,000	4.50	93.50	4.85	....
Reading Co.	1997	15,000,000	4.50	97.50	4.62	....
Total, Aaa		266,942,000	.....	......	.....	4.80

Sales of Railroad Bond Issues—Continued

Company	Maturity	Amount Offered	Interest Rate	Price to Company	Cost to Company (%)	Weighted Average Cost
Rating Aa						
Chesapeake & Ohio Ry. Co.	1995	35,088,000	4.50	91.50	4.94	....
Chicago, Milwaukee, St. Paul & Pacific	1989	15,000,000	4.75	98.00	4.85	....
Virginian Ry. Co.	1962	5,000,000	4.50	94.50	4.84	....
Great Northern Ry. Co.	1977	20,000,000	4.50	95.00	4.77	....
Pere Marquette	1980	14,000,000	4.50	94.75	4.78	....
Total, Aa		89,088,000	....	......	....	4.85
Rating A						
Missouri Pacific	1980	25,000,000	5.00	97.75	5.12	....
Colorado & Southern	1980	20,000,000	4.50	93.00	4.88	....
Pittsburgh, West Virginia	1960	6,000,000	4.50	92.50	4.98	....
Chicago & Northwestern	2037	12,000,000	4.50	97.50	4.62	....
Chicago Rock Island & Pacific	1960	32,228,000	4.50	92.50	4.98	....
Baltimore & Ohio	1960	63,031,000	4.50	92.50	4.98	....
New York, Chicago & St. Louis	1978	12,000,000	4.50	95.25	4.75	....
Wabash R. R. Co.	1980	15,000,000	5.00	98.00	5.11	....
New York, Chicago & St. Louis	1978	36,600,000	4.50	95.25	4.75	....
St. Louis & San Francisco	1978	10,000,000	4.50	90.25	5.04	....
Total, A		231,859,000	....	......	....	4.93
Rating Baa						
Boston & Maine	1955	15,000,000	5.00	98.00	5.14	....
Erie R. R. Co.	1975	50,000,000	5.00	93.50	5.38	....
Total, Baa		65,000,000	....	......	....	5.32

Rating Ba						
Mobile & Ohio R. R. Co.	1938	5,000,000	5.00	96.75	5.51	5.51
Total, Year 1930		657,889,000	....	......	....	4.91

[fol. 4899]

			Issues Offered in 1931			
Rating Aaa						
Pennsylvania R. R.	1977	$11,301,000	4.50	100.00	4.50	....
New York Central	2013	75,000,000	4.50	97.75	4.61	....
Pennsylvania R. R.	1981	50,000,000	4.50	94.00	4.56	....
Louisville & Nashville R. R.	1941	10,000,000	5.00	95.75	5.56	....
Cincinnati Union Terminal Co.	2019	12,000,000	5.00	95.00	5.27	....
Total, Aaa		158,301,000	....	......	....	4.70
Rating Aa						
New York Central	1976	5,000,000	4.50	98.00	4.60	....
Pennsylvania R. R.	1977	6,483,000	4.50	98.00	4.60	....
Pere Marquette	1980	8,000,000	4.50	97.50	4.63	....
Southern Pacific	1981	50,000,000	4.50	94.25	4.80	....
Total, Aa		69,483,000	....	......	....	4.75
Rating A						
Texas & Pacific	1980	13,000,000	5.00	96.00	5.23	....
Missouri Pacific R. R.	1981	61,200,000	5.00	92.50	5.44	....
Total, A		74,200,000	....	......	....	5.40
Rating Baa						
Boston & Maine R. R.	1961	13,943,000	4.75	97.00	4.94	4.94
Total, Year 1931		315,927,000	....	......	....	4.88

(Here follows side folio 4900)

[fol. 4900] Sales of Railroad Bond Issues in Amounts of $5,000,000 and Over During the Years 1921 to 1931, Inclusive, Showing Cost of money to Companies as Per Records of Interstate Commerce Co

Date Sold	Docket No.	Company	Issue	Amount Sold (1)	Int. Rate (2) %	Mat. Yrs. (3)	Price To Company (4)	Cost To Comp. % (5)	Proceeds To Company (6) Col. 4 x Col. 1	Annual Cost To Company (7) Col. 5 x Col. 6	Price To Public (8)	Yield To Public % (9)
1921												
3 10	1217	Pennsylvania R. R	15 Yr. 6½% Secured Gl	$60,000,000	6.50	15	95.40	7.00	$57,240,000	$4,006,800	99.25	6.58
3 18	1239	Chgo. & No. West Ry. Co	15 Yr. 6½% Secured Gold	15,000,000	6.50	15	95.40	7.00	14,310,000	1,001,700	99.58	6.58
6 1	1385	Chicago Un. Sta. Co	1st Mtge. Series "C"	6,000,000	6.50	42	97.50	6.68	5,850,000	390,780	101.00	6.44
7 1	1374	Nor. Pac. Gt. Nor	Jt. 15 Yr. 6½% Conv. Gold	230,000,000	6.50	15	91.50	7.45	210,450,000	15,678,525	96.50	6.875
7 1	1517	Ill. Cent. R. R	15 Yr. 6½% Secured Gold	8,000,000	6.50	15	93.75	7.19	7,500,000	539,250	97.25	6.80
9	1580	Minn., St. P. & S. S. M	10 Yr. 6½% Coll. Tr. Gold	10,000,000	6.50	10	97.25	6.89	9,725,000	670,053	99.50	6.57
11 16	1602	Southern Ry	1st Cons. Mtge. Gold	5,655,000	5.00	72½	82.00	6.12	4,637,100	283,791	85.00	5.90
								7.29	309,712,100	22,570,800		6.77
1922												
1 3	1546	Louis. & Nash. R. R. Co	1st Refdg. 5½% Gold, "A"	12,753,000	5.50	81	98.00	5.61	12,497,940	701,134	101.00	5.45
1 17	1963	Oregon Short Line R. R	Consol. 1st Mtge	16,424,000	5.00	24½	91.00	5.68	14,945,840	848,924	94.50	5.40
1 25	2007	Southern Ry. Co	Devel. & Gen. Mtge. "A"	30,000,000	6.50	34	90.50	7.26	27,150,000	1,971,000	94.50	6.90
1 27	1069	Chgo. Bur. & Q. R. R	1st & Refdg. Mtge. "A"	30,000,000	5.00	49	93.50	5.38	28,050,000	1,509,000	97.00	5.17
2 20	1990	Gt. Northern Ry. Co	Gen. Mtge. Gold, "B"	30,000,000	5.50	30	93.125	6.00	27,937,500	1,676,250	96.50	5.75
4 1	2273	Erie Ry. Co	Cons. Mtge. Extended	5,000,000	7.00	8½	100.00	7.00	5,000,000	350,000	103.75	6.42
4 13	2271	N. Y. C. R. R. Co	Refdg. & Impr. Mtge. "C"	60,000,000	5.00	91½	91.00	5.50	54,600,000	3,003,000	94.50	5.29
4 20	2298	Mo. Pacific R. R. Co	1st & Refdg. Mtge. "D"	18,000,000	6.00	27	94.875	6.40	17,077,500	1,092,960	98.75	6.10
5 1	2308	Del. & Hudson Co	15 Yr. 5½% Gold	7,500,000	5.50	15	95.00	6.01	7,125,000	428,213	98.00	5.70
5 8	2311	St. Louis-San. Fr. Ry. Co	Prior Lien Mtge. "D"	6,932,000	5.50	19½	90.50	6.36	6,273,460	398,992	95.00	5. 4
6 27	2354	Cleveland Un. Ter. Co	1st Mtge. S. F., "A"	12,000,000	5.50	50	95.75	5.76	11,490,000	661,824	99.00	5.56
7 3	2412	Chicago Un. Sta. Co	1st Mtge., "B"	6,150,000	5.00	41	97.00	5.18	5,965,500	309,013	(1)	
7 27	2321	Nor. Pacific Ry. Co	Refdg. & Impr. Mtge. "C"	8,702,300	5.00	125	91.50	5.46	7,962,605	434,758	96.00	5.21
7 28	2404	N. Y. C. R. R. Co	Refdg. & Impr. Mtge. "C"	25,000,000	5.00	91	91.50	5.47	22,875,000	1,251,263	94.50	5.29
10 5	2563	Chgo. R. I. & Pac. Ry	1st & Refdg. 4% Gold	5,400,000	4.00	11½	85.00	5.81	4,250,000	246,925	87.375	5.50
10 19	1493	Mo. Pacific R. R	1st & Refdg. "D"	5,500,000	6.00	26½	97.00	6.23	5,335,000	332,370	100.00	6.00
12 29	2684	Car. Clinch. & Ohio Ry	1st Cons. Mtge. "A"	8,000,000	6.00	30	91.50	6.66	7,320,000	487,512	96.50	6.26
								5.91	205,855,345	15,703,318		5.67
1923												
1 15	2729	Nor. Pacific Ry. Co	Refdg. & Impr. "D"	10,000,000	5.00	124½	96.50	5.18	9,650,000	499,870	99.00	5.05
4/ 1	1250	Mo. Kans. & Texas	Conv. Adj. "A"	57,500,000	5.00	29	100.00	5.00	57,500,000	2,875,000	(2)	
4/ 2	2831	Ill. Cent. R. R	Refdg. Mtge. 4% Gold	13,447,000	5.00	32½	96.125	5.25	12,925,929	678,611	99.00	5.06
4/16	2443	Del. Lack. & West R. R	1st Refdg. Mtge. "B"	10,000,000	4.50	50	95.00	4.76	9,500,000	452,200	96.25	4.70
7/21	2971	Cleveland Un. Term. Co	1st Mtge. S. F. Gold "B"	5,000,000	5.00	49½	91.50	5.50	4,575,000	251,625	94.50	5.31
9 14	3199	Louis. & Nash. R. R. Co	1st Refdg. 5% Gold "B"	14,000,000	5.00	79½	93.00	5.38	13,020,000	700,476	95.50	5.24
10/ 1	3220	Union Pacific R. R	1st Lien & Refdg. Mtge	20,000,000	5.00	84½	97.00	5.16	19,400,000	1,001,040	99.50	5.03
11/ 8	2740	Pere Marquette Ry	1st Mtge. 5% Gold "A"	12,500,000	5.00	32½	90.25	5.66	11,281,250	638,519	93.75	5.40
11/23	3323	Southern Ry. Co	Devel. & Gen. Mtge. Gl. "A"	20,000,000	6.00	32½	93.00	6.52	18,600,000	1,212,720	96.50	6.25
12/10	3329	Chgo. No. W. Ry. Co	1st & Refdg. Mtge. Gold	15,250,000	5.00	113½	90.50	5.53	13,801,250	763,209	93.50	5.35
12/14	2530	St. Paul Un. Depot Co	1st Refdg. Mtge. "A"	12,500,000	5.00	48	91.50	5.50	11,437,500	629,062	94.50	5.32
								5.34	181,690,929	9,702,332		5.32

(1) Placed privately.

(2) Issued under plan of reorganization of predecessor company in exchange for its securities. Does not appear in Exhibit

lroad Bond Issues in Amounts of $5,000,000 and Over During the Years 1921 to 1931, Inclusive, Showing Cost of money to Companies as Per Records of Interstate Commerce Commission and Yield to Public

Company	Issue	Amount Sold (1)	Int. Rate (2) %	Mat. Yrs. (3)	Price To Company (4)	Cost To Comp. % (5)	Proceeds To Company (6) Col. 4 x Col. 1	Annual Cost To Company (7) Col. 5 x Col. 6	Price To Public (8)	Yield To Public % (9)	Proceeds On Basis Of Pr. To Public (10) Col. 8 x Col. 1	Annual Cost On Basis Of Price To Public (11) Col. 10 x Col. 9
nia R. R	15 Yr. 6½% Secured Gl	$60,000,000	6.50	15	95.40	7.00	$57,240,000	$4,006,800	99.25	6.58	$59,550,000	$3,918,900
lo. West Ry. Co	15 Yr. 6½% Secured Gold	15,000,000	6.50	15	95.40	7.00	14,310,000	1,001,700	99.58	6.58	14,887,500	979,598
n. Sta. Co	1st Mtge. Series "C"	6,000,000	6.50	42	97.50	6.68	5,850,000	390,780	101.00	6.44	6,060,000	390,264
Gt. Nor	Jr. 15 Yr. 6½% Conv. Gold	230,000,000	6.50	15	91.50	7.45	210,450,000	~~15,678,525~~	96.50	6.875	221,950,000	15,259,063
R. R	15 Yr. 6½% Secured Gold	8,000,000	6.50	15	93.75	7.19	7,500,000	539,250	97.25	6.80	7,780,000	529,040
P. & S. S. M	10 Yr. 6½% Coll. Tr. Gold	10,000,000	6.50	10	97.25	6.89	9,725,000	670,053	99.50	6.57	9,950,000	653,715
Ry	1st Cons. Mtge. Gold	5,655,000	5.00	72½	82.00	6.12	4,637,100	283,791	85.00	5.90	4,806,750	283,598
						7.29	309,712,100	22,570,899		6.77	324,984,250	22,014,178
lash. R. R. Co	1st Refdg. 5½% Gold, "A"	12,753,000	5.50	81	98.00	5.61	12,497,940	701,134	101.00	5.45	12,880,530	701,989
ort Line R. R	Consol. 1st Mtge	16,424,000	5.00	24½	91.00	5.68	14,945,840	848,924	94.50	5.40	15,520,680	838,117
ly. Co	Devel. & Gen. Mtge. "A"	30,000,000	6.50	34	90.50	7.26	27,150,000	1,971,090	94.50	6.90	28,350,000	1,956,150
& Q. R. R	1st & Refdg. Mtge. "A"	30,000,000	5.00	49	93.50	5.38	28,050,000	1,509,000	97.00	5.17	29,100,000	1,504,470
rn Ry. Co	Gen. Mtge. Gold, "B"	30,000,000	5.50	30	93.125	6.00	27,937,500	1,676,250	96.50	5.75	28,950,000	1,664,625
o.	Cons. Mtge. Extended	5,000,000	7.00	8½	100.00	7.00	5,000,000	350,000	103.75	6.42	5,187,500	333,037
. R. Co	Refdg. & Impr. Mtge. "C"	60,000,000	5.00	91½	91.00	5.50	54,600,000	3,003,000	94.50	5.29	56,700,000	2,999,430
R. R. Co	1st & Refdg. Mtge. "D"	18,000,000	6.00	27	94.875	6.40	17,077,500	1,092,960	98.75	6.10	17,775,000	1,084,275
lon Co	15 Yr. 5½% Gold	7,500,000	5.50	15	95.00	6.01	7,125,000	428,213	98.00	5.70	7,350,000	418,950
an. Fr. Ry. Co	Prior Lien Mtge. "D"	6,932,000	5.50	19½	90.50	6.36	6,273,460	398,992	95.00	5. 4	6,585,400	391,173
Un. Ter. Co	1st Mtge. S. F., "A"	12,000,000	5.50	50	95.75	5.76	11,490,000	661,824	99.00	5.56	11,880,000	660,528
. Sta. Co	1st Mtge., "B"	6,150,000	5.00	41	97.00	5.18	5,965,500	309,013	(1)			
Ry. Co	Refdg. & Impr. Mtge. "C"	8,702,300	5.00	125	91.50	5.46	7,962,605	434,758	96.00	5.21	8,353,949	435,241
. R. Co	Refdg. & Impr. Mtge. "C"	25,000,000	5.00	91	91.50	5.47	22,875,000	1,251,263	94.50	5.29	23,625,000	1,249,762
& Pac. Ry	1st & Refdg. 4% Gold	5,000,000	4.00	11½	85.00	5.81	4,250,000	246,925	87.375	5.50	4,368,750	240,281
R. R	1st & Refdg. "D"	5,500,000	6.00	26½	97.00	6.23	5,335,000	332,370	100.00	6.00	5,500,000	330,000
. & Ohio Ry	1st Cons. Mtge. "A"	8,000,000	6.00	30	91.50	6.66	7,320,000	487,512	96.50	6.26	7,720,000	483,272
						5.91	265,855,345	15,703,318		5.67	269,846,809	15,201,300
Ry. Co	Refdg. & Impr. "D"	10,000,000	5.00	124½	96.50	5.18	9,650,000	499,870	99.00	5.05	9,900,000	499,950
& Texas	Conv. Adj. "A"	57,500,000	5.00	29	100.00	5.00	57,500,000	2,875,000	(2)			
. R	Refdg. Mtge. 4% Gold	13,447,000	5.00	32½	96.125	5.25	12,925,929	678,611	99.00	5.06	13,312,530	673,614
West R. R	1st Refdg. Mtge. "B"	10,000,000	4.50	50	95.00	4.76	9,500,000	452,200	96.25	4.70	9,625,000	452,375
In. Term. Co	1st Mtge. S. F. Gold "B"	5,000,000	5.00	49½	91.50	5.50	4,575,000	251,625	94.50	5.31	4,725,000	250,897
ah. R. R. Co	1st Refdg. 5% Gold "B"	14,000,000	5.00	79½	93.00	5.38	13,020,000	700,476	95.50	5.24	13,370,000	700,588
lo R. R	1st Lien & Refdg. Mtge	20,000,000	5.00	84½	97.00	5.16	19,400,000	1,001,040	99.50	5.03	19,900,000	1,000,970
ette Ry	1st Mtge. 5% Gold "A"	12,500,000	5.00	32½	90.25	5.66	11,281,250	638,519	93.75	5.40	11,718,750	632,812
y. Co	Devel. & Gen. Mtge. Gl. "A"	20,000,000	6.00	32½	93.00	6.52	18,600,000	1,212,720	96.50	6.25	19,300,000	1,206,250
V. Ry. Co	1st & Refdg. Mtge. Gold	15,250,000	5.00	113½	90.50	5.53	13,801,250	763,209	93.50	5.35	14,258,750	762,843
Depot Co	1st Refdg. Mtge. "A"	12,500,000	5.00	48	91.50	5.50	11,437,500	629,062	94.50	5.32	11,812,500	628,425
						5.34	181,690,929	9,702,332		5.32	127,922,530	6,808,724

rganization of predecessor company in exchange for its securities. Does not appear in Exhibit

[fol. 4901]

Sales of Public Utility Bond Issues (Other Than Bell System) in Amounts of $5,000,000 and Over During Years 1923 to 1931, Inclusive, Showing Cost of Money to Companies) as per Records of State Public Service Commissions) and Yield to Public

Issues Grouped According to Ratings (Moody's)

Company		Issue	Maturity	Amount Offered	Interest Rate %	Price to Company	Cost to Company (%)	Weighted Average Cost (%)
Rating Aaa					Issues Offered in 1923			
Commonwealth Edison	(Ill.)	1st Mtge. Coll. 5's "A"	1953	$15,000,000	5.	89	5.77	5.77
Rating Aa								
Spring Valley Water Co.	(Cal.)	1st Mtge. Bonds	1943	22,000,000	5	96.50	5.29	....
Pacific Gas & Elec Co.	(Cal.)	1st & Ref. Mtge	1952	10,000,000	5.50	95	5.86	....
So. Calif. Edison Co.	(Cal.)	Gen. & Ref. Mtge	1944	9,408,000 (a)	5.50	94	6.01	....
Pacific Gas & Elec. Co.	(Cal.)	1st & Ref. Mtge	1953	10,000,000	5.50	92	6.10	....
Total, Aa				51,408,000	....	....	....	5.68
Rating A								
Pub. Serv. Co. of No. Ill.	(Ill.)	1st Lien & Ref. 5½'s "A"	1962	5,000,000	5.50	89.25	6.24	....
Ohio Power Co.	(Ohio)	1st & Ref. Mtge. "C" Bonds	1953	8,000,000	6	95	6.46	....
So. Calif. Edison Co.	(Cal.)	Ref. Mtge. Bonds	1943	11,500,000	6	94.50	6.50	....
Pub. Serv. Co. of No. Ill.	(Ill.)	1st & Ref. 5½'s	1962	10,000,000	5.50	87.50	6.37	....
Total, A				34,500,000	....	....	....	6.42
Rating Baa								
Milwaukee El. Ry. & Lt. Co.	(Wis.)	Ref. & 1st Mtge. "C"	1953	10,000,000	6	92.50	6.58	....
Ill. Power & Lt. Corp.	(Ill.)	1st & Ref. 6's "A"	1953	5,000,000	6	92.04*	6.69	....
Total, Baa				15,000,000	....	....	....	6.62

(a) $10,000,000 offered, but as Commission reports show sale of only $9,408,000 this amount has been used for purposes of comparison.

(*) Represents average price: $3,095,000 at 92.50; and $1,905,000 at 91.30.

Sales of Public Utility Bond Issues (Other Than Bell System) in Amounts of $5,000,000 and Over During Years 1923 to 1931, Inclusive, Showing Cost of Money to Companies) as per Records of State Public Service Commissions) and Yield to Public

Issues Grouped According to Ratings (Moody's)

[fol. 4902]

Company		Issue	Maturity	Amount Offered	Interest Rate %	Price to Company	Cost to Company (%)	Weighted Average Cost (%)
Rating Aaa					Issues Offered in 1924			
Cleveland Elec. Illum. Co.	(Ohio)	Gen. Mtge. Bonds "A"	1954	$11,500,000	5.	97.	5.20	5.20
Rating Aa								
Pacific Gas & Elec. Co	(Cal.)	1st & Ref. Mtge. Bonds	1952	12,500,000	5.50	92.50	6.06	. . .
Pacific Gas & Elec. Co	(Cal.)	1st & Ref. Mtge. Bonds	1952	12,500,000	5.50	94.50	5.90	. . .
Brooklyn Edison Co.	(N. Y.)	Gen. Mtge. Bonds "A"	1949	25,000,000	5.	95.	5.37	. . .
Total, Aa				50,000,000	. . . .	. . . .	. . . .	5.67
Rating A								
Union Elec. Pr. Co. of Ill.	(Ill.)	1st Mtge. 5½'s "A"	1954	10,000,000	5.50	90.76	6.17	. . .
Los Angeles Gas & El. Corp	(Cal.)	1st & Ref. Mtge. Bonds	1942	8,000,000	6.	94.75	6.50	. . .
So. Calif. Edison Co	(Cal.)	Ref. Mtge. Bonds	1943	14,000,000	6.	95.	6.46	. . .
Syracuse Lighting Co	(N. Y.)	1st & Ref. Gold Bonds	1954	7,000,000	5.50	92.	6.08	. . .
Penn. Ohio Power & Lt. Co.	(Ohio)	1st & Ref. Mtge. Bonds	1944	19,000,000	5.50	94.	6.02	. . .
Los Angeles Gas & El. Corp	(Cal.)	1st & Ref. Mtge. Bonds	1949	6,000,000	5.50	93.	6.05	. . .
Pub. Serv. Co. of No. Ill.	(Ill.)	1st Lien. & Ref. 5½'s "B"	1964	5,000,000	5.50	91.	6.10	. . .
Total, A				69,000,000	. . . .	. . . .	. . . .	6.20
Rating Baa								
Market St. Ry. Co.	(Cal.)	1st Mtge. Bonds	1940	13,000,000	7.	93.	7.77	. . .
Chicago Rapid Transit Co	(Ill.)	1st & Ref. 6½'s	1944	6,500,000	6.50	88.50	7.63	. . .
Ohio Public Serv. Co.	(Ohio)	1st Mtge. & Ref. Bonds	1944	8,000,000	5.	80.	6.85	. . .
Ill. Power & Lt. Corp	(Ill.)	1st & Ref. 5½'s	1954	5,000,000	5.50	92.	6.08	. . .
Chgo. No. Shore & Mil. R. R.	(Ill.)	1st & Ref. 6's	1955	7,000,000	6.	92.	6.61	. . .
Total, Baa				39,500,000	. . . .	. . . .	. . . .	7.15

[fol. 4903]

Rating Aaa					Issues Offered in 1925			
New York Edison Co	(N. Y.)	20 yr. 1st & Ref. Mtge. Bonds "B"	1945	$30,000,000	5.	97.	5.24	5.24
Rating Aa								
Consol. Gas Co. of N. Y.	(N. Y.)	20 yr. Gold Deben	1945	50,000,000	5.50	95.	5.93	....
Niagara Lockport & Ont. Pr	(N. Y.)	30 yr. 1st & Ref. Mtge. "A"	1955	15,000,000	5.	95.	5.34	....
Pacific Gas & Elec. Co	(Cal.)	1st & Ref. Mtge. Bonds	1955	10,000,000	5.	91.	5.62	....
Consol. Gas, El. Lt. & Pr. Co	(Md.)	1st Ref. Mtge. S. F. "F"	1965	9,000,000	5.	97.5	5.15	....
Total, Aa				84,000,000	....	.....	....	5.70
Rating A								
Grt. Western Pr. Co. of Cal.	(Cal.)	1st & Ref. Mtge. Bonds	1955	6,300,000*	5.50	94.	5.93	5.93
Rating Baa								
Ill. Lt. & Pr. Corp	(Ill.)	1st & Ref. 5½'s "B"	1954	5,000,000	5.50	95.	5.86	....
Ill. Lt. & Pr. Corp	(Ill.)	1st & Ref. 5½'s "B"	1954	6,000,000	5.50	95.	5.86	....
Total, Baa				11,000,000	....	.....	....	5.86
Rating Aaa					Issues Offered in 1926			
Commonwealth Edison Co.	(Ill.)	1st Coll. 4½'s "C"	1956	15,000,000	4.50	90.50	5.12	....
Cleveland Elec. Illum. Co.	(Ohio)	Gen. Mtge. Bonds	1961	10,000,000	5.	99.50	5.03	....
Total, Aaa				25,000,000	....	.....	....	5.08
Rating Aa								
Buffalo Gen. El. Co. of N. Y.	(N. Y.)	30 yr. Gen. & Ref. Mtge. "A"	1956	10,000,000	5.	96.	5.27	....
Pac. Gas & Elec. Co	(Cal.)	1st & Ref. Mtge. Bonds	1955	10,000,000	5.	94.75	5.36	....
Cumberland Co. Pr. & Lt. Co.	(Me.)	1st Mtge. Gold Bonds	1956	9,000,000	4.50	91.50	5.05	....
Consol. Gas El. Lt. & Pr. Co.	(Md.)	1st Ref. Mtge. S. F. Series "F"	1965	7,000,000	5.	97.50	5.15	....
Total, Aa				36,000,000	....	.....	....	5.23

(*) Commission reports $7,000,000 but as only $6,300,000 was included in public offering this amount is used for purposes of comparison.

Sales of Public Utility Bond Issues (Other Than Bell System) in Amounts of $5,000,000 and Over During Years 1923 to 1931, Inclusive, Showing Cost of Money to Companies (as per Records of State Public Service Commissions) and Yield to Public

Issues Grouped According to Ratings (Moody's)

[fol. 4904]

Company		Issue	Maturity	Amount Offered	Interest Rate %	Price to Company	Cost to Company (%)	Weighted Average Cost (%)
Rating A								
Pub. Serv. Co. of No. Ill	(Ill.)	1st Lien & Ref. 5's "C"	1966	$7.500.000	5	94.50	5.33	....
Utica Gas & Elec. Co	(N. Y.)	30 yr. Gen. Mtge. "D"	1956	6.000.000	5	97.75	5.15	....
So. Calif. Edison Co	(Cal.)	Ref. Mtge. Bonds	1951	40.000.000	5	94.50	5.40	....
Pub. Serv. Co. of No. Ill.	(Ill.)	Deben. 5's	1931	10.000.000	5	96.50	5.82	....
New Jersey Power & Lt. Co.	(N. J.)	1st Mtge. Gold 5's	1956	6.000.000	5	95.50	5.30	....
Total, A				69.500.000	....	....	....	5.42
Rating Baa								
Northern Ohio Pr. & Lt. Co	(Ohio)	Gen. & Ref. Mtge. Bonds	1951	7.500.000	5.50	87.50	6.52	....
Potomac Edison Co.	(Md.)	1st Mtge. Series "E"	1956	11.250.000	5	93	5.48	....
Western United G. & E. Co.	(Ill.)	1st Mtge. 5½'s "A"	1955	22.500.000	5.50	90	6.25	....
Chi., Aurora & Elgin R. R	(Ill.)	1st & Ref. 6's	1951	5.000.000	6	90	6.84	....
Ill. Power & Lt. Corp	(Ill.)	1st Ref. 5's "C"	1956	7.500.000	5	92	5.55	....
Total, Baa				53.750.000	....	....	....	6.07
Rating Aaa					Issues Offered in 1927			
Commonwealth Edison Co	(Ill.)	1st Mtge. Coll. 4½'s "D"	1957	15.000.000	4.50	94	4.88	4.88
Rating Aa								
Milwaukee Gas Lt. Co	(Wis.)	1st Mtge	1967	11.600.000	4.50	89.843	5.10	....
Boston Consol. Gas Co	(Mass.)	Deb. Gold Bonds 5's	1947	10.500.000	5	101.497	4.926	....
Pub. Serv. Elec. & Gas Co	(N. J.)	1st & Ref. Mtge. Gold	1965	19.800.000	5	94.79	5.32	....
Pacific Gas & Elec. Co	(Cal.)	1st & Ref. Mtge. Bonds	1957	15.000.000	4.50	93	4.95	....
Pub. Serv. Elec. & Gas Co	(N. J.)	1st & Ref. Mtge. Gold Bonds	1967	45.000.000	4.50	94.944	4.78	....
Total, Aa				101.800.000	....	....	....	4.96

(*) Proceeds of $7,500,000—Offering $8,500,000.

[fol. 4905]

Rating A					Issues Offered in 1927			
So. Calif. Edison Co.	(Cal.)	Ref. Mtge. Bonds	1951	$15.000.000	5.	95.	5.37	....
Los Angeles Gas & Elec. Corp.	(Cal.)	1st & Gen. Mtge. Bonds	1961	10.000.000	5.	95.	5.32	....
San Joaquin Lt. & Pr. Corp.	(Cal.)	Unifying & Ref. Mtge. Bonds	1957	25.000.000	5.	95.	5.34	....
Pub. Serv. Co. of No. Ill.	(Ill.)	Debenture 5's	1932	10.000.000	5.	96.	5.94	....
Ohio Power Co.	(Ohio)	1st & Ref. Bonds "D"	1956	9.702,000	4.50	90.25	5.15	....
So. Calif. Edison Co.	(Cal.)	Ref. Mtge. Bonds	1951	30,000.000	5.00	97.	5.22	....
So. Calif. Gas Co.	(Cal.)	1st Mtge. & Ref. Bonds	1957	8.646.000	5.	95.	5.34	....
New York Pr. & Lt. Corp.	(N. Y.)	1st Mtge. Gold Bonds	1967	66.000.000	4.50	93.	4.90	....
Cent. Ill. Pub. Serv. Co.	(Ill.)	1st Mtge. 4½'s "F"	1967	29,000.000	4.50	91.50	4.99	....
Total, A				203.348.000	....	.....	....	5.15
Rating Baa								
Ill. Pr. & Lt. Corp.	(Ill.)	5½'s Gold Bonds	1957	9.500.000	5.50	90.76	6.18	....
Ill. Pr. & Lt. Corp.	(Ill.)	1st & Ref. 5's "C"	1956	5,000.000	5.	92.	5.56	....
Total, Baa				14.500.000	....	.....	....	5.96
Rating Aaa					Issues Offered in 1928			
Rochester Tel. Co.	(N. Y.)	25 yr. 1st & Ref. Mtge. "C"	1953	5,000.000	4.50	97.52	4.66	....
Cincinnati Gas & El. Co.	(Ohio)	1st Mtge. Bonds	1968	35.000.000	4.	89.50	4.57	....
Total, Aaa				40.000,000	....	.....	....	4.58
Rating Aa								
Ohio Power Co.	(Ohio)	1st & Ref. Mtge. Bonds "D"	1957	10.018,000	4.50	90.25	5.15	....
Pac. Gas & Elec. Co.	(Cal.)	1st & Ref. Mtge. Bonds	1957	20.000.000	4.50	96.	4.75	....
Rochester Gas & El. Corp.	(N. Y.)	50 yr. Gen. Mtge. "D"	1978	6.000.000	4.50	97.	4.66	....
Southern Cos., G. Co. of Cal.	(Cal.)	1st Mtge. Bonds	1968	12.000.000	4.50	91.25	5.01	....
Total, Aa				48.018.000	....	.....	....	4.91

Sales of Public Utility Bond Issues (Other Than Bell System) in Amounts of $5,000,000 and Over During Years 1928 to 1931, Inclusive, Showing Cost of Money to Companies (as per Records of State Public Service Commissions) and Yield to Public

Issues Grouped According to Ratings (Moody)

Company		Issue	Maturity	Amount Offered	Interest Rate %	Price to Company	Cost to Company %	Weighted Average Cost %
Rating A								
Cal. Water Service Co.	(Cal.)	1st Mtge. Bonds	1951	$6,254,000	5	96	5.15	
Green Mountain Pr. Corp.	(Vt.)	1st Mtge. Gold Bonds	1948	7,200,000	5	92	5.67	
Pub. Serv. Co. of No. Ill.	(Ill.)	1st Lien & Ref. 4½s "D"	1978	10,000,000	4.50	90.50	5.02	
Total A				23,454,000				5.25
fol. 4906								
Rating Baa								
Ill. Pr. & Lt. Corp.	(Ill.)	1st & Ref. 5s "C"	1956	10,000,000	5	92	5.57	5.57
No Rating								
Super Power Co. of Ill.	(Ill.)	1st Mtge. 4½s	1968	10,000,000	4.50	94.50	4.81	
Bellows Falls Hydro-El. Corp.	(Vt.)	1st Mtge. Bonds	1958	9,000,000	5	94.50	5.37	
Total No Rating				19,000,000				5.07
					Issues Offered in 1929			
Rating Aaa								
Consol. Gas El. Lt. & Pr. Co.	(Md.)	1st & Ref. Mtge. S. F. "G"	1969	10,500,000	4.75	97	4.93	4.93
Rating Aa								
So. Cal. Edison Co.	(Cal.)	Ref. Mtge. Bonds	1954	15,000,000	5	94.5	5.40	5.40
Rating A								
Ill. Pr. & Lt. Corp.	(Ill.)	1st & Ref. 5s "C"	1956	5,000,000	5	90	5.73	5.73

Rating Aaa					Issues Offered in 1930			
Pub. Serv. Elec. & Gas Co.	(N. J.	1st & Ref. Mtge. Gold Bonds	1970	20 000 000	4 50	91 76	4 97	
Commonwealth Edison Co.	(Ill.	1st Mtge. Coll. 4½'s "E"	1960	12 000 000	4.50	95	4 82	
Consol. Gas El. Lt. & Pr. Co.	(Md.	1st Ref. Mtge. s. f. "H"	1970	7 500 000	4 50	95 50	4 75	
Total, Aaa				39 500 000				4 88
Rating Aa								
Pac. Gas & Elec. Co.	(Cal.	1st Ref. Mtge. Bonds	1957	25 000 000	4 50	93 5	4 94	4 94
fol. 4907								
Rating A					Issues Offered in 1930			
Brooklyn Union Gas Co.	(N. Y.	20 yr. Deben. Bonds	1950	$18 000 000	5	100	5	
Pub. Serv. Co. of No. Ill.	(Ill.	1st Lien & Ref. 4½'s "E"	1980	15 000 000	4 50	91	4 96	
Super Pr. Co. of Ill.	(Ill.	1st Mtge. 4½'s	1970	10 000 000	4 50	92 50	4 93	
Ill. Pr. & Lt. Corp.	(Ill.	1st & Ref. Mtge. 5's "C"	1956	8 500 000	5	91 25	5 65	
Total, A				51 500 000				5 09
Rating Baa								
Cincinnati St. Ry. Co.	(Ohio	1st Mtge. Bonds	1955	5 000 000	6	95	6 40	6 40
Rating Aaa					Issues Offered in 1931			
Commonwealth Edison Co.	(Ill.	1st Mtge. Bonds "F"	1981	85 000 000	4	91 50	4 42	
Consol. Gas Co. of N. Y.	(N. Y.	20 yr. Gold Deb. Bonds	1951	60 000 000	4 50	98	4 65	
Consol. Gas El. Lt. & Pr. Co.	(Md.	1st Ref. Mtge. s. f.	1981	18 000 000	4	92 50	4 37	
Pub. Serv. Elec. & Gas Co.	(N. J.	1st Ref. Mtge. Gold Bonds	1971	26 000 000	4	90 53	4 51	
Buffalo Gen. Elec. Co.	(N. Y.	Gen. & Ref. 50 yr. Mtge. "B"	1981	20 000 000	4 50	97 50	4 62	
Total, Aaa				209 000 000				4·52

Company		Issue	Maturity	Amount Offered	Interest Rate (%)	Price to Company %	Cost to Company (%)	Weighted Average Cost (%)
Rating Aa								
Pacific Gas & Elec. Co.	(Cal.)	1st & Ref. Mtge. Bonds	1957	25,000,000	4.50	95	4.84	
So. Calif. Gas Co.	(Cal.)	1st Mtge. & Ref. Bonds	1961	12,500,000	4.50	93	4.95	
Peoples Gas Lt. & Coke Co.	(Ill.)	1st & Ref. Mtge. Bonds "B"	1981	15,000,000	4	91	4.45	
New Jersey Pr. & Lt. Co.	(N. J.)	1st Mtge. Gold 4½s	1960	6,000,000	4.50	99.2	4.55	
				58,500,000				4.74
Rating A								
Milwaukee El. Ry. & Lt. Co.	(Wis.)	Ref. & 1st Mtge.	1971	15,000,000	5	97	5.18	
Pub. Serv. Co. of No. Ill.	(Ill.)	1st Lien & Ref. Mtge. "F"	1981	40,000,000	4.50	94	4.82	
Potomac Edison Co.	(Md.)	1st Mtge. Series "F"	1961	5,000,000	4.50	92	5.02	
Total A				60,000,000	....	.....	....	4.93

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[fol. 4908]

Public Offerings of Long Term Bond Issues of $5,000,000 or Over
During the Years 1923 to 1931, Inclusive of Public Utilities (Other Than Bell System Companies)
Grouped According to Investment Rating (Moody's) at Time of Public Offering

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering Price	Original Public Offering Yield %	Weighted Average Yield %	% of Total Offering
				Issues Offered in 1923			
				Rating Aaa			
Commonwealth Edison Co., 1st Mtge. Coll. 5's	1953	$15,000,000	5	92½	5.52	5.52	4.95
				Rating Aa			
Memphis Power & Lt. Co., 1st & Ref. Mtge. 5's	1948	5,500,000	5	89½	5.80	......	......
Spring Valley Water Co., 1st Mtge. 5's	1943	22,000,000	5	98½	5.12	......	......
Pacific Gas & Electric Co., 1st & Ref. Mtge. 5½'s	1952	10,000,000	5½	98½	5.60	......	......
Pacific Gas & Electric Co., 1st & Ref. Mtge. 5½'s	1952	10,000,000	5½	95½	5.82	......	......
Philadelphia Elec. Co., 1st Lien & Ref. Mtge. 5½'s	1953	10,000,000	5½	98½	5.60	......	......
Total, Aa		57,500,000			......	5.47	18.98
				Rating A			
The Laclede Gas Lt. Co., 1st Mtge. Coll. & Ref. 5½'s	1953	17,500,000	5½	96.45	5.75	......	......
American Power & Lt. Co., Deb. 6's	2016	5,000,000	6	95½	6.28	......	......
Public Service Co. of Nor. Ill., 1st Lien & Ref. Mtge. 5½'s	1962	5,000,000	5½	94¼	5.88	......	......
Southern Cal. Edison Co. Gen. & Ref. Mtge. 5½'s	1944	10,000,000	5½	97½	5.71	......	......
West Penn. Power Co. 1st Mtge. 5's	1963	6,000,000	5	90	5.63	......	......
Public Service Elec. Pr. Co., 1st Mtge. 6's	1948	14,000,000	6	97½	6.20	......	......
North American Edison Co. Secured 6½'s	1948	8,000,000	6½	98½	6.62	......	......
The Ohio Power Co., 1st & Ref. Mtge. 6's	1953	6,000,000	6	99	6.07	......	......
Alabama Power Co., 1st Mtge. Lien & Ref. 6's	1951	6,000,000	6	99	6.07	......	......
Southern Cal. Edison Co., Ref. Mtge. 6's	1943	11,500,000	6	98½	6.13	......	......
Penn. Central Lt. & Pr. Co., 1st Ref. Mtge. 6's	1953	10,500,000	6	98	6.15	......	......
Northern States Power Co., Minn. 1st Lien and Gen'l Mtge. 6's	1948	8,500,000	6	97½	6.20	......	......
Public Service Co. of Nor. Ill., 1st Lien & Ref. Mtge. 5½'s	1962	10,000,000	5½	92	6.04	......	......
West Penn. Power Co., 1st Mtge. 5½'s	1953	7,500,000	5½	95-1/8	5.85	......	......
Total, A		125,300,000				6.03	41.36

Public Offerings of Long Term Bond Issues—Continued

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering		Weighted Average Yield %	% of Total Offerings
				Price Issues Offered	Yield % in 1923		
				Rating Aa			
				Rating Baa			
St. Maurice Power Co. Ltd., 1st Mtge. 6½'s	1953	9,026,000	6½	99½	6.54		
Consolidated Power & Light Co., 1st M. & Ref. Lien 6½'s	1943	7,000,000	6½	99½	6.54		
Illinois Power & Lt. Corpn., 1st & Ref. M. 6's	1953	30,000,000	6	98½	6.11		
The Counties Gas & Elec. Co., 1st & Ref. M. 6's	1953	6,600,000	6	98	6.15		
Milwaukee Electric Ry. & Lt. Co. Ref. & 1st M. 6's	1953	10,000,000	6	98½	6.11		
Ohio Edison Co. 1st M. 6's	1948	7,000,000	6	95	6.40		
Public Service Co. of Colorado, 1st M. & Ref. 6's	1953	5,000,000	6	93	6.53		
Illinois Power & Lt. Corpn. 1st & Ref. M. 6's	1953	5,000,000	6	98½	6.11		
Minnesota Power & Lt. Co., 1st & Ref. M. 6's	1950	8,300,000	6	97¾	6.17		
Total, Baa		87,926,600				6.24	29.03

[fol. 4909]

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Price Issues Offered	Yield % in 1923	Weighted Average Yield %	% of Total Offerings
				Rating Ba			
Illinois Power & Lt. Corpn. Deb. 7's		10,000,000	7	100	7.00		
Interstate Public Service Co., 1st M. & Ref. 6's		7,192,000	6	91½	6.71		
Total, Ba		17,192,000				6.88	5.68
Grand Total, Year 1923 Exclusive of Convertibles		302,918,600				6.01	100

Convertible Issues During 1923.
Rating Baa

Philadelphia Co., Com. Deb. 5½'s	1938	10.000.000	5½	99½	5.55	......	......
Monongahela West Penn. Public Service Co., 1st Lien & Ref. Com. 6's	1928	6.770.000	6	97.89	6.50	......	......
Standard Gas & Elec. Co., Com. 6½'s	1933	6.000.000	6½	98	6.78	......	......
Northern States Power Co. (Minn.) Conv. 6½'s	1933	10.000.000	6½	98½	6.71	......	......
Total Convertible Issues (Baa)		32.770.000	...	98½	...	6.32	100

Issues Offered in 1924
Rating Aaa

Commonwealth Edison Co., 1st M. Coll. T. 5's	1954	15.000.000	5	98½	5.10	......	......
Cleveland Electric Illuminating Co., G. M. 5's	1954	11.500.000	5	100	5.00	......	......
Total, Aaa		26.500.000	...	...	...	5.05	5.49

Wisconsin Elec. Pr. Co., 1st M. 5's	1954	89.000.000	5	91¼	5.61	......	......
Connecticut Lt. & Pr. Co., 1st & Ref. 5½'s	1954	5.874.000	5½	96½	5.75	......	......
Duquesne Light Co., 1st M. & Coll. T. 5½'s	1949	10.000.000	5½	99	5.57	......	......
Bridgeport (Conn.) Hydraulic Co., 1st M. 5's	1944	5.000.000	5	100	5.00	......	......
Pacific Gas & Elec. Co., 1st & Ref. M. 5½'s	1952	12.500.000	5½	96	5.79	......	......
Pacific Gas & Elec. Co., 1st & Ref. M. 5½'s	1952	12.500.000	5½	98	5.64	......	......
Brooklyn Edison Co., Inc., Gen. M. 5's	1949	25.000.000	5	100	5.00	......	......
Detroit Edison Co., Gen. & Ref. M. 5's	1949	12.500.000	5	97½	5.18	......	......
Philadelphia Elec. Co., 1st Lien & Ref. 5's	1960	12.500.000	5	99½	5.03	......	......
Union Elec. Lt. & Pr. Co. (St. L.) Gen. M. 5's	1954	5.000.000	5	99	5.06	......	......
Total, Aa		109.874.000				5.33	22.78

Public Offerings of Long Term Bond Issues—(Continued)

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering		Weighted Average Yield %	% of Total Offering
				Price	Yield %		
				Rating A			
Los Angeles Gas & Elec. Corpn. Gen. & Ref. M. 5's	1942	8,000,000	6	99	6.09		
Union Elec. Lt. & Pr. Co. of Ill., 1st M. 5½'s	1954	10,000,000	5½	95¾	5.80		
The Syracuse Lighting Co., Inc., 1st & Ref. M. 5½'s	1954	7,000,000	5½	97	5.71		
Southern Cal. Edison Co., Ref. M. 6's	1943	14,000,000	6	99	6.09		
Birmingham (Ala.) Elec. Co., 1st & Ref. M. 6's	1954	8,000,000	6	97½	6.18		
Consumers Power Co., 1st Lien & Unifying M. 5½'s	1954	8,500,000	5½	95½	5.82		
Northern States Power Co. (Minn.), 1st L. & Gen. M. 6's	1948	6,000,000	6	99½	6.04		
Pennsylvania Ohio Pr. & Lt. Co., 1st & R. M. 5's	1954	19,000,000	5½	98	5.64		
Puget Sound Power & Lt. Co., 1st & R. M. 5½'s	1949	20,000,000	5½	96¾	5.75		
American Gas & Elec. Co. Deb. 6's	2014	9,000,000	6	95½	6.28		
American Power & Lt. Co., Deb. 6's	2016	5,000,000	6	94½	6.35		
Public Service Elec. & Gas Co., 1st & Ref. M. 5½'s	1964	15,000,000	5½	96½	5.72[4]		
Puget Sound Pr. & Lt. Co., 1st & Ref. M. 5½'s	1949	5,000,000	5½	97	5.72		
American Power & Lt. Co., Deb. 6's	2016	5,000,000	6	94½	6.35		
[fol. 4910]							
Birmingham (Ala.) Water Works Co., 1st M. 5½'s	1954	5,500,000	5½	99¾	5.52		
Los Angeles Gas & Elec. Corpn. G. & Ref. M. 5½'s	1949	6,000,000	5½	96½	5.77		
Public Service Co. of Nor. Ill., 1st L. & R. M. 5½'s	1964	5,000,000	5½	96	5.75		
Total A		156,000,000				5.66	32.35
				Rating Baa			
Market St. Ry. Co., 1st M. 7's	1940	13,000,000	7	100	7.00		
Illinois Pr. & Lt. Corpn., 1st & R. 6's	1953	5,000,000	6	98½	6.11		
West Kentucky Coal Co., 1st M. 7's	1944	5,000,000	7	100	7.00		
Northern States Power Co. (Minn.), 6½% Notes	1933	5,000,000	6½	97½	6.85		
Chicago Rapid Transit Co., 1st & Ref. M. 6½'s	1944	7,500,000	6½	94½	7.02		
Central Ill. Pub. Serv. Co., 1st M. & R. 6's	1944	6,000,000	6	97	6.27		

Luzerne County Gas & Elec. Corp., 1st & Ref. M. 6's	1954	6,000,000	6	98	6.15		
Public Service Corp. of N. J. Security 6's	1944	20,000,000	6	96	6.36		
Interstate Power Co., 1st M. 6's	1944	6,000,000	6	96	6.36		
Public Service Co. of Colo., 1st M. & Ref. 5½'s	1954	10,000,000	5½	93	6.01		
Continental Gas & Elec. Corp., Sec. 6½'s	1964	11,700,000	6½	99	6.57		
Ohio Public Service Co., 1st M. & R. 5's	1954	9,000,000	5	89	5.78		
Central Iowa Pr. & Lt. Co., 1st M. 6's	1944	6,500,000	6	100	6.00		
United Light & Pr. Co., Deb. 6½'s	1974	5,000,000	6½	95	6.84		
Chicago North Shore & Milw. R. R. Co., 1st & Ref. 6's	1955	7,000,000	6	98	6.15		
Illinois Pr. & Lt. Corp., 1st & Ref. M. 5½'s	1954	5,000,000	5½	97	5.71		
Total Bss		126,700,000				6.40	26.26
				Rating Bs			
Pennsylvania Elec. Corp., Deb. 6½'s	1954	5,000,000	6½	93-3/8	7.03		
North American Lt. & Pr. Corp. Sec. 7's	1954	6,300,000	7	100	7.00		
Duke-Price Power Co., Ltd., 1st M. 6's	1949	12,000,000	6	99	6.08		
Cities Service Power & Lt. Co.	1944	20,000,000	6	94½	6.49		
Western Pr. Corp., Sec. Deb. 6½'s	1954	6,000,000	6½	96½	6.52		
Total Bs		49,300,000				6.52	10.22
				Rating B			
Detroit United Ry., 1st M. & Coll. T. 6's	1929	9,000,000	6	99	6.24	6.24	1.86
				No Rating			
Virginia Power Co., 1st Lien & Ref. 6½'s	1954	5,000,000	6½	96½	6.77	6.77	1.04
Grand Total Year 1924 (Exclusive of Convertible-		482,374,000				[illegible]	100

Public Offerings of Long Term Bond Issues—(Continued)

[fol. 4911]

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering Price	Original Public Offering Yield %	Weighted Average Yield %	% of Total Offering
				Convertible Issues During 1924 Rating Baa			
Standard Gas & Elec. Co., Com. Deb. 6½'s	1954	$10,500,000	6½	93½	7.02	....	......
Continental Gas & Elec. Corp., Conv. Coll. T. 7's	1954	5,700,000	7	100	7.00	....	......
Adirondack Pr. & Lt. Corp., Conv. Deb. 6's	1929	5,000,000	6	99-1/8	6.21	....	......
Total, Convertible Issues (Baa)		21,200,000	...	......	....	6.82	100
				Issues Offered in 1925 Rating Aaa			
New York Edison Co., 1st Lien & Ref. M. 5's	1944	30,000,000	5	100	5.00	5.00	7.23
				Rating Aa			
Consolidated Gas Co. of New York, Deb. 5½'s	1945	50,000,000	5½	100	5.50	....	......
Niagara Lockport & Ontario Pr. Co., 1st M. & R. 5's	1955	15,000,000	5	98½	5.10	....	......
West Penn. Pr. Co., 1st M. 5's	1963	6,500,000	5	97½	5.15	....	......
Pacific Gas & Elec. Co., 1st & Ref. M. 5's	1955	10,000,000	5	95¼	5.32	....	......
Consol. Gas, Elec. Lt. & Pr. Co. of Baltimore, 1st Ref. M. 5's	1965	9,000,000	5	100½	4.97	....	......
Detroit Edison Co., Gen. & Ref. M. 5's	1955	8,000,000	5	99½	5.03	....	......
Total, Aa		98,500,000	...	......	....	5.31	23.73
				Rating A			
American Gas & Elec. Co., Deb. 6's	2014	9,000,000	6	97	6.19	....	......
American Pr. & Lt. Co., Deb. 6's	2016	8,000,000	6	95½	6.28	....	......
Indiana & Mich. Elec. Co., 1st & Ref. M. 5's	1955	8,000,000	5	95½	5.30	....	......
Pennsylvania Pr. & Lt. Co., 1st & Ref. M. 5's	1953	8,000,000	5	95½	5.30	....	......
Philadelphia Rapid Transit Co., Guar. 6's	1962	8,975,000	6	99	6.07	....	......
Oklahoma Gas & Elec. Co., 1st M. 5's	1950	23,500,000	5	95	5.37	....	......
Philadelphia Suburban Water Co., 1st M. 5's	1955	10,000,000	5	97½	5.16	....	......

Great Western Power Co. of California, 1st Ref. M.	1955	6,300,000	5½	99	5.57	....	....
New Orleans Public Service, Inc., 1st & Ref. M. 5's	1955	5,000,000	5	94½	5.37	....	....
American Pr. & Lt. Co., Deb. 6's	2016	5,000,000	6	96	6.25	....	....
Alabama Power Co., 1st M. Lien & Ref. 5's	1951	5,000,000	5	95¾	5.30	....	....
Adirondack Pr. & Lt. Corpn., 1st & Ref. M. 5's	1956	5,000,000	5	96¼	5.25	....	....
Massachusetts Gas Co., 5½'s	1946	18,000,000	5½	98½	5.62	....	....
Northern States Pr. Co. (Minn.), 1st Lien & G. M. 5½'s	1950	8,500,000	5½	100	5.50	....	....
Ohio Power Co., 1st & Ref. M. 5's	1952	5,662,000	5	94½	5.39	....	....
Total, A		133,937,000				5.58	32.26

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				Rating Baa			
Jersey Central Pr. & Lt. Co., 1st M. & Ref. 5½'s	1945	$11,500,000	5½	97½	5.71	....	....
Oklahoma Gas & Elec. Co., Deb. 6's	1940	8,000,000	6	98½	6.15	....	....
Associated Gas & Elec. Co., Sec. 6's	1955	14,000,000	6	95½	6.34	....	....
Cities Service Co., Ref. Deb. 6's	1966	10,000,000	6	91	6.64	....	....
Houston (Tex.) Elec. Co., 1st M. 6's	1935	5,000,000	6	94½	6.80	....	....
Illinois Pr. & Lt. Corp., 1st & Ref. M. 5½'s	1954	5,000,000	5½	99½	5.53	....	....
Toledo Traction Lt. & Pr. Co., Sec. 5½'s	1930	8,500,000	5½	99	5.73	....	....
Monongahela West Penn. Public Service Co., West Penn. System, 1st L. & Ref. M. 5½'s	1953	13,200,000	5½	98	5.64	....	....
Missouri Pr. & Lt. Co., 1st M. 5½'s	1955	6,500,000	5½	98½	5.60	....	....
Penn. Central Lt. & Pr. Corp., 1st & Ref. M. 5½'s	1975	5,500,000	5½	97	5.68	....	....
American Water Works & Elec. Co., Deb. 6's	1975	8,000,000	6	94½	6.37	....	....
United Lt. & Rr. Co., Deb. 6's	1975	12,500,000	6	92	6.54	....	....
Illinois Pr. & Lt. Corp., 1st & Ref. M. 5½'s	1954	6,000,000	5½	99	5.57	....	....
International Pr. Securities Corp., Sec. 6½'s	1955	10,000,000	6½	93¾	7.00	....	....
Northern States Pr. Co., (Minn.), 5½'s	1940	7,500,000	5½	96	5.91	....	....
Total, Baa		131,200,000	....	....	....	6.11	31.60
				Rating Ba			
National Public Service Corpn. Coll. Tr. 6½	1955	6,000,000	6½	97½	6.69	....	....
Central States Elec. Corpn., Sec. Deb. 6's	1945	10,000,000	6	98½	6.13	....	....
Total, Ba		16,000,000	....	....	....	6.33	3.85

Public Offerings of Long Term Bond Issues—Continued

Name of Company—Type of Issue	Rating	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering Price	Original Public Offering Yield %	Weighted Average Yield %	% of Total Offering
					No Rating			
Feather River Power Co., 1st M. Serial Gold Notes 6's		1929-1963	5,500,000	6	100	6.00	6.00	1.33
Grand Total, Year 1925 (Exclusive of Convertibles)			415,137,000	...	....	....	5.67	100.
				Convertible Issues During 1925				
Southeastern Pr. & Lt. Co. (Maine), Deb. 6's	* Baa	2025	10,000,000	6	96½	6.22	....	.....
International Tel. & Tel. Corp., Com. Deb. 5½'s	Baa	1945	25,000,000	5½	99	5.58	....	.....
Penn-Ohio Edison Co., Deb. 6's	* Ba	1950	6,000,000	6	96½	6.28	....	.....
Brooklyn Union Gas Co., Com. Deb. 5½'s	Baa	1936	11,800,000	5½	100	5.50	....	.....
			52,800,000	...	....	....	....	.....
				Summary of Convertible Issues (1925)				
Total, Rated Baa			46,800,000	...	....	....	5.69	88.64
Total, Rated Ba			6,000,000	...	....	....	6.28	11.36
							5.75	100.

* Issued with warrants for common stock subscription rights.

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Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Price	Yield %	Weighted Average Yield %	% of Total Offering
				Issues Offered in 1926			
				Rating Aaa			
Commonwealth Edison Co., 1st M. Coll. 4½'s	1956	$15,000,000	4½	93	4.95	....	.....
Cleveland Elec. Illuminating Co., G. M. 5's	1961	10,000,000	5	102.50	4.85	....	.....
Total, Aaa		25,000,000	...	....	....	4.91	3.34
				Rating Aa			
Buffalo General Elec. Co., Gen. & Ref. M. 5's	1956	10,000,000	5	99	5.06	....	.....
The Spring Brook Water Supply Co., 1st Ref. M. 5's	1965	5,300,000	5	99	5.06	....	.....
Carolina Pr. & Lt. Co., 1st & Ref. 5's	1956	18,000,000	5	97¾	5.15	....	.....
Pacific Gas & Elec. Co., 1st & Ref. M. 5's	1955	10,000,000	5	98½	5.10	....	.....

The Washington Water Power Co., Gen. M. 5's	1956	5,000,000	5	100½	4.97		
Cumberland County Pr. & Lt. Co., 1st M. 4½'s	1956	9,000,000	4½	94½	4.85		
Detroit Edison Co., Gen. & R. M. 5's	1955	15,000,000	5	101½	4.90		
Connecticut Lt. & Pr. Co., 1st & Ref. 4½'s	1956	8,000,000	4½	95¼	4.80		
West Penn. Power Co., 1st M. 5's	1956	18,500,000	5	100½	4.97		
Western Union Tel. Co., 5's	1951	25,000,000	5	100	5.00		
Cons. Gas Elec. Lt. & Pr. Co. of Balt., 1st Ref. M. 5's	1965	7,000,000	5	101½	4.91		
Total, Aa		130,800,000				4.99	17.47
					Rating A		
Florida Pr. & Lt. Co., 1st M. 5's	1954	30,000,000	5	93½	5.46		
Pennsylvania Pr. & Lt. Co., 1st & R. 5's	1953	10,000,000	5	98½	5.10		
Alabama Power Co., 1st M. Lien & Ref. 5's	1951	5,000,000	5	98	5.14		
Public Service Co. of Nor. Ill., 1st Lien & Ref. M.	1966	7,500,000	5	98½	5.09		
American Gas & Elec. Co., Deb. 6's	2014	7,500,000	6	99½	6.03		
American Pr. & Lt. Co., Deb. 6's	2016	10,000,000	6	98	6.12		
Appalachian Elec. Pr. Co., 1st & Ref. M. 5's	1956	35,000,000	5	97	5.20		
Utica Gas & Elec. Co., Gen. M. 5's	1956	6,000,000	5	100	5.00		
Ohio Power Co., 1st & Ref. 4½'s	1956	9,635,000	4½	93	4.95		
Public Service Corpn. of N. J., Sec. 5½'s	1956	15,000,000	5½	99	5.57		
Southern Cal. Edison Co., Ref. M. 5's	1951	40,000,000	5	98½	5.11		
Central Power & Lt. Co. (Mass.), 1st M. 5's	1956	14,500,000	5	96	5.27		
Florida Power & Lt. Co., 1st M. 5's	1954	12,000,000	5	95	5.35		
Alabama Power Co., 1st M. Lien & Ref. 5's	1956	6,000,000	5	98½	5.10		
Gulf States Utilities Co., 1st M. & Ref. 5's	1956	9,000,000	5	96	5.27		
Texas Power & Lt. Co., 1st & Ref. M. 5's	1956	16,000,000	5	97	5.20		
Northern Indiana Public Service Co., 1st & R. M. 5's	1966	11,500,000	5	98½	5.09		
Public Service Co. of Nor. Ill., Deb. 5's	1931	10,000,000	5	99½	5.11		
New Jersey Pr. & Lt. Co., 1st M. 5's	1956	6,000,000	5	99	5.06		
New York Water Service Corpn., 1st M. 5's	1951	7,000,000	5	94½	5.40		
Virginia Elec. & Pr. Co., 1st & Ref. M. 5's	1955	6,000,000	5	96½	5.24		
Detroit City Gas Co., 1st M. 5's	1950	10,000,000	5	100	5.00		
Total, A		283,635,000				5.26	37.88

Public Offerings of Long Term Bond Issues—(Continued)

[fol. 4914]

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering Price	Original Public Offering Yield %	Weighted Average Yield %	% of Total Offering
				Issues Offered in 1926 Rating Baa			
Cities Service Co., Ref. 6% Gold Debenture	1966	$10,000,000	6	93¼	6.47	....	......
Western United Gas & Elec. Co., 1st M. 30 Yr. 5½'s	1955	22,500,000	5½	99	5.57	....	......
Chicago Aurora & Elgin R. R. Co., 1st & R. Mtg. 6's	1951	5,000,000	6	96	6.32	....	......
Standard Gas & Elec. Co., Gold Deb. 6's	1951	7,500,000	6	97½	6.20	....	......
Philadelphia Elec. Pr. Co., 1st M. 5½'s	1972	36,000,000	5½	100	5.50	....	......
Puget Sound Power & Lt. Co., 1st & R. 5's	1931	5,000,000	5	99½	5.11	....	......
Cities Service Pr. & Lt. Co., 20 Yr. S. F. 6's	1944	5,000,000	6	96	6.37	....	......
Northern Ohio Pr. & Lt. Co., Gen. & Ref. 5½'s	1951	8,500,000	5½	92½	6.09	....	......
Cities Service Co., Gold Deb. 6's	1966	5,000,000	6	93¼	6.47	....	......
The Nevada Cal. Elec. Corp., 1st Tr. M. 5's	1956	23,000,000	5	95½	5.30	....	......
Dallas (Tex.) Ry. & Term. Co., 1st M. 6's	1951	5,000,000	6	96½	6.28	....	......
Derby Gas & Elec. Corp. (Del.), 1st Lien 5's	1946	5,500,000	5	95	5.41	....	......
Southern Cities Utilities Co., 1st Lien 6's	1951	5,500,000	6	100	6.00	....	......
National Pr. & Lt. Co., Gold Deb. 6's	2026	9,500,000	6	98	6.12	....	......
Kentucky Utilities Co., 1st Mtg. 5's	1961	6,250,000	5	97	5.19	....	......
Standard Gas & Elec. Co., Gold Deb. 6's	1951	7,500,000	6	99	6.08	....	......
The Potomac Edison Co., 1st M. 5's	1956	11,250,000	5	97	5.20	....	......
Arkansas Pr. & Lt. Co., 1st & Ref. 5's	1956	18,000,000	5	95¾	5.28	....	......
Interstate Public Service Co., 1st M. & R. 5's	1956	10,000,000	5	96	5.27	....	......
Standard Gas & Elec. Co., Gold Deb. 6's	1966	10,000,000	6	99	6.07	....	......
Illinois Power & Lt. Corpn., 1st & Ref. 5's	1956	7,500,000	5	97	5.20	....	......
Total, Baa	...	223,500,000	...	....	...	5.66	29.8
				Rating Ba			
Municipal Service Co., S. F. Coll. Tr. 6's	1956	5,500,000	6	96	6.30	....	......
Virginia Public Service Co., 1st M. & R. 5½'s	1946	11,500,000	5½	97	5.75	....	......
Central Gas & Elec. Co., 1st Lien Coll. Tr. S. F. 6's	1946	6,500,000	6	98½	6.13	....	......

General Public Utilities Co., 1st M. & Coll. Tr. 6½'s		1956	6,300,000	6½	98	6.65	....	......
Indianapolis Power & Lt. Corpn., 1st Coll. Tr. 6's		1936	10,000,000	6	98	6.27	....	......
Public Service Co. of Colo., Gold Deb. 6's		1946	6,000,000	6	99	6.09	....	......
North American Lt. & Pr. Co., S. F. Gold Deb. 5½'s		1956	15,000,000	5½	94½	5.89	....	......
Total, Ba		....	60,800,000	...	....	....	6.09	8.12
					No Rating			
Lehigh Power Securities Corp. Gold Deb. 6's		2026	$25,000,000	6	95	6.32	6.32	3.34
Grand Total, Year 1926 (Exclusive of Convertibles)		....	748,375,000	...	....	....	5.42	100.00
					Convertible Issues During 1926			
	Rating							
Houston Gulf Gas Co., 1st M. S. F. 6's *	Ba	1931	5,700,000	6½	98	6.98	....	......
International Power Securities Secured Gold	No rating	1936	5,000,000	7	100	7.00	....	......
Empire Gas & Fuel Co., 1st & Ref. 6½'s *	No rating	1941	20,000,000	6½	97½	6.77	....	......
Associated Elec. Co., Com. 5½'s	Baa	1946	65,000,000	5½	95¼	5.91	....	......
Virginia Public Service Co., S.F. Gold Deb. 6's	Ba	1946	5,000,000	6	96½	6.31	....	......
Southeastern Pr. & Lt. Co., Gold Deb. 6's *	Baa	2025	12,500,000	6	95	6.32	....	......
Oklahoma Natural Gas Corpn., S. F. 6½'s	Ba	1941	6,000,000	6½	99	6.61	....	......
Federal Water Service Corpn. Gold Deb. 6's	No rating	1996	5,000,000	6	96	6.25	....	......
Western Power Corpn. Coll. Tr. 5½'s	Ba	1957	10,000,000	5½	99	5.57	....	......
Total Convertible Issues		....	134,200,000	...	....	....	....	......

[fol. 4915]

				Summary of Convertible Issues (1926)			
Total, Rated Baa	....	77,500,000	...	....	....	5.97	57.75
Total, Rated Ba	....	26,700,000	...	....	....	6.24	19.90
Total, Not Rated	....	30,000,000	...	....	....	6.72	22.35
		134,200,000	...	....	....	6.19	100.

Public Offerings of Long Term Bond Issues—(Continued)

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering Price	Original Public Offering Yield %	Weighted Average Yield %	% of Total Offering
				Issues Offered in 1927 Rating Aaa			
Commonwealth Edison Co., 1st M. Coll. 4½'s	1957	15,000,000	4½	96	4.75	....	......
Duquesne Light Co., 1st M. 4½'s	1967	55,000,000	4½	95	4.78	....	......
Duquesne Light Co., 1st M. 4½'s	1967	10,000,000	4½	99	4.55	....	......
Total, Aaa	....	80,000,000	...	....	....	4.74	5.77
				Rating Aa			
Boston Consolidated Gas Co., Deb. 5's	1947	10,500,000	5	103	4.77	....	......
Central Hudson Gas & Elec. Corpn., 1st & Ref. M. 5's	1957	8,000,000	5	101½	4.90	....	......
Milwaukee Gas Light Co., 1st M. 4½'s	1967	11,500,000	4½	93¾	4.86	....	......
Public Service Elec. Gas Co., 1st & Ref. M. 5's	1965	19,800,000	5	99	5.06	....	......
Philadelphia Suburban Counties Gas Elec. Co., 1st & Ref. M. 4½'s	1957	10,000,000	4½	95	4.82	....	......
Carolina Power & Lt. Co., 1st & Ref. M. 5's	1956	10,000,000	5	100¾	4.95	....	......
Detroit Edison Co., Gen. & Ref. M. 5's "C"	1962	20,000,000	5	102¼	4.86	....	......
* Issued with warrants for common stock subscription rights							
				Issues Offered in 1927 Rating Aa			
Union Elec. Lt. & Pr. Co. (Mo.), Gen. M. 5's "B"	1967	$10,000,000	5	102½	4.86	....	......
Columbus Ry. Power & Lt. Co., 1st & Ref. 4½'s	1957	13,000,000	4½	93¾	4.90	....	......
Pacific Gas & Elec. Co., 1st & Ref. M. 4½'s "E"	1957	15,000,000	4½	96	4.75	....	......
Philadelphia Elec. Co., 1st Lien & Ref. M. 4½'s	1967	35,000,000	4½	98½	4.58	....	......
Public Service Elect. Gas Co., 1st & Ref. M. 4½'s	1967	45,000,000	4½	98	4.61	....	......
Philadelphia Suburban Counties Gas & Elec. Co., 1st & Ref. M. 4½'s	1957	10,000,000	4½	98	4.62	....	......
Duke Power Co., 1st & Ref. M. 4½'s	1967	40,000,000	4½	98	4.61	....	......
Total, Aa	....	257,800,000	...	....	....	.71	18.59

Rating A

San Joaquin Lt. & Pr. Corpn. Unif. & Ref. M. 5's	1957	25,000,000	5	98½	5.10	....	.....
Indianapolis-Pr. & Lt. Co., 1st M. 5's "A"	1957	30,000,000	5	98	5.13	....	.....
Narragansett Co., Coll. Tr. 5's	1957	27,500,000	5	99	5.06	....	.....
New Orleans Public Service, Inc., 1st & Ref. M. 5's "B"	1955	8,000,000	5	96	5.27	....	.....
Southern Cal. Edison Co., Ref. M. 5's	1951	15,000,000	5	98½	5.11	....	.....
Southwestern Gas & Elec. Co., 1st M. 5's	1957	12,500,000	5	96	5.27	....	.....
Los Angeles Gas & Elec. Corpn., 1st & Gen. M. 5's	1961	10,000,000	5	98½	5.09	....	.....
Interstate Power Co. (Del.), 1st M. 5's	1957	20,000,000	5	97½	5.16	....	.....
Empire District Elec. Co., 1st & Ref. M. 5's	1952	9,400,000	5	98½	5.11	....	.....
Cincinnati St. Ry. Co., 1st M. 5½'s "A"	1952	7,000,000	5½	100	5.50	....	.....
Public Service Co. of Oklahoma, 1st M. 5's	1957	8,500,000	5	97½	5.17	....	.....
Southwestern Gas & Elec. Co., 1st M. 5's	1957	5,000,000	5	96½	5.23	....	.....
Columbia Gas & Elec. Corp., Deb. 5's	1952	40,000,000	5	100	5.00	....	.....
Lone Star Corp. (Del.), Deb. 5's	1942	15,000,000	5	98¾	5.12	....	.....
Montana Power Co., Deb. 5's "A"	1962	12,500,000	5	97¼	5.17	....	.....
International Tel. & Tel. Co., Deb. 4½'s	1952	35,000,000	4½	92	5.07	....	.....
Wisconsin Mich. Power Co., 1st & Ref. M. 5's	1957	5,000,000	5	99	5.06	....	.....
Detroit City Gas Co., 1st M. 5's "B"	1950	7,500,000	5	100	5.00	....	.....
[fol. 4916]							
Public Service Co., of Nor. Ill., Deb. 5's	1932	10,000,000	5	99	5.23	....	.....
Pennsylvania Water Service Co., 1st M. & Ref. 5's	1967	9,200,000	5	98¾	5.07	....	.....
Southern Cal. Edison Co., Ref. M. 5's	1952	30,000,000	5	100	5.00	....	.....
Southern Cal. Gas. Co., 1st M. & Ref. 5's	1957	8,646,000	5	99	5.07	....	.....
Columbia Gas & Elec. Corpn., Deb. 5's	1952	5,000,000	5	99	5.07	....	.....
New York Pr. & Lt. Corpn., 1st M. 4½'s	1967	$66,000,000	4½	96	4.72	....	.....
Ohio Power Co., 1st & Ref. 4½'s "D"	1956	9,702,000	4½	94¾	4.84	....	.....
Penn. Central Light & Pr. Co., 1st M. 4½'s	1977	24,000,000	4½	96	4.71	....	.....
Alabama Power Co., 1st & Ref. M. 4½'s	1967	40,000,000	4½	94¾	4.80	....	.....
Associated Elec. Co., 4½'s	1953	20,000,000	4½	94¼	4.90	....	.....
Central Illinois Public Service Co., 1st M. 4½'s "F"	1967	29,000,000	4½	94¾	4.80	....	.....
Florida Power & Lt. Co., 1st M. 5's	1954	10,000,000	5	97½	5.18	....	.....
Philadelphia Co., Secured 5's	1967	60,000,000	5	98	5.12	....	.....
Total, A	....	614,448,000	...	......	....	5.01	44.31

Public Offerings of Long Term Bond Issues—(Continued)

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering		Weighted Average Yield %	% of Total Offering
				Price	Yield %		
				Rating Baa			
Peoples Light & Pr. Corpn., 1st Lien 5½'s	1941	6,500,000	5½	97	5.81	....	......
Illinois Power & Lt. Corpn., Deb. 5½'s	1957	9,500,000	5½	96½	5.75	....	......
International Power Sec. Corpn., 7's Series "E"	1957	10,000,000	7	96⅜	7.30	....	......
Interstate Power Co. (Del.), Deb. 6's	1952	7,500,000	6	98½	6.12	....	......
Southwestern Lt. & Pr. Co., 1st M. 5's "A"	1957	6,500,000	5	97	5.20	....	......
Northwestern Public Service Co., 1st M. 5's "A"	1957	5,800,000	5	96¼	5.25	....	......
Community Pr. & Lt. Co., 1st M. Coll. 5's	1957	11,000,000	5	95½	5.30	....	......
Cities Service Co., Ref. Deb. 5's	1966	14,000,000	5	91¾	5.53	....	......
Georgia Power Co., 1st & Ref. M. 5's	1967	45,000,000	5	97	5.18	....	......
Missouri Public Service Co., 1st M. 5's	1947	5,000,000	5	97	5.24	....	......
United Public Utilities Co., 1st Lien 6's "A"	1947	5,500,000	6	100	6.00	....	......
The Power Corp. of N. Y., Deb. 5½'s	1947	5,000,000	5½	100	5.50	....	......
Cities Service Gas Co., 1st M. Pipeline 5½'s	1942	25,000,000	5½	96¼	5.88	....	......
Brooklyn Manhattan Transit Corpn. R. T. Sec. S. F. 6's	1968	10,262,000	6	101¾	5.87	....	......
Iowa Public Service Co., 1st M. 5's	1957	12,000,000	5	97½	5.16	....	......
Iowa-Nebraska Light & Pr. Co., 1st Lien & Ref. M. 5's	1957	12,000,000	5	96½	5.23	....	......
United Lt. & Ry. Co., Deb. 5½'s	1952	25,000,000	5½	99½	5.54	....	......
Georgia Power Co., 1st & Ref. M. 5's	1967	18,000,000	5	98	5.12	....	......
West Texas Utilities Co., 1st M. 5's "A"	1957	12,500,000	5	97½	5.16	....	......
Cities Service Pr. & Lt. Co., Deb. 5½'s	1952	45,000,000	5½	98	5.65	....	......
Illinois Power & Lt. Corpn., 1st & Ref. M. 5's "C"	1956	5,000,000	5	98	5.13	....	......
Mississippi Pr. & Lt. Co., 1st M. 5's	1957	9,000,000	5	97¼	5.18	....	......
Central Gas & Elec. Co., 1st Lien Coll. Tr. 5½'s	1946	7,000,000	5½	98½	5.63	....	......
Louisiana Power & Lt. Co., 1st M. 5's	1957	8,000,000	5	97¾	5.15	....	......
Twin City Rapid Transit Co., 1st Lien & Ref. M. 5½'s	1952	18,000,000	5½	97	5.73	....	......
Wisconsin Pr. & Lt. Co., 1st Lien & Ref. M. 5's	1956	6,350,000	5	101½	4.90	....	......
Total, Baa	....	344,412,000	...	......	....	5.51	24.84

[fol. 4917]

Rating Ba

Standard Pr. & Lt. Corpn. Deb. 6's	1957	$24,000,000	6	99½	6.04	....	......
Federated Utilities Inc. (Chicago), 1st Lien 5½'s	1957	7,500,000	5½	94¾	5.87	....	......
Empire Oil & Ref. Co., 1st M. Coll. Tr. 5½'s	1942	30,000,000	5½	96	5.91	....	......
Utilities Power & Lt. Corpn. Deb. 5½'s	1947	20,000,000	5½	94¼	6.00	....	......
Central States Pr. & Lt. Corp., 1st M. & 1st Lien 4½'s	1953	8,500,000	5½	98½	5.61	....	......
Total, Ba	....	90,000,000	...	....	....	5.93	6.49
Grand Total, Year 1927 (Exclusive of Convertibles)	....	1,386,660,000	...	....	....	5.12	100.

Convertible Issues During 1927

	Rating							
North American Edison Co., Deb. 5's "A"	A	1957	25,000,000	5	98	5.13		
Peoples Light & Power Corp. Deb. 6's	Ba	1962	5,000,000	6	98	6.14	....	......
Associated Gas & Electric Co., Deb. 5½'s	Baa	1977	40,000,000	5½	95¾	5.76	....	......
Federal Water Service Corp. Deb. 5's	Ba	1957	10,000,000	5½	96¾	5.73	....	......
New England Gas & Elec. Assn. Deb. 5's	Baa	1947	17,000,000	5	99	5.08	....	......
American Electric Power Corpn. Deb. 6's "A"	B	1957	6,500,000	6	99	6.07	....	......
Dixie Gulf Gas Co., 1st M. 6½'s "A" *	No rating	1937	9,500,000	6½	99½	6.57	....	......
American Natural Gas Corp. Deb. 6½'s *	Ba	1942	10,000,000	6½	99½	6.55	....	......
Central States Elec. Corp., Deb. 5's	No rating	1948	20,000,000	5	96½	5.28	....	......
Total Convertible Issues		....	143,000,000	...	....	....	....	......

Summary of Convertible Issues (1927)

Total, Rated A	....	25,000,000	...	....	....	5.13	17.49
Total, Rated Baa	....	57,000,000	...	....	....	5.55	39.86
Total, Rated Ba	....	25,000,000	...	....	....	6.14	17.48
Total, Rated B	....	6,500,000	...	....	....	6.07	4.54
Total, Not Rated	....	29,500,000	...	....	....	5.70	20.63
		143,000,000	...	....	....	5.64	100.00

Public Offerings of Long Term Bond Issues—(Continued)

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering Price	Original Public Offering Yield %	Weighted Average Yield %	% of Total Offering
				Issues Offered in 1928 Rating Aaa			
Rochester Tel. Corpn., 1st & Ref. 4½'s "C"	1953*	5,000,000	4½	98½	4.60	....	......
The Cincinnati Gas & Elec. Co., 1st M. 4's "A"	1968	35,000,000	4	92½	4.40	....	......
Consumers Power Co., 1st Lien & Unif. M. 4½'s	1958	11,415,100	4½	97	4.69	....	......
Total, Aaa	....	51,415,100	....	......	....	4.49	7.29
				Rating Aa			
Southern Counties Gas Co., of Cal. 1st M. 4½'s	1968	12,000,000	4½	94¾	4.80	....	......
Rochester Gas & Elec. Corpn., Gen. M. 4½'s	1977	6,000,000	4½	99½	4.52	....	......
Scranton Gas & Water Co., 1st M. 4½'s	1958	11,000,000	4½	99	4.56	....	......
Birmingham Elec. Co., 1st & Ref. M. 4½'s	1968	9,200,000	4½	95¼	4.77	....	......
Ohio Power Co., 1st & Ref. M. 4½'s "D"	1956	10,018,000	4½	96	4.76	....	......
Pacific Gas & Elec. Co., 1st & Ref. M. 4½'s "E"	1957	20,000,000	4½	99	4.56	....	......
Pennsylvania Water & Power Co., 1st Ref. M. 4½'s "B"	1968	6,000,000	4½	99	4.55	....	......
Metropolitan Edison Co. (Pa.), 1st M. 4½'s "D"	1968	23,000,000	4½	99½	4.53	....	......
Total, Aa	....	97,218,000	...	......	....	4.61	13.78

* Issued with Warrants for common stock subscription rights.

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Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering Price	Original Public Offering Yield %	Weighted Average Yield %	% of Total Offering
				Rating A			
Indiana Service Corp., 1st Lien & Ref. M. 5's "A"	1963	5,000,000	5	99½	5.03	....	......
San Antonio Public Service Co., 1st M. & Ref. 5's "B"	1958	7,500,000	5	97½	5.16	....	......
Utah Power & Lt. Co., 1st Lien & Gen. M. 4½'s	1944	5,500,000	4½	96¾	4.79	....	......
Iowa Pr. & Lt. Co., 1st M. 4½'s "A"	1958	6,000,000	4½	95¼	4.80	....	......
Interstate Public Service Co., 1st M. & Ref. 4½'s "F"	1958	12,554,000	4½	94½	4.85	....	......
Minnesota Pr. & Lt. Co., 1st & Ref. M. 4½'s	1978	14,000,000	4½	97¼	4.64	....	......
New England Pr. Assn., Deb. 5's	1948	25,000,000	5	100	5.00	....	......
American Gas & Elec. Co., Deb. 5's	2028	50,000,000	5	101	4.95	....	......

California Water Service Co., 1st M. 5's "A"	1958	6,254,000	5	103¼	4.79	....	....
Diversified Investments Inc., Deb. 5's "A"	1958	5,000,000	5	95	5.34	....	....
Public Service Co., of Okla., 1st M. 5's "D"	1957	5,000,000	5	96	5.27	....	....
North American Edison Co., Deb. 5½'s "B"	1963	20,000,000	5½	100	5.50	....	....
Alabama Pr. Co., 1st & Ref. M. 5's	1968	15,000,000	5	99½	5.03	....	....
Georgia Power Co., 1st & Ref. M. 5's	1967	15,000,000	5	98	5.12	....	....
Green Mountain Power Corp., 1st M. 5's	1948	7,200,000	5	96½	5.29	....	....
Public Service Co., of Nor. Ill. 1st Lien & Ref. M. 4½'s	1978	10,000,000	4½	94½	4.79	....	....
Central Ill. Pub. Service Co., 1st M. 5's "G"	1968	5,700,000	5	100	5.00	....	....
Columbia Gas & Elec. Corp., Deb. 5's	1952	5,000,000	5	101	4.93	....	....
Electric Power Corp., 1st S. F. Gold 6½'s	1953	5,000,000	6½	99½	6.54	....	....
New Orleans Public Service Inc., 1st Ref. M. 5's "B"	1955	5,000,000	5	99½	5.03	....	....
Total, A		229,708,000	....	....	....	5.05	32.55
				Rating Baa			
Cities Service Gas Pipe Line Co., 1st M. Pipeline 6's	1943	$12,000,000	6	100	6.00	....	....
Continental Gas & Elec. Corpn., Deb. 5's "A"	1958	36,000,000	5	95½	5.30	....	....
Oklahoma Natural Gas Corpn., 1st M. 5's "B"	1948	14,000,000	5	96¼	5.31	....	....
Cities Service Co., Deb. 5's	1958	50,000,000	5	98	5.13	....	....
Texas Cities Gas Co., 1st M. 5's	1948	5,400,000	5	98½	5.12	....	....
American Gas & Pr. Co. (Del.), Sec. Deb. 5's	1953	6,500,000	5	95½	5.33	....	....
Midland Utilities Co., Deb. 6's "A"	1938	6,000,000	6	99½	6.07	....	....
Rochester Central Pr. Corp., Deb. 5's "A"	1953	22,500,000	5	90	5.76	....	....
Illinois Pr. & Lt. Corpn., 1st & Preferred M. 5's	1956	10,000,000	5	96	5.27	....	....
Total, Baa		167,400,000	...	......	...	5.38	23.72
				Rating Ba			
National Elec. Pr. Co., Deb. 5's	1978	10,000,000	5	94½	5.30	....	....
Houston Gulf Gas. Co., 1st M. & Coll. 6's "A"	1943	11,000,000	6	99½	6.05	....	....
Southern Cities Utilities Co., 1st Lien & Coll. Tr. 5's "A"	1958	10,500,000	5	94	5.41	....	....
Consolidated Gas Utilities Co., 1st M. & Coll. 6's "A"	1943	8,000,000	6	98½	6.15	....	....
General Water Works Corpn., 1st Lien & Coll. Tr. 5's "A"	1943	5,600,000	5	90¼	6.00	....	....
Utilities Service Co., 1st Lien 6's "A"	1953	5,000,000	6	99½	6.04	....	....
American Community Power Co., Deb. 5½'s	1953	5,000,000	5½	94½	5.92	....	....
Keystone Water Wks. & Elec. Corp., 1st Lien 5½'s "B"	1948	6,000,000	5½	97	5.75	....	....

Public Offerings of Long Term Bond Issues—(Continued)

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering Price	Original Public Offering Yield %	Weighted Average Yield %	% of Total Offering
				Rating Ba			
Delaware Elec. Pr. Co. of Del., Deb. 5½'s	1959	8.000.000	5½	96½	5.74	....	....
National Public Service Corpn., Deb. 5's	1978	20.000.000	5	93½	5.38	....	....
Total, Ba	....	89.100.000	....	......	....	5.69	12.63
[fol. 4919]							
				No Rating			
Lexington Water Power Co., 1st M. 5's	1968	12.000.000	5	98	5.12	....	
Super-Power of Ill., 1st M. 4½'s	1968	10.000.000	4½	98½	4.58	....	
Commonwealth Subsidiary Corpn., Deb. 5½'s "A"	1948	20.000.000	5½	97	5.75	....	
Memphis Natural Gas Co., 1st M. 6's	1943	6.300.000	6	99½	6.05	....	
Bellows Falls Hydro Elec. Corp., 1st M. 5's	1958	9.000.000	5	98	5.13	....	....
Detroit Canada Tunnel Co., 1st S. F. Gold 6's	1953	8.500.000	6	100	6.00	....	....
Vicksburg Bridge & Term. Co., 1st & Ref. Gold 6's	1958	5.000.000	6	99½	6.04	....	....
Total, No Rating	....	70.800.000	....	......	....	5.47	10.03
Grand Total, Year 1928 (Exclusive of Convertibles)	....	705.641.000	....	......	....	5.15	100

Convertible Issues During 1928

Name of Company—Type of Issue	Rating	Year of Maturity	Amount Offered	Interest Rate %	Price	Yield %	Weighted Average Yield %	% of Total Offering
Lexington Water Power Co., Deb. 5½'s	No rating	1953	5.000.000	5½	98½	5.61	....	
Houston Gulf Gas Co., Deb. 6½'s	B	1943	8.000.000	6½	99	6.61		....
New England Gas & Elec. Assn., Deb. 5's	A	1948	6.000.000	5	97	5.24	....	
International Tel. & Tel. Co., Deb. 4½'s	A	1939	56.911.400	4½	98	4.75		....
Associated Gas & Elec. Co., Deb. 4½'s	A	1948	13.000.000	4½	97	4.73		
Associated Gas & Elec. Co., Deb. 5's	A	1968	35.000.000	5	100	5.00	....	
Detroit Canada Tunnel Co., S. F. Deb. 6½'s	No rating	1948	8.500.000	6½	99½	6.54		
Cities Service, Deb. Gold 5's	Baa	1963	30.000.000	5	97½	5.13	....	....
Total Convertible Issues			162.411.400					

Summary Convertible Issues (1928)

Total, Rated A	....	110,911,400	...	...	...	4.85	68.29
Total, Rated Baa	....	30,000,000	...	...	...	5.13	18.48
Total, Rated B	....	8,000,000	...	...	...	6.61	4.92
Total, Not Rated	....	13,500,000	...	...	...	5.22	8.31
		162,411,400	...	...	...	5.02	100.00

Issues Offered in 1929

Rating Aaa *

Consolidated Gas & Elec. Lt. & Pr. Co. of Balt., 1st Ref. M. 4¾'s "C"	1969	10,500,000	4¾	100	4.75	....	.....
Detroit Edison Co., Gen. & Ref. M. 5's "A"	1949	13,516,000	5	100	5.00	....	.....
Total, Aaa	....	24,016,000				4.89	11.46

Rating Aa

The Milwaukee Elec. Ry. & Lt. Co., Ref. & 1st M. 5's "B"	1961	10,000,000	5	100¼	4.98	....	.....
Carolina Pr. & Lt. Co., 1st & Ref. M. 5's	1956	8,000,000	5	99	5.07	....	.....
Southern Public Utilities Co., 1st & Ref. M. 5's	1943	8,000,000	5	100½	4.95	....	.....
Southern Cal. Edison Co., Ref. M. 5's	1954	15,000,000	5	98	5.14	....	.....
Milwaukee Elec. Ry. & Lt. Co., 1st & Ref. M. 5's "B"	1961	10,000,000	5	99¾	5.05	....	.....
Union Elec. Lt. & Pr. Co. (Mo.), Gen. M. 5's "B"	1967	15,000,000	5	100	5.00	....	.....
Total, Aa	....	66,000,000				5.04	31.50

* Issued with Warrants for common stock subscription rights.

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Public Offerings of Long Term Bond Issues—(Continued)

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering		Weighted Average Yield %	% of Total Offering
				Price	Yield %		
				Rating A			
Penn-Ohio Edison Co., Deb. 5½'s "B"	1959	$8,000,000	5½	96½	5.73		
Kentucky Utilities Co., 1st M. 5's "I"	1969	8,150,000	5	99	5.06		
Birmingham Gas Co., 1st M. 5's	1959	5,000,000	5	96	5.27		
Gulf States Utilities Co., 1st M. & Ref. 5's "A"	1956	9,000,000	5	94	5.42		
Central Pr. & Lt. Co., 1st M. 5's	1956	6,800,000	5	91	5.67		
Northern Indiana Public Service Co., 1st & Ref. M. 5's "D"	1969	15,500,000	5	94	5.37		
Puget Sound Pr. & Lt. Co., 1st & Ref. M. 5½'s "A"	1949	8,000,000	5½	97¾	5.69		
Illinois Power & Lt. Corp., 1st & Ref. 5's "C"	1956	5,000,000	5	94½	5.39		
West Texas Utilities Co., 1st M. 5's "A"	1957	8,250,000	5	93	5.49		
Total, A		73,700,000				5.45	35.18
				Rating Baa			
Florida Power Corp., 1st M. 5½'s "A"	1979	9,000,000	5½	94	5.87		
Tide Water Power Co., 1st M. 5's "A"	1979	5,300,000	5	94½	5.32		
Cities Service Power & Lt. Co., Deb. 5½'s	1949	20,000,000	5½	93	6.11		
Total, Baa		34,300,000				5.92	16.37
				Rating Ba			
Montana Dakota Pr. Co., 1st M. 5½'s	1934	5,500,000	5½	99	5.73	5.73	2.62
				No Rating			
Public Service Subsidiary Corp., Deb. 5½'s	1949	6,000,000	5½	97	5.75	5.75	2.87
Grand Total, Year 1929 (Exclusive of Convertibles)		209,516,000				5.34	100

Convertible Issues During 1929

	Rating					
Associated Gas & Elec. Co., Deb. 4½'s	A	1949	25,000,000	4½	95	4.90
Pacific Public Service Co., Com. 6's	Ba.	1944	5,000,000	6	98½	6.16
Peoples Lt. & Pr. Corp., Deb. 5's	Ba	1979	6,000,000	5	98	5.11
Utilities Power & Lt. Corp., Deb. 5's	Bx	1959	36,000,000	5	98	5.13
Central Public Service Corp., Deb. 5½'s *	Ba	1949	25,000,000	5½	96½	5.80
Cities Service Co., Deb. 5's *	Ba	1969	50,000,000	5	97½	5.15
International Hydro Elec. Sys. Com. 6's	Ba	1944	30,000,000	6	100	6.00
Southern Cities Public Service Co., Deb. 6's	Ba	1949	17,500,000	6	99	6.09
Associated Tel. Utilities, Deb. 5½'s "C"	Baa	1944	8,000,000	5½	97	5.80
Federal Water Service Corp., Deb. 5½'s	Baa	1954	6,500,000	5½	99	5.58
Southern Natural Gas Corpn., 1st S. F. 6's *	No Rating	1944	13,000,000	6	97½	6.26
Tri-Utilities Corp., Deb. 5's	B	1979	12,500,000	5	99	5.06
Cent. States Elec. Corp., Gold Deb. 5½'s *	No Rating	1954	25,000,000	5½	99½	5.54
Gen'l Water Wks. & Elec. Corp., Deb. 6's "B"	Ba.	1944	7,250,000	6	95¼	6.50
Total, Convertible Issues			266,750,000			

Summary of Convertible Issues (1929)

Total, Rated A	25,000,000	4.90	9.37
Total, Rated Baa	14,000,000	5.70	5.41
Total, Rated Ba	176,750,000	5.56	66.26
Total, Rated B	12,500,000	5.06	4.68
Total, Not Rated	38,000,000	5.78	14.25
	266,750,000	5.51	100

* Issued with Warrants for common stock subscription rights.

Public Offerings of Long Term Bond Issues—(Continued)

[fol. 4921]

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering Price	Original Public Offering Yield %	Weighted Average Yield %	% of Total Offering
			Issues Offered in 1930 Rating Aaa				
Public Service Elec. & Gas Co., 1st & Ref. M. 4½'s	1970	$20,000,000	4½	95½	4.75	....	......
Consumers Power Co., 1st Lien & Unif. M. 4½'s	1958	20,000,000	4½	97	4.69	....	......
Commonwealth Edison Co., 1st M. Coll. 4½'s "E"	1960	12,000,000	4½	97½	4.65	....	......
Consolidated Gas Elec. Lt. & Pr. Co. of Balt., 1st & Ref. M. 4½'s "H"	1970	7,500,000	4½	98½	4.58	....	......
Consumers Power Co., 1st Lien & Unif. M. 4½'s	1958	20,000,000	4½	101½	4.41	....	......
Washington Water Pr. Co., 1st & Gen. M. 5's	1960	15,000,000	5	98½	5.10	....	......
Western Union Tel. Co., 30 yr. 5's	1960	35,000,000	5	100	5.00	....	......
Total, Aaa	....	129,500,000	...	....	....	4.78	17.90
			Rating Aa				
Southern Cal. Edison Co., (1) Ref. M. 5's	1954	5,000,000	5	(Sale Price not reported)			
Kansas Gas & Elec. Co., 1st M. 4½'s	1980	16,000,000	4½	93½	4.85	....	......
Pacific Gas & Elec. Co., 1st & Ref. M. 4½'s "F"	1960	25,000,000	4½	96½	4.72	....	......
Public Service Co. of New Hampshire, 1st & Ref. M. 4½'s "B"	1957	5,279,000	4½	99	4.56	....	......
Total, Aa	....	46,279,000	...	....	....	4.75	6.39
			Rating A				
North American Edison Co., Deb. 5's "C"	1969	25,000,000	5	95½	5.27	....	......
Arkansas Power & Lt. Co., 1st & Ref. M. 5's	1956	6,000,000	5	94¾	5.38	....	......
LaClede Gas Lt. Co., 1st M. Coll. & Ref. 5½'s "D"	1960	5,500,000	5½	100	5.50	....	......
Massachusetts Gas Co., Deb. 5's	1955	25,000,000	5	98	5.14	....	......

Brooklyn Union Gas Co., Deb. 5's	19[illegible]0	18,000,000	5	102½	4.80	....	......
Associated Tel. Co. Ltd. (Cal.), 1st M. 5's "A"	1955	6,000,000	5	97½	5.15	....	......
Puget Sound Pr. & Lt. Co., 1st & Ref. M. 5's "C"	1950	9,000,000	5	95½	5.37	....	......
Central Arizona Lt. & Pr. Co., 1st M. 5's	1960	7,500,000	5	96¼	5.25	....	......
Central Pr. & Lt. Co., 1st M. 5's	1956	5,500,000	5	95	5.36	....	......
Texas Electric Service Co., 1st M. 5's	1960	33,730,000	5	97¾	5.15	....	......
Public Service Co. of Nor. Ill., 1st Lien & Ref. M. 4½'s "E"	1980	15,000,000	4½	94	4.82	....	......
Pacific Pr. & Lt. Co., 1st M. & Prior Lien 5's	1955	17,000,000	5	96	5.29	....	......
Ohio Edison Co., 1st & Cons. M. 5's	1960	18,834,500	5	98	5.13	....	......
Indianapolis Pr. & Lt. Co., 1st M. 5's "A"	1957	8,000,000	5	100	5.00	....	......
Central Me. Pr. Co., 1st & Gen. M. 4½'s "E"	1957	5,000,000	4½	99½	4.53	....	......
Chicago District Elec. Gen. Corp., 1st M. 4½'s "A"	1970	15,000,000	4½	95	4.78	....	......
Tennessee Public Service Co., 1st & Ref. M. 5's	1970	7,000,000	5	96½	5.21	....	......
Portland General Elec. Co., 1st & Ref. M. 5's	1960	40,000,000	4½	93¾	4.90	....	......
Minneapolis Gas Lt. Co., 1st M. 4½'s	1950	9,000,000	4½	95	4.89	....	......
Super-Power Co. of Ill., 1st M. 4½'s	1970	10,000,000	4½	96	4.72	....	......
Illinois Power & Light Corp., 1st & Ref. M. 5's	1956	8,500,000	5	95½	5.32	....	......
Northern Indiana Public Service Co., 1st & Ref. M. 4½'s "E"	1970	14,000,000	4½	92	4.96	....	......
Arkansas Power & Lt. Co., 1st & Ref. M. 5's	1956	6,000,000	5	94¾	5.38	....	......
Oklahoma Gas & Elec. Co., Gold 5's "A"	1950	6,000,000	5	99½	5.04	....	......
International T. & T. Corp., Deb. 5's	1955	50,000,000	5	96½	5.25	....	......

[fol. 4922]

Rating A

New England Power Ass'n, Deb. 5½'s	1954	$25,000,000	5½	95	5.89	....	......
West Penn. Elec. Co., Deb. 5's	2030	5,000,000	5	93	5.38	....	......
Total, A	....	400,564,500	...	....	....	5.15	55.39

(1) Not included in computing average weighted yield.

[fol. 4923]

Public Offerings of Long Term Bond Issues—(Continued)

Name of Company—Type of Issue	Rating	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering Price	Original Public Offering Yield %	Weighted Average Yield %	% of Total Offering
					Rating Baa			
Electric Pr. & Lt. Corpn., Deb. 5's		2030	$15,000,000	5	92½	5.41	....	......
American & Foreign Pr. Co., Deb. 5's		2030	50,000,000	5	90	5.56	....	......
Cincinnati St. Railway Co., 1st M. 6's "B"		1955	5,000,000	6	99½	6.04	....	......
National Pr. & Lt. Co., Deb. 5's "B"		2030	15,000,000	5	91	5.50	....	......
Associated Tel. & Tel. Co., Deb. 5½'s "A"		1955	10,000,000	5½	94½	5.92	....	......
Mississippi Power & Lt. Co. 1st M. 5's		1957	7,000,000	5	95	5.35	....	......
Chicago District Elec. Gen. Corpn., 5 Yr. Deb. 5½'s		1935	8,000,000	5½	100	5.50	....	......
Continental Gas & Elec. Corpn., Deb. 5's "A"		1958	16,000,000	5	92½	5.53	....	......
Electric Pr. & Lt. Corpn., Deb. 5's		2030	15,000,000	5	92½	5.41	....	......
Virginia Public Service Co., 1st M. Ref. 5's "B"		1950	6,000,000	5	90	5.85	....	......
Total, Baa			147,000,000	...	....	....	5.56	20.32
Grand Total, Year 1930 (Exclusive of Convertibles)			723,343,500	...	....	....	5.12	100
	Rating				Convertible Issues During 1930			
American Commonwealth Pr. Co., Deb. 6's	Ba	1940	10,000,000	6	98.16	6.25	....	......
Associated Gas & Elec. Co. Deb. 5's	A	1950	30,000,000	5	90	5.86	....	......
Associated Tel. Utilities Co., Com. Deb. Deb. 5½'s "C"	Baa	1944	6,000,000	5½	99	5.60	....	......
Pacific Northwest Public Service Co., Deb. Gold 6's	Ba	1950	16,000,000	6	99½	6.04	....	......
American Commonwealth Pr. Co., Deb. Gl. 6's	No Rat'g.	1940	10,000,000	6	98.16	6.25	....	......
Associated Tel. Utilities Deb. 5½'s "C"	Baa	1944	8,000,000	5½	100	5.50	....	......
Associated Gas & Elec. Co. Deb. 5's	A	1950	10,000,000	5	91	5.76	....	......
Southern Natural Gas Corpn., S. F. Deb. 6's	No Rat'g.	1944	11,500,000	6	97	6.33	....	......
Appalachian Gas Corp., Deb. 6's "B"	No Rat'g.	1945	6,700,000	6	100	6.00	....	......

New England Gas & Elec. Assn., Deb. Gold 5's A	1950	20,000,000	5	91	5.76	....	......
Cities Service Co., Deb. Gold 5's Ba	1950	118,115,600	5	100	5.00	....	......
Total Convertible Issues		246,315,600	...	......	....	....	......
			Summary of Convertible Issues (1930)				
Total, Rated A		60,000,000	...	......	....	5.81	24.36
Total, Rated Baa		14,000,000	...	......	....	5.54	5.68
Total, Rated Ba		$144,115,600	...	......	....	5.20	58.51
Total, Not Rated		28,200,000	...	......	....	6.22	11.45
Total		246,315,600	...	......	....	5.47	100.
[fol. 4924]				Issues Offered in 1931 Rating Aaa			
Kansas City Pr. & Lt. Co., 1st M. 4½'s	1961	27,000,000	4½	102¾	4.34	....	......
Buffalo General Elec. Co., Gen. & Ref. M. 4½'s	1981	20,000,000	4½	101	4.45	....	......
Philadelphia Elec. Co., 1st & Ref. M.	1971	40,000,000	4	93½	4.34	....	......
Public Service Elec. & Gas Co., 1st & Ref. M	1971	26,000,000	4	93¾	4.33	....	......
Consolidated Gas Co. of N. Y., Deb. 4½'s	1951	60,000,000	4½	101	4.42	....	......
Consolidated Gas Elec. Lt. & Pr. Co. of Balt., 1st & Ref. M.	1981	18,000,000	4	95½	4.22	....	......
Commonwealth Edison Co., 1st M. "F"	1981	85,000,000	4	94½	4.27	....	......
West Penn. Power Co., 1st M. "H"	1961	10,000,000	4	96	4.24	....	......
Total, Aaa		286,000,000	...	......	....	4.33	33.63
				Rating Aa			
Detroit Edison Co., Gen. & Ref. M. "D"	1961	34,984,000	4½	100	4.50	....	......
Pacific Gas & Elec. Co., 1st & Ref. M	1960	25,000,000	4½	98	4.63	....	......
Louisville Gas & Elec. Co., 1st & Ref. M. "C"	1961	6,000,000	4½	97	4.69	....	......
Southern Cal. Gas Co., 1st & Ref. M	1961	12,500,000	4½	95½	4.78	....	......
Northern States Power Co., (Minn.) Ref. M	1961	35,000,000	4½	97½	4.66	....	......
Pennsylvania Pr. & Lt. Co., 1st M.	1981	100,000,000	4½	96½	4.68	....	......
New Jersey Pr. & Lt. Co.	1960	6,000,000	4½	102	4.38	....	......

Public Offerings of Long Term Bond Issues—(Continued)

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering		Weighted Average Yield %	% of Total Offering
				Price	Yield %		
				Rating Aa			
Metropolitan Edison Co., 1st M. "E"	1971	5,000,000	4	95	4.26	....	......
Nebraska Power Co., 1st M.	1981	16,500,000	4½	102½	4.38	....	......
Pennsylvania Elec. Co., 1st & Ref. Gold 4's	1971	6,000,000	4	95¼	4.25	....	......
Detroit Edison Co., Gen. & Ref. "D"	1961	15,016,000	4½	103½	4.29	....	......
Northern States Power Co. (Minn.), Ref. M	1961	10,000,000	4½	98½	4.59	....	......
Safe Harbor Water Pr. Corpn., 1st M	1979	21,000,000	4½	96½	4.68	....	......
Delaware Power & Lt. Co., 1st M	1971	$6,000,000	4½	100	4.50	....	......
Peoples Gas Lt. & Coke Co., 1st & Ref. "B"	1981	15,000,000	4	94	4.29	....	......
Bridgeport Hydraulic Co., 1st M. "D"	1961	5,000,000	4½	104½	4.23	....	......
Total, Aa		319,000,000	...	......	....	4.57	37.51
				Rating A			
Tennessee Elec. Power Co., 1st & Ref. M	1956	7,000,000	5	99	5.07	....	......
Columbia Gas & Elec. Corp., Deb. 5's	1961	50,000,000	5	98	5.13	....	......
Milwaukee Elec. Ry. & Lt. Co., 1st M 5's	1971	15,000,000	5	100	5.00	....	......
North American Co., Deb. 5's	1961	25,000,000	5	97	5.20	....	......
Alabama Power Co., 1st & Ref. M	1967	8,000,000	4½	98½	4.59	....	......
Potomac Edison Co., 1st M. "F"	1961	5,000,000	4½	96	4.75	....	......
Public Service Co. of Nor. Ill., 1st Lien & Ref. M. "F"	1981	40,000,000	4½	97½	4.63	....	......
Puget Sound Power & Lt. Co., 1st & Ref. M. "D"	1950	16,000,000	4½	94½	4.95	....	......
Jersey Central Pr. & Lt. Co., 1st M. "C"	1961	32,000,000	4½	101	4.44	....	......
Wisconsin Michigan Power Co., 1st M	1961	5,000,000	4½	100½	4.47	....	......
Houston Lighting & Pr. Co., 1st Lien & Ref. M. "E"	1981	5,000,000	4½	98½	4.58	....	......
Public Service Co. of Colo., 1st M. & Ref. "C"	1961	11,000,000	6	91	6.70	....	......
Total, A		219,000,000	...	....	....	4.89	25.74

[fol. 4925]

					Rating Baa		
Central Illinois Elec. Co., 1st & Ref. M.	1951	15,000,000	5	94½	5.46	....	......
Washington & Suburban Co.'s. Coll. Tr. 5½'s	1941	6,500,000	97½	97	5.90	....	......
Metropolitan Edison Corpn., Sec. Cons. Ref. 6's	1961	5,000,000	6	100	6.00	....	......
		26,500,000				5.67	3.12
Total, Baa			...	....	....		
		850,500,000				4.59	......
Grand Total, (Exclusive of Convertibles)			...	....	....		
				Convertible Issues During 1931			
Rating							
Dominion Gas & Elec. Co., 1st Lien & Coll.... Ba	1945	8,000,000	6½	96	6.95	6.95	100.
[fol. 4926]							
				Issues Offered in 1923			
					Rating Aa		
American Smelting & Ref. Co., 1st M. 6's "B"	1947	$10,000,000	6	99½	6.04	....	......
Federal Sugar Refining Co., 6's	1933	5,000,000	6	98	6.27	....	......
Webster Mills, 10 yr. 6½'s	1933	5,500,000	6½	99	6.64	....	......
						6.26	5.22
Total, Aa	....	20,500,000	...	....	....		
					Rating A		
American Rolling Mill Co., Deb. 6's	1938	7,000,000	6	100	6.00	....	......
Anaconda Copper Mining Co., Cons. Mtge. Series "A" 6's	1953	100,000,000	6	96½	6.26	....	......
Bethlehem Steel Corp., Cons. Mtge. 5½'s "B"	1953	25,000,000	5½	93	6.01	....	......
Republic Iron & Steel Co., Ref. & Gen. M. 5½'s "A"	1953	10,000,000	5½	94½	5.89	....	......
Armour & Co., 1st M. Guar. 5½'s "A"	1943	50,000,000	5½	96	5.84	....	......
American Chain Co. Inc., Deb. 6's	1933	7,500,000	6	97½	6.34	....	......
General Petroleum Corp., 6's	1928	10,000,000	6	97½	6.59	....	......
Youngstown Sheet & Tube Co., Deb. 6's	1943	40,000,000	6	99	6.09	....	......
Associated Oil Co., 12 yr. 6's	1935	24,000,000	6	100	6.00	....	......
California Petroleum Corp., 6½'s	1933	8,000,000	6½	96½	6.99	....	......
						6.13	71.81
Total, A	....	281,500,000	...	....	....		

Public Offerings of Long Term Bond Issues—(Continued)

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering		Weighted Average Yield %	% of Total Offering
				Price	Yield %		
				Rating Baa			
Price Bros. & Co., Ltd., 1st M. 6's "A"	1943	10,000,000	6	98½	6.13	....	.....
J. H. & C. K. Eagle, Inc.; New York 6½'s	1938	5,000,000	6½	100	6.50	....	.....
Pure Oil Co., 6½'s "A"	1933	12,000,000	6½	99	6.64	....	.....
Sinclair Consolidated Oil Corp., 1st Lien Coll. 6½'s "B"	1938	25,000,000	6½	94	7.16	....	.....
Willys-Overland Co., 1st Mtge. 6½'s	1933	10,000,000	6½	98	6.78	....	.....
Pillsbury Flour Mills, 1st M. 6's	1943	6,000,000	6	95	6.45	....	.....
Warner Sugar Corp., 1st & Ref. M. 7's "A"	1939	6,000,000	7	96½	7.39	....	.....
Total, Baa	....	74,000,000	...	......	....	6.79	18.88
				Rating Ba			
Associated Simmons Hdw. Co., Sec. 6½'s	1933	$10,000,000	6½	98	6.78	6.78	2.56
				Not Rated			
Lockwood Greene & Co. Inc., Coll. Tr. 7's	1933	6,000,000	7	100	7.00	7.00	1.53
Grand Total, Year 1923 (Exclusive of Convertibles)	....	392,000,000	...	....	....	6.29	100
				Convertible Issues During 1923			
				Rating A			
Pressed Steel Car Co., Conv. 5's	1933	6,000,000	5	94⅜	5.75	....	.....
International Match Corp., Conv. Deb. 6½'s	1943	75,000,000	6½	94½	7.02	....	.....
Total, A	....	81,000,000	...	....	....	6.93	61.83

				Rating Baa			
Anaconda Copper Mining Co., Conv. Deb. 7's	1938	50.000.000	7	100	7.00	7.00	38.17
Total Convertible, Year 1923	....	131.000.000	....	....	....	6.95	100
				Issues Offered in 1924			
[fol. 4927]				Rating Aaa			
Western Electric Co. Inc., Deb. 5's	1944	35.000.000	5	96½	5.29	5.29	21.67
				Rating A			
Wheeling Steel Corp., 1st & Ref. M. 5½'s "A"	1948	15.000.000	5½	96½	5.77	....	......
Central Leather Co., 1st Lien 6's	1945	15.000.000	6	95	6.44	....	......
Total, A	....	30.000.000	....	....	....	6.10	18.58
				Rating Baa			
Continental Motors Corp., 1st M. 6½'s	1939	7.500.000	6½	95½	6.99	....	......
Botany Cons. Mills Inc., Sec. 6½'s	1934	8.000.000	6½	96½	6.99	....	......
Bethlehem Steel Corp., Cons. M. 6's "A"	1948	30.000.000	6	96	6.33	....	......
Old Ben Coal Corp., 1st M. 6's	1944	8.000.000	6	98	6.18	....	......
Total, Baa	....	53.500.000	....	....	....	6.50	33.13
				Rating Ba			
The M. A. Hanna Co., Deb. 6's	1934	7.000.000	6	98½	6.20	....	......
Old Ben Coal Corp., Deb. 7½'s	1934	5.000.000	7½	100	7.50	....	......
South Penn Collieries Co., 1st M. 6's "A"	1944	5.000.000	6	94½	6.50	....	......
Total, Ba	....	17.000.000	....	....	....	6.68	10.52

Public Offerings of Long Term Bond Issues—(Continued)

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering Price	Original Public Offering Yield %	Weighted Average Yield %	% of Total Offering
				Not Rated			
Continental Paper & Bag Mills Corp.:							
1st & Ref. M. 6½'s "A"	1944	$6,000,000	6½	95	6.97	....	....
Sun Oil Co., 5½'s	1939	10,000,000	5½	99¾	5.52	....	....
West Virginia Coal & Coke Co., 1st M. 6's	1950	10,000,000	6	96	6.31	....	....
Total, Not Rated	....	26,000,000	....	....	....	6.15	16.10
Grand Total, Year 1924 (Exclusive of Convertibles)	....	161,500,000	....	....	....	6.13	100
				Convertible Issues During 1924			
				Rating A			
General Asphalt Co., 15 yr. Conv. 6's	....	5,000,000	6	97½	6.26	6.26	8.77
				Rating Baa			
Pan American Petroleum & Transport Co., 10 yr. Conv. 6's	1934	12,000,000	6	97	6.41	6.41	21.05
				Not Rated			
Andes Copper Mining Co., Conv. Deb. 7's	1943	40,000,000	7	100	7.00	7.00	70.18
Total Convertible, Year 1924	....	57,000,000		....	....	6.81	100

[fol. 4926]

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering Price	Original Public Offering Yield %	Weighted Average Yield %	% of Total Offering
				Issues Offered in 1925			
				Rating Aaa			
General Petroleum Corp., 1st M. 5's	1940	18,000,000	5	94¾	5.52	5.52	10.40
				Rating Aa			
U. S. Smelting Ref. & Mining Co., 5½'s	1935	8,000,000	5½	99	5.63	5.63	4.62

				Rating A			
Union Oil Co. of Cal. 10 yr. 5's	1935	10,000,000	5	96	5.53	....	......
Hershey Chocolate Co., 1st M. & Coll. Tr. 5½'s	1940	20,000,000	5½	98	5.70	....	......
Inland Steel Co., Deb. 5½'s	1945	12,500,000	5½	98½	5.63	....	......
Total A		42,500,000			....	5.64	24.55
				Rating Baa			
A. M. Byers Co., 1st M. 6's	1945	$5,000,000	6	99	6.09		
Mid-Continent Petroleum Corp., 1st M. 6½'s	1940	12,500,000	6½	97½	6.77		
S. D. Warren Co., 1st M. 6's	1945	6,000,000	6	98	6.18		
International Paper Co., Ref. M. 6's "A"	1955	15,587,000	6	96	6.30		
Houston Oil Co. of Texas, 10 yr. 6½'s	1935	7,000,000	6½	100	6.50		
Walworth Co., 1st M. 6's "A"	1945	8,500,000	6	98½	6.13		
American Type Founders Co., Deb. 6's	1940	5,000,000	6	100	6.00		
The Trumbull Steel Co., 1st M. 6's	1940	13,000,000	6	96	6.42		
National Dairy Products Corp., Coll. Tr. 6's	1940	15,000,000	6	98½	6.15		
Albert Pick & Co., Deb. 6's	1936	6,000,000	6	98½	6.20		
Consumers Co., 1st S. F. Gold 6's	1946	6,000,000	6	98	6.17		
Total Baa		99,587,000				6.30	57.53
				Rating Ba			
By-Products Coke Corp., 1st M. 5½'s "A"	1945	5,000,000	5½	94¼	6.00	6.00	2.89
Grand Total, Year 1925 (Exclusive of Convertibles)	....	173,087,000			....	6.02	100

Public Offerings of Long Term Bond Issues. (Continued)

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering Price	Original Public Offering Yield %	Weighted Average Yield %	% of Total Offering
				Convertible Issues During 1925			
				Rating Baa			
Dodge Bros. Inc., Conv. Db. 6's	1940	75,000,000	6	99	6.10		
United Oil Co., 1st M. & Coll. Tr. Conv. 6½'s	1935	5,000,000	6½	100	6.50		
North American Cement Corp., Deb. 6½'s "A"	1940	6,000,000	6½	98½	6.66		
Pan American Petroleum Co. of Cal., 1st M. Conv. 6's	1940	15,000,000	6	99	6.10		
Total, Baa		101,000,000				6.15	78.96
				Rating Ba			
Belding Hemingway Co., Conv. 6's	1936	5,410,000	6	99¾	6.03		
Trumbull Steel Co., Deb. 7's	1935	5,000,000	7	100	7.00		
Total, Ba		10,410,000				6.50	8.14
				Not Rated			
Anglo Chilan Consol. Nitrate Corp., Deb. 7's	1945	16,500,000	7	100	7.00	7.00	12.90
Total Convertible Year 1925		127,910,000				6.29	100
[fol. 4929]				Issues Offered in 1926			
				Rating Aaa			
Westinghouse Electric & Mfg. Co. 20 yr. 5's	1946	$30,000,000	5	99	5.08		
Standard Oil Co. of N. J. 20 yr. Deb. 5's	1946	120,000,000	5	100½	4.96		
Standard Oil Co. of New York 25 yr. Deb. 4½'s	1951	50,000,000	4½	97¾	4.65		
Total, Aaa		200,000,000				4.90	48.25

				Rating A			
Youngstown Sheet & Tube Co., Deb. 6's	1943	10,000,000	6	103½	5.67	5.67	2.41
				Rating Baa			
Chicago By-Products Coke Co., 1st & Ref. 5's "A"	1976	13,000,000	5	94¾	5.30		
Crown Williamette Paper Co., 1st M. 6's	1951	20,000,000	6	99	6.08		
Goodyear Tire & Rubber Co., of Cal. 5 yr. 5½'s	1931	5,000,000	5½	98½	5.85		
St. Regis Paper Co., 5 yr. deb. 6's	1931	5,000,000	6	99½	6.12		
Container Corp. of America 1st M. 6's	1946	5,000,000	6	99	6.09		
Penn. Dixie Cement Corp., 1st M. 6's "A"	1941	13,000,000	6	99½	6.05		
Gotham Silk Hosiery Co. Inc., 10 yr. Deb. 6's	1936	6,000,000	6	100	6.00		
Chile Copper Co., 20 yr. Deb. 5's	1947	35,000,000	5	96¾	5.26		
Fisk Rubber Co., S. F. Gold Notes 5½'s	1931	10,000,000	5½	98¼	5.91		
Kieth (B. F.) Corp., 1st & Gen. Ref. M. 6's	1946	6,000,000	6	100	6.00		
Stanley-Crandall Co., of Wash. D. C. Guar. 1st M. S. F. 6's	1946	5,000,000	6	100	6.00		
Dierks Lumber & Coal Co. 1st M. S. F. 6's Gold Bonds	1941	6,500,000	6	100	6.00		
McCrary Drug Stores Corp., Gold Deb. 5½'s	1941	6,000,000	5½	98	5.70		
Total Baa		135,500,000				5.52	32,69
				Rating Ba			
The Otis Steel Co., 1st M. 6's "A"	1941	12,000,000	6	98½	6.15		
Pacific Mills 5½'s	1931	17,500,000	5½	96¾	6.27		
Inspiration Cons. Copper Co., 5 yr. 6½'s	1931	6,000,000	6½	100	6.50		
Pickering Lumber Co., 1st M. 6's "A"	1946	7,500,000	6	100	6.00		
Total, Ba		43,000,000				6.22	10.38
				Not Rated			
Brown Co., 1st M. 5½'s "A"	1946	20,000,000	5½	97	5.75		
McKeesport Tin Plate Co., 1st M. S. F. Gold 6's	1946	6,000,000	6	101½	5.87		
Total, Not Rated		26,000,000				5.78	6.27
Grand Total, Year 1926 (Exclusive of Convertible)		414,500,000				5.31	100

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Public Offerings of Long Term Bond Issues—(Continued)

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering		Weighted Average Yield %	% of Total Offering
				Price	Yield %		
				Convertible Issues During 1926			
				Rating A			
California Petroleum Corp., 12 yr. Conv. Deb. 5½'s	1938	12,000,000	5½	98	5.73	5.73	10.08
				Rating Baa			
Consolidated Cigar Corp., Conv. 6's	1936	10,000,000	6	99½	6.07	....	......
Richfield Oil Co., of Cal. 1st M. & Coll. Tr. Conv. 6's "A"	1941	12,000,000	6	99	6.10	....	......
Total, Baa	....	22,000,000	....	....	....	6.09	18.49

[fol. 4930]

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Price	Yield %	Weighted Average Yield %	% of Total Offering
				Rating Ba			
Barnsdahl Corp., Conv. Deb. 6's	1940	$25,000,000	6	100	6.00	....	......
International Paper Co., Conv. Deb. 6's	1941	25,000,000	6	98	6.21	....	......
Indiana Limestone Co., 10 yr. S. F. Gold Deb. 7's	1936	5,000,000	7	99	7.14	....	......
International Paper Co., Deb. 6's	....	25,000,000	6	98	6.21	....	......
Total, Ba	....	80,000,000	....	....	....	6.20	67.23
				Not Rated			
Hood Rubber Co., 10 yr. Conv. 5½ Gold Notes	1936	5,000,000	5½	96½	5.70	5.70	4.20
Total, Convertible Year 1926	....	119,000,000	....	....	....	6.11	100.00

Issues Offered in 1927

Rating Aaa

American Radiator Co., Deb. 4½'s	1947	10,000,000	4½	96	4.81	....	......
Procter & Gamble Co., Deb. 4½'s	1947	11,000,000	4½	98¾	4.60	....	......
Total, Aaa	...	21,000,000	...	....	....	4.70	2.99

Rating Aa

Gulf Oil Corp., of Pa. Deb. 5's	1947	35,000,000	5	100	5.00	....	......
Aluminum Co., of American Deb. 5's	1952	60,000,000	5	100	5.00	....	......
Humble Oil & Refining Co., Deb. 5's	1937	25,000,000	5	100	5.00	....	......
International Match Corp., Deb. 5's	1947	50,000,000	5	98½	5.12	....	......
Total, Aa	...	170,000,000	...	....	....	5.03	24.23

Rating A

Fairbanks Morse & Co., Deb. 5's	1942	8,000,000	5	97½	5.24	....	......
Shell Union Oil Corp., Deb. 5's	1947	50,000,000	5	99½	5.04	....	......
Allis-Chalmers Mfg. Co., Deb. 5's	1937	15,000,000	5	99	5.13	....	......
Shell Pipe Line Corp., Deb. 5's	1952	30,000,000	5	98	5.14	....	......
Sinclair Crude Oil Purchasing Co., 5½'s "A"	1938	42,000,000	5½	98½	5.70	....	......
Goodyear Tire & Rubber Co., 1st M. & Coll. Tr. 5½'s "A"	1957	60,000,000	5	97	5.20	....	......
Firestone Tire & Rubber Co., of Cal. Guar. S. F. 5's "A"	1942	10,000,000	5	96½	5.34	....	......
Total, A	...	215,000,000	...	....	....	5.25	......

Rating Baa

Robert Gair & Co., (N. Y.) 1st M. 5½'s	1942	5,000,000	5½	97½	5.75	....	......
Minnesota & Ontario Paper Co., 1st M. 6's "C"	1950	5,000,000	6	100	6.00	....	......
Phillips Petroleum Co., Deb. 5¼'s	1939	40,000,000	5¼	99¼	5.33	....	......
P. Lorillard Co., Deb. 5½'s	1937	15,000,000	5½	97½	5.83	....	......
The Hudson Coal Co., 1st M. 5's "A"	1962	35,000,000	5	98½	5.09	....	......

Public Offerings of Long Term Bond Issues—(Continued)

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering		Weighted Average Yield %	% of Total Offering
				Price	Yield %		
				Rating Baa			
The Pure Oil Co., 5½'s	1937	20,000,000	5½	98	5.77	....	......
Consolidated Water Power & Paper Co., 1st M. 5½'s "A"	1947	7,500,000	5½	97	5.75	....	......
Continental Oil Co., Deb. 5¼'s	1937	12,000,000	5¼	99¼	5.38	....	......
York Ice Machinery Co., 1st M. 6's	1947	6,500,000	6	101	5.91	....	......
Hall Printing Co., 1st M. & Coll. Tr. S. F. 5½'s "A"	1947	6,000,000	5½	92½	6.16	....	......
Libby McNeill & Libby 1st M. S. F. 5's	1942	12,500,000	5	97½	5.24	....	......
American Cyanamid Co., S. F. 5's Gold Deb.	1942	5,000,000	5	94	5.60	....	......
Paramount Famous Lasky Corp., S. F. 6's Gold Bonds	1947	16,000,000	6	99½	6.04	....	......
McCrory Stores Corp., Deb. 5½'s	1941	6,000,000	5½	98	5.71	....	......
Total, Baa	....	191,500,000	...	....	....	5.54	27.30

[fol. 4931]

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Price	Yield %	Weighted Average Yield %	% of Total Offering
			Rating Ba				
Skelley Oil Co., Deb. 5½'s	1939	$15,000,000	5½	98½	5.67	....	......
Columbia Steel Corp., 1st M. 5½'s "A"	1947	7,500,000	5½	99½	5.54	....	......
Pittsburg Screw & Bolt Cor., Deb. 5½'s	1947	5,000,000	5½	100	5.50	....	......
National Radiator Corp., Deb. 6½'s	1947	12,000,000	6½	100	6.50	....	......
A. E. Staley Mfg. Co., 1st M. 6's	1942	6,000,000	6	99	6.10	....	......
Crown Cork & Seal Co., (Inc. N. Y.) 6's	1947	5,500,000	6	98½	6.13	....	......
Total, Ba	....	51,000,000	...	....	....	5.93	7.27
			Not Rated				
Koppers Gas & Coke Co., Deb. 5's	1947	25,000,.00	5	96	5.33	....	......
Spruce Falls Power & Paper Ltd., 1st M. 5½'s Gold Bonds	1943	13,000,000	5½	100	5.50	....	......
Pennsylvania Glass Sand Corp., 1st M. S. F. 6's	1952	5,000,000	6	92½	6.62	....	......

St. Louis Gas & Coke Corp'n., 1st M. S. F. 6's Gold Bonds	1947	10,000,000	6	97	6.26	....	......
Total, Not Rated	....	53,000,000	...	....	....	5.66	7.56
Grand Total, Year 1927 (Exclusive of Convertibles)	....	701,500,000	...	....	....	5.34	100
Convertible Issues During 1927							
Rating Baa							
California Petroleum Corp., Conv. Deb. 5's	1939	8,000,000	5	96½	5.40	....	......
(Julius) Kayser & Co., Conv. Deb. 5½'s	1947	7,000,000	5½	96½	5.80	....	......
White Eagle Oil & Ref. Co., Conv. Deb. 5½'s	1937	5,000,000	5½	100	5.50	....	......
Remington Rand Inc., Deb. 5½'s "A"	1947	25,000,000	5½	100	5.50	....	......
Total, Baa	....	45,000,000	...	....	....	5.53	87.38
Rating Ba							
Independent Oil & Gas Co., Conv. Deb. 6's	1939	6,500,000	6	99	6.12	6.12	12.62
Total, Convertible Year 1927	....	51,500,000	...	....	....	5.60	100.00
Issues Offered in 1928							
Rating Aaa							
Procter & Gamble Gold Deb. 4½'s	1947	5,000,000	4½	100	4.50	4.50	2.12
Rating Aa							
Inland Steel Co., 1st M. 4½'s	1978	30,000,000	4½	95	4.76	4.75	13.25
Rating A							
Firestone Cotton Mills 5's	1948	12,000,000	5	97	5.24	....	......
Wheeling Steel Corp., 1st & Ref. M. 4½'s "B"	1953	21,000,000	4½	93	4.99	....	......
American Ice Co., (U. S.) S. F. Gold Deb. 5's	1953	6,000,000	5	100	5.00	....	......
Total, A	....	39,000,000	...	....	....	5.07	17.22

[fol. 4932]

Public Offerings of Long Term Bond Issues—(Continued)

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering		Weighted Average Yield %	% of Total Offering
				Price	Yield %		
			Rating Baa				
American Rolling Mills Co., Deb. 5's	1948	$25,000,000	5	99½	5.04	....	......
Sharon Steel Hoop Co., 1st M. 5½'s "A"	1948	10,000,000	5½	100½	5.46	....	......
Pittsburg Steel Co., Deb. 6's	1948	11,000,000	6	101	5.91	....	......
Spang Chalfant & Co. Inc., 1st M. 5's	1948	7,000,000	5	99	5.08	....	......
Jos. T. Ryerson & Co. Inc., Deb. 5's	1943	5,000,000	5	96	5.39	....	......
Childs Co., Gold Deb. 5's	1943	6,000,000	5	96	5.40	....	......
Strawbridge & Clothier, 1st M. S. F. 5's	1948	12,000,000	5	100	5.00	....	......
Total, Baa	....	76,000,000	...	....	....	5.28	34.43
			Rating Ba				
Certain-Teed Products Corp., Deb. 5½'s "A"	1948	13,500,000	5½	98½	5.63	....	......
Holly Sugar Corp., 1st M. 6's	1943	6,500,000	6	100	6.00	....	......
Gannet Co. Inc., S. F. Gold 6's "A"	1943	5,000,000	6	99¾	6.03	....	......
Total, Ba	....	25,000,000	...	....	....	5.81	11.04
			Not Rated				
Peabody Coal Co., 1st M. 5's "A"	1953	12,500,000	5	96½	5.25	....	......
Susquehanna Silk Mills, Deb. 5's	1938	8,000,000	5	96	5.53	....	......
Republic Brass Corp., 1st M. 6's "A"	1948	10,000,000	6	103	5.75	....	......
Scripps (E. W.) Co., Gold Deb. 5½'s	1943	8,500,000	5½	99	5.60	....	......
Miehle Ptg. Press & Mfg. Co., S. F. Gold Deb. 5½'s "A"	1948	5,000,000	5½	101	5.42	....	......
Connecticut Coke Co., 1st M. Gold 5's "A"	1948	5,500,000	5	95	5.40	....	......
Total, Not Rated	....	49,500,000	...	....	....	5.49	21.85
Grand Total, Year 1928 (Exclusive of Convertibles)	....	224,500,000	...	....	....	5.26	100.00

				Convertible Issues During 1928			
				Rating A			
International Cement Corp., Conv. Deb. 5's	1948	18,000,000	5	97	5.24	....	......
Abraham & Straus Inc., Gold Deb. 5½'s	1943	5,150,000	5½	101	5.40	....	......
Total, A	....	23,150,000	...	....	....	5.28	22.89
				Rating Baa			
Houston Oil Co., Conv. Deb. 5½'s	1938	8,000,000	5½	101	5.37	....	......
Kendall Co., Deb. 5½'s "A"	1948	6,500,000	5½	95	5.93	....	......
Total, Baa	....	14,500,000	...	....	....	5.61	14.34
				Rating Ba			
Shaffer Oil & Ref. Co., Conv. 6's	1933	10,000,000	6	98½	6.35	....	......
Container Corp., of America Deb. 5's	1943	6,000,000	5	98½	5.14	....	......
Shaffer Oil & Ref. Co., 6's Conv. Gold Notes	1933	10,000,000	6	98½	6.35	....	......
Transcontinental Oil Co., 1st M. S. F. Gold 6½'s	1938	12,000,000	6½	100	6.50	....	......
Total, Ba	....	38,000,000	...	....	....	6.21	37.56
				Not Rated			
Colon Oil Corp'n., Conv. Deb. 6's	1938	10,000,000	6	100	6.00	....	......
Pacific Western Oil Co., Deb. 6½'s	1943	15,500,000	6½	100	6.50	....	......
Total, Not Rated	....	25,500,000	...	....	....	6.30	25.21
Total, Convertible Year 1928	....	101,150,000	...	....	....	5.94	100.00
				Issues Offered in 1929			
				Rating Baa			
Koppers Gas & Coke Co., Deb. 5½'s	1950	$25,000,000	5½	99	5.58	5.58	48.54

Public Offerings of Long Term Bond Issues—(Continued)

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering		Weighted Average Yield %	% of Total Offering
				Price	Yield %		
				Rating Ba			
Winchester Repeating Arms Co., Deb. 6½'s	1934	6.500.000	6½	99½	6.62	....	......
Pittsburg Coal Co., Deb. 6's	1949	20.000.000	6	100	6.00	....	......
Total, Ba	....	26.500.000	...	....	....	5.15	51.46
Grand Total, Year 1929 (Exclusive of Convertibles)	....	51.500.000	...	....	....	5.87	100.00
			Convertible Issues During 1929				
				Rating Aa			
The Texas Corp., Conv. Deb. 5's	1944	100.000.000	5	98½	5.14	....	......
American I. & G. Chemical Corp. Guar. 5½'s Deb	1949	30.000.000	5½	95	5.93	....	......
Total, Aa	....	130.000.000	...	....	....	5.32	43.65
				Rating A			
Shell Union Oil Corp., S. F. Deb. 5's	1949	50,000,000	5	100	5.00	5.00	16.79
				Rating Baa			
General Steel Castgs. Corp., 1st M. 5½'s "A"	1949	20.000.000	5m	100	5.50	....	......
Simmons Co., Deb. 5's	1944	15.000.000	5	99½	5.05	....	......
Total, Baa	....	35.000.000	...	....	....	5.31	11.75
				Rating Ba			
American Service Co.	1944	7.000.000	6	99	6.10	....	......
Phil. & Reading Coal & Iron Co., Conv. Deb. 6's	1949	30.900.000	6	100	6.00	....	......
Warner Quinlan Co., Conv. Deb. 6's	1939	7.000.000	6	98½	6.20	....	......
Richfield Oil Co. of Cal. 1st M. & Coll. Tr. Conv. 6's "A"	1944	25.000.000	6	99	6.10.	....	......

Warner Co., 1st S. F. Gold 6's	1944	7,000,000	6	99	6.20	....	......
Total, Ba	....	78,800,000	...	....	....	6.08	25.79
			Not Rated				
General Theatres Equip. Inc., Conv. Deb. 6's	1944	6,000,000	6	99	6.10	6.10	2.02
Total, Convertible Year 1929	....	297,800,000	...	....	....	5.47	1000.0
			Issues Offered in 1920				
			Rating Aaa				
Union Gulf Corp., Coll. Tr. 5's	1950	60,000,000	5	99	5.08	....	......
Lehigh Coal & Navigation Co., Cons. S. F. 4½'s "C"	1954	6,000,000	4½	99½	4.53	....	......
Total, Aaa	....	66,000,000	...	....	...	5.03	35.11
			Rating Aa				
Crane Co., 10 yr. 5% Notes	1940	12,000,000	5	100	5.00	5.00	6.38
			Rating A				
Crucible Steel Co., of America, Deb. 5's	1940	10,000,000	5	99½	5.06	....	......
Swift & Co., 10 yr. 5% Notes	1940	30,000,000	5	100	5.00	....	......
Total, A	....	40,000,000	...	....	...	5.01	21.28

[fol. 4934]

			Rating Baa				
General Baking Co., Deb. 5½'s	1940	7,000,000	5½	97	5.90	....	......
Pure Oil Co., 5½% S. F. Gold Notes	1940	20,000,000	5½	97½	5.83	....	......
Houston Oil Co., of Texas Sec. 5½'s "A"	1940	12,000,000	5½	97	5.90	....	......
Paramount Public Corp., 5½'s	1950	15,000,000	5½	94½	5.97	....	......
Total, Baa	....	54,000,000	...	....	...	5.89	28.72

Public Offerings of Long Term Bond Issues—Continued

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering Price	Original Public Offering Yield %	Weighted Average Yield %	% of Total Offering
			Rating Ba				
Brown Co., 1st M. 5½'s "B"	1950	5,000,000	5½	95	5.93		
The Glidden Co., 5 yr. 5½'s	1935	6,000,000	5½	99¾	5.56		
Total, Ba		11,000,000				5.72	5.85
			Not Rated				
Illinois Publishing & Ptg. Co., Sec. 6½'s Gold Deb	1950	5,000,000	6½	100	6.50	6.50	2.66
Grand Total, Year 1930 (Exclusive of Convertibles)		188,000,000				5.35	100.00
			Convertible Issues During 1930				
			Rating A				
Union Oil Co., of Cal. Deb. 5's	1945	15,000,000	5	99½	5.05		
Caterpillar Tractor Co., 5 yr. Conv. 5's	1935	10,000,000	5	98½	5.35		
Total, A		25,000,000				5.17	16.51
			Rating Baa				
Newberry J. J. Co	1940	5,000,000	5½	99	5.63		
California Packing Corp., Conv. Deb. 5's	1940	15,000,000	5	100	5.00		
Gillette Safety Razor Co., Conv. Deb. 5's	1940	20,000,000	5	96	5.53		
Total, Baa		40,000,000				5.34	26.41

			Rating Ba				
McKesson & Robbins Inc., Conv. Deb. 5½s	1950	22,000,000	5½	96	5.84		
Armstrong Cork Co., Conv. Deb. 5s	1940	14,931,000	5	98	5.26		
Total Ba		36,931,000				5.60	24.39
			Rating B				
General Theatres Equip. Inc., Conv. Deb. 6s	1940	30,000,000	6	99½	6.07	6.07	19.81
			Not Rated				
The Mead Corp., 1st M. Conv. 6s "A"	1945	9,500,000	6	97	6.31		
Hudson Bay Mining & Smelting Co., Conv. Deb. 6s	1935	5,000,000	6	100	6.00		
Saxet Co., 1st Lien Coll. Conv. 6s "A"	1945	5,000,000	6	99	6.10		
Total, Not Rated		19,500,000				6.17	12.88
Total, Convertible Year 1930		151,431,000				5.63	100.00
			Issues Offered in 1931				
			Rating Aa				
Inland Steel Co., 1st M. 4½s "B"	1981	15,000,000	4½	96½	4.68	4.68	17.65
			Rating A				
Youngstown Sheet & Tube Co., 1st M. 5s "B"	1970	25,000,000	5	101	4.94	4.94	29.41
[fol. 4935]							
			Rating Baa				
Inter Lake Iron Corp., 1st M. "B"	1951	5,000,000	5	97	5.24		
National Steel Corp., Coll. Mtg.	1955	40,000,000	5	99	5.07		
Total, Baa		45,000,000				5.09	52.94
Grand Total, Year 1931 (Exclusive of Convertibles)		85,000,000				4.97	100.00

Public Offerings of Long Term Bond Issues—(Continued)

Name of Company—Type of Issue	Year of Maturity	Amount Offered	Interest Rate %	Original Public Offering Price	Original Public Offering Yield %	Weighted Average Yield %	% of Total Offering
Convertible Issues During 1931							
Rating A							
International Match Corp'n. Conv. Deb. 5s	1941	50,000,000	5	96	5.50	5.50	
Rating Baa							
Vanadium Corp. of America Conv. Deb. 5s	1941	5,000,000	5	97.5	5.33		
Warren Bros. Co. Conv. Deb. 6s	1941	5,000,000	6	99	6.13		
St. Joseph Lead Co. Conv. Deb. 5½s	1941	9,752,300	5½	97½	5.83		
Total, Baa		19,752,300				5.78	17.98
Rating B							
Fox Film Corp. Conv. Deb. 6s	1936	30,000,000	6	98	6.47		
Radio Kieth Orpheum Corp'n. Deb. 6s	1941	11,600,000	6	100	6.00		
Grigsby-Grunow Co. Conv. Deb. 6s	1936	5,000,000	6	97½	6.60		
Total, B		46,600,000				6.36	40.05
Total Convertible Year 1931		116,352,300				5.90	100.00

(Here follow side folios 1936-4977)

[fol. 4936]

EXTRACTS FROM EXHIBIT X-262

Sales During the Year 1923 of Long-term Bonds for $5,000,000 or Over of Bell System Companies, Investment Rating (Moody's) and Yields from Date of Iss

Name of Company; Type of Issue; House of Issue	Amount Offered	Rate %	Original Public Offering		1923 Rating, Average Yield		1924 Rating, Average Yield		1925 Rating, Average Yield		1926 Rating, Average Yield		1927 Rating, Average Yield	
			Price	Yield										
January:														
Bell Tel. Co. of Pa., 1st and Ref. Mtge. 5s, "B", 1948, J. P. Morgan & Co	$35,000,000	5	98½	5.11	Aaa	5.20	Aaa	5.05	Aaa	4.88	Aaa	4.83	Aaa	4.64½
June:														
Illinois Bell Tlephone Co., 1st & Ref. Mtge. 5s, "A" 1956, J. P. Morgan & Co	50,000,000	5	95¼	5.31	Aa	5.36½	Aa	5.27	Aaa	5.04	Aaa	4.85½	Aaa	4.72
November:														
American Tel. & Tel. Co., Deb. 5½s, 1943, J. P. Morgan & Co	100,000,000	5½	98½	5.63	Aa	5.64	Aa	5.44	Aa	5.24	Aa	5.08	Aaa	4.81½

The "average yield" shown on this exhibit is the arithmetical average of the yields computed on the basis as testified to by Witness Hammond on the high market quotation for the

[fol. 4937]

Sales During the Year 1924 of Long Term Bonds for $5,000,000 or Over, of Bell System Companies, Investment Rating (Moody's) and Yields from Date of Iss

Name of Company; Type of Issue; House of Issue	Amount Offered	Rate %	Original Public Offering		1924 Rating, Average Yield		1925 Rating, Average Yield		1926 Rating, Average Yield		1927 Rating, Average Yield		1928 Rating Averag Yield	
			Price	Yield										
January:														
Southwestern Bell Telephone Co., 1st & Ref. M. 5s "A" 1954, J. P. Morgan & Co	$50,000,000	5	93½	5.44	Aa	5.33	Aa	5.08	Aa	4.86½	Aaa	4.69½	Aaa	4.

The "average yield" shown on this exhibit is the arithmetical average of the yields computed on the basis as testified to by Witness Hammond on the hig for the year and the low market quotation for the year.

Extracts from Exhibit X 262

923 of Long-term Bonds for $5,000,000 or Over of Bell System Companies, Investment Rating (Moody's) and Yields from Date of Issue to December 31, 1931

e	Amount Offered	Rate %	Original Public Offering Price	Original Public Offering Yield	1923 Rating, Average Yield	1924 Rating, Average Yield	1925 Rating, Average Yield	1926 Rating, Average Yield	1927 Rating, Average Yield	1928 Rating, Average Yield	1929 Rating, Average Yield	1930 Rating, Average Yield	1931 Rating, Average Yield
8, J. P. ..	$35,000,000	5	98½	5.11	Aaa 5.20	Aaa 5.05	Aaa 4.88	Aaa 4.83	Aaa 4.64½	Aaa 4.48½	Aaa 4.69	Aaa 4.58	Aaa 4.54
56, J. P.	50,000,000	5	95¼	5.31	Aa 5.36½	Aa 5.27	Aaa 5.04	Aaa 4.85½	Aaa 4.72	Aaa 4.70½	Aaa 4.80½	Aaa 4.67½	Aaa 4.76½
& Co	100,000,000	5½	98½	5.63	Aa 5.64	Aa 5.44	Aa 5.24	Aa 5.08	Aaa 4.81½	Aaa 4.75	Aaa 4.97	Aaa 4.76	Aaa 4.95

s the arithmetical average of the yields computed on the basis as testified to by Witness Hammond on the high market quotation for the year and the low market quotation for the year.

1924 of Long Term Bonds for $5,000,000 or Over, of Bell System Companies, Investment Rating (Moody's) and Yields from Date of Issue to December 31, 1931

of Issue	Amount Offered	Rate %	Original Public Offering Price	Original Public Offering Yield	1924 Rating, Average Yield	1925 Rating, Average Yield	1926 Rating, Average Yield	1927 Rating, Average Yield	1928 Rating, Average Yield	1929 Rating, Average Yield	1930 Rating, Average Yield	1931 Rating, Average Yield
5s "A" 1954, ...	$50,000,000	5	93½	5.44	Aa 5.33	Aa 5.08	Aa 4.86½	Aaa 4.69½	Aaa 4.68½	Aaa 4.78½	Aaa 4.67	Aaa 4.78

ield" shown on this exhibit is the arithmetical average of the yields computed on the basis as testified to by Witness Hammond on the high market quotation he low market quotation for the year.

[fol. 4938]

Sales During the Year 1925, of Long Term Bonds for $5,000,000 or Over, of Bell System Companies, Investment Rating (Moody's) and Yields From Date of Issue to 1

Name of Company; Type of Issue; House of Issue	Amount Offered	Rate %	Original Public Offering		1925 Rating, Average Yield		1926 Rating, Average Yield		1927 Rating, Average Yield		1928 Rating, Average Yield		1929 Ratin Avera Yiel	
			Price	Yield										
January:														
American Telephone & Telegraph Co., 35 yr. deb. 5s, 1960, J. P. Morgan & Co.	$125,000,000	5	95	5.32	Aa	5.23½	Aa	5.03	Aaa	4.76½	Aaa	4.63½	Aaa	4.
September:														
(The) Bell Telephone Co. of Pa., 1st & Ref. M. 5s, "C" 1960, J. P. Morgan & Co.	50,000,000	5	100	5.00	Aaa	4.95	Aaa	4.86	Aaa	4.62	Aaa	4.41½	Aaa	4.

The "average yield" shown on this exhibit is the arithmetical average of the yields computed on the basis as testified to by Witness Hammond on high market quotation for the year and the low market quotation for the year.

s, of Long Term Bonds for $5,000,000 or Over, of Bell System Companies, Investment Rating (Moody's) and Yields From Date of Issue to December 31, 1931

ouse of Issue	Amount Offered	Rate %	Original Public Offering		1925 Rating, Average Yield		1926 Rating, Average Yield		1927 Rating, Average Yield		1928 Rating, Average Yield		1929 Rating, Average Yield		1930 Rating, Average Yield		1931 Rating, Average Yield	
			Price	Yield														
deb. 5s, 1960, J. P.	$125,000,000	5	95	5.32	Aa	5.23½	Aa	5.03	Aaa	4.76½	Aaa	4.63½	Aaa	4.83½	Aaa	4.76	Aaa	4.90
. 5s, "C" 1960, J. P.	50,000,000	5	100	5.00	Aaa	4.95	Aaa	4.86	Aaa	4.62	Aaa	4.41½	Aaa	4.67	Aaa	4.51	Aaa	4.56½

erage yield" shown on this exhibit is the arithmetical average of the yields computed on the basis as testified to by Witness Hammond on the quotation for the year and the low market quotation for the year.

[fol. 4039]

Sales During the Year 1926 of Long Term Bonds for $5,000,000 or Over, of Bell System Companies, Investment Rating (Moody's) and Yields from Date of Issue to December 31

Name of Company; Type of Issue; House of Issue	Amount Offered	Rate %	Original Public Offering Price	Original Public Offering Yield	1926 Rating, Average Yield		1927 Rating, Average Yield		1928 Rating, Average Yield		1929 Rating, Average Yield		1930 Rating, Average Yield	
May														
New England Tel. & Tel. Co., 1st M. 4½s "B" 1961, J. P. Morgan & Co.	$40,000,000	4½	94½	4.83	Aaa	4.83	Aaa	4.56	Aaa	4.59	Aaa	4.60	Aaa	4.46

The "average yield" shown on this exhibit is the arithmetical average of the yields computed on the basis as testified to by Witness Hammond on the high market quotation for the year and the low market quotation for the year.

[fol. 4940]

Sales During the Year 1929 of Long-term Bonds for $5,000,000 or Over of Bell System Companies, Investment Rating (Moody's) and Yields from Date of Issue to December 31, 1931

Name of Company; Type of Issue; House of Issue	Amount Offered	Rate %	Original Public Offering		1929 Rating, Average Yield	1930 Rating, Average Yield	1931 Rating, Average Yield
			Price	Yield			
May:							
American Telephone & Telegraph Conv. deb. 4½s, 1939, Co. to stockholders	$219,000,000	4½	100	4.50	Aaa	Aaa	Aaa
October:							
Southern Bell Telephone & Telegraph Co., 1st M. 5s, Jan. 1, 1941, J. P. Morgan & Co.	32,000,000	5	100	5.00	Aaa 4.76	Aaa 4.58½	Aaa 4.74

The "average yield" shown on this exhibit is the arithmetical average of the yields computed on the basis as testified to by Witness Hammond on the high market quotation for the year and the low market quotation for the year.

[fol. 4941]

Sales During the Year 1930 of Long-term Bonds for $5,000,000 or Over, of Bell System Companies, Investment Rating (Moody's), and Yields from Date of Issue to December 31, 1931.

Name of Company; Type of Issue; House of Issue	Amount Offered	Rate %	Original Public Offering		1930 Rating: Average Yield	1931 Rating: Average Yield
			Price	Yield		
January:						
American Telephone & Telegraph Co., Deb. 5s, 1965, J. P. Morgan & Co.	$150,000,000	5	99½	5.03	Aaa 4.76½	Aaa 4.89½
May:						
Southern New England Telephone Co., Deb. 5s, 1970, Chas. W. Scranton & Co.	10,000,000	5	102½	4.86	Aaa 4.68½	Aaa 4.60

The "average yield" shown on this exhibit is the arithmetical average of the yields computed on the basis as testified to by Witness Hammond on the high market quotation for the year and the low market quotation for the year.

(Here follow side folios 4942-4952)

Sales During the Year 1923 of Long-term Bonds for $5,000,000 or Over, of Public Utilities Other Than Bell System Companies, Investment Rating (Moody's), anc

[fol. 4942]

Name of Company; Type of Issue; House of Issue	Amount Offered	Rate %	Original Public Offering		1923 Rating, Average Yield		1924 Rating, Average Yield		1925 Rating, Average Yield		1926 Rating, Average Yield		1 Ra Av Y	
			Price	Yield										
January:														
The Laclede Gas Light Co., 1st Mtge. Coll. & Ref. 5½s, "C" 1953, Halsey, Stuart & Co.	$17,500,000	5½	96.45	5.75	A	6.07½	A	5.90½	A	5.57	A	5.23½	A	
Memphis Pr. & Lt. Co., 1st & Ref. Mtge. 5s "A" 1948, Guaranty Co. of N. Y.	5,500,000	5	89½	5.80	Aa	....	Aa	5.66½	Aa	5.20	Aa	4.98½	Aa	
Spring Valley Water Co., 1st Mtge. 5s, 1943, Mercantile Trust Co.	22,000,000	5	98½	5.12	Aa	....	Aa	5.22½	Aa	5.14½	Aa	5.12	Aa	
February:														
Pacific Gas & Electric Co., 1st & Ref. Mtge. 5½s "C," Dec. 1952, National City Co.	10,000,000	5½	98½	5.60	Aa	....	Aa	5.73	Aa	5.48½	Aa	5.33	Aa	
Philadelphia Co., Conv. Deb. 5½s, 1938, Lee, Higginson & Co.	10,000,000	5½	99½	5.55	Baa	6.62	Baa	6.26½	Baa	5.85½	Baa	5.48½		
St. Maurice Power Co., Ltd., 1st Mtge. 6½s, 1953, Aldred & Co.	9,026,600	6½	99½	6.54	Baa	....	A	6.10½	A	6.02	A	5.88½		
Monongahela West Penn Public Service Co., 1st Lien & Ref. Conv. 5 yr. 6s "A", 1928, Halsey, Stuart & Co.	6,770,000	6	97.89	6.50	Baa	....	Baa	....	Called for payment Aug. 1, 1925 @ 10					
March:														
American Power & Light Co., Deb. 6s, 2016, Bonbright & Co.	5,000,000	6	95½	6.28	A	6.35½	A	6.35	A	6.25	A	6.06½	A	
Consolidated Power & Light Co., 1st Mtge. & Ref. Lien 6½s "A" 1943, Tucker Anthony & Co.	7,000,000	6½	99½	6.54	Baa	....	Baa	6.65½	Retired 3/1/26 @ 105.					
Public Service Co. of Northern Illinois, 1st Lien and Ref. Mtge. 5½s "A" 1962, Halsey Stuart & Co.	5,000,000	5½	94¼	5.88	A	....	A	....	A	5.46	A	5.21½	A	
Southern California Edison Co., Gen. & Ref. Mtge. 5½s, 1944, Harris, Forbes & Co.	10,000,000	5½	97½	5.71	A	....	A	5.83	A	5.49½	A	5.22		
Standard Gas & Electric Co., Conv. 6½s, 1933, H. M. Byllesby & Co.	6,000,000	6½	98	6.78	Baa	....			Retired 9/1/25 @ 105.					
West Penn Power Co., 1st Mtge. 5s "E" 1963, Halsey, Stuart & Co.	6,000,000	5	90	5.63	A	5.77½	A	5.50	Aa	5.20½	Aa	4.90½	Aa	
[fol. 4943]														
April:														
Illinois Pr. & Lt. Corp., 1st & Ref. M 6s "A" 1953, E. H. Rollins & Sons	30,000,000	6	98½	6.11	Baa	6.24½	Baa	6.13½	Baa	5.89	Baa	5.81	Baa	5
Public Service Elec. Power Co., 1st M 6s, 1948, Drexel & Co.	14,000,000	6	97½	6.20	A	6.27½	A	5.99½	A	5.61	Retired 4/1/27 @			
May:														
The Counties Gas & Electric Co., 1st & Ref. Mtge. 6s, 1953, Drexel & Co.	6,600,000	6	98	6.15	Baa	....	Baa	....	A		Retired 11/1/2			
Illinois Power & Light Corp., deb. 7s, 1953, E. H. Rollins & Sons	10,000,000	7	100	7.00	Ba	....	Ba	....	Ba	6.88	Retired 4/1/27 @ 1			
July:														
Interstate Public Service Co., 1st M & Ref. 6s, "A", Feb. 1948, Halsey, Stuart & Co.	7,192,000	6	91½	6.71	Ba	....	Baa	6.74½	Baa	6.14½	Baa	5.91½	Reti	
August:														
Milwaukee Elec. Ry. & Lt. Co. Ref. & 1st Mtge. 6s "C" 1953, Dillon, Read & Co.	10,000,000	6	98½	6.11	Baa	6.28	A	6.17½	A	5.90½	Retired 9/1/26 @ 104½.			
North American Edison Co., secured 6½s, "B" 1948, Dillon, Read & Co.	8,000,000	6½	98½	6.62	A	6.80½	A	6.54½	A	6.22½	A	6.09	Reti	
September:														
The Ohio Pr. Co., 1st & Ref. Mtge. 6s, "C", 1953, Dillon, Read & Co.	6,000,000	6	99	6.07	A	....	A	[illegible]	A	5.80½	A	5.66	Retir	
Ohio River Edison Co., 1st Mtge. 6s, 1948, Bonbright & Co.	7,000,000	6	95	6.40	Baa	....	Baa	5.98	A	5.90½	A	5.70½	A	5.
Pacific Gas & Electric Co., 1st & Ref. Mtge. 5½s "C", 1952, National City Co.	10,000,000	5½	95½	5.82	Aa	....	Aa	5.73	Aa	5.48½	Aa	5.33	Aa	5.1
October:														
Alabama Power Co., 1st Mtge. Lien & Ref. 6s, 1951, Harris, Forbes & Co.	6,000,000	6	99	6.07	A	6.06	A	5.94½	A	5.74½	A	5.61	Retir	
Philadelphia Elec. Co., 1st Lien & Ref. Mtge. 5½s, 1953, Drexel & Co.	10,000,000	5½	98½	5.60	Aa	5.67	Aa	5.39	Aa	5.11	Aa	5.00½	Aa	5.0
Public Service Co. of Colorado, 1st Mtge. & Ref. 6s, "A" 1953, Halsey, Stuart & Co.	5,000,000	6	93	6.53	Baa	....	Baa	6.44	Baa	6.04	[illegible]	[illegible]	[illegible]	[illegible]
Southern California Edison Co., Ref. Mtge. 6s, 1943, Harris														

m Bonds for $5,000,000 or Over, of Public Utilities Other Than Bell System Companies, Investment Rating (Moody's), and Yields from Date of Issue to December 31, 1931

	Amount Offered	Rate %	Original Public Offering		1923 Rating, Average Yield		1924 Rating, Average Yield		1925 Rating, Average Yield		1926 Rating, Average Yield		1927 Rating, Average Yield		1928 Rating, Average Yield		1929 Rating, Average Yield		1930 Rating, Average Yield		1931 Rating, Average Yield	
			Price	Yield																		
“C”	$17,500,000	5½	96.45	5.75	A	6.07½	A	5.90½	A	5.57	A	5.23½	A	5.17½	A	5.19	A	5.31½	A	5.31½	A	7.30
ranty	5,500,000	5	89½	5.80	Aa	....	Aa	5.66½	Aa	5.20	Aa	4.98½	Aa	4.88½	Aa	4.77½	Aa	4.93	Aa	4.82½	Aa	5.18½
Trust	22,000,000	5	98½	5.12	Aa	....	Aa	5.22½	Aa	5.14½	Aa	5.12	Aa	4.98	Aa	4.89½	Aa	5.18	Retired 11/30/30 @ 100			
Dec.	10,000,000	5½	98½	5.60	Aa	....	Aa	5.73	Aa	5.48½	Aa	5.33	Aa	5.19½	Aa	5.15½	Aa	5.25	Aa	5.12½	Aa	5.33½
Co...	10,000,000	5½	99½	5.55	Baa	6.62	Baa	6.26½	Baa	5.85½	Baa	5.48½		Retired 1/18/28 @ 102½.								
& Co.	9,026,600	6½	99½	6.54	Baa	....	A.	6.10½	A	6.02	A	5.88½		Retired 8/1/28 @ 107½.								
Ref.	6,770,000	6	97.89	6.50	Baa	...	Baa	....	Called for payment Aug. 1, 1925 @ 101½.													
)....	5,000,000	6	95½	6.28	A	6.35½	A	6.35	A	6.25	A	6.06½	A	5.75½	A	5.58½	A	5.66	Baa	5.80½	Baa	7.61½
6½s	7,000,000	6½	99½	6.54	Baa	....	Baa	6.65½		Retired 3/1/26 @ 105.												
Mtge.	5,000,000	5½	94¼	5.88	A	....	A	....	A	5.46	A	5.21½	A	5.06	A	5.02	A	5.26½	....	5.04	Retired 5/7/31@110.	
1944, ...	10,000,000	5½	97½	5.71	A	....	A	5.83	A	5.49½	A	5.22		Retired 8/1/28 @ 105.								
llesby	6,000,000	6½	98	6.78	Baa	....				Retired 9/1/25 @ 105.												
Stuart	6,000,000	5	90	5.63	A	5.77½	A	5.50	Aa	5.20½	Aa	4.90½	Aa	4.82	Aa	4.71	Aa	4.82½	Aaa	4.72½.	Aaa	4.78
ollins	30,000,000	6	98½	6.11	Baa	6.24½	Baa	6.13½	Baa	5.89	Baa	5.81	Baa	5.73	Baa	5.75½	A	5.80	A	5.79½	A	6.87½
)....	14,000,000	6	97½	6.20	A	6.27½	A	5.99½	A	5.61	Retired 4/1/27 @ 107½.											
1953, ...	6,600,000	6	98	6.15	Baa	....	Baa	....	A			Retired 11/1/26 @ 107½.										
Sons..	10,000,000	7	100	7.00	Ba	....	Ba	....	Ba	6.88	Retired 4/1/27 @ 105.											
1948, ...	7,192,000	6	91½	6.71	Ba	....	Baa	6.74½	Baa	6.14½	Baa	5.91½	Retired 3/22/28 @ 105.									
1953, ...	10,000,000	6	98½	6.11	Baa	6.28	A	6.17½	A	5.90½	Retired 9/1/26 @ 104½.											
Dillon, ...	8,000,000	6½	98½	6.62	A	6.80½	A	6.54½	A	6.22½	A	6.09	Retired 5/1/27 @ 105¼.									
Read	6,000,000	6	99	6.07	A	....	A	....	A	5.80½	A	5.66	Retired 5/1/28 @ 106.									
.....	7,000,000	6	95	6.40	Baa	....	Baa	5.98	A	5.90½	A	5.70½	A	5.48½	A	5.48	A	5.59½	....	5.42½	Retired 1/1/31@107½.	
1952, ...	10,000,000	5½	95½	5.82	Aa	....	Aa	5.73	Aa	5.48½	Aa	5.33	Aa	5.19½	Aa	5.15½	Aa	5.24	Aa	5.12½	Aa	5.32½
Iarris, ...	6,000,000	6	99	6.07	A	6.06	A	5.94½	A	5.74½	A	5.61	Retired 12/1/27 @ 105.									
Drexel	10,000,000	5½	98½	5.60	Aa	5.67	Aa	5.39	Aa	5.11	Aa	5.00½	Aa	5.01	Aaa	5.03	Retired 5/1/30 @ 107.					
1953, ...	5,000,000	6	93	6.53	Baa	....	Baa	6.44	Baa	6.04	Baa	5.90½	Baa	5.80½	A	5.68	A	5.96½	A	5.89	A	6.53½

October:														
Alabama Power Co., 1st Mtge. Lien & Ref. 6s, 1951, Harris, Forbes & Co.	6,000,000	6	99	6.07	A	6.06	A	5.94½	A	5.71½	A	5.61		Retired
Philadelphia Elec. Co., 1st Lien & Ref. Mtge. 5½s, 1953, Drexel & Co.	10,000,000	5½	98½	5.60	Aa	5.67	Aa	5.39	Aa	5.11	Aa	5.00½	Aa	5.01
Public Service Co. of Colorado, 1st Mtge. & Ref. 6s, "A" 1953, Halsey, Stuart & Co.	5,000,000	6	93	6.53	Baa		Baa	6.44	Baa	6.04	Baa	5.90½	Baa	5.80½
Southern California Edison Co., Ref. Mtge. 6s, 1943, Harris, Forbes & Co.	11,500,000	6	98½	6.13	A		A	6.01½	A	5.78	A	5.63½		Retired
[fol. 4944]														
November:														
Illinois Power & Light Corp., 1st & Ref. Mtge. 6s, "A" April, 1953, E. H. Rollins & Sons	5,000,000	6	98½	6.11	Baa	6.24½	Baa	6.13½	Baa	5.89	Baa	5.81½	Baa	5.74
Minnesota Pr. & Lt. Co., 1st & Ref. Mtge. 6s, 1950, Harris, Forbes & Co.	8,300,000	6	97¾	6.17	Baa		A		A	5.73½	A	5.61½		Retired
Northern States Pr. Co. (Minn.) Conv. 6½s, 1933, Guaranty Co. of N. Y.	10,000,000	6½	98½	6.71	Baa	6.73½	Baa	6.76½	Baa	6.15½	Baa	5.88½	Baa	5.77½
Penn. Central Lt. & Pr. Co., 1st & Ref. Mtge. 6s, 1953, Drexel & Co.	10,300,000	6	98	6.15	A	....	A		A	5.76½	A	5.70½		Retired
December:														
Commonwealth Edison Co. (Chicago), 1st Mtge. Coll. 5s "A", July 1953, Halsey, Stuart & Co.	15,000,000	5	92½	5.52	Aaa	....	Aaa	5.31	Aaa	5.01	Aaa	4.89	Aaa	4.75½
Northern States Power Co. (Minn.), 1st Lien & Genl. Mtge. 6s "A" 1948, Harris, Forbes & Co.	8,500,000	6	97½	6.20	A	....	A	6.09	A	5.78½	A	5.70	A	5.66
Public Service Co. of Northern Illinois, 1st Lien & Ref. Mtge. 5½s, "A", June, 1962, Halsey, Stuart & Co.	10,000,000	5½	92	6.04	A		A		A	5.46	A	5.21½	A	5.06
West Penn. Power Co., 1st Mtge. 5½s "F", 1953, Halsey, Stuart & Co., Inc.	7,500,000	5½	95 1/8	5.85	A	..	A	5.49½	Aa	5.27½	Aa	5.15	Aa	5.09

The "average yield" shown on this exhibit is the arithmetical average of the yields computed on the basis as testified to by Witness Hammond on the high and the low market quotation for the year.

s, al	6,000,000	6	99	6 07	A	6 06	A	5 94½	A	5 74½	A	5 61	Retired 12 1 27 @ 105									
3,	10,000,000	5½	98½	5 60	Aa	5 67	Aa	5 39	Aa	5 11	Aa	5 00½	Aa	5 01	Aaa	5 03	Retired 5 1 30 @ 107					
s,	5,000,000	6	93	6 53	Baa		Baa	6 44	Baa	6 04	Baa	5 90½	Baa	5 80½	A	5 68	A	5 96½	A	5 89	A	6 53½
	11,500,000	6	98½	6 13	A		A	6 01½	A	5 78	A	5 63½	Retired 10 1 27 @ 105									
l, s	5,000,000	6	98½	6 [illegible]1	Baa	6 21½	Baa	6 13½	Baa	5 89	Baa	5 81½	Baa	5 74	Baa	5 76½	A	5 80½	A	5 80½	A	6 87½
y	8,300,000	6	97¾	6 17	Baa		A		A	5 73½	A	5 61½	Retired 5 1 28 @ 105¾									
d	10,000,000	6½	98½	6 71	Baa	6 73½	Baa	6 76	Baa	6 15½	Baa	5 88½	Baa	5 77½		5 77½	Retired 5 1 29 @ 102½					
	10,300,000	6	98	6 15	A		A		A	5 76½	A	5 70½	Retired 12 1 27 @ 105									
	15,000,000	5	92½	5 52	Aaa		Aaa	5 31	Aaa	5 01	Aaa	4 89	Aaa	4 75½	Aaa	4 68½	Aaa	4 87	Aaa	4 71	Aaa	4 70½
s	8,500,000	6	97½	6 20	A		A	6 09	A	5 78½	A	5 70	A	5 66	A	5 67½	A	5 73½		5 62½	Retired 6 1 31 @ 105	
	10,000,000	5½	92	6 04	A		A		A	5 46	A	5 21½	A	5 06	A	5 02	A	5 26½		5 03	Retired 5 7 31 @ 110	
t	7,500,000	5½	95 1/8	5 85	A		A	5 40½	Aa	5 27½	Aa	5 15	Aa	5 04	Aa	5 10	Aa	5 21	Aaa	5 11	Called for payment	

on this exhibit is the arithmetical average of the yields computed on the basis as testified to by Witness Hammond on the high market quotation for the year
or the year

f Long Term Bonds for $5,000,000 or Over, of Bell System Companies, Investment Rating (Moody's) and Yields from Date of Issue to December 31, 1931*

House of Issue	Amount Offered	Rate %	Original Public Offering Price	Original Public Offering Yield	1926 Rating, Average Yield		1927 Rating, Average Yield		1928 Rating, Average Yield		1929 Rating, Average Yield		1930 Rating, Average Yield		1931 Rating, Average Yield	
s. D. 1961 J. P. Morgan	$40,000,000	4½	94½	4.83	Aaa	4.83	Aaa	4.56	Aaa	4.34½	Aaa	4.60½	Aaa	4.40½	Aaa	4.49

* "Average yield" shown on this exhibit is the arithmetical average of the yields computed on the basis as testified to by Witness Ham-
n the high market quotation for the year and the low market quotation for the year

[fol. 4945] Sales During the Year 1924 of Long-Term Bonds for $5,000,000 or Over, of Public Utilities Other Than Bell System Companies, Investment Rating (Moody's), and Yields from Date of Issue to December

Name of Company; Type of Issue; House of Issue	Amount Offered	Rate %	Original Public Offering		1924 Rating, Average Yield		1925 Rating, Average Yield		1926 Rating, Average Yield		1927 Rating, Average Yield		1928 Rating, Average Yield		1929 Rating, Average Yield		1930 Rating, Average Yield	
			Price	Yield														
January:																		
Los Angeles Gas & Electric Corp., Gen. & Ref. M 6s "H" 1942, Bond & Goodwin & Tucker, Inc	$8,000,000	6	99	6.09	A	5.91	A	5.75	A	5.43½	Aa	5.17½	Aa	5.54½	Aa	5.51	Aa	5.12
Market Street Ry. Co., 1st M 7s, April 1940, Dillon, Read & Co	13,000,000	7	100	7.00	Baa	7.24½	Ba	7.02	Ba	7.35½	Ba	7.15	Ba	7.22½	Ba	8.67	Ba	8.07
Union Electric Light & Power Co., of Illinois, 1st M 5½s, "A" 1954, Dillon, Read & Co	10,000,000	5½	95¾	5.80	A	5.68½	A	5.36½	A	5.37½	A	5.29	Aa	5.35	Aa	5.35½	Aa	5.29
Standard Gas & Electric Co., Conv. deb, 6½s, 1954, H. M. Byllesby & Co	10,500,000	6½	93½	7.02	Baa		Retired September 1, 1925 @ 105.											
February:																		
Continental Gas & Elec. Corp., Conv. Coll. Tr. 7s, "A", 1954, Howe, Snow & Berties, Inc	5,700,000	7	100	7.00	Baa		Baa	6.82½	Baa	6.27½			Retired 2/1/28 @ 105.					
The Syracuse Lighting Co., Inc., 1st & Ref. Mtge. 5½s, 1954, Drexel & Co	7,000,000	5½	97	5.71	A	5.61	A	5.36	A	5.17½	A	5.12	Aa	5.08	Aa	5.18	Aa	5.16
Wisconsin Electric Pr. Co., 1st M 5s "A" 1954, Dillon, Read & Co	9,000,000	5	91¼	5.61	Aa	....	Aa	5.24	Aa	5.03½	Aa	4.88½	Aa	4.83	Aa	4.93	Aa	4.84
Connecticut Lt. & Pr. Co., 1st & Ref. 5½s "B" 1954, Lee, Higginson & Co	5,874,000	5½	96½	5.75	Aa	5.57	Aa	5.09	Aa	4.89	Aa	4.92	Aa	4.98	Aa	5.16½	Aa	4.95
Virginian Power Co., 1st lien & ref. 6½s "A" 1954, A. B. Leach & Co., Inc	5,000,000	6½	96½	6.77	No rating		Retired 4/1/26 @ 105.											
March:																		
Duquesne Light Co., 1st Mtge. & Coll. Tr. 5½s, "B" 1949, Harris, Forbes & Co	10,000,000	5½	99	5.57	Aa	5.27½	Aa	5.15	....	....	Retired 7/1/27 @ 105.							
Illinois Power & Light Corp. 1st & Ref. 6s, "A", 1953, E. H. Rollins & Sons	5,000,000	6	98½	6.11	Baa	6.13½	Baa	5.89	Baa	5.81½	Baa	5.74	Baa	5.76	A	5.80½	A	5.80
Southern California Edison Co., Ref. Mtge. 6s, Oct. 1943, Harris, Forbes & Co	14,000,000	6	99	6.09	A	6.01½	A	5.78	A	5.64	....	....	Retired 10/1/27 @ 105.					
April:																		
Birmingham (Ala.) Electric Co., 1st & Ref. Mtge. 6s, 1954, Harris, Forbes & Co	8,000,000	6	97½	6.18	A	....	A	5.92½	A	5.75	....	....	Retired 4/1/28 @ 105.					
[fol. 4946]																		
Bridgeport (Conn.) Hydraulic Co., 1st Mtge. 5s, "A" 1944, Lee, Higginson & Co	$5,000,000	5	100	5.00	Aa	4.86½	Aa	4.72	Aa	4.65	Aa	4.67½	Aa	4.71	Aa	4.97½	Aa	5.00
Consumers Power Co., 1st Lien & Unifying Mtge. 5½s, 1954, National City Co	8,500,000	5½	95½	5.82	A	....	A	....	Aa	5.19½	....	....	Retired 5/7/28 @ 105.					
Northern States Power. (Minn.), 1st Lien & Gen. Mtge. 6s, "A" Nov. 1948, Harris, Forbes & Co	6,000,000	6	99½	6.04	A	6.09	A	5.78½	A	5.70	A	5.66	A	5.67½	A	5.73½	....	5.62
Pacific Gas & Electric Co., 1st & Ref. Mtge. 5½s, "C", Dec. 1952, National City Co	12,500,000	5½	96	5.79	Aa	5.73	Aa	5.49	Aa	5.33	Aa	5.19½	Aa	5.15½	Aa	5.24	Aa	5.12
Pennsylvania Elec. Corp., deb. 6½s, 1954, E. H. Rollins & Sons	5,000,000	6½	93-3/8	7.03	Ba	....	Retired 7/1/26 @ 105.											
May:																		
West Kentucky Coal Co., 1st M 7s A, 1944, Lee, Higginson & Co	5,000,000	7	100	7.00	Baa	....	Baa	6.81	Baa	6.86½	....	....	Retired 5/1/28 @ 104.					
Northern States Pr. Co., (Minn.), 6½% notes Nov. 1933, Guaranty Co. of N. Y	5,000,000	6½	97½	6.86	Baa	6.76½	Baa	6.15	Baa	5.88½	Baa	5.77½	Baa	5.77½	Baa	5.88½	...	5.69
June:																		
Chicago Rapid Transit Co., 1st & Ref. Mtge. 6½s, 1944, National City Co	6,500,000	6½	94½	7.02	Baa	7.16½	Baa	7.03	Baa	6.98½	Baa	6.81	Baa	6.97½	Ba	7.39	Ba	8.59
North American Light & Power Corp., secured 7s, 1954, E. H. Rollins & Sons	6,300,000	7	100	7.00	Ba	....	Ba	7.10½	Retired August 1, 1926.									
Pennsylvania Ohio Power & Light Co., 1st & Ref. Mtge. 5½s, "A", 1943, Lee, Higginson & Co	19,000,000	5½	98	5.64	A	....	A	5.69½	A	5.49½	A	5.34	A	5.23½	A	5.39	A	5.26
Puget Sound Power & Light Co., 1st & Ref. Mtge. 5½s "A", 1949, Lee, Higginson & Co	20,000,000	5½	96¾	5.75	A	....	Baa	....	Baa	5.44	Baa	5.38½	A	5.25½	A	5.47½	A	5.36
Adirondack Power & Light Corp., Conv. Deb. 6s, April 1, 1929, Harris, Forbes & Co	5,000,000	6	99-1/8	6.21	Baa	....	Baa	....	Baa	....	....	....	Retired 10/1/27 @ 101.					
Detroit United Ry., 1st Mtge. & Coll. Tr. 5 yr. 6s, July 1, 1929, Dillon, Read & Co	9,000,000	6	99	6.24	B	....	B	....	B	....	Caa	....						
July:																		
Central Illinois Public Service Co., 1st Mtge. & Ref. 6s, "C" Jan. 1944, Halsey Stuart & Co	6,000,000	6	98	6.27	Baa	....	Baa	6.10½	Baa	5.88½	....	....	Retired 1/16/28 @ 107½.					

[fol. 4945]

Sales During the Year 1924 of Long-Term Bonds for $5,000,000 or Over, of Public Utilities Other Than Bell System Companies, Investment Rating (Moody's), and Yields from Date of Issue to December 31, 1931

Name of Company; Type of Issue; House of Issue	Amount Offered	Rate %	Original Public Offering		1924 Rating, Average Yield		1925 Rating, Average Yield		1926 Rating, Average Yield		1927 Rating, Average Yield		1928 Rating, Average Yield		1929 Rating, Average Yield		1930 Rating, Average Yield		1931 Rating, Average Yield	
			Price	Yield																
January:																				
Los Angeles Gas & Electric Corp., Gen. & Ref. M 6s "H" 1942, Bond & Goodwin & Tucker, Inc	$8,000,000	6	99	6.09	A	5.91	A	5.75	A	5.43½	Aa	5.17½	Aa	5.54½	Aa	5.51	Aa	5.12½	Aa	5.31
Market Street Ry. Co., 1st M 7s, April 1940, Dillon, Read & Co	13,000,000	7	100	7.00	Baa	7.24½	Ba	7.02	Ba	7.35½	Ba	7.15	Ba	7.22½	Ba	8.67	Ba	8.07½	Ba	9.00
Union Electric Light & Power Co., of Illinois, 1st M 5½s, "A" 1954, Dillon, Read & Co	10,000,000	5½	95¾	5.80	A	5.68½	A	5.36½	A	5.37½	A	5.29	Aa	5.35	Aa	5.35½	Aa	5.29½	Aa	5.37
Standard Gas & Electric Co., Conv. deb, 6½s, 1954, H. M. Byllesby & Co	10,500,000	6½	93½	7.02	Baa		Retired September 1, 1925 @ 105.													
February:																				
Continental Gas & Elec. Corp., Conv. Coll. Tr. 7s, "A", 1954, Howe, Snow & Berties, Inc	5,700,000	7	100	7.00	Baa		Baa	6.82½	Baa	6.27½			Retired 2/1/28 @ 105.							
The Syracuse Lighting Co., Inc., 1st & Ref. Mtge. 5½s, 1954, Drexel & Co	7,000,000	5½	97	5.71	A	5.61	A	5.36	A	5.17½	A	5.12	Aa	5.08	Aa	5.18	Aa	5.16	Aa	5.30
Wisconsin Electric Pr. Co., 1st M 5s "A" 1954, Dillon, Read & Co	9,000,000	5	91¼	5.61	Aa	....	Aa	5.24	Aa	5.03½	Aa	4.88½	Aa	4.83	Aa	4.93	Aa	4.84	Aa	5.02½
Connecticut Lt. & Pr. Co., 1st & Ref. 5½s "B" 1954, Lee, Higginson & Co	5,874,000	5½	96½	5.75	Aa	5.57	Aa	5.09	Aa	4.89	Aa	4.92	Aa	4.98	Aa	5.16½	Aa	4.96	Aa	5.07
Virginian Power Co., 1st lien & ref. 6½s "A" 1954, A. B. Leach & Co., Inc	5,000,000	6½	96½	6.77	No rating		Retired 4/1/26 @ 105.													
March:																				
Duquesne Light Co., 1st Mtge. & Coll. Tr. 5½s, "B" 1949, Harris, Forbes & Co	10,000,000	5½	99	5.57	Aa	5.27½	Aa	5.15	....	....	Retired 7/1/27 @ 105.									
Illinois Power & Light Corp. 1st & Ref. 6s, "A", 1953, E. H. Rollins & Sons	5,000,000	6	98½	6.11	Baa	6.13½	Baa	5.89	Baa	5.81½	Baa	5.74	Baa	5.76	A	5.80½	A	5.80	A	6.87½
Southern California Edison Co., Ref. Mtge. 6s, Oct. 1943, Harris, Forbes & Co	14,000,000	6	99	6.09	A	6.01½	A	5.78	A	5.64	....	....	Retired 10/1/27 @ 105.							
April:																				
Birmingham (Ala.) Electric Co., 1st & Ref. Mtge. 6s, 1954, Harris, Forbes & Co	8,000,000	6	97½	6.18	A	....	A	5.92½	A	5.75	....	....	Retired 4/1/28 @ 105.							

[fol. 4946]

Name of Company; Type of Issue; House of Issue	Amount Offered	Rate %	Price	Yield	1924 Rating	1924 Yield	1925 Rating	1925 Yield	1926 Rating	1926 Yield	1927 Rating	1927 Yield	1928 Rating	1928 Yield	1929 Rating	1929 Yield	1930 Rating	1930 Yield	1931 Rating	1931 Yield
Bridgeport (Conn.) Hydraulic Co., 1st Mtge. 5s, "A" 1944, Lee, Higginson & Co	$5,000,000	5	100	5.00	Aa	4.86½	Aa	4.72	Aa	4.65	Aa	4.67½	Aa	4.71	Aa	4.97½	Aa	5.00½	AA	...
Consumers Power Co., 1st Lien & Unifying Mtge. 5½s, 1954, National City Co	8,500,000	5½	95½	5.82	A	....	A	....	Aa	5.19½	....	....	Retired 5/7/28 @ 105.							
Northern States Power (Minn.), 1st Lien & Gen. Mtge. 6s, "A" Nov. 1948, Harris, Forbes & Co	6,000,000	6	99½	6.04	A	6.09	A	5.78½	A	5.70	A	5.66	A	5.67½	A	5.73½	....	5.62	Retired 6/1/31@105.	
Pacific Gas & Electric Co., 1st & Ref. Mtge. 5½s, "C", Dec. 1952, National City Co	12,500,000	5½	96	5.79	Aa	5.73	Aa	5.49	Aa	5.33	Aa	5.19½	Aa	5.15½	Aa	5.24	Aa	5.12½	Aa	5.33½
Pennsylvania Elec. Corp., deb. 6½s, 1954, E. H. Rollins & Sons	5,000,000	6½	93-3/8	7.03	Ba	....	Retired 7/1/26 @ 105.													
May:																				
West Kentucky Coal Co., 1st M 7s A, 1944, Lee, Higginson & Co	5,000,000	7	100	7.00	Baa	....	Baa	6.81	Baa	6.86½	....	....	Retired 5/1/28 @ 104.							
Northern States Pr. Co., (Minn.), 6½% notes Nov. 1933, Guaranty Co. of N. Y	5,000,000	6½	97½	6.86	Baa	6.76½	Baa	6.15	Baa	5.88½	Baa	5.77½	Baa	5.77½	Baa	5.88½	....	5.69½	Retired 11/1/31@101½	
June:																				
Chicago Rapid Transit Co., 1st & Ref. Mtge. 6½s, 1944, National City Co	6,500,000	6½	94½	7.02	Baa	7.16½	Baa	7.03	Baa	6.98½	Baa	6.81	Baa	6.97½	Ba	7.39	Ba	8.59½	Ba	14.32
North American Light & Power Corp., secured 7s, 1954, E. H. Rollins & Sons	6,300,000	7	100	7.00	Ba	....	Ba	7.10½	Retired August 1, 1926.											
Pennsylvania Ohio Power & Light Co., 1st & Ref. Mtge. 5½s, "A", 1943, Lee, Higginson & Co	19,000,000	5½	98	5.64	A	....	A	5.69½	A	5.49½	A	5.34	A	5.23½	A	5.39	A	5.26	A	5.57
Puget Sound Power & Light Co., 1st & Ref. Mtge. 5½s "A", 1949, Lee, Higginson & Co	20,000,000	5½	96¾	5.75	A	....	Baa	....	Baa	5.44	Baa	5.38½	A	5.25½	A	5.47½	A	5.36	A	7.02
Adirondack Power & Light Corp., Conv. Deb. 6s, April 1, 1929, Harris, Forbes & Co	5,000,000	6	99-1/8	6.21	Baa	....	Baa	....	Baa	....	....	....	Retired 10/1/27 @ 101.							
Detroit United Ry., 1st Mtge. & Coll. Tr. 5 yr. 6s, July 1, 1929, Dillon, Read & Co	9,000,000	6	99	6.24	B	....	B	....	B	....	Caa	....								
July:																				
Central Illinois Public Service Co., 1st Mtge. & Ref. 6s, "C"																				

Adirondack Power & Light Corp., Conv. Deb. 6s, April 1, 1929, Harris, Forbes & Co.	5,000,000	6	99-1/8	6.21	Baa	....	Baa	....	Baa	....	....	....	Retired 10/1/27 @ 101.							
Detroit United Ry., 1st Mtge. & Coll. Tr. 5 yr. 6s, July 1, 1929, Dillon, Read & Co.	9,000,000	6	99	6.24	B	....	B	....	B	....	Caa	....								
July:																				
Central Illinois Public Service Co., 1st Mtge. & Ref. 6s, "C" Jan. 1944, Halsey Stuart & Co.	6,000,000	6	98	6.27	Baa	....	Baa	6.10½	Baa	5.88½	....	....	Retired 1/16/28 @ 107½.							
[fol. 4947]																				
Duke-Price Power Co., Ltd., 1st Mtge. 6s, 1949, National City Co.	$12,000,000	6	99	6.08	Ba	....	....	....	Retired 7/1/26 @ 107½.											
Luzerne County, Gas & Electric Corp., 1st & Ref. Mtge. 6s, 1954, Drexel & Co.	6,000,000	6	98	6.15	Baa	....	Baa	5.86	Baa	5.69½	Baa	5.49	A	5.47½	A	5.64½	A	5.53	A	5.8
Public Service Corp. of N. J., Sec. 6s, 1944, Drexel & Co.	20,000,000	6	96	6.36	Baa	6.40	A	6.18½	A	5.79	....	....	Retired 3/15/28 @ 107½.							
August:																				
American Gas & Electric Co., Deb. 6s, American Series 2014, Bonbright & Co.	9,000,000	6	95½	6.28	A	6.28½	A	6.17½	A	5.99½	....	....	Retired 5/1/28 @ 110.							
American Power & Light Co., Deb. 6s, American Series 2016, Bonbright & Co.	5,000,000	6	94½	6.35	A	6.35	A	6.25	A	6.06½	A	5.76	A	5.58	A	5.66	Baa	5.80½	Baa	7.6
Commonwealth Edison Co., 1st Mtge. Coll. Tr. 5s, "B" 1954, Halsey, Stuart & Co.	15,000,000	5	98½	5.10	Aaa	....	Aaa	5.00	Aaa	4.85½	Aaa	4.65½	Aaa	4.65½	Aaa	4.97	Aaa	4.66	Aaa	4.6
Pacific Gas & Electric Co., 1st & Ref. Mtge. 5½s, "C", Dec. 1952, National City Co.	12,500,000	5½	98	5.64	Aa	5.73	Aa	5.48½	Aa	5.33	Aa	5.19½	Aa	5.15½	Aa	5.24	Aa	5.12½	Aa	5.3
September:																				
Interstate Power Co., 1st M 6s, "A", 1944, West & Co.	6,000,000	6	96	6.36	Baa	....	Baa	6.25	Baa	6.00½	....	....	Retired 7/1/27 @ 105.							
Public Service Co. of Colorado, 1st M & Ref. 5½s, "B" 1954, Halsey, Stuart & Co.	10,000,000	5½	93	6.01	Baa	....	Baa	5.94	Baa	5.74	Baa	5.45	A	5.33	A	5.64½	A	5.51	A	6.6
Public Service Electric & Gas Co., 1st & Ref. M 5½s, 1964, Drexel & Co.	15,000,000	5½	96½	5.72	A	5.72	Aa	5.35½	Aa	5.21	....	....	Retired 2/1/28 @ 105.							
Puget Sound Power & Light Co., 1st & Ref. M 5½s, "A", June 1949, Lee, Higginson & Co.	5,000,000	5½	97	5.72	A	....	Baa	....	Baa	5.44	Baa	5.38½	A	5.25½	A	5.47½	A	5.36	A	7.0
October:																				
American Pr. & Lt. Co., deb. American 6% Series 2016, Bonbright & Co.	5,000,000	6	94½	6.35	A	6.35	A	6.25	A	6.06½	A	5.75½	A	5.58½	A	5.66	Baa	5.80½	Baa	7.6
Birmingham (Ala.) Water Works Co., 1st M 5½s "A", 1954, P. W. Chapman & Co.	5,500,000	5½	99¾	5.52	A	....	A	5.40	A	5.33	A	5.24	A	5.35	A	5.42½	A	5.46½	A	5.6
Brooklyn, Edison Co., Inc., Gen. M 5s, "A", Jan. 1949, Guaranty Co. of N. Y.	25,000,000	5	100	5.00	Aa	4.95½	Aa	4.92½	Aa	4.70	Aaa	4.65½	Aaa	4.61½	Aaa	4.73	Aaa	4.61	Aaa	4.6
Continental Gas & Elec. Corp., Secured 6½s "A", 1964, Otis & Co.	11,700,000	6½	99	6.57	Baa	....	Baa	6.63	Baa	6.47½	....	....	Retired 4/1/28 @ 105.							
Detroit, Edison Co., Gen. & Ref. M 5s, "A", 1949, Coffin & Burr, Inc.	12,500,000	5	97½	5.18	Aa	5.18	Aa	5.02	Aa	4.84	Aa	4.71	Aaa	4.66½	Aaa	4.84	Aa	4.67½	Aa	4.7
[fol. 4948]																				
Los Angeles Gas & Elec. Corp., Gen. & Ref. M 5½s, "I", 1949, Bond & Goodwin & Tucker, Inc.	$6,000,000	5½	96½	5.77	A	....	A	5.69	A	5.42	Aa	5.19½	Aa	5.05½	Aa	5.11	Aa	5.07	Aa	4.9
Ohio Public Service Co., 1st M & Ref. 5s "D", 1954, Halsey, Stuart & Co.	9,000,000	5	89	5.78	Baa	....	A	5.72	A	5.25	A	4.96	A	4.86½	A	5.11	A	5.00	A	5.6
Public Service Co. of Northern Illinois, 1st Lien & Ref. M. 5½s, "B", July 1964, Halsey, Stuart & Co.	5,000,000	5½	96	5.75	A	....	A	....	A	5.21	A	5.06½	A	5.03	A	5.30½	....	5.14½	Retired 5/7/31	
November:																				
Central Iowa Pr. & Lt. Co., 1st M 6s "A", 1944, A. C. Allyn & Co.	6,500,000	6	100	6.00	Baa	....	Baa	5.94½	....	....	Retired 5/1/27 @ 105.									
Cities Service Power & Light Co., 20 yr. 6s "A", 1944, Dillon, Read & Co.	20,000,000	6	94½	6.49	Ba	6.48½	Baa	6.52½	Baa	....	Retired 11/1/27 @ 105.									
Cleveland Elec. Illuminating Co., Gen. M. 5s "A", 1954, Dillon, Read & Co.	11,500,000	5	100	5.00	Aaa	....	Aaa	4.68	Aaa	4.79	Aaa	4.69½	Aaa	4.66½	Aaa	4.79½	Aaa	4.76½	Aaa	4.7
United Light & Power Co., deb. 6½s May 1974, Bonbright & Co.	5,000,000	6½	95	6.84	Baa	6.91½	Baa	6.84	Baa	6.68½	Ba	6.46½	Ba	6.23½	Ba	6.50½	Ba	6.60½	Ba	9.1
December:																				
Chicago, North Shore Milwaukee R. R. Co., 1st & Ref. 6s "A", Jan. 1955, Halsey, Stuart & Co.	7,000,000	6	98	6.15	Baa	....	Baa	6.09½	Baa	5.98	Baa	6.03½	Baa	6.78½	Ba	7.08	Ba	8.28	Ba	19.5
Illinois Pr. & Lt. Corp., 1st & Ref. M 5½s, "B", 1954, E. H. Rollins & Sons	5,000,000	5½	97	5.71	Baa	....	Baa	5.64	Baa	5.49	Baa	5.43	Baa	5.41	A	5.58	A	5.46	A	6.8
Phila. Elec. Co., 1st Lien & Ref. 5s, Jan. 1960, Drexel & Co.	12,500,000	5	99½	5.03	Aa	....	Aa	4.98½	Aa	4.86	Aa	4.70	Aaa	4.79½	Aaa	4.86½	....	4.76	Retired 7/1/31	
Union Elec. Lt. & Pr. Co., (St. L.) Gen. M 5s, "A", 1954, Dillon, Read & Co.	5,000,000	5	99	5.06	Aa	....	Aa	5.09	Aa	4.97½	Aa	4.86	Aa	4.71	Aa	4.86½	Aa	4.80½	Aa	4.
Western Pr. Corp., 30 yr. secured deb. 6½s, "A", 1954, E. H Rollins & Sons	6,000,000	6½	98½	6.62	Ba	....	Ba	6.56½	....	....	Retired 1/1/27 @ 105.									

The "average yield" shown on this exhibit is the arithmetical average of the yields computed on the basis as testified to by Witness Hammond on the high market quotation for the year and the low market quotation for the year.

ndack Power & Light Corp., Conv. Deb. 6s, April 1, 1929, rris, Forbes & Co	5,000,000	6	99-1/8	6.21	Baa	....	Baa	....	Baa	....	....	....	Retired 10/1/27 @ 101.							
it United Ry., 1st Mtge. & Coll. Tr. 5 yr. 6s, July 1, 1929, on, Read & Co	9,000,000	6	99	6.24	B	....	B	....	B	....	Caa	....								
r:																				
al Illinois Public Service Co., 1st Mtge. & Ref. 6s, "C" . 1944, Halsey Stuart & Co	6,000,000	6	98	6.27	Baa	....	Baa	6.10½	Baa	5.88½	....	....	Retired 1/16/28 @ 107½.							
947]																				
-Price Power Co., Ltd., 1st Mtge. 6s, 1949, National City Co	$12,000,000	6	99	6.08	Ba	....	....	....	Retired 7/1/26 @ 107½.											
ne County, Gas & Electric Corp., 1st & Ref. Mtge. 6s, 1954, xel & Co	6,000,000	6	98	6.15	Baa	....	Baa	5.86	Baa	5.69½	Baa	5.49	A	5.47½	A	5.64½	A	5.53	A	5.82½
c Service Corp. of N. J., Sec. 6s, 1944, Drexel & Co	20,000,000	6	96	6.36	Baa	6.40	A	6.18½	A	5.79	....	....	Retired 3/15/28 @ 107½.							
st:																				
ican Gas & Electric Co., Deb. 6s, American Series 2014, nbright & Co	9,000,006	6	95½	6.28	A	6.28½	A	6.17½	A	5.99½	....	....	Retired [illegible]1/28 @ 110.							
ican Power & Light Co., Deb. 6s, American Series 2016, nbright & Co	5,000,000	6	94½	6.35	A	6.35	A	6.25	A	6.06½	A	5.76	A	5.58	A	5.66	Baa	5.80½	Baa	7.61½
nonwealth Edison Co., 1st Mtge. Coll. Tr. 5s, "B" 1954, sey, Stuart & Co	15,000,000	5	98½	5.10	Aaa	....	Aaa	5.00	Aaa	4.85½	Aaa	4.65½	Aaa	4.65½	Aaa	4.97	Aaa	4.66	Aaa	4.65½
c Gas & Electric Co., 1st & Ref. Mtge. 5½s, "C", Dec. 1952, tional City Co	12,500,000	5½	98	5.64	Aa	5.73	Aa	5.48½	Aa	5.33	Aa	5.19½	Aa	5.15½	Aa	5.24	Aa	5.12½	Aa	5.33½
mber:																				
tate Power Co., 1st M 6s, "A", 1944, West & Co	6,000,000	6	96	6.36	Baa	....	Baa	6.25	Baa	6.00½	....	....	Retired 7/1/27 @ 105.							
c Service Co. of Colorado, 1st M & Ref. 5½s, "B" 1954, sey, Stuart & Co	10,000,000	5½	93	6.01	Baa	....	Baa	5.94	Baa	5.74	Baa	5.45	A	5.33	A	5.64½	A	5.51	A	6.61½
c Service Electric & Gas Co., 1st & Ref. M 5½s, 1964, xel & Co	15,000,000	5½	96½	5.72	A	5.72	Aa	5.35½	Aa	5.21	....	....	Retired 2/1/28 @ 105.							
Sound Power & Light Co., 1st & Ref. M 5½s, "A", June 9, Lee, Higginson & Co	5,000,000	5½	97	5.72	A	....	Baa	....	Baa	5.44	Baa	5.38½	A	5.25½	A	5.47½	A	5.36	A	7.01½
ber:																				
ican Pr. & Lt. Co., deb. American 6% Series 2016, Bon- ht & Co	5,000,000	6	94½	6.35	A	6.35	A	6.25	A	6.06½	A	5.75½	A	5.58½	A	5.66	Baa	5.80½	Baa	7.61½
ngham (Ala.) Water Works Co., 1st M 5½s "A", 1954, W. Chapman & Co	5,500,000	5½	99¾	5.52	A	....	A	5.40	A	5.33	A	5.24	A	5.35	A	5.42½	A	5.46½	A	5.61½
klyn, Edison Co., Inc., Gen. M 5s, "A", Jan. 1949, Guaranty of N. Y	25,000,000	5	100	5.00	Aa	4.95½	Aa	4.92½	Aa	4.70	Aaa	4.65½	Aaa	4.61½	Aaa	4.73	Aaa	4.61	Aaa	4.67
nental Gas & Elec. Corp., Secured 6½s "A", 1964, Otis & Co	11,700,000	6½	99	6.57	Baa	....	Baa	6.63	Baa	6.47½	....	....	Retired 4/1/28 @ 105.							
it, Edison Co., Gen. & Ref. M 5s, "A", 1949, Coffin & r, Inc	12,500,000	5	97½	5.18	Aa	5.18	Aa	5.02	Aa	4.84	Aa	4.71	Aaa	4.66½	Aaa	4.84	Aa	4.67½	Aa	4.79½
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Angeles Gas & Elec. Corp., Gen. & Ref. M 5½s, "I", 1949, d & Goodwin & Tucker, Inc	$6,000,000	5½	96½	5.77	A	....	A	5.69	A	5.42	Aa	5.19½	Aa	5.05½	Aa	5.11	Aa	5.07	Aa	4.99
Public Service Co., 1st M & Ref. 5s "D", 1954, Halsey, art & Co	9,000,000	5	89	5.78	Baa	....	A	5.72	A	5.25	A	4.96	A	4.86½	A	5.11	A	5.00	A	5.62½
c Service Co. of Northern Illinois, 1st Lien & Ref. M. 5½s, ", July 1964, Halsey, Stuart & Co	5,000,000	5½	96	5.75	A	....	A	....	A	5.21	A	5.06½	A	5.03	A	5.30½	....	5.14½	Retired 5/7/31@110.	
mber:																				
al Iowa Pr. & Lt. Co., 1st M 6s "A", 1944, A. C. Allyn & Co	6,500,000	6	100	6.00	Baa	....	Baa	5.94½	....	....	Retired 5/1/27 @ 105.									
Service Power & Light Co., 20 yr. 6s "A", 1944, Dillon, d & Co	20,000,000	6	94½	6.49	Ba	6.48½	Baa	6.52½	Baa	....	Retired 11/1/27 @ 105.									
land Elec. Illuminating Co., Gen. M. 5s "A", 1954, Dillon, d & Co	11,500,000	5	100	5.00	Aaa	....	Aaa	4.68	Aaa	4.79	Aaa	4.69½	Aaa	4.66½	Aaa	4.79½	Aaa	4.76½	Aaa	4.78½
d Light & Power Co., deb. 6½s May 1974, Bonbright & Co	5,000,000	6½	95	6.84	Baa	6.91½	Baa	6.84	Baa	6.68½	Ba	6.46½	Ba	6.23½	Ba	6.50½	Ba	6.60½	Ba	9.17½
mber:																				
go, North Shore Milwaukee R. R. Co., 1st & Ref. 6s "A", . 1955, Halsey, Stuart & Co	7,000,000	6	98	6.15	Baa	....	Baa	6.09½	Baa	5.98	Baa	6.03½	Baa	6.78½	Ba	7.08	Ba	8.28	Ba	19.54½
s Pr. & Lt. Corp., 1st & Ref. M 5½s, "B", 1954, E. H. lins & Sons	5,000,000	5½	97	5.71	Baa	....	Baa	5.64	Baa	5.49	Baa	5.43	Baa	5.41	A	5.58	A	5.46	A	6.81
Elec. Co., 1st Lien & Ref. 5s, Jan. 1960, Drexel & Co	12,500,000	5	99½	5.03	Aa	....	Aa	4.98½	Aa	4.86	Aa	4.70	Aaa	4.79½	Aaa	4.86½	....	4.76	Retired 7/1/31@105.	
Elec. Lt. & Pr. Co., (St. L.) Gen. M 5s, "A", 1954, Dillon, d & Co	5,000,000	5	99	5.06	Aa	....	Aa	5.09	Aa	4.97½	Aa	4.86	Aa	4.71	Aa	4.86½	Aa	4.80½	Aa	4.92½
rn Pr. Corp., 30 yr. secured deb. 6½s, "A", 1954, E. H lins & Sons	6,000,000	6½	98½	6.62	Ba	....	Ba	6.56½	....	....	Retired 1/1/27 @ 105.									

The "average yield" shown on this exhibit is the arithmetical average of the yields computed on the basis as testified to by Witness Hammond on the high market quotation for the year and the low market quotation for the year.

Fol. 4949

Sales During the Year 1925 of Long-term Bonds for $5,000,000 or Over of Public Utilities [illegible] Other Than Bell System Companies; Investment Rating (Moody's) and Yields from Date of Issue to December 31, 1931

Name of Company; Type of Issue; House of Issue	Amount Offered	Rate	Original Public Offering	Yield	1925 Rating	1925 Average Yield	1926 Rating	1926 Average Yield	1927 Rating	1927 Average Yield	1928 Rating	1928 Average Yield	1929 Rating	1929 Average Yield	1930 Rating	1930 Average Yield	1931 Rating	1931 Average Yield
February:																		
American Gas & Elec. Co., deb. 6s, Amer. Series, 2014, Bonbright & Co	$9,000,000	6	[illegible]	[illegible]	A	6.17½	A	5.99	Retired 5/1/28 @ 110									
American Pr. & Lt. Co., Deb. 6s, Amer. Series, 2016, Bonbright & Co	8,000,000	6	[illegible]	[illegible]	A	6.25	A	6.06½	A	5.76	A	5.58½	A	5.66	Baa	5.80	Baa	7.61½
Consolidated Gas Co. of N. Y., 20 yr. deb. 5½s, 1945, National City Co	50,000,000	5½	100½	[illegible]	Aa	5.25	Aa	5.04	Aaa	4.95½	Aaa	4.98½	Aaa	5.12	Aaa	4.88½	Aaa	5.09
Indiana & Michigan Elec. Co., 1st & Ref. M. 5s, 1955, Harris, Forbes & Co	8,000,000	5	95½	[illegible]	A	5.23½	A	5.16	A	4.96	Aa	4.82	Aa	4.93½	Aa	4.86	Aa	5.21
New York Edison Co., 1st Lien & Ref. M. 5s, "B" Oct. 1944, National City Co	30,000,000	5	100	[illegible]	Aaa	4.95½	Aaa	4.72	Aaa	4.64	Aaa	4.60	Aaa	4.77	Aaa	4.57½	Aaa	4.64
Pennsylvania Pr. & Lt. Co., 1st & Ref. M. 5s, "D" Sept. 1953	8,000,000	5	97½	[illegible]	A	5.22½	A	5.05	A	4.89½	A	4.73	Aa	4.94	No Rating	4.84	No Rating	4.74
March:																		
Jersey Central Pr. & Lt. Co., 1st M. & Ref. 5½s 1945, E. H. Rollins & Sons	11,500,000	5½	97	[illegible]	Baa	5.80	Baa	5.80½	Baa	5.58	A	5.37	A	5.67½		5.30	Called for redemption.	
National Public Service Corp., Coll. Tr. 6½s "A" 1955, E. H. Rollins & Sons	6,000,000	6½	97½	[illegible]	Ba	6.83½	Ba	6.73		6.44	Retired 4/1/28 @ 105.							
Niagara Lockport & Ontario Pr. Co., 1st M. & Ref. 5s "A" 1955, Blair & Co	15,000,000	5	98½	[illegible]	Aa	5.09½	Aa	5.98	Aa	4.83½	Aa	4.81	Aa	4.91½	Aa	4.79	Aa	5.28
Phila. Rapid Transit Co., Secur. 6s, 1962, Dillon, Read & Co.	8,975,000	6	99	[illegible]	A	6.16½	A	6.02½	A	5.81	A	5.83½	Baa	6.18	Baa	7.99	Baa	9.78
Oklahoma Gas & Elec. Co., 1st M. 5s "A", 1950, H. M. Byllesby & Co	23,500,000	5	95	[illegible]	A	5.50½	A	5.41½	A	5.15	A	4.99½	A	5.09	A	5.02	A	6.48
Okla. Gas & Elec. Co., Deb. 6s, 1940, H. M. Byllesby	8,000,000	6	98½	[illegible]	Baa	6.31	Baa	6.27	Baa	5.99	Baa	5.67	Baa	6.09	Baa	6.07	Baa	8.09
April:																		
West Penn. Pr. Co., 1st M. 5s, "E" 1963, Halsey, Stuart & Co.	6,500,000	5	97½	[illegible]	Aa	5.20½	Aa	4.95	Aa	4.82	Aa	4.71	Aa	4.82½	Aaa	4.73½	Aaa	4.79
May:																		
Associated Gas & Elec. Co., Secured 6s, 1955, John Nickerson & Co.	14,000,000	6	95½	[illegible]	Baa	6.47		6.10½	Retired 4/1/28 @ 105									
Fol. 4950																		
Cities Service Co., Refunding Deb. 6s, 1966, A. B. Leach & Co.	10,000,000	6	91	[illegible]	Baa	6.50½	Baa	6.35	Retired 11/1/28 @ 104									
Pacific Gas & Elec. Co., 1st & Ref. M. 5s "D" 1955, National City Co	10,000,000	5	95¼	[illegible]	Aa	5.35½	Aa	5.21	Aa	4.90½	Aa	4.78½	Aa		Aa	4.84½	Aa	4.85
Phila. Suburban Water Co., 1st M. 5s, 1955, Drexel & Co	10,000,000	5	97½	[illegible]	[illegible]	5.15	A	5.09½	A	4.99½	Aa	4.81½	Aa	5.03½	Aa	4.91½	Aa	5.16
June:																		
Consolidated Gas Elec. Lt. & Pr. Co. of Balt., 1st Ref. M. 5s, "F", 1965, Alex. Brown & Sons	9,000,000	5	100½	[illegible]	Aa	5.02½	Aa	4.93	Aa	4.83	Aaa	4.81½	Aaa	4.83	Aaa	4.70		4.71
The Detroit Edison Co., Gen. & Ref. M. 5s, "B" 1955, Coffin & Burr, Inc.	8,000,000	5	99½	[illegible]	Aa	4.99½	Aa	4.86½	Aa	4.73	Aaa	4.71½	Aaa	4.84½	Aa	4.68½	Aa	4.87
Great Western Power Co. of Calif., 1st Ref. M. 5½s, "D", Feb. 1955, E. H. Rollins & Sons	6,300,000	5½	99	[illegible]	[illegible]	5.63	A	5.59½	A	5.40½	A	5.40½	A	5.39½		5.34½	Retired 4/1/31 @ 102½	
Houston Tex. Elec. Co., 1st M. 6s, "A" 1935, Lee, Higginson & Co.	5,000,000	6	94¼	[illegible]	Baa	6.85½	Baa	7.47	Baa	7.08½	Baa	6.59	Ba	7.60½	B		B	[illegible]
Illinois Pr. & Lt. Corp., 1st & Ref. M. 5½s "B", Dec. 1954, E. H. Rollins & Sons	5,000,000	5½	99½	[illegible]	Baa	5.64	Baa	5.50	Baa	5.43	Baa	5.41	A	5.58	A	5.46	A	6.81
New Orleans Public Service Inc., 1st & Ref. M. 5s, "B", 1955, Dillon, Read & Co	5,000,000	5	94½	[illegible]	[illegible]	5.64½	A	5.46½	A	5.23	A	5.12½	A	5.92½	A	5.87	A	6.94
July:																		
Toledo Trac. Lt. & Pr. Co., Secured 5½s, 1930, Harris, Forbes & Co.	8,500,000	5½	99	[illegible]	Baa	5.85	Baa	5.80½	Baa	5.50½	Baa	5.30½	Retired					
August:																		
Southeastern Pr. & Lt. Co. (Maine)*, deb. 6s "A" 2025, Bonbright & Co	10,000,000	6	96½	[illegible]	Baa	6.67	Baa	6.46	Baa	5.87½	Baa	5.63	A	5.85½	Baa	5.80	Baa	7.67
International Tel. & Tel. Corp., 20 yr. conv. deb. 5½s, 1945, J. P. Morgan & Co	25,000,000	5½	99	[illegible]	Baa	5.05	Retired 9/1/27 @ 105											
Monongahela West Penn Public Service Co.,—West Penn System, 1st Lien & Ref. M. 5½s, "B", Feb. 1953, Halsey, Stuart & Co.	13,200,000	5½	98	[illegible]	Baa	5.75½	Baa	5.75½	Baa	5.49	Baa	5.43	Baa	5.73½	Baa	5.81½	Baa	7.25
September:																		

Dillon, Read & Co.	5,000,000	5	94½	5.37	A	5.64½	A	5.46½	A	5.23	A	5.12½	A	5.92½	A	5.87	A	6.94½
July:																		
Toledo Trac. Lt. & Pr. Co., Secured 5½s, 1930, Harris, Forbes & Co.	8,500,000	5½	99	5.73	Baa	5.85	Baa	5.80½	Baa	5.50½	Baa	5.30½		Retired.				
August:																		
Southeastern Pr. & Lt. Co., (Maine)*, deb. 6s "A" 2025, Bonbright & Co.	10,000,000	6	96½	6.22	Baa	6.67	Baa	6.46	Baa	5.87½	Baa	5.63	A	5.85½	Baa	5.89	Baa	7.67
International Tel. & Tel. Corp., 20 yr. conv. deb. 5½s, 1945, J. P. Morgan & Co	25,000,000	5½	99	5.58	Baa	5.05		Retired 9/1/27 @ 105.										
Monongahela West Penn Public Service Co.—West Penn System, 1st Lien & Ref. M. 5½s, "B", Feb. 1953, Halsey, Stuart & Co.	13,200,000	5½	98	5.64	Baa	5.75½	Baa	5.75½	Baa	5.49	Baa	5.43	Baa	5.73½	Baa	5.81½	Baa	7.25½
September:																		
American Pr. & Lt. Co., Deb. American 6% Series 2016, Bonbright & Co.	5,000,000	6	96	6.25	A	6.25	A	6.06½	A	5.75½	A	5.58½	A	5.66	Baa	5.80½	Baa	7.61½
[fol. 4951]																		
October:																		
Alabama Pr. Co., 1st M. Lien & Ref. 5s, June 1951, Harris, Forbes & Co	5,000,000	5	95¾	5.30	A	5.36½	A	5.09	A	4.94	A	4.84	Aa	5.00	Aa	4.85	Aa	5.67
Central States Electric Corp., Sec. Deb. 6s, 1945, Dillon, Read & Co.	10,000,000	6	98½	6.13	Ba	....	Ba	6.49		Retired 3/24/28 @ 105.								
Missouri Pr. & Lt. Co., 1st M. 5½s "A" 1955, Hambleton & Co.	6,500,000	5½	98½	5.60	Baa	5.67½	Baa	5.66	Baa	5.47½	Baa	5.35	[illegible]	5.58	A	5.49	A	6.00½
Penn. Central Lt. & Pr. Corp., 1st & Ref. M. 5½s, 1975, A. C. Allyn & Co	5,500,000	5½	97	5.68	Baa	.....	Baa	5.68½		Retired 4/1/28 @ 105.								
November:																		
American Water Works & Electric Co., Inc., Deb. 6s, A, 1975, W. C. Langley & Co	8,000,000	6	94½	6.37	Baa	6.36½	Baa	6.24½	Baa	5.73½	Baa	5.64	Baa	5.78½	Baa	5.77	Baa	7.54½
The United Lt. & Pr. Co., Deb. 6s, 1975, Bonbright & Co	12,500,000	6	92	6.54	Baa	6.56	Baa	6.52½	Ba	6.20	Ba	5.87	Ba	6.22	Ba	6.41½	Ba	8.87½
Feather River Power Co., 1st Mtge. 6% Serial Gold Notes 1929–1963, Bond & Goodwin & Tucker	5,500,000	6	100	6.00	No Rating		No Rating		No Rating		No Rating		No Rating		No Rating		Retired 1/1/31 @ 100.	
Penn. Ohio Edison Co., Deb. Gold 6s,* Ser. "A" 1950, Bonbright & Co.	6,000,000	6	96½	6.28	Ba	....	Baa	....	Baa	....	Baa	....	A	....	Baa	....	Baa	....
December:																		
Adirondack Pr. & Lt. Corp., 1st & Ref. M. 5s, Jan. 1956, Harris, Forbes & Co	5,000,000	5	96¼	5.25	A	....	A	5.11		Retired 1/1/28 @ 105.								
Brooklyn Union Gas Co., Conv. deb. 5½s, Jan. 1936, Co. to stkh. & employees; underwritten Jessup & Lamont and Chas. D. Barney & Co	11,800,000	5½	100	5.50	Baa	....	A	....	A	....	....	....	A	....	A	....	A	....
Illinois Pr. & Lt. Corp., 1st & Ref. M. 5½s, B, 1954, E. H. Rollins & Sons	6,000,000	5½	99	5.57	Baa	5.64	Baa	5.49½	Baa	5.43	Baa	5.41	A	5.58	A	5.46	A	6.81
International Power Securities Corp., Secured 6½s, C, 1955, Aldred & Co	10,000,000	6½	93¾	7.00	Baa	....	Baa	....	Baa	....	Baa	7.23	Baa	7.27½	Baa	7.51	Baa	10.3[illegible]
Massachusetts Gas Co., 20 yr. 5½s, Jan. 1946, Kidder, Peabody & Co.	18,000,000	5½	98½	5.62	A	5.53	A	5.32½	A	5.13½	A	5.16½	A	5.32	A	5.25	A	6.35
Northern States Power Co. (Minn.), 1st Lien & Gen. M. 5½s, B, 1950, Harris, Forbes & Co	8,500,000	5½	100	5.50	A	5.52	A	5.39½	A	5.33	A	5.26½	....	5.34	....	5.31	....	5.16½
Northern States Power Co. (Minn.), 15 yr. 5½s, 1940, Guaranty Co. of N. Y.	7,500,000	5½	96	5.91	Baa	5.96	Baa	5.92½	Baa	5.80½	Baa	5.46.	Baa	5.59½	A	5.47½	A	6.66
[fol. 4952]																		
Ohio Power Co., 1st & Ref. M. 5s, B, July 1952, Dillon, Read & Co.	5,662,000	5	94½	5.39	A	5.52½	A	5.17	A	5.01½	Aa	4.91	Aa	5.02½	Aa	4.91	Aa	5.21½

*Issued with warrants for common stock rights.

The "average yield" shown on this exhibit is the arithmetical average of the yields computed on the basis as testified to by Witness Hammond on the high market quotation for the year and the low market quotation for the year.

[fol. 4953]

Sales During the Year 1926 of Long Term Bonds for $5,000,000 or Over, of Public Utilities Other Than Bell System Companies, Investment Rating (Moody's) and Yields from Date of Issue to December 31, 1931.

Name of Company; Type of Issue; House of Issue	Amount Offered	Rate %	Original Public Offering		1926 Rating, Average Yield		1927 Rating, Average Yield		1928 Rating, Average Yield		1929 Rating, Average Yield		1930 Rating, Average Yield		1931 Rating, Average Yield	
			Price	Yield												
January:																
Buffalo General Electric Co., Gen. & Ref. Mtge. 5s, A, 1956, Lee, Higginson & Co	$10,000,000	5	99	5.06	Aa	4.89	Aa	4.75	Aaa	4.75	Aaa	4.86	Aaa	4.82	Aaa	4.71
Cities Service Co., Ref. Deb. 6s, 1966, A. B. Leach & Co., Inc	10,000,000	6	93¼	6.47	Baa	6.34½	....	5.89½	Retired 11/1/28 @ 104.							
Commonwealth Edison Co., 1st Mtge. Coll. 4½s C, April 1956, Halsey, Stuart & Co	15,000,000	4½	93	4.95	Aaa	4.85	Aaa	4.57½	Aaa	4.51	Aaa	4.73	Aaa	4.61	Aaa	4.67½
Florida Pr. & Lt. Co., 1st Mtge. 5s, 1954, Bonbright & Co	30,000,000	5	93½	5.46	A	5.42	A	5.36	Baa	5.45½	Baa	6.44	Baa	6.06½	Baa	7.44½
Lehigh Power Securities Corp., (Del.) Deb. 6s, A, 2026, Bonbright & Co	25,000,000	6	95	6.32	*No rating	6.37½	No rating	5.96	No rating	5.64	No rating	5.89	No rating	5.85½	No rating	7.45
Pennsylvania Pr. & Lt. Co., 1st & Ref. 5s, D. Sept. 1953, Guaranty Co. of N. Y	10,000,000	5	98½	5.10	A	5.05	A	4.89½	A	4.73	Aa	4.94	No rating	4.84	No rating	4.74½
Western United Gas & Elec. Co., 1st M. 5½s, A, Dec. 1955, Blair & Co	22,500,000	5½	99	5.57	Baa	5.51½	Baa	5.35½	Baa	5.31	Baa	5.35½	A	5.34	A	6.20½
Houston Gulf Gas Co., 1st Mtge.** 6½s, 1931, Taylor, Ewart & Co	5,700,000	6½	98	6.98	Ba	7.23	Retired 7/1/28 @ 103.									
Chicago Aurora & Elgin R. R., 1st & Ref. M. 6s, Ser. "A" 1951, Halsey, Stuart & Co	5,000,000	6	96	6.32	Baa	6.39½	Ba	6.33½	Ba	7.32½	B	8.29½	B	11.33	B	23.20½
February:																
Alabama Power Co., 1st M. Lien & Ref. 5s, 1951 (June), Harris, Forbes & Co	5,000,000	5	98	5.14	A	5.09	A	4.94	A	4.84	Aa	5.00	Aa	4.85	Aa	5.67
International Power Securities** Corp., Secured 7s "D" 1936, Aldred & Co	5,000,000	7	100	7.00	No rating	7.72½	Baa	7.68½	Baa	7.08½	Baa	8.06½	Baa	8.90	Baa	12.57½
Public Service Co. of Northern Illinois, 1st Lien & Ref. m 5s, "C" May, 1966, Halsey, Stuart & Co	7,500,000	5	98½	5.09	A	5.04½	A	4.87	A	4.80	A	4.92½	A	4.88½	A	5.17
The Spring Brook Water Supply Co., 1st Ref. M 5s, Apr. 1965, First National Bank	5,300,000	5	99	5.06	Aa	5.04	Aa	4.98½	Aa	....	Aa	.....	Aa	....	Aa	5.08½
[fol. 4954]																
Standard Gas & Electric Co., Deb. 6s, 1931, H. M. Byllesby & Co., Inc	7,500,000	6	97½	6.20	Baa	6.10	Baa	5.97½	Baa	5.72½	Baa	5.92	Baa	6.07½	Baa	9.02
March:																
Empire Gas & Fuel Co., (Del.) 1st &** Ref. 6½s, 1941, Halsey, Stuart & Co	20,000,000	6½	97½	6.77	No rating		Retired Sept. 19, 1927.									
Carolina Pr. & Lt. Co., 1st & Ref. 5s, 1956, W. C. Langley & Co	18,000,000	5	97¾	5.15	Aa	5.02	Aa	4.87½	Aa	4.82	Aa	5.09½	A	4.90½	A	5.65½
Municipal Service Co., Coll. Tr. 6s A, 1956, E. H. Rollins & Co	5,500,000	6	96	6.30	Ba	6.30	Ba	....	Ba	....	Ba	....	Ba	....	Ba	8.92
Phila. Elec. Power Co., 1st Mtge. 5½s, 1972, Drexel & Co	36,000,000	5½	100	5.50	Baa	5.40½	Baa	5.25	Aa	5.18½	Aa	5.28½	Aa	5.17	Aa	5.33
Virginia Public Service Co., 1st M. & Ref. 5½s, A, 1946, E. H. Rollins & Co	11,500,000	5½	97	5.75	Ba	5.88½	Ba	5.70	Ba	5.59	Ba	6.08	Baa	5.87½	Baa	8.54½
American Gas & Elec. Co., deb. 6s, 2014, Bonbright & Co	7,500,000	6	99½	6.03	A	5.97½	No rating		Retired 5/1/28 @ 110.							
April:																
Puget Sound Power & Light Co., 1st & Ref. M 5s "B" 1931, Lee, Higginson Co	85,000,000	5	99½	5.11	Baa	5.11½	Baa	5.03½	A	......	A	5.53½	....	5.16½	Retired	
American Pr. & Lt. Co., Deb. 6s, 2016, Bonbright & Co	10,000,000	6	98	6.12	A	6.06½	A	5.75½	A	5.58½	A	5.66	Baa	5.80	Baa	7.61½
Appalachian Elec. Pr. Co., 1st & Ref. M 5s, 1956, Bonbright & Co	35,000,000	5	97	5.20	A	5.27	A	5.18½	A	5.02½	A	5.26	A	5.11½	A	5.53
Associated Elec. Co., convertible 5½s, 1946, Harris, Forbes & Co	65,000,000	5½	95¼	5.91	Baa	5.83	Retired 6/1/28 @ 105.									
Central Gas & Elec. Co., 1st lien Coll. Tr. 6s, 1946, Federal Securities Corp	6,500,000	6	98½	6.13	Ba	6.19½	Baa	6.02½	Baa	6.05	Baa	6.14½	Baa	6.62½	Baa	11.64½
Pacific Gas & Elec. Co., 1st & Ref. M 5s "D" 1955, National City Co	10,000,000	5	98½	5.10	Aa	5.21½	Aa	4.90½	Aa	4.78½	Aa	...	Aa	4.84	Aa	4.85½
Virginia Public Service Co., Conv. deb. 6s, Feb. 1946, E. H. Rollins & Co	5,000,000	6	96½	6.31	Ba	6.47½	Ba	6.28	Ba	5.98	Ba	6.70½	Ba	7.01½	Ba	9.77½
Cities Service Power & Light Co., 6s, Ser. "A" Nov. 1, 1944, Dillon, Read & Co	5,000,000	6	96	6.37	Baa	6.30½	Retired Nov. 1, 1927.									
May:																
General Public Utilities Co., 1st M & Coll. Tr. 6½s, "A" 1956, Howe, Snow & Berties	6,300,000	6½	98	6.65	Ba	6.65½	Ba	6.50½	Ba	6.52½	Ba	6.96½	B	6.76	B	5.73

[fol. 4955]

General Public Utilities Co., 1st M & Coll. Tr. 6½s, "A" 1956, Howe, Snow & Berties	6,300,000	6½	98	6.65	Ba	6.65½	Ba	6.50½	Ba	6.52½	Ba	6.96½	B	6.76	B	5.73
[fol. 4955]																
Indianapolis Power & Light Corp., 1st Coll. Tr. 6s "A" 1936, West & Co	10,000,000	6	98	6.27	Ba	5.94		Retired 5/1/27 @ 104.								
The Washington Water Power Co., Gen. M 5s, "A" 1956, White, Weld & Co	5,000,000	5	100½	4.97	Aa	4.91½	Aa	4.85½	Aaa	4.80½		Retired 6/1/30 @ 105.				
Northern Ohio Power & Light Co., Gen. & Ref. M. 5½s, 1951, National City Co	8,500,000	5½	92½	6.09	Baa	6.03½	Baa	5.90½	Baa	5.69	A	6.27½	A	5.52½	A	5.86
Utica Gas & Elec. Co., Gen. M 5s, "D" 1956, Harris Forbes & Co	6,000,000	5	100	5.00	A	4.98½	A	4.85½	A	4.82	Aa	4.87	Aa	4.85	Aa	5.21
June:																
Cities Service Co., Ref. deb. 6s, 1966, A. B. Leach & Co., Inc	5,000,000	6	93¼	6.47	Baa	6.34½	....	5.90	Retired 11/1/28 @ 104.							
Cumberland County Pr. & Lt. Co., 1st M 4½s, 1956, Harris, Forbes & Co	9,000,000	4½	94½	4.85	Aa	4.95	Aa	4.90	Aa	4.81½	Aa	5.01	Aa	4.95½	Aa	5.04
Detroit, Edison Co., Gen. & Ref. M 5s, B 1955, Coffin & Burr, Inc	15,000,000	5	101½	4.90	Aa	4.86½	Aa	4.72½	Aaa	4.71	Aaa	4.84½	Aa	4.68½	Aa	4.87
The Nevada-California Electric Corp., 1st Tr. M 5s, 1956, Spencer, Trask & Co	23,000,000	5	95½	5.30	Baa	5.40	Baa	5.36	Baa	5.28½	Baa	5.67	Baa	5.64	Baa	7.05
Ohio Power Co., 1st & Ref. 4½s "D" 1956, Dillon, Read & Co	9,635,000	4½	93	4.95	A	5.07½	A	4.98	Aa	4.85½	Aa	5.05	Aa	4.83	Aa	5.13
Public Service Company of Colorado, deb. 6s, 1946, A. B. Leach & Co	6,000,000	6	99	6.09	Ba	6.20	Ba	6.11½	Baa	5.95½	Baa	6.15	Baa	6.24	Baa	....
Southeastern Pr. & Lt. Co., Deb.*** 6s, A. Sept. 2025, Bonbright & Co	12,500,000	6	95	6.32	Baa	6.46	Baa	5.87½	Baa	5.63	A	5.85½	Baa	5.89	Baa	7.67
Public Service Corp., of N. J. secured 5½s, 1956, Drexel & Co	15,000,000	5½	99	5.57	A	5.50		Retired 3/15/28 @ 106.								
Southern California Edison Co., Ref. M 5s, 1951, Harris, Forbes & Co	40,000,000	5	98½	5.11	A	5.10½	A	4.97	A	4.80	Aa	5.01	Aa	4.80	Aa	4.89
July:																
Central Power & Light Co., (Mass.) 1st M 5s, 1956, Howe, Snow & Berties	14,500,000	5	96	5.27	A	5.32	A	5.17	A	5.08½	A	5.35	A	5.37	Baa	7.38
Connecticut Light & Power Co., 1st & Ref. 4½s, "C" 1956, Lee, Higginson & Co	8,000,000	4½	95¼	4.80	Aa	4.85	Aa	4.58½	Aa	4.48½	Aa	4.63½	Aa	4.54	Aa	4.60
Dallas (Tex.) Ry. & Terminal Co., 1st M 6s, 1951, Tucker, Anthony & Co	5,000,000	6	96½	6.28	Baa	....	A	6.13½	Baa	....	Baa	6.73	Baa	8.23	Baa	12.28
[fol. 4956]																
Derby Gas & Electric Corp., (Del.) 1st Lien 5s 1946, West & Co	5,500,000	5	95	5.41	Baa	....	Baa	5.65	Baa	5.70	Baa	6.34	Baa	6.82½	Baa	7.97
Florida Power & Light Co., 1st M. 5s, Jan. 1954, Bonbright & Co	12,000,000	5	95	5.35	A	5.43	A	5.35½	Baa	5.47	Baa	6.46½	Baa	6.09	Baa	7.44½
Southern Cities Utilities Co., 1st Lien 6s "A" 1951, Ames, Emerich & Co	5,500,000	6	100	6.00	Baa	6.10			Retired 6/1/28 @ 105.							
West Penn. Power Co., 1st M. 5s "G" 1956, W. G. Langley & Co	18,500,000	5	100½	4.97	Aa	4.97½	A	4.84	Aa	4.80	Aa	4.83½	Aaa	4.72	Aaa	4.93½
August:																
National Pr. & Lt. Co., Debt. 6s "A" 2026, Old Colony Corp	9,500,000	6	98	6.12	Baa	6.08½	Baa	5.82	A	5.62½	Baa	5.81	Baa	5.84½	Baa	7.32½
North American Lt. & Pr. Co., (Del.) Deb. 5½s, "A" 1956, E. H. Rollins & Sons	15,000,000	5½	94½	5.89	Ba	5.83½	Ba	5.90	Ba	....	Ba	....	Ba	6.78½	Ba	10.19
September:																
Oklahoma Natural Gas Corp., Conv. Deb. 6½s, 1941, White Weld & Co	6,000,000	6½	99	6.61	Ba	....	Retired 11/1/27 @ 105.									
Federal Water Service Corp., Conv. Deb. 6s "A" 1996, G. L. Ohrstrom & Co. Inc	5,000,000	6	96	6.25	No rating		Retired 9/1/27 @ 110.									
October:																
Western Union Telg. Co., 25 yr. 5s, Dec. 1951, Kuhn, Loeb & Co	25,000,000	5	100	5.00	Aa	4.93½	Aa	4.73	Aaa	4.77	Aaa	4.88	Aa	4.80	Baa	7.06½
Alabama Pr. Co., 1st M. Lien & Ref. 5s, 1956, Harris, Forbes & Co	6,000,000	5	98½	5.10	A	5.10	A	4.96	A	4.86	Aa	4.90½	Aa	4.86½	Aa	4.96½
The Cleveland Electric Illuminating Co., Gen. M. 5s "B" 1961, Dillon, Read & Co	10,000,000	5	102½	4.85	Aaa	4.83	Aaa	4.73½	Aaa	4.68½	Aaa	5.03½	Aaa	4.79	Aaa	4.78½
Gulf States Utilities Co., 1st M. & Ref. 5s "A" 1956, Stone & Webster, Ind	9,000,000	5	96	5.27	A	5.31	A	....	A	5.04½	A	5.27½	A	5.19	A	6.10½
Kentucky Utilities Co., 1st M. 5s, Feb. 1961, "H", Halsey, Stuart & Co	6,250,000	5	97	5.19	Baa	5.22	Baa	5.19	A	5.08	A	5.26½	A	....	A	6.30½
Standard Gas & Electric Co., Deb. 6s, Feb. 1951, H. M. Byllesby & Co	7,500,000	6	99	6.08	Baa	6.10	Baa	5.97	Baa	5.72	Baa	5.91½	Baa	6.07	Baa	9.02
November:																
Western Power Corp., Ser. "A" Coll. Tr. Conv. 5½s, Jan. 1957, Peirce & Fair Co	10,000,000	5½	99	5.57	Ba	....	Ba	5.63	Baa	5.00			Retired 4/1/30 @ 102.			
[fol. 4957]																

Gulf States Utilities Co., 1st M. & Ref. 5s "A" 1956, Stone & Webster, Ind	9,000,000	5	96	5.27	A	5.31	A	....	A	5.04½	A	5.27½	A	5.19	A	6.10½
Kentucky Utilities Co., 1st M. 5s, Feb. 1961, "H", Halsey, Stuart & Co	6,250,000	5	97	5.19	Baa	5.22	Baa	5.19	A	5.08	A	5.26½	A	....	A	6.30½
Standard Gas & Electric Co., Deb. 6s, Feb. 1951, H. M. Byllesby & Co	7,500,000	6	99	6.08	Baa	6.10	Baa	5.97	Baa	5.72	Baa	5.91½	Baa	6.07	Baa	9.02
November:															
Western Power Corp., Ser. "A" Coll. Tr. Conv. 5½s, Jan. 1957, Peirce & Fair Co	10,000,000	5½	99	5.57	Ba	....	Ba	5.63	Baa	5.00			Retired 4/1/30 @ 102.			
[fol. 4957]															
The Potomac Edison Co., 1st M. 5s "E" 1956, W. C. Langley & Co	11,250,000	5	97	5.20	Baa	....	Baa	5.18	A	5.01½	A	5.35½	A	5.11	A	5.71½
Texas Power & Lt. Co., 1st & Ref. M. 5s, 1956, Harris, Forbes & Co	16,000,000	5	97	5.20	A	....	A	5.15	A	4.98½	A	5.30½	A	5.17	A	5.76½
Consolidated Gas Electric Lt. & Pr. Co. of Baltimore, 1st Ref. M. 5s, "F", June 1965, Alex Brown & Sons	7,000,000	5	101½	4.91	Aa	4.93	Aa	4.83	Aaa	4.81	Aaa	4.83	....	4.79	....	4.73 Retired 7/22/31 @ 105.
Northern Indiana Public Service Co., 1st & Ref. M. 5s "C" 1966, Halsey, Stuart & Co	11,500,000	5	98½	5.09	A	....	A	5.07½	A	4.91½	A	5.14½	A	4.94	A	5.26
Arkansas Pr. & Lt. Co., 1st & Ref. M. 5s, 1956, Harris, Forbes & Co	18,000,000	5	95¾	5.28	Baa	5.25½	Baa	5.25	A	5.13	A	5.37½	A	5.19	A	6.11
Public Service Co. of No. Ill., Deb. 5s, 1931, Halsey, Stuart & Co. Inc	10,000,000	5	99½	5.11	A	....	A	....	A	4.93	A	5.67½	....	4.75½	Retired 5/7/31 @ 100.	
December:															
Interstate Public Service Co., 1st M. & Ref. 5s, "D", Halsey, Stuart & Co. (1956)	10,000,000	5	96	5.27	Baa	....	A	5.19	A	5.11	A	5.22	A	5.14½	A	6.78
New Jersey Power & Light Co., 1st M. 5s, 1956, Halsey, Stuart & Co	6,000,000	5	99	5.06	A	....	A	....	Aa	4.86	Aa	4.97	....	4.88	Called for redemption.	
New York Water Service Corp., 1st M. 5s, "A" 1951, G. I. Ohrstrom & Co	7,000,000	5	94½	5.40	A	....	A	5.25½	A	5.22½	A	5.32	A	5.46	A	6.65½
Standard Gas & Electric Co., 40 yr. Deb. 6s, 1966, H. M. Byllesby & Co	10,000,000	6	99	6.07	Baa	....	Baa	5.98½	Baa	5.77½	Baa	5.93½	Baa	6.05	Baa	8.98
Virginia Electric & Power Co., 1st & Ref. M. 5s, "A" 1955, Stone & Webster	6,000,000	5	96½	5.24	A	5.38½	A	5.02	A	4.96½	Aa	5.12	Aa	4.95½	Aa	5.11½
Illinois Power & Lt. Corp., 1st & Ref. M. 5s C 1956, Harris, Forbes & Co	7,500,000	5	97	5.20	Baa	....	Baa	5.19½	Baa	5.18	A	5.39½	A	5.31½	A	6.57½
Detroit City Gas Co., 1st 5s, Ser. "B" 1950, Halsey, Stuart & Co	10,000,000	5	100	5.00	A	4.99½	A	4.87½	A	4.87½	A	5.14	A	4.92	A	5.35

* No rating because no balance sheet furnished.

** Issued with warrants for stock rights.

*** Issued with warrants for common stock rights.

The "average yield" shown on this exhibit is the arithmetical average of the yields computed on the basis as testified to by Witness Hammond on the high market quotation for the year and the low market quotation for the year.

[fol. 4958]

Sales During the Year 1927 of Long-term Bonds for $5,000,000 or Over of Public Utilities Other Than Bell System Companies, Investment Rating (Moody's) and Yields from Date of Issue to December 31, 1931

Name of Company; Type of Issue; House of Issue	Amount Offered	Rate %	Original Public Offering		1927 Rating, Average Yield		1928 Rating, Average Yield		1929 Rating, Average Yield		1930 Rating, Average Yield		1931 Rating, Average Yield	
			Price	Yield										
January:														
Peoples Light & Power Corp., 1st lien 5½s, July 1941, G. L. Ohrstrom & Co.	$6,500,000	5½	97	5.81	Baa	5.93	Baa	....	Baa	....	Ba	....	No rating	16.43
San Joaquin Lt. & Pr. Corp., unif. & Ref. M 5s "D" 1957, Peirce Fair & Co.	25,000,000	5	98½	5.10	A	4.97½	A	4.89	A	5.07	A	4.92	A	5.26
Illinois Power & Lt. Corp., deb. 5½s 1957, Marshall Field, Glore Ward & Co.	9,500,000	5½	96½	5.75	Baa	5.79	Baa	5.65½	Baa	6.07	Baa	6.19½	Baa	8.26
Indianapolis Power & Lt. Co., (Indiana Corp.) 1st M 5s "A", 1957, Blair & Co.	30,000,000	5	98	5.13	A	5.10	A	4.97	A	5.23	A	5.07	A	5.21
Narragansett Co., Coll. Tr. 5s* "A" 1957, Harris, Forbes & Co.	27,500,000	5	99	5.06	A	4.66	A	4.93½	....	5.05	A	5.01	A	5.02½
New Orleans Public Service Inc., 1st & Ref. M. 5s, "B" June 1955, Dillon Read & Co.	8,000,000	5	96	5.27	A	5.23	A	5.12½	A	5.92½	A	5.85½	A	6.91½
Boston Consolidated Gas Co., deb. 5s, 1947, Bankers Trust Co.	10,500,000	5	103	4.77	Aa	4.87½	Aa	4.79	Aa	4.91½	Aa	4.78½	Aa	4.85
Central Hudson Gas & Electric Corp., 1st & Ref. M. 5s, 1957, Drexel & Co.	8,000,000	5	101½	4.90	Aa	4.78	Aa	4.84	Aa	4.85½	Aaa	4.80	Aaa	4.74
Southern California Edison Co., ref. M. 5s, July 1951, Harris, Forbes & Co.	15,000,000	5	98½	5.11	A	4.97	A	4.80½	Aa	5.01½	Aa	4.80½	Aa	4.89
Southwestern Gas & Elec. Co., 1st M. 5s "A" 1957, A. B. Leach & Co.	12,500,000	5	96	5.27	A	5.11	A	5.16	A	5.40½	A	5.43	Baa	6.55
North American Edison Co., Conv. deb. 5s "A" 1957, Dillon, Read & Co.	25,000,000	5	98	5.13	A	5.04½	A	4.91	A	5.08½	A	4.88½	A	5.87½
Peoples Light & Power Corp., Conv. Deb. 6s, 1962, G. L. Ohrstrom & Co.	5,000,000	6	98	6.14	Ba	6.12	Retired 7/1/29 @ 110.							
International Power Securities Corp., 7s, Ser. "E", 1957, Harris, Forbes & Co.	10,000,000	7	96-3/8	7.30	Baa	7.43½	Baa	7.23	Baa	7.49	Baa	7.56½	Baa	9.06½
[fol. 4959]														
February:														
Interstate Pr. Co. (Del.) Deb. 6s, 1952, West & Co.	$7,500,000	6	98½	6.12	Baa	6.15	Baa	6.08½	Ba	7.06	Ba	7.91½	Ba	11.73½
Los Angeles Gas & Elec. Corp., 1st & Gen. M. 5s, Sept. 1961, Bond & Goodwin & Tucker	10,000,000	5	98½	5.09	A	4.89½	A	4.88	Aa	5.08½	Aa	4.97½	Aa	5.09
Southwestern Light & Power Co., 1st M. 5s, "A" 1957, Hill, Joiner & Co.	6,500,000	5	97	5.20	Baa	5.30½	A	5.24½	A	....	A	5.36½	A	7.10
Standard Pr. & Lt. Corp., Deb. 6s, 1957, H. M. Byllesby & Co.	24,000,000	6	99½	6.04	Ba	5.99½	Ba	5.93	Baa	6.32½	Baa	6.19	Baa	8.73
Milwaukee Gas Light Co. 1st M. 4½s, 1967, Otis & Co.	11,500,000	4½	93-¾	4.86	Aa	4.64	Aaa	4.47½	Aaa	4.66	Aaa	4.53½	Aaa	4.62½
Northwestern Public Service Co., 1st M. 5s, "A" 1957, A. C. Allyn & Co.	5,800,000	5	96¼	5.25	Baa	5.37	A	4.94	A	5.38½	A	5.47	A	6.41
Community Pr. & Lt. Co., 1st M. Coll. 5s, 1957, Spencer, Trask & Co.	11,000,000	5	95½	5.30	Baa	....	Baa	....	Baa	....	Baa	....	Baa	8.05
Interstate Pr. Co., (Del.) 1st M. 5s, 1957, West & Co.	20,000,000	5	97½	5.16	A	5.25	A	5.18	Baa	5.74	Baa	6.07½	Baa	7.71
Associated Gas & Electric Co., Conv. deb. 5½s, 1977, Harris, Forbes & Co.	40,000,000	5½	95¾	5.76	Baa	5.39	A	5.38	A	4.89	Baa	6.07	Baa	9.99½
Cities Service Co., Ref. Deb. 5s, 1966, A. B. Leach & Co.	14,000,000	5	91¾	5.53	Baa	5.65	Baa	5.41½	Ba	6.46½	Ba	6.91½	Ba	9.57½
March:														
Georgia Power Co., 1st & Ref. M. 5s, 1967, Drexel & Co.	45,000,000	5	97	5.18	Baa	5.12	A	4.99	A	5.23	A	5.10½	A	5.79
Public Service Electric & Gas Co., 1st & Ref. M. 5s, 1965, Drexel & Co.	19,800,000	5	99	5.06	Aa	4.75	Aaa	4.78½	Aaa	4.85	Aaa	4.76½	Retired 6/1/31@105.	
Commonwealth Edison Co., 1st M. Coll. 4½s, "D" 1957 (July), Halsey, Stuart & Co.	15,000,000	4½	96	4.75	Aaa	4.49	Aaa	4.52	Aaa	4.75½	Aaa	4.66	Aaa	4.64
Federated Utilities, Inc., (Chicago) 1st Lien 5½s, 1957, Federal Securities Corp.	7,500,000	5½	94¾	5.87	Ba	5.81	Ba	5.81	Ba	6.03½	Ba	6.69	Ba	10.21½
[fol. 4960]														
April:														
The Empire District Electric Co., 1st & Ref. M. 5s, 1952, Halsey, Stuart & Co.	$9,400,000	5	98½	5.11	A	5.00	A	4.87	A	5.15	Baa	5.01	Baa	6.86½
The Cincinnati Street Ry. Co., 1st M. 5½s "A" 1952, Guaranty Co. of N. Y.	7,000,000	5½	100	5.50	A	5.53½	A	5.45	Baa	5.84½	Baa	6.28½	Baa	8.40½
Duquesne Light Co., 1st M. 4½s, 1967, Ladenburg, Thallmann & Co.	55,000,000	4½	95	4.78	Aaa	4.50	Aaa	4.45	Aaa	4.60½	Aaa	4.50	Aaa	4.53
Missouri Public Service Co., 1st M. 5s "A" 1947, Howe. Snow														

										[illegible]	Aaa	[illegible]	Aaa	4.64
Securities Corp	7,500,000	5½	94¾	[illegible]	[illegible]	[illegible]	Ba	5.81	Ba	6.03½	Ba	6.69	Ba	10.21½

ol. 4950)

April:

The Empire District Electric Co., 1st & Ref. M. 5s, 1952, Halsey, Stuart & Co	$9,400,000	5	98½	[illegible]		[illegible]	A	4.87	A	5.15	Baa	5.01	Baa	6.86½
The Cincinnati Street Ry. Co., 1st M. 5½s "A" 1952, Guaranty Co. of N. Y	7,000,000	5½	100	[illegible]		[illegible]	A	5.45	Baa	5.84½	[illegible]	6.28½	Baa	8.40½
Duquesne Light Co., 1st M. 4½s, 1967, Ladenburg, Thallmann & Co	55,000,000	4½	95	[illegible]	[illegible]	[illegible]	Aaa	4.45	Aaa	4.60½	Aaa	4.50	Aaa	4.53
Missouri Public Service Co., 1st M. 5s "A" 1947, Howe, Snow & Berties	5,000,000	5	97	[illegible]	[illegible]	5.32	Baa	5.26	Baa	5.63	Baa	6.12	Baa	7.51½
Public Service Co. of Oklahoma, 1st M. 5s "D" 1957, Halsey, Stuart & Co	8,500,000	5	97½	[illegible]		5.17	A	5.13	A		A	5.13	A	5.94
Southwestern Gas & Electric Co., 1st M. 5s, "B" 1957, A. B. Leach & Co	5,000,000	5	96½	[illegible]			A		A		A		Baa	6.35
United Public Utilities Co., 1st Lien 6s "A" 1947, Hambleton & Co	5,500,000	6	100	[illegible]	Baa	[illegible]	Baa	6.21½	Baa		Ba	7.45½	Ba	14.16½

May:

Empire Oil & Refining Co., 1st M. Coll. Tr. 5½s, 1942, Halsey, Stuart & Co	30,000,000	5½	96	[illegible]	[illegible]	[illegible]	Ba	6.22	Ba	7.30	Ba	7.70½	Ba	15.26
Philadelphia Suburban Counties Gas & Electric Co., 1st & Ref. M. 4½s, 1957, Drexel & Co	10,000,000	4½	95	[illegible]		[illegible]	Aa	4.52	Aaa	4.74	Aaa	4.56½	Aaa	4.62
The Power Corp. of N. Y. Deb. 5½s, 1947, F. L. Carlisle & Co.	5,000,000	5½	100	[illegible]	[illegible]	[illegible]	Baa	5.68	Baa	6.18½	Ba	5.84	Ba	7.84½
Cities Service Gas Co., 1st M., Pipeline 5½s, 1942, Halsey, Stuart & Co	25,000,000	5½	96¼	[illegible]	[illegible]	[illegible]	Baa	6.05	Baa	7.14½	Baa	7.41	Baa	11.91½
Columbia Gas & Electric Corp., Deb. 5s, 1952, Guaranty Company of N. Y	40,000,000	5	100	[illegible]		[illegible]	A	4.97½	A	5.10½	A	4.91	A	6.96
Lone Star Corp., Deb. 5s, 1942, Union Trust Co. of Pittsburgh	15,000,000	5	98¾	[illegible]		[illegible]	A	5.16½	A	5.41	A	5.22	A	6.26
The Montana Power Co., Deb. 5s, "A" 1962, Lee, Higginson & Co	12,500,000	5	97¼	[illegible]		[illegible]	A	4.93	A	5.11½	A	5.02	A	5.97
Brooklyn Manhattan Transit Corp., Rap. Tr. Ser. S. F. 6s, 1968, Brown Bros. & Co	10,262,000	6	101¾	[illegible]		[illegible]	Baa	6.40½	Baa	6.57	Baa	6.40½	Baa	6.68

The "average yield" shown on this exhibit is the arithmetical average of the yields computed on the basis [illegible] Witness Hammond on the high market quotation for the year and the low market quotation for the year.

[fol. 4961]														
June:														
Federal Water Service Corp., Conv. Debs. 5½s, 1957, G. L. Ohrostrom	$10,000,000	5½	96¾	5.73	Ba	5.75½	Retired 1/1/29 @ 105.							
International Tel. & Tel. Co., Debs. 4½s, 1952, J. P. Morgan Co	35,000,000	4½	92	5.07	A	4.89½	A	4.83½	A	5.13	Baa	6.22½	Baa	9.86
Iowa Public Service Co., 1st M. 5s, 1957, Halsey, Stuart & Co	12,000,000	5	97½	5.16	Baa	5.11	A	5.06½	A	5.31	A	5.36	A	6.10
Utilities Power & Light Corp., Deb. 5½s, 1947, West & Co	20,000,000	5½	94¼	6.00	Ba	6.12½	Ba	5.92½	Ba	6.25	Ba	7.39½	Ba	11.60
Wisconsin, Michigan Power Co., 1st & Ref. M. 5s, 1957, Harris, Forbes & Co	5,000,000	5	99	5.06	A	5.05	A	4.98½	A	5.05	A	4.97	A	5.02½
July:														
Carolina Power & Light Co., 1st & Ref. M. 5s, 1956, W. C. Langley & Co	10,000,000	5	100¾	4.95	Aa	4.87	Aa	4.81½	Aa	5.09½	A	4.90½	A	5.65½
Detroit City Gas Co., 1st M. 5s, "B", 1950, Otis & Co	7,500,000	5	100	5.00	A	4.87½	A	4.87½	A	5.14	A	4.92	A	5.35
The Detroit Edison Co., Gen. & Ref. M. 5s, "C", 1962, Coffin & Burr, Inc	20,000,000	5	102¼	4.86	Aa	4.65½	Aaa	4.71½	Aa	4.79½	Aa	4.69	Aa	4.80½
Union Electric Light & Power Co., (Mo.) Gen. M. 5s "B", 1967, Dillon, Read & Co	10,000,000	5	102½	4.86	Aa	....	Aa	....	Aa	....	Aa	4.89	Aa	4.87½
Public Service of Northern Illinois, Deb. 5s, Aug. 1, 1932, Halsey, Stuart & Co	10,000,000	5	99	5.23	A	4.97	A	5.00	A	5.55½	....	4.87	Retired 5/7/31 @ 100.	
August:														
Iowa-Nebraska Light & Power Co., 1st Lien & Ref. Mtge. 5s "A", May 1957, Otis & Co	12,000,000	5	96½	5.23	Baa	5.23	Baa	5.20	Baa	5.65½	Baa	5.48½	Baa	7.10
New England Gas & Electric Ass., Conv. Deb. 5s, 1947, Harris, Forbes & Co	17,000,000	5	99	5.08	Baa	5.06	A	5.24	A	5.83½	Baa	6.10½	Baa	8.31½
Columbus Ry. Power & Light Co., 1st & Ref. 4½s, 1957, Ser. "A", Guaranty Co. of N. Y	13,000,000	4½	93¾	4.90	Aa	4.82½	Aa	4.81	Aa	5.07½	Aa	4.91	Aa	5.08½
fol. 4962]														
September:														
American Electric Power Corp. (Del.) Conv. deb. 6s, "A", 1957, Bonbright & Co	$6,050,000	6	99	6.07	B	....	Ba	6.27	Ba	6.17	B	8.03½	B	12.93½
Dixie Gulf Gas Co., 1st Mtge. 6½s** "A", 1937, Blyth Witter & Co	9,500,000	6½	99½	6.57	No rating	6.53½	No rating	7.66	No rating	11.78	No rating	10.24	No rating	12.74
Pacific Gas & Electric Co., 1st & Ref. Mtge. 4½s, "E", 1957, National City Co	15,000,000	4½	96	4.75	Aa	4.62½	Aa	4.59½	Aa	4.91	Aa	4.76	Aa	4.93
Pennsylvania Water Service Co., 1st Mtge. & Ref. 5s "A", 1967, G. L. Ohrstrom & Co., Inc	9,200,000	5	98¾	5.07	A	5.03	A	4.97½	A	....	A	....	A	5.58
Southern California Edison Co., Ref. Mtge. 5s, 1952, Harris, Forbes & Co	30,000,000	5	100	5.00	A	4.87	A	4.83	Aa	5.03	Aa	4.82½	Aa	4.90
The United Light & Ry. Co., debenture 5½s, 1952, Otis & Co	25,000,000	5½	99½	5.54	Baa	5.57½	Baa	5.86	Baa	6.66½	Baa	6.93½	Baa	8.82½
October:														
Southern California Gas Co., 1st M. & Ref. 5s, 1957, Chase Securities Corp	8,646,000	5	99	5.07	A	5.00	A	4.98½	A	5.31	Aa	4.89½	Aa	5.57
American Natural Gas Corp., Deb.* 6½s, 1942, G. L. Ohrostrom & Co	10,000,000	6½	99½	6.55	Ba	6.59½	B	6.72½	B	9.37½	B	17.11	Caa	....
Columbia Gas & Elec. Corp., Deb. 5s, 1952, Guaranty Co. of N. Y	5,000,000	5	99	5.07	A	5.06½	A	4.97½	A	5.10½	A	4.91	A	6.94
Duquesne Light Co., 1st M. 4½s, Apr. 1967, Ladenburg, Thalman & Co	10,000,000	4½	99	4.55	Aaa	4.49	Aaa	4.45	Aaa	4.60½	Aaa	4.50	Aaa	4.53
Georgia Power Co., 1st & Ref. M. 5s, 1967, Drexel & Co	18,000,000	5	98	5.12	Baa	5.12½	A	4.99	A	5.22½	A	5.10½	A	5.78
New York Power & Light Corp., 1st M. 4½s, 1967, Bonbright & Co	66,000,000	4½	96	4.72	A	4.73	A	4.84	A	4.99½	A	4.84	A	5.14½
The Philadelphia Electric Co., 1st Lien & Ref. M. 4½s, 1967, Drexel & Co	35,000,000	4½	98½	4.58	Aa	4.48½	Aaa	4.47½	Aaa	4.66½	Aaa	4.48	Aaa	4.47½
West Texas Utilities Co., 1st M. 5s, "A", 1957, Halsey, Stuart & Co	12,500,000	5	97½	5.16	Baa	....	A	5.27	A	....	Baa	5.72	Baa	8.19½
[fol. 4963]														
November:														
Cities Service Pr. & Lt. Co., Deb. 5½s, 1952, Harris, Forbes & Co.	$45,000,000	5½	98	5.65	Baa	5.67	Baa	5.58	Baa	6.31	Baa	6.95	Ba	9.63
Illinois Pr. & Lt. Corp., 1st & Ref. M. 5s, "C", 1956, Harris, Forbes & Co	5,000,000	5	98	5.13	Baa	5.19½	Baa	5.19½	A	5.39½	A	5.31½	A	6.57½
Public Service Electric & Gas Co., 1st & Ref. M. 4½s, 1967, Drexel & Co	45,000,000	4½	98	4.61	Aa	4.54	Aaa	4.52	Aaa	4.63½	Aaa	4.54½	Aaa	4.51½
Ohio Power Co., 1st & Ref. 4½s, Ser. "D", June 1, 1956	9,702,000	4½	94¾	4.84	A	4.98½	Aa	4.86	Aa	5.05	Aa	4.83½	Aa	5.13
Mississippi Pr. & Lt. Co., 1st M. 5s, 1957, W. C. Langley & Co	9,000,000	5	97¼	5.18	Baa	....	Baa	....	Baa	....	Baa	5.46½	Baa	6.65
Penn Central Light & Pr. Co., 1st M. 4½s, 1977, A. C. Allyn & Co.	24,000,000	4½	96	4.71	A	4.70½	A	4.83½	A	5.09	A	4.90½	A	5.64½
Philadelphia Suburban Counties Gas & Electric Co., 1st & Ref. M.														

Forbes & Co.	5,000,000	5	98	5.13	Baa	5.19½	Baa	5.19½	A	5.39½	A	5.31½	A	6.57½
Public Service Electric & Gas Co., 1st & Ref. M. 4½s, 1967, Drexel & Co.	45,000,000	4½	98	4.61	Aa	4.54	Aaa	4.52	Aaa	4.63½	Aaa	4.54½	Aaa	4.51½
Ohio Power Co., 1st & Ref. 4½s, Ser. "D", June 1, 1956	9,702,000	4½	94¾	4.84	A	4.98½	Aa	4.86	Aa	5.05	Aa	4.83½	Aa	5.13
Mississippi Pr. & Lt. Co., 1st M. 5s, 1957, W. C. Langley & Co.	9,000,000	5	97¼	5.18	Baa	....	Baa	....	Baa	....	Baa	5.46½	Baa	6.65
Penn Central Light & Pr. Co., 1st M. 4½s, 1977, A. C. Allyn & Co.	24,000,000	4½	96	4.71	A	4.70½	A	4.83½	A	5.09	A	4.90½	A	5.64½
Philadelphia Suburban Counties Gas & Electric Co., 1st & Ref. M. 4½s, May 1957, Drexel & Co	10,000,000	4½	98	4.62	Aa	4.59	Aaa	4.50½	Aaa	4.74	Aaa	4.56½	Aaa	4.62
December:														
Alabama Power Co., 1st & Ref. M. 4½s, 1967, Harris, Forbes & Co.	40,000,000	4½	94¾	4.80	A	4.76	A	4.68½	Aa	4.91½	A	4.70½	A	5.21½
Associated Electric Co., 4½s, Jan. 1953, Harris, Forbes & Co.	20,000,000	4½	94¼	4.90	A	....	A	5.24½	No rating	5.72	A	5.63½	A	7.61
Central Gas & Electric Co., 1st Lien Coll. Tr. 5½s, 1946, Federal Securities Corp	7,000,000	5½	98½	5.63	Baa	5.93½	Baa	5.77	Baa	6.24	Baa	6.87	Baa	11.03
Central Illinois Public Service Co., 1st M. 4½s "F", 1967, Halsey, Stuart & Co.	29,000,000	4½	94¾	4.80	A	....	A	4.81½	A	5.27½	A	5.11	A	6.27
Central States Electric Corp., Conv. Deb. 5s, Jan. 1948, Dillon, Read & Co	20,000,000	5	96½	5.28	No*** rating	....	No rating	5.61	No rating	7.33	No rating	8.72	No rating	14.06
Central States Pr. & Lt. Corp., 1st M. & 1st Lien 5½s, Jan. 1953, Chase Securities Corp	8,500,000	5½	98½	5.61	Ba	....	Baa	5.75	Baa	6.12	Ba	7.09½	Ba	11.55½
Duke Pr. Co., 1st & Ref. M. 4½s, 1967, Stone & Webster & Blodget, Inc	40,000,000	4½	98	4.61	Aa	....	Aa	4.59½	Aa	4.66	Aa	4.56½	Aa	4.39½
Florida Pr. & Lt. Co., 1st M. 5s, Jan. 1954, Bonbright & Co	10,000,000	5	97½	5.18	A	5.36	Baa	5.46½	Baa	6.46½	Baa	6.09	Baa	7.44½
[fol. 4964]														
Louisiana Pr. & Lt. Co., 1st M. 5s, 1957, W. C. Langley & Co	8,000,000	5	97¾	5.15	Baa	....	A	5.2[illegible]½	A	5.49	A	5.23½	A	5.81
Philadelphia Co., Secured 5s, 1967, H. M. Byllesby & Co	60,000,000	5	98	5.12	A	5.10½	A	5.04½	A	5.14	A	5.04½	A	6.08
Twin City Rapid Transit Co., 1st Lien & Ref. M. 5½s, "A" 1952, Chase Securities Corp	18,000,000	5½	97	5.73	Baa	....	Ba	....	Ba	7.89½	Ba	9.70	Ba	18.18
Wisconsin Pr. & Light Co., 1st Lien & Ref. M. 5s, May, 1956, "E", Hill, Joiner & Co., Inc.	6,350,000	5	101½	4.90	Baa	5.12½	A	4.97	A	....	A	4.92½	A	5.35

* Beginning with Dec. 1927, Narragansett Electric Co.

** Issued with warrants for common stock rights.

*** Not rated because an investment company.

The "average yield" shown on this exhibit is the arithmetical average of the yields computed on the basis as testified to by Witness Hammond on the high market quotation for the year and the low market quotation for the year.

[fol. 4965]

Sales During the Year 1928 of Long-term Bonds for $5,000,000 or Over of Public Utilities Other Than Bell System Companies, Investment Rating (Moody's), and Yields from Date of Issue to December 31, 1931

Name of Company; Type of Issue; House of Issue	Amount Offered	Rate %	Original Public Offering Price	Original Public Offering Yield	1928 Rating	1928 Average Yield	1929 Rating	1929 Average Yield	1930 Rating	1930 Average Yield	1931 Rating	1931 Average Yield
January:												
Cities Service Gas Pipeline Co., 1st M. Pipeline 6s, 1943, Halsey, Stuart & Co	$12,000,000	6	100	6.00	Baa	5.94½	Baa	....	Baa	7.02	Baa	10.87½
Continental Gas & Elec. Corp., Deb. 5s "A", 1958, Otis & Co	36,000,000	5	95½	5.30	Baa	5.45	Baa	5.98½	Baa	6.03	Baa	7.77
Rochester Telephone Corp., 1st & Ref. 4½s, "C", 1953, The Guardian Detroit Co., Inc	5,000,000	4½	98½	4.60	Aaa	....	Aaa	....	Aaa	....	Aaa	4.94½
Lexington Water Power Co., 1st M. 5s, 1968, Halsey, Stuart & Co	12,000,000	5	98	5.12	No rating	5.26	No rating	5.51	No rating	5.87½	No rating	8.67½
Lexington Water Power Co., Conv. Deb. 5½s, 1953, Halsey, Stuart & Co	5,000,000	5½	98½	5.61	No rating	5.75	No rating	6.32	No rating	6.72	No rating	11.98½
National Electric Power Co., Sec. Deb. 5s, 1978, A. C. Allyn & Co	10,000,000	5	94½	5.30	Ba	....	Ba	....	Ba	6.70½	Ba	9.84
February:												
National Public Service Corp., Deb. 5s, 1978, E. H. Rollins & Sons	20,000,000	5	93½	5.38	Ba	5.70½	Ba	6.48	Ba	6.77½	Ba	10.88
Southern Counties Gas Co. of Cal., 1st M. 4½s, May 1968, Bond & Godwin & Tucker, Inc	12,000,000	4½	94¾	4.80	Aa	4.92½	Aa	5.09	Aa	4.81½	Aa	4.74
Rochester Gas & Electric Corp., Gen. M. 4½s "D", Sept. 1977, J. P. Morgan & Co	6,000,000	4½	99½	4.52	Aa	4.39½	Aa	4.61½	Aa	4.53½	Aa	4.54½
Scranton Gas & Water Co., 1st M. 4½s, 1958, First National Bank	11,000,000	4½	99	4.56	Aa	....	Aa	....	Aa	....	Aa	5.93
Birmingham Elec. Co., 1st & Ref. M. 4½s, 1968, Harris, Forbes & Co	9,200,000	4½	95¼	4.77	Aa	....	Aa	....	Aa	4.77½	Aa	5.40
Indiana Service Corporation, 1st Lien & Ref. M. 5s, "A", 1963, Halsey, Stuart & Co	5,000,000	5	99½	5.03	A	....	A	....	Baa	5.71	Baa	8.27½
Ohio Power Co., 1st & Ref. M. 4½s, "D", June 1956, Dillon, Read & Co	10,018,000	4½	96	4.76	Aa	4.85½	Aa	5.05	Aa	4.83	Aa	5.13
[fol. 4966]												
Oklahoma Natural Gas Corp., 1st M. 5s, "B", 1948, G. L. Ohrstrom & Co	14,000,000	5	96¼	5.31	Baa	....	Baa	....	Ba	....	Ba	17.20½
Pacific Gas & Electric Co., 1st & Ref. M. 4½s, "E", June 1957, National City Co	20,000,000	4½	99	4.56	Aa	4.59½	Aa	4.91	Aa	4.76	Aa	4.96
Pennsylvania Water & Power Co., 1st Ref. M. 4½s, "B", 1968, Chase & Co	6,000,000	4½	99	4.55	Aa	4.61	Aa	5.00½	Aa	....	Aa	4.95½
March:												
San Antonio Public Service Co., 1st M. & Ref. 5s, "B", 1958, Otis & Co	7,500,000	5	97½	5.16	A	5.09	A	5.53	A	5.27	A	5.91
Utah Pr. & Light Co., 1st Lien & Gen. M. 4½s, 1944, Harris, Forbes & Co	5,500,000	4½	96¾	4.79	A	4.91	A	5.28½	A	5.13	A	5.53
Iowa Pr. & Light Co., 1st M. 4½s, "A", 1958, Harris, Forbes & Co	6,000,000	4½	95¼	4.80	A	5.05½	A	....	A	4.83½	A	5.81½
Metropolitan Edison Co., (Pa.), 1st M. 4½s, "D", 1968, Halsey, Stuart & Co	23,000,000	4½	99½	4.53	Aa	4.49	Aa	4.78	Aa	4.51	Aa	4.89½
Interstate Public Service Co., 1st M. & Ref. 4½s, "F", 1958, Halsey, Stuart & Co	12,554,000	4½	94½	4.85	A	4.95½	A	5.26	A	5.19	A	7.32½
Vicksburg Bridge & Terminal Co., 1st Ref. Gold 6s, 1958, H. M. Byllesby & Co	5,000,000	6	99½	6.04	No rating	5.95	No rating		No rating		No rating	13.53
April:												
Associated Gas & Electric Co., Conv. deb. 4½s, 1948, Harris, Forbes & Co	63,000,000	4½	97	4.73	A	4.02½	A.	....	Baa	6.12½	Baa	14.29
Electric Power Corp., 1st s. f. Gold 6½s, 1953, Harris, Forbes & Co., Inc	5,000,000	6½	99½	6.54	A	6.89	A	7.38	A	8.41	A	12.64½
Cities Service Co., deb. 5s, 1958, Harris, Forbes & Co	50,000,000	5	98	5.13	Baa	5.67	Ba	6.15½	Ba	7.42	Ba	10.43
Minnesota Pr. & Lt. Co., 1st & Ref. M. 4½s, 1978, Harris, Forbes & Co	14,000,000	4½	97¼	4.64	A	4.85	A	5.13½	A	4.92	A	5.36½
New England Pr. Assn., Deb. 5s, 1948, Harris, Forbes & Co	25,000,000	5	100	5.00	A	5.16½	A	5.76½	Baa	6.34½	Baa	8.27
Houston Gulf Gas Co., 1st M. & Coll. 6s, "A", 1943, Blair & Co., Inc	11,000,000	6	99½	6.05	Ba	6.48½	No rating	8.71	No rating	8.45	No rating	12.65
[fol. 4967]												
American Gas & Elec. Co., Deb. 5s, 2028, Bonbright & Co	50,000,000	5	101	4.95	A	5.20	A	5.33	A	5.13½	A	5.90
California Water Service Co., 1st M. 5s, "A", 1958, Guaranty												

Co., Inc												
Cities Service Co., deb. 5s, 1958, Harris, Forbes & Co	50,000,000	5	98	5.13	Baa	5.67	Ba	6.18½	[illegible]	[illegible]	[illegible]	[illegible]
Minnesota Pr. & Lt. Co., 1st & Ref. M. 4½s, 1978, Harris, Forbes & Co	14,000,000	4½	97¼	4.64	A	4.85	A	5.13½	A	4.92	A	5.36½
New England Pr. Assn., Deb. 5s, 1948, Harris, Forbes & Co	25,000,000	5	100	5.00	A	5.16½	A	5.76½	Baa	6.34½	Baa	8.27
Houston Gulf Gas Co., 1st M. & Coll. 6s, "A", 1943, Blair & Co., Inc	11,000,000	6	99½	6.05	Ba	6.48½	No rating	8.71	No rating	8.45	No rating	12.65
[fol. 4967]												
American Gas & Elec. Co., Deb. 5s, 2028, Bonbright & Co	50,000,000	5	101	4.95	A	5.20	A	5.33	A	5.13½	A	5.90
California Water Service Co., 1st M. 5s, "A", 1958, Guaranty Co. of N. Y	6,254,000	5	103¼	4.79	A	5.10	A	5.25½	A	5.21	A	5.91
The Cincinnati Gas & Elec. Co., 1st M. 4s, "A", 1968, Guaranty Co. of N. Y	35,000,000	4	92½	4.40	Aaa	4.74	Aaa	4.74	Aaa	4.58	Aaa	4.53½
Super-Power Co. of Illinois, 1st M. 4½s, 1968, Halsey, Stuart & Co	10,000,000	4½	98½	4.58	No rating		No rating		A	....	A	6.05½
May:												
Associated Gas & Electric Co., 5s, Conv. deb. 1968, Harris, Forbes & Co., Inc	35,000,000	5	100	5.00	A	5.61½	A	6.43	Baa	6.96½	Baa	....
Detroit & Canada Tunnel Co., 1st s. f. Gold 6s, 1953, Harris, Forbes & Co., Inc	8,500,000	6	100	6.00	No rating		No rating	6.61	No rating	7.61	No rating	25.77½
Detroit & Canada Tunnel Co., Conv. s. f. deb. 6½s, 1948, Harris, Forbes & Co., Inc	8,500,000	6½	99½	6.54	No rating		No rating		No rating		No rating	
Texas Cities Gas Co., 1st M. 5s, 1948, P. W. Chapman & Co., Inc	5,400,000	5	98½	5.12	Baa	....	No rating	6.85½	No rating	7.60½	No rating	11.20
Houston Gulf Gas Co., Conv. Deb. 6½s, 1943, Blair & Co	8,000,000	6½	99	6.61	B	7.02	No rating	9.81½	No rating	9.35	No rating	16.38½
Southern Cities Utilities Co., 1st Lien & Coll. Tr. 5s, "A", 1958, E. H. Rollins & Sons	10,500,000	5	94	5.41	Ba	5.59	No rating	6.42½	No rating	9.27½	No rating	19.08
American Gas & Pr. Co., (Del.), Sec. Deb. 5s, 1953, Bonbright & Co	6,500,000	5	95½	5.33	Baa	....	Ba	....	Ba	6.64	Ba	12.77½
June:												
Consolidated Gas Utilities Co., (Del.), 1st M. & Coll. 6s, "A", 1943, G. E. Barrett & Co	8,000,000	6	98½	6.15	Ba	....	Ba	....	Ba	....	Ba	18.27
Diversified Investments Incorporated (Del.), 30 yr. Deb. 5s, "A", 1958, Telephone Bond & Share Co	5,000,000	5	95	5.34	A	....	A	....	Baa*	....	Baa	7.34
July:												
General Water Works Corp., 1st Lien & Coll. Tr. 5s, "A", 1943, Howe, Snow & Co	5,600,000	5	90¼	6.00	Ba	5.04	Ba	....	Ba	8.51	Ba	18.73½
[fol. 4968]												
August:												
Public Service Co. of Oklahoma, 1st M. 5s, "D", 1957, Halsey, Stuart & Co	5,000,000	5	96	5.27	A	5.13	A	....	A	5.13	A	5.94
Commonwealth Subsidiary Corp., Deb. 5½s, "A", 1948, Halsey, Stuart & Co	20,000,000	5½	97	5.75	No rating	5.75	No rating	5.71	No rating	5.66½	No rating	8.14
Midland Utilities Co., Deb. 6s. "A", 1938, Halsey, Stuart & Co	6,000,000	6	99½	6.07	Baa	....	Baa	....	Baa	....	Baa	10.98½
September:												
Rochester Central Pr. Corp., Deb. 5s, "A", 1953, Offered by Manufacturers Tr. Co., N. Y	22,500,000	5	90	5.76	Baa	5.86½	Baa	6.52	No rating	8.78	No rating	12.94
Utilities Service Co., 1st Lien 6s, "A", 1953, S. W. Straus & Co	5,000,000	6	99½	6.04	Ba	....	No rating		(No rating, Interest due 8-1-30 in default)		No rating	
Memphis Natural Gas Co., 1st M. 6s, 1943, P. W. Chapman & Co	6,300,000	6	99½	6.05	No rating		No rating		Retired 6/27/30 @ 103.			
North American Edison Co., Deb. 5½s, "B", 1963, Dillon, Read & Co	20,000,000	5½	100	5.50	A	5.41½	A	5.41	A	5.37½	A	6.36
Alabama Pr. Co., 1st & Ref. M. 5s, 1968, Harris, Forbes & Co	15,000,000	5	99½	5.03	A	4.87	Aa	5.05½	A	4.90½	A	5.21½
Georgia Pr. Co., 1st & Ref. M. 5s, March, 1967, Drexel & Co	15,000,000	5	98	5.12	A	4.99	A	5.22½	A	5.10	A	5.78
Green Mountain Pr. Corp., 1st M. 5s, 1948, G. L. Ohrstrom & Co	7,200,000	5	96½	5.29	A	5.20½	A	5.21½	A	4.93½	A	5.89
Illinois Pr. & Lt. Corp., 1st & Pref. M. 5s, 1956, Harris, Forbes & Co	10,000,000	5	96	5.27	Baa	5.18	A	5.39½	A	5.32	A	6.57½
October:												
American Community Power Co., Deb. 5½s, July 1953, Spencer,	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]		[illegible]	[illegible]

									default)			
Memphis Natural Gas Co., 1st M. 6s, 1943, P. W. Chapman & Co.	6,300,000	6	99½	6.95	No rating		No rating		Retired 6/27/30 @ 103.			
North American Edison Co., Deb. 5½s, "B", 1963, Dillon, Read & Co.	20,000,000	5½	100	5.50	A	5.41½	A.	5.41	A	5.37½	A	6.36
Alabama Pr. Co., 1st & Ref. M. 5s, 1968, Harris, Forbes & Co.	15,000,000	5	99½	5.03	A	4.87	Aa	5.05½	A	4.90½	A	5.21½
Georgia Pr. Co., 1st & Ref. M. 5s, March, 1967, Drexel & Co.	15,000,000	5	98	5.12	A	4.99	A	5.22½	A	5.10	A	5.78
Green Mountain Pr. Corp., 1st M. 5s, 1948, G. L. Ohrstrom & Co.	7,200,000	5	96½	5.29	A	5.20½	A	5.21½	A	4.93½	A	5.89
Illinois Pr. & Lt. Corp., 1st & Pref. M. 5s, 1956, Harris, Forbes & Co.	10,000,000	5	96	5.27	Baa	5.18	A	5.39½	A	5.32	A	6.57½
October:												
American Community Power Co., Deb. 5½s, July 1953, Spencer, Trask & Co.	5,000,000	5½	94½	5.92	Ba	....	Ba	....	B	....	B	13.58½
Bellows Falls Hydro-Elec. Corp., 1st (closed) Mtge. 5s, 1958, Harris, Forbes & Co.	9,000,000	5	98	5.13	No rating		Baa	5.30½	Baa	5.21	Baa	5.82
Cities Service deb. Gold 5s**, Harris, Forbes & Co., Inc., 1963	30,000,000	5	97½	5.13	Baa**	....	Ba	....	Ba	....	....	....
November:												
New Orleans Public Service, Inc., 1st & Ref. Mtge. 5s, Ser. "B" due June 1955, Dillon, Read & Co.	5,000,000	5	99½	5.03	A	5.13	A	5.92½	A	5.88	A	6.91½
[fol. 4969]												
Keystone Water Works & Electric Corp., 1st lien 5½s, "B" 1948, H. M. Byllesby & Co.	6,000,000	5½	97	5.75	Ba	....	No rating		Default	16.03	No rating	11.74
Public Service Co. of Northern Illinois, 1st lien and Ref. M. 4½s, "D" 1978, Halsey, Stuart & Co.	10,000,000	4½	94½	4.79	A	....	A	....	A	4.84½	A	5.26
Central Illinois Public Ser. Co., 1st M. 5s, "G", 1968, Halsey, Stuart & Co.	5,700,000	5	100	5.00	A	....	A	....	A	....	A	5.94½
Columbia Gas & Elec. Corp. deb. 5s, May 1952, Guaranty Co. of N. Y.	5,000,000	5	101	4.93	A	4.97	A	5.11	A	4.91½	A	6.93½
December:												
New England Gas & Electric Ass. (Conv.) Deb. 5s, 1948, Harris, Forbes & Co.	6,000,000	5	97	5.24	A	....	A	5.80	Baa	6.02	Baa	7.96½
Consumers Power Co., 1st lien & Unif. M. 4½s, 1958, Bonbright & Co.	11,415,100	4½	97	4.69	Aaa	4.67	Aaa	....	Aaa	4.71	Aaa	4.68½
Delaware Electric Power Co. (of Del.), deb. 5½s, 1959, Drexel & Co.	8,000,000	5½	96½	5.74	Ba	5.76	Ba	5.91½	Ba	6.05½	Ba	8.29
International Tel. & Tel. Co., Conv. Deb. 4½s, January 1939	56,911,400	4½	98	4.75	A	3.23	A	3.41	Baa	....	Baa	13.56

* Name of issuer changed to "Telephone Bond & Share Co."

** Issued with warrants for stock rights.

The "average yield" shown on this exhibit is the arithmetical average of the yields computed on the basis as testified to by Witness Hammond on the high market quotation for the year and the low market quotation for the year.

[fol. 4970]

Sales During the Year 1929 of Long-term Bonds for $5,000,000 [illegible] Other Than Bell System Companies, Investment Rating (Moody) and Yields from [illegible] December 31, 1931

Name of Company; Type of Issue; House of Issue	[illegible]	Rate	Original Public Offering		1929 Rating Average Yield*		1930 Rating Average Yield		1931 Rating Average Yield	
			Price	Yield						
January:										
Associated Gas & Elec. Co., Conv. deb. 4½s, 1949, Harris, Forbes & Co	[illegible]	4½	96	4.90	A		Baa	7.79	Baa	10.41
Penn-Ohio Edison Co., Deb. 5½s, "B", 1959, Bonbright & Co	[illegible]	5½	96½	5.75	A	5.99½	Baa	5.72½	Baa	7.44
Kentucky Utilities Co., 1st M. 5s, "I", 1969, Halsey, Stuart & Co	[illegible]		99	5.06	A		A	5.13½	A	6.14
The Milwaukee Electric Ry. & Lt. Ref. & 1st M. 5s, "B", June 1961, Dillon, Read & Co	[illegible]		100¼	4.98	Aa	5.05½	A	4.98	A	4.44
Montana-Dakota Power Co., 1st Mtge. 5½s, Jan. 1, 1934, The Minnesota Co	[illegible]		99	5.75	Ba	6.63	Baa	6.29	Baa	10.30
Public Service Subsidiary Corp., Deb. 5½s, 1949, Halsey, Stuart & Co	[illegible]		97	5.75	No rating		No rating	5.91½	No rating	[illegible]
February:										
Florida Power Corp., 1st M. 5½s, "A", 1979, E. H. Rollins & Sons	[illegible]		94	5.87	Baa		Ba		Ba	10.10
Pacific Public Service Co., Conv. 6s, 1944, A. E. Fitkin & Co., Inc	[illegible]		98	6.16	Ba	5.11½	Retired 9-1-30 @ 105			
Peoples Light & Power Corp., Conv. Deb. 5s, 1979, G. L. Ohrstrom & Co	[illegible]		98	5.11	Ba		B	6.58½	No rating	
Tide Water Power Co., 1st M. 5s, "A", 1979, E. H. Rollins & Sons	[illegible]		94	5.32	Baa	5.70	Baa	5.57	Baa	6.64
Utilities Power & Lt. Corp., Deb. 5s, 1959*, Chase Securities Co	[illegible]		98	5.13	Ba		Ba	7.09	Ba	10.08
Consolidated Gas Elec. Lt. & Pr. Co., of Balt., 1st Ref. M. 4½s "G" 1969, Alex. Brown & Sons	[illegible]	4½	100	4.75	Aaa	4.70½	Aaa	4.64	Aaa	4.52
Central Public Service Corp.,* Conv. deb. 5½s, 1949, Harris, Forbes & Co., Inc	[illegible]		96	5.80	Ba		Ba		Ba	
March:										
Cities Service Co., deb. 5s, 1969*, Harris, Forbes & Co	[illegible]		97	5.15	Ba		Ba	5.52	Ba	10.02
[fol. 4971]										
International Hydro-Electric System Conv., 6s, 1944; Chase Security Corp	[illegible]		100	6.00	Ba	6.15	Ba	7.32	Ba	12.20
April:										
Carolina Pr. & Lt. Co., 1st & Ref. M. 5s, 1956, W. C. Langley & Co	[illegible]		99	5.07	Aa	5.09½	A	4.91	A	5.65½
Southern Cities Public Service Co., Conv. deb. 6s, 1949, Harris, Forbes & Co	[illegible]		99	6.06	Ba	6.04½	Ba	8.23	Ba	19.54
May:										
Associated Telephone Utilities Co., Conv. Deb. 5½s, "C", 1944, Paine, Webber & Co	[illegible]		97	5.80	Baa		Baa	7.31	Baa	10.27
Birmingham Gas Co., 1st M. 5s, 1959, Bonbright & Co	[illegible]		96	5.27	A		A	5.18	A	5.70
Gulf States Utilities Co., 1st M. & Ref. 5s, "A", Sept. 1956, Stone & Webster & Blodget	[illegible]		94	5.42	A	5.27½	A	5.21½	A	6.10½
June:										
Southern Public Utilities Co., 1st & Ref. M. 5s, 1943, Stone & Webster & Blodget	[illegible]		100	4.95	Aa	5.00	Aa	4.84½	Aa	5.03
Central Pr. & Lt. Co., 1st M. 5s, 1956, E. H. Rollins & Sons	[illegible]		95	5.67	A	5.36½	A	5.37½	Baa	7.38
Federal Water Service Corp., Conv. Deb. 5½s, 1954, G. L. Ohrstrom & Co	[illegible]		99	5.58	Baa	5.60	Ba	6.84½	Ba	16.66
July:										
Cities Service Pr. & Lt. Co., Deb. 5½s, 1949, Harris, Forbes & Co	[illegible]		94	6.11	Baa		Baa		Ba	10.30
Southern Natural Gas Corp., 1st S. F.* 6s, 1944, G. L. Ohrstrom & Co., Inc	[illegible]		97	6.26	No rating	6.62½	No rating	8.40½	No rating	18.66
August:										
Southern California Edison Co., Ref. M. 5s, 1954, Harris, Forbes & Co	[illegible]		98	5.14	Aa	5.12½	Aa	4.73½	Aa	4.80

[fol. 4972]

[fol. 4973] Sales During the Year 1930 of Long-term Bonds for $5,000,000 or Over of Public Utilities Other Than Bell System Companies, Investment Rating (Moody's), and Yields from Date of Issue to December 31, 1931

Name of Company; Type of Issue; House of Issue	Amount Offered	Rate %	Original Public Offering			1930 Rating, Average Yield		1931 Rating, Average Yield	
			Price	Yield	Rating				
January:									
Associated Gas & Electric Co., Conv. Deb. 5s 1950, Harris, Forbes & Co.	$30,000,000	5	90	5.86	A	Baa	7.49½	Baa	10.67
Associated Telephone Utilities Co., Conv. Deb. 5½s, Ser. "C", May 1, 1944, Paine, Weber & Co.	6,000,000	5½	99	5.60	Baa	Baa	7.31	Baa	10.28
International Tel. & Tel. Corp., Deb. 5s, 1955, J. P. Morgan & Co.	50,000,000	5	96½	5.25	A	Baa	6.23	Baa	9.82½
New England Power Association Deb. 5½s, 1954, Harris, Forbes & Co.	25,000,000	5½	95	5.89	A	Baa	5.78	Baa	8.02½
North American Edison Co., Deb. 5s, "C" 1969, Dillon, Read & Co.	25,000,000	5	95½	5.27	A	A	5.10	Baa	6.23½
Public Service Electric & Gas Co., 1st & Ref. M. 4½s, 1970, Drexel & Co.	20,000,000	4½	95½	4.75	Aaa	Aaa	4.54	Aaa	4.51
Washington Water Power Co., 1st & Gen. M. 5s, 1960, White, Weld & Co.	15,000,000	5	98½	5.10	Aaa	Aa	4.89½	Aa	4.85½
Electric Power & Light Corp., Deb. 5s, 2030, Bonbright & Co.	15,000,000	5	92½	5.41	Baa	Baa	5.85	Ba	8.35½
February:									
Pacific Northwest Public Service Co., Conv. deb. gold 6s, 1950, Harris, Forbes & Co.	16,000,000	6	99½	6.04	Ba	Ba	....	Ba	12.44½
Western Union Telegraph Co., 30-yr. 5s, 1960, Kuhn, Loeb & Co.	35,000,000	5	100	5.00	Aaa	Aa	4.83½	Baa	7.04
Arkansas Power & Light Co., 1st & Ref. M. 5s, 1956, Harris, Forbes & Co.	6,000,000	5	94¾	5.38	A	A	5.19	A	6.11
March:									
American Commonwealth Power Cup. 6% Conv. Gold deb., 1940, E. H. Rollins & Sons	10,000,000	6	98.16	6.25	Ba	No rating	8.76	No rating	27.38½
Associated Telephone Utilities Co., Conv. deb. 5½s, Ser. "C" May 1, 1944, Paine, Weber & Co.	8,000,000	5½	100	5.50	Baa	Baa	7.31	Baa	10.33½
[fol. 4974]									
Associated Gas & Electric Co., Conv. Deb. 5s, 1950, Harris, Forbes & Co.	10,000,000	5	91	5.76	A	Baa	7.49½	Baa	11.67½
Oklahoma Gas & Electric Co., 1st Gold 5s, Ser. "A", 1950, H. M. Byllesby & Co., Inc.	6,000,000	5	99½	5.04	A	A	5.02	A	6.48
Southern California Edison Co., Ref. Mtge. 5s, 1954, Offered by Company	5,000,000	5	Price not given	....	Aa	Aa	4.73½	Aa	4.89½
West Penn Electric Co., Deb. 5s, 2030, W. C. Langley	5,000,000	5	93	5.38	A	Baa	5.74½	Baa	7.69
Laclede Gas Light Co., 1st Mtge. Coll. & Ref. 5½s, D, 1960, Halsey Stuart & Co.	5,500,000	5½	100	5.50	A	A	5.31	A	7.06½
American Commonwealth Power Conv. deb. 6s, 1940, E. H. Rollins & Sons	10,000,000	6	98.16	6.25	No rating	....	8.76½	No rating	27.38½
American & Foreign Power Co., Inc., Deb. 5s, 2030, Dillon, Read & Co.	50,000,000	5	90	5.56	Baa	Baa	6.14	Baa	....
April:									
Cincinnati Street Railway Co., 1st M. 6s, "B", 1955, Guaranty Co. of N. Y.	5,000,000	6	99½	6.04	Baa	Baa	6.35	Baa	8.55
Consumers Power Co., 1st Lien & Unif. M. 4½s, 1958, Bonbright & Co.	20,000,000	4½	97	4.69	Aaa	Aaa	4.71	Aaa	4.67½
Southern Natural Gas Corp. Conv. S. F. deb. 6s, 1944, G. L. Ohrstrom & Co., Inc.	11,500,000	6	97	6.33	....	No rating	8.40½	No rating	13.83½
May:									
Appallachian Gas Corp. Conv. 6% Deb. Ser. "B", 1945, P. W. Chapman, Inc.	6,700,000	6	100	6.00	....	No rating	10.13	No rating	....
New England Gas & Elect. Assn. Conv. deb. gold 5s, 1950, Harris, Forbes & Co.	20,000,000	5	91	5.76	A	Baa	6.27	Baa	8.11½
Massachusetts Gas Companies Deb. 5s, 1955, Union Trust Co. of Pittsburgh	25,000,000	5	98	5.14	A	A	5.13	A	5.82
[fol. 4975]									
Kansas Gas & Electric Co., 1st M. 4½s, 1980, Dillon, Read & Co.	16,000,000	4½	93½	4.85	Aa	Aa	4.82	Aa	5.11
National Power & Light Co., Deb. 5s "B" 2030, First National Old Colony Corp.	15,000,000	5	91	5.50	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[fol. 4975]									
Kansas Gas & Electric Co., 1st M. 4½s, 1980, Dillon, Read & Co.	16,000,000	4½	93½	4.85	Aa	Aa	4.82	Aa	5.11
National Power & Light Co., Deb. 5s "B" 2030, First National Old Colony Corp.	15,000,000	5	91	5.50	Baa	Baa	5.73½	Baa	7.07½
Brooklyn Union Gas Co., Deb. 5s, 1950, National City Co.	18,000,000	5	102½	4.80	A	A	4.77½	A	5.03½
Associated Telephone Co., Ltd., (Calif.), 1st M. 5s, "A", 1965, Paine, Webber & Co.	6,000,000	5	97½	5.15	A	A	5.03½	A	5.31½
Puget Sound Power & Light Co., 1st & Ref. M. 5s, "C", 1950, Stone & Webster and Blodget, Inc.	9,000,000	5	95½	5.37	A	A	5.18	A	6.69½
June:									
Central Arizona Lt. & Pr. Co., 1st M. 5s, 1960, Security First Nat. Co. of Los Angeles	7,500,000	5	96¼	5.25	A	A	5.04	A	5.34
Central Pr. & Lt. Co., 1st M. 5s, 1956, E. H. Rollins & Sons	5,500,000	5	95	5.36	A	A	5.36½	Baa	7.39
Cities Service Co., Conv. Deb. gold 5s, 1950, Harris, Forbes & Co.	118,115,600	5	100	5.00	Ba	Ba	5.95	Ba	10.07½
July:									
Associated Teleph. & Teleg. Co., Deb. 5½s, "A", 1955, Bancamerica Blair Corp.	10,000,000	5½	94½	5.92	Baa	Baa	6.47	Baa	8.73
Texas Electric Service Co., 1st Mtge. 5s, 1960, Bonbright & Co.	33,730,000	5	97¾	5.15	A	A	5.23	A	6.17
Public Service Co. of Northern Illinois, 1st lien & Ref. Mtge. 4½s, "E" 1980, Halsey, Stuart & Co.	15,000,000	4½	94	4.82	A	A	4.79½	A	5.22½
Commonwealth Edison Co., 1st Mtge. Coll. 4½s, "E", 1960, Halsey, Stuart & Co.	12,000,000	4½	97½	4.65	Aaa	Aaa	4.54½	Aaa	4.73
Consolidated Gas Electric Light & Power Co., of Baltimore, 1st Ref. Mrge. 4½s, "H", 1970, Aldred & Co.	7,500,000	4½	98½	4.58	Aaa	Aaa	4.43	Aaa	4.46
[fol. 4976]									
Pacific Gas & Electric Co., 1st & Ref. Mtge. 4½s, "F", 1960, National City Co.	25,000,000	4½	96½	4.72	Aa	Aa	4.68½	Aa	4.64
Pacific Power & Light Co., 1st Mtge. & prior lien 5s, 1955, W. C. Langley & Co.	17,000,000	5	96	5.29	A	A	5.34	A	6.51½
Mississippi Power & Light Co., 1st Mtge. 5s Dec., 1957, W. C. Langley & Co.	7,000,000	5	95	5.35	Baa	Baa	5.46½	Baa	6.65
Ohio Edison Co., 1st & Cons. Mtge. 5s, 1960, Bonbright & Co.	18,834,500	5	98	5.13	A	A	5.06½	A	5.20
August:									
Indianapolis Power & Light Co., 1st Mtge. 5s, "A", Jan., 1956, Chase Securities Co.	8,000,000	5	100	5.00	A	A	5.07	A	5.21
September:									
Central Maine Pr. Co., 1st & Gen. M. 4½s, "E", Dec., 1957, Harris, Forbes & Co.	5,000,000	4½	99½	4.53	A	A	4.70	A	4.79
Chicago District Electric Generating Corp., 1st 4½s, "A", 1970, Halsey, Stuart & Co.	15,000,000	4½	95	4.78	A	A	5.06½	A	6.11
Chicago District Electric Generating Corp. 5-yr. deb. 5½s, Oct. 1, 1935, Halsey, Stuart & Co.	8,000,000	5½	100	5.50	Baa	Baa	5.53	Baa	7.62
Consumers Pr. Co., 1st Lien & Unif. M. 4½s, 1958, Bonbright & Co.	20,000,000	4½	101½	4.41	Aaa	Aaa	4.71	Aaa	4.66½
Continental Gas & Electric Corp. Deb. 5s, "A", Feb., 1958, Otis & Co.	16,000,000	5	92½	5.53	Baa	Baa	6.04	Baa	7.77
Public Service Co. of New Hampshire, 1st & Ref. M. 4½s "B", 1957, Tucker, Anthony & Co.	5,279,000	4½	99	4.56	Aa	Aa	....	Aa	4.83½
Tennessee Public Service Co., 1st & Ref. M. 5s, 1970, First National Old Colony Corp.	7,000,000	5	96½	5.21	A	A	5.32	A	5.54
Electric Pr. & Light Corp. Deb. 5s, Feb., 2030, Bonbright & Co.	15,000,000	5	92½	5.41	Baa	Baa	5.85	Ba	8.38½
Portland General Electric Co., 1st & Ref. M. 4½s, 1960, Harris, Forbes & Co.	40,000,000	4½	93¾	4.90	A	A	5.41½	Baa	6.83
[fol. 4977]									
October:									
Minneapolis Gas Light Co., 1st Mtge. 4½s, July, 1950, Bonbright & Co.	9,000,000	4½	95	4.89	A	A	5.32	A	6.26
Super-Power Co. of Illinois, 1st Mtge. 4½s, 1970, Halsey, Stuart & Co.	10,000,000	4½	96	4.72	A	A	....	A	6.08½
November:									
Illinois Power & Light Corp., 1st & Ref. M. 5s, "C", 1956, Harris, Forbes & Co.	8,500,000	5	95½	5.32	A	A	5.32½	A	6.65
Northern Indiana Public Service Co., 1st & Ref. M. 4½s, "E", 1970, Halsey, Stuart & Co.	14,000,000	4½	93	4.96	A	A	5.07	A	4.94
December:									
Virginia Public Service Co., 1st M. ref. 5s, B, 1950, E. H. Rollins & Sons	6,000,000	5	90	5.85	Baa	Baa	....	Baa	7.84

Chicago District Electric Generating Corp., 1st 4½s, "A", 1970, Halsey, Stuart & Co.	15,000,000	4½	95	4.78	A	A	5.06½	A	6.11
Chicago District Electric Generating Corp. 5-yr. deb. 5½s, Oct. 1, 1935, Halsey, Stuart & Co.	8,000,000	5½	100	5.50	Baa	Baa	5.53	Baa	7.62
Consumers Pr. Co., 1st Lien & Unif. M. 4½s, 1958, Bonbright & Co.	20,000,000	4½	101½	4.41	Aaa	Aaa	4.71	Aaa	4.66½
Continental Gas & Electric Corp. Deb. 5s, "A", Feb., 1958, Otis & Co.	16,000,000	5	92½	5.53	Baa	Baa	6.04	Baa	7.77
Public Service Co. of New Hampshire, 1st & Ref. M. 4½s "B", 1957, Tucker, Anthony & Co.	5,279,000	4½	99	4.56	Aa	Aa	....	Aa	4.83½
Tennessee Public Service Co., 1st & Ref. M. 5s, 1970, First National Old Colony Corp.	7,000,000	5	96½	5.21	A	A	5.32	A	5.54
Electric Pr. & Light Corp. Deb. 5s, Feb., 2030, Bonbright & Co.	15,000,000	5	92½	5.41	Baa	Baa	5.85	Ba	8.38½
Portland General Electric Co., 1st & Ref. M. 4½s, 1960, Harris, Forbes & Co.	40,000,000	4½	93¾	4.90	A	A	5.41½	Baa	6.83

[fol. 4977]

October:

Minneapolis Gas Light Co., 1st Mtge. 4½s, July, 1950, Bonbright & Co.	9,000,000	4½	95	4.89	A	A	5.32	A	6.26
Super-Power Co. of Illinois, 1st Mtge. 4½s, 1970, Halsey, Stuart & Co.	10,000,000	4½	96	4.72	A	A	....	A	6.08½

November:

Illinois Power & Light Corp., 1st & Ref. M. 5s, "C", 1956, Harris, Forbes & Co.	8,500,000	5	95½	5.32	A	A	5.32½	A	6.65
Northern Indiana Public Service Co., 1st & Ref. M. 4½s, "E", 1970, Halsey, Stuart & Co.	14,000,000	4½	92	4.96	A	A	5.07	A	4.94

December:

Virginia Public Service Co., 1st M. ref. 5s, B, 1950, E. H. Rollins & Sons	6,000,000	5	90	5.85	Baa	Baa	....	Baa	7.84

The "average yield" shown on this exhibit is the arithmetical average of the yields computed on the basis as testified to by Witness Hammond on the high market quotation for the year and the low market quotation for the year.

[fol. 4978]

Sales During the Year 1931 of Long-term Bonds for $5,000,000 or Over of Public Utilities Other Than Bell System Companies, Investment Rating (Moody's), and Yields from Date of Issue to December 31, 1931

Name of Company; Type of Issue; House of Issue	Amount Offered	Rate %	Original Public Offering			1931 Rating, Average Yield	
			Price	Yield	Rating		
January:							
Detroit Edison Co., Gen. & Ref. Mtge. 4½s D, 1961, Coffin & Burr, Inc.	$34,984,000	4½	100	4.50	Aa	Aa	4.68
Kansas City Power & Light Co., 1st Mtge. 4½s, 1961, Guaranty Co. of N. Y.	27,000,000	4½	102¾	4.34	Aaa	Aaa	4.55½
Tennessee Electric Power Co., 1st & Ref. Mtge. 5s, 1956, Bonbright & Co.	7,000,000	5	99	5.07	A	A	5.47
Buffalo General Electric Co., Gen. & Ref. Mtge. 4½s, B, 1981, J. P. Morgan & Co.	20,000,000	4½	101	4.45	Aaa	Aaa	4.47
Columbia Gas & Electric Corp., deb. 5s, 1961, Guaranty Co. of N. Y.	50,000,000	5	98	5.13	A	A	6.69½
Pacific Gas & Electric Co., 1st & Ref. Mtge. 4½s, F, 1960, National City Co.	25,000,000	4½	98	4.63	Aa	Aa	4.95
Philadelphia Electric Co., 1st & Ref. Mtge. 4s, due 1971, Drexel & Co.	40,000,000	4	93½	4.34	Aaa	Aaa	4.54½
Milwaukee Electric Ry. & Light Co., 1st Mtge. 5s, 1971, Dillon, Read & Co.	15,000,000	5	100	5.00	A	A	5.56½
North American Co., Deb. 5s, 1961, Dillon, Read & Co.	25,000,000	5	97	5.20	A	A	5.98½
February:							
Central Illinois Electric & Gas Co., 1st & Ref. Mtge. 5s, 1951, Harris, Forbes & Co.	15,000,000	5	94½	5.46	Baa	Baa	7.17
Louisville Gas & Electric Co. (Kentucky), 1st & Ref. Mtge. 4½s, "C" 1961, Harris, Forbes & Co.	6,000,000	4½	97	4.69	Aa	Aa	4.94½
March:							
Public Service Electric & Gas Co., 1st & Ref. M. 4s, due 1971, Drexel & Co.	26,000,000	4	93¾	4.33	Aaa	Aaa	4.54
Southern California Gas Co., 1st M. & Ref. 4½s, 1961, Tucker, Hunter, Dulin & Co.	12,500,000	4½	95½	4.78	Aa	Aa	5.39
Alabama Power Co., 1st & Ref. M. 4½s, 1967, Drexel & Co.	8,000,000	4½	98½	4.59	A	A	5.21½

Sales During the Year 1931 of Long-term Bonds for $5,000,000 or Over of Public Utilities Other Than Bell System Companies, Investment Rating (Moody's), and Yields from Date of Issue to December 31, 1931

[illegible]

Name of Company, Type of Issue, Houses of Issue	Amount Offered	Rate %	Original Public Offering Price	Original Public Offering Yield	Original Public Offering Rating	1931 Rating	Average Yield
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Baa	Baa	11.84½
May:							
Northern States Power Co. (Minn.), Ref. Mtge. 4½s, 1961, Harris, Forbes & Co.	35,000,000	4½	97½	4.66	Aa	Aa	5.23½
Pennsylvania Power & Light Co., 1st Mtge. 4½s, 1981, Guaranty Co. of N. Y.	100,000,000	4½	96½	4.68	Aa	Aa	4.68
Potomac Edison Co., 1st Mtge. 4½s F, 1961, W. C. Langley & Co.	5,000,000	4½	96	4.75	A	A	4.97½
Public Service Co. of No. Illinois, 1st Lien & Ref. Mtge. 4½s, F, 1981, Halsey, Stuart & Co.	40,000,000	4½	97½	4.63	A	A	5.32
May:							
New Jersey Power & Light Co., 1st M. 4½s, 1960, Halsey, Stuart & Co.	6,000,000	4½	102	4.38	Aa	Aa	4.56½
Puget Sound Power & Light Co., 1st & Ref. M. 4½s D, 1950, Stone & Webster and Blodget, Inc.	16,000,000	4½	94½	4.95	A	A	6.68
Metropolitan Edison Co., 1st M. 4s E, 1971, Halsey, Stuart & Co.	5,000,000	4	95	4.26	Aa	Aa	4.89½
Nebraska Power Co., 1st M. 4½s, 1981, Harris, Forbes & Co.	16,500,000	4½	102½	4.38	Aa	Aa	4.73½
Dominion Gas & Electric Co., 1st Lien & Coll. 6½s, 1945, Halsey, Stuart & Co.	8,000,000	6½	96	6.95	Ba	Ba	12.22½
Consolidated Gas Co. of N. Y., Deb. 4½s, 1951, National City Co.	60,000,000	4½	101	4.42	Aaa	Aaa	4.78
Consolidated Gas-Electric Light & Power Co. of Balt., 1st Ref. M. 4s, 1981, Aldred & Co.	18,000,000	4	95½	4.22	Aaa	Aaa	4.53½
Pennsylvania Electric Co., 1st & Ref. gold 4s "F", 1971, Halsey, Stuart & Co., Inc.	6,000,000	4	95¼	4.25	Aa	Aa	4.90
June:							
Commonwealth Edison Co., 1st M. 4s "F", 1981, Halsey, Stuart & Co., Inc.	85,000,000	4	94½	4.27	Aaa	Aaa	4.83½
Detroit Edison Co., Gen. & Ref. 4½s "D" 1961, Coffin & Burr, Inc.	15,016,000	4½	103½	4.29	Aa	Aa	4.68
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4.77
[illegible] W. C. Langley & Co.	[illegible]	4	[illegible]	[illegible]	[illegible]	[illegible]	4.46
August:							
Bridgeport Hydraulic Co., 1st M. [illegible], Lee, Higginson & Co.	5,000,000	4½	104	4.23	Aa	Aa	4.52
Houston Lighting & Power Co., 1st Lien & Ref. M. 4½s "E", 1981, Halsey, Stuart & Co., Inc.	5,000,000	4½	[illegible]	4.58	A	A	5.32
September:							
Metropolitan Edison Co., [illegible] Ref. 6s 1961, Chase-Harris, Forbes Corp.	5,000,000	6	100	6.00	Baa	Baa	6.65
November:							
Public Service Co. of Colorado, 1st M. & Ref. 6s "C" 1961, Halsey, Stuart & Co., Inc.	11,000,000	6	91	6.70	A	A	[illegible]

(1) The "average yield" shown in this exhibit is the arithmetical average of the yields computed on the basis as testified to by Witness Hammond on the high market quotation for the year and the low market quotation for the year.

July:										
Cities Service Pr. & Lt. Co., Deb. 5½s, 1949, Harris, Forbes & Co.	20,000,000	5½	93	6.11	Baa	....	Baa	....	Ba	10.39
Southern Natural Gas Corp., 1st S. F.* 6s, 1944, G. L. Ohrstrom & Co., Inc	13,000,000	6	97½	6.26	No rating	6.62½	No rating	8.40½	No rating	18.66½
August:										
Southern California Edison Co., Ref. M. 5s, 1954, Harris, Forbes & Co	15,000,000	5	98	5.14	Aa	5.12½	Aa	4.73½	Aa	4.89½
[fol. 4972]										
September:										
Tri-Utilities Corp., Conv. Deb. 5s 1979, G. L. Ohrstrom	12,500,000	5	99	5.06	B	....	B	....	B	....
Northern Indiana Public Service Co., 1st & Ref. Mtge. 5s "D" 1969, Halsey Stuart & Co	15,500,000	5	94	5.37	A	5.18	A	4.97	A	5.25½
Central States Electric Corp*., Gold Deb. 5½s, 1954, Dillon, Read & Co	25,000,000	5½	99½	5.54	No rating		No rating		No rating	11.99
October:										
Puget Sound Pr. & Light Co., 1st & Ref. M. 5½s A June 1949, Stone & Webster & Blodget	8,000,000	5½	97¾	5.69	A	5.47½	A	5.36	A	9.31½
General Water Works & Electric Corp., Conv. Deb. 6s, B, 1944, E. H. Rollins & Sons	7,250,000	6	95¼	6.50	Ba	....	B	7.84½	B	17.35½
December:										
Illinois Pr. & Lt. Corp., 1st & Ref. 5s, C, 1956, Harris, Forbes & Co.	5,000,000	5	94½	5.39	A	5.39½	A	5.32	A	6.57½
Milwaukee Electric Ry. & Lt. Co. Ref. & 1st M. 5s B, June 1961, Dillon, Read & Co	10,000,000	5	99¼	5.05	Aa	5.06	A	4.98	A	5.44
Detroit Edison Co., Gen. & Ref. Mtge. 5s, A, Oct. 1949, Coffin & Burr, Inc.	13,516,000	5	100	5.00	Aaa	4.84	Aaa	4.67½	Aaa	4.79½
Union Electric Lt. & Pr. Co. (Mo), Gen. M. 5s, B, Aug. 1967, Dillon, Read & Co	15,000,000	5	100	5.00	Aa	....	Aa	4.89	Aa	4.87½
West Texas Utilties Co., 1st M. 5s, A, Oct. 1957, Halsey, Stuart & Co	8,250,000	5	93	5.49	A	....	Baa	5.71½	Baa	8.19½

*Issued with detachable warrants for stock rights.

The "average yield" shown on this exhibit is the arithmetical average of the yields computed on the basis as testified to by Witness Hammond on the high market quotation for the year and the low market quotation for the year.

(Here follow side folios 4981-5002)

[fol. 4981]

Sales During the Year 1923 of Long-term Bonds for $5,000,000 or Over of Industrials and Others, Investment Rating (Moody's) and Yields from Date of Issue to December 31, 1931

Name of Company; Type of Issue; House of Issue	Amount Offered	Rate %	Original Public Offering		1923 Rating, Average Yield		1924 Rating, Average Yield		1925 Rating, Average Yield		1926 Rating, Average Yield		1927 Rating, Average Yield		1928 Rating, Average Yield		1929 Rating, Average Yield		
			Price	Yield															
January:																			
The American Rolling Mill Co., 15-yr. Deb. 6s, 1938, Guaranty Co. of N. Y.	7,000,000	6	100	6.00	A	6.13½	A	6.01½	A	5.82	A	5.72½	....	5.44½	Retired 7/1/28 @ 110.				
Anaconda Copper Mining Co., Cons. Mtge. Series "A" 6s, 1953, Guaranty Co. of N. Y.	100,000,000	6	96½	6.26	A	6.28	A	6.21½	A	5.97½	A	5.79	A	5.65	A	5.61	Retired 8/1/29 @		
Anaconda Copper Mining Co., conv. deb. 7s, 1938, Guaranty Co. of N. Y.	50,000,000	7	100	7.00	Baa	7.00	Baa	7.14	Baa	6.66½	Baa	6.28½	Baa	5.62	Baa	....	Retired 8/1/29 @		
Bethlehem Steel Corp., Cons. Mtge. 5½s "B", 1953, Guaranty Co. of N. Y.	25,000,000	5½	93	6.01	A	6.21	Baa	6.43	Baa	6.49½	Baa	6.08½	Baa	5.52	Baa	5.32½			
Republic Iron & Steel Co., Ref. & Gen. Mtge. 5½s, "A" 1953, Kuhn, Loeb & Co.	10,000,000	5½	94½	5.89	A	6.19	A	6.22½	A	6.10	A	5.78½	A	5.43	A	5.28½	A	5.37½	Baa
Pressed Steel Car Co., 10-yr. conv. 5s, 1933, A. G. Becker & Co.	6,000,000	5	94-3/8	5.75	A	6.27½	Baa	6.22	Baa	5.83½	Baa	5.69	Baa	5.66	Baa	4.68	Baa	9.26	Baa
Armour & Co. (of Del.) 1st M. Guar. 5½s, "A" 1943, Blair & Co., Inc.	50,000,000	5½	96	5.84	A	6.37	A	6.57½	A	6.13	Baa	6.09½	Baa	6.40	Baa	7.74	Baa	7.13	Ba
February:																			
Price Bros. & Co., Ltd., 1st Mtge. 6s, "A" 1943, Harris, Forbes & Co.	10,000,000	6	98½	6.13	Baa	6.24½	Baa	6.23	Baa	5.96	Baa	5.78½	Baa	5.57½	Baa	5.46	Baa	...	Baa
March:																			
American Chain Co., Inc., 10-yr. deb. 6s, 1933, Dillon, Read & Co.	7,500,000	6	97½	6.34	A	6.73	Baa	6.81½	Baa	6.28½	Baa	5.98	Baa	5.38½	Ba	5.94	Baa	7.11	Baa
J-H & C-K Eagle Inc. (New York), 15-yr. 6½s, 1939, Equitable Trust Co.	5,000,000	6½	100	6.50	Baa	....	No rating		No rating		Called 2/1/26 @ 105.								
Lockwood, Greene & Co., Inc., Coll. Tr. 7s, 1933, Lee, Higginson & Co.	6,000,000	7	100	7.00	No rating		No rating		B	....	B	....	....	....	No rating		Liquidation.		
April:																			
American Smelting & Refining Co., 1st M 6s "B" 1947, Kuhn, Loeb & Co.	10,000,000	6	99½	6.04	Aa	5.89½	Aa	5.17	Aa	5.52	Aa	5.36	Aa	5.30½	Retired 10/1/28 @ 107½.				
Certain-teed Products Corp., 1st M 6½s 1925-43, S. W. Straus & Co.	8,000,000	6½	100	6.50	A	....	A	....	Retired 11/1/25 @ 105.										
Federal Sugar Refining Co., 6s, 1933, Equitable Trust Co.	5,000,000	6	98	6.27	Aa	....	No rating		No rating		No rating		....	....	No rating		No rating		No r
[fol. 4982]																			
General Petroleum Corp., 6s, April 15, 1928, Blyth, Witter & Co.	10,000,000	6	97½	6.59	A	7.03	A	6.63	Aaa	5.54½	Aaa	4.17½	Redeemed.						
May:																			
Associated Simmons Hardware Co., secured 6½s, 1933, Kidder, Peabody & Co.	10,000,000	6½	98	6.78	Ba	7.27½	B	9.59½	B	8.61	B	7.14½	B	8.70	B	9.57	B	10.66	B
June:																			
Long Bell Lumber Co., (Kans. City, Mo.) 1st M 6s "B" 1925-43, Halsey, Stuart & Co.	7,500,000	6	94	6.54	Baa	....	Baa	....	Baa	....	Ba	....	Ba	....	Ba	7.10	Ba	....	B
The Pure Oil Co., 10-yr. 6½s "A" 1933, Central Trust Co. of Illinois	12,000,000	6½	99	6.64	Baa	7.62	Baa	7.18	Baa	6.44½	Baa	5.94	Retired 12/1/27 @ 103.						
Sinclair Consolidated Oil Corp., 1st Lien Coll. 6½s, "B" 1938, Blair & Co.	25,000,000	6½	94	7.16	Baa	7.53	Baa	8.16	Baa	8.22	Baa	7.70	Baa	6.88	Baa	6.57½	Baa	6.53	Baa
Standard Oil Co., (Calif.) Serial 5s, 1925-33, Dillon, Read & Co.	25,000,000	5	100 98¾	5-5.16	Aaa	....	Aaa	....			Retired 8/1/26.								
July:																			
Youngstown Sheet & Tube Co., deb. 6s, July 1, 1943; Bankers Trust Co.	40,000,000	6	99	6.09	A	6.38½	A	6.41½	A	6.13½	A	5.70			Retired 1/1/28 @ 105.				
August:																			
Associated Oil Co., 12-yr. 6s, 1935, Kuhn, Loeb & Co.	24,000,000	6	100	6.00	A	6.66½	A	6.08½	A	5.65½	A	5.59	A	5.55	A	5.35	A	5.40½	A
September:																			
The Willys-Overland Co., 1st Mtge. 6½s, 1933, National City Co.	10,000,000	6½	98	6.78	Baa	....	Baa	6.71	Baa	6.29	Baa	6.10½	Baa	5.97½	Baa	5.89	Baa	6.42	Baa
California Petroleum Corp., 6½s, 1933, Blair & Co.	8,000,000	6½	96½	6.99	A	7.14	A	6.74½	A	6.08½			Retired 4/1/27 @ 103½.						
October:																			
Pillsbury Flour Mills Co., 1st Mtge. 6s, 1943, National City Co.	6,000,000	6	95	6.45	Baa	6.42	Baa	6.22	Baa	5.89½	Baa	5.76½	Baa	5.63	Baa	5.62	Baa	5.62½	Baa
International Match Corp. (Del.) Conv. Deb. 6½s, 1943, Lee, Higginson & Co.	75,000,000	6½	94½	7.02	A	7.10	Retired.												
November:																			

Sales During the Year 1923 of Long-term Bonds for $5,000,000 or Over of Industrials and Others, Investment Rating (Moody's) and Yields from Date of Issue to December 31, 1931

mpany; Type of Issue; House of Issue	Amount Offered	Rate %	Original Public Offering		1923 Rating, Average Yield		1924 Rating, Average Yield		1925 Rating, Average Yield		1926 Rating, Average Yield		1927 Rating, Average Yield		1928 Rating, Average Yield		1929 Rating, Average Yield		1930 Rating, Average Yield		1931 Rating, Average Yield	
			Price	Yield																		
ing Mill Co., 15-yr. Deb. 6s, 1938, Guaranty	7,000,000	6	100	6.00	A	6.13½	A	6.01½	A	5.82	A	5.72½	....	5.44½	Retired 7/1/28 @ 110.							
Mining Co., Cons. Mtge. Series "A" 6s, 1953, N. Y.	100,000,000	6	96½	6.26	A	6.28	A	6.21½	A	5.97½	A	5.79	A	5.65	A	5.61	Retired 8/1/29 @ 105.					
Mining Co., conv. deb. 7s, 1938, Guaranty	50,000,000	7	100	7.00	Baa	7.00	Baa	7.14	Baa	6.66½	Baa	6.28½	Baa	5.62	Baa	....	Retired 8/1/29 @ 110.					
rp., Cons. Mtge. 5½s "B", 1953, Guaranty	25,000,000	5½	93	6.01	A	6.21	Baa	6.43	Baa	6.49½	Baa	6.08½	Baa	5.52	Baa	5.32½			Retired 2/1/30 @ 107.			
eel Co., Ref. & Gen. Mtge. 5½s, "A" 1953,	10,000,000	5½	94½	5.89	A	6.19	A	6.22½	A	6.10	A	5.78½	A	5.43	A	5.28½	A	5.37½	Baa	6.23	Baa	9.29
o., 10-yr. conv. 5s, 1933, A. G. Becker & Co.	6,000,000	5	94-3/8	5.75	A	6.27½	Baa	6.22	Baa	5.83½	Baa	5.69	Baa	5.66	Baa	4.68	Baa	9.26	Baa	11.96½	Baa	21.46
Del.) 1st M. Guar. 5½s, "A" 1943, Blair &	50,000,000	5½	96	5.84	A	6.37	A	6.57½	A	6.13	Baa	6.09½	Baa	6.40	Baa	7.74	Baa	7.13	Ba	8.33	Ba	10.79
Ltd., 1st Mtge. 6s, "A" 1943, Harris, Forbes	10,000,000	6	98½	6.13	Baa	6.24½	Baa	6.23	Baa	5.96	Baa	5.78½	Baa	5.57½	Baa	5.46	Baa	....	Baa	5.71	Ba	10.78
o, Inc., 10-yr. deb. 6s, 1933, Dillon, Read	7,500,000	6	97½	6.34	A	6.73	Baa	6.81½	Baa	6.28½	Baa	5.98	Baa	5.38½	Ba	5.94	Baa	7.11	Baa	6.16½	Baa	9.21½
nc. (New York), 15-yr. 6½s, 1939, Equitable	5,000,000	6½	100	6.50	Baa	....	No rating		No rating		Called 2/1/26 @ 105.											
& Co., Inc., Coll. Tr. 7s, 1933, Lee, Higgin-	6,000,000	7	100	7.00	No rating		No rating		B	...	B	....	....	....	No rating		Liquidation.					
& Refining Co., 1st M 6s "B" 1947, Kuhn,	10,000,000	6	99½	6.04	Aa	5.89½	Aa	5.17	Aa	5.52	Aa	5.36	Aa	5.30½	Retired 10/1/28 @ 107½.							
ts Corp., 1st M 6½s 1925–43, S. W. Straus	8,000,000	6½	100	6.50	A	....	A	....	Retired 11/1/25 @ 105.													
ing Co., 6s, 1933, Equitable Trust Co.	5,000,000	6	98	6.27	Aa	....	No rating		No rating		No rating		....	....	No rating		No rating		No rating		Int. due 5/1/31 defaulted.	
Corp., 6s, April 15, 1928, Blyth, Witter & Co.	10,000,000	6	97½	6.59	A	7.03	A	6.63	Aaa	5.54½	Aaa	4.17½	Redeemed.									
Hardware Co., secured 6½s, 1933, Kidder,	10,000,000	6½	98	6.78	Ba	7.27½	B	9.59½	B	8.61	B	7.14½	B	8.70	B	9.57	B	10.66	B	....	B	....
Co., (Kans. City, Mo.) 1st M 6s "B" 1925– & Co.	7,500,000	6	94	6.54	Baa	....	Baa	....	Baa	....	Ba	....	Ba	....	Ba	7.10	Ba	....	B	....	B	....
10-yr. 6½s "A" 1933, Central Trust Co. of	12,000,000	6½	99	6.64	Baa	7.62	Baa	7.18	Baa	6.44½	Baa	5.94	Retired 12/1/27 @ 103.									
l Oil Corp., 1st Lien Coll. 6½s, "B" 1938,	25,000,000	6½	94	7.16	Baa	7.53	Baa	8.16	Baa	8.22	Baa	7.70	Baa	6.88	Baa	6.57½	Baa	6.53	Baa	6.99½	Baa	10.68½
alif.) Serial 5s, 1925–33, Dillon, Read & Co.	25,000,000	5	100 98¾	5-5.16	Aaa	....	Aaa	...			Retired 8/1/26.											
& Tube Co., deb. 6s, July 1, 1943; Bankers	40,000,000	6	99	6.09	A	6.38½	A	6.41½	A	6.13½	A	5.70			Retired 1/1/28 @ 105.							
2-yr. 6s; 1935, Kuhn, Loeb & Co.	24,000,000	6	100	6.00	A	6.66½	A	6.08½	A	5.65½	A	5.59	A	5.55	A	5.35	A	5.40½	A	5.28	A	5.56½
Co., 1st Mtge. 6½s, 1933, National City Co.	10,000,000	6½	98	6.78	Baa	....	Baa	6.71	Baa	6.29	Baa	6.10½	Baa	5.97½	Baa	5.89	Baa	6.42	Baa	8.00	Baa	10.60½
Corp., 6½s, 1933, Blair & Co.	8,000,000	6½	96½	6.99	A	7.14	A	6.74½	A	6.08½			Retired 4/1/27 @ 103½.									
Co., 1st Mtge. 6s, 1943, National City Co.	6,000,000	6	95	6.45	Baa	6.42	Baa	6.22	Baa	5.89½	Baa	5.76½	Baa	5.63	Baa	5.62	Baa	5.62½	Baa	5.52½	Baa	6.09½
Corp. (Del.) Conv. Deb. 6½s, 1943, Lee,	75,000,000	6½	94½	7.02	A	7.10	Retired.															

Pillsbury Flour Mills Co., 1st Mtge. 6s, 1943, National City Co.	6,000,000	6	95	6.45	Baa	6.42	Baa	6.22	Baa	5.89½	Baa	5.76½	Baa	5.63	Baa	5.62	Baa	5.62½	Ba
International Match Corp. (Del.), Conv. Deb. 6½s, 1943, Lee, Higginson & Co.	75,000,000	6½	94½	7.02	A	7.10	Retired.												
November:																			
General Cigar Co. Inc. (N. Y.) Serial 6s, 1925-35, Goldman, Sachs & Co.	7,700,000	6	..	6.00	Aa	....	A	....	A	....	A	....	A	....	A	....	Aa	....	Aa
[fol. 4983]																			
Webster Mills, 16-yr. 6½s, 1933, Brown Bros. & Co.	5,500,000	6½	99	6.64	Aa	6.46½	A	5.86½	Baa	6.40½	Ba	7.35½	Ba	7.68½	Ba	8.05½	Ba	9.39	..
December:																			
Lehigh & Wilkesbarre Corp., Coll. Trust 5½s, Jan. 1925-34, White Weld & Co.	10,000,000	5½	..	5.25-5.50	A	....	A	....	A	....	A	....			Retired 1/1/28 @ 103.				
Warner Sugar Corp., 1st & Ref. Mtge. 7s "A", Jan. 1939, Blair & Co.	6,000,000	7	96½	7.39	Baa	7.36	No rating	8.66½	No rating	9.48½	Ba	11.49	No rating	9.32½	No rating	8.48	No rating	10.79½	B

The "average yield" shown on this exhibit is the arithmetical average of the yields computed on the basis as testified to by Witness Hammond on the high market quotation for the year and the low market quotation for the year.

1st Mtge. 6s, 1943, National City Co.	6,000,000	6	95	6.45	Baa	6.42	Baa	6.22	Baa	5.89½	Baa	5.76½	Baa	5.63	Baa	5.62	Baa	5.62½	Baa	5.52½	Baa	6.09½
(Del.) Conv. Deb. 6½s, 1943, Lee, ...	75,000,000	6½	94½	7.02	A	7.10	Retired.															
Y.) Serial 6s, 1925-35, Goldman, ...	7,700,000	6	..	6.00	Aa	....	A	....	A	....	A	....	A	....	A	....	Aa	....	Aa	....	Aa	....
1933, Brown Bros. & Co.	5,500,000	6½	99	6.64	Aa	6.46½	A	5.86½	Baa	6.40½	Ba	7.35½	Ba	7.68½	Ba	8.05½	Ba	9.39	....	7.81	Retired 6/1/31 @ 101.	
p., Coll. Trust 5½s, Jan. 1925-34, ...	10,000,000	5½	..	5.25-5.50	A	....	A	....	A	....	A	....			Retired 1/1/28 @ 103.							
Ref. Mtge. 7s "A", Jan. 1939, Blair	6,000,000	7	96½	7.39	Baa	7.36	No rating	8.66½	No rating	9.48½	Ba	11.49	No rating	9.32½	No rating	8.48	No rating	10.79½	B	20.54½	B	28.10

The "average yield," shown on this exhibit is the arithmetical average of the yields computed on the basis as testified to by Witness Hammond on the high market quotation for the year and the low market quotation for the year.

[fol. 4984]

[fol. 4945]

Name of Company; Type of Issue; House of Issue	Amount Offered	Rate %	Price	[illegible]	1925 Rating Average Yield	1926 Rating Average Yield	1927 Rating Average Yield	1928 Rating Average Yield	1929 Rating Average Yield	[illegible] Rating Average Yield	[illegible]
January:											
Continental Paper & Bag Mills Corp., 1st & Ref. M 6½s, "A", 1944, Bankers Trust Co.	$6,000,000	6½	95	[illegible]	[illegible] 8.07½	B 9.02	B 8.57	B 7.88	B [illegible]	[illegible]	[illegible]
February:											
The Lehigh Valley Coal Co., 1st & Ref. Mtge. 5s, 1934-74, Drexel & Co.	15,000,000	5	[illegible]	[illegible]	[illegible]	A	A	A	Baa	[illegible]	[illegible]
March:											
Continental Motors Corp., 1st Mtge. 6½s, 1939, Halsey, Stuart & Co.	7,500,000	6½	[illegible]								
Botany Consolidated Mills, Inc., 10-yr. secured 6½s, 1934, Blair & Co.	8,000,000	6½	[illegible]	[illegible]	Baa	Baa	Baa	6.28	Retired [illegible]		
Western Electric Co., Inc., [illegible] 5s, 1944, J. P. Morgan & Co.	35,000,000	5	[illegible]	[illegible]	Ba 7.23 Aaa 5.01	Ba 8.70 Aaa 4.85	Ba 9.20½ Aaa 4.74½	B 14.17 Aaa 4.71	B [illegible] Aaa [illegible]	[illegible]	[illegible]
April:											
General American Tank Car Corp., Equip. Tr. 5½s, "B", 1925-34, Drexel & Co.	5,000,000	5½	[illegible]								
May:											
Bethlehem Steel Corp., Consol. Mtge. 6s, "A", 1948, Guaranty Co. of N. Y.	30,000,000	6	[illegible]	[illegible]	Baa [illegible]	Baa 6.14	Baa 5.70½	Baa [illegible]	Retired [illegible]		
July:											
The M. A. Hanna Co., [illegible] 6s, 1934, Dillon, Read & Co.	7,000,000	6	[illegible]	[illegible]	Ba 7.84	Ba 7.20½	Ba 7.11½	Ba [illegible]	Ba [illegible]	[illegible]	[illegible]
August:											
Old Ben Coal Corp., 1st M. 6s, 1944, Drexel & Co.	8,000,000	6	[illegible]	[illegible]	Baa [illegible]	Ba 6.70	Ba 6.81	Ba 6.90	Ba [illegible]	[illegible]	[illegible]
Old Ben Coal Corp., [illegible] 7½s, 1934, Cassatt & Co.	5,000,000	7½	[illegible]	[illegible]	Ba	B	B	B 10.90	B [illegible]	[illegible]	[illegible]
Sun Oil Co., deb. 5½s, 1939, Lee, Higginson & Co.	10,000,000	5½	[illegible]	[illegible]	A 5.78	A 5.60½	A 5.41½	A 5.35	A [illegible]	[illegible]	[illegible]
[fol. 4985]											
September:											
General Asphalt Co., 15-yr. conv. 6s, 1939. Underwritten by Drexel & Co., Co. [illegible]	5,000,000	6	[illegible]	[illegible]	A [illegible]	A 5.24½	A 4.97	A	Retired [illegible]		
October:											
Wheeling Steel Corp., 1st & Ref. M. 5½s "A", 1948, Lee, Higginson & Co.	15,000,000	5½	[illegible]	[illegible]	A [illegible]	A 5.78½	A 5.54	A 5.34	A [illegible]	[illegible]	[illegible]
Pan American Petroleum & Transport Co., 10-yr. Conv. 6s, 1934, Blair & Co.	12,000,000	6	[illegible]	[illegible]	Baa 4.55	Baa 4.78	Baa 5.30	A 4.98	A [illegible]	[illegible]	[illegible]
November:											
South Penn. Collieries Co., 1st M. 6s, "A", 1944, Lee, Higginson & Co.	5,000,000	6	[illegible]	[illegible]	No rating	No rating	No rating	No rating	No rating Default in Interest	[illegible]	[illegible]
December:											
Central Leather Co., 1st Lien 6s, 1945, Kuhn, Loeb & Co.	15,000,000	6	[illegible]		Baa 6.15½	Baa 5.87		Retired [illegible] 1928 [illegible]			
Andes Copper Mining Co., Conv. Deb. 7s, 1943, National City Co.	40,000,000	7	[illegible]	[illegible]	No rating 7.60	No rating 6.77½	Ba 5.57½		Retired [illegible]		
West Virginia Coal & Coke Co., 1st (closed) M. 6s, 1950, First National Bank, N. Y.	10,000,000	6	[illegible]	[illegible]	B [illegible]	B 8.20 (Reorganized)	No rating	No rating 15.37	Retired [illegible]		

The "average yield" shown on this exhibit is the arithmetical average [illegible] yields computed on the basis as testified to by Witness Hammond on the high market quotation for the year and the low market quotation for the year.

Type of Issue; House of Issue	Amount Offered	Rate %	Original Public Offering		1924 Rating, Average Yield		1925 Rating, Average Yield		1926 Rating, Average Yield		1927 Rating, Average Yield		1928 Rating, Average Yield		1929 Rating, Average Yield		1930 Rating, Average Yield		1931 Rating, Average Yield	
			Price	Yield																
ls Corp., 1st & Ref. M 6½s, "A",	$6,000,000	6½	95	6.97	No rating	7.32½	Ba	8.07½	B	9.02	B	8.57	B	7.88	B	6.82	No rating		No rating	
1st & Ref. Mtge. 5s, 1934-74, Drexel	15,000,000	5	....	5.30—5.40	No rating		A	....	A	....	A	....	A	....	Baa	....	Ba	....	P	....
1st Mtge. 6½s, 1939, Halsey, Stuart	7,500,000	6½	95½	6.99	Baa	....	Baa	....	Baa	....	Baa	....	....	6.28	Retired 4/15/29 @ 102¼.					
Inc., 10-yr. secured 6½s, 1934,	8,000,000	6½	96½	6.99	Baa	....	Ba	7.23	Ba	8.70	Ba	9.29½	B	14.17	B	27.10	B	35.75	B	
b. 5s, 1944, J. P. Morgan & Co	35,000,000	5	96½	5.29	Aaa	5.16½	Aaa	5.01	Aaa	4.85	Aaa	4.74½	Aaa	4.71	Aaa	4.77	Aaa	4.68½	Aaa	5.18½
Corp., Equip. Tr. 5½s, "B", 1925-34,	5,000,000	5½	To Yield	5.00 5.75	....	....	....	....	....	....	....	....	....	....	....	....	....	....	A	....
Mtge. 6s, "A", 1948, Guaranty	30,000,000	6	96	6.33	Baa	6.30½	Baa	6.40½	Baa	6.14	Baa	5.70½	Baa	5.66½	Retired 2/1/30 @ 105.					
deb. 6s, 1934, Dillon, Read & Co	7,000,000	6	98½	6.20	Ba	....	Ba	7.84	Ba	7.20½	Ba	7.11½	Ba	6.72½	Ba	6.85	No rating	6.40	Ba	7.32½
1944, Drexel & Co	8,000,000	6	98	6.18	Baa	6.17	Baa	6.18½	Ba	6.70	Ba	6.81	Ba	6.90	Ba	8.29	B	11.63½	B	30.45
7½s, 1934, Cassatt & Co	5,000,000	7½	100	7.50	Ba		Ba	....	B	....	B	....	B	10.90½	B	13.71	B	22.16	B	46.18
Lee, Higginson & Co	10,000,000	5½	99¾	5.52	No rating	5.93	A	5.78	A	5.60½	A	5.41½	A	5.35	A	6.07	A	5.34	A	6.39½
Conv. 6s, 1939. Underwritten by	5,000,000	6	97½	6.26	A	....	A	5.70½	A	5.24½	A	4.97½	A	....	Retired 10/1/29 @ 105.					
M. 5½s "A", 1948, Lee, Higgin-	15,000,000	5½	96½	5.77	A	....	A	6.05½	A	5.78½	A	5.54½	A	5.34½	A	5.50	Baa	5.50½	Ba	8.76½
ransport Co., 10-yr. Conv. 6s, 1934,	12,000,000	6	97	6.41	Baa	5.99	Baa	4.55	Baa	4.78	Baa	5.30	A	4.98	A	4.75	A	4.73½	A	5.50
M. 6s, "A", 1944, Lee, Higginson	5,000,000	6	94½	6.50	Ba	....	No rating		No rating		No rating		No rating		No rating Default in Interest.		No rating		No rating	
1945, Kuhn, Loeb & Co	15,000,000	6	95	6.44	A	....	Baa	6.15½	Baa	5.87			Retired 1/1/28 @ 105.							
Deb. 7s, 1943, National City Co.	40,000,000	7	100	7.00	No rating	6.94½	No rating	7.30½	No rating	6.77½	Ba	5.57½			Retired 1/1/29 @ 110.					
o., 1st (closed) M. 6s, 1950, First	10,000,000	6	96	6.31	No rating		Ba	6.92	B (Reorganized)	8.29	No rating		No rating	15.37½	Retired under Reorganization Plan.					

The "average yield" shown on this exhibit is the arithmetical average of the yields computed on the basis as testified to by Witness Hammond on the high market quotation for the year and the low market quotation for the year.

[fol. 4986]

Sales During the Year 1925 of Long-term Bonds for $5,000,000 or Over, of Industrials and Others, Investment Rating (Moody's), and Yield from Date of Issue to December 31, 1931.

Name of Company; Type of Issue; House of Issue	Amount Offered	Rate %	Original Public Offering		1925 Rating, Average Yield		1926 Rating, Average Yield		1927 Rating, Average Yield		1928 Rating, Average Yield		1929 Rating, Average Yield		1930 Rating, Average Yield		1931 Rating, Average Yield	
			Price	Yield														
January:																		
A. M. Byers Co., 1st M. 6s, 1945, Dillon Read & Co.	$5,000,000	6	99	6.09	Baa	....	Retired 12,1/26 @ 103.											
Mid-Continent Petroleum Corp., 1st M. 6½s, 1940, Kuhn, Loeb, & Co.	12,500,000	6½	97½	6.77	Baa	6.61	Baa	6.14	Baa	5.98½	Baa	5.87	Retired 3/1/29 @ 105.					
Union Oil Co. of Calif., 10 yr. 5s, 1935, Dillon, Read & Co.	10,000,000	5	96	5.53	A	5.63	A	5.39	A	5.15½	A	5.13	A	5.42½	A	4.84	A	6.11
February:																		
Magnolia Petroleum Co., Deb. 4½s, 1926–35, National City Co.	15,000,000	4½	..	4.25–4.90	Aaa	....	Aaa	5.55½	Aaa	4.11½	Aaa	4.74½	Aaa	....	Aaa	....	Aaa	....
(S. D.) Warren Co., 1st M. 6s, 1945, Estabrook & Co.	6,000,000	6	98	6.18	Baa	6.00	Baa	6.11½	Baa	5.71	Baa	5.68	Baa	5.90½	Ba	7.86½	Ba	8.92
United States Rubber Co., 6½% Gold Notes, 1926–1940, Kuhn, Loeb & Co.	30,000,000	6½		to yield 5.20 6.82	Baa	....	Baa	....	Ba	....	Ba	....	Ba	...	B	....	B	
March:																		
International Paper Co., Ref. M. 6s, "A", 1955, Bankers Trust Co.	15,587,000	6	96	6.30	Baa	6.22½	Baa	6.12	Baa	5.83½	Baa	6.04	Ba	6.71½	Ba	8.55	Ba	15.84
Utah-Idaho Sugar Co., 1st M. 6s, 1926–40, Kidder Peabody & Co.	7,000,000	6	..	5½–6¼	Ba	....	Ba	....	Ba	....	Ba	....	No rating		No Rating		No rating	
April:																		
Dodge Bros., Inc., 15 yr. Conv. deb. 6s, 1940, Dillon, Read & Co.	75,000,000	6	99	6.10	Baa	6.32	Ba	6.57	Ba	7.35½	Baa	6.32½	Baa	6.51	Baa	8.08	Baa	8.87½
Houston Oil Co., of Texas, 10-yr. 6½s, 1935, Whitaker & Co.	7,000,000	6½	100	6.50	Baa	...	Baa	6.29	No rating	5.94½	Retired 10/1/28 @ 103½.							
May:																		
Minnesota & Ontario Paper Co., 1st M. 6s, "A" 1930-45, Halsey Stuart & Co.	16,000,900	6	99½–98	6.04 6.18	No rating		No rating		Baa	....	Baa	....	Baa	..	No rating		P. & I. due 4/1/31 in default	
June:																		
American Linseed Co., 6s, 1930–35, Equitable Trust Co., N. Y.	6,000,000	6	100	6.00	Ba	....	Ba	....	Baa	....	Baa				Retired 6/15/30 @ 100½.			
[fol. 4987]																		
July:																		
Hershey Chocolate Co., 1st M. & Coll. Tr. 5½s, 1940, National City Co.	20,000,000	5½	98	5.70	A	5.57½	A	5.41	Retired 1/1/28 @ 103.									
August:																		
The United Oil Co., 1st M. & Coll. Tr. Conv. 6½s, 1935, Aronson & Co.	5,000,000	6½	100	6.50	Baa	6.53½	....	5.92	Retired 3/1/27 @ 105.									
North American Cement Corp., deb. 6½s,* "A" 1940, Hemphill, Noyes & Co.	6,000,000	6½	98½	6.66	Baa	6.50½	Ba	6.84½	B	8.11	B	9.33½	B	14.85½	B	15.51½	B	29.77½
September:																		
Walworth Co., 1st M. 6s "A" 1945, E. H. Rollins & Sons	8,500,000	6	98½	6.13	Baa	6.23½	Baa	6.54½	Ba	6.55½	Ba	7.27	Ba	7.17	Ba	8.95	Ba	20.30½
General Petroleum Corp., 1st M. 5s, 1940, Blyth, Witter & Co.	18,000,000	5	94¾	5.52	Aaa	5.59½	Aaa	4.97½	Aaa	4.84½	Aaa	4.86	Aaa	4.91½	Aaa	4.83½	Aaa	5.04
October:																		
By-Products Coke Corp., 1st M. 5½s, "A" 1945, Lee, Higginson & Co.	5,000,000	5½	94¼	6.00	Ba	5.85½	Baa	5.58½	Baa	5.34	Baa	5.34½	Baa	5.35½	Baa	5.22½	Baa	8.27
American Type Founders Co., Deb. 6s, 1940, Lazard Freres and Lehman Bros.	5,000,000	6	100	6.00	Baa	5.75	Baa	5.72½	Baa	5.43½	Baa	5.55	Baa	5.54	Baa	5.36½	Baa	5.87
Anglo-Chilian Consol. Nitrate Corp.,* deb. 7s, 1945, Lehman Bros.	16,500,000	7	100	7.00	No rating	7.07½	B	8.38½	B	7.88½	B	7.17½	B	8.28	B	9.54	B	...
Inland Steel Co., deb. 5½s, 1945, Kuhn, Loeb & Co.	12,500,000	5½	98½	5.63	A	6.08	A	5.47½			Retired 5/1/28 @ 103½.							
United States Smelting Refining & Mining Co., 5½s, 1935, Lee, Higginson & Co.	8,000,000	5½	99	5.63	Aa	5.50½	Aa	5.25½	Aa	5.06	Aa	5.07½	Retired 5/1/29 @ 104.					
November:																		
National Dairy Products Corp. (Del.), Coll. Tr. 6s, 1940, Goldman, Sachs & Co.	15,000,000	6	98½	6.15	Baa	6.21½	Baa	6.22			Retired 3/28/28 @ 103½.							
The Trumbull Steel Co., 1st M. 6s, 1940, Bankers Trust Co.	13,000,000	6	96	6.42	Baa	6.36½	Baa	6.34½	A	6.12	A	5.74	A	5.77½	Baa	6.59½	Baa	10.93
The Trumbull Steel Co., Deb. 7s, 1935*, Otis & Co.	5,000,000	7	100	7.00	Ba	7.29	Ba	7.37	Baa	7.10½	Baa	6.29	Baa	6.61½	Ba	6.89	Ba	16.50
December:																		
Belding Hemingway Co., Conv. 6s, 1936, Bankers Trust Co., Jan. 1, 1936	5,410,000	6	99¾	6.03	Ba	5.99	Ba	6.43½	Ba	6.53	Ba	6.87	B	9.50	B	11.25½	B	8.14
Albert Pick & Co. (Chicago), debenture 6s, 1936, Manufacturers Trust Co., N. Y., Jan. 1, 1936	6,000,000	6	98⅛	6.20	Baa		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

National Dairy Products Corp. (Del.), Coll. Tr. 6s, 1940, Goldman, Sachs & Co.	15,000,000	6	98½	6.15	Baa	6.21½	Baa	6.22			Retired 3/28/28 @ 103½.									
The Trumbull Steel Co., 1st M. 6s, 1940, Bankers Trust Co.	13,000,000	6	96	6.42	Baa	6.36½	Baa	6.34½	A	6.12	A	5.74	A	5.77½	Baa	6.59½	Baa	10.93		
The Trumbull Steel Co., Deb. 7s, 1935*, Otis & Co.	5,000,000	7	100	7.00	Ba	7.29	Ba	7.37	Baa	7.10½	Baa	6.29	Baa	6.61½	Ba	6.89	Ba	16.50		
December:																				
Belding Hemingway Co., Conv. 6s, 1936, Bankers Trust Co., Jan. 1, 1936	5,410,000	6	99¾	6.03	Ba	5.99	Ba	6.43½	Ba	6.53	Ba	6.87	B	9.50	B	11.25½	B	8.14		
Albert Pick & Co. (Chicago), debenture 6s, 1936, Manufacturers Trust Co., N. Y., Jan. 1, 1936	6,000,000	6	98½	6.20	Baa	....	Baa	6.51½	Baa	6.29½	Baa	6.36½	No rating	8.67	No rating	14.73½	No rating			
[fol. 4988]																				
Pan-American Petroleum Co. (of Calif.), 1st M. 15-yr. conv. 6s, 1940, Blair & Co.	15,000,000	6	99	6.10	Baa	5.71½	Baa	5.80½	Ba	6.47½	Ba	6.52½	Ba	6.62½	No rating	8.61½	No rating			
Consumers Co., 1st S. F. Gold 6s, Jan. 1, 1946, Halsey Stuart & Co., Inc.	6,000,000	6	98	6.17	Baa	....	Baa	6.18½	Baa	6.16	Baa	5.96½	Baa	6.54	Ba	7.10½	Ba	12.96		

* Issued with warrants for stock rights. The "average yield" shown on this exhibit is the arithmetical average of the yields computed on the basis as testified to by Witness Hammond on the high market quotation for the year and the low market quotation for the year.

[fol. 4989] Sales During the Year 1926 of Long-term Bonds for $5,000,000 or Over, of Industrials and Others, Investment Rating (Moody's), and Yields from Date of Issue to December 31, 1931

Name of Company; Type of Issue; House of Issue	Amount Offered	Rate %	Original Public Offering		1926 Rating, Average Yield		1927 Rating, Average Yield		1928 Rating, Average Yield		1929 Rating, Average Yield		1930 Rating, Average Yield		1931 Rating, Average Yield	
			Price	Yield												
January:																
*Barnsdall Corp., Deb. 6s, 1940, Blair & Co	$25,000,000	6	100	6.00	Ba	6.16½	Ba	5.85			Retired 2/15/29.					
Chicago By-Product Coke Co., 1st & Ref. 5s, A, 1976, Union Trust Co. of Pittsburgh	13,000,000	5	94¾	5.30	Baa	5.10½	Baa	4.96	Assumed by Peoples Gas Light & Coke Co. 2/1/28.							
Crown Williamette Paper Co., 1st Mtge. 6s, Blyth, Witter & Co., 1951	20,000,000	6	99	6.08	Baa	6.08	Baa	5.88½	Baa	5.99½	Baa	5.93	Baa	6.13½	Baa	8.20
Fisk Rubber Co., 5 yrs. 5½s, S. F. gold notes Jan. 1, 1931, Dillon, Read & Co	10,000,000	5½	98¼	5.91	Baa	6.18	Baa	6.08½	Ba	7.99½	B	....	Caa	....	Caa	....
February:																
The Otis Steel Co., 1st M. 6s, "A" 1941, Blair & Co	12,000,000	6	98½	6.15	Ba	6.61	Baa	6.44	Baa	6.06	Baa	5.86	Ba	6.14½	Ba	12.20
Pacific Mills 5½s, Feb. 1, 1931, Lee, Higginson & Co	17,500,000	5½	96¾	6.27	Ba	....	Ba	....	Ba	....			Retired 8/1/30 @ 100½.			
March:																
Brown Co., 1st M. 5½s, A, 1946, Harris, Forbes & Co	20,000,000	5½	97	5.75	No rating	5.76½	Baa	5.48	Baa	5.39	Baa	5.76	Ba	6.58	Ba	10.50½
Goodyear Tire & Rubber Co. of Calif., 5 yr. 5½s, 1931, Dillon, Read & Co	5,000,000	5½	98½	5.85	Baa	6.21	Baa	6.08½	Baa	5.95½	Baa	6.14½				
Inspiration Consolidated Copper Co., 5 yr. 6½s, 1931, Guaranty Co. of N. Y	6,000,000	6½	100	3.50	Ba	6.16	Ba	6.54	Ba	6.08½	Ba	5.97	Retired.			
Keith (B. F.) Corp., 1st & Gen. Ref. Mtge. 6s, 1946, Dillon, Read & Co	6,000,000	6	100	6.00	Baa	....	Baa	6.15	No rating	6.07	No rating	7.62	No rating	8.03	No rating	13.33
McKeesport Tin Plate Co., 1st Mtge. gold 6s, 20-yr. S. F. Gold Bonds 1946, Bank of Pittsburgh	6,000,000	6	101½	5.87	No rating				Retired Nov. 1, 1928 @ 103.							
April:																
St. Regis Paper Co., 5-yr. Deb. 6s, April 1, 1931, F. L. Carlisle & Co	5,000,000	6	99½	6.12	Baa	....	Baa	....	Baa	5.95½	Baa	6.77	....	6.00½		
May:																
Pickering Lumber Co., 1st M. 6s "A" 1946, Halsey, Stuart & Co	7,500,000	6	100	6.00	Ba	6.30½	Ba	6.27	Ba	6.23½	No rating	6.67½	No rating		5/14/31—Receivership.	
[fol. 4990]																
Indiana Limestone Co., 10 yr. 7% S. F.* gold deb. 1936, E. W. Chress & Co	5,000,000	7	99	7.14	Ba	....	Ba	....	B	....	B	....	B	....	....	....
June:																
Container Corp. of America, 1st M. 6s, 1946, National City Co	5,000,000	6	99	6.09	Baa	6.19	Baa	6.16	Baa	5.96½	Baa	6.53	Ba	7.10½	Ba	16.85
July:																
The Long Bell Lumber Co., 1st M. 6s, Series "B" and "C" due 1943–1946, Halsey, Stuart Co	8,720,000	6	97	6.26	Ba	....	Ba	....	Ba	....	Ba	....	B	....	B	....
August:																
Westinghouse Elec. & Mfg. Co., 20 yr. 5s, 1946, Kuhn, Loeb & Co.	30,000,000	5	99	5.08	Aaa	4.94½	Aaa	4.75	Aaa	4.72	Retired 3/1/29 @ 105.					
September:																
Consolidated Cigar Corp., Conv. 6s, 1936, Hornblower & Weeks	10,000,000	6	99½	6.07	Baa	6.10			Retired 1/4/28 @ 102.							
Penn-Dixie Cement Corp., 1st M. 6s, "A", 1941, National City Co.	13,000,000	6	99½	6.05	Baa	6.02½	Baa	6.13½	Baa	6.30	Ba	9.43	Ba	9.91½	Ba	15.60
Stanley-Crandall Co. of Washington, D. C., Guar. 1st Mtge. S. F. 6s, 1946, Brown Bros. & Co.	5,000,000	6	100	6.00	Baa	....	Baa	....	Baa	....	Ba	....	Ba	....	Ba	....
Macy (R. H.) & Co., Inc., 5¼s, Ser. Gold deb. 1927–36, Ehman Bros	7,500,000	5¼	To Yield	4.75–5.25	A	....	A	....	A	....	....	....	....	....	....	....
October:																
International Paper Co., Conv. Deb. 6s, 1941, Bankers Trust Co.	25,000,000	6	98	6.21	Ba	6.17½	Retired 12/1/27 @ 102½.									
California Petroleum Corp. 12-yr. Conv. Deb. 5½s, 1938, Blair & Co.	12,000,000	5½	98	5.73	A	5.46½	Baa	5.61½	Baa	5.13	Baa	5.70	Baa	5.42½	Baa	9.69½
Richfield Oil Co. of Calif., 1st M. & Coll. Tr. Conv. 6s, "A", 1941, Bond & Goodwin & Tucker, Inc.	12,000,000	6	99	6.10	Baa	6.18	Baa	6.51½			Retired 2/15/29 @ 102½.					
Hood Rubber Co., 10 yrs. Conv. 5½s, gold notes 1936, Bankers Trust Co	5,000,000	5½	98½	5.70	No rating	5.78½	No rating	6.21½	B	7.20½	B	7.68½	B	10.49	B	15.75½
International Paper Co., Conv. 6s, gold deb. 1941, Bankers Trust Co																

& Co.	12,000,000	5½	98	5.73	A	5.46½	Baa	5.61½	Baa	5.13	Baa	5.70	Baa	5.42½	Baa	9.69½
Richfield Oil Co. of Calif., 1st M. & Coll. Tr. Conv. 6s, "A", 1941, Bond & Goodwin & Tucker, Inc.	12,000,000	6	99	6.10	Baa	6.18	Baa	6.51½			Retired 2/15/29 @ 102½.					
Hood Rubber Co., 10 yrs. Conv. 5½s, gold notes 1936, Bankers Trust Co.	5,000,000	5½	98½	5.70	No rating	5.78½	No rating	6.21½	B	7.20½	B	7.68½	B	10.49	B	15.75½
International Paper Co., Conv. 6s, gold deb. 1941, Bankers Trust Co.	25,000,000	6	98	6.21	Ba	6.17½	Retired Dec. 1, 1927 @ 102½.									
[fol. 4991]																
November:																
The Youngstown Sheet & Tube Co., deb. 6s, July 1943, Bankers Trust Co.	10,000,000	6	103½	5.67	A	5.69½			Retired 1/1/28 @ 105.							
Gotham Silk Hosiery Co., Inc., 10 yr. deb. 6s, 1936, Hallgarten & Co.	6,000,000	6	100	6.00	Baa	....	Baa	6.01	Baa	5.80½	Ba	7.52½	Ba	9.34	Ba	11.41
Standard Oil Co. (N. J.), 20 yr. deb. 5s, 1946, J. P. Morgan & Co.	120,000,000	5	100½	4.96	Aaa	4.83	Aaa	4.75½	Aaa	4.75	Aaa	4.85	Aaa	4.75½	Aaa	4.83
December:																
Standard Oil Co. (N. Y.), 25-yr. deb. 4½s, 1951, Dillon, Read & Co.	50,000,000	4½	97¾	4.65	Aaa	4.64½	Aaa	4.79½	Aaa	4.76½	Aaa	4.80½	Aaa	4.66	Aaa	5.06
Chile Copper Co., 20-yr. Deb. 5s, 1947, National City Co.	35,000,000	5	96¾	5.26	Baa	5.25½	A	5.36½	A	5.37½	A	5.49	Baa	5.69½	Baa	9.90
Dierks Lumber & Coal Co., 1st Mtge. S. F. 6% Gold Bonds, 1932-41, Harris, Forbes & Co.	6,500,000	6	Par	....	Baa	....	Baa	....	No rating		No rating		No rating			
McCrory Stores Corp., 5½s, gold deb. 1941, National City Co.	6,000,000	5½	98	5.70	Baa	....	Baa	5.59½	Baa	5.44	Baa	6.02	Baa	5.87	Baa	7.55

* Issued with warrants for common stock rights.

The "average yield" shown on this exhibit is the arithmetical average of the yields computed on the basis as testified to by Witness Hammond on the high market quotation for the year and the low market quotation for the year.

[fol. 4992]

Sales During the Year 1927 of Long-term Bonds for $5,000,000 or Over of Industrials and Others, Investment Rating (Moody's), and Yields from Date of Issue to December 31, 1931

Name of Company; Type of Issue; House of Issue	Amount Offered	Rate %	Original Public Offering		1927 Rating, Average Yield	1928 Rating, Average Yield	1929 Rating, Average Yield	1930 Rating, Average Yield	1931 Rating, Average Yield
			Price	Yield					
January:									
California Petroleum Corp., Conv. Deb. 5s, 1939, Blair & Co.	$8,000,000	5	96½	5.40	Baa 5.65	Baa 5.04	Baa 5.48	Baa 5.40	Baa 9.63½
Gulf Oil Corp. of Pa., Deb. 5s, 1947, Union Trust Co. of Pittsburgh	35,000,000	5	100	5.00	Aa 5.00	Aa 4.92	Aaa 4.97½	Aaa 4.87	Aaa 5.54
February:									
(Julius) Kayser & Co., Conv. Deb. 5½s, 1947, Co. to sth.; underwritten by Blair & Co	7,000,000	5½	96½	5.80	Baa 5.39½	Baa 3.66½	Retired 3/1/29 @ 104¾.		
Aluminum Co. of America, Deb. 5s, 1952, Union Trust Co. of Pittsburgh	60,000,000	5	100	5.00	Aa 4.97½	Aa 4.87½	Aa 4.88½	Aa 4.81½	Called for payment.
Fairbanks Morse & Co., deb. 5s, 1942, Lee, Higginson & Co.	8,000,000	5	97½	5.24.	A 5.34.	A 5.39	A 5.64½	A 5.43	A 5.10½
Hudson (The J. L.) Co., 5s, Ser. Gold Notes 1930–36, Goldman, Sachs & Co.	10,000,000	5	To y.	4.85–5.02	No rating	No rating	No rating	No rating	No rating
March:									
Independent Oil & Gas Co., conv. deb. 6s, 1939, Co. to stkhdrs; underwritten	6,500,000	6	99	6.12	Ba	Ba 5.22½	Ba 5.02½	Ba 5.82	Ba 10.21½
Robert Gair & Co., (N. Y.) 1st M. 5½s, 1942, Edw. B. Smith & Co.	5,000,000	5½	97½	5.75	Baa	Retired 6/1/28 @ 105.			
Skelly Oil Co., Deb. 5½s, 1939, Taylor, Ewart & Co.	15,000,000	5½	98½	5.67	Ba 5.93½	Ba 6.30	Ba 6.93	Ba 7.64	Ba 13.72
White Eagle Oil & Refining Co.,* Deb. 5½s, 1937, Dillon, Read & Co.	5,000,000	5½	100	5.50	Baa 6.14	Baa 5.47	Aaa 5.49½	Aaa 4.81	Aaa 5.67
Hearst Magazine, Inc., 6s, Ser. Gold Deb. 1929–38, Halsey, Stuart & Co.	10,000,000	6	To y.	6.24–6.27	No rating	No rating	No rating	No rating	No rating
April:									
Humble Oil & Refining Co., Deb. 5s, 1937, J. P. Morgan & Co.	25,000,000	5	100	5.00	Aa 5.17	Aa 5.03½	Aa 5.16	Aa 4.77	Aa 5.04
Shell Union Oil Corp., Deb. 5s, 1947, Lee Higginson & Co	50,000,000	5	99½	5.04	A 5.19½	A 5.24	A 5.43	Ba 6.67½	Ba 8.42½
American Radiator Co., Deb. 4½s, 1947, First National Bank, New York	10,000,000	4½	96	4.81	Aaa 4.74½	Aaa 4.60½	Aaa 4.78½	Aaa 4.67	Aaa 5.09
[fol. 4993]									
Minnesota & Ontario Paper Co., 1st M. 6s, "C", 1950, Halsey, Stuart & Co.	$5,000,000	6	100	6.00	Baa	Baa	Baa	....	I. due 5/1/31 in default. 17.27
Spruce Falls Power & Paper, Ltd., 1st Mtge. 5½s, Service Gold Bonds, Oct. 1930–Apr. 1, 1943, First Trust & Savings Bank	13,000,000	5½	100	5.50	No rating	No rating	Baa	Baa	Baa ....
May:									
Allis-Chalmers Mfg. Co., Deb. 5s, 1937, Hayden, Stone & Co.	15,000,000	5	99	5.13	A 4.89½	A 5.00	A 5.12	A 4.77	A 6.97
Remington-Rand, Inc., Deb. 5½s, "A",** 1947, National City Co.	25,000,000	5½	100	5.50	Baa 5.75	Baa 5.95½	Baa 5.80½	Ba 6.37½	Ba 13.64½
Phillips Petroleum Co., Deb. 5¼s, 1939, Harris, Forbes & Co.	40,000,000	5¼	99¼	5.33	Baa 5.43	Baa 6.11½	Baa 6.74	Ba 6.50½	Ba 12.14½
Hall Printing Co., 1st Mtge. & Coll. Tr. S. F. 5½s, Ser. "A", 1947, Lee, Higginson & Co	6,000,000	5½	92½	6.16	Baa	Baa	Baa	Baa	Baa ....
Goodyear Tire & Rubber Co., 1st Mtge. & Coll. Tr. 5s, "A" 1957, Dillon, Read & Co	60,000,000	5	97	5.20	A 5.37	A 5.51½	A 5.74	Baa 5.82	Baa 6.99½
June:									
Koppers Gas & Coke Co., Deb. 5s, 1947, Union Trust Co. of Pittsburgh	25,000,000	5	96	5.33	No rating	No rating 5.03½	Baa 5.29	Baa 5.12½	Baa 6.90½
P. Lorillard Co., Deb. 5½s, 1937, Guaranty Co. of N. Y.	15,000,000	5½	97½	5.83	Baa 5.80	Ba 6.93.	Ba 8.13½	Ba 7.26½	Ba 6.93½
Columbia Steel Corp., 1st M. 5½s "A", 1947, American National Co.	7,500,000	5½	99½	5.54	Ba	Ba 5.59½	Retired 12/31/29 @ 105.		
The Hudson Coal Co., 1st M. 5s, "A", 1962, Kuhn, Loeb & Co.	35,000,000	5	98½	5.09	Baa 5.27½	Ba 5.82½	Ba 7.37	B	B 10.73
Pittsburgh Screw & Bolt Corp., Deb. 5½s, 1947, Blair & Co.	5,000,000	5½	100	5.05	Ba 5.52½	Baa 5.58½	Baa 5.72½	Baa 5.58	Baa 5.54½
Proctor & Gamble Co., Deb. 4½s, 1947, First National Bank, Cincinnati	11,000,000	4½	98¾	4.60	Aaa 4.57½	Aaa 4.68½	Aaa 4.97½	Aaa 4.62	Aaa 4.61
Pathe Exchange Inc., S. F. 7s, Deb.*** 1937, Blair & Co.	6,000,000	7	..	....	B 8.56½	B	B	No rating 19.85	No rating 14.35½
Pennsylvania Glass Sand Corp., 1st Mtge. S. F. 6s, 1952, Brown Bros.	5,000,000	6	92½	6.62	No rating 6.01	No rating 5.74½	No rating 5.92	No rating 6.08½	No rating 5.96

[fol. 4994]

Pennsylvania Glass Sand Corp., 1st Mtge. S. F. 6s, 1952, Brown Bros.	5,000,000	6	92½	6.62	No rating	6.01	No rating	5.74½	No rating	5.92	No rating	6.08½	No rating	5.96
[fol. 4994]														
July:														
The Pure Oil Co., 5½s, 1937, Guaranty Co. of N. Y.	$20,000,000	5½	98	5.77	Baa	5.64	Baa	5.61	Baa	5.74	Baa	6.86½	Baa	9.91½
August:														
Consolidated Water Power & Paper Co., 1st Mtge. 5½s, "A", 1947, National City Co.	7,500,000	5½	97	5.75	Baa	5.69	No rating	5.65½	Retired 2/1/29 @ 103.					
National Radiator Corp., Deb. 6½s, 1947, Bankers Trust Co.	12,000,000	6½	100	6.50	Ba	6.47½	B	8.00½	B	20.71	Caa	28.61½	Caa	....
September:														
A. E. Staley Mfg. Co., 1st M. 6s, 1942, Blair & Co.	6,000,000	6	99	6.10	Ba	6.09½	Ba	6.13	Ba	6.19½	Ba	6.19½	Ba	9.00
St. Louis Gas & Coke Corp., 1st Mtge. S. F. 6s, Gold Bonds, 1947, Chase Securities Corp.	10,000,000	6	97	6.26	No rating		B	6.60½	No rating	7.71½	B	....	B	17.96
Libby, McNeill & Libby, 1st Mtge. S. F. 5s, 1942, Harris, Forbes & Co.	12,500,000	5	97½	5.24	Baa	5.31½	Baa	5.53½	Baa	5.95½	No rating	5.76½	No rating	7.42½
Firestone Tire & Rubber Co. of Cal., Guar. S. F. 5s, "A", 1942, Otis & Co.	10,000,000	5	96½	5.34	A	5.31½	A	5.47	A	5.78	Baa	6.01½	Baa	8.59½
October:														
Continental Oil Co., Deb. 5¼s, 1937, National City Co.	12,000,000	5¼	99	5.38	Baa	5.40½	Baa	5.76	Baa	6.21½	Baa	6.34½	Baa	8.26
Shell Pipe Line Corp., Deb. 5s, 1952, Lee, Higginson & Co.	30,000,000	5	98	5.14	A	5.14½	A	5.28	A	5.43	A	5.93½	A	7.49
American Cyanamid Co., 15 yr. S. F. 5s, Gold deb. 1942, Guaranty Co. of N. Y.	5,000,000	5	94	5.60	Baa	5.52	A	5.57½	A	5.36	Baa	5.44	Baa	7.54
November:														
International Match Corp., Deb. 5s, 1947, Lee Higginson & Co.	50,000,000	5	98½	5.12	Aa	5.10	Aa	5.12	Aa	5.39	A	5.19	Baa	9.85½
Pennsylvania Tank Line Equip., Tr. 5s, "AA1" 1928–37, Freeman & Co.	6,000,000	5	To yield 4.75–5.30		Baa	....	Baa	....	Baa	....	Baa	....	Baa	....
Paramount Famous Lasky Corp., S. F. 6s, Gold bonds 1947, Kuhn, Loeb & Co.	16,000,000	6	99½	6.04	Baa	6.02	Baa	6.03	Baa	6.36	Baa	6.41½	Baa	11.32
Hearst Publications, Inc., 1st Mtge. & Coll. Gold 6¼s, Nov. 1928–47, Halsey Stuart & Co.	20,000,000	6¼	To yield 5.00–6.25		No rating		No rating		No rating		No rating		No rating	
[fol. 4995]														
December:														
Crown, Cork & Seal Co., Inc., (N. Y.) 6s, 1947, Paine, Webber & Co.	$5,500,000	6	98½	6.13	Ba	....	Ba	6.09½	Baa	6.23½	Baa	6.20	Baa	7.31½
York Ice Machinery Co., 1st M. 6s, 1947, West & Co.	6,500,000	6	101	5.91	Baa	....	Baa	....	Baa	....	Ba	....	Ba	....
Sinclair Crude Oil Purchasing Co., 5½s, "A", Jan. 1938, National City Co.	42,000,000	5½	98½	5.70	A	....	A	5.75	A	6.24	A	5.50	A	6.15
McCrory Stores Corp., 5½s, Deb. 1941; National City Co.	6,000,000	5½	98	5.71	Baa	5.59½	A	5.44	Baa	6.02	Baa	5.87½	Baa	7.55

* Issued with detachable warrants for common stock rights.

** Offered with non-detachable stock purchase warrants.

*** With non-detachable warrants for common stock rights.

The "average yield" shown on this exhibit is the arithmetical average of the yields conputed on the basis as testified to by Witness Hammond on the high market quotation for the year and the low market quotation for the year.

[fol. 4996]

Sales During the Year 1928 of Long-term Bonds for $5,000,000 or Over of Industrials and Others, Investment Rating (Moody's), and Yields from Date of Issue to December 31, 1931

Name of Company; Type of Issue; House of Issue	Amount Offered	Rate %	Original Public Offering		1928 Rating, Average Yield	1929 Rating, Average Yield	1930 Rating, Average Yield	1931 Rating, Average Yield
			Price	Yield				
January:								
American Rolling Mill Co. Deb. 5s, 1948, Harris, Forbes & Co.	25,000,000	5	99½	5.04	Baa 5.22½	Baa 5.14	Baa 5.38½	Baa 9.83½
Sharon Steel Hoop Co., 1st M. 5½s "A", 1948, Otis & Co.	7,000,000	5½	100½	5.46	Baa 5.67½	Baa 5.75½	Ba 5.97½	Ba 10.34
Proctor & Gamble 4½s % Gold deb., July 1, 1947, First National Bank, N. Y.	5,000,000	4½	100	4.50	Aaa 4.68	Aaa 4.96½	Aaa 4.62	Aaa 4.61
February:								
Pittsburgh Steel Co., Deb. 6s, 1948, Union Trust Co. of Pittsburgh	11,000,000	6	101	5.91	Baa 5.85	Baa 5.85	Baa 5.82	Ba 7.86½
Spang, Chalfant and Co., Inc., 1st M. 5s, 1948, Dillon, Read & Co.	7,000,000	5	99	5.08	Baa	Baa	Baa	Baa ....
Certain-teed Products Corp., Deb. 5½s, "A", 1948, Blair & Co., Inc.	13,500,000	5½	98½	5.63	Ba 6.56	B 9.31	B	B 14.10½
Firestone Cotton Mills, 5s, 1948, Otis & Co.	12,000,000	5	97	5.24	A 5.52½	A 5.79	Baa 6.64½	Baa 8.70½
Scripps (E. W.) Co., 15-yr. 5½%, Deb. Gold Bonds, 1943, Guaranty Co. of N. Y.	8,500,000	5½	99	5.60	No rating 5.91½	No rating 6.60	No rating 5.92½	No rating 9.21
Standard Oil of N. Y., 4½s% Ser. Gold, deb. 1929–48, Blair & Co., Inc.	20,000,000	4½	94¾	To Yield {4.05 4.60}	Aaa	Aaa	Aaa	Aaa ....
March:								
Shaffer Oil & Refining Co., Conv. 6s, Mar. 1, 1933, H. M. Byllesby & Co.	10,000,000	6	98½	6.35	Ba 6.24	Ba 6.59½	Ba 8.81½	B 18.45
Inland Steel Co., 1st M. 4½s, 1978, Kuhn, Loeb & Co.	30,000,000	4½	95	4.76	Aa 4.94	Aa 4.95	Aa 4.77½	Aa 5.46½
New York Dock Co., 5% Serial Gold Notes, 1929–38, A. B. Leach & Co., Inc.	10,000,000	5	....	To Yield {4.50 5.40}	Ba	Ba	Ba	Ba ....
Miehle Printing Press & Mfg. Co., 20-yr. S. F. 5½% Gold Deb. Ser. "A" 1948, Halsey, Stuary & Co.	5,000,000	5½	101	5.42	No rating	No rating	No rating	No rating
April:								
Peabody Coal Co. (Consolidated Company), 1st M. 5s; "A", 1953, Halsey, Stuart & Co.	12,500,000	5	96½	5.25	No rating 5.54½	No rating 5.99	No rating 6.76½	No rating 11.21½
[fol. 4997]								
Wheeling Steel Corp., 1st & Ref. M. 4½s, "B", 1953, Lee, Higginson & Co.	21,000,000	4½	93	4.99	A 5.26	A 5.50	Baa 5.30	Ba 8.03
Holly Sugar Corp., 1st M. 6s, 1943, Federal Securities Corp.	6,500,000	6	100	6.00	Ba 6.11½	B 7.62	B	B 15.85
International Cement Corp. conv. deb. 5s, 1948, Hayden, Stone & Co.	18,000,000	5	97	5.24	A 4.83	A 4.85	Baa 5.25	Baa 7.45½
Childs Co., 15-yr. 5% Gold deb., 1943, Laird, Bissell & Meeds	6,000,000	5	96	5.40	Baa 5.82½	Baa 6.62	Baa 6.91	Baa 10.52½
May:								
Huston Oil Co., Conv. Deb. 5½s, 1938, Mackubin, Goodrich & Co.	8,000,000	5½	101	5.37	Baa 5.38	5.89	Retired 7/15/30 @ 102½.	
Sysquehanna Silk Mills deb. 5s, 1938, Lee, Higginson & Co.	8,000,000	5	96	5.53	No rating 6.46	No rating 7.61	No rating	No rating 22.28½
American Ice Co. (U. S.), S. F. 5% Gold deb. 1953, Brown Bros. & Co.	6,000,000	5	100	5.00	A 5.55	A 5.83	Baa 6.26	Baa 7.78½
June:								
Colon Oil Corp. (Del.), Conv. Deb. 6s, 1938, Lee, Higginson & Co.	10,000,000	6	100	6.00	No rating 5.93	No rating 8.71½	No rating	No rating 20.26
Container Corp. of America, Deb.* 5s, 1943, National City Co.	6,000,000	5	98½	5.14	Ba 5.59½	Ba 7.66	B 8.80½	B 15.52
Strawbridge & Clothier, 1st Mtge. S. F. 5s, Sept., 1948, Brown Bros. & Co.	12,000,000	5	100	5.00	Baa 5.05	Baa 5.25½	Baa 5.39½	Baa 5.46
July:								
Transcontinental Oil Co., 1st M.** 10-yr. S. F. 6½% Gold Bonds 1938, Gorrell & Co.	12,000,000	6½	100	6.50	Ba 6.06½	Ba 8.31½	No rating 7.48	Retired 7/2/31.
Gannet Co., Inc., 15-yr. S. F. 6%, Gold deb. Ser. "A", Aug., 1943, Hemphill, Noyes & Co.	5,000,000	6	99¾	6.03	Ba 6.17	Ba 7.23	Ba 7.71	Ba 8.94½
September:								
Kendall Company, deb. 5½s, "A",* 1948, National City Co.	6,500,000	5½	95	5.93	Baa 5.71½	Baa 6.27½	B 6.17	B 12.04
October:								
Abraham & Straus, Inc., 15-yr. 5½ Gold deb. Oct., 1943,**								

Hemphill, Noyes & Co.	5,000,000	6	99¾	6.03	Ba	6.17	Ba	7.23	Ba	7.71	Ba	8.94½
September:												
Kendall Company, deb. 5½s, "A",* 1948, National City Co.	6,500,000	5½	95	5.93	Baa	5.71½	Baa	6.27½	B	6.17	B	12.04
October:												
Abraham & Straus, Inc., 15-yr. 5½** Gold deb. Oct., 1943, Lehman Bros.	5,150,000	5½	101	5.40	A	4.45½	A	4.91	A	5.96	A	7.16½
[fol. 4998]												
Connecticut Coke Co., 1st Mtge. Gold 5s, "A", Sept., 1948, Union Trust Co.	5,500,000	5	95	5.40	No rating		No rating		No rating		No rating	
November:												
Pacific Western Oil Co., Deb. 6½s,* 1943, Blyth, Witter & Co.	15,500,000	6½	100	6.50	No rating	6.54	Ba	8.36½	Ba	8.41	Ba	12.42
Joseph T. Ryerson & Co., Inc., Deb. 5s, 1943, Lee, Higginson & Co.	5,000,000	5	96	5.39	Baa	5.39	Baa	5.71	Baa	5.55	Baa	6.16
Balaban & Katz Corp. 5½% Ser. Gold Notes, 1929–38, Lawrence Stern & Co.	5,000,000	5½	99¾ To 98.12 Yield 5.75		Baa	....	Baa	....	Baa	....	Baa	....
December:												
Republic Brass Corp., 1st M. 6s "A", 1948, Kissel, Kinnicutt & Co.	10,000,000	6	103	5.75	No rating		No rating	5.86	No rating	5.82½	No rating	

* Issued with detachable warrants for common stock rights.
** Issued with warrants for stock rights.

The "average yield" shown on this exhibit is the arithmetical average of the yields computed on the basis as testified to by Witness Hammond on the high market quotation for the year and the low market quotation for the year.

[fol. 4999]

Sales During the Year 1929 of Long-term Bonds for $5,000,000 or Over, of Industrials and Others; Investment Rating (Moody's) and Yields from Date of Issue to December 31, 1931.

Name of Company; Type of Issue; House of Issue	Amount Offered	Rate %	Original Public Offering		1929 Rating, Average Yield		1930 Rating, Average Yield		1931 Rating, Average Yield	
			Price	Yield						
January:										
Pittsburgh Coal Co., Deb. 6s, 1949, Union Trust Co.	$20,000,000	6	100	6.00	Ba	5.98	Ba	6.07½	Ba	7.49½
Railway Express Agency, Inc., Serial 5s, A, 1929–49, J. P. Morgan & Co.	32,000,000	5	100	5.00	Aaa	....	Aaa	....	Aaa	....
February:										
Winchester Repeating Arms Co. (of Del.), 5-yr. Deb. 6½s, Feb. 1, 1934, Kidder, Peabody & Co.	6,500,000	6½	99½	6.62	Ba	7.88½	Caa	....	Caa	....
American Service Co., 1st gold 6s* "A" 1944, Halsey, Stuart & Co., Inc.	7,000,000	6	99	6.10	Ba	....	No rating		No rating	
March:										
Philadelphia & Reading Coal & Iron Co., conv. deb. 6s, 1949, offered to stkhdrs. of Co., underwritten by Drexel & Co.	30,800,000	6	100	6.00	~~Ba~~	~~6.30½~~	Ba	7.44½	Ba	13.12
Warner-Quinlan Co., Conv. Deb. 6s, 1939, Hayden, Stone & Co.	7,000,000	6	98½	6.20	Ba	7.33½	B	....	Ba	17.42
April:										
American I. G. Chemical Corp., Guar. 5½s, Conv. deb. 1949, National City Co.	30,000,000	5½	95	5.93	Aa	4.52½	Aa	5.33	Aa	8.72
Warner Co., 1st S. F. Gold 6s, 1944,** Dillon, Read & Co.	7,000,000	6	99	6.10	Ba	....	Ba	....	Ba	8.75
May:										
Richfield Oil Co., of California, 1st M. & Coll. Tr. Conv. 6s "A" 1944, Bond & Goodwin & Tucker, Inc.	25,000,000	6	99	6.10	Ba	6.14	No rating	10.14	5/1/31 Int. & S. F. default. No rating	17.71½
June:										
General Steel Castings Corp., 1st M. 5½s*, "A" 1949, Drexel & Co.	20,000,000	5½	100	5.50	Baa	5.34½	Ba	5.75½	Ba	8.35
[fol. 5000]										
July:										
General Theatres Equipment Inc. Conv. Deb. 6s, 1944, Chase Securities Corp.	6,000,000	6	99	6.10	No rating		Called for redemption 7/1/30			
Koppers Gas & Coke Co., Deb. 5½s, 1950, Union Tr. Co. of Pittsburgh	25,000,000	5½	99	5.58	Baa	....	Baa	5.37	Baa	7.05½
September:										
Shell Union Oil Corp., S. F. deb.** 5s, 1949, Lee, Higginson & Co.	50,000,000	5	100	5.00	A	5.28½	Ba	6.26½	Ba	8.10½
October:										
The Texas Corp. (Del.), Conv. Deb. 5s, 1944, Continental-Illinois Co.	100,000,000	5	98½	5.14	Aa	4.95½	Aa	4.92½	Aa	7.21½
Simmons Co., Deb. 5s, 1944, Co. to** stockholders; underwritten	15,000,000	5	99½	5.05	Baa	....	Ba	5.21	Ba	....
January:										
Butler Brothers, 5s Gold deb., 1932-45, Halsey, Stuart & Co.	$7,500,000	5	..	To 5.30 Yield 5.75	No rating		No rating		No rating	
March:										
Brown Co., 1st M. 5½s, B, 1950, Harris, Forbes & Co.	5,000,000	5½	95	5.93	Ba		Ba	6.03	Ba	9.93½
General Baking Co., Deb. 5½s, 1940, Marine Trust Co., of Buffalo	7,000,000	5½	97	5.90	Baa		Baa	5.84	Baa	6.39½
Union Oil Co. of California, Deb.† 5s, 1945, Dillon, Read & Co.	15,000,000	5	99½	5.05	A		A	5.38½	A	7.03½
Illinois Publishing & Printing Co., Sec. 6½s, Gold Deb. 1931–32, 33, 50, Halsey, Stuart & Co.	5,000,000	6½	100	6.50	....		No rating		No rating	
April:										
General Theatres Equipment, Inc., Conv. deb. 6s, 1940, Chase Securities Corp.	30,000,000	6	99½	6.07	B		B	11.11	B	21.74
Pure Oil Co., 5½s S. F. gold notes, 1940, Guaranty Co. of N. Y.	20,000,000	5½	97½	5.83	Baa		Baa	6.47	Baa	9.53½
McKesson & Robbins, Inc., Conv. Deb. 5½s, 1950, Chatham Phenix Corp.	22,000,000	5½	96	5.84	Ba		Ba	7.01	Ba	10.15½
Houston Oil Co. of Texas Secured 5½s, A, 1940, Mackubin, Goodrich & Co.	12,000,000	5½	97	5.90	Baa		Baa	6.42½	Ba	9.55
Caterpillar Tractor Co., 5-yr. Conv. 5s, April 1, 1935, Peirce, Fair & Co.	10,000,000	5	98½	5.35	A		A	5.33½	A	8.53½

General Theatres Equipment, Inc., Conv. deb. 6s, 1940, Chase Securities Corp	30,000,000	6	99½	6.07	B	B	11.11	B	21.74
Pure Oil Co., 5½s S. F. gold notes, 1940, Guaranty Co. of N. Y.	20,000,000	5½	97½	5.83	Baa	Baa	6.47	Baa	9.53½
McKesson & Robbins, Inc., Conv. Deb. 5½s, 1950, Chatham Phenix Corp	22,000,000	5½	96	5.84	Ba	Ba	7.01	Ba	10.15½
Houston Oil Co. of Texas Secured 5½s, A, 1940, Mackubin, Goodrich & Co	12,000,000	5½	97	5.90	Baa	Baa	6.42½	Ba	9.55
Caterpillar Tractor Co., 5-yr. Conv. 5s, April 1, 1935, Peirce, Fair & Co.	10,000,000	5	98½	5.35	A	A	5.33½	A	8.53½
Newberry (J. J.) Co., 5½s Conv. gold notes, 1940, Guaranty Co. of N. Y.	5,000,000	5½	99	5.63	Baa	Baa	6.98½	Baa	8.08½
May:									
Crucible Steel Co. of America, Deb. 5s, 1940, Chase Securities Corp.	10,000,000	5	99½	5.06	A	A	5.10½	A	7.45½
The Mead Corp. 1st Mtge. Conv. 6s, "A", 1945, National City Co.	9,500,000	6	97	6.31	No rating	No rating	7.24	No rating	12.20½
[fol. 5002]									
The Glidden Co., 5 yr. 5½s, June 1, 1935, Bancamerica Blair Corp.	6,000,000	5½	99¾	5.56	Ba	Ba	6.81½	Ba	12.06½
June:									
Union Gulf Corp., Coll. Trust 5s, 1950, Union Trust Co. of Pittsburgh	60,000,000	5	99	5.08	Aaa	Aaa	4.95	Aaa	5.32
Armstrong Cork Co., Conv. Deb. 5s, 1940, Co. to stockholders; underwritten by Guaranty Co. of N. Y	14,931,000	5	98	5.26	Ba	Ba	5.78	Ba	7.61½
Hudson Bay Mining & Smelting Co., Ltd., 5-yr. Conv. deb. 6s, July 15, 1935, Co. to stockholders; underwritten by J. P. Morgan & Co	5,000,000	6	100	6.00	No rating	No rating	7.25½	No rating	16.88
Saxet Co., 1st lien, Coll. Conv. 6s, "A", 1945, G. E. Barrett & Co., Inc.	5,000,000	6	99	6.10	Ba	No rating		No rating	
July:									
California Packing Corp., Conv. Deb. 5s, 1940, Dean, Witter & Co	15,000,000	5	100	5.00	Baa	Baa	5.44½	Baa	9.16½
Crane Co., 10 yr. 5% notes, 1940, Continental Illinois Co., Inc.	12,000,000	5	100	5.00	Aa	Aa	4.88½	Aa	6.20½
August:									
Paramount Publix Corp., 5½s, 1950, Kuhn, Loeb & Co	15,000,000	5½	94½	5.97	Baa	Baa	6.92½	Baa	10.97½
Swift & Co., 10 yr. 5% notes, 1940, Continental Illinois Co., Inc	30,000,000	5	100	5.00	A	A	5.00	A	5.69
October:									
Gillette Safety Razor Co., Conv. Deb. 5s, 1940, Lee, Higginson & Co	20,000,000	5	96	5.53	Baa	Baa	7.26½	Baa	7.26
Lehigh Coal & Navigation Co., Cons. S. F. 4½s, "C", Jan., 1954, Drexel & Co	6,000,000	4½	99½	4.53	Aaa	Aaa	4.62	Aaa	4.88

* Issued with non-detachable warrants for common stock rights.

** Issued with warrants for common stock rights.

† Issued with warrants for stock rights.

The "average yield" shown on this exhibit is the arithmetical average of the yields computed on the basis as testified to by Witness Hammond on the high market quotation for the year and the low market quotation for the year.

[fol. 5003]

Sales During the Year 1931 of Long-term Bonds for $5,000,000 or Over, of Industrials and Others, Investment Rating (Moody's), and Yields from Date of Issue to December 31, 1931

Name of Company; Type of Issue; House of Issue	Amount Offered	Rate %	Original Public Offering			1931 Rating, Average Yield
			Price	Yield	Rating	
January:						
International Match Corp., Conv. Deb. 5s, 1941, Lee, Higginson & Co.	$50,000,000	5	96	5.50	A	Baa 10.55
Inland Steel Co., 1st Mtge. 4½s, "B" 1981, Kuhn, Loeb & Co.	15,000,000	4½	96½	4.68	Aa	Aa 5.47
March:						
Interlake Iron Corp., 1st M. 5s, "B" 1951, Lee, Higginson & Co.	5,000,000	5	97	5.24	Baa	Baa 8.82
Youngstown Sheet & Tube Co., 1st M. 5s, "B" 1970, Bankers Co. of N. Y.	25,000,000	5	101	4.94	A	A 7.38½
General American Transportation System Equip. Trust 4½s "A" 1932–46, Kuhn, Loeb & Co.	9,690,000	4½		3.75–4.85	A	A ....
Vanadium Corp. of America, Conv. Deb. 5s, 1941, Lee, Higginson & Co.	5,000,000	5	97½	5.33	Baa	Baa 11.85½
Warren Bros. Co., Conv. deb. 6s, 1941, Bancamerica Blair Corp.	5,000,000	6	99	6.13	Baa	Ba 13.22
Grigsby-Grunow Co., Conv. deb. 6s, Mar. 1, 1936, offered to creditors and stockholders of Co.	5,000,000	6	97½	6.60	B	B 16.84
April:						
National Steel Corp., 1st (Coll.) Mtge. 5s, 1956, National City Co.	40,000,000	5	99	5.07	Baa	Baa 6.79
St. Joseph Lead Co., Conv. Deb. 5½s, 1941, Co. to stkh. underwritten by J. P. Morgan & Co.	9,752,300	5½	97½	5.83	....	Baa 6.68½
Fox Film Corp., 5 yr. Conv. Deb. 6s, April 1, 1936, Chase Securities Corp.	30,000,000	6	98	6.47	Ba	B 15.60
December:						
Radio Keith Orpheum Corporation Deb. 6s, 1941, Co. to stockholder.	11,600,000	6	100*	6.00	B	B. ....

* Offered in ratio of $5 debenture and ¾ share of common stock.

The "average yield" shown on this exhibit is the arithmetical average of the yields computed on the basis as testified to by Witness Hammond on the high market quotation for the year and the low market quotation for the year.

[fol. 5004]

EXHIBIT X-263

Illinois Bell Telephone Company, Chicago Exchange

Redistribution of Exchange Revenues Included in Intrastate and Interstate Toll

Year	Item	Intrastate Exchange (Additions)	Intrastate Toll (Deductions)	Intrastate Total (Additions)	Interstate Toll (Deductions)
1923	P. B. X. Terminals	$25,013.63	$16,236.92	$8,776.71	$8,776.71
	P. B. X. Switchboards	14,762.91	9,582.94	5,179.97	5,179.97
	Balance of Account 500	885,351.50	574,701.85	310,649.65	310,649.65
	Public Pay Station Revenues	89,589.70	58,154.72	31,434.98	31,434.98
	Total	$1,014,717.74	$658,676.43	$356,041.31	$356,041.31
1924	P. B. X. Terminals	$29,077.52	$19,288.09	$9,789.43	$9,789.43
	P. B. X. Switchboards	16,656.32	11,048.69	5,607.63	5,607.63
	Balance of Account 500	989,198.51	656,168.35	333,030.16	333,030.16
	Public Pay Station Revenues	104,572.03	69,366.11	35,205.92	35,205.92
	Total	$1,139,504.38	$755,871.24	$383,633.14	$383,633.14
1925	P. B. X. Terminals	$34,455.25	$22,654.06	$11,801.19	$11,801.19
	P. B. X. Switchboards	19,532.88	12,842.72	6,690.16	6,690.16
	Balance of Account 500	1,150,494.59	756,441.40	394,053.19	394,053.19
	Public Pay Station Revenues	118,134.18	77,672.32	40,461.86	40,461.86
	Total	$1,322,616.90	$869,610.50	$453,006.40	$453,006.40
1926	P. B. X. Terminals	$39,932.52	$27,482.97	$12,449.55	$12,449.55
	P. B. X. Switchboards	21,996.40	15,138.70	6,857.70	6,857.70
	Balance of Account 500	1,281,059.25	881,670.19	399,389.06	399,389.06
	Public Pay Station Revenues	132,819.42	91,411.01	41,408.41	41,408.41
	Total	$1,475,807.59	$1,015,702.87	$460,104.72	$460,104.72

1927	P. B. X. Terminals	$47,130.35	$32,567.60	$14,562.75	$14,562.75
	P. B. X. Switchboards	24,926.86	17,224.74	7,702.12	7,702.12
	Balance of Account 500	1,428,105.42	986,836.89	441,268.53	441,268.53
	Public Pay Station Revenues	148,342.00	102,505.99	45,836.01	45,836.01
	Total	$1,648,504.63	$1,139,135.22	$509,369.41	$509,369.41
1928	P. B. X. Terminals	$55,105.10	$37,703.49	$17,401.61	$17,401.61
	P. B. X. Switchboards	28,571.10	19,548.65	9,022.45	9,022.45
	Balance of Account 500	1,612,560.22	1,103,330.67	509,229.55	509,229.55
	Public Pay Station Revenues	167,319.78	114,481.96	52,837.82	52,837.82
	Total	$1,863,556.20	$1,275,064.77	$588,491.43	$588,491.43
1929	P. B. X. Terminals	$61,709.33	$42,189.03	$19,520.30	$19,520.30
	P. B. X. Switchboards	31,304.42	21,402.00	9,902.42	9,902.42
	Balance of Account 500	1,778,797.76	1,216,116.84	562,680.92	562,680.92
	Public Pay Station Revenues	183,808.64	125,665.09	58,143.55	58,143.55
	Total	$2,055,620.15	$1,405,372.96	$650,247.19	$650,247.19
1930	P. B. X. Terminals	$66,445.40	$46,215.74	$20,229.66	$20,229.66
	P. B. X. Switchboards	33,223.72	23,108.58	10,115.14	10,115.14
	Balance of Account 500	1,839,778.73	1,279,648.07	560,130.66	560,130.66
	Public Pay Station Revenues	190,957.95	132,819.76	58,138.19	58,138.19
	Total	$2,130,405.80	$1,481,792.15	$648,613.65	$648,613.65
[fol. 5005]					
1931	P. B. X. Terminals	$61,113.68	$41,985.26	$19,128.42	$19,128.42
	P. B. X. Switchboards	31,186.35	21,425.11	9,761.24	9,761.24
	Balance of Account 500	1,651,478.70	1,134,570.25	516,908.45	516,908.45
	Public Pay Station Revenues	176,970.52	121,579.22	55,391.30	55,391.30
	Total	$1,920,749.25	$1,319,559.84	$601,189.41	$601,189.41

[fol. 5006]

Exhibit X-264

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses, and Net Income for the Year 1923

	Intrastate			Interstate Toll	Total Chicago
	Exchange	Toll	Total		
Exchange Revenues	$36,202,267	$14,837	$36,217,104	$125,122	$36,342,226
Toll Revenues	....	1,828,914	1,828,914	1,214,080	3,042,994
Miscellaneous Operating Revenues	562,934	8,515	571,449	101,600	673,049
Non-Operating Revenues	212,669	16,482	229,151	96,970	326,121
Gross Revenues	36,977,870	1,868,748	38,846,618	1,537,772	40,384,390
Less: Licensee Revenue—Dr.	1,603,562	74,143	1,677,705	46,546	1,724,251
Total Revenues	$35,374,308	$1,794,605	$37,168,913	$1,491,226	$38,660,139
Traffic Expenses	$12,298,447	$665,329	$12,963,776	$228,897	$13,192,673
Commercial Expenses	3,653,964	398,522	4,052,486	149,787	4,202,273
General and Miscellaneous Expenses	977,201	56,492	1,033,693	29,501	1,063,194
Current Maintenance	5,468,607	175,016	5,643,623	258,110	5,901,733
Depreciation	4,011,667	197,473	4,209,140	271,814	4,480,954
Taxes	3,270,120	139,643	3,409,763	192,301	3,602,064
Other Expenses and Deductions	215,146	38,342	253,488	35,675	289,163
Total Expenses	$29,895,152	$1,670,817	$31,565,969	$1,166,085	$32,732,054
Balance	$5,479,156	$123,788	$5,602,944	$325,141	$5,928,085
Net Compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	$259,941	....	$259,941	....	$259,941
Balance Available for Return under present Rates	$5,739,097	$123,788	$5,862,885	$325,141	$6,188,026
Less: Reduction under rates in suit	1,557,240	....	1,557,240	....	1,557,240
Balance Available for Return under rates in Suit	$4,181,857	$123,788	$4,305,645	$325,141	$4,630,786

EXHIBIT X-265

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Aportionment of Revenues, Expenses, and Net Income for the Year 1924

	Intrastate			Interstate	Total
	Exchange	Toll	Total	Interstate Toll	Total Chicago
Exchange Revenues	$38,637,277	$2,600	$38,639,877	$33,881	$38,673,758
Toll Revenues	....	2,100,548	2,100,548	1,440,308	3,540,856
Miscellaneous Operating Revenues	614,956	8,656	623,612	120,760	744,372
Non-Operating Revenues	116,946	12,084	129,030	90,909	219,939
Gross Revenues	39,369,179	2,123,888	41,493,067	1,685,858	43,178,925
Less: Licensee Revenue—Dr.	1,719,003	85,208	1,804,211	56,227	1,860,438
Total Revenues	$37,650,176	$2,038,680	$39,688,856	$1,629,631	$41,318,487
Traffic Expenses	$12,422,269	$684,761	$13,107,030	$224,394	$13,331,424
Commercial Expenses	4,052,452	477,892	4,530,344	162,977	4,693,321
General and Miscellaneous Expenses	1,008,234	61,344	1,069,578	31,834	1,101,412
Current Maintenance	5,844,038	199,699	6,043,737	282,594	6,326,331
Depreciation	4,258,675	197,664	4,456,339	253,611	4,709,950
Taxes	3,642,213	170,457	3,812,670	227,379	4,040,049
Other Expenses and Deductions	276,538	58,234	334,772	47,985	382,757
Total Expenses	$31,504,419	$1,850,051	$33,354,470	$1,230,774	$34,585,244
Balance	$6,145,757	$188,629	$6,334,386	$398,857	$6,733,243
Net Compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	$277,665	....	$277,665	....	$277,665
Balance Available for Return under Present Rates	$6,423,422	$188,629	$6,612,051	$398,857	$7,010,908
Less: Reduction under Rates in Suit	1,566,820	....	1,566,820	....	1,566,820
Balance Available for Return under Rates in Suit	$4,856,602	$188,629	$5,045,231	$398,857	$5,444,088

[fol. 5008]

EXHIBIT X-266

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses, and Net Income for the Year 1925

	Intrastate			Interstate	Total
	Exchange	Toll	Total	Toll	Chicago
Exchange Revenues	$41,179,287	$2,179	$41,181,466	$34,824	$41,216,290
Toll Revenues	....	2,477,668	2,477,668	1,706,797	4,184,465
Miscellaneous Operating Revenues	646,130	11,184	657,314	129,332	786,646
Non-Operating Revenues	215,205	13,434	228,639	99,793	328,432
Gross Revenues	42,040,622	2,504,465	44,545,087	1,970,746	46,515,833
Less: Licensee Revenue—Dr.	1,820,773	100,371	1,921,144	66,301	1,987,535
Total Revenues	$40,219,849	$2,404,094	$42,623,943	$1,904,355	$44,528,298
Traffic Expenses	$12,861,116	$755,270	$13,616,386	$240,925	$13,857,311
Commercial Expenses	4,182,328	513,997	4,696,325	171,182	4,867,507
General and Miscellaneous Expenses	995,294	62,834	1,058,128	32,925	1,091,053
Current Maintenance	6,347,832	215,361	6,563,193	313,395	6,876,588
Depreciation	4,796,032	237,491	5,033,523	352,189	5,385,712
Taxes	4,215,791	224,889	4,440,680	284,844	4,725,524
Other Expenses and Deductions	361,718	78,772	440,490	54,159	494,649
Total Expenses	$33,760,111	$2,088,614	$35,848,725	$1,449,619	$37,298,344
Balance	$6,459,738	$315,480	$6,775,218	$454,736	$7,229,954
Net Compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	313,261	....	313,261	....	313,261
Balance Available for Return under Present Rates	$6,772,999	$315,480	$7,088,479	$454,736	$7,543,215
Less: Reduction under Rates in Suit	1,660,486	....	1,600,486	....	1,600,486
Balance Available for Return under Rates in Suit	$5,172,513	$315,480	$5,487,993	$454,736	$5,942,729

[fol. 5009]

EXHIBIT X-267

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Aportionment of Revenues, Expenses, and Net Income for the Year 1926

	Intrastate			Interstate	Total
	Exchange	Toll	Total	Toll	Chicago
Exchange Revenues	$44,266,292	$3,645	$44,269,937	$35,692	$44,305,629
Toll Revenues	....	2,976,666	2,976,666	2,084,196	5,060,862
Miscellaneous Operating Revenues	629,901	14,712	644,613	133,517	778,130
Non-Operating Revenues	127,523	6,532	134,055	120,330	254,385
Gross Revenues	45,023,716	3,001,555	48,025,271	2,373,735	50,399,006
Less: Licensee Revenue—Dr.	1,754,003	109,765	1,863,768	72,110	1,935,878
Total Revenues	$43,269,713	$2,891,790	$46,161,503	$2,301,625	$48,463,128
Traffic Expenses	$13,265,949	$906,240	$14,172,189	$257,610	$14,428,799
Commercial Expenses	4,335,153	560,907	4,896,060	189,088	5,085,148
General and Miscellaneous Expenses	1,080,570	74,686	1,155,256	37,709	1,192,965
Current Maintenance	7,440,549	273,815	7,714,364	370,343	8,084,707
Depreciation	5,476,536	275,391	5,751,927	451,096	6,203,023
Taxes	4,688,631	286,921	4,975,552	354,499	5,330,051
Other Expenses and Deductions	259,869	60,042	319,911	53,757	373,668
Total Expenses	$36,547,257	$2,438,002	$38,985,259	$1,713,102	$40,698,361
Balance	$6,722,456	$453,788	$7,176,244	$588,523	$7,764,767
Net Compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	174,858	....	174,858	....	174,858
Balance Available for Return under Present Rates	$6,897,314	$453,788	$7,351,102	$588,523	$7,939,625
Less: Reduction under Rates in Suit	1,668,254	....	1,668,254	....	1,668,254
Balance Available for Return under Rates in Suit	$5,229,060	$453,788	$5,682,848	$588,523	$6,271,371

[fol. 5010]

EXHIBIT X-268

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses, and Net Income for the Year 1927

	Intrastate			Interstate	Total
	Exchange	Toll	Total	Toll	Chicago
Exchange Revenues	$47,342,049	$5,570	$47,347,619	$44,332	$47,391,951
Toll Revenues	....	3,395,072	3,395,072	2,433,903	5,828,975
Miscellaneous Operating Revenues	593,422	....	593,422	124,204	717,626
Non-Operating Revenues	142,354	7,676	150,030	141,998	292,028
Gross Revenues	48,077,825	3,408,318	51,486,143	2,744,437	54,230,580
Less: Licensee Revenues—Dr.	1,877,636	123,683	2,001,319	84,401	2,085,720
Total Revenues	$46,200,189	$3,284,635	$49,484,824	$2,660,036	$52,144,860
Traffic Expenses	$12,804,628	$963,018	$13,767,646	$276,808	$14,044,454
Commercial Expenses	4,852,516	631,221	5,483,737	218,233	5,701,970
General and Miscellaneous Expenses	1,627,771	119,062	1,746,833	59,497	1,806,330
Current Maintenance	8,521,672	327,878	8,849,550	410,304	9,259,854
Depreciation	5,997,744	320,589	6,318,333	521,059	6,839,392
Taxes	5,022,866	330,891	5,353,757	414,399	5,768,156
Other Expenses and Deductions	368,273	90,272	458,545	72,832	531,377
Total Expenses	$39,195,470	$2,782,931	$41,978,401	$1,973,132	$43,951,533
Balance	$7,004,719	$501,704	$7,506,423	[illegible]6,904	$8,193,327
Net Compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	144,041	....	144,041	....	144,041
Balance Available for Return under Present Rates	$7,148,760	$501,704	$7,650,464	$686,904	$8,337,368
Less: Reduction under Rates in Suit	1,695,730	....	1,695,730	....	1,695,730
Balance Available for Return under Rates in Suit	$5,453,030	$501,704	$5,954,734	$686,904	$6,641,638

[fol. 5011]

Exhibit X-269

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses, and Net Income for the Year 1928

	Intrastate			Interstate Toll	Total Chicago
	Exchange	Toll	Total		
Exchange Revenues	$50,187,195	$7,475	$50,194,670	$49,853	$50,244,523
Toll Revenues	....	3,800,457	3,800,457	3,354,217	7,154,674
Miscellaneous Operating Revenues	723,312	....	723,312	178,209	901,521
Non-Operating Revenues	351,060	22,911	373,971	146,274	520,245
Gross Revenues	51,261,567	3,830,843	55,092,410	3,728,553	58,820,963
Less: Licensee Revenue—Dr.	980,598	67,509	1,048,107	56,786	1,104,893
Total Revenues	$50,280,969	$3,763,334	$54,044,303	$3,671,767	$57,716,070
Traffic Expenses	$13,115,081	$1,036,520	$14,151,601	$781,627	$14,933,228
Commercial Expenses	5,233,143	704,028	5,937,171	267,982	6,205,153
General and Miscellaneous Expenses	1,927,841	148,305	2,076,146	113,222	2,189,368
Current Maintenance	9,531,773	409,370	9,941,143	546,357	10,487,500
Depreciation	6,616,668	380,829	6,997,497	643,963	7,641,460
Taxes	5,589,876	390,901	5,980,777	492,638	6,473,415
Other Expenses and Deductions	460,452	137,094	597,546	106,205	703,751
Total Expenses	$42,474,834	$3,207,047	$45,681,881	$2,951,994	$48,633,875
Balance	$7,806,135	$556,287	$8,362,422	$719,773	$9,082,195
Net Compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	188,016	....	188,016	....	188,016
Balance Available for Return under Present Rates	$7,994,151	$556,287	$8,550,438	$719,773	$9,270,211
Less: Reduction under Rates in Suit	1,734,110	....	1,734,110	....	1,734,110
Balance Available for Return under Rates in Suit	$6,260,041	$556,287	$6,816,328	$719,773	$7,536,101

[fol. 5012]

Exhibit X-270

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses, and Net Income for the Year 1929

	Intrastate				
	Exchange	Toll	Total	Interstate Toll	Total Chicago
Exchange Revenues	$53.729.068	$8.584	$53.737,652	$60,548	$53,798,200
Toll Revenues	....	4,225,964	4,225,964	6.989.353	11,215,317
Miscellaneous Operating Revenues	1.254.238	....	1,254,238	5,394	1,259,632
Non-Operating Revenues	278.207	20,440	298,647	25,726	324,373
Gross Revenues	55.261.513	4,254,988	59,516,501	7,081,021	66,597,522
Less: Licensee Revenue—Dr.	787,245	56,530	843,775	87,521	931,296
Total Revenues	$54.474.268	$4,198.458	$58,672,726	$6,993.500	$65,666.226
Traffic Expenses	$13.216.005	$1.271.673	$14.487.678	$2.794.535	$17,282.213
Commercial Expenses	5.417.490	767.516	6.185.006	334.553	6.519.559
General and Miscellaneous Expenses	1.928.354	169.115	2.097.469	272.275	2,369.744
Current Maintenance	10.178.530	492.996	10,671,526	929,194	11,600.720
Depreciation	6.974.241	449.930	7.424.171	696.211	8,120.382
Taxes	6.346.186	453.760	6,799,946	668.670	7,468.616
Other Expenses and Deductions	389.259	122.373	511,632	132.122	643.754
Total Expenses	$44.450.065	$3.727.363	$48.177,428	$5.827,560	$54,004.988
Balance	$10.024.203	$471,095	$10,495,298	$1,165.940	$11,661,238
Net Compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	217.842	....	217,842	....	217.842
Balance Available for Return under Present Rates	$10,242.045	$471,095	$10.713.140	$1,165,940	$11,879,080
Less: Reduction under Rates in Suit	1.762.436	....	1.762.436	....	1,762,436
Balance Available for Return under Rates in Suit	$8.479.609	$471,095	$8,950,704	$1.165,940	$10,116,644

[fol. 5013]

EXHIBIT X-270-A

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses, and Net Income for the Year 1930

	Intrastate			Interstate Toll	Total Chicago
	Exchange	Toll	Total		
Exchange Revenues	$54,172,625	$12,611	$54,185,236	$66,884	$54,252,120
Toll Revenues	....	4,321,661	4,321,661	7,345,653	11,667,314
Miscellaneous Operating Revenues	1,219,486	....	1,219,486	6,080	1,225,566
Non-Operating Revenues	232,361	17,883	250,244	23,457	273,701
Gross Revenues	55,624,472	4,352,155	59,976,627	7,442,074	67,418,701
Less: Licensee Revenue—Dr.	814,945	59,062	874,007	94,215	968,222
Total Revenues	$54,809,527	$4,293,093	$59,102,620	$7,347,859	$66,450,479
Traffic Expenses	$12,320,929	$1,300,952	$13,621,881	$2,664,532	$16,286,413
Commercial Expenses	5,746,192	852,429	6,598,621	381,572	6,980,193
General and Miscellaneous Expenses	2,135,547	196,794	2,332,341	284,009	2,616,350
Current Maintenance	10,859,015	513,843	11,372,858	788,123	12,160,981
Depreciation	7,327,237	525,993	7,853,230	916,656	8,769,886
Taxes	6,800,869	481,837	7,282,706	810,125	8,092,831
Other Expenses and Deductions	416,440	117,032	533,472	97,641	631,113
Total Expenses	$45,606,229	$3,988,880	$49,595,109	$5,942,658	$55,537,767
Balance	$9,203,298	$304,213	$9,507,511	$1,405,201	$10,912,712
Net Compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	221,691	....	221,691	....	221,691
Balance Available for Return under Present Rates	$9,424,989	$304,213	$9,729,202	$1,405,201	$11,134,403
Less: Reduction under Rates in Suit	1,666,374	....	1,666,374	....	1,666,374
Balance Available for Return under Rates in Suit	$7,758,615	$304,213	$8,062,828	$1,405,201	$9,468,029

[fol. 5014]

Exhibit X-270B

Illinois Bell Telephone Company, Chicago Exchange

Station to Station Separation and Apportionment of Revenues, Expenses, and Net Income for the Year 1931

	Intrastate			Interstate	Total
	Exchange	Toll	Total	Toll	Chicago
Exchange Revenues	$52,391,978	$2,175	$52,394,153	$64,002	$52,458,155
Toll Revenues	18,018	4,112,509	4,130,527	6,951,847	11,082,374
Miscellaneous Operating Revenues	1,050,286	....	1,050,286	5,730	1,056,016
Non-Operating Revenues	107,305	7,915	115,220	10,486	125,706
Gross Revenues	53,567,587	4,122,599	57,690,186	7,032,065	64,722,251
Less: Licensee Revenue—Dr.	787,711	55,526	843,237	88,415	931,652
Total Revenues	$52,779,876	$4,067,073	$56,846,949	$6,943,650	$63,790,599
Traffic Expenses	$10,540,816	$1,194,978	$11,735,794	$2,250,640	$13,986,434
Commercial Expenses	5,700,882	841,490	6,542,372	377,773	6,920,145
General and Miscellaneous Expenses	2,460,994	233,809	2,694,803	309,519	3,004,322
Current Maintenance	10,351,339	490,714	10,842,053	704,029	11,546,082
Depreciation	7,558,432	562,703	8,121,135	1,025,133	9,146,268
Taxes	7,398,097	518,456	7,916,553	896,936	8,813,489
Other Expenses and Deductions	508,708	119,652	628,360	99,907	728,267
Total Expenses	$44,519,268	$3,961,802	$48,481,070	$5,663,937	$54,145,007
Balance	$8,260,608	$105,271	$8,365,879	$1,279,713	$9,645,592
Net Compensation to Chicago for use of Chicago Properties for "Other than Chicago" purposes and use of State Area Properties for Chicago purposes	236,661	....	236,661	....	236,661
Balance Available for Return under Present Rates	$8,497,269	$105,271	$8,602,540	$1,279,713	$9,882,253
Less Reduction under Rates in Suit	1,450,864	....	1,450,864	....	1,450,864
Balance Available for Return under Rates in Suit	$7,046,405	$105,271	$7,151,676	$1,279,713	$8,431,389

[fol. 5015]

EXHIBIT X-270c

Illinois Bell Telephone Company, Chicago Exchange

Capitalized Overheads

		Engineering	General	Total Included in Primary Accts.	Interest During Construction	Grand Total
Aug.-Dec.	1911	1.86	....	1.86	....	1.86
Year	1912	1.27	....	1.27	....	1.27
	1913	1.55	....	1.55	....	1.55
	1914	1.74	....	1.74	....	1.54
	1915	2.58	....	2.58	....	2.58
	1916	2.20	....	2.20	....	2.20
	1917	1.60	....	1.60	....	1.60
	1918	2.89	....	2.89	....	2.89
	1919	2.56	....	2.56	....	2.56
	1920	4.84	.36	5.20	.40	5.60
	1921	3.94	.54	4.48	.95	5.43
	1922	4.12	.56	4.68	3.24	7.92
	1923	....	....	4.95	1.42	6.37
	1924	....	....	5.01	.49	5.50
	1925	....	....	4.26	.90	5.16
	1926	....	....	8.34	.58	8.92
	1927	....	....	4.62	.46	5.08
	1928	....	....	5.43	1.43	6.86
	1929	....	....	7.08	1.21	8.29
	1930	....	....	7.47	.75	8.22
	1931	....	....	8.63	1.03	9.66

(Here follow Exhibit X-271, side folio 5016)

[fol. 5016]

EXHIBIT X-271

Illinois Bell Telephone Company, Chicago Exchange,

Balance Available for Return

	Under Present Rates					Under Rates in Suit				
	Interstate					Interstate				
	Exchange	Toll	Total	Interstate Toll	Total Chicago	Exchange	Toll	Total	Interstate Toll	Total Chicago
1923:										
Ptf's Exh. A-49	$4,996,252	$606,019	$5,602,271	$585,755	$6,188,026	$3,483,393	$577,210	$4,060,603	$570,183	$4,630,786
Def's. "	5,739,097	123,788	5,862,885	325,141	6,188,026	4,181,857	123,788	4,305,645	325,141	4,630,786
Difference	742,845	482,231	260,614	260,614	....	698,464	453,422	245,042	245,042	....
1924:										
Ptf's Exh. A-49	5,597,580	736,248	6,333,828	677,080	7,010,908	4,077,765	705,068	4,762,833	661,255	5,444,088
Def's. "	6,423,422	188,629	6,612,051	398,857	7,010,908	4,656,602	188,629	5,045,231	398,857	5,444,098
Difference	825,842	547,619	278,223	278,223	....	778,837	516,439	262,398	262,398	....
1925:										
Ptf's Exh. A-49	5,817,884	943,165	6,761,049	782,166	7,543,215	4,269,734	908,754	5,178,488	764,241	5,942,729
Def's. "	6,772,999	315,480	7,088,479	454,736	7,543,215	5,172,513	315,480	5,487,993	454,736	5,942,729
Difference	955,115	627,685	327,430	327,430	....	902,779	593,274	309,505	309,505	....
1926:										
Ptf's Exh. A-49	5,821,960	1,193,543	7,015,503	924,122	7,939,625	4,210,427	1,154,506	5,364,933	906,438	6,271,371
Def's. "	6,897,314	453,788	7,351,102	588,523	7,939,625	5,229,060	453,788	5,682,848	588,523	6,271,371
Difference	1,075,354	739,755	335,599	335,599	....	1,018,633	700,718	317,915	317,915	....
1927:										
Ptf's Exh. A-49	5,941,909	1,335,530	7,277,439	1,059,929	8,337,368	4,306,547	1,293,815	5,600,362	1,041,276	6,641,638
Def's. "	7,148,760	501,704	7,650,464	686,904	8,337,368	5,453,030	501,704	5,954,734	686,904	6,641,638
Difference	1,206,851	833,826	373,025	373,025	....	1,146,483	792,111	354,372	354,372	....
1928:										
Ptf's Exh. A-49	6,575,395	1,526,579	8,101,974	1,168,237	9,270,211	4,907,181	1,481,492	6,388,673	1,147,428	7,536,101
Def's. "	7,994,151	556,287	8,550,438	719,773	9,270,211	6,260,041	556,287	6,816,328	719,773	7,536,101
Difference	1,418,756	970,292	448,464	448,464	....	1,352,860	925,205	427,655	427,655	....
1929:										
Ptf's Exh. A-49	8,634,791	1,569,620	10,204,411	1,674,669	11,879,080	6,941,442	1,522,387	8,463,829	1,652,815	10,116,644
Def's. "	10,242,045	471,095	10,713,140	1,165,940	11,879,080	8,479,609	471,095	8,950,704	1,165,940	10,116,844
Difference	1,607,254	1,098,525	508,729	508,729	....	1,538,167	1,051,292	486,875	486,875	....
1930:										
Ptf's Exh. A-49	7,806,071	1,430,166	9,236,237	1,898,166	11,134,403	6,207,018	1,383,341	7,590,359	1,877,670	9,468,029
Def's. "	9,424,989	304,213	9,729,202	1,405,201	11,134,403	7,758,615	304,213	8,062,828	1,405,201	9,468,029
Difference	1,618,918	1,125,953	492,965	492,965	....	1,551,597	1,079,128	472,469	472,469	....
1931:										
Ptf's Exh. A-49	7,056,769	1,097,071	8,153,840	1,728,413	9,882,253	5,660,602	1,059,494	6,720,096	1,711,293	8,431,389
Def's. "	8,497,269	105,271	8,602,540	1,279,713	9,882,253	7,046,405	105,271	7,151,676	1,279,713	8,431,389
Difference	1,440,500	991,800	448,700	448,700	....	1,385,803	954,223	431,580	431,580	....

0

[fol. 5017]

EXHIBIT X-271A

Illinois Bell Telephone Company, Chicago Division

Additional Income under Attacked Rates Due to Defendants' Interstate Separation

(Giving Consideration to Effective Date (October 1, 1923) of Illinois Commerce Commission's Order of August 16, 1923)

During Year 1923

	Intrastate				
	Exchange	Toll	Total	Interstate Toll	Total Chicago
(1) Income Available for Return under Present Rates per Company's Exhibit A-49	$4,996,252	$606,019	$5,602,271	$585,755	$6,188,026
(2) Loss in Return due to Attacked Rates—one-fourth of Amounts Shown in Company's Exhibit A-49 to Give Consideration to Effective Date of the Illinois Commerce Commission's Order of August 16, 1923	378,215	7,202	385,417	3,893	389,310
(3) Income Available for Return under Attacked Rates—per Company's Exhibit A-49, as Adjusted Above	$4,618,037	$598,817	$5,216,854	$581,862	$5,798,716
(4) Income Available for Return under Present Rates—per Defendants' Interstate Separation	$5,739,097	$123,788	$5,862,885	$325,141	$6,188,026
(5) Loss in Return due to Attacked Rates—one-fourth of Amounts shown in "Defendants' Income Adjusted for Interstate Separation" to give Consideration to Effective Date of the Illinois Commerce Commission's Order of August 16, 1923	389,310	....	389,310	....	389,310
(6) Income Available for Return under Attacked Rates—per Defendants' Interstate Separation, as Adjusted Above	$5,349,787	$123,788	$5,473,575	$325,141	$5,798,716
(7) Additional Income under Attacked Rates due to Defendants' Interstate Separation	$731,750	$(475,029)	$256,721	$(256,721)	....

( ) = Red figures.

[fol. 5018]

Exhibit X-272

American Telephone and Telegraph Company

Rate of Interest on Capital Stock Installments Paid by Illinois Bell Telephone Company to A. T. & T. Co. Converted Into Average Return to Stockholders of A. T. & T. Co. on Their Investments in Capital Stock of A. T. & T. Co. During Years 1920 to 1930, Inclusive

Year Ended Dec. 31	Rate of Interest paid by Illinois Bell Telephone Co. on Capital Stock Installments, Per Cent	Rate of Interest Converted into Average Return to Stockholders of American Telephone and Telegraph Company, Per Cent
1920	..	....
1921	..	....
1922	8.00	10.81
1923	8.00	10.57
1924	8.00	10.66
1925	8.00	10.65
1926	..	....
1927	8.00	10.73
1928	..	....
1929	8.00	11.35
1930	8.00	11.81

[fol. 5019]

Exhibit X-275

American Telephone and Telegraph Company

Percentage of Undivided Profits Allocable to A. T. & T. Co., Stock Ownership, to Investments by A. T. & Co. in Common Stocks of Licensee Companies During Years 1920 to 1922, Inclusive

	Year Ended Dec. 31 1920	Year Ended Dec. 31 1921	Year Ended Dec. 31 1922
Bell Telephone Company of Pennsylvania	1.35%*	1.78%	2.12%
Central Union Telephone Company	30.62%*	....	....
Chesapeake and Potomac Telephone Company (Baltimore)	(a)	(a)	1.07%
Chesapeake and Potomac Telephone Company (West Virginia)	(a)	(a)	6.79%
Cincinnati and Suburban Bell Telephone Company	.69%	1.51%	1.82%
Illinois Bell Telephone Company	3.76%*	3.88%	4.12%
Indiana Bell Telephone Company	12.08%*	10.60%*	3.22%*
Michigan State Telephone Company	19.19%*	20.57%	8.49%
Mountain States Telephone & Telegraph Co	.18%	.51%	.77%
New England Telephone & Telegraph Co	1.54%	.89%	1.17%
New York Telephone Company	3.16%*	.20%	.06%
Northwestern Bell Telephone Company	1.85%	.25%	1.23%
Ohio Bell Telephone Company	.07%*	.48%	1.01%
Pacific Telephone & Telegraph Company	60.94%	76.70%	93.95%
Southern Bell Telephone & Telegraph Company	3.34%*	3.88%*	.42%
Southern New England Telephone Company	.90%	.59%	.65%
Southwestern Bell Telephone Company	.46%	.60%	1.04%
Wisconsin Telephone Company	.34%*	2.53%	2.94%
Average of All Licensee Companies	2.00%*	.99%	1.44%
Average of All Licensee Companies, exclusive of Illinois Bell Telephone Company	1.80%*	.67%	1.15%

(a) No stock holdings in these years.
* Red figures.

[fol. 5020]

American Telephone and Telegraph Company

Percentage of Undivided Profits Allocable to A. T. & T. Co., Stock Ownership, to investments by A. T. & T. Co. in Common Stocks of Licensee Companies During Years 1923 to 1930, Inclusive

	Year Ended Dec. 31 1923	Year Ended Dec. 31 1924	Year Ended Dec. 31 1925	Year Ended Dec. 31 1926	Year Ended Dec. 31 1927	Year Ended Dec. 31 1928	Year Ended Dec. 31 1928	Year Ended Dec. 31 1930
	%	%	%	%	%	%	%	%
Bell Telephone Company of Pennsylvania	.79	.41	.70	1.55	2.65	4.79	4.53	2.07
Chesapeake and Potomac Telephone Company (Baltimore)	1.21	1.53*	.35	1.87	.01	.94	1.15	.94
Chesapeake and Potomac Telephone Company (New York)	1.76	1.29	1.82	3.22	1.21	3.12	1.98	1.51
Chesapeake and Potomac Telephone Company (Virginia)	1.20	.07*	1.07*	2.35	2.16	2.61	2.39	1.55
Chesapeake and Potomac Telephone Company (West Virginia)	.78*	.51	.17*	.68	.10	.01	.68*	.86
Cincinnati and Suburban Bell Telephone Company	1.73	1.86	1.28	2.04	2.66	3.28	2.10	.90
Cumberland Telephone and Telegraph Company (Kentucky)	.31	2.78	.47	......	......	......	......	......
Diamond State Telephone Company	(a)	(a)	(a)	(a)	(a)	(a)	2.02	1.80
Illinois Bell Telephone Company	2.24	2.42	2.25	2.15	2.37	2.59	3.70	1.90
Indiana Bell Telephone Company	1.43*	2.90	3.50	3.11	3.44	1.90	1.79	.80
Michigan Bell Telephone Company	.92	3.37	.58	.37	1.73	.48*	.92*	1.44*
Mountain States Telephone & Telegraph Co.	1.36	2.25	2.49	2.97	2.02	2.57	2.13	1.64
New England Telephone & Telegraph Company	2.84*	2.96*	1.16*	.29	.73	1.25	2.27	1.12
New Jersey Bell Telephone Company	......	......	......	......	......	1.10	1.15	.10*
New York Telephone Company	.17	1.25*	.42	.54	1.40	1.68	1.84	1.38
Northwestern Bell Telephone Company	3.00	1.63	1.59	1.72	2.24	2.96	3.39	2.76
Ohio Bell Telephone Company	1.03	1.01	1.68	1.79	2.65	.93	.16	.43*
Pacific Telephone & Telegraph Company	76.40	29.05	.05	2.35	1.93*	.04*	2.81	1.02
Southern Bell Telephone & Telegraph Company	1.64	2.30	1.65	.92	.31	1.24	.49	.09
Southern New England Telephone Company	.79	.93	1.32	1.32	.68	2.31	2.16	1.37
Southwestern Bell Telephone Company	2.20	1.40	3.48	4.81	3.42	3.62	3.70	2.04
Wisconsin Telephone Company	6.84	3.02	2.74	3.62	5.34	5.52	5.18	.30
Average of All Licensee Companies	1.25	.56	1.11	1.58	1.18	1.94	2.09	1.02
Average of All Licensee Companies, exclusive of Illinois Bell Telephone Company	1.14	.35	1.01	1.53	1.59	1.88	1.95	.94

(a) No stock holdings in these years.
* Red figures.

[fol. 5021]

EXHIBIT X-276

American Telephone and Telegraph Company

Percentage of Undivided Profits of Licensee Companies to Investments by A. T. & T. Co. in Common Stocks of Licensee Companies, Converted into Average Return to Stockholders of A. T. & T. Co. on Their Investments in Capital Stock of A. T. & T. Co. During Years 1920 to 1922, Inclusive

	Year Ended Dec. 31 1920 %	Year Ended Dec. 31 1921 %	Year Ended Dec. 31 1922 %
Bell Telephone Company of Pennsylvania	2.71*	3.45	3.66
Central Union Telephone Company	57.23*	....	....
Chesapeake and Potomac Telephone Company (Baltimore)	(a)	(a)	1.84
Chesapeake and Potomac Telephone Company (West Virginia)	(a)	(a)	8.72
Cincinnati and Suburban Bell Telephone Company	1.38	2.92	3.15
Illinois Bell Telephone Company	7.55*	7.53	7.11
Indiana Bell Telephone Company	19.99*	16.39*	2.56*
Michigan State Telephone Company	34.27*	35.73	11.65
Mountain States Telephone & Telegraph Co	.36	.99	1.33
New England Telephone & Telegraph Co	3.09	1.73	2.02
New York Telephone Company	6.35*	.39	.10
Northwestern Bell Telephone Company	3.72	.48	2.12
Ohio Bell Telephone Company	4.42*	.93	1.26*
Pacific Telephone & Telegraph Company	118.14	144.59	159.20
Southern Bell Telephone & Telegraph Company	6.71*	7.53*	.72
Southern New England Telephone Company	1.81	1.15	1.12
Southwestern Bell Telephone Company	.92	1.16	1.80
Wisconsin Telephone Company	.69*	4.91	5.07
Average of All Licensee Companies	3.96*	1.99	2.35
Average of All Licensee Companies, exclusive of Illinois Bell Telephone Company	3.55*	1.38	1.85

(a) No stock holdings in these years.
* Red figures.

[fol. 5022]

American Telephone and Telegraph Company

Percentage of Undivided Profits of Licensee Companies to Investments by A. T. & T. Co., in Common Stocks of Licensee Companies Converted into Average Return to Stockholders of A. T. & T. Co. on their Investments in Capital Stock of A. T. & T. Co. During Years 1923 to 1930, Inclusive

	Year Ended Dec. 31 1923	Year Ended Dec. 81 1924	Year Ended Dec. 31 1925	Year Ended Dec. 31 1926	Year Ended Dec. 31 1927	Year Ended Dec. 31 1928	Year Ended Dec. 31 1929	Year Ended Dec. 31 1930
	%	%	%	%	%	%	%	%
Bell Telephone Company of Pennsylvania	1.24	.66	1.16	2.53	4.24	7.86	7.63	3.59
Chesapeake and Potomac Telephone Company (Baltimore)	1.90	2.45*	.57	3.06	.02	1.54	1.94	1.63
Chesapeake and Potomac Telephone Company (New York)	2.78	2.07	2.99	5.27	1.94	5.12	3.34	2.62
Chesapeake and Potomac Telephone Company (Virginia)	1.89	.11*	1.76*	3.84	3.46	4.28	4.02	2.69
Chesapeake and Potomac Telephone Company (West Virginia)	1.23*	.82	.28*	1.11	.16	.01	1.14*	1.48
Cincinnati and Suburban Bell Telephone Company	2.72	2.99	2.10	3.34	4.26	5.37	3.54	1.56
Cumberland Telephone and Telegraph Company (Kentucky)	1.56*	4.46	.77	......	......	......	......	......
Diamond State Telephone Company	(a)	(a)	(a)	(a)	(a)	(a)	1.26	3.12
Illinois Bell Telephone Company	3.53	3.88	3.70	3.52	3.80	4.25	6.23	3.29
Indiana Bell Telephone Company	.21*	2.47	3.26	5.09	5.51	3.12	3.02	1.39
Michigan Bell Telephone Company	1.45	5.40	.95	.60	2.77	.79*	1.55*	2.49*
Mountain States Telephone & Telegraph Co	2.15	3.61	4.09	4.86	3.23	4.22	3.42	2.84
New England Telephone & Telegraph Co	4.48*	4.76*	1.91*	.47	1.16	2.05	3.83	1.94
New Jersey Bell Telephone Company	......	......	......	......	......	1.81	1.94	.17*
New York Telephone Company	.27	2.01*	.69	.89	2.24	2.75	3.10	2.39
Northwestern Bell Telephone Company	4.73	2.62	2.61	2.82	3.59	4.86	5.71	4.78
Ohio Bell Telephone Company	1.63	1.62	2.76	2.93	4.25	1.52	.27	.74*
Pacific Telephone & Telegraph Company	118.47	44.44	.09	3.84	3.10*	.07*	4.73	3.81
Southern Bell Telephone & Telegraph Company	2.58	3.69	2.71	1.51	.50	2.03	.83	2.20
Southern New England Telephone Company	1.24	1.50	2.17	2.16	1.08	3.79	3.64	2.37
Southwestern Bell Telephone Company	3.47	2.24	5.72	7.88	5.48	5.94	6.24	2.30
Wisconsin Telephone Company	10.79	4.85	4.50	5.92	8.56	9.06	8.73	.52
Average of All Licensee Companies	1.96	.93	1.89	2.67	2.70	3.23	3.57	1.79
Average of All Licensee Companies, exclusive of Illinois Bell Telephone Company	1.80	.61	1.72	2.57	2.64	3.13	3.34	1.65

(a) No stock holdings in these years.

* Red figures.

[fol. 5023]

EXTRACTS FROM EXHIBIT X-277

American Telephone and Telegraph Company

Percentage of Dividends and Undivided Profits of Licensee Companies to Investments by A. T. & T. Co. in Common Stocks of Licensee Companies During Years 1920 to 1930, Inclusive

Year Ended Dec. 31	Illinois Bell Telephone Co.	Average of All Licensee Cos.	Average of All Licensee Cos. Excl. of Ill. Bell Tel. Co.
1920	3.02%	4.18%	4.32%
1921	10.78	7.40	7.02
1922	11.12	7.79	7.44
1923	9.39	7.89	7.73
1924	9.55	7.55	7.33
1925	9.51	8.18	8.06
1926	9.49	8.96	8.92
1927	9.90	9.08	9.01
1928	10.21	9.45	9.38
1929	11.32	9.60	9.45
1930	9.57	8.29	8.47

Exhibit from which these extracts were taken showed the same data for each licensee company shown in these extracts for Illinois Bell Telephone Company.

[fol. 5024]

EXTRACTS FROM EXHIBIT X-278

American Telephone and Telegraph Company

Percentage of Dividends and Undivided Profits of Licensee Companies to Investments by A. T. & T. Co. in Common Stocks of Licensee Companies Converted into Average Return to Stockholders of A. T. & T. Co. on Their Investments in Capital Stock of A. T. & T. Co. During Years 1920 to 1930, Inclusive

Year Ended Dec. 31	Illinois Bell Telephone Co.	Average of All Licensee Cos.	Average of All Licensee Cos. Excl. of Ill. Bell Tel. Co.
1920	1.79%	4.12%	4.40%
1921	16.74	10.18	9.45
1922	16.19	10.45	9.84
1923	12.76	10.40	10.15
1924	13.14	9.93	9.58
1925	13.14	10.95	10.75
1926	13.18	12.31	12.25
1927	13.78	12.46	12.35
1928	14.79	13.55	13.43
1929	16.94	14.04	13.79
1930	14.53	12.32	12.11

Exhibit from which these extracts were taken showed the same data for each licensee company shown in these extracts for Illinois Bell Telephone Company.

[fol. 5025]

Exhibit X-283

American Telephone and Telegraph Company

Dividends on Capital Stock and Undivided Profits Allocable to A. T. & T. Co. Ownership Related to Investment in Capital Stock and Surplus Allocable to A. T. & T. Co. Ownership of Illinois Bell Telephone Company, of All Licensee Companies, and of All Licensee Companies Exclusive of Illinois Bell Telephone Company, During Years 1920 to 1922, Inclusive

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
Illinois Bell Telephone Company			
(1) Dividends paid to A. T. & T. Co.	$3,150,224	$3,548,428	$3,949,378
(2) Undivided profits allocable to A. T. & T. Co. on basis of stock ownership	1,745,872*	1,996,981	2,323,738
(3) Total Dividends and Undivided Profits	$1,404,352	5,545,409	6,273,116
(4) Average book value of A. T. & T. Co.'s investment in capital stock	$46,462,494	51,440,543	56,452,540
(5) Average amount of corporate surplus allocable to A. T. & T. Co. on basis of stock ownership	1,421,859	1,610,571	3,256,962
(6) Total Capital Stock and Surplus	$47,884,353	53,051,114	59,709,502
(7) Percentage Relationship	2.93%	10.45%	10.51%
All Licensee Companies			
(1) Dividends paid to A. T. & T. Co.	$27,699,044	$32,909,577	$36,878,846
(2) Undivided profits allocable to A. T. & T. Co. on basis of stock ownership	8,971,690*	5,073,100	8,365,200
(3) Total Dividends and Undivided Profits	$18,727,354	37,982,677	45,244,046
(4) Average book value of A. T. & T. Co.'s investment in capital stock	$447,666,699	513,573,879	580,436,611
(5) Average amount of corporate surplus allocable to A. T. & T. Co. on basis of stock ownership	48,267,376	55,722,061	59,764,882
(6) Total Capital Stock and Surplus	$495,934,075	569,295,940	640,201,493
(7) Percentage Relationship	3.78%	6.67%	7.07%

All Licensee Companies Exclusive of Illinois Bell Telephone Company

(1) Dividends paid to A. T. & T. Co.	$24,548,820	$29,361,149	$32,929,468
(2) Undivided profits allocable to A. T. & T. Co. on basis of stock ownership	7,225,818*	3,076,119	6,041,462
(3) Total Dividends and Undivided Profits	$17,323,002	32,437,268	38,970,930
(4) Average book value of A. T. & T. Co.'s investment in capital stock	$401,204,205	462,133,336	523,984,071
(5) Average amount of corporate surplus allocable to A. T. & T. Co. on basis of stock ownership	46,845,517	54,111,490	56,507,920
(6) Total Capital Stock and Surplus	$448,049,722	516,244,826	580,491,991
(7) Percentage Relationship	3.87%	6.28%	6.71%

* Red figures.

(Here follow side folio 5026)

[fol. 5026]

Exhibit X-283

American Telephone and Telegraph Company

Dividends on Capital Stock and Undivided Profits Allocable to A. T. & T. Co. Ownership Related to Investment in Capital Stock and Surplus Allocable to A. T. & T. Co. Ownership of Illinois Bell Telephone Company of All Licensee Companies and of All Licensee Companies Exclusive of Illinois Bell Telephone Company During Years 1923 to 1930, Inclusive.

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
Illinois Bell Telephone Company:								
(1) Dividends paid to A. T. & T. Co.	$4,745,160	5,340,076	5,539,368	6,337,160	6,932,952	8,721,340	8,721,414	10,309,776
(2) Undivided profits allocable to A. T. & T. Co. on basis of stock ownership	1,490,859	1,815,012	1,717,673	1,852,348	2,185,707	2,960,068	4,237,163	2,549,217
(3) Total Dividends and Undivided Profits	$6,236,019	7,155,088	7,257,041	8,189,508	9,118,659	11,681,408	12,958,577	12,858,993
(4) Average book value of A. T. & T. Co.'s investment in capital stock	$66,410,793	74,851,757	76,342,269	86,330,488	92,088,083	114,461,965	114,463,353	134,335,909
(5) Average amount of corporate surplus allocable to A. T. & T. Co. on basis of stock ownership	4,723,147	6,134,410	7,599,971	9,410,050	11,602,661	14,435,602	18,094,899	21,447,659
(6) Total Capital Stock and Surplus	$71,133,940	80,986,167	83,942,240	95,740,538	103,690,744	128,897,567	132,558,252	155,783,568
(7) Percentage Relationship	8.77%	8.83%	8.65%	8.55%	8.79%	9.06%	9.78%	8.25%
All License Companies:								
(1) Dividends paid to A. T. & T. Co.	$43,833,156	52,431,044	63,282,773	77,862,410	85,820,373	101,248,756	109,359,491	118,593,979
(2) Undivided profits allocable to A. T. & T. Co. on basis of stock ownership	8,266,397	4,188,098	9,978,957	16,696,577	19,071,076	26,096,550	30,418,485	16,576,714
(3) Total Dividends and Undivided Profits	$52,099,553	56,619,142	73,261,730	94,558,987	104,891,449	127,345,306	139,777,976	135,170,693
(4) Average book value of A. T. & T. Co.'s investment in capital stock	$660,082,685	749,803,613	895,707,368	1,054,838,259	1,155,472,702	1,347,926,689	1,456,372,987	1,630,584,485
(5) Average amount of corporate surplus allocable to A. T. & T. Co. on basis of stock ownership	66,646,846	80,168,457	93,808,963	106,106,721	127,281,745	159,344,645	189,934,258	212,576,309
(6) Total Capital Stock and Surplus	$726,729,531	829,972,070	989,516,331	1,160,944,980	1,282,754,447	1,507,271,334	1,646,307,245	1,843,160,794
(7) Percentage Relationship	7.17%	6.82%	7.40%	8.15%	8.18%	8.45%	8.49%	7.33%
All Licensee Companies Exclusive of Illinois Bell Telephone Company:								
(1) Dividends paid A. T. & T. Co.	$39,087,996	47,090,968	57,743,405	71,525,250	78,887,421	92,527,416	100,638,077	108,284,203
(2) Undivided profits allocable to A. T. & T. Co. on basis of stock ownership	6,775,538	2,373,086	8,261,284	14,844,229	16,885,369	23,136,482	26,181,322	14,027,497
(3) Total Dividends and Undivided Profits	$44,863,534	49,464,054	66,004,689	86,369,479	95,772,790	115,663,898	126,819,399	122,341,700
(4) Average book value of A. T. & T. Co.'s investment in capital stock	$593,671,892	674,951,856	819,365,099	968,507,771	1,063,384,619	1,233,464,724	1,341,909,634	1,496,248,576
(5) Average amount of corporate surplus allocable to A. T. & T. Co. on basis of stock ownership	61,923,699	74,034,047	86,208,992	96,696,671	115,679,084	144,909,043	171,839,359	191,128,650
(6) Total Capital Stock and Surplus	$655,595,591	748,985,903	905,574,091	1,065,204,442	1,179,063,703	1,378,373,767	1,513,748,993	1,687,377,226
(7) Percentage Relationship	7.00%	6.60%	7.29%	8.11%	8.12%	8.39%	8.38%	7.25%

Exhibit X-284

American Telephone and Telegraph Company

Return on Investment (Including Surplus) in Illinois Bell Telephone Company, in All Licensee Companies, and in All Licensee Companies Exclusive of Illinois Bell Telephone Company, During Years 1920 to 1922, Inclusive

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
Illinois Bell Telephone Company:			
(1) Dividends paid to A. T. & T. Co.	$3,150,224	$3,548,428	$3,949,378
(2) Undivided Profits allocable to A. T. & T. Co. on basis of stock ownership	1,745,872*	1,996,981	2,323,738
(3) Interest on Capital Stock Installments paid to A. T. & T. Co.	....	....	247,466
(4) Interest on Loans	91,372	178,669	42,851
(5) Total Return on Investment	1,495,724	5,724,078	6,563,433
(6) Average book value of A. T. & T. Co. investment in Capital Stock	46,462,494	51,440,543	56,452,540
(7) Average amount of corporate surplus allocable to A. T. & T. Co. on basis of stock ownership	1,421,859	1,610,571	3,256,962
(8) Investment of A. T. & T. Co. in Capital Stock Installments	....	....	3,093,325
(9) Investment of A. T. & T. Co. in loans	1,522,231	3,200,000	741,463
(10) Total Investment	49,406,584	56,251,114	63,544,290
(11) Percentage of Return on Investment	3.03	10.18	10.33
All Licensee Companies:			
(1) Dividends paid to A. T. & T. Co.	29,076,091	34,335,625	40,519,487
(2) Undivided Profits allocable to A. T. & T. Co. on basis of stock ownership	8,971,690*	5,073,100	8,365,200
(3) Interest on Capital Stock Installments paid to A. T. & T. Co.	....	....	247,466
(4) Interest on Loans	10,587,164	10,680,263	8,119,224
(5) Total Return on Investment	30,691,565	50,088,988	57,251,377
(6) Average book value of A. T. & T. Co. investment in Capital Stock	472,550,756	539,170,232	630,159,926
(7) Average amount of corporate surplus allocable to A. T. & T. Co. on basis of stock ownership	48,267,376	55,722,061	59,764,882
(8) Investment of A. T. & T. Co. in Capital Stock Installments	....	....	3,093,325

Exhibit X-284—Continued

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
(9) Investment of A. T. & T. Co. in Loans	$176,377,669	$191,286,020	$140,490,425
(10) Total Investment	697,195,801	786,178,313	833,508,558
(11) Percentage of Return on Investment	4.40	6.37	6.87
All Licensee Companies Exclusive of Illinois Bell Telephone Company:			
(1) Dividends paid to A. T. & T. Co.	25,925,867	30,787,197	36,570,109
(2) Undivided Profits allocable to A. T. & T. Co. on basis of stock ownership	7,225,818*	3,076,119	6,041,462
(3) Interest on Capital Stock Installments paid to A. T. & T. Co.	....	....	....
(4) Interest on Loans	10,495,792	10,501,594	8,076,373
(5) Total Return on Investment	29,195,841	44,364,910	50,687,944
(6) Average book value of A. T. & T. Co. investment in Capital Stock	426,088,262	487,729,689	573,707,386
(7) Average amount of corporate surplus allocable to A. T. & T. Co. on basis of stock ownership	46,845,517	54,111,490	56,507,920
(8) Investment of A. T. & T. Co. in Capital Stock Installments	....	....	....
(9) Investment of A. T. & T. Co. in Loans	174,855,438	188,086,020	139,748,962
(10) Total Investment	647,789,217	729,927,199	769,964,268
(11) Percentage of Return on Investment	4.51	6.08	6.58

* Red figures.

(Here follows side folio 5028)

American Telephone and Telegraph Company

Return on Investment (Including Surplus) in Illinois Bell Telephone Company in All Licensee Companies and in All Licensee Companies Exclusive of Illinois Bell Telephone Company During Years 1923 to 1930, Inclusive

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
Illinois Bell Telephone Company:								
(1) Dividends paid to A. T. & T. Co	$4,745,160	$5,340,076	$5,539,368	$6,337,160	$6,932,952	$8,721,340	$8,721,414	$10,309,776
(2) Undivided Profits allocable to A. T. & T. Co. on bais of stock ownership	1,490,859	1,815,012	1,717,673	1,852,348	2,185,707	2,960,068	4,237,163	2,549,217
(3) Interest on Capital Stock Installments paid to A. T. & T. Co.	198,390	158,360	217,070	....	995,798	....	794,066	1,191,099
(4) Interest on Loans	11,280	....	134,388	394,605	221,625	271,801	686,659	32,037
(5) Total Return on Investment	6,445,689	7,313,448	7,608,499	8,584,113	10,336,082	11,953,209	14,439,302	14,082,129
(6) Average book value of A. T. & T. Cos. Investment in Capital Stock	66,410,793	74,851,757	76,342,269	86,330,488	92,088,083	114,461,965	114,463,353	134,335,909
(7) Average amount of corporate surplus allocable to A. T. & T. Co. on basis of stock ownership	4,723,147	6,134,410	7,599,971	9,410,050	[illegible],602,661	14,435,602	18,094,899	21,447,659
(8) Investment of A. T. & T. Co. in Capital Stock Installments	2,479,875	1,979,500	2,713,375	....	12,447,475	....	9,925,825	14,888,738
(9) Investment of A. T. & T. Co. in Loans	200,000	....	2,317,042	6,874,656	3,750,000	4,575,776	12,412,500	550,000
(10) Total Investment	73,813,815	82,965,667	88,972,657	102,615,194	119,888,219	133,473,343	154,896,577	171,222,306
(11) Percentage of Return on Investment	8.73	8.82	8.55	8.37	8.62	8.96	9.32	8.22
All Licensee Companies:								
(1) Dividends paid to A. T. & T. Co	47,542,861	56,905,202	68,218,201	82,788,903	90,746,520	106,169,963	114,279,282	123,521,949
(2) Undivided Profits allocable to A. T. & T. Co. on basis of stock ownership	8,266,397	4,188,098	9,978,957	16,696,577	19,071,076	26,096,550	30,418,485	16,576,714
(3) Interest on Capital Stock Installments paid to A. T. & T. Co.	198,390	158,360	217,070	....	995,798	....	794,066	1,191,099
(4) Interest on Loans	7,025,169	10,057,931	13,436,279	11,048,310	11,490,263	10,147,025	13,597,438	15,592,817
(5) Total Return on Investment	63,032,817	71,309,591	91,850,507	110,533,790	122,303,657	142,413,538	159,089,271	156,882,579
(6) Average book value of A. T. & T. Cos. Investment in Capital Stock	715,359,946	816,822,587	969,909,008	1,126,557,405	1,227,186,809	1,419,568,937	1,527,994,644	1,702,330,420
(7) Average amount of corporate surplus allocable to A. T. & T. Co. on basis of stock ownership	66,640,846	80,168,457	93,808,963	106,106,721	127,281,745	159,344,645	189,934,258	212,576,309
(8) Investment of A. T. & T. Co. in Capital Stock Installments	2,479,875	1,979,500	2,713,375	....	12,447,475	....	9,925,825	14,888,738
(9) Investment of A. T. & T. Co. in Loans	124,615,454	179,832,611	231,494,350	192,440,334	194,312,996	170,968,786	245,788,267	267,684,274
(10) Total Investment	909,102,121	1,078,803,155	1,297,925,696	1,425,104,460	1,561,229,025	1,749,882,368	1,973,642,994	2,197,479,741
(11) Percentage of Return on Investment	6.93	6.61	7.08	7.76	7.83	8.14	8.06	7.14
All License Companies Exclusive of Illinois Bell Telephone Company:								
(1) Dividends paid to A. T. & T. Co	42,797,701	51,565,126	62,678,833	76,451,743	83,813,568	97,448,623	105,557,868	113,212,173
(2) Undivided Profits allocable to A. T. & T. Co. on basis of stock ownership	6,775,538	2,373,086	8,261,284	14,844,229	16,885,369	23,136,482	26,181,322	14,027,497
(3) Interest on Capital Stock Installments paid to A. T. & T. Co.	....	....	....	....	....	....	....	....
(4) Interest on Loans	7,013,889	10,057,931	13,301,891	10,653,705	11,268,638	9,875,224	12,910,779	15,560,780
(5) Total Return on Investment	56,587,128	63,996,143	84,242,008	101,949,677	111,967,575	130,460,329	144,649,969	142,800,450
(6) Average book value of A. T. & T. Cos. Investment in Capital Stock	648,949,153	741,970,830	893,566,739	1,040,226,917	1,135,098,726	1,305,106,972	1,413,531,291	1,567,994,511
(7) Average amount of corporate surplus allocable to T. A. & T. Co. on basis of stock ownership	61,923,699	74,034,047	86,208,992	96,696,671	115,679,084	144,909,043	171,839,359	191,128,650
(8) Investment of A. T. & T. Co. in Capital Stock Installments	....	....	....	....	....	....	....	....
(9) Investment of A. T. & T. Co. in Loans	124,415,454	179,832,611	229,177,308	185,565,678	190,562,996	166,393,010	233,375,767	267,134,274
(10) Total Investment	835,288,306	995,837,488	1,208,953,039	1,322,489,266	1,441,340,806	1,616,409,025	1,818,746,417	2,026,257,435
(11) Percentage of Return on Investment	6.77	6.43	6.97	7.71	7.77	8.07	7.95	7.05

[fol. 5029] EXTRACTS FROM EXHIBIT X-285

American Telephone and Telegraph Company

Return on Investment in Illinois Bell Telephone Company from Dividends on Capital Stock, Interest on Capital Stock Installments, Interest on Loans and Undivided Profits in Excess of the Average Return on Investment in All Licensee Companies During Years 1920 to 1922, Inclusive

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
(1) Average Return from Investment in Illinois Bell Telephone Company....	3.12%	10.48%	10.89%
(2) Average Return from Investment in All Licensee Companies............	4.73%	6.86%	7.40%
(3) Investment in Illinois Bell Telephone Co..........	$47,984,725	$54,640,543	$60,287,328
(4) Return Required from Investment in Illinois Bell Telephone Co. on Basis of All Licensees (Item 2 Times Item 3)..........	2,269,677	3,748,341	4,461,262
(5) Actual Return from Investment in Illinois Bell Telephone Co..........	1,495,724	5,724,078	6,563,433
(6) Excess of Actual Return from Investment in Illinois Bell Telephone Co. Over Required Return on Basis of All Licensees....	773,953*	1,975,737	2,102,171

* Red Figures.

(Here follows side folio 5030)

American Telephone and Telegraph Company

Return on Investment in Illinois Bell Telephone Company from Dividends on Capital Stock, Interest on Capital Stock Installments, Interest on Loans, and Undivided Profits in Excess of the Average Return on Investment in All Licensee Companies During Years 1923 to 1930, Inclusive

	Year Ended Dec. 31, 1923	Year Ended Dec, 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
(1) Average Return from Investment in Illinois Bell Telephone Co.	9.33%	9.52%	9.35%	9.21%	9.55%	10.04%	10.55%	9.40%
(2) Average Return from Investment in All Licensee Companies	7.48%	7.14%	7.63%	8.38%	8.53%	8.95%	8.92%	7.90%
(3) Investment in Illinois Bell Telephone Company	$69,090,668	$76,831,257	$81,372,686	$93,205,154	$108,285,558	$119,037,741	$136,801,678	$149,774,647
(4) Return Required from Investment in Illinois Bell Telephone Co. on Basis of all Licensees (Item 2 Times Item 3)	5,167,982	5,485,752	6,208,736	7,810,592	9,236,758	10,653,878	12,202,710	11,832,197
(5) Actual Return from Investment in Illinois Bell Telephone Company	6,445,689	7,313,448	7,608,499	8,584,113	10,336,082	11,953,209	14,439,302	14,082,129
(6) Excess of Actual Return from Investment in Illinois Bell Telephone Co. Over Required Return on Basis of All Licensees	1,277,707	1,827,696	1,399,763	773,521	1,099,324	1,299,331	2,236,592	2,249,932

[fol. 5031]

American Telephone and Telegraph Company

Return on Investment in Illinois Bell Telephone Company from Dividends on Capital Stock, Interest on Capital Stock Installments, Interest on Loans and Undivided Profits in Excess of the Average Return on Investment in Other Licensee Companies During Years 1920 to 1932, Inclusive

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
(1) Average Return from Investment in Illinois Bell Telephone Co.	3.12%	10.48%	10.89%
(2) Average Return from Investment in Other Licensee Companies	4.86%	6.56%	7.10%
(3) Investment in Illinois Bell Telephone Co.	$47,984,725	$54,640,543	$60,287,328
(4) Return Required from Investment in Illinois Bell Telephone Co. on Basis of Other Licensees (Item 2 Times Item 3)	2,332,058	3,584,420	4,280,400
(5) Actual Return from Investment in Illinois Bell Telephone Co.	1,495,724	5,724,078	6,563,433
(6) Excess of Actual Return from Investment in Illinois Bell Telephone Co. over Required Return on Basis of Other Licensees	836,334*	2,139,658	2,283,033

* Red Figures.

(Here follows side folio 5032)

[fol. 5032]

American Telephone and Telegraph Company

Return on Investment in Illinois Bell Telephone Company from Dividends on Capital Stock, Interest on Capital Stock Installments, Interest on Loans and Undivided Profits in Excess of the Average Return on Investment in Other Licensee Companies During Years 1923 to 1930, Inclusive

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
(1) Average Return from Investment in Illinois Bell Telephone Co.	9.33%	9.52%	9.35%	9.21%	9.55%	10.04%	10.55%	9.40%
(2) Average Return from Investment in Other Licensee Companies	7.32%	6.94%	7.50%	8.32%	8.45%	8.87%	8.78%	7.78%
(3) Investment in Illinois Bell Telephone Co.	$69,090,668	$76,831,257	$81,372,686	$93,205,154	$108,285,558	$119,037,741	$136,801,678	$149,774,647
(4) Return Required from Investment in Illinois Bell Telephone Co. on Basis of Other Licensees (Item 2 Times Item 3)	5,057,437	5,332,089	6,102,951	7,754,669	9,150,130	10,558,648	12,011,187	11,652,468
(5) Actual Return from Investment in Illinois Bell Telephone Co.	6,445,689	7,313,448	7,608,499	8,584,113	10,336,082	11,953,209	14,439,302	14,082,129
(6) Excess of Actual Return from Investment in Illinois Bell Telephone Co. Over Required Return on Basis of Other Licensees	1,388,252	1,981,359	1,505,548	829,444	1,185,952	1,394,561	2,428,115	2,429,661

[fol. 5033]

Exhibit X-286

American Telephone and Telegraph Company

Per Cent of Undivided Profits and Dividend Payments to Capital Stock During Years 1920 to 1922, Inclusive

Year	Annual undivided profits (after dividends, interest, and amortization charges)	Capital stock	% of undivided profits to capital stock	Annual dividend rates	% Undivided profits and dividends to capital stock
1920......	$16,265,368	442,209,900	3.68	8.00	11.68
1921......	10,459,955	486,477,500	2.15	8.77	10.92
1922......	10,862,314	594,009,500	1.83	8.92	10.75

[fol. 5034]

American Telephone and Telegraph Company

Per Cent of Undivided Profits and Dividend Payments to Capital Stock

During Years 1923 to 1930, Inclusive

Year	Annual undivided profits (after dividends, interest, and amortization charges)	Capital stock	% of undivided profits to capital stock	Annual dividend rates	% Undivided profits and dividends to capital stock
1923......	$17,352,881	719,964,600	2.41	8.79	11.20
1924......	19,167,872	805,145,900	2.38	8.81	11.19
1925......	25,236,528	911,181,400	2.77	8.89	11.66
1926......	29,375,697	979,026,200	3.00	8.83	11.83
1927......	78,155,526	1,093,242,000	7.15	8.91	16.06
1928......	38,359,493	1,182,374,500	3.24	8.78	12.02
1929......	49,446,893	1,311,374,600	3.77	8.87	12.64
1930......	26,337,912	1,585,669,600	1.66	8.78	10.44

[fol. 5035]

EXHIBIT X-287

American Telephone and Telegraph Company

Return on Funds Used in Business During Years 1920 to 1922, Inclusive

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
(1) Dividends, interest, and amortization charges....	$54,284,970	$62,998,041	$70,806,126
(2) Annual undivided profits.	16,265,368	10,459,955	10,862,314
(3) Total undivided profits, dividends, interest, and amortization charges....	$70,550,338	$73,457,996	$81,668,440
(4) Total funds used in business..................	888,294,502	943,549,526	1,025,605,607
(5) Per cent of return on funds used in business........	7.94%	7.79%	7.96%

(Here follows side folio 5036 and 5037)

[fol. 5036]

American Telephone and Telegraph Company

Return on Funds Used in Business During Years 1923 to 1930, Inclusive

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
(1) Dividends, Interest and Amortization Charges	$78,037,037	88,451,491	103,799,805	109,555,690	120,167,234	126,908,556	144,375,979	171,642,573
(2) Annual Undivided Profits	17,352,881	19,167,872	25,236,528	29,375,697	78,155,526	38,359,493	49,446,893	26,337,912
(3) Total Undivided Profits, Dividends, Interest and Amortization Charges	$95,389,918	107,619,363	129,036,333	138,931,387	198,322,760	165,268,049	193,822,872	197,980,485
(4) Total Funds Used in Business	1,135,740,063	1,292,190,556	1,498,233,491	1,603,129,252	1,751,250,701	1,939,013,282	2,210,838,556	2,746,624,797
(5) Per Cent of Return on Funds Used in Business	8.40%	8.33%	8.61%	8.67%	11.32%	8.52%	8.77%	7.21%

[fol. 5037]

Exhibit X-288

American Telephone and Telegraph Company

Summary of Capital Stock Outstanding During Years 1920 to 1931, Inclusive

	Account 150—Capital Stock			Account 152—Premiums on Capital Stock			Total Capital Stock		
Year	Balance Beginning of Year	Added During Year	Balance Close of Year	Balance Beginning of Year	Added During Year	Balance Close of Year	Balance Beginning of Year	Added During Year	Balance Close of Year
1920	$441,981,200	$844,200	$442,825,400	$15,333,672	$144,830	$15,478,502	$457,314,872	$989,030	$458,303,902
1921	442,825,400	108,559,813	551,385,213	15,478,502	1,807,161	17,285,663	458,303,902	110,366,974	568,670,876
1922	551,385,213	163,698,641	715,083,854	17,285,663	2,065,676	19,351,339	568,670,876	165,764,317	734,435,193
1923	715,083,854	38,417,653	753,501,507	19,351,339	879,671	20,232,010	734,435,193	39,297,324	773,732,517
1924	753,501,507	163,842,865	917,344,372	20,231,010	860,767	21,091,777	773,732,517	164,703,632	938,436,149
1925	917,344,372	31,825,978	949,170,350	21,091,777	1,272,898	22,364,675	938,436,149	33,098,877	971,535,026
1926	949,170,350	163,626,329	1,112,796,679	22,364,675	1,314,652	23,679,327	971,535,026	164,940,981	1,136,476,007
1927	1,112,796,679	29,492,521	1,142,289,200	23,679,327	4,292,716	27,972,043	1,136,476,007	33,785,237	1,170,261,244
1928	1,142,289,200	205,272,263	1,347,561,463	27,972,043	5,849,935	33,821,978	1,170,261,244	211,122,197	1,381,383,441
1929	1,347,561,463	46,933,949	1,394,495,412	33,821,978	2,993,850	36,815,828	1,381,383,441	49,927,799	1,431,311,240
1930	1,394,495,412	512,618,824	1,907,114,236	36,815,828	222,315,775	259,131,603	1,431,311,240	734,934,599	2,166,245,839
1931	1,907,114,236	31,061,140	1,938,175,376	259,131,603	9,436,981	268,568,584	2,166,245,839	40,498,122	2,206,743,961

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Vol. VIII

TRANSCRIPT OF RECORD

EXHIBITS

Supreme Court of the United States

OCTOBER TERM, 1933

No. 440

BENJAMIN F. LINDHEIMER AND OTHERS, CONSTITUTING THE ILLINOIS COMMERCE COMMISSION OF THE STATE OF ILLINOIS; OTTO KERNER, ATTORNEY GENERAL OF THE STATE OF ILLINOIS, AND THE CITY OF CHICAGO, APPELLANTS,

vs.

ILLINOIS BELL TELEPHONE COMPANY

No. 548

ILLINOIS BELL TELEPHONE COMPANY, APPELLANT,

vs.

BENJAMIN F. LINDHEIMER AND OTHERS, CONSTITUTING THE ILLINOIS COMMERCE COMMISSION OF THE STATE OF ILLINOIS; OTTO KERNER, ATTORNEY GENERAL OF THE STATE OF ILLINOIS, AND THE CITY OF CHICAGO

APPEALS FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF ILLINOIS

FILED SEPTEMBER 8, 1933

FILED OCTOBER 25, 1933

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1933

No. 440

BENJAMIN F. LIDNHEIMER AND OTHERS, CONSTITUTING THE ILLINOIS COMMERCE COMMISSION OF THE STATE OF ILLINOIS; OTTO KERNER, ATTORNEY GENERAL OF THE STATE OF ILLINOIS, AND CITY OF CHICAGO, APPELLANTS,

vs.

ILLINOIS BELL TELEPHONE COMPANY

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF ILLINOIS

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X-327—List of exchanges in Illinois shown in Exhibit A-68	5157	4454
X-328—Statement re Illinois Bell Tel. Co., Chicago division, comparison of revenues and expenses and return on average fixed capital and materials and supplies, less accrued depreciation, years 1923 to 1931, inclusive; also Chicago division intrastate 1923-1930, inclusive, and Chicago division intrastate exchange 1923-1930, inclusive	5158	4455
X-331—Statement re Illinois Bell Tel. Co., Chicago division intrastate, return on average fixed capital and materials and supplies, less average accrued depreciation, in excess of the average return of all licensee companies of A. T. & T. during years 1923-1930, inclusive; same for other licensee companies 1923-1930, inclusive	5162	4456B
X-332—Statement re Illinois Bell Tel. Co., Chicago division intrastate exchange, return on average fixed capital and materials and supplies, less average accrued depreciation, in excess of the average return of all licensee companies of A. T. & T. during years 1923 to 1930, inclusive; same for other licensee companies 1923-1930, inclusive	5164	4456D
X-334—Statement re Illinois Bell Tel. Co., Chicago division, return on average fixed capital and materials and supplies, less average accrued depreciation in excess of the average return of all licensee companies of		

	Original	Print
A. T. & T. Co. during year 1931; same for other licensee companies	5166	4456E
X-335—Statement showing average cost of funds used in business eight years 1923-1930	5168	4457
X-336—Illinois Bell Tel. Co., Statement of Chicago division, Chicago division intrastate and Chicago division intrastate exchange showing net income required to cover all interest, amortization of bond discount and expense, and an 8% dividend together with resultant rates of return on the plaintiff's showing of average reproduction cost and average book cost including materials and supplies and cash working capital during years 1923-1930, inclusive	5172	4462
X-337—Illinois Bell Telephone Company: Chicago division, statement showing the net earnings per share available for the stockholders of the Illinois Bell Tel. Co. and the average earnings available for A. T. & T. stockholders on their proportionate investment in capital stock of A. T. & T. which would result from varying rates of return on the plaintiff's showing of average book cost including materials and supplies and cash working capital during years 1923-1930, inclusive; same for average reproduction cost	5173	4462
X-343—Response to Mr. Blackman's question to Mr. Plaintiff's Exhibit A-53 adjusted for rate base of book cost of plant, less depreciation, etc., years 1921-1933, inclusive	5177	4462c
X-338—Illinois Bell Tel. Co., Chicago division,		
X-340—Illinois Bell Tel. Co., Chicago division, Plaintiff's Exhibit A-53 adjusted for net income available for return under rates in suit and for rate base during years 1923 to 1931, inclusive; same for Chicago division intrastate and for Chicago division intrastate exchange, years 1923-1930, inclusive	5178	4462d
X-342—Interstate Commerce Commission, uniform system of accounts for telephone companies, January 1, 1913	5179	4463
Hammond on cross-examination. (Record 5518)	5190	4776
X-346—Order of November 29, 1919, on petition Illinois Public Utilities Commission. X-431.	5191	4476
X-347—Petition of May 21, 1920, in case No. 9291	5200	4483

	Original	Print
X-348—Mr. Crunden's working papers used in connection with his Exhibit A-100	5219	4499
X-349—Exhibits furnished by Mr. Heiss in connection with Heiss Ohio Exhibit No. 10, bearing the legends "Classification of Departmental Expenses" for the years 1920-1930, and "Analysis of Departmental Expenses, Year 1931."	5225	4501
X-351—Heiss Ohio Exhibit No. 11 furnished by plaintiff	5239	4505
X-352—Annual reports of Illinois Bell 1920-1931, inclusive	5240	4506
X-353—Annual reports of Western Electric Co., Illinois Corporation, 1909-1915, inclusive, and of New York Corporation, 1916-1931, inclusive	5253	4513
X-354—Portions of provisional estimates of Illinois Bell and letters of transmittal 1920-1931, inclusive	5361a	4588
X-355—Portions of provisional estimates of other licensee companies 1920-1930	5385	4591
X-356—Agreement, dated June 19, 1919, between International Telephone Sales and Engineering Corporation and Western Electric Co., Inc. (New York corporation)	5387	4593
X-357—Copy of agreement, dated March 21, 1924, between Theodore Gary, Frank H. Woods, H. L. Gary and A. F. Adams, and Western Electric Company, Inc. (New York corporation)	5394	4597
X-358—Correspondence between Western Electric and Automatic Electric, Inc.	5397	4599
X-359—Copy of agreement dated March 26, 1921, between International Telephone Sales & Engineering Corporation and Western Electric Company, Inc. (New York Corporation)	5408	4609
X-360—Memorandum regarding letter of May 26, 1927, from Electrical Research Products, Inc., to H. L. Gary	5409	4609
X-361—Letter, dated May 26, 1927, from International Telephone Sales & Engineering Corporation to Electrical Research Products, Inc.	5410	4610
X-362—Assignment, dated October 13, 1927, from International Telephone Sales & Engineering Corporation to Automatic Electric, Inc.	5413	4612
X-363—Agreement, dated March 21, 1924, between International Telephone Sales & Engineering Corporation and Western Electric Company, Inc.	5414	4613

	Original	Print
X-364—Agreement between International Telephone Sales & Engineering Corporation and Western Electric Co., Inc., dated May 24, 1927	5422	4617
X-365—Advertisements of A. T. & T., the cost of which was charged by the plaintiff as part of the costs of rendering the license contract services:		
"What is the A. T. & T.?", No. 268, February, 1931	5429	4625
"The Bell Telephone Company of Your Town," No. 258, April 1930	5429	4626
"Where Working Together is Everything," No. 242, December, 1928	5430	4627
"5,000 People Whose Sole Job is Bettering Your Service," No. 240, October, 1928	5431	4627
"Building on the Telephone Principle," No. 216, October, 1926	5432	4628
"Where the Bell System's Profit Goes," No. 239, September, 1928	5433	4629
"A Reduction in Long Distance Telephone Rates," No. 255, January, 1930	5434	4630
"How Many are 421,000 Stockholders?", No. 230, December, 1927	5435	4631
X-367—Statement showing net profits on new A. T. & T. instruments, 1927	5436	4631
X-368—Statement entitled: "Western Electric Company, Inc., number of shares of A. T. & T. Company stock on which payments were completed by Western Electric Company employees"	5439	4633
X-369—Statement showing A. T. & T. releases 7/15/19 to 11/2/31	5441	4634
X-370—Statement showing royalties received by Western Electric Company, Electrical Research Products, Inc., and portion paid to A. T. & T. Company in accordance with releases	5445	4637
X-371—Statement re American Telephone and Telegraph Company, miscellaneous non-operating revenues (account 316), year 1931	5448	4640
X-373—Handbook of outside plant engineering practices, general, of A. T. & T. and associated companies	5449	4640
X-374—Memorandum of agreement dated February 16, 1922, between Western Electric Co., Inc. (New York Corporation), and Stromberg-Carlson Telephone Manufacturing Co.,		

	Original	Print
covering manufacture of inter-communicating telephone apparatus	5464	4660
X-375—Memorandum of agreement dated June 1, 1920, between Stromberg-Carlson Telephone Manufacturing Co., and the Western Electric Company, Inc. (New York Corporation)	5466	4662
X-378—Agreement between Western Electric Co., Inc., and International Standard Electric Corp., dated March 30, 1928	5469	4664
X-379—Memorandum of agreement dated January 1, 1919, between International Western Electric Co., Inc. and Northern Electric Co., Limited	5480	4675
X-380—Memorandum of Agreement dated Aug. 27, 1919, between International Western Electric Co., Inc. and Western Electric Co., Limited, Northern Electric Co., Limited, and the Bell Telephone Company of Canada, Limited	5483	4679
X-381—Supplemental patent agreement, American Telephone & Telegraph Co., Western Electric Co., Inc., International Western Electric Co., Inc., Northern Electric Co., Ltd., The Bell Telephone Co., of Canada, Ltd., dated May 16, 1923	5488	4684
X-382—Assignment from International Western Electric Co., Inc., to Western Electric Co., Inc. (New York Corporation) of its rights in connection with agreement between Assignor and Northern Electric Co., Ltd., dated January 1, 1919, which assignment is dated Sept. 30, 1925	5494	4689
X-383—Agreement between Western Electric Co., Inc., and Victor Talking Machine Co., Inc. dated June 26, 1925	5495	4690
X-385—Agreement between Western Electric Co., Inc., and Victor Talking Machine Co., Inc., dated March 18, 1925	5508	4701
X-386—Agreement between International Western Electric Co., Inc., and Victor Talking Machine Co., dated May 1, 1925	5515	4708
X-388—Memorandum of agreement between Victor Phonograph Co. and Electrical Research Products, Inc., dated January 11, 1928	5523	4715
X-390—Agreement between International Western Electric Co., Inc. and Columbia Graphophone Co., Ltd., dated April 22, 1925	5527	4719
X-391—Agreement between International Western Electric Co., Inc. and The Gramophone Co., Ltd., dated May 1, 1925	5534	4726

		Original	Print
X-392—Agreement between Western Electric Co., Inc. and The Gramophone Co., Ltd., dated Jan. 19, 1926		5543	4733
X-393—Agreement between Electrical Research Products, Inc. and The Gramophone Co., Ltd., dated Aug. 10, 1927		5553	4741
X-394—Agreement for Western Electric Sound System, Plan B2-N. D. P.-52W between Electrical Research Products, Inc. (subsidiary of Western Electric Company) etc. (Form 315TS)		5563	4749
X-395—Agreement between American Telephone and Telegraph Co. and the Bell Telephone Company of Canada, Ltd., covering Services, Licenses and Privileges, dated May 16, 1923		5564	4750
X-396—Copy of General Contract, agreement dated Nov. 1, 1880, between The Canadian Telephone Company, Ltd., and The American Bell Telephone Company, The Bell Telephone Company of Canada, the American Speaking Telephone Company, The Gold and Stock Telegraph Company and The Western Union Telegraph Company		5570	4756
X-397—Certified copy of resolution adopted by Executive Committee of A. T. & T. at meeting Jan. 15, 1924; certified copy resolution adopted at meeting January 7, 1925; certified copy resolution adopted at meeting January 13, 1926; certified copy resolution adopted at meeting Jan. 12, 1927; and certified copy resolution adopted at meeting January 18, 1928		5574	4760
X-398—Statement re Electrical Research Products, Inc., General Auditing Dept., Results of Talking Motion Year 1930		5576	4761
X-400—Supplement to City's Exhibits furnished by plaintiff		5587	4771
44—Illinois Bell Telephone Company—Distribution of Chicago Gross A. T. & T. Company Tolls between Illinois Bell Tel. Co. and A. T. & T.—1926-1930	1931	5587	4771
53—Agreement in connection with Employee's Stock Plan dated June 10, 1921, between A. T. & T. and Illinois Bell Tel. Co.	1931	5589	4772
54—Illinois Bell Telephone Company—Payments made to A. T. & T. covering collections under the Employee's Stock Plan	1931	5596	4778

	Original	Print
57—Illinois Bell Telephone Company—Purchases from Western Electric Company 1931	5597	4779
76—Illinois Bell Telephone Company, Advances from A. T. & T. during years 1926 to 1930 1931	5599	4781
80—Illinois Bell Telephone Company, balance sheets, years 1926 to 1930 1931	5607	4792
81—Illinois Bell Telephone Company, dividends 1926 to 1930 1931	5610	4796
82—Illinois Bell Telephone Company, Entire Company, Net Earnings Available for Interest and Dividends 1931	5610	4796
117—Illinois Bell Telephone Company, Chicago Exchange, amount of billing to the A. T. & T. for operating the toll properties devoted to long lines service in Chicago—1926-1930 1931	5611	4796
142A—A. T. & T. Co., amounts received from all Associated Bell Companies for License Payments during the years 1918-1928, answer to question p. 2044 Trans. of Record .. 1931	5613	4799
142C—A. T. & T., Illinois Bell Telephone Company estimated requirements and cash taken; years 1918 to 1928—Recheck of Testimony, pp. 2110-2112, Trans. of Record p. 2135 1931	5614	4800
148—Supplemental answer to question pp. 2047 and 2059, Trans. of Rec.—A. T. & T.—Cost of Capital Funds Procured by the American Company through Sale of Stock, Bonds and other Borrowings 1931	5614	4800
151—Illinois Bell Telephone Co.—Total Number of Employees, Number of Employees Eligible to Subscribe, Number of Shares of A. T. & T. Stock issued to Employees during year, Number of shares A. T. & T. Stock under Subscription end of Year and % of Total Employees subscribing 1931	5615	4800
X-402—Correspondence between counsel and parties	5616	4801
X-403—Ruskin's statement of number of pages in CR and MR Reports furnished by plaintiff at later date	5618	4802

	Original	Print
X-404—Balance sheets of Graybar Electric Co. for years 1929, 1930 and 1931, with certificate of Assistant Secretary attached. (These were delivered to defendants by Mr. Thompson in open court on June 15, 1932.)	5619	4802
X-405—Statement entitled: "a/c Profit on Investment in Business with Illinois Bell 1916-1931 and 1923-1931. (This is working paper for Exhibit A-93 to 96 and was furnished by plaintiff)	5620	4802A
X-406—Burgess Index Numbers	5621	4803
X-408—Statement re Illinois Bell Tel. Co.—Chicago Area—Book Cost of Central Office Telephone Equipment	5631	4810
X-409—Statement re Illinois Bell Tel. Co.—Chicago Exchange—Company Stations	5632	4812
X-410—Statement re Illinois Bell Tel. Co.—Chicago Exchange—Figures used in arriving at average assets for 1923	5633	4812
X-415—Statement re Illinois Bell Tel Co.—Chicago Exchange—Public Pay Stations	5634	4813
X-416—Advice No. 40, dated July 15, 1919, to Public Utilities Commission, Springfield, Ill., with accompanying schedules issued by Chicago Telephone Company, etc. Attached petition with Exhibit A	5635	4813
X-418—Statement re Illinois Bell Tel. Co.—Stock Purchased by A. T. & T.—Years 1929 to 1931, incl.	5645	4815
X-419—Statement re Illinois Bell Tel. Co.—Prices at which A. T. & T. stock offered to employees	5645	4816
X-420—Executive Committee Minutes and Documents called for therein	5647	4816
Agreement of June 13, 1923, between Morkrum Company, Western Electric Company, Inc., and American Telephone & Telegraph Company	5681	4841
Letter of August 14, 1925, to Western Electric Company, Inc., signed by W. S. Gifford, President of American Telephone & Telegraph Co.	5685	4845
Agreement of October 6, 1925, between Automatic Electric Company, American Telephone and Telegraph Company and Western Electric Company, Inc.	5687	4847
License Agreement of July 17, 1928, between Stromberg-Carlson Telephone Manufacturing Company, Western Electric Company, and American Telephone and Telegraph Company	5691	4850

	Original	Print
Letter of June 12, 1928, to W. S. Gifford, President of American Telephone & Telegraph Co. signed by Edgar S. Bloom, President of Western Electric	5694	4852
Agreement of September 11, 1930, between American Telephone & Telegraph Company and Sterling Morton	5704	4859
Contract of May 24, 1927, whereby American Telephone & Telegraph Company extended franchise agreement with Automatic to 1936	5712	4868
X-421—Western Electric Sheets furnished in connection with Gregory Exhibits 1 and 7 in Ohio Case	5715	4869
X-422—Stock Issue Data, 1920-1931, for A. T. & T. Co.	5746	4892
X-423—Statement showing Approximate Sales of Panel and Step-by-Step Machine Switching Switchboards, 1920-1931, Inclusive (A); also Approximate Number of Lines of Panel and Step-by-Step Machine Switching Switchboards, 1918-1931, inclusive	5747	4893
X-424—Memorandum of proposed agreement between American Telephone and Telegraph Co. and Central Union Telephone Company, dated New York Feb. 15, 1924	5749	4894
X-426—Contracts, Schedules, Filings and Documents of Illinois Bell Telephone Company relating to Exchange and Toll Services in Chicago Area, effective during period 1923-1931, both inclusive	5751	4895
X-427—Pursuant to request of Defendants, plaintiff, on June 19, 1932, furnished copies of all contracts that ever existed in the Bell System containing a provision similar to Section 10 of the contract of Dec. 23, 1881, with the Chicago Telephone Company, being City's Exhibit 23. The plaintiff has furnished two contracts as being the only ones ever made containing provisions similar to Section 10.		
Agreement dated June 1, 1880, by and between the American Bell Telephone Co. and the Metropolitan Telephone Company;	5786	4925
Agreement dated May 7, 1880, between the National Bell Telephone Co. and the Pacific Bell Telephone Co.	5789	4982
X-429—Order of July 31, 1919, in connection with petition X-416. I. P. U. C.	5794	4931

	Original	Print
X-430—I. P. U. C. No. 2—Chicago Telephone Company—Schedule of Total Rates, filed July 10, 1919, in Case #9291	5802	4937
X-431—Petition of November 15, 1919, in Cases 8672 and 9291, I. P. U. C.	5804	4939
X-432—Illinois Bell Tel. Co.—Data relative to stock issues, 1920-1930	5805	4940
X-433—Letter dated August 26, 1927, to Telephone Company Presidents re prices on approximately 50 classes of telephone apparatus	5806	4941
X-434—Letter dated Oct. 17, 1930, to Frederick H. Reid, President of Mountain States Telephone & Telegraph Co., from Edgar S. Bloom with sheet attached entitled: "Important Price Increases effective Nov. 1, 1930."	5809	4942
X-435—MR and CR Reports	5812	4944a
X-436—Summary Sheets of Turner's Rebuttal Depreciation Study	5818	4949
X-437—Turner's Working Papers	5829	4956
X-438—Statement re A. T. & T. Co.—Use of Conversion formula in Connection with return on Entire Company Stock in Comparison with return on that portion of Stock represented by Investment in Stock of Illinois Bell	5831	4957
X-439—Letter of June 29, 1932—Mr. Goldstein to Mr. Blackman	5834	4959

[fol. 5038]

Exhibit X-289

American Telephone and Telegraph Company

Changes in Capital Stock Outstanding Since 1922

Capital stock outstanding, December 31, 1922	$699,347,400
1923:	
Issued for cash at par in accordance with the terms of the offer of August 24, 1922 to the stockholders of record of September 8, 1922	19,283,800
*Issued to employees upon completion of installment payments under Employes Stock Plan—	
$7,781,200 par at par	
1,009,300 par at $105 per share	
1,669,300 par at $110 per share	10,459,800
*Issued in exchange for convertible bonds at a premium at $646,776	6,428,200
Capital stock outstanding December 31, 1923	$735,519,200
1924:	
Issued for cash at par in accordance with the terms of the offer of May 20, 1924 to stockholders of record of June 10, 1924	128,253,700
Issued to employees upon completion of installment payments under Employes Stock Plan—	
14,857,400 par at par	
1,006,300 “ “ $105 per share	
1,235,000 “ “ $110 “ “	
2,600 “ “ $115 per share	17,101,300
Issued in exchange for convertible bonds at a premium of $686,562 over par	7,603,900
Capital Stock outstanding, December 31, 1924	$888,478,100
1925:	
Issued for cash at par in accordance with the terms of the offer of May 20, 1924 to stockholders of record June 10, 1924	20,921,100
Issued to employees of the Bell System upon completion of installment payments under Employees' Stock Plan—	
$4,958,500 par at $110 per share	
1,066,100 “ “ $115 “ “	
70,700 “ “ $118 “ “	
65,000 “ “ $121 “ “	
6,100 “ “ $125 “ “	6,166,400
Issued in exchange for convertible bonds at a premium of $589,232 over par value	6,031,900
Capital stock outstanding, December 31, 1925	$921,597,500
[fol. 5039] 1926:	
Issued for cash at par in accordance with the terms of the offer of May 19, 1926 to stockholders of record June 8, 1926	$134,912,800
Sale to public of portion of unsubscribed stock offered to stockholders of record September 8, 1922, at 145.85 per share	449,600
Issued to employes of the Bell System upon completion of installment payments under Employes' Stock Plan—	
7,316,800 par at $115 per share	
18,700 “ “ $118 “ “	
11,800 “ “ $121 “ “	
20,600 “ “ $125 “ “	7,367,900
Capital stock outstanding December 31, 1926	$1,064,327,800

1927:	
Issued for cash at par in accordance with the terms of the offer of May 19, 1926, to stockholders of record June 8, 1926	17,641,400
Sale to public of portion of unsubscribed stock remaining in treasury from offer to stockholders of record September 8, 1922 and June 10, 1924 (sale at average of $182.89 per share)	1,291,900
Issued to employees of the Bell System upon completion of installment payments under Employees' Stock Plan— $13,628,300 par at $115 per share 6,476,500 " " $118 " " 20,600 " " $121 " " 24,200 " " $125 " " 4,900 " " $130 " "	20,154,500
Capital Stock outstanding December 31, 1927	$1,103,415,600
1928:	
Issued for cash at par in accordance with the terms of the offer of May 16, 1928 to stockholders of record June 1, 1928	164,494,300
Sale to public of portion of unsubscribed stock remaining in treasury from previous offers to stockholders (sold at average $187.58 per share	2,032,700
Issued to employes of the Bell System upon completion of installment payments under Employes' Stock Plan— $7,992,200 par at $118 per share 8,854,800 " " $121 " " 1,979,000 " " $125 " " 922,800 " " $130 " "	19,748,800
Capital stock outstanding December 31, 1928	$1,289,691,400
1929:	
Issued for cash at par in accordance with terms of offer of May 16, 1928 to stockholders of record June 1, 1928	20,709,200
Issued to employes of the Bell System upon completion of installment payments under Employes' Stock Plan— $11,758,200 par issued at $125 per share 181,000 " " " $130 " "	11,939,200
Capital stock outstanding December 31, 1929	$1,322,339,800
[fol. 5040] 1930:	
Issued for cash at par in accordance with terms of offer of April 16, 1930 to stockholders of record May 23, 1930	$218,667,100
Issued is conversion of 4½% convertible bonds, 1939, premium cash paid company—$164,855,341.12	206,189,700
Issued to employes of Bell System upon completion of installment payments under Employes' Stock Plan— $10,916,000 par at $125 per share 20,287,300 " " $130 " " 98,700 " " $150 " "	31,302,000
Issued in exchange, share for share for common stock of Teletype Corporation	15,000,000
Sales of unsubscribed stock remaining in treasury from previous offers to stockholders (at $150 per share)	2,152,600
Capital stock outstanding, December 31, 1930	$1,795,651,200

(Here follows side folio 5041)

[fol. 5041]

Exhibit X-293

American Telephone and Telegraph Company

Investments in Capital Stock of Western Electric Company, Inc., from November 17, 1915, to December 31, 1930

Date purchased	Common			Preferred			Total*		
	Number of shares	Price per share	Cost	Number of shares	Price per share	Cost	Number of shares	Price per share	Cost
November 17, 1915	146,050	$46.08	$6,729,710	146,050	$100.00	$14,605,000	292,100	$73.04	$21,334,710
April 16, 1917, Installment 50%				146,050	100.00	7,302,500	146,050	100.00	7,302,500
November 30, 1917, Installment 50%						7,302,500			7,302,500
May 19, 1917				347	100.00	34,700	347	100.00	34,700
February 20, 1918	705	231.16	162,968				705	231.16	162,968
March 29, 1919	50	200.00	10,000				50	200.00	10,000
July 3, 1919				200	100.00	20,000	200	100.00	20,000
July 11, 1919	1	200.00	200				1	200.00	200
October 7, 1919	16	251.19	4,019	32	99.16	3,173	48	149.83	7,192
October 23, 1919	12	252.17	3,026	11	99.09	1,090	23	178.96	4,116
March 1, 1920				207	104.28	21,585	207	104.28	21,585
March 4, 1920	196,602	180.00	35,388,360				196,602	180.00	35,388,360
Rights			8,233						8,233
				292,897*	100.00*	29,290,548*	292,897*	100.00*	29,290,548*
Preferred stock called (premium of $20.00 per share received on 146,050 shares preferred stock called credited to cost of common stock)			2,921,000*						2,921,000*
April 3, 1920	9	190.00	1,710				9	190.00	1,710
May 28, 1920	2	190.00	380				2	190.00	380
June 22, 1920	21	195.24	4,100				21	195.24	4,100
March 30, 1921	25	180.00	4,500				25	180.00	4,500
November 23, 1921	16	195.00	3,120				16	195.00	3,120
June 9, 1922	338	185.00	62,530				338	185.00	62,530
December 30, 1922	147,535	100.00	14,753,500				147,535	100.00	14,753,500
Rights			10,234						10,234
March 9, 1923	50	185.00	9,250				50	185.00	9,250
October 24, 1923	14	180.00	2,520				14	180.00	2,520
March 9, 1925	43	180.00	7,740				43	180.00	7,740
March 11, 1925	169	180.00	30,420				169	180.00	30,420
September 30, 1925, Stock Dividend	245,829						245,829		
October 16, 1925	37½	140.00	5,250				37½	140.00	5,250
December 26, 1925	3½*	73.71*	258*				3½*	73.71*	258*
June 2, 1927, Surrendered	737,521*						737,521*		
Received in exchange for 737,521 shares surrendered	3,687,605						3,687,605		
December 31, 1928	245,842	40.00	9,833,680				245,842	40.00	9,833,680
Rights			32						32
May 31, 1929	491,685	40.00	19,667,400				491,685	40.00	19,667,400
Rights			78						78
December 2, 1929	737,532	40.00	29,501,280				737,532	40.00	29,501,280
Rights			189						189
March 31, 1930	737,829	40.00	29,513,160				737,829	40.00	29,513,160
Rights			5,775						5,775
Balance, December 31, 1930	5,900,493	$24.20	$142,802,106				5,900,493	$24.20	$142,802,106

* Red figures.

[fol. 5042]

EXHIBIT X-294

American Telephone and Telegraph Company

Return on Investments in Capital Stock of Western Electric Company, Inc., During Years 1916 to 1930, Inclusive

Year	Type	Average yearly investment	Dividends received	Dividend yield (%)	Dividend yield converted to average return to A. T. & T. Co. stockholders on their investments in capital stock of A. T. & T. Company (%)
1916	Common	$6,729,710	$1,168,400	17.36	......
	Preferred	14,605,000	876,300	6.00	......
	Total	$21,334,710	$2,044,700	9.58	
1917	Common	$6,729,710	$1,168,400	17.36	......
	Preferred	23,489,519	1,315,491	5.60	......
	Total	$30,219,229	$2,483,891	8.22	
1918	Common	$6,869,907	$1,467,550	21.36	......
	Preferred	29,244,700	1,754,682	6.00	......
	Total	$36,114,607	$3,222,232	8.92	
1919	Common	$6,901,870	$1,468,000	21.27	......
	Preferred	29,255,563	1,755,347	6.00	......
	Total	$36,157,433	$3,223,347	8.91	
1920	Common	$33,783,796	$2,943,095	8.71	13.22
	Preferred	5,052,081	3,273,534(a)	64.80	125.89
	Total	$38,835,877	$6,216,629	16.01	27.88

EXHIBIT X-294—Continued

Year	Type	Average yearly investment	Dividends received	Dividend yield (%)	Dividend yield converted to average return to A. T. & T. Co. stockholders on their investments in capital stock of A. T. & T. Company (%)
1921	Common	$39,395,412	$3,434,908	8.72	12.74
1922	Common	39,474,803	3,437,625	8.71	12.03
1923	Common	54,233,586	4,914,355	9.06	12.24
1924	Common	54,237,360	4,914,460	9.06	12.36
1925	Common	54,269,334	5,531,238	10.19	14.26
1926	Common	54,280,512	7,375,210	13.59	19.90
1927	Common	54,280,512	55,314,075	101.91	161.16
1928	Common	54,280,512	11,062,845	20.38	31.47
1929	Common	77,989,245	23,169,039	29.63	47.81
1930	Common	135,523,464	22,864,143	16.87	27.18
Average Yields:					
1916 to 1930		$52,041,781	$10,609,911	20.39	
1920 to 1922		39,233,404	4,363,054	11.12	17.50
1920 to 1930		59,709,158	13,470,409	22.56	35.19
1923 to 1930		67,386,816	16,885,667	25.06	39.06

(a) Includes amount of $2,936,940, representing premium of $20 per share on 146,847 shares called. The premium on the remaining 146,050 shares of preferred stock called in 1920 amounting to $2,931,000 was credited to the investment in common stock of Western Electric Company, Inc.

(Here follows side folio 5043)

[fol. 5043]

Exhibit X-295

Western Electric Company Annual Yield Per Share of Capital Stock on Stockholders' Investment During the Years 1882-1915

Year Ending December 31 (1)	Total Shares Outstanding (2)	Shares of Bonus Stock Outstanding (3)	Cash Dividends on Bonus Stock (4)	Number of Shares of Stock Sold (5)	Shares of Stock Dividends on Stock Sold (6)	Total Shares of Stock Sold Outstanding (7	Amount Received by W. E. for Stock Sold (8)	Total Amt. Rec'd By W. E. for Stock Outstanding (9)	Average Price Per Share Sold (10)	Cash Dividends on Stock Sold (11)	Dividend Per Share (12)	Yield on Price Pr. Sh. Sold (13)	Average Price Per Share Outstand'g (14)	Yield on Price Per Share Outstanding (15)
1882	10,000	2,000	......	8,000	......	8,000	$745,000	$745,000	93.12	......	......	......	$74.50	......
1883	10,000	2,000	$6,000	......	......	8,000	......	745,000	93.12	$24,000	$3.00	3.22%	74.50	4.03%
1884	10,000	2,000	......	......	......	8,000	......	745,000	93.12	......	......	......	74.50	......
1885	10,000	2,000	9,000	......	......	8,000	......	745,000	93.12	36,000	4.50	4.83%	75.40	6.04%
1886	10,000	2,000	12,000	......	......	8,000	......	745,000	93.12	48,000	6.00	6.44%	74.50	8.05%
1887	10,000	2,000	16,000	......	......	8,000	......	745,000	93.12	64,000	8.00	8.59%	74.50	10.74%
1888	10,000	2,000	27,000	......	......	8,000	......	745,000	93.12	108,000	13.50	14.50%	74.50	18.12%
1889	10,000	2,000	20,000	......	......	8,000	......	745,000	93.12	80,000	10.00	10.74%	74.50	13.42%
1890	17,500	3,000	20,000	2,500	4,000	14,500	250,000	995,000	68.62	80,000	10.00	14.57%	56.86	17.59%
1891	17,500	3,000	24,000	......	......	14,500	......	995,000	68.62	116,000	8.00	11.66%	56.86	14.07%
1892	17,500	3,000	24,000	......	......	14,500	......	995,000	68.62	116,000	8.00	11.66%	56.86	14.07%
1893	17,500	3,000	30,000	......	......	14,500	......	995,000	68.62	145,000	10.00	14.57%	56.86	17.59%
1894	20,000	3,428-4/7	33,214	......	2,071-3/7	16,571-3/7	......	995,000	60.04	160,536	10.00-a	16.13%	49.75	19.47%
1895	30,000	5,142-6/7	39,429	......	8,285-5/7	24,857-1/7	......	995,000	40.03	190,571	8.50-b	19.15%	33.17	23.12%
1896	30,000	5,142-6/7	41,143	......	......	24,857-1/7	......	995,000	40.03	198,857	8.00	19.99%	33.17	24.12%
1897	30,000	5,142-6/7	41,143	......	......	24,857-1/7	......	995,000	40.03	198,857	8.00	19.99%	33.17	24.12%
1898	35,000	6,000	48,000	......	4,142-6/7	29,000	......	995,000	34.31	232,000	8.00	23.32%	28.43	28.14%
1899	60,000	8,571-3/7	53,143	10,000	12,428-4/7	51,428-4/7	1,000,000	1,995,000	38.79	276,857	8.00-c	13.88%	33.25	16.54%
1900	70,000	8,571-3/7	68,571	10,000	......	61,428-4/7	1,000,000	2,995,000	48.76	431,429	8.00-d	14.40%	42.79	16.69%
1901	80,000	9,796	75,918	......	8,775-3/7	70,204	......	2,995,000	42.66	544,082	8.00-e	18.17%	37.44	20.70%
1902	100,000	12,245	93,042	......	17,551	87,755	......	2,995,000	34.13	666,958	8.00-f	22.27%	29.95	25.38%
1903	120,000	14,694	112,654	......	17,551	105,306	......	2,995,000	28.44	807,346	8.00-g	26.96%	24.96	30.72%
1904	120,000	14,694	117,552	......	......	105,306	......	2,995,000	28.44	842,448	8.00	28.13%	24.96	32.05%
1905	120,000	14,694	117,552	......	......	105,306	......	2,995,000	28.44	842,448	8.00	28.13%	24.96	32.05%
1906	150,000	14,694	117,552	30,000	......	135,306	3,000,000	5,995,000	44.31	1,022,448	8.00-h	17.06%	39.97	19.02%
1907	150,000	14,694	117,552	......	......	135,306	......	5,995,000	44.31	1,082,448	8.00	18.05%	39.97	20.02%
1908	150,000	14,694	117,552	......	......	135,306	......	5,995,000	44.31	1,082,448	8.00	18.05%	39.97	20.02%
1909	150,000	14,694	117,552	......	......	135,306	......	5,995,000	44.31	1,082,448	8.00	18.05%	39.97	20.02%
1910	150,000	14,694	166,483	......	......	135,306	......	5,995,000	44.31	1,533,517	11.33	25.58%	39.97	28.36%
1911	150,000	14,694	146,940	......	......	135,306	......	5,995,000	44.31	1,353,060	10.00	22.57%	39.97	25.02%
1912	150,000	14,694	146,940	......	......	135,306	......	5,995,000	44.31	1,353,060	10.00	22.57%	39.97	25.02%
1913	150,000	14,694	146,940	......	......	135,306	......	5,995,000	44.31	1,353,060	10.00	22.57%	39.97	25.02%
1914	150,000	14,694	146,940	......	......	135,306	......	5,995,000	44.31	1,353,060	10.00	22.57%	39.97	25.02%
1915	150,000	14,694	146,940	......	......	135,306	......	5,995,000	44.31	1,353,060	10.00	22.57%	39.97	25.02%
Totals	......	......	$2,400,752	60,500	74,806	......	$5,995,000	......	......	$18,777,998	......	......	......	......
Yearly Average	......	......	$70,610	......	......	......	$2,789,118	......	......	$552,294	......	19.80%	......	22.33%

For explanatory notes indicated by reference marks above and for other comments see succeeding page.

[fol. 5044] Western Electric Company

Annual Yield per Share of Capital Stock on Stockholders' Investment During the Years 1882-1915

Notes

The figures for the year 1915 do not include preferred stock issued in November 1915 or dividends on the same. The dividends on preferred stock amounted to $109,500, which if given consideration above would increase the yield per share outstanding to 26.85% for the year 1915 and to 22.45% for the entire period.

Columns (3) and (7) include increases in stock outstanding due to stock dividends.

a. $7.50 on 20,000 shares; $2.50 on 17,500 shares.
b. 2.50 on 20,000 " ; 6.00 on 30,000 "
c. 2.00 on 60,000 " ; 6.00 on 35,000 "
d. 2.00 on 70,000 " ; 6.00 on 60,000 "
e. 6.00 on 80,000 " ; 2.00 on 70,000 "
f. 6.00 on 100,000 " ; 2.00 on 80,000 "
g. 6.00 on 120,000 " ; 2.00 on 100,000 "
h. 6.00 on 150,000 " ; 2.00 on 120,000 "

[fol. 5045] Western Electric Company, Inc.

Average Annual Return to Company's Investors on all Capital Stock Issues on Basis I* During Years 1916 to 1930, Inclusive

Year Ended December 31 (1)	Average capital from all issues (2)	Total dividends paid (3)	% Dividends paid (4)
1916	$5,995,000	$2,100,000	35.03
1917	13,495,000	2,550,000	18.90
1918	20,995,000	3,300,000	15.72
1919	20,995,000	3,300,000	15.72
1920	35,870,000	24,345,000	67.87
1921	41,995,000	3,500,000	8.33
1922	41,995,000**	3,500,000**	8.33
1923	56,995,000	5,000,000	8.77
1924	56,995,000	5,000,000	8.77
1925	56,995,000	5,625,000	9.87
1926	56,995,000	7,500,000	13.16
1927	56,995,000	56,250,000	98.69
1928	56,995,000	11,250,000	19.74
1929	81,161,667	23,500,000	28.95
1930	139,495,000	23,250,000	16.67
Total		$179,970,000	
Average 1916-1930	$49,597,778	11,998,000	24.19
Average 1920-1922	39,953,333	10,448,333	26.15
Average 1920-1930	62,044,243	15,338,182	24.72
Average 1923-1930	70,328,333	17,172,125	24.42

* "Basis I" considers stock transactions of 1920 as being separate transactions and having no relationship to each other. The preferred stock outstanding (300,000 shares) was redeemed at $120 per share or $36,000,000. The difference between the redemption figures and cost was considered as being dividends or return to the investors. The sale of 200,000 shares of common stock during the year 1920 at $180 per share or $36,000,000 was considered to have no connection with the redemption of the preferred stock.

** Preferred stock, issued in 1922 and sold to the general public, was excluded from the above. Dividends on same were also excluded.

(Here follows side folio 5046)

[fol. 5046]

Western Electric Company, Inc.

Class I (Issues Prior to 1916)—Annual Yield per Share on Investment During Years 1916 to 1930, Inclusive

Year Ending Dec. 31 (1)	Total Shares Outstanding (2)	Shares of Bonus Stock Outstanding (3)	Cash Dividends on Bonus Stock		Shares of Stock Sold Outstanding (6)	Total Capital Received for Stock Sold and Outstanding (7)	Average Price Per Share Sold (8)	Cash Dividends on Stock Sold		Yield on Price Per Share Sold (11)	Average Price Per Share Outstanding (12)	Yield on Price Per Share Outstanding (13)
			Amount (4)	Per Share (5)				Amount (9)	Per Share (10)			
1916	150,000 C 150,000 P	14,694 C 14,694 P	$117,552 C 88,164 P	$8.00 C 6.00 P	135,306 C 135,306 P	$5,995,000.00	$44.31	$1,082,448 C 811,836 P	$8.00 C 6.00 P	31.60%	$39.97	35.03%
1917	150,000 C 150,000 P	14,694 C 14,694 P	117,552 C 88,164 P	8.00 C 6.00 P	135,306 C 135,306 P	5,995,000.00	44.31	1,082,448 C 811,836 P	8.00 C 6.00 P	31.60	39.97	35.03
1918	150,000 C 150,000 P	14,694 C 14,694 P	146,940 C 88,164 P	10.00 C 6.00 P	135,306 C 135,306 P	5,995,000.00	44.31	1,353,060 C 811,836 P	10.00 C 6.00 P	36.11	39.97	40.03
1919	150,000 C 150,000 P	14,691 C 14,691 P	146,940 C 88,164 P	10.00 C 6.00 P	135,306 C 135,306 P	5,995,000.00	44.31	1,353,060 C 811,836 P	10.00 C 6.00 P	36.11	39.97	40.03
1920	150,000 C	14,694 C	146,940 C 16,898 P 1,763,280 P	10.00 C 1.15 P 120.00 P	135,306 C	5,995,000.00	44.31	1,353,060 C 155,602 P 16,236,720 P	10.00 C 1.15 P 120.00 P	296.00	39.97	328.15
1921	150,000 C	14,694 C	146,940 C	10.00 C	135,306 C	5,995,000.00	44.31	1,353,060 C	10.00 C	22.57	39.97	25.03
1922	150,000 C	14,694 C	146,940 C	10.00 C	135,306 C	5,995,000.00	44.31	1,353,060 C	10.00 C	22.57	39.97	25.03
1923	150,000 C	14,694 C	146,940 C	10.00 C	135,306 C	5,995,000.00	44.31	1,353,060 C	10.00 C	22.57	39.97	25.03
1924	150,000 C	14,694 C	146,940 C	10.00 C	135,306 C	5,995,000.00	44.31	1,353,060 C	10.00 C	22.57	39.97	25.03
1925	150,000 C 75,000 C•	14,694 C 7,347 C	146,940 C 18,367 C	10.00 C 2.50 C	135,306 C 67,653 C	5,995,000.00	29.54	1,353,060 C 169,133 C	10.00 C 2.50 C	25.39	26.64	28.15
1926	225,000 C	22,041 C	220,410 C	10.00 C	202,959 C	5,995,000.00	29.54	2,029,590 C	10.00 C	33.85	26.64	37.53
1927	1,125,000 C*	110,205 C	1,653,075 C	15.00 C	1,014,795 C	5,995,000.00	5.91	15,221,925 C	15.00 C	253.91	5.33	281.48
1928	1,125,000 C	110,205 C	330,615 C	3.00 C	1,014,795 C	5,995,000.00	5.91	3,044,385	3.00 C	50.78	5.33	56.30
1929	1,125,000 C	110,205 C	551,025	5.00 C	1,014,795 C	5,995,000.00	5.91	5,073,975	5.00 C	84.64	5.33	93.83
1930	1,125,000 C	110,205 C	440,820	4.00 C	1,014,795 C	5,995,000.00	5.91	4,059,180	4.00 C	67.71	5.33	75.06
Totals			$6,757,771					$62,227,229				
Yearly average			$450,518			$5,995,000.00		$4,148,482		69.20%		76.71%

• Stock Dividend of 50%.

* Exchange of one old share for five new shares.

(3) Including Preferred Stock Received in Exchange of Common Stock in 1916, Stock Dividend in 1925, and Exchange of Stock in 1927.

(4) Including cash received in 1920 for Preferred Stock redeemed.

(6) Including Preferred Stock Received in Exchange of Common Stock in 1916, Stock Dividend in 1925, and Exchange of Stock in 1927.

[fol. 5047]

Western Electric Company, Inc.

Class II, A—6% Cumulative Preferred Stock of Year 1917

Annual Yield per Share on Investment During Years 1917 to 1920, Inclusive

Year Ending Dec. 31 (1)	Total Shares Outstanding (2)	Total Capital Received for Stock Outstanding (3)	Average Price Per Share (4)	Cash Dividend Amount (5)	Cash Dividend Per Share (6)	Per Cent Annual Yield Per Share (7)
1917.............	150,000	$15,000,000	$100.00	$450,000	$3.00	6.00 (a)
1918.............	150,000	15,000,000	100.00	900,000	6.00	6.00
1919.............	150,000	15,000,000	100.00	900,000	6.00	6.00
1920.............	....	15,000,000	100.00	172,500	1.15	6.00 (b)
	....	....	......	3,000,000 (d)	20.00	20.00
Totals......	....	....	......	$5.422,500	$36.15	......
Yearly average	....	$15,000,000	......	$2,021,667	$13.48 (c)	13.48 (c)

(a) Based on period held, i.e., two quarters of the year 1917.
(b) Based on period held, i.e., two months and nine days of the year 1920.
(c) Based on period held, i.e., two years, eight months and nine days.
(d) Amount paid over par value at redemption. The stock was redeemed at $120.00 per share.

[fol. 5048]

Western Electric Company, Inc.

Class II, B—Common Stock Issue of 1920

Annual Yield per Share on Investment During Years 1920 to 1930, Inclusive

Year Ending Dec. 31 (1)	Total Shares Outstanding (2)	Total Capital Received for Stock Outstanding (3)	Average Price Per Share Outstanding (4)	Cash Dividends Amount (5)	Cash Dividends Per Share (6)	Yield on Price Per Share Outstanding (7)
1920	200,000	$36,000,000	$180.00	$1,500,000	$7.50	5.56% (a)
1921	200,000	36,000,000	180.00	2,000,000	10.00	5.56
1922	200,000	36,000,000	180.00	2,000,000	10.00	5.56
1923	200,000	36,000,000	180.00	2,000,000	10.00	5.56
1924	200,000	36,000,000	180.00	2,000,000	10.00	5.56
1925	200,000	36,000,000	120.00	2,000,000	10.00	6.25
	100,000 (b)	......	......	250,000	2.50 (c)	......
1926	300,000	36,000,000	120.00	3,000,000	10.00	8.33
1927	1,500,000 (d)	36,000,000	24.00	22,500,000	15.00	62.50
1928	1,500,000	36,000,000	24.00	4,500,000	3.00	12.50
1929	1,500,000	36,000,000	24.00	7,500,000	5.00	20.83
1930	1,500,000	36,000,000	24.00	6,000,000	4.00	16.67
Total	......	......	......	$55,250,000	......	......
Yearly average	......	......	......	$5,139,535	......	14.28%

(a) Based on period held (three quarters) which has been adjusted to annual basis.
(b) Stock Dividend of 50%.
(c) Based on period held, i.e., one quarter of the year.
(d) Based on exchange of one old share for five new shares.

[fol. 5049]

Western Electric Company, Inc.

Class II C—Common Stock Issue of December 1922

Annual Yield Per Share on Investment During Years 1923 to 1930, Inclusive

Year Ending Dec. 31 (1)	Total Shares Outstanding (2)	Total Capital Received for Stock Outstanding (3)	Average Price Per Share Outstanding (4)	Cash Dividend		Yield on Price Per Share Outstanding (7)
				Amount (5)	Per Share (6)	
1923	150,000	$15,000,000	$100.00	$1,500,000	$10.00	10.00%
1924	150,000	15,000,000	100.00	1,500,000	10.00	10.00
1925	150,000	15,000,000	66.67	1,500,000	10.00	11.25
	75,000 (a)	....	......	187,500	2.50 (b)	......
1926	225,000	15,000,000	66.67	2,250,000	10.00	15.00
1927	1,125,000 (c)	15,000,000	13.33	16,875,000	15.00	112.50
1928	1,125,000	15,000,000	13.33	3,375,000	3.00	22.50
1929	1,125,000	15,000,000	13.33	5,625,000	5.00	37.50
1930	1,125,000	15,000,000	13.33	4,500,000	4.00	30.00
Total	....	....	......	$37,312,500	......	......
Average	....	$15,000,000	......	$4,664,062	......	31.09%

(a) Stock dividend of 50%.
(b) Based on period held, i. e., one quarter of the year.
(c) Based on exchange of one old share for five new shares.

[fol. 5050]

Western Electric Company, Inc.

Class II D—Common Stock Issue of December 31, 1928

Annual Yield Per Share on Investment During Years 1929 and 1930

Year Ending Dec. 31 (1)	Total Shares Outstanding (2)	Total Capital Received for Stock Outstanding (3)	Average Price Per Share Outstanding (4)	Cash Dividend		Annual Yield on Price Per Share Outstanding (7)
				Amount (5)	Per Share (6)	
1929	250,000	$10,000,000	$40.00	$1,250,000	$5.00	12.50%
1930	250,000	10,000,000	40.00	1,000,000	4.00	10.00
Total	....	....	......	$2,250,000	......	......
Yearly Average	....	$10,000,000	$40.00	$1,125,000	$4.50	11.25%

[fol. 5051]

Western Electric Company, Inc.

Class II E—Common Stock Issue of May 31, 1929

Annual Yield Per Share on Investment During Years 1929 and 1930

Year Ending Dec. 31 (1)	Total Shares Outstanding (2)	Total Capital Received for Stock Outstanding (3)	Average Price Per Share Outstanding (4)	Cash Dividend Amount (5)	Cash Dividend Per Share (6)	Annual Yield on Price Per Share Outstanding (7)
1929	500,000	$20,000,000	$40.00	$2,000,000	$4.00	17.14%
1930	500,000	20,000,000	40.00	2,000,000	4.00	10.00
Total	....	....	......	$4,000,000	......	....
Yearly Average	....	....	......	$2,526,316	......	12.63%

[fol. 5052]

Western Electric Company, Inc.

Class II F—Common Stock Issue of December 2, 1929

Annual Yield Per Share on Investment During Years 1929 and 1930

Year Ending Dec. 31 (1)	Total Shares Outstanding (2)	Total Capital Received for Stock Outstanding (3)	Average Price Per Share Outstanding (4)	Cash Dividend Amount (5)	Cash Dividend Per Share (6)	Annual Yield on Price Per Share Outstanding (7)
1929	750,000	$30,000,000	$40.00	$1,500,000	$2.00	60.00%
1930	750,000	30,000,000	40.00	3,000,000	4.00	10.00
Total	....	....	......	$4,500,000	......	......
Yearly Average	....	....	......	$4,153,974	......	13.85%

[fol. 5053]

Western Electric Company, Inc.

Class II G—Common Stock Issue of March 31, 1930

Annual Yield per Share on Investment During Year 1930

Year Ending Dec. 31 (1)	Total Shares Outstanding (2)	Total Capital Received for Stock Outstanding (3)	Average Price Per Share Outstanding (4)	Cash Dividend		Annual Yield on Price Per Share Outstanding (7)
				Amount (5)	Per Share (6)	
1930	750,000	$30,000,000	$40.00	$2,250,000	$3.00	10.00%

[fol. 5054]

Western Electric Company, Inc.

Average Return to Investors on Individual Issues of Capital Stock Adjusted to Include Changes in Values Thereof

(Issues Identified by Roman Numerals and Letters for Convenient Reference)

During the Years 1916 to 1930

Class I—Original Issues of Stock Prior to 1916:

(1) Book Value of 150,000 shares of common and 150,000 shares of Preferred at Jan. 1, 1916	$40,229,032.00
(2) Book Value of 1,125,000 shares of common at December 31, 1930 (@ 31.16 per share)	35,055,000.00
(3) Decrease in Book Value during years 1916 to 1930	$5,174,032.00
(4) Total Dividends Paid during years 1916 to 1930	68,985,000.00
(5) Total Dividends less Decrease in Book Value	$63,810,968.00
(6) Yearly Average of Item (5)	$4,254,065.00
(7) Average Annual Capital Investment	5,995,000.00
(8) Ratio of Item (6) to Item (7)	70.96%

Class II B—Common Stock Issue of 1920:

(1) Capital received from this issue of 200,000 shares	$36,000,000.00
(2) Book Value of 1,500,000 shares at December 31, 1930 (@ 31.16 per share)	46,740,000.00
(3) Increase in Value during years 1920 to 1930	$10,740,000.00
(4) Total Dividends Paid during years 1920 to 1930	55,250,000.00
(5) Total Dividends plus Increase in Value	$65,990,000.00
(6) Yearly average of Item (5) (Based on 10¾ years)	$6,138,605.00
(7) Average Annual Capital Investment	36,000,000.00
(8) Ratio of Item (6) and (7)	17.05%

Class II C—Common Stock Issue of December 1922:

(1) Capital received from this issue of 150,000 shares	$15,000,000.00
(2) Book Value of 1,125,000 shares at December 31, 1930 (@ 31.16 per share)	35,055,000.00
(3) Increase in Value during years 1922 to 1930	$20,055,000.00
(4) Total Dividends paid during years 1922 to 1930	37,312,500.00
(5) Total Dividends plus increase in value	$57,367,500.00
(6) Yearly average of Item (5)	$7,170,937.00
(7) Average Annual Capital Investment	15,000,000.00
(8) Ratio of Item (6) to Item (7)	47.81%

Class II D—Common Stock Issue of December 31, 1928:

(1) Capital received from this issue of 250,000 shares	$10,000,000.00
(2) Book Value of 250,000 shares at December 31, 1930 (@ 31.16 per share)	7,790,000.00
(3) Decrease in Value during years 1929 and 1930	$2,210,000.00
(4) Total Dividends paid during years 1929 and 1930	2,250,000.00
(5) Total Dividends minus decrease in value	$40,000.00
(6) Yearly Average of Item (5)	$20,000.00
(7) Average Annual Capital Investment	10,000,000.00
(8) Ratio of Item (6) to Item (7)	.20%

[fol. 5055]

Western Electric Company, Inc.

Average Return to Investors on Individual Issues of Capital Stock Adjusted to Include Changes in Values Thereof

(Issues Identified by Roman Numerals and Letters for Convenient Reference)

During the Years 1916* to 1930

Class II E—Common Stock Issue of May 31, 1929:

(1) Capital received from this issue of 500,000 shares	$20,000,000.00
(2) Book Value of 500,000 shares at December 31, 1930 (@ $31.16 per share)	15,580,000.00
(3) Decrease in value during years 1929 and 1930	$4,420,000.00
(4) Total Dividends Paid during years 1929 and 1930	4,000,000.00
(5) Total Dividends minus decrease in value	$-420,000.00*
(6) Yearly average of Item 5 (Based on 1.58 years)	$-265,823.00*
(7) Average annual capital investment	20,000,000.00
(8) Ratio of Item (6) to Item (7)	-1.33%*

Class II F—Common Stock Issue of December 2, 1929:

(1) Capital received from this issue of 750,000 shares	$30,000,000.00
(2) Book Value of 750,000 shares at December 31, 1930 (@ $31.16 per share)	23,370,000.00
(3) Decrease in value during years 1929 and 1930	$6,630,000.00
(4) Total Dividends Paid during years 1929 and 1930	4,500,000.00
(5) Total Dividends minus decrease in value	$-2,130,000.00*
(6) Yearly average of Item 5 (Based on 13 months)	$-1,966,154.00*
(7) Average annual capital investment	30,000,000.00
(8) Ratio of Item (6) to Item (7)	-6.55%*

Class II C—Common Stock Issue of March 31, 1930:

(1) Capital received from this issue of 750,000 shares	$30,000,000.00
(2) Book Value of 750,000 shares at December 31, 1930 (@ $31.16 per share)	23,370,000.00
(3) Decrease in Value during year 1930	$6,630,000.00
(4) Total Dividends Paid during year 1930	2,250,000.00
(5) Total Dividends minus decrease in value	$-4,380,000.00
(6) Yearly average of Item 5 (Based on 9 months)	$-5,840,000.00*
(7) Average annual capital investment	30,000,000.00
(8) Ratio of Item (6) to Item (7)	-19.47%

* Red figures.

NOTE.—Total net increase in book value during period held for all issues of stock was $5,730,968.00.

[fol. 5056]

Western Electric Company, Inc.

Average Return to Company's Investors on All Capital Stock Issues on Basis II* During Years 1916 to 1930, Inclusive

Year Ended December 31 (1)	Average capital from all issues (2)	Total dividends paid (3)	% Dividends paid (4)
1916	$5,995,000	$2,100,000	35.03
1917	13,495,000	2,550,000	18.90
1918	20,995,000	3,300,000	15.72
1919	20,995,000	3,300,000	15.72
1920	20,995,000	3,345,000	15.93
1921	20,995,000	3,500,000	16.67
1922	20,995,000**	3,500,000**	16.67
1923	35,995,000	5,000,000	13.89
1924	35,995,000	5,000,000	13.89
1925	35,995,000	5,625,000	15.63
1926	35,995,000	7,500,000	20.84
1927	35,995,000	56,250,000	156.27
1928	35,995,000	11,250,000	31.25
1929	60,161,667	23,500,000	39.06
1930	118,495,000	23,250,000	19.62
Total		$158,970,000	
Average 1916-1930	34,606,111	10,598,000	30.62
Average 1920-1922	20,995,000	3,448,333	16.42
Average 1920-1930	41,601,061	13,429,000	32.28
Average 1923-1930	49,328,333	17,172,125	34.81

* "Basis II" considers stock transactions of 1920 to be exchanges of common stock for preferred stock on the basis of two shares of common for three shares of preferred.

** Peferred stock, issued in 1922 and sold to the general public, was excluded from the above. Dividends on same were also excluded.

(Here follows side folio 5057)

[fol. 5057]

Western Electric Company, Inc.

Class I (Issues Prior to 1916) Annual Yield per Share on Investment During Years 1916 to 1930, Inclusive

Year Ending December 31 (1)	Total Shares Outstanding (2)	Shares of Bonus Stock Outstanding (3)	Cash Dividends on Bonus Stock		Shares of Stock Sold Outstanding (6)	Total Capital Received for Stock Sold and Outstanding (7)	Average Price Per Share Sold (8)	Cash Dividends on Stock Sold		Yield on Price Per Share Sold (11)	Average Price Per Share Outstanding (12)	Yield on Price Per Share Outstanding (13)
			Amount (4)	Per Share (5)				Amount (9)	Per Share (10)			
1916	150,000 C	14,694 C	$117,552 C	8.00 C	135,306 C	$5,995,000	$44.31	$1,082,448 C	$8.00 C	31.60%	$39.97	35.03%
	150,000 P	14,694 P	88,164 P	6.00 P	135,306 P			811,836 P	6.00 P			
1917	150,000 C	14,694 C	117,552 C	8.00 C	135,306 C	5,995,000	44.31	1,082,448 C	8.00 C	31.60%	39.97	35.03%
	150,000 P	14,694 P	88,164 P	6.00 P	135,306 P			811,836 P	6.00 P			
1918	150,000 C	14,694 C	146,940 C	10.00 C	135,306 C	5,995,000	44.31	1,353,060 C	10.00 C	36.11%	39.97	40.03%
	150,000 P	14,694 P	88,164 P	6.00 P	135,306 P			811,836 P	6.00 P			
1919	150,000 C	14,694 C	146,940 C	10.00 C	135,306 C	5,995,000	44.31	1,353,060 C	10.00 C	36.11%	39.97	40.03%
	150,000 P	14,694 P	88,164 P	6.00 P	135,306 P			811,836 P	6.00 P			
1920	150,000 C	14,694 C	146,940 C	10.00 C	135,306 C	5,995,000	26.58	1,353,060 C	10.00 C	36.45%	23.98	40.41%
	P	P	16,898 P	1.15 P	P			155,602 P	1.15 P			
	100,000 C*	9,796 C	73,470 C	7.50 C	90,204 C			676,530 C	7.50 C			
1921	250,000 C	24,490 C	244,900 C	10.00 C	225,510 C	5,995,000	26.58	2,255,100 C	10.00 C	37.62%	23.98	41.70%
1922	250,000 C	24,490 C	244,900 C	10.00 C	225,510 C	5,995,000	26.58	2,255,100 C	10.00 C	37.62%	23.98	41.70%
1923	250,000 C	24,490 C	244,900 C	10.00 C	225,510 C	5,995,000	26.58	2,255,100 C	10.00 C	37.62%	23.98	41.70%
1924	250,000 C	24,490 C	244,900 C	10.00 C	225,510 C	5,995,000	26.58	2,255,100 C	10.00 C	37.62%	23.98	41.70%
1925	250,000 C	24,490 C	244,900 C	10.00 C	225,510 C	5,995,000	17.72	2,255,100 C	10.00 C	42.32%	15.99	46.91%
	125,000 C⁎	12,245 C	30,612 C	2.50 C	112,755 C			281,888 C	2.50 C			
1926	375,000 C	36,735 C	367,350 C	10.00 C	338,265 C	5,995,000	17.72	3,382,650 C	10.00 C	56.42%	15.99	62.55%
1927	1,875,000 C†	183,675 C	2,755,125	15.00 C	1,691,325 C	5,995,000	3.54	25,369,875 C	15.00 C	423.18%	3.20	469.15%
1928	1,875,000 C	183,675 C	551,025	3.00 C	1,691,325 C	5,995,000	3.54	5,073,975	3.00	84.64%	3.20	93.83%
1929	1,875,000 C	183,675 C	918,375	5.00 C	1,691,325 C	5,995,000	3.54	8,456,625	5.00	141.06%	3.20	156.38%
1930	1,875,000 C	183,675 C	734,700	4.00 C	1,691,325 C	5,995,000	3.54	6,765,300	4.00	112.85%	3.20	125.10%
Totals	....	....	$7,700,635	....	....	....	.....	$70,909,365	....	....	.....	....
Yearly Average			513,376	....	....	$5,995,000	.....	4,727,291	....	78.85%	.....	87.42%

* Transaction equivalent to exchange of 2 shares of common for three shares of preferred resulted in additional 100,000 shares of common.
⁎ Stock Dividend of 50%.
† Exchange of one old share for five new shares.

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Western Electric Company, Inc.

Class II A–6% Cumulative Preferred Stock and Exchanged Common Stock

Annual Yield Per Share on Investment During Years 1917 to 1930, Inclusive

Year Ending December 31st (1)	Total Shares Outstanding (2)	Total Capital Received for Stock Outstanding (3)	Average Price Per Share (4)	Cash Dividends		Per Cent Annual Yield Per Share (7)
				Amount (5)	Per Share (6)	
1917	150,000 P	$15,000,000	$100	$450,000 P	$3.00	6.00 (a)
1918	150,000 P	15,000,000	100	900,000 P	6.00	6.00
1919	150,000 P	15,000,000	100	900,000 P	6.00	6.00
1920	P	15,000,000	150	172,500 P	1.15	6.15
	100,000 C*	....	....	750,000 C	7.50	.....
1921	100,000 C	15,000,000	150	1,000,000 C	10.00	6.67
1922	100,000 C	15,000,000	150	1,000,000 C	10.00	6.67
1923	100,000 C	15,000,000	150	1,000,000 C	10.00	6.67
1924	100,000 C	15,000,000	150	1,000,000 C	10.00	6.67
1925	100,000 C	15,000,000	100	1,000,000 C	10.00	7.50
	50,000 C#	....	....	125,000 C	2.50	.....
1926	150,000 C	15,000,000	100	1,500,000 C	10.00	10.00
1927	750,000 C&	15,000,000	20	11,250,000 C	15.00	75.00
1928	750,000 C	15,000,000	20	2,250,000 C	3.00	15.00
1929	750,000 C	15,000,000	20	3,750,000 C	5.00	25.00
1930	750,000 C	15,000,000	20	3,000,000 C	4.00	20.00
Total	....	....	....	30,047,500	.....	....
Yearly average	....	....	....	$2,225,741	.....	14.84% (b)

*Transaction equivalent to exchange of 2 shares of common stock for 3 shares of preferred.
Stock Dividend of 50%.
& Exchange of one old share for five new shares.
(a) Based on period held of two quarters of the year 1917.
(b) Based on period held of thirteen and a half years.

Western Electric Company, Inc.

Average Return to Investors on Individual Issues of Capital Stock Adjusted to Include Changes in Values Thereof. (Issues Identified by Roman Numerals and Letters for Convenient Reference.) During the Years 1916 to 1930.

Class I—Original Issues of Stock Prior to 1916:

(1) Book Value of 150,000 shares of common and 150,000 shares of preferred at Jan. 1, 1916	$40,229,032
(2) Book Value of 1,875,000 shares of common at December 31, 1930 (@ $31.16 per share)	58,425,000
(3) Increase in Book Value during years 1916 to 1930	18,195,968
(4) Total Dividends Paid during years 1916 to 1930	78,610,000
(5) Total Dividends Plus Increase in Book Value	96,805,968
(6) Yearly Average of Item (5)	$6,453,731
(7) Average Annual Capital Investment	5,995,000
(8) Ratio of Item (6) to Item (7)	107.65%

Class II A—Preferred Stock Issue of 1917 and Exchanged Common Stock Issue of 1920:

(1) Capital received from the issue of 150,000 shares of Preferred Stock in 1917	$15,000,000
(2) Book Value of 750,000 shares of common at December 31, 1930 (@ $31.16 per share)	23,370,000
(3) Increase in Value during years 1917 to 1930	8,370,000
(4) Total Dividends Paid during years 1917 to 1930	30,047,500
(5) Total Dividends Plus Increase in Value	38,417,500
(6) Yearly Average of Item (5) (Based on 13.5 years)	$2,845,741
(7) Average Annual Capital Investment	15,000,000
(8) Ratio of Item (6) to Item (7)	18.97%

Class II C—Common Stock Issue of December, 1922:

(1) Capital received from this issue of 150,000 shares	$15,000,000
(2) Book Value of 1,125,000 shares at December 31, 1930 (@ $31.16 per share)	35,055,000
(3) Increase in Value during years 1922 to 1930	20,055,000
(4) Total Dividends paid during years 1922 to 1930	37,312,500
(5) Total Dividends plus increase in value	57,367,500
(6) Yearly average of Item (5)	$7,170,937
(7) Average Annual Capital Investment	15,000,000
(8) Ratio of Item (6) to Item (7)	47.81%

Class II D—Common Stock Issue of December 31, 1928:

(1) Capital received from this issue of 250,000 shares	$10,000,000
(2) Book Value of 250,000 shares at December 31, 1930 (@ $31.16 per share)	7,790,000
(3) Decrease in Value during years 1929 and 1930	2,210,000
(4) Total Dividends paid during years 1929 and 1930	2,250,000
(5) Total Dividends minus decrease in value	40,000
(6) Yearly Average of Item (5)	$20,000
(7) Average Annual Capital Investment	10,000,000
(8) Ratio of Item (6) to Item (7)	.20%

Western Electric Company, Inc.

Average Return to Investors on Individual Issues of Capital Stock Adjusted to Include Changes in Values Thereof. (Issues Identified by Roman Numerals and Letters for Convenient Reference.) During the Years 1916 to 1930.

Class II E—Common Stock issue of May 31, 1929:

(1) Capital received from this issue of 500,000 shares	$20,000,000
(2) Book Value of 500,000 shares at December 31, 1930 (@ $31.16 per share)	15,580,000
(3) Decrease in value during years 1929 and 1930	4,420,000
(4) Total Dividends Paid during years 1929 and 1930	4,000,000
(5) Total Dividends minus decrease in value	420,000*
(6) Yearly average of Item 5 (Based on 1.58 years)	$265,823*
(7) Average annual capital investment	20,000,000
(8) Ratio of Item (6) to Item (7)	1.33%*

Class II F—Common Stock Issue of December 2, 1929:

(1) Capital received from this issue of 750,000 shares	$30,000,000
(2) Book Value of 750,000 shares at December 31, 1930 (@ $31.16 per share)	23,370,000
(3) Decrease in value during years 1929 and 1930	6,630,000
(4) Total Dividends Paid during years 1929 and 1930	4,500,000
(5) Total Dividends minus decrease in value	2,130,000*
(6) Yearly average of Item 5 (Based on 13 months)	$1,966,154*
(7) Average annual capital investment	30,000,000
(8) Ratio of Item (6) to Item (7)	6.55%*

Class II G—Common Stock Issue of March 31, 1930:

(1) Capital received from this issue of 750,000 shares	$30,000,000
(2) Book Value of 750,000 shares at December 31, 1930 (@$31.16 per share)	23,370,000
(3) Decrease in value during year 1930	6,630,000
(4) Total Dividends Paid during year 1930	2,250,000
(5) Total Dividends minus decrease in value	4,380,000*
(6) Yearly average of Item 5 (Based on 9 months)	$5,840,000*
(7) Average annual capital investment	30,000,000
(8) Ratio of Item (6) to Item (7)	19.47%*

* Red figures.

Note:—Total net increase in value of all stock issues during period held was $26,730,968.

[fol. 5061]

Western Electric Company, Inc.

Earnings (*) Available for Common Stock Related to Capital and Surplus, Based on Averages Per Share, During Years 1920 to 1930, Inclusive

Year	Average Number of Shares Outstanding During Year	Average Earnings	Average Capital	Per Cent of Earnings on Average Capital	Average Capital and Surplus	Per Cent of Earnings on Average Capital and Surplus
1920	315,000	$12.36	$66.65	18.54	$183.97	6.72
1921	350,000	12.35	59.99	20.59	167.92	7.35
1922	350,000	13.27	59.99	22.12	171.23	7.75
1923	500,000	14.38	71.99	19.97	154.25	9.32
1924	500,000	16.80	71.99	23.34	161.05	10.43
1925	563,889	40.34	63.83	63.20	179.88	22.43
1926	750,000	19.43	47.99	40.49	144.68	13.43
1927	2,583,333	25.59	13.93	183.70	34.06	75.13
1928	3,750,000	5.26	9.60	54.79	26.88	19.57
1929	4,357,636	6.19	13.81	44.82	29.54	20.95
1930	5,822,917	2.68	20.35	13.17	30.81	8.70
Average 1920–1930	1,803,889	$9.79	$23.06	42.45	$52.47	18.66
Average 1923–1930	2,353,472	9.63	20.96	45.94	45.92	20.97

(*) Earnings taken from Annual Reports to the Stockholders of Western Electric Company, Inc. without adjustment.

(Here follows side folio 5062).

[fol. 5062]

Western Electric Company, Inc.

Net Assets per Share of Capital Stock as of December 31, 1916 to 1930, Inclusive

As of December 31st (1)	Total Shares Outstanding (2)	Net Assets Before Deducting Depreciation and Contingency Reserves (3)	Depreciation Reserve (4)	Contingency Reserve (5)	Net Assets After Deducting Depreciation Reserve (6)	Net Assets After Deducting Depreciation and Contingency Reserves (7)	Annual Increase in Net Assets			Average Per Share	
							In Column (3) (8)	In Column (6) (9)	In Column (7) (10)	Column (3) Divided by Column (2) (11)	Column (6) Divided by Column (2) (12)
1915	150,000 P									100.00 P	100.00 P
	150,000 C	$56,562,925	$11,988,392	$4,345,501	$44,574,533	$40,229,032				277.09 P	197.16 C
1916	150,000 P									100.00 P	100.00 P
	150,000 C	56,574,369	13,320,143	2,800,578	43,254,226	40,453,648	$11,444	$-1,320,307*	$224,616	277.16	188.36
1917	300,000 P									100.00 P	100.00 P
	150,000 C	76,373,962	16,285,136	4,333,462	60,088,826	55,755,364	19,799,593	16,834,600	15,301,716	309.16	200.59
1918	300,000 P									100.00 P	100.00 P
	150,000 C	79,373,906	18,424,058	4,984,163	60,949,848	55,965,685	2,999,944	861,022	210,321	329.16	206.33
1919	300,000 P									100.00 P	100.00 P
	150,000 C	82,152,445	20,264,379	4,833,472	61,888,066	57,054,594	2,778,539	938,218	1,088,909	347.68	212.59
1920	350,000 C	86,588,346	34,021,005	4,617,888	62,567,341	57,949,453	4,435,901	679,275	894,859	247.40 C	178.76 C
1921	350,000 C	91,516,868	27,924,413	4,819,005	63,592,455	58,773,450	4,928,522	1,025,114	823,997	261.48	181.69
1922	*500,000 C	110,281,204	30,431,368	4,918,010	79,849,836	74,931,826	18,764,336	16,257,381	16,158,376	220.56	159.70
1923	*500,000 C	116,335,527	34,401,141	4,807,619	81,931,386	77,123,767	6,054,323	2,081,550	2,191,941	232.67	163.86
1924	*500,000 C	125,873,101	40,490,901	4,859,075	85,382,200	80,523,125	9,537,574	3,450,814	3,399,358	251.75	170.76
1925	750,000 C	149,516,000	41,767,842	6,313,575	107,748,158	101,434,583	23,642,899	22,365,958	20,911,458	199.35	143.66
1926	750,000 C	161,995,346	46,516,764	6,969,961	115,478,582	108,508,621	12,479,346	7,730,424	7,074,038	215.99	153.97
1927	3,750,000 C	139,306,994	51,319,208		87,987,786	87,987,786	−22,688,352*	−27,490,796*	−20,520,835*	37.15	23.46
1928	4,000,000 C	167,605,850	56,821,896		110,783,954	110,783,954	28,298,856	22,796,168	22,796,168	41.90	27.70
1929	5,250,000 C	229,227,682	64,670,737		164,556,945	164,556,945	61,621,832	53,772,991	53,772,991	43.66	31.34
1930	6,000,000 C	261,736,230	74,804,446		186,931,784	186,931,784	32,508,548	22,374,839	22,374,839	43.62	31.16

* Preferred Stock sold to the public during the year 1922 and outstanding during the years 1922 to 1924 has been eliminated both from the number of shares outstanding and from the assets.

* Decreases.

Western Electric Company, Inc.

Net Assets per Share of Capital Stock as of December 31, 1910 to 1930, Inclusive

ion	Contingency Reserve (5)	Net Assets After Deducting Depreciation Reserve (6)	Net Assets After Deducting Depreciation and Contingency Reserves (7)	Annual Increase in Net Assets			Average Per Share			Annual Increase in Averages Per Share		
				In Column (3) (8)	In Column (6) (9)	In Column (7) (10)	Column (3) Divided by Column (2) (11)	Column (6) Divided by Column (2) (12)	Column (7) Divided by Column (2) (13)	In Column (11) (14)	In Column (12) (15)	In Column (13) (16)
							100.00 P	100.00 P	100.00 P			
392	$4,345,501	$44,574,533	$40,229,032				277.09 P	197.16 C	168.19 C			
							100.00 P	100.00 P	100.00 P			
43	2,800,578	43,254,226	40,453,648	$11,444	$−1,320,307*	$224,616	277.16	188.36	169.69	$.07 C	$−8.80*C	$1.50 C
							100.00 P	100.09 P	100.00 P			
36	4,333,462	60,088,826	55,755,364	19,799,593	16,834,600	15,301,716	309.16	200.59	171.70	32.00 C	12.23 C	2.01 C
							100.00 P	100.00 P	100.00 P			
58	4,984,163	60,949,848	55,965,685	2,999,944	861,022	210,321	329.16	206.33	173.10	20.00 C	5.74 C	1.40 C
							100.00 P	100.00 P	100.00 P			
79	4,833,472	61,888,066	57,054,594	2,778,539	938,218	1,088,909	347.68	212.59	180.36	18.52 C	6.26 C	7.26 C
05	4,617,888	62,567,341	57,949,453	4,435,901	679,275	894,859	247.40 C	178.76 C	165.57 C	−100.28*C	−33.83*C	−14.79*C
13	4,819,005	63,592,455	58,773,450	4,928,522	1,025,114	823,997	261.48	181.69	167.92	14.08 C	2.93 C	2.35 C
68	4,918,010	79,849,836	74,931,826	18,764,336	16,257,381	16,158,376	220.56	159.70	149.86	−40.92*C	−21.99*C	−18.06*C
41	4,807,619	81,931,386	77,123,767	6,054,323	2,081,550	2,191,941	232.67	163.86	154.25	12.11 C	4.16 C	4.39 C
01	4,859,075	85,382,200	80,523,125	9,537,574	3,450,814	3,399,358	251.75	170.76	161.05	19.08 C	6.90 C	6.80 C
42	6,313,575	107,748,158	101,434,583	23,642,899	22,365,958	20,911,458	199.35	143.66	135.25	−52.40*C	−26.90*C	−25.80*C
64	6,969,961	115,478,582	108,508,621	12,479,346	7,730,424	7,074,038	215.99	153.97	144.68	16.64 C	10.31 C	9.43 C
08		87,987,786	87,987,786	−22,688,352*	−27,490,796*	−20,520,835*	37.15	23.46	23.46	−178.84*C	−130.51*C	−121.22*C
96		110,783,954	110,783,954	28,298,856	22,796,168	22,796,168	41.90	27.70	27.70	4.75 C	4.24 C	4.24 C
37		164,556,945	164,556,945	61,621,832	53,772,991	53,772,991	43.66	31.34	31.34	1.76 C	3.64 C	3.64 C
46		186,931,784	186,931,784	32,508,548	22,374,839	22,374,839	43.62	31.16	31.16	−.04*C	−.18*C	−.18*C

and outstanding during the years 1922 to 1924 has been eliminated both from the number of shares outstanding and from the assets.

[fol. 5063]

EXHIBIT X-296

American Telephone and Telegraph Company

Per Cents of Return on Investment from All Operations Classified During Years 1920 to 1922, Inclusive

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
(1) Holding Company (Entire)....	6.08	6.31	6.51
(2) Capital Stock of Western Electric Company, Inc............	16.01	8.72	8.71
(3) Capital Stock (*) of Licensee Companies:			
Illinois Bell Telephone Co.	6.78	6.90	7.05
All Licensees, Exclusive of I. B. T. Co..............	6.08	6.31	6.37
All Licensee Companies....	6.15	6.37	6.44
(4) License Contract Operations:			
Illinois Bell Telephone Company	14.50	15.47	9.67
All Licensee Companies, Exclusive of I. B. T. Co.	8.47	8.02	7.95
All Licensee Companies....	8.59	8.23	8.04
Long Lines	8.59	8.23	8.04
Total	8.60	8.22	8.04
(5) Long Lines Operations........	17.53	15.44	17.08
(6) Entire Company Operations....	7.94	7.78	7.97

* Including Capital Stock Installments.

[fol. 5064]

American Telephone and Telegraph Company

Per Cents of Return on Investment from All Operations Classified During Years 1923 to 1930, Inclusive

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
(1) Holding Company (Entire)	7.12	7.39	7.61	7.99	11.76	8.29	9.01	7.84
(2) Capital Stock of Western Electric Company, Inc.	9.06	9.06	10.19	13.59	101.91	20.38	29.63	16.87
(3) Capital Stock (*) of Licensee Companies:								
Illinois Bell Telephone Co.	7.18	7.16	7.28	7.34	7.58	7.62	7.65	7.71
All Licensees, Exclusive of I. B. T. Co.	6.59	6.95	7.01	7.35	7.38	7.47	7.47	7.22
All Licensee Companies	6.65	6.97	7.04	7.35	7.40	7.48	7.48	7.26
(4) License Contract Operations:								
Illinois Bell Telephone Co.	18.84	18.94	12.98	9.67	11.08	....	....	....
All Licensee Companies, Exclusive of I. B. T. Co.	8.57	8.15	8.16	7.94	8.64	....	....	....
All Licensee Companies	8.82	8.37	8.31	8.03	8.75	....	....	....
Long Lines	8.82	8.37	8.31	8.03	8.75	....	....	....
Total	8.82	8.37	8.31	8.03	8.75	6.04	4.77	3.46
(5) Long Lines Operations	16.22	14.43	16.19	14.52	12.47	12.97	11.91	7.92
(6) Entire Company Operations	8.40	8.33	8.61	8.66	11.33	8.52	8.77	7.21

* Including Capital Stock Installments.

[fol. 5065]

Exhibit X-297

American Telephone and Telegraph Company

Per Cents of Return on Capital and Surplus from All Operations Classified During Years 1920 to 1922, Inclusive

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
(1) Holding Company (Entire)	6.05	6.26	6.60
(2) Capital Stock of Western Electric Company, Inc.	21.25	9.86	9.59
(3) Capital Stock (*) of Licensee Companies:			
Illinois Bell Telephone Co.	7.12	7.14	7.33
All Licensees, Exclusive of I. B. T. Co.	6.05	6.26	6.41
All Licensee Companies	6.16	6.35	6.50
(4) License Contract Operations:			
Illinois Bell Telephone Company	18.94	19.93	10.90
All Licensee Companies, Exclusive of I. B. T. Co.	9.71	8.81	8.56
All Licensee Companies	9.89	9.12	8.68
Long Lines	9.89	9.12	8.68
Total	9.91	9.11	8.69
(5) Long Lines Operations	23.58	19.89	21.00
(6) Entire Company Operations	8.90	8.45	8.59

* Including Capital Stock Installments.

[fol. 5066]

American Telephone and Telegraph Company

Per Cents of Return on Capital and Surplus from All Operations Classified During Years 1923 to 1930, Inclusive

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
(1) Holding Company (Entire)	7.49	7.91	8.27	8.70	13.38	8.91	9.91	8.41
(2) Capital Stock of Western Electric Company, Inc.	9.94	10.06	11.71	15.97	127.16	23.76	35.65	19.47
(3) Capital Stock (*) of Licensee Companies:								
Illinois Bell Telephone Co.	7.57	7.61	7.83	7.86	8.10	8.08	8.21	8.25
All Licensees, Exclusive of I. B. T. Co.	6.83	7.34	7.47	7.87	7.85	7.90	7.99	7.65
All Licensee Companies	6.90	7.37	7.51	7.87	7.88	7.91	8.00	7.70
(4) License Contract Operations:								
Illinois Bell Telephone Co.	22.25	22.81	15.43	10.88	12.52	....	....	....
All Licensee Companies, Exclusive of I. B. T. Co.	9.32	8.89	9.00	8.64	9.44	....	....	....
All Licensee Companies	9.63	9.17	9.20	8.76	9.58	....	....	....
Long Lines	9.63	9.17	9.20	8.76	9.58	....	....	....
Total	9.63	9.17	9.20	8.76	9.58	6.14	4.62	3.05
(5) Long Lines Operations	18.95	16.99	19.70	17.17	14.27	14.66	13.53	8.51
(6) Entire Company Operations	9.10	9.12	9.60	9.57	12.84	9.19	9.61	7.64

* Including Capital Stock Installments.

[fol. 5067]

Exhibit X-298

American Telephone and Telegraph Company

Per Cents of Return on Capital Stock from All Operations Classified During Years 1920 to 1922, Inclusive

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
(1) Holding Company (Entire)	7.94	8.07	8.24
(2) Capital Stock of Western Electric Company, Inc.	27.88	12.74	12.03
(3) Capital Stock (*) of Licensee Companies:			
Illinois Bell Telephone Company	9.34	9.21	9.17
All Licensees, Exclusive of I. B. T. Co.	7.94	8.07	7.99
All Licensee Companies	8.08	8.18	8.11
(4) Licensee Contract Operations:			
Illinois Bell Telephone Company	24.85	25.83	13.69
All Licensee Companies, Exclusive of I. B. T. Co.	12.74	11.38	10.72
All Licensee Companies	12.98	11.79	10.88
Long Lines	12.98	11.79	10.88
Total	12.99	11.78	10.90
(5) Long Lines Operations	30.94	25.77	26.49
(6) Entire Company Operations	11.68	10.92	10.75

* Including Capital Stock Installments.

[fol. 5068]

American Telephone and Telegraph Company

Per Cents of Return on Capital Stock from All Operations Classified During Years 1923 to 1930, Inclusive

	Year Ended Dec. 31, 1923	Year Ended D c. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31 1930
(1) Holding Company (Entire)	9.18	9.67	10.02	10.73	16.75	11.64	13.05	11.53
(2) Capital Stock of Western Electric Company, Inc.	12.24	12.36	14.26	19.90	161.16	31.47	47.81	27.18
(3) Capital Stock (*) of Licensee Companies:								
Illinois Bell Telephone Co.	9.28	9.31	9.47	9.66	10.06	10.54	10.76	11.31
All Licensees, Exclusive of I. B. T. Co.	8.35	8.97	9.03	9.68	9.74	10.30	10.45	10.46
All Licensee Companies	8.44	9.00	9.08	9.68	9.77	10.31	10.47	10.53
(4) License Contract Operations:								
Illinois Bell Telephone Co.	27.67	28.21	18.84	13.48	15.67	....	....	....
All Licensee Companies, Exclusive of I. B. T. Co.	11.47	10.90	10.92	10.64	11.76	....	....	....
All Licensee Companies	11.86	11.25	11.16	10.79	11.93	....	....	....
Long Lines	11.86	11.25	11.16	10.79	11.93	....	....	....
Total	11.86	11.25	11.16	10.79	11.94	....	....	....
(5) Long Lines Operations	23.53	20.97	24.12	21.42	17.89	7.95	5.90	3.95
(6) Entire Company Operations	11.20	11.19	11.66	11.83	16.06	12.02	12.64	10.44

* Including Capital Stock Installments.

[fol. 5069]

Exhibit X-299

American Telephone and Telegraph Company

Percentages of Return of Licensee Companies on Average Fixed Capital and Material and Supplies, Years 1920 to 1930, Inclusive

Bell Telephone Co. of Nevada	b1.14%	.71%	4.91%	9.72%	6.63%	6.74%	4.50%	2.29%	4.46%	4.47%	.90%
Bell Telephone Co. of Pennsylvania	3.75	6.78	6.62	5.32	5.20	5.60	6.02	6.01	6.69	6.56	5.77
Chesapeake & Potomac Tel. Co. of Baltimore	4.66	4.54	4.85	5.01	3.50	6.04	6.75	5.89	6.46	6.48	6.24
Chesapeake & Potomac Tel. Co. of New York	2.89	5.38	7.09	7.28	7.14	7.28	7.53	5.70	6.56	5.78	5.73
Chesapeake & Potomac Tel. Co. of Virginia	3.58	5.51	5.56	6.06	5.45	4.28	5.79	5.93	6.57	6.77	6.34
Chesapeake & Potomac Tel. Co. of W. Virginia	2.65	5.47	5.47	5.07	3.18	4.81	5.69	5.16	5.07	4.73	4.48
Cincinnati & Suburban Bell Telephone Co.	6.48	6.92	7.64	6.91	7.36	6.23	7.11	7.60	8.18	7.33	6.44
Cumberland Telephone & Telegraph Co.	#3.07	2.54	4.06	5.03	5.87	5.55	5.38	....	....	....	....
Delaware & Atlantic Telephone Co.	#1.23	3.96	3.84	2.39	2.87	6.32	6.51	....	....	....	....
Diamond State Telephone Co.	a2.15	5.69	6.68	6.48	7.19	6.92	7.51	6.99	6.50	5.87	6.53
Home Tel. & Tel. Co. of Spokane	b2.23	2.69	3.52	4.34	5.74	8.01	4.86	3.58	4.90	3.89	3.97
Illinois Bell Telephone Co.	2.75	6.70	6.63	6.05	6.12	6.31	6.08	5.83	6.09	6.56	5.93
Indiana Bell Telephone Co.	.54*	.17*	2.33	3.48	4.40	4.67	6.49	7.72	8.04	7.56	6.70
Kansas City Telephone Co.	#4.16	4.37	4.01	4.29	4.55	4.87	4.53	....	....	....	....
Michigan Bell Telephone Co.	# .66	6.22	7.02	7.00	6.84	6.34	5.87	6.10	5.70	5.45	3.40
Mountain States Telephone Co.	6.38	6.00	6.12	6.25	6.48	6.55	7.00	6.12	6.16	6.03	5.97
New England Telephone & Telegraph Co.	6.18	5.74	5.68	3.42	3.67	3.97	5.70	5.80	5.93	6.28	5.82
New Jersey Bell Telephone Co.	....	....	....	....	....	....	....	3.48	6.12	6.51	5.56
New York Telephone Co.	2.29	4.50	4.77	4.67	4.02	5.05	5.42	5.70	5.59	5.63	5.40
Northwestern Bell Telephone Co.	7.03	4.40	5.72	6.44	6.42	5.84	7.07	6.83	7.13	7.25	6.58
Ohio Bell Telephone Co.	1.61	5.97	4.23	4.08	4.70	6.12	6.34	6.23	6.34	5.87	5.20

EXHIBIT X-299—Continued.

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
Pacific Telephone & Telegraph Co.	5.42	5.63	6.36	5.68	5.78	6.18	6.67	5.26	5.66	5.73	5.59
Southern Bell Telephone & Telegraph Co.	2.38	4.62	6.78	7.37	7.29	7.08	5.90	5.84	6.33	6.21	5.97
Southern California Telephone Co.	b .49	1.45*	2.36*	3.30*	1.34*	3.98	6.21	6.63	7.65	7.76	6.40
Southern New England Telephone Co.	5.11	5.55	5.49	5.82	5.93	6.12	6.02	5.46	6.64	6.58	6.10
Southwestern Bell Telephone Co.	6.96	6.81	7.74	7.59	6.92	7.62	8.08	7.24	7.22	7.51	6.69
Wisconsin Telephone Co.	4.11	5.37	6.88	6.96	6.59	6.45	6.88	7.28	7.30	6.88	4.66
Average of All Companies	3.71	5.24	5.58	5.18	5.05	5.67	6.14	5.96	6.27	6.31	5.69
Average of All Companies Exclusive of Illinois Bell Telephone Co.	3.80	5.11	5.48	5.11	4.96	5.61	6.15	5.98	6.28	6.28	5.67

* Red figures.

a Associated with Bell Telephone Co. of Pennsylvania.

b Associated with Pacific Telephone & Telegraph Co.

* Cumberland Tel. & Tel. Co. merged with Southern Bell Tel. & Tel. Co. July 1, 1926.
Delaware & Atlantic Telephone Co. was changed to New Jersey Bell Telephone Co. Sept. 26, 1927.
Kansas City Telephone Co. merged with Southwestern Bell Telephone Co. January 1, 1927.
Michigan Bell Telephone Co. changed from Michigan State Telephone Co. January 1, 1924.

[fol. 5070] . **American Telephone and Telegraph Company**

Percentages of Return of Licensee Companies on Average Fixed Capital and Materials and Supplies, Year Ended December 31, 1931

Bell Telephone Company of Nevada	2.60%
Bell Telephone Company of Pennsylvania	5.41
Chesapeake & Potomac Telephone Company—Baltimore	6.67
Chesapeake & Potomac Telephone Company—New York	7.14
Chesapeake & Potomac Telephone Company—Virginia	7.05
Chesapeake & Potomac Telephone Company—West Virginia	4.28
Cincinnati & Suburban Bell Telephone Company	6.51
Diamond State Telephone Company	6.49
Home Telephone & Telegraph Company of Spokane	4.34
Illinois Bell Telephone Company	5.32
Indiana Bell Telephone Company	6.10
Michigan Bell Telephone Company	3.56
Mountain States Telephone Company	5.07
New England Telephone & Telegraph Company	5.72
New Jersey Bell Telephone Company	5.51
New York Telephone Company	5.47
Northwestern Bell Telephone Company	5.97
Ohio Bell Telephone Company	4.98
Pacific Telephone & Telegraph Company	5.32
Southern Bell Telephone & Telegraph Company	5.68
Southern California Telephone Company	6.26
Southern New England Telephone Company	5.85
Southwestern Bell Telephone Company	5.55
Wisconsin Telephone Company	4.00
Average of All Companies	5.44
Average of All Companies Exclusive of Illinois Bell Telephone Company	5.45

[fol. 5071]

Exhibit X-300

American Telephone and Telegraph Company

Percentages of Return of Licensee Companies on Average Fixed Capital and Material and Supplies, Less Average Accrued Depreciation, Years 1920 to 1930, Inclusive

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
Bell Telephone Co. of Nevada	b1.39%	.88%	6.28%	12.75%	9.06%	9.48%	6.28%	3.14%	5.98%	5.23%	.99%
Bell Telephone Co. of Pennsylvania	4.87	8.95	8.82	6.98	6.52	6.79	7.19	7.16	7.99	7.87	6.90
Chesapeake & Potomac Tel. Co. of Baltimore	5.95	5.89	6.37	6.56	4.47	7.53	8.31	7.26	8.03	8.13	7.84
Chesapeake & Potomac Tel. Co. of New York	3.68	6.89	9.21	9.60	9.39	9.52	9.82	7.39	8.56	7.61	7.32
Chesapeake & Potomac Tel Co. of Virginia	3.94	6.20	6.37	7.07	6.37	4.99	6.83	7.07	7.91	8.20	7.45
Chesapeake & Potomac Tel. Co. of W. Virginia	3.01	6.29	6.32	5.85	3.67	5.45	6.36	5.82	5.71	5.28	5.02
Cincinnati & Suburban Bell Telephone Co.	8.36	9.17	10.35	9.45	10.16	8.50	9.65	8.73	11.20	10.17	8.76
Cumberland Telephone & Telegraph Co.	*3.63	3.05	5.03	6.39	7.42	6.88	6.60	....	....	....	....
Delaware & Atlantic Telephone Co.	*1.25	4.86	4.78	2.92	3.36	7.12	6.94	....	....	....	....
Diamond State Telephone Co.	a2.63	7.15	8.64	8.57	9.63	9.40	10.28	9.56	8.74	7.17	7.49
Home Tel. & Tel. Co. of Spokane	b2.67	3.38	4.62	5.98	8.17	11.49	6.45	4.44	6.03	4.81	4.94
Illinois Bell Telephone Co.	3.64	8.90	8.96	8.18	8.24	8.41	8.04	7.69	8.02	8.56	7.66
Indiana Bell Telephone Co.	.56*	.17*	2.48	3.73	4.75	5.09	7.15	8.62	8.91	8.34	7.39
Kansas City Telephone Co.	*4.27	4.47	4.74	5.57	5.29	5.71	4.77	....	....	....	....
Michigan Bell Telephone Co.	* .80	7.66	8.65	8.52	8.28	7.62	6.93	7.07	6.51	6.20	3.87
Mountain States Telephone Co.	7.35	7.22	7.41	7.80	8.32	8.58	9.33	8.28	7.62	7.97	7.73
New England Telephone & Telegraph Co.	8.45	7.87	7.72	4.58	4.78	5.24	7.22	7.29	7.45	7.91	7.27
New Jersey Bell Telephone Co.	....	....	....	....	....	....	....	4.30	7.73	8.16	6.89
New York Telephone Co.	3.20	6.34	6.73	6.50	5.44	6.75	7.27	7.70	7.62	7.64	7.24

Northwestern Bell Telephone Co.	8.55	5.34	7.12	8.23	8.45	7.36	9.69	9.40	9.69	9.70	8.68
Ohio Bell Telephone Co.	1.79	6.53	4.70	4.61	5.36	6.98	7.17	6.94	7.01	6.51	5.79
Pacific Telephone & Telegraph Co.	6.84	7.27	8.32	7.38	7.37	7.80	8.34	6.52	7.00	7.03	6.82
Southern Bell Telephone & Telegraph Co.	2.98	5.85	8.68	9.52	9.39	9.05	7.22	6.95	7.40	7.16	6.85
Southern California Telephone Co.	b .60	1.80*	2.83*	3.73*	1.45*	4.26	6.69	7.26	8.55	8.85	7.34
Southern New England Telephone Co.	7.21	7.80	7.65	8.11	8.22	8.39	8.21	7.43	8.91	8.57	7.65
Southwestern Bell Telephone Co.	8.68	8.67	9.89	9.73	8.87	9.63	9.93	8.62	8.46	8.84	7.92
Wisconsin Telephone Co.	6.23	8.02	9.79	9.60	8.98	8.64	9.21	9.80	9.84	9.26	6.08
Average of All Companies	4.74	6.72	7.24	6.73	6.46	7.16	7.71	7.45	7.81	7.84	7.03
Average of All Companies Exclusive of Illinois Bell Telephone Co.	4.84	6.53	7.09	6.61	6.32	7.07	7.68	7.43	7.79	7.78	6.98

* Red figures.

a Associated with Bell Telephone Co. of Pennsylvania.

b Associated with Pacific Telephone & Telegraph Co.

Cumberland Tel. & Tel. Co. merged with Southern Bell Tel. & Tel. Co. July 1, 1926.
Delaware & Atlantic Telephone Co. changed to New Jersey Bell Telephone Co. Sept. 26, 1927.
Kansas City Telephone Co. merged with Southwestern Bell Telephone Co. January 1, 1927.
Michigan Bell Telephone Co. changed from Michigan State Telephone Company, January 1, 1924.

[fol. 5072] American Telephone and Telegraph Company

Percentages of Return of Licensee Companies on Average Fixed Capital and Materials and Supplies, Less Average Accrued Depreciation, Year Ended December 31, 1931

Bell Telephone Company of Nevada	2.84%
Bell Telephone Company of Pennsylvania	6.47
Chesapeake & Potomac Telephone Company—Baltimore	8.33
Chesapeake & Potomac Telephone Company—New York	8.97
Chesapeake & Potomac Telephone Company—Virginia	8.14
Chesapeake & Potomac Telephone Company—West Virginia	4.88
Cincinnati & Suburban Bell Telephone Company	8.63
Diamond State Telephone Company	7.41
Home Telephone & Telegraph Company of Spokane	5.36
Illinois Bell Telephone Company	6.92
Indiana Bell Telephone Company	6.70
Michigan Bell Telephone Company	4.07
Mountain States Telephone Company	6.61
New England Telephone & Telegraph Company	7.06
New Jersey Bell Telephone Company	6.83
New York Telephone Company	7.27
Northwestern Bell Telephone Company	7.80
Ohio Bell Telephone Company	5.58
Pacific Telephone & Telegraph Company	6.53
Southern Bell Telephone & Telegraph Company	6.62
Southern California Telephone Company	7.22
Southern New England Telephone Company	7.19
Southwestern Bell Telephone Company	6.67
Wisconsin Telephone Company	5.11
Average of All Companies	6.71
Average of All Companies Exclusive of Illinois Bell Telephone Company	6.69

[fol. 5073]

EXTRACTS FROM EXHIBIT X-301

American Telephone and Telegraph Company

Comparison of Revenues, Expenses and Return on Investment in Long Lines Years Ended December 31, 1920 to 1922, Inclusive

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
Average Fixed Capital	$82,023,437	$90,456,740	$100,988,248
Average Materials and Supplies	441,634	1,342,430	1,899,196
Total	82,465,071	91,799,170	102,887,444
Less Average Depreciation Reserve	14,075,889	15,570,166	16,880,343
	68,389,182	76,229,004	86,007,101
Less Average Reserve for Amortization of Intangible Capital	795,565	868,200	937,509
Average Fixed Capital and Materials and Supplies less Average Accrued Depreciation	67,593,617	75,360,804	85,069,592
Per Cent of Return on Average Fixed Capital and Materials and Supplies	18.696	16.278	17.424
Per Cent of Return on Average Fixed Capital and Materials and Supplies, less Average Accrued Depreciation	22.809	19.829	21.073

[fol. 5074]

American Telephone and Telegraph Company

Comparison of Revenues, Expenses, and Return on Investment in Long Lines, Years Ended December 31, 1923, to 1930, Inclusive

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
Average Fixed Capital	$110,714,716	$127,264,004	$141,222,313	$156,209,287	$187,995,375	$222,655,921	$277,026,858	$362,501,503
Average Materials and Supplies	2,234,048	3,046,605	2,214,076	2,863,467	3,194,248	3,682,407	5,038,105	5,872,334
Total	112,948,764	130,310,609	143,436,389	159,072,754	191,189,623	226,338,328	282,064,963	368,373,837
Less Average Depreciation Reserve	19,089,518	21,743,135	23,285,927	26,729,959	31,176,323	36,701,445	43,782,478	52,235,034
	93,859,246	108,567,474	120,150,462	132,342,795	160,013,300	189,636,883	238,282,485	316,138,803
Less Average Reserve for Amortization of Intangible Capital	1,021,820	1,111,799	1,207,717	1,164,077	1,268,398	1,401,731	1,532,474	1,725,733
Average Fixed Capital and Materials and Supplies less Average Accrued Depreciation	92,837,426	107,455,675	118,942,745	131,178,718	158,744,902	188,235,152	236,750,011	314,413,070
Per Cent of Return on Average Fixed Capital and Materials and Supplies	16.429	14.585	16.136	14.666	12.526	13.133	12.276	7.927
Per Cent of Return on Average Fixed Capital and Materials and Supplies, less Average Accrued Depreciation	19.988	17.687	19.458	17.785	15.087	15.791	14.626	9.288

[fol. 5075]

Exhibit X-302

American Telephone and Telegraph Company

Return on Fixed Capital, Including General Equipment for Illinois Bell Telephone Company, for All Licensee Companies, and for All Licensee Companies Exclusive of Illinois Bell Telephone Company, Years 1920 to 1922, Inclusive

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
Illinois Bell Telephone Company:			
Average Fixed Capital	$95,485,189	$110,593,779	$120,151,142
Less Average Accrued Depreciation	23,629,563	27,521,702	31,517,824
Average Fixed Capital, Less Depreciation	71,885,626	83,072,077	88,633,318
Balance Available for Return on Investment	2,650,809	7,474,141	8,004,951
Per Cent of Return on Average Fixed Capital	2.78%	6.76%	6.66%
Per Cent of Return on Average Fixed Capital, Less Average Accrued Depreciation	3.69	9.00	9.03
All Licensee Companies:			
Average Fixed Capital	$1,004,955,227	$1,340,338,340	$1,482,418,591
Less Average Accrued Depreciation	243,756,127	300,912,317	344,762,903
Average Fixed Capital, Less Depreciation	761,199,100	1,039,426,023	1,137,655,688
Balance Available for Return on Investment	41,630,035	71,397,668	83,785,144
Per Cent of Return on Average Fixed Capital	4.14%	5.33%	5.65%
Per Cent of Return on Average Fixed Capital, Less Average Accrued Depreciation	5.47	6.87	7.36
All Licensee Companies, Exclusive of Illinois Bell Telephone Company:			
Average Fixed Capital	$909,470,038	$1,229,744,561	$1,364,267,449
Less Average Accrued Depreciation	220,126,564	273,390,615	313,245,079
Average Fixed Capital, Less Depreciation	689,343,474	956,353,946	1,049,022,370
Balance Available for Return on Investment	38,979,226	63,923,527	75,780,193
Per Cent of Return on Average Fixed Capital	4.29%	5.20%	5.56%
Per Cent of Return on Average Fixed Capital, Less Average Accrued Depreciation	5.65	6.68	7.22

(Here follow Dept. Exh. No. X-302, side folio 5076)

[fol. 5076]

Dept. Exh. No. X-302

American Telephone and Telegraph Company

Return on Fixed Capital, Including General Equipment For Illinois Bell Telephone Company, For All Licensee Companies, and For All Licensee Companies, Exclusive of Illinois Bell Telephone Company Years 1923 to 1930, Inclusive

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
Ill. Bell Telephone Company:								
Average Fixed Capital	$135,367,700	$152,037,842	$170,236,892	$191,427,419	$212,648,155	$235,167,754	$256,618,888	$274,767,018
Less Average Accrued Depreciation	35,548,952	39,243,223	42,737,220	46,977,210	51,686,856	56,730,665	60,138,915	62,382,764
Average Fixed Capital, Less Depreciation	99,818,748	112,794,619	127,499,672	144,450,209	160,961,299	178,437,089	196,479,973	212,384,254
Balance Available for Return on Investment	8,240,298	9,362,030	10,791,078	11,693,421	12,453,308	14,384,743	16,928,830	16,361,104
Per Cent of Return on Average Fixed Capital	6.09%	6.16%	6.34%	6.11%	5.86%	6.12%	6.60%	5.95%
Per Cent of Return on Average Fixed Capital, Less Average Accrued Depreciation	8.26	8.30	8.46	8.10	7.74	8.06	8.62	7.70
All Licensee Companies:								
Average Fixed Capital	$1,678,800,389	$1,933,324,730	$2,225,576,546	$2,497,494,976	$2,692,004,293	$2,936,520,852	$3,191,558,333	$3,484,060,236
Less Average Accrued Depreciation	390,541,429	428,385,944	470,457,128	511,928,428	541,235,530	582,220,788	628,856,919	665,451,961
Average Fixed Capital Less Depreciation	1,288,258,960	1,504,938,786	1,755,119,418	1,985,566,548	2,150,768,763	2,354,300,064	2,562,701,414	2,818,608,275
Balance Available for Return on Investment	88,102,052	98,689,312	127,356,155	154,808,887	161,698,045	185,267,326	202,796,612	199,709,520
Per Cent of Return on Average Fixed Capital	5.25%	5.10%	5.72%	6.20%	6.01%	6.31%	6.35%	5.73%
Per Cent of Return on Average Fixed Capital, Less Average Accrued Depreciation	6.84	6.56	7.26	7.80	7.52	7.87	7.91	7.09
All Licensee Companies, Exclusive of Illinois Bell Telephone Co.:								
Average Fixed Capital	$1,543,432,689	$1,781,286,888	$2,055,339,654	$2,306,067,557	$2,479,356,138	$2,701,353,098	$2,934,939,445	$3,209,293,218
Less Average Accrued Depreciation	354,992,477	389,142,721	427,719,908	464,951,218	489,548,674	525,490,123	568,718,004	603,069,197
Average Fixed Capital Less Depreciation	1,188,440,212	1,392,144,167	1,627,619,746	1,841,116,339	1,989,807,464	2,175,863,975	2,366,221,441	2,606,224,021
Balance Available for Return on Investment	79,861,754	89,327,282	116,565,077	143,115,466	149,244,737	170,882,583	185,867,776	183,348,416
Per Cent of Return on Average Fixed Capital	5.17%	5.01%	5.67%	6.21%	6.02%	6.33%	6.33%	5.71%
Per Cent of Return on Average Fixed Capital, Less Average Accrued Depreciation	6.72	6.42	7.16	7.77	7.50	7.85	7.86	7.04

[fol. 5077]

Deft. Exh. No. X-302

American Telephone and Telegraph Company

Return on Fixed Capital, Including General Equipment for Illinois Bell Telephone Company, for All Licensee Companies and for All Licensee Companies Exclusive of Illinois Bell Telephone Company, During Year 1931

Illinois Bell Telephone Company:	
Average Fixed Capital	$286,773,444
Less Average Accrued Depreciation	66,310,053
Average Fixed Capital, Less Depreciation	220,463,391
Balance Available for Return on Investment	15,310,016
Per Cent of Return on Average Fixed Capital	5.34%
Per Cent of Return on Average Fixed Capital, Less Average Accrued Depreciation	6.94%
All Licensee Companies:	
Average Fixed Capital	$3,696,091,208
Less Average Accrued Depreciation	696,906,054
Average Fixed Capital, Less Depreciation	2,999,185,154
Balance Available for Return on Investment	202,045,817
Per Cent of Return on Average Fixed Capital	5.47%
Per Cent of Return on Average Fixed Capital, Less Average Accrued Depreciation	6.74%
All Licensee Companies, Exclusive of Illinois Bell Telephone Company:	
Average Fixed Capital	$3,409,317,764
Less Average Accrued Depreciation	630,596,001
Average Fixed Capital, Less Depreciation	2,778,721,763
Balance Available for Return on Investment	186,735,801
Per Cent of Return on Average Fixed Capital	5.48%
Per Cent of Return on Average Fixed Capital, Less Average Accrued Depreciation	6.72%

[fol. 5078]

Exhibit X-303

American Telephone and Telegraph Company

Comparison of per Cent of Return on Fixed Capital of All Licensee Companies, as Shown in Exhibit No. X-302, and as Shown in American Telephone and Telegraph Company Monthly Statistical Report, C. R. 51-A, Years 1920 to 1931, Inclusive

Years Ended Dec. 31	Per Cent of Return as Shown in Exhibit	Per Cent of Return as Shown in M. R.-C. R. 51-A	Differences
	(a)	(b)	(c)
1920	4.14	3.80	.34*
1921	5.33	5.30	.03*
1922	5.65	5.70	.05
1923	5.25	5.40	.15
1924	5.10	5.30	.20
1925	5.72	5.90	.18
1926	6.20	6.30	.10
1927	6.01	6.10	.09
1928	6.31	6.50	.19
1929	6.35	6.52	.17
1930	5.73	5.84	.11
1931	5.47	5.58	.11

(a) Based on Fixed Capital including General Equipment.
(b) Based on Fixed Capital excluding General Equipment.
(c) Differences due to different bases of Fixed Capital, as indicated above, and probably to slightly different bases of income.

* Red Figures.

[fol. 5079]

Exhibit X-304

American Telephone and Telegraph Company

Comparison of per Cent of Return on Fixed Capital of Illinois Bell Telephone Company, as Shown in Exhibit No. X-302, and as Shown in Illinois Bell Telephone Company Monthly Report No. 1, Years 1922 to 1931, Inclusive

Years Ended Dec. 31	Per Cent of Return as Shown in Exhibit	Per Cent of Return as Shown in M. R.—No. 1	Differences
	(a)	(b)	(c)
1922	6.66	6.64	.02*
1923	6.09	5.97	.12*
1924	6.16	6.18	.02
1925	6.34	6.41	.07
1926	6.11	6.13	.02
1927	5.86	5.92	.06
1928	6.12	6.20	.08
1929	6.60	6.73	.13
1930	5.95	6.02	.07
1931	5.34	5.39	.05

(a) Based on Fixed Capital including General Equipment.
(b) Based on Fixed Capital excluding General Equipment.
(c) Differences due to different bases of Fixed Capital, as indicated above, and to different bases of income. Accounts 311, 316, 323, 520 and 525 have been excluded from income used by the I. B. T. Co., while Exhibit — gives consideration to these accounts.

* Red Figures.

[fol. 5080] **Exhibit X-305**

Southwestern Bell Telephone Company

General Exchange Tariff

Explanation of Terms

Original Sheet 2

The following definitions of Exchange station, Exchange Service, Toll Stations and Toll Service are on file, effective November 1, 1926:

"Exchange station: A station receiving exchange service.

"Exchange service consists of the privilege of using telephone facilities for telephone communication contracted for by the subscriber in accordance with the rates and regulations specified in the Local and General Exchange Tariffs.

Original Sheet 7

"Toll service: Toll service consists of the use of telephone facilities for telephone communication furnished in accordance with the rates and regulations of the Toll Tariff.

"Toll stations: A company station installed for the convenience of the public or a subscriber in a locality where the company does not furnish exchange service, from which established toll rates are charged for all messages sent over the Company's lines. Toll stations may be classified, as:

"A. Public toll station: A toll station which is provided primarily for the use of the general public and is operated under an agency contract.

"B. Private toll station: A toll station which is provided primarily for the use of a subscriber and is operated under a subscriber's contract."

Under Rules and Regulations Applying to all Subscribers' Contracts is the following rule:

"Use of lines of other companies.—When suitable arrangements can be made, lines of other telephone companies may be used in establishing wire connections to points not reached by the Telephone Company's lines. In establishing connections with the lines of other companies, the Telephone Company is not responsible or liable for any action of the Connecting Company."

[fol. 5081] Cape Girardeau Bell Telephone Company, Cape Girardeau, Missouri

Ill. C. C. No. 2

Original Sheet No. 1

Applies to East Cape Girardeau, Illinois

Rules and Regulations

Telephone Service:

The company does not transmit messages, but furnishes facilities for telephone communication between its subscribers or patrons, and is not responsible for errors in transmission.

The service furnished by the Company can be divided into two general classes, "Exchange Service" and "Toll Service".

Exchange Service: The Company installs one or more telephones on subscriber's premises, connected by wires with the Central Office switchboard, and in consideration of certain payments specifically stated in its schedule of Exchange Rates, agrees to connect each subscriber's telephone with that of any other subscriber within the Exchange Limits, on request of the subscriber.

Toll Service: The Company has provided wire circuits connecting its various exchanges and also connecting with the exchanges of a large number of other companies. Subscribers and others are given the right to use these circuits for communication with persons at distant points, upon payment of a toll charge, based on the distance between terminals and time occupied by the subscriber or patron in transmitting the communication. Toll messages may be sent from subscriber's telephone, or from Public Telephones provided by the company. All toll charges or messages sent from a subscriber's telephone will be billed to that subscriber, who will be held responsible for payments.

Issued October 1st, 1927. Effective October 1st, 1927.
Issued by Chas. W. Boutin, Secretary and Treasurer, 901 Broadway, Cape Girardeau, Missouri.
(Cancelled by schedule of the Southeast Missouri Telephone Company, Effective January 20, 1931.)

[fol. 5082] EXHIBIT X-306

Illinois Valley Telephone Company

Versailles

The rule defining exchange and toll service, contained in the attached certificates, was first placed in effect at Versailles on August 10, 1930. From December 14, 1922, until August 10, 1930, the following rule was in effect:

"To give continual service. To own and maintain all equipment in the town of Versailles and to take all farm lines at the corporation line of the town of Versailles, Illinois. To give exchange service over all farm and town lines."

The schedule of toll rates at Versailles, effective May 31, 1928, contains the following paragraph:

"Toll message rates to all points beyond 120 miles are shown by the toll schedules of the Illinois Bell Telephone Company and the American Telephone & Telegraph Company."

Vermont

The rule certified to was first filed for Vermont on April 2, 1928 and was suspended by order in case No. 18221, and made effective June 1, 1929. No similar rule was on file for this exchange before that time.

Standard schedule of toll rates of the Illinois Bell Telephone Company and the American Telephone & Telegraph Company was filed, effective April 30, 1928, for Vermont.

Mt. Sterling

The rule certified to was first placed in effect at Mt. Sterling on April 1, 1929, it having been filed May 1, 1928 and suspended in case No. 18286. No rule of any kind was on file previous to that time.

The standard toll rates of the Illinois Bell Telephone Company and the American Telephone & Telegraph Company were filed, effective May 20, 1927.

Camp Point

The rule certified to was first filed for Camp Point on January 31, 1929; was suspended in case 18972 and made effective May 1, 1930. No rule of any kind was on file previous to that time.

The standard toll rates of the Illinois Bell and American Telephone and Telegraph Companies was filed, effective May 20, 1927.

Bushnell

The rule certified to was first filed for Bushnell on May 11, 1928, was suspended by order in case No. 18321 and made effective April 1, 1929. No rule of any kind was on file previous to that time.

The standard toll rates of the Illinois Bell and the American Telephone & Telegraph Company were filed by the Bushnell Telephone and Telegraph Company, effective July 15, 1927.

[fol. 5083] The rule certified to is a part of the exchange rate schedule of each of the above named villages served by the Illinois Valley Telephone Company, the schedules showing flat rates covering village and rural service.

The rule in question is not on file for the exchanges at Cuba and Roseville of the company.

The Boynton Telephone Company (Now Illinois Telephone Company)

Pleasant Plains and New Berlin

The rule certified to was first filed for Pleasant Plains and New Berlin, effective January 1, 1929. No rules of a similar nature were on file for these exchanges previous to that date.

The rule in question is a part of the exchange rate schedule containing flat rates for village and rural service in these communities.

Pleasant Plains and New Berlin are the only exchanges served by this company.

The standard toll rates of the Illinois Bell and American Telephone and Telegraph Company were filed effective May 20, 1927.

The Wabash Telephone Company

Bloomington and Normal

The rule certified to defining exchange and toll service was filed for Bloomington and Normal by the Kinloch-Bloomington Telephone Company (the predecessor Company) July 28, 1926, suspended in case No. 16580 and made effective June 1, 1927. Previously there was no definition on file showing the relationship between exchange and toll service except the following note which was first in effect April 1, 1921 and is still a part of the rate schedule for these towns:

"Note B.—Long Distance terminals are auxiliary lines to exchange lines and this rate is quoted to subscribers of exchange service only."

The standard toll rates of the Illinois Bell and American Telephone and Telegraph Company were filed by the Kinloch-Bloomington Telephone Company, effective July 21, 1927, and still apply.

Paris, Chrisman, Marshall, Horace, Metcalf, West Union, Elbridge, Redmon, Vermilion, and Vicinities.

The rule in question is on file for Paris, effective June 1, 1929, but has never been on file for the other exchanges listed above. No rule similar to the one certified to was on file for Paris previous to June 1, 1929.

[fol. 5084] Special toll rates of the Wabash Valley Telephone Company, covering the above exchanges, filed March 17, 1914, contain the following note:

"Note.—For rates to points not listed above consult files of the Independent Toll Clearing Company at Springfield, Illinois."

The rule in question is a part of the exchange rate schedules containing flat rates for city and rural service at Bloomington, Normal and Paris.

The schedule of standard toll rates of the Illinois Bell and American Telephone and Telegraph Company were filed, applying to all exchanges, effective March 1, 1931.

The Illinois Telephone Company (Now Illinois Telephone Company)

Greenfield, Roodhouse and White Hall

The rule certified to, defining exchange and toll service, was first filed for Greenfield, Roodhouse and White Hall on July 11, 1929, and suspended in case 19403. The rule was made effective April 1, 1930. No rule of a similar nature was on file for these cities previous to that time.

The rule in question is a part of the exchange schedule of flat rates for each of the foregoing cities, covering city and rural service.

No rule defining exchange and toll service has ever been filed for Alexander, Carrollton, Hillview, Jacksonville, Literberry, Manchester, and Murrayville, the other exchanges of this company.

The schedule of special toll rates filed by the company on May 2, 1914, contains the following paragraph:

> "Remarks: All other toll rates are taken from the Kinloch Long Distance Telephone Company's rate book or from the Independent Clearing Company's rate book, according to route. Telephone connections with Farmers Telephone Company."

Schedule of toll rates filed, effective December 20, 1926, applying to all exchanges and toll stations in Illinois, is as follows:

> "Toll rates of this company to all points are based upon distance and are shown by the effective toll schedules of the Illinois Bell Telephone Company except to those points to which free toll service was given on September 30, 1926, or to which a rate was charged on September 30, 1926, which was different from the rate shown by the toll schedule promulgated by the Postmaster General of the United States."

The schedule of standard toll rates of the Illinois Bell and American Telephone and Telegraph Company were filed, effective April 30, 1928.

[fol. 5085] Automatic Home Telephone Company

The rule certified to defining exchange and toll service was first filed for Pontiac on April 27, 1925, suspended by order in case No. 15110, and placed in effect on May 1, 1926. Previously there was no definition on file showing the relationship between exchange and toll service.

The rule in question is a part of the exchange rate schedule containing flat rates for city and rural territory.

The exchange rate schedule filed to become effective January 1, 1914, contains the following explanatory remarks:

"Following places receive free toll service over metallic lines: Chenoa, Flanagan, Saunemin, Graymont, Cornell, Weston, Odell, Ocoya, and Pontiac Farmers' Exchange.

"In regard to toll rates. The Independent Toll Clearing Association of Springfield will file and give any information desired."

The schedules of the Independent Toll Clearing Association have no rules defining exchange or toll service.

Pontiac is the only exchange served by this company.

The schedule of standard toll rates of the Illinois Bell and American Telephone and Telegraph Company was filed March 16, 1927.

Home Telephone Company (Now Illinois Telephone Company)

Bluffs and Meredosia

The rule certified to defining exchange and toll service was placed in effect at Bluffs on May 1, 1929, and at Meredosia on June 1, 1929. Previous to that date there was no rule on file of a similar nature.

The rule in question is a part of the exchange rate schedule containing flat rates, covering village and rural territory, of Bluffs and Meredosia. No other exchanges *exchanges* were served by the Home Telephone Company.

The schedule of special toll rates filed by the Illinois Telephone Company on May 2, 1914, for Bluffs, contains the following remarks:

"Remarks: All other toll rates from Bluffs, Illinois, are taken from the Kinloch Long Distance Telephone Company's rate book or from the Independent Clearing Company's rate book, according to route. Telephone connections with Farmers Telephone Company."

The schedules on file of the Kinloch Long Distance Telephone Company and the Independent Toll Clearing Company contain no rules defining toll service.

Telegraph & Telephone Service Bulletin No. 22 of the United States Telegraph and Telephone Administration filed by the Kinloch Long Distance Telephone Company contains the following paragraph:

[fol. 5086] "There are many counties and districts in which a free toll service is granted the subscriber within such county or district, the exchange rates presumably having been made with a view of such free toll service. This order shall not be construed as requiring a discontinuance of these privileges pending a study and revision of these exchange rates." Order No. 2495.

The schedule of standard toll rates of the Illinois Bell and American Telephone and Telegraph Company was filed, effective August 1, 1927.

Streator Telephone Company

Streator and Grand Ridge

The rule defining exchange and toll service, contained in certificates attached, was first placed in effect at Streator and Grand Ridge on February 1, 1923, and has been in effect ever since that date. No rule of a similar nature was previously on file.

The following paragraph is a part of the exchange rate schedule filed June 13, 1914, cancelled February 1, 1923:

"Toll Rates—the toll rates established are those prescribed in the tariff books of the Central Union Telephone Company and the American Telephone and Telegraph Company, with the exception of the arrangement for connection between the two exchanges of this company, viz., Streator and Grand Ridge, a distance of eight miles. All subscribers connected with the Grand Ridge exchange are permitted to talk without charge to all subscribers in the Streator exchange. All rural subscribers in the Streator exchange are permitted to talk without charge to all subscribers in the Grand Ridge exchange. All subscribers in the Streator exchange, exclusive of rural subscribers are charged for talking with a Grand Ridge subscriber five cents each for a three minute period or fraction thereof and five cents (5¢) for each additional three minutes or fraction thereof."

Morton, Groveland and Tremont

The rule certified to was first filed for Morton, Groveland and Tremont on April 21, 1928, was suspended in case 18254 and made effective on April 1, 1929. No rule of a similar nature was previously on file, for these towns.

The schedule of rates filed by the Farmers' Mutual Telephone Company of Tazewell County for Groveland, effective January 1, 1914, states, as follows: (in addition to exchange and special toll rates):

"Other points:

Via Bell lines—Rates as laid down in Toll Tariff Book of Central Union Telephone Company.

Via Independent Lines—Rates as reported by the Independent Toll Clearing Company."

The rule certified to is a part of the exchange rate schedules containing flat rates covering village and rural service [fol. 5087] at Morton, Groveland and Tremont.

The schedule of standard toll rates of the Illinois Bell and American Telephone and Telegraph Company was filed for Streator and Grand Ridge on March 16, 1927, by the Streator Telephone Company and was filed May 31, 1927, by the Farmers' Mutual Telephone Company of Tazewell County for Groveland, Morton and Tremont.

Stanford, Mackinaw and Minier

The rule certified to was first filed for Stanford, Mackinaw, and Minier on April 21, 1928, was suspended by order in case No. 18255 and placed in effect on April 1, 1929. No rule of a similar nature was previously on file for these communities.

The rule in question is a part of the exchange rate schedule of flat rates, covering village and rural territory in these communities.

The schedule of exchange rates filed by the Minier Mutual Telephone Company (a predecessor Company) effective January 11, 1929, listing toll rates to non-subscribers and special rates to subscribers, states as follows:

> "All other toll rates from —— are taken from the rate books of the Independent Toll Clearing Company, Central Union Telephone Company or the American Telephone and Telegraph Company, according to route."

Schedule of standard toll rates of the Illinois Bell and American Telephone and Telegraph Company was filed, effective May 31, 1927, for Stanford, Mackinaw and Minier by the Minier Mutual Telephone Company.

[fols. 5088 & 5089] EXTRACTS FROM EXHIBIT X-307

Report of the Directors of American Telephone and Telegraph Company

New York, March 3, 1932.

To the Stockholders:

The number of Bell System telephones during 1931 decreased 292,000, or a little less than 2 per cent, as compared with a net gain in 1930 or 122,500. Including approximately 4,200,000 telephones operated by some 6,900 connecting companies or on connecting rural lines, the total number of telephones in the United States interconnected in and with the Bell System at the end of the year was 19,600,000.

Local telephone conversations were about 1 per cent less and toll and long-distance conversations were 6 per cent less than in 1930. During the last quarter the decreases compared with the last quarter of 1930 were about 2 per cent and 9 per cent respectively.

Total assets of the System increased $24,000,000 amounting at the end of the year to $5,024,335,000. Preferred stock and bonds amounting to $83,596,000 were retired during the year. Cash assets—including funds temporarily invested in Government obligations—were $289,000,000 on December 31, 1931.

Total operating revenues of the System decreased $28,000,000 or 2.6 per cent. At the same time, in spite of an increase of $4,000,000 in taxes and $10,000,000 in depreciation, total expenses decreased $29,000,000. Operating income was, therefore, slightly in excess of last year, but a reduction of $11,000,000 in non-operating revenues—due to a reduction in dividends received from the Western Electric Company—resulted in net earnings of $258,000,000 or $10,000,000 less than in 1930. These net earnings were at the rate of 5.1 per cent on the cost of plant and other assets.

(Page 2)

The number of stockholders of the American Telephone and Telegraph Company at the end of 1931 was 644,903, an increase of 77,209 for the year. The average holding per stockholder was 29 shares, as compared with 32 shares at the end of 1930. The earnings of the Company per share were $9.05, compared with $10.44 in 1930.

It has been the aim of the Bell System for many years to plan its construction program so as to avoid, so far as practicable, extraordinary fluctuations from year to year. This aids stabilization of employment and, in the long run, results in economies. The construction expenditures for 1930 were at substantially the level of 1929, but the much reduced growth of the business in 1930 followed by an [fol. 5090] actual decline in 1931 forced a curtailment in these expenditures for 1931. While the net additions to plant of $149,000,000 during the year were the lowest since 1920, every effort was made to move forward replacement and betterment work with the result that the gross construction expenditures during the year were $391,000,000, which is larger than in any year except 1928, 1929 and 1930.

(Page 3)

Ship-to-shore telephone service was extended during 1931 to additional liners, making seven in all. Radio stations are being installed for ship-to-shore service with tug-boats and other harbor craft at Boston, New York, Seattle, San Francisco and Los Angeles.

Extension of the telephone cable network continued during 1931, including the completion of cable extensions from Chicago and St. Louis to Omaha and Kansas City. A fourth submarine cable between Key West and Havana was opened to service during the year. This new cable, with its three telephone channels (as compared with one in each of the other three cables), is the result of development work by Bell System research engineers.

By the close of 1931 the major part of the air transport routes of the United States, including about 90 airport ground stations and about 250 airplanes, had been supplied with Western Electric radiotelephone equipment. This equipment is employed for the dispatching of airplanes and for the maintenance of two-way telephone communication between the pilots and the airport personnel. Teletypewriter circuits totaling about 30,000 miles are being used for the transmission of meteorological information and other communications relating to air transportation.

(Pages 5 and 6)

Research and Development

There has been no substantial reduction in development and research activity other than that occasioned by the closing of Bell Telephone Laboratories on Saturday mornings beginning in August.

With lessened pressure during the year for new things urgently required for immediate use by the operating companies, and because of postponement to a later date of a few highly technical projects, such as the transatlantic telephone cable, there has been a transfer of emphasis to some of the more fundamental problems.

There are always many research and development problems the solution of which is potentially of great value either from the standpoint of economy or the betterment of service. Frequently, however, they require a large amount of fundamental research work before they can be brought to the stage where practical application can be undertaken. In times of heavy demand for new plant or new methods from the operating companies it is often necessary to defer work on problems of this kind and

devote the energies of the staff to matters of more immediate concern. In periods of reduced activity it is possible to attack vigorously those major problems whose solution will be of great future benefit to the Bell System.
[fol. 5091] As examples of the fundamental types of problem on which it was possible to concentrate during 1931 might be mentioned the investigation of wide-frequency band transmission over cable circuits and the investigation of magnetic materials which play such an important part in the efficient functioning of communication apparatus.

It now seems clear that circuits can be provided in aerial or underground cable that will have characteristics permitting an extremely wide band of frequencies to be transmitted with substantial uniformity throughout the band. The net result of this work has been to open up the possibility of very long circuits, each of which can carry a very large number of non-interfering telephone communications, and a very much larger number of non-interfering telegraph communications.

Equally promising and in an entirely different direction have been the results of the fundamental work on materials, and particularly on magnetic materials, following the already striking advances which were made in the development of permalloy and perminvar in our laboratories a few years ago.

Western Electric Company, Incorporated

The decline in the gross business of the Bell System, even though small, deprived the Western Electric Company of part of its usual manufacturing based on the normal growth of the telephone industry. Total sales amounted to $229,000,000, compared with $361,000,000 in 1930.

To provide employment for the greatest number, short-time operation was very generally applied and on August 1st a maximum of five days per week employment and remuneration was adopted throughout the company, including officers and their staffs. As a result, in spite of a 37 per cent decrease in business, the average number of employees in 1931 was greater than in any year except 1929 and 1930. Employees at the end of the year numbered 44,600.

Dividends paid totalled $10,500,000 as compared with $23,250,000 in 1930.

Electrical Research Products, Inc. (wholly owned by the Western Electric Company) maintained its position of its recording and sound reproducing apparatus in the moving picture industry. At the end of 1931 there were approximately 5,400 Western Electric reproducing systems in theatres in the United States and 3,200 in theatres abroad.

[fol. 5092] X-307, p. 10

American Telephone and Telegraph Company

Balance Sheet, December 31, 1931

Assets

Investments:	
Stocks of Associated Companies Investment, at cost, in stocks of associated telephone companies. Increase for the year $161,207,728. See page 13.	$1,939,270,421.51
Stocks of Other Companies Investment, at cost, in stocks of affiliated and subsidiary companies other than Associated Companies. Increase for the year $162,500. See page 13.	168,855,388.28
Bonds and Notes of, and Advances to, Associated Companies Temporary financing of Associated Companies for the extension of their telephone properties, including also $836,044 investment in bonds of these companies. Decrease for the year $4,051,452.	316,577,487.47
Notes of, and Advances to, Other Companies Loans and advances to affiliated and subsidiary companies, other than Associated Companies. Increase for the year $201,500. See page 13.	51,197,000.00
Plant and Equipment:	
Long Lines Plant and Equipment Cost of long-distance plant and equipment mainly for providing interconnection between and through territories of Associated Companies. Increase for the year $24,321,565.	459,632,581.50
General Equipment Cost of office furniture and equipment other than that included in Long Lines Plant and Equipment.	1,566,814.39
Current Assets:	
Accounts Receivable Current receivables, including dividends, interest, tolls and other items.	13,078,792.09
[fol. 5093]	
Temporary Investments Funds temporarily invested in municipal, state and United States Government short-term obligations and special bank deposits in anticipation of financial requirements.	233,424,180.33

Cash	21,043,681.84
Cash and deposits in banks available for current requirements.	
Total Assets	$3,204,646,347.41

(Page 11)

American Telephone and Telegraph Company

Balance Sheet, December 31, 1931, continued

Liabilities

Capital Stock:

Stock Issued and Outstanding (Authorized $2,500,000,000)	$1,865,836,100.00
Total par value of shares outstanding. Increase for the year $70,184,900. See page 14.	
Installments	72,339,276.21
Installments paid on stock subscribed for but not yet issued. Decrease for the year $39,123,760. See page 14.	
Premiums	268,568,584.31
Amount received in excess of par value of capital stock. Increase for the year $9,436,982. See page 14.	

Long-term debt:

Bonds and Debentures	458,300,900.00
Face value of debt obligations in the form of bonds and debentures. Decrease for the year $4,314,800. See page 14.	
Notes	13,122,615.05
Notes sold to Trustee of Pension Fund.	

[fol. 5094]

Current Liabilites:

Dividend Payable January 15, 1932	41,981,294.25
Dividend declared for last quarter of 1931.	
Accounts Payable	17,514,834.73
Current accounts for supplies, services, etc.	
Interest and Taxes Accrued, Not Due	12,395,176.74
Interest and taxes payable after close of year.	

Surplus and Reserves:

Reserve for Depreciation	64,429,195.96
Provision for the ultimate retirement of plant and equipment used up in furnishing telephone service. Increase for the year $6,282,547.	
Reserve for Contingencies	64,664,444.18
(No change during year.)	

Surplus		325,493,925.98
Increase for the year, $3,124,456, comprising:		
Net income carried to Surplus	$3,078,059	
Miscellaneous additions (net)	46,397	
Total Liabilities		$3,204,646,347.41

C. A. Heiss, Comptroller.

[fol. 5095] American Telephone and Telegraph Company

Statement of Earnings and Expenses for the Year Ending December 31, 1931

Earnings:	
Dividends	$150,135,883.73
Dividends on stocks owned. As a whole these dividends were earned with a margin of about $3,400,000.	
Interest	27,138,693.99
Interest on notes and advances, on bonds owned, on temporary investments and bank deposits, and on other accounts.	
Telephone Operating Revenues	109,317,960.95
Revenues from operation of the long-distance lines and payments from the Associated Companies for services furnished them under the license contracts.	
Miscellaneous Revenues	1,249,510.25
Total	$287,842,048.92
Expenses	90,024,636.38
Expenses incurred in conducting the business, including depreciation and taxes.	
Net earnings	$197,817,412.54
Deduct Interest	31,150,878.84
Interest on bonds, debentures and other indebtedness.	
Net income	$166,666,533.70
Deduct Dividends	163,588,474.25
Dividends at the rate of $9.00 per share per annum on capital stock.	
Balance for Surplus	$3,078,059.45

Average number of shares of capital stock outstanding during year	18,419,461
Net earnings per share available for dividends (after interest charges)	$9.05

C. A. Heiss, Comptroller.

[fol. 5096] The number of stockholders of record on December 31, 1931 was 644,903, an increase of 77,209 over the previous year. The average holding per stockholder is now 29 shares, as compared with 32 shares at the end of 1930.

More than 125,000 Bell System employees are stockholders, having acquired shares through small installment payments under Employees' Stock Plans. The average holding per employee stockholder is 10 shares.

For the past 50 years the American Telephone and Telegraph Company and its predecessor have paid regular quarterly dividends to stockholders at the annual rate of at least $7.50 per share. The table below gives the net earnings per share available for dividends.

Net Earnings per Share

1912	$9.86
1913	9.59
1914	9.38
1915	9.52
1916	9.77
1917	9.48
1918	9.97
1919	10.05
1920	11.72
1921	11.10
1922	11.14
1923	11.35
1924	11.31
1925	11.79
1926	11.95
1927	11.76*
1928	12.11
1929	12.67
1930	10.44
1931	9.05

* Does not include special dividend from Western Electric Company, Inc.

[fol. 5097]

Bell System Financial Statements

The Bell System Balance Sheet and Income Statement which follow combine the accounts of the American Telephone and Telegraph Company and its twenty-four associated operating telephone companies. All inter-company duplications are excluded from the combined figures so that the statements represent the business as a whole of the Bell Telephone System. The accounts of the Western Electric Company, Inc., The Bell Telephone Company of Canada and of subsidiary and connecting companies in which either the American Telephone and Telegraph Company or its associated telephone companies have investments are not included, but the investments in these companies appear in the accompanying Balance Sheet under the item Investments, and dividends and interest received from them are included in the Income Statement under Non-Operating Revenues.

Bell System Balance Sheet, December 31, 1931

(Inter-Company Duplications Excluded)

Assets

Telephone Plant Plant and equipment used in furnishing telephone service; comprised of land and buildings, rights of way, poles, wire, cable, underground conduit, switchboards, telephones, etc. Increase for the year $151,641,850.	$4,195,063,589
General Equipment, Tools and Supplies Materials and supplies, office furniture and fixtures, automobiles, tools, etc. Decrease for the year $7,018,605.	95,708,659
Investments Investments in stocks and bonds of, and advances to, subsidiary and connecting companies, and in miscellaneous property. These investments include stocks of Western Electric Company, Inc., The Bell Telephone Company of Canada, etc. Increase for the year $21,762,569.	305,514,657
Accounts Receivable	138,519,006

Current accounts receivable from telephone subscribers, and amounts receivable from connecting companies and others.	
Temporary Investments	$239,289,893
Funds temporarily invested and held available for conversion into cash as needed.	
Cash	50,239,747
Cash and deposits in banks available for current requirements.	
Total Assets	$5,024,335,551

NOTE.—All items of intangible assets carried in the accounts of Bell System companies are excluded from the Bell System Balance Sheet through a corresponding reduction in the Surplus.

[fol. 5098]

Liabilities

Capital Stock (Including Installments)		$2,172,897,419
Par value of capital stock outstanding in hands of public, including also installment payments on stock not yet issued. Increase for the year $17,844,693.		
Common Stock:		
American Telephone and Telegraph Co.	$1,865,836,100	
Associated Companies	136,731,443	
Common Stock Installments:		
American Telephone and Telegraph Co.	72,339,276	
Preferred Stock:		
Associated Companies	97,990,600	
Premiums on Capital Stock		268,152,953
Net amount received in excess of par value of capital stock outstanding in hands of public.		
Long-Term Debt		1,054,824,529
Face value of funded obligations outstanding in hands of public. Decrease for the year $60,767,694.		
Mortgage Bonds:		
Associated Companies	$487,179,595	
Collateral Trust Bonds:		
American Telephone and Telegraph Co.	75,951,500	
Associated Companies	388,850	
Debenture Bonds:		
American Telephone and Telegraph Co.	368,905,900	
Associated Companies	10,000,000	
Convertible Bonds:		
American Telephone and Telegraph Co.	12,923,000	
Notes Sold to Trustee of Pension Fund:		
American Telephone and Telegraph Co.	13,122,615	
Associated Companies	85,801,069	
Notes—Miscellaneous:		
Associated Companies	552,000	
Bills Payable		937,000
Short-term obligations payable within one year.		
Accounts Payable		79,292,391

Current bills for supplies, services, etc.	
Accrued Liabilities Not Due	125,983,017
Dividends, interest, taxes, rents, etc., payable after close of year.	
Reserves for Depreciation of Plant and Equipment	788,586,005
Provision for the ultimate retirement of plant and equipment used up in furnishing telephone service. Increase for the year $48,580,130.	
Reserves for Contingencies	85,289,952
Increase for the year $2,072,380.	
[fol. 5099] Surplus	$448,372,285
Total Liabilities	$5,024,335,551

(page 18)

Bell System Financial Statements

Bell System Income Statement

For Year Ending December 31, 1931

(Inter-Company Duplications Excluded)

Exchange Revenues	$723,920,495
Revenues from local exchange service.	
Toll Revenues	326,268,854
Revenues from long-distance and local toll service.	
Miscellaneous Revenues	25,567,924
Revenues derived from directory advertising and miscellaneous sources.	
Total Operating Revenues	$1,075,757,273
Current Maintenance	$177,021,733
Cost of inspection, repairs and rearrangements required to keep the telephone plant and equipment in good operating condition, representing 4.4 per cent of the cost of the average plant in service during the year.	
Depreciation Expense	192,307,175
Provision to meet loss of investment when telephone property is retired from service, based on rates of depreciation for the different classes of property which spread this loss of investment uniformly over its service life. Depreciation expense during 1931 represented 4.9 per cent of the cost of the average depreciable plant in service.	
Traffic Expenses	199,942,702
Expenses incurred in the handling of telephone calls; principally operators' wages.	
Commercial Expenses	103,503,879

Expenses incurred in business relations with subscribers, including the rendering of bills and collection of accounts; also the cost of advertising, sales activities, directories, pay station commissions, etc.	
General and Miscellaneous Expenses	66,382,880
Expenses of the Executive, Accounting, Financial and Legal Departments, insurance premiums, sickness, accident and death benefits, pensions and other items of general expense incurred in operating the properties.	
Total Operating Expenses	$739,158,369
Net Operating Revenues	$336,598,904
Uncollectible Revenues	$8,861,863
Revenues earned which, based on experience, cannot be collected.	
[fol. 5100] Taxes	$90,630,592
Federal, state and local taxes applicable to the year's operations.	
Operating Income (Carried Forward)	$237,106,449

(Here follows pp. 5101-5114)

DEFENDANT'S EXHIBIT X-307

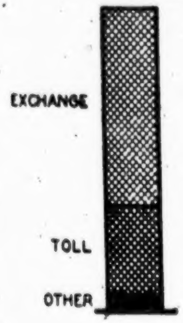
BELL SYSTEM FINANCIAL STATEMENTS

Bell System Income Statement, Continued

Operating Income (Brought forward)		$237,106,449
Non-Operating Revenues—Net Dividends and interest received from investments in the Western Electric Company, Inc., The Bell Telephone Company of Canada, and in subsidiary and connecting companies; interest on bank balances and temporary investments, minor rent revenues and other miscellaneous non-operating income.		36,567,982
Total Gross Income		$273,674,431
Rents and Miscellaneous Deductions Mainly rentals paid for the use of buildings, poles, conduits and other facilities.		$ 15,575,451
Net Earnings		$258,098,980
Interest Deductions Interest charges on funded and other debt obligations, including amortization of debt discount.		$ 64,719,802
Net Income		$193,379,178
Dividends		$180,904,344
To holders of preferred stock of Associated Companies	$ 6,428,174	
To holders of common stock of Associated Companies	10,887,696	
American Telephone and Telegraph Co.	163,588,474	
Balance		$ 12,474,834

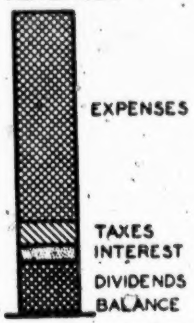
AVERAGE MONTHLY REVENUES AND EXPENSES PER TELEPHONE IN BELL SYSTEM FOR YEAR ENDING DECEMBER 31, 1931

COMPOSITION OF REVENUES

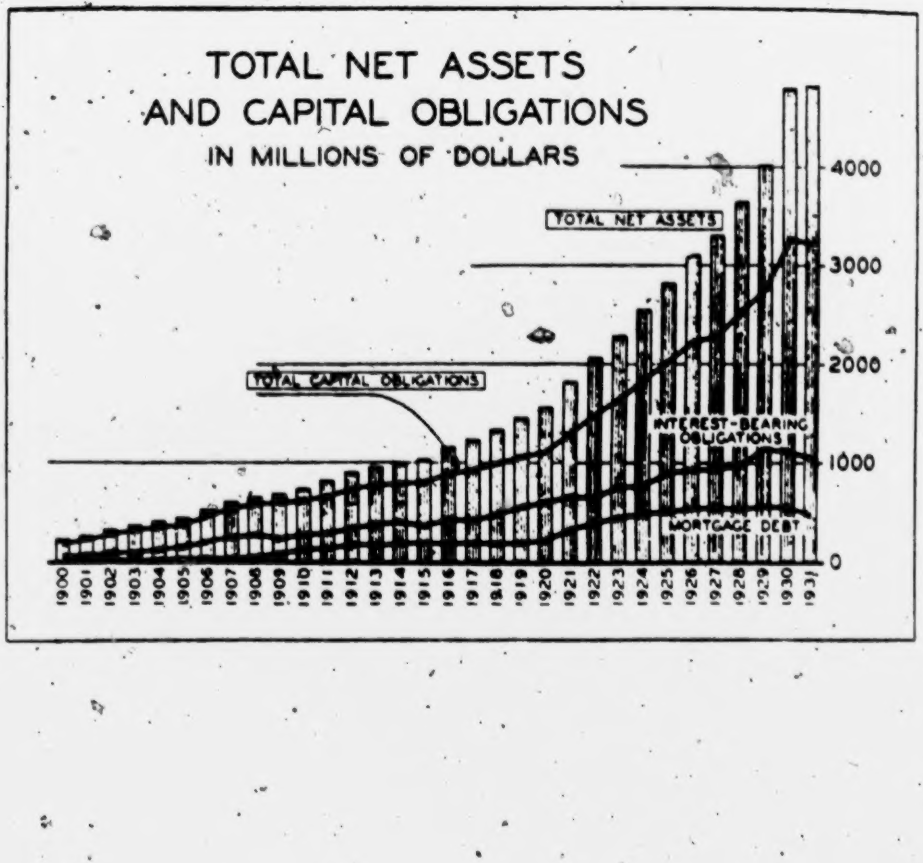


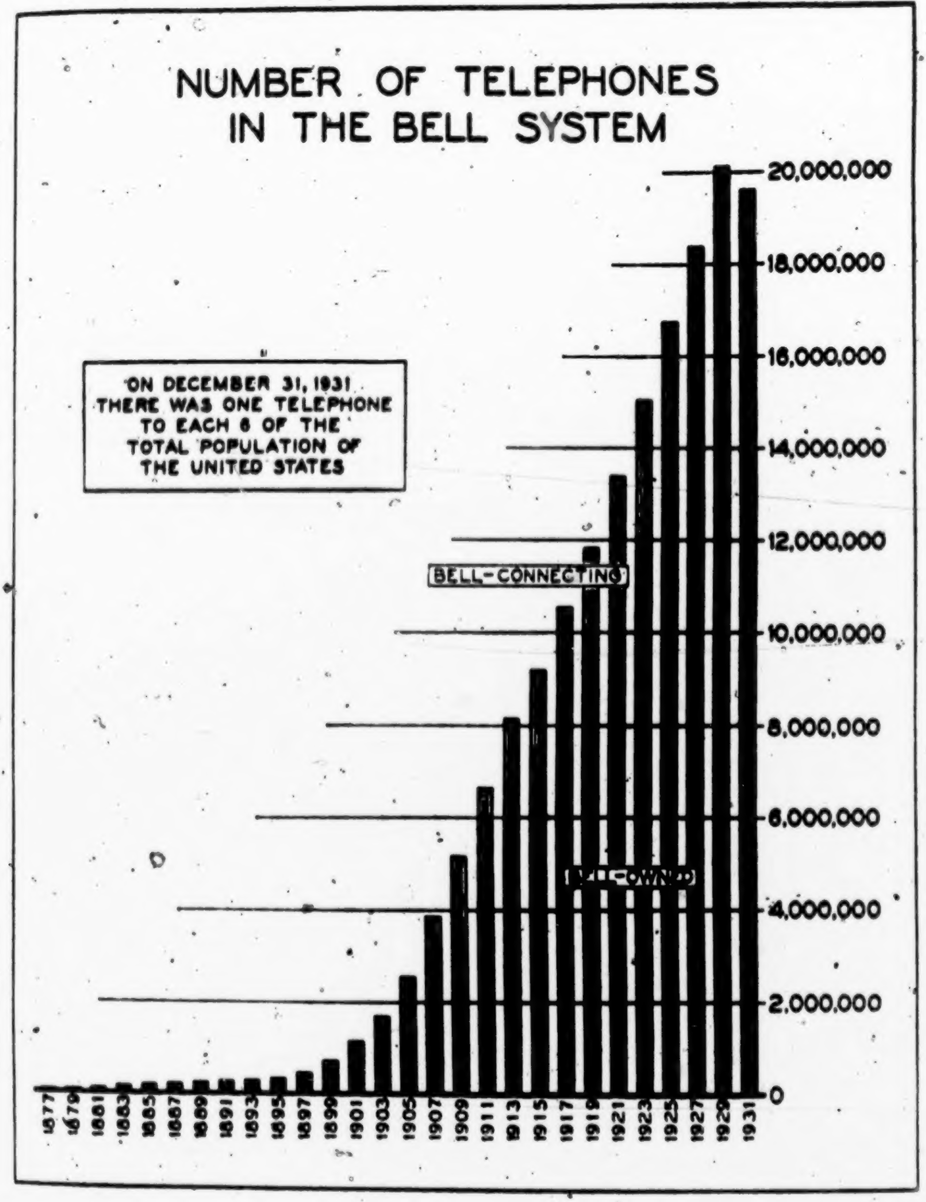
REVENUES		$5.99
EXPENSES	$4.11	
TAXES	.49	4.60
NET EARNINGS		1.39
INTEREST	$.35	
DIVIDENDS	.97	1.32
BALANCE FOR CONTINGENCIES AND SURPLUS		$.07

DISPOSITION OF REVENUES



BELL SYSTEM STATISTICS




NUMBER OF TELEPHONES IN THE BELL SYSTEM
ON DECEMBER 31, 1931 THERE WAS ONE TELEPHONE TO EACH 6 OF THE TOTAL POPULATION OF THE UNITED STATES
BELL-CONNECTING
BELL-OWNED
20,000,000
18,000,000
16,000,000
14,000,000
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
0
1877
1879
1881
1883
1885
1887
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1911
1913
1915
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1921
1923
1925
1927
1929
1931

X-308

213. LONG-TERM ADVANCES TO OTHER COMPANIES.

Give particulars of the various advances made by the respondent to other companies where such advances are of a permanent nature or where the respondent is to be reimbursed or repaid in securities of the debtor corporation to be permanently held. The particulars for each debtor corporation should be separately shown.

Line No.	Name of debtor company. (a)	Amount of Unpaid Advances (Including Interest) at Close of Year. Principal. (b) $ c.	Interest. (c) $ c.
1	New England Tel & Tel Co	4 600 000 00	14 945 00
2	New York Telephone Co	43 213 716 44	211 747 21
3	Bell Tel Co of Pa	0	9 437 85
4	Ches.&Pot.Tel Co.of Balt City	725 000 00	3 221 75
5	" " " " " " West Va.	725 000 00	3 111 50
6	" " " " " " Va.	600 000 00	2 940 00
7	Illinois Bell Tel.Co.	4 000 000 00	26 033 55
8	Wisconsin Tel.Co.	2 774 284 48	13 120 38
9	Michigan State Tel.Co.	21 537 595 21	104 680 80
10	Central Union Tel. Co.	12 571 925 71	0
11	Ohio Bell Tel.Co.	9 000 000 00	0
12	Indiana Bell Tel.Co.	1 395 000 00	4 888 29
13	Southern Bell Tel.& Tel Co.	6 836 238 45	29 263 95
14	Cumberland Tel.&Tel.Co.	7 297 080 38	45 546 21
15	Northwestern Bell Tel.Co.	3 533 236 21	16 152 37
	Northwestern Tel.Exch.Co.(a)	[illegible] 419 982 88	84 549 41
16	Nebraska Telephone Co.(a)	[illegible] 856 625 43	39 831 47
17	Southwestern Bell Tel.Co.	19 624 761 22	93 162 21
18	Mountain States Tel &Tel Co.	2 137 918 20	13 471 39
	Pacific Tel.&Tel.Co.	[illegible] 760 000 00	31 623 86
19	Southern New Eng.Tel.Co.	3 478 343 32	13 143 89
20	Total,	178 085 817 93	760 871 09

(a) Assumed by Northwestern Bell Telephone Company as of December 31, 1920.

214. MISCELLANEOUS INVESTMENTS.

Give particulars of all investments of the respondent in property (tangible or intangible) other than that used in its telephone operations or in operations auxiliary to its telephone operations. This schedule should include all such direct investments as are includible in Account No. 111, "Miscellaneous investments," in the Uniform System of Accounts for Telephone Companies. The description of the property in column (a) should give the location and other identification of it with a reasonable degree of particularity.

If any property of the character provided for in this schedule was disposed of during the year, give particulars in a footnote.

Name and description of property held at the close of the year as an investment. (a)	Amount at which carried on respondent's books at close of year. (b) $ c.
None held at close of year	
Land and buildings were acquired and disposed of during year as follows: Book value	
20-22 Dey Street, New York, N. Y. 429 890 14	
178 Fulton Street, New York, N. Y. 170 222 57	
Total,	

221. CASH AND SPECIAL DEPOSITS.

Give particulars of the various special deposits at the close of the year, the aggregate of which is shown in the item "Cash and deposits," on the asset side of the balance Sheet (p. 200). If any such deposits consisted wholly or partly of securities, give full particulars in a footnote showing class and subclass of each security, in accordance with the instructions on page 205, and stating a subtotal for each class and each subclass. Also state the balance in the "Cash," account at the close of the year.

Line No.	Name of depositary. (a)	Purpose of deposit. (b)	Amount at close of year (c) $ c.
31			
32	Board of Public Works,		
33	City of Detroit, Michigan (Cash)	In accordance with the terms of the franchise.	200 00
34			
35			
36			
37			
38			
39			
40		Total Special Deposits,	200 00
41	Cash on hand and in banks, available for general corporate purposes,		26 636 160 24
42		Total Cash and Special Deposits,	26 636 360 24

213. LONG-TERM ADVANCES TO OTHER COMPANIES.

Give particulars of the various advances made by the respondent to other companies where such advances are of a permanent nature or where the respondent is to be reimbursed or repaid in securities of the debtor corporation to be permanently held. The particulars for each debtor corporation should be separately shown.

Line No.	Name of debtor company. (a)	Amount of unpaid advances (including interest) at close of year. Principal. (b) $	c.	Interest. (c) $	c.
1	New England Tel & Tel Co	13 750 000	00	57 575	00
2	New York Telephone Co	17 479 123	56	209 593	85
3	Ches.&Pot.Tel.Co.(Balt.)	1 675 000	00	7 039	66
4	" " " " " (W.Va.)	433 800	00	4 777	50
5	" " " " " (Va.)	600 000	[illegible]	2 940	00
6	Wisconsin Tel. Co.	3 974 294	48	19 474	04
7	Michigan State Tel. Co.	21 937 732	50	107 494	89
8	Central Union Tel. Co.	13 919 795	22	79 658	81
9	Ohio Bell Tel. Co.	2 855 000	00	40 345	78
10	Indiana Bell Tel. Co.	918 000	00	27 697	50
11	Southern Bell Tel.Co.	12 723 238	45	58 973	16
12	Cumberland Tel & Tel Co.	8 077 080	38	39 577	69
13	Northwestern Bell Tel.Co.	4 885 000	00	23 936	50
14	Southwestern Bell Tel.Co.	30 174 761	22	139 877	50
15	Mountain States Tel&TelCo.	3 399 018	20	16 655	19
16	Pacific Tel & Tel Co.	22 010 000	00	96 636	16
17	Southern New England TelCo.	2 962 043	32	14 024	02
18					
19					
20	Total,	161 773 887	33	946 277	29

214. MISCELLANEOUS INVESTMENTS.

Give particulars of all investments of the respondent in property (tangible or intangible) other than that used in its telephone operations or in operations auxiliary to its telephone operations. This schedule should include all such direct investments as are includible in Account No. 111, "Miscellaneous investments," in the Uniform System of Accounts for Telephone Companies. The description of the property in column (a) should give the location and other identification of it with a reasonable degree of particularity.

If any property of the character provided for in this schedule was disposed of during the year, give particulars in a footnote.

Name and description of property held at the close of the year as an investment. (a)	Amount at which carried on respondent's books at close of year. (b) $
None	
Total,	

221. CASH AND SPECIAL DEPOSITS.

Give particulars of the various special deposits at the close of the year, the aggregate of which is shown in the item "Cash and deposits," on the asset side of the balance Sheet (p. 200). If any such deposits consisted wholly or partly of securities, give full particulars in a footnote showing class and subclass of each security, in accordance with the instructions on page 205, and stating a subtotal for each class and each subclass. Also state the balance in the "Cash" account at the close of the year.

Line No.	Name of depositary. (a)	Purpose of deposit. (b)	Amount at close of year. (c) $
31			
32	Board of Public Works,		
33	City of Detroit, Michigan (Cash)	In accordance with the terms of the franchise	200 00
34			
35			
36			
37			
38			
39			
40		Total Special Deposits,	200 00
41	Cash on hand and in banks, available for general corporate purposes,		29 732 164 94
42		Total Cash and Special Deposits,	29 732 364 94

213. LONG-TERM ADVANCES TO OTHER COMPANIES.

Give particulars of the various advances made by the respondent to other companies where such advances are of a permanent nature or where the respondent is to be reimbursed or repaid in securities of the debtor corporation to be permanently held. The particulars for each debtor corporation should be separately shown.

	Name of debtor company. (a)	Amount of Unpaid Advances (Including Interest) at Close of Year. Principal. (b) $ c.	 Interest. (c) $ c.
1	Central Union Tel.Co.	12 805 614 20	64 354 74
2	Ches.&Pot.Tel.Co(West Va.)	3 755 071 76	6 413 12
3	" " ""(Virginia)	4 920 797 81	1 657 84
4	Cumberland Tel& Tel Co.	8 277 080 38	40 557 69
5	Michigan State Tel Co.	25 985 465 00	96 703 78
6	Mountain States T & T Co.	4 200 000 00	20 580 00
7	New York Telephone Co.	7 611 553 99	79 767 71
8	Pacific Tel.& Tel.Co.	300 000 00	98 00
9	Southern Bell T & T Co.	14 546 238 45	69 447 23
10	Wisconsin Telephone Co.	2 726 144 00	12 410 77
11	Southwestern Bell TelCo.	16 274 761 22	79 746 33
12	Indiana Bell Tel. Co.	5 133 625 00	117 532 17
13	Southern New Eng.Tel.Co.	1 300 000 00	6 370 00
14	Ohio Bell Tel. Co.	6 205 000 00	26 680 50
15	Maryland TelCo of Balt City	1 725 500 00	-
16	Northwestern Bell TelCo.	-	11 968 25
17			
18			
19			
20	Total,	115 766 851 81	634 288 13

214. MISCELLANEOUS INVESTMENTS.

Give particulars of all investments of the respondent in property (tangible or intangible) other than that used in its telephone operations or in operations auxiliary to its telephone operations. This schedule should include all such direct investments as are includible in Account No. 111, "Miscellaneous investments," in the Uniform System of Accounts for Telephone Companies. The description of the property in column (a) should give the location and other identification of it with a reasonable degree of particularity.

If any property of the character provided for in this schedule was disposed of during the year, give particulars in a footnote.

Name and description of property held at the close of the year as an investment. (a)	Amount at which carried on respondent's books at close of year. (b) $ c.
None	
Total,	

221. CASH AND SPECIAL DEPOSITS.

Give particulars of the various special deposits at the close of the year, the aggregate of which is shown in the item "Cash and deposits," on the asset side of the balance Sheet (p. 200). If any such deposits consisted wholly or partly of securities, give full particulars in a footnote showing class and subclass of each security, in accordance with the instructions on page 205, and stating a subtotal for each class and each subclass. Also state the balance in the "Cash" account at the close of the year.

	Name of depositary. (a)	Purpose of deposit. (b)	Amount at close of year (c) $ c.
31			
32			
33			
34			
35			
36			
37			
38			
39			
40		Total Special Deposits,	None
41	Cash on hand and in banks, available for general corporate purposes,		26 517 547 38
42		Total Cash and Special Deposits,	26 517 547 38

213. LONG-TERM ADVANCES TO OTHER COMPANIES.

Give particulars of the various advances made by the respondent to other companies where such advances are of a permanent nature or where the respondent is to be reimbursed or repaid in securities of the debtor corporation to be permanently held. The particulars for each debtor corporation should be separately shown.

Line No.	Name of debtor company. (a)	Amount of Unpaid Advances (Including Interest) at Close of Year. Principal. (b)	Interest (c)
		$ ¢	$ ¢
1	Bell Tel.Co.of Penna.	16 200 000 00	73 075 34
2	New England Tel.& Tel.Co	19 249 000 00	76 680 10
3	Ches.& Pot.Tel Co (West Va)	1 255 471 76	5 171 81
4	" " " " (Va.)	617 797 81	2 292 21
5	" " " " (BaltCity)	125 000 00	0
6	Cumberland Tel.& Tel.Co.	1 802 480 38	44 966 07
7	Michigan State Tel.Co.	16 820 465 00	80 705 28
8	Mountain States T & T Co.	1 524 302 00	7 469 08
9	New York Telephone Co.	30 711 553 99	128 028 28
10	Pacific Tel. & Tel.Co.	31 400 000 00	141 528 34
11	Southern Bell Tel&Tel.Co.	1 640 000 00	4 325 06
12	Ohio Bell Telephone Co.	11 415 607 94	44 157 16
13	Southwestern Bell Tel Co.	20 874 761 22	90 608 00
14	Indiana Bell Telephone Co	6 058 625 00	124 754 10
15	Southern New Eng.Tel.Co.	2 700 000 00	15 026 66
16	Wisconsin Telephone Co.	0	18 883 72
17			
18			
19			
20	Total,	162 395 065 10	857 671 22

214. MISCELLANEOUS INVESTMENTS.

Give particulars of all investments of the respondent in property (tangible or intangible) other than that used in its telephone operations or in operations auxiliary to its telephone operations. This schedule should include all such direct investments as are includible in Account No. 111, "Miscellaneous investments," in the Uniform System of Accounts for Telephone Companies. The description of the property in column (a) should give the location and other identification of it with a reasonable degree of particularity.

If any property of the character provided for in this schedule was disposed of during the year, give particulars in a footnote.

Name and description of property held at the close of the year as an investment. (a)	Amount at which carried on respondent's books at close of year. (b)
	$ ¢
None	
Total,	

221. CASH AND SPECIAL DEPOSITS.

Give particulars of the various special deposits at the close of the year, the aggregate of which is shown in the item "Cash and deposits," on the asset side of the balance Sheet (p. 200). If any such deposits consisted wholly or partly of securities, give full particulars in a footnote showing class and subclass of each security, in accordance with the instructions on page 205, and stating a subtotal for each class and each subclass. Also state the balance in the "Cash" account at the close of the year.

Line No.	Name of depositary. (a)	Purpose of deposit. (b)	Amount at close of year. (c)
			$
31			
32	J. P. Morgan & Co.	Temporary deposit of surplus cash funds - repayable Jan.31,1924	10 0
33			
34			
35			
36			
37			
38			
39			
40			
41	Cash on hand and in banks, available for general corporate purposes.		
42			

213. LONG-TERM ADVANCES TO OTHER COMPANIES.

Give particulars of the various advances made by the respondent to other companies where such advances are of a permanent nature or where the respondent is to be reimbursed or repaid in securities of the debtor corporation to be permanently held. The particulars for each debtor corporation should be separately shown.

Line No.	Name of debtor company. (a)	Amount of Unpaid Advances (Including Interest) at Close of Year. Principal. (b) $ c.	Interest. (c) $ c.
1	Bell Tel. Co. of Penna	15 100 000 00	51 548 00
2	New England Tel.& Tel.Co.	31 219 200 00	138 274 08
3	Ches.& Pot.Tel.Co.of W.Va.	2 755 471 76	13 011 81
4	" " " " " Va.	2 342 797 81	8 907 21
5	" " " " " D.C.	4 275 000 00	18 865 00
6	Cumberland Tel.& Tel.Co.	10 322 480 38	46 758 15
7	Michigan Bell Tel. Co.	7 015 000 00	102 973 50
8	Mountain States T.&T.Co.	1 000 000 00	7 347 72
9	New York Telephone Co.	43 831 553 99	177 861 27
10	Pacific Tel.& Tel. Co.	45 287 500 00	208 784 92
11	Southern Bell Tel&Tel.Co.	5 285 000 00	19 461 16
12	Wisconsin Telephone Co.	0	7 570 50
13	Indiana Bell Tel. Co.	7 748 625 00	131 979 25
14	Southern New Eng.T.& T.Co.	3 200 000 00	14 700 00
15	Ohio Bell Telephone, Co.	16 315 607 94	72 694 48
16			
17			
18			
19			
20	Total.	195 698 236 88	1 020 737 06

214. MISCELLANEOUS INVESTMENTS.

Give particulars of all investments of the respondent in property (tangible or intangible) other than that used in its telephone operations or in operations auxiliary to its telephone operations. This schedule should include all such direct investments as are includible in Account No. 111, "Miscellaneous investments," in the Uniform System of Accounts for Telephone Companies. The description of the property in column (a) should give the location and other identification of it with a reasonable degree of particularity.

If any property of the character provided for in this schedule was disposed of during the year, give particulars in a footnote.

Name and description of property held at the close of the year as an investment. (a)	Amount at which carried on respondent's books at close of year. (b) $ c.
None	
Total	

221. CASH AND SPECIAL DEPOSITS.

Give particulars of the various special deposits at the close of the year, the aggregate of which is included in the item "Cash and deposits," on the asset side of the Balance Sheet (p. 200). If any such deposits consisted wholly or partly of securities, give full particulars in a footnote showing class and subclass of each security, in accordance with the instructions on page 205, and stating a subtotal for each class and each subclass. Also state the balance in the "Cash" account at the close of the year.

Line No.	Name of depositary. (a)	Purpose of deposit. (b)	Amount at close of year. (c) $ c.
31	The Merchants National Bank, Boston, Mass.	Temporary deposit of surplus cash funds	1 000 000 00
32	Old Colony Trust Co., Boston, Mass.	" " " " " "	2 500 000 00
33			
34			
35			
36			
37			
38			
		Total Special Deposits,	3 500 000 00
41	Cash on hand and in banks, available for general corporate purposes,		23 531 892 27
42		Total Cash and Special Deposits,	27 031 892 27

213. LONG-TERM ADVANCES TO OTHER COMPANIES.

Give particulars of the various advances made by the respondent to other companies where such advances are of a permanent nature or where the respondent is to be reimbursed or repaid in securities of the debtor corporation to be permanently held. The particulars for each debtor corporation should be separately shown.

Line No.	Name of debtor company. (a)	Amount of Unpaid Advances (Including Interest) at Close of Year. Principal. (b) $ c.	Interest. (c) $ c.
1	New England Tel.&Tel.Co.	24 850 000 00	238 193 24
2	Ches.& Pot.Tel.Co.(NY)	(a) 150 000 00	0
3	" " " " Balt City	7 200 000 00	34 300 00
4	" " " " W.Va.	4 955 471 76	23 424 31
5	" " " " Va.	3 467 797 81	16 012 21
6	Cumberland Tel.& Tel.Co.	8 377 626 23	32 340 14
7	Michigan Bell Tel. Co.	20 090 000 00	86 779 00
8	Mountain States T.& T.Co.	1 000 000 00	6 051 50
9	New York Telephone Co.	85 488 553 99	392 301 12
10	Pacific Tel. & Tel. Co.	45 187 500 00	208 776 75
11	Southern Bell Tel&Tel Co.	7 191 824 79	24 183 13
12	Wisconsin Telephone Co.	0	245 00
13	Indiana Bell Tel. Co.	6 622 139 22	32 448 49
14	Southern New England T.Co	3 000 000 00	14 700 00
15	Ohio Bell Telephone Co.	7 715 607 94	26 830 48
16	Illinois Bell TelephoneCo	3 000 000 00	14 700 00
17	Northwestern Bell Tel Co.	4 750 000 00	18 260 66
18	205 Broadway Corporation	(a) 11 557 602 92	0
19			
20	Total	244 604 124 66	1169 546 03

(a) Advance made as of Dec.31,1925.

214. MISCELLANEOUS INVESTMENTS.

Give particulars of all investments of the respondent in property (tangible or intangible) other than that used in its telephone operations or in operations auxiliary to its telephone operations. This schedule should [illegible] which are includible in Account No. 111, "Miscellaneous Investments," in the Uniform System of Accounts for Telephone Companies. The description of the property in column (a) should give the location and other [illegible] particularity.

If any property of the character provided for in this schedule was disposed of during the year, [illegible].

Name and description of property held at the close of the year as an investment. (a)	[illegible] (b) $ c.
None	

221. CASH AND SPECIAL DEPOSITS.

Give particulars of the various special deposits at the close of the year, the aggregate of which is included in the item "Cash and deposits" on the asset side of the Balance Sheet [illegible]. If any such deposits consisted wholly or partly of securities, give full particulars in a footnote showing class and subclass of each security, in accordance with the instructions on page [illegible], and stating a subtotal for each class and each subclass. Also state the balance in the "Cash" account at the close of the year.

Line No.	Name of depositary. (a)	Purpose of deposit. (b)	Amount at close of year. (c)
31			
32			
33			
34			
35			
36			
37			
40		Total Special Deposits,	0
41	Cash on hand and in banks, available for general corporate purposes,		26 866 043 46
42		Total Cash and Special Deposits,	26 866 043 46

213. LONG-TERM ADVANCES TO OTHER COMPANIES.

Give particulars of the various advances made by the respondent to other companies where such advances are of a permanent nature or where the respondent is to be reimbursed or repaid in securities of the debtor corporation to be permanently held. The particulars for each debtor corporation should be separately shown.

Line No.	Name of debtor company (a)	Amount of unpaid advances (including interest) at close of year: Principal (b) $	c	Interest (c) $	c	Interest accrued and credited to income during the year. (d) $	c
1	Ches.& Pot.Tel.Co.(N.Y.)	2 025 000	00	6 002	50	30 800	59
2	Del.& Atl. Tel.& Tel.Co.	7 217 239	47	24 094	46	47 094	62
3	Illinois Bell Tel. Co.	13 800 000	00	60 449	66	441 695	78
4	Indiana Bell Tel. Co.	6 500 000	00	31 850	00	384 851	43
5	Michigan Bell Tel. Co.	32 940 000	00	151 410	00	1494 099	82
6	Mountain States T.& T.Co.	846 000	00	5 126	06	94 510	22
7	New York Telephone Co.	38 263 314	52	158 090	24	1178 640	26
8	Ohio Bell Telephone Co.	18 946 607	94	72 748	38	678 208	83
9	Pacific Tel. & Tel. Co.	65 687 500	00	311 576	75	3020 498	67
10	Southern Bell Tel&Tel Co	25 772 855	91	111 080	66	559 331	74
11	Southern New England T.Co	1 250 000	00	6 125	00	165 626	86
12	Southwestern Bell Tel.Co.	4 274 559	81	5 461	34	103 531	97
13	205 Broadway Corporation	4 800 000	00	20 000	00	399 315	17
14	Bell Tel.Laboratories,Inc.	1 300 000	00	7 583	33	15 166	66
15	Ches.&Pot.Tel.Co.Balt City	0		44 835	00	489 922	41
16	Ches.&Pot.Tel.Co.of Va.	0		18 829	71	215 147	95
17							
18							
19						(a)	
20	TOTAL.	223 623 077	65	1035 265	11	9338 443	18

(a) Includes interest on advances retired during the year by companies listed.

214. MISCELLANEOUS INVESTMENTS.

Give particulars of all investments of the respondent in property (tangible or intangible) other than that used in its telephone operations or in operations auxiliary to its telephone operations. This schedule should include all such direct investments as are includable in Account No. 411, "Miscellaneous investments," in the Uniform System of Accounts for Telephone Companies. The description of the property in column (a) should give the location and other identification of it with a reasonable degree of particularity.

If any property of the character provided for in this schedule was disposed of during the year, give particulars in a footnote.

Name and description of property held at the close of the year as an investment (a)	Amount at which carried on respondent's books at close of year (b) $	c
None		
TOTAL.		

221. CASH AND SPECIAL DEPOSITS.

Give particulars of the various special deposits at the close of the year, the aggregate of which is included in the item "Cash and deposits," on the asset side of the Balance Sheet (p. 200). If any such deposits consisted wholly or partly of securities, give full particulars in a footnote showing class and subclass of each security, in accordance with the instructions on page 205, and stating a subtotal for each class and each subclass. Also state the balance in the "Cash" account at the close of the year.

Line No.	Name of depositary (a)	Purpose of deposit (b)	Amount at close of year. (c) $ c
31	First National Bank, Boston, Mass.	Temporary deposit of surplus cash.	1 000 000 00
32	National Shawmut Bank, Boston, Mass.	" " " "	2 000 000 00
33			
34			
35			
36			
37			
38			
39			
40		Total Special Deposits,	3 000 000 00
41	Cash on hand and in banks, available for general corporate purposes,		21 789 173 30
42		TOTAL CASH AND SPECIAL DEPOSITS,	24 789 173.30

213. LONG-TERM ADVANCES TO OTHER COMPANIES.

Give particulars of the various advances made by the respondent to other companies where such advances are of a permanent nature or where the respondent is to be reimbursed or repaid in securities of the debtor corporation to be permanently held. The particulars for each debtor corporation should be separately shown.

Line No.	Name of debtor company (a)	Amount of unpaid advances (including interest) at close of year: Principal (b) $ c	Amount of unpaid advances (including interest) at close of year: Interest (c) $ c	Interest accrued and credited to income during the year (d) $ (a) c
1	Ches.& Pot.Tel.Co.(N.Y.)	3 647 651 18	15 435 00	148 915 09
2	" " "Co.Balt.City	1 972 772 59	3 062 50	21 061 84
3	" " " " of Va.	974 723 96	1 225 00	10 922 91
4	" " " " " W.Va.	1 059 365 58	2 695 00	20 861 75
5	Indiana Bell Tel. Co.	3 500 000 00	31 850 00	382 200 00
6	Michigan Bell Tel. Co.	15 127 385 95	231 525 00	2339 150 56
7	Mountain States T.&T.Co	3 307 886 15	12 005 00	113 366 08
8	New England Tel.&Tel.Co	5 032 799 74	4 410 00	9 457 00
9	New Jersey Bell Tel.Co(b)	22 824 633 94	70 791 48	605 621 49
10	New York Telephone Co.	71 661 238 91	297 675 00	2801 627 70
11	Northwestern Bell T.Co.	2 045 138 79	40 84	726 84
12	Ohio Bell Telephone Co.	3 496 292 63	117 763 05	1285 723 91
13	Pacific Tel.& Tel.Co.	35 351 880 48	54 641 29	1980 438 65
14	Southern Bell T.& T.Co.	20 283 141 91	71 588 26	877 484 79
15	Southern New England TCo	5 996 172 05	25 725 00	201 087 82
16	Southwestern Bell T.Co.	3 892 089 53	86 066 34	704 357 28
17	Wisconsin Tel.Co.	2 513 846 52	5 145 00	42 262 50
18	Bell Tel.Laboratories Inc	1 300 000 00	7 583 33	90 999 96
19	205 Broadway Corporation	~~4 800 000 00~~	~~20 000 00~~	~~240 000 00~~
20	TOTAL.	208 787 019 91	1059 227 09	11876 266 17

(a) Includes interest on advances retired during the year by companies listed.

(b) Name changed from Delaware & Atlantic Tel.& Tel.Co., Sept. 26, 1927.

214. MISCELLANEOUS INVESTMENTS.

Give particulars of all investments of the respondent in property (tangible or intangible) other than that used in its telephone operations or in operations auxiliary to its telephone operations. This schedule should include all such direct investments as are includable in Account No. 111, "Miscellaneous Investments," in the Uniform System of Accounts for Telephone Companies. The description of the property in column (a) should give the location and other identification of it with a reasonable degree of particularity.

If any property of the character provided for in this schedule was disposed of during the year, give particulars in a footnote.

Name and description of property held at the close of the year as an investment. (a)	Amount at which carried on respondent's books at close of year. (b) $ c
None	
TOTAL.	

221. CASH AND SPECIAL DEPOSITS.

Give particulars of the various special deposits at the close of the year, the aggregate of which is included in the item "Cash and deposits," on the asset side of the Balance Sheet (p. 200). If any such deposits consisted wholly or partly of securities, give full particulars in a footnote showing class and subclass of each security, in accordance with the instructions on page 205, and stating a subtotal for each class and each subclass. Also state the balance in the "Cash" account at the close of the year.

Line No.	Name of depositary (a)	Purpose of deposit (b)	Amount at close of year. (c) $ c
31			
32	None		
33			
34			
35			
36			
37			
38			
39			
40		Total Special Deposits,	0
41	Cash on hand and in banks, available for general corporate purposes,		~~20 814 033 59~~
42		TOTAL CASH AND SPECIAL DEPOSITS,	20 814 033 59

213. LONG-TERM ADVANCES TO OTHER COMPANIES.

Give particulars of the various advances made by the respondent to other companies where such advances are of a permanent nature or where the respondent is to be reimbursed or repaid in securities of the debtor corporation to be permanently held. The particulars for each debtor corporation should be separately shown.

Line No.	Name of debtor company (a)	Amount of unpaid advances (including interest) at close of year: Principal (b)	Amount of unpaid advances (including interest) at close of year: Interest (c)	Interest accrued and credited to income during the year (d)(a)
	Wisconsin Tel. Co.	$ 0	$ 490 08	$ 83 [illegible] 08
1	Ches.& Pot.Tel.Co.(N.Y.)	3547 651 18	16 280 99	198 393 56
2	" " " "Co.Balt.City	2672 772 59	9 544 08	100 057 64
3	" " " " of Va.	1324 723 96	4 531 15	48 906 21
4	" " " " " W.Va.	2384 365 58	8 743 39	84 499 94
5	Indiana Bell Tel. Co.	3500 000 00	17 150 00	205 800 00
6	Michigan Bell Tel. Co.	32517 385 95	139 865 85	1187 622 61
7	Mountain States T&T Co.	9950 000 00	48 077 16	329 119 44
8	New England Tel.&Tel.Co	5700 000 00	28 371 00	185 811 62
9	New Jersey Bell Tel.Co.	13747 103 42	158 304 81	1601 975 45
10	New York Tel. Co.	5300 000 00	0	1053 420 21
11	Illinois Bell Tel. Co.	12400 000 00	51 172 83	312 922 29
12	Ohio Bell Telephone Co.	1600 000 00	44 170 47	361 397 19
13	Pacific Tel. & Tel. Co.	51551 880 48	347 278 55	2586 297 91
14	Southern Bell T.& T.Co.	34422 989 91	150 902 17	1159 549 55
15	Southern New England T.Co	2500 000 00	12 250 00	262 124 59
16	Southwestern Bell T.Co.	0	70 876 47	608 380 26
17	Bell Tel. Co.of Penna.	6500 000 00	16 574 63	54 026 97
18	Bell Tel.Laboratories	1300 000 00	7 583 33	90 999 96
19	205 Broadway Corporation	4950 000 00	20 425 00	243 826 38
20	TOTAL	195 868 873 07	1052 792 88	10759 083 86

(a) Includes interest on advances retired during the year by companies listed.

214. MISCELLANEOUS INVESTMENTS.

Give particulars of all investments of the respondent in property (tangible or intangible) other than that used in its telephone operations or in operations auxiliary to its telephone operations. This schedule should include all such direct investments as are includable in Account No. 111, "Miscellaneous investments," in the Uniform System of Accounts for Telephone Companies. The description of the property in column (a) should give the location and other identification of it with a reasonable degree of particularity.

If any property of the character provided for in this schedule was disposed of during the year, give particulars in a footnote.

Name and description of property held at the close of the year as an investment (a)	Amount at which carried on respondent's books at close of year (b)
	$ ¢
None	
TOTAL,	

221. CASH AND SPECIAL DEPOSITS.

Give particulars of the various special deposits at the close of the year, the aggregate of which is included in the item "Cash and deposits," on the asset side of the Balance Sheet (p. 200). If any such deposits consisted wholly or partly of securities, give full particulars in a footnote showing class and subclass of each security, in accordance with the instructions on page 205, and stating a subtotal for each class and each subclass. Also state the balance in the "Cash" account at the close of the year.

Line No.	Name of depositary (a)	Purpose of deposit (b)	Amount at close of year (c)
			$ ¢
31			
32			
33	None		
34			
35			
36			
37			
40		Total Special Deposits,	0
41	Cash on hand and in banks, available for general corporate purposes,		20 695 267 43
42		TOTAL CASH AND SPECIAL DEPOSITS,	20 695 267 43

213. LONG-TERM ADVANCES TO OTHER COMPANIES.

Give particulars of the various advances made by the respondent to other companies where such advances are of a permanent nature or where the respondent is to be reimbursed or repaid in securities of the debtor corporation to be permanently held. The particulars for each debtor corporation should be separately shown.

Line No.	Name of debtor company (a)	Amount of unpaid advances (including interest) at close of year: Principal	Interest	(a) Interest accrued and credited to income during the year
	Illinois Bell Tel. Co.	2 200 000 00	1 981 00	455 945 33
	Bell Tel. Co. of Pa.	6 300 000 00	47 072 66	429 888 16
1	Ches.& Pot.Tel.Co.(N.Y.)	6 522 651 18	26 365 99	261 227 90
2	" " " " Balt.City	4 097 772 59	18 609 06	181 213 89
3	" " " " of Va.	3 474 723 96	16 103 31	123 798 62
4	" " " " W.Va.	3 934 365 58	17 930 89	181 740 44
5	Diamond State Tel.Co.	2 500 000 00	0	0
6	Indiana Bell Tel. Co.	4 175 049 72	17 260 26	205 910 26
7	Michigan Bell Tel. Co.	43 417 385 95	172 336 52	2150 962 64
8	Mountain States T&T Co.	18 200 000 00	88 959 50	885 936 34
9	New England Tel.&Tel.Co.	17 450 000 00	75 215 00	527 087 23
10	New Jersey Bell Tel.Co.	26 247 103 42	115 282 81	1070 675 72
11	New York Telephone Co.	52 800 000 00	218 295 00	1474 475 33
12	Northwestern Bell TelCo.	6 500 000 00	24 500 00	172 447 35
13	Pacific Tel.& Tel.Co.	87 451 880 48	419 416 55	4004 570 22
14	Southern New England T.Co.	9 400 000 00	41 756 16	343 128 49
15	Southwestern Bell T.Co.	2 150 000 00	62 393 34	377 766 88
16	Wisconsin Telephone Co.	3 475 000 00	20 098 16	66 525 64
17	Ohio Bell Tel. Co.	4 100 000 00	18 799 66	274 159 47
18	Bell Tel.Laboratories,Inc	1 800 000 00	9 914 66	93 333 89
19	205 Broadway Corp'n.	~~4 850 000 00~~	~~[illegible] 66~~	~~[illegible] 66~~
20	Total	311 045 932 88	[illegible] 528 21	13545 677 86

(a) Includes interest on advances retired during the year by companies listed.

214. MISCELLANEOUS INVESTMENTS.

Give particulars of all investments of the respondent in property (tangible or intangible) other than that used in its telephone operations or in operations auxiliary to its telephone operations. This schedule should include all such direct investments as are includable in Account No. 111, "Miscellaneous Investments," in the Uniform System of Accounts for Telephone Companies. The description of the property in column (a) should give the location and other identification of it with a reasonable degree of particularity.

If any property of the character provided for in this schedule was disposed of during the year, give particulars in a footnote.

Name and description of property held at the close of the year as an investment. (a)	Amount at which carried on respondent's books at close of year. (b)
None	$ c.
Total	

221. CASH AND SPECIAL DEPOSITS.

Give particulars of the various special deposits at the close of the year, the aggregate of which is included in the item "Cash and deposits," on the asset side of the Balance Sheet (p. 200). If any such deposits consisted wholly or partly of securities, give full particulars in a footnote showing class and subclass of each security, in accordance with the instructions on page 205, and stating a subtotal for each class and each subclass. Also state the balance in the "Cash" account at the close of the year.

Line No.	Name of depository. (a)	Purpose of deposit. (b)	Amount at close of year. (c)
			$ c.
31			
32			
33			
34			
35	None		
36			
37			
38			
39			
40		Total Special Deposits,	0
41	Cash on hand and in banks, available for general corporate purposes,		~~20 795 947 88~~
42		Total Cash and Special Deposits,	20 795 947 88

213. LONG-TERM ADVANCES TO OTHER COMPANIES.

Give particulars of the various advances made by the respondent to other companies where such advances are of a permanent nature or where the respondent is to be reimbursed or repaid in securities of the debtor corporation to be permanently held. The particulars for each debtor corporation should be separately shown.

Line No.	Name of debtor company (a)	Amount of unpaid advances (including interest) at close of year: Principal (b)	Interest (c)	Interest accrued and credited to income during the year (a) (d)
	~~[illegible]~~	~~100 000 00~~		
	[illegible] Tel & Tel Co	$ 1 055 000 00	$ 22 323 35	$ 22 323 35
1	New England Tel & Tel Co	13 200 000 00	53 410 [illegible]	46 [illegible] 41
2	Southern New Eng Tel Co	1 800 000 00	[illegible]	[illegible]
3	New Jersey Bell Tel Co	39 297 103 42	[illegible]	[illegible]
4	Bell Tel Co of Pa.	23 825 000 00	107 122 [illegible]	[illegible]
5	Diamond State Tel Co	1 445 000 00	[illegible]	[illegible]
6	Ches & Pot Tel Co ([illegible])	5 722 [illegible] 18	[illegible]	[illegible]
7	" " " Balt City	2 815 000 00	11 88[illegible]	[illegible]
8	" " " of Va	2 944 7[illegible]	11 513 [illegible]	[illegible]
9	" " " W Va	[illegible]	18 910 84	242 925 11
10	Southern Bell Tel & Tel Co	[illegible]	[illegible]	[illegible]
11	Ohio Bell Tel Co	15 500 000 00	64 946 33	[illegible]
12	Michigan Bell Tel Co	36 740 000 00	181 741 08	2 080 22[illegible]
13	Indiana Bell Tel Co	6 984 957 00	31 6[illegible] 44	31[illegible]
14	Wisconsin Tel Co	12 000 000 00	58 737 50	466 022 [illegible]
15	New York Tel Co	67 600 000 00	2 854 700 00	2 850 476 [illegible]
16	Northwestern Bell Tel Co	30 911 738 50	142 466 48	1 399 581 82
17	Southwestern Bell Tel Co	15 700 000 00	68 100 00	668 221 34
18	Mountain States T&T Co	11 400 000 00	56 641 34	667 575 [illegible]
19	Pacific Tel & Tel Co	22 948 000 00	112 498 09	2 34[illegible]
20	Bell Tel Laboratories Inc	3 150 000 00	17 383 33	173 872 21
	195 Broadway Corpn (b)	4 850 000 00	23 765 00	285 100 00
	Cuban-American T&T Co.	90 500 00	1 056 58	1 056 58
	Total	329 119 429 64	1 500 316 5[illegible]	16 [illegible] 964 75

(a) [illegible]

(b) [illegible] 195 Broadway Corpn [illegible]

214. MISCELLANEOUS INVESTMENTS.

Give particulars of all investments of the respondent in property (tangible or intangible) other than that used in its telephone operations or in operations auxiliary to its telephone operations. This schedule should include all such direct investments as are includable in Account No. [illegible] "Miscellaneous investments" in the Uniform System of Accounts for Telephone Companies. The description of the property or security [illegible] should give the location and other identification [illegible] reasonable degree of particularity.

If any property of the character provided for in this schedule was disposed of during the year, give particulars [illegible]

Name and description of property held at the close of the year as an investment (a)	Amount at which carried in respondent's books at close of year (b)
	$
Total	

221. CASH AND SPECIAL DEPOSITS.

Give particulars of the various special deposits at the close of the year, the aggregate of which is included in the item "Cash and deposits," on the asset side of the Balance Sheet, p. 200. If any such deposits consisted wholly or partly of securities, give full particulars in a footnote showing class and subclass of each security, in accordance with the instructions on page 205, and stating a subtotal for each class and each subclass. Also state the balance in the "Cash" account at the close of the year.

Line No.	Name of depositary (a)	Purpose of deposit (b)	Amount at close of year (c)
21			$
22			
23			
24	See statement attached		
25			
26			
27			
28			
29			
30			
31		Total Special Deposits	58 542 010 73
32	Cash on hand and in banks, available for general corporate purposes		37 [illegible] 11
33		Total Cash and Special Deposits	95 [illegible] 34

[fol. 5115] **Exhibit X-313**

Sales of Important Telephone Plant Items of Western Electric Company Manufacture, Quantities Sold to Illinois Bell Telephone Company and to Total Bell System, 1924 to 1930, Inclusive

Item | Ill. Bell Tel. Co. | Total Bell System | % Ill. Bell to Total

Item	Ill. Bell Tel. Co.	Total Bell System	% Ill. Bell to Total
Switchboards:			
Large Multiple Sections	1082	10221	10.6
Small Multiple Sections	859	16941	5.1
550 and 551 Types	4221*	36529*	11.6*
505 and 506 Types	3336*	31133*	10.7*
Panel Lines	100780	1327488	7.6
Step-by-Step Lines	39048	1620305	2.4
700 and 701 P. B. X. Lines	20674	200973	10.3
740 P. B. X's	24	354	6.8
750 P. B. X's	104	1687	6.2
Station Apparatus:			
Subsets, 534A, 584A, 534C, 584C, 534AC, 554AR, 554C, 534AR	643538	6631641	9.7
Hand Telephone Sets	164510	2197582	7.5
Coin Collectors, 50 Type	27851	344754	8.1
Dials, 2AA, 2AB, 2AE, 2HA, 2HB, 2HE, 4HA, 4HB, 4HE	256933	4640387	5.5
Desk Stands, 20AL, 20CF, 40AL, 40CF, 50AL, 51AL	378861	4551826	8.3
Cable Terminals:			
8 and "C" Types and 14 Type	122919**	1596662**	7.7**
Loading Coils:			
Side & Phantom, Non-Phantom and Carrier	370119	6594854	5.6
Lead Covered Cable (Millions of Conductor Feet) Quadded and Loop	20647	250309	8.3

*1925 to 1930, inclusive, as figures for 1924 are not available.
**1927 to 1930, inclusive, as figures for 1924 to 1926 are not available.

(Here follows side folio 5116)

[fol. 5116]

Exhibit X-313

Sales of Important Telephone Plant Items of Western Electric Company Manufacture

Quantities Sold to Illinois Bell Telephone Company and to Total Bell System

Item	1924			1925			1926			1927			1928			1929			
	Ill. Bell	Total Bell System	% Ill. Bell to Total	Ill. Bell	Total Bell System	% Ill. Bell to Total	Ill. Bell	Total Bell System	% Ill. Bell to Total	Ill. Bell	Total Bell System	% Ill. Bell to Total	Ill. Bell	Total Bell System	% Ill. Bell to Total	Ill. Bell	Total Bell System	% Ill. Bell to Total	I B
Switchboards:																			
Large Multiple Sections	157	2,402	6.5	207	1,556	13.3	45	1,064	4.2	166	1,325	12.5	363	802	45.3	52	1,475	3.5	
Small Multiple Sections	129	1,821	7.1	135	1,530	8.8	85	1,969	4.3	123	2,514	4.9	146	2,227	6.6	137	3,694	3.7	
550 and 551 Types	*	*	*	641	5,462	11.7	684	6,237	11.0	987	6,040	16.3	920	8,003	11.5	728	8,249	8.8	
505 and 506 Types	*	*	*	626	4,849	12.9	534	4,489	11.9	562	4,725	11.9	671	6,721	10.0	607	6,815	8.9	
Panel Lines	9,200	138,515	6.6	5,100	100,649	5.1	0	99,529	0	27,600	150,500	18.3	2,400	188,880	1.3	20,880	308,865	6.8	35;
Step-by-Step Lines	200	113,440	.2	4,325	139,402	3.1	0	196,320	0	7,402	174,187	4.2	8,650	271,510	3.2	9,760	335,939	2.9	8,
700 and 701 P. B. X. Lines	1,028	8,124	12.7	2,277	10,610	21.5	2,222	17,182	12.9	1,812	25,758	7.0	2,482	26,544	9.4	4,885	44,078	11.1	5,
740 P. B. X.'s	......	......	....	......	......	....	......	......	....	......	......	....	0	38	0	2	161	1.2	
750 P. B. X.'s	......	......	....	......	......	....	......	......	....	......	......	....	......	......	....	1	30	3.3	
Station Apparatus:																			
Subsets, 534A, 584A, 534C, 534AC, 584C, 554AR, 554C, 534AR	96,630	905,724	10.7	93,212	1,078,810	8.6	102,176	976,640	10.5	87,068	867,600	10.0	87,006	1,028,009	8.5	115,255	1,174,888	9.8	62,
Hand Telephone Sets	......	......	....	......	......	....	......	......	....	10,345	101,004	10.2	41,033	485,020	8.5	51,839	637,518	8.1	61,
Coin Collectors, 50 Type	544	33,029	1.6	1,955	49,799	3.9	2,350	42,796	5.5	4,456	56,649	7.9	7,800	61,071	12.8	5,696	53,150	10.7	5,
Dials, 2AA, 2AB, 2AE, 2HA, 2HB, 2HE, 4HA, 4HB, 4HE	8,536	332,728	2.6	18,693	563,741	3.3	12,343	474,919	2.6	22,109	506,437	4.4	53,633	883,239	6.1	77,993	1,019,087	7.7	63
Desk Stands, 20AL, 20CF, 40AL, 40CF, 50AL, 51AL	87,036	883,068	9.9	79,195	1,116,055	7.1	83,207	929,552	9.0	67,023	719,790	9.3	49,524	600,462	8.2	8,796	253,683	3.5	4,
Cable Terminals:																			
8 & "C" Types	......	......	....	......	......	....	......	......	....	0	40,542	0	11,593	141,095	8.2	17,012	221,456	7.7	19,
14 Type	......	......	....	......	......	....	......	......	....	17,956	174,593	10.3	5,873	129,428	4.5	145	67,135	.2	
Total	12,896	145,030	8.9	18,139	246,562	7.4	19,625	213,788	9.2	17,956	215,135	8.3	17,466	270,523	6.5	17,157	288,591	5.9	19,
Loading Coils:																			
Side & Phantom	3,831	105,959	3.6	13,089	187,370	7.0	15,328	340,000	4.5	9,642	455,379	2.1	12,817	742,299	1.7	8,797	1,391,640	.6	9,
Non-Phantom	7,639	100,000	7.6	46,393	110,000	42.2	30,475	154,462	19.7	55,000	245,671	22.4	64,100	276,752	28.2	41,931	384,672	10.9	51,
Carrier	......	1,919	....	......	1,062	....	......	10,000	....	0	16,424	0	166	23,788	.7	103	32,417	.3	
Total	11,470	207,878	5.5	59,482	298,432	19.9	45,803	504,462	9.1	64,642	717,474	9.0	77,083	1,042,839	7.4	50,831	1,808,729	2.8	60,
Lead Covered Cable (Mil. Cd. Ft.):																			
Quadded	82	1,856	4.4	295	2,547	11.6	236	4,035	5.8	233	4,472	5.2	257	6,691	3.8	228	11,620	2.0	
Loop	1,668	28,587	5.8	2,474	31,635	7.8	3,081	30,674	10.0	3,462	24,238	14.3	3,328	29,111	11.4	2,478	33,807	7.3	2
Total	1,750	30,443	5.7	2,769	34,182	8.1	3,317	34,709	9.6	3,695	28,710	12.9	3,585	35,802	10.0	2,706	45,427	6.0	2

*—Figures not Available.
**—Total 1925 to 1930, Inclusive.
***—Total 1927 to 1930, Inclusive.

Exhibit X-313

Sales of Important Telephone Plant Items of Western Electric Company Manufacture

Quantities Sold to Illinois Bell Telephone Company and to Total Bell System

1924		1925			1926			1927			1928			1929			1930			Total		
Total Bell System	% Ill. Bell to Total	Ill. Bell	Total Bell System	% Ill. Bell to Total	Ill. Bell	Total Bell System	% Ill. Bell to Total	Ill. Bell	Total Bell System	% Ill. Bell to Total	Ill. Bell	Total Bell System	% Ill. Bell to Total	Ill. Bell	Total Bell System	% Ill. Bell to Total	Ill. Bell	Total Bell System	% Ill. Bell to Total	Ill. Bell	Total Bell System	% Ill. Bell to Total
2,402	6.5	207	1,556	13.3	45	1,064	4.2	166	1,325	12.5	363	802	45.3	52	1,475	3.5	92	1,597	5.8	1,082	10,221	10.6
1,821	7.1	135	1,530	8.8	85	1,969	4.3	123	2,514	4.9	146	2,227	6.6	137	3,694	3.7	104	3,186	3.3	859	16,941	5.1
*	*	641	5,462	11.7	684	6,237	11.0	987	6,040	16.3	920	8,003	11.5	728	8,249	8.8	261	2,538	10.3	4,221	36,529	11.6**
*	*	626	4,849	12.9	534	4,489	11.9	562	4,725	11.9	671	6,721	10.0	607	6,815	8.9	336	3,534	9.5	3,336	31,133	10.7**
138,515	6.6	5,100	100,649	5.1	0	99,529	0	27,600	150,500	18.3	2,400	188,880	1.3	20,880	308,865	6.8	35,600	340,550	10.5	100,780	1,327,488	7.6
113,440	.2	4,325	139,402	3.1	0	196,320	0	7,402	174,187	4.2	8,650	271,510	3.2	9,760	335,939	2.9	8,711	389,507	2.2	390,048	1,620,305	2.4
8,124	12.7	2,277	10,610	21.5	2,222	17,182	12.9	1,812	25,758	7.0	2,482	26,544	9.4	4,885	44,078	11.1	5,968	68,677	8.7	20,674	200,973	10.3
....	....	....	....	....	....	....	....	....	....	....	0	38	0	2	161	1.2	22	155	14.2	24	354	6.8
....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	30	3.3	103	1,657	6.2	104	1,687	6.2
05,724	10.7	93,212	1,078,810	8.6	102,176	976,640	10.5	87,068	867,600	10.0	87,006	1,028,009	8.5	115,255	1,174,888	9.8	62,191	599,970	10.4	643,538	6,631,641	9.7
....	....	....	....	....	....	....	....	10,345	101,004	10.2	41,033	485,020	8.5	51,839	637,518	8.1	61,293	974,040	6.3	164,510	2,197,582	7.5
33,029	1.6	1,955	49,799	3.9	2,350	42,796	5.5	4,456	56,649	7.9	7,800	61,071	12.8	5,696	53,150	10.7	5,050	48,260	10.5	27,851	344,754	8.1
32,728	2.6	18,693	563,741	3.3	12,343	474,919	2.6	22,109	506,437	4.4	53,633	883,239	6.1	77,993	1,019,087	7.7	63,626	860,236	7.4	256,933	4,640,387	5.5
83,068	9.9	79,195	1,116,055	7.1	83,207	929,552	9.0	67,023	719,790	9.3	49,524	600,463	8.2	8,796	253,683	3.5	4,080	49,216	8.3	378,861	4,551,826	8.3
....	....	....	....	....	....	....	....	0	40,542	0	11,593	141,095	8.2	17,012	221,456	7.7	19,680	181,352	10.9	48,285	584,445	8.3***
....	....	....	....	....	....	....	....	17,956	174,593	10.3	5,873	129,428	4.5	145	67,135	.2	0	35,681	0	23,974	406,837	5.9***
45,030	8.9	18,139	246,562	7.4	19,625	213,788	9.2	17,956	215,135	8.3	17,466	270,523	6.5	17,157	288,591	5.9	19,680	217,033	9.1	122,919	1,596,662	7.7
05,959	3.6	13,089	187,370	7.0	15,328	340,000	4.5	9,642	455,379	2.1	12,817	742,299	1.7	8,797	1,391,640	.6	9,428	1,510,429	.6	72,932	4,733,076	1.5
00,000	7.6	46,393	110,000	42.2	30,475	154,462	19.7	55,000	245,671	22.4	64,100	276,752	23.2	41,931	384,672	10.9	51,312	453,654	11.3	296,850	1,725,211	17.2
1,919	....	....	1,062	....	....	10,000	....	0	16,424	0	166	23,788	.7	103	32,417	.3	68	50,957	.1	337	136,567	.2
07,878	5.5	59,482	298,432	19.9	45,803	504,462	9.1	64,642	717,474	9.0	77,083	1,042,839	7.4	50,831	1,808,729	2.8	60,808	2,015,040	3.0	370,119	6,594,854	5.6
1,856	4.4	295	2,547	11.6	236	4,035	5.8	233	4,472	5.2	257	6,691	3.8	228	11,620	2.0	303	14,886	2.0	1,634	46,107	3.5
28,587	5.8	2,474	31,635	7.8	3,081	30,674	10.0	3,462	24,238	14.3	3,328	29,111	11.4	2,478	33,807	7.3	2,522	26,150	9.6	19,013	204,202	9.3
30,443	5.7	2,769	34,182	8.1	3,317	34,709	9.6	3,695	28,710	12.9	3,585	35,802	10.0	2,706	45,427	6.0	2,825	41,036	6.9	20,647	250,309	8.3

Exhibit X-313

Illinois Bell Telephone Company, Chicago Rate Case

Sales of Important Telephone Plant Items of Western Electric Company Manufacture

Per Cent Sales to Illinois Bell of Total Sales to Bell System for Various Periods

Item	1924 & 1925	1924 to 1926	1924 to 1927	1924 to 1928	1924 to 1929	1924 to 1930	1930 & 1929	1930 to 1928	1930 to 1927	1930 to 1926	1930 to 1925	1930 to 1924
Switchboards:												
1. Large Multiple Sections	9.2	8.1	9.1	13.1	11.5	10.6	4.7	13.1	12.9	11.5	11.8	10.6
2. Small Multiple Sections	7.9	6.6	6.0	6.1	5.5	5.1	3.5	4.2	4.4	4.4	4.8	5.1
3. 550 and 551 Types	11.7	11.3	13.0	12.6	11.6	11.6	9.2	10.2	11.7	11.5	11.6	11.6
4. 505 and 506 Types	12.9	12.4	12.2	11.5	10.9	10.7	9.1	9.5	10.0	10.3	10.7	10.7
5. Panel Lines	6.0	4.2	8.6	6.5	6.6	7.6	8.7	7.0	8.7	7.9	7.7	7.6
6. Step-by-Step Lines	1.8	1.0	1.9	2.3	2.5	2.4	2.5	2.7	2.9	2.5	2.6	2.4
7. 700 and 701 P. B. X. Lines	17.6	15.4	11.9	11.1	11.1	10.3	9.6	9.6	9.2	9.5	10.2	10.3
8. 740 P. B. X's	....	....	....	....	1.0	6.8	7.6	6.8	6.8	6.8	6.8	6.8
9. 750 P. B. X's	....	....	....	....	3.3	6.2	6.2	6.2	6.2	6.2	6.2	6.2
Station Apparatus:												
10. Subsets, 534A, 584A, 534C, 584C, 554AR, 554C, 534AR	9.6	9.9	9.9	9.6	9.6	9.7	10.0	9.4	9.6	9.8	9.6	9.7
11. Hand Telephone Sets	....	....	10.2	8.8	8.4	7.5	7.0	7.4	7.5	7.5	7.5	7.5
12. Coin Collectors, 50 Type	3.0	3.9	5.1	7.0	7.7	8.1	10.6	11.4	10.5	9.7	8.8	8.1
13. Dials, 2AA, 2AB, 2AE, 2HA, 2HB, 2HE, 4HA, 4HB, 4HE	3.0	2.9	3.3	4.2	5.1	5.5	7.5	7.1	6.6	6.1	5.8	5.5
14. Desk Stands, 20AL, 20CF, 40AL, 40CF, 50AL, 51AL	8.3	8.5	8.7	8.6	8.3	8.3	4.2	6.9	8.0	8.3	8.0	8.3
Cable Terminals:												
15. 8 and "C" Types	....	....	....	6.4	7.1	8.3	9.1	8.9	8.3	8.3	8.3	8.3
16. 14 Type	....	....	10.3	7.8	6.5	5.9	.1	2.6	5.9	5.9	5.9	5.9
Total	7.9	8.4	8.4	7.9	7.5	7.7	7.3	7.0	7.3	7.6	7.6	7.7
Loading Coils:												
17. Side and Phantom	5.8	5.1	3.8	3.0	2.0	1.5	.6	.9	1.0	1.3	1.5	1.5
18. Non-Phantom	25.7	23.2	22.9	23.0	19.3	17.2	11.1	14.1	15.6	16.0	17.8	17.2
19. Carrier	....	....	....	.3	.3	.2	.2	.3	.3	.3	.2	.2
Total	14.0	11.6	10.5	9.3	6.8	5.6	2.9	3.9	4.5	4.9	5.6	5.6
Lead Covered Cable (Mil. Cond. Ft.):												
20. Quadded	8.6	7.3	6.6	5.6	4.3	3.5	2.0	2.4	2.7	3.0	3.5	3.5
21. Loop	6.9	7.9	9.3	9.7	9.3	9.3	8.3	9.4	10.4	10.3	9.9	9.3
Total	7.0	7.9	9.0	9.2	8.5	8.3	6.4	7.5	8.5	8.7	8.6	8.3

[fol. 5118] EXHIBIT X-313A

Illinois Bell Telephone Company, Chicago Rate Case

Quantities Sold to Illinois Bell Telephone Company and to Total Bell System, 1924 to 1930

Graphs

The accompanying chart contains graphs illustrating the percent that sales to Illinois Bell Telephone Company were to total Bell System sales of each of seventeen principal items of Western Electric Company manufacture in each year 1924 to 1930 and during that entire period.

The seventeen items are listed at the right of the chart. They are designated in the scale across the bottom of the chart, each vertical line on the chart representing an item.

The graph across the top of the chart represents the percent that the total quantities sold to the Illinois Bell Telephone Company of each item during the period are to the total quantities of the same item sold to the Bell System during the period.

Each of the seven other graphs represents the percent that the sales of each item to the Illinois Bell Telephone Company during the year designated are to the total sales of that item to the Bell System during the same year.

The chart simply shows in graphical form the percentages for each item for each year shown on the second sheet of Exhibit X-313. For example, referring to the graph for the year 1924 at the bottom of the chart, the percent sales of large multiple sections, 6.5%, shown as the first item on the second sheet of Exhibit X-313, is item 1 in the lower graph of the chart, Exhibit X-313A. The second item on the second sheet of Exhibit X-313, small multiple sections, 7.1%, is the second item of the lower graph on the chart, Exhibit X-313A.

The third item of the second sheet of Exhibit X-313 is starred, the figures not being available. Point on the chart [fol. 5119] X-313A is, therefore, omitted. This is also true of the fourth item.

The fifth item of the second sheet of Exhibit X-313, panel lines, is 6.6%, and is the fifth item in the lower graph of Exhibit X-313A. The sixth item, step-by-step lines, on Exhibit X-313, is .2%, and is the sixth item on the chart. The seventh item, 708 and 701 P. B. X. lines, is 12.7% on Exhibit X-313, and is item seven on the graph of X-313A. The eighth item, 740 P. B. X's, is zero on sheet X-313, and is so plotted on the graph on X-313A.

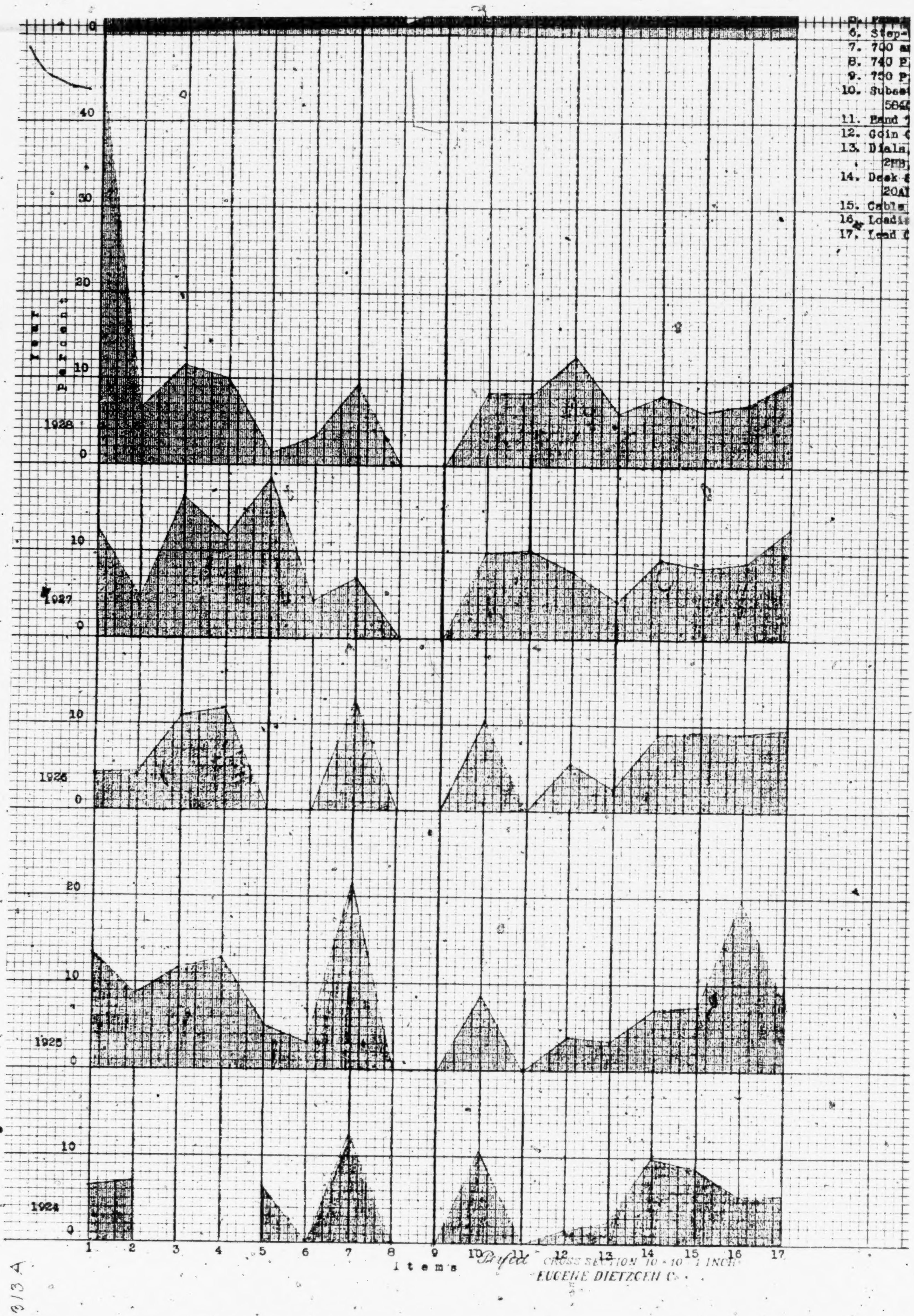
By following the vertical lines, each representing an item, one can readily visualize the wide variations from year to year of the percents relationship that sales to the Illinois Bell Telephone Company have been to sales to the Bell System.

By comparing the percent sales of one item with another in the same year or in the entire period 1924 to 1930 (which is the graph at the top of the chart), the wide variations of the percents will be noted.

The percents would have been the same during any year and during the period 1924 to 1930 for all items, if the sales to the Illinois Bell Telephone Company during those periods had been representative cross-sections of the sales to the Bell System.

(Here follows side folio 5120)

EXHIBIT X-313A

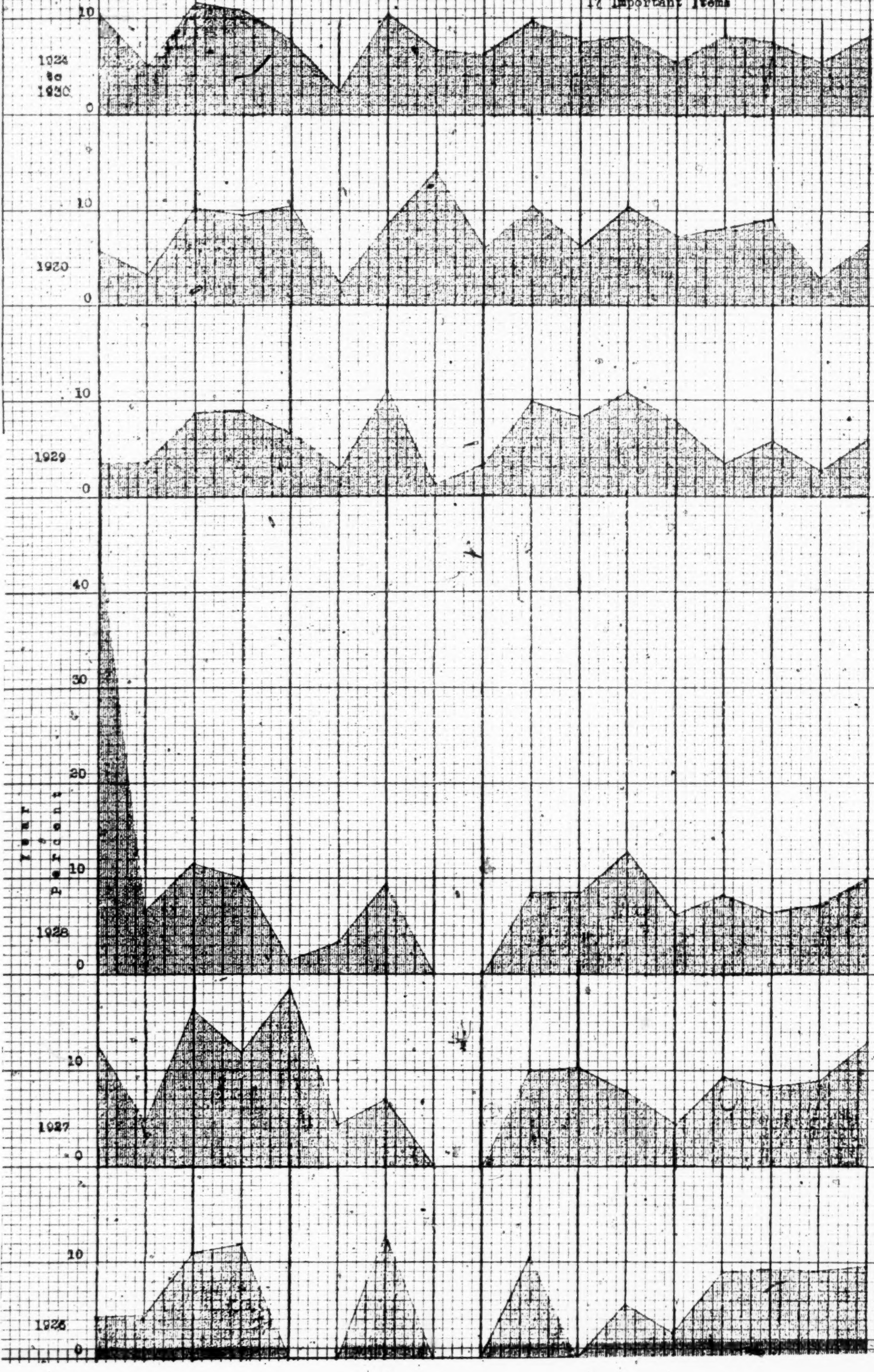


313 A

EXHIBIT X-313A

ILLINOIS BELL TELEPHONE COMPANY
CHICAGO RATE CASE

Cross Section of Sales by W. E. Co. to Illinois Bell
17 Important Items



Percents
to

Items:
1. Large
2. Small
3. 550 and
4. 505 and
5. Panel
6. Step-by
7. 700 and
8. 740 P.
9. 750 P.
10. Subsets
584C,
11. Hand
12. Coin C
13. Dials,
2HB,
14. Desk S
20AL,
15. Cable
16. Loading
17. Lead Co

2. Small Multiple Sections
3. 550 and 551 Types
4. 505 and 506 Types
5. Panel Lines
6. Step-by-Step Lines
7. 700 and 701 P.B.X. Lines
8. 740 P.B.X.'s
9. 750 P.B.X.'s
10. Subsets, 534A,584A,534C,534AD,
 584C,554AR,554C,534AR
11. Hand Telephone Sets
12. Coin Collectors
13. Dials, 2AA,2AB,2AE,2HA,
 2HB,2HE,4HA,4HB,4HE
14. Desk Stands, 20AL,20CF,
 20AL,40CF,50AL,51AL
15. Cable Terminals
16. Loading Coils
17. Lead Covered Cable

J. G. Wray & Co.

Percents of Sales to Illinois Bell
to Sales to Bell System
1924-1930

Items:
1. Large Multiple Sections
2. Small Multiple Sections
3. 550 and 551 Types
4. 505 and 506 Types
5. Panel Lines
6. Step-by-Step Lines
7. 700 and 701 P.B.X. Lines
8. 740 P.B.X.'s
9. 750 P.B.X.'s
10. Subsets, 534A,584A,534C,534AD,
    584C,554AR,554C,534AR
11. Hand Telephone Sets
12. Coin Collectors
13. Dials, 2AA,2AB,2AE,2HA,
    2HB,2HE,4HA,4HB,4HE
14. Desk Stands, 20AL,20CF,
    20AL,40CF,50AL,51AL
15. Cable Terminals
16. Loading Coils
17. Lead Covered Cable.

EXHIBIT X-314

Sales of Important Telephone Plant Items of Western Electric Company Manufacture

Per Cent Quantities Sold to Illinois Bell Telephone Company of Total Sales to Bell System

Per Cents Adjusted Proportionately to a Total of 100% for Each Period

Item	Illinois Bell Telephone Company							
	1924	1925	1926	1927	1928	1929	1930	1924 to 1930
Switchboards:								
Large Multiple Sections	8.3	9.8	4.2	8.5	29.2	3.3	4.4	8.0
Small Multiple Sections	9.1	6.5	4.3	3.3	4.3	3.5	2.5	3.9
550 and 551 Types	*	8.7	11.0	11.1	7.4	8.4	7.8	8.7
505 and 506 Types	*	9.6	12.0	8.1	6.4	8.5	7.2	8.1
Panel Lines	8.5	3.8	0	12.4	.8	6.5	7.9	5.8
Step-by-Step Lines	.3	2.3	0	2.9	2.1	2.8	1.6	1.8
700 and 701 P. B. X. Lines	16.3	16.0	13.0	4.8	6.0	10.6	6.6	7.8
740 P. B. X.'s	0	0	0	0	0	1.2	10.7	5.2
750 P. B. X.'s	0	0	0	0	0	3.2	4.7	4.7
Station Apparatus:								
Subsets, 534A, 584A, 534C, 534AC, 584C, 554AR, 554C, 534AR	13.7	6.4	10.5	6.8	5.5	9.4	7.8	7.4
Hand Telephone Sets	0	0	0	6.9	5.5	7.7	4.7	5.7
Coin Collectors, 50 Type	2.0	2.9	5.5	5.4	8.2	10.2	7.9	6.1
Dials, 2AA, 2AB, 2AE, 2HA, 2HB, 2HE, 4HA, 4HB, 4HE	3.3	2.4	2.6	3.0	3.9	7.4	5.6	4.2
Desk Stands, 20AL, 20CF, 40AL, 40CF, 50AL, 51AL	12.7	5.3	9.0	6.3	5.3	3.3	6.2	6.3
Cable Terminals:								
Total	11.4	5.5	9.2	5.6	4.2	5.6	6.9	5.8
Loading Coils:								
Total	7.1	14.8	9.1	6.1	4.8	2.7	2.3	4.2
Lead Covered Cable:								
Total	7.3	6.0	9.6	8.8	6.4	5.7	5.2	6.3

* Figures Not Available.

J. G. Wray & Co.

(Here follows side folio 5122)

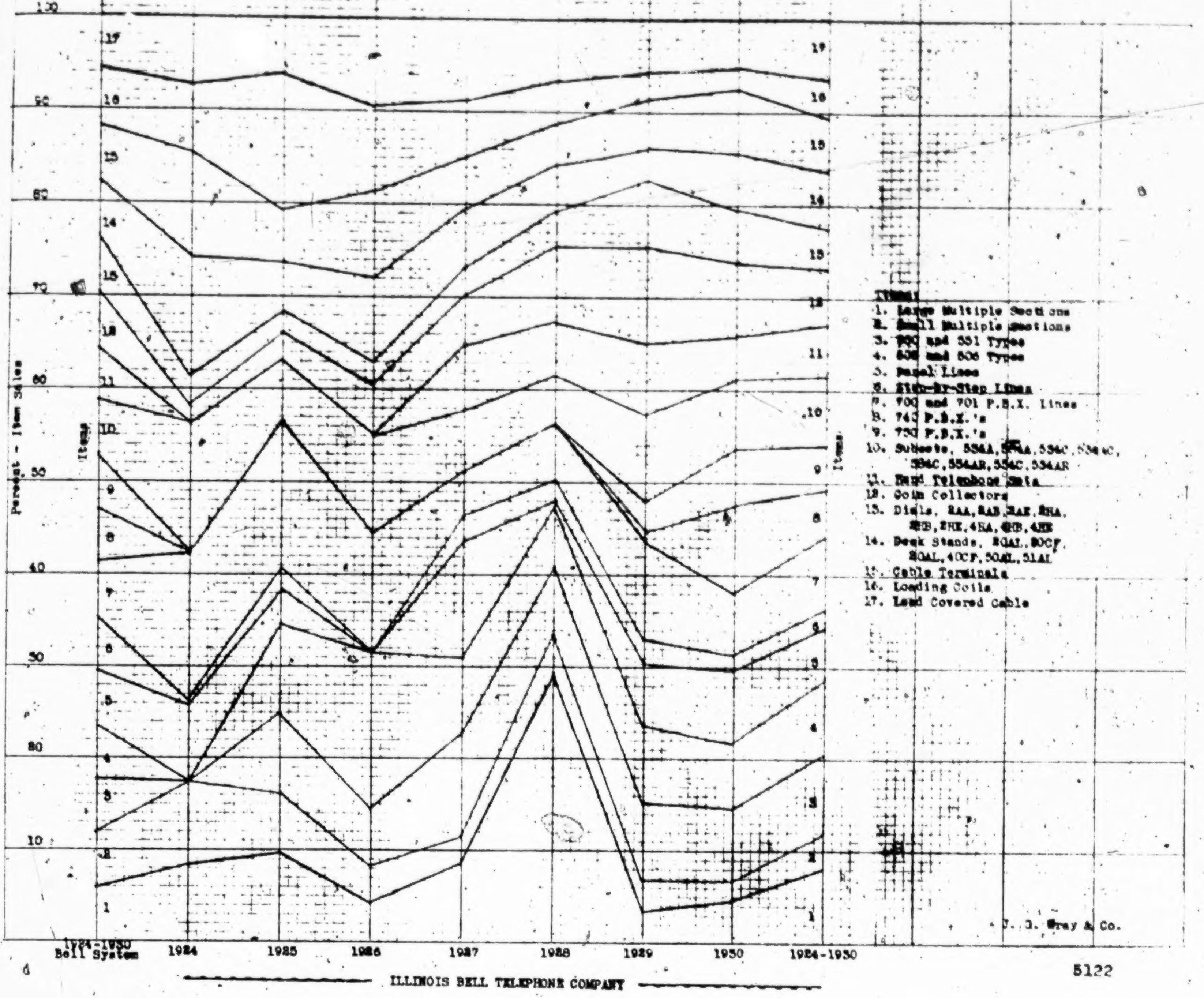
X-314
p 27

EXHIBIT X-314

ILLINOIS BELL TELEPHONE COMPANY
CHICAGO RATE CASE

Cross Section of Sales by W.E. Co. to Illinois Bell
17 Important Items

Percents of Items of Sales to Bell System and to Illinois Bell for Periods Indicated
Adjusted Proportionately to Aggregate 100% in Each Case



J. G. Wray & Co.

[fol. 5123]

EXHIBIT X-315

Illinois Bell Telephone Company

Chicago Telephone Rate Case

Western Electric Company Manufactures

Sales to all Bell Companies and to Illinois Bell Telephone Company, 1916-1930

(Dollars in Thousands)

Year	All Bell Companies	Illinois Bell Telephone Company	% Illinois Bell
1916	$39,793	$3,997	10.04
1917	59,835	5,856	9.79
1918	45,449	2,653	5.84
1919	42,707	3,400	7.96
1920	70,197	3,900	5.56
1921	100,696	9,127	9.06
1922	115,952	8,339	7.19
1923	132,118	7,478	5.66
1924	177,427	10,846	6.11
1925	166,885	14,798	8.87
1926	176,783	13,680	7.74
1927	170,914	16,964	9.93
1928	179,806	15,991	8.89
1929	242,084	16,034	6.62
1930	251,856	17,380	6.90
1931	162,702	4,829	2.97
Totals	$2,135,204	$155,272	7.27%

[fol. 5124]

EXHIBIT X-315-A

Illinois Bell Telephone Company

Chicago Telephone Rate Case

Western Electric Company Manufactures

Sales to Bell Customers and to Ohio Bell Telephone Company, 1922-1930

(Dollars in Thousands)

Year	Bell Customers	Ohio Bell	% Ohio
1922	$115,952	$2,474	2.13%
1923	132,118	4,016	3.04
1924	177,427	4,407	2.48
1925	166,885	6,815	4.08
1926	176,783	9,400	5.32
1927	170,914	5,997	3.51
1928	179,806	6,783	3.77
1929	242,084	11,645	4.81
1930	251,856	9,441	3.75
Totals	$1,613,825 (A)	$60,978 (A)	3.78%

(A) Includes sales of Equipment and Apparatus designed entirely or in part by the Western Electric Company, Inc., but manufactured by others.

[fol. 5125]

EXHIBIT X-316

Illinois Bell Telephone Company

Chicago Telephone Rate Case

Western Electric Company Manufactures, 1922-1930

Sales to Illinois Bell and to Ohio Bell as Per Cent of Total Sales to Bell Customers

	Year	% Ill. Bell	% Ohio Bell	Per cent of average (line 10) Ill.	Ohio
1.	1922	7.19	2.13	95	56
2.	1923	5.66	3.04	75	80
3.	1924	6.11	2.48	81	66
4.	1925	8.87	4.08	118	108
5.	1926	7.74	5.32	103	141
6.	1927	9.93	3.51	132	93
7.	1928	8.89	3.77	118	100
8.	1929	6.62	4.81	88	127
9.	1930	6.90	3.75	92	99
10.	Average	7.53	3.78	100	100

(Here follows Exhibit X-317, side folios 5126-5136)

[fol. 5126]

EXHIBIT X-317

Illinois Bell Telephone Company, Chicago Rate Case

Estimate of Quantities of New Material Required to be Delivered by Western Electric Company for Construction and Maintenance

Data from Provisional Estimates

Per Cent to Each Company of Total Bell System Requirements

Period 1922 to 1932, Inclusive

	N. Eng. T. & T.	So. N. Eng. T. & T.	N. Y. T.	B. T. of Pa.	Ches. & Pot. T.	So. B. T. & T.	Ohio B. T.	Cin. & Sub. T.	Mich. B. T.	Ind. B. T.	Ill. B. T.	Wis. T. Co.	N. W. B. T.	S. W. B. T.	Mtn. S. T. & T.	Pac. T. & T.
Switchboards:																
1. Manual Large Multiple Sections	4.7	1.8	19.9	9.6	3.5	6.1	5.3	.9	5.1	1.1	8.0	3.4	1.9	5.5	1.6	13.0
2. " Small " C. O. Sections	9.0	1.7	21.8	9.1	3.4	7.7	3.4	.3	6.4	.9	6.4	2.2	2.6	8.7	2.0	7.3
3. " Multiple P. B. X. Sections	5.2	.5	31.4	7.2	3.8	4.1	5.1	1.2	7.5	.2	10.4	2.6	1.7	5.9	1.1	12.1
4. " Non-Multiple P. B. X	6.2	1.6	34.3	7.1	3.7	3.4	3.7	1.3	4.5	.7	10.9	1.9	1.7	6.9	2.0	10.1
5. Panel Mach. Switch.—No. of Lines	6.3	....	39.0	9.8	4.5	.3	3.4	1.7	8.1	.3	7.9	2.6	.6	7.9	....	7.6
6. " " " — " " Frames	7.2	....	36.9	8.4	4.1	.3	2.9	1.5	8.2	....	11.4	2.6	.5	8.7	....	7.3
7. Step-by-Step—No. of Lines	5.3	7.8	9.6	7.4	4.4	11.1	8.6	....	5.3	1.5	2.9	.6	5.0	11.1	3.6	15.8
8. No. 700, 701, 740 and 750 Type P. B. X.—No. of New Exch	28.3	4.0	17.5	9.3	3.1	1.2	3.4	.6	3.0	1.0	7.5	2.2	.9	7.0	2.1	8.9
9. " 700, 701 and 720 " " — " " Sec	4.2	2.9	21.0	9.8	2.1	1.4	7.2	.6	7.9	.5	12.7	.7	.8	8.4	1.1	18.7
10. " " " " " Type P. B. X.—No. of Lines Equip. & Tr	6.1	4.7	20.8	11.6	3.8	1.3	6.7	.7	8.7	.7	10.5	1.5	.9	6.6	1.0	14.4
11. Toll Test, Morse Boards—Teleg. Test Bays	4.3	.6	1.9	2.6	1.8	1.9	2.5	.4	1.7	.3	2.9	4.6	1.8	10.5	.6	9.0
Repeaters and Carrier Current Equipment:																
12. Repeaters, Telephone	2.9	.3	2.1	.7	.9	1.0	.3	.01	2.2	.1	3.3	3.2	1.1	3.9	.6	8.0
13. " Telegraph	2.4	....	....	.4	.3	1.2	.2	....	1.3	.2	2.4	4.6	.4	5.7	.2	18.3
14. Carrier Telephone Systems	2.3	.1	1.3	.1	3.5	3.5	1.2	....	5.4	1.2	3.0	2.8	6.8	22.7	1.8	13.5
15. " Telegraph "	.9	....	....	....	....	....	....	....	....	....	13.0	.7	....	4.6	.3	11.8
Loading Coils:																
16. Loading Coils (All)	3.5	1.0	13.6	3.6	1.0	1.4	1.7	.4	3.2	.3	5.4	.9	.8	4.0	.4	9.7
17. Vacuum Tubes	3.3	....	2.6	.5	.3	.3	.2	....	.3	....	4.9	1.3	.5	1.7	4.0	14.7
18. Loading Coil Cases	2.6	1.0	8.3	3.3	2.1	2.7	1.2	.4	2.3	.2	3.8	2.7	3.5	5.3	1.7	9.4
Cable Terminals:																
19. Cable Terminals	10.4	2.0	15.9	10.4	4.9	7.3	5.3	1.8	5.5	2.1	8.2	1.3	3.8	10.5	2.0	8.6
Station Apparatus:																
20. Sub. Sets, Bell Boxes and Wall Type	5.9	1.9	23.4	8.9	3.3	8.0	4.8	2.0	5.4	1.1	7.1	1.7	2.6	8.8	2.6	12.5
21. Hand Sets	7.6	2.4	30.6	7.9	4.1	3.2	6.5	1.0	4.1	1.0	8.2	1.4	3.0	7.6	1.6	9.8
22. Desk Telephone Sets	6.9	2.0	21.6	9.6	3.3	10.2	4.9	2.1	6.0	1.4	7.1	2.0	2.5	9.1	2.7	8.6
23. Coin Collectors	7.9	1.1	18.2	7.5	3.9	4.7	3.9	3.2	4.0	1.0	21.7	1.9	1.3	9.0	2.7	8.0
24. Loose and Mounted Dials	5.3	3.3	16.4	12.4	7.2	4.8	7.6	1.1	5.5	2.6	5.9	2.6	.8	11.3	1.7	11.5
25. Wiring Plan Keys	16.5	1.6	16.7	3.7	2.7	10.5	6.3	.6	6.3	1.0	5.9	1.1	5.3	8.4	4.8	8.6
Lead Covered Cable (Expressed in Millions of Conductor Feet):																
26. No. 19 and smaller, paired	7.2	2.4	24.4	8.9	3.3	6.3	4.6	1.1	5.9	1.2	8.9	2.3	2.0	8.7	1.6	11.1
27. " " " " " in quadded cable	6.9	1.5	16.1	16.3	7.4	3.3	3.2	.5	5.6	1.7	6.0	7.2	13.5	6.6	.9	2.8
28. " " " " quadded	2.4	.5	6.4	4.2	1.0	.7	.6	.1	2.4	.2	2.1	.4	.9	5.9	.1	8.0
29. " 16 " larger, quadded and paired	4.4	2.0	10.8	6.8	1.9	1.7	2.3	.4	4.1	.5	3.0	1.5	1.5	2.5	.8	10.6
30. Dist. Frame Wire (Thousand Cond. Ft.)	3.9	1.2	25.4	7.5	3.6	4.5	4.2	1.8	5.0	.7	11.8	1.4	1.9	10.0	2.4	14.3
31. Toll Aerial Cable—Linear Ft	5.0	2.2	7.7	10.1	3.9	1.7	1.4	.3	3.7	.2	2.7	1.8	1.1	2.2	.6	8.1
32. Submarine, Taped and Buried Cable	7.3	1.5	16.8	2.1	1.5	3.4	3.7	....	1.2	....	.2	.9	8.7	23.6	2.6	6.7

Exhibit X-317

Illinois Bell Telephone Company, Chicago Rate Case

Estimate of Quantities of New Material Required to be Delivered by Western Electric Company for Construction and Maintenance

Data from Provisional Estimates

Per Cent to Each Company of Total Bell System Requirements

Period 1922 to 1932, Inclusive

	N. Eng. T. & T.	So. N. Eng. T. & T.	N. Y. T.	B. T. of Pa.	Ches. & Pot. T.	So. B. T. & T.	Ohio B. T.	Cin. & Sub. T.	Mich. B. T.	Ind. B. T.	Ill. B. T.	Wis. T. Co.	N. W. B. T.	S. W. B. T.	Mtn. S. T. & T.	Pac. T. & T.	A. T. & T. L. L.	Total
ltiple Sections	4.7	1.8	19.9	9.6	3.5	6.1	5.3	.9	5.1	1.1	8.0	3.4	1.9	5.5	1.6	13.0	8.6	100.00
" C. O. Sections	9.0	1.7	21.8	9.1	3.4	7.7	3.4	.3	6.4	.9	6.4	2.2	2.6	8.7	2.0	7.3	7.1	100.00
P. B. X. Sections	5.2	.5	31.4	7.2	3.8	4.1	5.1	1.2	7.5	.2	10.4	2.6	1.7	5.9	1.1	12.1	....	100.00
tiple P. B. X	6.2	1.6	34.3	7.1	3.7	3.4	3.7	1.3	4.5	.7	10.9	1.9	1.7	6.9	2.0	10.1	....	100.00
ch.—No. of Lines	6.3	....	39.0	9.8	4.5	.3	3.4	1.7	8.1	.3	7.9	2.6	.6	7.9	....	7.6	....	100.00
" — " " Frames	7.2	....	36.9	8.4	4.1	.3	2.9	1.5	8.2	....	11.4	2.6	.5	8.7	....	7.3	....	100.00
. of Lines	5.3	7.8	9.6	7.4	4.4	11.1	8.6	....	5.3	1.5	2.9	.6	5.0	11.1	3.6	15.8	....	100.00
and 750 Type P. B. X.—No. of New Exch.	28.3	4.0	17.5	9.3	3.1	1.2	3.4	.6	3.0	1.0	7.5	2.2	.9	7.0	2.1	8.9	....	100.00
720 " " — " " Sec	4.2	2.9	21.0	9.8	2.1	1.4	7.2	.6	7.9	.5	12.7	.7	.8	8.4	1.1	18.7	....	100.00
Type P. B. X.—No. of Lines Equip. & Tr	6.1	4.7	20.8	11.6	3.8	1.3	6.7	.7	8.7	.7	10.5	1.5	.9	6.6	1.0	14.4	....	100.00
Boards—Teleg. Test Bays	4.3	.6	1.9	2.6	1.8	1.9	2.5	.4	1.7	.3	2.9	4.6	1.8	10.5	.6	9.0	52.6	100.00
arrier Current Equipment:																		
one	2.9	.3	2.1	.7	.9	1.0	.3	.01	2.2	.1	3.3	3.2	1.1	3.9	.6	8.0	69.4	100.00
ph	2.4	....	....	.4	.3	1.2	.2	....	1.3	.2	2.4	4.6	.4	5.7	.2	18.3	62.4	100.00
Systems	2.3	.1	1.3	.1	3.5	3.5	1.2	....	5.4	1.2	3.0	2.8	6.8	22.7	1.8	13.5	30.8	100.00
"	.9	....	....	....	....	....	....	....	....	....	13.0	.7	....	4.6	.3	11.8	68.7	100.00
),	3.5	1.0	13.6	3.6	1.0	1.4	1.7	.4	3.2	.3	5.4	.9	.8	4.0	.4	9.7	49.1	100.00
	3.3	....	2.6	.5	.3	.3	.2	....	.3	....	4.9	1.3	.5	1.7	4.0	14.7	65.4	100.00
s	2.6	1.0	8.3	3.3	2.1	2.7	1.2	.4	2.3	.2	3.8	2.7	3.5	5.3	1.7	9.4	49.5	100.00
:																		
	10.4	2.0	15.9	10.4	4.9	7.3	5.3	1.8	5.5	2.1	8.2	1.3	3.8	10.5	2.0	8.6	.02	100.00
us:																		
es and Wall Type	5.9	1.9	23.4	8.9	3.3	8.0	4.8	2.0	5.4	1.1	7.1	1.7	2.6	8.8	2.6	12.5	....	100.00
	7.6	2.4	30.6	7.9	4.1	3.2	6.5	1.0	4.1	1.0	8.2	1.4	3.0	7.6	1.6	9.8	....	100.00
ts	6.9	2.0	21.6	9.6	3.3	10.8	4.9	2.1	6.0	1.4	7.1	2.0	2.5	9.1	2.7	8.6	....	100.00
	7.9	1.1	18.2	7.5	3.9	4.7	3.9	3.2	4.0	1.0	21.7	1.9	1.3	9.0	2.7	8.0	....	100.00
d Dials	5.3	3.3	16.4	12.4	7.2	4.8	7.6	1.1	5.5	2.6	5.9	2.6	.8	11.3	1.7	11.5	....	100.00
	16.5	1.6	16.7	3.7	2.7	10.5	6.3	.6	6.3	1.0	5.9	1.1	5.3	8.4	4.8	8.6	....	100.00
able (Expressed in Millions of Conductor Feet):																		
paired	7.2	2.1	24.4	8.9	3.3	6.3	4.6	1.1	5.9	1.2	8.9	2.3	2.0	8.7	1.6	11.1	.4	100.00
" in quadded cable	6.0	1.5	16.1	16.3	7.4	3.3	3.2	.5	5.6	1.7	6.0	7.2	13.5	6.6	.9	2.8	.5	100.00
quadded	2.4	.5	6.4	4.2	1.0	.7	.6	.1	2.4	.2	2.1	.4	.9	5.9	.1	8.0	64.1	100.00
quadded and paired	4.4	2.0	10.8	6.8	1.9	1.7	2.3	.4	4.1	.5	3.0	1.5	1.5	2.5	.8	10.6	45.2	100.00
Thousand Cond. Ft.)	3.9	1.2	25.4	7.5	3.6	4.5	4.2	1.8	5.0	.7	11.8	1.4	1.9	10.0	2.4	14.3	.4	100.00
Linear Ft.	5.0	2.2	7.7	10.1	3.9	1.7	1.4	.3	3.7	.2	2.7	1.8	1.1	2.2	.6	8.1	47.3	100.00
and Buried Cable	7.3	1.5	16.8	2.1	1.5	3.4	3.7	....	1.2	....	.2	.9	8.7	23.6	2.6	6.7	19.8	100.00

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Illinois Bell Telephone Company—Chicago Rate Case

Estimate of Quantities of New Material Required to be Delivered by Western Electric Company for Construction and Maintenance

Data from Provisional Estimates

Per Cent to Each Company of Total Bell System Requirements

Period 1922 to 1924, Inclusive

	N.Eng. T.&T.	So. N. Eng. T. & T.	N. Y. T.	B. T. of Pa.	Ches. & Pot. T.	So. B. T. & T.	Cum. T. & T.	Ohio B. T.	Cin. & Sub. T.	Mich. B. T.	Ind. B. T.	Ill. B. T.	Wis. T.	N. W. B. T.	S. W. B. T.	Mtn. S. T. & T.	Pa T. &
Switchboards:																	
1. No. 1 Relay																	
Subs.	5.6	2.2	32.4	12.7	2.6	1.8	1.7	3.9	1.6	2.0	1.1	7.9	1.4	.8	2.6	1.6	11.
Trunk	8.1	1.3	43.5	10.8	1.8	.8	1.4	4.3	1.1	2.1	.9	8.3	1.5	.2	2.7	1.9	9.
Toll & 2 Pos. Serv. Obs.	1.8	1.8	14.2	19.7	1.5	.5	.3	11.7	....	4.2	1.8	6.7	4.0	.4	1.9	1.1	22.
2. No. 9 Relay																	
Subs.	1.5	.3	1.5	24.4	2.6	4.5	3.3	4.1	....	6.1	....	2.7	8.6	1.5	5.8	3.5	29.
Trunk	....	....	....	46.2	1.9	....	....	....	....	3.8	....	1.9	13.5	....	....	....	32.
Toll & 2 Pos. Serv. Obs.	....	....	....	17.1	.6	5.2	....	1.5	....	3.3	....	4.2	11.8	3.0	4.0	7.0	42.
3. No. 10 Relay																	
Subs.	12.5	6.7	38.5	6.2	4.6	2.3	1.9	1.1	....	2.1	....	2.1	2.5	....	2.5	.4	16.
Trunk	6.9	[illegible].8	....	34.4	10.4	....	....	....	....	....	....	3.4	13.8	....	....	....	17.
Toll. & 2 Pos. Serv. Obs.	8.3	6.1	....	15.9	4.5	6.1	3.8	.8	....	....	....	.8	1.5	.8	9.8	....	41.
4. No. 1-D Relay																	
Subs.	14.4	....	22.6	19.3	9.8	1.7	2.7	1.2	....	4.0	1.3	7.1	2.5	.5	10.9	1.1	
Trunk	9.5	....	9.5	37.95	22.4	....	3.45	1.7	....	2.6	4.3	1.7	....	....	3.45	3.45	
Toll. & 2 Pos. Serv. Obs.	3.7	....	9.1	13.8	14.9	....	5.9	....	....	7.4	1.1	5.3	2.1	2.1	33.0	1.1	
5. Other C. O. Boards																	
Subs.	6.2	1.4	.8	15.6	10.2	5.7	4.3	3.0	....	.5	....	4.0	.8	2.7	3.2	4.0	36.
Trunk	....	....	....	4.35	....	....	....	17.4	....	....	....	69.5	....	....	4.35	....	4.
Toll. & 2 Pos. Serv. Obs.	....	....	....	16.0	18.0	24.0	....	....	....	6.0	....	2.0	4.0	16.0	2.0	....	12.
6. No. 4640 Mult. P. B. X.																	
Subs.	1.8	3.7	....	4.1	7.4	....	....	19.8	....	14.8	.9	3.7	14.8	1.8	15.2	1.4	10.
Trunk	....	....	....	....	....	....	....	100.0	....	....	....	....	....	....	....	....	
Toll & 2 Pos. Serv. Obs.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
7. No. 604 Mult. P. B. X.																	
Subs.	2.7	....	13.4	9.2	13.6	1.6	2.2	8.1	....	6.0	....	13.6	1.6	4.4	3.8	....	20.
Trunk	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
Toll & 2 Pos. Serv. Obs.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
8. Other Mult. P. B. X.																	
Subs.	6.7	.4	21.9	12.2	1.0	.4	.8	5.7	....	1.9	....	8.0	....	.5	2.3	.4	37.
Trunk	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
Toll & 2 Pos. Serv. Obs.	....	....	100.0	....	....	....	....	....	....	....	....	....	....	....	....	....	
9. No. 4 Toll Test Boards																	
Subs.	33.3	....	....	15.4	2.4	2.4	2.4	4.7	....	1.2	1.2	....	....	2.[illegible]	3.6	1.2	2.
Trunk	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
Toll. & 2 Pos. Serv. Obs.	....	1.5	....	....	4.5	....	....	6.0	....	.5	....	5.0	13.6	....	7.6	2.0	17.

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	N.Eng. T.&T.	So. N. Eng. T. & T.	N. Y. T.	B. T. of Pa.	Ches. & Pot. T.	So. B. T. & T.	Cum. T. & T.	Ohio B. T.	Cin. & Sub. T.	Mich. B. T.	Ind. B. T.	Ill. B. T.	Wis. T.	N. W. B. T.	S. W. B. T.	Mtn. S. T. & T.	Pa T. &
10. No. 4 Morse Test Boards																	
Subs.	~~7.4~~	....	....	3.7	....	....	....	....	....	....	....	....	....	....	7.4	....	
Trunk	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
Toll. & 2 Pos. Serv. Obs.	....	....	....	....	....	....	....	2.85	....	....	....	14.3	5.7	....	2.85	2.85	11.
11. No. 700 Semi-Mechan. P. B. X. (No. of Lines)																	
Subs.	1.6	2.1	31.4	15.8	6.6	1.7	1.2	5.0	....	15.4	....	5.8	2.5	....	....	....	10.
Trunk	100.0	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
Toll & 2 Pos. Serv. Obs.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
No. 8 Relay Switchboard—Subs.	....	....	100.0	....	....	....	....	....	....	....	....	....	....	....	....	....	
No. 10 Multiple P. B. X.—Subs.	....	....	100.0	....	....	....	....	....	....	....	....	....	....	....	....	....	
Spec. Magneto C. O. Board	....	....	....	100.0	....	....	....	....	....	....	....	....	....	....	....	....	
" C. B. "	....	....	....	100.0	....	....	....	....	....	....	....	....	....	....	....	....	
No. 105-A "	....	....	....	100.0	....	....	....	....	....	....	....	....	....	....	....	....	
C. O. Mag. Toll	....	....	....	100.0	....	....	....	....	....	....	....	....	....	....	....	....	
Other Mult. P. B. X. Order Table—Subs.	....	....	....	....	....	....	....	....	....	....	....	....	....	100.00	....	....	
Private Branch Exchange Switchboards and Substation Sets: P. B. X. Switchboards Non-Multiple Cord Boards																	
12. (a) 30 line—550 Boards	8.2	.3	24.7	10.3	2.9	1.9	1.4	2.3	4.4	4.8	1.1	10.2	1.3	1.6	4.5	1.0	10

Illinois Bell Telephone Company—Chicago Rate Case

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Data from Provisional Estimates

Per Cent to Each Company of Total Bell System Requirements

Period 1922 to 1924, Inclusive

N.Eng. T. & T.	So. N. Eng. T. & T.	N. Y. T.	B. T. of Pa.	Ches. & Pot. T.	So. B. T. & T.	Cum. T. & T.	Ohio B. T.	Cin. & Sub. T.	Mich. B. T.	Ind. B. T.	Ill. B. T.	Wis. T.	N. W. B. T.	S. W. B. T.	Mtn. S. T. & T.	Pac. T. & T.	A. T. & T. L. L.	Total
5.6	2.2	32.4	12.7	2.6	1.8	1.7	3.9	1.6	2.0	1.1	7.9	1.4	.8	2.6	1.6	11.9	7.1	100.00
8.1	1.3	43.5	10.8	1.8	.8	1.4	4.3	1.1	2.1	.9	8.3	1.5	.2	2.7	1.9	9.3	....	100.00
1.8	1.8	14.2	19.7	1.5	.5	.3	11.7	....	4.2	1.8	6.7	4.0	.4	1.9	1.1	22.7	5.7	100.00
1.5	.3	1.5	24.4	2.6	4.5	3.3	4.1	....	6.1	....	2.7	8.6	1.5	5.8	3.5	29.6	....	100.00
....	....	....	46.2	1.9	....	....	....	....	3.8	....	1.9	13.5	....	....	....	32.7	....	100.00
....	....	....	17.1	.6	5.2	....	1.5	....	3.3	....	4.2	11.8	3.0	4.0	7.0	42.3	....	100.00
12.5	6.7	38.5	6.2	4.6	2.3	1.9	1.1	....	2.1	....	2.1	2.5	....	2.5	.4	16.8	....	100.00
6.9	13.8	....	34.4	10.4	....	....	....	....	....	....	3.4	13.8	....	....	....	17.3	....	100.00
8.3	6.1	....	15.9	4.5	6.1	3.8	.8	....	....	....	.8	1.5	.8	9.8	....	41.6	....	100.00
14.4	....	22.6	19.3	9.8	1.7	2.7	1.2	....	4.0	4.3	7.1	2.5	.5	10.9	1.1	.9	....	100.00
9.5	....	9.5	37.95	22.4	....	3.45	1.7	....	2.6	4.3	1.7	....	....	3.45	3.45	....	....	100.00
3.7	....	9.1	13.8	14.9	....	5.9	....	....	7.4	1.1	5.3	2.1	2.1	33.0	1.1	.5	....	100.00
6.2	1.4	.8	15.6	10.2	5.7	4.3	3.0	....	.5	....	4.0	.8	2.7	3.2	4.9	36.7	....	100.00
....	....	....	4.35	....	....	....	17.4	....	....	....	69.5	....	....	4.35	....	4.35	....	100.00
....	....	....	16.0	18.0	24.0	....	....	....	6.0	....	2.0	4.0	16.0	2.0	....	12.0	....	100.00
1.8	3.7	....	4.1	7.4	....	....	19.8	....	14.8	.9	3.7	14.8	1.8	15.2	1.4	10.6	....	100.00
....	....	....	....	....	....	....	100.0	....	....	....	....	....	....	....	....	....	....	100.00
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	......
2.7	....	13.1	9.2	13.6	1.6	2.2	8.1	....	6.0	....	13.6	1.6	4.4	3.8	....	20.1	....	100.00
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	......
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	......
6.7	.4	21.9	12.2	1.0	.4	.8	5.7	....	1.9	....	8.0	....	.5	2.3	.4	37.8	....	100.00
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	......
....	....	100.0	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	100.00
33.3	....	....	15.4	2.4	2.4	2.4	4.7	....	1.2	1.2	....	....	2.4	3.6	1.2	2.4	27.4	100.00
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	......
....	1.5	....	....	4.5	....	....	6.0	....	.5	....	5.0	13.6	....	7.6	2.0	17.6	41.7	100.00
7.4	....	....	3.7	....	....	....	....	....	....	....	....	....	....	7.4	....	....	81.5	100.00
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	......
....	....	....	....	....	....	....	2.85	....	....	....	14.3	5.7	....	2.85	2.85	11.4	60.0	100.00
1.6	2.1	31.4	15.8	6.6	1.7	1.2	5.0	....	15.4	....	5.8	2.5	....	....	....	10.9	....	100.00
100.0	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	100.00
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	......
....	....	100.0	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	100.00
....	....	100.0	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	100.00
....	....	....	100.0	....	....	....	....	....	....	....	....	....	....	....	....	....	....	100.00
....	....	....	100.0	....	....	....	....	....	....	....	....	....	....	....	....	....	....	100.00
....	....	....	100.0	....	....	....	....	....	....	....	....	....	....	....	....	....	....	100.00
....	....	....	100.0	....	....	....	....	....	....	....	....	....	....	....	....	....	....	100.00
....	....	....	....	....	....	....	....	....	....	....	....	....	100.00	....	....	....	....	100.00

on Sets:

	....	....	....	....	....	....	....	....	....	....	....	....	....	100.00	....	....
Private Branch Exchange Switchboards and Substation Sets:																
P. B. X. Switchboards																
Non-Multiple Cord Boards																
12. (a) 30 line—550 Boards	8.2	.3	24.7	10.3	2.9	1.9	1.4	2.3	4.4	4.8	1.1	10.2	1.3	1.6	4.5	1.0
13. (b) 80 line—550 Boards	7.1	.4	31.3	9.4	1.9	1.9	.9	6.0	4.8	2.5	.4	9.7	.9	1.5	5.4	1.5
14. (c) Sizes over 80 lines	5.5	.1	26.2	4.8	3.0	3.5	2.3	8.9	....	3.1	1.3	8.9	1.5	2.0	6.4	3.1
15. Cordless Boards	5.8	1.1	46.6	10.7	3.2	.4	.6	3.5	.2	3.6	.5	13.2	.9	1.4	3.5	1.0
Substation Sets																
Sub-Sets and Bell Boxes																
16. Mach. Switch	6.8	.4	28.1	7.0	1.0	2.0	....	1.5	....	2.4	2.1	1.9	....	2.3	6.2	1.0
17. Manual	10.8	2.0	21.3	12.5	4.0	3.2	3.7	2.9	4.4	3.6	.7	8.1	2.6	3.2	7.6	1.6
Desk Stands																
18. Mach. Switch	11.4	.8	29.2	14.2	.7	1.9	....	3.3	....	4.2	1.6	6.8	....	1.5	8.8	.4
19. Manual	12.4	2.0	23.3	10.6	4.5	2.9	3.7	3.3	4.9	3.2	1.1	8.0	2.8	3.2	6.4	1.9
20. No. 50 Coin Collectors	13.9	1.9	18.7	9.3	4.6	2.7	2.2	8.7	6.9	3.0	1.2	2.9	1.7	1.2	7.5	6.9
Lead Covered Cable Expressed in Millions of Conductor Feet:																
21. No. 16 and heavier	10.1	1.5	10.9	11.7	3.4	.9	.1	1.1	1.5	2.6	2.6	4.0	2.5	1.3	2.8	.2
22. No. 19	10.4	1.8	35.1	9.4	3.6	1.1	1.5	1.7	1.2	3.0	.4	4.4	1.2	.4	2.6	.4
23. No. 22	11.6	2.0	29.0	11.7	3.1	2.0	3.2	4.3	1.3	3.4	1.4	9.7	2.3	.3	4.5	.9
24. No. 24	6.0	2.1	25.5	13.9	3.6	2.5	2.2	2.8	.8	1.9	2.8	6.4	3.2	2.6	7.6	2.2
Miscellaneous Equipment:																
Cable Terminals																
25. Type B	14.9	2.3	9.6	8.9	6.4	2.9	1.9	3.7	14.7	3.0	1.4	6.7	4.0	2.0	3.4	1.0
26. No. 8	34.2	....	....	33.0	....	....	....	....	.1	....	....	.3	....	21.7	....	10.7
27. No. 14	3.3	2.6	18.1	13.8	8.2	4.2	3.7	9.4	.8	2.7	3.2	8.0	1.8	.2	7.8	.03
28. Dist. Frame Wire (Cond. Ft.)	5.3	1.4	32.4	5.4	2.8	2.4	.6	5.5	1.4	1.4	.6	13.0	1.2	2.2	7.0	3.5
Vacuum Tubes	3.3	....	2.6	.5	.3	.1	.2	.2	....	.3	....	4.9	1.3	.5	1.7	4.0
Telephone Repeater Sets	9.7	....	.7	.3	.8	.3	.5	.1	....	2.0	.1	2.2	3.4	1.3	.9	.5
Loading Coils	13.2	.9	20.0	5.0	1.7	.1	.1	.6	.2	2.4	1.1	5.1	1.1	.03	1.0	.1
Submarine Cable	5.0	7.4	14.4	....	2.5	10.5	9.9	....	....	1.0	....	....	5.0	.7	3.2	....
Toll Aer. Cable—Lin. Ft.	11.3	3.3	7.8	10.6	7.6	.1	....	1.6	....	3.0	....	1.4	4.0	1.4	1.7	.1

	....	....	....	....	....	....	....	....	....	....	....	....	....	100.00	....	....	....	....	100.00
Exchange Switchboards and Substation Sets:																			
chboards																			
Cord Boards																			
oards	8.2	.3	24.7	10.3	2.9	1.9	1.4	2.3	4.4	4.8	1.1	10.2	1.3	1.6	4.5	1.0	19.1	....	100.00
oards	7.1	.4	31.3	9.4	1.9	1.9	.9	6.0	4.8	2.5	.4	9.7	.9	1.5	5.4	1.5	14.4	....	100.00
ines	5.5	.1	26.2	4.8	3.0	3.5	2.3	8.9	....	3.1	1.3	8.9	1.5	2.0	6.4	3.1	19.4	....	100.00
..	5.8	1.1	46.6	10.7	3.2	.4	.6	3.5	.2	3.6	.5	13.2	.9	1.4	3.5	1.0	3.8	....	100.00
ts																			
Bell Boxes																			
..	6.8	.4	28.1	7.0	1.0	2.0	...	1.5	....	2.4	2.1	1.9	...	2.3	6.2	1.0	37.3	....	100.00
..	10.8	2.0	21.3	12.5	4.0	3.2	3.7	2.9	4.4	3.6	.7	8.1	2.6	3.2	7.6	1.6	7.8	....	100.00
..	11.4	.8	29.2	14.2	.7	1.9	...	3.3	....	4.2	1.6	6.8	...	1.5	8.8	.4	15.2	...	100.00
..	12.4	2.0	23.3	10.6	4.5	2.9	3.7	3.3	4.9	3.2	1.1	8.0	2.8	3.2	6.4	1.9	5.8	....	100.00
tors	13.9	1.9	18.7	9.3	4.6	2.7	2.2	8.7	6.9	3.0	1.2	2.9	1.7	1.2	7.5	6.9	6.7	....	100.00
able Expressed in Millions of Conductor Feet:																			
..	10.1	1.5	10.9	11.7	3.4	.9	.1	1.1	1.5	2.6	2.6	4.0	2.5	1.3	2.8	.2	7.0	35.8	100.00
..	10.4	1.8	35.1	9.4	3.6	1.1	1.5	1.7	1.2	3.0	.4	4.4	1.2	.4	2.6	.4	11.2	10.6	100.00
..	11.6	2.0	29.0	11.7	3.1	2.0	3.2	4.3	1.3	3.4	1.4	9.7	2.3	.3	4.5	.9	9.3	.02	100.00
..	6.0	2.1	25.5	13.9	3.6	2.5	2.2	2.8	.8	1.9	2.8	6.4	3.2	2.6	7.6	2.2	13.9	.006	100.00
uipment:																			
ds																			
..	14.9	2.3	9.6	8.9	6.4	2.9	1.9	3.7	14.7	3.0	1.4	6.7	4.0	2.0	3.4	1.0	13.2	.06	100.00
..	34.2	....	....	33.0	....	....	....	....	.1	....	....	.3	....	21.7	....	10.7	....	.004	100.00
..	3.3	2.6	18.1	13.8	8.2	4.2	3.7	9.4	.8	2.7	3.2	8.0	1.8	.2	7.8	.03	12.2	.0003	100.00
Cond. Ft.)	5.3	1.4	32.4	5.4	2.8	2.4	.6	5.5	1.4	1.4	.6	13.0	1.2	2.2	7.0	3.5	13.5	.4	100.00
..	3.3	....	2.6	.5	.3	.1	.2	.2	....	.3	....	4.9	1.3	.5	1.7	4.0	14.7	65.4	100.00
Sets	9.7	....	.7	.3	.8	.3	.5	.1	....	2.0	.1	2.2	3.4	1.3	.9	.5	3.6	73.6	100.00
..	13.2	.9	20.0	5.0	1.7	.1	.1	.6	.2	2.4	1.1	5.1	1.1	.03	1.0	.1	9.7	37.7	100.00
..	5.0	7.4	14.4	....	2.5	10.5	9.9	....	....	1.0	....	....	5.0	.7	3.2	....	39.6	.8	100.00
n. Ft.	11.3	3.3	7.8	10.6	7.6	.1	....	1.6	....	3.0	....	1.4	4.0	1.4	1.7	.1	12.9	33.2	100.00

[fol. 5129]

Illinois Bell Telephone Company, Chicago Rate Case

Estimate of Quantities of New Material Required to be Delivered by Western Electric Company for Construction and Maintenance

Data from Provisional Estimates

Per Cent to Each Company of Total Bell System Requirements

Year 1925

	N. Eng. T. & T.	So. N. Eng. T. & T.	N. Y. T.	B. T. of Pa.	Ches. & Pot. T.	So. B. T. & T.	Cum. T. & T.	Ohio B. T.	Cin. & Sub. T.	Mich. B. T.	Ind. B. T.	Ill. B. T.	Wis. T. Co.	N. W. B. T.	S. W. B. T.
Switchboards:															
1. Man., Lge. Mult. Jobs requir. Sections	5.03	1.51	18.34	4.52	6.03	3.27	3.52	5.03	1.51	4.02	1.0	10.80	2.76	4.77	6.53
2. " " " Sections	3.1	1.3	22.7	4.5	5.1	1.7	1.9	7.6	2.2	6.4	.5	15.3	3.6	3.3	2.8
3. " Sma. " Jobs requir. Sections	8.7	3.3	9.5	12.8	5.6	4.4	4.4	7.4	.3	9.8	.5	8.5	2.8	2.3	4.1
4. " " " Sections (Incl. No. 700 & 720)	10.2	1.8	15.4	9.2	5.4	4.9	5.9	3.6	.1	8.8	.2	7.4	3.9	1.7	5.4
5. " Non-Mult. Sections	12.39	1.49	29.60	11.23	3.53	1.66	.94	5.40	....	5.56	1.13	8.74	.78	1.57	4.58
6. Panel Mach. Switch.—No. of new offices	25.1	....	8.3	33.4	8.3	....	....	....	....	8.3	....	....	....	....	8.3
7. " " " —(New off.) No. of lines	25.50	....	5.63	38.10	5.63	....	....	....	....	7.0	....	....	....	....	9.0
8. " " " —(" ") " " frames	33.9	....	2.8	35.9	5.0	....	....	....	....	5.9	....	....	....	....	9.3
9. " " " —No. of additions	....	....	70.4	14.8	....	....	....	....	....	3.7	....	....	....	....	....
10. " " " —(Add.) No. of lines	....	....	57.1	....	....	....	....	....	....	....	....	....	....	....	....
11. " " " —(Add.) No. of frames	....	....	59.4	1.7	....	....	....	....	....	2.9	....	....	....	....	....
12. Step-by-Step M.S. Jobs—C. O.'s and Add	....	2.2	8.7	4.3	2.2	....	....	6.5	....	8.7	....	2.2	....	8.7	6.5
13. " " " " Lines—New C. O.'s and Add	....	1.9	7.2	5.2	7.0	....	....	14.9	....	6.1	....	.2	....	2.7	3.1
14. Semi-Mech. P. B. X. Jobs	14.3	11.4	4.3	8.6	1.4	....	1.4	12.9	....	8.6	....	14.3	....	....	7.1
15. " " Sec. (No. 700 & 720) incl. in Line 4	11.8	1.3	11.9	2.6	2.0	....	.7	11.9	....	9.2	....	27.6	....	....	5.9
16. " " Lines (Equipped)	17.3	1.8	11.9	3.6	1.9	....	.8	10.9	....	11.6	....	23.0	....	....	6.4
Repeaters and Carrier Current Equipment:															
17. Telephone Repeaters, No. 21 Type	....	....	25.0	....	....	....	....	....	....	....	....	....	20.8	....	....
18. " " " 22 "	1.8	....	5.6	.8	.9	1.0	.8	....	....	4.5	.7	3.2	2.4	2.0	5.4
19. " " " 44 "	....	....	10.9	....	....	....	....	....	....	....	....	1.7	....	....	....
20. Carrier Telephone Systems	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
21. " Telegraph Systems	....	....	....	....	....	....	....	....	....	....	....	....	....	....	17.0
22. " Repeaters, all types	....	....	....	....	....	....	....	....	....	....	....	....	....	....	12.2
23. " Repeater Stations (new)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Lead Covered Cable (Expressed in Millions of Conductor Feet):															
24. No. 16 and heavier	6.3	3.2	4.5	18.7	3.4	1.4	.4	2.6	.2	2.2	.2	3.1	2.9	1.4	1.9
25. " 19 quadded	7.8	2.1	2.0	15.1	2.5	....	....	....	....	4.7	....	.2	.6	.3	....
26. " 19 non-quadded	7.7	5.2	28.4	5.7	4.2	2.2	4.2	2.0	2.1	4.6	.4	8.1	.15	.4	4.0
27. " 22	9.2	1.9	24.8	10.2	4.4	4.1	3.6	3.4	2.0	4.0	.7	8.5	2.5	.5	4.0
28. " 24	8.0	2.1	22.3	9.7	3.2	2.0	3.6	4.06	.6	3.2	.8	8.8	2.3	2.6	8.0
29. Total	8.3	2.4	22.3	9.9	3.6	2.5	3.5	3.4	1.1	3.6	.7	8.1	2.2	1.1	5.9
30. Submarine Cable	3.4	.8	73.3	....	.4	2.7	2.7	....	....	1.3	....	....	2.0	1.3	....
31. Toll Aerial Cable—Linear Feet	5.8	3.9	4.5	15.6	7.6	.2	.2	1.2	....	3.3	.02	1.6	3.9	2.3	2.2

[fol. 5130]

	N. Eng. T. & T.	So. N. Eng. T. & T.	N. Y. T.	B. T. of Pa.	Ches. & Pot. T.	So. B. T. & T.	Cum. T. & T.	Ohio B. T.	Cin. & Sub. T.	Mich. B. T.	Ind. B. T.	Ill. B. T.	Wis. T. Co.	N. W. B. T.	S. W. B. T.
Loading Coils:															
32. Toll Cable Loading Coils	4.7	.7	6.8	1.3	.6	....	....	....	.3	5.9	....	2.4	.1	....	.1
33. Toll Entrance Cable Loading Coils	.6	....	5.9	1.0	13.2	....	.8	8.2	4.5	....	....	2.0	14.7	6.5	.7
34. Local Cable Loading Coils	9.4	....	39.9	5.1	4.3	2.8	....	.5	....	1.7	.9	26.5	....	....	1.1
35. Open Wire Loading Coils	....	....	....	....	3.3	32.0	39.2	....	....	....	....	....	....	.4	6.1
36. Cable Coil Cases	5.7	1.5	13.3	2.1	3.6	1.3	.2	.6	.8	3.4	.6	7.4	1.6	.5	.9
Cable Terminals:															
37. "B" Type	17.7	2.6	13.0	9.2	5.7	3.2	2.6	2.8	4.1	3.9	.7	12.0	3.2	2.4	3.9
38. All other Types	10.2	1.4	16.8	12.5	4.7	3.2	3.5	6.2	2.9	2.3	1.4	10.9	1.4	3.1	7.5
Station and Miscellaneous Equipment:															
39. Bell Boxes	8.7	2.7	21.7	9.8	3.8	3.0	4.2	5.5	2.1	7.8	1.2	7.3	1.3	2.4	6.4
40. Wall Type Subsets, Manual and Mech. Switch	4.5	.2	11.7	5.9	2.1	4.8	7.7	.5	1.0	6.6	.2	3.0	4.3	2.2	6.4
41. Desk Stands, Manual	6.1	3.9	15.5	3.7	3.2	5.2	8.0	6.9	2.6	6.8	1.1	10.1	4.3	3.0	7.5
42. " " Machine Switching	9.0	.5	26.5	14.9	3.8	1.3	3.8	7.0	....	11.7	1.4	5.1	....	.8	4.1
43. Coin Collectors, No. 50 Type	13.4	.8	22.3	12.1	6.0	4.7	3.1	5.6	6.4	3.0	.8	3.9	1.0	1.5	3.6
44. " " " 7 "	11.5	....	....	3.4	....	....	.5	....	2.7	1.8	....	57.9	.9	....	4.6
45. Distributing Frame Wire (Thousand Cond. Ft.)	3.8	1.1	29.2	9.2	5.0	1.7	.7	4.3	2.5	3.5	.6	10.2	1.0	1.5	7.3
46. Coin Collectors, No. 23 Type	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....

* Included in Pac. T. & T.

Illinois Bell Telephone Company, Chicago Rate Case

Estimate of Quantities of New Material Required to be Delivered by Western Electric Company for Construction and Maintenance

Data from Provisional Estimates

Per Cent to Each Company of Total Bell System Requirements

Year 1925

	N. Eng. T. & T.	So. N. Eng. T. & T.	N. Y. T.	B. T. of Pa.	Ches. & Pot. T.	So. B. T. & T.	Cum. T. & T.	Ohio B. T.	Cin. & Sub. T.	Mich. B. T.	Ind. B. T.	Ill. B. T.	Wis. T. Co.	N. W. B. T.	S. W. B. T.	Dallas T. Co.	K. C. T.	Mtn. S. T. & T.	Pac. T. & T.	Home T. & T. of Pas.*	So. Cal. T. Co.*	A. T. & T. L. L.	Total
....	5.03	1.51	18.34	4.52	6.03	3.27	3.52	5.03	1.51	4.02	1.0	10.80	2.76	4.77	6.53	....	.5	1.76	13.32	....	.5	5.78	100.00
....	3.1	1.3	22.7	4.5	5.1	1.7	1.9	7.6	2.2	6.4	.5	15.3	3.6	3.3	2.8	....	.2	.9	13.9	....	.5	3.2	100.00
....	8.7	3.3	9.5	12.8	5.6	4.4	4.4	7.4	.3	9.8	.5	8.5	2.8	2.3	4.1	.5	....	3.3	11.8	....	.3	....	100.00
....	10.2	1.8	15.4	9.2	5.4	4.9	5.9	3.6	.1	8.8	.2	7.4	3.9	1.7	5.4	.4	....	2.1	13.6	....	4.4	....	100.00
....	12.39	1.49	29.60	11.23	3.53	1.66	.94	5.40	....	5.56	1.13	8.74	.78	1.57	4.58	.70	.12	1.42	9.16	.15	5.59	....	100.00
....	25.1	....	8.3	33.4	8.3	....	....	....	....	8.3	....	....	....	....	8.3	....	8.3	....	....	....	....	....	100.00
....	25.50	....	5.63	38.10	5.63	....	....	....	....	7.0	....	....	....	....	9.0	....	9.14	....	....	....	....	....	100.00
....	33.9	....	2.8	35.9	5.0	....	....	....	....	5.9	....	....	....	....	9.3	....	7.2	....	....	....	....	....	100.00
....	....	....	70.4	14.8	....	....	....	....	....	3.7	....	....	....	....	....	....	3.7	....	7.4	....	....	....	100.00
....	....	....	57.1	....	....	....	....	....	....	....	....	....	....	....	....	....	10.8	....	32.1	....	....	....	100.00
....	....	....	59.4	1.7	....	....	....	....	....	2.9	....	....	....	....	....	....	12.4	....	23.6	....	....	....	100.00
....	....	2.2	8.7	4.3	2.2	....	....	6.5	....	8.7	....	2.2	....	8.7	6.5	6.5	....	4.3	39.2	....	32.6	....	100.00
....	....	1.9	7.2	5.2	7.0	....	....	14.9	....	6.1	....	.2	....	2.7	3.1	3.3	....	.3	48.1	....	44.9	....	100.00
....	14.3	11.4	4.3	8.6	1.4	....	1.4	12.9	....	8.6	....	14.3	....	....	7.1	....	....	....	15.7	....	....	....	100.00
....	11.8	1.3	11.9	2.6	2.0	....	.7	11.9	....	9.2	....	27.6	....	....	5.9	....	....	....	15.1	....	....	....	100.00
....	17.3	1.8	11.9	3.6	1.9	....	.8	10.9	....	11.6	....	23.0	....	....	6.4	....	....	....	10.8	....	....	....	100.00
....	....	....	25.0	....	....	....	....	....	....	....	....	....	20.8	....	....	....	....	....	....	....	....	54.2	100.00
....	1.8	....	5.6	.8	.9	1.0	.8	....	....	4.5	.7	3.2	2.4	2.0	5.4	....	....	1.2	11.5	....	....	58.2	100.00
....	....	....	10.9	....	....	....	....	....	....	....	....	1.7	....	....	....	....	....	....	....	....	....	87.4	100.00
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	17.0	....	....	....	....	....	....	83.0	100.00
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	12.2	....	....	....	....	....	....	87.8	100.00
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4.8	....	....	95.2	100.00
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	9.1	....	....	90.9	100.00
tor Feet):																							
....	6.3	3.2	4.5	18.7	3.4	1.4	.4	2.6	.2	2.2	.2	3.1	2.9	1.4	1.9	....	....	.7	13.2	....	3.0	33.7	100.00
....	7.8	2.1	2.0	15.1	2.5	....	....	....	....	4.7	....	.2	.6	.3	....	....	....	....	5.0	....	....	59.7	100.00
....	7.7	5.2	28.4	5.7	4.2	2.2	4.2	2.0	2.1	4.6	.4	8.1	.15	.4	4.0	.01	2.4	.9	13.8	2.6	5.5	2.2	100.00
....	9.2	1.9	24.8	10.2	4.4	4.1	3.6	3.4	2.0	4.0	.7	8.5	2.5	.5	4.0	.2	1.7	1.3	12.9	1.1	5.5	.1	100.00
....	8.0	2.1	22.3	9.7	3.2	2.0	3.6	4.06	.6	3.2	.8	8.8	2.3	2.6	8.0	.6	1.0	1.2	16.0	.8	6.3	....	100.00
....	8.3	2.4	22.3	9.9	3.6	2.5	3.5	3.4	1.1	3.6	.7	8.1	2.2	1.1	5.9	.4	1.3	1.1	14.3	1.0	5.6	3.8	100.00
....	3.4	.8	73.3	....	.4	2.7	2.7	....	....	1.3	....	....	2.0	1.3	....	....	....	....	12.1	....	....	....	100.00
....	5.8	3.9	4.5	15.6	7.6	.2	.2	1.2	....	3.3	.02	1.6	3.9	2.3	2.2	....	....	.3	8.3	....	....	39.1	100.00
....	4.7	.7	6.8	1.3	.6	....	....	....	.3	5.9	....	2.4	.1	....	.1	....	....	....	8.3	....	....	63.8	100.00
....	.6	....	5.9	1.0	13.2	....	.8	8.2	4.5	....	....	2.0	14.7	6.5	.7	....	....	....	10.9	....	....	31.0	100.00
....	9.4	....	39.9	5.1	4.3	2.8	....	.5	....	1.7	.9	26.5	....	....	1.1	....	4.1	.7	3.0	....	1.9	....	100.00
....	....	....	....	....	3.3	32.0	39.2	....	....	....	....	....	....	.4	6.1	....	....	....	....	....	....	19.0	100.00
....	5.7	1.5	13.3	2.1	3.6	1.3	.2	.6	.8	3.4	.6	7.4	1.6	.5	.9	....	1.4	.3	6.4	....	1.9	48.4	100.00
....	17.7	2.6	13.0	9.2	5.7	3.2	2.6	2.8	4.1	3.9	.7	12.0	3.2	2.4	3.9	.3	....	1.6	11.0	.7	4.7	.1	100.00
....	10.2	1.4	16.8	12.5	4.7	3.2	3.5	6.2	2.9	2.3	1.4	10.9	1.4	3.1	7.5	.5	.9	1.7	8.9	.7	2.8	....	100.00
....	8.7	2.7	21.7	9.8	3.8	3.0	4.2	5.5	2.1	7.8	1.2	7.3	1.3	2.4	6.4	.6	1.0	1.3	9.2	.3	3.0	....	100.00
....	4.5	.2	11.7	5.9	2.1	4.8	7.7	.5	1.0	6.6	.2	3.0	4.3	2.2	6.4	.5	....	4.1	34.3	.7	13.4	....	100.00
....	6.1	3.9	15.5	3.7	3.2	5.2	8.0	6.9	2.6	6.8	1.1	10.1	4.3	3.0	7.5	....	....	1.7	10.4	.5	.8	....	100.00
....	9.0	.5	26.5	14.9	3.8	1.3	3.8	7.0	....	11.7	1.4	5.1	....	.8	4.1	1.0	2.0	.5	6.6	....	4.7	....	100.00
....	13.4	.8	22.3	12.1	6.0	4.7	3.1	5.6	6.4	3.0	.8	3.9	1.0	1.5	3.6	.1	.6	1.3	9.8	.3	8.1	....	100.00
....	11.5	....	....	3.4	....	....	.5	....	2.7	1.8	....	57.9	.9	....	4.6	....	1.4	....	15.3	....	....	....	100.00
....	3.8	1.1	29.2	9.2	5.0	1.7	.7	4.3	2.5	3.5	.6	10.2	1.0	1.5	7.3	.8	1.2	2.4	13.9	.9	4.9	.1	100.00
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	100,00	100.00	....	....	100.00

J. G. Wray & Co.

Data from Provisional Estimates

Per Cent to Each Company of Total Bell System Requirements

Period 1926 to 1928, Inclusive

	N.Eng. T. & T.	So. N. Eng. T. & T.	N. Y. T.	B. T. of Pa.	Ches. & Pot. T.	So. B. T. & T.	Cum. T. & T.	Ohio B. T.	Cin. & Sub. T.	Mich. B. T.	Ind. B. T.	Ill. B. T.	Wis. T.	N. W. B. T.	S. W. B. T.	Mtn. S. T. & T.	P T. &
Switchboards																	
1. Man. Lge. Mult. Jobs req. Sec., W. E. Eng'd	3.7	2.8	18.8	7.2	4.2	11.9	2.8	3.6	1.8	4.8	.9	11.5	2.7	2.4	6.7	2.4	6.
2. " " " Sec. (excl. M. S. A.)	1.4	2.8	13.3	4.5	2.3	9.9	2.8	6.4	1.1	7.4	1.3	11.8	2.1	1.5	6.3	2.1	7.
3. " Sma. " C.O. Jobs req. Sect., W. E. Eng'd	6.3	2.4	12.7	12.7	3.2	16.3	1.4	1.2	.5	6.4	.6	4.8	4.5	2.2	7.9	2.3	2.
4. " " " " Sec. (excl. M. S. A.)	4.3	3.3	14.8	4.7	1.8	15.2	1.2	1.2	.1	9.0	1.1	4.7	3.8	2.3	9.2	3.0	3.
5. " " Mult. P. B. X. Sec. (excl. No. 700)	4.4	.2	29.5	6.3	3.2	4.8	1.0	4.0	2.1	11.4	.4	15.6	2.2	2.0	5.6	1.8	5.
6. " Non-Mult. Sec., No. 505 Type	7.7	1.8	30.7	9.9	4.3	1.6	.2	4.4	.1	6.2	.6	13.1	2.3	1.1	6.1	1.4	8.
7. " " " " " 550 "	7.6	1.2	31.8	4.8	3.2	4.4	.9	2.7	.4	6.8	.5	13.5	1.0	1.2	10.6	2.1	7.
8. " " " " Total all Types (excl. No. 700)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	..
9. Panel Mach. Switch.—No. of new offices	10.7	....	28.6	8.9	7.2	....	....	1.8	....	8.9	....	10.7	....	....	12.5	....	10.
10. " " " (New off.) No. of Lines, Total	7.1	....	31.2	8.6	6.9	....	....	1.7	....	9.5	....	11.5	....	....	12.9	....	10.
11. " " " (" ") " " Frames	7.9	....	25.7	6.1	7.1	....	....	1.3	....	9.1	....	16.1	....	....	15.3	....	11.
12. " " " No. of Add. req. Frames, W. E. Eng'd	2.6	....	62.3	10.4	1.3	....	....	1.3	....	3.9	....	3.9	....	....	5.2	....	9.
13. " " " (Add.) No. of Lines (Incl. in Line 10)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	..
14. " " " " " " Frames (" " " 11)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	..
15. Step-by-Step, MS.—No. of New Offices	2.1	3.2	13.8	3.2	....	12.7	3.2	3.2	....	5.3	2.1	3.2	....	7.5	8.5	7.5	24.
16. " " " " (New off.) No. of Lines	2.2	4.9	10.6	7.7	.4	14.2	3.8	3.4	....	8.0	1.3	3.9	1.0	7.7	12.9	4.5	13.
17. " " " " No. of Add. req. Frames, W. E. Eng'd	....	1.0	12.6	5.8	3.9	12.6	....	9.7	....	10.7	....	1.9	....	3.9	17.5	5.8	14.
18. " " " " (Add.) No. of Lines (Incl. in Line 16)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	..
19. No. 700 P.B.X.—No. of Jobs	8.3	3.0	3.7	9.6	.2	1.8	.5	7.4	.9	14.9	.2	8.7	.2	.2	18.1	.5	21.
20. " 700 " No. of Sections	6.7	1.6	6.6	9.5	.1	1.7	.2	6.6	.8	11.7	....	16.2	.1	.1	14.0	.8	23.
21. " 700 " No. of Lines Equipped	8.1	2.5	7.1	10.0	.1	1.8	.2	7.1	.6	13.8	.3	14.9	.1	.2	13.0	1.5	18.
22. Key Indicator, Sender and Link Frames	....	....	9.4	....	....	.6	....	21.0	....	42.5	....	....	....	.2	22.0	....	4.
23. Call " Trunk Units	3.9	.5	10.5	1.7	.9	6.6	3.4	19.1	....	10.6	.1	9.4	....	2.3	9.1	4.0	17.
24. Straight Forward Trunk., No. of Pos. to be Convt'd	4.7	....	35.9	9.1	6.0	.1	....	5.0	6.1	4.4	.9	12.4	2.3	....	3.6	.6	8.
Repeaters and Carrier Current Equipment																	
25. Telephone Repeaters, No. 21, 22 and 44 Types	1.3	.1	.3	.3	.7	2.3	.1	.2	....	2.8	.02	4.3	1.9	1.4	2.2	.7	2.
26. Telegraph Repeaters, Metallic	3.7	....	....	....	....	.1	....	....	....	4.6	....	7.1	5.3	....	....	....	..
27. " " Grounded Duplex	7.1	....	....	....	1.7	3.1	....	....	....	....	....	....	3.6	2.0	9.4	....	1.
28. Carrier Tel. Systems, Type "C"	....	....	....	....	....	4.1	....	3.6	....	3.6	....	4.5	4.5	.9	25.4	1.4	24.
29. " " " " "D"	4.4	....	1.3	.4	4.4	4.9	.9	4.4	....	7.5	....	1.8	3.3	8.0	27.4	.4	18.
30. " Teleg. " " "B"	....	....	....	....	....	....	....	....	....	....	....	19.4	....	....	1.2	....	10.
31. " " " "Voice Frequency"	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	..
Lead Covered Cable (Expressed in Millions of Conductor Feet)																	
32. No. 10 and heavier, quadded	2.7	1.6	6.6	6.2	2.4	3.7	.1	2.0	.3	4.2	.3	3.7	2.0	1.4	3.2	.5	8.
33. " " " " Non-quadded	1.6	....	15.7	....	....	....	1.3	.8	....	4.6	....	11.0	.4	....	....	....	7.
34. " 19, quadded	1.9	.8	6.4	7.3	2.1	1.0	....	.6	.1	4.5	.1	4.4	.7	1.2	1.0	.01	5.
35. " " non-quadded	6.1	3.6	34.7	4.5	3.4	5.9	1.2	2.4	1.2	12.9	.2	6.9	.9	1.0	6.2	1.1	7.
36. " 22,	6.2	1.4	22.7	7.9	3.3	6.2	1.1	5.2	1.1	9.5	.9	13.3	1.4	.9	8.1	1.6	9.
37. " 24	8.1	2.1	17.5	7.7	3.7	5.4	1.5	4.3	1.3	7.5	1.0	11.0	1.8	3.1	12.4	1.7	9.
38. Total	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	..
39. Toll Aerial Cable—Lin. Ft	3.2	2.2	8.4	9.5	4.2	3.2	.1	1.6	.7	4.3	.2	4.2	2.8	.9	3.0	.6	4.

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	N.Eng. T. & T.	So. N. Eng. T. & T.	N. Y. T.	B. T. of Pa.	Ches. & Pot. T.	So. B. T. & T.	Cum. T. & T.	Ohio B. T.	Cin. & Sub. T.	Mich. B. T.	Ind. B. T.	Ill. B. T.	Wis. T.	N. W. B. T.	S. W. B. T.	Mtn. S. T. & T.	P T. &
Loading Coils																	
40. Toll Cable & Toll Entran. Cable Loading Coils	1.6	.9	8.5	2.8	.9	.8	.001	.8	.2	3.9	.1	2.5	1.8	.7	.9	.1	5.
41. Local Cable Loading Coils	3.6	1.1	26.3	9.5	3.2	2.3	....	3.9	.4	6.7	.01	23.8	.7	.1	5.3	1.1	11.
42. Cable Coil Cases—Toll	2.1	1.2	9.0	4.2	2.9	1.6	.1	1.0	.4	3.6	.1	5.4	5.1	2.3	3.0	.9	8.
43. Cable Coil Cases—Local	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	..
Cable Terminals																	
44. "B" Type	11.7	1.6	10.9	6.8	5.5	4.5	1.6	3.3	18.7	6.2	1.0	8.5	2.1	2.8	6.0	1.5	7.
45. No. 8 Type	45.6	....	1.5	17.8	....	....	....	....	.4	.005	....	4.3	....	17.6	....	10.7	2.
46. No. 14 Type	1.2	2.3	21.7	5.1	6.5	6.7	1.6	5.5	1.5	7.0	2.2	12.4	1.5	.2	15.6	.1	8.
Station Apparatus and Miscellaneous																	
47. Sub-Sets, Bell Boxes	2.9	2.3	26.3	7.5	3.2	9.7	1.6	5.7	2.2	6.6	.6	7.5	1.5	2.4	10.0	1.6	8.
48. " " Wall Type	2.5	.2	5.6	4.8	1.7	15.1	1.8	1.0	.7	3.0	.5	3.7	1.8	2.4	8.4	4.3	42.
49. Desk Stands, Manual Types and Mach. Switch	3.8	2.3	22.7	8.1	2.7	10.6	1.9	5.6	1.6	6.7	.8	7.8	1.8	2.8	9.7	2.1	9.
50. Hand Sets (1928 only)	1.9	2.0	42.2	4.6	2.7	2.0	....	1.0	....	13.1	.8	9.9	.5	1.3	9.1	.9	8.
51. Coin Collectors, No. 50 Type	7.8	1.3	21.6	10.6	7.3	4.7	.6	4.3	5.7	3.5	1.5	4.9	2.3	1.1	12.7	1.6	8.
52. Coin Collectors, No. 7 Type	....	....	.3	(.5)	....	2.1	.9	....	1.1	1.7	....	87.7	.9	....	4.3	....	1.
53. Dist. Frame Wire (Thousand Cond. Ft.)	3.2	1.1	20.2	8.1	3.6	4.8	1.2	3.4	1.8	7.6	.9	11.7	1.6	1.8	11.9	1.7	14.

( ) = Red.

for Construction and Maintenance

Data from Provisional Estimates

Per Cent to Each Company of Total Bell System Requirements

Period 1926 to 1928, Inclusive

	N.Eng. T. & T.	So. N. Eng. T. & T.	N. Y. T.	B. T. of Pa.	Ches. & Pot. T.	So. B. T. & T.	Cum. T. & T.	Ohio B. T.	Cin. & Sub. T.	Mich. B. T.	Ind. B. T.	Ill. B. T.	Wis. T.	N. W. B. T.	S. W. B. T.	Mtn. S. T. & T.	Pac. T. & T.	A. T. & T. L. L.	Total
req. Sec., W. E. Eng'd	3.7	2.8	18.8	7.2	4.2	11.9	2.8	3.6	1.8	4.8	.9	11.5	2.7	2.4	6.7	2.4	6.4	5.4	100.00
(excl. M. S. A.)	1.4	2.8	13.3	4.5	2.3	9.9	2.8	6.4	1.1	7.4	1.3	11.8	2.1	1.5	6.3	2.1	7.0	16.0	100.00
Jobs req. Sect., W. E. Eng'd	6.3	2.4	12.7	12.7	3.2	16.3	1.4	1.2	.5	6.4	.6	4.8	4.5	2.2	7.9	2.3	2.6	12.0	100.00
Sec. (excl. M. S. A.)	4.3	3.3	14.8	4.7	1.8	15.2	1.2	1.2	.1	9.0	1.1	4.7	3.8	2.3	9.2	3.0	3.9	16.4	100.00
X. Sec. (excl. No. 700)	4.4	.2	29.5	6.3	3.2	4.8	1.0	4.0	2.1	11.4	.4	15.6	2.2	2.0	5.6	1.8	5.5	....	100.00
No. 505 Type	7.7	1.8	30.7	9.9	4.3	1.6	.2	4.4	.1	6.2	.6	13.1	2.3	1.1	6.1	1.4	8.5	....	100.00
" 550 "	7.6	1.2	31.8	4.8	3.2	4.4	.9	2.7	.4	6.8	.5	13.5	1.0	1.2	10.6	2.1	7.5	....	100.00
Total all Types (excl. No. 700)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	......
No. of new offices	10.7	....	28.6	8.9	7.2	....	....	1.8	....	8.9	....	10.7	....	....	12.5	....	10.7	....	100.00
(New off.) No. of Lines, Total	7.1	....	31.2	8.6	6.9	....	....	1.7	....	9.5	....	11.5	....	....	12.9	....	10.6	....	100.00
(" ") " " Frames	7.9	....	25.7	6.1	7.1	....	....	1.3	....	9.1	....	16.1	....	....	15.3	....	11.4	....	100.00
). of Add. req. Frames, W. E. Eng'd	2.6	....	62.3	10.4	1.3	....	....	1.3	....	3.9	....	3.9	....	....	5.2	....	9.1	....	100.00
dd.) No. of Lines (Incl. in Line 10)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	......
" " Frames (" " " 11)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	......
). of New Offices	2.1	3.2	13.8	3.2	....	12.7	3.2	3.2	....	5.3	2.1	3.2	....	7.5	8.5	7.5	24.5	....	100.00
ew off.) No. of Lines	2.2	4.9	10.6	7.7	.4	14.2	3.8	3.4	....	8.0	1.3	3.9	1.0	7.7	12.9	4.5	13.5	....	100.00
of Add. req. Frames, W. E. Eng'd	....	1.0	12.6	5.8	3.9	12.6	....	9.7	....	10.7	....	1.9	....	3.9	17.5	5.8	14.6	....	100.00
.) No. of Lines (Incl. in Line 16)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	......
Jobs	8.3	3.0	3.7	9.6	.2	1.8	.5	7.4	.9	14.9	.2	8.7	.2	.2	18.1	.5	21.8	....	100.00
Sections	6.7	1.6	6.6	9.5	.1	1.7	.2	6.6	.8	11.7	....	16.2	.1	.1	14.0	.8	23.3	....	100.00
Lines Equipped	8.1	2.5	7.1	10.0	.1	1.8	.2	7.1	.6	13.8	.3	14.9	.1	.2	13.0	1.5	18.7	....	100.00
nd Link Frames	....	....	9.4	....	....	.6	....	21.0	....	42.5	....	....	....	.2	22.0	....	4.3	....	100.00
nits	3.9	.5	10.5	1.7	.9	6.6	3.4	19.1	....	10.6	.1	9.4	....	2.3	9.1	4.0	17.9	....	100.00
., No. of Pos. to be Convt'd	4.7	....	35.9	9.1	6.0	.1	....	5.0	6.1	4.4	.9	12.4	2.3	....	3.6	.6	8.9	....	100.00
r Current Equipment																			
o. 21, 22 and 44 Types	1.3	.1	.3	.3	.7	2.3	.1	.2	....	2.8	.02	4.3	1.9	1.4	2.2	.7	2.5	78.9	100.00
letallic	3.7	....	....	....	....	.1	....	....	....	4.6	....	7.1	5.3	....	....	....	....	79.2	100.00
rounded Duplex	7.1	....	....	....	1.7	3.1	....	....	....	....	....	....	3.6	2.0	9.4	....	1.2	71.9	100.00
ype "C"	....	....	....	....	....	4.1	....	3.6	....	3.6	....	4.5	4.5	.9	25.4	1.4	24.4	27.6	100.00
" "D"	4.4	....	1.3	.4	4.4	4.9	.9	4.4	....	7.5	....	1.8	3.3	8.0	27.4	.4	18.8	12.1	100.00
" "B"	....	....	....	....	....	....	....	....	....	....	....	19.4	....	....	1.2	....	10.0	69.4	100.00
Voice Frequency"	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	......
(Expressed in Millions of Conductor Feet)																			
lded	2.7	1.6	6.6	6.2	2.4	3.7	.1	2.0	.3	4.2	.3	3.7	2.0	1.4	3.2	.5	8.3	50.8	100.00
-quadded	1.6	....	15.7	....	....	....	1.3	.8	....	4.6	....	11.0	.4	....	....	....	7.2	57.4	100.00
lded	1.9	.8	6.4	7.3	2.1	1.0	....	.6	.1	4.5	.1	4.4	.7	1.2	1.0	.01	5.6	62.3	100.00
quadded	6.1	3.6	34.7	4.5	3.4	5.9	1.2	2.4	1.2	12.9	.2	6.9	.9	1.0	6.2	1.1	7.5	.3	100.00
	6.2	1.4	22.7	7.9	3.3	6.2	1.1	5.2	1.1	9.5	.9	13.3	1.4	.9	8.1	1.6	9.0	.2	100.00
	8.1	2.1	17.5	7.7	3.7	5.4	1.5	4.3	1.3	7.5	1.0	11.0	1.8	3.1	12.4	1.7	9.9	....	100.00
	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	......
Ft	3.2	2.2	8.4	9.5	4.2	3.2	.1	1.6	.7	4.3	.2	4.2	2.8	.9	3.0	.6	4.7	46.2	100.00
n. Cable Loading Coils	1.6	.9	8.5	2.8	.9	.8	.001	.8	.2	3.9	.1	2.5	1.8	.7	.9	.1	5.9	67.6	100.00
ils	3.6	1.1	26.3	9.5	3.2	2.3	[illegible]	3.9	.4	6.7	.01	23.8	.7	.1	5.3	1.1	11.9	.1	100.00
	2.1	1.2	9.0	4.2	2.9	1.6	.1	1.0	.4	3.6	.1	5.4	5.1	2.3	3.0	.9	8.0	49.1	100.00
	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	......
	11.7	1.6	10.9	6.8	5.5	4.5	1.6	3.3	18.7	6.2	1.0	8.5	2.1	2.8	6.0	1.5	7.1	.2	100.00
	45.6	....	1.5	17.8	....	....	....	....	.4	.005	....	4.3	....	17.6	....	10.7	2.1	.0006	100.00
	1.2	2.3	21.7	5.1	6.5	6.7	1.6	5.5	1.5	7.0	2.2	12.4	1.5	.2	15.6	.1	8.9	.006	100.00
d Miscellaneous																			
	2.9	2.3	26.3	7.5	3.2	9.7	1.6	5.7	2.2	6.6	.6	7.5	1.5	2.4	10.0	1.6	8.4	....	100.00
	2.5	.2	5.6	4.8	1.7	15.1	1.8	1.0	.7	3.0	.5	3.7	1.8	2.4	8.4	4.3	42.5	....	100.00
pes and Mach. Switch	3.8	2.3	22.7	8.1	2.7	10.6	1.9	5.6	1.6	6.7	.8	7.8	1.8	2.8	9.7	2.1	9.0	....	100.00
	1.9	2.0	42.2	4.6	2.7	2.0	....	1.0	....	13.1	.8	9.9	.5	1.3	9.1	.9	8.0	....	100.00
Type	7.8	1.3	21.6	10.6	7.3	4.7	.6	4.3	5.7	3.5	1.5	4.9	2.3	1.1	12.7	1.6	8.5	....	100.00
ype	....	....	.3	(.5)	....	2.1	.9	....	1.1	1.7	....	87.7	.9	....	4.3	....	1.5	....	100.00
and Cond. Ft.)	3.2	1.1	20.2	8.1	3.6	4.8	1.2	3.4	1.8	7.6	.9	11.7	1.6	1.8	11.9	1.7	14.9	.5	100.00

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Illinois Bell Telephone Company, Chicago Rate Case

Estimate of Quantities of New Material Required to be Delivered by Western Electric Company for Construction and Maintenance

Data from Provisional Estimates

Per Cent to Each Company of Total Bell System Requirements

Year 1929

	N. Eng. T. & T. No. Area	N. Eng. T. & T. So. Area	So. N. Eng. T. & T.	N. Y. T.	N. J. B. T.	B. T. of Pa.	Ches. & Pot. T.	So. B. T. & T.	Ohio B. T.	Cin. & Sub. T.	Mich. B. T.	Ind. B. T.	Ill. B. T.	Wis. T. Co.	N. W. B. T.
Switchboards:															
1. Man., Lge. Mult. Sections (excl. D. S. "A")	.6	2.2	1.7	6.6	5.4	3.7	.5	6.0	5.4	.4	16.5	1.0	3.7	7.6	1.0
2. " Sma. " C. O. " (" " ")	4.1	2.1	....	7.4	4.6	4.5	1.9	4.5	1.4	1.9	3.2	.2	4.7	2.9	3.5
3. " " " PBX " (" No. 700)	.9	2.8	....	41.9	6.2	6.6	2.7	2.7	1.3	.4	5.2	....	14.5	1.6	.6
4. " Non-Mult. Sections, No. 505 Type	1.2	2.9	2.7	37.2	5.4	7.1	3.0	2.3	3.6	.4	3.0	.7	12.8	2.4	1.5
5. " " " " " 551 "	1.6	2.7	2.6	29.4	3.6	4.9	2.7	5.8	4.0	.5	4.1	.7	13.9	2.3	1.9
6. " " " " Total other Types	4.7	1.2	4	....	....	1.9	7.8	16.3	5.1	.4	....	....	....	....	6.2
7. Panel—No. of Lines, Total	....	4.4	....	27.3	3.1	13.2	6.9	2.2	7.4	3.7	7.4	2.1	6.6	6.4	....
8. " —No. of Frames, "	....	3.8	....	30.0	3.5	9.3	6.3	1.9	6.1	2.7	7.2	....	10.9	6.2	....
9. Step-by-Step, No. of Lines, Total	10.8	....	11.1	4.0	3.3	12.1	.4	10.5	13.1	....	1.7	....	2.9	....	1.4
10. No. 700—P. B. X.—No. of New Exchanges	1.7	1.0	6.9	17.9	....	8.6	.3	2.4	6.6	.7	8.4	.7	8.7	.7	....
11. " " " " " Sections	1.1	1.2	3.7	21.0	....	11.0	1.5	1.1	6.1	.8	9.1	.3	10.5	.5	....
12. " " " " " Lines Equipped, Total	1.8	1.7	7.3	19.3	....	10.2	2.1	1.7	4.6	.9	12.2	.8	9.0	.1	....
13. " 740 " " " New Exchanges	1.8	2.5	9.9	22.3	1.1	10.2	1.1	....	1.4	....	4.2	1.1	5.6	2.8	.4
Repeaters and Carrier Current Equipment:															
14. Telephone Repeaters, No. 21, 22 and 44 Types	3.6	.4	....	1.7	.2	.9	.6	.8	.1	....	2.2	.1	3.6	3.8	.6
15. Telegraph " , Metallic	....	.5	....	....	....	....	....	....	....	....	2.6	....	4.7	6.1	....
16. " " , Differential Duplex	.8	....	....	....	....	....	....	7.0	....	....	1.0	....	2.9	6.5	1.6
17. " " , Single Line	1.6	....	....	....	....	....	....	.8	....	....	....	1.6	4.4	8.1	....
18. " " , One Way Polar	.5	1.4	....	....	....	1.0	1.0	1.9	....	....	1.9	....	8.1	5.3	....
19. Carrier Telephone Systems, Type "C"	3.1	.8	....	....	....	....	....	2.7	....	....	1.9	....	2.3	5.8	2.7
20. " " " " "D"	6.5	....	....	3.9	....	....	....	3.9	....	....	11.0	2.6	4.9	.3	5.5
21. " Telegraph " " "B"	....	....	....	....	....	....	....	....	....	....	....	....	5.7	....	....
22. " " " "Voice Frequency"	....	....	....	....	....	....	....	....	....	....	....	....	22.8	....	....
Loading Coils:															
23. Side and Phantom Loading Coils	1.9	1.0	.5	4.1	2.5	1.8	.3	1.2	.5	.2	2.8	.1	1.7	1.1	.8
24. Non-phantom Loading Coils	3.9	.5	2.1	27.8	3.2	9.7	2.4	1.3	5.8	1.3	6.0	....	13.5	.6	2.9
25. Carrier Loading Coils	1.4	....	....	2.4	....	....	.3	6.3	....	....	.3	1.0	.6	5.4	8.1
26. Loading Coil Cases	2.9	1.1	1.4	7.7	2.1	3.8	2.0	3.1	1.6	.6	2.6	.3	3.7	1.9	4.8
Cable Terminals:															
27. "C" Type	6.1	6.0	2.4	7.9	.6	13.5	....	12.8	6.0	.1	11.3	1.0	6.7	1.4	5.4
28. No. 14 Type	.5	1.5	....	26.5	12.2	....	12.2	.3	....	4.9	....	2.8	....	.5	.2

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	N. Eng. T. & T. No. Area	N. Eng. T. & T. So. Area	So. N. Eng. T. & T.	N. Y. T.	N. J. B. T.	B. T. of Pa.	Ches. & Pot. T.	So. B. T. & T.	Ohio B. T.	Cin. & Sub. T.	Mich. B. T.	Ind. B. T.	Ill. B. T.	Wis. T. Co.	N. W. B. T.
Lead Covered Cable (Expressed in Millions of Conductor Feet):															
29. No. 16 and larger—Paired Cond., Non-quad	1.3	.3	....	32.9	1.3	1.4	....	....	.8	.3	1.9	....	2.4	....	.3
30. " 19 " " " "	5.3	3.0	2.6	26.4	8.3	4.9	1.5	7.1	6.5	.9	7.4	.8	7.0	3.2	.8
31. " 22 " " " "	1.6	2.7	.9	22.3	4.5	7.7	2.5	8.3	7.8	1.2	6.5	.8	8.3	2.9	1.3
32. " 24 " " " "	3.0	2.8	1.8	19.2	3.7	8.4	3.3	7.2	5.2	.9	6.3	1.2	7.4	2.4	2.8
33. " 16 and larger—Quadded Cond	3.3	1.7	1.2	7.5	.4	8.7	1.2	1.1	3.1	.4	4.1	.3	2.3	.3	3.2
34. " 19 and smaller " "	1.1	.6	.9	2.4	2.8	2.8	.5	.4	.5	.1	1.7	.1	1.6	.1	.9
35. Total (Lines 29 to 34)	2.6	2.4	1.3	16.7	4.0	6.5	2.2	5.7	4.8	.8	5.3	.7	6.0	2.0	1.8
36. Toll Aerial Cable, Linear Feet	2.4	1.1	1.9	5.6	....	8.4	2.9	....	2.4	....	2.8	.5	....	.2	2.6
Station Apparatus:															
37. Subscriber Sets, Bell Boxes	1.8	2.9	1.9	22.5	6.0	10.6	2.5	5.4	7.3	.7	5.9	1.5	7.8	1.3	2.0
38. " " , Wall Type	.5	1.3	.5	5.1	.3	.3	2.2	9.0	2.2	.1	4.5	.9	4.9	2.3	2.8
39. Desk Stands	....	....	1.8	....	9.0	13.0	5.2	13.6	8.4	....	8.2	2.7	4.6	2.3	1.3
40. Hand Telephone Sets	2.4	2.9	1.3	34.9	4.2	7.6	2.5	5.6	6.3	1.3	4.2	.8	9.2	1.2	2.7
41. Coin Collectors, No. 50 Type	4.7	1.9	1.0	15.7	8.2	9.1	2.7	6.3	4.6	.6	5.7	1.4	6.6	2.0	2.3
42. " " " 7 "	....	....	....	....	....	....	....	2.7	....	.7	....	....	94.3	.7	....

Illinois Bell Telephone Company, Chicago Rate Case

Estimate of Quantities of New Material Required to be Delivered by Western Electric Company for Construction and Maintenance

Data from Provisional Estimates

Per Cent to Each Company of Total Bell System Requirements

Year 1929

	N. Eng. T. & T. No. Area	N. Eng. T. & T. So. Area	So. N. Eng. T. & T.	N. Y. T.	N. J. B. T.	B. T. of Pa.	Ches. & Pot. T.	So. B. T. & T.	Ohio B. T.	Cin. & Sub. T.	Mich. B. T.	Ind. B. T.	Ill. B. T.	Wis. T. Co.	N. W. B. T.	S. W. B. T.	Mtn. S. T. & T.	Pac. T. & T.	A. T. & T. L. L.	Total
"A")	.6	2.2	1.7	6.6	5.4	3.7	.5	6.0	5.4	.4	16.5	1.0	3.7	7.6	1.0	6.7	.4	15.5	15.1	100.00
")	4.1	2.1	....	7.4	4.6	4.5	1.9	4.5	1.4	1.9	3.2	.2	4.7	2.9	3.5	14.7	.7	7.3	30.4	100.00
0)	.9	2.8	....	41.9	6.2	6.6	2.7	2.7	1.3	.4	5.2	....	14.5	1.6	.6	5.7	1.2	5.7	....	100.00
ype	1.2	2.9	2.7	37.2	5.4	7.1	3.0	2.3	3.6	.4	3.0	.7	12.8	2.4	1.5	5.2	1.7	6.9	....	100.00
"	1.6	2.7	2.6	29.4	3.6	4.9	2.7	5.8	4.0	.5	4.1	.7	13.9	2.3	1.9	7.7	2.5	9.1	....	100.00
r Types	4.7	1.2	.4	....	....	1.9	7.8	16.3	5.1	.4	....	....	....	....	6.2	17.9	6.6	31.5	....	100.00
		4.4	....	27.3	3.1	13.2	6.9	2.2	7.4	3.7	7.4	2.1	6.6	6.4	....	1.7	....	7.6	....	100.00
	....	3.8	....	30.0	3.5	9.3	6.3	1.9	6.1	2.7	7.2	....	10.9	6.2	....	4.7	....	7.4	....	100.00
	10.8	....	11.1	4.0	3.3	12.1	.4	10.5	13.1	....	1.7	....	2.9	....	1.4	9.9	4.8	14.0	....	100.00
anges	1.7	1.0	6.9	17.9	....	8.6	.3	2.4	6.6	.7	8.4	.7	8.7	.7	....	11.0	1.0	23.4	....	100.00
	1.1	1.2	3.7	21.0	....	11.0	1.5	1.1	6.1	.8	9.1	.3	10.5	.5	....	7.0	1.1	24.0	....	100.00
ipped, Total	1.8	1.7	7.3	19.3	....	10.2	2.1	1.7	4.6	.9	12.2	.8	9.0	.1	....	6.6	.7	21.0	....	100.00
anges	1.8	2.5	9.9	22.3	1.1	10.2	1.1	....	1.4	....	4.2	1.1	5.6	2.8	.4	19.8	....	15.8	....	100.00
ipment:																				
4 Types	3.6	.4	....	1.7	.2	.9	.6	.8	.1	....	2.2	.1	3.6	3.8	.6	3.6	.7	11.8	65.3	100.00
	....	.5	....	....	....	....	....	....	....	....	2.6	....	4.7	6.1	....	6.5	....	27.2	52.4	100.00
lex	.8	....	....	....	....	....	....	7.0	....	....	1.0	....	2.9	6.5	1.6	8.8	....	21.0	49.5	100.00
	1.6	....	....	....	....	....	....	.8	....	....	....	1.6	4.4	8.1	....	12.1	....	10.9	60.5	100.00
"	.5	1.4	....	....	....	1.0	1.0	1.9	....	....	1.9	....	8.1	5.3	....	8.4	....	16.2	54.3	100.00
"	3.1	.8	....	....	....	....	....	.7	....	....	1.9	....	2.3	5.8	2.7	19.5	1.6	25.3	34.3	100.00
"	6.5	....	....	3.9	....	....	....	.9	....	....	11.0	2.6	4.9	.3	5.5	46.8	1.6	13.0	....	100.00
	....	....	....	....	....	....	....	....	....	....	....	....	5.7	....	....	22.9	....	14.3	57.1	100.00
equency"	....	....	....	....	....	....	....	....	....	....	....	....	22.8	....	....	....	....	2.9	74.3	100.00
	1.9	1.0	.5	4.1	2.5	1.8	.3	.1	.5	.2	2.8	.1	1.7	1.1	.8	4.4	....	11.2	63.9	100.00
	3.9	.5	2.1	27.8	3.2	9.7	2.4	1.3	5.8	1.3	6.0	....	13.5	.6	2.9	1.7	.5	13.7	3.1	100.00
	1.4	....	....	2.4	....	....	.3	6.3	....	....	.3	1.0	.6	5.4	8.1	14.0	5.1	12.1	43.0	100.00
	2.9	1.1	1.4	7.7	2.1	3.8	2.0	3.1	1.6	.6	2.6	.3	3.7	1.9	4.8	7.0	3.9	12.5	37.0	100.00
	6.1	6.0	2.4	7.9	.6	13.5	....	12.8	6.0	.1	11.3	1.0	6.7	1.4	5.4	9.0	2.7	7.1	....	100.00
	.5	1.5	....	26.5	12.2	....	12.2	.3	....	4.9	....	2.8	....	.5	.2	32.3	.4	5.7	....	100.00
illions of Conductor Feet):																				
-quad	1.3	.3	....	32.9	1.3	1.4	....	....	.8	.3	1.9	....	2.4	....	.3	5.9	....	11.2	40.0	100.00
"	5.3	3.0	2.6	26.4	8.3	4.9	1.5	7.1	6.5	.9	7.4	.8	7.0	3.2	.8	7.2	.6	6.5	....	100.00
"	1.6	2.7	.9	22.3	4.5	7.7	2.5	8.3	7.8	1.2	6.5	.8	8.3	2.9	1.3	9.1	1.7	9.9	....	100.00
"	3.0	2.8	1.8	19.2	3.7	8.4	3.3	7.2	5.2	.9	6.3	1.2	7.4	2.4	2.8	10.9	2.0	11.5	....	100.00
	3.3	1.7	1.2	7.5	.4	8.7	1.2	1.1	3.1	.4	4.1	.3	2.3	.3	3.2	2.9	2.6	24.8	30.9	100.00
	1.1	.6	.2	2.4	2.8	2.8	.5	.4	.5	.1	1.7	.1	1.6	.1	.9	9.9	.3	11.8	62.2	100.00
	2.6	2.4	1.3	16.7	4.0	6.5	2.2	5.7	4.8	.8	5.3	.7	6.0	2.0	1.8	9.6	1.4	11.0	15.2	100.00
	2.4	1.1	1.9	5.6	....	8.4	2.9	....	2.4	....	2.8	.5	....	.2	2.6	1.6	1.6	12.9	53.1	100.00
	1.8	2.9	1.9	22.5	6.0	10.6	2.5	5.4	7.3	.7	5.9	1.5	7.8	1.3	2.0	8.3	4.1	7.5	....	100.00
	.5	1.3	.5	5.1	.3	.3	2.2	9.0	2.2	.1	4.5	.9	4.9	2.3	2.8	9.9	11.7	41.5	....	100.00
	....	....	1.8	....	9.0	13.0	5.2	13.6	8.4	....	8.2	2.7	4.6	2.3	1.3	13.0	8.2	8.7	....	100.00
	2.4	2.9	1.3	34.9	4.2	7.6	2.5	5.6	6.3	1.3	4.2	.8	9.2	1.2	2.7	5.6	1.1	6.2	....	100.00
	4.7	1.9	1.0	15.7	8.2	9.1	2.7	6.3	4.6	.6	5.7	1.4	6.6	2.0	2.3	14.6	4.7	7.9	....	100.00
	....	....	....	....	....	....	....	2.7	....	.7	....	....	94.3	.7	....	....	....	1.6	....	100.00

J. G. Wray & Co.

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Illinois Bell Telephone Company, Chicago Rate Case

Estimate of Quantities of New Material Required to be Delivered by Western Electric Company, for Construction and Maintenance

Data from Provisional Estimates

Per Cent to Each Company of Total Bell System Requirements

Period 1930 to 1932 Inclusive

	N. Eng. T. & T.	So. N. Eng. T. & T.	N. Y. T.	N. J. B. T.	B. T. of Pa.	Ches. & Pot. T.	So. B. T. & T.	Ohio B. T.	Cin. & Sub. T.	Mich. B. T.	Ind. B. T.	Ill. B. T.	Wis. T.	N. W. B. T.	S. W. B. T.	Mt T.
Switchboards																
1. Manual, Lge. Mult. Sections (excl. D. S. "A")	3.6	.4	9.3	4.7	3.4	2.6	5.1	6.8	.3	3.2	2.3	4.7	5.5	3.6	9.4	
2. " " " "	27.1	....	15.1	....	....	7.8	....	....	....	....	....	8.5	....	8.4	4.2	
3. Small Mult, C. O. "	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
4. Manual Sma. Mult. C. O. Sections (excl. D. S. "A")	6.5	.4	11.4	8.9	8.8	6.0	9.7	1.2	.3	5.7	.8	1.9	2.2	8.4	21.6	
5. No. 5 Toll Test and No. 9 Teleg. Test Bays	3.7	.6	1.5	.8	2.4	1.6	2.0	2.2	.4	1.9	.3	2.5	4.0	2.0	11.3	
6. Manual, Sma. Mult. P. B. X. Sections (excl. Dial P. B. X.)	8.1	.9	26.2	6.5	5.9	6.1	6.2	5.3	2.0	7.6	.3	4.3	4.6	2.4	9.4	
7. " Non-Mult. Sect., No. 506 Type	5.5	2.3	30.3	8.0	6.2	4.7	2.2	3.6	.8	3.3	.6	6.0	3.5	2.4	6.9	
8. " " " " " 550 & 551 Types	3.9	2.1	27.1	5.8	3.0	5.3	5.4	4.8	2.4	3.0	.8	5.5	2.7	2.6	8.5	
9. Panel, No. of Lines, Total	5.4	....	37.8	8.4	7.6	2.9	....	3.3	1.9	8.0	....	7.5	2.8	1.0	6.9	
10. " " " Frames, "	5.9	....	37.9	7.1	7.0	2.3	....	3.0	2.0	8.3	....	10.7	2.8	.8	6.4	
11. Step-by-Step, No. of Lines, Total	6.1	9.4	10.1	.1	5.8	8.2	8.3	9.5	....	4.7	2.3	2.7	.7	4.9	11.1	
12. No. 700 and 701, Type P. B. X., No. of Sections	2.2	3.6	31.0	2.5	10.4	4.2	1.3	7.6	.5	3.9	1.0	9.3	1.4	2.0	5.3	
13. " " " 701, " " " " New Exchanges	3.8	6.7	22.3	1.8	9.1	3.9	2.0	8.5	.8	4.1	1.2	4.7	2.6	1.6	8.1	
14. " " " 701, " " " " Lines Equipped, Tot	5.6	5.2	20.2	6.1	12.8	5.6	.8	7.0	.8	5.1	.9	8.8	2.4	1.6	4.5	
15. " 740, Type P. B. X., No. of Systems	20.2	8.0	11.1	2.9	8.1	1.3	1.5	3.4	.5	4.6	2.0	13.4	2.3	1.1	8.0	
16. " 750, " " " " "	17.9	3.5	17.4	5.6	12.0	4.8	1.4	3.4	.7	2.0	1.1	8.1	3.0	1.1	6.8	
17. SXS-Community Type, No. of Lines	100.0	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
Repeaters and Carrier Current Equipment																
18. Telephone Repeaters, No. 22 Type	4.0	1.1	3.0	2.1	1.3	2.3	1.3	.9	.02	3.6	.1	2.9	4.3	2.5	5.1	1
19. " " 44 "	1.1	.1	.4	.3	.4	.01	.1	.1	....	.6	....	2.9	2.6	.1	4.7	
20. Telegraph Repeaters, Metallic	1.8	....	....	....	....	....	....	.8	....	.6	....	1.1	3.9	....	2.3	
21. " " Single Line	4.3	....	....	....	.7	.2	.6	....	....	....	.6	.2	3.6	....	6.5	
22. " " Diff. Duplex	1.1	....	....	....	.7	1.0	1.1	.2	....	.5	....	.5	5.6	.5	7.0	
23. " " One and Two Way Polar	4.0	....	....	....	1.3	....	1.3	.1	....	1.4	.5	1.3	1.8	.5	6.8	
24. Carrier Telephone System, C, D	1.1	....	1.3	....	....	6.0	3.3	.3	....	5.2	1.8	2.0	2.7	9.5	18.4	
25. " Telegraph ", Type B and Voice Freq	1.3	....	....	....	....	....	....	....	....	....	....	1.0	.9	....	5.7	
Loading Coils																
26. Side and Phantom Loading Coils	2.8	.8	5.8	1.9	2.6	.4	.4	.9	.1	1.1	.2	2.2	.3	.4	5.3	
27. Non-Phantom " "	3.7	2.2	22.3	7.8	4.9	1.7	4.6	5.2	1.2	6.5	1.0	10.0	1.0	1.1	4.7	
28. Carrier Phantom " "	.2	.006	1.0	....	....	1.6	8.4	....	....	.2	.5	.7	4.1	9.6	12.4	
29. Loading Coil Cases	1.9	.7	5.1	1.2	2.4	1.4	3.3	1.3	.2	1.1	.2	2.3	1.3	4.1	6.7	
Cable Terminals																
30. Cable Terminals, Type "BB"	....	1.1	48.0	6.7	1.2	1.7	8.5	1.7	....	.7	4.6	11.2	.5	1.1	7.1	
31. " " "C" and 14	12.1	2.2	11.3	3.2	9.6	4.2	7.5	5.1	1.5	6.9	2.8	6.9	1.2	4.2	9.8	

[fol. 5136]

	N. Eng. T. & T.	So. N. Eng. T. & T.	N. Y. T.	N. J. B. T.	B. T. of Pa.	Ches. & Pot. T.	So. B. T. & T.	Ohio B. T.	Cin. & Sub. T.	Mich. B. T.	Ind. B. T.	Ill. B. T.	Wis. T.	N. W. B. T.	S. W. B. T.	Mt T.
Station Apparatus																
32. Sub. Sets, Bell Boxes—Wall Type	4.5	2.1	20.1	5.1	7.6	4.1	5.7	6.1	.6	5.7	1.7	7.8	1.6	2.4	10.1	
33. Desk Stands	....	1.6	....	7.1	4.0	3.3	27.6	1.0	.3	8.0	6.0	(2.4)	1.4	1.8	20.8	1
34. Hand Telephone Sets	8.4	2.7	22.3	5.5	8.2	4.5	2.8	6.9	1.0	3.5	1.0	7.9	1.4	3.1	8.2	1
35. Coin Collectors, No. 50 Type	8.5	1.5	21.1	7.7	7.4	3.6	4.4	3.8	.2	7.3	1.1	5.1	3.1	2.2	8.7	
36. Loose and Mounted Dials	5.3	3.3	15.4	1.0	12.4	7.2	4.8	7.6	1.1	5.5	2.6	5.9	2.6	.8	11.3	
37. Wiring Plan Keys	16.5	1.6	14.6	2.1	3.7	2.7	10.5	6.3	.6	6.3	1.0	5.9	1.1	5.3	8.4	
Lead Covered Cable (Expressed in Millions of Conductor Feet)																
38. No. 19, 22, 24 and 26, Non-Quadded	6.2	2.3	19.4	5.1	7.9	3.0	6.2	5.9	1.1	5.7	1.3	8.2	3.0	2.5	9.0	
39. " 19, 22 and 24 pair in Quadded Cable	6.9	1.5	11.5	4.6	16.3	7.4	3.3	3.2	.5	5.6	1.7	6.0	7.2	13.5	6.6	
40. " 16 and larger, Quadded and Paired	4.3	2.5	11.4	2.5	4.5	1.3	.6	2.7	.2	4.7	.2	3.2	1.2	1.2	1.8	
41. " 19 and smaller, Quadded	2.5	.5	4.7	2.6	2.9	.7	.7	.7	.1	1.7	.3	1.3	.4	.9	6.4	
42. Toll Aerial Cable, Linear Feet	7.1	1.4	7.0	2.2	10.3	1.7	1.4	.3	.1	3.5	.1	3.0	.2	....	1.4	
43. Buried Cable, Paired and Quadded }	8.0	1.1	9.3	.4	2.4	1.6	1.9	4.4	....	1.2	....	.3	.5	10.2	28.1	
44. Tape Armored Cable, Quadded—Sheath Miles }																

( ) = Red.

4440f

Illinois Bell Telephone Company, Chicago Rate Case

Estimate of Quantities of New Material Required to be Delivered by Western Electric Company, for Construction and Maintenance

Data from Provisional Estimates

Per Cent to Each Company of Total Bell System Requirements

Period 1930 to 1932 Inclusive

	N. Eng. T. & T.	So. N. Eng. T. & T.	N. Y. T.	N. J. B. T.	B. T. of Pa.	Ches. & Pot. T.	So. B. T. & T.	Ohio B. T.	Cin. & Sub. T.	Mich. B. T.	Ind. B. T.	Ill. B. T.	Wis. T.	N. W. B. T.	S. W. B. T.	Mtn. S. T. & T.	Pac. T. & T.	A. T. & T. L. L.	Total
ections (excl. D. S. "A")	3.6	.4	9.3	4.7	3.4	2.6	5.1	6.8	.3	3.2	2.3	4.7	5.5	3.6	9.4	1.3	10.4	22.4	100.00
"	27.1	....	15.1	....	....	7.8		....	....	....	....	8.5	....	8.4	4.2	....	28.9	....	100.00
"	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
. O. Sections (excl. D. S. "A")	6.5	.4	11.4	8.9	8.8	6.0	9.7	1.2	.3	5.7	.8	1.9	2.2	8.4	21.6	3.9	2.3	....	100.00
o. 9 Teleg. Test Bays	3.7	.6	1.5	.8	2.4	1.6	2.0	2.2	.4	1.9	.3	2.5	4.0	2.0	11.3	.4	8.6	53.8	100.00
. B. X. Sections (excl. Dial P. B. X.)	8.1	.9	26.2	6.5	5.9	6.1	6.2	5.3	2.0	7.6	.3	4.3	4.6	2.4	9.4	.7	3.5	....	100.00
ect., No. 506 Type	5.5	2.3	30.3	8.0	6.2	4.7	2.2	3.6	.8	3.3	.6	6.0	3.5	2.4	6.9	3.2	10.5	....	100.00
" " 550 & 551 Types	3.9	2.1	27.1	5.8	3.0	5.3	5.4	4.8	2.4	3.0	.8	5.5	2.7	2.6	8.5	3.3	13.8	....	100.00
otal	5.4	....	37.8	8.4	7.6	2.9	....	3.3	1.9	8.0	....	7.5	2.8	1.0	6.9	....	6.5	....	100.00
"	5.9	....	37.9	7.1	7.0	2.3	....	3.0	2.0	8.3	....	10.7	2.8	.8	6.4	....	5.8	....	100.00
ines, Total	6.1	9.4	10.1	.1	5.8	8.2	8.3	9.5	....	4.7	2.3	2.7	.7	4.9	11.1	2.9	13.2	....	100.00
e P. B. X., No. of Sections	2.2	3.6	31.0	2.5	10.4	4.2	1.3	7.6	.5	3.9	1.0	9.3	1.4	2.0	5.3	1.4	12.4	....	100.00
" " " New Exchanges	3.8	6.7	22.3	1.8	9.1	3.9	2.0	8.5	.8	4.1	1.2	4.7	2.6	1.6	8.1	1.6	17.2	....	100.00
" " " Lines Equipped, Tot	5.6	5.2	20.2	6.1	12.8	5.6	.8	7.0	.8	5.1	.9	8.8	2.4	1.6	4.5	1.0	11.6	....	100.00
., No. of Systems	20.2	8.0	11.1	2.9	8.1	1.3	1.5	3.4	.5	4.6	2.0	13.4	2.3	1.1	8.0	1.4	10.2	....	100.00
" " "	17.9	3.5	17.4	5.6	12.0	4.8	1.4	3.4	.7	2.0	1.1	8.1	3.0	1.1	6.8	3.1	8.1	....	100.00
, No. of Lines	100.0	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	100.00
r Current Equipment																			
No. 22 Type	4.0	1.1	3.0	2.1	1.3	2.3	1.3	.9	.02	3.6	.1	2.9	4.3	2.5	5.1	1.1	12.1	52.3	100.00
44 "	1.1	.1	.4	.3	.4	.01	.1	.1	....	.6	....	2.9	2.6	.1	4.7	....	4.9	81.7	100.00
Metallic	1.8	....	....	....	....	....	....	.8	....	.6	....	1.1	3.9	....	2.3	....	21.9	67.6	100.00
Single Line	4.3	....	....	....	.7	.2	.6	....	....	....	.6	.2	3.6	....	6.5	.2	14.7	68.4	100.00
Diff. Duplex	1.1	....	....	....	.7	1.0	1.1	.2	....	.5	....	.5	5.6	.5	7.0	.5	26.3	55.0	100.00
One and Two Way Polar	4.0	....	....	....	1.3	....	1.3	.1	....	1.4	.5	1.3	1.8	.5	6.8	.7	17.3	63.0	100.00
em, C, D	1.1	....	1.3	....	....	6.0	3.3	.3	....	5.2	1.8	2.0	2.7	9.5	18.4	2.8	8.9	36.7	100.00
" , Type B and Voice Freq	1.3	....	....	....	....	....	....	....	....	....	....	11.0	.9	....	5.7	.5	13.0	67.6	100.00
ding Coils	2.8	.8	5.8	1.9	2.6	.4	.4	.9	.1	1.1	.2	2.2	.3	.4	5.3	.03	7.9	66.9	100.00
" "	3.7	2.2	22.3	7.8	4.9	1.7	4.6	5.2	1.2	6.5	1.0	10.0	1.0	1.1	4.7	1.5	15.6	5.0	100.00
" "	.2	.006	1.0	....	....	1.6	8.4	....	....	.2	.5	.7	4.1	9.6	12.4	3.2	4.0	54.1	100.00
....	1.9	.7	5.1	1.2	2.4	1.4	3.3	1.3	.2	1.1	.2	2.3	1.3	4.1	6.7	1.4	9.3	56.1	100.00
"BB"	....	1.1	48.0	6.7	1.2	1.7	8.5	1.7	....	.7	4.6	11.2	.5	1.1	7.1	1.1	4.8	....	100.00
and 14	12.1	2.2	11.3	3.2	9.6	4.2	7.5	5.1	1.5	6.9	2.8	6.9	1.2	4.2	9.8	1.9	9.5	.1	100.00
Wall Type	4.5	2.1	20.1	5.1	7.6	4.1	5.7	6.1	.6	5.7	1.7	7.8	1.6	2.4	10.1	4.1	10.7	....	100.00
....	....	1.6	....	7.1	4.0	3.3	27.6	1.0	.3	8.0	6.0	(2.4)	1.4	1.8	20.8	13.5	6.0	....	100.00
....	8.4	2.7	22.3	5.5	8.2	4.5	2.8	6.9	1.0	3.5	1.0	7.9	1.4	3.1	8.2	1.8	10.8	....	100.00
Type	8.5	1.5	21.1	7.7	7.4	3.6	4.4	3.8	.2	7.3	1.1	5.1	3.1	2.2	8.7	3.5	10.8	....	100.00
als	5.3	3.3	15.4	1.0	12.4	7.2	4.8	7.6	1.1	5.5	2.6	5.9	2.6	.8	11.3	1.7	11.5	....	100.00
....	16.5	1.6	14.6	2.1	3.7	2.7	10.5	6.3	.6	6.3	1.0	5.9	1.1	5.3	8.4	4.8	8.6	....	100.00
(Expressed in Millions of Conductor Feet)																			
on-Quadded	6.2	2.3	19.4	5.1	7.9	3.0	6.2	5.9	1.1	5.7	1.3	8.2	3.0	2.5	9.0	2.0	11.2	....	100.00
n Quadded Cable	6.9	1.5	11.5	4.6	16.3	7.4	3.3	3.2	.5	5.6	1.7	6.0	7.2	13.5	6.6	.9	2.8	.5	100.00
lded and Paired	4.3	2.5	11.4	2.5	4.5	1.3	.6	2.7	.2	4.7	.2	3.2	1.2	1.2	1.8	.6	8.9	48.2	100.00
dded	2.5	.5	4.7	2.6	2.9	.7	.7	.7	.1	1.7	.3	1.3	.4	.9	6.4	.05	7.5	66.1	100.00
r Feet	7.1	1.4	7.0	2.2	10.3	1.7	1.4	.3	.1	3.5	.1	3.0	.2	....	1.4	.2	8.6	51.5	100.00
d Quadded uadded—Sheath Miles	8.0	1.1	9.3	.4	2.4	1.6	1.9	4.4	....	1.2	....	.3	.5	10.2	28.1	3.2	3.7	23.7	100.00

J. G. Wray & Co.

[fol. 5137] **Exhibit X-317-A**

Illinois Bell Telephone Company, Chicago Rate Case

Cross-section of Estimated Quantities of Materials to be Delivered by W. E. Co. to Each Associated Co.

Period 1922-1932—11 Years

Quantities from Provisional Estimates

This chart—Exhibit 317-A—is to illustrate graphically the percentages shown on sheet 1 of Exhibit X-317.

Each graph on this chart represents for each associated company the percent that the estimated quantities of that company for each item is to the total estimated quantities for the Bell System of each item during the eleven year period, 1922 to 1932 inclusive.

Each graph on the chart represents the estimated requirements of a company and the company named is indicated both at the left and right hand ends of the graph. The 32 items of Western Electric Manufacture are indicated by the numbers at the bottom of the chart designated "Items."

The items are designated in the typewritten list in the upper left hand of the chart.

The percents are indicated by the scale at the left of each graph and begin at zero for each graph.

The following is the code used to designate the various associated companies:

N. E. T. & T.—New England Tel. & Tel. Co.
So. N. E. T. & T.—Southern New England Tel. & Tel. Co.
N. Y. T.—New York Telephone Co.
B. T. of Pa.—Bell Telephone Co. of Pennsylvania.
Ches. & Pot. T.—Chesapeake & Potomac Telephone Co. (Group).
So. B. T. & T.—Southern Bell Tel. & Tel. Co.
O. B. T.—Ohio Bell Telephone Company.
Cin. & Sub. T.—Cincinnati & Suburban Telephone Co.
M. B. T.—Michigan Bell Telephone Co.
Ind. B. T.—Indiana Bell Telephone Co.
Ill. B. T.—Illinois Bell Telephone Co.
Wis. T.—Wisconsin Telephone Co.

N. W. B. T.—Northwestern Bell Telephone Co.
S. W. B. T.—Southwestern Bell Telephone Co.
Mtn. S. T. & T.—Mountain States Tel. & Tel. Co.
[fol. 5138] Pac. T. &. T.—Pacific Tel. & Tel. Co.
A. T. & T. L. L.—American Tel. & Tel. Co.—Long Lines.

The vertical lines represent the 32 items. They are numbered at the bottom of the chart.

To illustrate how the chart has been prepared let us take item 1, sheet 1, Exhibit X317. The percent of estimate of quantities for the eleven year period for each company to the total quantities for the Bell System for the eleven year period for each item are on sheet 1 of Exhibit X317, shown across the sheet from left to right, opposite the items as designated and numbered. The same percentages are shown on the chart—Exhibit X317-A—across the chart from the bottom to the top opposite the same items as numbered at the bottom.

For example: On exhibit X317, Item 1—Manual Large Multiple Sections—has the following percentages; N. E. T. & T., 4.7; So. N. E. T. & T. 1.8; N. Y. T., 19.9, etc., across the page to a total of 100 percent. These figures are shown above Item 1 at the left hand of the chart—Exhibit X317-A. The percents beginning at the bottom are N. E. T. & T., 4.7; next above So. N. E. T. & T., 1.8; next above N. Y. T., 19.9, etc., to a total which will be 100 percent for the sum of the percents for this item.

The graphs on chart—Exhibit X317-A—are to enable one to visualize readily the variations of the percentages of estimated quantities of the 32 different items for the same company, and also the variations in the percents of any single item for the different companies. The percents for each of the companies would be alike for all 32 items if the estimates of quantities of each company were each a fair cross section of the estimates of quantities for the items for the Bell System.

(Here follows side folio 5139)

EXHIBIT X-317A

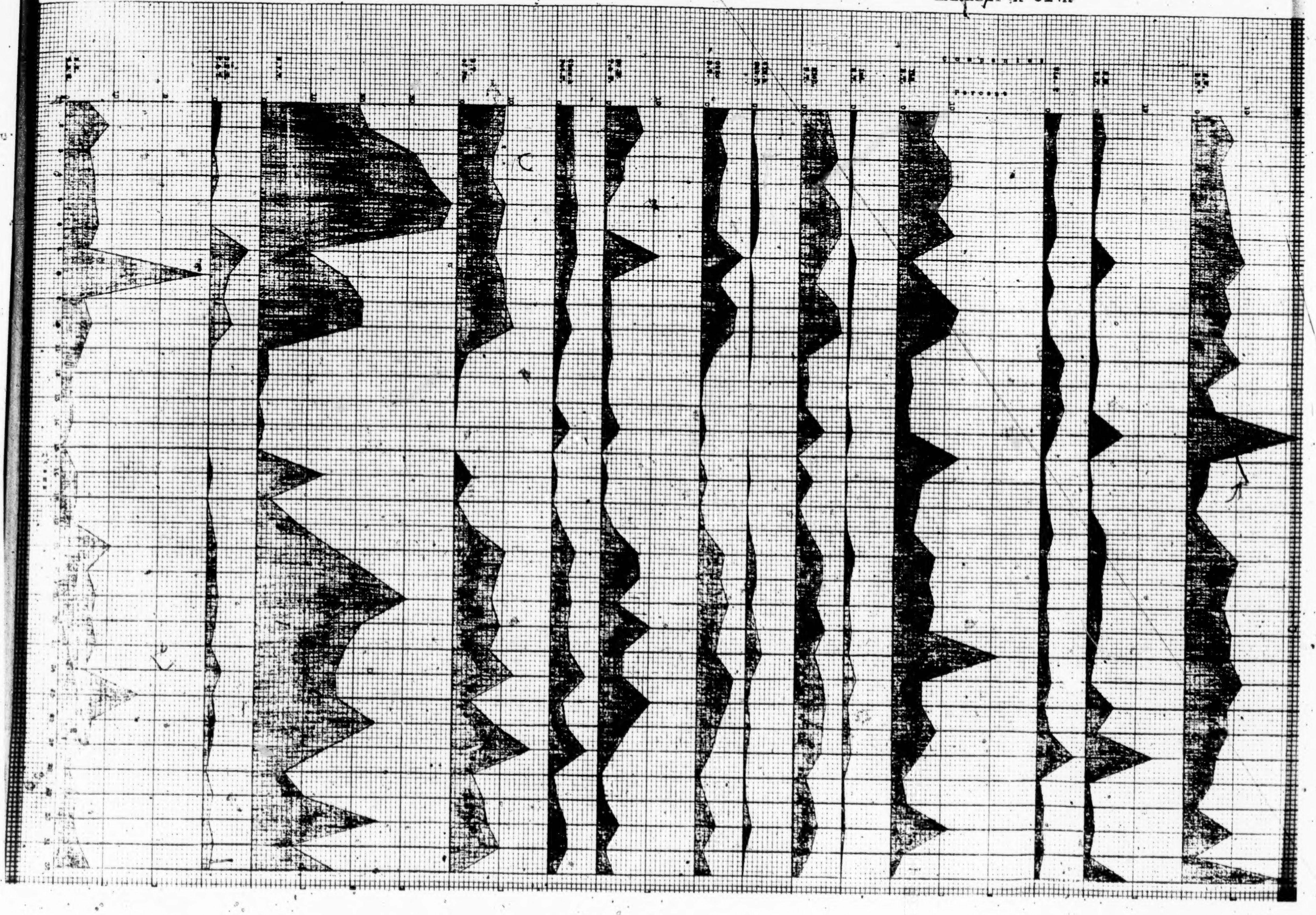
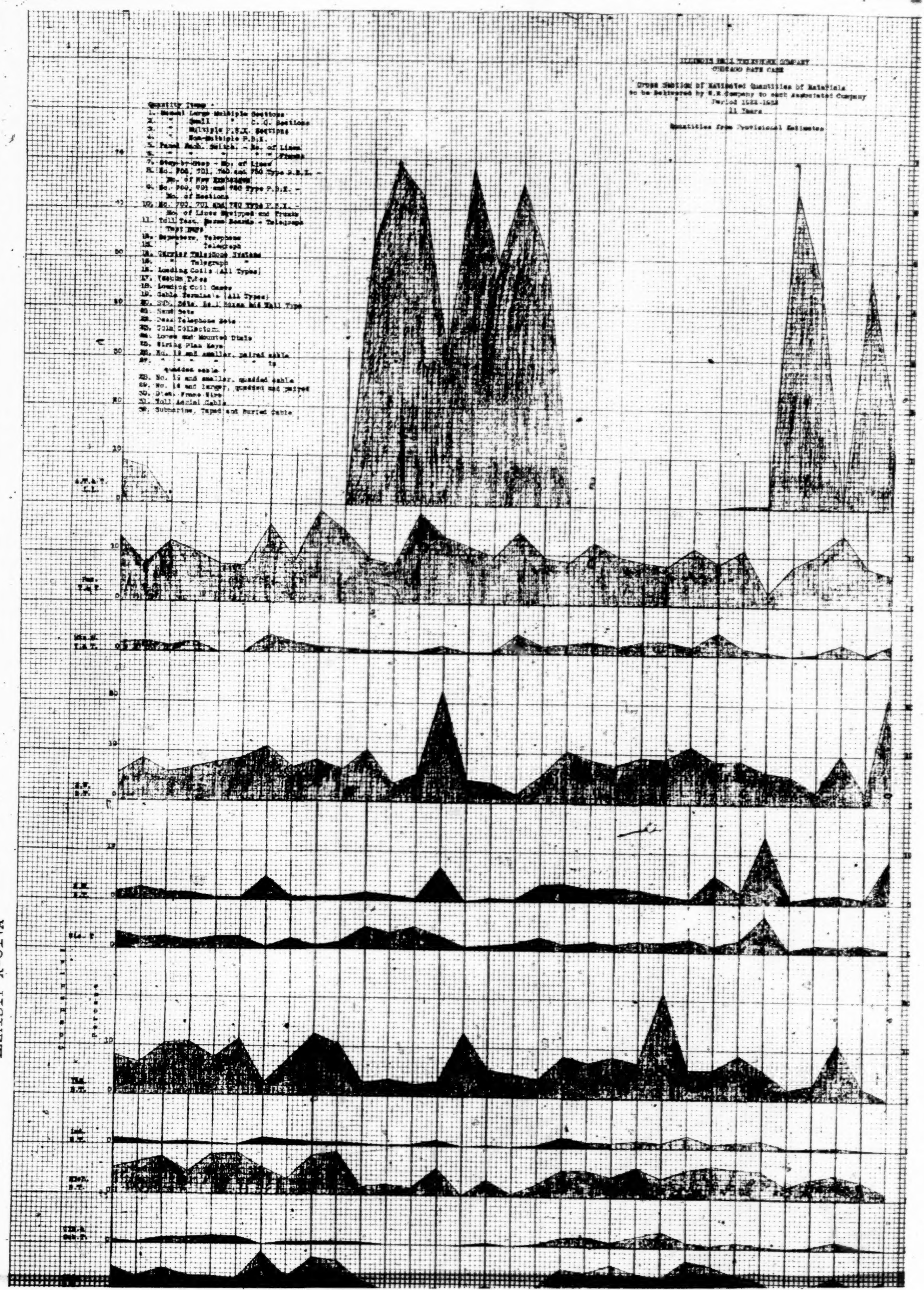


EXHIBIT X-317A

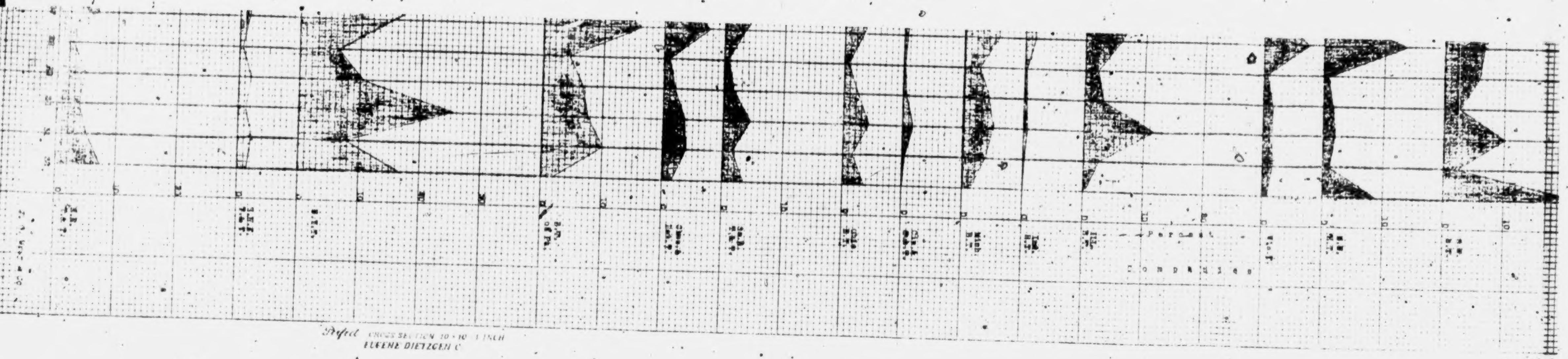


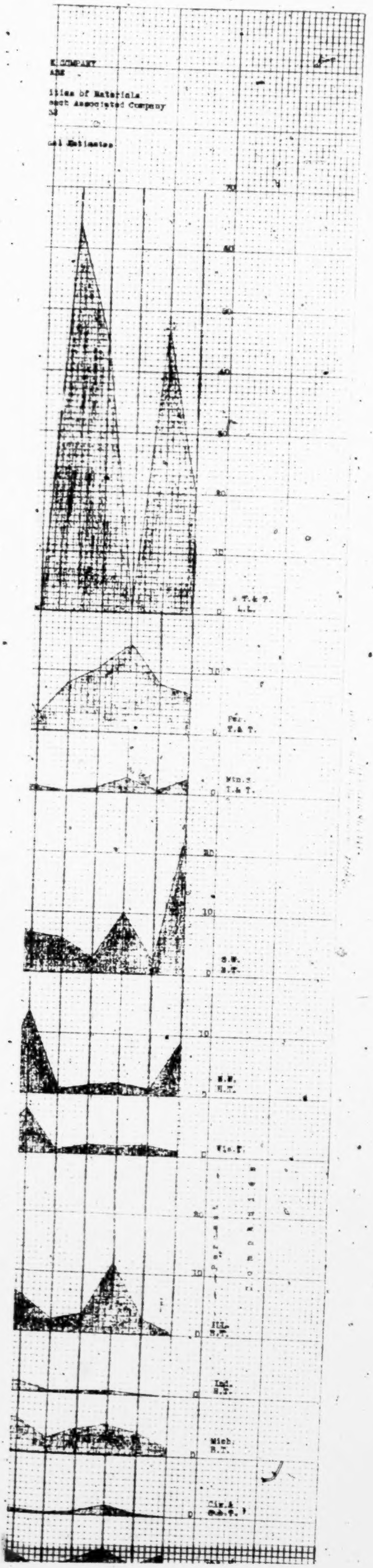
ILLINOIS BELL TELEPHONE COMPANY
CHICAGO RATE CASE

Cross Section of Estimated Quantities of Materials
to be Delivered by W.E.Company to each Associated Company
Period 1922-1932
11 Years

Quantities from Provisional Estimates

Quantity Items -
1. Manual Large Multiple Sections
2. " Small " C.O. Sections
3. " Multiple P.B.X. Sections
4. " Non-Multiple P.B.X.
5. Panel Mach. Switch. - No. of Lines
6. " " " " - Trunks
7. Step-by-Step - No. of Lines
8. No. 700, 701, 740 and 750 Type P.B.X. - No. of New Extensions
9. No. 700, 701 and 740 Type P.B.X. - No. of Sections
10. No. 700, 701 and 740 Type P.B.X. - No. of Lines Equipped and Trunks
11. Toll Test, Morse Boards - Telegraph Test Bays
12. Repeaters, Telephone
13. " Telegraph
14. Carrier Telephone Systems
15. " Telegraph "
16. Loading Coils (All Types)
17. Vacuum Tubes
18. Loading Coil Cases
19. Cable Terminals (All Types)
20. Std. Cable Bd. Boxes and Wall Type
21. Hand Sets
22. Desk Telephone Sets
23. Coin Collectors
24. Loose and Mounted Dials
25. Wiring Plan Keys
26. No. 19 and smaller, paired cable
27. " " " " " 19 quadded cable
28. No. 19 and smaller, quadded cable
29. No. 16 and larger, quadded and paired
30. Dist. Frame Wire
31. Toll Aerial Cable
32. Submarine, Taped and Buried Cable

of Pa.
Percent
Companies
Perfect CROSS SECTION 10 x 10 1 INCH
EUGENE DIETZGEN C


COMPANY
ARE
ities of Materials
each Associated Company
3
al Estimates
A.T.& T.
L.L.
Pac.
T.& T.
Mtn.S.
T.& T.
S.W.
B.T.
N.W.
B.T.
Wis.T.
Ill.
B.T.
Ind.
B.T.
Mich.
B.T.
Cin.&
Sub.T.
Percent
Companies
0
10
20
30
40
50
60
70

[fol. 5140].

EXHIBIT X-319

Illinois Bell Telephone Company—Chicago Rate Case

Estimated Quantities of New Materials Required to be Delivered in 1932-1933-1934

Provisional Estimate for 1932—Summary of Statement "E"

Actual Figures and Percentages of Bell System Totals—For Each Company

Panel Central Office Equipment

	Lines						Frames					
	1932		1933		1934		1932		1933		1934	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
New Eng. Tel. & Tel. Co.	31,320	7.36	15,000	5.39	15,260	5.74	396	9.08	150	4.96	119	4.06
So. New Eng. Tel. Co.	0		0		0		0		0		0	
New York Tel. Co.	185,890	43.66	99,120	35.61	64,670	24.31	1,650	37.81	964	31.90	660	22.52
New Jersey Bell Tel. Co.	18,160	4.27	19,900	7.15	0		210	4.81	286	9.46		
Bell Tel. Co. of Pa.	22,200	5.21	45,740	16.43	39,405	14.81	265	6.07	563	18.63	554	18.90
Diamond State Tel. Co.	0		0		0		0		0		0	
Ches. & Pot. Tel. Co. of D. C.	9,600	2.25	27,600	9.91	5,900	2.22	94	2.15	215	7.12	64	2.18
" " " " " B. C.	0		470	.17	0		0		13	.43	0	
" " " " " Va.	0		0		0		0		0		0	
" " " " " W. Va.	0		0		0		0		0		0	
So. Bell Tel. & Tel. Co.	0		0		0		0		0		0	
Ohio Bell Tel. Co.	27,780	6.05	16,840	6.05	20,420	7.67	255	5.84	216	7.15	217	7.40
Cinn. & Sub. Bell Tel. Co.	6,400	1.50	2,000	.72	17,800	6.69	98	2.25	14	.46	219	7.47
Mich. Bell Tel. Co.	12,040	2.83	10,120	3.63	47,240	17.76	111	2.54	115	3.81	476	16.24
Ind. Bell Tel. Co.	0		0		0		0		0		0	
Wis. Tel. Co.	16,730	3.93	1,000	.36	8,500	3.19	208	4.77	22	.73	105	3.58
Ill. Bell Tel. Co.	44,320	10.41	17,280	6.21	22,780	8.56	570	13.06	201	6.65	313	10.68
Northwestern Bell Tel. Co.	0		0		980	.37	0		0		4	.14
Southwestern Bell Tel. Co.	26,600	6.25	11,200	4.02	5,200	1.95	239	5.48	120	3.97	33	1.13
Mountain States T. & T. Co.	0		0		0		0		0		0	
Pacific Tel. & Tel. Co.	26,730	6.28	12,100	4.35	17,900	6.73	268	6.14	143	4.73	167	5.70
Total	425,770	100.00	278,370	100.00	266,055	100.00	4,364	100.00	3,022	100.00	2,931	100.00

[fol. 5141]

Illinois Bell Telephone Company—Chicago Rate Case
Estimated Quantities of New Materials Required to be Delivered in 1932–1933–1934
Provisional Estimate for 1932—Summary of Statement "E"
Actual Figures and Percentages of Bell System Totals—For Each Company

Step-by-Step Lines

	1932		1933		1934	
	Amount	%	Amount	%	Amount	%
New Eng. Tel. & Tel. Co.	27,660	11.69	8,625	4.62	27,260	8.31
So. New Eng. Tel. Co.	21,370	9.03	23,120	12.37	22,400	6.83
New York Tel. Co.	23,990	10.14	28,730	15.38	20,490	6.24
New Jersey Bell Tel. Co.	0	.....	400	.21	3,400	1.04
Bell Bel. Co. of Pa.	2,860	1.21	8,795	4.71	11,180	3.41
Diamond State Tel. Co.	1,020	.43	0	.....	100	.03
Ches. & Pot. Tel. Co. of D. C.	0	.....	0	.....	0	.....
" " " " " B. C.	0	.....	0	.....	0	.....
" " " " " Va.	12,900	5.45	2,500	1.34	0	.....
" " " " " W. Va.	555	.23	3,360	1.80	325	.10
So. Bell Tel. & Tel. Co.	14,100	5.96	20,136	10.78	55,910	17.04
Ohio Bell Tel. Co.	18,300	7.73	1,960	1.05	17,000	5.18
Cinn. & Sub. Bell Tel. Co.	0	.....	0	.....	0	.....
Mich. Bell Tel. Co.	8,300	3.51	7,550	4.04	4,860	1.48
Ind. Bell Tel. Co.	2,000	.84	3,500	1.87	10,000	3.05
Wis. Tel. Co.	0	.....	11,380	6.09	36,610	11.16
Ill. Bell Tel. Co.	13,790	5.83	560	.30	2,340	.71
Northwestern Bell Tel. Co.	30,590	12.03	9,090	4.86	25,475	7.76
Southwestern Bell Tel. Co.	9,185	3.88	32,295	17.29	41,370	12.61
Mountain States T. & T. Co.	119	.05	3,765	2.02	12,955	3.95
Pacific Tel. & Tel. Co.	49,904	21.09	21,063	11.27	36,431	11.10
Total	236,643	100.00	186,829	100.00	328,106	100.00

(Here follow side folio 5142, 5143 and 5144)

[fol. 5142]

Illinois Bell Telephone Company, Chicago Rate Case

Estimated Quantities of New Materials Required to be Delivered in 1932-1933 1934

Provisional Estimate for 1932—Summary of Statement "E"

Actual Figures and Percentages of Bell System Totals For Each Company

	700-701 P. B. X. Lines						740 P. B. X's				750 P. B. X's			
	1932		1933		1934		1932		1933		1932		1933	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
New Eng. Tel. & Tel. Co	4,500	8.22	4,700	8.81	5,075	8.67	50	21.01	60	19.54	355	16.15	380	15.52
So. New Eng. Tel. Co	1,280	2.33	1,690	3.17	1,790	3.06	23	9.67	27	8.79	80	3.64	85	3.47
New York Tel. Co	10,350	18.90	10,540	19.75	11,340	19.37	38	15.97	48	15.63	290	13.20	359	14.67
New Jersey Bell Tel. Co	2,700	4.93	800	1.50	700	1.19	6	2.52	6	1.95	175	7.96	175	7.15
Bell Tel. Co. of Pa	12,060	22.02	6,080	11.40	6,680	11.41	19	7.98	23	7.49	224	10.20	228	9.31
Diamond State Tel. Co	120	.22	120	.22	120	.20	2	.84	1	.33	18	.82	18	.74
Ches. & Pot. Tel. Co. of D. C	2,030	3.71	1,840	3.45	2,380	4.06	0	....	0	....	125	5.69	75	3.06
" " " " " B. C	480	.88	460	.86	0	....	0	....	1	.33	24	1.09	25	1.02
" " " " " Va	0	....	0	....	0	....	2	.84	2	.65	30	1.37	40	1.63
" " " " " W. Va	140	.25	100	.19	0	....	3	1.26	2	.65	10	.46	10	.41
So. Bell Tel. & Tel. Co	100	.18	705	1.32	865	1.48	9	3.78	10	3.26	45	2.05	64	2.62
Ohio Bell Tel. Co	3,220	5.88	4,630	8.68	4,765	8.14	7	2.94	8	2.61	65	2.96	70	2.86
Cinn. & Sub. Bell Tel. Co	640	1.17	575	1.08	300	.51	3	1.26	2	.65	20	.91	15	.61
Mich. Bell Tel. Co	1,000	1.82	1,200	2.25	2,000	3.42	6	2.52	6	1.95	50	2.28	100	4.09
Ind. Bell Tel. Co	300	.55	400	.75	500	.85	5	2.10	3	.98	33	1.50	25	1.02
Wis. Tel. Co	190	.35	200	.37	200	.34	6	2.52	8	2.61	75	3.41	110	4.49
Ill. Bell Tel. Co	6,450	11.78	7,500	14.06	7,500	12.81	12	5.04	29	9.45	220	10.01	262	10.70
Northwestern Bell Tel. Co	800	1.46	520	.97	670	1.14	4	1.68	5	1.63	47	2.14	52	2.12
Southwestern Bell Tel. Co	1,800	3.29	2,265	4.25	2,640	4.51	5	2.10	15	4.89	75	3.41	100	4.09
Mountain States T. & T. Co	1,076	1.96	800	1.50	850	1.45	10	4.20	12	3.91	70	3.19	90	3.68
Pacific T. & T. Co	5,530	10.10	8,230	15.42	10,180	17.39	28	11.77	39	12.70	166	7.56	165	6.74
Total	54,766	100.00	53,355	100.00	58,550	100.00	238	100.00	307	100.00	2,197	100.00	2,448	100.00

Exhibit X-320

Illinois Bell Telephone Company, Chicago Rate Case

Data from Provisional Estimates Depreciation

Per Cent Retirements to Plant in Service at End of Preceding Year

Year 1923

	R. W.	Bldg.	C. O. Equipment			Sta. Equipment			Ex. P.	Ex. A. C.	Ex. A. W.	Ex. Cond.	Ex. U. G. C.	T. P.	T. A. C.	T. A. W.	T. Cond.	T. U. G. C.
			Man.	M. S.	Total	Man.	M. S.	Total										
Ill. Bell	2.1	.4*	2.1	0		10.6	.1		3.9	3.8	7.4	.4	1.6	4.5	1.2	4.5	.2	1.1
N. Eng. T. & T.	.2	.1*	1.6	0		10.8	2.6		2.6	4.5	5.5	.2	3.5	4.4	4.0	7.5		2.6
So. N. Eng. T. & T.	.6	.3*	1.4	0		12.4	14.3		5.2	3.9	3.6	.4	2.9	5.5	.2	5.5		.4
N. Y. T.	.8	.2*	1.1	1.0		12.8	2.8		2.7	1.9	2.7	.1	1.6	3.1	.2	2.7		.2
B. of Pa. & Ass. Cos.	.45	1.23*			1.92			9.1	5.17	4.8	6.05	.27	3.10	4.91	1.46	4.85	.24	1.17
C. & P. & Ass. Cos.	.6	.4*	2.3	1.0		1.9	4.2		5.6	5.5	8.7	.2	2.8	4.5	2.7	2.4		1.0
So. B. T. & T. excl. Cum.			1.23			12.81	12.02		5.62	4.9	8.84		2.82	3.96	1.87	.78		.54
Cum. T. & T.		.08'	1.52			13.53			4.48	5.82	6.48	.51	4.51	3.55	2.17	.89		.47
Ohio B. T.	1.2	5.8*	6.1	16.3		20.0	8.0		3.6	4.0	10.5	.1	1.8	6.6	.7	5.7	0	1.7
Cin. & Sub. T.			.6			1.5			.5	.3	.5		.7					
Mich. Bell	0	5.9*	4.1	1		17.0	14.4		3.9	5.6	13.7	.4	2.0	4.6	10.1	3.7	0	2.1
Ind. Bell		1.289*			1.572	9.541	7.128		3.093	6.944	10.983	.573	1.223	6.378		1.106		7.353
Wis. Tel.		.5*	1.5			8.0			3.5	7.3	7.6	1	1.7	3.0	.6	4.0		.5
N. W. Bell		.07*			.66			8.59	3.03	3.74	7.59	.35	1.17	4.17	1.24	1.23	2.90	.87
S. W. Bell	.18	.31*			2.08			13.6	3.7	3.3	9.5	.089	1.6	6.67	2.30	1.90	5.9	6.88
Mt. States T. & T.		.53*	2.73	1.65		18.36	4.43		2.64	4.27	8.50	.39	2.43	2.84	21.88	1.08		
Pac. T. Sys. Excl. S. Cal	7	.4*	4.6	1.7				15.3	5.6	7.4	11.5	.2	1.5	6.0	.6	4.6	.4	4.1
So. Cal. T.	1.1	.2*	.9	1.3				19.2	4.1	8.1	10.5	.2	1.1					
Kas. City T.		1.54*	3.16					19.26	2.63	2.46	7.86	.17	.83					

* Includes Land.

Illinois Bell Telephone Company, Chicago Rate Case

Data from Provisional Estimates Depreciation

Per Cent Retirements to Plant in Service at End of Preceding Year

Year 1924

[fol. 5144]

			C. O. Equipment			Sta. Equipment												
	R. W.	Bldg.	Man.	M. S.	Total	Man.	M. S.	Total	Ex. P.	Ex. A. C.	Ex. A. W.	Ex. Cond.	Ex. U. G. C.	T. P.	T. A. C.	T. A. W.	T. Cond.	T. U. G. C.
Ill. Bell	1.10	.70	1.61	.....	.....	11.21	9.62	.....	3.21	3.79	7.12	.29	1.49	7.06	1.33	8.65	.24	.21
N. Eng. T. & T.	.32	.13	3.1	.02	.....	8.98	7.90	.....	2.75	4.36	5.79	.19	4.20	4.71	2.42	8.69	.03	1.02
So. N. Eng. T. & T.	.71	1.57	3.11	.....	.....	12.06	7.10	.....	5.17	2.95	3.14	.35	2.28	4.15	.18	5.60	.....	.27
N. Y. Tel.	1.16	2.17	.....	.....	.93	.....	.....	12.65	2.66	2.00	4.85	.05	1.75	2.27	.43	2.22	.....	.28
B. of Pa. & Ass. Cos.	.3	1.4	.....	.....	1.50	.....	.....	11.0	4.8	4.1	5.9	.4	3.1	4.1	1.4	3.8	.3	1.2
C. & P. & Ass. Cos.	.5	1.0	2.1	.....	.....	12.0	11.7	.....	7.5	6.8	10.1	.2	2.4	5.4	.6	2.7	.....	.2
So. B. T. & T. excl. Cum.	.85	.3	1.38	.....	.....	14.88	18.69	.....	4.96	5.08	9.25	.06	2.28	3.89	.94	.72	.....	1.97
Cum. T. & T.	.....	.69	1.4	.....	.....	13.21	.....	.....	3.72	6.82	7.28	.09	1.79	3.52	1.96	1.10	.....	2.40
Ohio B. T.	1.41	2.06	4.38	11.57	.....	16.35	10.72	.....	4.35	3.34	9.38	.25	.90	7.56	.76	5.58	5.88	2.34
Cin. & Sub. T.	.....	.01	.04	1.77	.....	.....	.40	.....	.41	.40	.....	.....	1.13	.02	.....	.....	.....	.....
Mich. Bell	3.4	.8	.....	.....	2.2	.....	.....	15.8	2.9	5.6	10.6	.3	1.7	.....	.....	.....	.....	.....
Ind. Bell	.57	.82	.....	.....	2.44	12.62	9.74	.....	6.8	10.14	17.8	.05	2.31	7.76	.....	3.82	.....	4.5
Wis. Tel.	.....	.81	1.37	.....	.....	12.15	.....	.....	3.71	7.24	9.67	.15	1.75	3.95	5.21	2.91	.....	1.24
N. W. Bell	.....	.05	.....	.....	.76	.....	.....	9.73	3.8	4.12	7.95	.56	1.19	3.32	.88	1.61	.....	5.28
S. W. Bell	1.11	.15	.....	.....	1.8	.....	.....	17.51	4.96	3.2	10.37	.23	1.67	5.68	1.46	1.72	5.71	5.72
Mt. States T. & T.	.....	6.19	3.21	3.04	.....	17.79	3.47	.....	2.36	3.99	8.61	.26	1.90	2.08	7.02	.67	.....	.....
Pac. T. Sys. excl. S. Cal.	.8	.75	5.39	3.89	.....	.....	.....	11.75	5.99	4.58	13.24	.23	1.42	4.98	.23	5.00	.....	2.86
So. Cal. T.	1.02	.17	5.73	5.59	.....	.....	.....	12.67	4.66	5.74	25.89	.17	1.13	.....	.....	.....	.....	.....
Kas. C. T.	.....	.75	.....	.....	1.18	.....	.....	8.54	3.66	3.66	4.88	.....	.42	.....	.....	.....	.....	.....

[fol. 5145]

Illinois Bell Telephone Company—Chicago Rate Case

Depreciation Data from Provisional Estimates

Associated Bell Companies
Depreciation Rates

(Form A—Accts. 340, 608, 609 as % of Average Plant in Service Including No. 261)

	1923	1924	1924	1926	1927	1928	1929	1930	1931	1932	1933	1934
Illinois Bell												
From 1923 Est. (excl. Acct. 211)	***5.20	5.20	5.20	5.30	5.30	....	....	....	....	....	....	....
1924	**5.13	***5.06	5.08	5.10	5.09	5.16	....	....	....	....	....	....
1925	*5.11	**4.84	***4.90	4.90	4.89	4.90	4.91	....	....	....	....	....
1926	*5.11	*4.81	**4.86	***4.88	4.91	4.90	4.93	4.94	....	....	....	....
1927	*5.11	*4.81	*4.88	**4.93	***4.91	4.94	4.97	4.98	5.01	....	....	....
1928	*5.11	*4.81	*4.88	*4.92	**4.94	***4.96	4.99	4.99	5.01	5.04	....	....
1929	....	*4.81	*4.88	*4.92	*4.93	**4.98	***4.97	4.98	4.99	4.99	4.99	....
1930	....	....	*4.88	*4.92	*4.93	*4.97	**4.82	***4.80	4.79	4.76	4.74	4.74
1931 (excl. Acct. 211)	....	....	....	....	....	....	*4.93	**4.93	***4.93	4.92	4.91	....
New England T. & T.												
From 1925 Est	*4.81	**4.74	***4.76	4.76	4.77	4.78	4.79	....	....	....	....	....
1930	....	....	*4.77	*4.57	*4.57	*4.58	**4.19	***4.18	4.18	4.19	4.19	4.19
New York Tel. Co.												
From 1925 Est	*5.02	**4.97	***4.99	5.02	5.00	5.00	5.00	....	....	....	....	....
1931	....	....	*5.03	*4.96	*4.94	*4.97	*4.72	**4.68	***4.64	4.60	4.58	4.59
New Jersey Bell												
From 1931 Est	....	....	....	....	....	....	*4.70	**4.68	***4.66	4.61	4.57	....
Ohio Bell Tel. Co.												
From 1925 Est	*5.24	**5.24	***5.24	5.26	5.27	5.28	5.28	....	....	....	....	....
1930	....	....	*5.25	*5.28	*5.15	*5.17	**5.52	***5.48	5.42	5.35	5.28	5.20

Illinois Bell Telephone Company—Chicago Rate Case—Continued

	1923	1924	1924	1926	1927	1928	1929	1930	1931	1932	1933	1934
Indiana Bell Tel. Co.												
From 1925 Est.	*4.88	**5.88	***5.71	5.71	5.71	5.71	5.71	....	....	....	....	....
1930	....	....	*5.69	*5.65	*5.51	*5.50	**5.51	***5.46	5.38	5.31	5.28	5.23
Michigan Bell Tel. Co.												
From 1925 Est.	*5.17	**5.22	***5.18	5.12	5.07	5.04	5.02	....	....	....	....	....
1930	....	....	*5.18	*5.02	*5.11	*5.25	**5.25	***5.32	5.25	5.21	5.15	5.08
1931	....	....	....	....	....	....	*5.49	**5.55	***5.54	5.52	5.49	....
Wisconsin Tel. Co.												
From 1925 Est.	*4.91	**4.83	***4.83	4.83	4.83	4.83	4.83	....	....	....	....	....
1930	....	....	*4.79	*4.77	*4.75	*4.77	**4.34	***4.33	4.31	4.30	4.30	4.30
N. W. Bell Tel. Co.												
From 1925 Est. (1930=5.31)	*5.00	**5.00	***5.00	5.00	5.00	5.00	5.00	....	....	....	....	....
1930	....	....	*5.00	*4.98	*4.91	**4.88	**4.72	***4.71	4.71	4.66	4.65	4.67
1931	....	....	....	....	....	....	*4.96	**4.88	***4.90	4.88	4.87	....

* Actual.
** Last 3 months estimated.
*** This and later years estimated.

133—440 [fol. 5146]

Illinois Bell Telephone Company—Chicago Rate Case

Depreciation Data from Provisional Estimates

Associated Bell Companies
Depreciation Rates

(Form A—Accts. 340, 608, 609 as % of Average Plant in Service Including No. 261)

	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934
Pacific T. & T. Co.												
From 1925 Est.	*5.30	**4.97	***4.98	4.91	4.93	4.93	4.93	....	....	....	....	....
1930	....	....	*4.98	*4.61	*4.81	*4.81	**4.81	***4.92	4.93	4.92	4.91	4.89
1931	....	....	....	....	....	....	*5.01	**5.17	***5.13	5.12	5.12	....
Mountain States T. & T. Co.												
From 1925 Est.	*5.18	**5.20	***5.20	5.19	5.19	5.19	5.18	....	....	....	....	....
1930	....	....	*5.29	*5.22	*5.20	*5.15	**4.89	***4.88	4.87	4.88	4.87	4.87
1931	....	....	....	....	....	....	*5.20	**5.00	***4.89	4.89	4.89	....
S. W. Bell Tel. Co.												
From 1925 Est.	*5.08	**5.08	***5.08	5.05	4.96	4.96	4.97	....	....	....	....	....
1930	....	....	*5.07	*5.06	*5.07	*5.64	**5.33	***5.26	5.21	5.16	5.12	5.09
1931	....	....	....	....	....	....	*5.57	**5.54	***5.47	5.44	5.41	....
Southern Bell Tel. Co.												
From 1925 Est.	*5.05	**5.25	***5.25	5.25	5.25	5.25	5.26	5.27	....	....	....	....
1930	....	....	*5.38	*5.31	*5.18	*5.16	**5.35	***5.28	5.21	5.16	5.11	5.07
1931	....	....	....	....	....	....	*5.59	**5.52	***5.48	5.43	5.39	....

Illinois Bell Telephone Company—Chicago Rate Case—Continued

	1923	1924	1924	1926	1927	1928	1929	1930	1931	1932	1933	1934
Ches. & Pot. Tel. Co.												
From 1925 Est.	*5.08	**4.99	***4.99	5.00	5.00	5.00	5.00	....	....	....	....	....
1930	....	....	*4.44	*4.43	*4.35	*4.42	**4.44	***4.39	4.34	4.34	4.34	4.22
1931	....	....	....	....	....	....	*4.71	**4.61	***4.58	4.57	4.55	....
Bell of Pa.												
From 1925 Est.	*4.78	**4.66	***4.68	4.71	4.69	4.72	4.71	....	....	....	....	....
1930	....	....	....	....	....	....	....	***4.60	4.54	4.49	4.45	4.41
1931	....	....	....	....	....	....	*4.97	**4.91	***4.86	4.81	4.71	....
A. T. & T. Long Lines												
From 1925 Est.	*4.26	**4.45	***4.45	4.40	4.40	4.40	4.40	....	....	....	....	....
1930	....	....	*4.99	*5.11	*5.20	*5.27	**5.19	***5.09	5.00	4.98	4.98	4.97
1931 (excl. Acct. 211)	....	....	....	....	....	....	*5.53	**5.39	***5.14	5.13	5.15	....

* Actual.
** Last 3 months estimated.
*** This and later years estimated.

[fol. 5147]

Exhibit X-321

Illinois Bell Telephone Company—Chicago Exchange

	Independent Class A, B, C	Percent Independent of Total	Bell System	Percent Bell of Total	Total
Number of Central Iffices	3,747	36.3	6,585	63.7	10,332
Number of Stations	2,091,082	11.8	15,682,059	88.2	17,773,141
Fixed Capital	352,229,684	7.9	4,146,149,003	92.1	4,498,378,687
Capital Stock	161,736,059	6.3	2,413,768,502	93.7	2,575,504,561
Funded Debt	121,040,203	9.8	1,115,592,223	90.2	1,236,962,426
Total Assets	406,657,587	7.5	5,000,195,801	92.5	5,406,853,388
Revenues—Exchange	60,378,667	7.7	728,709,193	92.3	789,087,860
Revenues—Toll	18,162,013	5.0	348,541,203	95.0	366,703,216
Revenues—Miscellaneous	1,616,820	5.7	26,689,409	94.3	28,306,229
Revenues—Total Operating	80,157,500	6.8	1,103,939,805	93.2	1,184,097,305
Revenues—Other	1,204,321	2.5	47,626,208	97.5	48,830,529
Revenues—Total	81,361,821	6.6	1,151,566,013	93.4	1,232,927,834
Expenses					
Maintenance	12,586,979	6.2	191,056,987	93.8	203,643,966
Depreciation	12,331,388	6.3	182,400,230	93.7	194,731,618
Traffic	14,256,077	6.0	225,291,129	94.0	239,547,206
Commercial	5,709,851	5.1	106,347,376	94.9	112,057,227
General	6,408,869	8.7	67,653,358	91.3	74,062,227
Uncollectible	557,134	5.8	9,056,624	94.2	9,613,758
Taxes	5,769,018	6.3	86,291,070	93.7	92,060,088
Deductions, Rents, etc	1,198,328	7.1	15,594,814	92.9	16,793,142
Total	58,817,644	6.2	883,691,588	93.8	942,509,232
Available for Dep. Int. & Div.	33,548,404	6.9	450,274,655	93.1	483,823,059
Available for Int. & Div	21,217,016	7.3	267,874,425	92.7	289,091,441
Available for Div	14,842,664	6.9	201,645,905	93.1	216,488,569

[fol. 5148]

Illinois Bell Telephone Company—Chicago Rate Case

Comparison of Bell and Independent Telephones in 52 Largest Cities in the United States, January 1, 1931

Totals
Bell and Independent Exchanges

Exchange	***Population	Number of Telephones
New York	7,014,900	1,786,270
Chicago	3,424,000	981,325
Los Angeles	1,320,000	401,887
Total 8 Cities over 1,000,000 population	19,602,800	4,875,830
Pittsburgh	987,300	231,435
Milwaukee	725,100	158,003
San Francisco	653,300	262,470
Washington	508,500	172,998
Total 10 cities with population between 500,000 & 1,000,000	6,927,700	1,605,282
Minneapolis	497,600	133,477
Seattle	403,900	128,447
Denver	290,100	[illegible],965
Omaha	228,800	67,102
Total 34 Cities with population 200,000 & 500,000	10,228,400	2,204,289
Total 52 Cities with more than 200,000 population	36,758,900	8,685,400

*** City or Exchange Area.

Independent Exchanges

Exchange	Population	Number of Telephones
Philadelphia	1,950,961	57,000*
Rochester, N. Y.	328,132	89,533**
St. Paul	271,606	84,000

* Includes Camden, N. J., Chester, Pa., and 14 small exchanges in competition with a Bell Exchange.

** Includes Rochester and 36 small exchanges.

(Here follows side folios 5149, 5150 and 5151)

[fol. 5149]

EXHIBIT X-322

Illinois Bell Telephone Company, Chicago Division

Analysis of Account 510—Message Tolls

Eight Years—January 1, 1923 to Decmber 31, 1930

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
American Telephone & Telegraph Co. Tolls:								
Commissions on A. T. & T. Co. Messages	$257,243.64	$373,918.07	$416,203.49	$462,441.82	$514,853.23	$593,397.67	$717,622.13	$741,360.20
Prorate on Suburban Division Messages	110.16	110.16	820.38	1,554.35	2,067,82	3,310.59	4,234.03	5,202.80
Prorate on Illinois Division Messages	....	....	....	1,200.76	1,257.28	1,487.58	1,808.31	2,015.51
Total American Telephone & Telegraph Co. Tolls	257,353.80	374,028.23	417,023.87	465,196.93	518,178.33	598,195.84	723,664.47	748,578.51
Illinois Bell Telephone Co. Tolls:								
Originating Commissions and Mileage Prorate:								
Chicago to Suburban Divisions	1,001,787.31	1,144,141.07	1,355,931.46	2,087,784.06	2,346,420.34	2,622,016.85	2,904,337.82	2,958,137.17
Chicago to Illinois Division	53,050.33	57,187.86	122,312.02	157,250.55	199,578.31	219,679.46	244,490.11	235,496.03
Mileage Prorate:								
Suburban Divisions to Chicago and Suburban	731,951.67	842,997.27	1,009,488.13	795,232.38	885,694.84	990,512.44	1,069,063.34	1,083,216.19
Illinois Division to Chicago	16,298.79	17,252.92	33,172.57	44,429.11	53,747.73	60,892.25	70,333.36	63,086.68
Through Message Prorate:								
Suburban Divisions to Illinois Division	797.86	884.17	1,347.95	4,531.67	5,537.98	6,413.55	7,194.30	7,164.79
Illinois Division to Suburban Divisions	730.08	786.51	1,167.72	4,117.78	4,964.07	5,476.42	6,223.03	6,158.87
Total Illinois Bell Telephone Co. Tolls	1,804,616.04	2,063,249.80	2,523,419.85	3,093,345.55	3,495,943.27	3,904,990.97	4,301,641.96	4,353,259.73
Associated Telephone Company Tolls:								
Originating Commissions and Mileage Prorate:								
Indiana Bell Telephone Company	1,388.39	1,373.91	1,008.40	4,748.26	15,443.31	23,603.16	26,325.95	25,565.76
Southwestern Bell Telephone Company	....	....	....	1,189.34	5,640.06	4,010.67	4,601.32	4,577.89
Wisconsin Telephone Company	22,964.94	24,305.71	27,101.13	33,329.19	38,520.66	39,497.97	41,990.86	38,496.37
Total Associated Telephone Co.'s Tolls	24,353.33	25,679.62	28,109.53	39,266.79	59,604.03	67,111.80	72,918.13	68,640.02
Subscribers' and Miscellaneous Adjustments	2,418.18*	2,364.23*	579.10	4,929.69	10,441.87	6,812.87*	240.38	394.83*
Use of Long Lines Plant Billed A. T. & T. Co.	628,048.79	716,045.66	811,573.82	976,156.51	1,155,232.85	1,307,418.18	2,276,635.93	2,621,505.44
Operation of Long Lines Plant Billed A. T. & T. Co.	....	....	....	....	....	506,978.29	2,423,845.28	2,340,183.95
Total Account 510—Message Tolls	2,711,953.78	3,176,639.08	3,780,706.17	4,578,895.47	5,239,400.35	6,377,882.21	9,798,946.15	10,131,770.82

(*) Red figures.

[fol. 5150]

Illinois Bell Telephone Company, Chicago Division

Analysis of Account 512—Leased Toll Lines
Eight Years—January 1, 1923 to December 31, 1930

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
A. T. & T. Co. Special Terminal Loops for Special Contract Service	$3,315.54	$2,763.21	$2,989.47	$3,185.92	$3,761.60	$4,605.10	$6,018.45	$10,068.43
A. T. & T. Co. Special Terminal Loops for Other Than Special Contract Service	....	89.36	249.54	529.88	840.05	1,405.70	1,866.03	292.80
Subscribers for Leased Toll Lines	161,654.33	184,277.76	199,586.52	223,752.86	268,381.28	306,847.30	355,892.52	394,284.89
A. T. & T. Co. for Press News Transmission	769.73	714.96	697.85	799.98	1,220.94	88.32*	233.79	202.05
Short Period Talking Service	....	....	....	16.43	282.41	516.83	1,253.28	1,151.40
Radio Broadcasting Service	....	....	....	....	16,715.08	22,359.70	26,801.40	32,738.06
Special Circuits Furnished for Talking Purposes	1,802.43	155.33	47.66	....	70.20	1,387.44	3,972.17	2,498.90
Use of Long Lines Plant Billed A. T. & T. Co.	21,169.71	8,418.75	3,630.23	4,392.85	23,764.79	27,543.80	48,193.89	56,519.08
Operation of Long Lines Plant Billed A. T. & T. Co	....	....	....	....	....	10,507.77	51,275.79	49,473.60
Total Account 512—Leased Toll Lines	188,711.74	196,419.35	207,201.27	232,677.92	315,036.35	375,085.32	495,507.32	547,229.21

* Red figures.

Illinois Bell Telephone Company, Chicago Division

Analysis of Account 514—Telegraph Service on Toll Lines and Account 516—Other Toll Lines Revenues
Eight Years—January 1, 1923 to December 31, 1930

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
Account 514—Telegraph Service on Toll Lines:								
A. T. & T. Co. Special Terminal Loops for Special Contract Service	$53,461.61	$55,025.18	$63,502.57	$64,668.09	$64,550.98	$70,487.34	$80,646.66	$99,131.32
A. T. & T. Co. Special Terminal Loops for Other Than Special Contract Service	1,366.11	866.06	892.67	1,062.85	2,390.15	2,639.81	4,316.09	2,204.69
Subscribers for Telegraph Service on Toll Lines	283.86	231.35	454.17	780.19	632.11	514.98	684.40	2,952.69
Telegraph Service on Toll Lines (Miscel. Accts. Receivable)				389.25	1,543.47	1,951.44	2,081.60	2,901.84
Teletypewriter Service				845.74	3,357.92	5,034.36	7,091.12	10,658.05
A. T. & T. Co. for Press News Transmission	2,537.96	2,167.08	2,834.78	2,759.74				
Use of Long Lines Plant Billed A. T. & T. Co.	84,678.84	109,507.37	128,873.00	155,945.47	187,477.77	217,289.96	382,751.02	447,747.97
Operation of Long Lines Plant Billed A. T. & T. Co						83,968.25	407,024.44	392,841.59
Total Account 514—Telegraph Service on Toll Lines	142,328.38	167,797.04	196,557.19	226,451.33	259,952.40	381,886.14	884,595.33	958,438.15
Account 516—Other Toll Line Revenues:								
Use of Long Lines Plant Billed A. T. & T. Co.				22,837.48	14,586.08	14,781.89	16,670.04	15,676.18
Operation of Long Lines Plant Billed A. T. & T. Co						5,038.14	19,598.29	14,199.27
Total Account 516—Other Toll Line Revenues				22,837.48	14,586.08	19,820.03	36,268.33	29,875.45

[fol. 5152]

Extracts from Exhibit X-323, P. 4

June 15, 1932.

Merrimac Study, July 7, 1925

Breakdown of Annual Charge Percentages

Central Office Equipment:

Interest	7.0%	
Insurance	0.1	
Taxes	2.0	
Depreciation	3.7	(14 Yrs., 16% Salv.) Int. 7%
	12.8%	

Private Branch Exchanges:

Interest	7.0%	
Taxes	2.0	
Depreciation	6.4	(7 Yrs., 45% Salv.) Int. 7%
	15.4%	

Substations:

Manual:

Interest	7.0%	
Taxes	2.0	
Depreciation	3.5	(5 Yrs., 70% Salv. of Appar.) Int. 7%
	12.5%	

Dial:

Interest	7.0%	
Taxes	2.0	
Depreciation	4.0	(5 Yrs., 70% Salv. of Appar.) Int. 7%
	13.0%	

RJF: MF.

[fol. 5153]

Extracts from Exhibit X-324, P. 4

June 15, 1932

Longbeach Study, September 20, 1926

Breakdown of Annual Charge Percentages

Central Office Equipment:

Interest	7.0%	
Insurance	0.1	
Taxes	2.0	
Depreciation	3.7	(14 Years, 16% Salv.)
	12.8%	

Private Branch Exchanges:

Interest	7.0%	
Taxes	2.0	
Depreciation	6.4	(7 Years, 45% Salv.)
	15.4%	

Substations:

Manual:

Interest	7.0%	
Taxes	2.0	
Depreciation	3.0	(5 Years, 70% Salv. of Appar.)
	12.0%	

Dial:

Interest	7.0%	
Taxes	2.0	
Depreciation	3.7	(5 Years, 70% Salv. of Appar.)
	12.7%	

RJF: MF.

[fol. 5154]

EXHIBIT X-325

Example #1

Date	Investment (gross additions)	Dollar years	Life	Date of retirement
Jan. 1, 1926.........	$10,000	$140,000	14 Yrs.	Jan. 1, 1940
Jan. 1, 1931.........	40,000	360,000	9 Yrs.	Jan. 1, 1940
Total	50,000	500,000	10 Yrs.	(Average Life)

Depreciation Accruals on Original Investment of $10,000 Based on Average Life of Ten Years, no Salvage, and Annual Depreciation Rate of Ten per Cent

Year	Investment (1st unit only)	Depreciation rate	Annual depreciation expense	Total accumulated depreciation to Dec. 31st Amount	Total accumulated depreciation to Dec. 31st Per Cent of investment
1926..........	$10,000	10%	$1,000	$1,000	10%
1927..........	10,000	10%	1,000	2,000	20%
1928..........	10,000	10%	1,000	3,000	30%
1929..........	10,000	10%	1,000	4,000	40%
1930..........	10,000	10%	1,000	5,000	50%
1931..........	10,000	10%	1,000	6,000	60%
1932..........	10,000	10%	1,000	7,000	70%
1933..........	10,000	10%	1,000	8,000	80%
1934..........	10,000	10%	1,000	9,000	90%
1935..........	10,000	10%	1,000	10,000	100%
1936..........	10,000	10%	1,000	11,000	110%
1937..........	10,000	10%	1,000	12,000	120%
1938..........	10,000	10%	1,000	13,000	130%
1939..........	10,000	10%	1,000	14,000	140%

[fol. 5155]

Example #2

Date	Investment (gross additions)	Dollar years	Life	Date of retirement
Jan. 1, 1926.........	$10,000	$80,000	8 Yrs.	Jan. 1, 1934
Jan. 1, 1931.........	15,000	45,000	3 Yrs.	Jan. 1, 1934
Total	25,000	125,000	5 Yrs.	(Average Life)

Depreciation Accruals on Original Investment of $10,000 Based on Average Life of Five Years, no Salvage, and Annual Depreciation Rate of Twenty per Cent

Year	Investment (1st unit only)	Depreciation rate	Annual depreciation expense	Total accumulated depreciation to Dec. 31st Amount	Total accumulated depreciation to Dec. 31st Per Cent of investment
1926..........	$10,000	20%	$2,000	$2,000	20%
1927..........	10,000	20%	2,000	4,000	40%
1928..........	10,000	20%	2,000	6,000	60%
1929..........	10,000	20%	2,000	8,000	80%
1930..........	10,000	20%	2,000	10,000	100%
1931..........	10,000	20%	2,000	12,000	120%
1932..........	10,000	20%	2,000	14,000	140%
1933..........	10,000	20%	2,000	16,000	160%

[fol. 5156]

Exhibit X-326

Example #3

Date	Investment (gross additions)	Dollar years	Life	Date of retirement
Jan. 1, 1926	$10,000	$80,000	8 Yrs.	Jan. 1, 1934
Jan. 1, 1931	40,000	120,000	3 Yrs.	Jan. 1, 1934
Total	50,000	200,000	4 Yrs. (Average Life)	

Depreciation Accruals on Original Investment of $10,000 Based on Average Life of Four Years, no Salvage, and Annual Depreciation Rate of 25 per Cent

				Total accumulated depreciation to Dec. 31st	
Year	Investment (1st unit only)	Depreciation rate	Annual depreciation expense	Amount	Per Cent of investment
1926	$10,000	25%	$2,500	$2,500	25%
1927	10,000	25%	2,500	5,000	50%
1928	10,000	25%	2,500	7,500	75%
1929	10,000	25%	2,500	10,000	100%
1930	10,000	25%	2,500	12,500	125%
1931	10,000	25%	2,500	15,000	150%
1932	10,000	25%	2,500	17,500	175%
1933	10,000	25%	2,500	20,000	200%

[fol. 5157]

EXHIBIT X-327

List of Exchanges in Illinois Shown in Exhibit A-68

Name of Company.	Controlling Corporation	Where Applicable	Stations Per Exchange	Total Company Stations
			December 31, 1931	
Automatic Home Telephone Co.	*Telephone Bond & Share Co. 62.98% Illinois Bell Telephone Co. 34.90%	Pontiac	1811	1811
The Boynton Telephone Co.	*Telephone Bond & Share Co. 100%	New Berlin	254	
		Pleasant Plains	250	504
Home Telephone Co.	*Telephone Bond & Share Co. 100%	Bluffs	245	
		Meredosia	69	314
The Illinois Telephone Co.	*Telephone Bond & Share Co. 62.1% Illinois Bell Telephone Co. 37.6%	Greenfield	444	
		Roodhouse	529	
		White Hall	541	8231
Illinois Valley Telephone Co.	*Telephone Bond & Share Co.	Bushnell	794	
		Camp Point	281	
		Mt. Sterling	484	
		Vermont	214	
		Versailles	125	2390
Streator Telephone Co.	*Telephone Bond & Share Co. 99.9%	Grand Ridge	262	
		Groveland	136	
		Mackinaw	194	
		Minier	307	
		Morton	564	
		Standford	267	
		Streator	3719	
		Tremont	436	5885
Wabash Telephone Co.	*Wash Telephone Securities Co. 83.3% Illinois Bell Telephone Co. 16.7%	Bloomington	9448	
		Normal	1463	14793

* Telephone Bond and Share Company and Wabash Telephone Securities Company are both Theodore Cary Interests.

[fol. 5158]

Exhibit X–328

Illinois Bell Telephone Company, Chicago Division

Comparison of Revenues and Expenses and Return on Average Fixed Capital and Materials and Supplies, Less Accrued Depreciation, Year Ended December 31, 1931

	Total Chicago Division	Chicago Division Intrastate	Chicago Division Intrastate Exchange
Revenues:			
Exchange Service Revenues	$52,458,155	$51,792,964	$50,471,229
Toll Service Revenues	11,082,374	4,130,527	18,018
Miscellaneous Telephone Oper. Revenues	1,056,016	1,050,286	1,050,286
Miscellaneous Revenues	22,793	22,573	22,068
Gross Revenues	64,619,338	56,996,350	51,561,601
Less—Licensee Revenues—Dr.	931,652	834,199	758,829
Total Telephone Operating Revenues	63,687,686	56,162,151	50,802,872
Expenses:			
Traffic Expenses	13,986,434	11,735,794	10,540,816
Commercial Expenses	6,920,145	6,490,175	5,534,184
General and Miscellaneous Expenses	3,004,322	2,690,039	2,445,809
Current Maintenance	11,546,082	10,842,053	10,351,339
Depreciation	9,146,268	8,121,135	7,558,432
Taxes, Assignable to Operations (b)	8,258,505	7,339,735	6,689,352
Other Expenses and Deductions	794,004	685,265	553,695
Total Expenses	53,655,760	47,904,196	43,673,627
Balance	10,031,926	8,257,955	7,129,245
Net Compensation to Chicago for Use of Chicago Properties for "Other Than Chicago" Purposes and Use of State Area Properties for Chicago Purposes	236,661	236,661	236,661
Balance Available for Return (c)	10,268,587	8,494,616	7,365,906

EXHIBIT X-328—Continued

	Total Chicago Division	Chicago Division Intrastate	Chicago Division Intrastate Exchange
Average Fixed Capital	193,354,389	175,710,631	162,558,786
Average Materials and Supplies	224,433	203,648	188,393
Average Fixed Capital and Materials & Supplies	193,578,822	175,914,279	162,747,179
Average Accrued Depreciation (a)	53,206,146	48,351,038	44,731,989
Average Fixed Capital & Materials & Supplies, Less Accrued Depreciation	140,372,676	127,563,241	118,015,190
Percent of Return on Fixed Capital	5.31%	4.83%	4.53%
Percent of Return on Fixed Capital and Materials and Supplies	5.30%	4.83%	4.53%
Percent of Return on Fixed Capital, Less Accrued Depreciation	7.33%	6.67%	6.25%
Percent of Return on Fixed Capital & Materials and Supplies, Less Accrued Depreciation	7.32%	6.66%	6.24%

(a) As represented by Reserve for Accrued Depreciation and Reserve for Amort. of Intangible Capital.

(b) Based on Accrued Taxes; Plaintiff's Exhibit A-49 Shows Tax Payments.

(c) This Showing of Return on Investment is Prepared on the Same Basis as the Statements for All Licensee Companies, Using the Figures Shown in Plaintiff's Exhibit A-49 and A-53, Except as Indicated by Notes (a) and (b) Above.

(Here follow side folios 5159–5167)

[fol. 5159]

Illinois Bell Telephone Company, Chicago Division

Comparison of Revenues and Expenses and Return on Average Fixed Capital and Materials and Supplies, Less Accrued Depreciation, Years 1923, to 1930, Inclusive

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
Revenues:								
Exchange Service Revenues	$36,342,226	38,673,758	41,216,290	44,305,629	47,391,951	50,244,523	53,798,200	54,252,120
Toll Service Revenues	3,042,994	3,540,856	4,184,465	5,060,862	5,828,975	7,154,674	11,215,317	11,667,314
Miscellaneous Telephone Operating Revenues	673,049	744,372	786,646	778,130	717,626	901,521	1,259,632	1,225,566
Miscellaneous Revenues	127,125	121,368	112,912	133,325	164,188	144,406	28,856	37,742
Gross Revenues	$40,185,394	43,080,354	46,300,313	50,277,946	54,102,740	58,445,124	66,302,005	67,182,742
(Less) Licensee Revenues—Dr.	1,724,251	1,860,438	1,987,535	1,935,878	2,085,720	1,104,893	931,296	968,222
Total Telephone Operating Revenues	$38,461,143	41,219,916	44,312,778	48,342,068	52,017,020	57,340,231	65,370,709	66,214,520
Expenses:								
Traffic Expenses	$13,192,673	13,331,424	13,857,311	14,428,799	14,044,454	14,933,228	17,282,213	16,286,413
Commercial Expenses	4,202,273	4,693,321	4,867,507	5,085,148	5,701,970	6,205,153	6,519,559	6,980,193
General and Miscellaneous Expenses	1,063,194	1,101,412	1,091,053	1,192,965	1,806,330	2,189,368	2,369,744	2,616,350
Current Maintenance	5,901,733	6,326,331	6,876,588	8,084,707	9,259,854	10,487,500	11,600,720	12,160,981
Depreciation	4,480,954	4,709,950	5,385,712	6,203,023	6,839,392	7,641,460	8,120,382	8,769,886
Taxes, Assignable to Operations (b)	3,674,933	3,996,097	4,585,718	5,317,937	6,021,746	6,615,517	7,944,954	7,920,818
Other Expenses and Deductions	284,506	436,782	532,463	400,906	583,098	727,128	659,924	656,914
Total Expenses	$32,800,266	34,595,317	37,196,352	40,713,485	44,256,844	48,799,354	54,497,496	55,391,555
Balance	$5,660,877	6,624,599	7,116,426	7,628,583	7,760,176	8,540,877	10,873,213	10,822,965
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	259,941	277,665	313,261	174,858	144,041	188,016	217,842	221,691
Balance Available for Return (c)	$5,920,818	6,902,264	7,429,687	7,803,441	7,904,217	8,728,893	11,091,055	11,044,656
Average Fixed Capital	$92,811,249	105,513,839	118,740,547	133,704,654	148,212,139	162,449,631	176,024,193	186,971,863
Average Materials and Supplies	233,022	299,310	358,227	336,693	326,599	344,336	276,091	209,784
Average Fixed Capital and Materials and Supplies	$93,044,271	105,813,149	119,098,774	134,041,347	148,538,738	162,793,967	176,300,284	187,181,647
Average Accrued Depreciation (a)	27,791,419	30,764,839	33,925,190	37,726,473	41,913,778	45,873,241	48,204,767	50,120,687
Average Fixed Capital and Materials and Supplies, Less Accrued Depreciation	$65,252,852	75,048,310	85,173,584	96,314,874	106,624,960	116,920,726	128,095,517	137,060,960
Percent of Return on Fixed Capital	6.38%	6.54%	6.26%	5.84%	5.33%	5.37%	6.30%	5.91%
Percent of Return on Fixed Capital and Materials and Supplies	6.36%	6.52%	6.24%	5.82%	5.32%	5.36%	6.29%	5.90%
Percent of Return on Fixed Capital, Less Accrued Depreciation	9.11%	9.23%	8.76%	8.13%	7.44%	7.49%	8.68%	8.07%
Percent of Return on Fixed Capital and Materials and Supplies Less Accrued Depreciation	9.07%	9.20%	8.72%	8.10%	7.41%	7.47%	8.66%	8.06%

[fol. 5160]

Chicago Division—Intrastate

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
Revenues:								
Exchange Service Revenues	$35,861,063	38,256,244	40,728,460	43,809,832	46,838,250	49,606,179	53,087,404	53,536,622
Toll Service Revenues	1,828,914	2,100,548	2,477,668	2,976,666	3,395,072	3,800,457	4,225,964	4,321,661
Miscellaneous Telephone Operating Revenues	571,449	623,612	657,314	644,613	593,422	723,312	1,254,238	1,219,486
Miscellaneous Revenues	38,466	34,778	24,244	19,656	29,833	25,118	28,566	37,154
Gross Revenues	$38,299,892	41,015,182	43,887,686	47,450,767	50,856,577	54,155,066	58,596,172	59,114,923
(Less) Licensee Revenues—Dr.	1,662,014	1,787,095	1,901,069	1,845,571	1,980,880	1,036,616	834,276	864,131
Total Telephone Operating Revenues	$36,637,878	39,228,087	41,986,617	45,605,196	48,875,697	53,118,450	57,761,896	58,250,792
Expenses:								
Traffic Expenses	$12,963,776	13,107,030	13,616,386	14,172,189	13,767,646	14,151,601	14,487,678	13,621,881
Commercial Expenses	4,024,158	4,499,021	4,660,954	4,861,199	5,444,198	5,889,116	6,134,337	6,544,747
General and Miscellaneous Expenses	1,032,165	1,068,025	1,056,458	1,153,582	1,744,156	2,072,484	2,094,112	2,328,458
Current Maintenance	5,643,623	6,043,737	6,563,193	7,714,364	8,849,550	9,941,143	10,671,526	11,372,858
Depreciation	4,209,140	4,456,339	5,033,523	5,751,927	6,318,333	6,997,497	7,424,171	7,853,230
Taxes, Assignable to Operations (b)	3,429,005	3,718,015	4,245,697	4,896,091	5,514,444	6,036,473	7,152,578	7,043,684
Other Expenses and Deductions	248,419	383,407	472,949	343,690	504,322	616,585	525,245	555,135

Expenses:								
Traffic Expenses	$12,963,776	13,107,030	13,616,386	14,172,180	13,767,646	14,151,601	14,487,678	13,621,881
Commercial Expenses	4,024,158	4,499,021	4,660,954	4,861,199	5,444,198	5,889,116	6,134,337	6,544,747
General and Miscellaneous Expenses	1,032,165	1,068,025	1,056,458	1,153,582	1,744,156	2,072,484	2,094,112	2,328,458
Current Maintenance	5,643,623	6,043,737	6,563,193	7,714,364	8,849,550	9,941,143	10,671,526	11,372,858
Depreciation	4,209,140	4,456,339	5,033,523	5,751,927	6,318,333	6,997,497	7,424,171	7,853,230
Taxes, Assignable to Operations (b)	3,429,005	3,718,015	4,245,697	4,896,091	5,514,444	6,036,473	7,152,578	7,043,684
Other Expenses and Deductions	248,419	383,407	472,949	343,690	504,322	616,585	525,245	555,135
Total Expenses	$31,550,286	33,275,574	35,649,160	38,893,042	42,142,649	45,704,899	48,489,647	49,319,993
Balance	$5,087,592	5,952,513	6,337,457	6,712,154	6,733,048	7,413,551	9,272,249	8,930,799
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	259,941	277,665	313,261	174,858	144,041	188,016	217,842	221,691
Balance Available for Return (c)	$5,347,533	6,230,178	6,650,718	6,887,012	6,877,089	7,601,567	9,490,091	9,152,490
Average Fixed Capital	$88,663,316	100,540,215	112,486,829	126,061,831	139,205,005	151,459,710	162,493,935	170,958,739
Average Materials and Supplies	222,618	284,533	338,324	316,963	306,108	319,489	253,664	190,933
Average Fixed Capital and Materials and Supplies	$88,885,934	100,824,748	112,825,153	126,378,794	139,511,113	151,779,199	162,747,599	171,149,672
Average Accrued Depreciation (a)	26,549,361	29,314,671	32,138,449	35,569,953	39,366,598	42,769,859	44,499,465	45,828,123
Average Fixed Capital and Materials and Supplies, less Accrued Depreciation	$62,336,573	71,510,077	80,686,704	90,808,841	100,144,515	109,009,340	118,248,134	125,321,549
Percent of Return on Fixed Capital	6.03%	6.20%	5.91%	5.46%	4.94%	5.02%	5.84%	5.35%
Percent of Return on Fixed Capital and Materials and Supplies	6.02%	6.18%	5.89%	5.45%	4.93%	5.01%	5.83%	5.35%
Percent of Return on Fixed Capital, Less Accrued Depreciation	8.61%	8.75%	8.28%	7.61%	6.89%	6.99%	8.04%	7.31%
Percent of Return on Fixed Capital and Materials and Supplies. Less accrued depreciation	8.58%	8.71%	8.24%	7.58%	6.87%	6.97%	8.03%	7.30%

[fol. 5161]

Chicago Division—Intrastate Exchange

Revenues:								
Exchange Service Revenues	$35,187,550	37,497,773	39,856,670	42,790,484	45,693,545	48,323,639	51,673,447	52,042,219
Toll Service Revenues								
Miscellaneous Telephone Operating Revenues	562,934	614,956	646,130	629,901	593,422	723,312	1,254,238	1,219,486
Miscellaneous Revenues	30,725	27,527	21,218	19,478	29,257	24,655	27,946	35,942
Gross Revenues	$35,781,209	38,140,256	40,524,018	43,439,863	46,316,224	49,071,606	52,955,631	53,297,647
(Less) Licensee Revenues—Dr.	1,558,559	1,668,213	1,762,140	1,695,347	1,812,145	944,026	757,072	782,801
Total Telephone Operating Revenues	$34,222,650	36,472,043	38,761,878	41,744,516	44,504,079	48,127,580	52,198,559	52,514,846
Expenses:								
Traffic Expenses	$12,298,447	12,422,269	12,861,116	13,265,949	12,804,628	13,115,081	13,216,005	12,320,929
Commercial Expenses	3,573,425	3,959,092	4,078,936	4,223,179	4,724,389	5,080,559	5,257,238	5,569,642
General and Miscellaneous Expenses	973,064	1,003,687	990,402	1,075,279	1,619,332	1,916,599	1,917,567	2,122,604
Current Maintenance	5,468,607	5,844,038	6,347,832	7,440,549	8,521,672	9,531,773	10,178,530	10,859,015
Depreciation	4,011,667	4,258,675	4,796,032	5,476,536	5,997,744	6,616,668	6,974,241	7,327,237
Taxes, Assignable to Operations (b)	3,194,736	3,444,824	3,905,239	4,459,245	5,001,531	5,472,894	6,494,940	6,379,994
Other Expenses and Deductions	208,136	317,635	385,557	277,530	404,324	470,738	397,077	430,421
Total Expenses	$29,728,082	31,250,220	33,365,114	36,218,267	39,073,620	42,204,312	44,435,598	45,009,842
Balance	$4,494,568	5,221,823	5,396,764	5,526,249	5,430,459	5,923,268	7,762,961	7,505,004
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	259,941	277,665	313,261	174,858	144,041	188,016	217,842	221,691
Balance available for Return (c)	$4,754,509	5,499,488	5,710,025	5,701,407	5,574,500	6,111,284	7,980,803	7,726,695
Average Fixed Capital	$84,783,048	95,976,573	107,112,897	119,708,266	131,600,492	142,347,871	151,517,431	158,431,574
Average Materials and Supplies	212,875	271,196	321,892	300,465	288,668	299,325	235,475	176,653
Average Fixed Capital and Materials and Supplies	$84,995,923	96,247,769	107,434,789	120,008,731	131,889,160	142,647,196	151,752,906	158,608,227
Average Accrued Depreciation (a)	25,387,453	27,984,043	30,603,070	33,777,214	37,216,073	40,196,818	41,493,515	42,470,023
Average Fixed Capital and Materials and Supplies, Less Accrued								

Depreciation	4,011,667	4,258,675	4,796,032	5,476,556	5,997,744	6,616,668	6,974,241	7,327,257
Taxes, Assignable to Operations (b)	3,194,736	3,444,824	3,905,239	4,459,245	5,001,531	5,472,894	6,494,940	6,379,994
Other Expenses and Deductions	208,136	317,635	385,557	277,530	404,324	470,738	397,077	430,421
Total Expenses	$29,728,082	31,250,220	33,365,114	36,218,267	39,073,620	42,204,312	44,435,598	45,009,842
Balance	$4,494,568	5,221,823	5,396,764	5,526,249	5,430,459	5,923,268	7,762,961	7,505,004
Net compensation to Chicago for use of Chicago properties for "Other than Chicago" purposes and use of State Area properties for Chicago purposes	259,941	277,665	313,261	174,858	144,041	188,016	217,842	221,691
Balance available for Return (c)	$4,754,509	5,499,488	5,710,025	5,701,107	5,574,500	6,111,284	7,980,803	7,726,695
Average Fixed Capital	$84,783,048	95,976,573	107,112,897	119,708,266	131,600,492	142,347,871	151,517,431	158,431,574
Average Materials and Supplies	212,875	271,196	321,892	300,465	288,668	299,325	235,475	176,653
Average Fixed Capital and Materials and Supplies	$84,995,923	96,247,769	107,434,789	120,008,731	131,889,160	142,647,196	151,752,906	158,608,227
Average Accrued Depreciation (a)	25,387,453	27,984,043	30,603,070	33,777,214	37,216,073	40,196,818	41,493,515	42,470,023
Average Fixed Capital and Materials and Supplies, Less Accrued Depreciation	$59,608,470	68,263,726	76,831,719	86,231,517	94,673,087	102,450,378	110,259,391	116,138,204
Percent of Return on Fixed Capital	5.61%	5.73%	5.33%	4.76%	4.24%	4.29%	5.27%	4.88%
Percent of Return on Fixed Capital and Materials and Supplies	5.59%	5.71%	5.31%	4.75%	4.23%	4.28%	5.26%	4.87%
Percent of Return on Fixed Capital, less Accrued Depreciation	8.00%	8.09%	7.46%	6.63%	5.91%	5.98%	7.25%	6.66%
Percent of Return on Fixed Capital and Materials and Supplies, Less Accrued Depreciation	7.98%	8.06%	7.43%	6.61%	5.89%	5.97%	7.24%	6.65%

(a) As represented by Reserve for Accrued Depreciation and Reserve for Intangible Capital.

(b) Based on accruals for each year. Plaintiff's Exhibit A–49 shows tax payments.

(c) This showing of return on investment is prepared on the same basis as the statements for all Licensee Companies, using the figures shown in Plaintiff's Exhibit A–49, except as indicated by notes (a) and (b) above.

(Here follow side-folios 5162 and 5163)

EXHIBIT X-331

X-331

ILLINOIS BELL TELEPHONE COMPANY - CHICAGO DIVISION INTRASTATE

RETURN ON AVERAGE FIXED CAPITAL AND MATERIALS AND SUPPLIES, LESS AVERAGE ACCRUED DEPRECIATION IN EXCESS OF THE AVERAGE RETURN OF ALL LICENSEE COMPANIES OF AMERICAN TELEPHONE AND TELEGRAPH COMPANY DURING YEARS 1923 TO 1930, INCLUSIVE

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
(1) Per Cent Of Return On Average Fixed Capital And Materials And Supplies, Less Depreciation - Chicago Division Intrastate	8.58%	8.12%	8.24%	7.58%	6.77%	6.97%	8.03%	7.30%
(2) Per Cent Of Return On Average Fixed Capital And Materials And Supplies, Less Depreciation - All Licensee Companies	6.73%	6.46%	7.16%	7.71%	7.35%	7.81%	7.84%	7.03%
(3) Percentage Relation Of Item (2) To (1)	78.44%	79.31%	86.89%	101.72%	108.48%	112.05%	97.63%	96.33%
(4) Amount Of Recorded Return Under Present Rates - Chicago Division Intrastate	$ 5,347,533	$ 6,230,178	$ 6,650,718	$ 6,887,012	$ 6,877,089	$ 7,601,567	$ 9,490,091	$ 9,152,490
(5) Amount Of Required Return Under Present Rates, Chicago Division Intrastate, On Basis Of All Licensees (Item 3 Times Item 4)	4,192,605	4,620,923	5,778,809	7,005,469	7,457,515	8,517,556	9,265,176	8,813,848
(6) Excess Of Recorded Return Under Present Rates, Chicago Division Intrastate, Over Return Required On Basis Of All Licensees	1,154,928	1,609,255	871,909	118,457*	580,426*	915,989*	224,915	338,642
(7) Loss In Recorded Return Of Chicago Division Intrastate, Due To Attacked Rates	385,417	1,550,995	1,582,561	1,650,570	1,677,077	1,713,301	1,740,582	1,645,878
(8) Excess Of Recorded Return Under Attacked Rates, Chicago Division Intrastate, Over Return Required On Basis Of All Licensees	769,511	58,260	710,652*	1,769,027*	2,257,503*	2,629,290*	1,515,667*	1,307,236*
(9) Additional Return Of Chicago Division Intrastate, Due To Adjustment Of Interstate Separation	256,721	262,398	309,505	317,915	354,372	427,655	486,875	472,469
(10) Excess Of Adj. Return Under Attacked Rates, Chicago Division Intrastate, Over Return Required On Basis Of All Licensees	1,026,232	320,658	401,147*	1,451,112*	1,903,131*	2,201,635*	1,028,792*	834,767*
(11) Additional Return Of Chicago Division Intrastate, Due To Adjustment Of License Payments On Basis Of All Licensees	360,486	326,505	243,351	79,116	116,885	38,039*	61,688	72,614
(12) Excess Of Adjusted Return Under Attacked Rates, Chicago Division Intrastate, Over Return Required On Basis Of All Licensees	1,386,718	647,163	157,796*	1,371,996*	1,786,246*	2,239,674*	967,104*	762,153*
(13) Additional Return Of Chicago Division Intrastate, Due To Adjustment Of Depreciation Expense:								
(a) Depreciation Expense	597,132	1,414,018	1,562,392	2,205,414	2,860,112	3,561,852	3,888,445	4,069,162
(b) Less - Increase In Required Return Due To Change In Depreciation Reserve (Adjustment of Item 5)	20,168	84,424	199,516	358,919	533,568	804,569	1,090,976	1,247,532
(c) Net Adjustment	576,964	1,329,594	1,362,876	1,846,495	2,326,544	2,757,283	2,797,469	2,821,630
(14) Excess Of Adjusted Return Under Attacked Rates - Chicago Division Intrastate, Over Return On Basis Of All Licensees	1,963,682	1,976,757	1,205,080	474,499	540,298	517,609	1,830,365	2,059,477

*Red Figures.

x-331

p.2

ILLINOIS BELL TELEPHONE COMPANY - CHICAGO DIVISION INTRASTATE

RETURN ON AVERAGE FIXED CAPITAL AND MATERIALS AND SUPPLIES, LESS AVERAGE ACCRUED DEPRECIATION IN EXCESS OF THE AVERAGE RETURN OF OTHER LICENSEE COMPANIES OF AMERICAN TELEPHONE AND TELEGRAPH COMPANY DURING YEARS 1923 TO 1930, INCLUSIVE

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
(1) Percent Of Return On Average Fixed Capital And Materials And Supplies, Less Depreciation - Chicago Division Intrastate	8.58%	8.71%	8.[illegible]%	7.58%	6.87%	6.97%	8.03%	7.[illegible]%
(2) Percent Of Return On Average Fixed Capital And Materials And Supplies, Less Depreciation - Other Licensee Companies	6.61%	6.32%	7.07%	7.08%	7.[illegible]%	7.79%	7.7[illegible]%	6.9[illegible]%
(3) Percentage Relation Of Item (2) To (1)	77.04%	72.56%	85.[illegible]%	[illegible]%	[illegible]8.25%	111.75%	96.5[illegible]%	95.62%
(4) Amount Of Recorded Return Under Present Rates - Chicago Division Intrastate	$ 5,347,533	$ 6,[illegible],178	$ 6,650,718	$ 6,687,[illegible]	$ [illegible]	$ 7,641,567	$ [illegible]	$ 9,152,490
(5) Amount Of Required Return Under Present Rates, Chicago Division Intrastate, On Basis Of Other Licensees (Item 3 Times Item 4)	4,119,739	4,520,617	5,706,316	[illegible]	7,[illegible]	8,495,511	9,134,349	8,751,611
(6) Excess Of Recorded Return Under Present Rates, Chicago Division Intrastate, Over Return Required On Basis Of Other Licensees	1,227,794	1,709,561	944,402	90,[illegible]*	560,485*	853,944*	295,142	400,879
(7) Loss In Recorded Return Of Chicago Division Intrastate, Due To Attacked Rates	385,917	1,550,[illegible]	1,582,561	1,650,570	1,677,077	1,783,301	1,740,582	1,645,878
(8) Excess Of Recorded Return Under Attacked Rates, Chicago Division Intrastate, Over Return On Basis Of Other Licensees	841,877	158,566	638,159*	1,741,479*	2,237,562*	2,637,245*	1,445,440*	1,244,999*
(9) Additional Return Of Chicago Division Intrastate, Due To Adjustment Of Interstate Separation	257,221	262,398	309,525	327,315	354,372	457,655	486,875	472,463
(10) Excess Of Adjusted Return Under Attacked Rates, Chicago Division Intrastate, Over Return Required On Basis Of Other Licensees	1,099,098	420,964	328,634*	1,413,564*	1,883,190*	2,179,590*	958,565*	772,536*
(11) Additional Return Of Chicago Division Intrastate, Due To Adjustment of License Payments On Basis Of Other Licensees	372,170	335,335	254,213	88,440	126,526	31,502*	71,435	83,324
(12) Excess Of Adjusted Return Under Attacked Rates, Chicago Division Intrastate, Over Return Required On Basis Of Other Licensees	1,471,268	756,299	74,421*	1,3[illegible]*	1,756,[illegible]*	2,211,[illegible]*	887,130*	6[illegible]*
(13) Additional Return Of Chicago Division Intrastate, Due To Adjustment Of Depreciation Expense:								
(a) Depreciation Expense	597,132	1,414,018	1,562,592	2,205,419	2,860,112	3,561,852	3,888,445	4,063,1[illegible]
(b) Less - Increase In Required Return, Due To Change In Depreciation Reserve (Adjustment of Item 5)	19,867	82,644	197,308	357,562	532,132	802,509	1,082,626	1,118,655
(c) Net Adjustment	577,265	1,331,374	1,365,284	1,847,858	2,327,980	2,759,343	2,805,819	[illegible]
(14) Excess Of Adjusted Return Under Attacked Rates - Chicago Division Intrastate, Over Return On Basis Of Other Licensees	2,048,533	2,087,673	1,290,863	512,768	571,320	548,248	1,916,689	2,141,291

*Red Figures

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[fol. 5164]

Exhibit X–332

Illinois Bell Telephone Company, Chicago Division Intrastate Exchange

Return on Average Fixed Capital and Materials and Supplies, Less Average Accrued Depreciation in Excess of the Average Return of Other Licensee Companies of American Telephone and Telegraph Company During Years 1923 to 1930, Inclusive

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
(1) Per Cent of Return on Average Fixed Capital and Materials and Supplies, Less Depreciation—Chicago Division Intrastate Exchange	7.98%	8.06%	7.43%	6.61%	5.89%	5.97%	7.24%	6.65%
(2) Per Cent of Return on Average Fixed Capital and Materials and Supplies, Less Depreciation—Other Licensee Company	6.61%	6.32%	7.07%	7.68%	7.43%	7.79%	7.78%	6.98%
(3) Percentage Relation of Item (2) to Item (1)	82.83%	78.41%	95.15%	116.99%	126.15%	130.49%	107.46%	104.96%
(4) Amount of Recorded Return under present Rates—Chicago Division Intrastate Exchange	$4,754,509	$5,499,488	$5,710,025	$5,701,107	$5,574,500	$6,111,284	$7,980,803	$7,726,695
(5) Amount of Required Return under present Rates, Chicago Division Intrastate Exchange, On Basis of Other Licensees (Item 3 Times Item 4)	3,938,160	4,312,149	5,433,089	6,624,116	7,032,232	7,974,614	8,576,471	8,109,939
(6) Excess of Recorded Return under present Rates, Chicago Division Intrastate Exchange, over Return Required on Basis of Other Licensees	816,349	1,187,339	276,936	923,009*	1,457,732*	1,863,330*	595,368*	383,244*
(7) Loss in Recorded Return of Chicago Division Intrastate Exchange, due to Attacked Rates	378,215	1,519,815	1,548,150	1,611,533	1,635,362	1,668,214	1,693,349	1,599,053
(8) Excess of Recorded Return under Attacked Rates, Chicago Division Intrastate Exchange, over Return on Basis of Other Licensees	438,134	332,476*	1,271,214*	2,534,542*	3,093,094*	3,531,544*	2,288,717*	1,982,297*
(9) Additional Return of Chicago Division Intrastate Exchange, Due to Adjustment of Interstate Separation	731,750	778,837	902,779	1,018,633	1,146,483	1,352,860	1,538,167	1,551,597
(10) Excess of Adjusted Return under Present Rates, Chicago Division Intrastate Exchange, over Return Required on Basis of Other Licensees	1,169,884	446,361	368,435*	1,545,909*	1,946,611*	2,178,684*	750,550*	430,700*
(11) Additional Return of Chicago Division Intrastate Exchange, Due to Adjustment of License Payments on Basis of Other Licensees	354,643	314,860	235,887	77,876	113,256	37,898*	64,393	75,454
(12) Excess of Adjusted Return under Attacked Rates, Chicago Division Intrastate Exchange, over Return Required on Basis of Other Licensees	1,524,527	761,221	132,548*	1,438,033*	1,833,355*	2,216,582*	686,157*	355,246*
(13) Additional Return of Chicago Division Intrastate Exchange, Due to Adjustment of Depreciation Expense:								
(a) Depreciation Expense	574,555	1,360,459	1,501,377	2,115,480	2,737,843	3,395,724	3,685,780	3,849,092
(b) Less—Increase in Required Return, due to Change in Depreciation Reserve (Adjustment of Item 5)	18,997	78,892	187,597	339,503	503,062	754,230	1,009,495	1,147,895
(c) Net Adjustment	555,558	1,281,567	1,313,780	1,775,977	2,234,781	2,641,494	2,676,285	2,701,197
(14) Excess of Adjusted Return under Attacked Rates—Chicago Division Intrastate Exchange, over Return on Basis of Other Licensees	2,079,085	2,042,788	1,181,232	337,944	401,426	424,912	1,990,128	2,345,951

[fol. 5165]

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
(1) Per Cent of Return on Average Fixed Capital and Materials and Supplies, Less Depreciation—Chicago Division Intrastate Exchange	7.98%	8.06%	7.43%	6.61%	5.89%	5.97%	7.24%	6.65%
(2) Per Cent of Return on Average Fixed Capital and Materials and Supplies, Less Depreciation—All Licensee Companies	6.73%	6.46%	7.16%	7.71%	7.45%	7.81%	7.84%	7.03%
(3) Percentage Relation of Item (2) to Item (1)	84.34%	80.15%	96.37%	116.64%	126.49%	130.82%	108.29%	105.71%
(4) Amount of Recorded Return under Present Rates—Chicago Division Intrastate Exchange	$4,754,509	$5,499,488	$5,710,025	$5,701,107	$5,574,500	$6,111,284	$7,980,803	$7,726,695
(5) Amount of Required Return under Present Rates, Chicago Division Intrastate Exchange, on Basis of All Licensees (Item 3 Times Item 4)	4,009,953	4,407,840	5,502,751	6,649,771	7,051,185	7,994,782	8,642,412	8,167,889
(6) Excess of Recorded Return under Present Rates, Chicago Division Intrastate Exchange, over Return Required on Basis of All Licensees	744,556	1,091,648	207,274	948,664*	1,476,685*	1,883,498*	661,609*	441,194*
(7) Loss in Recorded Return of Chicago Division Intrastate Exchange, due to Attacked Rates	378,215	1,519,815	1,548,150	1,611,533	1,635,362	1,668,214	1,693,349	1,599,053
(8) Excess of Recorded Return under Attacked Rates, Chicago Division Intrastate Exchange, over Return on Basis of All Licensees	366,341	428,167*	1,340,876*	2,560,197*	3,112,047*	3,551,712*	2,354,958*	2,040,247*
(9) Additional Return of Chicago Division Intrastate Exchange, due to Adjustment of Interstate Separation	731,750	778,837	902,779	1,018,633	1,146,483	1,352,860	1,538,167	1,551,597
(10) Excess of Adjusted Return under Attacked Rates, Chicago Division Intrastate Exchange, over Return Required on Basis of All Licensees	1,098,091	350,670	438,097*	1,541,564*	1,965,564*	2,198,852*	816,791*	488,650*
(11) Additional Return of Chicago Division Intrastate Exchange, due to Adjustment of License Payments on Basis of All Licensees	345,386	306,446	225,593	69,101	104,210	38,398*	55,299	65,468

(12) Excess of Adjusted Return under Attacked Rates, Chicago Division Intra-

(10) Excess of Adjusted Return under Attacked Rates, Chicago Division Intrastate Exchange, over Return Required on Basis of All Licensees	1.098.091	350,670	438,097*	1.541.564*	1.965.564*	2.198.852*	816.791*	488.650*
(11) Additional Return of Chicago Division Intrastate Exchange, due to Adjustment of License Payments on Basis of All Licensees	345,386	306,446	225,593	69.101	104,210	38.398*	55,299	65.468
(12) Excess of Adjusted Return under Attacked Rates, Chicago Division Intrastate Exchange, over Return Required on Basis of All Licensees	1.443,477	657,116	212,504*	1.472.463*	1.861.354*	2.237,250*	761.492*	423.182*
(13) Additional Return of Chicago Division Intrastate Exchange, due to Adjustment of Depreciation Expense:								
(a) Depreciation Expense	574,555	1.360,459	1.501.377	2.115.480	2.737.843	3.395.724	3.685.780	3.849.092
(b) Less—Increase in Required Return, due to Change in Depreciation Reserve (Adjustment of Item 5)	19,342	80,640	189,985	340,829	504.416	756.166	1.017,280	1.156.118
(c) Net Adjustment	555.213	1,279.819	1,311.392	1.774.651	2.233.427	2.639.558	2.668.500	2,692.974
(14) Excess of Adjusted Return under Attacked Rates—Chicago Division Intrastate Exchange, over Return on Basis of All Licensees	1.998.690	1,936,935	1.098.888	302.188	372.073	402.308	1.907.008	2.269.792

* Red figures.

(Here follow side folios 5166 and 5167)

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EXHIBIT X-334

ILLINOIS BELL TELEPHONE COMPANY - CHICAGO DIVISION

RETURN ON AVERAGE FIXED CAPITAL AND MATERIALS AND SUPPLIES, LESS AVERAGE ACCRUED DEPRECIATION IN EXCESS OF THE AVERAGE RETURN OF ALL LICENSEE COMPANIES OF AMERICAN TELEPHONE AND TELEGRAPH COMPANY DURING YEAR 1921

	Chicago Division	Chicago Division Intrastate	Chicago Division Intrastate Exchange
(1) Per Cent of Return on Average Fixed Capital and Materials and Supplies, less Depreciation - Chicago Division	7.32%	6.66%	6.24%
(2) Per Cent of Return on Average Fixed Capital and Materials and Supplies, less Depreciation - All Licensee Companies	6.71%	6.71%	6.71%
(3) Percentage Relation of Item (2) to Item (1)	91.61%	100.75%	107.53%
(4) Amount of Recorded Return under Present Rates - Chicago Division	$10,068,587	$8,494,616	$7,565,906
(5) Amount of Required Return under Present Rates, Chicago Division, on Basis of All Licensees (Item 3 times Item 4)	9,513,214	8,558,326	8,120,559
(6) Excess of Recorded Return under Present Rates, Chicago Division, over Return Required on Basis of All Licensees	555,373	63,710*	554,653*
(7) Loss in Recorded Return of Chicago Division, due to Attacked Rates	1,150,864	1,433,744	1,396,167
(8) Excess of Recorded Return under Attacked Rates, Chicago Division, over Return Required on Basis of All Licensees	595,491*	1,497,454*	1,950,820*
(9) Additional Return of Chicago Division, due to Adjustment of Interstate Separation	-	431,580	1,385,803
(10) Excess of Adjusted Return under Attacked Rates, Chicago Division, over Return Required on Basis of All Licensees	595,491*	1,065,874*	565,017*
(11) Additional Return of Chicago Division, due to Adjustment of License Payments on Basis of All Licensees	209,948	186,331	172,453
(12) Excess of Adjusted Return under Attacked Rates, Chicago Division, over Return Required on Basis of All Licensees	385,543*	879,543*	392,564*
(13) Additional Return of Chicago Division, due to Adjustment of Depreciation Expense:			
(a) Depreciation Expense	3,610,887	3,309,223	3,165,252
(b) Less - Increase in Required Return due to Change in Depreciation Reserve (Adjustment of Item 5)	1,572,048	1,428,597	1,361,668
(c) Net Adjustment	2,038,839	1,880,626	1,803,584
(14) Excess of Adjusted Return under Attacked Rates, Chicago Division, over Return on Basis of All Licensees	1,653,296	1,001,083	1,411,020

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* - Red Figures.

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p 2

ILLINOIS BELL TELEPHONE COMPANY - CHICAGO DIVISION

RETURN ON AVERAGE FIXED CAPITAL AND MATERIALS AND SUPPLIES, LESS AVERAGE ACCRUED DEPRECIATION IN EXCESS OF THE AVERAGE RETURN OF OTHER LICENSEE COMPANIES OF AMERICAN TELEPHONE AND TELEGRAPH COMPANY DURING YEAR 1931

	Chicago Division	Chicago Division Intrastate	Chicago Division Intrastate Exchange
(1) Per Cent of Return on Average Fixed Capital and Materials and Supplies, less Depreciation - Chicago Division	7.32%	6.66%	6.24%
(2) Per Cent of Return on Average Fixed Capital and Materials and Supplies, less Depreciation - Other Licensee Companies	6.69%	6.69%	6.69%
(3) Percentage Relation of Item (2) to Item (1)	91.39%	100.45%	107.22%
(4) Amount of Recorded Return under Present Rates - Chicago Division	$10,268,587	$8,494,616	$7,365,906
(5) Amount of Required Return under Present Rates, Chicago Division, on Basis of Other Licensees (Item 3 times Item 4)	9,384,462	8,532,842	7,896,987
(6) Excess of Recorded Return under Present Rates, Chicago Division, over Return Required on Basis of Other Licensees	884,125	38,226*	531,081*
(7) Loss in Recorded Return of Chicago Division, due to Attacked Rates	1,450,864	1,433,744	1,396,167
(8) Excess of Recorded Return under Attacked Rates, Chicago Division, over Return Required on Basis of Other Licensees	566,739*	1,471,970*	1,927,248*
(9) Additional Return of Chicago Division, due to Adjustment of Interstate Separation	-	431,580	1,385,803
(10) Excess of Adjusted Return under Attacked Rates, Chicago Division, over Return Required on Basis of Other Licensees	566,739*	1,040,390*	541,445*
(11) Additional Return of Chicago Division, due to Adjustment of License Payments on Basis of Other Licensees	222,830	199,096	184,190
(12) Excess of Adjusted Return under Attacked Rates, Chicago Division, over Return Required on Basis of Other Licensees	343,909*	841,294*	357,255*
(13) Additional Return of Chicago Division, due to Adjustment of Depreciation Expense:			
(a) Depreciation Expense	3,610,887	3,309,223	3,145,252
(b) Less - Increase in Required Return due to Change in Depreciation Reserve (Adjustment of Item 5)	1,567,362	1,424,539	1,317,728
(c) Net Adjustment	2,043,525	1,884,684	1,827,524
(14) Excess of Adjusted Return under Attacked Rates, Chicago Division, over Return on Basis of Other Licensees	1,699,616	1,043,390	1,470,269

5167

* - Red Figures.

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EXHIBIT X-335

Illinois Bell Telephone Company—Entire Company

Average Cost of Funds Used in Business, Eight Years, 1923 to 1930

	Average Funds		Dividends, Interest and Amortization Charges		
	Amount	Per Cent of Total	Amount	Per Cent of Total	Average Rate Paid Per Cent
	Year 1923				
Capital Stock	$60,042,600	54.81	$4,803,408	66.42	8.00
Capital Stock Premiums	2,911	.01	0	......	....
Total	60,045,511	54.82	4,803,408	66.42	8.00
Surplus	5,318,585	4.85	0	......	....
Total	65,364,096	59.67	4,803,408	66.42	7.35
Capital Stock Instalments	2,485,375	2.27	198,830	2.75	8.00
Total	67,849,471	61.94	5,002,238	69.17	7.37
Funded Debt (net after adjustment for Unamortized Debt, Discount and Expense)	41,268,751 (a)	37.68	2,205,249	30.49	5.34
Miscellaneous Interest-Bearing Loans	416,727	.38	24,510	.34	5.88
Total	41,685,478	38.06	2,229,759	30.83	5.35
Grand Total	$109,534,949	100.	$7,231,997	100.	6.60
	Year 1924				
Capital Stock	$67,521,900	55.35	$5,401,752	66.07	8.00
Capital Stock Premiums	2,911	.01	0	......	....
Total	67,524,811	55.36	5,401,752	66.07	8.00
Surplus	6,664,407	5.46	0	......	....
Total	74,189,218	60.82	5,401,752	66.07	7.28

(a) Excludes Chicago Telephone Co. 5% First Mortgage Gold Bonds subsequent to June 28, 1923.

Exhibit X-335—Continued

Illinois Bell Telephone Company—Entire Company

Average Cost of Funds Used in Business, Eight Years, 1923 to 1930

	Average Funds		Dividends, Interest and Amortization Charges		
	Amount	Per Cent of Total	Amount	Per Cent of Total	Average Rate Paid Per Cent
Capital Stock Instalments	1,982,612	1.63	158,609	1.95	8.00
Total	76,171,830	62.45	5,560,361	68.02	7.30
Funded Debt (net after adjustment for Unamortized Debt, Discount and Expense)	45,790,073	37.54	2,614,126	31.97	5.71
Miscellaneous Interest-Bearing Loans	29,883	.01	1,793	.01	6.00
Total	45,819,956	37.55	2,615,919	31.98	5.71
Grand Total	$121,991,786	100.	$8,176,280	100.	6.70
[fol. 5169]	Year 1925				
Capital Stock	$70,000,000	54.29	$5,600,000	65.58	8.00
Capital Stock Premiums	2,933	.01	0	......	....
Total	70,000,933	54.30	5,600,000	65.58	8.00
Surplus	8,526,401	6.61	0	......	....
Total	78,529,334	60.91	5,600,000	65.58	7.13
Capital Stock Instalments	2,735,700	2.12	218,856	2.56	8.00
Total	81,265,034	63.03	5,818,856	68.14	7.16
Funded Debt (net after adjustment for Unamortized Debt, Discount and Expense)	45,585,369	35.35	2,597,570	30.42	5.70

Miscellaneous Interest-Bearing Loans	2,094,813	1.62	122,414	1.44	5.84
Total	47,680,182	36.97	2,719,984	31.86	5.70
Grand Total	$128,945,216	100.	$8,538,840	100.	6.62
	Year 1926				
Capital Stock	$80,000,000	55.73	$6,400,000	67.73	8.00
Capital Stock Premiums	3,433	.01	0	......	....
Total	80,003,433	55.74	6,400,000	67.73	8.00
Surplus	10,142,033	7.06	0	......	....
Total	90,145,466	62.80	6,400,000	67.73	7.10
Capital Stock Instalments	....	......	....	......	....
Total	90,145,466	62.80	6,400,000	67.73	7.10
Funded Debt (net after adjustment for Unamortized Debt, Discount and Expense)	45,470,617	31.68	2,582,754	27.33	5.68
Miscellaneous Interest-Bearing Loans	7,924,854	5.52	466,477	4.94	5.89
Total	53,395,471	37.20	3,049,231	32.27	5.71
Grand Total	$143,540,937	100.	$94,492,231	100.	6.58
[fol. 5170]	Year 1927				
Capital Stock	$87,500,000	54.83	$7,000,000	65.60	8.00
Capital Stock Premiums	3,647	.00	0	......	....
Total	87,503,647	54.83	7,000,000	65.60	8.00
Surplus	12,534,462	7.85	0	......	....
Total	100,038,109	62.68	7,000,000	65.60	7.00

EXHIBIT X-335—Continued

Illinois Bell Telephone Company—Entire Company

Average Cost of Funds Used in Business, Eight Years, 1923 to 1930

	Average Funds		Dividends, Interest and Amortization Charges		
	Amount	Per Cent of Total	Amount	Per Cent of Total	Average Rate Paid Per Cent
Capital Stock Instalments	12,540,350	7.86	1,003,228	9.40	8.00
Total	112,578,459	70.54	8,003,228	75.00	7.11
Funded Debt (net after adjustment for Unamortized Debt, Discount and Expense)	45,557,812	28.55	2,581,808	24.19	5.67
Miscellaneous Interest-Bearing Loans	1,448,208	.91	85,908	.81	5.93
Total	47,006,020	29.46	2,667,716	25.00	5.68
Grand Total	159,584,479	100.	10,670,944	100.	6.69
	Year 1928				
Capital Stock	$110,000,000	61.46	$8,800,000	74.25	8.00
Capital Stock Premiums	4,168	.00	0	......	....
Total	110,004,168	61.46	8,800,000	74.25	8.00
Surplus	15,209,099	8.50	0	......	....
Total	125,212,267	69.96	8,800,000	74.25	7.03
Capital Stock Instalments	....	......	....	......	....
Total	125,213,267	69.96	8,800,000	74.25	7.03
Funded Debt (net after adjustment for Unamortized Debt, Discount and Expense)	45,788,958	25.58	2,588,288	21.84	5.65
Miscellaneous Interest-Bearing Loans	7,973,915	4.46	462,873	3.91	5.80
Total	53,762,873	30.04	3,051,161	25.75	5.68
Grand Total	$178,976,140	100.	$11,851,161	100.	6.62

[fol. 5171]

	Year 1929				
Capital Stock	$110,000,000	54.82	$8,800,000	67.19	8.00
Capital Stock Premiums	4,168	.01	0	......	....
Total	110,004,168	54.83	8,800,000	67.19	8.00
Surplus	18,977,260	9.45	0	......	....
Total	128,981,428	64.28	8,800,000	67.19	6.82
Capital Stock Instalments	10,000,513	4.98	800,041	6.11	8.00
Total	138,981,941	69.26	9,600,041	73.30	6.91
Funded Debt (net after adjustment for Unamortized Debt, Discount and Expense)	45,705,016	22.78	2,575,613	19.66	5.64
Miscellaneous Interest-Bearing Loans	15,981,288	7.96	921,464	7.04	5.77
Total	61,686,304	30.74	3,497,077	26.70	5.67
Grand Total	$200,668,245	100.	$13,097,118	100.	6.53
	Year 1930				
Capital Stock	$130,000,000	58.07	$10,400,000	70.30	8.00
Capital Stock Premiums	4,168	.01	0	......	....
Total	130,004,168	58.08	10,400,000	70.30	8.00
Surplus	22,147,338	9.89	0	......	....
Total	152,151,506	67.97	10,400,000	70.30	6.84
Capital Stock Instalments	14,998,912	6.69	1,199,913	8.11	8.00
Total	167,150,418	74.66	11,599,913	78.41	6.94
Funded Debt (net after adjustment for Unamortized Debt, Discount and Expense)	45,771,193	20.44	2,572,476	17.39	5.62
Miscellaneous Interest-Bearing Loans	10,960,384	4.90	622,010	4.20	5.68
Total	56,731,577	25.34	3,194,486	21.59	5.63
Grand Total	$223,881,995	100.	$14,794,399	100.	6.61

[fol. 5172]

EXTRACTS FROM EXHIBIT X-336

Illinois Bell Telephone Company

Statement of Chicago Division, Chicago Division Intrastate, and Chicago Division Intrastate Exchange, Showing Net Income Required to Cover all Interest, Amortization of Bond Discount and Expense, and an 8% Dividend Together with Resultant Rates of Return on the Plaintiff's Showing of Average Reproduction Cost and Average Book Cost Including Materials and Supplies and Cash Working Capital During the Years 1923 to 1930, Inclusive

	(1) Net income required to cover all interest; amortization of bond discount and expense and an 8% dividend		
Year ended Dec. 31,	Total Chicago division (1)	Total Chicago division intrastate (2)	Total Chicago division intrastate exchange (3)
1923	$4,760,028	$4,547,731	$4,348,286
1924	5,423,245	5,168,352	4,933,038
1925	5,680,890	5,382,643	5,125,015
1926	6,284,306	5,925,472	5,626,653
1927	7,043,890	6,617,030	6,254,622
1928	7,834,210	7,299,917	6,860,261
1929	8,575,469	7,906,582	7,372,330
1930	9,565,910	8,746,112	8,104,239

(Here follows Exhibit X-337, side folios 5173, 5174, 5175, 5176, 5177 and 5178)

[fols. 5173 & 5174]

Exhibit X-337

Illinois Bell Telephone Company, Chicago Division

Statement Showing the Net Earnings Per Share Available for the Stockholders of the Illinois Bell Telephone Company and the Average Earnings Available for A. T. & T. Co. Stockholders on Their Proportionate Investment in Capital Stock of A. T. & T. Co. Which Would Result from Varying Rates of Return on the Plaintiff's Showing of Average Book Cost Including Materials and Supplies and Cash Working Capital During Years 1923 to 1930, Inclusive.

	1923		1924		1925		1926		1927		1928	
	Net Earnings Per Share Available for Illinois Bell Tel. Co. Stockholders	Average Earnings Available for A. T. & T. Co. Stockholders	Net Earnings Per Share Available for Illinois Bell Tel. Co. Stockholders	Average Earnings Available for A. T. & T. Co. Stockholders	Net Earnings Per Share Available for Illinois Bell Tel. Co. Stockholders	Average Earnings Available for A. T. & T. Co. Stockholders	Net Earnings Per Share Available for Illinois Bell Tel. Co. Stockholders	Average Earnings Available for A. T. & T. Co. Stockholders	Net Earnings Per Share Available for Illinois Bell Tel. Co. Stockholders	Average Earnings Available for A. T. & T. Co. Stockholders	Net Earnings Per Share Available for Illinois Bell Tel. Co. Stockholders	Averag Earnin Availab for A. T. & T. Stockhold
(1) 4.91% Return:												
Total Chicago Division	$8.31	11.06%	$8.00	10.656%	$8.89	12.118%	$8.99	12.363%	$9.02	12.366%	$8.79	12.463%
Total Chicago Intrastate	8.32	11.07%	8.00	10.656%	8.90	12.134%	8.99	12.363%	9.03	12.382%	8.79	12.463%
Chicago Intrastate Exchange	8.31	11.06%	8.00	10.656%	8.90	12.134%	8.99	12.363%	9.02	12.366%	8.79	12.463%
(2) 5% Return:												
Total Chicago Division	8.54	11.42%	8.22	11.009%	9.13	12.512%	9.22	12.739%	9.26	12.750%	9.00	12.807%
Total Chicago Intrastate	8.51	11.42%	8.22	11.009%	9.14	12.529%	9.23	12.756%	9.27	12.766%	9.00	12.807%
Chicago Intrastate Exchange	8.54	11.42%	8.22	11.009%	9.14	12.529%	9.22	12.739%	9.27	12.766%	9.00	12.807%
(3) 5½% Return:												
Total Chicago Division	9.80	13.41%	9.45	12.983%	10.47	14.716%	10.52	14.868%	10.61	14.913%	10.17	14.726%
Total Chicago Intrastate	9.80	13.41%	9.46	13.000%	10.47	14.716%	10.53	14.885%	10.62	14.929%	10.18	14.743%
Chicago Intrastate Exchange	9.80	13.41%	9.45	12.983%	10.47	14.716%	10.53	14.885%	10.61	14.913%	10.18	14.743%
(4) 6% Return:												
Total Chicago Division	11.06	15.40%	10.68	14.957%	11.80	16.902%	11.83	17.013%	11.95	17.059%	11.35	16.661%
Total Chicago Intrastate	11.06	15.40%	10.69	14.974%	11.81	16.919%	11.84	17.030%	11.96	17.075%	11.36	16.678%
Chicago Intrastate Exchange	11.06	15.40%	10.68	14.957%	11.80	16.902%	11.83	17.013%	11.95	17.059%	11.35	16.661%
(5) 7% Return:												
Total Chicago Division	13.57	19.36%	13.15	18.922%	14.46	21.276%	14.43	21.271%	14.65	21.384%	13.71	20.513%
Total Chicago Intrastate	13.58	19.37%	13.16	18.938%	14.47	21.292%	14.45	21.303%	14.66	21.400%	13.71	20.513%
Chicago Intrastate Exchange	13.57	19.36%	13.15	18.922%	14.47	21.292%	14.44	21.287%	14.65	21.384%	13.71	20.513%
(6) 8% Return:												
Total Chicago Division	16.09	23.33%	15.61	22.870%	17.13	25.666%	17.04	25.544%	17.34	25.693%	16.06	24.385%
Total Chicago Intrastate	16.10	23.35%	15.62	22.886%	17.14	25.682%	17.05	25.561%	17.35	25.709%	16.07	24.401%
Chicago Intrastate Exchange	16.09	23.33%	15.62	22.886%	17.14	25.682%	17.04	25.544%	17.34	25.693%	16.06	24.385%

Exhibit X-337

Illinois Bell Telephone Company, Chicago Division

Statement Showing the Net Earnings Per Share Available for the Stockholders of the Illinois Bell Telephone Company and the Average Earnings Available for A. T. & T. Co. Stockholders on Their Proportionate Investment in Capital Stock of A. T. & T. Co. Which Would Result from Varying Rates of Return on the Plaintiff's Showing of Average Book Cost Including Materials and Supplies and Cash Working Capital During Years 1923 to 1930, Inclusive.

1923	1924		1925		1926		1927		1928		1929		1930	
Average Earnings Available for A. T. & T. Co. Stockholders	Net Earnings Per Share Available for Illinois Bell Tel. Co. Stockholders	Average Earnings Available for A. T. & T. Co. Stockholders	Net Earnings Per Share Available for Illinois Bell Tel. Co. Stockholders	Average Earnings Available for A. T. & T. Co. Stockholders	Net Earnings Per Share Available for Illinois Bell Tel. Co. Stockholders	Average Earnings Available for A. T. & T. Co. Stockholders	Net Earnings Per Share Available for Illinois Bell Tel. Co. Stockholders	Average Earnings Available for A. T. & T. Co. Stockholders	Net Earnings Per Share Available for Illinois Bell Tel. Co. Stockholders	Average Earnings Available for A. T. & T. Co. Stockholders	Net Earnings Per Share Available for Illinois Bell Tel. Co. Stockholders	Average Earnings Available for A. T. & T. Co. Stockholders	Net Earnings Per Share Available for Illinois Bell Tel. Co. Stockholders	Average Earnings Available for A. T. & T. Co. Stockholders
11.06%	$8.00	10.656%	$8.89	12.118%	$8.99	12.363%	$9.02	12.366%	$8.79	12.463%	$8.60	12.357%	$8.01	11.831%
11.07%	8.00	10.656%	8.90	12.134%	8.99	12.363%	9.03	12.382%	8.79	12.463%	8.58	12.323%	8.00	11.814%
11.06%	8.00	10.656%	8.90	12.134%	8.99	12.363%	9.02	12.366%	8.79	12.463%	8.58	12.323%	7.99	11.796%
11.42%	8.22	11.009%	9.13	12.512%	9.22	12.739%	9.26	12.750%	9.00	12.807%	8.83	12.744%	8.21	12.177%
11.42%	8.22	11.009%	9.14	12.529%	9.23	12.756%	9.27	12.766%	9.00	12.807%	8.81	12.711%	8.21	12.177%
11.42%	8.22	11.009%	9.14	12.529%	9.22	12.739%	9.27	12.766%	9.00	12.807%	8.81	12.711%	8.20	12.160%
13.41%	9.45	12.983%	10.47	14.716%	10.52	14.868%	10.61	14.913%	10.17	14.726%	10.10	14.885%	9.37	14.187%
13.41%	9.46	13.000%	10.47	14.716%	10.53	14.885%	10.62	14.929%	10.18	14.743%	10.09	14.869%	9.37	14.187%
13.41%	9.45	12.983%	10.47	14.716%	10.53	14.885%	10.61	14.913%	10.18	14.743%	10.08	14.852%	9.36	14.169%
15.40%	10.68	14.957%	11.80	16.902%	11.83	17.013%	11.95	17.059%	11.35	16.661%	11.37	17.026%	10.53	16.196%
15.40%	10.69	14.974%	11.81	16.919%	11.84	17.030%	11.96	17.075%	11.36	16.678%	11.36	17.009%	10.52	16.179%
15.40%	10.68	14.957%	11.80	16.902%	11.83	17.013%	11.95	17.059%	11.35	16.661%	11.35	16.993%	10.52	16.179%
19.36%	13.15	18.922%	14.46	21.276%	14.43	21.271%	14.65	21.384%	13.71	20.513%	13.92	21.325%	12.85	20.215%
19.37%	13.16	18.938%	14.47	21.292%	14.45	21.303%	14.66	21.400%	13.71	20.513%	13.90	21.291%	12.84	20.197%
19.36%	13.15	18.922%	14.47	21.292%	14.44	21.287%	14.65	21.384%	13.71	20.513%	13.89	21.291%	12.84	20.197%
23.33%	15.61	22.870%	17.13	25.666%	17.04	25.544%	17.34	25.693%	16.06	24.385%	16.47	25.624%	15.17	24.234%
23.35%	15.62	22.886%	17.14	25.682%	17.05	25.561%	17.35	25.709%	16.07	24.401%	16.45	25.590%	15.16	24.216%
23.33%	15.62	22.886%	17.14	25.682%	17.04	25.544%	17.34	25.693%	16.06	24.385%	16.44	25.573%	15.15	24.199%

[fols. 5175 and 5176]

EXHIBIT X-337

Illinois Bell Telephone Company, Chicago Division

Statement Showing the Net Earnings Per Share Available for the Stockholders of the Illinois Bell Telephone Company and the Average Earnings Available for A. T. & T. Co. Stockholders on their Prop
Result from Varying Rates of Return on the Plaintiff's Showing of Average Reproduction Cost, Including Materials and Supplies and Cash Working Capital During

	1923		1924		1925		1926		1927		
	Net Earnings Per Share Available for Illinois Bell Tel. Co. Stockholders	Average Earnings Available for A. T. & T. Co. Stockholders	Net Earnings Per Share Available for Illinois Bell Tel. Co. Stockholders	Average Earnings Available for A. T. & T. Co. Stockholders	Net Earnings Per Share Available for Illinois Bell Tel. Co. Stockholders	Average Earnings Available for A. T. & T. Co. Stockholders	Net Earnings Per Share Available for Illinois Bell Tel. Co. Stockholders	Average Earnings Available for A. T. & T. Co. Stockholders	Net Earnings Per Share Available for Illinois Bell Tel. Co. Stockholders	Average Earnings Available for A. T. & T. Co. Stockholders	Net Earning Per Share Available for Illinois Bell Tel. Co Stockholder
(1) 3.85% Return:											
Total Chicago Division	$11.10	15.46%	$10.33	14.396%	$10.79	15.242%	$10.14	14.246%	$9.52	13.167%	$8.89
Total Chicago Intrastate	11.10	15.46%	10.33	14.396%	10.79	15.242%	10.14	14.246%	9.52	13.167%	8.89
Chicago Intrastate Exchange	11.09	15.44%	10.32	14.380%	10.79	15.242%	10.13	14.230%	9.51	13.151%	8.89
(2) 4% Return:											
Total Chicago Division	11.69	16.39%	10.89	15.294%	11.38	16.212%	10.68	15.130%	10.05	14.016%	9.35
Total Chicago Intrastate	11.69	16.39%	10.89	15.294%	11.38	16.212%	10.68	15.130%	10.05	14.016%	9.35
Chicago Intrastate Exchange	11.68	16.37%	10.88	15.278%	11.37	16.195%	10.68	15.130%	10.05	14.016%	9.34
(3) 5% Return:											
Total Chicago Division	15.63	22.61%	14.64	21.313%	15.27	22.608%	14.31	21.074%	13.62	19.734%	12.38
Total Chicago Intrastate	15.63	22.61%	14.64	21.313%	15.27	22.608%	14.30	21.058%	13.62	19.734%	12.38
Chicago Intrastate Exchange	15.62	22.59%	14.63	21.297%	15.26	22.591%	14.30	21.058%	13.61	19.718%	12.37
(4) 6% Return:											
Total Chicago Division	19.56	28.81%	18.39	27.331%	19.16	29.004%	17.93	27.002%	17.18	25.436%	15.41
Total Chicago Intrastate	19.56	28.81%	18.39	27.331%	19.16	29.004%	17.93	27.002%	17.18	25.436%	15.41
Chicago Intrastate Exchange	19.55	28.79%	18.38	27.315%	19.15	28.987%	17.92	26.985%	17.17	25.420%	15.40
(5) 7% Return:											
Total Chicago Division	23.49	35.01%	22.14	33.349%	23.06	35.416%	21.55	32.929%	20.74	31.139%	18.44
Total Chicago Intrastate	23.49	35.01%	22.14	33.349%	23.06	35.416%	21.55	32.929%	20.74	31.139%	18.44
Chicago Intrastate Exchange	23.48	34.99%	22.14	33.349%	23.05	35.400%	21.54	32.913%	20.73	31.123%	18.43
(6) 8% Return:											
Total Chicago Division	27.43	41.22%	25.89	39.368%	26.95	41.812%	25.18	38.873%	24.30	36.841%	21.47
Total Chicago Intrastate	27.43	41.22%	25.89	39.368%	26.95	41.812%	25.18	38.873%	24.30	36.841%	21.47
Chicago Intrastate Exchange	27.41	41.19%	25.88	39.352%	26.94	41.795%	25.17	38.857%	24.29	36.825%	21.45

(Here follow side folios 5177 and 5178)

EXHIBIT X-337

Illinois Bell Telephone Company, Chicago Division

Stockholders of the Illinois Bell Telephone Company and the Average Earnings Available for A. T. & T. Co. Stockholders on their Proportionate Investment in Capital Stock of A. T. & T. Co. which would
es of Return on the Plaintiff's Showing of Average Reproduction Cost, Including Materials and Supplies and Cash Working Capital During Years 1923 to 1930, Inclusive

1924		1925		1926		1927		1928		1929		1930	
Net Earnings Per Share Available for Illinois Bell Tel. Co. Stockholders	Average Earnings Available for A. T. & T. Co. Stockholders	Net Earnings Per Share Available for Illinois Bell Tel. Co. Stockholders	Average Earnings Available for A. T. & T. Co. Stockholders	Net Earnings Per Share Available for Illinois Bell Tel. Co. Stockholders	Average Earnings Available for A. T. & T. Co. Stockholders	Net Earnings Per Share Available for Illinois Bell Tel. Co. Stockholders	Average Earnings Available for A. T. & T. Co. Stockholders	Net Earnings Per Share Available for Illinois Bell Tel. Co. Stockholders	Average Earnings Available for A. T. & T. Co. Stockholders	Net Earnings Per Share Available for Illinois Bell Tel. Co. Stockholders	Average Earnings Available for A. T. & T. Co. Stockholders	Net Earnings Per Share Available for Illinois Bell Tel. Co. Stockholders	Average Earnings Available for A. T. & T. Co. Stockholders
$10.33	14.396%	$10.79	15.242%	$10.14	14.246%	$9.52	13.167%	$8.89	12.627%	$8.62	12.390%	$8.04	11.883%
10.33	14.396%	10.79	15.242%	10.14	14.246%	9.52	13.167%	8.89	12.627%	8.60	12.357%	8.02	11.848%
10.32	14.380%	10.79	15.242%	10.13	14.230%	9.51	13.151%	8.89	12.627%	8.59	12.340%	8.01	11.831%
10.89	15.294%	11.38	16.212%	10.68	15.130%	10.05	14.016%	9.35	13.381%	9.11	13.216%	8.49	12.662%
10.89	15.294%	11.38	16.212%	10.68	15.130%	10.05	14.016%	9.35	13.381%	9.09	13.183%	8.47	12.628%
10.88	15.278%	11.37	16.195%	10.68	15.130%	10.05	14.016%	9.34	13.365%	9.08	13.166%	8.46	12.610%
14.64	21.313%	15.27	22.608%	14.31	21.074%	13.62	19.734%	12.38	18.350%	12.36	18.695%	11.46	17.807%
14.64	21.313%	15.27	22.608%	14.30	21.058%	13.62	19.734%	12.38	18.350%	12.34	18.661%	11.43	17.755%
14.63	21.297%	15.26	22.591%	14.30	21.058%	13.61	19.718%	12.37	18.334%	12.32	18.628%	11.42	17.738%
18.39	27.331%	19.16	29.004%	17.93	27.002%	17.18	25.436%	15.41	23.319%	15.62	24.191%	14.42	22.934%
18.39	27.331%	19.16	29.004%	17.93	27.002%	17.18	25.436%	15.41	23.319%	15.59	24.140%	14.39	22.882%
18.38	27.315%	19.15	28.987%	17.92	26.985%	17.17	25.420%	15.40	23.303%	15.57	24.107%	14.37	22.848%
22.14	33.349%	23.06	35.416%	21.55	32.929%	20.74	31.139%	18.44	28.288%	18.87	29.670%	17.39	28.079%
22.14	33.349%	23.06	35.416%	21.55	32.929%	20.74	31.139%	18.44	28.288%	18.84	29.619%	17.35	28.010%
22.14	33.349%	23.05	35.400%	21.54	32.913%	20.73	31.123%	18.43	28.272%	18.82	29.585%	17.33	27.975%
25.89	39.368%	26.95	41.812%	25.18	38.873%	24.30	36.841%	21.47	33.257%	22.12	35.148%	20.36	33.224%
25.89	39.368%	26.95	41.812%	25.18	38.873%	24.30	36.841%	21.47	33.257%	22.09	35.098%	20.31	33.137%
25.88	39.352%	26.94	41.795%	25.17	38.857%	24.29	36.825%	21.45	33.224%	22.06	35.047%	20.29	33.102%

(Here follow side folios 5177 and 5178)

fol. 5177]

Exhibit X-338

Illinois Bell Telephone Company, Chicago Division

Plaintiff's Exhibit A-53 Adjusted for Rate Base of Book Cost of Plant, Less Depreciation, etc., Years 1923 to 1931, Inclusive

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930	Year Ended Dec. 31, 1931
Total Chicago Division:									
(1) Average Book Cost of Plant in Service and General Equipment, per Exhibit A-53....	$92,811,249	$105,513,839	$118,740,547	$133,704,654	$148,212,139	$162,449,631	$176,024,193	$186,971,863	$193,354,139
(2) Average Going Value, adjusted on basis of Ill. C. C. Order of August 16, 1923...........	4,549,418	5,170,178	5,818,287	6,551,528	7,262,395	7,960,032	8,625,185	9,161,621	9,474,353
(3) Average Materials and Supplies, per Exhibit A-53...........................	233,022	299,310	358,227	336,693	326,599	344,336	276,091	209,784	224,433
(4) Average Working Cash Capital, per Exhibit A-53...........................	3,000,000	3,150,000	3,325,000	3,550,000	3,825,000	4,050,000	4,500,000	4,550,000	4,250,000
(5) Total...........................	100,593,689	114,133,327	128,242,061	144,142,875	159,626,133	174,803,999	189,425,469	200,893,268	207,302,925
(6) Average Accrued Depreciation and Amortization of Intangible Capital, on basis of Ill. C. C. Order of August 16, 1923..........	27,476,795	29,392,498	30,983,731	32,789,000	34,288,440	34,823,962	33,130,569	30,712,663	29,777,709
(7) Total...........................	73,116,894	84,740,829	97,258,330	111,353,875	125,337,693	139,980,037	156,294,900	170,180,605	177,525,216
Chicago Division Intrastate:									
(1) Average Book Cost of Plant in Service and General Equipment, per Exhibit A-53....	88,663,316	100,540,215	112,486,829	126,061,831	139,205,005	151,459,710	162,493,935	170,958,739	175,710,631
(2) Average Going Value, adjusted on basis of Ill. C. C. Order of August 16, 1923...........	4,346,376	4,926,495	5,511,855	6,177,030	6,821,045	7,421,526	7,962,203	8,376,978	8,609,821
(3) Average Materials and Supplies, per Exhibit A-53...........................	222,618	284,533	338,324	316,963	306,108	319,489	253,664	190,933	203,648
(4) Average Working Cash Capital, per Exhibit A-53...........................	2,915,000	3,060,000	3,225,000	3,440,000	3,695,000	3,840,000	3,975,000	4,050,000	3,800,000
(5) Total...........................	96,147,310	108,811,243	121,562,008	135,995,824	150,027,158	163,040,725	174,684,802	183,576,650	188,324,100
(6) Average Accrued Depreciation and Amortization of Intangible Capital, on basis of Ill. C. C. Order of August 16, 1923..........	26,248,803	28,007,019	29,351,908	30,914,716	32,204,666	32,468,077	30,583,958	28,082,291	27,060,466
(7) Total...........................	69,898,507	80,804,224	92,210,100	105,081,108	117,822,492	130,572,648	144,100,844	155,494,359	161,263,634
Chicago Division Intrastate Exchange:									
(1) Average Book Cost of Plant in Service and General Equipment, per Exhibit A-53....	84,783,048	95,976,573	107,112,897	119,708,266	131,600,492	142,347,871	151,517,431	158,431,574	162,558,785
(2) Average Going Value, adjusted on basis of Ill. C. C. Order of August 16, 1923...........	4,156,161	4,702,852	5,248,532	5,865,706	6,448,425	6,975,046	7,424,355	7,763,148	7,965,380
(3) Average Materials and Supplies, per Exhibit A-53...........................	212,875	271,196	321,892	300,465	288,668	299,325	235,475	176,653	188,393
(4) Average Working Cash Capital, per Exhibit A-53...........................	2,750,000	2,880,000	3,025,000	3,200,000	3,425,000	3,550,000	3,635,000	3,690,000	3,450,000
(5) Total...........................	91,902,084	103,830,621	115,708,321	129,074,437	141,762,585	153,172,242	162,812,261	170,061,375	174,162,558
(6) Average Accrued Depreciation and Amortization of Intangible Capital, on basis of Ill. C. C. Order of August 16, 1923..........	25,100,048	26,735,747	27,949,654	29,356,603	30,445,384	30,514,793	28,518,005	26,024,534	25,035,005
(7) Total...........................	66,802,036	77,094,874	87,758,667	99,717,834	111,317,201	122,657,449	134,294,256	144,036,841	149,127,553

[fol. 5178]

EXTRACTS FROM EXHIBIT X-340

Illinois Bell Telephone Company

Plaintiff's Exhibit A-53 Adjusted for Net Income Available for Return Under Rates in Suit and for Rate Base During Years 1923 to 1931, Inclusive

Chicago Division:	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930	Year Ended Dec. 31, 1931
(1) Income Available for Return Per Company's Exhibit A-53	$5,798,716 (a)	$5,444,088	$5,942,729	$6,271,371	$6,641,638	$7,536,101	$10,116,644	$9,468,029	$8,431,389
(2) Income Due to Adjustment of License Payments	383,214	348,864	266,314	95,363	135,574	37,174*	82,331	95,870	222,830
(3) Total	6,181,930	5,792,952	6,209,043	6,366,734	6,777,212	7,498,927	10,198,975	9,563,899	8,654,219
(4) Income Due to Adjustment of Depreciation Expense	629,249	1,486,184	1,652,052	2,339,977	3,035,752	3,812,129	4,237,709	4,429,941	3,610,887
(5) Total	6,811,179	7,279,136	7,861,095	8,706,711	9,812,964	11,311,056	14,436,684	13,993,840	12,265,106
(6) Income Due to Defendants' Interstate Separation	....	....	....	....	....	....	....	....	....
(7) Total Income Available for Return, After Above Adjustments	6,811,179	7,279,136	7,861,095	8,706,711	9,812,964	11,311,056	14,436,684	13,993,840	12,265,106
Chicago Division Intrastate:									
(1) Income Available for Return Per Company's Exhibit A-53	$5,216,854 (a)	$4,782,833	$5,178,488	$5,364,933	$5,600,362	$6,388,673	$8,463,829	$7,590,359	$6,720,096
(2) Income Due to Adjustment of License Payments	372,170	335,335	254,213	88,440	126,528	37,505*	71,435	83,324	199,096
(3) Total	5,589,024	5,118,168	5,432,701	5,453,373	5,726,890	6,351,168	8,535,264	7,673,683	6,919,192
(4) Income Due to Adjustment of Depreciation Expense	597,132	1,414,018	1,562,392	2,205,414	2,860,112	3,561,852	3,888,445	4,069,162	3,309,223
(5) Total	6,186,156	6,532,186	6,995,093	7,658,787	8,587,002	9,913,020	12,423,709	11,742,845	10,228,415
(6) Income Due to Defendants' Interstate Separation	256,721	262,398	309,505	317,915	354,372	427,655	486,875	472,469	431,580
(7) Total Income Available for Return, After Above Adjustments	6,442,877	6,794,584	7,304,598	7,976,702	8,941,374	10,340,675	12,910,584	12,215,314	10,659,995
Chicago Division Intrastate Exchange:									
(1) Income Available for Return Per Company's Exhibit A-53	$4,618,037 (a)	$4,077,765	$4,269,734	$4,210,427	$4,306,547	$4,907,181	$6,941,442	$6,207,018	$5,660,602
(2) Income Due to Adjustment of License Payments	354,643	314,860	235,887	77,876	113,256	37,898*	64,393	75,454	184,190
(3) Total	4,972,680	4,392,625	4,505,621	4,288,303	4,419,803	4,869,283	7,005,835	6,282,472	5,844,792
(4) Income Due to Adjustment of Depreciation Expense	574,555	1,360,459	1,501,377	2,115,480	2,737,843	3,395,724	3,685,780	3,849,092	3,125,252
(5) Total	5,547,235	5,753,084	6,006,998	6,403,783	7,157,646	8,265,007	10,691,615	10,131,564	8,970,044
(6) Income Due to Defendant's Interstate Separation	731,750	778,837	902,779	1,018,633	1,146,483	1,352,860	1,538,167	1,551,597	1,385,803
(7) Total Income Available for Return, After Above Adjustments	6,278,985	6,531,921	6,909,777	7,422,416	8,304,129	9,617,867	12,229,782	11,683,161	10,355,847

*Red figures.

(a) Loss in Revenues During the Year 1923 Due to the Attacked Rates, Was Taken from Plaintiff's Exhibit A-52 to Give Consideration to the Effective Date (Oct. 1, 1923) of the Illinois Commerce Commission's Order.

[fol. 5179]

EXTRACTS FROM X-342

Uniform System of Accounts for Telephone Companies as Prescribed by the Interstate Commerce Commission in Accordance with Section 30 of the Act to Regulate Commerce

(3)

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[fol. 5182] 104. Construction Work in Progress.

This account should include the amounts expended upon plant that is in process of construction under estimates or work orders; but is not ready for service at the date of the balance sheet. It includes interest charged to construction, also such proportion of plant supervision expenses, engineering expenses, tool expenses, supply expenses, and general expenses as may be properly chargeable to the construction work included under this account.

When the work is completed on any job the cost of which has been included in this account, this account should be credited with the amount at which it stands charged, and the appropriate fixed capital or other accounts should be concurrently charged, but expenditures should not be carried in this account beyond the close of the fiscal year next succeeding that in which the expenditures were made.

* * * * * * *

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* * * * * * *

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11. Interest Accruing During Construction Period.—Account No. 268, "Interest During Construction," should include only such proportion of the interest on funds used for construction purposes and of the discount and expense on funded debt as is equitably assignable to the period between the date of the issuance of securities and the time when the property acquired or the improvement made through such issuance becomes available for the service for which it is intended. The proportion of interest, discount, and expense thus chargeable should be that which the period prior to the completion or coming into service of the facilities or improvements constructed bears to the entire life of the securities issued.

(43)
[fol. 5184] 268. Interest During Construction.

This account should include the interest upon all moneys (and credits available upon demand) devoted to the construction and equipment of the property from the time of such devotion until the construction is ready for use. Interest receivable accrued upon such moneys (and upon such credits) should be credited to this account.

If any property with respect to which an interest charge is included in this account is withdrawn or retired from service, the amount of such interest (estimated, if not known) should be credited to this account and charged off as a part of the original cost of the property so retired. No interest upon expenditures for replacements or reconstruction should be included in this account or any other fixed capital account unless proper credits are made to the appropriate fixed capital accounts for any interest included in such accounts in respect of the property retired or withdrawn. (See sec. 11, p. 33.)

270. Undistributed Construction Expenditures.

This account should include the expenditures provided for in the following subaccounts when such expenditures can not be satisfactorily allocated to the fixed capital accounts to which they relate. Upon the retirement or withdrawal of any property with respect to which any charge is included in this account or any subaccount hereunder, there should be credited to this account or the appropriate subaccount such part of the undistributed expenditures during construction (estimated, if not known) as may be applicable to the property withdrawn or retired.

271. Engineering and Superintendence.

This account should include all expenditures for services and expenses of engineers, draftsmen, and superintendents employed on preliminary and construction work when the expenditures can not be assigned to specific construction accounts.

272. Law Expenditures During Construction.

This account should include general law expenditures, incurred in the construction of the telephone plant, such as the pay and expenses of counsel, solicitors, and attorneys, their clerks and attendants, and expenses of their offices; the cost of printing briefs, legal forms, testimony, reports, etc.; payments to arbitrators for the settlement of disputed questions; cost of suits and payments of special fees, notarial fees, and witness fees, and other court expenses. When any of the expenditures enumerated herein can be charged directly to the account for which incurred, they should be so charged and not to this account. Expenditures incurred in connection with the acquisition of right of way should be charged to account No. 207, "Right of Way," and in the acquisition of other land to account No. 211, "Land."

Law expenditures in connection with the organization of the corporation should be charged to account No. 201, "Organization."

273. Taxes During Construction.

This account should include all taxes and assessments levied and paid on property belonging to the company under construction and before the plant is opened for operation, except special taxes assessed for street and other improvements, such as grading, sewering, curbing, guttering, [fol. 5185] paving, sidewalks, etc., which should be charged to the account to which the property benefited is charged.

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274. Miscellaneous Construction Expenditures.

This account should include salaries and expenses of executive and general officers of the telephone company before it is ready to begin operations; clerks in general offices engaged on construction accounts or work; rent and repair of general offices when rented, with the office expenses; insurance during construction; also construction and equipment items of a special and incidental nature which can not properly be charged to any other fixed capital account.

Note A.—This account may include a suitable proportion of supply expenses when such expenses are not assignable to specific materials.

Note B.—This account should not include any costs of organization, or any costs or discounts connected with the issue and disposal of stocks, bonds, or other securities, or commercial paper.

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[fol. 5186]

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Account No. 413, "Realized Depreciation Not Covered by Reserves," is provided in the Corporate Surplus or Deficit account for charges for realized depreciation on tangible fixed capital retired when such depreciation occurred prior to the establishment of account No. 102, "Reserve for Accrued Depreciation—Cr.," or has not been provided for by credits to that account.

(70) 606. Repairs of Buildings and Grounds.

This account should include the cost of repairing general offices, central offices, test stations, or other telephone offices and the fixtures (except telephone apparatus) therein, such as elevators, plumbing, apparatus for heating, lighting, ventilating, and power; and the cost of maintaining yards and grounds, with their fences, sidewalks, sewers, etc., appurtenant to such buildings. Charge also to this account the cost of repairing shops, stores, stables, and garages, and permanent fixtures therein.

(75) 668. Insurance.

This account should include premiums paid to insurance companies for fire, fidelity, boiler, casualty, burglar, and all other insurance. Charge also to this account and credit account No. 169, "Insurance and Casualty Reserves," amounts set aside as an insurance reserve.

This account should be credited and the proper fixed capital account or accounts concurrently charged with the cost of insurance applicable to construction work.

[fol. 5190]

Exhibit X-343

Response to Mr. Blackman's question to Mr. Hammond on cross-examination (Record 5518) as follows:

Q. "Will you make up a little table for me, and add up the yields of the various years of Triple 'A' Bell bonds, the Triple 'A' Railroad bonds, and the Triple 'A' Utility bonds, and tell me what the comparison is that you have taken?"

	Cost to company			Yield to public (on offering price)		
Year	Bell System %	Railroads %	Public Utilities %	Bell System %	Railroads %	Public Utilities %
1923	5.33	5.24	5.77	5.11	5.10	5.52
1925	5.19	5.17	5.24	5.00	4.99	5.00
1926	5.02	4.75	5.08	4.83	4.65	4.91
1929	5.33	4.82	4.93	5.00	4.67	4.75
1930	5.21	4.80	4.88	5.02	4.66	4.69
Arithmetical Average	5.22	4.96	5.18	4.99	4.81	4.97
Weighted Average	5.21	4.94	5.12	5.00	4.78	4.92

All figures taken from Exhibit X-235 and supporting data X-261—Pages 4, 5, 6, 7, and 8.

[fol. 5191]

Exhibit X-346

STATE OF ILLINOIS:

PUBLIC UTILITIES COMMISSION

No. 8672

In the Matter of the Application of the CHICAGO TELEPHONE COMPANY to Increase Telephone Rates in All Its Exchanges (Except the City of Chicago) in the Counties of Cook, DuPage, Grundy, Kane, Kendall, Lake, McHenry, and Will

No. 9291

In the Matter of the Application of the CHICAGO TELEPHONE COMPANY for Authority to Put Into Force Certain Rates Throughout the State of Illinois

By the COMMISSION:

A petition filed by the Chicago Telephone Company on November 15, 1919, requests that a temporary order be entered authorizing the placing in effect on December 1, 1919, for local and long distance telephone service in Illinois certain schedules of rates which modify in some particulars hereinafter enumerated the schedules approved by this Commission in an order entered on July 31, 1919 for rates and charges to continue in effect until November 30, 1919.

The petitioner refers to the application for increased rates filed July 16, 1919, on which the order of July 31, 1919 was entered, and states that since the entry of the order on July 31, 1919 the applicant has filed verified reports as required by said order, showing its operations during the months of August and September, 1919, under the rates and charges fixed by the Commission on July 31, 1919.

The petition also states that case number 8672, previously dismissed, was reinstated by order of the Commission and set for joint hearing with the proceedings in the present case, number 9291.

The petition further states that the reports of the company's operations during the months of August and September, 1919, under the schedule approved by this Commis- [fol. 5192] sion in its order of July 31, 1919 show that such rates and charges which have been in effect since August 1, 1919 do not produce a revenue sufficient to pay the operating expenses of the applicant and interest on its fixed and current indebtedness after setting aside the funds provided for in said order of July 31, 1919.

It is further stated and the applicant has introduced evidence tending to show that during the month of October, 1919, its operating expenses were increased at the rate of one million, seven hundred and fifty thousand dollars ($1,750,000) per annum by wage increases made in that month to all classes of its employes.

All interested parties having been duly notified, hearings have been held in the city of Chicago in both cases 8672 and 9291, legal representatives of the city of Chicago and of the various municipalities affected in the adjacent territory being present.

The testimony presented tends to show that notwithstanding greatly increased operating expenses no change in the rates charged for service by the petitioner was made from

1913 until the property passed into the control of the Federal Government; that an increase in rates became effective on June 16, 1919 under authority of the Postmaster General, and remained in operation until modified by order of this Commission in its order approved July 31, 1919.

The increased rates first referred to, abolished in the city of Chicago the former flat rates for service, which allowed an unlimited number of calls for a fixed charge per annum. These rates were effective for a limited number of subscribers only, and were not available to new applicants for service. In its order approved July 31, 1919 the Commission continued in effect in the city of Chicago the measured service rates established by the Federal Government, but reduced the charge to four-party residence subscribers to the rate which had been in effect since 1913, [fol. 5193] these subscribers representing over seventy per cent (70%) of the total number of business and residence subscribers of the petitioner in the city of Chicago.

The petitioner has introduced evidence tending to show that the actual cost of its tangible property in the State of Illinois, amounted to seventy-eight million dollars ($78,000,000) on July 31, 1919; and that on that date there was outstanding against said property bonds in the sum of eighteen million, five hundred eighty-five thousand, four hundred and fifty-four dollars ($18,585,454); capital stock in the amount of thirty nine million, one hundred twenty-seven thousand, two hundred and seventy-two dollars ($39,127,272); a total of fifty-seven million, seven hundred twelve thousand, seven hundred twenty-six dollars ($57,712,726). Portions of an appraisal made by Messrs. Byllesby and Arnold during the year 1912 have also been introduced in evidence, which appraisal was used as a basis for re-classifying the book entries showing the original cost of its property.

The rates at present in force in the territory of the petitioner outside of the city of Chicago are an increase over the rates which were in effect in said territory from 1913 to June, 1919, but the increase is not as great as that asked in case number 8672.

The new rates for exchange service in the territory adjacent to Chicago have not been in effect a sufficient length of time to show their full effect on revenue or to definitely establish a comparison between the proportions of the company's revenues derived from the city of Chicago and the adjoining municipalities. Pending the completion of a final report on this distribution of revenue, the rates for local exchange service at present in force in the adjoining municipalities should be continued in effect and the increase asked for in the petition filed November 15, 1919 should be denied.

[fol. 5194] It appears that subscribers using the four-party service are now paying the same rate for telephone service which had been in effect since 1913, notwithstanding the increased operating expenses and the cost of maintenance. Authority is asked to increase the rates for service to the four-party residence subscribers at a daily guarantee of seven and one-half cents (7½¢) including one and one-half outgoing messages, additional messages four cents (4¢) each. Sufficient evidence has not been placed in the record as to the results of the operation of that branch of the service at the rate asked for to justify this Commission at the present time in approving the placing in effect of the proposed daily guarantee of seven and one-half cent (7½¢) per day on the four-party residence service.

The record thus far made in the proceedings herein tends to show that the petitioner will not receive sufficient revenue to meet all of its operating expenses, interest requirements and provide an adequate return, but the Commission recognizes the fact that this is a temporary order and that no serious injury will be done the petitioner by requiring it to wait its final determination of this case, in order to have its rates definitely determined, when the evidence is closed The petitioner, contrary to most public utility corporations, is financially capable of caring for itself, and no injury, permanent or irreparable, can be done it by postponing its rate adjustment until all the evidence has been received. Any inequality in the rates now sought to be increased and denied in this order, can be taken into account in the final order and adjusted at that time.

This petitioner is not endangered by any fear of bankruptcy, and under the rates now in effect it is more than earning operating expenses, and sufficient to meet interest on its fixed charge, and with the release of the funds impounded under the order of July 31, 1919, we are of the opinion the petitioner will be sufficiently cared for until [fol. 5195] the final order is entered herein. Should this not be the actual result the petitioner is not barred from again presenting its petition to the Commission and request emergency relief, should the same appear necessary. The Commission is further of the opinion that until the final order is entered herein, the present rates in force should be allowed to remain in effect.

[fol. 5196] After carefully considering the evidence the Commission is of the opinion and finds:

(A) That in view of the showing disclosed by the record so far made a situation exists which makes it proper for the Commission to enter a temporary order insuring as far as possible the maintenance of the service rendered by the companies, without disturbance or interruption, and to protect the public as to rates pending the final determination by the Commission of the just and reasonable rates to be charged by the applicant for its service.

(B) That there is not sufficient evidence in the record to justify the approval by the Commission of the proposed schedules filed by the Applicant.

(C) That there is not in the record sufficient evidence from which the value of the applicant's property or the amount which it is entitled to earn may be finally and definitely determined, and that, in the absence of additional evidence, the rights and interests of both the public and the company can be best protected by permitting the company to charge and collect, temporarily, the rates and schedules now in effect, and upon the express terms and conditions hereinafter set forth, said rates to be collected temporarily pending a further investigation and determination of a just and reasonable rate by this Commission.

(D) That in view of the short time in which the rates of the applicant have been in effect in the City of Chicago upon a measured service basis it is desirable that said measured service rates be continued, so that their full effect on the Company's revenues may be determined.

(E) That the following rates and charges for moves and changes are just and reasonable, and should be allowed to become effective temporarily, pending the final disposition of this case, or the further order of the Commission.

(F) That the long distance and toll rates, as provided in the schedules filed with the Commission on July 16th, 1919, are hereby permitted to become effective, subject to any final order to be hereafter entered by this Commission, but all other rates listed in said schedule so filed, are hereby resuspended for a period not to exceed six months and until the further order of the Commission.

[fol. 5197] It is therefore ordered by the Public Utilities Commission of Illinois as follows:

(1) That the Chicago Telephone Company charge and collect for local service rendered by it to its subscribers and patrons within the City of Chicago the rates now in effect.

(2) That the Chicago Telephone Company charge for the moving of telephones the following rates under the rules and regulations set forth in the schedules filed with the Commission on July 16, 1919.

A. Charges for moves and changes:

1. Charges for changes of location of telephone equipment or wiring on the subscriber's premises:

(a) For moving a telephone set from one location to another on the same premises, a charge of $3.00

(b) For moving any other equipment or wiring from one location to another on the same premises, a charge based on the cost of labor and material

2. Charges for changes other than moves, in wiring and equipment on the subscriber's premises made on the initiative of subscriber, to be:

(a) For change in type or style of telephone set, a charge of $3.00.

(b) For other changes in equipment or wiring a charge based on the cost of labor and material

3. The charges specified above not to apply (a) if the changes or moves are required for the proper maintenance of the equipment or service; or (b) if the changes are required because of a change in class or grade of service.

(3) That the Chicago Telephone Company charge and collect for local services rendered by it to its subscribers and patrons within the suburban towns, villages and communities served by it outside of the City of Chicago, and within the State of Illinois, the rates now in effect.

(4) That the Chicago Telephone Company be released from the order heretofore entered, requiring it to set aside funds under the order of the Commission entered July 31, 1919. The release of the fund impounded under the order of July 31, 1919, is made in view of the admitted solvency of petition- and its ability to respond to reparation of the Commission, and nothing herein shall be construed to modify the right of consumers to receive or the authority [fol. 5198] of the Commission to award and require payment of reparation if awarded pursuant to the terms of the order of July 31, 1919.

(5) That the rates and charges in effect as modified above shall be continued until final hearing and further order by the Commission.

(6) That the long distance and toll rates, as provided in the schedules filed with the Commission on July 16, 1919, are hereby permitted to become effective, subject to any final order to be hereafter entered by this Commission, but all other rates listed in said schedule so filed, are hereby resuspended for a period not to exceed six months and until the further order of the Commission.

(7) That the Commission expressly retains jurisdiction, both as to the rates involved and the parties herein, of this cause, and reserves to itself full right and authority, upon complaint upon application, or upon its own motion, to further investigate the rates permitted to be placed in effect by this order, or the service rendered in connection therewith, and to make such further findings and issue such further orders as may be justified by the facts determined at any subsequent hearing or hearings.

(8) The acceptance by the Chicago Telephone Company within one day from the date hereof of this order and of all the terms and conditions hereof is made an express condition precedent to any and all right of the said company to charge, demand, collect or receive the rates which said com-

pany is by this order permitted to charge temporarily, and upon acceptance of this order in writing, the Chicago Telephone Company shall file with this Commission new schedules of temporary rates and charges effective when filed, applicable to the service to be furnished in accordance herewith, which schedules and charges shall provide for reparation or repayment to the subscribers and patrons of said [fol. 5199] companies of any and all sums which they may be entitled to receive in accordance with the terms of this order if and when this Commission shall by its order prescribe new and different rates to be charged and collected by said company, the said schedules so to be filed to become a part of every contract between the company and its subscribers and patrons.

(9) That all terms and conditions of order approved July 31, 1919, except those specifically modified herein, are continued in full force and effect.

By order of the Commission, at Springfield, Illinois, this 29th day of November, 1919.

(Signed) R. Allan Stephens, Secretary.

VC.

[fol. 5200] EXHIBIT X-347

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF ILLINOIS.

Number 9291

In the Matter of the Application of the CHICAGO TELEPHONE COMPANY for Authority to Put Into Force Certain Rates Throughout the State of Illinois

PETITION OF CHICAGO TELEPHONE COMPANY FOR TEMPORARY RATES IN THE CITY OF CHICAGO

Cutting, Moore and Sidley, Attorneys for Chicago Telephone Company.

William P. Sidley, William D. Bangs, of Counsel.

[fol. 5201] Before the Public Utilities Commission of the State of Illinois

Number 9291

In the Matter of the Application of the Chicago Telephone Company for Authority to Put Into Force Certain Rates Throughout the State of Illinois

Petition

The petition of the above named Chicago Telephone Company, applicant, respectfully represents and shows:

1. That the applicant is a corporation duly organized and existing under the laws of the State of Illinois, with its principal place of business in the City of Chicago, Illinois, and owns within the State of Illinois, in the City of Chicago and elsewhere, certain plant, equipment and property used by it for the transmission of telephone messages between points within the State of Illinois, and that, as a public utility it is subject to the provisions of an act entitled "An Act to provide for the Regulation of Public Utilities" in force in the State of Illinois, herein referred to as the Public Utilities Act.

2. That on July 16, 1919, the applicant filed a schedule of rates and charges, and a petition to this Commission for authority to put into force said rates and charges in the [fol. 5202] City of Chicago and throughout the State of Illinois; on July 31, 1919, an order was entered upon said petition whereby this Commission placed in effect in the City of Chicago certain of the rates and charges set forth in said schedule, all of said rates and charges being on a measured service basis; this applicant duly accepted said order in the manner therein provided, filed said schedule of temporary rates and charges, and charged said rates from August 1, 1919, to December 1, 1919.

3. That on November 15, 1919, the applicant filed a petition with this Commission for authority to put into effect in the City of Chicago and elsewhere in the State of Illinois, certain toll and exchange rates, and for authority to make certain charges for installation and moving of telephones;

on November 29, 1919, this Commission entered its order permitting the applicant to put into effect the toll rates referred to in said petition, and a charge for moving telephones referred to in said petition. The said order of November 29, 1919, did not permit any increase of exchange rates in the City of Chicago, or any charge for the installation of telephones therein. This Commission stated in its said order that:

"The record thus far made in the proceedings herein tends to show that the petitioner will not receive sufficient revenue to meet all of its operating expenses, interest requirements and provide an adequate return, but the Commission recognizes the fact that this is a temporary order and that no serious injury will be done the petitioner by requiring it to wait its final determination of this case, in order to have its rates definitely determined, when the evidence is closed. This petitioner, contrary to most public utility corporations, is financially capable of caring for itself, and no injury, permanent or irreparable, can be done it by postponing its rate adjustment until all the evidence has been received. Any inequality in the rates now sought [fol. 5203] to be increased and denied in this order can be taken into account in the final order and adjusted at that time. This petitioner is not endangered by any fear of bankruptcy, and under the rates now in effect it is more than earning operating expenses, and sufficient to meet interest on its fixed charges, and with the release of the funds impounded under the order of July 31, 1919, we are of the opinion the petitioner will be sufficiently cared for until the final order is entered herein. Should this not be the actual result the petitioner is not barred from again presenting its petition to the Commission and request emergency relief, should the same appear necessary."

The applicant duly accepted said order in the manner therein provided and filed a schedule of temporary rates and charges for the City of Chicago, which have been in effect from December 1, 1919, to the present time.

4. That the applicant has proceeded with all due diligence to introduce evidence before this Commission during the months of July, September, October, November and December, 1919, and January, February, March, April and May,

1920; the record in this proceeding consists of over seven thousand pages of testimony introduced on behalf of the applicant, and on behalf of the City of Chicago, together with numerous and voluminous exhibits; the applicant has closed its evidence, reserving its rights to introduce necessary additional evidence; the City of Chicago has not closed its case nor has the applicant introduced any testimony in rebuttal to the testimony already introduced in behalf of the City of Chicago.

5. That the applicant has introduced testimony showing, as to the City of Chicago:

(a) The original cost of its land, buildings, plant and personal property as of July 31, 1919, as shown by its books [fol. 5204] of account, and as verified by a public accountant to be true and correct.

(b) An inventory (and appraisal) of its physical plant as of July 31, 1911, and the gross and net additions to said plant by years, from July 31, 1911, to July 31, 1919, shown by its books of account, and as verified by a public accountant to be true and correct.

(c) A valuation of its lands as of July 31, 1919.

(d) The present value of its exchange and office buildings as of July 31, 1919.

(e) An appraisal of its plant based on a reproduction cost new less deterioration basis as of July 31, 1919 and an estimate of all items of overhead entering therein.

(f) A statement of its construction work in progress as of July 31, 1919, and its required working capital.

(g) An estimate of the going value of its business, and an estimate of the cost of reproducing the business.

That all of said elements necessary and proper to a determination of the present value of this applicant's property used and useful in public service in the City of Chicago are set forth in Exhibit A (in evidence in this proceeding) hereto attached, and made a part hereof.

6. That the applicant has filed with this Commission, as required by its orders heretofore entered, verified statements of its operations from August, 1919, to March, 1920,

inclusive, as set forth for the City of Chicago in Exhibit B (in evidence in this case) hereto attached and made a part hereof.

[fol. 5205] 7. That in order to preserve and maintain its plant and service in the City of Chicago, it has been necessary for this applicant to increase the wages of its employes, and that thereby the operating expenses of this applicant have and will be substantially increased wholly disproportionate to the increase in its revenues; that during the month of October, 1919, operating expenses were substantially increased in the manner aforesaid; in April, 1920, it was necessary for this applicant to again increase its wages to its plant, traffic, commercial and other employes, and that such increased schedule of wages was put into effect to maintain the service without any substantial increase in revenues, and without any change in rates and charges; the effect of such wage increase and the resultant increase in operating expenses on the financial condition of this applicant, is set forth in Exhibit C (in evidence in this proceeding) hereto attached, and made a part hereof.

8. That the average monthly wage in the traffic department in the City of Chicago has more than doubled from 1914 to 1919, as shown by "Employes' Earnings Exhibit Four" in evidence in this proceeding; and for the month of April, 1920, said average earnings amounted to $80.54 per month; that notwithstanding said increased wages this applicant has at present between 950 and 1000 less telephone operators in the City of Chicago than necessary to properly handle the telephone traffic created by its subscribers; the increase in operators' wages made in April, 1920, was effective as of January 1, 1920 (consisting of a premium to operators for continuous service and regular attendance), but was insufficient to retain the operating force, or attract a sufficient number of new operators to maintain the force; it was and is absolutely essential to the maintenance of the [fol. 5206] telephone service in the City of Chicago that this applicant make a further increase of operators' wages; that this applicant has increased its wages to telephone operators by an increase in the wage schedule effective May 23, 1920, applicable to said operators; and its operating expenses, with its present operating force, will be increased

thereby at the rate of over $60,000 per month, or $735,000 per annum, over and above the item of traffic expense set forth in Exhibit C.

That in 1914 the company paid to its operators 16.64 per cent of its gross operating revenues and in the first three months of 1920 it has paid to its operators 2[illegible]4 per cent of its gross operating revenues; the expense of operators' wages increased from 23.8 per cent of the total operating expense in 1914 to 31.3 per cent of the total operating expense in the first three months of 1920; the average earnings per employe in the City of Chicago have increased from $56 per month in 1914 to $88 per month in July, 1919, or an increase of 57 per cent as shown by "Employes' Earnings Exhibit One" in evidence in this proceeding, and that said average earnings per employe have increased since July, 1919, to $100 in the City of Chicago, or an increase of 15 per cent over the July, 1919, averages, a total increase of 80 per cent since 1914.

9. That the average exchange revenue per station in the City of Chicago varied between $36.08 and $37.14 per annum during the years from 1913 to 1918, inclusive; for the period from August 1, 1919, to and including February 29, 1920, exchange revenues per station under the present schedule of rates for exchange service in the City of Chicago amounted to $42.75 per station per annum, an increase of approximately 17 per cent over the revenue per station figures for the period from 1913 to 1918.

[fol. 5207] As compared with the increase in exchange revenues per station from 1914 to 1920 of 17 per cent, the total telephone operating expenses per station have increased from $27.04 per annum in 1914 to $37.86 per annum the first three months of 1920, or an increase of approximately 40 per cent; that the foregoing statistics do not include any allowance whatsoever for the increase in operators' wages, made effective in the month of May, 1920.

10. That in order to meet the greatly increased expenses of this applicant since July, 1919, this applicant has introduced testimony setting forth in detail proposed changes of rates in the City of Chicago, with an estimate of the net additional revenue which would be derived from said increased rates, as set forth in Exhibit E (in evidence in this proceeding), hereto attached and made a part hereof.

This applicant further states that the following tables show the prior, present and proposed rates for the different classes of services set forth in Exhibit E as shown by the evidence in this proceeding:

4 C R Four Party Coin Box Residence

This class of service has been in effect in the City of Chicago since the year 1907; the rate for said service from 1907 to 1913 was a guarantee of 5 cents per day, including one outgoing message, additional messages at the rate of 5 cents each; in 1913 the guarantee was continued, but the rate for additional messages decreased to 4 cents each; this rate has continued in effect up to and including the present time, with the exception that for a period of about six weeks at the end of Federal control, the rate was tem- [fol. 5208] porarily increased to a guarantee of 6½ cents a day, including 1.3 outgoing messages.

The proposed rate is a guarantee of 8 cents per day, including 1.6 outgoing messages, additional messages at the rate of 5 cents each; the percentage of subscribers in the City of Chicago having four party nickel residence service has increased from 34 per cent in 1908 to 73 per cent in 1919; the number of stations was 278,506 on August 1, 1919.

2 C R Two Party Coin Box Residence

This class of service has been in effect in the City of Chicago since the year 1907; the rate for said service from 1907 to 1913 was a guarantee of 10 cents per day, including two outgoing messages, additional messages at the rate of 5 cents each; in 1913 the guarantee was continued, but the rate for additional messages decreased to 4 cents each; this rate has continued in effect up to and including the present time, no change having been made during Federal control.

The proposed rate is a guarantee of 12½ cents per day, including 2.5 outgoing messages, additional messages at the rate of 5 cents each. The number of two party nickel residence subscribers was 5,084, March 1, 1920.

2 C B Two Party Coin Box Business

This class of service has been in effect in the City of Chicago since the year 1907; the rate for said service from

1907 to 1913 was a guarantee of 12½ cents per day, including 2.5 outgoing messages, additional messages at the rate of 5 cents each; in 1913 the guarantee was continued, but the rate for additional messages decreased to 4 cents each; this rate has continued in effect up to and including the [fol. 5209] present time, no change having been made during Federal control.

The proposed rate is a guarantee of 15 cents per day, including three outgoing messages, additional messages at the rate of 5 cents each; the number of subscribers in the City of Chicago having two party nickel business service was 27,245, March 1, 1920.

1 C B One Party Coin Box Business

This class of service has been in effect in the City of Chicago since the year 1907; the rate for said service from 1907 to 1913 was a guarantee of 20 cents per day, including four outgoing messages, additional messages at the rate of 5 cents each; in 1913 the guarantee was continued, but the rate for additional messages decreased to 4 cents each; this rate has continued in effect up to and including the present time, no change having been made during Federal control.

The proposed rate is a guarantee of 20 cents per day, including four outgoing messages, additional messages at the rate of 5 cents each; the number of subscribers in the City of Chicago having one party nickel business service was 5,792 March 1, 1920.

1 M B Single Measured Business

This class of service has been in effect in the City of Chicago since the year 1907; the rate for said service from 1907 to 1913 was a guarantee of $60 per annum, including 1,200 outgoing messages, additional messages at a scale declining to a minimum charge of 2 cents per message; in 1913 the guarantee was reduced to $48 for 960 messages, but the minimum charge was continued at 2 cents per message. This rate continued in effect up to June 16, 1919, [fol. 5210] when the following scale was put into effect:

$4.00 a month for a guarantee of 80 messages.
5c. each for next 20 additional messages.
4c. each for next 100 additional messages.

3c. each for next 100 additional messages.
2½c. each for all other additional messages.

The proposed rate is the same as the present schedule with the minimum excess message rate increased from 2½c. to 3c. per message. On March 1, 1920, there were 32,374 direct single measured business lines and 6,276 private branch exchanges in the City of Chicago.

M Trunk Single Measured Business Auxiliary

This class of service has been in effect in the City of Chicago since the year 1907 up to and including the present time without change, at the rate of $2 per month, the outgoing messages over these lines being accounted for under the classes to which they are auxiliary.

The proposed rate is $3 per month. On March 1, 1920 there were 23,454 M Trunks in use.

Business Extensions and P. B. X. Terminals

This class of service has been in effect in the City of Chicago since the year 1907 at the rate of 50 cents per month, and has continued without change up to the present time.

The proposed rate is 75 cents per month. On March 1, 1920, there were a total of 138,637 business extensions and private branch exchange terminals in the City of Chicago.

[fol. 5211]

Service Connection Charges

Under the present system, which has been in effect since 1907, excepting during a portion of the Federal control period, the costs of connecting and disconnecting service have been absorbed in the annual charges, under contracts which were made for yearly periods. A cancellation charge is made if the contract is terminated within the year, ranging from $1 to $2 per month, depending upon the class of service covered by the contract. A small percentage of such charges are collectible, and the revenue derived therefrom is insignificant as compared with the costs.

The proposed service connection charges would abolish the cancellation charge and the system of yearly contracts, substituting therefor a charge of $3.50, to be paid by the subscriber at the time of installing service, with this charge reduced to $1.50 in case connection was established to an instrument in place on subscriber's premises.

11. That under the rate schedule at present in force the rate of return to the company during the months of December, 1919, January, February and March, 1920, was less than 4 per cent on the original cost of its land, buildings, physical plant and personal property in the City of Chicago, without reference to the present value of its property therein, which is greater than its original cost; the present schedule of rates and charges in the City of Chicago is discriminatory between classes of service; the said rates and charges are unreasonable, and if continued will amount to a confiscation of the property of the applicant without due process of law, contrary to the Constitution of the State of Illinois and of the United States of America.

[fol. 5212] 12. That in order for applicant to maintain its service and to make the necessary enlargements and extensions of its plant in the City of Chicago it will be necessary to issue at least ten million dollars ($10,000,000) in new securities, and under the present rates of interest and return on invested capital the fixed charges or requirements of the applicant will be increased between $800,000 and $1,000,000 per annum; the applicant has paid dividends on its outstanding capital stock at the rate of 8 per cent per annum since the year 1908; the net income of the applicant was insufficient to pay said dividends during the calendar year 1917, during the first six months of the year 1918, and during the period from August 1, 1919, to March 31, 1920; that during the period from August 1, 1918, to July 31, 1919, the Chicago Telephone Company was operated by the government of the United States, which guaranteed to it the payment of its fixed charges and dividends on its capital stock at the rate of 8 per cent per annum; the net deficit of the government from its operation of applicant's property during said period was in excess of $1,800,000, and of said amount there remains due and unpaid to the applicant from the United States Government the sum of approximately $600,000; in order to obtain working capital it has been necessary for the applicant to borrow from its principal stockholder, the American Telephone & Telegraph Co., on its demand notes, the sum of $1,272,230 at the rate of 6 per cent per annum; to borrow from bankers on its demand notes since January 1, 1920, the sum of $2,200,000 at the rate of 6½ per cent per annum; and further bank loans will be immediately necessary in at least the sum of $800,000; that the financial standing and credit of the applicant will be injured if its present schedule of rates and charges in the City of Chicago is continued in effect pending the final order in this proceeding.

[fol. 5213] 13. That the schedule of rates and charges herein set forth is fair and reasonable; that the effect of having increased the rates of certain classes of service and having continued in effect the rates for other classes of service without increase and at rates which have been in effect since the year 1913 results in discrimination as between classes of service and operates to prevent the proper development of the company's business, which, if continued, will cause injury to this applicant; this is particularly true with reference to the rates for 4-party coin box service, affecting the largest class of the company's subscribers in the City of Chicago, which have remained unchanged since the year 1913, notwithstanding greatly increased operating expenses; that the proposed rate changes in the City of Chicago, if put into effect, will yield a return to this applicant of 7.03 per cent on the original cost of the land, buildings, physical plant and personal property of this applicant, and of 3.54 per cent on the present value of its property, based on the present value of its lands and buildings, and the reproduction cost new less deterioration of its physical plant, all in the City of Chicago.

The applicant respectfully represents that an emergency exists because of the matters aforesaid, and especially because of the irreparable damage and injury which will be caused this applicant by the continuance in effect of its present rates and charges, pending a final determination of this proceeding.

The applicant therefore prays that the rates and charges hereinabove set forth shall be put into effect on June 1, 1920, and pending final hearing and determination of this proceeding, and that the applicant be released from all liability to account to its subscribers and patrons for any [fol. 5214] part of the charges made by the applicant since July 31, 1919.

Chicago Telephone Company, by W. R. Abbott, General Manager.

State of Illinois,
County of Cook, ss:

W. R. Abbott, being first duly sworn, deposes and says that he is General Manager of Chicago Telephone Company, that he has read the foregoing petition subscribed by him on behalf of said Chicago Telephone Company, and that the facts therein stated are true and correct to his best knowledge and belief.

W. R. Abbott.

Subscribed and sworn to before this 21st day of May, A. D. 1920. A. O. Sorenson, Notary Public.

[fol. 5215]

EXHIBIT A

Chicago Telephone Company Exhibit, Chicago Division

Valuation Tables

	I Original Costs			II	III
	Total July 31, 1911	Net Additions August 1, 1911, to July 31, 1919	Total July 31, 1919	Reproduction Cost New Less Deterioration 1911-1915 Costs*	Reproduction Cost New Less Deterioration as of 7/31/19
Land	$526,957	$774,277	$1,301,234	$1,301,234	$1,417,020
Buildings	2,328,433	6,244,544	8,572,977	8,315,788	12,134,728
Plant in Service	23,655,539	30,447,433	54,102,972	44,020,427	72,591,293
Construction Work in Progress			433,714	294,926	433,714
General Equipment and Supplies			1,200,923	653,916	883,670
Working Capital			2,000,000	2,000,000	2,000,000
Sub-Totals			$67,611,820	$56,586,291	$89,460,425
Preliminary Costs				447,018	718,023
Engineering Costs				1,900,198	3,045,935
Administrative and Legal Costs				542,914	870,267
Interest During Construction				7,185,532	11,372,020
Going Value				18,187,109	28,777,900
Totals				$84,849,062	$134,244,570

* Except land which is based on July 31, 1919, Book Value and Buildings, Construction Work in Progress, General Equipment and Supplies which are based on July 31, 1919, Book Value less Deterioration.

(Here follows side folio 5216)

[fol. 5216]

Exhibit B

Chicago Telephone Company

Exhibit—Income Accounts, Chicago Exchange

	August, 1919	September, 1919	October, 1919	November, 1919	December, 1919	January, 1920	February, 1920	August, 1919, Adjusted as a Normal Month with Increased Expenses	Monthly Average 4 Months November, 1919 to February, 1920	March, 1920
Exchange Revenues	$1,806,780	$1,879,140	$1,870,094	$1,923,204	$1,986,751	$2,103,104	$1,965,026	$1,838,407	$1,994,521	$2,122,856
Toll Revenues	153,771	131,589	144,431	135,426	154,575	158,987	146,795	146,467	148,946	159,943
Miscellaneous Operating Revenues	18,860	16,781	17,506	18,129	19,550	19,136	17,879	18,860	18,674	18,059
Non-operating Revenues	7,284	8,485	8,645	8,569	48,956	10,501	10,264	7,284	19,572	11,859
Gross Revenue	1,986,695	2,035,995	2,040,676	2,085,328	2,209,832	2,291,728	2,139,964	2,011,018	2,181,713	2,312,717
Less Licensee Rev.—Dr.	80,038	121,423	86,203	89,124	89,251	91,211	94,933	86,922	91,130	100,390
Total Revenues	$1,906,657	$1,914,572	$1,954,473	$1,996,204	$2,120,581	$2,200,517	$2,045,031	$1,924,096	$2,090,583	$2,212,327
Traffic Expenses	694,489	624,704	671,210	728,612	786,231	750,059	709,588	754,489	743,623	900,249
Commercial Expenses	206,507	238,981	254,679	261,948	274,425	271,436	269,190	227,512	269,250	333,161
General and Miscellaneous Expenses	53,477	64,945	63,584	70,054	81,147	74,285	73,708	60,254	74,798	84,744
Current Maintenance	283,337	270,193	286,901	300,108	283,771	333,911	299,386	319,749	304,294	329,265
Depreciation	267,232	268,071	269,290	270,846	272,262	276,231	277,403	267,232	274,186	279,370
Uncollectible Revenues	8,210	6,285	6,097	6,406	6,252	6,685	7,031	6,033	6,593	6,694
Taxes	144,267	151,618	161,434	155,336	152,070	181,182	183,056	160,274	167,911	184,594
Rents	4,254	4,840	4,519	4,299	4,402	5,008	4,463	4,254	4,543	4,515
Amortization of Landed Capital	1,052	1,058	1,063	1,069	1,076	1,083	1,090	1,052	1,079	1,096
Other Deductions	408	198	358	732	1,513	4,025	777	408	1,762	636
Total Expenses and Deductions	$1,663,233	$1,630,893	$1,719,135	$1,799,410	$1,863,149	$1,903,905	$1,825,692	$1,801,257	$1,848,039	$2,124,324
Balance for Return	243,424	283,679	235,338	196,794	257,432	296,612	219,339	122,839	242,544	88,003

[fol. 5217]

EXHIBIT C

Chicago Telephone Company

Exhibit Summary Net Financial Condition, Chicago Exchange

	One Year on Basis of Books Nov. 1919 to Feb. 1920	Increased Expenses per Month	One Year with Increased Expenses
Exchange Revenues	$23,934,252		$23,934,252
Toll Revenues	1,787,352		1,787,352
Miscellaneous Operating Revenues	224,088		224,088
Non-Operating Revenues	234,864		234,864
Gross Revenues	$26,180,556		$26,180,556
Less Licensee Revenue—Dr.	1,093,560		1,093,560
Total Revenues	$25,086,996		$25,086,996
Traffic Expenses	$8,923,476	$128,063	$10,460,232
Commercial Expenses	3,231,000	39,129	3,700,548
General and Miscellaneous Expenses	897,576	6,163	971,532
Current Maintenance	3,651,528	25,013	3,951,684
Depreciation	3,290,232		3,290,232
Uncollectible Revenues	79,116		79,116
Taxes (Exclusive of Federal Income Tax)	1,840,471		1,840,471
Rents	54,516		54,516
Amortization of Landed Capital	12,948		12,948
Miscellaneous Deductions	21,144		21,144
Total Expenses and Deductions	$22,002,007	$198,368	$24,382,423
Balance for Return	$3,084,989		$704,573

(Here follows side folio 5218)

[fol. 5218]

Exhibit D

Chicago Telephone Company

Exhibit—Summary—Effect of Proposed Rate Changes on Net Financial Conditions, Chicago Exchange

Code	4CR	2CR	2CB	1CB	1MB	M Trk.			
Class	4 Party Coin Box Residence	2 Party Coin Box Residence	2 Party Coin Box Business	Single Coin Box Business	Single Measured Business	Single Measured Business Auxiliary	Business Extension P.B.X. Terminals	Service Connection Charges	
Rate—Present	5c per day with 1 message Others 4c each	10c per day with 2 messages Others 4c each	12½c per day with 2½ messages Others 4c each	20c per day with 4 messages Others 4c each	$4.00 per month with 80 messages Next 20 5c each " 100 4c " " 100 3c " Others 2½c "	$2.00 per month with no messages	50c per month		
Rate—Proposed	8c per day All messages 5c each	12½c per day All messages 5c each	15c per day All messages 5c each	20c per day All messages 5c each	$4.00 per month with 80 messages Next 20 5c each " 100 4c " Others 3c "	$3.00 per month with no messages	75c per month	$3.50 new $1.50 if using present instrumentalities	All Proposed Changes
Estimated Additional Net Revenue from Increased Rates	$2,051,692	$33,503	$181,441	$25,903	$724,960	$259,496	$383,470	$388,386	$4,048,851
Balance for Return under Present Rates	704,573	704,573	704,573	704,573	704,573	704,573	704,573	704,573	704,573
Balance for Return with Increased Rates	$2,756,265	$738,076	$886,014	$730,476	$1,429,533	$964,069	$1,088,043	$1,092,959	$4,753,424

[fol. 5219] EXTRACTS FROM EXHIBIT X-348

Mr. Crunden's Working Papers Used in Connection with His Exhibit A-100

A portion only of this Exhibit is being included in the record in the Supreme Court. It is agreed that remaining portions of the Exhibit, together with those taken, amply support Exhibits A-100 and A-101.

(Here follow side folios 5220–5224)

EXHIBIT X-348

④

X-348

P 7

Toll Board Messages
Associated Operating Companies Long Lines and Bell Telephone Co. of Canada
Exhibit A100

		Total Toll Messages	Ratio of Toll Board Messages to Total Toll Messages	Toll Board Messages
Year	1923	559 451 425	42.00	234 969 598
	1924	609 822 850	42.00	256 125 597
	1925	701 379 030	39.70	278 447 475
	1926	793 546 269	36.40	288 850 842
	1927	874 150 788	33.20	290 218 062
	1928	949 793 409	32.30	306 783 271
	1929	1,049 552 934	33.21	348 602 000
	1930	982 189 299	36.23	355 911 000

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Employees, Plant and Stations
Exhibit A 100
June 30, 1923

	A	B	C	D	E	F	G	H	I	J	K
	Total Regular Employees	Total Regular Employees		Total Plant in Service	Exchange and Toll Lines	Toll Lines	Central Office Equipment	Buildings	Land and Buildings	Plant in Service (Excl. Land and Buildings)	Total Company Stations
		Plant	Traffic								
New Eng. Tel. & Tel. Co.	22 786	7 745	12 942	142 275 713	83 058 395	22 364 250	22 739 491	10 430 048	13 664 115	128 611 598	973 467
So. New Eng. Tel. Co.	3 955	1 114	2 377	30 202 868	17 839 091	2 493 565	5 107 522	2 326 706	2 725 675	27 477 193	209 418
New York Tel. Co.	53 579	15 722	31 789	357 429 722	166 903 424	31 551 340	84 429 805	35 797 913	43 074 479	314 425 243	1 954 261
New Jersey Bell Tel. Co.											
Bell Tel. Co. of Penna.	23 374	6 461	4 009	142 555 598	76 067 037	14 707 978	27 032 208	12 506 761	16 413 587	126 442 011	925 155
Diamond State Tel. Co.											
C. & P. Assoc. Cos Ches. & Pot. Tel. Co.	9 842	2 558	6 163	57 824 728	36 797 734	8 740 703	12 770 655	5 468 887	6 050 671	61 474 277	440 911
Ches. & Pot. Tel. Co. of B.C.											
Ches. & Pot. Tel. Co. of Va.											
Ches. & Pot. Tel. Co. of W. Va.											
So. Bell Tel. & Tel. Co.	6 980	1 942	4 195	47 829 763	28 407 709	11 707 517	7 244 309	3 134 710	4 133 533	43 676 230	270 348
Cumberland T. & T. Co.	7 555	2 012	5 007	49 171 598	33 799 208	11 992 485	7 220 952	1 936 129	2 480 239	46 691 359	290 006
Ohio Bell Tel. Co.	11 062	3 078	6 669	86 221 694	50 937 542	10 922 052	13 509 251	6 129 266	8 584 143	77 637 551	493 406
Cinn. & Sub. Bell Tel. Co.	2 608	669	1 778	18 532 249	10 318 327	251 192	3 593 654	1 749 249	2 056 599	16 475 650	135 702
Michigan Bell Tel. Co.	10 191	2 425	6 707	58 637 326	32 143 946	7 662 940	11 952 333	4 460 854	5 438 280	53 199 046	357 399
Indiana Bell Tel. Co.	4 419	998	3 002	30 504 429	18 733 200	5 707 244	7 226 988	930 351	1 184 281	29 320 148	180 655
Wisconsin Tel. Co.	5 517	1 419	3 354	29 516 466	17 465 298	5 932 642	5 542 015	2 169 604	2 668 718	26 847 748	233 902
Illinois Bell Tel. Co.	23 799	6 302	15 071	136 306 310	64 445 276	13 255 892	33 970 087	10 751 110	12 912 775	123 393 535	936 393
No'western Bell Tel. Co.	9 566	2 376	6 370	77 559 777	44 534 852	17 055 348	15 524 936	6 209 493	7 328 255	70 231 522	503 188
So'western Bell Tel. Co.	18 758	3 514	13 570	121 429 034	71 034 807	31 268 606	21 789 444	6 255 424	8 723 755	112 702 279	745 204
Mtn. States T. & T. Co.	6 303	1 856	3 998	51 483 645	34 346 868	13 986 246	7 067 265	2 744 959	3 716 560	47 767 085	329 172
Pacific Tel. & Tel. Co.	25 453	8 553	14 562	161 569 977	87 233 073	26 181 042	37 671 860	9 728 075	13 509 071	148 020 906	1 955 305
Total Asso. Oper. Cos.											
A.T.&T. Co. Long Lines	7 317	4 572	2 781	106 754 270	86 364 442	86 264 442	13 860 277	1 177 312	1 266 020	105 458 250	34
Total Bell Oper. Cos.	255 553	73 246	155 844	1,716 175 387	960 492 214	322 178 204	339 733 082	124 506 935	156 233 756	1,559 941 631	9 930 216
~~A. T. & T. Co. General~~		–	–								
Total Bell System											
2... [illegible]	11 821	2 930	7 526	69 717 020	37 628 909	9 097 561	13 982 627	4 440 744	5 685 159	64 031 161	257 871
[illegible]	267 674	76 176	163 670	1,785 892 407	998 121 193	331 275 765	353 715 709	128 947 679	161 919 615	1,623 772 792	10 392 087

Sources of Information

Column

- A - M.R. 23, Col. H, Line 21
- B - M.R. 23, Col. H, Line 17
- C - M.R. 23, Col. H, Line 20
- D - M.R. 6, Col. E, Line 39
- E - M.R. 6, Col. E, Line 27 +34
- F - M.R. 6, Col. E, Line 34
- G - M.R. 6, Col. E, Line 14
- H - M.R. 6, Col. E, Line 10
- I - M.R. 6, Col. E, Line 11
- J - Col. D - I
- K - M.R. 1 - Col. S, Line 45

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Total Messages - Exchange and Toll
Exhibit A 100

	Year 1923	Year 1930
Bell Telephone System		
Exchange* - 1923 - 41,109,000 X 333	13,689,297,000	
1930 - 62,365,000 X 333		20,767,545,000
Toll* - 1923 - 1,683,000 X 325	546,975,000	
1930 - 2,933,000 X 327		959,091,000
Bell Tel Co of Canada		
ExchangeΦ - 1923 - 3,435,811 X 333	1,144,125,063	
1930 - 5,301,947 X 333		1,765,548,351
TollΦ 1923 - 38,389 X 325	12,476,425	
1930 70,637 X 327		23,098,299
Grand Total	15,392,873,488	23,515,282,650

* Average Daily Exchange and Toll Conversations obtained from annual report of American Tel & Tel Co. to stockholders.

- Average Daily Exchange and Toll Conversations obtained in annual report of Bell Tel Co. of Canada to stockholders.

A FORM D 204P

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Employees, Plant and Stations
Exhibit A 100
June 30, 1930

Source of Information - Same as for June 30, 1923 and Q.R.7A, Col. F, line 42 & 43.

	Total Regular Employees	Total Regular Employees		Total Plant in Service	Exchange and Toll Lines	Toll Lines	Central Office Equipment	Buildings	Land and Buildings	Plant in Service (Excl. Land and Buildings)	Total Company Stations	No. of Morse Stations	No. of Teletypewriter Stations
		Plant	Traffic										
New Eng. Tel. & Tel. Co.	22 877	7 898	11 637	270 163 523	134 197 760	28 222 603	63 683 939	20 167 924	29 332 959	240 830 564	1 248 514	79	258
So. New Eng. Tel. Co.	5 082	1 887	2 339	64 841 445	34 407 700	5 992 423	12 744 503	6 210 344	8 074 471	56 766 974	325 584	0	41
New York Tel. Co.	62 048	19 749	30 458	672 693 540	242 142 718	48 810 356	211 344 495	80 706 274	100 617 019	572 076 521	2 632 275	1 362	802
New Jersey Bell Tel. Co.	15 645	4 579	8 154	170 576 175	84 402 695	19 758 058	37 652 057	19 597 353	23 301 592	147 574 585	689 547	66	34
Bell Tel. Co. of Penna.	23 810	7 407	12 250	274 895 188	120 219 747	25 989 359	75 105 817	27 071 323	34 253 500	240 641 688	1 289 612	20	278
Diamond State Tel. Co.	451	193	227	7 250 315	3 921 564	1 159 486	1 463 818	416 527	616 545	6 633 770	33 558	0	0
Ches. & Pot. Tel. Co.	3 095	814	1 670	29 398 756	11 055 587	169 357	6 869 902	4 712 193	5 568 888	23 829 868	161 961	0	33
Ches.&Pot.Tel.Co.of B.C.	4 172	1 160	2 352	45 718 494	23 692 099	4 306 355	10 957 591	2 807 840	3 466 440	42 252 054	213 255	2	6
Ches.&Pot.Tel.Co.of Va.	2 752	778	1 593	27 105 869	14 677 441	4 016 252	4 827 476	2 907 373	3 342 325	23 763 534	144 211	1	2
Ches&PotTel.Co.of W.Va.	2 118	551	1 256	21 546 475	12 000 700	3 761 149	4 242 968	1 234 133	1 738 732	19 807 743	116 020	0	0
So. Bell Tel. & Tel. Co.	21 278	6 683	12 351	214 368 693	119 238 099	41 857 507	48 458 717	16 067 161	19 333 211	195 035 482	1 406 198	0	62
Ohio Bell Tel. Co.	13 820	4 324	7 637	159 732 696	77 873 641	16 505 972	34 967 019	17 431 388	21 951 225	137 781 471	717 832	5	132
Cinn. & Sub. Bell Tel. Co.	3 461	985	2 130	33 104 920	16 638 726	633 265	8 199 015	2 856 250	3 349 137	29 755 783	187 013	0	50
Michigan Bell Tel. Co.	14 045	5 511	6 539	165 300 785	79 006 982	18 805 782	41 717 367	17 155 844	20 689 919	144 610 866	690 382	0	155
Indiana Bell Tel. Co.	4 387	1 349	2 484	43 130 575	23 652 629	6 948 311	10 090 635	2 858 900	3 531 265	39 599 610	229 018	25	36
Wisconsin Tel. Co.	5 550	3 098	4 358	64 576 833	35 119 9[illegible]4	11 420 545	13 781 544	5 587 508	6 616 873	57 959 960	363 364	0	26
Illinois Bell Tel. Co.	31 245	9 026	17 700	270 712 242	122 279 284	23 073 262	73 699 417	19 320 267	22 371 904	248 340 338	1 447 900	70	654
No'western Bell Tel. Co.	12 182	4 021	6 709	115 593 366	63 427 378	25 133 693	24 126 592	10 092 810	11 635 749	103 957 617	654 430	12	50
So'western Bell Tel. Co.	26 843	8 235	14 905	296 584 662	149 502 251	52 731 401	71 846 736	31 330 451	36 660 225	260 024 407	1 368 060	225	616
Mtn. States T. & T. Co.	7 740	2 377	4 127	83 205 997	49 208 209	19 289 036	13 395 989	7 776 050	9 370 413	73 935 584	439 864	48	22
Pacific Tel. & Tel. Co.	30 915	10 658	15 260	389 689 713	190 462 036	64 283 745	101 095 435	33 937 213	42 274 480	347 415 283	1 627 131	548	732
Total Asso. Oper. Cos.													
A.T.&T. Co. Long Lines	21 959	13 106	7 831	352 729 322	256 037 716	256 037 716	71 994 364	5 337 994	6 301 179	346 428 153	76	2 953	3 720
Total Bell Oper. Cos.	332 477	114 389	174 067	3,773 419 894	1 864 194 877	679 105 733	942 265 396	335 563 420	414 398 041	3 359 021 553	15 589 122	6 067	7 720
~~A. T. & T. Co. General~~													
~~Total Bell System~~													
B[illegible] Tel. Co. of Canada	15 539	5 806	8 061	165 528 511	75 664 839	21 110 522	44 021 386	16 123 141	18 552 711	146 975 800	779 243	310	[illegible]
[illegible]	354 316	120 195	182 128	3,938 948 405	1,939 859 716	700 216 255	986 286 782	351 686 561	432 950 752	3,505 997 653	16 368 365	6 383	8 015

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Regular Employees
Exhibit A.107

Source of Information - M. R. 23, [redacted], Col. H, Line 21

	June 30 1923	June 30 1924	June 30 1925	June 30 1926	June 30 1927	June 30 1928	June 30 1929	June 30 1930
New Eng. Tel. & Tel. Co.	22 786	24 887	24 225	23 420	21 251	21 259	21 373	22 877
So. New Eng. Tel. Co.	3 [illegible]	4 159	4 499	4 908	5 113	5 312	5 [illegible]	5 082
New York Tel. Co.	53 579	60 519	59 333	62 756	63 523	55 535	63 557	62 048
New Jersey Bell Tel. Co.						13 775	15 394	15 645
Bell Tel. Co. of Penna. *	23 374	24 948	23 920	24 529	23 996	21 391	23 167	23 [illegible]
Diamond State Tel. Co.								451
C.&P. & Assoc. Cos.	9 742	10 422	10 936	10 793	10 274	11 109		
Ches. & Pot. Tel. Co.							3355	3025
Ches.&Pot.Tel.Co.of B.C.							4090	4 [illegible]2
Ches.&Pot.Tel.Co.of Va.							2676	2 722
Ches&Pot Tel.Co.of W.Va.							2058	2 118
So. Bell Tel. & Tel. Co.	6 980	7 741	8 368	10 185	20 391	20 [illegible]	22 143	21 298
Cumberland T.&T. Co #	7 565	7 964	9 757	10 669				
Ohio Bell Tel. Co.	11 061	11 471	11 911	12 174	12 750	13 519	14 567	13 820
Cinn. & Sub. Bell Tel. Co.	2 608	2 869	2 928	3 096	3 301	3 312	3 562	3 421
Michigan Bell Tel. Co.	10 191	10 726	11 607	12 414	12 873	13 560	14 920	14 045
Indiana Bell Tel. Co.	4 479	4 566	4 258	4 058	3 979	3 789	4 217	4 397
Wisconsin Tel. Co.	5 517	6 067	6 208	6 228	6 430	6 759	7 537	7 550
Illinois Bell Tel. Co.	25 799	24 818	26 117	28 507	28 974	30 504	32 117	31 [illegible]
No'western Bell Tel. Co.	9 866	10 034	10 636	10 879	10 869	11 [illegible]	12 354	12 184
So'western Bell Tel. Co.	18 982	19 653	20 795	23 715	27 451	26 966	29 239	26 183
Mtn. States T. & T. Co.	6 303	6 424	6 554	6 767	7 300	7 884	8 958	7 740
Pacific Tel. & Tel. Co.	25 653	25 659	27 620	28 371	28 149	28 889	32 770	30 9[illegible]
Total Asso. Oper. Cos.	246 536	262 539	269 672	283 549	287 314	295 510	324 240	316 518
~~A.T.&T. Co. Long Lines~~								
~~Total Bell Oper. Cos.~~								
Bell Tel. Co. Canada ~~A.T.&T. Co. [illegible]~~	11 821	13 333	13 258	13 897	14 423	14 462	17 342	15 239
Total ~~Bell System~~	258 357	275 872	282 930	297 446	301 737	310 032	341 582	332 357

* 1923 to 1927 inc. [illegible]
Diamond State [illegible] and
Delaware & Maryland Tel. Co.
1928 and 1929 [illegible] Diamond
State Tel. Co.

[illegible] Tel. Co. [illegible]
with Southern Bell [illegible]

[fol. 5225]

EXHIBIT X-349

Exhibits Furnished by Mr. Heiss in Connection with Heiss Ohio Exhibit No. 10, Bearing the Legends "Classification of Departmental Expenses" for the Years 1920–1930, and "Analysis of Departmental Expenses, Year 1931"

(Here follow side folios 5226, 5227, and 5228)

[fol. 5226]

X-349

American Telephone and Telegraph Company (General Department)

Item 1(a)—Classification of Departmental Expenses

Year 1920

Items	Development and Research	Operation and Engineering	Operation, General	Personnel	Information	Legal	Comptroller	Treasurer	Secretary*	General Service Bureau	Administration and Sundry Items	Grand Total
Salaries	$765,190	$1,064,967	$60,390	$40,849	$38,053	$254,649	$416,391	$231,098		$27,098	$409,291	$3,307,976
Traveling	70,435	145,991	1,086	1,072	756	5,485	64,039	4,113			39,309	332,286
Rent and House Service	142,047	203,776	6,520	16,007	7,092	55,224	77,190	56,261		15,885	61,592	641,594
Postage, Printing and Stationery	28,497	86,937	534	1,914	8,595	37,963	39,640	64,642		16,542	27,062	312,326
Telegrams and Express	1,074	2,079	22	11	2,325	386	612	291		72	673	7,545
Telephone Service	11,951	36,903	481	769	813	4,216	9,205	7,397		253	16,048	88,036
Furniture Repairs, etc. Depreciation on Furniture and Fixtures	9,644	15,588	352	1,674	947	3,085	10,294	5,664		1,574	9,598	58,420
Periodicals and books	4,326	285	1,082	156	16,995	2,390	3,206	1,835		19	2,170	32,464
Special Services	1,578	3,239		10	18,711	5,661	1,128				21,090	51,417
Entertainment	5,835	27,588	431	425	101	403	2,235				9,898	46,916
Directors' Fees											17,840	17,840
Contributions											15,500	15,500
Attorneys' Fees and Costs						80,824						80,824
Transfer Agents' and Bond Trustees' Charges								21,750				21,750
Insurance Premiums						40		1,314				1,354
Stock Appraisals								750				750
Press Clippings					2,335							2,335
Experimental	1,492,900	4,610										1,497,510
Engineers' Materials	8,877	1,858										10,735
Auditors' Fees											5,250	5,250
Patents						129,975						129,975
Advertising (including Educational and Publicity)	19,874	7,517			279,863			12,107			10,940	330,301
Annual Reports											43,794	43,794
Interest on Employees' Benefit Fund				17,642								17,642
Other Benefit Payments				15,957								15,957
Medical Fees and Expenses				63								63
Maintenance of Employees' Benefit Fund				52,430								52,430
Miscellaneous	34,200	26,658	518	3,593	580	3,135	13,601	4,866		944	126,743	214,838
Total	2,596,428	1,627,996	71,416	152,572	377,166	583,436	637,541	412,088		62,387	816,798	7,337,828
Charged Other Companies for Services rendered by Benefit Department				1,347								1,347
Total Departmental Expenses	$2,596,428	$1,627,996	$71,416	$151,225	$377,166	$583,436	$637,541	$412,088		$62,387	$816,798	$7,336,481

* Secretary included in Administration. Not classified separately prior to 1924.

December 3, 1931

[fol. 5227]

American Telephone and Telegraph Company (General Department)

Item 1(a)—Classification of Departmental Expenses

Year 1921

Items	Development and Research	Operation and Engineering	Personnel	Information	Legal	Comptroller	Treasurer	Secretary	General Service Bureau	Administration and Sundry Items	Grand Total
Salaries	$942,744	$1,471,084	$156,854	$53,659	$283,160	$556,825	$385,536	$28,949	$31,350	$326,034	$4,236,195
Traveling	93,820	164,827	18,591	2,172	7,403	73,153	1,163	286		12,605	374,020
Rent and House Service	166,435	218,543	27,816	9,225	56,091	88,414	62,485	4,267	17,372	54,721	700,369
Postage, Printing and Stationery	26,128	92,435	21,347	12,254	29,232	48,238	148,382	1,246	28,575	12,752	420,589
Telegrams and Express	1,459	1,375	831	2,816	191	579	358	12	2,224	126	9,971
Telephone Service	8,809	20,237	2,924	577	2,797	6,150	4,027	298	298	12,271	58,388
Furniture Repairs, etc. Depreciation on Furniture and Fixtures	12,926	15,990	3,216	995	3,584	12,357	13,483	1,742	1,604	4,933	70,830
Periodicals and Books	2,675	840	931	735	3,241	4,518	2,110	8	5	2,002	17,065
Special Services	2,256	9,970	69,273	24,448	5,301	1,099	1,781		2	6,172	120,312
Entertainment	5,281	32,766	1,566	2,523	771	5,093	132	109		5,581	53,822
Directors' Fees										23,975	23,975
Subscriptions			21,191							5,500	26,691
Attorneys' Fees and Costs					48,440						48,440
Financial Agents' and Bond Trustees' Charges							38,936				38,936
Insurance Premiums	100	10					2,681				2,791
Press Clippings				2,331							2,331
Experimental	1,322,870	12,108									1,334,978
Engineers' Materials	9,381	2,152									11,533
Auditors' Fees										5,950	5,950
Patents					54,196						54,196
Advertising (including Educational and Publicity)	20,125	8,625	6,915	472,869			13,867			3,076	525,477
Stock Exchange Charges							25,032				25,032
Annual Reports (including Advertising)										50,933	50,933
Interest on Employees' Benefit Fund			21,716								21,716
Other Benefit Payments			13,015								13,015
Medical Fees and Expenses			88								88
Maintenance of Employees' Benefit Fund			47,425								47,425
Payments for Widening Distrib. of A. T. & T. Co. Stock										1,550,734	1,5[illegible],734
Miscellaneous	32,597	20,993	9,807	3,989	1,625	9,335	57,107	487	1,964	126,177	2[illegible],081
Total	2,647,606	2,066,955	423,506	588,593	496,032	805,761	757,090	37,404	83,394	2,203,542	10,109,883
Charged other Companies for Services rendered by Benefit Department			2,019								2,019
Restaurant Earnings—Net										840	840
Total Departmental Expenses	$2,647,606	$2,066,955	$421,487	$588,593	$496,032	$805,761	$757,090	$37,404	$83,394	$2,202,702	$10,107,024
Deduct—Payments for widening distribution of American Tel. and Tel. Co. stock—treated as non-license											1,550,734
Balance Departmental Expenses											$8,556,290

December 3, 1931.

[fol. 5228]

American Telephone and Telegraph Company (General Department)

Item 1(a)—Classification of Departmental Expenses

Year 1922

Items	Development and Research	Operation and Engineering	Operation, General	Personnel	Information	Legal	Comptroller	Treasurer	Secretary	General Service Bureau	Administration and Sundry Items	Grand Total
Salaries	$1,004,425	$1,560,497	$116,174	$198,549	$74,669	$299,560	$606,340	$555,383	$42,091	$109,450	$264,695	$4,831,833
Traveling	79,809	155,897	15,255	20,614	1,310	6,450	65,430	1,111	270	32	4,033	350,211
Rent and House Service	177,028	237,936	20,428	58,055	16,815	68,454	106,670	141,758	16,060	37,417	78,705	959,326
Postage, Printing and Stationery	14,802	71,466	1,561	16,062	4,683	23,079	32,519	182,664	11,278	42,705	14,051	414,870
Telegrams and Express	1,844	1,231	62	668	2,455	70	212	665	688	1,407	195	9,497
Telephone Service	17,370	20,022	1,183	2,238	766	3,216	7,825	5,322	587	982	7,888	67,399
Furniture Repairs, etc. Depreciation on Furniture and Fixtures	13,760	16,884	1,649	4,925	1,161	3,904	12,433	32,856	2,429	3,017	12,862	105,880
Periodicals and Books	1,085	1,365	84	560	872	2,725	3,329	1,958	25	117	2,017	14,137
Special Services	1,260	16,169	5,198	40,848	24,704	4,352	1,037	1,096	....	....	13,500	108,164
Entertainment	4,497	30,389	1,419	1,695	148	789	1,803	241	118	236	6,185	47,520
Directors' Fees	....	....	....	....	....	....	....	....	....	....	24,960	24,960
Subscriptions	....	....	....	5,000	....	....	....	....	....	....	7,783	12,783
Attorneys' Fees and Costs	....	....	....	....	....	54,903	....	....	....	....	....	54,903
Financial Agents' and Bond Trustees' Charges	....	....	....	....	....	....	....	47,599	....	....	....	47,599
Insurance Premiums	510	....	....	....	....	....	....	2,381	....	....	....	2,891
Press Clippings	....	....	....	....	2,868	....	....	....	....	....	....	2,868
Experimental	975,265	3,765	....	....	....	....	....	....	....	....	....	979,030
Engineers' Materials	9,837	733	....	....	....	....	....	....	....	....	....	10,570
Auditors' Fees	....	....	....	....	....	....	....	....	....	....	8,075	8,075
Patents	....	....	....	....	....	210,363	....	....	....	....	....	210,363
Advertising (including Educational and Publicity)	17,500	7,500	....	6,471	437,135	....	....	16,894	....	....	60	485,560
Stock Exchange Charges	....	....	....	....	....	....	....	23,206	....	....	....	23,206
Annual Reports (including Advertising)	....	....	....	....	....	....	....	....	....	....	41,030	41,030
Interest on Employees' Benefit Fund	....	....	....	19,601	....	....	....	....	....	....	....	19,601
Other Benefit Payments	....	....	....	37,753	....	....	....	....	....	....	....	37,753
Medical Fees and Expenses	....	....	....	5	....	....	....	....	....	....	....	5
Maintenance of Employees' Benefit Fund	....	....	....	69,364	....	....	....	....	....	....	....	69,364
Loud Speaker Demonstrations	....	....	....	36,573	....	....	....	....	....	....	....	36,573
Payments for widening distribution of American Tel. and Tel. Co. stock	....	....	....	....	....	....	....	....	....	....	1,550,063	1,550,063
Miscellaneous	33,207	9,896	855	9,674	418	2,095	7,521	114,108	2,173	4,866	71,714	256,527
Total	2,352,199	2,133,750	163,868	528,655	568,004	679,960	845,119	1,127,242	75,719	200,229	2,107,816	10,782,561
Charged Other Companies for Services Rendered by Benefit Department	....	....	....	2,680	....	....	....	....	....	....	....	2,680
Restaurant Earnings—Net	....	....	....	....	....	....	....	....	....	....	5,800	5,800
Total Departmental Expenses	$2,352,199	$2,133,750	$163,868	$525,975	$568,004	$679,960	$845,119	$1,127,242	$75,719	$200,229	$2,102,016	$10,774,081
Deduct—Payments for widening distribution of American Tel. and Tel. Co. stock—treated as non-license												1,550,063
Balance Departmental Expenses												$9,224,018

December 3, 1931.

[fol. 5229]

American Telephone and Telegraph Company
(Excluding Long Lines Department)
Department of Operation—General
Apportionment of Expenses to License Activities
Years 1923 to 1930 (Heiss Exhibit No. 10)

	Total Expenses (1)	Direct (Wholly License)		Other (Non-License)	
		Amount (2)	% of 1 (3)	Amount (4)	% of 1 (5)
1923	$241,740	$213,551	88	$28,189	12
1924	241,069	209,788	87	31,281	13
1925	243,589	211,565	87	32,024	13
1926	271,875	240,549	88	31,326	12
1927	265,671	233,029	88	32,642	12
1928	286,718	254,250	89	32,468	11
1929	317,727	268,793	85	48,934	15
1930	341,080	277,792	81	63,288	19

June 29, 1931.

(Here follow side folios 5230, 5231, 5232, 5233, 5234, 5235, 5236, 5237, and 5238)

[fol. 5230]

American Telephone and Telegraph Company (General Department)

Analysis of Departmental Expenses—Year 1923 (Heiss Exhibit No. 10)

Items	Development and Research	Operation and Engineering	Operation, General	Personnel	Information	Legal	Comptroller	Treasurer	Secretary	General Service Bureau	Administration and Sundry Items	Grand Total
Salaries	$1,128,055	$1,735,694	$167,570	$224,792	$84,303	$324,829	$658,488	$563,772	$36,238	$152,213	$300,881	$5,376,835
Traveling	75,867	191,820	12,036	24,128	1,469	7,015	65,332	583	296	515	8,748	387,809
Rent and House Service	246,455	370,906	35,955	95,180	33,194	99,649	166,457	169,536	15,033	70,250	88,636	1,391,251
Postage, Printing & Stationery	16,166	94,655	2,814	13,633	3,747	23,524	36,175	105,559	3,991	41,633	12,649	354,546
Telegrams and Express	3,333	585	19	146	3,553	31	112	117	17	3,565	101	11,579
Telephone Service	37,787	60,133	4,065	4,899	1,368	8,218	14,717	22,334	647	2,162	23,627	179,957
Furniture Repairs, etc.	1,972	4,197	175	2,907	795	744	5,528	6,790	68	824	3,791	27,791
Depreciation on Furniture and Fixtures	11,367	11,318	1,284	3,901	928	3,061	6,746	9,434	1,655	2,589	3,686	55,969
Periodicals and Books	2,744	1,629	302	811	1,276	4,096	3,434	2,040	74	90	1,764	18,260
Special Services	9,223	10,651	459	38,112	24,006	6,884	3,931	3,172	10	0	25,154	121,602
Entertainment	5,324	45,123	2,141	9,256	656	1,480	7,520	360	75	408	3,680	76,023
Directors' Fees	....	....	....	....	....	....	....	....	....	....	24,150	24,150
Subscriptions	....	....	....	5,000	....	....	....	....	....	....	85,330	90,330
Attorneys' Fees and Costs	....	....	....	....	....	97,266	....	....	....	....	....	97,266
Financial Agents' and Bonds Trustees' Charges	....	....	....	....	....	....	....	41,477	....	....	....	41,477
Insurance Premiums	353	....	....	....	....	....	....	1,748	....	....	....	2,101
Press Clippings	....	....	....	....	3,031	....	....	....	....	....	....	3,031
Experimental	1,230,332	9,071	....	....	....	....	....	....	....	....	....	1,239,403
Engineers' Materials	25,879	490	....	....	....	....	....	....	....	....	....	26,369
Auditors' Fees	....	....	....	....	....	....	....	....	....	....	8,100	8,100
Patents	....	....	....	....	....	180,696	....	....	....	....	....	180,696
Advertising (including Educational and Publicity)	17,500	7,500	....	10,542	475,029	....	....	15,006	....	....	250	525,827
Stock Exchange Charges	....	....	....	....	....	....	....	1,493	....	....	....	1,493
Annual Reports (including Advertising)	....	....	....	....	....	....	....	....	....	....	36,302	36,302
Interest on Employees' Benefit Fund	....	....	....	58,542	....	....	....	....	....	....	....	58,542
Other Benefit Payments	....	....	....	65,824	....	....	....	....	....	....	....	65,824
Medical Fees and Expenses	....	....	....	39	....	....	....	....	....	....	....	39
Maintenance of Employees' Benefit Fund	....	....	....	48,527	....	....	....	....	....	....	....	48,527
Loud Speaker Demonstrations	....	....	....	0	....	....	....	....	....	....	62,345	62,345
Miscellaneous	30,347	6,937	14,920	19,453	983	1,698	4,133	11,440	451	4,767	74,192	169,321
Motor Truck Expense	....	....	....	....	....	....	....	....	....	4,092	....	4,092
Total	2,842,704	2,550,709	241,740	625,692	634,338	759,191	972,573	954,861	58,555	283,108	763,386	10,686,857
Charged Other Companies for Services rendered by Benefit Department	....	....	....	22,950	....	....	....	....	....	....	....	22,950
Restaurant Earnings—Net	....	....	....	....	....	....	....	....	....	....	21,970	21,970
Total Departmental Expenses	$2,842,704	$2,550,709	$241,740	$602,742	$634,338	$759,191	$972,573	$954,861	$58,555	$283,108	$741,416	$10,641,937
Deduct for Strictly Non-License Activities	716	....	28,189	....	....	....	....	....	....	....	....	28,905
Departmental Expenses Direct (Wholly) or Indirect (Jointly) License	$2,841,988	$2,550,709	$213,551	$602,742	$634,338	$759,191	$972,573	$954,861	$58,555	$283,108	$741,416	$10,613,032

June 30, 1931.

[fol. 5231]

American Telephone and Telegraph Company (General Department)

Analysis of Departmental Expenses—Year 1924 (Heiss Exhibit No. 10)

Items	Development and Research	Operation and Engineering	Operation, General	Personnel	Information	Public Relations	Legal	Comptroller	Tr
Salaries	$1,347,018	$1,950,619	$165,039	$224,373	$103,153	$16,478	$339,821	$746,546	$
Traveling	92,404	149,206	15,088	16,177	1,768	3,868	5,418	75,648	
Rent and House Service	250,237	345,062	34,083	89,869	34,336	1,532	87,828	158,668	
Postage, Printing and Stationery	17,332	96,017	2,205	18,179	4,156	0	22,543	37,810	
Telegrams and Express	3,169	286	35	359	3,582		20	83	
Telephone Service	42,246	55,360	5,765	5,452	2,079		7,986	14,683	
Furniture Repairs, etc. Dep'n. on Furn. and Fixtures	15,508	16,312	1,612	5,411	1,730		3,610	14,010	
Periodicals and Books	2,743	1,569	374	830	1,429		3,638	3,848	
Special Services	20,201	16,316	737	17,836	20,430		5,531	12,188	
Conference	6,562	41,740	1,125	5,043	168		591	2,776	
Directors' Fees									
Subscriptions				3,200					
Attorneys' Fees and Costs							47,231		
Financial Agents' and Bond Trustees' Charges									
Insurance Premiums	1,337	63							
Press Clippings					3,326				
Experimental	1,192,183	594							
Engineers' Materials	11,219	1,170							
Auditors' Fees									
Patents							220,417		
Advertising (including Educational and Publicity)	22,502	7,500		18,233	517,555				
Stock Exchange Charges									
Annual Reports (including Advertising)									
Interest on Employees' Benefit Fund				78,255					
Other Benefit Payments				28,139					
Medical Fees and Expenses				55					
Maintenance of Employees' Benefit Fund				26,231					
Miscellaneous	54,845	6,526	15,006	18,937	715		2,033	4,477	
Motor Truck Expense									
Loud Speaker and Radio Demonstrations									
Total	3,079,506	2,688,340	241,069	556,579	694,427	21,878	746,667	1,070,737	1,
Charged Other Companies for Services rendered by Benefit Department				41,114					
Less—Restaurant Earnings (Net)									
Total Departmental Expenses	$3,079,506	$2,688,340	$241,069	$515,465	$694,427	$21,878	$746,667	$1,070,737	$1,
Deduct for Strictly Non-License Activities	1,084		31,281						
Departmental Expenses Direct (Wholly) or Indirect (Jointly), License	$3,078,422	$2,688,340	$209,788	$515,465	$694,427	$21,878	$746,667	$1,070,737	$1,

June 30, 1931.

American Telephone and Telegraph Company (General Department)

Analysis of Departmental Expenses—Year 1924 (Heiss Exhibit No. 10)

	Development and Research	Operation and Engineering	Operation, General	Personnel	Information	Public Relations	Legal	Comptroller	Treasurer	Secretary	General Service Bureau	Administration and Sundry Items	Grand Total
	$1,347,018	$1,950,619	$165,039	$224,373	$103,153	$16,478	$339,821	$746,546	$656,967	$39,886	$191,663	$321,280	$6,102,843
	92,404	149,206	15,088	16,177	1,768	3,868	5,418	75,648	2,807	259	363	7,231	370,237
	250,237	345,062	34,083	89,869	34,336	1,532	87,828	158,668	172,036	16,921	66,501	82,441	1,339,514
	17,332	96,017	2,205	18,179	4,156	0	22,543	37,810	180,254	3,004	49,250	19,062	449,812
	3,169	286	35	359	3,582		20	83	313	95	8,066	18	16,026
	42,246	55,360	5,765	5,452	2,079		7,986	14,683	29,253	779	3,017	26,043	192,663
	15,508	16,312	1,612	5,411	1,730		3,610	14,010	18,287	1,817	3,197	6,630	88,124
	2,743	1,569	374	830	1,429		3,638	3,848	2,193	64	81	2,522	19,291
	20,201	16,316	737	17,836	20,430		5,531	12,188	3,442	0	6	15,727	112,414
	6,562	41,740	1,125	5,043	168		591	2,776	279	87	251	9,246	67,868
												29,510	29,510
				3,200								7,000	10,200
							47,231						47,231
									59,330				59,330
	1,337	63							5,796				7,196
					3,326								3,326
	1,192,183	594											1,192,777
	11,219	1,170											12,389
												6,600	6,600
							220,417						220,417
	22,502	7,500		18,233	517,555				15,587			125	581,502
									24,653				24,653
												43,087	43,087
				78,255									78,255
				28,139									28,139
				55									55
				26,231									26,231
	54,845	6,526	15,006	18,937	715		2,033	4,477	86,900	808	4,868	51,002	246,117
											4,002		4,002
												91,273	91,273
	3,079,506	2,688,340	241,069	556,579	694,427	21,878	746,667	1,070,737	1,258,097	63,720	331,265	718,797	11,471,082
Department				41,114									41,114
												42,713	42,713
	$3,079,506	$2,688,340	$241,069	$515,465	$694,427	$21,878	$746,667	$1,070,737	$1,258,097	$63,720	$331,265	$676,084	$11,387,255
	1,084		31,281										32,365
) License	$3,078,422	$2,688,340	$209,788	$515,465	$694,427	$21,878	$746,667	$1,070,737	$1,258,097	$63,720	$331,265	$676,084	$11,354,890

[fol. 5232]

American Telephone and Telegraph Company (General Department)

Analysis of Departmental Expenses—Year 1925 (Heiss Exhibit No. 10)

Items	Development and Research	Operation and Engineering	Operation, General	Personnel	Information	Public Relations	Legal	Comptroller	Treasurer
Salaries	$1,590,840	$2,150,778	$173,268	$272,494	$120,802	$22,017	$357,281	$834,910	$560,606
Traveling	106,525	167,310	15,864	16,164	1,907	3,094	8,465	83,069	1,095
Rent and House Service	245,762	356,235	30,843	89,408	32,416	2,640	80,983	157,952	143,357
Postage, Printing and Stationery	19,034	104,594	3,464	24,360	4,204		24,133	37,428	115,261
Telegrams and Express	4,357	442	60	977	5,498		8	163	168
Telephone Service	48,624	81,872	5,238	8,031	2,781		8,547	20,336	28,029
Furniture Repairs, etc.	3,472	4,460	354	3,069	574		341	4,911	2,726
Depreciation on Furniture and Fixtures	17,836	12,837	1,601	4,577	1,484		3,191	8,047	10,879
Periodicals and Books	3,337	1,776	395	657	1,658		3,959	4,657	2,213
Special Services	16,904	20,223	700	20,620	19,410		21,875	17,934	2,480
Conferences	6,925	47,545	1,607	11,504	2,153		601	3,347	676
Directors' Fees									
Subscriptions				6,800					
Attorneys' Fees and Costs							131,934		
Financial Agents' and Bond Trustees' Charges									42,037
Insurance Premiums	2,171								3,190
Press Clippings					4,552				
Experimental	1,418,437	7,512							
Engineers' Materials	110,658	587							
Auditors' Fees									
Patents							137,002		
Advertising (includes Educational and Publicity)				8,284	541,847				18,065
Annual Reports (includes Advertising)									
Interest on Employees' Benefit Fund				93,172					
Other Benefit Payments				11,860					
Medical Fees and Expenses				1,075					
Maintenance of Employees' Benefit Fund				24,832					
Loud Speaker and Radio Demonstrations									
Miscellaneous	30,863	6,988	10,195	53,486	1,178		1,945	3,966	14,132
Motor Truck Expense									
Total	3,625,745	2,963,159	243,589	651,370	740,464	27,751	780,265	1,176,720	944,914
Less:									
Charged Other Companies for Services Rendered				47,847					
Retaurant Earnings (Net)									
Total Departmental Expenses	$3,625.745	$2,963,159	$243,589	$603,523	$740,464	$27,751	$780,265	$1,176,720	$944,914
Deduct for Strictly Non-License Activities	895		32,024						
Departmental Expenses Direct (Wholly) or Indirect (Jointly) License	$3,624,850	$2,963,159	$211,565	$603,523	$740,464	$27,751	$780,265	$1,176,720	$944,914

June 30, 1931.

American Telephone and Telegraph Company (General Department)

Analysis of Departmental Expenses—Year 1925 (Heiss Exhibit No. 10)

Items	Development and Research	Operation and Engineering	Operation, General	Personnel	Information	Public Relations	Legal	Comptroller	Treasurer	Secretary	General Service Bureau	Administration and Sundry Items	Grand Total
	$1,590,840	$2,150,778	$173,268	$272,494	$120,802	$22,017	$357,281	$834,910	$560,606	$40,442	$212,378	$390,667	$6,726,483
	106,525	167,310	15,864	16,164	1,907	3,094	8,465	83,069	1,095	228	716	20,362	424,799
	245,762	356,235	30,843	89,408	32,416	2,640	80,983	157,952	143,357	17,479	67,026	79,278	1,303,379
	19,034	104,594	3,464	24,360	4,204		24,133	37,428	115,261	1,491	54,789	23,176	411,934
	4,357	442	60	977	5,498		8	163	168	100	10,539	27	22,339
	48,624	81,872	5,238	8,031	2,781		8,547	20,336	28,029	895	4,118	30,892	239,363
	3,472	4,460	354	3,069	574		341	4,911	2,726	84	1,265	531	21,787
s.	17,836	12,837	1,601	4,577	1,484		3,191	8,047	10,879	1,844	3,237	4,618	70,151
	3,337	1,776	395	657	1,658		3,959	4,657	2,213	55	384	2,584	21,675
	16,904	20,223	700	20,620	19,410		21,875	17,934	2,480		35	16,439	136,620
	6,925	47,545	1,607	11,504	2,153		601	3,347	676	41	290	5,478	80,167
												33,860	33,860
				6,800								4,708	11,508
Charges							131,934						131,934
									42,037				42,037
	2,171								3,190		423	16	5,800
					4,552								4,552
	1,418,437	7,512											1,425,949
	110,658	587											111,245
												6,750	6,750
Publicity)							137,002						137,002
				8,284	541,847				18,065			13,020	581,216
												42,335	42,335
				93,172									93,172
				11,860									11,860
nd				1,075									1,075
ns				24,832									24,832
												65,173	65,173
	30,863	6,988	10,195	53,486	1,178		1,945	3,966	14,132	209	4,803	44,555	172,320
											3,480		3,480
	3,625,745	2,963,159	243,589	651,370	740,464	27,751	780,265	1,176,720	944,914	62,868	363,483	784,469	12,364,797
es Rendered				47,847									47,847
												38,112	38,112
	$3,625.745	$2,963,159	$243,589	$603,523	$740,464	$27,751	$780,265	$1,176,720	$944,914	$62,868	$363,483	$746,357	$12,278,838
ities	895		32,024										32,919
y) or Indirect (Jointly) License	$3,624,850	$2,963,159	$211,565	$603,523	$740,464	$27,751	$780,265	$1,176,720	$944,914	$62,868	$363,483	$746,337	$12,245,919

American Telephone and Telegraph Company (General Department)

Analysis of Departmental Expenses—Year 1926 (Heiss Exhibit No. 10)

Items	Development and Research	Operation and Engineering	Operation, General	Personnel	Information	Public Relations	Legal	Comptroller	Treasurer
Salaries	$1,776,478	$2,384,945	$183,166	$332,242	$130,147	$22,079	$317,281	$922,191	$732,791
Traveling	126,670	149,305	17,590	15,452	2,731	3,208	5,582	92,654	1,571
Rent and House Service	304,633	427,542	46,391	138,094	31,564	2,078	79,053	195,376	208,821
Postage, Printing and Stationery	21,317	119,158	2,338	31,469	4,170		30,566	38,805	196,270
Telegrams and Express	9,447	584	31	1,246	4,201		20	141	296
Telephone Service	61,313	109,104	4,702	10,887	2,939		7,756	23,022	29,002
Furniture Repairs, etc	4,620	5,824	512	5,063	643		390	5,368	11,781
Depreciation on Furniture and Fixtures	19,660	11,854	1,630	4.938	1,164		3.170	7,742	9,742
Periodicals and Books	2,982	1,541	183	1,177	1,330		4,227	4.732	2,180
Special Services	20,297	26,165	4,800	17,603	8,491		58,882	8,819	7,347
Conferences	8,942	47,873	1,941	23,239	300		1,547	2,453	938
Directors' Fees									
Subscriptions				6,700					
Attorneys' Fees and Costs							160,786		
Financial Agents' and Bond Trustees' Charges									59,279
Insurance Premiums	2,378								3,377
Press Clippings					4,525				
Experimental	1,764,817	4,011							
Engineers' Materials	130,921	483							
Auditors' Fees									
Patents							80,138		
Advertising (including Educational and Publicity)				11,608	664,443				14,765
Stock Exchange Charges									25,083
Annual Reports (including Advertising)									
Interest on Employees' Benefit Fund				95,951					
Other Benefit Payments				12,339					
Medical Fees and Expenses				185					
Maintenance of Employees' Benefit Fund				18,956					
Loud Speaker and Radio Demonstrations									
Miscellaneous	41,638	12,917	8,591	32,757	672		1,202	5,311	58,509
Motor Truck Expense									
Total	4,296,113	3,301,306	271,875	759,906	857,320	27,365	750,600	1,306,614	1,381,752
Charged Other Companies for Services rendered by Benefit Department				51,946					
Total Departmental Expenses	$4,296,113	$3,301,306	$271,875	$707,960	$857,320	$27,365	$750,600	$1,306,614	$1,381,752
Deduct for Strictly Non-License Activities	420		31,326						
Departmental Expenses Direct (Wholly) or Indirect (Jointly) License	$4,295,693	$3,301,306	$240,549	$707,960	$857,320	$27,365	$750,600	$1,306,614	$1,381,752

June 30, 1931.

American Telephone and Telegraph Company (General Department)

Analysis of Departmental Expenses—Year 1926 (Heiss Exhibit No. 10)

Items	Development and Research	Operation and Engineering	Operation, General	Personnel	Information	Public Relations	Legal	Comptroller	Treasurer	Secretary	General Service Bureau	Administration and Sundry Items	Grand Total
	$1,776,478	$2,384,945	$183,166	$332,242	$130,147	$22,079	$317,281	$922,191	$732,791	$42,507	$238,021	$446,834	$7,548,682
	126,670	149,305	17,590	15,452	2,731	3,208	5,582	92,654	1,571	144	389	5,945	421,241
	304,633	427,542	46,391	138,094	31,564	2,078	79,053	195,376	208,821	18,048	87,284	88,277	1,627,161
	21,317	119,158	2,338	31,469	4,170		30,566	38,805	196,270	2,613	71,289	25,774	543,769
	9,447	584	31	1,246	4,201		20	141	296	65	7,266	5	23,302
	61,313	109,104	4,702	10,887	2,939		7,756	23,022	29,002	1,023	5,992	31,064	286,804
	4,620	5,824	512	5,063	643		390	5,368	11,781	88	1,634	607	36,530
s.	19,660	11,854	1,630	4,938	1,164		3,170	7,742	9,742	985	3,324	4,941	69,150
	2,982	1,541	183	1,177	1,330		4,227	4,732	2,180	141	235	2,290	21,018
	20,297	26,165	4,800	17,603	8,491		58,882	8,819	7,347		154	9,775	162,333
	8,942	47,873	1,941	23,239	300		1,547	2,453	938	53	271	5,447	93,004
												32,810	32,810
				6,700								2,500	9,200
							160,786						160,786
Charges									59,279				59,279
	2,378								3,377			235	5,990
					4,525								4,525
	1,764,817	4,011											1,768,828
	130,921	483											131,404
												6,500	6,500
							80,138						80,138
l Publicity)				11,608	664,443				14,765			9,660	700,476
									25,083				25,083
).												41,002	41,002
				95,951									95,951
				12,339									12,339
				185									185
nd				18,956									18,956
ns												2,971	2,971
	41,638	12,917	8,591	32,757	672		1,202	5,311	58,509	456	8,246	38,098	208,397
											3,587		3,587
	4,296,113	3,301,306	271,875	759,906	857,320	27,365	750,600	1,306,614	1,381,752	66,123	427,692	754,735	14,201,401
rendered by Benefit Department				51,946									51,946
	$4,296,113	$3,301,306	$271,875	$707,960	$857,320	$27,365	$750,600	$1,306,614	$1,381,752	$66,123	$427,692	$754,735	$14,149,455
ities	420		31,326										31,746
y) or Indirect (Jointly) License	$4,295,693	$3,301,306	$240,549	$707,960	$857,320	$27,365	$750,600	$1,306,614	$1,381,752	$66,123	$427,692	$754,735	$14,117,709

American Telephone and Telegraph Company (General Department)

Analysis of Departmental Expenses—Year 1927 (Heiss Exhibit No. 10)

Items	Development and Research	Operation and Engineering	Operation, General	Personnel	Information	Public Relations	Legal	Comptroller	Treas
Salaries	$1,933,537	$2,577,975	$204,883	$366,204	$143,277	$22,777	$337,122	$1,026,746	$645
Traveling	147,335	150,966	8,647	16,365	11,248	2,032	5,950	77,772	1
Rent and House Service	323,412	425,436	40,256	139,046	41,198	2,662	84,864	203,159	195
Postage, Printing and Stationery	20,613	147,007	1,701	20,352	4,755		44,419	41,228	124
Telegrams and Express	6,812	612	12	923	7,442		28	185	
Telephone Service	66,771	123,012	6,068	12,138	4,529		8,454	27,107	31
Furniture Repairs, etc.	5,780	6,672	278	5,948	1,007		286	5,342	5
Depreciation on Furniture and Fixtures	23,914	13,593	1,441	5,577	1,358		3,397	8,832	10
Periodicals and Books	3,525	1,662	232	1,140	1,748		4,416	4,407	2,
Special Services	47,277	33,475	228	12,020	5,467		55,892	6,087	2,
Conferences	9,991	65,540	817	12,499	1,734		2,349	8,310	5,
Directors' Fees									
Subscriptions				5,700					
Attorneys' Fees and Costs							93,604		
Financial Agents' and Bond Trustees' Charges									44,
Insurance Premiums	1,833	88							7,
Press Clippings					5,391				
Experimental	2,653,821	2,608							
Engineers' Materials	97,730	859							
Auditors' Fees									
Patents							155,445		
Advertising (including Educational and Publicity)	10,000			12,976	559,746				14,
Stock Exchange Charges									2,
Annual Reports (including Advertising)									
Interest on Employees' Benefit Fund				54,936					
Other Benefit Payments				9,496					
Medical Fees and Expenses				156					
Maintenance of Employees' Benefit Fund				5,558					
Loud Speaker and Radio Demonstrations									
Miscellaneous	14,147	13,435	1,108	19,851	797		508	3,056	9,
Motor Truck Expense									
Provision for Service Pension Fund				285,506					
Total	5,386,498	3,562,940	265,671	986,391	789,697	27,471	796,734	1,412,231	1,103,1
Charged Other Companies for Services Rendered by Benefit Department				47,976					
Total Departmental Expenses	$5,386,498	$3,562,940	$265,671	$938,415	$789,697	$27,471	$796,734	$1,412,231	$1,103,1
Deduct for Strictly Non-License Activities	149		32,642						
Departmental Expenses Direct (Wholly) or Indirect (Jointly) License	$5,386,349	$3,562,940	$233,029	$938,415	$789,697	$27,471	$796,734	$1,412,231	$1,103,1

June 30, 1931.

American Telephone and Telegraph Company (General Department)

Analysis of Departmental Expenses—Year 1927 (Heiss Exhibit No. 10)

Items	Development and Research	Operation and Engineering	Operation, General	Personnel	Information	Public Relations	Legal	Comptroller	Treasurer	Secretary	General Service Bureau	Administration and Sundry Items	Grand Total
	$1,933,537	$2,577,975	$204,883	$366,204	$143,277	$22,777	$337,122	$1,026,746	$645,664	$41,221	$261,276	$518,260	$8,098,942
	147,335	150,966	8,647	16,365	11,248	2,032	5,950	77,772	1,633	154	567	10,914	433,583
	323,412	425,436	40,256	139,046	41,198	2,662	84,864	203,159	195,102	18,200	86,988	91,717	1,652,040
	20,613	147,007	1,701	20,352	4,755		44,419	41,228	124,872	1,485	61,429	32,173	500,034
	6,812	612	12	923	7,442		28	185	408	25	8,395	84	24,926
	66,771	123,012	6,068	12,138	4,529		8,454	27,107	31,203	1,262	6,300	32,788	319,632
	5,780	6,672	278	5,948	1,007		286	6,342	5,179	54	1,548	1,379	33,473
res	23,914	13,593	1,441	5,577	1,358		3,397	8,832	10,718	1,004	3,604	5,468	78,906
	3,525	1,662	232	1,140	1,748		4,416	4,407	2,381	41	294	2,377	22,223
	47,277	33,475	228	12,020	5,467		55,892	6,087	2,287	0	4	11,402	174,130
	9,991	65,540	817	12,499	1,734		2,349	8,310	5,124	37	303	23,656	130,360
												31,760	31,760
				5,700								27,500	33,200
' Charges							93,604						93,604
									44,306				44,306
	1,833	88							7,729		79	15	9,744
					5,391								5,391
	2,653,821	2,608											2,656,429
	97,730	859											98,589
												6,000	6,000
							155,445						155,445
nd Publicity)	10,000			12,976	559,746				14,627			0	597,349
									2,867				2,867
ng)												40,691	40,691
l.				54,936									54,936
				9,496									9,496
				156									156
Fund				5,558									5,558
tions												250	250
	14,147	13,435	1,108	19,851	797		508	3,056	9,039	151	6,555	40,490	109,137
											3,583		3,583
				285,506									285,506
	5,386,498	3,562,940	265,671	986,391	789,697	27,471	796,734	1,412,231	1,103,130	63,634	440,925	876,924	15,712,246
es Rendered by Benefit Department				47,976									47,976
s.	$5,386,498	$3,562,940	$265,671	$938,415	$789,697	$27,471	$796,734	$1,412,231	$1,103,130	$63,634	$440,925	$876,924	$15,664,270
ivities	149		32,642										32,791
olly) or Indirect (Jointly) License	$5,386,349	$3,562,940	$233,029	$938,415	$789,697	$27,471	$796,734	$1,412,231	$1,103,130	$63,634	$440,925	$876,924	$15,631,479

American Telephone and Telegraph Company (General Department)

Analysis of Departmental Expenses—Year 1928 (Heiss Exhibit No. 10)

Items	Development and Research	Operation and Engineering	Operation, General	Personnel	Information	Public Relations	Legal	Comptroller	Treasurer
Salaries	$2,156,751	$2,808,803	$223,524	$378,851	$197,289	$21,998	$379,846	$1,075,403	$916,722
Traveling	132,252	155,345	8,574	16,323	4,045	2,393	4,938	89,034	1,051
Rent and House Service	337,719	435,054	42,175	144,951	53,550	3,487	86,072	206,271	240,360
Postage, Printing and Stationery	24,223	149,624	1,943	25,502	6,357		25,343	46,420	235,384
Telegrams and Express	5,840	474	36	207	1,273		20	110	450
Telephone Service	91,503	151,190	6,539	18,384	7,178		9,295	33,611	37,902
Furniture Repairs									
Depreciation on Furniture and Fixtures	34,171	19,503	1,759	10,229	2,475		3,301	14,122	25,892
Periodicals and Books	3,315	2,134	136	828	1,720		8,508	4,318	2,840
Special Services	72,101	24,540	110	8,215	5,900		33,042	7,558	14,230
Conferences	10,210	79,764	906	10,817	2,503		1,426	3,571	735
Directors' Fees									
Subscriptions				5,700					
Attorneys' Fees and Costs							162,563		
Financial Agents' and Bond Trustees' Charges									67,780
Insurance Premiums	2,064								4,812
Press Clippings					7,175				
Experimental	2,616,502	4,104							
Engineers' Materials	27,674	585							
Auditors' Fees									
Patents							314,570		
Advertising (including Educational and Publicity)				11,573	743,201				
Stock Exchange Charges									15,301
Annual Reports (including Advertising)									33,647
Benefit Payments, etc.				73,170					
Miscellaneous	12,492	19,571	1,016	17,414	1,332		406	4,053	51,120
Motor Truck Expense									
Prov. for Service Pension Fund				251,111					
Total	5,526,817	3,850,691	286,718	973,275	1,033,998	27,878	1,029,330	1,484,471	1,648,226
Charged Other Companies for Services Rendered by Benefit Department				48,857					
Total Departmental Expenses	$5,526,817	$3,850,691	$286,718	$924,418	$1,033,998	$27,878	$1,029,330	$1,484,471	$1,648,226
Deduct for Strictly Non-License Activities		36,708	32,468						
Departmental Expenses Direct (Wholly) or Indirect (Jointly) License	$5,526,817	$3,813,983	$254,250	$924,418	$1,033,998	$27,878	$1,029,330	$1,484,471	$1,648,226

June 30, 1931.

American Telephone and Telegraph Company (General Department)

Analysis of Departmental Expenses—Year 1928 (Heiss Exhibit No. 10)

Items	Development and Research	Operation and Engineering	Operation, General	Personnel	Information	Public Relations	Legal	Comptroller	Treasurer	Secretary	General Service Bureau	Administration and Sundry Items	Grand Total
	$2,156,751	$2,808,803	$223,524	$378,851	$197,289	$21,998	$379,846	$1,075,403	$916,722	$44,428	$264,237	$460,681	$8,928,533
	132,252	155,345	8,574	16,323	4,045	2,393	4,938	89,034	1,051	167	396	15,547	430,065
	337,719	435,054	42,175	144,951	53,550	3,487	86,072	206,271	240,360	18,427	90,344	94,941	1,753,351
	24,223	149,624	1,943	25,502	6,357		25,343	46,420	235,384	1,727	75,914	29,115	621,552
	5,840	474	36	207	1,273		20	110	450	132	10,167	35	18,744
	91,503	151,190	6,539	18,384	7,178		9,295	33,611	37,902	1,886	8,675	35,292	401,455
ures)	34,171	19,503	1,759	10,229	2,475		3,301	14,122	25,892	926	5,258	8,211	125,847
	3,315	2,134	136	828	1,720		8,508	4,318	2,840	40	215	2,559	26,613
	72,101	24,540	110	8,215	5,900		33,042	7,558	14,230		44	12,141	177,881
	10,210	79,764	906	10,817	2,503		1,426	3,571	735	31	232	5,563	115,758
												32,670	32,670
				5,700								1,000	6,700
							162,563						162,563
' Charges									67,780				67,780
	2,064								4,812				6,876
					7,175								7,175
	2,616,502	4,104											2,620,606
	27,674	585											28,259
												8,000	8,000
							314,570						314,570
nd Publicity)				11,573	743,201				15,301			2,191	772,266
									33,647				33,647
ng)												31,889	31,889
				73,170									73,170
	12,492	19,571	1,016	17,414	1,332		406	4,053	51,120	699	6,196	37,247	151,546
											4,324		4,324
				251,111									251,111
	5,526,817	3,850,691	286,718	973,275	1,033,998	27,878	1,029,330	1,484,471	1,648,226	68,463	466,002	777,082	17,172,951
es Rendered by Benefit Department				48,857									48,857
s.	$5,526,817	$3,850,691	$286,718	$924,418	$1,033,998	$27,878	$1,029,330	$1,484,471	$1,648,226	$68,463	$466,002	$777,082	$17,124,094
ivities		36,708	32,468										69,176
olly) or Indirect (Jointly) License	$5,526,817	$3,813,983	$254,250	$924,418	$1,033,998	$27,878	$1,029,330	$1,484,471	$1,648,226	$68,463	$466,002	$777,082	$17,054,918

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American Telephone and Telegraph Company (General Department)

Analysis of Departmental Expenses—Year 1929 (Heiss Exhibit No. 10)

Items	Development and Research	Operation and Engineering	Operation, General	Personnel	Information	Public Relations	Legal	Comptroller	Tre
Salaries	$2,319,998	$3,052,991	$258,132	$405,934	$220,420	$28,875	$402,694	$1,151,232	$96
Traveling	153,086	159,357	6,263	16,531	6,960	2,426	2,863	86,515	'
Rent and House Service	341,230	452,862	38,744	147,148	55,086	4,440	91,466	210,993	25
Postage, Printing and Stationery	27,677	171,216	2,077	36,645	8,324	....	11,936	48,709	15
Telegrams and Express	6,995	1,003	11	668	2,551	....	20	157	
Telephone Service	97,438	200,356	8,345	20,832	13,392	....	10,899	38,982	4
Furniture Repairs, etc	6,194	8,361	350	7,003	658	....	645	7,087	11
Depreciation on Furniture and Fixtures	27,460	14,066	1,432	5,789	1,754	....	2,886	8,207	10
Periodicals and Books	3,656	2,780	141	1,394	2,007	....	9,752	4,840	3
Special Service	46,021	16,492	125	16,242	10,664	....	26,884	1,513	17
Conferences	11,715	89,566	1,210	17,844	5,563	....	472	4,052	1
Directors' Fees	....	....	....	....	....	....	....	....	....
Subscriptions	....	....	....	5,825	....	....	....	....	....
Attorneys' Fees and Costs	....	....	....	....	....	....	50,576	....	....
Patents	....	....	....	....	....	....	77,818	....	....
Press Clippings	....	....	....	....	6,526	....	....	....	....
Experimental	3,911,981	3,488	....	....	....	....	....	....	....
Engineers' Materials	89,151	406	....	....	....	....	....	....	....
Financial Agents' and Bond Trustees' Charges	....	....	....	....	....	....	....	....	50
Insurance	1,814	....	....	....	....	....	....	....	6
Advertising (including Educational and Publicity)	....	....	....	13,892	1,122,591	....	....	....	15
Stock Exchange Charges	....	....	....	....	....	....	....	....	
Auditors' Fees	....	....	....	....	....	....	....	....	
Annual Reports (including Advertising)	....	....	....	....	....	....	....	....	....
Miscellaneous	45,733	36,224	897	22,199	3,759	....	3,814	4,535	44
Service Pension Accruals	....	....	....	282,123	....	....	....	....	....
Benefit Payments (other than Service Pensions)	....	....	....	110,821	....	....	....	....	....
Total	7,090,199	4,209,168	317,727	1,110,890	1,460,255	35,741	692,727	1,566,822	1,591
Charged Other Companies for Services Rendered by Benefit Department	....	....	....	54,584	....	....	....	....	....
Total Departmental Expenses	$7,090,199	$4,209,168	$317,727	$1,056,306	$1,460,255	$35,741	$692,727	$1,566,822	$1,591
Deduct for Strictly Non-License Activities	....	107,063	48,934	....	113,085	....	....	....	....
Departmental Expenses Direct (Wholly) or Indirect (Jointly) License	$7,090,199	$4,102,105	$268,793	$1,056,306	$1,347,170	$35,741	$692,727	$1,566,822	$1,591

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American Telephone and Telegraph Company (General Department)

Analysis of Departmental Expenses—Year 1929 (Heiss Exhibit No. 10)

Items	Development and Research	Operation and Engineering	Operation, General	Personnel	Information	Public Relations	Legal	Comptroller	Treasurer	Secretary	General Service Bureau	Administration and Sundry Items	Grand Total
	$2,319,998	$3,052,991	$258,132	$405,934	$220,420	$28,875	$402,694	$1,151,232	$968,386	$45,604	$271,314	$421,486	$9,547,066
	153,086	159,357	6,263	16,531	6,960	2,426	2,863	86,515	2,705	77	555	14,087	451,427
	341,230	452,862	38,744	147,148	55,086	4,440	91,466	210,993	255,743	18,952	95,740	99,950	1,811,994
	27,677	171,216	2,077	36,645	8,324		11,936	48,709	156,321	1,612	96,077	65,041	625,635
	6,995	1,003	11	668	2,551		20	157	587	122	12,233	5	24,342
	97,438	200,356	8,345	20,832	13,392		10,899	38,982	45,128	2,177	10,881	38,779	487,259
	6,194	8,361	350	7,003	658		645	7,087	11,640	47	3,193	17,380	62,558
res	27,460	14,066	1,432	5,789	1,754		2,886	8,207	10,962	839	3,374	5,749	82,518
	3,656	2,780	141	1,394	2,007		9,752	4,840	3,621	94	315	2,023	30,623
	46,021	16,492	125	16,242	10,664		26,884	1,513	17,541	0	101	10,154	145,737
	11,715	89,566	1,210	17,844	5,563		472	4,052	1,158	7	182	5,771	137,540
												52,140	52,140
				5,825								3,500	9,325
							50,576						50,576
							77,818						77,818
					6,526								6,526
	3,911,981	3,488											3,915,469
	89,151	406											89,557
s' Charges									50,854				50,854
	1,814								6,667		112	81	8,674
nd Publicity)				13,892	1,122,591				15,313			0	1,151,796
									0				0
												7,500	7,500
ng)												33,201	33,201
	45,733	36,224	897	22,199	3,759		3,814	4,535	44,437	187	13,968	27,080	202,833
				282,123									202,123
e Pensions)				110,821									101,821
	7,090,199	4,209,168	317,727	1,110,890	1,460,255	35,741	692,727	1,566,822	1,591,063	69,348	508,045	803,927	19,455,912
es Rendered by Benefit Department				54,584									54,584
s.	$7,090,199	$4,209,168	$317,727	$1,056,306	$1,460,255	$35,741	$692,727	$1,566,822	$1,591,063	$69,348	$508,045	$803,927	$19,401,328
ivities		107,063	48,934		113,085								269,082
olly) or Indirect (Jointly) License	$7,090,199	$4,102,105	$268,793	$1,056,306	$1,347,170	$35,741	$692,727	$1,566,822	$1,591,063	$69,348	$508,045	$803,927	$19,132,246

[fol. 5237]

American Telephone and Telegraph Company (General Department)

Analysis of Departmental Expenses—Year 1930 (Heiss Exhibit No. 10)

Items	Development and Research	Operation and Engineering	Operation, General	Personnel	Information	Public Relations	Legal	Comptroller	T
Salaries	$2,512,585	$3,321,520	$276,320	$444,295	$244,729	$39,300	$408,528	$1,261,688	$1,4
Traveling	157,990	145,683	12,241	18,618	4,667	4,386	3,235	84,944	
Rent and House Service	382,225	449,590	35,936	142,813	53,096	5,781	95,452	235,196	3
Postage, Printing and Stationery	26,829	182,715	2,236	35,379	5,705		17,763	47,973	3
Telegrams and Express	9,718	731	11	829	2,061		41	255	
Telephone Service	116,553	220,169	10,059	23,746	17,533		14,074	45,797	
Furniture Repairs, etc	9,110	12,509	581	6,435	409		1,504	7,055	
Dep'n on Furn. and Fix	29,776	15,835	1,417	5,958	1,861		3,257	8,770	
Periodicals and Books	4,465	2,253	223	1,322	2,462		11,782	5,633	
Special Services	12,065	10,471	0	6,005	5,450		50,638	896	
Conferences	12,904	90,405	1,480	11,421	2,810		2,100	1,842	
Directors' Fees									
Subscriptions				5,700					
Attorneys' Fees and Costs							58,895		
Patents							298,976		
Press Clippings					7,893				
Experimental	6,304,285	5,416							
Engineers' Materials	168,244	408							
Financial Agents' and Bond Trustees' Charges									
Insurance	7,954	20						19	
Advertising (including Educational and Publicity)				11,401	1,133,268				
Stock Exchange Charges									
Auditors' Fees									
Annual Reports (including Advertising)									
Miscellaneous	63,747	46,338	576	18,816	1,924		786	4,594	
Service Pension Accruals				311,694					
Benefit Payments (Other than Service Pensions)				106,426					
Total	9,818,450	4,504,063	341,080	1,150,858	1,483,859	49,467	967,031	1,704,662	2,4
Charged Other Companies for Services Rendered by Benefit Department				50,585					
Total Departmental Expenses	$9,818,450	$4,504,063	$341,080	$1,100,273	$1,483,859	$49,467	$967,031	$1,704,662	$2,49
Deduct for Strictly Non-License Activities	261,646	163,495	63,288		132,248				
Departmental Expenses Direct (Wholly) or Indirect (Jointly) License	$9,556,804	$4,340,568	$277,792	$1,100,273	$1,351,611	$49,467	$967,031	$1,704,662	$2,49

June 30, 1931.

American Telephone and Telegraph Company (General Department)

Analysis of Departmental Expenses—Year 1930 (Heiss Exhibit No. 10)

Items	Development and Research	Operation and Engineering	Operation, General	Personnel	Information	Public Relations	Legal	Comptroller	Treasurer	Secretary	General Service Bureau	Administration and Sundry Items	Grand Total
	$2,512,585	$3,321,520	$276,320	$444,295	$244,720	$39,300	$408,528	$1,261,688	$1,466,745	$46,764	$307,501	$435,780	$10,765,746
	157,990	145,683	12,241	18,618	4,667	4,386	3,235	84,944	2,983	22	836	5,772	441,377
	382,225	449,590	35,936	142,813	53,096	5,781	95,452	235,196	329,790	14,144	92,536	85,211	1,921,770
	26,829	182,715	2,236	35,379	5,705		17,763	47,973	331,346	3,671	101,989	36,859	792,465
	9,718	731	11	829	2,061		41	255	868	202	14,233	13	28,962
	116,553	220,169	10,059	23,746	17,533		14,074	45,797	72,278	2,370	12,467	42,224	577,270
	9,110	12,509	581	6,435	409		1,504	7,055	21,270	106	5,198	4,232	68,409
	29,776	15,835	1,417	5,958	1,861		3,257	8,770	13,276	928	3,488	4,696	89,262
	4,465	2,253	223	1,322	2,462		11,782	5,633	3,781	69	879	1,969	34,838
	12,065	10,471	0	6,005	5,450		50,638	896	8,242	0	275	9,231	103,273
	12,904	90,405	1,480	11,421	2,810		2,100	1,842	1,359	19	239	4,510	129,089
												49,320	49,320
				5,700								26,250	31,930
							58,895						58,895
							298,976						298,976
					7,893								7,893
	6,304,285	5,416											6,309,701
	168,244	408											168,652
ees' Charges									116,499				116,499
	7,954	20						19	13,623		19		21,835
and Publicity)				11,401	1,133,268				17,729			210,000	1,372,398
									74,393				74,393
												7,500	7,500
ising)												32,634	32,634
	63,747	46,338	576	18,816	1,924		786	4,594	25,292	89	15,492	59,365	237,019
				311,694									311,694
vice Pensions)				106,426									106,426
	9,818,450	4,504,063	341,080	1,150,858	1,483,859	49,467	967,031	1,704,662	2,499,674	68,384	555,152	1,015,566	24,158,246
vices Rendered by Benefit Department				50,585									50,585
ses	$9,818,450	$4,504,063	$341,080	$1,100,273	$1,483,859	$49,467	$967,031	$1,704,662	$2,499,674	$68,384	$555,152	$1,015,566	$24,107,661
ctivities	261,646	163,495	63,288		132,248								620,677
holly) or Indirect (Jointly) License	$9,556,804	$4,340,568	$277,792	$1,100,273	$1,351,611	$49,467	$967,031	$1,704,662	$2,499,674	$68,384	$555,152	$1,015,566	$23,486,984

[fol. 5238]

American Telephone and Telegraph Company (General Department)

Item 1(a)—Analysis of Departmental Expenses—Year 1931

Items	Development and Research	Operation and Engineering	Operation, General	Personnel	Information	Public Relations	Legal	Comptroller	
Salaries	$2,494,935	$3,347,931	$273,615	$421,592	$240,441	$29,210	$378,669	$1,254,569	
Traveling	118,148	103,142	5,482	7,768	3,733	5,252	5,304	86,549	
Rent and House Service	383,376	477,677	30,726	123,869	53,164	3,977	95,324	233,529	
Postage, Printing and Stationery	23,272	136,322	2,442	10,144	3,657		12,992	41,549	
Telegrams and Express	6,752	269	12	16	1,730		4	428	
Telephone Service	139,603	230,214	11,333	26,549	14,904		16,192	45,678	
Furniture Repairs, etc	6,869	10,702	330	5,868	737		421	7,379	
Depreciation on Furniture and Fixtures	34,218	16,514	1,494	6,085	1,910		3,395	9,384	
Periodicals and Books	3,594	2,617	274	858	2,767		7,515	5,249	
Special Services	11,666	10,564	200	6,000	5,250		196,384	2,816	
Conferences	7,413	49,485	1,051	7,536	1,178		688	1,041	
Directors' Fees									
Subscriptions				5,700					
Attorneys' Fees and Costs							60,858		
Patents							136,692		
Press Clippings					8,351				
Experimental	5,530,369	2,547							
Engineers' Materials	103,830	191							
Financial Agents' and Bond Trustees' Charges									
Insurance									
Advertising (including Educational and Publicity)				10,004	1,080,529				
Stock Exchange Charges									
Auditors' Fees									
Annual Reports (including Advertising)									
Miscellaneous	18,121	25,356	688	10,606	1,333		1,187	6,904	
Service Pension Accruals				323,493					
Benefit Payments (Other than Service Pensions)				162,783					
Total	8,882,166	4,413,531	327,647	1,128,871	1,419,384	38,439	915,625	1,695,075	1
Charged Other Companies for Services Rendered by Benefit Department				48,176					
Total Departmental Expenses	$8,882,166	$4,413,531	$327,647	$1,080,695	$1,419,384	$38,439	$915,625	$1,695,075	$1
Deduct Expenses Definitely Allocated to Non-License Activities		178,564	54,016		111,904			3,000	
Balance	$8,882,166	$4,234,967	$273,631	$1,080,695	$1,307,480	$38,439	$915,625	$1,692,075	$1

American Telephone and Telegraph Company (General Department)

Item 1(a)—Analysis of Departmental Expenses—Year 1931

Items	Development and Research	Operation and Engineering	Operation, General	Personnel	Information	Public Relations	Legal	Comptroller	Treasurer	Secretary	General Service Bureau	Sundry Items (Including Administration)	Grand Total
	$2,494,935	$3,347,931	$273,615	$421,592	$240,441	$29,210	$378,669	$1,254,569	$985,159	$45,382	$315,801	$369,497	$10,156,801
	118,148	103,142	5,482	7,768	3,733	5,252	5,304	86,549	660	3	468	5,759	342,268
	383,376	477,677	30,726	123,869	53,164	3,977	95,324	233,529	296,407	7,216	84,781	78,983	1,869,029
	23,272	136,322	2,442	10,144	3,657		12,992	41,549	157,702	401	73,184	36,662	498,327
	6,752	269	12	16	1,730		4	428	277		10,385	78	19,951
	139,603	230,214	11,333	26,549	14,604		16,192	45,678	63,613	2,381	14,106	57,513	621,786
	6,869	10,702	330	5,868	737		421	7,379	5,639	14	3,193	2,582	43,734
tures	34,218	16,514	1,494	6,085	1,910		3,395	9,384	14,899	871	3,691	4,667	97,128
	3,594	2,617	274	858	2,767		7,515	5,249	3,600	40	308	1,564	28,386
	11,666	10,564	200	6,000	5,250		196,384	2,816	644		100	8,802	242,426
	7,413	49,485	1,051	7,536	1,178		688	1,041	845	6	152	6,648	76,043
												45,850	45,850
				5,700								57,150	62,850
							60,858						60,858
							136,692						136,692
					8,351								8,351
	5,530,369	2,547											5,532,916
	103,830	191											104,021
ees' Charges									79,770				79,770
									8,524				8,524
l and Publicity)				10,004	1,080,529				22,485				1,113,018
									6,133				6,133
												8,000	8,000
ising)												37,727	37,727
	18,121	25,356	688	10,606	1,333		1,187	6,904	5,925	29	11,639	30,289	112,077
				323,493									323,493
vice Pensions)				162,783									162,783
	8,882,166	4,413,531	327,647	1,128,871	1,419,384	38,439	915,625	1,695,075	1,652,282	56,343	517,808	751,771	21,798,942
vices Rendered by Benefit Department				48,176									48,176
ses	$8,882,166	$4,413,531	$327,647	$1,080,695	$1,419,384	$38,439	$915,625	$1,695,075	$1,652,282	$56,343	$517,808	$751,771	$21,750,766
ated to Non-License Activities		178,564	54,016		111,904			3,000					347,484
	$8,882,166	$4,234,967	$273,631	$1,080,695	$1,307,480	$38,439	$915,625	$1,692,075	$1,652,282	$56,343	$517,808	$751,771	$21,403,282

[fol. 5239] EXHIBIT X-351

Heiss Exhibit No. 11

American Telephone and Telegraph Company

Summary for Period 1923 to 1930, Both Inclusive of

A. Estimate of costs incurred by company in rendering license contract services.*

B. Amounts received by company for license contract services.

	A. Costs incurred	B. Amounts received
1923	$21,269,690	$25,901,549
1924	23,939,675	28,377,701
1925	27,003,505	31,965,628
1926	27,971,003	31,546,703
1927	28,605,736	34,242,684
1928	20,671,367	19,204,162
1929	21,740,842	15,878,523
1930	27,746,263	16,511,139
Total	$198,948,081	$203,628,089

Amount by which license revenues exceed costs incurred during eight year period 1923-1930	$4,680,008
Average per year	585,001

* These costs do not include any amounts for contingencies.

April 17, 1931.

[fol. 5240] EXTRACTS FROM EXHIBIT X-352

Annual Report Illinois Bell Telephone Company

Year Ended December 31, 1920

* * *

Illinois Bell Telephone Company

Chicago, February 1, 1921.

To the Stockholders:

As shown in the Income Statement submitted herewith the revenue for the year was $33,361,416; the expenses $31,934,955, and the deficit after the payment of the usual dividend $1,773,539.

The record of the Company with respect to earnings over expenses, charges and dividends for ten years is as follows;

Year	Surplus	Deficit
1911	$102,540	
1912	374,412	
1913	475,554	
1914	406,221	
1915	797,047	
1916	1,193,585	
1917		$73,001
1918		793,200
1919		976,395
1920		1,773,539

The excess earnings of the years 1911 to 1916, inclusive, went into the corporate surplus, out of which in 1912 $400,000 was drawn to create a Benefit Fund for employees, increased to $500,000 in 1915, and $541,000 to pay a bonus to [fol. 5241] employees in 1916 to help them meet the increased cost of living.

At the end of 1916 the surplus was $2,495,400. In 1919 the United States Government paid the Company $1,875,600 to cover the loss incurred in the operation of the property, while in its control from August 1, 1918, to July 31, 1919. The losses indicated above of $3,616,000 in four years have been paid from the surplus and the payment by the Government. The balance in the surplus on December 31, 1920 was $629,980. (P. 1)

The war appears to have cost the Telephone Company, the Government, and the telephone subscribers, who have paid increased rates of about $4,300,000, a total of eight million dollars in four years; furthermore, it seriously checked construction, and much of what should have been done in the past three years will now have to be done at a cost for capital, material and labor greatly in excess of pre-war prices.

The vital importance of a surplus in any business was proven by our experience as above, for had we not in the six years prior to 1916 built up a surplus of two and a half million dollars, we could scarcely have survived the losses of the past four years. (P. 2)

* * * * * * *

[fol. 5242] In October and November the plan long under consideration to purchase the telephone property of the Central Union Telephone Company in Illinois, was carried out. The price paid therefor was $15,530,000 in the notes of the Chicago Telephone Company, payable December 1, 1923, and we assumed the payment of underlying bonds amounting to $520,000. The purchase, manifestly in the interest of the public service, was approved by the Illinois Utilities Commission, and we took possession of the property on December 1st.

We acquire exchanges at Peoria, Springfield, Rockford, Rock Island, Moline, Quincy, and in thirty or more other cities having 117,700 telephones and an extensive system of toll lines covering the entire State.

We will have contractual relations with 574 connecting telephone companies in the state, operating 320,000 telephones, so that the state system will include 1,150,000 telephones. (P. 4)

* * * * * * *

[fol. 5243] Annual Report Illinois Bell Telephone Company

Year Ended December 31, 1923

* * * * * * *

On August 16, 1923, the Illinois Commerce Commission entered an order reducing rates in the City of Chicago, which, if operative, would have reduced the company's revenue approximately $1,700,000 per annum. The present Chicago rates were fixed upon a minimum valuation made by the former Commission, and are producing less than a fair return on the fair value of our property devoted to the service of the public. The order of the Commission being in our opinion confiscatory of the company's property, application was made to the United States District Court in Chicago for an injunction against the Commission's order. A temporary injunction was issued by three Federal Judges on December 21, and the City of Chicago announced its intention to appeal to the United States Supreme Court. No further proceedings will be had pending the determination of this appeal. (P. 3)

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[fol. 5244] Annual Report Illinois Bell Telephone Company

Year Ended December 31, 1925

The expenditures for new plant to take care of the demands for service in this territory were the greatest in the history of the company, and it is estimated will be even larger during 1926.

For each telephone gained during the year there was added to the plant $288.29, resulting in an average investment per telephone at the end of the year of $159.31, which compares with $117.83 per telephone at the close of 1915 and $129.32 at the close of 1920.

This increase in the investment per telephone is to a considerable extent the result of the decreased purchasing power of the dollar since 1914, and it will probably be several years before the full effect is reflected in the cost of plant per telephone of your company. (P. 3)

[fol. 5245] Annual Report Illinois Bell Telephone Company

Year Ended December 31, 1927

* * * * * * *

It has heretofore seemed necessary that telephone instruments be owned and maintained by a central organization. This condition no longer obtains. Therefore, at the end of 1927 the American Telephone and Telegraph Company offered to sell and the Illinois Bell Telephone Company bought the telephone instruments in use on its lines but heretofore owned and maintained by the American Telephone and Telegraph Company. At the same time the American Company made a reduction from 4 per cent to 2 per cent. of gross revenues in the charge for research, engineering, financial and other services furnished the Illinois Bell Telephone Company by the American Company. The purchase of the telephone instruments and their maintenance by this company will increase this company's investment and expense, but it will be more then offset by the 50% reduction in the charge for services. (P. 3)

* * * * * * *

[fol. 5246] Annual Report Illinois Bell Telephone Company

Year Ended December 31, 1929

* * * * * * *

Your Directors Submit Herewith the Balance Sheet and Statement of Operations for the Year 1929.

Net earnings were $17,372,400.66, at the rate of 6.66% on the average book cost of the physical property, which compares with 6.19% for 1928. Net profits were $13,075,212.11, which is $11.89 per share of capital stock and compares with $10.72 per share for 1928.

The rate schedule in effect in Chicago was approved in 1920. For the nine years beginning with 1921, net earnings equalled 6.42% of the average book cost of the physical property and net profits have averaged $11.27 per share of capital stock. (P. 1)

* * * * * * *

Reduction in Toll Rates

On February 1, 1929, a reduction was made in toll rates affecting the charges on messages covering distances above 130 miles. The estimated amount of the reduction on business of the Illinois Bell Telephone Company was $62,000,000.00 per year.

At the same time, a similar reduction was made in the rates of the American Telephone and Telegraph Company, on charges covering messages from 130 to 1500 miles, and the two reductions, taken together, resulted in an estimated decrease in toll and long distance charges in the territory [fol. 5247] of this company of approximately $350,000.00 per year.

During December, 1929, arrangements were made for a further reduction affecting charges on toll messages of from approximately 60 to 300 miles. This change was made effective January 1, 1930. The estimated reduction in charges of the Illinois Bell Telephone Company was $262,000.00 per year and on the total charges of this company and the American Telephone and Telegraph Company in our territory, $500,000.00 per year.

These two rate revisions involved an estimated total decrease in charges for toll and long distance messages of $850,000.00 per year in the territory of the Illinois Bell Telephone Company. (P. 4)

* * * * * * *

[fol. 5248] Annual Report of the Illinois Bell Telephone Company for the Year 1930

* * * * * * *

Your Directors submit herewith the Balance Sheet and Statement of Operations for the year 1930.

Net earnings were $17,365,987 at the rate of 6.21% on the average book cost of the physical property, which compares with 6.66% for 1929. Net profits were $12,971,590, which is $9.98 per average share of capital stock outstanding and compares with $11.89 per share for 1929. (P. 3)

* * * * * * *

Reduction in Toll Rates

On January 1, 1930, reductions were made in the rates for toll messages between points separated by distances of approximately sixty to three hundred miles. It is estimated that the saving to customers of this Company from this reduction amounts to about $500,000 per year, approximately half of the saving being on business of the Illinois Bell Company and half on American Telephone and Telegraph Company business in our territory. The four reductions in toll rates made in a period of about three and one-half years involved an estimated total annual saving to patrons of our company in excess of $1,200,000. (P. 6)

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[fol. 5249] Annual Report of the Illinois Bell Telephone Company for the Year 1931

* * * * * * *

Your Directors submit herewith the Balance Sheet and Statement of Operations for the year 1931.

Net earnings of $16,149,372 for the year were at the rate of 5.58% on the average book cost of the physical property, which compares with 6.21% for 1930. Net profits were $12,816,907, which is $8.54 per average share of capital stock outstanding and compares with $9.98 per average share outstanding for 1930.

While our revenues for the year, in common with those of most other industries, were adversely affected by general business conditions, we were able, by careful management, to finish the year with a margin of earnings above the dividend requirements.

During the year 1931 the number of subscribers' stations connected was 227,575 and the number disconnected 284,116, resulting in a net station loss of 56,541. At the end of the year the total number of stations in service was 15,000 higher than at the beginning of 1929 and about 175,000 higher than five years ago. In addition to connections and disconnections, it was necessary to care for the change in location of 175,068 telephones, due to subscribers' change of address. (P. 3)

* * * * * * *

[fol. 5250] Service

The average number of local telephone calls per day was 5,891,000, a decrease of 4.4% from the average of the previous year. Toll and long distance completed messages averaged 221,000 per day during 1931, a decrease of 6.1%. (P. 5)

* * * * * * *

General Policies

A thorough understanding of our operations, aims and policies tends to promote mutual confidence between the Company and its customers. During the year we have continued our efforts to make these policies known to the public and obtain for them general recognition.

Briefly stated, it is our fundamental policy to furnish the most telephone service and the best at the least cost to our customers; to seek earnings sufficient only to operate the (p. 9) business on a sound financial basis with no large profits for distribution as "melons"; to use any earnings in excess of actual requirements to improve the service or reduce its cost; and to provide adequate compensation and suitable working conditions for employees.

Our business differs from the usual commercial enterprise. We do not manufacture or buy and sell commodities which move rapidly with resulting rapid turnover of capital. We sell a service, made to order, a call at a time. The cost of supplying this service is controlled by two principal items. One of these is the operating costs of rendering and maintaining the service. The other is the capital charges on a vast plant which, once installed, remains continuously in service for the use of the public and is continuously subject to these fixed charges.

[fol. 5251] Because of the great value of our service, both to the individual and the community, it has expanded rapidly within recent years, but because of the inherent characteristics of the telephone business this expansion has not been and cannot be attended by the economies of mass production customary in most industries. As the telephone system grows, the plant and switching arrangements become more complicated and the cost of giving each subscriber access to larger numbers of telephones increases. But the benefits and economies resulting from continuous improvements made in methods and equipment partially offset these rising costs and help avoid the necessity of increasing charges for service.

In this respect we are aided materially by the systematic efforts of the Bell Telephone Laboratories to design better and cheaper equipment, by the studies of the American Telephone and Telegraph Company for the purpose of devising more efficient operating methods, and by the work of the Western Electric Company in producing high grade apparatus at the least cost. All these have been of great value in offsetting the inherent tendency toward constantly rising costs of operation.

It is with great pleasure that the Directors again record their appreciation of both the spirit, and the loyalty to high standards of service, which characterize the employees of our Company.

It has been the custom in the past to give special recognition to acts of courage or resourcefulness in emergency. At this time we are moved to record recognition of the cour- [fol. 5252] age and devotion of the men and women who are upholding our standards and ideals in the everyday, non-spectacular ways demanded by the difficult time through which all business has been passing. (P. 10)

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[fol. 5253] EXTRACTS FROM EXHIBIT X-353

Annual Reports v. Western Electric Company 1909 to 1931, Inclusive

Western Electric Company Report to Stockholders

November 30, 1909

[fol. 5254] Assets and Liabilities December 1, 1909

(P. 4)

Assets:

Factory Plants (46.5 per cent of cost)	$8,373,342
Warehouses and Offices (67.9 per cent of cost)	1,101,931
Total Plant in Use (48.3 per cent of cost)	$9,475,273
Merchandise	14,414,697
Cash	1,860,616
Accounts and Bills Receivable	11,753,193
Total Current Assets	$28,028,506
Surplus Plant (65.4 per cent of cost)	2,790,982
Sundry Investments	2,780,859
Grand Total	$43,075,620

Liabilities:	
Capital Stock	$15,000,000
Mortgages and Bonds	110,348
Total Capital Liabilities	$15,110,348
Bills Payable	4,514,799
Bills Receivable Discounted	24,050
Accounts Payable	3,961,813
Total Current Liabilities	$8,500,662
Reserve for Pension Fund	597,494
Other General Reserves	1,430,330
Surplus	17,436,786
Grand Total	$43,075,620

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[fol. 5255] Western Electric Company Report to Stockholders

December 31, 1910

[fol. 5256] Western Electric Company

Assets and Liabilities January 1, 1911

(P. 10)

Assets:			
Real Estate and Buildings	$11,697,300		
Depreciation Reserve	3,470,210		
		$8,227,090	(70.3% of Cost)
Machinery and Equipment	$8,387,983		
Depreciation Reserve	6,603,087		
		1,784,896	(21.3% of Cost)
Total Plants		$10,011,986	(49.8% of Cost)
Merchandise	$18,523,512		
Cash	3,596,269		
Bills Receivable	8,643,019		
Accounts Receivable	14,229,079		
Total Current Assets		$44,991,879	
Sundry Investments		3,382,080	
Grand Total		$58,385,945	

Liabilities:		
Capital Stock	$15,000,000	
Mortgages and Bonds Payable, Constituent Companies	91,118	
First Mortgage 5% Bonds	15,000,000	
Total Capital Liabilities		$30,091,118
Bills Payable	$115,385	
Accounts Payable	5,472,333	
Total Current Liabilities		5,587,718
Reserve for Pensions		739,541
General Reserves		2,846,506
Surplus		19,121,062
Grand Total		$58,385,945

R. H. Gregory, Comptroller.

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[fol. 5257] Western Electric Company Report to Stockholders

December 31, 1911

[fol. 5258] Western Electric Company

Assets and Liabilities, January 1, 1912

(P. 16)

Assets:			
Real estate and buildings	$12,573,932		
Depreciation Reserve	3,795,093		
		$8,778,839	(69.8% of Cost)
Machinery and Equipment	$9,077,466		
Depreciation Reserve	7,281,141		
		1,796,325	(19.8% of Cost)
Total Plants		$10,575,164	(48.8% of Cost)
Merchandise	$18,187,015		
Cash	2,760,727		
Bills Receivable	7,992,561		
Accounts Receivable	14,137,590		
Total Current Assets		$43,077,893	
Sundry Investments		3,758,758	
Grand Total		57,411,815	
Liabilities:			
Capital Stock	$15,000,000		
Mortgages and Bonds Payable, Constituent Companies	91,118		
First Mortgage 5% Bonds	15,000,000		
Total Capital Liabilities		$30,091,118	

Bills Payable	$57,862	
Accounts Payable	4,189,624	
Total Current Liabilities		4,247,486
Reserve for Pensions		786,889
Other General Reserves		2,184,968
Surplus		20,101,354
Grand Total		$57,411,815

R. H. Gregory, Comptroller.

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[fol. 5259] Western Electric Company Report to Stockholders

December 31, 1912

[fol. 5260] Abnormal expenditures and expenditures which should properly be spread over a period of years although formerly charged to expenses of the year are now charged to a Reserve Account created for this purpose. This Reserve Account in former reports has been called "General Reserves". In this report it is more properly called "Reserve for Contingencies." As the amounts credited to this Reserve during the years 1910 and 1911 have been insufficient to meet the charges against it during the years 1911 and 1912 your Directors have considered it advisable to credit to this account the sum shown in the Earnings statement (p. 20).

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Western Electric Company

Assets and Liabilities, January 1, 1913

(P. 22)

Assets:			
Real Estate and Buildings	$12,809,126		
Depreciation Reserve	4,187,825		
		$8,621,301	(67.3% of Cost)
Machinery and Equipment	$9,442,214		
Depreciation Reserve	7,721,951		
		1,720,263	(18.2% of Cost)
Total Plants		$10,341,564	(46.5% of Cost)
Merchandise	$18,947,164		
Cash	2,317,885		
Bills Receivable	10,684,672		
Accounts Receivable	15,470,937		
Total Current Assets		47,420,658	
Sundry Investments		4,388,710	
Grand Total		$62,150,932	
Liabilities:			
Capital Stock	$15,000,000		
Mortgages and Bonds Payable, Constituent Companies	81,501		
First Mortgage 5% Bonds	15,000,000		
Total Capital Liabilities		$30,081,501	
Total Current Liabilities		6,329,686	

Reserve for Employees' Benefits	1,070,000
Reserve for Contingencies	3,500,981
Surplus	21,168,764
Grand Total	$62,150,932

R. H. Gregory, Comptroller.

[fol. 5261] Western Electric Company Report to Stockholders

December 31, 1913

[fol. 5262] * * * * * * *

Western Electric Company

Assets and Liabilities January 1, 1914

(P. 28)

Assets:		
Real Estate and Buildings	$10,974,082	
Machinery and Equipment	7,729,741	
Total Plant		$18,703,823
Merchandise	16,966,856	
Cash	2,393,175	
Bills Receivable	9,286,508	
Accounts Receivable	16,738,566	
Total Current Assets		45,385,105
Sundry Investments		9,979,390
Grand Total		$74,068,318
Liabilities:		
Capital Stock	$15,000,000	
First Mortgage 5% Bonds	15,000,000	
Total Capital Liabilities		30,000,000
Bills Payable	1,000,000	
Accounts Payable	4,660,517	
Total Current Liabilities		5,660,517
Reserve for Depreciation of Plant		11,022,235
Reserve for Employees' Benefit Fund		1,000,000
Reserve for Contingencies		3,545,107
Surplus		22,840,459
Grand Total		$74,068,318

R. H. Gregory, Comptroller.

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[fol. 5263] Western Electric Company Report to Stockholders

December 31, 1914

[fol. 5264] (P. 31)

Western Electric Company, 500 South Clinton Street,
Chicago, Illinois

March 17, 1915.

To the Stockholders:

The sales of the Western Electric Company for 1914 were $66,408,000 as compared with $77,533,000 for 1913. Business conditions affecting this company's prosperity have been steadily getting worse through the year. The prospects for 1915 are not encouraging. As is always the case, the expenses do not decrease as rapidly as the sales, and at this time there are certain expenses connected with the development of new apparatus which it does not seem wise to curtail.

The orders on hand at January 1, 1915, were $4,309,000 in value less than on January 1, 1914. The average value of an order filled during 1914 was $56 as compared with $73 for 1913. The number of employees at January 1, 1915, was 15,650 as compared with 19,856 at January 1, 1914. Business conditions are also reflected in our balance sheet by reductions in our merchandise and receivable accounts, and by the increase in cash on hand.

It will be impossible until after the close of the European war to report the effect of the war during this year upon our foreign investments. We expect, however, a loss of profits and some loss of property, on account of which we may later have to make revaluations.

The total disbursements from the Employees' Benefit Fund for 1914 amounted to $154,373. These payments covered al class of benefits and were made to 2,209 beneficiaries.

As was explained in the report for 1912, the Reserve for Contingencies is intended to provide for abnormal expense and such expenses as are not properly chargeable against the operations of any one year. To make this more clear, the earnings statement has been rearranged and a statement of additions to and subtractions from this reserve has been added to the statements hitherto appended to this report.

For the Directors.

H. B. Thayer, President.

[fol. 5265] **Western Electric Company**

Assests and Liabilities, January 1, 1915

(P. 33)

Assets:		
Real Estate and Buildings	$11,227,615	
Machinery and Equipment	7,990,194	
Total Plant		$19,217,809
Merchandise	15,497,147	
Cash	5,242,421	
Bills Receivable	11,850,845	
Accounts Receivable	12,311,929	
Total Current Assets		44,902,342
Sundry Investments		9,349,059
Grand Total		$73,469,210
Liabilities:		
Capital Stock	$15,000,000	
First Mortgage 5% Bonds	15,000,000	
Total Capital Liabilities		$30,000,000
Accounts Payable		3,210,970
Reserve for Depreciation of Plant		11,449,912
Reserve for Employees' Benefit Fund		1,000,000
Reserve for Contingencies		3,796,909
Surplus		24,011,419
Grand Total		$73,469,210

R. H. Gregory, Comptroller.

[fol. 5266] Western Electric Company, Incorporated

Report to Stockholders for the Year Ending December 31, 1915

March 17, 1916.

To the Stockholders:

As the incorporation of this Company under the laws of the State of New York on November 17, 1915, together with the purchase of the going business of Western Electric Company (an Illinois corporation) and the assumption of the latter company's obligations was in effect a reorganization and change of domicile of the latter company, in this report we shall cover the operations of the two companies during the year, thus giving the results of the continuing business without attempting to segregate that part which pertains only to the operations of the Western Electric Company, Incorporated. (P. 36)

[fol. 5267] Western Electric Company, Incorporated

Report to Stockholders for Year Ending December 31, 1916

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As to the foreign manufacturing companies in which we are interested, our information as to the most of them is meager, but we understand that they have, with the exception of the one at Antwerp, Belgium, been employed on fairly profitable work during the year. Whether a satisfactory profit will remain after the payment of war taxes in the several belligerent countries is not so certain. No dividends have been received by us, so that our foreign investments have made no contribution to our profits of the year, as shown in the statement. (P. 43)

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[fol. 5268] (P. 46)

Western Electric Company, Incorporated

Assets and Liabilities, December 31, 1916.

Assets:

Real Estate and Buildings	$11,633,290	
Machinery and Equipment	9,209,532	
Total Plant		$20,842,822
Merchandise	$33,001,524	
Cash	5,328,180	
Bills Receivable	1,085,520	
Accounts Receivable	18,109,258	
Total Current Assets		$57,524,482
Sundry Investments		12,041,068
Grand Total		$90,408,372

Liabilities:

Preferred Stock, 150,000 shares	$15,000,000	
Common Stock, 150,000 shares no par value	25,453,648	
Bonded Debt	15,000,000	
Total Capital Liabilities		$55,453,648
Bills Payable		5,500,000
Accounts Payable		12,334,003
Reserve for Depreciation on Plant		13,320,143
Reserve for Employees' Benefit Fund		1,000,000
Reserve for Contingencies		2,800,578
Grand Total		$90,408,372

R. H. Gregory, Comptroller.

[fol. 5269] Report to Stockholders of Western Electric Company, Incorporated, for the Year Ending December 31, 1917

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[fol. 5270] There is no return from foreign investments included in the profits of the Company for 1917. As to some, information is entirely lacking, and as to others, it is incomplete. It is our belief, however, that as a whole, a conservative valuation of them would require no addition to reserves, the earnings of some of them being apparently sufficient to offset possible losses of others. (P. 50)

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[fol. 5271] (P. 53)

Western Electric Company, Incorporated

Assets and Liabilities, December 31, 1917

Assets:

Real Estate and Buildings	$12,911,537	
Machinery and Equipment	12,134,759	
Total Plant		$25,046,296

Merchandise	$44,415,028	
Cash	4,257,150	
Bills Receivable	1,177,166	
Accounts Receivable	24,678,194	
Total Current Assets		$74,527,538
Sundry Investments		13,094,686
Grand Total		$112,668,520
Liabilities:		
Preferred Stock, 300,000 shares	$30,000,000	
Common Stock, 150,000 shares no par value	28,755,364	
Bonded Debt	15,000,000	
Total Capital Liabilities		$70,755,364
Bills Payable		10,600,000
Accounts Payable		9,194,558
Reserve for Depreciation on Plant		16,285,136
Reserve for Employees' Benefit Fund		1,500,000
Reserve for Contingencies		4,333,462
Grand Total		$112,668,520

R. H. Gregory, Comptroller.

[fol. 5272] Western Electric Company, Incorporated

Report to Stockholders for Year Ending December 31, 1918

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[fol. 5273] Foreign

No return from foreign investments has been included in our earnings for 1918 (our information thereon being incomplete). It is believed, however, that the earnings of some of the foreign allied companies in which we are interested were sufficient to offset losses on others, so that no net loss was sustained on the whole.

The Antwerp factory which had been in the hands of the Germans throughout the war came again under our control in November, 1918. Although the buildings were not much damaged, it is necessary to replace large amounts of machinery and material which had been taken away by the enemy. This rehabilitation is now in progress and it is expected operations will be resumed there within a few months.

For the purpose of handling our export business to the best advantage, it has been found advisable to segregate it from the domestic business directly conducted by this Company. Accordingly, a subsidiary corporation, the International Western Electric Company, Incorporated, was organized during the year and has been operating since June 1st with satisfactory results. (P. 58)

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[fol. 5274] (P. 63)

Western Electric Company, Incorporated

(Including the Owned Subsidiaries, Western Electric Company, Incorporated, of Delaware, and Western Electric Company of California)

Balance Sheet, December 31, 1918

Assets:		
Real Estate and Buildings	$13,541,253	
Machinery and Equipment	14,430,339	
Total Plant		$27,971,592
Merchandise	$45,047,290	
Cash	5,547,402	
Bills Receivable	694,758	
Accounts Receivable	23,838,621	
Total Current Assets		75,128,071
Liberty Bonds		3,904,920
Sundry Investments		11,452,316
Grand Total		$118,456,899

Liabilities:

Preferred Stock, 300,000 shares	$30,000,000	
Common Stock, 150,000 shares, no par value	25,965,685	
Bonded Debt	15,000,000	
Total Capital Liabilities		$70,965,685
General Bills Payable		10,600,000
Bills Payable for Liberty Bonds		2,172,250
Accounts Payable		9,710,743
Reserve for Depreciation on Plant		18,424,058
Reserve for Employees' Benefit Fund		1,600,000
Reserve for Contingencies		4,984,163
Grand Total		$118,456,899

R. H. Gregory, Comptroller.

[fol. 5275] Western Electric Company, Incorporated

Report to Stockholders for Year Ending December 31, 1919

* * * * * * *

[fol. 5276] The bills payable of your company aggregated

At December 31, 1919	$15,520,000
An increase during the year of	2,747,750 (p. 73)

This obligation is made up of short time notes to the Company's regular bankers and matures at various dates. It has always been your Company's practice to finance its temporary requirements for working capital in this way. As the business expands these borrowings are larger; as it contracts they are automatically reduced or paid. During the summer of 1919 they were as low as $7,000,000. With the present large volume of business they are increasing and are now approximately $21,000,000.

Whenever it has become apparent that the expansion of the business was more than a temporary condition, additional and permanent capitalization has been provided. It seems to the directors that such a time has now arrived and that at the first favorable opportunity permanent financing should be arranged. For this purpose the above described changes in authorized capitalization can now be utilized (p. 74):

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[fol. 5277] (P. 76)

Western Electric Company, Incorporated

(Including the Owned Subsidiaries, Western Electric Company, Incorporated, of Delaware, and Western Electric Company, Incorporated, of California)

Balance Sheet, December 31, 1919

9

Assets:		
Real Estate and Buildings	$14,704,310	
Machinery and Equipment	15,839,796	
Total Plant		$30,544,106
Merchandise	45,097,345	
Cash	4,914,238	
Bills Receivable	1,335,015	
Accounts Receivable	29,526,549	
Total Current Assets		80,873,147
Liberty Bonds (Market Value)		2,303,391
Sundry Investments (Market Value)		1,396,639
International Western Electric Company, Incorporated		13,372,642
Grand Total		$128,489,925
Liabilities:		
Preferred Stock, 300,000 Shares	$30,000,000	
Common Stock, 150,000 Shares, no par value	27,054,594	
First Mortgage Bonds, 5%, 1922	15,000,000	
Total Capital Liabilities		$72,054,594
General Bills Payable	13,500,000	
Bills Payable Secured by Liberty Bonds	2,020,000	
Accounts Payable	14,217,480	
Total Current Liabilities		29,737,480

Reserve for Depreciation on Plant	20,264,379	
Reserve for Employees' Benefit Fund	1,600,000	
Reserve for Contingencies	4,833,472	
Total Reserves		26,697,851
Grand Total		$128,489,925

R. H. Gregory, Comptroller.

[fol. 5278] Western Electric Company, Incorporated

Report to Stockholders for Year Ending December 31, 1920

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[fol. 5279] (P. 85)

Plant

The permanent plant account of your Company at December 31, 1920, being its face value or original cost was	$37,838,313
Against which the reserve for depreciation at that date was	24,021,005
Leaving the net book value of only	$13,817,308

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The expansion of the Company's business during 1920 was considerably greater and more rapid than was anticipated at April 1st, when the 7% convertible gold bonds were issued. As indicated elsewhere, it is apparent that not all of this expansion is permanent. To meet the requirements for temporary working capital the Company has continued its long-established practice of borrowing for short terms on its own notes. As the volume of output and sales was at a maximum in December these borrowings were necessarily high at the end of the year. They have been decreased somewhat since that date. If the volume of sales decreases as expected during 1921, these borrowings will be reduced. If the volume should continue about as in 1920, your Directors will at the first favorable opportunity consider permanent financing.

The conditions for long-term financing during 1920 were not merely unfavorable; they were almost prohibitive. While rates for short terms have continued high during the year and have considerably reduced the amount that would otherwise have been earned for your Company's common stock, it has seemed wise to bear this burden temporarily rather than to saddle the company permanently with high fixed charges. The banks and the dealers in commercial paper have cheerfully taken your Company's notes at the minimum current market rates.

Following is a comparison of the net working capital at the beginning and end of the year:

(Pp. 88-89)

	Dec. 31, 1919	Dec. 31, 1920
Current Assets	$80,873,147	$126,765,361
Current Liabilities	29,737,480	58,395,850
Net Working Capital	$51,135,667	$68,369,511

[fol. 5280] (P. 93)

Western Electric Company, Incorporated

Including the Owned Subsidiaries, Western Electric Company, Incorporated, of Delaware, Western Electric Company, Incorporated, of California

Balance Sheet, December 31, 1920

Assets:

Real Estate and Buildings	$17,174,836	
Machinery and Equipment	20,663,477	
Total Plant		$37,838,313
Merchandise	72,209,721	
Cash	7,825,257	
Bills Receivable	848,378	
Trade Acceptances	1,869,307	
Accounts Receivable	44,012,698	
Total Current Assets		126,765,361
Liberty Bonds (Market Val[illegible])		1,193,220
Trustees, Employees' Bond Purchase Plan		1,066,751
Sundry Investments		2,703,265
International Western Electric Company, Incorporated		19,017,286
Grand Total		$188,584,196

Liabilities:		
Preferred Stock 7%, 500,000: Shares Authorized, None Issued:		
Common Stock, 500,000 Shares: Authorized, 350,000 Shares. Issued, No Par Value	$57,949,453	
First Mortgage Bonds, 5% 1922	15,000,000	
Convertible Gold Bonds, 7% 1925	27,000,000	
Total Capital Liabilities		$99,949,453
General Bills Payable	41,550,000	
Bills Payable Secured by Liberty Bonds	1,200,000	
Trade Acceptances Discounted	1,082,384	
Accounts Payable	14,563,466	
Total Current Liabilities		58,395,850
Reserve for Depreciation on Plant	24,021,005	
Reserve for Employees' Benefit Fund	1,600,000	
Reserve for Contingencies	4,617,888	
Total Reserves		30,238,893
Grand Total		$188,584,196

R. H. Gregory, Comptroller.

[fol. 5281] Western Electric Company, Incorporated

Report to Stockholders for Year Ending December 31, 1921

* * * * * * *

[fol. 5282] Foreign Department

The export and foreign business of your Company is conducted through the International Western Electric Company, Incorporated, to which, upon its organization in 1918, your Company sold and conveyed all of its export and foreign business and assets. All of the issued capital stock of the International Company—55,000 shares of preferred having a par value of $100 per share and 100,000 shares of common without par value—is owned or controlled by your Company. Such additional capital as has been required for its expansion, either permanent or temporary, has been advanced by your Company, the total capital and advances being shown in the Balance Sheet. This amount at the close of the year was $17,988,000, a reduction of $1,029,000 during the year.

The International Company and the numerous affiliated companies in which it owns interests, conduct in nearly all foreign countries a business generally similar to that of your Company in the United States.

The sales of the International Company and its principal foreign affiliated companies, excluding all inter-company sales, were in 1921 approximately $41,000,000, reckoning them into dollars at the current rates or exchange or approximately $49,000,000, if reckoned at the standard or par of exchange. This latter figure compares with $41,300,000 sales for 1920.

The foreign business as a whole was larger and more profitable than in any previous year. This was due chiefly to getting the Antwerp factory on a full capacity basis for the first time since the war and to the exceptional activity of the London factory. Both of these allied companies do a large export business from Belgium and England respectively.

The export billings from the United States while almost equal to those of the previous year resulted largely from orders in hand at the beginning of the year. The prospect of selling American-made apparatus for export during the coming year is not very promising, although the recent and continued improvement in foreign exchange rates will be helpful.

[fol. 5283] On the other hand the prospect for the principal foreign allied companies is distinctly good. The demands for telephone equipment in most foreign countries continue to increase and while competition is always active the manufacturing facilities of these foreign allied companies and the technical assistance furnished them by the International Company enable them to maintain and better their position year by year.

The International Company's earnings in 1921 from its own operations and from interest and dividends received from its foreign affiliated companies were sufficient to meet its interest obligations and to pay the 7% dividend on its preferred stock, both for the current year and for the years 1918 and 1919, so that all accumulated dividends on this stock have now been paid. No dividends have been paid on the common stock.

The average investment of your Company's Foreign Department (the International Company) during 1921 was $19,650,000, on which there was earned for interest and dividends $1,842,546, equal to 9.4% (pp. 103-104).

* * * * * * *

The only changes in capitalization during the year were (1) the increase of $823,997 in the book value of common stock representing the undivided profits for the year and (2) an issue of $1,600,000 7% Convertible Gold Bonds during the year for sale to employees.

The Company's Bills Payable were reduced during the year from $42,750,000 to $29,050,000, a reduction of $13,700,000, while the cash on hand increased $5,438,000, making a total improvement for the year in its financial position of $19,138,000. In the two months since the end of the year a further improvement of about $8,500,000 has been made in the financial position.

Your Company's First Mortgage Bonds amounting to $15,000,000 were issued in 1909 and mature at the end of the current year. Under present financial conditions it is entirely feasible to do permanent financing and it is possible that your Directors will take action in that direction before the maturity of these bonds. But your Company's [fol. 5284] financial position is now sufficiently favorable to enable it to meet the payment out of its current resources and current credit should it seem desirable to do so when the time for decision arrives.

Following is a comparison of the net working capital at the beginning and end of the year:

(Pp. 106-107)

	Dec. 31, 1920	Dec. 31, 1921
Current Assets	$126,765,361	$113,462,593
Current Liabilities	58,395,850	43,084,549
Net Working Capital	$68,369,511	$70,378,044

* * * * * * *

Federal Trade Commission

The complaint which was issued under date of January 5, 1921, by the Federal Trade Commission against Western Electric Company, alleging violation of section 5 of the Federal Trade Commission Act and section 3 of the so-called Clayton Act, was on March 9, 1922, formally dismissed.

This action of the Commission comes as a result of more than a year's investigation by the Commission of the Company's files and records in the greater number of its houses and departments and the interviewing and examination, by the Commission's representatives, of many of the Company's suppliers, customers, competitors and former employees.

Your Company co-operated with the Commission to the fullest extent in furnishing it information regarding the matters complained of, and it is a source of considerable satisfaction that the Commission has, after thorough investigation, dismissed the complaint on its own motion (p. 108).

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[fol. 5285] (P. 111)

Western Electric Company, Incorporated

Including the Owned Subsidiaries, Western Electric Company, Incorporated, of Delaware, Western Electric Company, Incorporated, of California

Balance Sheet, December 31, 1921

Assets:		
Real Estate and Buildings	$19,354,501	
Machinery and Equipment	26,215,335	
Total Plant		$45,569,836
Merchandise	$58,978,025	
Cash	13,262,880	
Bills Receivable	779,019	
Trade Acceptances	573,474	
Marketable Securities	833,268	
Accounts Receivable	39,035,927	
Total Current Assets		113,462,593
Trustees, Employees' Bond Purchase Plan		465,464
Sundry Investments		2,315,471
International Western Electric Company, Incorporated, of Delaware		17,988,053
Grand Total		$179,801,417

Liabilities:

Preferred Stock, 7%, 500,000 Shares Authorized, None Issued.		
Common Stock, 500,000 Shares Authorized, 350,000 Shares Issued, No Par Value	$58,773,450	
First Mortgage Bonds, 5%, 1922	15,000,000	
Convertible Gold Bonds, 7%, 1925	28,600,000	
Total Capital Liabilities		$102,373,450
General Bills Payable	$29,050,000	
Trade Acceptances and Bills Receivable Discounted	448,456	
Accounts Payable	13,586,093	
Total Current Liabilities		43,084,549
Reserve for Depreciation on Plant	$27,924,413	
Reserve for Employees' Benefit Fund	1,600,000	
Reserve for Contingencies	4,819,005	
Total Reserves		34,343,418
Grand Total		$179,801,417

R. H. Gregory, Comptroller.

[fol. 5286] Western Electric Company, Incorporated Report to Stockholders for Year Ending December 31, 1922

[fol. 5287]. Supply Department

The function of this department is the merchandising of electrical supplies of every kind throughout the United States and it operates for that purpose forty-eight distributing houses in the principal cities. These houses carry stocks of all the materials used in electrical construction work—such as wires, cables, conduits, poles, cross-arms, insulators, line hardware and tools, electrical apparatus and supplies—such as motors, batteries, lamps, cords, switches and electric fittings, and a complete line of electric household appliances—such as washing machines, dishwashers, flat irons, sewing machines, heating devices and vacuum cleaners.

This business is highly competitive but your Company has steadily maintained and strengthened its position in it by striving to give a service complete as to lines of merchandise and national as to territory, publicity and organization.

As stated in last year's report, the year 1921 was generally unprofitable to those engaged in the merchandising of electrical supplies. Recovery from this depression began in the late spring of 1922 and each succeeding month has shown an improvement. There are indications that this improving condition will continue during 1923. Building permits are at a high mark, partcularly for residence building, but business building is also active. Industrial concerns, having absorbed their surplus electrical supplies, are again in the market and public utilities are making the much needed extensions.

Your Company's average investment in its Supply Department during 1922 was about $8,300,000, on which it earned approximately 8.4% as compared with an average of 10% over the previous six years.

[fol. 5288]

Foreign Department

The export and foreign business of your Company is conducted through the International Western Electric Company, Incorporated, to which, upon its organization in 1918, your Company sold and conveyed all of its export and foreign business and assets. All of the issued capital stock of the International Company—55,000 shares of Preferred having a par value of $100 per share and 100,000 shares of Common without par value—is owned or controlled by your Company. Such additional capital as has been required for its expansion, either permanent or temporary, has been advanced by your Company, the total capital and advances being shown in the Balance Sheet. This amount, representing your Company's investment in its Foreign Department, was at the close of the year $15,135,561, a reduction of $2,852,492 during the year.

The International Company and the numerous affiliated companies in which it owns interests or with which it has contractual relationships conduct in nearly all foreign countries a business generally similar to that of your Company in the United States.

During 1922 the economic and industrial conditions in foreign countries with few exceptions showed little or no improvement. The principal buyers of telephone equipments abroad are governments and the necessity of drastic reduction of governmental expenditures has prevented even the needed development of such economic utilities as the telephone and telegraph. Notwithstanding these adverse conditions the sales of the International Company and its principal foreign affiliated companies, excluding all inter-company sales, were in 1922 approximately $35,000,000, reckoning them into dollars at the current rates of exchange. This compares with $41,000,000 sales for 1921.

The export billings from the United States show in 1922 a considerable decrease from the previous year, as was foreshadowed in the report made a year ago. While it may be expected that exports from this country will vary from year to year, depending on the economic conditions in foreign countries, this Company has for many years safeguarded its position in foreign trade by the establishment of factories in certain foreign countries and by investment in and contractual relations with foreign manufacturers of telephone apparatus and of cables. Its policy is, accordingly, to encourage the trade in these commodities into and through the channels of least economic resistance and to shape its course to meet the varying conditions that arise. This policy has proved especially wise during the past few years of extraordinary instability in world conditions.

There is an increasing recognition of the important part that better communication must play in the rehabilitation of industry throughout Europe and in the readjustment of international relations. Although progress is these directions is at the moment slow and obscure, yet the best opinion seems to be that the underlying trend is toward peaceful settlements of political disputes and a rebuilding of the productive processes on which civilization depends. As such a period of reconstruction develops the opportunity and responsibility of all who are concerned with electrical communication will likewise develop. The International Company and its affiliated companies, by reason of the technical assistance furnished them from America, are in a position to do a large part in the improvement of electrical communication whenever and wherever there may be opportunity.

[fol. 5289]

The International Company's net earnings in 1922 were approximately $1,958,000, which amount was sufficient to provide for interest, for dividends at the rate of 7% on its Preferred Stock, and for a dividend of $7.00 per share on the Common Stock, leaving a small balance. For the period since its incorporation in 1918, the International Company has now paid to your Company in the form of interest and dividends approximately 7% per annum on its investment (pp. 120-122).

[fol. 5290] Recent New Activities

It may be of interest to the stockholders to mention briefly a few of the new lines of activity which your Company has recently been developing, more with a view to the future than for any immediate volume of sales or profits.

Radio Telephony.—During the past year your Company [fol. 5291] has manufactured and sold a number of equipments for radio telephone broadcasting and, so far as permitted by its patent and license rights, has manufactured and sold other radio telephone apparatus. This business has not reached large proportions nor is it expected to, but its technical side is so closely related to the Company's technical work in other directions that it seems desirable to keep in touch in every way with the general progress of radio development.

Public Address Systems.—Important progress has been made in the development of electrical devices by which the voice of a speaker can be plainly heard by very large audiences in one place and through wire connection by other audiences in distant places.

It may fairly be claimed that your Company has been foremost in this field and numerous demonstrations of its equipments for this purpose now on the market have been made throughout the country during the past year. One of these demonstrations of special interest occurred on June 14, 1922, when 27,000 employees at Hawthorne, assembled at the noon hour in the yards surrounding the factory buildings, were addressed by the Company's local officers and by wire connection heard plainly and without effort brief addresses by the Company's executives in their New York offices and similarly heard a speaker in San Francisco. This was the first occasion where the employees of a single industry ever assembled together to be addressed in this way (P. 122-128).

* * * * * * *

During the year the general bills payable were reduced from $29,050,000 to $12,000,000, which was the amount outstanding December 31, 1922. This $12,000,000, together with $618,563 of trade acceptances and bills receivable discounted at banks, represent the total amount of interest-bearing obligations of your Company at the end of the year. The Current accounts payable, $16,820,749, are for current purchases and expenses not due and represent a normal amount for the volume of busines in process.

Following is a comparison of the net working capital at the beginning and end of the year:

(P. 124)

	Dec. 31, 1921	Dec. 21, 1922
Working Assets	$113,462,593	$101,702,583
Current Liabilities	43,084,549	31,233,257
Net Working Capital	$70,378,044	$70,469,326

[fol. 5292]

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(Pp. 128-129)

Western Electric Company, Incorporated

Including the Owned Subsidiaries, Western Electric Company, Incorporated, of Delaware, Western Electric Company, Incorporated, of California

Balance Sheet, December 31, 1922

Assets:		
Land, Buildings and Permanent Fixtures	$20,257,973	
Machinery, Tools and Other Equipment	28,947,552	
		$49,205,525
Investment in and Advances to International Western Electric Company, Incorporated		15,135,561
Other Investments		2,150,392
Merchandise, Materials and Supplies	$52,701,893	
Trade Acceptances and Bills Receivable	1,200,838	
Accounts Receivable	36,419,141	
Prepaid Charges	205,802	
Marketable Securities	166,040	
Cash	11,008,869	
Total Working Assets		101,702,583
Grand Total		$168,194,061
Liabilities:		
Common Stock, no Par Value, 500,000 Shares Authorized and Issued	$74,931,826	
Preferred Stock, 7% Cumulative, Par Value $100	24,679,600	
Total Capital Stock		$99,611,426

Bills Payable	$12,000,000	
Trade Acceptances and Bills Receivable Discounted	618,563	
Interest and Taxes accrued not due	1,793,945	
Accounts Payable	16,820,749	
Total Current Liabilities		31,233,257
Reserve For Depreciation on Plant and Equipment	$30,431,368	
For Employees' Benefit Fund	2,000,000	
For Contingencies	4,918,010	
Total Reserves		37,349,378
Grand Total		$168,194,061

Note.—At December 31, 1922, there was in the hands of the Trustees $7,513,056 to make payment of the balance due on 7% Convertible Gold Bonds called for redemption October 1, 1922, and 5% First Mortgage Bonds matured December 31, 1922, not presented to the Trustees for payment at December 31, 1922. These items are therefore not included in the above balance sheet.

The stated capital of the Company as shown in its Certificate of Incorporation includes $5.00 for each share of common stock.

R. H. Gregory, Comptroller.

[fol. 5293] Annual Report of Western Electric Company, Incorporated

For the Year Ending December 31, 1923

[fol. 5294] Annual Report of the Western Electric Company, Incorporated, for the Year 1923

[fol. 5295] Western Electric Company, Incorporated, 195 Broadway, New York

March 17, 1924.

To the Stockholders:

The following report on the business of Western Electric Company, Incorporated, for the year 1923 is respectfully submitted.

Sales

The total sales of your Company billed during 1923 were $255,177,000, which compares with 1922 as follows:

	1922	1923
To Bell Telephone Companies	$158,614,000	$185,969,000
To Other Domestic Customers	50,340,000	65,713,000
To I. W. E. Co. for Export	1,987,000	3,495,000
	$210,941,000	$255,177,000

Under sales there is included the merchandise not of Western Electric manufacture which the Company procures for and furnishes to telephone companies as their purchasing agents and storekeeper.

The sales to the Company's subsidiary, the International Western Electric Company, Inc., are for export exclusively and are further referred to in this report under the heading Foreign Department.

Sales to Other Domestic Customers represent an increase of 31% and to Bell Telephone Companies an increase of 17% over 1922.

The aggregate is considerably more than was estimated at the beginning of the year and represents the largest volume of business ever reached by your Company in any year of its history.

The sales for the past several years have been as follows:

[fol. 5296]

1914	$66,409,000
1915	63,852,000
1916	106,987,000
1917	150,340,000
1918	145,226,000
1919	135,722,000
1920	206,112,000
1921	189,765,000
1922	210,941,000
1923	255,177,000
Total for ten years	$1,530,531,000

Earnings

The net earnings for the year after providing for the usual depreciation of plant and for all taxes were as shown in the Comptroller's statement appended hereto	$10,079,471
Deduct Interest on Borrowings	1,159,958
Balance	$8,919,513

Out of which were paid Dividends		
7% on Preferred Stock	$1,727,572	
$10 per share on Common Stock	5,000,000	
		6,727,572
Balance carried to Common Stock		$2,191,941

The net earnings as stated above, $10,079,471, were 8.1% on the average capital stock and interest bearing obligations for the year.

Prospect

The unfilled orders of your Company at December 31, 1923, aggregated $94,951,000, as compared with $62,069,000 at the end of 1922 and $75,525,000 at the end of 1921. The unusually large volume of unfilled orders is chiefly in large switchboards made to order and requiring approximately two years for their engineering, manufacture and installation.

In all dpartments of your Company's work the prospects are for great activity during 1924 and for billings substantially exceeding the high record of 1923.

General Organization

The general organization of your Company and its subsidiary companies comprises four main departments, the head of each of which reports to the President.

[fol. 5297] The General Staff Department, through several departments—Legal, Accounting, Treasury, Purchasing and Traffic, and Publicity—provides the specialized services indicated by their names for the three main operating departments:

The Telephone Department.
The Supply Department.
The Foreign Department.

Telephone Department

The function of this Department is to serve the Bell Telephone System in the development and manufacture of apparatus and the warehousing and distribution of its apparatus and supplies throughout the country.

Although the Bell Telephone Operating Companies are under no contractual obligation to purchase anything from or through your Company, nevertheless in actual practice it is to their advantage to so purchase nearly all they require.

Every piece of apparatus is designed to meet their needs and to harmonize with what is already in use and what is projected for the future. This is of vital importance in a nation-wide telephone plant which is growing and expanding and which must always provide complete intercommunication throughout all parts of the country. The facilities provided by your Company both in manufacture and distribution have become by a process of evolution over many years specially adapted to the needs of the Bell Companies. The prices charged them are uniform to them all and are under their constant review and check. Because of the quantity production of standardized apparatus and the elimination of usual selling and exploitation expenses, these prices, as has been repeatedly demonstrated in court and commission proceedings, are on a considerably lower level than that of other manufacturers. Finally the Bell Companies are assured of a continuity of supply of established quality even in times of extraordinary demand. It is an obligation of your Company to provide necessary facilities as the course of business may demand.

In effect the practical operation of the arrangement is that your Company is that part of the Bell Telephone System which is responsible for manufacture and supply.

The recent extraordinary growth of the Bell System has made the obligation of your Company to provide the necessary facilities for manufacturing a matter of great im-[fol. 5298] portance. From 1919 to 1924 the requirements increased three-fold. This rapid expansion has been met by various measures, some permanent, others of an emergency character.

Among these measures the following may be specifically mentioned, several of them having been started during the past year.

New buildings have been erected at Hawthorne and equipped with machinery.

Additional space for manufacturing has been made available by moving stocks of materials to rented quarters.

Overtime work has been resorted to generally and in some departments all-night crews are employed, pending completion of additional facilities.

Two auxiliary factories have been established in rented quarters in Chicago. These now employ about 1,250 men and women.

One auxiliary factory has been started at Newark and another at Jersey City. Both of these are in rented quarters and their work will eventually be transferred to the Kearny plant.

The repair shops at distributing houses have been and are being expanded to take on some kinds of work formerly done at Hawthorne for which their facilities are suitable.

Arrangements have been made with other manufacturers of telephone equipment, among them the Automatic Electric Company of Chicago, the Stromberg-Carlson Manufacturing Company of Rochester, and the Kellogg Switchboard and Supply Company of Chicago, by which they make to Bell specifications certain types of apparatus. Many piece parts and tools are now being supplied by outside manufacturers.

In the report of last year announcement was made of the purchase of a plot of 55 acres on the Passaic River at Kearny, N. J., for a future manufacturing plant. Construction work there has been progressing steadily during the past year. The plant for the manufacture of lead-covered cable is to have a capacity substantially equal to that at Hawthorne two years ago and will probably be in operation by the end of 1924. This will be followed by a first group of buildings for the manufacture of telephone apparatus which it is expected will be ready for operation in 1925. The expected cost of the Kearny plant as at present contemplated is approximately $20,000,000 and the general plans provide for such further construction [fol. 5299] as may be found necessary in the future.

The large and increasing volume of the Telephone Department's operations is partially indicated by the number of employees in its various groups as follows:

Manufacturing—33,000, an increase of 8,000 during the year. They are mostly concentrated at the Hawthorne plant on the western edge of Chicago but the auxiliary factories already have a considerable number which will rapidly increase during 1924.

Installation—18,400, an increase of 2,400 during the year. A large group of these is located at Hawthorne preparing equipment specifications, but most of them are engaged in various cities throughout the country installing switchboards.

Engineering—3,300, in the Bell System Laboratories at 463 West Street, New York.

Sales and Distribution—6,300, an increase of 1,800 during the year. They carry on the supply service for the Bell Companies, operating the central warehouses at Hawthorne and thirty-one distributing houses throughout the country.

During the year new distributing houses were established at Washington and Indianapolis, and arrangements were made to open another at Milwaukee. New and modern warehouses were also erected at Minneapolis and St. Louis, and increased capacity is being provided at Philadelphia, Dallas, Seattle, Emeryville (near San Francisco) and Los Angeles.

With the establishment of the Milwaukee house early in 1924, your Company now has a main distributing house at the headquarters of each Bell Telephone Company. These, with their fifteen branch warehouses, constitute a complete and comprehensive distribution system.

The floor space contained in these various distributing houses, general warehouses and sub-warehouses approximates two million square feet. The value of merchandise carried in them is approximately thirty-one million dollars.

During 1923 your Company completed the installation of 24 new central offices and additions to 12 existing offices of the panel type of machine switching having a capacity of [fol. 5300] 136,000 lines and making a total of this type of equipment now installed (including an earlier variety known as "semi-mechanical") of 38 central offices having a capacity of 212,000 lines.

The step-by-step type of machine switching manufactured to Bell specifications has been installed during the year in 14 central offices having a capacity of 47,000 lines and making a total of 42 central offices and 177,200 lines of this type furnished to the Bell Companies since 1919.

Notwithstanding the increasing use of machine switching systems, commonly called by the public "automatic" or "dial", the demand for manual switchboards continues to grow. Of the largest type of manual switchboards, known as the No. 1, your Company's output in the past few years has been: 1919, 767 sections; 1920, 924 sections; 1921, 1,268 sections; 1922, 1,420 sections; 1923, 1,745 sections.

Likewise the output of subscribers station equipment has been increasing. In 1923, 1,120,000 desk sets and 200,000 wall sets were produced.

In lead-covered cable for telephone lines, both aerial and underground, the production has increased from 10 billion conductor feet in 1920 to 24 billion conductor feet in 1923.

Prices of telephone apparatus as a whole have not been substantially changed during the year, although raw material costs with a few exceptions and wages have increased. It is the policy of your Company to keep its prices to the Bell Telephone Companies on the lowest basis consistent with a fair return. Production in increasing quantity and renewed efforts in the direction of manufacturing methods and better design have overcome the advances in material and labor costs and the greater expense of overhead through operating in several places and under forced draft.

The Telephone Department's total billings for 1923 were $198,537,000 an increase of $30,217,000 over the previous year. These billings include $10,378,000 to the Supply and Foreign Departments. The average capital employed by the Telephone Department during the year was $102,500,000 on which its net earnings were $7,577,000 or 7.4%.

Supply Department

The function of this Department is the merchandising of electrical supplies of every kind throughout the United States. It operates for that purpose forty-seven distribut- [fol. 5301] ing houses in the principal cities from which its customers, now numbering about 35,000 and located in every section of the country, are supplied.

The business is highly competitive and its results depend chiefly upon the active, forceful and continued selling efforts of these local distributing organizations, and their ability to serve their customers promptly with well assorted lines of merchandise. General headquarters establishes policies and methods, provides catalogues, bulletins and national advertising, and through constant assistance and supervision by specialists on various phases of the work holds the entire organization together.

Most of the merchandise handled by this Department is purchased by it from other manufacturers but it also serves as the selling and distributing outlet for manufactures of your Company to others than the Bell Telephone Companies.

During 1923 the volume of business carried on by the Supply Department was larger than in any previous year except 1920, in fact reaching a volume comparable with the total business of your Company in pre-war years.

Although the margins of gross profits, greatly reduced by the demoralized conditions of the trade in 1921, have not fully recovered, a strict economy in operating expenses and a high degree of efficiency in obtaining more rapid turnover of merchandise and receivables enabled the Department to earn in 1923 a satisfactory return on the capital employed.

The average capital employed during the year was about $8,900,000 on which a return of approximately 17.3% was earned as compared with 8.4% in 1922.

The prospect for 1924 is for a good volume of business. Building is still continuing at a high rate, industrial concerns on the whole are fairly busy, and the public utilities have extensive programs for the needed extension and betterment of their plants.

Foreign Department

The foreign business of your Company including export from the United States is conducted through the International Western Electric Company, Incorporated, to which, upon its organization in 1918, your Company sold and conveyed all of its export and foreign business and assets. All of the issued capital stock of the International [fol. 5302] Company—55,000 shares of Preferred having a par value of $100 per share and 100,000 shares of Common without par value—is owned or controlled by your Company. Such additional capital as has been required for its expansion has been advanced by your Company, the total capital and advances being shown in the Balance Sheet. This amount, representing your Company's investment in its Foreign Department, was at the close of the year $14,476,865, a reduction of $658,696 during the year.

The International Company owns interests in or has contractual relationships with numerous companies throughout the world engaged in a business of similar character to that of your Company in the United States. The list appended to this report indicates something of the widespread extent of these interests and relationships.

As to the business conditions during the past year in the field covered by these various companies, it may be said that on the whole there was an improvement over the previous year. It is still true, however, and particularly so in continental Europe, that the extreme pressure to reduce governmental budgets has a retarding effect on much needed telephone development. If telephone finance were separate from government finance the telephone systems in nearly all European countries would be growing faster than they are, very much to the economic advantage of their peoples.

In some cases there is a growing recognition of this and in some directions real progress is being made, notably in various projects for long cables equipped with loading coils and repeaters which without doubt will eventually become the nucleus of a comprehensive toll system for Europe.

It has been and is the policy of the International Company to attempt to supply from the United States only those foreign customers for whom manufacture within their countries is uneconomical or impracticable. The trend is clearly toward national manufacture of telephone equipments wherever and whenever the demand within a country is sufficient to support an effective factory. This trend is retarded practically by the considerable number of competitors in telephone apparatus, principally English, American, German and Swedish, who compete with each other with apparatus made in their home factories.

The International Company aims rather to supply to foreign factories the American telephone technique and to invest its own capital only where American capital is welcomed and fairly treated.

[fol. 5303] Mention should be made of the serious effects of the earthquake of September 1, 1923, on the Japanese affiliated company, the Nippon Electric Company, Ltd., at Tokyo, where a modern manufacturing plant was largely wrecked and one hundred employees, including an American technical adviser, were killed.

Everything possible was done to relieve the distress of those afflicted. The financial loss was about $1,250,000 which, however, was covered by the Nippon Company's reserves. The plant has been temporarily reconstructed to about 50% of its former capacity and plans are under way for its complete rehabilitation.

(The sales of the International Company and its principal foreign affiliated companies, excluding all inter-company sales, were in 1923 approximately $36,500,000, reckoning them into dollars at the current rates of exchange. This compares with $35,000,000 in 1922.)

The export billings from the United States by the International Company were $5,715,000 of which your Company furnished, as shown in the first page of this report, $3,495,000 a substantial increase over the previous year.

The International Company's net earnings in 1923 were $1,561,129, which amount was sufficient to provide for interest, for dividends at the rate of 7% on its Preferred Stock, and for a dividend of $1.40 per share on the Common Stock, leaving a substantial balance. For the period since its incorporation in 1918, the International Company has paid to your Company in the form of interest and dividends approximately 7% per annum on its investment and has built up a reasonable surplus.

Recent Special Activities

In carrying on your Company's engineering work, it sometimes happens that new principles are discovered which, although relatively unimportant in furthering the main activities of your Company, are so closely related to its technical work that it seems desirable to give them special study and attention. Such studies assist in developing a comprehensive viewpoint of the art of electrical communication as a whole and in some cases result in specific inventions and improvements. Some of these recent developments and some of the recent activities of your Company in new lines of manufacture may be briefly mentioned as follows:

Radio.—During the past year extensive changes have been made in equipment for radio telephone broadcasting [fol. 5304] whereby speech and music may be broadcast with a higher degree of fidelity than has in the past obtained. In addition to improvement made in broadcasting equipments of medium power, a high power quality set has also been produced.

Your Company has also developed receiving sets of the quality required for the proper reception of the matter transmitted by these broadcasting sets and, so far as permitted by its patents and license rights, is prepared to manufacture and sell this equipment as well as other radio telephone apparatus.

Your Company has also carried out successful development work for the United States Navy, which has resulted in the production of a number of high power radio telegraph sets for use on battleships.

Aids to Hearing.—For the aid of persons with impaired hearing two interesting and useful types of devices have been produced.

A. A device known as the "audiometer", capable of measuring hearing to enable physicians to determine what sort of equipment a partially deaf person requires to improve hearing.

B. A device to aid hearing known as the "audiphone", to be prescribed by the physician from measurements made with the audiometer, mentioned above.

This work was undertaken not only because of a demand on the part of the public but because it was found that the well known principles of the vacuum tube amplifier could be successfully applied in assisting those whose hearing is impaired.

Submarine Cable.—During the year, the experimental length of deep sea type of cable referred to in the 1922 annual report was manufactured and laid in Bermuda waters. The tests on this experimental length confirmed our calculations as to the efficiency of this type of cable, and the Western Union Telegraph Company has placed an order on the Telegraph Construction and Maintenance Company, Limited, of London, for a cable of this type to be laid between New York and the Azores. This cable is to be manufactured under the direct supervision of your Company's engineers and the special material for it known as "permalloy", which makes possible the high speed of operation, [fol. 5305] has already been manufactured at Hawthorne and shipped to the Telegraph Construction and Maintenance Company, Limited.

Catalina Cable.—In June, 1923, two submarine cables of a new type having several novel and important features of construction were laid by the Pacific Telephone and Telegraph Company between San Pedro on the California Coast and the Island of Santa Catalina. These cables, each having a length of twenty-seven statute miles, were designed by your Company and manufactured in its Hawthorne Shops.

The particular point of interest in connection with these cables is the employment of a special form of insulation to take the place of the gutta percha normally employed in submarine cables. The employment of this insulation results in improved electrical and mechanical characteristics.

Public Address Systems.—In the report to stockholders for the year 1922, mention was made of the important progress by your Company in the development of electrical devices for amplifying and projecting the voice of a speaker so that he could be heard by very large audiences.

During the year 1923 a total of seventy-eight permanent installations of Public Address Systems were made in such places as municipal parks, civic auditoriums, cathedrals, churches, theatres, motion picture houses and hotels, and in addition to these permanent installations, public address apparatus mounted on special automobile trucks was provided for seventy-seven different temporary occasions.

Wire Mill.—A rod-mill and wire drawing plant for the manufacture of copper wire, the construction of which was started in the fall of 1922 at the Hawthorne Works, was completed during the year and is now in successful operation.

The plant has an area of 92,000 square feet of floor space and is equipped with modern copper rod rolling machinery and accessory equipment and with new forms of wire-drawing machinery designed and built at Hawthorne. Its capacity is sufficient to provide for a considerable proportion but not all of your Company's requirements for copper wire. It will, moreover, afford improved facilities for meeting the more difficult requirements for some of your Company's products.

During the year part of this wire drawing equipment was temporarily installed and operated and the results indicate savings in cost sufficient to make a satisfactory return on the plant investment.

[fol. 5306]

Finance

At the end of 1923 your Company's capitalization was as follows:

Common stock. No par value. 500,000 shares, of which the book value was	$77,123,767
Preferred Stock. 7% cumulative. Par value $100 per share, redeemable at $110 per share	24,679,600
Total	$101,803,367

Of the Common Stock over 98% is owned by the American Telephone and Telegraph Company. The Preferred Stock is owned by 8,717 shareholders, living in nearly all the states of the Union and in several foreign countries, the average holding being twenty-eight shares.

Your Company's financial requirements for the year incident to its expanding business were met by increasing its general bills payable from $12,000,000 at the beginning of the year to $35,000,000 at its close. This $35,000,000, together with $705,659 of trade acceptances and bills receivable discounted at banks, represent the total amount of interest-bearing obligations of your Company at the end of the year.

Employees

Following is a comparison of the total number of your Company's employees at the end of several years:

1914	15,650	1919	27,584
1915	17,135	1920	39,650
1916	26,878	1921	45,243
1917	30,737	1922	51,162
1918	26,126	1923	63,808

(These figures do not include employees of the International Western Electric Company, Inc., which with its owned subsidiaries had at the end of 1923, 7,956 employees.)

The Employees' Benefit Fund, maintained entirely at the Company's cost, provides for payments in cases of accident, sickness, retirement for age or disability, and death. The total payments from this fund in 1923 amounted to $858,332 and were made to 10,120 beneficiaries, including pensioners who numbered 137 at the end of the year.

[fol. 5307] The employees of your Company have been enabled to participate in the successive plans offered by the American Telephone and Telegraph Company for the purchase of its stock by installment payments. Up to December 31, 1923, about 15,800 employees had thus acquired and paid in full for 86,300 shares and 8,500 employees were making regular payments on 46,600 shares.

The continuing and rapid growth of your Company's business has not only opened the way for promotion to those who could demonstrate their capacity for it, but it has also attracted great numbers of newcomers into the Company's service. One of the responsibilities of your directors is to see to it that these newer employees are given the opportunity to learn about the character of the Company and the ideals which for more than fifty years have guided and inspired its practical policies. First in importance of these policies is fair treatment as represented by the best possible working conditions and the highest wages consistent with the market. This policy, repeatedly stated in these reports and elsewhere, is understood by the older employees and the constantly growing number of those with long service records is evidence that they value it. They have had experience too of the provisions which the Company makes for them in such exigencies as sickness, injury and other disabilities, for vacations, for financial help in emergencies and for assisting them to save. They are familiar with the advantages open to all in the social, recreational, educational and athletic activities for which the Company provides facilities. They constitute the backbone of the morale of the Company. But the younger employees of today will be the older employees of tomorrow. It is of great and increasing importance that they be given opportunities to fit themselves for higher grades of work and to develop their mental capabilities, so that positions of responsibility may be filled in the future as in the past from the ranks of those trained in the Company.

At Hawthorne, in addition to the special training courses maintained on Company time for accepted college graduates, for stenographers, and for young men of technical ability who have inclinations toward tool designing, there are evening classes in some fourteen subjects planned to be of special interest and value to those desiring to get ahead in the Company. These courses are conducted at only nominal expense to students by the Hawthorne Club with the ~~hearty~~ cooperation and support of the Company, and cover such subjects as telephone practice, practical mathematics, mechanical drawing, business English, production and manufacturing principles, accounting and typewriting.

Similarly in the Engineering Department at New York [fol. 5308] special courses are conducted by the staff covering the principles and practices important for advancement in the engineering work of your Company and ranging all the way up to higher mathematics and physics.

In all these classes carried on outside of working hours and involving also outside study and preparation and voluntary alike on the part of both students and instructors, more than 3,000 employees are enrolled.

The directors of your Company desire to express to you and in no perfunctory phrases their conviction that the exceptional record made during the past year has been directly due to the extraordinary efforts made by all ranks of employees with a spirit of devotion, courage and good-will for which no words can express too high an appreciation.

For the directors.

C. G. Du Bois, President.

[fol. 5309]

X-353

Western Electric Company, Incorporated

Including the Owned Subsidiaries, Western Electric Company, Incorporated, of Delaware, Western Electric Company, Incorporated, of California

Earnings for Twelve Months Ending December 31, 1923

Sales	$255,177,122	
Other Income	1,302,874	
		$256,479,996
Cost of Merchandise	$225,751,351	
Expenses	18,239,356	
Taxes	2,409,818	
		246,400,525
Available for Interest and Dividends		$10,079,471
Interest Deductions	$1,159,958	
On Preferred Stock 7% per annum	1,727,572	

Dividends:		
On Common Stock, $10.00 per share, 500,000 shares	5,000,000	
		7,887,530
Balance Carried to Common Stock		$2,191,941

R. H. Gregory, Comptroller.

[fol. 5310] X-353

Western Electric Company, Incorporated

Including the Owned Subsidiaries, Western Electric Company, Incorporated, of Delaware, Western Electric Company, Incorporated, of California

Balance Sheet, December 31, 1923

Assets:		
Land, Buildings and Permanent Fixtures	$23,449,884	
Machinery, Tools and Other Equipment	33,915,918	
		$57,365,802
Investment in and Advances to International Western Electric Company, Incorporated		14,476,865
Other Investments		2,238,820
Merchandise, Materials and Supplies	69,349,002	
Trade Acceptances and Bills Receivable	1,066,727	
Accounts Receivable	44,311,960	
Prepaid Charges	462,556	
Marketable Securities	108,000	
Cash	12,053,342	
Total Working Assets		127,351,587
Grand Total		$201,433,074

Liabilities:		
Common Stock, no Par Value, 500,000 Shares Authorized and Issued	$77,123,767	
Preferred Stock, 7% Cumulative, Par Value $100	24,679,600	
Total Capital Stock		$101,803,367
Bills Payable	$35,000,000	
Trade Acceptances and Bills Receivable Discounted	705,659	
Interest and Taxes Accrued not due	2,655,755	
Accounts Payable	20,056,533	
Total Current Liabilities		58,417,947
Reserve for Depreciation on Plant and Equipment	$34,404,141	
For Employees' Benefit Fund	2,000,000	
For Contingencies	4,807,619	
Total Reserves		41,211,760
Grand Total		$201,433,074

The stated capital of the Company as shown in its Certificate of Incorporation includes $5.00 for each share of common stock.

R. H. Gregory, Comptroller.

[fol. 5311] Western Electric Company, Incorporated, 195
Broadway, New York

March 17, 1924.

To the Stockholders:

The following report on the business of Western Electric Company, Incorporated, for the year 1923 is respectfully submitted.

Sales

The total sales of your Company billed during 1923 were $255,177,000, which compares with 1922 as follows:

	1922	1923
To Bell Telephone Companies	$158,614,000	$185,969,000
To Other Domestic Customers	50,340,000	65,713,000
To I. W. E. Co. for Export	1,987,000	3,495,000
	$210,941,000	$255,177,000

Under sales there is included the merchandise not of Western Electric manufacture which the Company procures for and furnishes to telephone companies as their purchasing agent and storekeeper.

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Prospect

The unfilled orders of your Company at December 31, 1923, aggregated $94,951,000 as compared with $62,069,000 at the end of 1922 and $75,525,000 at the end of 1921. The unusually large volume of unfilled orders is chiefly in large switchboards made to order and requiring approximately two years for their engineering, manufacture and installation.

In all departments of your Company's work the prospects are for great activity during 1924 and for billings substantially exceeding the high record of 1923.

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The sales of the International Company and its principal foreign affiliated companies, excluding all inter-company [fol. 5312] sales, were in 1923 approximately $36,500,000, reckoning them into dollars at the current rates of exchange. This compares with $35,000,000 in 1922.

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Recent Special Activities

In carrying on your Company's engineering work, it sometimes happens that new principles are discovered which, although relatively unimportant in furthering the main activities of your Company, are so closely related to its technical work that it seems desirable to give them special study and attention. Such studies assist in developing a comprehensive viewpoint of the art of electrical communication as a whole and in some cases result in specific inventions and improvements. Some of these recent developments and some of the recent activities of your Company in new lines of manufacture may be briefly mentioned as follows:

Radio.—During the past year extensive changes have been made in equipment for radio telephone broadcasting whereby speech and music may be broadcast with a higher degree of fidelity than has in the past obtained. In addition to improvement made in broadcasting equipments of medium power, a high power high quality set has also been produced.

Your Company has also developed receiving sets of the quality required for the proper reception of the matter transmitted by these broadcasting sets and, so far as permitted by its patents and license rights, is prepared to manufacture and sell this equipment as well as other radio telephone apparatus.

Your Company has also carried out successful development work for the United States Navy, which has resulted in the production of a number of high power radio telegraph sets for use on battleships.

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Public Address Systems.—In the report to stockholders for the year 1922, mention was made of the important progress by your Company in the development of electrical devices for amplifying and projecting the voice of a speaker so that he could be heard by very large audiences.

[fol. 5313] During the year 1923 a total of seventy-eight permanent installations of Public Address Systems were made in such places as municipal parks, civic auditoriums, cathedrals, churches, theatres, motion picture houses and hotels, and in addition to these permanent installations, public address apparatus mounted on special automobile trucks was provided for seventy-seven different temporary occasions.

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[fol. 5314] **Western Electric Company, Incorporated**

Including the Owned Subsidiaries, Western Electric Company, Incorporated, of Delaware, Western Electric Company, *Incorporated*, of California

Balance Sheet, December 31, 1923

Assets:		
Land, Buildings and Permanent Fixtures	$23,449,884	
Machinery, Tools and Other Equipment	33,915,918	
		$57,365,802
Investment in and Advances to International Western Electric Company, Incorporated		14,476,865
Other Investments		2,238,820
Merchandise, Materials and Supplies	$69,349,002	
Trade Acceptances and Bills Receivable	1,066,727	
Accounts Receivable	44,311,960	
Prepaid Charges	462,556	
Marketable Securities	108,000	
Cash	12,053,342	
Total Working Assets		127,351,587
Grand Total		$201,433,074
Liabilities:		
Common Stock, no Par Value, 500,000 Shares Authorized and Issued	$77,123,767	
Preferred Stock, 7% Cumulative, Par Value $100	24,679,600	
Total Capital Stock		$101,803,367
Bills Payable	$35,000,000	
Trade Acceptances and Bills Receivable Discounted	705,659	
Interest and Taxes Accrued not due	2,655,755	
Accounts Payable	20,056,533	
Total Current Liabilities		58,417,947
Reserve For Depreciation on Plant and Equipment	$34,404,141	
For Employees' Benefit Fund	2,000,000	
For Contingencies	4,807,619	
Total Reserves		41,211,760
Grand Total		$201,433,074

The stated capital of the Company as shown in its Certificate of Incorporation includes $5.00 for each share of common stock.

R. H. Gregory, Comptroller.

[fol. 5315] Western Electric Company, Incorporated

Report to Stockholders for Year Ending December 31, 1924

[fol. 5316] Western Electric Company, Incorporated, 195 Broadway, New York

March 23, 1925.

To the Stockholders:

The following report on the business of Western Electric Company, Incorporated, for the year 1924 is respectfully submitted.

Sales

The total sales of your Company billed during 1924 were $298,281,000, which compares with 1923 as follows:

	1923	1924
To Bell Telephone Companies	$185,969,000	$233,300,000
To Other Domestic Customers	65,713,000	60,708,000
To I. W. E. Co. for Export	3,495,000	4,273,000
	$255,177,000	$298,281,000

Under sales there is included the merchandise not of Western Electric manufacture which the Company procures for and furnishes to telephone companies as their purchasing agent and storekeeper. (P. 161)

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The estimated requirements over the next five years indicate that with all emergency measures eliminated both the Hawthorne and Kearny plants, operated at about normal capacity, will meet the demands. (P. 164)

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During 1924 your Company completed the installation of twenty-three new central offices and sixty-two additions to existing offices of panel type machine switching, equipped for 227,000 lines. In addition, five new central offices and five additions to existing offices, equipped for 23,000 lines, were installed by one of the Associated Companies, making a total of twenty-eight new offices and sixty-seven additions completed during the year, equipped for 250,000 lines. This makes a total of this type of equipment now installed of [fol. 5317] sixty-six central offices and 453,000 lines.

The step-by-step type of machine switching manufactured to Bell specifications has been installed during the year in eight new offices and sixteen additions to existing offices, providing equipment for 92,000 lines and making a total of fifty central offices and 254,000 lines of this type furnished to the Bell Companies since 1919.

There was a decided increase in the demand for manual switchboards during the past year. Of the largest type of manual switchboard, known as the No. 1, your Company's output in the past few years has increased from 767 sections in 1919 to 1,745 in 1923, and finally to 2,491 in 1924. (Pp. 164-165)

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Substantial reductions were made in telephone apparatus prices to the Bell Telephone Companies during the year, with the result that the general level of these prices at the end of the year was 17% below the peak prices of 1921, and was only 37% above the pre-war level as compared with 60% for general commodities. Although prices were changed on many classes of apparatus, the bulk of the reductions were in the prices of panel, step-by-step, and manual central office equipment. (P. 165)

[fol. 5318] The trend in shop wages during 1924 was slightly upward while in raw materials the trend was downward until the latter part of the year when it turned upward. The reductions in prices were made possible by greater quantity production and by continued efforts toward better manufacturing methods. The lesser production scheduled for 1925 and the upward trend of material prices if it continues indicate that telephone apparatus prices cannot be further decreased in the near future and may have to be increased. The established policy of your Company is to keep its prices to the Bell Telephone Companies on the lowest basis that will, on the average, produce a fair return on the investment. (P. 166)

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The total sales of the International Company and its principal foreign allied companies, excluding all inter-company sales, were in 1924 approximately $43,800,000, reckoning them into dollars at the current rates or exchange. This compares with $36,500,000 in 1923. The export billings from the United States by the International Company were $6,773,000, of which your Company furnished, as shown on the first page of this report, $4,273,000, a substantial increase over the previous year. (Pp. 168-169)

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Bell Telephone Laboratories, Incorporated

Since 1907 your Company has directly operated the laboratories at 463 West Street, New York, for the joint use of the American Telephone & Telegraph Company and of your Company. The increasing volume of the work there carried on, its necessarily close relationship to the American Telephone & Telegraph Company's Department of Research and Development, and the need for still further coordination of the scientific work in the art of communication have made it desirable that it should be organized as a separate corporation owned jointly by the American Telephone & Telegraph Company and the Western Electric Company. This plan, carefully considered for several months, was made effective January 1, 1925 and the Bell Telephone Laboratories, Incorporated is now operating, its expenses being divided between its two owner Companies in proportion to the volume and character of the work done for them. (P. 169)

[fol. 5318a] As of April 1, 1924 your Company sold $35,000,000 Twenty Year 5% Gold Debenture Bonds. These bonds are subject to redemption at the option of the Company at 105% on April 1, 1934 or on any interest payment date thereafter to and including October 1, 1940, and at 100% on April 1, 1941 or on any interest payment date thereafter prior to maturity on April 1, 1944. The proceeds of these Debenture Bonds were used in part for additions to plant and in part to retire outstanding short term Bills Payable. The discount on these Debenture Bonds has been charged against the earnings of the year. (P. 170)

P. 175

[fol. 5319] **Western Electric Company, Incorporated**

Including the Owned Subsidiaries, Western Electric Company, Incorporated, of Delaware, Western Electric Company, Incorporated, of California.

Balance Sheet, December 31, 1924

Assets:		
Land, Buildings and Permanent Fixtures	$30,387,700	
Machinery, Tools and Other Equipment	41,409,532	
		$71,797,232
Investment in and Advances to International Western Electric Company, incorporated		13,523,097
Other Investments		2,280,546
Merchandise, Materials and Supplies	$67,952,558	
Trade Acceptances and Bills Receivable	800,940	
Accounts Receivable	45,735,932	
Prepaid Charges	913,090	
Marketable Securities	138,000	
Cash	9,920,018	
Total Working Assets		124,820,538
Grand Total		$212,421,413
Liabilities:		
Common Stock, no Par Value, 500,000 Shares Authorized and Issued	$80,523,125	
Preferred Stock, 7% Cumulative, Par Value $100	24,679,600	
5% Gold Debenture Bonds, 1944	35,000,000	
Total Capital Liabilities		$140,202,725
Trade Acceptances and Bills Receivable Discounted	$595,533	
Interest, Taxes and Other Accruals not due	4,771,420	
Accounts Payable	17,501,759	
Total Current Liabilities		22,868,712
Reserve For Accrued Depreciation on Plant and Equipment	$40,490,901	
For Employees' Benefit Fund	4,000,000	
For Contingencies	4,859,075	
Total Reserves		49,349,976
Grand Total		$212,421,413

The stated capital of the Company as shown in its Certificate of Incorporation includes $5.00 for each share of common stock.

R. H. Gregory, Comptroller.

[fol. 5320] Western Electric Company, Incorporated

Report to Stockholders for Year Ending December 31, 1925

[fol. 5321] March 22, 1926.

To the Stockholders:

The past year has been marked by three important changes in the structure of your Company.

At January 1, 1925, the Bell Telephone Laboratories, Incorporated, owned jointly by your Company and the American Telephone and Telegraph Company, took over the work formerly carried on by your Company's Engineering Department. This has resulted in a better coordination of the scientific work for the Bell System.

As of September 30, the entire capital stock of the International Western Electric Company, Incorporated, which directly and through its foreign subsidiaries carried on your Company's foreign business, was sold to the International Telephone and Telegraph Corporation. The effect of this is to limit the Company's geographical sphere of action substantially to that of the Bell System, namely, the United States and Canada.

At December 31, the Company's Supply Department, conducting a merchandising business through out the United States in all kinds of electrical supplies, was turned over to a new corporation, the Graybar Electric Company, Inc., all of whose $15,000,000 capital stock is owned by your Company.

All of these changes have been duly approved by unanimous vote at meetings of the Stockholders.

So far as can be foreseen the structural changes in the Company are now completed. Its direct activities henceforth center about the furnishing of equipment and supplies to the Bell System, though it has an outlet in the foreign field for its principal products and inventions through the International Standard Electric Corporation (formerly International Western Electric Company, Incorporated) and in the United States for such of its products as are not required by the Bell System through the Graybar Electric Company, Inc. (P. 184)

[fol. 5322]

Sales

The total sales of your Company billed during 1925 were $297,729,000 which compares with 1924 as follows:

	1924	1925
To Bell Telephone Companies	$233,300,000	$226,701,000
To Other Domestic Customers	60,708,000	67,585,000
To Export Customers	4,273,000	3,443,000
	$298,281,000	$297,729,000

Under sales, theer is included the merchandise not of Western Electric manufacture which the Company procures for and furnishes to telephone companies as their purchasing agent and storekeeper. (P. 185) * * *

Prices

The apparatus and supplies furnished to the Bell Telephone Companies fall generally into three groups as to prices.

Telephone supplies not manufactured by the Company are billed at cost including an amount sufficient to cover expenses and interest. These prices now average about 57% above the pre-war level.

Lead covered cable prices are based chiefly on the costs of raw materials and are now about 68% above the pre-war level.

Telephone apparatus comprises more than half of the billings to the Bell Telephone Companies. The 1925 level of prices in this group was about 37% above the pre-war level. Reductions made at January 1, 1926, bring it to 33% above the pre-war level and 20% below the high level of 1920-21. The raw materials entering into telephone apparatus now average about 67% above the pre-war level and shop wages are more than double pre-war wages. It is to be noted in this connection that prices of commodities in general are now 59% above pre-war prices.

The prices of telephone equipment have been kept at a relatively low level by greater quantity production, by improved manufacturing methods, by changes in design, by important advances in the field of switchboard installation and generally by an increased efficiency of personnel throughout the entire organization. (P. 192-193)

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[fol. 5323] Sound Recording and Reproduction

Among the important by-products of work done in the Bell Telephone Laboratories, Incorporated, over the past several years on sound transmission, are some improved methods of recording sound on records, such as are used in phonographs, and of reproducing sound from such records.

The commercial exploitation of these inventions has been provided for by giving licenses to certain phonograph companies from whom substantial royalties will accrue to your Company over the next few years, the amounts depending on the sales of records and equipment utilizing such inventions. (P. 193)

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Sale of Foreign Business

The sale of the International Western Electric Company, Incorporated, which directly and through several foreign affiliated companies, conducted your Company's business outside the United States, was announced in August and was completed on September 30, 1925, when its new owners, the International Telephone and Telegraph Corporation, took over the property.

The patent rights and contracts of the International Company relating to submarine cables of the deep-sea and continuously-loaded types, terminal apparatus for such cables and phonograph recording and reproduction were excluded from the sale and remain the property of your Company. The International Company, now known as International Standard Electric Corporation, has made an agreement with your Company for a continuing exchange of patent rights in the field of telephony and telegraphy (except as to certain special applications and uses of telephonic or telegraphic apparatus for purposes not commonly and commercially understood as telephony or telegraphy): and the agreement provides also that the International Company shall continue to act as exclusive distributors outside the United States, Canada and Newfoundland for certain apparatus and merchandise which your Company sells for export.

With respect to employees' pensions, your Company has a continuing liability to reimburse the International Company for pensions in effect on the date of sale and for a pro-rata share of pensions subsequently granted to employees in its service at the date of the sale. A reserve has been set up on your Company's books which, with accruing interest thereon, is calculated to fully meet this liability.

[fol. 5324] The cash received from the sale was $29,306,534. The net profit, including a special dividend from the hitherto undistributed earnings of the International Western Electric Company, Incorporated, paid prior to the sale, and after deducting necessary reserves for all liabilities in connection with the sale, was $15,955,096. (Pp. 194-195)

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[fol. 5325] (Pp. 201-202)

Western Electric Company, Incorporated

Balance Sheet, December 31, 1925

Assets:		
Land, Buildings and Permanent Fixtures at Cost	$32,965,487	
Machinery, Tools and Other Equipment at Cost	40,278,066	
Total		$73,243,553
Investments		17,624,506
Merchandise, Materials and Supplies at Cost or Market whichever is the lower	$55,990,232	
Accounts Receivable	37,613,759	
Prepaid Charges	172,092	
Marketable Securities	10,142,000	
Cash	21,418,305	
Total Working Assets		125,336,388
Grand Total		$216,204,447
Liabilities		
Capital and Surplus Represented by 750,000 shares without par value outstanding (1,000,000 shares authorized).	$101,434,583	
5% Gold Debenture Bonds, 1944	35,000,000	
Total Capital Liabilities		$136,434,583

Interest, Taxes and Other Accruals Not Due..	$5,148,841	
Accounts Payable	16,330,720	
Total Current Liabilities		21,479,561
Reserve for Accrued Depreciation on Plant and Equipment	$41,767,842	
For Employees' Benefit Fund	7,500,000	
For Pension Funds under Agreements with International Standard Electric Corporation and Graybar Electric Company, Inc.	2,708,886	
For Contingencies	6,313,575	
Total Reserves		58,290,303
Grand Total		$216,204,447

The capital of the Company as provided for in its Certificate of Incorporation is $52,500,000.

R. H. Gregory, Comptroller.

[fol. 5326] Western Electric Company, Incorporated

Report to Stockholders for Year Ending December 31, 1926

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[fol. 5327] **Production**

The everchanging character and variety of our products are exemplified by the fact that during the year the manufacture of 1,940 new items of apparatus and equipment was undertaken, for which the necessary tools, machinery and equipment were provided.

Our policy of seeking for the most efficient methods and equipment for manufacture was prosecuted energetically throughout the year, resulting in substantial reductions in manufacturing costs.

During the year a group of multi-story buildings at the Kearny Works was completed, and the manufacturing activities carried on for the past few years in temporary rented quarters in Jersey City and Newark were transferred to Kearny. Studies show a substantial increase in the future demand for toll equipment, i. e., toll cable, carrier current and repeater apparatus, and for machine switching central office equipment, to provide for which your Board has authorized an addition of 225,000 square feet to the buildings of the Kearny Works and the rebuilding of a large portion of the cable manufacturing plant at the Hawthorne Works in order to further increase its capacity. (P. 210)

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Changes in Company Structure

Effective January 1, 1927, a new subsidiary corporation "Electrical Research Products Inc.," was formed to take over that portion of the business and assets of the Western Electric Company, Incorporated, which is not related to the manufacture and distribution of telephone apparatus and supplies. All the stock of the new corporation is owned by your Company.

The field of the Electrical Research Products Inc., includes the commercial development of electrical devices and inventions controlled by your Company and not suitable for distribution through the Graybar Electric Company, Inc., which carries on the distribution of electrical supplies for the general trade. (P. 211)

[fol. 5328] (Pp. 216-217)

Western Electric Company, Incorporated

Balance Sheet, December 31, 1926

Assets:		
Land, Buildings and Permanent Fixtures at Cost	$35,173,957	
Machinery, Tools and Other Equipment at Cost	43,034,163	
Total		$78,208,120
Investments and Marketable Securities		47,385,475
Merchandise, Materials and Supplies at Cost or Market, whichever is the lower	$61,455,789	
Accounts Receivable	40,665,639	
Prepaid Charges	122,318	
Cash	7,454,343	
Total Working Assets		109,698,089
Grand Total		$235,291,684
Liabilities:		
Capital and Surplus Represented by 750,000 shares without par value outstanding.	$108,508,621	
5% Gold Debenture Bonds, 1944	35,000,000	
Total Capital Liabilities		$143,508,621
Interest, Taxes and Other Accruals Not Due	$5,199,522	
Accounts Payable	17,775,078	
Total Current Liabilities		22,974,600

Reserve for Accrued Depreciation on Plant and Equipment	$46,516,764	
For Employees' Benefit Fund	12,500,000	
For Pension Funds under Agreements with Other Companies	2,821,738	
For Contingencies	6,969,961	
Total Reserves		68,808,463
Grand Total		$235,291,684

The capital of the Company as provided for in its Certificate of Incorporation is $52,500,000.

R. H. Gregory, Comptroller.

[fol. 5329] Western Electric Company, Incorporated

Report to Stockholders for Year Ending December 31, 1927

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[fol. 5330] The volume of merchandise sold during the year was approximately 3% greater than in 1926, in which year the sales were the largest in the Company's history up to that time. However, the value of the 1927 sales was about $9,000,000 less than in 1926 owing to the lower prices which obtained for supplies purchased for our customers and price reductions which were put into effect during the year on products of Western Electric manufacture. (P. 225

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Production

The factory output of telephone apparatus and cable was somewhat less than for 1926, due to a general reduction in inventories throughout the year. In several lines, however, there were substantial increases, notably central office equipment of the dial type, toll cable and loading coils.

We shipped to our customers 342,700 lines of dial type central office equipment and 1,356 sections of large multiple and 2,207 sections of small multiple manual type central office equipments. The largest single central office project ever installed by the Company was completed at Cleveland, Ohio. It consisted of 144 sections of toll board, 16,800 lines of dial type central office equipment, together with a large quantity of associated apparatus, having a value of approximately $6,000,000.

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In general, production during the year was conducted on a more uniform and better controlled basis than at any time in the Company's history. This was made possible by close cooperation with the Telephone Companies in planning changes in production rates so as to avoid sudden fluctuations in manufacturing schedules and by continued improvements in our methods and processes, whereby the possibility of manufacturing difficulties interrupting production was greatly reduced.

The experience and efficiency of our installation personnel has continued to improve and this together with the improvement in our methods, tools and engineering work has reduced the cost of installation of central office equipments to our customers.

[fol. 5331] During the year gratifying progress was made in generally increasing the efficiency of our personnel, in developing labor-saving machinery, redesigning product to reduce cost and simplifying and improving methods and processes, which together with a reduction in inventories and better controlled production enabled us to make a substantial reduction in the prices of Western Electric Products. (P. 226)

[fol. 5332] (P. 234)

Western Electric Company, Incorporated

Balance Sheet, December 31, 1927

Assets:		
Land, Buildings, and Permanent Fixtures at Cost	$38,809,592	
Machinery, Tools and Other Equipment at Cost	47,928,965	
Total		$86,738,557
Investments and Marketable Securities		30,242,055
Merchandise, Materials and Supplies at Cost or Market, whichever is the lower	$52,680,988	
Accounts Receivable	38,734,274	
Prepaid Charges	149,704	
Cash	5,186,077	
Total Working Assets		96,751,043
Grand Total		$213,731,655
Liabilities:		
Capital Represented by 3,750 shares without par value outstanding.	$75,000,000	
5% Gold Debenture Bonds, 1944	35,000,000	
Total Capital Liabilities		$110,000,000

Interest, Taxes and Other Accruals Not Due	$4,249,968	
Bills Payable	4,967,000	
Accounts Payable	15,458,625	
Total Current Liabilities		24,675,593
Reserve for Accrued Depreciation on Plant and Equipment	$51,319,208	
For Employees' Benefit Fund	12,431,151	
For Pension Funds under Agreements with Other Companies	2,204,704	
For Self-insured Risks	113,213	
		66,068,276
Surplus		12,987,786
Grand Total		$213,731,655

R. H. Gregory, Comptroller.

[fol. 5333] Western Electric Company, Incorporated

Report to Stockholders for Year Ending December 31, 1928.

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[fol. 5334] Western Electric Company, Incorporated

195 Broadway,
New York, March 6, 1929.

To the Stockholders:

In many respects 1928 has been the most remarkable year in the history of the Western Electric Company. Sales greatly exceeded those of any previous year; net earnings surpassed those of 1927, notwithstanding important price reductions, the effective value of which during the year substantially equalled the entire net earnings for 1927; and appropriations for increasing our manufacturing facilities far exceeded similar appropriations during any previous year. Furthermore, we successfully established in the motion picture field the Western Electric system of recording and reproducing sound with motion pictures, which bids fair to revolutionize the motion picture industry and will undoubtedly have an important influence on the future development of the entire entertainment field (p. 242).

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While the value of the 1928 sales was $34,200,000 greater than for 1927, an increase of 13.5%, the volume handled shows an even larger increase—22%, due to lower prices for supplies which we, as purchasing agent, procured for *our customers*, and to substantial reductions in the prices of products of our own manufacture and for equipment installations. The reductions in the prices of our manufactured products and equipment installations amounted to upwards of $19,000,000 on the 1928 volume of business, and were largely the result of improved methods and processes, increased efficiency of the personnel, and the further introduction of labor-saving machinery (p. 242).

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[fol. 5335] At the close of the year the voting stock of the Graybar Electric Company was sold to the Graybar Management Corporation for $3,000,000 in cash, subject to $6,000,000 par value preferred non-voting stock of the Graybar Electric Company, held by your Company, which stock is to be retired at par over a period of ten years.

The Management Corporation was organized to enable the officers and other employees of the Graybar Electric Company to purchase that Company, and all of the outstanding stock of the Management Corporation is owned by them. No officer or other employee of the American Telephone and Telegraph Company, the Western Electric Company, or any other company owned or controlled by either of those companies, owns any stock of the Graybar Management Corporation.

Your Directors have had this sale under consideration for the past two years owing to the fact that the trend of the Graybar business has been toward an increasing proportion of sales of electric power and lighting supplies furnished by various electrical manufacturers, while the sale of products manufactured by your Company has become a relatively small and decreasing proportion of the Graybar Company's total business. In view of this tendency it was decided to dispose of the Graybar Company. It will, however, continue to distribute in the United States, to customers other than the Bell System, Western Electric products such as telephone apparatus, train dispatching equipment, telephone cable, public address systems, broadcasting equipment, radio loud speakers and scientific equipment.

Production and Distribution

During the first half of the year production was on a slightly higher level than in 1927, but about the middle of the year increasing demands for our products made it necessary to utilize every facility at our command and to resort to overtime and night work in our shops. The 1927 and 1928 outputs of a few significant items illustrate the magnitude of the increase:

[fol. 5336]

	1927	1928	Per cent Increase
Dial type central office equipment, in lines	342,700	455,000	33
Private branch-exchange switchboards	11,600	15,600	34
Loading coils	719,000	1,045,000	45
Telephone repeaters	8,460	15,100	78
Toll cable, in billions of conductor feet	4.7	7.4	58

(p. 244).

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In the summer of 1928 a forecast of long distance telephone apparatus and equipment requirements for 1929 indicated a greatly increased demand. To meet this demand and to provide for increasing demands in the future, your Board deemed it advisable to authorize another Manufacturing Works to supplement Hawthorne and Kearny. Accordingly, a site containing about 135 acres of land has been purchased on the Bay of the Patapsco River in the city of Baltimore, Maryland. Plans are nearly completed for the immediate erection of the first manufacturing unit, a cable plant, which will double our capacity for the manufacture of toll cable. It is expected that this unit will be in operation in the latter part of 1929 and will be followed by the erection of two additional units to be completed in the summer of 1930, which will be used for the manufacture of wire products (pp. 244-245).

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The growing demand for the most modern types of telephone equipment increases materially the amount of equipment removed from service by the Telephone Companies and returned to our repair shops for modification and repair, or for recovery of basic materials. Much of this equipment is reconditioned and modernized for use by the Telephone Companies. The volume of this business has shown a steady increase, having amounted to $35,500,000 in 1928, as compared with $18,000,000 five years ago.

Bell Telephone Laboratories, Inc.

The development and design of the products that your [fol. 5337] Company manufactures is done by Bell Telephone Laboratories, which also carries on the fundamental research involved.

These Laboratories, the largest in the industrial world, with more than 4,600 employees, including a highly trained staff of scientists, engineers and technicians, continue to make outstanding inventions and improvements in systems and apparatus for electrical communication by wire, by submarine cable and by radio. It has also continued to carry on successfully, in cooperation with the engineers of the Western Electric Company, improvements in apparatus design directed toward further standardization and more economical manufacture.

Electrical Research Products, Inc.

This Company was organized January 1, 1927, to provide a means for the commercial development, in fields outside the telephone industry, of inventions of the Bell Telephone Laboratories and the Western Electric Company, some of which, while primarily developed for the telephone industry, may be used to advantage in other fields. Notable progress was made during the past year, particularly in the talking motion picture field.

As a by-product of its telephone research work the Bell Telephone Laboratories developed a system of synchronizing sound with motion pictures, which was first commercially demonstrated in 1926. Since that time substantially all of the larger and more important motion picture producers have adopted this system and taken licenses for its use in the production of sound pictures. At the close of the year Electrical Research Products had equipped a large number of leading motion picture studios, and more than 1,000 theatres with the Western Electric sound system. The Company has a large volume of sound equipments on order for delivery during 1929 and expects to equip upwards of 3,000 additional theatres during the year.

Progress in sound pictures parallels developments of major importance in the design and operation of modern high speed submarine cables, and improvements in the methods of recording sound on records, such as are used in phonographs, and in reproducing sound from such records, referred to in the annual reports for 1925 and 1926.

[fol. 5338]

Employees

At the end of the year there were 56,324 employees on the pay roll, as compared with 40,565 at the beginning of the year, an increase of nearly 40%. The first half of the year showed a small, gradual increase in the total number employed, followed by a rapid increase during the last half of the year due largely to the increased demand for our manufactured products (pp. 245-247).

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[fol. 5339] (P. 251)

Western Electric Company, Incorporated

Balance Sheet, December 31, 1928

Assets:		
Land, Buildings and Permanent Fixtures at Cost	$42,606,473	
Machinery, Tools and Other Equipment at Cost	51,819,779	
Total		$94,426,252
Investments, including Stock in and Advances to Subsidiary Companies		30,002,873
Merchandise, Materials and Supplies at Cost or Market, whichever is the lower	$60,177,391	
Accounts Receivable	48,957,412	
Marketable Securities	5,863,929	
Cash	12,303,035	
Total Working Assets		127,301,767
Grand Total		$251,730,892
Liabilities:		
Capital Represented by 4,000,000 shares without par value outstanding.	$100,000,000	
5% Gold Debenture Bonds, 1944	35,000,000	
Total Capital Liabilities		$135,000,000

Interest, Taxes and Other Accruals Not Due	$3,181,785	
Bills Payable	21,064,706	
Accounts Payable	24,753,263	
Total Current Liabilities		48,999,754
Reserve for Depreciation of Plant	$56,821,896	
Self-insured Risks	125,288	
Total		56,947,184
Surplus		10,783,954
Grand Total		$251,730,892

R. H. Gregory, Comptroller.

[fol. 5340] Western Electric Company, Incorporated

Report to Stockholders for Year Ending December 31, 1929

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[fol. 5341] A new record was also established during the year in expansion of permanent manufacturing facilities, involved in carrying forward a comprehensive three-year program for additional plant and equipment, to provide adequate sources of supply for the future needs of the Bell System.

In its business outside of the System, your Company made notable progress, maintaining its leadership as the principal manufacturer of talking motion picture equipment, supplying theatres not only in the United States but throughout the world, and pioneering in the aviation industry as a maker of radio telephone equipment for communication between planes and the ground (p. 258).

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The sales for 1929 show an increase of 42.7% over 1928, the amount of the increase—$123,019,000—being greater than the sales of your Company for any year prior to 1920.

While the heavy demands for Western Electric products necessitated intense effort being applied to increasing production throughout the year, there was no slackening of effort directed toward reducing costs. During the year, your Company was able to reduce prices to the extent of $11,250,000 on the year's volume of sales as the result of economies effected by this work. This activity, involving extensive research and development work which has been prosecuted intensively for a number of years, has resulted in better methods and equipment, increased efficiency of working forces, more economical use of materials, elimination of waste and the mechanization of processes. Illustrating more broadly the effectiveness of this work over a period of years, Western Electric sales for 1929, which approximated $411,000,000, would have totalled $495,000,000 on the basis of prices in effect on January 1, 1926. Of this saving of $84,000,000, lower prices which obtained for materials purchased account for $20,000,000, while the balance, $64,000,000, is due to design economies effected by the Bell Telephone Laboratories, and reductions in costs of manufactured products and in the cost of installing central office equipments, brought about by the intensive program of cost reduction in the Western Electric Company (p. 259).

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[fol. 5342]

Production

Beginning with the middle of 1928 demand for products of your Company increased with unprecedented rapidity and taxed its ability in every department. Spare capacity was rapidly exhausted and to meet these demands it was necessary to use the permanent manufacturing facilities to the utmost, by working overtime and establishing night-shifts wherever practicable. It was also necessary to expand manufacturing temporarily into rented quarters, in many locations, having an aggregate floor area equal to about 25% of our permanent floor space. As a result of these extraordinary efforts production for the year 1929 exceeded that for 1928 by 67%.

A comparison of the output of a few of the more important products manufactured in 1928 and 1929 is as follows:

	1928	1929
Dial Type Central Office Equipment (Lines)	455,000	636,000
Loading Coils	1,045,000	1,797,000
Long Distance Cable (Conductor Feet)	7,446,000,000	12,000,000,000
Telephone Repeaters	15,100	38,500
Handsets	532,000	653,000
Subscriber Sets	929,000	1,664,000
Calling Dials	525,000	1,312,000

To provide on a permanent basis for the greater demand for your Comapny's products we are making large additions to our manufacturing facilities at Hawthorne and Kearny, and have started a third plant at Point Breeze, Baltimore, Maryland, the first unit of which, the toll cable plant, having an initial capacity equal to double the output of toll cable in 1927, was placed in production at the close of the year. When completed to its ultimate size, the Point Breeze toll cable plant will have a capacity equal to four times our toll cable output for 1927.

[fol. 5343] On January 1, 1929, we had available 5,160,000 square feet of floor space, of which 3,900,000 was at Hawthorne. During 1929, 1,360,000 square feet were added, and during 1930 we plan to add 2,670,000 square feet. This will bring the total to 9,190,000 square feet of floor space at the manufacturing plants which is more than twice that available at Hawthorne on January 1, 1929.

Our present plans for the expansion of the three main manufacturing plants, Hawthorne, Kearny and Point Breeze, provide a floor space of 5,000,000 square feet for each plant when completed to ultimate capacity, and the employment of a total of 110,000 people on a normal operating [fol. 5344] basis, divided about equally between the three plants. The annual normal capacity output of the three plants, based on present prices, will be about $510,000,000—nearly four times the sales of products of our own manufacture for the year 1927, which up to that time was our record year. Of this total Hawthorne will produce $160,000,000, Kearny $177,000,000 and Point Breeze $173,000,000.

Your Company entered into a contract to purchase the property adjoining the Kearny Works, to the north, comprising 89 acres of ground and buildings having a floor area of 865,000 square feet. This property will become available in the fall of 1930 (pp. 261-262).

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The expansion to Plant facilities made in 1929 and planned for 1930 and 1931 involve expenditures of $110,000,000, which is almost one and one-fifth times the cost value of the entire Plant at January 1, 1929 (p. 262).

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Employees' Benefit Plan

In accordance with the provisions of the Employees' Benefit Plan, established in 1913, the Company made payments during 1929 totaling $1,269,105 to employees on account of sickness, accident, retirement for age or disability, and as death benefits to dependents. These payments were made to 8,836 employees as follows:

Accident Benefits and Expenses	$154,433
Sickness Benefits	810,342
Pensions	144,629
Death Benefits	159,701
Total	$1,269,105

For the ten year period from 1920 to 1929 these payments aggregated $8,728,000 (p. 265).

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[fol. 5345] Bell Telephone Laboratories, Incorporated

During 1929 the personnel of the Laboratories was increased to more than 5,600. This highly trained staff continued to make outstanding developments and improvements in systems and apparatus for electrical communication, and to carry on, with the cooperation of the engineers of your Company, improvements in apparatus design directed towards further standardization and more economical manufacture.

These continuing developments of the telephone and associated arts require the initiation of manufacture of a large number of new devices. In 1929 the manufacture of 3,630 new items of apparatus and equipment was undertaken, involving the provision of tools, machinery and other facilities necessary for their production.

Of particular importance during the year was the completion of the design of small light-weight radio apparatus, suitable for aircraft and arranged for radio-beacon and weather-signal reception and for two-way radio telephone communication. A spectacular demonstration of the latter equipment was a two-way telephone conversation on December 23rd between passengers in the Laboratories' airplane with passengers on the S. S. Leviathan. Another important development in the telephone field was a steel armored cable which can be buried in a trench without the protection of the usual conduit.

In its development work outside of the telephone field the Laboratories made important improvements in the design of high-powered radio broadcasting equipment, of public address systems, and of equipment auxiliary to talking motion pictures (p. 266).

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Electrical Research Products, Inc.

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A number of inventions and patents resulting from the development of manufacturing methods, processes and equipment for the Western Electric factories have been made available to others for use outside of the telephone field upon a basis productive of income to the Company (p. 267).

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[fol. 5346] (P. 271)

Western Electric Company, Incorporated

Balance Sheet, December 31, 1929

Assets:		
Land, Buildings and Permanent Fixtures at Cost	$60,102,640	
Machinery, Tools and Other Equipment at Cost	74,461,492	
Total		$134,564,132
Investments, including Stock in and Advances to Subsidiary Companies		62,178,802
Merchandise, Materials and Supplies at Cost or Market, whichever is the lower	$95,940,378	
Accounts Receivable	65,431,915	
Marketable Securities	671,450	
Cash	14,604,973	
Total Working Assets		176,648,716
Grand Total		$373,391,650
Liabilities:		
Capital Represented by 5,250,000 shares (without par value) outstanding.	$150,000,000	
5% Gold Debenture Bonds, 1944	35,000,000	
Total Capital Liabilities		$185,000,000
Notes Sold to Trustee of Pension Fund		26,128,933
Interest, Taxes and Other Accruals Not Due	$5,344,170	
Notes Payable	42,819,000	
Accounts Payable	34,733,139	
Total Current Liabilities		82,896,309

Reserve for Depreciation of Plant	$64,670,737	
Self-Insured Risks	138,726	
Total		64,809,463
Surplus		14,556,945
Grand Total		$373,391,650

R. H. Gregory, Comptroller.

[fol. 5347] Western Electric Company, Incorporated

Report to Stockholders for Year Ending December 31, 1930

[fol. 5348] The 1930 business of the Western Electric Company, like that of most industries, showed a decrease in comparison with the previous year. While the Company entered the year with the largest volume of unfilled orders in its history, the recession in general business early in the year affected the telephone companies' requirements for equipment, and the volume of new business which they placed consequently decreased.

The problems of the year, therefore, were primarily those of adjusting large scale operations to fit a rapidly declining business. This situation was met first, by eliminating overtime and night work and by releasing many of the more recently employed people. Then by applying a policy of shortened hours, the Company was able to distribute work in such a way as to retain in its service more than 5,000 employees who would otherwise have been laid off.

[fol. 5349] The change in business conditions and the consequent decrease in demand for the Company's products made it advisable to modify the program which was undertaken the previous year for expansion of manufacturing facilities; and while substantially all buildings in course of construction at the beginning of 1930 were carried to completion, the resumption of the program awaits a revival in business (p. 279).

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The company is primarily a manufacturer of communication equipment, and a large proportion of its product is sold to the Bell System. During 1930, the sale of telephone equipment for dial central offices was the largest in the history of the business, reflecting the growing use of dial operation by the Bell System throughout the country. Sales of lead covered cable and apparatus used on subscribers' premises, together with supplies purchased from other manufacturers showed a falling off.

Included in the sales to customers outside of the Bell System are telephone apparatus, cable, aviation radio, public-address and police and other radio transmitting equipment. Of outstanding interest during the year were the sales of aviation radio equipment to the leading air transport companies in the United States. Practically all of the large air lines are now equipped with both plane and ground transmitting and receiving radio systems.

A public address and music distribution system was contracted for by the new Waldorf-Astoria Hotel, New York City. This project, which is the largest hotel equipment of its kind in existence, will provide for selection of six radio programs, or six public address programs in any one of 2,000 rooms.

Financial

The net profit rate on sales was 3.4%, as compared with 5.6% in 1929, and was the lowest profit rate in more than ten years.

While 1930 sales were about 12% less than for [fol. 5350] 1929, earnings declined from $31,555,774 to $20,297,612—the result of the change from an expanding to a rapidly contracting volume of manufacture and the necessary heavy write-downs in inventories during a period of declining commodity prices. These earnings fell short of meeting interest payments and dividends by $7,625,161. Earnings included dividends amounting to $5,044,000 received during the year from subsidiary companies whose earnings in 1930 exceeded the dividends paid by approximately $250,000.

To finance the completion of manufacturing facilities which were contracted for in 1929, stockholders of record on February 17, 1930, were offered the right to subscribe to 750,000 shares of common stock without par value at $40.00 per share in the ratio of 1 share for each 7 shares held. The entire amount of new stock offered, providing new capital of $30,000,000, was taken by the stockholders and stock was issued as of March 31, 1930.

Manufacture

The problem of production in 1930 can best be understood when it is remembered that as the year opened, our plants were operating at maximum capacity, as the result of a two year unprecedented demand for our products. Thousands of employees were on overtime and night work, and a large amount of manufacturing was being carried on in rented quarters.

When orders from the telephone companies began to decrease, there was still a large volume of production on schedule and the steps taken to control output were first directed toward eliminating emergency measures of manufacture. As the year progressed, however, the volume of orders continued to decrease, and by July downward revisions of schedules made necessary adjustments of forces, hours of work and the supply of raw materials. This contraction, which it was necessary to accomplish even more rapidly than the expansion of the year before, was also costly and difficult both for management and employees.

During the year leased factory space was reduced 190,000 square feet. In the same period new buildings—a power plant, an insulated wire building and a restaurant—were completed at Point Breeze, and the contract covering [fol. 5351] the purchase of the Ford Motor Plant, adjoining the Kearny Works, was consummated. These buildings will be used for the manufacture of various types of apparatus now being produced in rented space and will make possible the release of about 425,000 square feet of that space during 1931.

While the Company's building expansion program is held in abeyance, its general plans for the distribution of manufacture between Works remain unchanged. They provide for producing at Hawthorne all types of dial central office equipment, loading coils and toll and loop cable for the Middle West.

The Kearny Works is producing the manual type of central office equipment, carrier current and repeater systems for toll lines, radio broadcasting equipment, airplane communication products, and loop cable for the East and the Pacific coast.

The Point Breeze Works is producing toll cable for the East and Pacific coast and a substantial part of the Bell

System's requirements for rubber covered telephone wire—and when building construction is resumed—it is planned to transfer from Hawthorne the manufacture of the types of apparatus used on subscribers' premises.

Distribution

The problem of distribution during 1930 was the reverse of that in 1929. During periods of rapidly increasing demand, stocks are quickly diminished, problems of supply are magnified, and service is the pressing and important factor. During periods of declining demand, as in 1930, supply becomes plentiful, service difficulties disappear and problems incident to balancing orderly and efficient decline in production against increasing stocks of merchandise take their place.

Service throughout the year was excellent. Investment at Distributing Houses was reduced commensurate with the decline in volume of sales. Investment at the merchandise warehouses increased, but was maintained at levels which may be readily reduced over a reasonable period with an upward trend in sales. (pp. 280-282).

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[fol. 5352] Bell Telephone Laboratories, Incorporated

The Laboratories have continued their pioneering researches in the sciences basic to the communication art; their design and development of new apparatus and equipment; and their work, in cooperation with various departments of the Western Electric Company, leading to increased standardization and reductions in cost of products.

Their continued development work and new designs, coupled with improvements of Western Electric Company's engineers in manufacturing methods, resulted during the year in many economies in production, noticeably in the case of loading coil units and of certain types of lead covered cable. The development of new magnetic materials continued with further improvements in "permalloy" and "perminvar", alloys which are important in the design of many Western Electric products. In central office equipment new design resulted in a reduced number of types, and in greater standardization, with consequent economies in manufacturing and merchandising.

Further progress was made in the development of airplane radio systems, sound picture systems, acoustical apparatus and other Western Electric products.

Electrical Research Products, Inc.

Electrical Research Products, together with its foreign subsidiaries, has installed sound reproducing equipment for talking motion pictures in more than 7,600 theatres throughout the world. With substantially all the large motion picture theatres equipped at the end of 1930, the future activities of the Company in this field are now concentrated upon the smaller theatres. In addition to the recording studios in this country, a number of foreign studios have been equipped with Western Electric sound recording apparatus.

The maintenance of theatre equipment in a satisfactory operating condition continues to be an important function of the Company. For that purpose it has an experienced technical service organization located throughout the world. This group provides regular inspection to all theatres equipped with the Western Electric sound system and emergency assistance when called for. It is thus an [fol. 5353] important factor in insuring high quality for the reproduction of talking pictures.

Progress has been made during the year in improving the quality of sound in the motion picture, the outstanding achievement in this respect being the "Western Electric New Process Noiseless Recording", which is perhaps the most notable single advance in the art since the first commercially successful showing of sound pictures in 1926.

During the year, effort has been directed toward developing the use of the talking motion picture for nontheatrical purposes. Essential research has laid a foundation for the utilization of this medium in the educational field and the interest of educators is being awakened. In the industrial field, business is turning to this method for publicity and for the demonstration of products. In the religious field a start has likewise been made.

Experience gained in the solution of acoustic problems is now being made commercially available to architects, builders, engineers, and the public generally through a consulting acoustic service.

The Company's activity in making available to other industries Western Electric developments in manufacturing methods, processes and equipment for use outside the telephone field has been carried on with satisfactory results.

Teletype Corporation

The acquisition in October of the Teletype Corporation of Chicago and its operation as a Western Electric subsidiary brought to the company a notable addition in product, manufacturing facilities and personnel.

The Teletype plant occupies six and a half acres of land on Wrightwood Avenue, Chicago. It consists of thirteen buildings comprising 280,000 square feet of floor space. Here is designed and manufactured printing telegraph equipment for the transmission of typewritten communications over wires between distant points. Wide uses of this system are made by newspapers, news gathering agencies, financial institutions and industries. High speed stock quo- [fol. 5354] tation tickers and stock quotation display boards are also Teletype products.

For several years the Bell System has been the largest customer of the Teletype Corporation, and the system probably will continue to require the major portion of the company's production. The acquisition of Teletype furnishes opportunity for greater progress and economy from coordinated research, development and manufacture (pp. 285-287).

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[fol. 5355] (P. 291)

Western Electric Company, Incorporated

Balance Sheet, December 31, 1930

Assets:		
Land, Buildings and Service Equipment at Cost	$73,089,826	
Machinery, Tools and Other Equipment at Cost	90,728,006	
Total		$163,817,832
Investments, including Stock in and Advances to Subsidiary Companies		75,041,557
Merchandise, Materials and Supplies at Cost or Market, whichever is the lower	$86,678,371	
Accounts Receivable	44,824,081	
Marketable Securities	859,677	
Cash	8,080,441	
Total Working Assets		140,442,570
Grand Total		$379,301,959

Liabilities:		
Capital	$180,000,000	
Represented by 6,000,000 shares (without par value) outstanding.		
5% Gold Debenture Bonds, 1944	35,000,000	
Total Capital Liabilities		$215,000,000
Notes Sold to Trustee of Pension Fund		31,481,085
Interest, Taxes and Other Accruals Not Due	$3,875,540	
Notes Payable	30,000,000	
Accounts Payable	17,025,175	
Total Current Liabilities		50,900,715
Reserve for Depreciation of Plant	$74,804,446	
Self-insured Risks	183,929	
Total		74,988,375
Surplus		6,931,784
Grand Total		$379,301,959

R. H. Gregory, Comptroller.

[fol. 5356] Western Electric Company, Incorporated

Report to Stockholders for Year Ending December 31, 1931

[fol. 5357] Sales

Sales for 1931 were $228,956,000 and compare with previous years as follows:

1930	$361,478,000	1925	$239,531,000
1929	410,950,000	1924	246,944,000
1928	287,931,000	1923	198,537,000
1927	253,724,000	1922	168,321,000
1926	263,105,000	1921	153,411,000

Sales to Bell Telephone Companies during 1931 were $219,535,000, and to customers outside of the Bell System $9,421,000.

[fol. 5358] Financial

The net profit rate on sales was 4.0%, as compared with 3.4% in 1930.

While 1931 sales were 36.7% less than for 1930, earnings declined from $20,297,612 to $15,557,613, or 23.4% (p. 298).

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Manufacture

At the beginning of 1931 the Manufacturing Department was operating at 66% of normal activity and had on its roll 39,484 employees working an average of five days a week.

As the year progressed, in order to meet the continued decline in business, the general policy was followed of spreading available work as far as possible through shortening the hours of work, thus insuring the maintenance of the largest number of people at work and minimizing unemployment. The application of this policy enabled the Manufacturing Department to maintain, as of the end of the year, a force of 28,137 employees, with plants operating at 44% of normal.

Production for the year in comparison with 1930 dropped 30% on telephone apparatus and 55% on cable.

In a period of declining production the normal trend of costs is upward. Efforts to offset this were applied both by the introduction of more efficient processes and improved operating practices.

During the year leased space at Works locations was reduced 697,000 square feet. In order to economize further and at the same time take advantage of low construction costs, a new building, having a floor space of 278,000 square feet, was started at Hawthorne, and its completion in 1932 will make possible consolidation within the Hawthorne Works of operations now carried on at three outside rented locations in Chicago (pp. 299-300).

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[fol. 5359] Bell Telephone Laboratories, Incorporated

The development and research work of the Laboratories continued throughout 1931, and the results of this work, together with related advancements made by Western Electric engineers in manufacturing methods, have been reflected in further improvements in the products of the Company. Outstanding advances are to be found in each important part of the telephone plant, such as central office and station equipment, outside plant structures and wire and radio transmission systems. Increased standardization has aided materially in the efforts towards further economies in manufacturing and merchandising.

Of marked importance in the extension of services of the Bell System was the newly developed teletypewriter exchange system, which provides central switching facilities for teletypewriters similar to central office exchanges for telephones. All of this central office equipment was developed in the Laboratories and is manufactured by the Western Electric Company.

Among the products for use in fields outside the Bell System, noteworthy progress has been made in the further development of sound picture systems, including those for educational and industrial purposes, airplane radio telephone systems and general acoustical apparatus.

Electrical Research Products, Inc.

With substantially all large motion picture theatres throughout the world equipped with sound reproducing apparatus, the sales of Electrical Research Products during 1931 were for the most part to the smaller theatres. There are now approximately 8,600 theatres equipped with the Western Electric system, and the high standard which the Company has attained in the maintenance of theatre equipment through its technical service organization, has further consolidated the Company's position of outstanding leadership in the field. The market, however, for installations in theatres is approaching saturation.

In the non-theatrical field, where the Company has done considerable pioneering work in developing the use of sound pictures for religious, educational and industrial use, many lines of business are finding this medium an effective means of sales training and sales stimulation.

[fol. 5360] During the year outstanding improvements were made in the art of recording sound for use in radio broadcasting; and electrical transcriptions of a new standard of quality were made available to the Company's licensees among broadcasting stations, both for advertising and regular programs.

The Company's acoustic engineering service, made commercially available last year to architects, engineers and the public, has been further developed and has met with gratifying acceptance.

Teletype Corporation

On November 21st the Bell System inaugurated a teletypewriter switching service providing its customers with a two-way system of typewritten communication by wire. The immediate popularity of this service brought a marked increase in demand for instruments. In meeting it the Teletype Corporation was able to restore to their jobs more than 400 former employees and to put the entire force upon a full time operating basis.

Nassau Smelting & Refining Company, Incorporated

On October 30th the Company acquired the business of the Nassau Smelting & Refining Company and the plant and inventory of the Tottenville Copper Company, Staten Island, New York. This purchase provides the Western Electric Company with facilities to carry on more completely and more economically the reclamation of scrap metals resulting from manufacturing operations and from material removed from the Bell System plant. The business will be conducted as a wholly owned subsidiary under the name of the Nassau Smelting & Refining Company, Incorporated (pp. 302-304).

* * * * * * *

[fol. 5361] **Western Electric Company, Incorporated**

Balance Sheet, December 31, 1931

Assets:		
Land, Buildings and Service Equipment at Cost	$75,546,869	
Machinery, Tools and Other Equipment at Cost	95,481,320	
Total		$171,028,189
Investments, including Stock in and Advances to Subsidiary and Associated Companies		78,217,496
Merchandise, Materials and Supplies at Cost or Market, whichever is the lower	69,516,518	
Accounts Receivable	46,714,099	
Marketable Securities	1,004,497	
Cash	4,352,379	
Total Working Assets		121,587,493
Grand Total		$370,833,178
Liabilities:		
Capital	$180,000,000	
Represented by 6,000,000 shares (without par value) authorized and outstanding.		
5% Gold Debenture Bonds, 1944	35,000,000	
Total Capital Liabilities		215,000,000
Notes Sold to Trustee of Pension Fund		35,822,963
Interest, Taxes and Other Accruals Not Due	2,360,833	
Notes Payable	14,741,764	
Accounts Payable	11,393,301	
Total Current Liabilities		28,495,898

Reserve for Depreciation of Plant	84,046,476	
Self-Insured Risks	219,670	
Total		84,266,146
Surplus (Earned)		7,248,171
Grand Total		$370,833,178
Contingent Liability		$479,692

R. H. Gregory, Comptroller.

[fol. 5361a] EXTRACTS FROM EXHIBIT X-354

Illinois Bell Provisional Estimates

(Here follows side folio 5362)

EXHIBIT X-354

[illegible] COMPARED WITH RESULTS OF [illegible]

		ACTUAL RESULTS					Prob. Est.	[illegible]				
	COMPANY STATIONS	1918	1919	1920	1921	1922†	1923	1924	1925	1926	1927	
1	Gross Connections*	119	159	127	159	165	170	177	180	184	191	1
2	Gross Disconnections*	98	99	93	120	125	126	127	132	136	141	2
3	% Disc. to Total in Service Jan. 1st	14.0	13.7	11.8	14.6	14.6	14.0	13.4	13.3	13.0	12.9	3
4	Net Station Gain*	21	60	34	39	40	44	50	48	48	50	4
5	% Gain to Total Stations Jan. 1st	2.0	8.2	4.3	4.7	4.7	4.9	5.3	4.8	4.6	4.8	5
6	Net Sta. Gain by Purchases, Sales, or Transfers	1	9	1	4	-	2	-	-	-		6
7	Total Stations at End of Year	730	790	825	858	898	946	996	1,044	1,092	1,142	7
8	Average Number of Stations	712	761	801	840	872	922	970	1,019	1,067	1,116	8
9	% Increase over Previous Year	4.2	5.5	5.3	4.9	3.8	5.7	5.2	5.1	4.7	4.6	9
10	Av. No. Stations Operated from Mach. Switch. C. O.	2	2	2	2	4	26	40	50	58	68	10
	PLANT—INCL. CONST. WORK IN PROGRESS											
11	Gross Additions to Plant*	6,958	7,969	11,196	16,658	17,300	17,400	17,200	13,740	14,250	13,790	11
12	Net Additions to Plant*	4,414	5,347	8,502	11,982	13,136	12,400	12,450	10,810	9,180	8,770	12
13	Per Station Gained*	210.19	89.12	250.06	307.23	328.40	281.82	249.00	225.21	190.21	175.40	13
14	Net Add. to Plant by Purchases, Sales, or Transfers	21	689	236	*500	26	912	-	-	-	-	14
15	Total Plant at End of Year	91,678	97,664	106,402	117,884	131,046	144,429	156,879	167,689	176,819	185,589	15
16	% Increase Over End of Previous Year	5.1	6.5	8.9	10.8	11.2	10.2	8.6	6.9	5.4	5.0	16
17	Per Station	127.18	123.63	129.29	137.39	145.95	152.88	157.47	160.78	162.07	162.55	17
18	Average Plant in Service	86,973	93,481	100,447	108,793	118,500	134,080	148,620	160,095	170,660	179,498	18
19	Per Station	122.14	124.44	125.28	129.52	135.89	145.42	153.28	157.11	159.94	160.84	19
	REVENUES AND EXPENSES {Average Per Station Annual Basis											
20	Exchange Revenues	32.14	36.92	41.83	48.08	48.74	48.82	49.22	49.26	49.54	49.58	20
21	Toll Revenues	5.39	6.11	7.02	6.94	7.45	7.59	7.70	7.80	7.90	8.00	21
22	**Total Tel. Revenues**	37.53	43.03	48.85	55.02	56.19	56.40	56.92	57.16	57.44	57.58	22
23	Traffic Expenses	10.61	13.68	17.50	17.32	17.52	17.37	17.11	16.24	16.45	16.25	23
24	Commercial Expenses	4.23	4.95	6.16	6.05	6.13	6.09	6.07	6.05	6.02	5.96	24
25	Gen. and Misc. Expenses	1.41	1.48	1.89	1.88	1.61	1.56	1.56	1.56	1.56	1.56	25
26	Other Oper. Expenses	1.94	2.12	2.21	2.50	2.42	2.42	2.48	2.50	2.52	2.55	26
27	Current Maintenance	5.39	6.25	7.43	8.23	8.46	8.06	8.14	8.15	8.17	8.18	27
28	Depreciation	6.52	6.91	6.68	6.26	6.73	7.44	7.95	8.17	8.26	8.46	28
29	Taxes	2.42	2.99	3.27	4.27	4.79	4.76	4.95	5.22	5.47	5.47	29
30	**Total Tel. Expenses**	32.53	38.48	44.94	46.36	47.68	47.72	48.26	47.89	47.55	48.51	30
31	**Net Tel. Earnings**	5.00	4.55	3.91	8.66	8.51	8.68	8.66	9.27	9.89	9.04	31
32	Depreciation ($\frac{608,\ 609}{340}$) % to Av. Plant in Serv ($\frac{\text{incl. 261}}{\text{excl. 211}}$)	5.4	5.6	5.4	5.0	5.0	5.2	5.2	5.2	5.2	5.3	32
33	Reserve for Depreciation ($\frac{102}{101}$)—End of Year	20.598	24,687	26,882	29,513	33,261	37,718	43,910	49,963	57,[illegible]8	[illegible]5,204	33
34	% to Tot. Plant in Service ($\frac{\text{except}}{211}$) and Gen. Eq.	22.5	25.4	24.3	26.3	28.7	26.2	28.4	29.9	32.5	35.[illegible]	34

* Including Purchases, Sales or Transfers

† [illegible] Months Estimated

Note: Show money value and number of stations to nearest thousand, omitting last three digits.
Show percentages extended to one decimal. Per station figures should be given in dollars and cents.
Show 1923 estimated net gain in company stations by months on reverse of form.

*= red figures

Date issued 11-27-22

X-354
23

5362

[fol. 5363] EXHIBIT X-354

* * * * * * *

P. 21-A

November 28, 1922.

Mr. H. B. Thayer, President American Telephone and Telegraph Co., 195 Broadway, New York.

DEAR MR. THAYER: As requested in your letter of September 7th, I am sending you herewith five copies of the 1923 Provisional Estimate.

The proposed program, which totals $17,400,000 for Gross Additions to Plant, includes approximately $350,000 for additional plant for the Long Lines Department in Chicago. The completion of this program during 1923 will require $6,600,000 beyond our estimated current resources. This figure does not include provision for refunding $19,004,000 of Chicago Telephone Company bonds and $15,530,179 of Central Union Company notes, both of which mature December 1, 1923.

* * * * * * *

(Here follows side folios 5364-5384)

4590A

FORM [illegible]
[illegible] ESTIMATE [illegible]

STATEMENT E.

FORECAST OF EARNINGS AND EXPENSES
COMPARED WITH RESULTS OF 1922-1923

Name of Company ILLINOIS BELL TELEPHONE COMPANY

		ACTUAL RESULTS		Prov. Est.	FORECAST				
		1922	1923‡	1924	1925	1926	1927	1928	
	EARNINGS AND EXPENSES:								
1	Exchange Revenues (500-506, Inclusive)	[illegible]	45 820	49 470	52 790	58 [illegible]	57 810	60 230	1
2	Toll Revenues (540-546, Inclusive)		7 650	8 640	9 690	10 010	10 590	11 [illegible]	2
3	Miscellaneous Operating Revenues (520-526, Inclusive)		720	760	790	810	880	850	3
4	**Total Telephone Revenues**			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4
	Operation—								
5	Traffic (621-635, Inclusive)			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5
6	Commercial (640-650, Inclusive)				[illegible]	[illegible]	6 [illegible]	[illegible]	6
7	General and Miscellaneous (660-690, Inclusive)				[illegible]		[illegible]	[illegible]	7
8	Other Expenses (304, 330-334, Inclusive, 337, 341, 527)				[illegible]	[illegible]	[illegible]	[illegible]	8
9	**Total Operation**				[illegible]		[illegible]	[illegible]	9
	Current Maintenance—								
10	Ordinary Repairs (601-606 "R" codes and 610)				[illegible]		[illegible]	[illegible]	10
11	Rearrangements and Changes (601-606 "M" codes)				[illegible]		[illegible]		11
12	Station Removals and Changes (607)				[illegible]			[illegible]	12
13	**Total Current Maintenance**			[illegible]	[illegible]			[illegible]	13
14	Depreciation (340, 608, 609)				[illegible]		[illegible]	[illegible]	14
15	Taxes (305, 322)						[illegible]	[illegible]	15
16	**Total Telephone Expenses**						[illegible]	[illegible]	16
17	**Net Telephone Earnings**						[illegible]	[illegible]	17
18	Sundry Net Earnings (302, 310-316, Incl., minus 303, 320, 321, 323)						[illegible]		18
19	**Total Net Earnings**						[illegible]		19
20	Deduct Interest Expense (335, 336, 338, minus 339)				× × ×	× × ×	× × ×	× × ×	20
21	**Balance Net Profits**				× × ×	× × ×	× × ×	× × ×	21
22	Deduct Dividends (Common) (351-01)				× × ×	× × ×	× × ×	× × ×	22
23	(Preferred) (351-02)				× × ×	× × ×	× × ×	× × ×	23
24	**Total Dividends**				× × ×	× × ×	× × ×	× × ×	24
25	**Balance for Corporate Surplus**				× × ×	× × ×	× × ×	× × ×	25
26	Amount of Licensee Revenue—Dr. (527) incl. in line 8								26
	AVERAGE CAPITAL OBLIGATIONS:								
27	Capital Stock, Com. (150-01)				× × ×	× × ×	× × ×	× × ×	27
28	Capital Stock, Pref. (150-02)				× × ×	× × ×	× × ×	× × ×	28
29	Funded Debt (151)				× × ×	× × ×	× × ×	× × ×	29
30	Advances and Bills Payable (155-157)				× × ×	× × ×	× × ×	× × ×	30
31	**Total Average Capital Obligations**				× × ×	× × ×	× × ×	× × ×	31
32	% Net Telephone Earnings to Average Plant in Service	[illegible] 69 %	6.37%	%	%	%	5.56%	6.82%	32
33	% Total Net Earnings to Average Capital Obligations	%	%	6.55 %	× × ×	× × ×	× × ×	× × ×	33
34	% Balance Net Profits (after Preferred Dividend) to Average Common Stock	%	%	1 06 %	× × ×	× × ×	× × ×	× × ×	34

‡ Last .... months estimated.
This includes $ .... for estimated changes in present rates.
Includes estimated interest deductions to be paid A. T. & T. Co. $ 180,000.

Show money value to nearest thousand dollars, omitting last three digits.
Show percentages extended to two decimals.

Date Issued Novebmer 14, 1923 #Excludes Capital Stock Installments.

X-354
R22

5364

[illegible]

FORM S. R. 318 L
PROVISIONAL ESTIMATE 1925
STATEMENT E
SHEET 1

FORECAST OF EARNINGS AND EXPENSES
(COMPARED WITH RESULTS OF 1923-1924)

ILLINOIS BELL TELEPHONE COMPANY
(Name of Company)

		ACTUAL RESULTS		Prov. Est.	FORECAST				
		1923	1924†	1925	1926	1927	1928	1929	
	EARNINGS AND EXPENSES								
1	Exchange Revenues (500-506, Inclusive)	45 605	48 740	52 960	57 550	60 440	63 400	66 770	1
2	Toll Revenues (510-516, Inclusive)	7 593	8 470	9 870	11 030	11 840	12 670	13 760	2
3	Miscellaneous Operating Revenues (520-526, Inclusive)	760	845	850	895	940	875	815	3
4	**Total Telephone Revenues**	53 958	58 055	[illegible] 680	69 475	73 220	76 945	81 345	4
5	Traffic Expenses (621-635, Inclusive)	18 940	17 300	18 950	20 080	20 370	21 620	22 740	5
6	Commercial Expenses (640-650, Inclusive)	5 538	6 245	6 725	7 195	7 545	7 885	8 225	6
7	General and Miscellaneous Expenses (660-690, Inclusive)	1 371	1 460	1 560	1 645	1 725	1 805	1 880	7
8	Other Oper. Expenses (304, 330-334, Inclusive, 337, 341, 527)	2 751	3 010	3 395	3 675	3 865	4 055	4 280	8
9	**Total Operation Expenses**	28 600	28 015	30 630	32 595	33 505	35 365	37 125	9
10	Supervision of Maintenance (601)	716	1 000	1 090	1 155	1 230	1 290	1 345	10
11	Ordinary Repairs (602-606 "R" codes and 610)	4 330	4 730	5 130	5 400	5 750	6 045	6 265	11
12	Rearrangements and Changes (602-606 "M" codes)	1 482	1 510	1 730	1 850	1 970	2 075	2 150	12
13	Station Removals and Changes (607)	1 487	1 610	1 800	1 675	1 990	2 100	2 170	13
14	**Total Current Maintenance**	8 015	8 850	9 750	10 280	10 940	11 510	11 930	14
15	Depreciation (340, 608, 609)	4 883	7 285	8 300	9 210	9 900	10 710	11 490	15
16	Taxes (305, 322)	4 375	4 890	5 385	6 080	6 555	6 935	7 445	16
17	**Total Telephone Expenses**	45 873	49 040	54 065	58 165	60 900	64 520	67 990	17
18	**Net Telephone Earnings**	8 085	9 015	9 615	11 310	12 320	12 425	13 355	18
19	Sundry Net Earnings (302, 310-316, Incl., minus 303, 320, 321, 323)	1 017	315	475	340	460	400	380	19
20	**Total Net Earnings**	9 102	9 330	10 090	11 650	12 780	12 825	13 735	20
21	Deduct Interest (335, 336, 338, minus 339)*	2 789	2 275	2 950					21
22	**Balance Net Profits**	6 313	7 055	7 140					22
23	Deduct Dividends (Common) (351-01)	4 804	5 402	5 600					23
24	(Preferred) (351-02)	-	-	-					24
25	**Total Dividends**	4 804	5 402	5 600					25
26	**Undivided Profits**	1 509	1 653	1 540					26
27	Amount of Licensee Revenue Dr. (527) incl. in Line 8	2 322	2 515	2 762	3 015	3 177	3 344	3 540	27
	AVERAGE CAPITAL OBLIGATIONS								
28	Capital Stock (Common) (150-01)	60 039	67 109	70 000					28
29	Capital Stock (Preferred) (150-02)	-	-	-					29
30	Capital Stock Installments (150-04)	2 816	2 478	3 542					30
31	Funded Debt (153)	43 193	49 790	49 360					31
32	Advances and Bills Payable (155, 157)	8 811	-	1 875					32
33	**Total Average Capital Obligations**	114 859	119 377	124 777					33
34	Net Telephone Earnings to Average Plant in Service	6.04 %	6.03 %	5.71 %	6.05 %	6.13 %	5.73 %	5.75 %	34
35	Total Net Earnings to Average Capital Obligations	7.92 %	8.23 %	8.09 %					35
36	Balance Net Profits (after Preferred Div.) to Average Common Stock	10.51 %	10.51 %	10.20 %					36

37 Annual Value of Rate Changes to be made during the year: Exchange 1925 $ 220 1926 $ 2,000 ; Toll 1925 $ 0 1926 $ 500 37

38 umulative Effective Value of 1925 and 1926 Rate Changes included in: Line 1—1925 $ 129 1926 $ 1,232 ; Line 2—1925 $ 0 1926 $ 375 38

†st 2 months estimated.

*Includes estimated Interest Deductions to be paid A. T. & T. Co. $ 352

Show money value to nearest thousand dollars, omitting last three digits.
Show percentages extended to two decimals.

Date Issued November 12, 1924

X-354
P.25

5365

X-3547 p.27

FORM S. M. 216 M
PROVISIONAL ESTIMATE
STATEMENT F

ILLINOIS BELL TELEPHONE COMPANY
(Name of Company)

PROVISIONAL FINANCIAL PLAN—1925[1]

REQUIREMENTS				
Gross Additions to Plant (incl. Int. during Const.)	$ 26,500,000			1
Plus Cost of Removing Plant	570,000			2
Less Salvage (incl. gross wiring gain)	3,300,000	$ 23,770,000		3
Extraordinary Repairs (Net)		195,000		4
General Equipment (Gross less Net Salvage)		416,000		5
Total for Plant and Equipment			$ 24,381,000	6
Stocks—to Increase Percent of Control (106)[2]		$ 0		7
Other Investment Securities (106-109)[2]		0		8
Advances and Bills Receivable (new loans) (110, 117)[2] (Except to A. T. & T. Co.)		0		9
Miscellaneous Investments, Increase (111) (Excludes transfers from and to Accounts 211 & 212)		0		10
Total for Investments and Advances			$ 0	11
Cash and Marketable Securities, Increase (113, 114, 116)[2]		$ 20,000		12
Accounts Receivable, Increase (115, 118, 119, 120, 123) (Except loans on open account to A. T. & T. Co.)		366,000		13
Materials and Supplies, Increase (122-01-02 and 03)		0		14
Total for Increased Current Assets			$ 385,000	15
Prepayments, Increase (129-133)			18,000	16
Obligations maturing or expected to pay (153, 155, 157, 163)[2] (Except to A. T. & T. Co.)			20,000	17
Sinking Funds			500,000	18
Purchase of Going or Completed Plant—From Bell Operating Companies[2]			8,000	19
Purchase of Going or Completed Plant—From Other Companies[2]			1,418,000	20
Miscellaneous Debit Items[2]			100,000	21
GRAND TOTAL REQUIREMENTS			$ 26,582,000	22
RESOURCES				
Undivided Profits			$ 1,840,000	23
Charges to Income, etc., not payable in cash in current year:				
Wiring Loss (Net)	$ 755,000			24
Amortization of Debt Discount and Expense (338)	125,000			25
Accrued Liabilities not Due, Increase (166, 167)	470,000			26
Matured Interest and Dividends Unpaid, Increase (162)	0	$ 1,350,000		27
Less Credits to Income, etc., not receivable in cash in current year:				
Accrued Income not Due, Increase (124)	$ 0			28
Matured Interest and Dividends Rec., Increase (121)	0	$ 0		29
Net Charges or Credits to Income, etc., not payable or receivable in cash in current year			$ 1,350,000	30
Depreciation & Amortization (340, 608 & 609) & depreciation charged Clear'g Accts. (701-2-3 & 4)			8,580,000	31
Investment Securities Sold[2] (Except to A. T. & T. Co.)			0	32
Advances and Bills Receivable Maturing—from Others[2]			8,000	33
Increased Current Liabilities (158, 159, 160, 161, 164, 165) (Except loans from A. T. & T. Co.)			393,000	34
Sale of Going or Completed Plant—To Bell Operating Companies[2]			72,000	35
Sale of Going or Completed Plant—To Other Companies[2]			0	36
Miscellaneous Credit Items[2]			2,000	37
GRAND TOTAL RESOURCES			$ 11,153,000	38
BALANCE NET REQUIREMENTS			$ 15,429,000	39

FINANCING PROPOSED FOR ABOVE NET REQUIREMENTS

Stocks and Bonds of Co. sold Others[2]	$ 102,000	Stocks & Bonds of Co. sold A. T. & T. Co.	$ 9,898,000	40
Borrowed from Bankers and Others[2]	0	Investment Securities sold A. T. & T. Co.[2]	0	41
Other[2]	0	Reduction of Loans to A. T. & T. Co.	1,829,000	42
		Loans from A. T. & T. Co. (Net)	3,600,000	43
Total Financing from Others	$ 102,000	Net Financing from A. T. & T. Co.	$ 15,327,000	L44
		GRAND TOTAL FINANCING	$ 15,429,000	45

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[1] Amounts to nearest [illegible]

[2] Specify detail on reverse side of report or on Supplementary Statement.

Date issued November 13, 1924

5366

1590C

FORM S. R. 316 [illegible]
PROVISIONAL ESTIMATE 1926
SATEMENT E
SHEET 1

FORECAST OF EARNINGS AND EXPENSES
(COMPARED WITH RESULTS OF 1924-1926)

ILLINOIS BELL TELEPHONE COMPANY
(Name of Company)

		ACTUAL RESULTS		Prov. Est.	FORECAST			
	EARNINGS AND EXPENSES (Under Existing Rates for 1926-1930)	1924	1925†	1926	1927	1928	1929	1930
1	Exchange Revenues (500-506, Inclusive)	48 832	52 100	55 350	58 100	60 650	62 200	66 700
2	Toll Revenues (510-516, Inclusive)	8 620	10 090	11 480	12 620	14 110	16 570	17 140
3	Miscellaneous Operating Revenues (520-526, Inclusive)	859	916	916	965	1 015	1 065	1 120
4	**Total Telephone Revenues**	58 318	63 105	67 746	71 685	75 775	79 835	84 960
5	Traffic Expenses (621-635, Inclusive)	17 859	18 010	19 040	18 520	19 250	19 400	19 780
6	Commercial Expenses (640-650, Inclusive)	6 282	6 640	7 080	7 470	7 870	8 320	8 730
7	General and Miscellaneous Expenses (660-690, Inclusive)	1 486	1 500	1 600	1 690	1 765	1 840	1 915
8	Other Oper. Expenses (304, 330-334, Inclusive, 337, 341, 527)	3 133	3 610	3 806	4 025	4 220	4 420	4 620
9	**Total Operation Expenses**	28 210	29 760	31 526	31 705	33 105	33 980	35 045
10	Supervision of Maintenance (601)	962	1 020	1 030	1 120	1 170	1 220	1 260
11	Ordinary Repairs (602-606 "R" codes)	4 685	4 720	5 280	5 410	5 690	5 940	6 230
12	Rearrangements and Changes (602-606 "M" codes, and 610)	1 493	1 700	1 890	2 000	2 130	2 230	2 350
13	Station Removals and Changes (607)	1 642	1 820	1 980	2 090	2 170	2 250	2 340
14	**Total Current Maintenance**	8 782	9 260	10 180	10 620	11 160	11 640	12 180
15	Depreciation (340, 608, 609)	7 228	8 200	9 320	10 350	11 200	12 100	13 050
16	Taxes (305, 322)	4 890	5 490	5 930	6 600	7 120	7 700	8 275
17	**Total Telephone Expenses**	49 106	52 710	56 955	59 275	62 585	65 420	68 550
18	**Net Telephone Earnings**	9 207	10 395	10 790	12 410	13 190	14 415	15 410
19	Sundry Net Earnings (302, 310-316, Incl., minus 303, 320, 321, 323)	805	515	430	410	460	510	570
20	**Total Net Earnings‡**	10 012	10 910	11 220	12 820	13 650	14 925	15 980
21	Deduct Interest (335, 336, 338, minus 339)	2 774	2 945	* 3 265	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx
22	**Balance Net Profits**	7 238	7 965	7 955	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx
23	Deduct Dividends—(Preferred) (351-02)	–	–	–	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx
24	—(Common) (351-01)	5 402	5 600	6 400	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx
25	**Total Dividends**	5 402	5 600	6 400	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx
26	**Undivided Profits**	1 836	2 365	1 555	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx
27	Amount of Licensee Revenue—Dr. (527) incl. in Line 8	2 513	2 713	2 912	3 082	3 256	3 433	3 609
	AVERAGE CAPITAL OBLIGATIONS							
28	Capital Stock (Common) (150-01)	67 109	70 417	80 000	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx
29	Capital Stock (Preferred) (150-02)	–	–	–	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx
30	Capital Stock Installments (150-04)	2 478	2 707	7 000	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx
31	Funded Debt (153)	49 794	49 418	48 856	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx
32	Advances and Bills Payable (155, 157)	–	1 783	3 517	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx
33	**Total Average Capital Obligations**	119 381	124 325	139 373	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx
34	Net Telephone Earnings to Average Plant in Service	6.15%	6.20%	5.69%	5.92%	5.81%	5.91%	5.8[illegible]%
35	Balance Net Profits (after Preferred Div.) to Average Common Stock	10.79%	11.81%	9.94%	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx
36	Cumulative Effective Revenue Value of Rate Changes	xxxx xxx	–	125	560	2 795	2 950	3 105
37	Additional Net Tel. Earnings from Rate Changes in Line 36	xxxx xxx	–	102	486	2 270	2 597	2 523
38	Net Tel. Earn. (Incl. Effect of Rate Changes) to Average Plant in Service	xxxx xxx	6.20%	5.74%	6.14%	6.81%	6.89%	6.84%
39	al. Net Prof. Incl. Effect of Rate Changes (after Pfd. Div.) to Av. Com. Stock	xxxx xxx	11.81%	10.07%	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx

† Last .... months estimated.
‡ Do not include rate changes already granted and included in lines 1 to 35 incl.

Date Issued November 12, 1923

* Includes estimated Interest Deductions to be paid A. T. & T. Co. $ 700
Show money value to nearest thousand dollars, omitting last three digits.
Show percentages extended to two decimals.

Y-354
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* indicates red figures

FORM S. H. 816 N
PROVISIONAL ESTIMATE
STATEMENT F

X-354
P.31

____
(Name of Company)

PROVISIONAL FINANCIAL PLAN—[illegible]¹

	REQUIREMENTS				
1	Gross Additions to Plant (incl. Int. during Const.)	$29 000 00			1
2	*Plus* Cost of Removing Plant	750 000			2
3	*Less* Salvage (incl. gross wiring gain)	3 650 000	$ 26 100 000		3
4	Extraordinary Repairs (Net)		210 000		4
5	General Equipment (Gross less Net Salvage)		540 000		5
6	Total for Plant and Equipment			$ 26 850 000	6
7	Stocks—to Increase Percent of Control (106)²		$		7
8	Other Investment Securities (106-109)²				8
9	Advances and Bills Receivable (new loans) (110, 117)² (Except to A. T. & T. Co.)				9
10	Miscellaneous Investments, Increase (111) (Excludes transfers from and to Accounts 211 & 212)				10
11	Total for Investments and Advances			$	11
12	Cash and Marketable Securities, Increase (113, 114, 116)²		$ *160 000		12
13	Accounts Receivable, Increase (115, 118, 119, 120, 123) (Except loans on open account to A. T. & T. Co.)		375 000		13
14	Materials and Supplies, Increase (122-01-02 and 03)				14
15	Total for Increased Current Assets			$ 215 000	15
16	Prepayments, Increase (129-133)			10 000	16
17	Obligations maturing or expected to pay (153, 155, 157, 163)² (Except to A. T. & T. Co.)			156 000	17
18	Sinking Funds			500 000	18
19	Purchase of Going or Completed Plant—From Bell Operating Companies²			66 000	19
20	Purchase of Going or Completed Plant—From Other Companies²			1 150 000	20
21	Miscellaneous Debit Items²			*25 000	21
22	**GRAND TOTAL REQUIREMENTS**			$ 28 922 000	22
	RESOURCES				
23	Undivided Profits (Under Existing and Expected Rates) $ 1 555 000 $ 103 000			$ 1 658 000	23
	Charges to Income, etc., not payable in cash in current year:				
24	Wiring Loss (Net)	$ 1 100 000			24
25	Amortization of Debt Discount and Expense (338)	120 000			25
26	Accrued Liabilities not Due, Increase (166, 167)	500 000			26
27	Matured Interest and Dividends Unpaid, Increase (162)		$ 1 720 000		27
	Less Credits to Income, etc., not receivable in cash in current year:				
28	Accrued Income not Due, Increase (124)	$			28
29	Matured Interest and Dividends Rec., Increase (121)		$		29
30	Net Charges or Credits to Income, etc., not payable or receivable in cash in current year			$ 720 000	30
31	Depreciation & Amortization (340, 608 & 609) & depreciation charged Clear'g Accts. (701-2-3 & 4)			8 640 000	31
32	Investment Securities Sold² (Except to A. T. & T. Co.)			-	32
33	Advances and Bills Receivable Maturing—from Others²			29 000	33
34	Increased Current Liabilities (158, 159, 160, 161, 164, 165) (Except loans from A. T. & T. Co.)			*249 000	34
35	Sale of Going or Completed Plant—To Bell Operating Companies²			123 000	35
36	Sale of Going or Completed Plant—To Other Companies²				36
37	Miscellaneous Credit Items²			10 000	37
38	**GRAND TOTAL RESOURCES**			$ 12 932 000	38
39	**BALANCE NET REQUIREMENTS**			$ 15 990 000	39

	FINANCING PROPOSED FOR ABOVE NET REQUIREMENTS				
40	Stocks and Bonds of Co. sold Others²	$ 188 000	Stocks & Bonds of Co. sold A. T. & T. Co.	$ 12 812 000	40
41	Borrowed from Bankers and Others²		Investment Securities sold A. T. & T. Co.²		41
42	Other²	190 000	Reduction of Loans to A. T. & T. Co.		42
43			Loans from A. T. & T. Co. (Net)	*2 200 000	43
44	Total Financing from Others	$ 328 000	Net Financing from A. T. & T. Co.	$	44
45			**GRAND TOTAL FINANCING**	$	45

1. Show amounts to nearest thousand dollars, but show last three digits.
2. Specify detail on reverse side of report (or on Supplementary Statement).

Date Issued ______________

Printed in U. S. A.

FORM [illegible]
PROVISIONAL ESTIMATE [illegible]
STATEMENT E
SHEET 1

45

ESTIMATED EARNINGS A[illegible] EXPENSES
COMPARED WITH RESULTS OF 1925-1926

ILLINOIS BELL TELEPHONE COMPANY
(Name of Company)

		Actual Results				PROV. EST.		Forecast								
		1925		1926†		1927		1928		1929		1930		1931		
	EARNINGS AND EXPENSES (Under Existing Rates for 1927-1931)															
1	Exchange Revenues (500-506, Inclusive)	52	425	56	250	59	670	63	150	66	010	68	930	71	830	1
2	Toll Revenues (510-516, Inclusive)	10	303	12	160	15	960	15	910	17	540	19	270	21	060	2
3	Miscellaneous Operating Revenues (520-526, Inclusive)		945		930		990	1	050	1	100	1	160	1	210	3
4	**Total Telephone Revenues**	63	673	69	340	74	620	80	090	84	650	89	360	94	100	4
5	Traffic Expenses (621-635, Inclusive)	18	22[illegible]	19	350	19	780	19	860	19	900	20	210	20	840	5
6	Commercial Expenses (640-650, Inclusive)	6	51[illegible]	6	900	7	380	7	820	8	200	8	590	9	970	6
7	General and Miscellaneous Expenses (660-690, Inclusive)		475	1	03[illegible]	1	725	1	540	1	925	2	005	2	09[illegible]	7
8	Other Oper. Expenses (304, 330-334, Inclusive, 337, 341, 527)		[illegible]		[illegible]	[illegible]	[illegible]		2[illegible]		[illegible]	1	625	[illegible]	[illegible]	8
9	**Total Operation Expenses**		[illegible]	[illegible]	[illegible]	32	[illegible]		72[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	740	9
10	Supervision of Maintenance (601)			[illegible]	[illegible]	1	[illegible]	[illegible]	[illegible]	1	[illegible]	[illegible]		1	570	10
11	Ordinary Repairs (602-606 "R" codes)				[illegible]	5	[illegible]				[illegible]				[illegible]	11
12	Rearrangements and Changes (602-606 "M" codes, and 610)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	71[illegible]				[illegible]	12
13	Station Removals and Changes (607)	[illegible]	[illegible]	2		[illegible]	[illegible]	2	[illegible]	2	[illegible]	2	[illegible]	[illegible]	[illegible]	13
14	**Total Current Maintenance**			10	[illegible]	11		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	14
15	Depreciation (340, 608, 609)							[illegible]				[illegible]	[illegible]			15
16	Taxes (305, 322)					[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]		16
17	**Total Telephone Expenses**					[illegible]					[illegible]		[illegible]	[illegible]		17
18	**Net Telephone Earnings**			[illegible]		[illegible]	[illegible]									18
19	Sundry Net Earnings (302, 310-316, Incl.), minus (303, 320, 321, 323)															19
20	**Total Net Earnings**															20
21	Deduct Interest (335, 336, 338, minus 339)							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx	21
22	**Balance Net Profits**							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx	22
23	Deduct Dividends—(Preferred) (351-02)							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx	23
24	—(Common) (351-01)							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx	24
25	**Total Dividends**							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx	25
26	**Undivided Profits**							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx	26
27	Amount of Licensee Revenue—Dr. (527) incl. in Line 8															27
	AVERAGE CAPITAL OBLIGATIONS															
28	Capital Stock (Common) (150-01)							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx	28
29	Capital Stock (Preferred) (150-02)							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx	29
30	Capital Stock Installments (150-04)							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx	30
31	Funded Debt (153)							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx	31
32	Advances and Bills Payable (155, 157)							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx	32
33	**Total Average Capital Obligations**			[illegible]				xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx	33
34	Net Telephone Earnings to Average Plant in Service		%	[illegible]	%		%		%		%		%		%	34
35	Balance Net Profits (after Preferred Div.) to Average Common Stock		%	[illegible]	%		%	xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx	35
36	Cumulative Effective Revenue Value of Rate Changes	xxxx	xxx	‡												36
37	Additional Net Tel. Earnings from Rate Changes in Line 36	xxxx	xxx	‡												37
38	[illegible] Tel. Earn. (Incl. Effect of Rate Changes) to Average Plant in Service	xxxx	xxx		%		%		%		%		%	[illegible]	%	38
39	B[illegible] Net Prof. Incl. Effect of Rate Changes (after Pfd. Div.) to Av. Com. Stock	xxxx	xxx		%		%	xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx	39

†Last.......months estimated.
‡Do not include rate changes already granted and included in lines 1 to 35 incl.

Date Issued..............................

*Includes estimated Interest Deductions to be paid A. T. & T. Co. $..................
Show money value to nearest thousand dollars, omitting last three digits.
Show percentages extended to two decimals.

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Printed in U. S. A.

FORM S. R. 315-O
PROVISIONAL ESTIMATE 1928
STATEMENT E
SHEET 1

ESTIMATED EARNINGS AND EXPENSES
COMPARED WITH RESULTS OF 1926-27

ILLINOIS BELL TELEPHONE COMPANY
(Name of Company)

		Actual Results		PROV. EST.	Forecast				
	EARNINGS AND EXPENSES (Under Existing Rates for 1928-1932)	1926	1927†	1928	1929	1930	1931	1932	
1	Exchange Revenues (500-506, Inclusive)			64 370					1
2	Toll Revenues (510-516, Inclusive)			15 980					2
3	Miscellaneous Operating Revenues (520-526, Inclusive)			1 130					3
4	**Total Telephone Revenues**			81 480					4
5	Traffic Expenses (621-635, Inclusive)			19 880					5
6	Commercial Expenses (640-650, Inclusive)			8 100					6
7	General and Miscellaneous Expenses (660-690, Inclusive)			2 660					7
8	Other Oper. Expenses (304, 330-334, Inclusive, 337, 341, 527)			2 990					8
9	**Total Operation Expenses**			33 630					9
10	Supervision of Maintenance (601)			1 433					10
11	Ordinary Repairs (602-606 "R" codes)			7 060					11
12	Rearrangements and Changes (602-606 "M" codes, and 610)			2 969					12
13	Station Removals and Changes (607)			2 423					13
14	**Total Current Maintenance**			13 885					14
15	Depreciation (340, 608, 609)			11 800					15
16	Taxes (305, 322)			8 815					16
17	**Total Telephone Expenses**			68 130					17
18	**Net Telephone Earnings**			13 350					18
19	Sundry Net Earnings (302, 310-316, Incl.), minus (303, 320, 321, 323)			610					19
20	**Total Net Earnings**			13 960					20
21	Deduct Interest (335, 336, 338, minus 339)			3 145	XXXX XXX	XXXX XXX	XXXX XXX	XXXX XXX	21
22	**Balance Net Profits**			10 815	XXXX XXX	XXXX XXX	XXXX XXX	XXXX XXX	22
23	Deduct Dividends —(Preferred) (351-02)			—	XXXX XXX	XXXX XXX	XXXX XXX	XXXX XXX	23
24	—(Common) (351-01)			8 800	XXXX XXX	XXXX XXX	XXXX XXX	XXXX XXX	24
25	**Total Dividends**			8 800	XXXX XXX	XXXX XXX	XXXX XXX	XXXX XXX	25
26	**Undivided Profits**			2 015	XXXX XXX	XXXX XXX	XXXX XXX	XXXX XXX	26
27	Amount of Licensee Revenue—Dr. (527) incl. in Line 8			1 570					27
28	Average Capital Stock (Common) (150-01)			110 000	XXXX XXX	XXXX XXX	XXXX XXX	XXXX XXX	28
29	Net Telephone Earnings to Average Plant in Service	%	%	5.66 %	%	%	%	%	29
30	Balance Net Profits (after Preferred Div.) to Average Common Stock	%	%	9.83 %	XXXX XXX	XXXX XXX	XXXX XXX	XXXX XXX	30
31	Cumulative Effective Revenue Value of Rate Changes ‡	XXXX XXX		159					31
32	Additional Net Tel. Earnings from Rate Changes in Line 31 ‡	XXXX XXX		116					32
33	Net Tel. Earn. (Incl. Effect of Rate Changes) to Average Plant in Service	XXXX XXX	%	5.71 %	%	%	%	%	33
34	l. Net Prof. Incl. Effect of Rate Changes (after Pfd. Div.) to Av. Com. Stock	XXXX XXX	%	9.94 %	XXXX XXX	XXXX XXX	XXXX XXX	XXXX XXX	34

†Last months estimated.
‡Do not include rate changes already granted and included in lines 1 to 30 incl.

Show money value to nearest thousand dollars, omitting last three digits.
Show percentages two figures to right of decimal.

Date Issued (Revised) March 1, 1928.

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ESTIMATED EARNINGS AND EXPENSES
COMPARED WITH RESULTS OF 1926-27

ILLINOIS BELL TELEPHONE COMPANY
(Name of Company)

FORM S. R. [illegible]
PROVISIONAL ESTIMATE 1928
STATEMENT E
SHEET 1

	EARNINGS AND EXPENSES (Under Existing Rates for 1928-1932)	Actual Results 1926	Actual Results 1927*	PROV. EST. 1928	Forecast 1929	Forecast 1930	Forecast 1931	Forecast 1932	
1	Exchange Revenues (500-506, Inclusive)	56 569	60 430	64 370	68 280	72 010	75 540	79 140	1
2	Toll Revenues (510-516, Inclusive)	12 364	14 290	15 960	17 770	19 860	21 920	24 080	2
3	Miscellaneous Operating Revenues (520-526, Inclusive)	942	880	1 150	1 210	1 270	1 320	1 390	3
4	**Total Telephone Revenues**	69 875	75 600	81 480	87 260	93 140	98 780	104 610	4
5	Traffic Expenses (621-635, Inclusive)	19 222	19 100	19 880	20 020	19 900	20 340	21 140	5
6	Commercial Expenses (640-650, Inclusive)	6 907	7 830	6 100	6 600	9 030	9 490	9 950	6
7	General and Miscellaneous Expenses (660-690, Inclusive)	1 619	1 730	1 840	1 950	2 060	2 150	2 240	7
8	Other Oper. Expenses (304, 330-334, Inclusive, 337, 341, 527)	3 609	4 240	4 560	4 890	6 240	5 580	5 925	8
9	**Total Operation Expenses**	31 357	32 610	32 380	33 470	37 220	37 560	39 260	9
10	Supervision of Maintenance (601)	1 271	1 390	1 455	1 510	1 581	1 648	1 713	10
11	Ordinary Repairs (602-606 "R" codes)	5 446	6 000	6 780	7 312	7 906	8 410	6 894	11
12	Rearrangements and Changes (602-606 "M" codes, and 610)	2 456	2 640	2 969	2 755	3 745	2 927	3 106	12
13	Station Removals and Changes (607)	1 906	2 280	2 425	2 559	2 671	2 785	2 897	13
14	**Total Current Maintenance**	11 141	12 310	15 610	14 140	14 900	16 770	16 610	14
15	Depreciation (340, 608, 609)	9 291	10 380	11 560	12 950	14 020	15 060	16 100	15
16	Taxes (305, 322)	6 570	7 680	6 830	9 835	10 765	11 620	12 355	16
17	**Total Telephone Expenses**	58 365	62 890	66 380	72 395	75 910	80 000	84 325	17
18	**Net Telephone Earnings**	11 510	12 710	15 100	14 835	17 230	18 780	20 285	18
19	Sundry Net Earnings (302, 310-316, Incl.), minus (303, 320, 321, 323)	410	680	640	610	570	610	650	19
20	**Total Net Earnings**	11 920	13 390	15 740	15 445	17 800	19 390	20 935	20
21	Deduct Interest (335, 336, 338, minus 339)	5 049	3 690	4 970	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx	21
22	**Balance Net Profits**	6 871	9 700	10 770	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx	22
23	Deduct Dividends – (Preferred) (351-02)	-	-	-	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx	23
24	– (Common) (351-01)	6 400	7 000	8 800	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx	24
25	**Total Dividends**	6 400	7 000	8 800	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx	25
26	**Undivided Profits**	2 471	2 700	1 970	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx	26
27	Amount of Licensee Revenue – Dr. (527) incl. in Line 8	2 686	2 910	3 140	3 360	3 580	3 806	4 050	27
28	Average Capital Stock (Common) (150-01)	80 000	88 750	110 000	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx	28
29	Net Telephone Earnings to Average Plant in Service	6.13%	6.12%	5.64%	5.75%	6.18%	6.30 %	6.39%	29
30	Balance Net Profits (after Preferred Div.) to Average Common Stock	11.09%	10.93%	9.79%	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx	30
31	Cumulative Effective Revenue Value of Rate Changes	xxxx xxx	27	139	189	274	288	296	31
32	Additional Net Tel. Earnings from Rate Changes in Line 31	xxxx xxx	22	116	157	227	257	247	32
33	Net Tel. Earn. (Incl. Effect of Rate Changes) to Average Plant in Service	xxxx xxx	6.13%	5.69%	5.81 %	6.25%	6.38 %	6.47%	33
34	Bal. Net Prof. Incl. Effect of Rate Changes (after Pfd. Div.) to Av. Com. Stock	xxxx xxx	10.95%	9.90%	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx	34

*Last 3 months estimated.
‡Do not include rate changes already granted and included in lines 1 to 30 incl.

Show money value to nearest thousand dollars, omitting last three digits.
Show percentages two figures to right of decimal.

Date Issued November 1, 1927

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P. 39

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FORM S. M. 316-G
PROVISIONAL ESTIMATE
STATEMENT F

* indicates red figures

ILLINOIS BELL TELEPHONE COMPANY
(Name of Company)

PROVISIONAL FINANCIAL PLAN—YEAR 1928

	REQUIREMENTS			
1	Gross Additions to Plant (incl. Int. during Const.)	$ 38,000,000		
2	*Plus* Cost of Removing Plant	700,000		
3	*Less* Salvage (incl. gross wiring gain)	5,800,000	$ 32,900,000	
4	Extraordinary Repairs (Net)		250,000	
5	General Equipment (Gross less Net Salvage)		920,000	
6	Total for Plant and Equipment			$ 34,070,000
7	Stocks—to Increase Per Cent of Control (106)[1]		$ 450,000	
8	Other Investment Securities, Increase (106-109)[1]		* 210,000	
9	Advances and Bills Receivable, Increase (110-117)[1] (Except to A. T. & T. Co.)		-	
10	Miscellaneous Investments, Increase (111) (Excl. sales of bldgs. if salv. is incl. in Line 3. Excl. trans. from Accts. 211 & 212)		-	
11	Total for Investments and Advances			$ 240,000
12	Cash and Marketable Securities, Increase (113, 114, 116)[1]		$ 25,000	
13	Accounts Receivable, Increase (115, 118, 119, 120, 121, 123) (Except loans on open account to A. T. & T. Co.)		470,000	
14	Materials and Supplies, Increase (122 less 122-10)		-	
15	Total for Increased Current Assets			$ 495,000
16	Accrued Income Not Due, Increase (124)			-
17	Prepayments, Increase (129-133)			20,000
18	Obligations maturing or expected to be paid (153, 155, 157, 163)[1] (Except to A. T. & T. Co.)			38,000
19	Sinking Funds			500,000
20	Purchase of Plant—From Bell Operating Companies[2]			193,000
21	Purchase of Plant—From Other Companies[2]			1,540,000
22	Miscellaneous Debit Items[2]			-
23	**GRAND TOTAL REQUIREMENTS**			$ 37,096,000
	RESOURCES			
24	Undivided Profits			$ 1,970,000
25	Wiring Loss (Net)			1,350,000
26	Amortization of Debt Discount and Expense (338)			125,000
27	Accrued Liabilities not Due, Increase (166, 167)			1,145,000
28	Depreciat'n & Amortizat'n (340, 608, 609, 674) & depreciation charged Clear'g Accts. (701-2-3 & 4)			11,990,000
29	Increased Current Liabilities (158, 159, 160, 161, 162, 164, 165) (Except loans from A. T. & T. Co.)			* 146,000
30	Sale of Plant—To Bell Operating Companies[2]			47,000
31	Sale of Plant—To Other Companies[2]			-
32	Miscellaneous Credit Items[2]			1,025,000
33	**GRAND TOTAL RESOURCES**			$ 17,506,000
34	**BALANCE NET REQUIREMENTS**			$ 19,590,000

FINANCING PROPOSED FOR ABOVE NET REQUIREMENTS

35	Stocks and Bonds of Co. sold Others[2]	$ -	Stocks and Bonds of Co. sold A. T. & T. Co.	$ -
36	Borrowed from Bankers and Others[2]	-	Investment Securities sold A. T. & T. Co.	-
37	Other[2]	190,000	Loans from A. T. & T. Co. (Net)	19,400,000
38	Total Financing from Others	$ 190,000	Net Financing from A. T. & T. Co.	$ 19,400,000
39			**GRAND TOTAL FINANCING**	$ 19,590,000

1. Show amounts to nearest thousand dollars, but show last three digits.
2. Specify detail on Supplementary Statement.

• Funds with A.T. & T. Company as of December 31, 1927	-	$ 4,250,000
Advances Payable to A.T. & T. Company December 31, 1928	-	15,150,000
Total		$ 19,400,000

Date Issued November 1, 1927

Printed in U. S. A.

Printed in U.S.A.

ESTIMATED EARNINGS AND EXPENSES
COMPARED WITH RESULTS OF 1927-28

ILLINOIS BELL TELEPHONE COMPANY
(Name of Company)

FORM S. B. 315-P
PROVISIONAL ESTIMATE 1929
STATEMENT E
SHEET 1

	EARNINGS AND EXPENSES (Under Existing Rates for 1929-1933)	Actual Results 1927	Actual Results 1928†	PROV. EST. 1929	Forecast 1930	Forecast 1931	Forecast 1932	Forecast 1933	
1	Exchange Revenues (500-506, Inclusive)	60 590	64 435	67 960	71 580	74 985	78 390	81 835	1
2	Toll Revenues (510-516, Inclusive)	14 236	16 505	20 330	22 910	25 270	27 695	30 230	2
3	Miscellaneous Operating Revenues (520-526, Inclusive)	888	1 150	1 340	1 405	1 560	1 775	1 940	3
4	**Total Telephone Revenues**	75 714	82 070	89 630	95 895	101 815	107 860	114 005	4
5	Traffic Expenses (621-635, Inclusive)	19 007	20 250	22 680	23 160	23 820	24 840	25 580	5
6	Commercial Expenses (640-650, Inclusive)	7 626	8 315	8 815	9 350	9 850	10 275	10 725	6
7	General and Miscellaneous Expenses (660-690, Inclusive)	2 456	2 770	2 945	3 075	3 225	3 395	3 555	7
8	Other Oper. Expenses (304, 330-334, Inclusive, 337, 341, 527)	4 209	3 025	3 270	3 460	3 630	3 825	4 040	8
9	**Total Operation Expenses**	33 298	34 360	37 710	39 045	40 525	42 335	43 900	9
10	Supervision of Maintenance (601)	1 373	1 540	1 680	1 840	1 950	2 045	2 140	10
11	Ordinary Repairs (602-606 "R" codes)	6 119	6 815	7 425	7 975	8 505	8 995	9 510	11
12	Rearrangements and Changes (602-606 "M" codes, and 610)	2 659	3 085	3 025	3 035	3 155	3 265	3 440	12
13	Station Removals and Changes (607)	2 350	2 520	2 770	2 965	3 150	3 345	3 530	13
14	**Total Current Maintenance**	12 501	13 960	14 900	15 815	16 760	17 650	18 620	14
15	Depreciation (340, 608, 609)	10 264	11 550	12 830	13 980	14 915	15 890	16 875	15
16	Taxes (305, 322)	7 411	8 065	8 995	9 940	10 890	11 380	12 025	16
17	**Total Telephone Expenses**	63 474	67 905	74 435	78 780	83 090	87 255	91 420	17
18	**Net Telephone Earnings**	12 240	14 165	15 195	17 115	18 725	20 605	22 585	18
19	Sundry Net Earnings (302, 310-316, Incl.) minus (303, 320, 321, 323)	638	580	500	415	445	460	595	19
20	**Total Net Earnings**	12 878	14 745	15 695	17 530	19 170	21 065	23 180	20
21	Deduct Interest (335, 336, 338, minus 339)	3 671	3 045	4 160	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx	21
22	**Balance Net Profits**	9 207	11 700	11 535	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx	22
23	Deduct Dividends—(Preferred) (351-02)	-	-	-	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx	23
24	—(Common) (351-01)	7 000	8 800	8 800	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx	24
25	**Total Dividends**	7 000	8 800	8 800	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx	25
26	**Undivided Profits**	2 207	2 900	2 735	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx	26
27	Amount of Licensee Revenue—Dr. (527) incl. in Line 8	2 921	1 570	1 710	1 855	1 940	2 060	2 175	27
28	Average Capital Stock (Common) (150-01)	88 760	110 000	110 000	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx	28
29	Net Telephone Earnings to Average Plant in Service	5.92 %	6.16 %	5.95 %	6.14 %	6.31 %	6.52 %	6.75 %	29
30	Balance Net Profits (after Preferred Div.) to Average Common Stock	10.37 %	10.64 %	10.49 %	xxxxxxxx	xxxxxxxx	xxxxxxxx	xxxxxxxx	30

†Last 3 months estimated.

Show money value to nearest thousand dollars, omitting last three digits.
Show percentages two figures to right of decimal.

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P.45

E-1

Date Issued NOVEMBER 1, 1928.

5373

Printed in U. S. A.

FORM S. B. 315-P
PROVISIONAL ESTIMATE 1929
STATEMENT E
SHEET 1

ESTIMATED EARNINGS AND EXPENSES
COMPARED WITH RESULTS OF 1927-28

ILLINOIS BELL TELEPHONE COMPANY
CHICAGO AREA
(Name of Company)

	EARNINGS AND EXPENSES (Under Existing Rates for 1929-1933)	Actual Results 1927	Actual Results 1928†	PROV. EST. 1929	Forecast 1930	Forecast 1931	Forecast 1932	Forecast 1933	
1	Exchange Revenues (500-506, Inclusive)	47 392	50 015	52 520	55 160	57 610	60 060	62 550	1
2	Toll Revenues (510-516, Inclusive)	5 829	7 145	10 130	11 670	13 060	14 525	16 100	2
3	Miscellaneous Operating Revenues (520-526, Inclusive)	718	865	1 050	1 070	1 200	1 370	1 510	3
4	**Total Telephone Revenues**	53 939	58 025	63 700	67 900	71 870	75 955	80 160	4
5	Traffic Expenses (621-635, Inclusive)	14 044	14 930	16 955	17 305	17 790	18 585	19 160	5
6	Commercial Expenses (640-650, Inclusive)	5 702	6 220	6 540	6 910	7 290	7 590	7 920	6
7	General and Miscellaneous Expenses (660-690, Inclusive)	1 806	2 100	2 235	2 335	2 445	2 575	2 695	7
8	Other Oper. Expenses (304, 330-334, Inclusive, 337, 341, 527)	2 601	1 765	1 920	2 035	2 140	2 250	2 395	8
9	**Total Operation Expenses**	24 153	25 015	27 650	28 585	29 665	31 000	32 170	9
10	Supervision of Maintenance (601)	902	980	1 010	1 070	1 130	1 190	1 250	10
11	Ordinary Repairs (602-606 "R" codes)	4 501	5 050	5 540	5 940	6 306	6 720	7 130	11
12	Rearrangements and Changes (602-606 "M" codes, and 610)	1 924	2 300	2 215	2 1[illegible]0	2 260	2 340	2 470	12
13	Station Removals and Changes (607)	1 933	2 100	2 286	2 440	2 590	2 750	2 910	13
14	**Total Current Maintenance**	9 260	10 430	11 050	11 640	12 280	13 000	13 760	14
15	Depreciation (340, 608, 609)	6 856	7 660	8 550	9 270	9 810	10 420	11 050	15
16	Taxes (305, 322)	6 068	6 400	7 190	7 915	8 630	8 950	9 430	16
17	**Total Telephone Expenses**	46 337	49 505	54 440	57 410	60 385	63 370	66 410	17
18	**Net Telephone Earnings**	7 602	8 520	9 260	10 490	11 485	12 585	13 750	18
19	Sundry Net Earnings (302, 310-316, Incl.), minus (303, 320, 321, 323)								19
20	**Total Net Earnings**								20
21	Deduct Interest (335, 336, 338, minus 339)				xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx	21
22	**Balance Net Profits**				xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx	22
23	Deduct Dividends—(Preferred) (351-02)				xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx	23
24	—(Common) (351-01)				xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx	24
25	**Total Dividends**				xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx	25
26	**Undivided Profits**				xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx	26
27	Amount of Licensee Revenue—Dr. (327) incl. in Line 8	2 086	1 110	1 215	1 300	1 370	[illegible] 450	1 530	27
28	Average Capital Stock (Common) (150-01)				xx x xxx	xxxx xxx	xxxx xxx	xxxx xxx	28
29	Net Telephone Earnings to Average Plant in Service	5.28%	5.36%	5.24%	5.50%	5.71%	5.90%	6.08%	29
30	Balance Net Profits (after Preferred Div.) to Average Common Stock	%	%	%	xxxxxxxx	xxxxxxxx	xxxxxxxx	xxxxxxxx	30

†Last 3 months estimated.

Show money value to nearest thousand dollars, omitting last three digits.
Show percentages two figures to right of decimal.

E-1

Date Issued November 12, 1928.

4590M

Printed in U. S. A.

ESTIMATED EARNINGS AND EXPENSES
COMPARED WITH RESULTS OF 1927-28

ILLINOIS BELL TELEPHONE COMPANY - STATE AREA
(Name of Company)

FORM S. B. 310-P
PROVISIONAL ESTIMATE 1929
STATEMENT E
SHEET 1

	EARNINGS AND EXPENSES (Under Existing Rates for 1929-1933)	Actual Results				Prov. Est.		Forecast							
		1927		1928†		1929		1930		1931		1932		1933	
1	Exchange Revenues (500-506, Inclusive)	13	198	14	420	15	440	16	420	17	375	18	330	19	285
2	Toll Revenues (510-516, Inclusive)	8	407	9	360	10	200	11	240	12	210	13	170	14	130
3	Miscellaneous Operating Revenues (520-526, Inclusive)		170		265		290		335		360		405		430
4	**Total Telephone Revenues**	21	775	24	045	25	930	27	995	29	945	31	905	33	845
5	Traffic Expenses (621-635, Inclusive)	4	963	5	320	5	725	5	855	6	030	6	255	6	420
6	Commercial Expenses (640-650, Inclusive)	1	924	2	095	2	275	2	440	2	560	2	685	2	805
7	General and Miscellaneous Expenses (660-690, Inclusive)		650		670		710		740		780		820		860
8	Other Oper. Expenses (304, 330-334, Inclusive, 337, 341, 527)	1	608	1	260	1	350	1	425	1	490	1	575	1	645
9	**Total Operating Expenses**	9	145	9	345	10	060	10	460	10	860	11	335	11	730
10	Supervision of Maintenance (601)		471		560		670		770		820		855		890
11	Ordinary Repairs (602-606 "R" codes)	1	618	1	765	1	885	2	035	2	205	2	275	2	380
12	Rearrangements and Changes (602-606 "M" codes, and 610)		735		785		810		845		895		925		970
13	Station Removals and Changes (607)		417		420		485		525		560		595		620
14	**Total Current Maintenance**	3	241	3	530	3	850	4	175	4	480	4	650	4	860
15	Depreciation (340, 608, 609)	3	408	3	870	4	280	4	710	5	105	5	470	5	825
16	Taxes (305, 322)	1	343	1	655	1	805	2	025	2	260	2	430	2	595
17	**Total Telephone Expenses**	17	137	18	400	19	995	21	370	22	705	23	885	25	010
18	**Net Telephone Earnings**	4	638	5	645	5	935	6	625	7	240	8	020	8	835
19	Sundry Net Earnings (302, 310-316, Incl.), minus (303, 320, 321, 323)														
20	**Total Net Earnings**														
21	Deduct Interest (335, 336, 338, minus 339)							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx
22	**Balance Net Profits**							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx
23	Deduct Dividends—(Preferred) (351-02)							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx
24	—(Common) (351-01)							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx
25	**Total Dividends**							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx
26	**Undivided Profits**							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx
27	Amount of Licensee Revenue—Dr. (527) incl. in Line 8		835		460		495		535		570		610		645
28	Average Capital Stock (Common) (150-01)							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx
29	Net Telephone Earnings to Average Plant in Service	7.41%		7.97%		7.46%		7.54%		7.59%		7.83%		8.10%	
30	Balance Net Profits (after Preferred Div.) to Average Common Stock	%		%		%		xxxxxxxx		xxxxxxxx		xxxxxxxx		xxxxxxxx	

†Last 3 months estimated.

Show money value to nearest thousand dollars, omitting last three digits.
Show percentages two figures to right of decimal.

Date Issued November 1 1928

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E-1

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Issued in U. S. A

* indicates red figures

FORM G. H. 216-B
PROVISIONAL ESTIMATE
STATEMENT F

1-354
P. 48

ILLINOIS BELL TELEPHONE COMPANY.
(Name of Company)

ESTIMATE OF CASH REQUIREMENTS¹—YEAR 19 29

REQUIREMENTS

Gross Construction (Plant and General Equipment)	$ 41,835,000			1
Purchases of Plant and General Equipment²	50,000	$ 41,885,000		2
Less Plant and General Equip. Removed or Abandoned	$ 17,825,000			3
" Plant and General Equipment Sold²	-	$ 17,825,000		4
Net Additions to Plant and General Equipment			$ 24,060,000	5
Stocks of System Corporations (106), Increase²			-	6
Other Investment Securities (107 to 110), Increase²			-	7
Miscellaneous Investments (111), Increase			* 8,000	8
Cash and Marketable Securities (113, 114, 116), Increase			* 50,000	9
Accounts and Bills Receivable (115, 117, 118 to 121, 123), Increase (Except loans on open account to A. T. & T. Co.)			322,000	10
Materials and Supplies (122 less 122-10), Increase			* 20,000	11
Other Assets (124 to 136, 201 to 204), Increase			* 51,000	12
Obligations Maturing or expected to be Retired² #			126,000	13
TOTAL			$ 24,379,000	14

RESOURCES

Undivided Profits	$ 2,735,000	15
Surplus (137, 171 to 174), Increase	* 56,000	16
Accounts Payable (158 to 165), Increase (Except loans from A. T. & T. Co.)	230,000	17
Accrued Liabilities Not Due (166, 167), Increase	1,141,000	18
Deferred Credit Items (168, 169, 170, 170A), Increase	4,000	19
Fixed Capital Reserves (102, 103), Increase	3,930,000	20
Capital Obligations Assumed²	-	21
Notes to be Sold Pension Fund Trustee	1,135,000	22
TOTAL	$ 9,119,000	23
BALANCE NET CASH REQUIREMENTS	$ 15,260,000	24

1. Show amounts to nearest thousand dollars, but show last three digits.
2. Specify detail below or on Supplementary Statement.

* Purchase of Plant from Harvard Telephone Company, Harvard, Illinois.

United Telephone Company [illegible]
maturity – June 1, 1929.

Printed in U. S. A.

ESTIMATED EARNINGS AND EXPENSES
COMPARED WITH RESULTS OF 1928-29

ILLINOIS BELL TELEPHONE COMPANY
(Name of Company)

FORM S. R. 315-B
PROVISIONAL ESTIMATE 1930
STATEMENT E
SHEET 1

	EARNINGS AND EXPENSES	Actual Results 1928	Actual Results 1929†	PROV. EST. 1930	Forecast 1931	Forecast 1932	Forecast 1933	Forecast 1934	
1	Exchange Revenues (500-506, Inclusive)	64 656	69 340	73 370	77 570	81 620	86 100	90 550	1
2	Toll Revenues (510-516, Inclusive)	16 578	21 390	23 870	26 650	29 750	32 870	36 230	2
3	Miscellaneous Operating Revenues (520-526, Inclusive)	1 185	1 560	1 630	1 680	1 740	1 800	1 860	3
4	**Total Telephone Revenues**	82 419	92 290	98 870	105 900	113 110	120 770	128 640	4
5	Traffic Expenses (621-635, Inclusive)	20 267	23 380	24 270	25 120	26 650	27 320	28 290	5
6	Commercial Expenses (640-650, Inclusive)	8 301	8 845	9 580	10 165	10 720	11 275	11 805	6
7	General and Miscellaneous Expenses (660-690, Inclusive)	2 903	3 150	3 265	3 410	3 580	3 760	3 935	7
8	Other Oper. Expenses (304, 330-334, Inclusive, 337, 341, 527)	3 009	2 920	3 130	3 550	3 745	3 580	3 760	8
9	**Total Operation Expenses**	34 480	38 295	40 245	42 245	44 695	45 935	47 790	9
10	Supervision of Maintenance (601)	1 505	1 801	2 015	2 197	2 378	2 567	2 717	10
11	Ordinary Repairs (602-606 "R" codes)	6 961	7 954	8 730	9 579	10 382	11 237	12 199	11
12	Rearrangements and Changes (602-606 "M" codes, and 610)	3 031	3 095	3 350	3 604	3 864	4 151	4 423	12
13	Station Removals and Changes (607)	2 465	2 835	3 165	3 375	3 626	3 860	4 131	13
14	**Total Current Maintenance**	13 962	15 685	17 260	18 755	20 250	21 815	23 470	14
15	Depreciation (340, 608, 609)	11 472	12 195	13 395	14 475	15 615	16 860	18 120	15
16	Taxes (305, 322)	8 293	9 810	10 420	12 440	12 785	13 530	16 400	16
17	**Total Telephone Expenses**	68 207	75 985	81 320	87 915	93 345	98 140	105 780	17
18	**Net Telephone Earnings**	14 212	16 305	17 550	17 985	19 765	22 630	22 860	18
19	Sundry Net Earnings (302, 310-316, Incl.), minus (303, 320, 321, 323)	629	500	475	430	595	790	660	19
20	**Total Net Earnings**	14 841	16 805	18 025	18 415	20 360	23 420	23 520	20
21	Deduct Interest (335, 336, 338, minus 339)	3 051	4 225	4 355	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx	21
22	**Balance Net Profits**	11 790	12 580	13 670	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx	22
23	Deduct Dividends—(Preferred) (351-02)	-	-	-	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx	23
24	—(Common) (351-01)	8 800	8 800	10 400	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx	24
25	**Total Dividends**	8 800	8 800	10 400	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx	25
26	**Undivided Profits**	2 990	3 780	3 270	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx	26
27	Amount of Licensee Revenue—Dr. (527) incl. in Line 8	1 569	1 310	1 405	1 505	1 610	1 715	1 830	27
28	Average Capital Stock (Common) (130-01)	110 000	110 000	130 000	xxxx xxx	xxxx xxx	xxxx xxx	xxxx xxx	28
29	Net Telephone Earnings to Average Plant in Service	6.20 %	6.49 %	6.34 %	6.00 %	✓ 6.07 %	6.41 %	6.03 %	29
30	Balance Net Profits (after Preferred Div.) to Average Common Stock	10.72 %	11.44 %	10.52 %	xxxxxxxx	xxxxxxxx	xxxxxxxx	xxxxxxxx	30

†Last 3 months estimated.

Show money value to nearest thousand dollars, omitting last three digits.
Show percentages two figures to right of decimal.
* Includes estimated interest to be paid A. T. & T. Co. $ 1,275

Date Issued November 8, 1929.

T-354
P-49

E-1

5377

Printed in U. S. A.

ESTIMATED EARNINGS AND EXPENSES
COMPARED WITH RESULTS OF 1928-29

ILLINOIS BELL TELEPHONE COMPANY
CHICAGO AREA
(Name of Company)

FORM [illegible]
PROVISIONAL ESTIMATE 1930
STATEMENT E
SHEET 1

	EARNINGS AND EXPENSES	Actual Results				PROV. EST.		Forecast								
		1928		1929†		1930		1931		1932		1933		1934		
1	Exchange Revenues (500-506, Inclusive)	50	245	53	800	56	680	59	690	62	570	65	860	69	130	1
2	Toll Revenues (510-516, Inclusive)	7	154	10	940	12	670	14	470	16	470	18	520	20	790	2
3	Miscellaneous Operating Revenues (520-526, Inclusive)		902	1	270	1	280	1	310	1	340	1	370	1	390	3
4	**Total Telephone Revenues**	58	301	66	010	70	630	75	470	80	380	85	750	91	310	4
5	Traffic Expenses (621-635, Inclusive)	14	933	17	520	18	080	19	030	20	250	20	920	21	850	5
6	Commercial Expenses (640-650, Inclusive)	6	205	6	515	7	050	7	410	7	790	8	170	8	520	6
7	General and Miscellaneous Expenses (660-690, Inclusive)	2	189	2	385	2	440	2	535	2	650	2	770	2	890	7
8	Other Oper. Expenses (304, 330-334, Inclusive, 337, 341, 527)	1	797	1	625	1	770	2	070	2	175	1	945	2	060	8
9	**Total Operation Expenses**	25	124	28	045	29	340	31	045	32	865	33	805	35	320	9
10	Supervision of Maintenance (601)		954	1	135	1	255	1	380	1	500	1	620	1	740	10
11	Ordinary Repairs (602-606 "R" codes)	5	217	5	860	6	460	7	150	7	800	8	450	9	150	11
12	Rearrangements and Changes (602-606 "M" codes, and 610)	2	267	2	295	2	480	2	680	2	890	3	100	3	300	12
13	Station Removals and Changes (607)	2	050	2	285	2	555	2	730	2	920	3	090	3	280	13
14	**Total Current Maintenance**	10	488	11	575	12	750	13	940	15	110	16	260	17	470	14
15	Depreciation (340, 608, 609)	7	654	8	230	8	980	9	570	10	290	11	110	11	890	15
16	Taxes (305, 322)	6	635	7	855	8	265	9	995	10	150	10	610	13	155	16
17	**Total Telephone Expenses**	49	901	55	705	59	335	64	550	68	415	71	785	77	835	17
18	**Net Telephone Earnings**	8	400	10	305	11	295	10	920	11	965	13	965	13	475	18
19	Sundry Net Earnings (302, 310-316, Incl.), minus (303, 320, 321, 323)															19
20	**Total Net Earnings**															20
21	Deduct Interest (335, 336, 338, minus 339)							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx	21
22	**Balance Net Profits**							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx	22
23	Deduct Dividends—(Preferred) (351-02)							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx	23
24	—(Common) (351-01)							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx	24
25	**Total Dividends**							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx	25
26	**Undivided Profits**							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx	26
27	Amount of Licensee Revenue—Dr. (527) incl. in Line 8	1	105		935	1	000	1	070	1	140	1	215	1	295	27
28	Average Capital Stock (Common) (150-01)							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx	28
29	Net Telephone Earnings to Average Plant in Service	5.30 %		5.97%		5.97%		5.40 %		5.46 %		5.88 %		5.31 %		29
30	Balance Net Profits (after Preferred Div.) to Average Common Stock.	%		%		%		xxxxxxxx		xxxxxxxx		xxxxxxxx		xxxxxxxx		30

†Last 3 months estimated.

Show money value to nearest thousand dollars, omitting last three digits.
Show percentages two figures to right of decimal.
* Includes estimated interest to be paid A. T. & T. Co. $..................

Date Issued November 8, 1929.

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P. 50

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Printed in U. S. A.

FORM ... PROVISIONAL ESTIMATE 1930

ESTIMATED EARNINGS AND EXPENSES
COMPARED WITH RESULTS OF 1928-29

ILLINOIS BELL TELEPHONE COMPANY - STATE AREA
(Name of Company)

STATEMENT E
SHEET 1

	EARNINGS AND EXPENSES	Actual Results				PROV. EST.		Forecast							
		1928		1929†		1930		1931		1932		1933		1934	
1	Exchange Revenues (500-506, Inclusive)	14	411	15	540	16	690	17	880	19	050	20	240	21	420
2	Toll Revenues (510-516, Inclusive)	9	424	10	450	11	200	12	180	13	280	14	350	15	440
3	Miscellaneous Operating Revenues (520-526, Inclusive)		283		290		350		370		400		430		470
4	**Total Telephone Revenues**	24	118	26	280	28	240	30	430	32	730	35	020	37	330
5	Traffic Expenses (621-635, Inclusive)	5	334	5	860	6	190	6	090	6	400	6	400	6	440
6	Commercial Expenses (640-650, Inclusive)	2	096	2	330	2	530	2	755	2	930	3	105	3	285
7	General and Miscellaneous Expenses (660-690, Inclusive)		714		765		825		875		930		990	1	045
8	Other Oper. Expenses (304, 330-334, Inclusive, 337, 341, 527)	1	212	1	295	1	360	1	480	1	570	1	635	1	700
9	**Total Operation Expenses**	9	356	10	250	10	905	11	200	11	830	12	130	12	470
10	Supervision of Maintenance (601)		551		666*		760		817		878		947		977
11	Ordinary Repairs (602-606 "R" codes)	1	744	2	094	2	270	2	429	2	582	2	787	3	049
12	Rearrangements and Changes (602-606 "M" codes, and 610)		764		800		870		924		974	1	051	1	123
13	Station Removals and Changes (607)		415		550		610		645		706		770		851
14	**Total Current Maintenance**	3	474	4	110	4	510	4	815	5	140	5	555	6	000
15	Depreciation (340, 608, 609)	3	818	3	965	4	415	4	905	5	325	5	750	6	230
16	Taxes (305, 322)	1	658	1	955	2	155	2	445	2	635	2	920	3	245
17	**Total Telephone Expenses**	18	306	20	280	21	985	23	365	24	930	26	355	27	945
18	**Net Telephone Earnings**	5	812	6	000	6	255	7	065	7	800	8	665	9	385
19	Sundry Net Earnings (302, 310-316, Incl.), minus (303, 320, 321, 323)														
20	**Total Net Earnings**														
21	Deduct Interest (335, 336, 338, minus 339)							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx
22	**Balance Net Profits**							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx
23	Deduct Dividends—(Preferred) (351-02)							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx
24	—(Common) (351-01)							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx
25	**Total Dividends**							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx
26	**Undivided Profits**							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx
27	Amount of Licensee Revenue—Dr. (527) incl. in Line 8		454		375		405		435		470		500		535
28	Average Capital Stock (Common) (150-01)							xxxx	xxx	xxxx	xxx	xxxx	xxx	xxxx	xxx
29	Net Telephone Earnings to Average Plant in Service	8.23%		7.64 %		7.11 %		7.23 %		7.33 %		7.51 %		7.47 %	
30	Balance Net Profits (after Preferred Div.) to Average Common Stock.	%		%		%		xxxxxxxx		xxxxxxxx		xxxxxxxx		xxxxxxxx	

†Last .... months estimated.

Show money value to nearest thousand dollars, omitting last three digits.
Show percentages two figures to right of decimal.
* Includes estimated interest to be paid A. T. & T. Co. $ ....

E-1

Date Issued November 1, 1929

STATE

5379

* indicates red figures

FORM S. R. 316-S
PROVISIONAL ESTIMATE
STATEMENT F

X-354
P. 52

ILLINOIS BELL TELEPHONE COMPANY
(Name of Company)

ESTIMATE OF CASH REQUIREMENTS[1]—YEAR 19 30

REQUIREMENTS

Gross Construction (Plant and General Equipment)	$ 44,765,000			
Purchases of Plant and General Equipment[2]	320,000	$ 45,085,000		1
Less Plant and General Equip. Removed or Abandoned	$ 18,610,000			2
" Plant and General Equipment Sold[2]	-	$ 18,610,000		3
Net Additions to Plant and General Equipment				4
Stocks of System Corporations (106), Increase[2]			$ 26,475,000	5
Other Investment Securities (107 to 110), Increase[2]			341,000	6
Miscellaneous Investments (111), Increase			*66,000	7
Cash and Marketable Securities (113, 114, 116), Increase			17,000	8
Accounts and Bills Receivable (115, 117, 118 to 121, 123), Increase (Except loans on open account to A. T. & T. Co.)			187,000	9
Materials and Supplies (122 less 122-10), Increase			517,000	10
Other Assets (124 to 136, 201 to 204), Increase			*19,000	11
Obligations Maturing or expected to be Retired[2] (Except to A. T. & T. Co.)			*63,000	12
TOTAL			-	13
			$ 27,389,000	14

RESOURCES

Undivided Profits		
Surplus (137, 171 to 174), Increase	$ 3,270,000	15
Accounts Payable (158 to 165), Increase (Except loans from A. T. & T. Co.)	* 8,000	16
Accrued Liabilities Not Due (166, 167), Increase	494,000	17
Deferred Credit Items (168, 169, 170, 170A), Increase	* 6,282,000	18
Fixed Capital Reserves (102, 103), Increase	21,000	19
Capital Obligations Assumed[2]	4,575,000	20
Notes to be Sold Pension Fund Trustee	-	21
TOTAL	1,357,000	22
	$ 3,427,000	23
BALANCE NET CASH REQUIREMENTS	$ 23,962,000	24

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1. Show amounts to nearest thousand dollars, but show last three digits.
2. Specify detail below or on Supplementary Statement.

See Supplementary Statement.

* Does not include:

Remainder of stock issue	$20,002,000
Surplus funds of Bell Realty Trust	160,000

Date Issued November 8, 1929.

FORM S. N. 731
PROVISIONAL ESTIMATE 1931
STATEMENT A

X-354
P.54

Name of Company ILLINOIS BELL TELEPHONE COMPANY

SUMMARY OF PROVISIONAL ESTIMATE AND FORECAST
(COMPARED WITH RESULTS OF 1929-30)

"000" Omitted

		Actual Results		Prov. Est.	Forecast		
		1929	1930†	1931	1932	1933	
	COMPANY STATIONS AND LINES						
1	Total Inward Station Movement	460	422	458	505	539	1
2	Total Outward Station Movement	389	422	418	435	470	2
3	Net Station Gain	71	-	40	68	69	3
4	Average Number of Company Stations	1 408	1 445	1 461	1 522	1 589	4
5	Net Gain in Exchange Circuits Serving Co. Stations	42	12	34	49	50	5
	TOLL USAGE AND CALLING RATE						
6	Average Daily Calling Rate per Station—Local	4 66	4 50	4 54	4 63	4 63	6
7	Toll Usage { Total messages A-B	60 172	63 237	67 552	73 584	79 630	7
8	Total messages—Toll Board	11 529	11 663	12 347	13 313	14 370	8
	CONSTRUCTION PROGRAM						
9	Gross Construction	37 731	36 870	29 450	46 160	43 155	9
10	Plant Removed or Abandoned	19 511	16 485	16 259	19 063	21 161	10
11	Net Additions	18 220	20 385	13 191	27 097	21 994	11
12	Average Plant in Service	250 824	270 400	288 500	307 580	331 700	12
	REVENUES AND EXPENSES						
13	Exchange Revenues (500-506)	69 329	70 550	72 390	76 370	80 400	13
14	Toll Revenues (510-516)	21 752	22 340	24 590	27 140	29 900	14
15	Miscellaneous Operating Revenues (520-526)	1 537	1 560	1 490	1 510	1 540	15
16	**Total Telephone Revenues**	92 618	94 450	98 470	105 020	111 840	16
17	Traffic Expenses (621-635)	23 200	22 613	22 710	23 920	24 340	17
18	Commercial Expenses (640-650)	8 861	9 564	10 200	10 740	11 280	18
19	General and Miscellaneous Expenses (660-690)	3 146	3 595	3 800	3 970	4 075	19
20	Other Oper. Expenses (304, 330-334, 337, 341, 527)	2 864	2 980	3 185	3 285	3 335	20
21	**Total Operation Expenses**	38 071	38 752	39 895	41 915	43 030	21
22	Supervision of Maintenance (601)	1 778	1 796	1 917	2 008	2 131	22
23	Ordinary Repairs (602-606 "R" codes)	8 077	8 428	8 939	9 730	10 517	23
24	Rearrangements and Changes (602-606 "M" codes, and 610)	3 085	3 176	3 212	3 635	3 800	24
25	Station Removals and Changes (607)	2 803	3 324	3 219	3 444	3 725	25
26	**Total Current Maintenance**	15 743	16 724	17 287	18 817	20 173	26
27	Depreciation (340, 608, 609)	12 064	13 025	13 890	14 800	15 950	27
28	Taxes (305, 322)	9 861	9 790	11 865	12 570	12 860	28
29	**Total Telephone Expenses**	75 739	78 291	82 937	87 902	91 795	29
30	**Net Telephone Earnings**	16 879	16 159	15 533	17 118	20 047	30
31	Sundry Net Earnings (302, 310-316), minus (303, 320, 321, 323)	491	1 055	585	685	550	31
32	**Total Net Earnings**	17 370	17 214	16 118	17 803	20 597	32
33	Deduct Interest (335, 336, 338, minus 339)	4 297	4 560	# 3 160	xxxx xxx	xxxx xxx	33
34	**Balance Net Profits**	13 073	12 854	12 958	xxxx xxx	xxxx xxx	34
35	Deduct Dividends—(Preferred) (351-02)	-	-	-	xxxx xxx	xxxx xxx	35
36	—(Common) (351-01)	8 800	10 400	12 000	xxxx xxx	xxxx xxx	36
37	**Total Dividends**	8 800	10 400	12 000	xxxx xxx	xxxx xxx	37
38	**Undivided Profits**	4 273	2 454	958	xxxx xxx	xxxx xxx	38
39	Average Capital Stock (Common) (150-01)	110 000	130 000	150 000	xxxx xxx	xxxx xxx	39
40	Net Telephone Earnings to Average Plant in Service	6.73 %	5.98 %	5.38 %	5.57 %	6.04 %	40
41	Balance Net Profits (after Preferred Div.) to Av. Com. Stock	11.88 %	9.89 %	8.64 %	xxxxx xxx	xxxxxxxx	41

†Last = 3 = months estimated.
#Includes estimated interest to be paid A. T. & T. Co. $ 10

Date Issued November 10, 1930

5381

* indicates red figures

FORM S. N. 751
PROVISIONAL ESTIMATE 1931
STATEMENT A

f-554
P.55

Name of Company ILLINOIS BELL TELEPHONE COMPANY
CHICAGO AREA

SUMMARY OF PROVISIONAL ESTIMATE AND FORECAST
(COMPARED WITH RESULTS OF 1929-30)

"000" Omitted

		Actual Results		Prov. Est.	Forecast		
		1929	1930†	1931	1932	1933	
	COMPANY STATIONS AND LINES						
1	Total Inward Station Movement	337	309	334	365	392	1
2	Total Outward Station Movement	291	315	307	319	347	2
3	Net Station Gain	46	* 6	27	46	45	3
4	Average Number of Company Stations	964	984	992	1 032	1 077	4
5	Net Gain in Exchange Circuits Serving Co. Stations	25	6	23	32	32	5
	TOLL USAGE AND CALLING RATE						
6	Average Daily Calling Rate per Station—Local	4 49	4 30	4 35	4 49	4 49	6
7	Toll Usage { Total messages A-B	24 387	25 520	27 165	29 550	31 985	7
8	Total messages—Toll Board	2 546	2 590	2 795	3 040	3 205	8
	CONSTRUCTION PROGRAM						
9	Gross Construction	25 065	23 000	19 500	31 500	29 100	9
10	Plant Removed or Abandoned	14 180	10 750	11 900	13 100	16 200	10
11	Net Additions	10 885	12 250	7 600	18 400	12 900	11
12	Average Plant in Service	172 370	184 600	194 500	206 000	221 500	12
	REVENUES AND EXPENSES						
13	Exchange Revenues (500-506)	55 798	54 450	55 850	58 940	62 050	13
14	Toll Revenues (510-516)	11 215	11 700	13 010	14 580	16 220	14
15	Miscellaneous Operating Revenues (520-526)	1 260	1 220	1 140	1 130	1 140	15
16	**Total Telephone Revenues**	68 273	67 370	70 000	7[illegible] [illegible]00	79 410	16
17	Traffic Expenses (621-635)	17 282	16 540	16 620	17 700	17 950	17
18	Commercial Expenses (640-650)	6 520	7 000	7 550	7 950	8 550	18
19	General and Miscellaneous Expenses (660-690)	2 370	2 590	2 705	2 650	2 905	19
20	Other Oper. Expenses (304, 330-334, 337, 341, 527)	1 562	1 570	1 780	1 815	1 800	20
21	**Total Operation Expenses**	27 734	27 700	28 655	30 [illegible]	31 [illegible]	21
22	Supervision of Maintenance (601)	1 130	1 165	1 260	1 350	1 440	22
23	Ordinary Repairs (602-606 "R" codes)	6 041	6 270	6 625	7 140	7 780	23
24	Rearrangements and Changes (602-606 "M" codes, and 610)	2 291	2 300	2 335	2 580	2 710	24
25	Station Removals and Changes (607)	2 139	2 465	2 440	2 620	2 890	25
26	**Total Current Maintenance**	11 601	12 200	12 660	13 690	14 820	26
27	Depreciation (340, 608, 609)	8 133	8 710	9 200	9 750	10 450	27
28	Taxes (305, 322)	7 059	8 105	9 680	10 050	10 120	28
29	**Total Telephone Expenses**	55 427	56 715	60 195	63 745	66 375	29
30	**Net Telephone Earnings**	10 846	10 655	9 805	10 855	13 035	30
31	Sundry Net Earnings (302, 310-316), minus (303, 320, 321, 323)						31
32	**Total Net Earnings**						32
33	Deduct Interest (335, 336, 338, minus 339)			#	xxxx xxx	xxxx xxx	33
34	**Balance Net Profits**				xxxx xxx	xxxx xxx	34
35	Deduct Dividends—(Preferred) (351-02)				xxxx xxx	xxxx xxx	35
36	—(Common) (351-01)				xxxx xxx	xxxx xxx	36
37	**Total Dividends**				xxxx xxx	xxxx xxx	37
38	**Undivided Profits**				xxxx xxx	xxxx xxx	38
39	Average Capital Stock (Common) (150-01)				xxxx xxx	xxxx xxx	39
40	Net Telephone Earnings to Average Plant in Service	6.29%	5.77%	5.04%	5.27%	5.86%	40
41	**Balance Net Profits (after Preferred Div.) to Av. Com. Stock**	- %	- %	- %	xxxxx xxx	xxxxxxxx	41

†Last - 3 - months estimated.
# Includes estimated interest to be paid A. T. & T. Co. $ XX

Date Issued November 10, 1930

FORM S. N. 731
PROVISIONAL ESTIMATE 1931
STATEMENT A
X-354
P. 56

Name of Company ILLINOIS BELL TELEPHONE COMPANY
STATE AREA

SUMMARY OF PROVISIONAL ESTIMATE AND FORECAST
(COMPARED WITH RESULTS OF 1929-30)

"000" Omitted

		Actual Results		Prov. Est.	Forecast		
		1929	1930†	1931	1932	1933	
	COMPANY STATIONS AND LINES						
1	Total Inward Station Movement	123	113	124	138	147	1
2	Total Outward Station Movement	98	107	111	116	123	2
3	Net Station Gain	25	6	13	22	24	3
4	Average Number of Company Stations	444	461	469	490	512	4
5	Net Gain in Exchange Circuits Serving Co. Stations	17	6	11	17	18	5
	TOLL USAGE AND CALLING RATE						
6	Average Daily Calling Rate per Station—Local	5 01	4 91	4 92	4 93	4 92	6
7	Toll Usage { Total messages A-B	35 785	37 717	40 387	44 034	47 645	7
8	Toll Usage { Total messages—Toll Board	8 983	9 073	9 552	10 273	11 105	8
	CONSTRUCTION PROGRAM						
9	Gross Construction	12 666	13 870	9 950	14 660	14 055	9
10	Plant Removed or Abandoned	5 332	5 735	4 359	5 963	4 961	10
11	Net Additions	7 334	8 135	5 591	8 697	9 094	11
12	Average Plant in Service	78 454	85 800	94 000	101 580	110 200	12
	REVENUES AND EXPENSES						
13	Exchange Revenues (500-506)	15 531	16 100	16 540	17 430	18 350	13
14	Toll Revenues (510-516)	10 537	10 640	11 580	12 610	13 680	14
15	Miscellaneous Operating Revenues (520-526)	277	340	350	380	400	15
16	**Total Telephone Revenues**	26 345	27 080	28 470	30 420	32 430	16
17	Traffic Expenses (621-635)	5 918	6 073	6 090	6 220	6 390	17
18	Commercial Expenses (640-650)	2 341	2 564	2 650	2 790	2 930	18
19	General and Miscellaneous Expenses (660-690)	776	1 005	1 095	1 140	1 170	19
20	Other Oper. Expenses (304, 330-334, 337, 341, 527)	1 302	1 410	1 405	1 470	1 535	20
21	**Total Operation Expenses**	10 337	11 052	11 240	11 620	12 025	21
22	Supervision of Maintenance (601)	648	631	657	658	691	22
23	Ordinary Repairs (602-606 "R" codes)	2 036	2 158	2 314	2 590	2 737	23
24	Rearrangements and Changes (602-606 "M" codes, and 610)	794	876	877	1 055	1 090	24
25	Station Removals and Changes (607)	664	859	779	824	835	25
26	**Total Current Maintenance**	4 142	4 524	4 627	5 127	5 353	26
27	Depreciation (340, 608, 609)	3 931	4 315	4 690	5 070	5 500	27
28	Taxes (305, 322)	1 902	1 685	2 185	2 340	2 540	28
29	**Total Telephone Expenses**	20 312	21 576	22 742	24 157	25 418	29
30	**Net Telephone Earnings**	6 033	5 504	5 728	6 263	7 012	30
31	Sundry Net Earnings (302, 310-316), minus (303, 320, 321, 323)						31
32	**Total Net Earnings**						32
33	Deduct Interest (335, 336, 338, minus 339)				xxxx xxx	xxxx xxx	33
34	**Balance Net Profits**				xxxx xxx	xxxx xxx	34
35	Deduct Dividends—(Preferred) (351-02)				xxxx xxx	xxxx xxx	35
36	—(Common) (351-01)				xxxx xxx	xxxx xxx	36
37	**Total Dividends**				xxxx xxx	xxxx xxx	37
38	**Undivided Profits**				xxxx xxx	xxxx xxx	38
39	Average Capital Stock (Common) (150-01)				xxxx xxx	xxxx xxx	39
40	Net Telephone Earnings to Average Plant in Service	7.69 %	6.41 %	6.09 %	6.17 %	6.36 %	40
41	Balance Net Profits (after Preferred Div.) to Av. Com. Stock	%	%	%	xxxxx xxx	xxxxxxxx	41

†Last 3 months estimated.
Includes estimated interest to be paid A. T. & T. Co. $ -

5383

Date Issued November 10, 1930

FORM S. H. 734
PROVISIONAL ESTIMATE
STATEMENT D

X-354.
8.57

* indicates red figures

ILLINOIS BELL TELEPHONE COMPANY
(Name of Company)

ESTIMATE OF CASH REQUIREMENTS¹—YEAR 1951

REQUIREMENTS

1	Gross Construction (Plant and General Equipment)	$50,359,000			1
2	Purchases of Plant and General Equipment²	500,000	$ 50,859,000		2
3	Less Plant and General Equip. Removed or Abandoned	$16,844,000			3
4	" Plant and General Equipment Sold²	–	$ 16,844,000		4
5	Net Additions to Plant and General Equipment			$13,815,000	5
6	Stocks of System Corporations (106), Increase²			512,000	6
7	Other Investment Securities (107 to 110), Increase²			–	7
8	Miscellaneous Investments (111), Increase			* 25,000	8
9	Cash and Marketable Securities (113, 114, 116), Increase			5,000	9
10	Accounts and Bills Receivable (115, 117, 118 to 121, 123), Increase (Except loans on open account to A. T. & T. Co.)			918,000	10
11	Materials and Supplies (122 less 122-10), Increase			* 44,000	11
12	Other Assets (124 to 136, 201 to 204), Increase			* 79,000	12
13	Obligations Maturing or expected to be Retired² (Except to A. T. & T. Co.)			–	13
14	TOTAL			$14,902,000	14

RESOURCES

15	Undivided Profits			$ 958,000	15
16	Surplus (137, 171 to 174), Increase			17,000	16
17	Accounts Payable (158 to 165), Increase (Except loans from A. T. & T. Co.)			562,000	17
18	Accrued Liabilities Not Due (166, 167), Increase			*5,795,000	18
19	Deferred Credit Items (168, 169, 170, 170A), Increase			25,000	19
20	Depreciation and Amortization (340, 608, 609, 674, 701 to 704)	$14,262,000			20
21	Other Credits to Reserve	136,000	$14,398,000		21
22	Less Total Net Charges to Reserves (102, 103)		8,378,000		22
23	Fixed Capital Reserves (102, 103), Increase			6,020,000	23
24	Capital Obligations Assumed²			–	24
25	Notes to be Sold Pension Fund Trustee			1,407,000	25
26	TOTAL			*$ 4,992,000	26
27	BALANCE NET CASH REQUIREMENTS			$ 9,910,000	27

1. Show amounts to nearest thousand dollars, but show last three digits.
2. Specify detail below or on Supplementary Statement.

Line 2	- Peoples' Tel. & Tel. Co. of Menard County	$ 181,000
	Bond County Tel. & Tel. Co,	119,000
		300,000
Line 6	- Additional Stock Issue - Crown Point Tel. Co.	$ 450,000
	Liquidation of Peoples' Tel. & Tel. Co. of Menard County	* 86,000
	Liquidation of Bond County Tel. & Tel. Co.	* 52,000
		$ 312,000

*Does not include surplus funds of Bell Realty Trust $ 160,000

Date Issued November 10, 1950.

5384

[fol. 5385] EXTRACTS FROM EXHIBIT X-355

Portions of Provisional Estimates of Other Licensee Companies, 1920-1930, as Follows

* * * * * * *

P. 33:

New York Telephone Company

Excerpts from Letter Dated November 15, 1923, from H. F. Thurber, President, to W. S. Gifford, Executive Vice-President, A. T. & T. Co.

"E. Assumption as to Changes in Wage Rates and Material Costs.—We have assumed no change in wage rates and have assumed that material costs will follow the trends furnished by you, except in the case of machine switching equipment. After consulting with your people and the Western Electric Company, we have assumed that the 1921 costs of machine switching equipment installed would carry through the year 1924, that these costs would be reduced in 1925 and subsequent years so that by the end of 1928 the cost would be approximately 70% of the 1921 costs. * * *

"L. Financial Requirements for 1924.—In view of the magnitude of the construction program and the inadequacy of net earnings, it is desirable that we secure funds at the lowest possible cost. This means borrowing funds rather than issuing Common or Preferred stocks or selling security holdings. Furthermore, with a Federal income tax at the present rate it would seem advisable to finance the requirements with an interest bearing obligation. If the general financial condition warrants, we suggest an issue of $75,000,000. 30-year 5½% mortgage bonds—Series "B". In our interest computations we have assumed that the cost of money realized from such a bond issue would be approximately the same as we pay the A. T. & T. Company, namely, 5.88%. This would bring the ratio of funded debt to total capital obligations to approximately 48%. The provisions of the refunding mortgage place no restrictions on an issue of this amount. We also suggest, in the event of a bond issue, that the proceeds be used in part to liquidate debt to A. T. & T. Company. The program as outlined contemplates further loans from A. T. & T. Company during the latter part of 1924."

* * * * * * *

1931

P. 34.

Indiana Bell Telephone Company

The following 3 charts have been taken from the Provisional Estimate for the year 1931 which accompanied Letter dated November 13, 1930 from J. F. Carroll, President, to W. S. Gifford, President of A. T. & T. Co.

(Here follows side folio 5386)

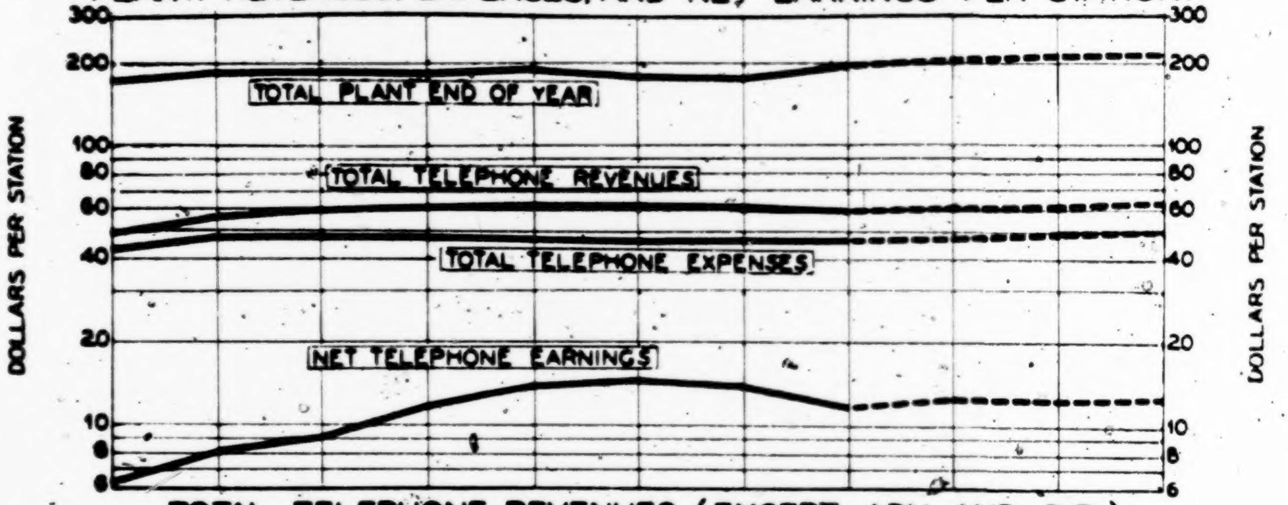
EXHIBIT X-355

X-355
CHART NO 1 XX1
p. 35

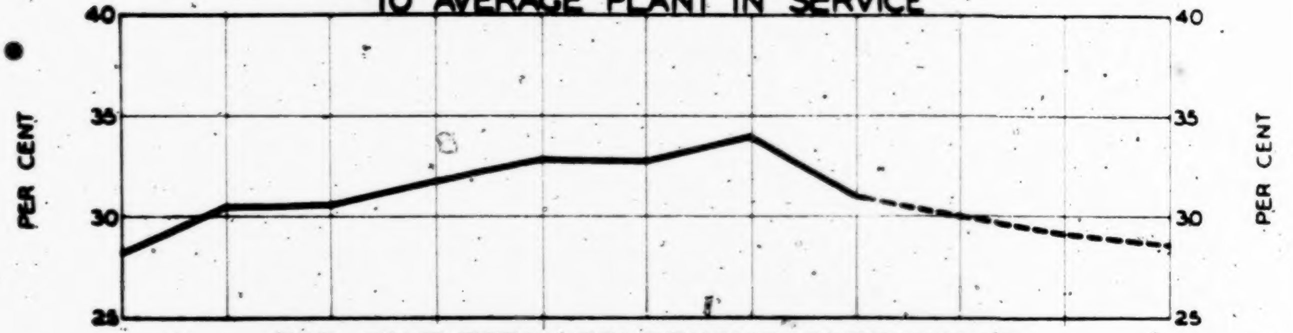
SUMMARY CHART

INDIANA BELL TELEPHONE COMPANY

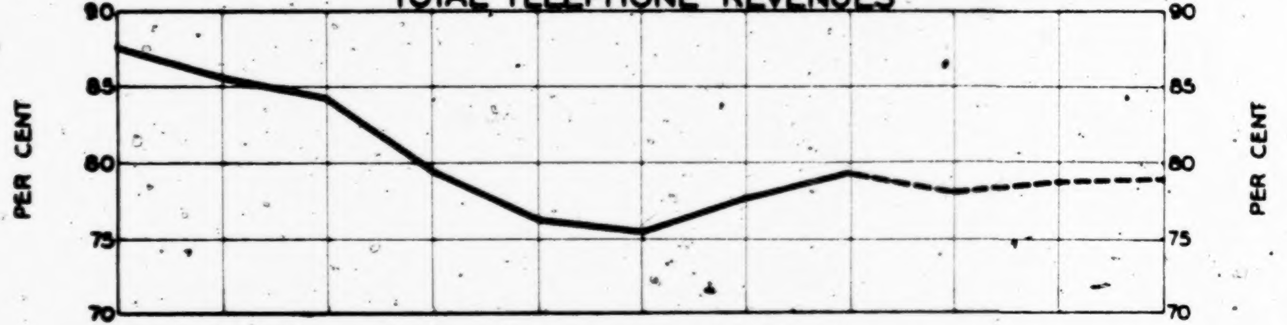
PLANT. REVENUES. EXPENSES, AND NET EARNINGS PER STATION



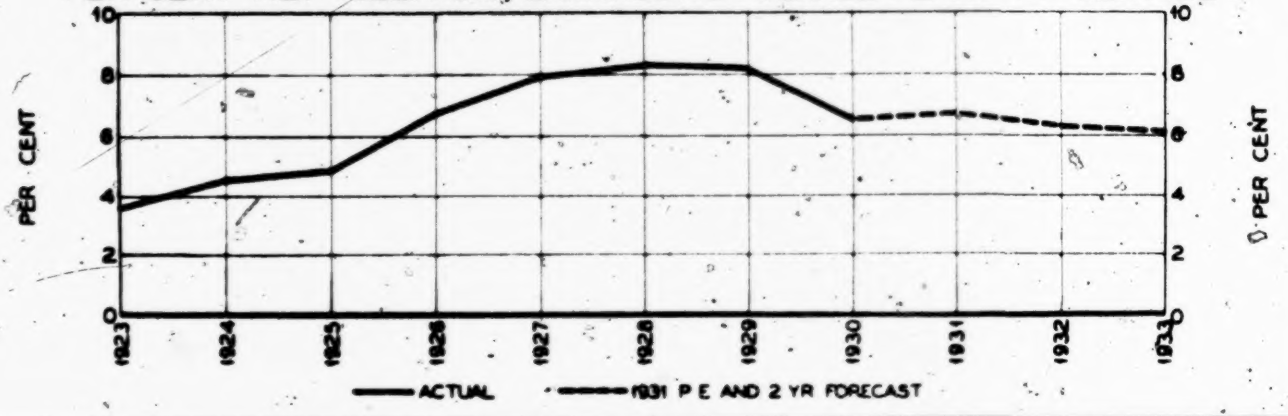
TOTAL TELEPHONE REVENUES (EXCEPT ADV AND DIR.) TO AVERAGE PLANT IN SERVICE



PER CENT TOTAL TELEPHONE EXPENSES TO TOTAL TELEPHONE REVENUES



PER CENT NET TELEPHONE EARNINGS TO AVERAGE PLANT IN SERVICE



LAST 4 MONTHS 1930 ESTIMATED

PREPARED BY ACCOUNTING DEPARTMENT

45924

[fol. 5387] EXTRACTS FROM EXHIBIT X-356

This agreement, made and entered into on the 19th day of June, 1919, by and between the International Telephone Sales and Engineering Corporation, a corporation created under the laws of the state of Delaware (hereinafter referred to as the Sales Corporation) and Western Electric Company, Incorporated, a corporation created under the laws of the State of New York (hereinafter referred to as the Western Company),

Witnesseth:

* * * * * * * *

[fol. 5388] Section 3. The Sales Company agrees that on the terms hereinafter specified it will cause to be manufactured and delivered to the Western Company, or its nominee, and upon said terms the Western Company orders and agrees that it will take 50,000 lines, or the equivalent thereof, per annum for a period of five years, provided, however, that in order to assure priority for the requirements of the Automatic Company's other customers, the Sales Company shall only be required to furnish to the Western Company in any calendar year, and the Western Company shall only be required to take in any such year the number of lines not in excess of 50,000 equal to the difference between 100,000 lines and the number of lines to be manufactured for such other customers in the year in question; to that end, beginning with the year 1920, the Sales Company shall, three months prior to January 1st and July 1st, of each year, during the period of this contract, notify the Western Company in writing of the amount of orders then on hand from others than the Western Company, and of the periods when the apparatus covered by such orders from others is to be manufactured, not including its installation, and if the amount of apparatus to be so manufactured under such other orders in any six months' period shall exceed 25,000 lines, the number of lines which the Sales Company is required to manufacture and deliver and the Western Company is required to take, shall be reduced by the amount of such excess, such reduction to be made in the preliminary information next thereafter given by the Western Company, unless otherwise agreed by the parties.

[fol. 5389] Section 4. (b) The Western Company shall have the right to specify within reasonable manufacturing limits any changes which it desires in the said standard specifications, and in that event, any change in the cost (except general executive and sales costs) occasioned by such changes from the standard specifications shall, as the case may be, be added to or deducted from the purchase price fixed hereby for lines of the standard type.

The Western Company shall hold said Automatic Electric Company and the Sales Company harmless as against damages and expenses incurred by them, or either of them, on account of infringements of patents arising out of such changes in the standard specifications. If changes specified by the Western Company, as aforesaid, shall delay the manufacture of the apparatus specified, the time here- [fol. 5390] inafter prescribed for the delivery of such apparatus shall, if necessary, be extended for the period of such delay.

• • • • • • •

Section 10. The Sales Company warrants that all of the apparatus furnished hereunder shall be, as to workmanship, material and finish, free from defects and first-class in all respects, and further, that where the standard specifications have not been changed and the apparatus has been delivered installed, it will if properly operate~~d,~~ render first-class commercial telephone service, in connection with standard metallic circuits of American Telephone and Telegraph Company construction, and upon written notice given within one year after acceptance agrees to repair or replace any part thereof which may fail to operate satisfactorily. Such parts shall be carefully packed and shipped to the Sales Company at Chicago, Illinois. If upon inspection by it, their defects are found to be due to either defective workmanship, material or finish, no charge will be made for the replacement thereof; otherwise, the Western Company or its nominee shall pay the proper charges for such replacements. There is no warranty against injury to parts caused by light-ing, foreign currents or other causes beyond the control of the Sales Company.

[fol. 5391] In addition to the portions of this contract printed in full above, it contains, in substance, the following provisions:

Sect. 1. Defines the words "line" (p. 1).

Sect. 2. Automatic Electric agrees to enlarge its manufacturing capacity (p. 1).

Sect. 3. Printed in full above (pp. 1-2).

Sect. 4. Par. "A" provides that the lines sold under contract shall be of the general types now manufactured subject to modification thereafter authorized. Standard specifications have been identified (pp. 2-3).

Par. "B", First two paragraphs printed in full above. Western may direct charges in standard specifications but such charges shall not be embodied in apparatus made for other customers; this not to limit normal developments of Automatic Electric apparatus.

Par. "C" covers the time of furnishing to Automatic Electric specifications for apparatus.

Par. "D" deals with specifications for apparatus.

Par. "E" states that the 250,000 lines ordered shall be distributed with reasonable uniformity over a five year period.

Par. "F" provides for the marking of apparatus manufactured under contract (pp. 2-5).

Sect. 5. Identifies schedule "A" which shows the relative portions of the constituent parts included in lines. Provides for ordering of parts of lines (p. 6).

Sect. 6. Provides that adjustment of prices shall be made from time to time on account of modifications of standard specifications (p. 6).

Sect. 7. Provides for the method and place of delivery and installation of apparatus (pp. 5-8).

Sect. 8. Western shall furnish shipping instructions promptly (p. 8).

[fol. 5392] Sect. 9. Provides that the prices on apparatus shall be the prices fixed in Schedule "A" but they shall not exceed those charged for like apparatus to other customers. Sales price to be in cash upon delivery, except that Western shall advance $1,600,000 upon the price of the first 50,000 lines to be manufactured under this contract.

Provides that the prices fixed in Schedule "A" are based on the actual cost to Automatic Electric of labor and material between August 1, 1918, and April 30, 1919, and shall be adjusted if necessary to conform to any increases or decreases of the costs during the term of this agreement (pp. 8-10)

Sect. 10. Printed in full above (pp. 10-11).

Sect. 11. Provides for insurance of shipment by Sales Company (p. 11).

Sect. 12. Manufacturing under this contract to be subject to inspection by Western and, if the material is not in accordance with agreement, it may be rejected.

Provides that if directors of Western shall decide that Sales Company has failed under this contract or that there is imminent probability that it will fail, Western may forthwith manufacture such lines itself and continue in this manufacture so long as in its opinion may be needful. If controversy shall arise as to whether such action taken by Western was justified, such controversy shall be determined by arbitration, and if found not to be justified Western shall reimburse Sales in accordance with the provisions of the contract (pp. 11-13).

Sect. 13. Western has right to cancel this contract as to any lines upon payment of 30% of gross sales price as liquidated damages (pp. 13-14).

Sect. 14. The prices stated in Schedule "A" are intended to be the standard prices which Automatic sold such lines and parts of lines to customers under contracts made during the period from August 1, 1918, to April 30, 1919. Such standard prices being defined to be the uniform prices at which not less than 80% of such lines were sold by Automatic to customers.

Provides for Audit Company to verify such schedule and to provide a table of equivalents stating as to each component part of a line in Schedule "A" the price thereof (pp. 14-15).

Sect. 15. Provides that disputes as to adjustments of prices should be submitted to the Audit Company of New York or such other firms as may be agreed upon (p. 15).

Sect. 16. All other disputes to be settled by arbitration.

[fol. 5393] Sect. 17. Limits liability for failure to perfrom any obligations within a fixed time if delay was caused by strikes, etc. (pp. 16-17).

Sect. 18. Contract not assignable by Sales except to Automatic and then only upon the condition that Western will be guaranteed as to the advancements made by Western under Section 9. If such assignment is made to Automatic, Western shall be relieved of the obligation of making certain advance payments.

Acknowledgment (p. 18).

Schedule "A" shows prices for the products to be sold (pp. 19-21).

[fol. 5394] EXTRACTS FROM EXHIBIT X-358

This agreement, made and entered into on this 21st day of March, 1924, by and between Theodore Gary, Frank H. Woods, H. L. Gary and A. F. Adams (hereinafter designated as the "Vendors") and the Western Electric Company, Incorporated, a corporation created under the laws of the state of New York (hereinafter designated as the "Western Company").

Whereas, the Vendors are now the owners of all of the outstanding capital stock, consisting of 37,500 shares of Series A common stock of the par value of $100.00 per share, and 50,000 shares of Series B common stock of the par value of $1.00 per share of the International Telephone Sales and Engineering Corporation, a Delaware corporation (hereinafter designated as the "Sales Corporation"): of which the 50,000 shares of Series B common stock are deposited as security under a certain trust agreement dated July 1, 1919, made by the Sales Corporation and the First Trust and Savings Bank of Chicago, covering an issue of Debentures the last of which mature on January 1, 1925, and

Whereas, the Sales Corporation is now the owner of a majority of the capital stock of the Automatic Electric Company, an Illinois corporation (hereinafter designated as the "Automatic Company"),

Now, therefore, this agreement witnesseth:

That for and in consideration of One Dollar and other valuable considerations, the receipt whereof is hereby acknowledged, the Vendors jointly and severally for themselves, their heirs, executors and administrators, hereby grant to the Western Company, its nominees and assigns, an option to acquire all of the outstanding capital stock of the Sales Corporation, which stock is now owned by the Vendors as above recited, upon the terms and conditions following:

1. This option may be exercised by the Western Company at any time after January 1, 1925, until and including July 1, 1929.

2. Upon its election to exercise this option, the Western Company shall on or before said July 1, 1929 give to the Vendors notice of such election, which notice may be given by registered letter addressed to each vendor, care of Theodore Gary and Company at 14th Floor Telephone Building,

Kansas City, Missouri, or at such other address as may hereafter be designated in writing for that purpose by the Vendors.

[fol. 5395] 3. Upon such election to exercise this option, the transaction shall be closed by delivery to the Western Company, its nominees or assigns, of certificates representing the stock covered hereby duly endorsed in blank for transfer, with all necessary legal formalities complied with, and upon such delivery the Western Company, its nominees or assigns, shall make payment to the Vendors of the purchase price hereinafter provided. The date and place of such delivery and payment shall be fixed by the Western Company in its notice of the election to exercise the option, which date shall be not less than thirty nor more than ninety days after the date of such notice. The stock transfer tax payable on such delivery shall be paid by the Western Company.

4. The price to be paid by the Western Company to the Vendors for the stock covered by this option shall be the sum of Eight Hundred and Twenty Thousand Dollars ($820,000.00), with interest thereon at the rate of six per cent (6%) per annum from the fifteenth day of January, 1924, until paid, less an amount equal to any dividends declared by the Sales Corporation payable to stockholders of record on any date between January 15, 1924, and the date the stock covered by this option is delivered to the Western Company, its nominees or assigns.

[fol. 5396] In addition to the revisions of this contract quoted in full above, there are additional provisions relative to the following subjects:

Recitals and first 4 sections quoted complete above (pp. 1–3).

Section 5. Vendors agree to furnish Western balance sheets for Sales Corporation and Automatic Company and show details as Western may require. Western to be afforded opportunities to verify such sheets (p. 3).

Section 6. Vendors have not or will not incur any indebtedness other than that reasonably necessary in transaction of their businesses. A statement of indebtedness as of January 31, 1924, as appended to the contract.

Section 7. Sales Corporation and Automatic Company are not to increase the amount of the outstanding capital stock of either unless necessary in the transaction of regular and ordinary business (p. 4).

Section 8. Vendors will not distribute any surplus profits to stockholders except with the written consent of Western and will use any surplus funds to reduce outstanding indebtedness and to purchase outstanding stock of Automatic (p. 4).

Section 9. Sales Corporation will not sell any shares of the Automatic (p. 4).

Section 10. Vendors agree that their salaries as officers of the Sales Corporation or Automatic are not to be increased (pp. 4–5).

Section 11. Vendors will not cancel option with Sales Corporation to purchase certain stock of Automatic. Sales Corporation may exercise said option (p. 5).

Section 12. Provisions in contract requiring consent of Western to transactions are for the purpose of conserving properties of the Sales Corporation and nothing contained is deemed to give Vendors control of the business or affairs of said Corporation.

[fol. 5397] EXTRACTS FROM EXHIBIT X-358

Correspondence Between Western Electric and Automatic Electric, Inc.

[fol. 5398] Copy

Western Electric Company, Incorporated, 195 Broadway, New York

F. B. Gleason, General Commercial Manager

June 25, 1929.

Automatic Electric, Inc., 1033 West Van Buren Street, Chicago, Illinois.

Attention of Mr. H. L. Harris

MY DEAR MR. HARRIS:

In our conversation of April 12, 1929, you explained that additional orders covering apparatus to be shipped during the latter part of 1929 would be of material advantage to your company and that the concession in price discussed by us would be made if we complied with your request.

We understand that our schedules for the year 1929 as increased pursuant to our above mentioned conversation, while possibly subject to minor changes, meet the conditions as to volume specified by you, and that you therefore will allow us a discount of 3% on the value of your total shipments to us during the year 1929 determined in accordance with the contract between our two companies dated May 24, 1927. In determining such value on which this discount shall be allowed, we will, of course, exclude the invoice price of any coded apparatus purchased by you from us for incorporation in our orders and rebilled to us at the same prices as charged you by us.

In regard to the future, notwithstanding the fact that the contract minimum for each of the calendar years 1930 to 1936 inclusive is a volume of business amounting to $2,600,000 figured at 1925 prices, we agree to make a firm commitment for 1930 of a volume of business amounting to not less than $5,000,000 figured at 1925 prices; and in consideration therefor you agree to allow us the following: vol- [fol. 5399] ume discounts on the value of your total shipments to us under the May 24, 1927 contract during each of the calendar years 1930 to 1926 inclusive.. It is understood that the maximum rate of discount reached in any year shall apply to the total of such value of shipments for that year excluding, however, the price of coded apparatus purchased by you from us for incorporation in our orders and rebilled to us at the same prices as charged you by us.

Value at 1925 Price	Discount on Value of Total Shipments
$3,400,000	1%
3,800,000	2%
4,200,000	3%
4,600,000	4%
6,200,000 and over	5%

It is further understood that if the volume of business as defined above during any of the calendar years 1930 to 1936 inclusive shall exceed $3,400,000 at 1925 prices, the maximum price for that year shall be reduced from 118%

of standard cost (as provided for in the third paragraph of Section IV-b of the 1927 contract) to conform to the following schedule.

Value at 1925 Price	Maximum Price (Per Cent of Standard Cost)
$3,000,000	118.00
3,400,000	116.82
3,800,000	115.64
4,200,000	114.46
4,600,000	113.28
6,200,000 and over	112.10

Your company further agrees to waive the provisions of the second paragraph of Section IV-b of the 1927 contract, reading as follows:

"Provided, however, that if the estimated complete cost of said apparatus specified for delivery in any of the calendar years 1930 to 1936 inclusive falls below the 1927 estimated complete cost of the same kinds and quantities of apparatus, the price for the said apparatus shall be the estimated complete cost for the particular year plus 15% plus one-half the difference between said estimated complete costs above referred to."

If this letter is in accordance with your understanding, please signify your acceptance by signing and returning the attached copy of this letter.

Very truly yours, F. B. Gleason, General Commercial Manager.

FBG-RR.

Accepted July 13, 1929.

Automatic Electric, Inc., by H. L. Harris.

[fol. 5400] Automatic Electric, Inc., Chicago, Illinois.

Dear Sirs: Referring to Section VI of the contract entered into by and between International Telephone Sales and Engineering Corporation (called "Sales Corporation") and the undersigned Western Electric Company, Incorporated (called "Western Company), dated May 24, 1927, which has been transferred to and assumed by Automatic Electric, Inc. with the consent of the Western Company:

The undersigned, Western Company, hereby consents and agrees that, in consideration of your acceptance of the conditions and agreements herein contained, the parties owning a majority of the voting stock of Automatic Electric Inc. may sell and transfer all of the said stock (except necessary qualifying shares) to Automatic Products Corporation, a Delaware corporation, and the undersigned hereby waives the right and option given to it by said Section VI to terminate said contract by reason of any such sale and transfer of said stock.

It is understood and agreed, as a condition of the consent hereby given, that in the event a majority of the voting stock of said Automatic Products Corporation shall not be and continue, during the term of said contract, to be owned or controlled by Theodore Gary, A. F. Adams, H. L. Gary and Frank H. Woods, or any of them, or in the event that said Automatic Products Corporation shall sell or otherwise dispose of its said voting stock of Automatic Electric Inc., or any part thereof, or upon the happening of any of the events set forth in said Section VI, except as herein and by our letter of September 27, 1927 to the Sales Corporation specifically consented to, then, in any of the events aforesaid, the undersigned shall have and may exercise the right and option given to it by said Section VI. It is further understood and agreed that, except as herein and heretofore in said letter of September 27, 1927 specifically modified, Section VI shall remain in full force and effect.

When action has been taken on the sale and transfer to which consent is hereby given, you agree to give the undersigned written notice to that effect.

Yours very truly, Western Electric Company, Incorporated, by Edgar S. Bloom, President.

Accepted and agreed to this 14 day of December, 1927.
Automatic Electric, Inc., by H. L. Gary, President.

[fol. 5401] International Telephone Sales and Engineering Corporation, Telephone Building, Kansas City, Mo.

Office of the Vice-President

November 10, 1927.

Western Electric Company, Incorporated, 195 Broadway,
New York City, New York.

Dear Sirs: You are hereby notified that on or about October 13, 1927, the contract entered into by and between the undersigned International Telephone Sales and Engineering Corporation (called Sales Corporation) and Western Electric Company Incorporated (called Western Company) dated May 24, 1927, for the manufacture of step-by-step machine switching apparatus, was, for valuable consideration, assigned and transferred to the Automatic Electric Inc. a Delaware corporation of Chicago, Illinois, (called Incorporated) including all right of Sales Corporation in said contract and interest appurtenant thereto and also all benefits accruing and to accrue to said Sales Corporation under said contract, and Incorporated has, as a further condition of such assignment, assumed and agreed to pay, discharge and perform all obligations of the Sales Corporation set forth in and arising from said contract which have not, prior to such assignment, been discharged and performed by said Sales Corporation.

This notice is given you in accordance with the terms of the written consent given by the Western Company to the Sales Corporation in a letter under date of September 27, 1927.

Yours very truly, International Telephone Sales & Engineering Corp., by H. L. Gary, Vice-President.

HLG:MB.

[fol. 5402] International Telephone Sales and Engineering Corporation, Telephone Building, Kansas City, Mo.

Office of the Vice-President

November 7, 1927.

Western Electric Company, Incorporated,
195 Broadway,
New York, N. Y.

Gentlemen:

Written notice is hereby given to you that the parties owning all of the capital (voting) stock of International Telephone Sales and Engineering Corporation have transferred all of said stock to Automatic Electric Inc., a Delaware Corporation, of Chicago, Illinois.

Said transfer was made by formal Deed of Gift and transfer on or about the 24th day of October, 1927, and this notice of transfer is given to you in compliance with the terms of a certain letter, giving your consent to such transfer, written to the undersigned under date of September 27, 1927. Kindly acknowledge receipt.

Yours very truly, International Telephone Sales and Engineering Corporation, by H. L. Gary, First Vice-President.

HLG:MB.

[fol. 5403] Western Electric Company, Incorporated, Telephone and Telegraph Building, 195 Broadway, New York

Edgar S. Bloom, President

September 27, 1927.

International Telephone Sales and Engineering Corporation, Kansas City, Missouri.

Dear Sirs: Referring to the contract entered into by and between the International Telephone Sales and Engineering Corporation (called "Sales Corporation") and the undersigned Western Electric Company, Incorporated (called "Western Company"), dated May 24, 1927, for the manufacture of step-by-step machine switching apparatus, the undersigned, at your request and in consideration of your acceptance of the conditions and agreements herein contained, hereby consents and agrees that:

1. The parties owning all of the capital (voting) stock of the Sales Corporation may, at any time they see fit to do so, transfer all or any part, not less than a majority of their said stock to the Automatic Electric Inc. (a Delaware corporation) of Chicago, Illinois, and the undersigned hereby waives the right and option given to it by Section VI of said contract, to terminate said contract by reason of any such transfer of said stock.

2. The Sales Corporation may, at any time, assign and transfer the said contract and all of the Sales Corporation's rights therein and interest appurtenant thereto, including all benefits accruing and to accrue to Sales Corporation under said contract, to the said Automatic Electric Inc. providing and upon condition that the said Automatic Electric Inc. shall assume and agree to pay, discharge and perform all obligations of the Sales Corporation set forth in and arising from said contract that shall not have, prior to such assignment, been paid, discharged and performed by said Sales Corporation.

3. That at any time, the Sales Corporation may transfer to said Automatic Electric Inc. all of its property, rights and assets and may thereafter and after the assignment of said contract as provided in the preceding paragraph "2" be dissolved, provided that before such dissolution, all obligations of the Sales Corporation shall have [fol. 5404] either been paid or shall have been assumed by said Automatic Electric Inc., the undersigned hereby waiving its right and option given to it by Section VI of said contract to terminate said contract by reason of any such transfer by the Sales Corporation of its property and assets, including the assignment of contract mentioned in preceding paragraph "2" hereof.

It is agreed as a condition to the consent hereby given that in the event the Automatic Electric Inc. shall sell or otherwise dispose of the stock of the Sales Corporation which may be transferred to it, or shall permit the Sales Corporation to sell all or any part of its physical assets to others than Automatic Electric Inc., except in the ordinary course of business, or upon the happening of any of the events set forth in said Section VI, except as herein specifically consented to, the undersigned shall have and may exercise the right and option given to it by said Section VI. It is further agreed that except as hereby specifically modified said Section VI shall remain in full force and effect.

When action has been taken on any of the above named matters, you agree to give the undersigned written notice to that effect.

If any additional documents are required to evidence the consent herein given, as might be the case, particularly with respect to the assignment of said contract, such additional documents will be furnished by the undersigned upon request.

Yours truly, Western Electric Company, Incorporated, by Edgar S. Bloom, President.

ECR.

Accepted and agreed to this 27th day of September, 1927.
International Telephone Sales and Engineering Corporation, by H. L. Gary, Vice-President.

[fol. 5405] (Copy)

Memorandum of agreement made this first day of March, 1932, by and between Automatic Electric Company, a Delaware corporation, party of the first part (hereinafter referred to as Automatic) and Western Electric Company, Incorporated, a New York corporation, party of the second part, (hereinafter referred to as Western), to further amend an agreement dated May 24, 1927, between International Telephone Sales and Engineering Corporation and Western and heretofore assigned on the part of International Telephone Sales and Engineering Corporation to Automatic (said agreement as heretofore amended being hereinafter referred to as the 1927 agreement),

Witnesseth:

That for and in consideration of the mutual covenants and conditions hereinafter contained, the 1927 agreement is hereby amended as follows:

1. Western agrees that if it shall be determined that Automatic's profit on the 1931 volume of Western's business (excepting any portion of the P. B. X. equipment authorized by Western to be produced by Automatic and in Automatic's stock on December 31, 1931) was less than $200,000, Western will pay to Automatic an amount equal to the difference between such profit and $200,000. In determining the amount of such profit, the cost of Western's business shall be computed in accordance with the provisions of Exhibit "B" attached to the 1927 agreement and the price basis shall be the guaranteed maximum price in accordance with the provisions of paragraph (b) of Section IV of the 1927 agreement as heretofore in effect.

[fol. 5406] 2. Effective as of January 1, 1932, Section III of the 1927 agreement is amended by striking out paragraph (b) thereof and substituting the following:

"b. It is further agreed that the contract minimum of $2,600,000 for each of the years 1932 to 1936 inclusive, referred to in Section III-a hereof is based in part upon aggregate sales by Western of private automatic exchanges (P. A. X.) and it is further agreed that should Automatic or such other corporation as Automatic may procure to manufacture such exchanges for it, increase the aggregate amount of its or their own sales exclusive of sales, (a) to Western, (b) to operating telephone companies for which Western does not now or hereafter act as purchasing agent and storekeeper under the terms of its standard supply contract and (c) to customers outside of the United States and its possessions, of private automatic exchanges (P. A. X.) beyond $1,000,000 in any calendar year, the said amount of $2,600,000 shall be reduced for the subsequent year by the amount of such excess; provided, however, that in no event shall said amount be reduced by more than $500,000."

3. Effective as of January 1, 1932, Section IV of the 1927 agreement is amended by striking out paragraph (b) thereof and substituting the following:

"b. The prices to be charged by Automatic to Western for each apparatus specified to be delivered during each of the calendar years 1932 to 1936 inclusive shall be the estimated complete cost thereof as determined for each such calendar year in accordance with the provisions of Exhibit B attached hereto plus 10%.

"Provided, however, that if such estimated complete cost for any particular year shall exceed 148% of the standard cost made effective by the parties as of January 1, 1931, the price to Western for that year shall not exceed 148% of said standard cost plus 10%, unless such estimated complete cost plus 5% shall exceed 148% of said standard cost plus 10%, in which event the price shall be such estimated complete cost plus 5%.

"Provided, further, that the P. B. X. equipment authorized by Western to be produced by Automatic and in Automatic's stock on December 31, 1931, may be billed by Automatic to Western immediately upon execution of this [fol. 5407] amendment and shall be billed on the basis of the prices current during the respective years in which by the terms of Western's authorizations the respective portions of said stock were to be produced by Automatic.

"Provided further, that P. B. X. equipment authorized by Western to be produced by Automatic subsequent to January 1, 1932, shall irrespective of the year in which it is specified for delivery be applied on the contract volume of the year in which by the terms of Western's authorization such equipment was to be produced or, at the option of Western, on the contract volume of the year in which such equipment was actually produced. The price to Western for such equipment so applied on the contract volume of any year shall be the price applicable to such year."

4. The letter agreement dated June 25, 1929 is cancelled and terminated as of January 1, 1932, and it shall have no future effect as an amendment of the 1927 agreement except insofar as Automatic thereby waived the provisions of the second paragraph of Section IV (b) of the 1927 contract, said paragraph being now omitted from Section IV (b) as hereinabove amended.

In witness whereof the parties have caused these presents to be executed by their officers thereunto duly authorized and their corporate seals to be hereto affixed the day and year first above written.

Automatic Electric Company, by (Sgd.) W. F. Benoist, President. Attest: (Sgd.) E. S. Hartwick, Asst. Secretary. Western Electric Company, Incorporated, (Sgd.) by Edgar S. Bloom, President. Attest: (Sgd.) H. B. Gilmore, Secretary.

[fol. 5408] DIGEST OF EXHIBIT X-359

This is a contract dated March 26, 1921, between International Telephone Sales and Engineering Corporation and Western Electric Company, Inc., amending the contract between the parties dated June 19, 1919, in which contract the Sales Corporation agreed to manufacture and deliver to Western, and Western agreed to order and take from Sales certain quantites of automatic telephone apparatus over a period of five years. In this amendment, Sales Corporation agrees to manufacture and deliver and Western agrees to order and take such quantities of apparatus and equipment as will, when added to the quantity required to be delivered under the original contract, amount at its sales price to not less than $3,300,000 and not more than $3,900,000 for any twelve consecutive months.

[fol. 5409] EXHIBIT X-360

Copy

June 6, 1927.

Memorandum Regarding Letter of May 26, 1927, from Edgar S. Bloom, President of Electrical Research Products, Inc., to H. L. Gary, Kansas City, Mo.

The figure of four million dollars was arrived at on the basis that the payment was fully warranted for the assets involved, and consideration was also given to the volume of business which the Automatic Electric would receive up to the end of 1930, and profits which would result therefrom, as follows:

Year	Minimum volume contract of May 24/27 at A. E. 1925 prices	Est. annual vol. of business		A. E. Co. profit on est. vol. under contract of May 24/27
		At A. E. Co. 1925 Prices	At proposed prices in contract of May 24, 1927	
1927	$3,300,000	$5,300,000	$4,523,000	$694,000
1928	3,300,000	4,700,000	4,313,000	674,000
1929	3,300,000	3,380,000	3,137,000	520,000
1939	2,600,000	2,800,000	2,492,000	325,000

The payment of four million dollars was agreed upon after the Gary interests had estimated the probable results under the contract on the basis of the minimum volume of business per year as set forth above and as in the contract. It was stated, however, to Mr. H. L. Gary that in our judgment the volume would undoubtedly be somewhat greater than the minimum so that the results would probably be more attractive than he had figured on the basis of the minimum figures.

The figures given above covering estimated volume of business and A. E. profit on that volume were made up by us for our own purposes and they were not given to Mr. Gary or used as a basis in arriving at the figure of four million dollars. They were merely used by us in order that we might have some idea as to how much better the results would probably be than the results estimated by the Gary interests on the basis of the minimum volume of business.

In any event, the minimum volume of business and profits resulting therefrom are not alone controlling, and if any claims should be made for reduction in the four million dollar item account must be taken not only of reduction in volume of business, if any, below the minimum volume given in the contract, but also the general results.

In other words, any reduction below the four million dollar figure should be based on very definite facts, both as to the results from business obtained from us, and also from others.

[fol. 5410]

Exhibit X-361

Copy

May 26, 1927.

Electrical Research Products, Inc., 195 Broadway, New York City,

Gentlemen: Pursuant to the arrangement between us and for value received, we are paying you herewith the sum of

Five hundred thousand ($500,000.00) dollars, and agree to pay you the following amounts at the times stated opposite each:

(1)	January 1, 1928	$500,000
(2)	January 1, 1929	500,000
(3)	January 1, 1930	500,000
(4)	January 1, 1931	350,000
(5)	January 1, 1932	350,000
(6)	January 1, 1933	350,000
(7)	January 1, 1934	350,000
(8)	January 1, 1935	300,000
(9)	January 1, 1936	300,000

It is agreed that no interest charges are to accrue with respect to items numbered (1), (2) and (3) above, unless these items are not paid on their due dates, in which event they shall bear interest from their respective due dates until paid, at the rate of 6% per annum payable quarter-yearly on April 1st, July 1st, October 1st and January 1st of each and every year, and that if we pay any or all of the items numbered (1), (2) and (3) above before their respective due dates we may deduct an amount equal to 6% per annum on the amount so paid from the date of payment to the due date of the item paid. It is further agreed that no interest shall accrue with respect to items numbered from (4) to (9) inclusive until January 1, 1930, on and after which date they shall bear interest at the rate of 6% per annum payable quarter-yearly as aforesaid, and that if we pay any or all of said last six items and the interest accrued thereon (if any) before their respective due dates we may deduct an amount equal to 6% per annum on the principal amount so paid from the date of payment to and including December 31, 1929, but no deduction is to be allowed us in the event of payment after January 1, 1930.

[fol. 5411] As security for the payment by us of the above listed items and interest, we herewith deposit with you Sixty Thousand (60,000) shares of preferred stock without par value of Automatic Electric Inc., a Delaware Corporation, and we hereby give to you, or your assigns, complete authority to sell said stock or any part thereof, or any stock which may be given as additional security hereunder, at your option, or at the option of your assigns, on or at any time after the non-payment of any of said amounts at maturity, at either public or private sale and without advertising the same or otherwise giving to us any notice of any kind, and to apply the proceeds of any such sale to the payment of said amounts and interest thereon (if any is payable) together with all costs, attorneys' fees and expenses of such sale.

We agree that in the event Automatic Electric Inc. issues additional preferred stock or any other stock having rights equal or superior to the stock hereby deposited, prior to the full payment of the items herein listed, such additional stock shall be immediately deposited with you as security hereunder.

We agree that in the event that the sale of stock deposited as security hereunder shall be insufficient to pay the principal and interest, together with all costs, attorneys' fees and expenses incurred by you in connection with any sale thereof, we will pay to you, or your assigns, the amount of such deficiency forthwith after such sale, with interest thereon at the rate of 6% per annum.

We agree that in the event that we default in the payment of any of the above items as and when the same become due, all of the items then remaining unpaid shall thereupon become due and payable, together with interest as herein provided.

We agree that if any bonds, notes, debentures or other evidences of indebtedness are made a prior lien to the preferred stock deposited as security hereunder, or if such pre- [fol. 5412] ferred stock is called for redemption, the balances then remaining unpaid upon any of the items above listed shall thereupon become due and payable, together with interest as herein provided.

Yours very truly, International Telephone Sales and Engineering Corporation, by (Sd.) H. L. Gary, Vice-President.

Accepted, May 26, 1927.

Electrical Research Products, Inc., by (Sd.) Edgar S. Bloom, President.

[fol. 5413] Exhibit X-362

Assignment

For valuable consideration, the undersigned International Telephone Sales and Engineering Corporation hereby assigns and transfers to Automatic Electric Inc. that certain contract dated May 24, 1927, between International Telephone Sales and Engineering Corporation (hereinafter called the Sales Corporation), party of the first part, and Western Electric Company Incorporated (hereinafter called the Western Company), party of the second part, whereby the Sales Corporation agrees to manufacture or cause to be manufactured for the Western Company, and the Western Company agrees to purchase from the Sales Corporation, step-by-step machine switching telephone apparatus for a period of ten (10) years from January 1, 1927, including in this assignment all the rights of the Sales Corporation in said contract and interest appurtenant thereto, and all benefits accruing and to accrue to the Sales Corporation under said contract; and the undersigned Automatic Electric Inc. shall and does hereby assume and agree to pay, discharge and perform all obligations of the Sales Corporation set forth in and arising from said contract that have not, at the date of this Assignment, been paid, discharged and performed by the Sales Corporation.

The undersigned Western Company hereby consents to the assignment of said contract as hereinbefore set forth.

Dated this 13th day of October, A. D. 1927.

International Telephone Sales and Engineering Corporation, by (Sgd.) H. L. Gary, Vice-President. Attest: (Sgd.) M. J. Ryan, Asst. Secretary. Automatic Electric, Inc., by (Sgd.) H. L. Harris, Vice-President. Attest: (Sgd.) Walter I. Patton, Secretary. Western Electric Company, Incorporated, by (Sgd.) Edgar A. Bloom, President. Attest: (Sgd.) H. B. Gilmore, Secretary.

ECP.

[fol. 5414] EXTRACTS FROM EXHIBIT X-363

Agreement Between International Telephone Sales and Engineering Corporation and Western Electric Company, Incorporated

Dated March 21, 1924

[fol. 5415] Memorandum of agreement, made and entered into this 21st day of March, 1924, by and between The International Telephone Sales and Engineering Corporation, a corporation organized and existing under the laws of the State of Delaware, party of the first part (hereinafter referred to as the Sales Corporation), and Western Electric Company, Incorporated, a corporation organized and existing under the laws of the State of New York, party of the second part (hereinafter referred to as the Western Company).

Whereas, the Western Company desires to arrange with the Sales Corporation for the manufacture of step by step machine switching telephone apparatus (hereinafter referred to as said apparatus), to assist the Western Company in supplying the needs of the telephone companies comprising what is commonly known as the Bell Telephone System, and the Sales Corporation is willing to procure the manufacture of said apparatus upon the terms and conditions hereinafter provided.

Now, therefore, this agreement witnesseth:

That for and in consideration of the sum of One Dollar ($1.00) by each of the parties to the other duly paid, receipt whereof is hereby acknowledged, and of the mutual covenants and conditions hereinafter contained, the parties have agreed as follows:

Section I. Subject-matter.—The Sales Corporation shall manufacture or cause to be manufactured for the Western Company, and the Western Company shall purchase from the Sales Corporation, the quantities hereinafter provided of said apparatus, the general types and kinds of which are indicated on the list of apparatus hereto attached, marked Exhibit A, and hereby made a part hereof. The Western Company reserves the right to modify, supplement or otherwise change said list so as to include additional or modified types and kinds of apparatus therein or to exclude therefrom any of the types and kinds therein described, and upon the Western Company so modifying or [fol. 5416] supplementing said list the apparatus included therein as so modified or supplemented shall be deemed to be covered by all of the provisions of this agreement.

[fol. 5417] Section IV.—Price, Invoicing and Payment.—

a. The price to be charged by the Sales Corporation to the Western Company for said apparatus delivered as provided in Section II-c hereof shall be the estimated complete cost thereof to the Sales Corporation as hereinafter defined, plus 20%.

The estimated complete cost to the Sales Corporation of said apparatus, upon which its price to the Western Company is to be determined, shall be made up of the factors defined and set forth in the appendix hereto attached, marked Exhibit B, and by this reference made a part hereof.

Said prices to the Western Company shall be determined annually, and the Sales Corporation shall submit to the Western Company on or before the first day of October, 1924, and on or before the first day of October of each subsequent year during the term hereof, except the last, lists, in the form prescribed by the Western Company, indicating its prices of said apparatus. Prices shown on said list, and the factors upon which such prices are determined, shall be subject to audit by the Western Company, and upon acceptance of such prices by the Western Company the same shall obtain for orders covering said apparatus scheduled by the Western Company for delivery during the ensuing calendar year, beginning the following January first, and the said prices shall not be, in respect of apparatus supplied under the Western Company's orders scheduled by the Western Company for delivery during such period, subject to any adjustment to take care of any deficit or surplus realized by the Sales Corporation as a result of any inaccuracy of the Sales Corporation's cost estimates.

The Western Company shall accept or reject the prices submitted by the Sales Corporation within sixty (60) days after the same have been submitted by the Sales Corporation and in the event of rejection, the prices then in effect shall prevail from the following January 1st until such time as new prices are determined by arbitration or agreement, at which time billings from said January 1st shall be adjusted accordingly.

[fol. 5418] The prices to the Western Company of changed, modified or additional apparatus resulting from the Western Company's exercise of its right to supplement the list of apparatus hereto attached, as provided in Section I hereof, or to change the specifications covering said apparatus, as provided in Section II-d hereof, shall be determined in accordance with the provisions of this section, IV-a, of this agreement, and upon being so determined pursuant thereto such prices shall obtain for orders covering the remainder of said calendar year in which the said lists are so supplemented and/or specifications are so changed.

[fol. 5419] b. The Sales Corporation agrees that it will at its own expense, upon request of the Western Company, defend any and all actions and suits that may at any time (without limitation to the term of this agreement) be brought against the Western Company or its customers or users of apparatus furnished at any time by the Sales Corporation to or upon order of the Western Company, on account of any infringement or alleged infringement of patents by reason of the use or sale of the apparatus so furnished, and the Sales Corporation agrees to indemnify and save harmless the Western Company and its customers and users of said apparatus from all loss, damage, liability and expense on account of any such infringement or claim of infringement.

Provided, however, that the Sales Corporation shall have been given prompt notice of such actions, suits or claims of infringement and full opportunity to defend the same, and

Provided further that the agreements in this paragraph contained shall not apply to any infringement or claim of infringement relating solely to inventions or features specially prescribed or specified by the Western Company for the apparatus to be furnished hereunder which inventions or features are not (at the time of sale of said apparatus) employed or incorporated in the types of system and apparatus theretofore sold by the Sales Corporation or by the Automatic Electric Company to other customers.

[fol. 5420] Section XI.—Term of contract.—This agreement shall continue in force until the 31st day of December, 1929.

[fol. 5421] In addition to the parts of this contract printed in full above, it contains, in substance, the following additional provisions:

Recitals and Section I printed in full above (pp. 3-4).

Sect. II. This section contains the details of the method of ordering and delivering products (pp. 4-6).

Sect. III. Apparatus ordered by Western at prices established for the year 1925 shall not be less than $3,300,000 for each calendar year. Western may order more apparatus and Sales Corporation will furnish it so far as it may and at the same time supply the requirements of its other customers (p. 6).

Sect. IV—A. Printed in full above.

B. Specifies the time of invoicing and payments (pp. 7-8).

Sect. V. Western shall from time to time advance to Sales at its request amounts not in excess of 73% of the price to the Western of apparatus desired by Western during the next succeeding twelve months' period. Sales Corporation shall pay interest at the rate of 7% per annum on the average balance of the amount advanced to Sales (pp. 8-9).

Sect. VI. Provides for the marking of the apparatus purchased by Western hereunder.

Sect. VII. In paragraph "A" the Sales Corporation warrants the apparatus sold and others reserved to Western Electric the right to reject apparatus subject only to appeal to arbitration.

Paragraph "B" printed in full above (pp. 10-12).

Sect. VIII. Limits liability in the case of non-performance because of strikes, etc.

Sect. IX. Governs the construction in contract and provides for arbitration.

Sect. X. Gives addresses for notices (pp. 12-14).

Sect. XI. Exhibit A is a list of general types of counts of step-by-step machine switching telephone apparatus indicating the items in respect of which authorizations will be given as provided in the contract (pp. 15-18).

Exhibit B prescribes a method to be employed by the Sales Corporation in determining the estimated complete cost of apparatus pursuant to Section 4A of the agreement (pp. 18-43).

In general the method is by use of Standard Shop Costs.

[fol. 5422] Extracts from Exhibit X-364

Memorandum of agreement, made and entered into this 24th day of May, 1927, by and between International Telephone Sales and Engineering Corporation, a corporation organized and existing under the laws of the State of Delaware, party of the first part (hereinafter referred to as the Sales Corporation), and Western Electric Company, Incorporated, a corporation organized and existing under the laws of the State of New York, party of the second part (hereinafter referred to as the Western Company):

Whereas, under date of March 21, 1924, the Western Company entered into an agreement with the Sales Corporation for the manufacture of step by step machine switching telephone apparatus, hereinafter referred to as said apparatus, which agreement was for a period ending December 31, 1929, which agreement is hereinafter referred to as the contract of March 21, 1924; and

Whereas, the parties hereto desire to terminate such agreement and to enter into a new arrangement for a period from January 1, 1927, to December 31, 1936, for the manufacture of said apparatus to assist the Western Company in supplying the needs of the Telephone Companies for which the Western Company acts or may hereafter act as purchasing agent and storekeeper under the terms of its standard supply contract; and the Sales Corporation is willing to procure the manufacture of said apparatus upon the terms hereinafter provided;

Now, therefore, this agreement witnesseth:

That for and in consideration of the sum of One ($1.00) Dollar by each of the parties to the other duly paid, receipt whereof is hereby acknowledged, and of the mutual covenants and conditions hereinafter contained, the said contract of March 21, 1924, is hereby terminated as of the first day of January, 1927, except such parts thereof as provide for schedules, authorizations and orders covering purchases of said apparatus for the year 1927, and the parties have further agreed as follows:

Section I. Subject-matter.—The Sales Corporation shall manufacture or cause to be manufactured for the Western Company, and the Western Company shall purchase from the Sales Corporation, the quantities hereinafter provided of said apparatus, the general types and kinds of which are indicated on the list of apparatus hereto attached, marked Exhibit A, and hereby made a part hereof. The Western Company reserves the right to modify, supplement or otherwise change said list so as to include addi- [fol. 5423] tional or modified types and kinds of apparatus therein or to exclude therefrom any of the types and kinds therein described, and upon the Western Company so modifying or supplementing said list, the apparatus included therein as so modified or supplemented shall be deemed to be covered by all of the provisions of this agreement.

* * * * * * *

Section IV. Price, Invoicing and Payment.—a. The prices to be charged by the Sales Corporation to the Western Company for said apparatus specified to be delivered during the calendar years 1927, 1928 and 1929 shall be the estimated complete cost (as hereinafter defined) to the Sales Corporation for the periods hereinafter specified in this section, plus 20%; provided however, that if the contract minimum specified in Section III hereof is exceeded in any of said years, the prices to be charged by the Sales Corporation to the Western Company on all such excess shall be such estimated complete cost thereof to the Sales Corporation plus 15%.

The estimated complete cost for the twelve months ending August 31, 1926, as heretofore agreed to by the parties hereto, shall be used in determining prices for the year 1927.

The Sales Corporation shall submit to the Western Company on or before the fifteenth day of October, 1927, and on or before the fifteenth day of October, 1928, lists in the form prescribed by the Western Company, indicating the Sales Corporation's estimated complete cost of said apparatus for the cost year ending August 31st preceding, which estimated complete cost shall be subject to audit by the Western Company, and upon acceptance of such estimated complete cost by the Western Company, the same shall be used in determining the prices for said apparatus scheduled by the Western Company for delivery during the ensuing calendar year, beginning the following January first.

The Western Company shall accept or reject the estimated complete cost submitted by the Sales Corporation within sixty (60) days after the same has been submitted by the Sales Corporation, and in event of rejection, the estimated complete cost then in effect shall form the basis of prices from the following January first until such time as new prices are determined by arbitration or agreement, at which time billings from said January first shall be adjusted accordingly.

b. The prices to be charged by the Sales Corporation [fol. 5424] to the Western Company for said apparatus specified to be delivered during each of the calendar years 1930 to 1936 inclusive shall be the estimated complete cost thereof, as determined for each such calendar year in accordance with the provisions of Exhibit B attached hereto, plus 15%.

Provided, however, that if the estimated complete cost of said apparatus specified for delivery in any of the calendar years 1930 to 1936 inclusive falls below the 1927 estimated complete cost of the same kinds and quantities of apparatus, the price for the said apparatus shall be the estimated complete cost for the particular year plus 15% plus one-half the difference between said estimated complete costs above referred to.

Provided, further, that if the Western Company places orders with the Sales Corporation specifying deliveries of said apparatus for any year after 1929 in an amount which, calculated at the prices established for the calendar year 1925 under the contract of March 21, 1924, between the parties hereto, aggregate $3,000,000 or more, and if the estimated complete cost applicable to the particular year, plus 15%, exceeds standard cost (which shall be taken to mean the standard cost established under the terms of the contract of March 21, 1924 and in effect between the parties hereto at the date hereof) plus 18%, then and in that event the price to the Western Company on such orders shall not exceed said standard cost plus 18% unless the estimated complete cost of said apparatus supplied on such orders exceeds said standard cost plus 18%, in which event the price to the Western Company for said apparatus so supplied shall be the estimated complete cost.

c. The prices to the Western Company of changed, modified or additional apparatus resulting from the Western Company's exercise of its right to supplement the list of apparatus hereto attached, as provided in Section I hereof, or to change the specifications covering said apparatus, as provided in Section II-d hereof, shall be determined in accordance with the provisions of this Section.

* * * * * * *

Section VI. Termination of Contract.—This contract, being based to a large extent upon the existing personal relationship between the Western Company and the parties owning a majority of the voting stock of the Sales Corporation and Automatic Electric Inc., and the confidence which the Western Company has in the policies established [fol. 5425] by them, it is hereby agreed that in the event that the present owners shall sell or otherwise dispose of all or a majority of the voting stock of the Sales Corporation or of the Automatic Electric Inc., or shall permit either of said corporation to sell all or any part of their physical assets, except in the ordinary course of business, then at such time the Western Company shall have the option, to be exercised at any time within one year following notice from the Sales Corporation of such change, which notice shall be given within thirty (30) days after such change becomes effective, to terminate this contract, provided that existing orders placed with the Sales Corporation before such termination shall be manufactured and delivered to the Western Company in accordance with the terms of this contract; and upon such termination the Sales Corporation agrees to refund to the Western Company any and all amounts and advances paid to it in accordance with the terms of Section V of this contract, except so much as is necessary to complete the then existing orders above referred to, and the Western Company shall be saved harmless from any law suits or damages as a subsequence of said termination.

In the event that this contract is terminated for the reasons aforesaid, the Sales Corporation agrees and guarantees that it will obtain for the Western Company from such corporation as may then have the right to manufacture and sell private automatic exchange (P. A. X.) equipment a contract whereby the Western Company or its nominee will have the exclusive license, subject to licenses outstanding at the date thereof, under any and all patents appertaining thereto, to manufacture and sell said equipment within the United States and its possessions during a period of ten (10) years to begin with the date of termination of this contract as aforesaid, except that such contract shall not extend or have any application to sales of such equipment to operating telephone companies for which the Western Company does not now or hereafter act as purchasing agent and storekeeper under the terms of its standard supply contract.

It is further agreed that in further consideration for such exclusive license contract, the Western Company shall pay to the Sales Corporation or its nominee a royalty of two and one-half (2½%) per cent of the net sales price of all of said equipment sold by it under the said exclusive license contract.

* * * * * * *

(b) The Sales Corporation agrees that it will at its own [fol. 5426] expense, upon request of the Western Company, defend any and all actions and suits that may at any time (without limitation to the term of this agreement) be brought against the Western Company or its customers or users of apparatus furnished at any time by the Sales Corporation to or upon order of the Western Company, on account of any infringement or alleged infringement of patents by reason of the use or sale of the apparatus so furnished, and the Sales Corporation agrees to indemnify and save harmless the Western Company and its customers and users of said apparatus from all loss, damage, liability and expense on account of any such infringement or claim of infringement.

Provided, however, that the Sales Corporation shall have been given prompt notice of such actions, suits or claims of infringement and full opportunity to defend the same; and

Provided further that the agreements in this paragraph contained shall not apply to any infringement or claim of infringement relating solely to inventions or features specially prescribed or specified by the Western Company for the apparatus to be furnished hereunder which inventions or features are not (at the time of sale of said apparatus) employed or incorporated in the types of systems and apparatus theretofore sold by the Sales Corporation or by the Automatic Electric Inc., to other customers.

* * * * * * *

Section XII. Term of Contract.—This agreement shall be effective as of the first day of January, 1927, and shall continue in force until the 31st day of December, 1936.

In witness whereof the parties have caused these presents to be executed by their officers thereunto duly authorized and their corporate seals to be affixed the day and year first above written.

International Telephone Sales and Engineering Corporation, by H. L. Gary, Vice-President. Attest: A. B. Simons, Secretary. Western Electric Company, Incorporated, by Edgar S. Bloom, President. Attest: H. B. Gilmore, Secretary.

[fol. 5427] In addition to the provisions of contract quoted in full above it contains, in substance, the following additional provisions:

Section I. Sales Corporation shall manufacture and Western shall purchase apparatus of general types and kinds indicated in Exhibit A. Western reserves the right to modify, supplement or change said list (p. 2).

Section II. Provides special features and details of the manufacture of equipment and specifications therefor (pp. 2-4).

Section III. (a) Amounts ordered for each of the years 1927, 1928, and 1929 shall be not less than $3,300,000 calculated at prices for the year 1925 as established in the contract of 1924. Amounts for each of the years 1930 to 1936, inclusive, shall be not less than $2,600,000 calculated at the same prices. Additional quantities shall be furnished Western by the Sales Corporation so far as it can and at same time supply requirements of its other customers.

(b) States that amounts specified are based in part upon aggregate sales by the Western of private automatic exchanges and if the Sales Corporation shall increase the aggregate amount of its own sales (exclusive of sales to the Western or other telephone companies for whom Western does not act as agent under terms of the Standard Supply Contract to customers outside of the United States or its possessions) of private automatic exchanges beyond $1,000,000 in any calendar year the said minimum amounts shall be reduced for the subsequent year by the amount of such excess but not exceeding $500,000 (pp. 5-6).

Section IV. In addition to the provisions of the section set forth in full above it deals with the following:

Provides for the time and payment of invoices.

Provides that the prices to be shared by Sales Corporation shall be the estimated complete cost of apparatus to the Western plus 15%. The complete cost shall be determined in the manner set forth in Exhibit B.

Provides that notwithstanding anything to the contrary herein contained the prices to the Western for apparatus shall be as favorable as prices charged the Sales Corporation's most favored customer.

Provides that coded apparatus purchased from Western by Sales Corporation for use in connection with orders placed by Western shall be rebilled to Western at the same prices without the addition of any percentage for profit but with a service charge of 6%.

Provides that the estimated complete cost for each of the years 1930 to 1936 (inclusive), shall be submitted to the Western for audit by them (pp. 6-10).

Section V. Requires advance from Western at request of Sales Corporation of amounts, not in excess of 73% of the price of apparatus desired by the Western during the twelve months' period following said advance. Details the method of determining said amounts and provides for the payment by Sales Corporation of interest at the rate of 6% per annum thereon (pp. 10-11).

Section VI. Quoted in full above (pp. 12-13).

[fol. 5428] Section VII. Provides for markings on apparatus covered by the contract (pp. 13-14).

Section VIII. (a) Sales Corporation warrants apparatus will be of suitable material and properly manufactured and subject to rejection by Western and its decision shall be final unless Sales Corporation appeals to arbitration.

(b) Set forth in full above (pp. 14-16).

Section IX. Releases liability in case of delay caused by strikes, etc., and provides for adjustment of prices in case of war (p. 16).

Section X. Covers the construction of the contract.

Section XI. Covers addresses for mailing under the contract (pp. 17-18).

Section XII. Set forth in full above.

Exhibit A. Is a list of general types and kinds of step-by-step machine switching telephone apparatus covered by the contract (pp. 20-22).

Exhibit B. Specifies method to be employed by the Sales Corporation in determining estimated complete cost under the contract. In general, it is determined on the basis of Standard Shop Costs.

[fol. 5429] EXTRACTS FROM EXHIBIT X-365

Advertisements of A. T. & T. the Cost of Which was Charged by the Plaintiff as Part of the Costs of Rendering the License Contract Services

February, 1931

What is the A. T. & T.?

All that most people see of the telephone company are a telephone and a few feet of wire.

But through that telephone you can talk with any one of millions of people, all linked together by the web of equipment of the Bell System.

All its efforts are turned constantly to one job—to give better telephone service to an ever-increasing number of people, as cheaply as it possibly can.

The American Telephone and Telegraph Company provides the staff work for the Bell System. To it the operation of the telephone service is a public trust. It pays a reasonable dividend to its stockholders * * * and uses all earnings beyond that to improve and extend the service.

There are more than 550,000 stockholders, and no one person owns so much as one per cent of its stock.

The Bell System operates through 24 regional companies, each one attuned to the needs of its particular territory. In addition, the 5,000 members of the Bell Laboratories staff do the scientific work which makes it possible to improve and widen the service at least cost to its users. The Western Electric Company, which manufactures for the Bell System, specializes in the economical production of telephone equipment of the highest quality.

All these facilities are directly available throughout the entire Bell System, at any time or place. * * * Because of them, every dollar that you spend for telephone service brings you constantly greater value and convenience.

* * * * * * *

April, 1930

The Bell Telephone Company of Your Town

An Advertisement of the American Telephone and Telegraph Company

It has its home in your town. Its operators are the [fol. 5430] daughters of your neighbors. Its various departments are in the hands of your own citizens, with years of training in telephone engineering and management. Who owns the Bell System? 450,000 people scattered over the United States own the stock of the American Telephone and Telegraph Company and 250,000 own other securities of the Bell System.

No matter how small the part of the Bell System that serves you, it has behind it research, engineering and manufacture on a national scale. The Bell System operates through 24 companies, each designed to fit the particular area it serves—to furnish the highest standard of service in a manner personal to the needs of every user.

Serving each of these 24 operating companies is the staff of the American Telephone and Telegraph Company, which is constantly developing better methods of telephone communication.

Each draws on the findings of the Bell Laboratories, one of the greatest institutions of its kind in the world, for the continual scientific improvement of telephone service. Each has the benefit of the buying power and specialized manufacturing processes of the Western Electric Company, which supplies telephone apparatus of the highest quality and precision for the entire Bell System. Each takes advantage of every improvement in practice, equipment and economy.

The Bell System's ideal is to give all of the people of this nation the kind of modern, convenient telephone service that they want, over its wires to connect them one with another and with the telephones of the rest of the world. It is your telephone company, at your service with every resource that it commands.

December, 1928

Where Working Together is Everything

An Advertisement of the American Telephone and Telegraph Company

It is the aim of the Bell System that any one anywhere in the country can pick up a telephone and talk to any one anywhere else clearly and without delay. That is the meaning of universal service. To provide it, the means of telephoning must be uniformly good. Each of the 24 operating companies of the Bell System has full access to all the improvements and methods that are continually being made. [fol. 5431] There are 5,000 workers on the staffs of the American Telephone and Telegraph Company and the Bell Laboratories whose sole occupation is to develop constantly improving methods and equipment for the 350,000 employees of the Bell System to use in serving the public. The results of the efforts are evident, not only in the extension of telephone service across the Atlantic, but in the constantly improving local and long distance service at home.

The very nature of the telephone business necessitates a single interconnected system. The American Telephone and Telegraph Company accepts its responsibility for a nation-wide telephone service as a public trust.

It is fundamental in the policy of the Company that all earnings after regular dividends and a surplus for financial security be used to give more and better service to the public.

October, 1928

5,000 People Whose Sole Job Is Bettering Your Service

An Advertisement of the American Telephone and Telegraph Company

The very nature of the telephone business necessitates a single inter-connected system. The American Telephone and Telegraph Company accepts its responsibility for a nation-wide telephone service as a public trust.

It also accepts responsibility for the safety of the funds invested in it by more than 420,000 persons in every walk of life. From the time of its organization it has never missed paying a regular dividend, so that investors rightly feel assurance in providing money for the growth of the business.

It is the policy of the company to use all income, beyond that necessary to pay regular dividends and maintain a surplus for financial stability, to improve and extend the service. Because of the nature of the business, speculative profits have no place in it.

The Bell System maintains in its research, engineering and business staffs and in the Bell Laboratories 5,000 workers—in a total of 350,000 employees—whose sole occupation is to improve the telephone art and to make these improvements instantly available throughout the nation. These workers are a guaranty of continued progress in furnishing the public a constantly improving telephone service at the lowest possible cost.

[fol. 5432] September, 1930

They Use It, They Believe in It, They Own It

An Advertisement of the American Telephone and Telegraph Company

The Bell Telephone System is representative of the new type of ownership in American business, and of the responsibility to further the nation's welfare and prosperity which such an institution accepts.

Some 500,000 men and women, in nearly every town and city in the country, own the stock of the American Telephone and Telegraph Company. The average number of shares per stockholder is thirty. No single individual owns as much as one per cent of the total capital stock. The company pays only a regular, reasonable dividend, which it has not missed paying since its incorporation. Earnings beyond that go into the extension and improvement of the telephone service.

The Bell System is an American institution which consistently builds ahead of the communication needs of the day and year. Its construction program for 1930 requires the expenditure of approximately 700 million dollars.

The scope, speed and accuracy of its service is dependent on the constant research of more than 5,000 scientific workers, new methods of operation and construction, and the co-ordinated efforts of more than 450,000 widely scattered employees. All its efforts are centered on giving the public a steadily improving telephone service at the lowest possible cost. This is the accepted responsibility of the Bell System.

* * * * * * *

October, 1926

Building on the Telephone Principle

Fifty years ago Alexander Graham Bell discovered the principle of the telephone. His first telephone employed wire as the connecting path over which words passed. Four years later he used a beam of light instead of wire to carry speech between telephone instruments.

Today, both wire and wireless telephony are employed on every hand in the service of the nation. Wire telephony, with its thousands of central offices, its complex switchboards and millions of miles of wire, envelops the country, carrying for the American people 70,000,000 conversations every day. Wireless telephony is broadcasting entertain- [fol. 5433] ment and carrying important information to the remotest regions.

But new applications of the telephone principle are still being found. In the loud speaker, in the deaf set, the electrical stethoscope, the improved phonograph, the telephone principle has been adapted by the Bell Telephone Laboratories to the uses of the physician, the public speaker and the musician. The scientific research and engineering skill, which enable America to lead the world in telephone service, are also bringing forth from the telephone principle other devices of great usefulness.

September, 1928

Where the Bell System's Profits Goes

An Advertisement of the American Telephone and Telegraph Company

There is in effect but one profit paid by the Bell Telephone System. This profit is not large, for it is the policy of the Bell System to furnish a constantly improving telephone service at the least cost to the public.

The treasury of the American Telephone and Telegraph Company receives dividends from the stock of the operating companies. It receives a payment from the operating companies for research, engineering and staff work. It receives dividends from the Western Electric Company—makers of supplies for the Bell System—and income from long distance operations.

Only one profit is taken from this money in the American Telephone and Telegraph Company's treasury. That is the regular dividend to its stockholders—now more than 420,000 in number—which it has never missed paying since its incorporation in 1885.

Money beyond regular dividend requirements and a surplus for financial stability is used to give more and better telephone service to the public. This is fundamental in the policy of the company.

The Bell System accepts its responsibility to provide a nation-wide telephone service as a public trust.

[fol. 5434] January, 1930

A Reduction in Long Distance Telephone Rates

An Advertisement of the American Telephone and Telegraph Company

On January 1, 1930, there is effective a reduction in various long distance telephone rates in the Bell System which on the present volume of calls means a saving of more than $5,000,000 a year to the telephone-using public in the United States. This is the fourth reduction in long distance rates within a little more than three years. On October 1, 1926, they were reduced by $3,000,000. On December 1, 1927, a reduction of $1,500,000 went into effect. On February 1, 1929, there was a reduction of $5,000,000.

These reductions are in accordance with the aim of the Bell System to continue to furnish the best possible telephone service at the least cost to the public. Earnings must, of course, be sufficient to permit the best possible telephone service at all times and to provide a reasonable payment to stockholders with an adequate margin to insure financial safety. Earnings in excess of these requirements will either be spent for the enlargement and improvement of the service, or the rates for the service will be reduced. This is fundamental in the policy of the management.

[fol. 5435] How Many Are 421,000 Stockholders?

An Advertisement of the American Telephone and Telegraph Company

On October 15th, American Telephone and Telegraph Company checks representing the 152d dividend were mailed to its 421,000 stockholders. That is the largest number of stockholders of any company in the world.

The American Telephone and Telegraph Company is owned by a great investment democracy.

Its dividend checks are cashed at banks in every state in the Union, by people representing all trades, stations and professions.

No institution is more nationally or publicly owned than the American Telephone and Telegraph Company, which in turn owns more than 91% of the common stock of the operating companies of the Bell national System. The average holding is 26 shares, and no one person owns as much as 1% of the total stock.

The Bell System was developed in the interest of telephone users and is owned by the public that it serves.

Dec., 1927.

[fol. 5436]

Exhibit X-367

(This document was delivered to the Defendants on June 15, 1932, pursuant to cross-examination of Mr. Gregory on May 25, 1932 (Rec. 3414), together with statement of Mr. Bracelen by letter of June 15, 1932, as follows:

"We understand that as a result of your examination of underlying data of the 1927 profits on A. T. & T. instruments, you request the following additional information:

(a) 1927 results on new A. T. & T. Co. instruments similar in form to previous years results which you have available in the underlying data in your possession.

Copy of statement showing these results is attached (X-367).

(b) Whether shop variation of current cost from standard cost (operating surplus and current underrun applicable to A. T. & T. Co. instruments) was determined in 1927 as in prior years.

In 1927, as in prior years, shop variation applicable to A. T. and T. Co. instruments was determined based on the ratio of standard shop cost of A. T. and T. Company instruments to total standard shop cost of telephone apparatus, of Western Electric manufacture.

(c) Statement as to what investment figures represent and how they have been arrived at.

As explained by Mr. Gregory on the witness stand, investment applicable to American Telephone and Telegraph Company instruments comprises the same items as total investment shown on Exhibits A-77 and A-80, that is, plant at gross value, merchandise at cost or market, whichever is the lower, receivables and cash, less current accounts payable.

The records for the period 1921 to 1926 inclusive, show the investment in merchandise and receivables, applicable to A. T. and T. Co. instruments, except that portion of merchandise representing work in progress which has been apportioned in general on the basis of standard shop cost of sales. Investment in plant, cash and payable for the same period, applicable to A. T. and T. Co. instruments, has been apportioned in general upon the basis of standard shop cost of sales but with respect to plant, the expense loadings on standard shop costs were used.

Records are not available which indicate the method used in determining the apportionment for the period 1916 to 1920 inclusive.

For 1927, average investment was determined on the basis of turnover as indicated for the period 1916 to 1926 inclusive.

The method used brings the same result over the twelve year period, 1916 to 1927 inclusive, as is obtained by taking the turnover on telephone apparatus exclusive of installation and equipment engineering, modified by the use of investment completed instruments."

(Here follows side folio 5437)

EXHIBIT 367

367

B.T.G.

Net Profit – New A.T.&T. instruments

1939

(Dollars in Thousands)

		Source
Sales	4,836	1939 Underlying Data 2.01-9 Report
Basic Gross Profit	1467	" "
Manufacturing Dept Surplus	178	Based on ratio of manufacturing [illegible] to Total Telephone apparatus of W.E. before standard cost (3.8%) times standard cost of sales to ATT [illegible] (3.367) Underlying Data
Total Gross Profits	1595	
Expenses		
Development	567	1939 Underlying Data
Merchandising & General	285	" " "
	852	
Net Profits before Taxes	743	
Federal Taxes	97	at 13% of Net Profits before tax.
Net Profits	646	
Ratio Net Profits to Sales	13.4%	
Average Investment	6093	Based on turnover of approx .8 for 11 years ending 12/31/36 as shown in [illegible] which has [illegible] been. This ratio was applied to 1939 sales. To determine investment
Per Cent Return	10.6	

[fol. 5438] **Net Profits Before Deducting Federal Taxes on Sales of New A. T. & T. Instruments in Excess of 20% Over Complete Cost Provided Under 1882 Contract**

(Dollars in Thousands)

	(a) Analysis of 1927 Actual Selling Price Based on Estimated Cost	(b) Based on Actual Costs 1927 Selling Price Would Have Been	(c) Difference (a—b)	
Shop Cost	$3,292	$3,241	$51+	1
Development Expense	492	567	75—	2
Distribution Expense	246	285	39—	3
Complete Cost	$4,030	$4,093	63—	4
Profits (20% of Line 4)	806	819	13—	5
Selling Price	$4,836	$4,912	$76—	6
Selling Price (on basis of Col. b)	4,912			7
Profits more than 20% over Complete Cost (6-7)	76			8

[fols. 5439 & 5440] Exhibit X-368

Western Electric Company, Incorporated

Number of Shares of A. T. & T. Co. Stock on Which Payments Were Completed by Western Electric Company Employees

1915-1921	37,689
1922	34,875
1923	13,783
1924	15,229
1925	12,372
1926	13,167
1927	25,405
1928	36,989
1929	20,777
1930	53,993
1931	64,430
	328,709

[fol. 5441] A. T. & T. Releases, 7/15/19 to 11/2/31

(This document delivered to Defendants on or about June 6, 1932, together with letter—sent June 15, 1932—in which appears following statement:

"The typed inscription 'Relating to Electrical Research Products Inc. field of business' which appeared on the binder of releases furnished you in accordance with your request, appearing at Tr. pages 2832 and 2834, was stricken our because, while the binder included all the releases relating to Electrical Research Products, Inc. field of business, certain of the releases applied also to fields of business of other companies where Electrical Research Products, Inc. did not have exclusive rights.

You inquire as to whether in the case of 19 releases. * * *"

(These 19 releases are as follows:)

1. Release Aug. 23, 1921, Re: Loud Speaker Equipment—"The Western Electric will pay a royalty of 5% on sales, both domestic and export on the part of the loud speaker telephone equipment manufactured by the Western Electric, whether sold as complete sets or spare parts; except that sales to the A. T. & T. and its licensee companies are excluded from royalty. Receipts from leases are to be classed as sales" (page 8 of Exhibit X-369).

2. Release Dec. 20, 1921, re: Recording of Sound Waves as covered by Sound Recording agreement between the Western Electric and the General Electric, on one side, and the Phone Laboratories, Inc., on the other—"The Western Electric is to pay to the A. T. & T. 5% on the sales price of all apparatus of its own manufacture furnished under this agreement. The Western Electric is to pay to the A. T. & T. 5% of the gross royalty received by the Western Electric Co., Inc., under this agreement" (page 10).

3. Release July 15, 1919, Re: Vacuum Tubes and Related Apparatus—"That it (the Western Electric) pay to the A. T. & T. 10% of the gross price representing the gross selling price of said vacuum tubes" (page 1).

[fol. 5442] 4. Release Nov. 13, 1924, Re: Electrical Recording of Sound for the making of phonograph records—

"That the Western Electric pay to the A. T. & T. a royalty of 5% on all parts of the equipment manufactured by the Western Electric. This royalty is to apply on the sales price of the Telephone Department to the Supply Department of the Western Electric Company. That the Western Electric pay to the A. T. & T. 5% of the gross royalty and/or other payments received by the Western Electric for use of this system and apparatus" (page 21).

5. Release Aug. 11, 1926, Re: Device Similar to #3-A Audiometer—"That the Western Electric pay to the A. T. & T. a 5% royalty on its sales price" (page 36).

6. Release Aug. 11, 1926, Re: Electro-Magnetic Reproducer and Associated Apparatus—"That the Western Electric pay to the A. T. & T. a 5% royalty on its sales price" (page 38).

7. Release Nov. 6, 1926, Re: System in Apparatus for Recording and Reproducing Sound in Coordination, Synchronism or Timed Relation with the Taking and Projection of Pictures—"That the Western Electric, Inc., pay to the A. T. & T. a 5% royalty on its sales price." Also "That the Western Electric pay to the A. T. & T. 33⅓% of the gross royalties and/or other payments received by the Western Electric for the use of these systems and apparatus in the United States" (pages 40-41).

8. Release Jan. 5, 1927, Re: Manufacture for Export Systems and Apparatus for Recording and Reproducing Sound—"That the Western Electric Co., Inc., pay to the A. T. & T. a 5% royalty on the sales price" (page 43).

9. Release Aug. 21, 1928, Re: Electro-Magnetic Reproducer—"That the Western Electric Company pay to the A. T. & T. a 5% royalty on its sales price (page 57).

10. Release May 29, 1929, re: Six Vacuum Tube Amplifiers without Vacuum Tubes to the Commercial Cable Company—"That the Western Electric, Inc., pay to the A. T. [fol. 5443] & T. 5% royalty on its sales price. That the Western Electric pay to the A. T. & T. 33⅓% of the gross royalties and other payments received by the Western Electric, Inc., or its agents, for the use of these systems and apparatus" (pages 64-64).

11. Release Aug. 27, 1929, Re: Manufacture and Sale or Lease within the United States a System and Apparatus for the electrical recording of sound for the making of broadcast sound records, etc.—"That the Western Electric, Inc., pay to the A. T. & T. a 5% royalty on its sales price on all parts of such equipment manufactured by it. That the Western Electric, Inc., pay to the A. T. & T. 33⅓% of the gross royalties and/or other payments received by the Western Electric, Inc., for the use of this system and apparatus" (page 67).

12. Release May 26, 1930, re: #1-B Stethoscope and Similar Devices, etc.—"That the Western Electric, Inc., pay to the A. T. & T. 5% royalty on its sales price" (page 70).

13. Release June 18, 1930, re: Manufacture and sale of vault protection apparatus—"That the Western Electric, Inc., pay to the A. T. & T. 5% royalty on its sales price" (page 71).

14. Release October 14, 1930, re: The right to manufacture, sell or lease, or sell outside the Bell System, Apparatus for the determination of the quantity and quality of Noise, etc.—"That the Western Electric, Inc., pay to the A. T. & T. a 5% royalty on its sales" (page 74).

15. Release Dec. 16, 1930, re: Radio Telephone Equipment to the Motion Picture Industry for communication between Studios and locations where pictures are being made—"That the Western Electric, Inc., pay to the A. T. & T. 5% royalty on its sales price on all parts of each equipment manufactured by it" (pages 78-79).

16. Release Apr. 3, 1931, re: Right to Manufacture and sell any two or more of the following systems, as far as this right has not been extended by previous leases:

[fol. 5444] Public Address Systems.
Sound Picture.
Radio Broadcast Reception.
Music Distribution.
Input Equipment for Radio Broadcasting.

"That the Western Electric, Inc., pay to the A. T. & T. a 5% royalty on its sales price on all parts of each equipment manufactured by it" (pages 81-83).

17. Release June 29, 1931, re: Sale or Lease of Sound Apparatus or Radio Receivers, etc.—

"That the Western Electric pay to the A. T. & T. a 5% royalty on its sales price" (page 87).

18. Release July 23, 1931, re: Sale or Lease of String Oscillographs—

"That the Western Electric pay to the A. T. & T. a 5% royalty upon its sales price" (page 88).

19. Release Aug. 27, 1931, re: Vault Protection Apparatus—

"That the Western Electric, Inc., pay to the A. T. & T. a 5% royalty on its sales price on all parts manufactured by it. That the Western Electric, Inc., should pay to the A. T. & T. a 33⅓% of all royalties or other payments received by the Western Electric, Inc., or its agent, with respect thereto" (pages 90-91).

"Royalties are based on Western Electric Company's sales price only. Wherever these releases provide for a royalty based on sales price, the royalty paid is a per cent of the Western Electric Company's sales price and not a per cent of the sales price by a subsidiary."

[fol. 5445] EXHIBIT X-370

Royalties Received by Western Electric Company, Electrical Research Products, Inc., and Portion Paid to A. T. & T. Company in Accordance with Releases

(This document sent to Defendants June 15, 1932, together with the following statement from Mr. Bracelen:

"I enclose herewith a statement showing by years the royalties received by the Western Electric Company and the Electrical Research Products, Inc., and the portion of such royalties paid to the American Telephone and Telegraph Company for the period 1916 to 1931. No portion of royalties received by the Electrical Research Products, Inc. is paid to the Western Electric Company. In addition to the amount shown on this statement, the Western Electric Company turned over in 1925, to the American Telephone and Telegraph Company on behalf of the International Western Electric, $5,000 representing the American Telephone and Telegraph Company's share of royalties received by the International Western Electric Company'';

and also the following statement from Mr. Bracelen under date of June 22, 1932:

"With reference to * * * royalties in which American Telephone and Telegraph does not participate,'' these royalties are received from the following sources:

(a) Permalloy and submarine cables.

(b) Reproducing Apparatus outside of the United States.

(c) Under contract with International Standard Electric Corporation and Northern Electric Company, Limited.

(d) From various manufacturing licensees.)

[fol. 5446]

Royalties Received by Western Electric Company, Electrical Research Products, Inc., and Portion Paid to A. T. & T. Company in Accordance with Releases

(Dollars in Thousands)

Western Electric Company

	Total Royalty Received	Royalties in which A. T. & T. Co. does not participate	Royalties in which A. T. & T. Co. does participate	Royalty Paid A. T. & T Co.
1916 to 1924..	160	160	0	0
1925..........	436	144	292	54
1926..........	2,187	1,452	735	103
1927..........	227	227	0	0
1928..........	230	230	0	0
1929..........	295	295	0	0
1930..........	340	340	0	0
1931..........	298	298	0	0
	4,173	3,146	1,027	157

Electrical Research Products, Inc.

	Total Royalty Received	Royalties in which A. T. & T. Co. does not participate	Royalties in which A. T. & T. Co. does participate	Royalty Paid A. T. & T Co.
1927..........	1,274	258	1,016	188
1928..........	1,525	201	1,324	229
1929..........	2,896	361	2,535	328
1930..........	4,024	483	3,541	833
1931..........	3,734	346	3,388	794
	13,453 (A)	1,649	11,804	2,372
	17,626	4,795	12,831	2,529

(A) As shown on Exhibit A-82 large portions of these royalties were distributed to others than the A. T. & T. Co.

[fol. 5447] Royalties Paid by W. E. Co. to A. T. & T. Co. on Sales of Restricted Apparatus Covered by Releases

(Dollars in Thousands)

	Sales	% Royalty	Royalty paid At. T. & F. Co.
1919	180	5	9
1920	6	10	1
	178	5	9
1921	10	10	1
	272	5	14
1922	15	10	2
	1,499	5	75
1923	1,868	5	93
1924	1,565	5	78
1925	1,740	5	87
1926	2,507	5	125
1927	3,222	5	161
1928	10,743 (A)	3½ (A)	376
1929	25,415 (A)	3½ (A)	891
1930	11,039 (A)	3½ (A)	385
1931	4,030 (A)	3½ (A)	140
			2,447

(a) By agreement with A. T. & T. Co. beginning in 1928 the amount of royalties due on sales of restricted apparatus was determined by the application of 3½% to the total Sales of Special Commercial Products to non-Bell customers, instead of 5% of the sales of apparatus which were restricted. This change was made for convenience and to save expense, the amounts being substantially the same.

[fol. 5448] EXHIBIT X-371

American Telephone and Telegraph Company

Miscellaneous Non-operating Revenues (Account 316), Year 1931

Western Electric Company—royalties and analogous items:	
Electrical recording of sound for the making of phonograph records	$19,938
Mechanical reproduction of sound from phonograph records	35,146
Recording and reproducing sound in timed relation with the taking and projection of pictures	902,242
Singer patent (linemen's shields)	1,383
Trailer and winch equipment	679
Carbon monoxide detectors	54
Deflection dynamometers	8
Sales by Western Electric Company of special commercial products	162,048
Total from Western Electric Company	1,121,498
Royalties received from:	
Atlantic Precision Company	817
Cameron Surgical Specialty Company	377
Foote Pierson and Company, Inc.	300
Northern Electric Company	2,589
Radio Products Company	2,170
Stromberg-Carlson Telephone Mfg. Co.	6,278
Supreme Instruments Corporation	449
Weston Electrical Instrument Corporation	1,077
Miscellaneous Long Lines items	36,116
Other miscellaneous minor items	46
Total	$1,171,717

[fol. 5449] EXTRACTS FROM EXHIBIT X-373

Handbook of Outside Plant Engineering Practices General

American Telephone & Telegraph Co. and Associated Companies

September, 1927

* * * * * * * *

Handbook of Outside Plant Engineering Practices General

Introduction

This handbook is a guide and reference for the plant engineering forces in the general design, use and upkeep of the outside telephone plant. The details of such work applicable to the several kinds of outside plant will be covered in the following handbooks:

Pole Lines,
Underground Conduit,
Block Plant,
Cable,
House Cable,
Aerial Wire,
Trunk and Toll Cable.

The plant engineer should also be thoroughly familiar with approved methods of construction and operation as established in the construction specifications and the company's routines before attempting the solution of any problems in plant engineering.

Since the plant is necessarily scattered over a large territory and the different parts must work together efficiently, standardization is desirable in engineering as well as in construction and maintenance. However, sufficient flexibility must be retained to permit adaptation of the plans to meet the many local conditions affecting each problem, and it is therefore impracticable to specify exact methods for engineering the outside plant. These notes present fundamental principles which are generally applicable and discuss the considerations to be accorded many typical problems encountered by the engineer.

Since the business is continually growing, the design of plant in any locality must include determination of a general and flexible plan of relief and the plant must be designed with sufficient flexibility in type, amount and arrangment to permit of economical readjustment to meet demands for service which are variable and uncertain, both as to amount and location. The consideration of future as well as present adaptability and economy is therefore an underlying principle of all phases of good outside plant engineering.

These exacting requirements call for the greatest ingenuity and foresight in outside plant design and involve careful study of various plans for plant extension and rearrangement with a view to the selection of the most economical and desirable plan. In this work, cost studies and comparisons are important tools for the plant engineer. The discussion of these studies presents, where practicable, bases for short methods of economic selection, the application of which is taken up in the several detail handbooks. It is highly desirable that the plant be engineered on an economic basis, but it must be recognized that such economy includes consideration of practical and operating features as well as the more definite results of cost studies, and that the final decision in each case requires the exercise of sound judgment on the part of the engineer in weighing the indications of the cost study with all related business or other factors bearing on the problem. In this connection the engineer's attention is particularly directed to the interpretation of cost studies as outlined in Section 127.

Underlying all of these principles and considerations, the engineer must have foremost in his mind the fact that the telephone system exists for the purpose of furnishing service to the public and that the results of his engineering efforts should insure a service which is satisfactory from the subscriber's viewpoint.

This handbook also includes brief descriptions of the principles and proper uses of such closely allied subjects as Commercial Surveys, Traffic Engineering, Fundamental Plans and Accounting, although it is not intended that the plant engineer should undertake work along these lines except as requested by and under the direction of those responsible for these several branches of the telephone work. It will be necessary, however, for him to associate these subjects with his own work and to make use of their several indications and practices in planning the outside plant. Their treatment in this handbook is, therefore, limited to such information as may facilitate complete cooperation with the departments more immediately concerned, in order to attain the greatest efficiency and most accurate results.

* * * * * * *

[fol. 5450] **Accounting Principles**

26. The system of standard telephone accounts in use by Bell System companies embodies four main groups of accounts, namely, the assets, the liabilities, the revenues and the expenses.

27. Assets represent generally that which is owned by and owed to the company and are divided into—

(a) Property assets, consisting of the investment in fixed capital, Section 31, the investment in securities of other companies and the investment in physical property other than plant and equipment used in telephone operations.

(b) Current assets or working assets, consisting of cash, material and supplies and amounts due the company and readily convertible into cash.

(c) Deferred assets, consisting of those not subject to current settlements.

28. Liabilities consist of all debts or obligations, including the company's obligations to its stockholders, and are classified as:

(a) Capital liabilities, consisting of the capital stock which represents ownership of the business, advances from system corporations, and long term debts, such as bonded indebtedness.

(b) Current or working liabilities, representing the obligations falling due in the ordinary course of the business and to meet which cash must be currently provided.

(c) Deferred liabilities, consisting of those not subject to [fol. 5451] current settlement (p. 15).

* * * * * * *

34. The interest during construction account is provided in the fixed capital accounts for interest charges. It is a generally accepted principle that interest upon the moneys devoted to the construction and equipment of the property from the dates of expenditures until the construction is ready for use should be included as an element in the cost of the property. This principle recognizes that there is a definite cost attached to the use of money. In the existing system of accounts no provision is made for adding to the cost of the various classes of property the interest relating thereto. Interest charged to construction is generally computed at the prevailing interest rate on the balance carried in the "Construction Work in Progress" account. The amount so charged to fixed capital is treated as interest revenue.

35. The depreciation reserve account is built up through charges to operating expense. The purpose and use of this account is made clear by considering, in the natural order of their occurrence, the new plant built, repairs, depreciation, old plant removed, cost of removal and salvage.

(a) The cost of building new plant is charged to the proper fixed capital account, whether it represents additions to the system or the replacement of existing plant.

(b) The cost of repairing plant so as to keep it in serviceable condition can not be considered as adding to the value of the property and must be charged to expense.

(c) In spite of constant repairs, every part of the plant will at some time in the future have to be retired either because of deterioration, inadequacy, public requirements, or storms or other casualties. The practice of telephone companies is to make provision during the life of depreciable plant for its retirement for any cause. This is accomplished by making monthly charges for depreciation in the operating expenses throughout the service life of the plant.

(d) Since the accrual thus charged to expense is not itself a cash outlay, the charge must be offset by an equal credit to some account. That account has been designated by the term "Reserve for Accrued Depreciation."

[fol. 5452] (e) As plant is retired, the fixed capital accounts should be accordingly decreased, since the plant is no longer in existence and the books should no longer show it as an asset. The original cost of plant retired is therefore credited to the proper fixed capital account and charged to the depreciation reserve account.

(f) The provision for depreciation, if correctly made, recognizes that there would be some salvage from the majority of old plant when taken out and that the cost of removing old plant so as to recover the salvage would reduce the net value of this salvage. This net salvage value must, then, be credited to the depreciation reserve, or, in other words, the reserve in the end is charged with the net loss of the plant retired from service.

Provision is made in the depreciation reserve for losses resulting from extraordinary casualties. The work of restoring the property is known as extraordinary repairs and its cost is actually charged to the operating expense account. Concurrently the depreciation reserve is charged and operating expenses credited with the total expenditures, including the cost of temporary facilities used in restoring service. Charging the reserve with the total of such expenditures simplifies the transaction, but requires adjustment with respect to new plant added. This adjustment consists of charging the fixed capital accounts and crediting the reserve with the cost of constructing such plant under normal conditions. The net result is that the reserve is charged on acount of extraordinary repairs with abnormal costs of construction, the cost of temporary facilities and the cost of repairing property damaged but not retired. The reserve is also charged as outlined under (e) and (f) above with the net loss of plant destroyed, replaced or otherwise retired as a result of extraordinary casualties (pp. 16-17).

* * * * * * *

[fol. 5453] 64. The Data in the Provisional Estimate are prepared through the cooperation of all departments of the company and include:

a. The basic forecasts:
1. Estimated line and station growth.
2. Estimated calling rates.
3. Estimated toll usage.

b. Estimated gross additions to plant; original cost of plant to be displaced; the net additions to plant; salvage on the plant displaced and cost of removing it; net charges to the reserves. The estimated gross additions to plant is the measure of construction activities in money and includes additions to care for growth and plant to replace worn-out and obsolete plant. This part of the Provisional Estimate is usually spoken of as the "Construction Program" and includes estimates of the materials and supplies to be manufactured or purchased by the Western Electric Company for the telephone company.

c. Estimated results of operation. The significant items and their relationship may be stated in simplified form as follows:

	Revenues
less)	Expense
equals)	Net telephone earnings
plus)	Sundry net earnings
equals)	Total net earnings
less)	Interest expense

equals) Balance net profits
less) Dividends
equals) Undivided profits
(or balance for corporate surplus)

(NOTE.—"Sundry net earnings" are income other than telephone earnings. Generally speaking, "undivided profits" are added to the company's "surplus" at end of year.)

d. New financing required. This is measured by the difference between estimated capital requirements and estimated resources. The capital requirements are for such items as gross additions to plant, investment in securities of other companies, purchase of existing plant, etc. The resources consist of estimated undivided profits, credits to [fol. 5454] depreciation reserve, returns from the sale of plant, etc. (p. 28).

• • • • • • •

Plant Charges

109. Annual charges comprise the items of expense incident to ownership of plant and those that are incurred each year after its installation to keep it in serviceable condition. They do not generally include purely operating costs. Depreciation, interest, taxes, maintenance, insurance and administration are the items that ordinarily comprise annual charges on telephone plant. The annual charges on any plant are equally and, in some cases, more important than the initial outlay or first cost of installing it; and the relative economies of different types of plant are nearly always studied from the viewpoint of annual charges.

110. Future worth is an amount occurring at some future time, or the cumulation at the end of some definite period of time of an amount placed at compound interest during that period. In the latter case, future worth is computed by application of the compound interest factor for the intervening period. The equation for determination of compound interest factors and factors derived therefrom with several rates of interest and for periods of from 1 to 50 years is shown in Appendix I.

Example: Future worth at end of 10 years, at 7% interest, of:

a. $100 occurring 10 years hence = $100.
b. $100 occurring 3 years hence = 100 x 1.61 = $161. (1.61 = Compound Interest Factor for 7 years.)
c. $100 occurring at once = 100 x 1.97 = $197.

The future worth of an annuity or annual charge for a given period is the sum of the cumulations to the end of the period of the yearly amount taken as occurring successively in each year of the period. The equation for determination of annuity cumulation factors and factors derived therefrom with several rates of interest and for periods of from 1 to 50 years is shown in Appendix IV.

Example: Future worth at end of 10 years of—
a. Annual charge of $100 starting at once = 100 x 13.82 = $1,382.
b. Annual charge of $100 starting 3 years hence = 100 x 8.65 = $865. (8.65 = Annuity cumulation factor for 7 years.)

[fol. 5455] 111. Present worth is an amount occurring at once or an amount which, if placed at compound interest at the start of a definite period of time, will cumulate to a specific sum at the end of that period. In the latter case, present worth is computed by application of the present worth factor for the period. The equation for the computation of present worth factors and factors derived therefrom with several rates of interest and for periods of from 1 to 50 years is shown in Appendix II.

Example: Present worth at 7% interest of:
a. $100 occurring at once = $100.
b. $100 occurring in 10 years = 100 x .51 = $51.

The present worth of an annuity or annual charge for a given period is the sum of the present worths of the yearly amount taken as occurring successively in each year of the period. The equation for computation of the factors for present worth of annuity and factors derived therefrom with several rates of interest and for periods of from 1 to 50 years is shown in Appendix V.

Example: Present worth at 7% interest for 10 years of:
a. Annual charge of $100 starting at once = 100 x 7.02 = $702.

b. Annual charge of $100 starting 5 years hence = 100 (7.02 − 4.10) = $292.

112. An annuity is a fixed amount recurring yearly as a charge or credit. Annual charges, Section 109, are therefore in the form of annuities. Other costs and charges occurring at particular times may be converted into equivalent annuities. That is, a future worth or cumulation may be converted to an equivalent annuity by multiplying it by the annuity factor for the intervening period (Appendix III); a present worth or amount may be expressed as an equivalent annuity by multiplying it by the factor for the annuity of present worths (Appendix VI) for the period over which it is desired to spread the amount.

Examples (From Sections 110 and 111):

a. Annuity over 10 year period equivalent to a future amount of $1,382 (using 7% interest rate) = 1,382 × .072 = $100.

b. Annuity over 10 year period equivalent to a present worth of $702 (using 7% interest rate) = 702 × .1423 = $100. (Pp. ~~44~~–45)

* * * * * * *

[fol. 5456] 114. An equated annual charge is an annuity or annual charge which will amount to the same cumulative total as a series of several annual charges cumulated over varying periods. It may be derived by obtaining the total future worth, (or present worth) of the several annual charges for their respective periods and multiplying this total by the annuity factor, Appendix III (or the factor for an annuity of present worth, Appendix VI) for the period of study.

Example: Assume a plant to be built up of three units having an annual charge of $100 per unit. One unit is to be installed immediately, one at the end of 4 years and one at the end of 7 years. Let the period of study be 10 years.

Unit of plant	Date installed	Period in service	Annual charge
1st Unit	At once	10 years	$100
2nd Unit	4 years	10—4=6 years	$100
3rd Unit	7 years	10—7=3 years	$100

Future worth		Present worth	
Factor App. IV	Amount	App. V	Amount
13.82	$1,382	7.02	$702
7.15	715	7.02—3.38=3.64	364
3.21	321	7.02—5.39=1.63	163
Total	$2,418		$1,229

Equated annual charge = Future worth × Annuity factor for the period = 2418 × .0724 = $175, or

Equated annual charge = Present worth × Factor for annuity of present worth for the period = 1229 × .1414 = $175.

The engineer is cautioned against the use of average annual charges in such studies instead of equated annual charges. Average annual charges derived without proper [fol. 5457] consideration of interest, although they may sometimes furnish an approximate indication of relative costs under two plans, will in general produce incorrect results, particularly if the interest factor is later applied in calculating present worths or cumulative charges. (Pp. 45–46)

* * * * * * *

117. Depreciation at retirement considers that the complete depreciation of a unit of plant is realized at the time of its retirement from service. As mentioned in Section 116, this amount may be taken as the first cost or structural value of the plant in service, less the net salvage to be obtained at the time of retirement.

Example: An aerial cable is estimated to cost $822 per 1,000 ft. in place. The expected service life is 10 years, at which time it will be removed and a net salvage estimated at $189, or 23% of the first cost, will be obtained. Depreciation at retirement, i. e., at the end of the tenth year = 822 — 189 = $633, and the present worth (Section 111) of this depreciation will be 633 × .508349 (App. II, 7% — $321.78. (P. 48)

* * * * * * *

[fol. 5458] 127. Interpretation of Cost Studies. The point to be emphasized in the interpretation of cost studies or more particularly cost comparisons of two or more plans is:

The answer to the cost comparison is not the answer to the problem unless all pertinent factors have been evaluated and reflected in the study. Since it is often impracticable to properly reflect all factors in a cost comparison, these studies may be considered as definitely disposing of the known or estimated factors relating to cost and as providing a logical basis of judgment from which to consider the intangible and broader aspects of the problem, such as difference in quality or dependability of service, effect on operation or organization, financial considerations, etc. The interpretation or summation of the results of a study should therefore include considerations of:

a) Practicability of the several plans both as to construction and operation and the effect of one type of plant against another upon the day by day routine operations which cannot well be expressed in annual charges. For example, a comparison of the annual charges on aerial cable terminals as against the annual charges on twisted pair circuits may favor but a few terminals on aerial cables. On the other hand, the improvements in efficiency and resultant economies which can be made by the Installation Department with a greater number of terminals might tend to reverse the results of a study in which these features were not considered.

b) New money required under each plan, both initially and each year during the period of study. In this connection it is important to keep in mind that, other things being equal, a plan requiring large investments has disadvantages as compared with one requiring smaller investments. Even though the plan involving the larger investment proves in from the cost study by a small margin, it may be desirable to adopt the alternative plan and avoid tying up considerable amounts of fixed capital. This is particularly true when it is considered that, in general, much of the fixed capital cannot be recovered at a later date, while as long as the annual charges remain in the form of operating expenses, they are flexible, Section 125.

c) Immediate economies which can be effected should outweigh approximately equal economies estimated for some future date.

d) Adaptability of the plan to meet existing plant conditions most economically.

[fol. 5459] e) Which plan is least effected by contingencies of various kinds such as doubt as to realization of growth as predicted, assumption regarding plans to be carried out at some future date, etc.

f) Which plain is least subject to unfavorable reaction from fluctuations in material, labor and other costs assumed.

g) Which plan will be most flexible in the future. One plan, if adopted now, may preclude the economical introduction later of different or improved contingent plant.

h) Net revenue expected under each plan.

The proper interpretation and use of cost analyses and comparisons requires the exercise of sound business judgment. Overall considerations of many phases of a specific problem may clearly indicate which of the plans considered should be adopted. But the question may still remain—should it be done at all? In other words does the plan recommended represent in itself a sound investment?

Are the assumptions on which its selection was based well founded and do they warrant immediate execution of the plan. It is evident that experience is an important factor in making these decisions, but it should be reasonably clear that any experience cited represents fact, not opinion, and that it is based upon conditions comparable with those under consideration. (Pp. 57–60)

Appendix II

Present Worth Factors

(To Convert Future Worth to Present Worth)

$\frac{1}{(r)^n}$ = Present Worth (at beginning of first year) of $1.00 to be spent at the end of any year, n.

Year, n	i=2%	i=3%	i=4%	i=5%	i=6%	i=7%	i=8%
1	.980392	.970874	.961538	.952381	.943396	.934579	.925926
2	.961169	.942596	.924556	.907029	.889996	.873439	.857339
3	.942322	.915142	.888996	.863838	.839619	.816298	.793832
4	.923845	.888487	.854804	.822702	.792094	.762895	.735030
5	.905731	.862609	.821927	.783526	.747258	.712986	.680583
6	.887971	.837484	.790315	.746215	.704961	.666342	.630170
7	.870560	.813092	.759918	.710681	.665057	.622750	.583490
8	.853490	.789409	.730690	.676839	.627412	.582009	.540269
9	.836755	.766417	.702587	.644609	.591898	.543934	.500249
10	.820348	.744094	.675564	.613913	.558395	.508349	.463193
11	.804263	.722421	.649581	.584679	.526788	.475093	.428883
12	.788493	.701380	.624597	.556837	.496969	.444012	.397114
13	.773033	.680951	.600574	.530321	.468839	.414964	.367698
14	.757875	.661118	.577475	.505068	.442301	.387817	.340461
15	.743015	.641862	.555265	.481017	.417265	.362446	.315242
16	.728446	.623167	.533908	.458112	.393646	.338735	.291890
17	.714163	.605016	.513373	.436297	.371364	.316574	.270269
18	.700159	.587395	.493628	.415521	.350344	.295864	.250249
19	.686431	.570286	.474642	.395734	.330513	.276508	.231712
20	.672971	.553676	.456387	.376889	.311805	.258419	.214548
21	.659776	.537549	.438834	.358942	.294155	.241513	.198656
22	.646839	.521893	.421955	.341850	.277505	.225713	.183941
23	.634156	.506692	.405726	.325571	.261797	.210947	.170315
24	.621721	.491934	.390121	.310068	.246979	.197147	.157699
25	.609531	.477606	.375117	.295303	.232999	.184249	.146018
26	.597579	.463695	.360689	.281241	.219810	.172195	.135202
27	.585862	.450189	.346817	.267848	.207368	.160930	.125187
28	.574375	.437077	.333477	.255094	.195630	.150402	.115914
29	.563112	.424346	.320651	.242946	.184557	.140563	.107328

30	.552071	.411987	.308319	.231377	.174110	.131367	.099377
31	.541246	.399987	.296460	.220359	.164255	.122773	.092016
32	.530633	.388337	.285058	.209866	.154957	.114741	.085200
33	.520229	.377026	.274094	.199873	.146186	.107235	.078889
34	.510028	.366045	.263552	.190355	.137912	.100219	.073045
35	.500028	.355383	.253415	.181290	.130105	.093663	.067635
36	.490223	.345032	.243669	.172657	.122741	.087535	.062625
37	.480611	.334983	.234297	.164436	.115793	.081809	.057986
38	.471187	.325226	.225285	.156605	.109239	.076457	.053690
39	.461948	.315754	.216621	.149148	.103056	.071455	.049713
40	.452890	.306557	.208289	.142046	.097222	.066780	.046031
41	.444010	.297628	.200278	.135282	.091719	.062412	.042621
42	.435304	.288959	.192575	.128840	.086527	.058329	.039464
43	.426769	.280543	.185168	.122704	.081630	.054513	.036541
44	.418401	.272372	.178046	.116861	.077009	.050946	.033834
45	.410107	.264439	.171198	.111297	.072650	.047613	.031328
46	.402154	.256737	.164614	.105997	.068538	.044499	.029007
47	.394268	.249259	.158283	.100949	.064658	.041587	.026859
48	.386538	.241999	.152195	.096142	.060998	.038867	.024869
49	.378958	.234950	.146341	.091564	.057546	.036324	.023027
50	.371528	.228107	.140713	.087204	.054288	.033948	.021321

$$\frac{1}{(r)^n} = \frac{1}{(1+i)^n}$$, Appendix VII.

[fol. 5461]

Appendix III

Annuity Factors

(To Convert Future Worth to Annuity)

U_n = Annuity (to be laid aside at the end of each year) to redeem $1.00 at the end of year, n.

Year, n	i=2%	i=3%	i=4%	i=5%	i=6%	i=7%	i=8%
1	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2	.495050	.492611	.490196	.487805	.485437	.483092	.480769
3	.326755	.323530	.320349	.317209	.314110	.311052	.308034
4	.242624	.239027	.235490	.232012	.228591	.225228	.221921

Appendix III—Continued

Year. n	i=2%	i=3%	i=4%	i=5%	i=6%	i=7%	i=8%
5	.192158	.188355	.184627	.180975	.177396	.173891	.170456
6	.158526	.154598	.150762	.147017	.143363	.139796	.136315
7	.134512	.130506	.126610	.122820	.119135	.115553	.112072
8	.116510	.112456	.108528	.104722	.101036	.097468	.094015
9	.102515	.098434	.094493	.090690	.087022	.083486	.080080
10	.091327	.087231	.083291	.079505	.075868	.072378	.069029
11	.082178	.078077	.074149	.070389	.066793	.063357	.060076
12	.074560	.070462	.066552	.062825	.059277	.055902	.052695
13	.068118	.064030	.060144	.056456	.052960	.049651	.046522
14	.062602	.058526	.054669	.051024	.047585	.044345	.041297
15	.057825	.053767	.049941	.046342	.042963	.039795	.036830
16	.053650	.049611	.045820	.042270	.038952	.035858	.032977
17	.049970	.045953	.042199	.038699	.035445	.032425	.029629
18	.046702	.042709	.038993	.035546	.032357	.029413	.026702
19	.043782	.039814	.036139	.032745	.029621	.026753	.024128
20	.041157	.037216	.033582	.030243	.027185	.024393	.021852
21	.038785	.034872	.031280	.027996	.025005	.022289	.019832
22	.036631	.032747	.029199	.025971	.023046	.020406	.018032
23	.034668	.030814	.027309	.024137	.021278	.018714	.016422
24	.032871	.029047	.025587	.022471	.019679	.017189	.014978
25	.031220	.027428	.024012	.020952	.018227	.015811	.013679
26	.029699	.025938	.022567	.019564	.016904	.014561	.012507
27	.028293	.024564	.021239	.018292	.015697	.013426	.011448
28	.026970	.023293	.020013	.017123	.014593	.012392	.010489
29	.025778	.022115	.018880	.016046	.013580	.011449	.009619
30	.024650	.021019	.017830	.015051	.012649	.010586	.008827
31	.023596	.019999	.016855	.014132	.011792	.009797	.008107
32	.022611	.019047	.015949	.013280	.011002	.009073	.007451
33	.021687	.018156	.015104	.012490	.010273	.008408	.006852
34	.020819	.017322	.014315	.011755	.009598	.007797	.006304
35	.020002	.016539	.013577	.011072	.008974	.007234	.005803
36	.019233	.015804	.012887	.010434	.008395	.006715	.005345
37	.018507	.015112	.012240	.009840	.007857	.006237	.004924

38	.017821	.014459	.011632	.009284	.007358	.005795	.004539
39	.017171	.013844	.011061	.008765	.006894	.005387	.004185
40	.016556	.013262	.010523	.008278	.006462	.005009	.003860
41	.015972	.012712	.010017	.007822	.006059	.004660	.003561
42	.015417	.012192	.009540	.007395	.005683	.004336	.003287
43	.014890	.011698	.009090	.006993	.005333	.004036	.003034
44	.014388	.011230	.008665	.006616	.005006	.003758	.002802
45	.013910	.010785	.008262	.006262	.004701	.003500	.002587
46	.013453	.010363	.007882	.005928	.004415	.003260	.002390
47	.013018	.009961	.007522	.005614	.004148	.003037	.002208
48	.012602	.009578	.007181	.005318	.003898	.002831	.002040
49	.012204	.009213	.006857	.005040	.003664	.002639	.001886
50	.011823	.008866	.006550	.004777	.003444	.002460	.001743

$$U_n = \frac{i}{(1+i)^n - 1}, \text{ Appendix VII.}$$

[fol. 5462]

Appendix IV

Annuity Cumulation Factors

(To Convert Annuity to Future Worth)

V_n=Amount of an Annuity of $1.00 (to be laid aside at end of each year) at the end of any year, n.

Year, n	i=2%	i=3%	i=4%	i=5%	i=6%	i=7%	i=8%
1	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2	2.02	2.03	2.04	2.05	2.06	2.07	2.08
3	3.0604	3.0909	3.1216	3.1525	3.1836	3.2149	3.2464
4	4.121608	4.183627	4.246464	4.310125	4.374616	4.439943	4.506112
5	5.204040	5.309136	5.416323	5.525631	5.637093	5.750739	5.866601
6	6.308121	6.468410	6.632975	6.801913	6.975319	7.153291	7.335929
7	7.434283	7.662462	7.898294	8.142008	8.393838	8.654021	8.922803
8	8.582969	8.892336	9.214226	9.549109	9.897468	10.259803	10.636628
9	9.754628	10.159106	10.582795	11.026564	11.491316	11.977989	12.487558
10	10.949721	11.463879	12.006107	12.577893	13.180795	13.816448	14.486562
11	12.168715	12.807796	13.486351	14.206787	14.971643	15.783599	16.645487
12	13.412090	14.192030	15.025805	15.917127	16.869941	17.888451	18.977126

Appendix IV

Annuity Cumulation Factors

(To Convert Annuity to Future Worth)

V_n=Amount of an Annuity of $1.00 (to be laid aside at end of each year) at the end of any year, n.

Year, n	i=2%	i=3%	i=4%	i=5%	i=6%	i=7%	i=8%
13	14.680332	15.617790	16.626838	17.712983	18.882138	20.140643	21.495297
14	15.973938	17.086324	18.291911	19.598632	21.015066	22.550488	24.214920
15	17.293417	18.598914	20.023588	21.578564	23.275970	25.129022	27.152114
16	18.639825	20.156881	21.824531	23.657492	25.672528	27.888054	30.324283
17	20.012071	21.761588	23.697512	25.840366	28.212880	30.840217	33.750226
18	21.412312	23.414435	25.645413	28.132385	30.905653	33.999033	37.450244
19	22.840559	25.116868	27.671229	30.539004	33.759992	37.378965	41.446263
20	24.297370	26.870374	29.778079	33.065954	36.785591	40.995492	45.761964
21	25.783317	28.676486	31.969202	35.719252	39.992727	44.865177	50.422921
22	27.298984	30.536780	34.247970	38.505214	43.392290	49.005739	55.456755
23	28.844963	32.452884	36.617889	41.430475	46.995828	53.436141	60.893296
24	30.421862	34.426470	39.082604	44.501999	50.815677	58.176671	66.764759
25	32.030300	36.459264	41.645908	47.727099	54.864512	63.249038	73.105940
26	33.670906	38.553042	44.311745	51.113454	59.156383	68.676470	79.954415
27	35.344324	40.709634	47.084214	54.669126	63.705766	74.483823	87.350768
28	37.051210	42.930923	49.967583	58.402583	68.528112	80.697691	95.338830
29	38.792235	45.218850	52.966286	62.322712	73.639798	87.346529	103.965936
30	40.568079	47.575416	56.084938	66.438848	79.058186	94.460786	113.283211
31	42.379441	50.002678	59.328335	70.760790	84.801677	102.073041	123.345868
32	44.227030	52.502759	62.701469	75.298829	90.889778	110.218154	134.213537
33	46.111570	55.077841	66.209527	80.063771	97.343165	118.933425	145.950620
34	48.033802	57.730177	69.857909	85.066959	104.183755	128.258765	158.626670
35	49.994478	60.462082	73.652225	90.320308	111.434780	138.236878	172.316804
36	51.994367	63.275944	77.598314	95.836323	119.120867	148.913460	187.102148
37	54.034255	66.174223	81.702246	101.628139	127.268119	160.337402	203.070320
38	56.114940	69.159449	85.970336	107.709546	135.904206	172.561020	220.315945

39	58.237238	72.234233	90.409150	114.095023	145.058458	185.640292	238.941221
40	60.401983	75.401260	95.025516	120.799774	154.761966	199.635112	259.056519
41	62.610023	78.663298	99.826536	127.839763	165.047684	214.609570	280.781040
42	64.862223	82.023196	104.819598	135.231751	175.950545	230.632240	304.243523
43	67.159468	85.483892	110.012382	142.993339	187.507577	247.776497	329.583005
44	69.502657	89.048409	115.412877	151.143006	199.758032	266.120851	356.949646
45	71.892710	92.719861	121.029392	159.700156	212.743514	285.749311	386.505617
46	74.330504	96.501457	126.870568	168.685164	226.508125	306.751763	418.426067
47	76.817176	100.396501	132.945390	178.119422	241.098612	329.224386	452.900152
48	79.353519	104.408396	139.263206	188.025393	256.564529	353.270093	490.132164
49	81.940590	108.540648	145.833734	198.426663	272.958401	378.999000	530.342737
50	84.579401	112.796867	152.667084	209.347996	290.335905	406.528929	573.770156

$$V_n = \frac{(1+i)^n - 1}{}, \text{ Appendix VII.}$$

Appendix VII

Derivation of Annuity Factors

Compound interest factor, $(r)^n = (1+i)^n$. See Appendix I.

Let i = rate of interest in per cent.

\$1.00 = principal.

The amount of \$1.00 with interest at $i\%$

at the end of one year $= 1+i$,

at the end of two years $= (1+i) + i\,(1+i)$

$= (1+i)\,(1+i) = (1+i)^2$

at the end of three years $= (1+i)^2 + i(1+i)^2$

$= (1+i)^2\,(1+i) = (1+i)^3$

at the end of "n" years $= (1+i)^{n-1} + 1\,(1+i)^{n-1}$

$= (1+i)^{n-1}\,(1+i) = (1+i)^n$.

For convenience, let "r" represent the factor $(1+i)$, by which the amount of \$1.00, with interest at $i\%$, at the end of n years $= r^n$.

Present worth factor, $\frac{1}{(r)^n} = \frac{1}{(1+i)^n}$. See Appendix II.

From the definition of present worth, Section 111, the present worth of \$1.00 to be spent "n" years hence is the amount "X," which, if placed at interest immediately, will amount to \$1.00 at the end of "n" years.

From the derivation of the compound interest factor, the amount of \$X, with interest, at $i\%$, at the end of "n" years $= X(1+i)^n = X(r)^n$.

Since it is desired that this amount shall equal \$1.00,

$$X\,(r)^n = 1$$

$$\text{From which } X = \frac{1}{(r)^n} \text{ or } (r)^{-n}$$

or the present worth of \$1.00, n years hence $= \frac{1}{(r)^n}$.

Annuity factor, $U_n = \frac{i}{(1+i)^n - 1}$. See Appendix III.

An annuity to redeem a specific sum at the end of a certain period is the amount which, if set aside each year at compound interest, will, at the end of the period, equal the sum to be redeemed.

Let X = annual amount or annuity.

\$1.00 = sum to be redeemed.

n = period of years at the end of which the sum is to be redeemed.

Since the amount "X" is to be set aside each year during the period "n" years, the total at the end of the period will be the sum of this amount at compound interest for $n-1$ years, for $n-2$ years, for $n-3$ years, etc., respectively, and for 0 years, or the amount due the last year of the period.

From the derivation of the compound interest factor, the amount at the end of $n-1$ years

$$=X(r)^{n-1}$$

the amount at the end of $n-2$ years

$$=X(r)^{n-2}.$$

the amount at the end of $n-3$ years

$$=X(r)^{n-3}.$$

the amount at the end of $n-(n+1)$ years

$$=X(r)^{1}.$$

the amount at the end of $n-n$ or 0 years

$$=X(r)^{0}=X.$$

The sum of these amounts is to equal $1.00 and may be written

$$X\,[r^{n-1}+r^{n-2}+r^{n-3}+\;.\;.\;.\;.\;r+1]=1 \quad (1)$$

Dividing both sides of this equation by r,

$$X\left[r^{n-2}+r^{n-3}+r^{n-4}+\;.\;.\;.\;.\;1+\frac{1}{r}\right]=\frac{1}{r}(2)$$

Subtracting equation (2) from equation (1),

$$X\left[r^{n-1}-\frac{1}{r}\right]=1-\frac{1}{r}$$

Multiplying both sides of this equation by r,

$$X[r^{n}-1]=r-1$$

and since $r=(1+i)$

$$X\left[(1+i)^{n}-1\right]=i,\text{ and } X=\frac{i}{(1+i)^{n}-1}$$

or the annuity required to redeem $1.00 at the end of "n" years $=\dfrac{i}{(1+i)^{n}-1}$ which for convenience may be represented by the symbol U_n.

Annuity Cumulation factor, $V_n=\dfrac{(1+i)^{n}-1}{i}$

See Appendix IV.

The cumulation or total amount of an annuity over a period of years is the inverse of an annuity or annual charge, and the factors on the basis of $1.00 are reciprocal.

Let X = cumulation or total amount at end of period.
$1.00 = annuity or annual charge.
n = period of years during which annuity is paid or charged.

Since \$1.00 is to be set aside each year during the period "n" years, the total at the end of the period will be the sum of \$1.00 at compound interest for n−1 years, for n−2 years, for n−3 years, etc., and the \$1.00 due the last year of the period. From the derivation of the compound interest factor, the amount of \$1.00 at the end of

n−1 years $= (r)^{n-1}$.
the amount of \$1.00 at the end of
n−2 years $= (r)^{n-2}$.

[fol. 5464] **EXTRACTS FROM EXHIBIT X-374**

Memorandum of agreement, made this 16th day of February, 1922, between Western Electric Company, Incorporated, a corporation organized and existing under and by virtue of the laws of the State of New York, hereinafter called the Western Company, party of the first part, and Stromberg Carlson Telephone Manufacturing Company, a corporation organized and existing under and by virtue of the laws of the State of New York, hereinafter called the Stromberg Company, party of the second part:

Witnesseth that for and in consideration of the mutual covenants and conditions hereinafter contained, the parties have agreed as follows:

Section I. The Stromberg Company agrees to manufacture for and sell and deliver to the Western Company, and the Western Company agrees to purchase and receive from the Stromberg Company at prices and upon terms and conditions hereinafter set forth, intercommunicating telephonic apparatus and parts therefor as hereinafter provided.

* * * * * * *

3. It is the intent of the parties that the "net cost" of apparatus and parts to the Western Company hereunder, shall during the term hereof, be such that the Western Company may be enabled to meet competition in sales to its electrical contractor customers, and so that the gross profit realized by the Western Company upon its aggregate quarterly sales of apparatus and parts covered hereby to its contractor customers is not less than 30% of the Western Company's aggregate selling prices to such customers, it being recognized by both parties that the selling expense

of the Western Company upon the apparatus and parts covered hereby averages approximately 20% of its aggregate selling price.

* * * * * * *

[fol. 5465] In addition to the provisions of this contract quoted in full above it contains, in substance, the following additional matters:

Section II. Apparatus to be of highest quality material and workmanship and manufactured in accordance with specifications to be furnished to Stromberg by Western.

Section III. Gives Western the right of inspecting and rejecting the apparatus.

Section IV. Stromberg warrants apparatus, materials and parts furnished hereunder.

Section V. Western may bring additional types of intercommunicating telephonic apparatus under terms of the contract.

Section VI. Covers the details of placing orders, manufacturing of apparatus, maintenance of stock of apparatus by Stromberg and the disposal of all stock thereof if the contract is terminated (pages 2–4).

Section VII. Covers the billing for apparatus purchased hereunder.

Section VIII. (1) Provides that the net cost to Western of apparatus purchased shall be determined by mutual agreement in advance of purchases.

(2) Provides that at quarterly intervals Stromberg shall submit a list showing types of apparatus and proposed schedule of net cost therefor (page 3).

(3) Quoted in full above (pages 5-6).

Section IX. Requires Stromberg, as various types of equipment come under contract, to purchase from Western such tools therefor as Western shall desire to sell at a price not to exceed cost less reasonable allowance for depreciation.

Section X. Provides that Stromberg, as various types of apparatus become covered by contract, shall purchase from Western such raw materials and such assemblies and codified parts of apparatus as Western may require Stromberg to employ in various kinds of apparatus manufactured hereunder. Prices and terms to be mutually agreed upon (page 7).

Section XI. As various types of apparatus come under contract Stromberg shall purchase from Western its stock of completed apparatus of such types (pages 7-8).

Section XII. Prohibits sale of apparatus manufactured under Western patents to any other Stromberg customer (pages 8-9).

Section XIII. Prohibits assignment of contract by Stromberg.

Section XIV. Contract to be construed according to the laws of New York (p. 10).

Section XV. Contract to be effective January 1, 1922, and shall continue in force until terminated by three months' written notice by either party (p. 10).

[fol. 5466] EXTRACTS FROM EXHIBIT X-375

Memorandum of agreement, made this 1st day of June, 1920, by and between the Stromberg-Carlson Telephone Manufacturing Company, a corporation organized and existing under the laws of the State of New York, hereinafter called the "Stromberg Company", and Western Electric Company, Incorporated, a corporation organized and existing under the laws of State of New York, hereinafter called the "Western Company":

In consideration of the mutual covenants and undertakings herein made and entered into by the parties hereto, it is agreed by and between said parties as follows:

1. The Stromberg Company agrees to manufacture and sell to the Western Company and the Western Company agrees to purchase from the Stromberg Company one thousand (1,000) thirty (30) line Private Branch Exchange telephone switchboards upon the terms and conditions hereinafter provided.

* * * * * * *

11. The Stromberg Company agrees and warrants that the switchboards and parts thereof to be furnished under this contract and the circuits therein employed will not infringe any valid patent or trademark, and that in case any action or suit charging any such infringement shall at any

time be brought against the Western Company or against any purchaser or user of said switchboards and parts so furnished by the Stromberg Company under this contract, the Stromberg Company will at its own expense defend any and all such actions or suits and will save the Western Company and all customers of the Western Company harmless therefrom and from any and all claims, demands and liabilities directly arising from any such alleged infringement; provided, however, that the Stromberg Company shall be given immediate written notice of all charges of such infringement and the institution of any such suits and full authority and opportunity to assume defense thereof through its own counsel, and provided, further, that the obligations of the Stromberg Company under this paragraph 11 shall not extend to any of the parts to be furnished by the Western Company in accordance with paragraph 10 hereof, nor to any infringement due solely to features of construction or circuits which are not standard with the Stromberg Company or furnished by it to its other customers.

12. The Western Company agrees and warrants that [fol. 5467] the parts to be furnished by it under paragraph 10 of this agreement will not infringe any valid patent or trademark and that the apparatus and circuits described by the said specifications, so far as the same specify features of construction or circuits which are not standard with the Stromberg Company or furnished by it to its other customers, will not infringe any valid patent or trademark, and that in case any action or suit charging such infringement shall at any time be brought against the Stromberg Company by reason of the use of any of the parts furnished by the Western Company hereunder or by reason of the manufacture for the Western Company of apparatus or circuits which are not standard with the Stromberg Company or furnished by it to its other customers, the Western Company will at its own expense defend any and all such actions or suits and will save the Stromberg Company harmless therefrom and from all claims, demands, or liabilities directly arising from any such alleged infringement; provided, however, that the Western Company shall be given immediate written notice of all claims of such infringement and of the institution of any such suits, and

full authority and opportunity to assume the defense thereof through its own counsel.

[fol. 5468] In addition to the above portions of the contract quoted in full, the remaining portions of the contract in brief are as follows:

Paragraph 2 provides that switchboards to be furnished hereunder shall conform to certain specifications prepared by Western Electric; and that this agreement shall not be construed to authorize Stromberg Company to manufacture for or sell to others than Western Company any private branch exchange telephone switchboards embodying any invention or patents of the Western Company under which the Stromberg Company is not already licensed. Paragraph 3 covers manner of delivery. Paragraph 4 covers manner of Western Company's informing Stromberg as to equipment of the switchboards to be delivered. Paragraph 5 covers the price which Western agrees to pay Stromberg Company for all switchboards shipped by Stromberg Company. Paragraph 6 covers additional equipment to be supplied by Stromberg Company to Western. Paragraph 7 provides that Stromberg will for five years from date hereof and thereafter as long as purchases of Western Company shall amount to $500 or more per year, supply Western with such parts for the switchboards covered hereby as the Western may order from time to time, at the Stromberg Company's lowest prices in effect at the date the order is received, less 25% and 5%. Paragraph 8 covers markings on switchboards. Paragraph 9 covers inspection at option of Western Company. Paragraph 10 covers certain parts to be incorporated into the switchboards to be furnished by Western Company to Stromberg Company, and prices therefor are to be as low as the prices the Western Company charges its most favored customers for similar parts. Paragraphs 11 and 12 are quoted in full above. Paragraph 13 provides for guaranty by Stromberg Company of first class design and workmanship of all switchboards and parts furnished under this agreement, and against defects.

[fol. 5469] **Exhibit X-378**

Agreement made this 30th day of March, 1928, between Western Electric Company, Incorporated, a New York corporation, hereinafter called Western, and International Standard Electric Corporation, a Delaware corporation, hereinafter called International, witnesseth:

Whereas the parties hereto heretofore entered into a certain agreement dated October 1, 1925, with reference to the exchange of patent rights and technical information and certain sales arrangements, and

Whereas the parties hereto desire to supplement said agreement of October 1, 1925, and to exchange certain further rights and licenses as herein provided,

Now, in consideration of the covenants and agreements herein contained, the parties hereto agree as follows:

1. Wherever International is herein mentioned, such term shall, unless inconsistent with the context, be deemed to include each and all of International's associated companies as defined in said agreement of October 1, 1925, and the respective successors to substantially the entire good will and business of International and/or its said associated companies.

2. Wherever Western is herein mentioned, such term shall, unless inconsistent with the context, be deemed to include each and all subsidiary companies owned or controlled by Western and the respective successors to substantially the entire good will and business of Western and/or its said subsidiary companies.

3. International hereby grants to Western, its successors and assigns, (subject to the licenses herein reserved by and granted to International and subject also to such rights, if any, as Marconi's Wireless Telegraph Company Limited may now have or be entitled to receive under a certain contract between the latter and Standard Telephones and Cables Limited, formerly Western Electric Company, Limited, dated February 16, 1925), licenses under all patents and patent rights and other rights which are now owned or controlled by International or which may be owned or controlled by International during the term of this agreement, and under all patents and patent rights or other rights which International has at any time acquired directly or indirectly from Western, said licenses to Western being of the following character and scope:

to make, use and sell throughout the world any and all apparatus for use [fol. 5470] (a) in recording sound or

(b) in reproducing sound from records or

(c) for establishing or maintaining a timed relation between the recording or the reproduction of sound on the one hand, and the taking or projection of motion pictures on the other hand,

but only insofar as and to the extent that said apparatus is used or intended for use for any of the purposes aforesaid, and provided that said licenses do not extend to apparatus of a character not ordinarily employed in accomplishing the functions or uses aforesaid as a primary object or purpose thereof, or as directly incidental to such primary purpose.

(For example, in the case of the electrical reproduction of sound from records, said licenses cover not only the mechanism for driving the record and controlling the speed thereof, and the electrical "pick-up" for producing variations in electric current corresponding to the sound vibrations recorded on the record, but said licenses also cover electrical amplifiers, transformers, loud speakers, and current controlling devices, so far as and to the extent that the various elements above referred to are used for reproducing sound from records. But in the case of radio broadcasting from phonograph records, said licenses would not extend to the radio transmitting apparatus or to the radio receiving sets, since such radio apparatus is of a character not usually employed for the primary purpose of broadcasting sound from records or as a direct incident to such primary purpose, but said licenses would extend to the phonograph mechanism and electrical "pick-up" thereof connected to the radio broadcast transmitter.)

Subject as aforesaid, said licenses shall, in respect of patents based upon inventions originating with or derived from Western, be exclusive from date hereof until the ends of the terms of said patents respectively, and in respect of all other patents shall be exclusive during the term of this agreement and non-exclusive thereafter for the remainder of the terms of said patents respectively.

4. International agrees that it will not during the term of this agreement manufacture or sell (except only to the

extent of the rights in this instrument expressly reserved [fol. 5471] by and granted to International) any apparatus, systems, devices or things whatsoever, whether patented or unpatented, for the purpose of or for use in

(a) recording sound or

(b) reproducing sound from records or

(c) establishing or maintaining a timed relation between the recording or reproduction of sound and the taking or projection of motion pictures,

whether in any such case such recording or reproduction of sound is the principal purpose or is incidental to other uses and purposes except, however, that nothing in this paragraph contained shall apply to manufacture or sale in the United States (which term shall include all places subject to the jurisdiction of the United States) or to any business or commerce within, into or from the United States, and except also that if at any time it shall be established by competent authority or by advice of the legal counsel of both parties that the provisions of this section are in conflict with the laws of any country, this section shall, as regards such country, be void, and this agreement shall be construed as though such country had been specifically excepted from the operation of this section.

5. International hereby reserves and Western hereby grants to International, to the full extent to which Western has or shall acquire rights of the character herein granted, non-exclusive licenses under all patents and patent rights or other rights which are now owned or controlled by Western and under all patents and patent rights and other rights which may be owned or controlled by Western during the term of this agreement or which at any time heretofore have been owned or controlled by Western to make, use and sell throughout the world except the United States, Canada and Newfoundland, any and all apparatus (including amplifying and loud speaking equipment) for use for the electrical reproduction of sound from records, but only in so far as and to the extent that said apparatus is used for the purpose aforesaid, except that said licenses do not extend to apparatus of a character not ordinarily employed in accomplishing the function or use aforesaid as a primary object or purpose thereof or as

directly incidental to such primary purpose (the examples given in Section 3 as to the interpretation of said section being also applicable to the licenses granted in the present section) and except also, that said licenses do not extend [fol, 5472] to the manufacture, sale or lease of apparatus

(a) for use in theatres (including motion picture theatres) or

(b) for use in homes, including all places of permanent or temporary residence, such as private living rooms of hotels, or

(c) for use in connection with apparatus for establishing or maintaining a timed relation between the reproduction of sound and the taking or projection of motion pictures, or

(d) for use as a self-contained instrument of the phonograph type in which the pick-up amplifier, and loud speaker are assembled in the same cabinet, or

(e) for use in or as a part of mechanical talking machines (meaning thereby machines for reproducing sounds from Gramophone or phonograph records in which a stylus, moved by the record, vibrates a diaphragm or other vibratory member by means of a mechanical connection thereto as distinguished from electro-magnetic actuation of the diaphragm).

6. International further reserves and Western hereby grants to International to the full extent of any rights which Western now has, or may during the term of this agreement acquire, rights in respect of apparatus for the recording of sound and/or for the electrical reproduction of sound from records, in so far as and to the extent that such apparatus is used or intended for use in and as a part of telephone exchange systems, such rights to International to be of the same character and scope as were in and by said agreement of October 1, 1925 granted and agreed to be granted by Western to International in respect of said apparatus.

7. Nothing herein contained shall operate as a limitation or restriction upon the exercise by International of any rights with respect to the manufacture, use and sale of amplifiers and/or loud speakers for uses other than those mentioned in Section 3 hereof, which International has or is

entitled to receive under said agreement of October 1, 1925, or under a certain previous agreement dated August 14, 1925, between Western and International and International Telephone and Telegraph Corporation, a Maryland corpo- [fol. 5473] ration.

8. International hereby grants to Western, its successors and assigns, a license under all patents and patent rights owned or controlled by International on October 1, 1925, to make, use and sell throughout the world all apparatus, devices, systems, methods and equipment intended for use in the fields referred to in Items (d), (e) and (f) of Section 3 of Article II of said agreement of October 1, 1925, namely,

"(d) Applications and uses of telephone apparatus as aids to the deaf or for the measurement of sensitivity of hearing; audiophones and audiometers.

(e) Submarine signalling;

(f) Direction-finding; radio goniometry."

Said licenses to Western in this Section 8 granted shall be exclusive for the term of this agreement and non-exclusive thereafter.

9. International hereby grants to Western, its successors and assigns, licenses under all patents and patent rights and other rights which International now owns or controls, or may during the term of this agreement own or control, to the full extent to which International has or shall acquire such rights, to make, use and sell throughout the world, all apparatus, devices, systems, methods and equipment intended for use in the field referred to in Item (a) of Section 3 of Article II of said agreement of October 1, 1925, namely

"(a) Transmission and reception of all graphical and printed matter, including pictures, motion-pictures, drawings, writings or images ("television"); except, however, the transmission and reception of messages by pictures of words or symbols, which are to be regarded as telegraphy for the purpose of this agreement,"

said licenses to be exclusive for the term of this agreement, (subject to non-exclusive licenses hereby reserved to

International) and non-exclusive thereafter for the remainder of the terms of the respective patents.

10. Western hereby grants to International non-exclusive licenses under all patents and patent rights and other rights which Western now owns or controls, or may during [fol. 5474] the term of this agreement own or control, to make, use and sell throughout the world, except the United States, Canada and Newfoundland, all apparatus, devices, systems, methods and equipment intended for use in the field referred to in the said Item (a) of Section 3 of Article II of said agreement of October 1, 1925, for the entire terms of the respective patents; provided, however, that Western and International, and their respective successors, assigns and licensees, shall in good faith from time to time make every reasonable effort to agree and adhere to such policies and practices in the distribution of said apparatus for use in said field as shall be mutually satisfactory and for the best interest of both parties. It is contemplated by both parties that so far as practicable said apparatus shall be leased to users instead of being sold outright.

11. Insofar as to the extent that any licenses herein granted or agreed to be granted are expressed as "exclusive", such exclusive licenses include the right to grant sub-licenses thereunder. In the event that either party shall assign to others any portion of its good will and business for any country or countries, to which good will and business any of the non-exclusive licenses herein granted or agreed to be granted to such party relate, the party having such non-exclusive licenses may assign the same to such assignee of any portion of its good will and business so far as said licenses are applicable thereto; but except as above provided the licenses herein described as "non-exclusive" are personal to the parties hereto respectively and their respective associated and subsidiary companies referred to in Sections 1 and 2 hereof.

12. Each of the parties hereto agrees to furnish to the other party information as to patents and applications for patents in respect of which the other party is entitled to receive licenses hereunder and technical information in respect of apparatus, methods, systems and devices for use in the fields of said licenses to the other party; (except that

International shall not be obligated to furnish the technical information referred to in Article V of said agreement of October 1, 1925 in respect of apparatus of a character which is not ordinarily used for any other purpose than the reproduction of sound from records, for example the "pick-up", as distinguished from amplifiers and loud speakers, which may be sold for other purposes) and to the extent that either party is entitled hereunder to receive such licenses all of the provisions of Articles IV and V of said agreement of October 1, 1925 shall (except as aforesaid) apply to the furnishing of such patent and technical information by the other party as though the same were within the field [fol. 5475] of patent exchange referred to in said agreement.

13. International agrees to pay to Western a royalty upon all apparatus, whether patented or unpatented, sold, or furnished for use within any of the fields for which any licenses or rights are herein granted to International; and all of the provisions of Article VI of said agreement of October 1, 1925 shall apply thereto as though all apparatus for use in the fields of the licenses herein granted to International were listed in the Schedule 1 referred to in said Article VI, except that the rate of royalty upon apparatus (such as the "pick-up", for example) which is not ordinarily used for any other purpose than the reproduction of sound from records shall be five per cent (5%) upon any such apparatus covered by any patent or patents of Western, and except also that the royalty in respect of apparatus for use in the field of the licenses granted in Section 10 hereof shall be an amount equal to five per cent. (5%) upon the fair market value of the apparatus so furnished, plus fifty per cent. (50%) of all amounts in excess of such fair market value charged to the user by way of rentals, or in the purchase price, or otherwise, provided that in case such apparatus is purchased from Western for sale or lease by International, International shall not be obligated to pay said five per cent. (5%) upon the market value thereof, but shall pay to Western the said fifty per cent. (50%) of all amounts in excess of such fair market value which may be charged to the user; and

Provided, further, that in the event that Western, its successors, assigns or licensees, shall at any time grant to others than International licenses, in the field of the licenses granted in Section 10 hereof, for any country or countries outside the United States, Canada and Newfoundland at a rate of royalty lower than the royalty herein provided to be paid by International, then and in that event the royalties to be paid by International in respect of any rights herein granted to International for such country or countries shall be reduced in such a manner as not to exceed the rates of royalty upon which such licenses to others shall have been granted.

14. It is mutually agreed that the appointment of International as exclusive distributor for Western as provided in Section 1 of Article VII of the said agreement of October 1, 1925, shall not be deemed to apply to any equipment or apparatus for use in the fields referred to in Section 3 of [fol. 5476] said agreement of August 14, 1925, or in the fields referred to by Sections 3 and 4 of Article II of said agreement of October 1, 1925.

15. Each of the parties hereto agrees that it will in good faith make every reasonable effort to determine the ultimate use for which apparatus sold by it (in or for use in the territory for which licenses are herein or by said agreement of October 1, 1925 granted to the other party), is intended, particularly with reference to apparatus which is capable for use in or for or in connection with the reproduction of sound from records, and in the event that one of the parties has knowledge or information that apparatus sold by it is intended for use in a field for which the licenses of the other party hereto are to any extent exclusive (either under the present agreement or under said agreements of August 14, 1925 and October 1, 1925), the party having such knowledge or information will not accept orders for apparatus intended for such use. In the event that either party has knowledge or information that apparatus previously sold or furnished by it was subsequently used for purposes in the exclusive field of the other party, the party having such knowledge will refuse to accept further orders for the same kind of apparatus from the customer in question until it is assured that the apparatus covered by such further orders will not be used in the exclusive field of the other party.

16. International agrees that it will not assert, maintain, agree to, or acquiesce in any position, in respect of the contract dated February 16, 1925, between Marconi's Wireless Telegraph Company Limited and Standard Telephones and Cables Limited (formerly Western Electric Company Limited) which is inconsistent with Western's interpretation of the term "public address systems" as used in said contract; and Western and International mutually agree to endeavor in good faith to come to an understanding with regard to concessions or arrangements, if any, which may, in the opinion of both parties, be desirable to make to or with said Marconi's Wireless Telegraph Company Limited in settling the dispute which has arisen with said company with respect to the interpretation of said contract.

17. All of the provisions of Article VIII, and of Sections 1 to 5 inclusive of Article IX, and all the provisions of Article X of said agreement of October 1, 1925, shall apply to the present agreement in like manner as if said provi-
[fol. 5477] sions were written herein.

18. This contract shall inure to the benefit of and be binding upon the parties hereto and the assignees of and successors to substantially the entire good will and business of said parties respectively from date hereof until the termination of said agreement of October 1, 1925, and shall terminate with said agreement, but termination of the sales arrangements provided for in Article VII of said agreement prior to the termination of said agreement as a whole shall not affect the present agreement.

In witness whereof the parties hereto have caused this instrument to be executed by their respective proper officers thereto duly authorized at New York City, New York, the day and year first above written.

Western Electric Company, Incorporated, by Edgar S. Bloom, President. Attest: H. B. Gilmore, Secretary. International Standard Electric Corporation, by G. E. Pingree, President. Attest: S. G. Ordway, Asst. Secretary.

In consideration of the foregoing agreement and of the sum of one dollar ($1.00) and other good and valuable considerations, the receipt of which is hereby acknowledged, the undersigned Electrical Research Products Inc. hereby assents to the execution and delivery of the foregoing agreement by Western Electric Company, Incorporated, and to the full extent of any right, title or interest which it has in the subject matter thereof ~~or in~~, to or under any patents, applications for patents, inventions and rights therein granted or agreed to be granted by said Western Electric Company, Incorporated, and in respect of all patents, applications for patents, inventions and rights now owned or controlled or hereafter during the term of said agreement owned or controlled by Electrical Research Products Inc., said Electrical Research Products Inc. hereby joins in said agreement and assumes toward said International Standard Electric Corporation obligations of the same character and scope as the obligations therein assumed by said Western Electric Company, Incorporated.

Electrical Research Products, Inc., by J. E. Otterson, President. Attest: H. B. Gilmore, Sec.

[fol. 5478] In consideration of the foregoing contract and of the sum of one dollar ($1.00) and other good and valuable considerations, the receipt of which is hereby acknowledged, the undersigned American Telephone and Telegraph Company, a New York corporation, hereby assents to the execution and delivery of the foregoing agreement by Western Electric Company, Incorporated, and agrees that during the time said agreement shall remain in force it will grant to said Western Electric Company, Incorporated, rights in respect of all foreign patents and foreign rights to inventions which are now owned or which may hereafter be acquired by American Telephone and Telegraph Company, said rights to be of the same character and scope as the rights which said Western Electric Company, Incorporated, is or will be obligated under said agreement to grant to said International Standard Electric Corporation in respect of the patents, applications for patents and inventions of said Western Electric Company, Incorporated.

American Telephone and Telegraph Company, by Walter S. Gifford, President. Attest: A. A. Marsters, Secretary.

In consideration of the foregoing contract and of the sum of one dollar ($1.00) and other good and valuable considerations, the receipt of which is hereby acknowledged, the undersigned, Bell Telephone Laboratories, Inc., a New York corporation, hereby assents to the execution and delivery of the foregoing agreement by Western Electric Company, Incorporated, and agrees that during the time said agreement shall remain in force it will grant to said Western Electric Company, Incorporated, rights in respect of all foreign patents and foreign rights to inventions which are now owned or which may hereafter be acquired by Bell Telephone Laboratories, Inc., said rights to be of the same character and scope as the rights which said Western Electric Company, Incorporated, is or will be obligated under said agreement to grant to said International Standard Electric Corporation in respect of the patents, applications for patents and inventions of said Western Electric Company, Incorporated.

Bell Telephone Laboratories, Inc., by Frank B. Jewett, President. Attest: J. W. Farrell, Secretary.

[fol. 5479] In consideration of the foregoing contract and of the sum of one dollar ($1.00) and other good and valuable considerations the receipt of which is hereby acknowledged the undersigned International Telephone & Telegraph Corporation, a Maryland Corporation, being a party to the agreement of August 14, 1925, therein referred to, and being the owner of all of the capital stock of said International Standard Electric Corporation, hereby consents to the foregoing contract.

International Telephone & Telegraph Corporation, by J. L. McQurrrie, Vice-President. Attest: Albert L. Hoffman, Asst. Secretary.

[fol. 5480] **Exhibit X-379**

Memorandum of agreement made this first day of January, 1919, between International Western Electric Company, Incorporated, a corporation of the State of Delaware, hereinafter called the International Company, party of the first part, and Northern Electric Company, Limited, a corporation of the Dominion of Canada, hereinafter called the Northern Company, party of the second part, witnesseth:

That in consideration of the mutual covenants and agreements herein contained, it is agreed by and between said parties as follows:

1. Scope:

(a) The International Company hereby appoints the Northern Company its exclusive distributor for the sale in the Dominion of Canada and Newfoundland of all merchandise, whether patented or not, which the International Company has or may hereafter have the right to sell for export, and the Northern Company agrees to purchase from the International Company, or its associated companies (meaning thereby the companies, the majority of whose stock is now or may hereafter be owned by the International Company or Western Electric Company, Limited, of Canada) all such merchandise, other than that of like kind and character manufactured by the Northern Company, which the Northern Company requires in its business and which the International Company or its associated companies can furnish upon terms as favorable as those offered by others; provided, however, that nothing herein contained shall prevent the Northern Company from purchasing any merchandise in the Canadian market where such purchase is clearly in the national or the company's interest.

(b) The Northern Company agrees to give the International Company, or its nominees, the exclusive distribution in all countries outside of the Dominion of Canada and Newfoundland, of all merchandise, whether patented or not, which the Northern Company manufactures or sells.

2. Prices and Terms:

(a) The International Company agrees on behalf of itself and its associated companies, as above defined, to sell to the Northern Company, and the Northern Company agrees to sell to the International Company and its associated companies merchandise as above provided at prices determined as follows:

Merchandise of Western Electric or Northern Electric manufacture at prices mutually agreed upon from time to time between the parties hereto, but not exceeding prices charged to the associated companies of the International

Company, for material of like kind and quality, by the party making the sale.

Merchandise not of Western Electric or Northern Electric manufacture, including shop raw material, at the cost thereof, to the party making the sale, cash discounts deducted, plus the usual service charges made between the International Company and its associated companies.

(b) Bills for merchandise of Western Electric and of Northern Electric manufacture shall be payable and commence to bear interest on the 15th day of the third month following the date of bills for such merchandise, and bills for merchandise not of Western Electric and not of Northern Electric manufacture shall be payable as and when [fol. 5481] billed and shall commence to bear interest from the 15th day of the month in which bills are rendered. In the absense of any special agreement the interest referred to above shall be at the rate of 6% per annum.

(c) The term "merchandise of Western Electric manufacture" as herein used means all merchandise manufactured by Western Electric Company, Incorporated, of New York, by the International Company or by any of the associated companies, as hereinabove referred to, of the International Company.

3. Information:

(a) The International Company agrees to give to the Northern Company all information on the latest and best methods of rendering telephone and telegraph service which it may procure from others and which it is permitted by the parties from which procured to so furnish.

(b) The International Company agrees to give to the Northern Company all information in regard to sales methods, accounting methods, and technical engineering and manufacturing matters which it may possess or acquire and have the right to furnish, and which may be needed by the Northern Company for the proper, economical and efficient operation of its business, and shall give assistance to the Northern Company in every way to the end that the Northern Company shall have, whenever needed, the benefits of the wide and varied experience of the International Company and its associated companies.

(c) The Northern Company agrees to furnish to the International Company upon the latter's request, insofar as it is in a position to do so, information of the character hereinabove in this section 3 described.

(d) All information given by either party to the other, as above provided, is for such other party's exclusive use and shall be kept confidential and not furnished or sold to any other person, firm or company, except that the International Company may furnish to its associated and allied Companies and to companies of the Bell Telephone System such of the information received from the Northern Company as the International Company may deem advisable.

4. Special Services:

(a) The International Company agrees to furnish to the Northern Company upon request:

(1) Suitable plans for buildings and character and layout of machinery, and if desired, an expert or experts to supervise the construction and erection of factory buildings and the installation of machinery.

(2) Experts to aid by research and development work or otherwise, in the solution of any engineering or manufacturing problems, or problems relating to the management and development of business that may be submitted by the Northern Company.

[fol. 5482] (b) The Northern Company agrees to furnish to the International Company upon the latter's request, insofar as it is in a position to do so, special expert services similar to those hereinabove in this section 4 described.

(c) All such special expert services furnished by either party to the other, shall be at the expense of the party to which the same is furnished, such expense to be the actual cost of the services rendered.

5. Training of Students:

The International Company will, subject to the laws of the United States, upon request and at the expense of the Northern Company, receive or arrange for the reception into its own organization, or that of Western Electric Company, Incorporated, of New York, of a reasonable number of men designated by the Northern Company and will furnish them every facility for studying the methods and practices followed in all departments of said companies.

6. Compensation:

The Northern Company agrees to pay the International Company as compensation for the information and advice furnished by the International Company as provided in Section 3 hereof, and for the licenses under patents as provided in a certain agreement between the parties hereto and others, relating to patents dated the 27th day of August, 1919, an amount equal to one per cent (1%) of the total sales by the Northern Company to its customers of material now regularly classed by the Northern Company as telephone apparatus and of such additional material which later may be so classed as telephone apparatus. Such compensation shall be determined quarterly, shall be payable to the International Company as and when billed and shall commence to bear interest from the 15th day of the month following that in which bills are rendered.

7. Termination:

This agreement shall continue in force until terminated by not less than one year's prior written notice by either party to the other of its election to cancel the same.

In witness whereof the parties hereto have caused these presents to be executed by their officers thereunto duly authorized the day and year first above written.

International Western Electric Company, Incorporated, by G. E. Pringle, Vice-President. Attest: E. C. Pratt, Secretary. Northern Electric Company, Limited, by P. F. Sise, Vice-President. Attest: William Hay, Secretary.

[fol, 5483] EXTRACTS FROM EXHIBIT X-380

Memorandum of agreement, made this 27th day of August, 1919, between International Western Electric Company, Incorporated, a corporation of the State of Delaware, hereinafter called the International Company, party of the first part; Western Electric Company, Limited, a corporation of the Dominion of Canada, hereinafter called Western Limited, party of the second part; Northern Electric

Company, Limited, a corporation of the Dominion of Canada, hereinafter called the Northern Company, party of the third part, and The Bell Telephone Company of Canada, Limited, a corporation of the Dominion of Canada, hereinafter called Bell Company of Canada, party of the fourth part:

Whereas, the Western Limited in its name of Electrical Properties Limited, entered into a certain agreement dated the 23rd day of April, 1914, between said Electrical Properties, Limited, and the Northern Company, and

Whereas, it is desired by all parties to this agreement that so far as practicable the title to all patents in Canada and Newfoundland for inventions heretofore acquired, and hereafter acquired during the term of this agreement, by said parties or any of them shall be held in the name of the International Company, subject to certain licenses herein specified to the Northern Company and the Bell Company of Canada.

Now, therefore, in consideration of the sum of One Dollar ($1.00), by each of said parties paid to the other, the receipt of which is hereby acknowledged, and in further consideration of the covenants and agreements herein contained, it is agreed as follows:

1. The Western Limited and the Northern Company declare the said agreement of the 23rd day of April, 1914, to be terminated as of the day and year first above written.

2. The Western Limited hereby assigns and agrees to assign to the International Company, its successors, assigns, legal representatives and nominees, with the consent of the Northern Company which is hereby given, all right, title and interest of the Western Limited in and to all patents, applications for patents, inventions and patent rights of every description, in and for any and all countries, which said Western Limited now owns or which it may hereafter acquire, during the term of this agreement, including specifically all patents, applications for patents, inventions and [fol. 5484] patent rights accrued or accruing to it under the said agreement of the 23rd day of April, 1914.

3. The Northern Company hereby assigns and agrees to assign to and surrenders and agrees to surrender unto the International Company, its successors, assigns, legal repre-

sentatives and nominees, with the consent of the Western Limited which is hereby acknowledged, (subject to the licenses herein granted and agreed to be granted to the Northern Company and the Bell Company of Canada) all right, title and interest of the Northern Company in and to all patents, applications for patents, inventions and exclusive rights under patents and inventions, in and for any and all countries, (including the exclusive licenses under patents and other patent rights granted and agreed to be granted to it by the Electrical Properties Limited in and by virtue of the said agreement of the 23rd day of April, 1914) which the Northern Company now owns; and also all patents, applications for patents, inventions and exclusive patent rights (except the rights herein granted and agreed to be granted by the International Company) which it may hereafter acquire during the term of the present agreement in respect of inventions which have been or shall have been made by the respective employees of the Northern Company or its associated or allied companies and which are acquired during the term of this agreement by the Northern Company without cost or at a merely nominal cost.

4. The Bell Company of Canada hereby assigns and agrees to assign to the International Company, its successors, assigns, legal representatives and nominees (subject to the licenses herein granted or agreed to be granted to the Bell Company of Canada and the Northern Company) all right, title and interest of the Bell Company of Canada in and to all patents, applications for patents, inventions and exclusive rights under patents and inventions, in and for any and all countries, which the Bell Company of Canada now owns, and also all patent applications for patents, inventions and exclusive patent rights which it may hereafter acquire during the term of this agreement in respect of inventions which have been or shall have been made by the respective employees of the Bell Company of Canada or its associated or allied companies and which are acquired or shall have been acquired during the term of this agreement by the Bell Company of Canada without cost or at a merely nominal cost.

5. The Northern Company and the Bell Company of [fol. 5485] Canada each for itself agrees that as to all pat-

ents, applications for patents, inventions and patent rights (except non-exclusive, non-assignable licenses) which may hereafter be acquired by it at more than a nominal cost, or be submitted to it for purchase, it will promptly notify the International Company thereof and of the cost or price thereof, and will upon written request of the International Company assign the same (if already acquired) to the International Company at the actual cost thereof, or purchase the same (if submitted for purchase) for the International Company at the latter's expense.

6. The International Company hereby grants and agrees to grant to the Northern Company and to the Bell Company of Canada, severally, licenses to make, use and sell under all patents of the Dominion of Canada and Newfoundland, which the International Company now owns or which it may hereinafter own, or in respect of which it has or may hereafter acquire the right to grant such licenses, for inventions which have been or which may during the term of this agreement be acquired by the International Company from its employees, or from any of its associated or allied companies, where such inventions have been or shall have been acquired without additional cost for the Canadian and Newfoundland rights (including those inventions which it has acquired or shall hereafter acquire under and by virtue of the present agreement); such licenses to the Northern Company during the term of this agreement to be exclusive (except for the licenses herein granted to the Bell Company of Canada and except for such compulsory licenses as the laws of Canada and Newfoundland may require to be granted to others), and to be non-exclusive from and after the termination of this agreement until the ends of the terms of such patents respectively; and such licenses to the Bell Company of Canada to be non-exclusive during the entire terms of such patents respectively.

* * * * * * *

9. The International Company will regularly furnish the Northern Company and the Bell Company of Canada, copies of specifications of all applications for United States patents covering inventions with respect to which said Companies are or will be entitled to licenses under this agreement, and will consider any suggestions received from

either of said Companies as to the advisability of taking and maintaining patents in Canada and Newfoundland for such inventions, and as to the advisability of purchasing patents, applications, inventions and patent rights for [fol. 5486] Canada and Newfoundland or of conducting litigation upon or involving the same, but the decision of all questions relating to such matters shall remain with the International Company, except that the International Company shall be bound to take out and to maintain patents in Canada and Newfoundland for any such inventions when requested so to do by the Northern Company, or the Bell Company of Canada, so far as this is possible.

10. The Northern Company agrees to reimburse the International Company for all actual expenses incurred in preparing, filing and prosecuting applications for Canadian and Newfoundland patents, in maintaining and renewing such patents; and also for any reasonable expense which may be incurred by the International Company in acquiring rights to patent in Canada and Newfoundland inventions of its employees or employees of its associated or allied companies, in litigation upon or involving such patents; in studies and investigations relating to Canadian or Newfoundland patents or patent rights of others, and in defense of suits upon such patents; payment for all such expenses to be made by the Northern Company within thirty days from receipt of the bill therefor from the International Company.

11. This agreement shall continue in force until terminated by not less than one year's prior written notice by any party to the others of its election to cancel the same.

[fol. 5487]. In addition to the portions of this contract printed in full above, it contains, in substance, the following provisions:

Sections 1 to 6, inclusive, are printed in full above.

Section 7. The International agrees that, as to all patents or patent rights for Canada or Newfoundland, which it may hereafter acquire at more than a nominal cost or which may be submitted to it for purchase, it will notify the Northern Company and the Bell Company of Canada thereof and upon request of either or both of said Companies, grant to or purchase for said Companies, a license similar in scope and character, so far as possible, to the license granted herein to such Companies provided that that Company or those Companies so requesting shall pay the International Company the actual cost of the rights so acquired (p. 4–5).

Section 8. Each of the parties to the contract will make arrangements with its employees who are in positions where they may be reasonably expected to make inventions whereby said employees will agree to assign to such party for nominal consideration, all rights to such inventions made in the course of their employment (p. 5).

Sections 9, 10, 11 are printed in full above."

[fol. 5488]

Exhibit X-381

This agreement, made this 16th day of May, 1923, between the American Telephone and Telegraph Company, a New York corporation (hereinafter called the American Company), Western Electric Company, Incorporated, a New York corporation, (hereinafter called the Western Company), International Western Electric Company, Incorporated, a Delaware corporation, (hereinafter called the International Company), Northern Electric Company, Limited, a corporation of the Dominion of Canada, (hereinafter called the Northern Company) and the Bell Telephone Company of Canada Limited, a corporation of the Dominion of Canada (hereinafter called the Bell Company), witnesseth:

Whereas, by an agreement dated the 27th day of August, 1919, between the International Company, the Northern Company, the Bell Company and Western Electric Company, Limited, a corporation of the Dominion of Canada, the International Company agreed, among other things (1) to grant certain licenses to said Northern Company and said Bell Company under its patents in Canada and Newfoundland, (2) to furnish regularly to the Northern Company and the Bell Company copies of specifications of all applications for United States patents covering inventions with respect to which said last-named companies would be entitled to licenses under said agreement, and (3) upon the terms therein stated to take out and maintain patents in Canada and Newfoundland for any such inventions; and

Whereas, by a certain commercial agreement dated the 1st day of January, 1919, between said International Company and said Northern Company, the International Company appointed said Northern Company its exclusive distributor for the sale in Canada and Newfoundland of merchandise which the International Company might have the right to sell for export, and the International Company agreed, among other things, to sell such merchandise to said Northern Company at certain favorable terms as set forth in said contract, and agreed to perform certain services for said Northern Company, and said Northern Company agreed to pay to the International Company certain compensation for such services and for licenses under patents; and

Whereas, each of said agreements of August 27, 1919, and January 1, 1919, by its terms is terminable upon one year's prior written notice by either party thereto to the [fol. 5489] other; and

Whereas, by an agreement of even date herewith between the American Company and said Bell Company, the American Company agrees, among other things, to furnish copies of specifications of applications for certain United States patents, which may be filed by the American Company or said Western Company, and upon request of the Bell Company to patent or cause to be patented in Canada and Newfoundland such of said inventions as it may have the right to have so patented, and to grant or cause to be granted to said Canadian Company licenses thereunder, it being further provided in said agreement that the American Company, if and so long as it elects so to do, may perform the obligations above referred to (recited in the second section of said contract) through an arrangement to be made by it with the International Company; and

Whereas, the American Company and the Western Company are each entitled to certain rights in respect of patents and inventions of the other, in the United States of America, under and by virtue of a certain contract dated February 6, 1882, between The American Bell Telephone Company and the Western Electric Company, and an amendatory agreement between the same parties dated April 8, 1908, the American Company having succeeded to the rights and obligations of said The American Bell Telephone Company thereunder, and the Western Company having succeeded to the rights and obligations of the Western Electric Company;

Now, therefore, in consideration of the premises and of the sum of One Dollar by each of said parties paid to the other, it is agreed as follows:

1. For the purposes of this contract, the term 'patent rights' shall be construed to include patents, applications for patents, inventions and transferable patent rights and licenses, unless it shall be clear from the context that this construction of it is inapplicable.

2. The American Company and Western Company assign and agree to assign to the International Company (subject to the rights which the American Company and [fol. 5490] the Western Company each reserves to itself) all right, title and interest which said American Company and said Western Company now have or may during the term of this agreement acquire in, to and under all patent rights in or for Canada and/or Newfoundland and (except those relating solely to trans-oceanic submarine cables or to methods or machinery for the manufacture thereof, or to terminal equipment for such cables); provided, however, that as to all of such patent rights acquired by the American Company or the Western Company at more than a nominal cost, and as to all of such patent rights submitted during said term to either of said companies for purchase, the American Company and the Western Company severally agree that they will promptly notify the International Company thereof and of the cost or price thereof, and they shall only be bound to assign the same (if already acquired) or to purchase the same for the International Company, upon written request made by the International Company, within a reasonable time after such notice, not exceeding six months, and upon payment by the International Company of the actual cost thereof, such assignments in all cases to be subject to the rights which the American Company and the Western Company each reserves to itself, as hereafter stated.

3. The American Company and the Western Company each reserves to itself and its successors the right to make, use and sell and to license others to make, use and sell under all of the patent rights assigned and to be assigned by them respectively under this contract, such reserved rights to be

exclusive with respect to trans-oceanic submarine cable, parts thereof, terminal equipment therefor and machinery for the manufacture thereof, and such reserved rights to be otherwise non-exclusive; but this reservation shall not be construed to restrict the other parties hereto in the use for other purposes (as, for example, in short distance submarine telephone cables across rivers and bays) of inventions which may be applicable both to the subject matter for which said reserved rights are exclusive and also to such other purpose.

4. The International Company assigns and agrees to assign to the Western Company (subject to a non-exclusive assignable license to make, use and sell which is hereby reserved to the International Company) all the right, title and interest which it now has or may acquire during the term of this agreement from the Bell Company or the Northern Company in, to and under all patent rights in or [fol. 5491] for the United States of America; provided, however, that as to all of such patent rights hereafter acquired by the International Company at more than a nominal cost, and as to all of such patent rights submitted during said term to the International Company for purchase, the International Company agrees that it will promptly notify the Western Company thereof and of the cost or price thereof, and it shall only be bound to assign the same (if already acquired) or to purchase the same for the Western Company within a reasonable time after such notice not exceeding six months and upon payment by the Western Company of the actual cost thereof.

5. It is agreed between the American Company and the Western Company that the said contract of February 6, 1882, as amended by the agreement of April 8, 1908, shall apply to all patent rights acquired by the Western Company under this agreement, and that the respective rights of the American Company and the Western Company in all such patent rights shall be determined in accordance with said agreement, provided, however, that nothing herein contained shall prevent any modification or termination of said contract of February 6, 1882, and said amendatory agreement, by mutual consent of the American Company and the Western Company.

6. The American Company and the Western Company each agrees that as and whenever it shall hereafter file or acquire any application for United States patent for an invention in respect of which it shall have or shall be entitled to acquire right for Canada or Newfoundland (which rights, if acquired, it would be obligated by this contract to assign to the International Company) it will promptly and regularly and of its own initiative furnish to the International Company without charge a copy of the specification and drawing of each such application, and will also furnish at cost such additional copies thereof as the International Company may require, and will, upon request made by the International Company at any reasonable time thereafter, execute and use all reasonable efforts to cause to be executed all necessary papers and documents, including applications for patents in Canada and Newfoundland for such inventions and will give all reasonable assistance and do all acts which may be reasonably required to enable the International Company to take out and maintain in its own name patents in Canada and Newfoundland for all such inventions: provided, however, that the International Company shall reimburse the American Company and the Western Company for all expenses which may be incurred [fol. 5492] by them respectively, in connection with the performance of the acts so requested by the International Company, and provided further, that if the American Company and the Western Company shall in good faith endeavor to comply with the agreements in this paragraph contained, neither of said companies shall be liable for any mistake, delay, neglect or default of their respective employees or others in connection with such matters.

7. Under all patents, applications for patents, inventions and patent rights received by the International Company from the American Company or the Western Company under this agreement, the Bell Company and the Northern Company (subject to the reservations stated in Section 3 hereof) shall have the same rights and the same obligations as under the patents covered by the said contract of August 27, 1919, and it is agreed between the International Company, the Bell Company and the Northern Company that said contract of August 27, 1919, shall be and remain in full force and effect for the entire term of

this agreement, notwithstanding anything in said agreement of August 27, 1919, to the contrary.

8. During the term of this agreement the Northern Company waives the right given to it in said commercial agreement dated January 1, 1919, to terminate said agreement as therein provided; but the right of the International Company to terminate said commercial agreement shall continue unaffected by this agreement.

9. For the purpose of this contract and all other contracts hereinbefore mentioned between any two or more of the parties hereto, in determining whether the cost of patents, applications, inventions or rights is more than "nominal", such cost shall be deemed to include only the amounts actually paid for the assignment of such patents, applications, inventions or rights and the actual expense of preparing, filing and prosecuting patent applications and obtaining patents in the country in respect of which the rights are to be assigned; that is to say, such items as the regular salaries paid to employees who are inventors and the expense incurred by any of the parties hereto in development of the inventions, shall not be taken into account.

[fol. 5493] 10. A compliance by the American Company with this agreement shall constitute the performance of its obligations to the Bell Company under sections second and third of said agreement of even date herewith between them.

11. This agreement shall terminate contemporaneously with the termination of the said agreement between the American Company and the Bell Company of even date herewith, whether said agreement be terminated by lapse of time or otherwise.

* * * * * * *

[fol. 5494]

Exhibit X-382

Know all men by these presents that International Western Electric Company, Incorporated, a corporation of the State of Delaware, hereinafter called the Assignor, for and in consideration of One Dollar to it duly paid by Western

Electric Company, Incorporated, a corporation of the State of New York, hereinafter called the Assignee, has bargained, sold, assigned, granted and conveyed and by these presents does bargain, sell, assign, grant and convey unto the Assignee all its right, title and interest in, to and under a certain agreement in writing between the Assignor and Northern Electric Company, Limited, a corporation of the Dominion of Canada, dated January 1, 1919, wherein and whereby the Assignor and said Northern Electric Company, Limited, reciprocally appointed each other as their exclusive distributor for the sale of merchandise, the said appointment being exclusive as to said Northern Electric Company, Limited, in the Dominion of Canada and Newfoundland, and exclusive as to the Assignor in all countries outside the Dominion of Canada and Newfoundland.

To have and to hold the same unto the said Assignee, its successors and assigns for its and their use and benefit forever.

And the Assignor does hereby authorize and empower the Assignee, upon performance of the covenants and conditions in said agreement contained, to have, demand and receive the performance by said Northern Electric Company, Limited, on its part, of the terms and conditions of said agreement, to the same extent that the Assignor might have, demand and receive performance thereof had this assignment not been made.

* * * * * * *

[fol. 5495] EXTRACTS FROM EXHIBIT X-383

Agreement, made this 26th day of June, 1925, between Western Electric Company, Incorporated, a New York corporation, hereinafter called the Western Company, and Victor Talking Machine Company, a New Jersey corporation, hereinafter called the Victor Company, witnesseth:

Whereas, the Western Company has produced and developed certain improved acoustic reproducing and/or acoustic amplifying apparatus for reproducing sound by mechanical means, which apparatus, including certain improvements in the sound box, tone arm, amplifying horn and other parts, is hereinafter referred to as acoustic apparatus and is adapted for use in mechanical phonographs or mechanical talking machines (meaning thereby machines for reproducing sounds from phonograph records in which a stylus moved by the record vibrates a diaphragm or other vibratory member by means of a mechanical connection thereto), and certain parts of said acoustic apparatus, such as the tone arm and amplifying horn, are also capable of use in or in connection with electrical phonograph or electrical talking machines (meaning thereby machines for electrically reproducing sound from phonographs or talking machine records), and also as acoustic amplifiers for the loudspeaker units of radio receiving sets; and the Western Company represents that it has acquired certain applications for United States patents and rights in respect of inventions relating to said acoustic apparatus, as follows:

Application Serial Number	Filed
603,005	November 24, 1922
610,977	January 6, 1932
628,168	March 28, 1923
662,387	September 13, 1923
668,801	October 16, 1923
678,935	December 6, 1923
728,996	July 30, 1924
756,409	December 17, 1924
757,277	December 20, 1924
759,182	December 31, 1924
33,619	May 29, 1925

copies of which applications have been furnished to the Victor Company, together with such information as the Western Company has available with reference to the [fol. 5496] pertinent outstanding patents; and

Whereas, the Victor Company having examined said acoustic apparatus and having witnessed demonstrations thereof in connection with mechanical talking machines is desirous of acquiring licenses of the character and scope hereinafter stated, in respect of said inventions or improvements of the Western Company and such other inventions and improvements relating to mechanical talking machines as the Western Company and/or the American Telephone and Telegraph Company (a New York corporation) may hereafter develop or acquire during the term of this agreement; and the Victor Company also desires to obtain the engineering assistance and advice of the Western Company and the benefits of its experiments and laboratory development work relating to mechanical talking machines to the end that the Victor Company may obtain the advantages thereof during the continuance of this agreement in connection with the Victor Company's business;

Now, therefore, in consideration of the covenants and agreements herein contained and the licenses herein granted and agreed to be granted, and in further consideration of the initial payment by the Victor Company to the Western Company of the sum of One Hundred Thousand Dollars ($100,000), the receipt of which is hereby acknowledged, the parties hereto agree as follows:

Article I

Engineering and Technical Information and Assistance.

1. The Western Company agrees that it will at its own cost and expense promptly after the execution of this agreement furnish to the Victor Company:

(a) drawings, specifications, full data and information concerning the mechanical phonographs or talking machines and parts therefor heretofore developed by the Western Company, and

(b) one complete sample of each phonograph or talking machine part or one complete phonograph or talking machine embodying the same of each of the Western Company's present preferred types of such talking machine or parts in each size which the Victor Company may reasonably require.

[fol. 5497] 2. The Western Company further agrees that it will from time to time hereafter during the continuance of this agreement at its own cost and expense furnish to the Victor Company:

(a) drawings, specifications and full data and information concerning all further inventions and improvements in or adapted for use in mechanical phonographs or talking machines which the Western Company and/or the American Telephone & Telegraph Company may hereafter produce or acquire, and which may be of advantage for commercial manufacture and sale, and

(b) one model of each device containing such inventions or improvements, if required by the Victor Company,

to the end that the Victor Company may at all times during the continuance of this agreement be in complete possession of full information regarding such inventions and improvements and the manufacture thereof, within a reasonable time after the Western Company and/or said American Telephone & Telegraph Company shall have produced, developed or otherwise acquired the same.

* * * * * * *

5. If any suit, action or proceeding based upon the claim that the manufacture, use and/or sale of the said acoustic apparatus as embodied in the samples to be furnished by the Western Company under Paragraph (b) of Section 1 of Article 1 hereof constitutes an infringement of any Letters Patent of the United States should be brought against the Victor Company and/or any of the purchasers of its goods, the Western Company will at its own cost and expense furnish the services of a practical engineer or expert to assist in the defense of said suit, action or proceeding; and the Western Company will also furnish the Victor Company at the Western Company's own cost and expense all information in its possession or available to it which may be useful in the defense of said suit, action or proceeding.

Article II

Licenses to the Victor Company

1. The licenses herein granted and agreed to be granted [fol. 5498] by the Western Company are under all United States patents and applications for United States patents for inventions or improvements (whether machines, processes or compositions of matter) relating or applicable to mechanical phonographs or talking machines or parts thereof or to machines, processes or compositions of matter applicable to the manufacture thereof, which are now or which may during the continuance of this agreement be owned or controlled by the Western Company and/or the American Telephone & Telegraph Company or in respect of which said companies or either of them now has or dur-

ing the continuance of this agreement may acquire the right to grant such licenses, specifically including all of the applications recited in the preamble hereof.

* * * * * * *

5. With the reservations and exceptions aforesaid the Western Company hereby grants and agrees to grant to the Victor Company licenses for the continental United States, Alaska and Hawaii under the patents and applications referred to in Section 1 of this Article II:

(a) to make, use and sell for entertainment and/or educational purposes mechanical phonographs or talking machines and parts for use in such mechanical phonographs or talking machines including, but without limiting the generalty of the foregoing, sound boxes, needles, tone arms and/or horns (parts being licensed for sale separately for use only in mechanical phonographs or talking machines heretofore or hereafter manufactured or sold by the Victor Company and/or its sublicensees hereunder); and

(b) to use methods and to make and use machines and compositions of matter for the manufacture of the apparatus described in (a) of this section and the talking machines or phonographs and acoustic parts referred to in paragraph (a) of Section 6 of this Article, so far as and to the extent that the Western Company and/or the American Telephone and Telegraph Company have or may acquire the right to grant such licenses in view of their existing contractual obligations to the General Electric Company under a certain license agreement with the latter dated July 1, 1920.

[fol. 5499] 6. With the reservations and exceptions aforesaid the Western Company also hereby grants and agrees to grant to the Victor Company licenses for the continental United States, Alaska and Hawaii under the patents and applications for patents referred to in Section 1 of this Article II:

(a) To manufacture mechanical talking machines or phonographs and/or acoustic parts thereof, such as the horns, tone arms and sound boxes for assembly for use for entertainment and/or educational purposes (1) in combination with radio receiving apparatus or parts thereof and/or (2) in combination with devices or parts thereof for the electrical reproduction of sound from commercial talking machine records.

(b) To assemble, use and sell said combinations for entertainment and/or educational purposes, and

(c) to sell said acoustic parts for repair and/or replacement purposes, and

(d) to sell complete mechanical phonographs or talking machines (but not parts thereof separately) for assembly in whole or in part in such combinations by wholesalers, jobbers, dealers or users,

provided, however, that so far as any of said radio apparatus and said devices for the electrical reproduction of sound or any of said combinations are or shall be covered by patents or applications for patents of the Western Company or the American Telephone and Telegraph Company all of said radio receiving apparatus and parts thereof and all said devices and parts thereof for the electrical reproduction of sound so assembled, used or sold (other than those which the Victor Company is licensed to manufacture in Paragraph (a) of this Section 6), shall be licensed for assembly, sale and use in such combinations by any person, firm or corporation having the right to grant such licenses in respect of such combinations.

The licenses granted and agreed to be granted in this Section 6 are limited as herein stated for the reason that the Western Company represents that it has heretofore [fol. 5500] granted to others certain exclusive licenses with respect to radio receiving apparatus and desires to retain the right to grant exclusive licenses with respect to electrical phonographs or talking machines, to which its said inventions in acoustic apparatus may be applicable.

7. The licenses to the Victor Company referred to in paragraph (a) of Section 5 of this Article are and shall be exclusive to the Victor Company within the restricted field for which said licenses are expressed as granted, except that the Western Company reserves the right within two years after December 31, 1926, to grant non-exclusive non-assignable licenses within the same field (and for all or any part of the terms of the respective patents) to the Columbia Phonograph Company, Inc., if the latter Company is actu-

ally engaged in the business of manufacturing and selling phonographs or talking machines at the time within said two years period when such licenses shall be granted to it. Nothing herein contained shall be construed to restrict or limit the Western Company in granting licenses or in exercising rights for fields, uses and purposes outside of those stated in said paragraph (a) of said Section 5.

* * * * * * *

Article IV

Royalties to be Paid by the Victor Company

1. The Victor Company agrees, subject to the provisions hereof, to pay to the Western Company as compensation for the licenses herein granted and agreed to be granted and for the technical information and assistance to be rendered by the Western Company hereunder a royalty upon all apparatus which may hereafter be sold, leased or put into commercial use by the Victor Company under this license and agreement and by its sub-licensees under sub-licenses granted hereunder, embodying any of the inventions or improvements licensed or agreed to be licensed to the Victor Company under Paragraph (a) of Section 5 and under Section 6 of Article II. Said royalty shall (except as hereinafter expressly provided) be based upon the total sales of such apparatus under this license during each "royalty period" during the continuance hereof (the first royalty period being from the date hereof to January 1st, 1927, and each succeeding twelve months' period of the continuance of this agreement being a royalty period), the [fol. 5501] rates of royalty payable upon such sales during each royalty period being in accordance with the following schedule:

Upon the first $2,000,000 of such sales in each royalty period	5%
Upon the second $2,000,000 of such sales	4%
Upon the third $2,000,000 of such sales	3%
Upon the fourth $2,000,000 of such sales	2%
Upon all such sales above $8,000,000	1%

The expression "total sales" as used herein means the total amount realized by the Victor Company and its sub-licensees during each royalty period as the sales price, rental or other compensation for said apparatus, so sold, leased or put into commercial use by them hereunder.

2. The Western Company agrees to credit the said initial payment of One Hundred Thousand Dollars ($100,000) made by the Victor Company to the Western Company upon the execution of this agreement against royalties accruing hereunder on account of said apparatus so sold, leased or put into commercial use hereunder during the first royalty period as above defined.

* * * * * * *

8. The Victor Company agrees, subject to the provisions hereof, to pay to the Western Company as royalty for the first royalty period aforesaid a minimum of One Hundred Thousand Dollars ($100,000)—against which the Western Company shall credit as before stated the said initial payment of One Hundred Thousand Dollars ($100,000) made by the Victor Company upon the execution of this agreement and recited as part of the consideration hereof—and the Victor Company further agrees, subject to the provisions hereof, to pay to the Western Company as royalty for each succeeding twelve months' royalty period (after said first royalty period) during the further continuance of this agreement a minimum of One Hundred Thousand Dollars ($100,000). The amount (if any) necessary in addition to [fol. 5502] the royalty accruing at the regular rates for each twelve months' period in order to make up said minimum of One Hundred Thousand Dollars ($100,000) for that period shall be payable at the time the last quarterly statement covering such period is due. Royalties paid by the Victor Company in excess of One Hundred Thousand Dollars ($100,000) for any such royalty period shall not be credited against the minimum required for any other period.

* * * * * * *

Article XII

Duration and Termination of Agreement, Its Construction and Assignability

1. This agreement, unless otherwise terminated as herein provided, shall continue in force until January 1st, 1936,

and thereafter until terminated by either party on six months' written notice to the other of intention to terminate the same, and upon the expiration of said period of six months from such notice this agreement shall terminate, provided that no such notice shall be given by the Western Company prior to January 1st, 1941, and upon the expiration of said period of six months from such notice this agreement and all licenses herein granted and agreed to be granted and all obligations of the respective parties hereunder shall terminate, except as herein otherwise specifically provided.

* * * * * * *

The undersigned American Telephone and Telegraph Company, a New York corporation, hereby consents to the foregoing agreement and to the extent of its interest in the patents, applications for patents and inventions in respect of which licenses are therein granted and agreed to be granted by Western Electric Company, Incorporated, to Victor Talking Machine Company, hereby grants to said Western Electric Company, Incorporated, the right to grant said licenses.

American Telephone and Telegraph Co., by W. S. Gifford, President. Attest: A. A. Masters, Secretary. (Seal.)

[fol. 5503] In addition to the portions of this contract printed in full above, it contains, in substance, the following provisions:

Section 3. Western agrees from time to time upon the request and at the expense of Victor, to furnish special assistance and advice in connection with manufacturing methods, and such other data as it may be in a position to furnish in connection with the design, manufacture and use of acoustic apparatus under the licenses granted, also such additional models or samples of said acoustic apparatus adapted for use under the licenses and embodying Western's present or future improvements as Victor may order, also the services of an experienced engineer to assist Victor (p. 9). Section 4. In connection with the services rendered under section 3, Victor agrees to pay Western the complete cost incurred by Western. Section 5 quoted in full above.

Article II

In section 2 it is recognized that the inventions of some of said patents and applications may be applicable to other apparatus than that which Victor is licensed to make, use and sell hereunder, and said licenses do not cover all embodiments of said inventions but are limited to the particular embodiments for which said licenses are expressed as granted. Secton 3. No rights granted for talking motion pictures or for phonograph or talking machines for other than entertainment and educational purposes (p. 12). Section 4. No rights granted for export except to Hawaii and Alaska without consent of International Western Electric Company. Sections 5, 6 and 7 quoted in full above. Section 8. Victor has the right to grant sub-licenses to others except to Columbia Phonograph Company, until after De-[fol. 5504] cember 31, 1928, but Victor shall remain responsible for the payments of royalties under such sub-licenses. Section 9. Termination of agreement does not terminate right of Victor to use and sell apparatus manufactured prior to such termination or in course of manufacture (pp. 11-16).

Article III

Licenses to Western Electric Company

Section 1. Victor Company will, upon written request of Western, at any time during the period of the agreement or within five years after its termination, grant to Western and to the American Telephone and Telegraph Company non-exclusive licenses under all United States patents for improvements in acoustic apparatus which are or shall during the continuance of the agreement be owned or controlled by Victor or concerning which it may acquire the right to grant such licenses to manufacture, use and sell the inventions covered by said patents in the field of electrical transmission and electrical reproduction of sound so far as said inventions are or may be applicable to said fields. No rights agreed to be granted to Western or American Company to manufacture, use or sell phonographs or talking machines of any kind. Licenses granted to Western or the American Company are to be free of royalties or other considerations than this agreement for the entire terms of the respective patents, and shall be assignable only to the successors in business of the Western Electric Company or of the American Company; nothing in Article III to be construed as requiring Victor to grant any licenses contrary to the terms of an agreement between it and the Radio Corporation of America dated May 16, 1925.

[fol. 5505] Article IV

Sections 1 and 2 printed in full above. Section 3. The royalties payable under the contract with respect to machines, the selling price of which is $45 or less and which embody no inventions of Western or of the American Company except in the sound box shall be based upon 33⅓ per cent only of such selling price except that as to phonographs and talking machines that Victor had in stock at the time of the contract, the only royalty shall be at the rate of 25 cents upon each (pp. 18 and 19). Section 4. Talking machines or phonographs not embodying inventions licensed hereunder except those relating to needles or as to which Victor has not had previous notice in writing of the rights of Western or of the American Company shall not be subject to any royalty, except as to the specified royalty on needles provided in the contract (p. 19). Section 5. No royalty shall be payable upon tungsten needles or other needles embodying no inventions licensed under the contract. Other needles embodying patentable inventions or improvements licensed under the contract shall, except when furnished with phonographs, be subject to royalties in the same way as replacement parts (p. 19). Royalties payable with respect to combination apparatus referred to in section 6 of Article II shall be based upon ½ only of Victor's selling price of the complete combined apparatus, provided that Victor shall pay royalties only for and to the extent that its rights to manufacture are dependent upon the present agreement as distinguished from rights independently acquired. If Victor's right to manufacture is based in part upon rights granted under the contract and partly upon rights gained independently, royalties shall be based upon ¼ only of Victor's selling price. [fol. 5506] If rights to manufacture or sell apparatus covered by the present or future patents of Western or of the American Company have or shall be acquired independently of the present agreement by Victor from others to whom Western or the American Company have granted such rights, then such apparatus shall not be subject to royalty under the present contract (pp. 20 and 21). No apparatus shall be subject to more than one royalty and resales of apparatus shall not be subject to royalty. Section 8 printed in full above (p. 21). Section 9 grants Victor certain relief in case of interruption of its rights to use licenses obtained by injunction (pp. 22 and 23). Section 10. Victor agrees to keep accurate records of business done under licenses and Western has right to audit them (pp. 23 and 24). Section 11. In the event that Western or the American Company shall within two years after December 31, 1926, grant any licenses to Columbia Phonograph Company for the manufacture, use and sale in the United States of mechanical phonographs upon terms more favorable as to rates of royalty or minimum royalty than those payable by Victor hereunder, the rates or minimum royalties of Victor provided in this contract shall thereafter be reduced so as to become as favorable as those given to the Columbia Company.

Article V provides for termination of the contract in case of default by Victor (pp. 24-25). Article VI grants Victor right, if patents are not protected by Western, to submit question to arbitration and if it is then found that the rates or minimum royalties are unfair because of such failure to protect, Victor may terminate the agreement or reduce the rates of payment accordingly. Upon the ter-[fol. 5507] mination of this agreement, Victor shall be free to dispute and contest the validity and scope of all patents for which licenses are given (pp. 25-27). Article VII provides for the marking of apparatus manufactured by it under terms of the contract (pp. 27-28). Article VIII. Western warrants its right to grant licenses to Victor Company as expressed in section 5 of Article VII (pp. 28-29). Article IX provides for limited liability in case of strikes, etc. Article X provides for addresses for notices (pp. 29-30). Article XI provides for arbitration.

[fol. 5508] EXTRACTS FROM EXHIBIT X-385

Agreement made this 18th day of March, 1925, between Western Electric Company, Incorporated, a New York corporation, hereinafter called the Western Company, and Victor Talking Machine Company, a corporation of the State of New Jersey, hereinafter called the Lessee.

* * * * * * *

1. The Western Company agrees promptly to furnish and install at the Laboratories of the Lessee at Camden, New Jersey, one complete electrical sound recording equipment, comprising the apparatus set forth in the schedule attached hereto and marked "Schedule A", of the Western Company's latest standard type embodying such inventions and improvements of the Western Company as in the judgment of its Engineers are most practicable and necessary for use at the Lessee's said laboratories to record sounds upon master records to be used in the manufacture of commercial phonograph records. The said sound recording equipment is to remain the property of the Western Company, and the lessee is hereby given the right, subject to the conditons and agreements herein contained, to use the same during the term of this agreement for the purpose of sound recording in the production of master phonograph records, and for no other use or purpose.

* * * * * * *

4. The Western Company agrees (without limitation to the term of this agreement) that it will, at its own expense, defend any and all actions and suits that may at any time be brought against the Lessee or its customers for infringement of patents by reason of the employment by the Lessee of methods, systems and/or equipment of the Western Company hereunder, for the purposes and in the manner contemplated by this agreement, and will pay and satisfy all judgments and decrees for profits, damages and/or costs which may be finally awarded against the Lessee or its customers by the court of last resort in any such action or suit, on account of any such infringement; provided, however, that the Western Company's liability shall be limited to the amount of the initial payment and royalties actually received by it hereunder, plus fifty per cent (50%) of the excess of any such judgments or decrees over said amount, the Lessee hereby assuming the payment of the remainder of any such judgments or decrees, and provided further that the Western Company shall have been

given prompt notice of any such actions, suits and claims of infringement and full opportunity to defend the same; and

In the event that the use contemplated by this agreement of any apparatus as furnished by the Western Company to the Lessee hereunder shall be prevented by injunction or restraining order, the Lessee may at its option, within one hundred twenty (120) days of such injunction or restraining order, either (a) terminate this agreement by notice in writing to the Western Company to that effect or (b) indicate to the Western Company by notice in writing its willingness to share equally with said Western Company the cost of obtaining necessary rights by purchase or on a royalty basis under the patent or patents upon which such injunction or restraining order is based and [fol. 5509] in the event that the Western Company declines or refuses to share such cost, it shall serve written notice thereof on the Lessee and the Lessee shall have the right within ten days thereafter to terminate this agreement as in (a) (Exhibit X-385) hereinabove provided.

In the event that the Lessee shall terminate this agreement as hereinabove provided in options (a) or (b) during the first fifteen months of the term hereof the Western Company shall refund to the Lessee a portion of the initial payment of Fifty thousand dollars ($50,000), which portion shall be in the same ratio to the entire initial payment as the unexpired portion of said first fifteen months of the term hereof is to said entire first fifteen months.

Should the use of a portion or item of any apparatus furnished by the Western Company hereunder to the Lessee be prevented by injunction or restraining order, and should the Lessee at its sole cost acquire rights or licenses under the patent or patents upon which such injunction or restraining order is based, it is the intention hereof that the parties hereto shall thereupon endeavor to mutually agree upon fair and equitable modifications in the scale of royalties thereafter to be paid by the Lessee to the Western Company during the remainder of the term hereof.

Provided that the agreements in this section contained shall not apply to any infringement or claim of infringement relating to phonograph records themselves except insofar as the Western Company's method or system is involved therein, or to the methods or apparatus which are not furnished or approved in writing by the Western Company for the electrical recording of sound, or to any infringement or claim of infringement relating to combinations which involve apparatus not furnished or approved in writing by the Western Company hereunder; and

Provided, further, that the liability of the Western Company in respect of patent infringements shall be limited to the agreements in this Section 4 contained.

* * * * * * *

7. The Lessee agrees that all master records or other records used in the production of commercial records, upon which sounds are directly or indirectly recorded by use of the methods, apparatus or equipment of the Western Company /(as distinguished from commercial records manufactured by impression or otherwise from such master records [fol. 5510] or other records) will be at all times, without limitation to the term of this agreement, for the Lessee's exclusive use in the manufacture of commercial records by or for the Lessee, itself, in the Continental United States of America, Alaska and Hawaii, and the Lessee agrees not to permit, except as hereinafter provided, any such master records or other records except commercial records, to be shipped outside the Continental United States, Alaska or Hawaii, or to be used in any manufacture of commercial records for others than the Lessee itself;

* * * * * * *

8. The Lessee agrees to furnish to the Western Company full and accurate quarterly statements within forty-five (45) days after the end of each quarter of each twelve months' period of the term of this contract, showing the total number of commercial phonograph records as distinguished from master records (and the term "master records", wherever used in this agreement, shall be interpreted to mean any records used or employed in any manner, in, or in connection with, the manufacture of commercial records), sold by the Lessee during the preceding quarter, which shall have been manufactured from or in accordance with any master records produced directly or indirectly by the use of the Western Company's appa-

ratus, equipment, methods, inventions or improvements, and the Lessee shall pay to the Western Company a royalty on its annual sales of such commercial records in accordance with the following schedule (the amount of said initial payment of Fifty thousand Dollars ($50,000) except as provided to the contrary in Section 4 hereof, being credited against royalties accruing in accordance with said following table during the first fifteen months from and after the date of this contract);

1. On each of the first five million records sold in any twelve months' period of the term of this contract, one (1) cent per record;

2. On each of the second five million records sold in any such twelve months' period, three-quarters (¾) of one cent per record;

3. On each of the next ten million records sold in any such twelve months' period, one-half (½) of one cent per record;

4. On each record sold in excess of twenty million in any such twelve months' period, one-quarter (¼) of one cent per record.

[fol. 5511] The term "record" as used in the royalty schedule just preceding shall be read as "commercial record", whether said record embodies one or two recorded surfaces. Royalty shall be computed upon the basis of the sales of each twelve months' period separately and not upon the basis of cumulative sales from year to year. The Lessee shall, however, have the right to deduct and to receive credit for, at the average rate of royalty ascertained by application of the above schedule of rates to the total sales for the year in which the records are returned in making its statements of royalties to the Western Company, all records which are returned in exchange or because of being damaged, broken or otherwise rendered unsalable or for any other reasons which are in accordance with the Lessee's usual trade practices. If the Western Company should at any time during the term of this agreement grant to others in the United States of America rights similar to those herein granted to the Lessee upon lower rates of royalty or on more favorable terms than those above specified, then the royalties to be paid by the

Lessee hereunder and the terms embodied herein shall thereupon and thereafter be modified to conform to such lower rates of royalty and changed terms, provided, however, that the minimum annual royalties required to avoid termination as provided in Section 9 hereof, shall obtain notwithstanding. The Lessee agrees that all accounts rendered by it to the Western Company shall be certified to by the certified public acountants who regularly audit the books of the Lessee, but the Western Company shall have the right at its option and at its own expense, to verify the accounts so rendered to it by the Lessee by examination of the Lessee's records by a certified public accountant or accountants of the Western Company's selection.

Each quarterly statement shall be accompanied by payment of the royalties shown to be due thereby. The Lessee agrees in any event to pay a minimum royalty for each twelve months' period of the term hereof to the Western Company of Fifty Thousand ($50,000) Dollars.

• • • • • • •

18. This agreement, unless otherwise terminated as herein provided, shall continue in force for a period of ten years and three months from date hereof and thereafter until terminated by either party on six months' written notice to the other of intention to terminate the same, and upon the expiration of said period of six months from [fol. 5512] such notice this agreement shall terminate; provided that no such notice shall be given by the Western Company prior to the expiration of fourteen (14) years and nine (9) months from the date hereof; and provided further that no such termination shall relieve the Lessee from its obligations under Sections 7, 8, 11 and 12 hereof, and all provisions of this agreement respecting the apparatus and equipment furnished by the Western Company to the Lessee prior to such termination shall be and remain binding upon the Lessee at all times.

• • • • • • •

[fol. 5513] Addition to the portions of this contract printed in full above, it contains, in substance, the following provisions:

Section 1 is quoted in full above.

Section 2. Western agrees to give lessee instructions regarding the use of the equipment furnished and to advise lessee from time to time of all improvements made by it relating to the methods, system and apparatus for the electrical recording of sound. Western also agrees to furnish the services of a competent engineer to give technical advice and assistance to lessee. The expenses of the engineer shall be reimbursed to Western by lessee (p. 7-8).

Section 3. Western agrees upon request of lessee to furnish and install additional, complete equipment described in Schedule A, or supplementary or replacing equipment for the same purposes, or equipment necessary to make available to lessee improvements. All such equipment to be subject to the terms of this contract (p 8-9).

Section 4 printed in full above.

Section 5. Licenses from Western do not relate to the manufacture of commercial records from master records but only to methods and apparatus for receiving, transmitting and recording sounds upon master records from which commercial records may be manufactured (p. 11).

Section 6. Rights granted are non-exclusive and do not include talking motion pictures but are limited to the production and sale of phonograph records for the same general purpose as the commercial records heretofore produced by lessee.

Section 7. In addition to the provisions of this section [fol. 5514] quoted in full above, it is agreed that nothing permits the lessee to make such master records out of the United States and that lessee will not pass on information or experience as to the manufacture of such master records to any persons or firms except its allied concerns (p. 11-12).

Section 8 printed in full above (p. 13-15).

Section 9. Western may terminate agreement if minimum royalties are not paid but such termination shall be in lieu of all other remedies (p. 15-16).

Section 10. Labels used in connection with records shall contain such notices as may be necessary to protect each and all of the patents involved. The name of the Western may be used on such label (p. 16).

Section 11. Upon termination of the contract, lessee shall be under obligations to pay royalties as to the records then manufactured (p. 16-17).

Section 12. Title of all apparatus to remain in the Western (p. 17).

Section 13. Lessee shall return all apparatus to Western upon termination of contract (p. 17-18).

Section 14. Liability limited in case of loss caused by riots and so forth (p. 18).

Section 17. Covers address for notices.

Section 16. Agreement to be construed according to the laws of New York. (p. 19).

Section 17. Provides for arbitration.

Section 18. Printed in full above.

Section A. List of the apparatus comprising the complete electrical sound recording equipment referred to in the contract (p. 21).

[fol. 5515] EXTRACTS FROM EXHIBIT X-386

Agreement, made as of the first day of May, 1925, between International Western Electric Company, Incorporated, a Delaware corporation, hereinafter called the International Company, and Victor Talking Machine Company, a New Jersey corporation, hereinafter called the Lessee:

* * * * * * *

1. The International Company agrees promptly to furnish to the Lessee, f. o. b. Camden, New Jersey, one complete electrical sound recording equipment, of the Western Company's latest standard type, comprising the apparatus set forth in the schedule attached hereto and marked "Schedule B" embodying such inventions and improvements of the Western Company as, in the judgment of its engineers, are most practicable and necessary for use in recording sounds upon master records to be used in the manufacture of commercial phonograph records. The said sound recording equipment is to remain the property of the International Company but the lessee is hereby given the right, subject to the conditions and agreements herein contained, to use the same during the term hereof, and to permit its associated and subsidiary companies within said territory to use the same during the term hereof, for the purpose of sound recording in the production of master phonograph records and for no other use or purpose. The term "associated and subsidiary companies" as used in

this section and elsewhere throughout this agreement, as applying to associated and subsidiary companies of the Lessee, or of allied companies of the Lessee, shall be deemed to mean any company or companies, partnerships or firms engaged in the production and/or sale of phonograph records in said territory, which are owned or controlled by the Lessee or by such allied companies of the Lessee by way of stock ownership or otherwise.

* * * * * * *

4. The International Company agrees, without limitation to the term of this agreement, that it will at its own expense defend any and all actions and suits that may at any time be brought in those portions of said territory particularly specified in Part 2 of "Schedule A" against the Lessee or any other of its associated or subsidiary companies or any of its or their customers for infringement of patents by reason of the employment by the Lessee or any of its associated or subsidiary companies, of the methods, systems and/or equipment covered hereby for the purposes and in the manner contemplated by this agree- [fol. 5516] ment and will pay and satisfy all judgments and decrees for profits, damages and/or costs which may be finally awarded against the Lessee and/or any of its associated or subsidiary companies or any of its or their customers by the court of last resort in any such action or suit, on account of an such infringement, provided, however, that the International Company's liability hereunder shall be limited to the amount of royalty actually received by it in respect of sales made by the Lessee and/or its associated or subsidiary companies in the particular country in which said judgment or decree is rendered, plus fifty (50%) per cent of the excess of any such judgment or decree over said amount, the Lessee indemnifying and saving harmless the International Company from the remainder of any such judgment or decree, and provided further, that the International Company shall have been given prompt notice of any such actions, suits and claims of infringement and full opportunity to defend the same, and provided further that the International Company assumes no liability hereunder in respect of any such actions, suits or claims of infringe-

ment in any portion of said territory not particularly specified in part 2 of "Schedule A".

* * * * * * *

8. The Lessee agrees to pay to the International Company a minimum royalty of ten thousand ($10,000) dollars for the first fourteen months of the term hereof ending June 30th, 1926, and a minimum royalty of ten thousand ($10,000) dollars for each twelve months thereafter during the term of this agreement. Said minimum royalties for each twelve months' period subsequent to June 30th, 1926, shall be paid by the Lessee in quarter-annual installments of two thousand five hundred ($2,500) dollars each, and the initial payment of ten thousand ($10,000) dollars hereinabove provided to be made by the Lessee to the International Company shall be applied by the International Company in satisfaction of the minimum royalties above provided for shall be paid to and applied by the International Company in satisfaction pro tanto of royalties payable by the Lessee to the International Company, in accordance with the provisions of this section, for the period in respect of which such minimum royalties shall be payable.

The Lessee shall pay to the International Company a royalty based upon its annual sales, and those of its associated and subsidiary companies in said territory (exclusive of sales to the Lessee or any of its associated and subsidiary companies) of commercial records produced in accordance with the Western Company's methods or systems and/or with the Western Company's apparatus or equipment in accordance with the following schedule.

[fol. 5517] 1. On each of the first two and one-half million records sold in any twelve months' period of the term of this contract, one cent (1¢) per record.

2. On each of the next two and one-half million records sold in any twelve months' period three-quarters (¾¢) of one cent per record.

3. On each of the next five million records sold in any such twelve months' period, one-half (½¢) of one cent per record.

4. On records sold in excess of ten million in any such twelve months' period, one-quarter (¼¢) of one cent per record.

The term "record" as used in the royalty schedule just preceding shall be read as "commercial record" whether said records embody one or more recorded surfaces, and the term "twelve months' period" shall be interpreted to mean first period of fourteen (14) months of the term hereof, ending June 30th, 1926, and each period of twelve calendar months thereafter. Royalties shall be computed on the basis of the combined sales of each period separately of the Lessee and its associated and subsidiary companies throughout the entire territory, and not on the basis of cumulative sales from year to year. The Lessee, however, shall, in making its statements of royalties to the International Company, have the right to deduct and to receive credit for all records which are returned in exchange or because of being damaged, broken or otherwise rendered unsalable, or for any other reasons which are in accordance with the Lessee's usual trade practices, at the average rate of royalty ascertained by application of the above schedule of rates to the total sales for the period in which such records are returned.

* * * * * * *

9. The International Company may, within ninety (90) days after the end of the second, or any subsequent twelve-months' period of this agreement, terminate the same if it so elects, by giving written notice to the Lessee to that effect, unless the minimum royalty herein provided for shall be paid by the Lessee to the International Company in accordance with Section 8 hereof for such twelve months' period then ended. The exercise by the International Company of its election to so terminate this agreement in such event shall be in lieu of any other remedies given by law for failure to pay the minimum royalty above provided, which [fol. 5518] remedies the International Company retains, however, in the event that it does not exercise such option to terminate.

Such termination shall take place ninety (90) days after the receipt of such notice from the International Company to the Lessee, provided, however, that the Lessee may at any time within said period of ninety days, avoid such termination on that account by paying to the International Company the amount necessary, in addition to any royalties, theretofore paid in respect of such twelve months' period, to make up the minimum total amount required for the twelve months' period then ended, as above stated.

If, at any time, the Lessee shall be in default in the performance of any of its obligations to make payments hereunder, the International Company may, at its option, terminate this agreement by ninety (90) days written notice to the Lessee to that effect, unless such default shall have been removed and all sums due hereunder to the International Company at the date of such notice shall have been paid with interest at the rate of six (6%) per cent per annum within said period of ninety days. If the Lessee shall at any time become bankrupt or insolvent, the International Company may, by written notice to the Lessee, terminate this agreement forthwith.

* * * * * * *

"Schedule A"

Territory Covered

Part 1. General Description of Territory:

The territory covered by this agreement includes all lands and islands between West Longitude 30 and West Longitude 170 including the Americas (excepting, however, the Continental United States, Alaska and Hawaii), the whole of Greenland and all the Aleutian Islands and shall comprise in addition the Philippine Islands the Chinese Republic (including Manchuria and all islands whether in Chinese or foreign possession lying in such relation to the coast of China as to be geographically and commercially part of the Chinese territory (such as Hong Kong) the Japanese Empire (including Formosa and all Islands [fol. 5519] whether in Japanese or foreign possession lying in such relation to the Japanese Empire as to be geographically and commercially a part of the Japanese territory) Annam, Cochin China, Tongking, Cambodia, and Corea.

* * * * * * *

[fol. 5520] This contract, dated May 1, 1925, between International Western Electric Company and Victor Talking

Machine Company (called lessee), in addition to the portions printed in full above, contains, in substance, the following provisions:

Section 1 printed in full above. In section 2, International agrees to give lessee full instructions regarding the use of the equipment furnished and to advise the lessee further from time to time of all improvements of the Western Electric Company relating to methods, systems or apparatus for the electrical recording of sound. International also agrees to furnish lessee the services of competent engineers to give technical information, advice and assistance to lessee, but at the expense of lessee (pp. 3, 4).

Section 3. International agrees to furnish lessee from time to time additional apparatus, equipment or material, as follows: Additional complete equipment described in schedule B, or supplemental or replacing equipment or equipment necessary to make available improvements in the methods and systems; all such additional equipment to be subject to the terms of this contract (pp. 4 and 5).

Section 4. In addition to the portion of this section quoted in full above, certain relief is granted lessee in case the use of the systems or apparatus be prevented by injunction. It is specifically provided that this section shall not apply to infringements or claims of infringement relating to phonograph records themselves, except in so far as Western's methods or systems are involved therein (pp. 5-10).

[fol. 5521] Section 5. The obligations of International do not relate to any methods, processes, apparatus or material for the manufacture of commercial records from master records, but only to those methods, systems and apparatus employed for receiving, transmitting and recording sound upon master records from which commercial records may be manufactured (p. 10).

Section 6. Rights granted to lessee are non-exclusive and do not include the use of any apparatus or equipment in connection with motion pictures, but are limited to the production and sale of phonograph records for the same general purposes as the commercial records heretofore produced by lessee. International shall not, during the term of the contract, grant to others in the territory described, rights similar to those granted lessee, but International reserves the right to sell for other purposes the equipment or apparatus involved in the use of Western's methods or systems for the electrical recording of sound. Lessee agrees to promote sales in the territory licensed (p. 11).

Section 7 provides for the marking of records and that the license granted is for the exclusive use of lessee and its associated and subsidiary companies (pp. 11-13). Section 8. After the provisions of this section quoted in full above, there follows agreement of lessee to furnish statements disclosing the amount of royalties payable and Western is granted the right to audit lessee's books relating to such sales (pp. 15-16).

Section 9 quoted in full above. Section 10 requires records to bear notices as directed by International and grants lessee the right to use name of International on the labels (pp. 17-18).

[fol. 5522] Section 11. Termination of the agreement shall not relieve lessee of its obligation to pay royalties on sales of records already manufactured under the terms of the contract (pp. 18 and 19). Section 12. Title to all apparatus remains in International, but lessee shall keep it in good condition and insure it. Lessee indemnifies International for use or misuse of such apparatus (p. 19). Section 13. All apparatus to be returned to International on expiration of contract (pp. 19 and 20). Section 14 limits liability in case of loss caused by strikes, etc. (pp. 20 and 21). Section 15 gives addresses for notices. Section 16 provides that contract shall be construed according to the laws of New York. Section 17 provides for arbitration. Section 18 provides that agreement, unless otherwise terminated, shall continue in force to June 30, 1925 and thereafter until terminated by six months' written notice from either party. Section 19. Rights granted from Empire of Japan shall not become effective unless and until International shall secure the consent of its allied company operating in said empire. Section 20. There shall be no duplication of royalties. Schedule A, Part 1, is a general description of the territory, which includes all lands and islands between West Longitude 30 and West Longitude 170, including the Americas, except the Continent of the United States, Alaska and Hawaii (p. 25). Schedule B is a list of apparatus comprising the complete electrical sound recording equipment referred to in the contract (p. 26).

[fol. 5523] EXHIBIT X-388

Memorandum of Agreement Between Victor Phonograph Company and Electrical Research Products, Inc.

1. Products grants to Victor a non-exclusive, non-assignable license to record and to make, use, sell and lease disc records for use in the commercial field, including cued records, specially arranged records and synchronized records for use in motion picture theatres equipped with apparatus supplied by Products.

2. Products undertakes to actively distribute its apparatus in theatres and to the extent that it may legally do so, will restrict the use of records with such apparatus to the reproduction of records made and supplied for the purpose by its licensees.

3. Products will extend to Victor to the extent it may be able all rights and licenses it holds from music publishers or composers upon the same terms and conditions as they may be extended to its other producing licensees and Victor agrees to avail itself of such present rights and licenses upon those terms and of such future rights as may be obtained with Victor's consent.

4. Products will purchase from Victor and Victor will supply to Products upon fair and reasonable terms such portions of the apparatus to be supplied to theatres as they may mutually agree upon from time to time, it being the intent that Products shall obtain from Victor those parts that Victor may be in position to manufacture to better advantage than Products and its associated companies.

5. Victor agrees within a reasonable time, as the business develops, to put itself in a position to supply to theatres equipped with apparatus supplied by Products records for use on such apparatus including cued records, especially arranged records and synchronized records, and Victor shall confine the distribution of such records, when for use in theatres or places where motion pictures are regularly shown, to exhibitors licensed by Products.

6. Products agrees to lease to Victor on fair and reasonable terms such electrical recording apparatus as Victor may require for recording of sound under this agreement.

7. Products agrees to supply to Victor services of engineers and technical advice and assistance upon the same conditions and terms as set forth in agreement of Mar. 18, 1925.

[fol. 5524] 8. In fields of commercial entertainment outside of the theatrical field Products will in good faith endeavor to bring about such modifications in its existing contracts and those of its associated companies so that it may extend to Victor licenses under its patents to make, use, sell or lease apparatus for the electric reproduction of sound by means of self-contained instruments designed to distribute sound in the immediate vicinity of the instrument, reserving, however, all rights in respect to apparatus designed to distribute sounds from points distinctly separated from the turntable and connected thereto by systems involving the use of what is known as wire telephony. This reservation shall not be construed to apply unreasonably to apparatus of the same general character as the present auditorium model, distributed by the Victor Company, where because of the size of the sound radiator or because, for architectural reasons or convenience in installation or operation, it is desired to make a special installation of the sound radiator or multiple sound radiators in different public rooms, it may not be practicable to include it in the cabinet with the turntable, amplifier and pick-up apparatus.

9. Products grants to Victor, without consideration other than this agreement, non-exclusive, non-assignable licenses under its patents and agrees to supply upon the same conditions and terms as set forth in the agreement of March 18, 1925 such technical information and assistance as it may be able to supply for use by Victor in the manufacture of records and in the design and manufacture of apparatus for the reproduction of sound, except as otherwise limited herein. No rights, however, are granted with respect to electric phonographs for use in the home for entertainment or educational purposes.

10. Products agrees to assist Victor in the establishment of research and experimental facilities and will to that end give such technical advice and will supply on fair and reasonable terms such apparatus as it may be in a position to supply from time to time to Victor. Apparatus so sup-

plied to Victor shall be for the sole use of Victor and its associated and subsidiary companies.

11. Victor will disclose to Products freely any information and methods or apparatus arising out of the arrangement set forth in the preceding paragraphs; and Victor grants to Products without other consideration than this agreement licenses under any patents or rights derived from such activities. Licenses so granted shall be for use by Products without restriction as to field and shall include non-exclusive rights to sub-license others except other companies competitive with Victor in the home phonograph field.

[fol. 5525] 12. Victor now holds contracts with artists and performers of national and international repute by which it may legally restrict such artists from engaging in recording for others. In consideration of this agreement Victor agrees to execute waivers of the restrictive clauses with respect to artists in favor of Products and its licensees, except that such artists shall not be made available for the production of commercial phonograph records.

13. Products agrees that in its present contracts and in future contracts made by it or its duly accredited licensees with similar performers or artists, it and they will waive/omit the restrictive clause in favor of or as they may apply to Victor. Should any licensee refuse to waive for Victor's purposes, Victor to have privilege of refusing to waive for such licensee.

14. The parties agree that either may enter into contracts with artists by which the artists may legally be restricted from engaging in similar work for others except and other than the parties hereto, their licensees or companies owned or controlled by them.

15. The license granted for synchronized records shall be without restriction as to producers where the records so made are distributed by Victor or its agents and not by the producer making the motion picture. No rights, however, are granted to Victor for making synchronized records for motion picture producers when the sale or lease of the records to exhibitors is to be done by the Producer and the proceeds thereof retained for the producer's benefit unless such producer shall hold a license from Products.

16. Victor shall, in order to obtain the greatest revenue from the sale or lease of records, adopt such practices with regard to methods of distribution and fix such charges for such records as may be designed to produce the greatest gross revenue and as may be consistent with competitive conditions which obtain from time to time.

17. Victor shall pay to Products, as royalty, 8% of the gross revenues derived from the following:

a. Synchronized records,
b. Specially cued records,
c. Records supplied to theatres for general music purposes,

provided that in the case of synchronized records Victor shall adopt such distribution policies that Products shall receive 8% of the amount paid by exhibitors for such rec- [fol. 5526] ords whether directly distributed by Victor or otherwise. In case such records are distributed by the producer of the motion picture the 8% of the revenue derived from exhibitors to be paid to Products shall be in addition to the 8% paid by Victor on its direct revenues. It is understood that it is the intention of Victor to so arrange its distribution of records for general theatre use that it can determine the amount of revenue derived therefrom.

Ordinary commercial records sold for commercial entertainment purposes shall for royalty purposes only be considered as being recorded under the agreement of March 18, 1925.

Royalty payable for rights and licenses for the manufacture, use, sale or lease of electrical reproducing apparatus for use in the commercial entertainment field shall be 8% of Victor's gross revenue derived therefrom when such apparatus is sold through the usual distribution channels, and shall be 8% of 60% of the selling price when sold direct by Victor to the customer.

18. The minimum royalty shall be $100,000 per year.

19. If licenses of substantially the same character as those granted by this agreement shall be granted to others upon lower rates of royalty or lower minimum royalty, such lower rates shall be extended to Victor.

20. Victor expressly states that it is its intention to actively exploit to the fullest degree commercially feasible the rights and licenses granted by this agreement subject to Victor's existing obligations to the R. C. A.

21. The licenses granted shall be for the United States and its territories and possessions including Alaska, Hawaii, Philippine Islands, Virgin Islands, Porto Rico, Guam, American Samoa and Panama Canal Zone.

22. This agreement shall become effective as of the date hereof and shall continue in force until the 10th day of January, 1938, and thereafter until terminated by either party by giving to the other two years' written notice thereof (expiring on the last day of a calendar year) of intention to terminate the same, and upon expiration of the time limited by such notice this agreement shall terminate.

January 11, 1928.

(O. K., with definition contained in your letter Jan. 11, 1928, Victor letter dated Jan. 11, 1928. (Sd.) E. E. S. J. E. O.)

[fol. 5527] EXTRACTS FROM EXHIBIT X-390

Agreement made this 22nd day of April, 1925, between International Western Electric Company, Incorporated, a Delaware corporation, hereinafter called the International Company, and Columbia Graphophone Company, Limited, a British Corporation, hereinafter called the Lessee:

* * * * * * *

1. The International Company agrees promptly to furnish to the Lessee, F. O. B. London, England, one complete electrical sound recording equipment, comprising the apparatus set forth in the schedule attached hereto and marked Schedule "B" of the Western Company's latest standard type, embodying such inventions and improvements of the Western Company as, in the judgment of the International Company's engineers are most practicable and necessary for use in recording sound upon master records to be used in the manufacture of commercial phono-

graph records. The said sound recording equipment is to remain the property of the International Company, and the Lessee is hereby given the right, subject to the conditions and agreements herein contained, to use the same during the term hereof, and to permit its associated and subsidiary companies within said territory to use the same during the term hereof, for the purpose of sound recording in the production of master phonograph records and for no other use or purpose. The term "associated and subsidiary companies" as used in this section, and elsewhere throughout this agreement as applying to associated and subsidiary companies of the Lessee, shall be deemed to mean any company or companies, partnerships or firms engaged in the production and/or sale of phonograph records in said territory, which are owned or controlled by the Lessee either by way of stock ownership, or otherwise.

* * * * * * *

8. The Lessee agrees to pay to the International Company a minimum royalty of twenty-five thousand ($25,000) dollars for the first fifteen (15) months of the term hereof, and a minimum royalty of twenty-five thousand ($25,000) dollars for each twelve months thereafter during the term of this agreement, which shall be paid by the Lessee in quarter-annual installments of six thousand two hundred and fifty dollars ($6,250) each; the initial payment of twenty-five thousand dollars ($25,000) hereinabove provided to be made by the Lessee to the International Company, to be applied by the International Company in satisfaction of the minimum royalties for the first fifteen months of the term hereof. The minimum royalties above [fol. 5528] provided shall not be diminished during the term of this agreement and shall be applied by the International Company on account of royalties actually due from the Lessee to the International Company in accordance with the provisions of this Section. The Lessee shall pay to the International Company a royalty based upon its annual sales of commercial records produced in accordance with the Western Company's methods or systems and/or with the Western Company's apparatus or equipment in accordance with the following schedule:

1. On each of the first five million records sold in any twelve months' period of the term of this contract, one (1¢) cent per record;

2. On each of the next five million records sold in any twelve months' period, three quarters (¾¢) of one cent per record;

3. On each of the next ten million records sold in any such twelve months' period, one-half (½¢) of one cent per record;

4. On records sold in excess of twenty million in any such twelve months' period, one-quarter (¼¢) of one cent *per* record.

The term "record" as used in the royalty schedule just preceding shall be read as "commercial record", whether said record embodies one or more recorded surfaces, and the term "twelve months' period" shall be interpreted to mean the first fifteen calendar months of the term hereof and each twelve calendar months thereafter. Royalties shall be computed on the basis of the sales of each twelve months' period separately and not on the basis of cumulative sales from year to year. The Lessee shall, however, have the right to deduct and to receive credit for at the average rate of royalty ascertained by application of the above schedule of rates to the total sales for the twelve months' period in which the records are returned in making its statements of royalties to the International Company, all records which are returned in exchange or because of being damaged, broken or otherwise rendered unsalable, or for any other reasons which are in accordance with the Lessee's usual trade practices.

[fol. 5529] The Lessee agrees to furnish to the International Company full and accurate annual statements within ninety (90) days after the end of each twelve months' period of the term hereof showing the total number of commercial phonograph records as distinguished from master records (and the term "master records" wherever used in this agreement shall be interpreted to mean any records used or employed in any manner in, or in connection with, the manufacture of commercial records) sold by the Lessee, its associated and subsidiary and/or allied companies in or for shipment to said territory, which shall have been manufactured from or in accordance with any master records produced directly or indirectly by the use of the Western Company's apparatus, equipment, methods or improvements, and the royalty hereinabove provided to be paid by the Lessee to the International Company shall be based upon such annual statements and upon the rendition thereof, should the same indicate that royalties in excess of the minimum royalties are due from the Lessee to the International Company, the Lessee shall, at the time of submitting such statements to the International Company, make payment of any additional royalties shown to be due thereby. The Lessee assumes full responsibility for and agrees to make payment of royalties on account of sales of said commercial records made in said territory, or for shipment to said territory, by its associated and subsidiary companies as above defined, and agrees that its annual statements furnished to the International Company shall be certified to by the certified public accountants who regularly audit the books of the Lessee, and to permit the International Company, at its option and at its own expense, to verify said statements by having an independent examination made by the Lessee's books by a certified public accountant or accountants of the International Company's selection. The annual statements to be furnished by the Lessee to the International Company shall report sales of said commercial records by countries or in such other manner as the International Company may hereafter specify by written notice to the Lessee, and the Lessee agrees upon request of the International Company, to permit, and obtain any other necessary permission to enable the International Company, through its duly accredited representatives, to examine the books and records of the Lessee's associated and subsidiary companies in so far as such examination may be necessary to determine the accuracy of the statements of sales of said records made by such associated and subsidiary companies to the Lessee, whereon the Lessee's annual statement to the International Company shall be based.

9. The International Company may, within ninety (90) [fol. 5530] days after the end of the second, or any subsequent twelve months' period of this agreement, terminate the same if it so elects, by giving written notice to the Lessee

to that effect, unless the royalty paid by the Lessee to the International Company upon sales of commercial records for such twelve months' period then ended equals or exceeds the sum of Twenty-five thousand ($25,000) Dollars. The exercise by the International Company of its election to so terminate this agreement in such event shall be in lieu of any other remedies given by law for failure to pay the minimum royalty above provided, which remedies the International Company retains, however, in the event that it does not exercise such option to terminate.

Such termination shall take place ninety (90) days after the date of such notice from the International Company to the Lessee, provided, however, that the Lessee may at any time within said period of ninety days, avoid such termination on that account by paying to the International Company the amount necessary, in addition to any royalties theretofore paid in respect of such twelve months' period, to make up the minimum total amount required for the twelve months' period then ended, as above stated.

If, at any time, the Lessee shall be in default in the performance of any of its obligations hereunder, the International Company may, at its option, terminate this agreement by ninety (90) days written notice to the Lessee to that effect, unless such default shall have been removed and all sums due hereunder to the International Company at the date of such notice shall have been paid with interest at the rate of six (6%) per cent per annum within said period of ninety days. If the Lessee shall at any time become bankrupt or insolvent, the International Company may, by written notice to the Lessee, terminate this agreement forthwith.

* * * * * * *

18. This agreement, unless otherwise terminated, shall continue in force for a period of ten years and six months from the date hereof, and thereafter until terminated by either party on six months' written notice to the other of intention to terminate the same, and upon the expiration of said period of six months from such notice this agreement shall terminate; provided, however, that no such termination shall relieve the Lessee from its obligations under Sections Seven, Eight, Eleven and Twelve hereof and all [fol. 5531] provisions of this agreement in respect of the

apparatus and equipment furnished by the International Company to the Lessee shall be and remain binding upon the Lessee at all times.

* * * * * * *

SCHEDULE "A"

Territories Covered

Great Britain and Ireland.
Continental Europe.
Africa.
Australia.
Tasmania.
New Zealand.
South Sea Islands.
India.
Burma.
Ceylon.
Malay Peninsula.
British Borneo.
New Guinea.
Dutch East Indies.

* * * * * * *

[fol. 5532] This was a contract between the International Western Electric Company and the Columbia Graphophone Company, Ltd., dated April 22, 1925.

In addition to the portions of the contract printed in full above the contract contains, in substance, the following provisions:

Sect. I. Printed above in full.

Sect. II. International should give Graphophone full instructions regarding operation of equipment to be furnished and advise it concerning all improvements which Western may make relating to methods, systems, and apparatus with the electrical recording sound. International also furnished at expense of the Grapho-one competent engineers to advise Graphophone as to methods and apparatus (pp. 8–10).

Sect. III. International agrees upon request to furnish additional apparatus, equipment, or material consisting of additional complete equipment as described in Schedule 3R, supplementary or replacing equipment, and equipment necessary to make available improvements or additions to methods, systems, and apparatus. All additional apparatus subject to permits of the contract and furnished at the expense of International shall not involve duplication of royalties (p. 10).

Sect. IV. International agrees to protect Graphophone in patent infringement suits and pay any damages resulting from such suits but not exceeding the amounts received as royalties plus 50%. Graphophone is given certain relief in case its use of the improvements and patents be interrupted by the injunction (pp. 11–12).

Sect. V. The obligation to the International does not relate to methods, processes, apparatus, or materials as many of Commercial records from master records but only receiving, transmitting, and recording sounds upon master records (p. 13).

Section VI. Rights granted are not exclusive and do not include talking motion pictures but are limited to the sale of phonograph records for the same general purposes as the Commercial records that they produce by graphophone. International should not grant others similar rights except to Graphophone Company and the Victor Talking Machine Company. If either of the latter were terminated, International may grant similar license to not exceeding one other party. International reserves the right to sell for other purposes equipment or apparatus which, or parts of which, are involved in the use of the Western Electric's methods or systems for electrical recording of sound (p. 13).

[fol. 5533] Sect. VII. Graphophone is to promote sales and agrees that master records recorded by use of the methods, apparatus, or equipment of Western or for its own use agrees not to permit such records to be shipped outside the territory except to itself or to others for manufacture of Commercial records (pp. 13-14).

Sect. VIII & IX. Printed in full above.

Sect. X. Provides for the replacing of records produced under the license (pp. 18-19).

Sect. XI. Provides that the obligation to pay royalties upon sales of Commercial records which shall have been made prior to the termination of contract shall not be affected by such termination (p. 19).

Sect. XII. Provides all apparatus furnished by International under the contract shall remain in International. The lessee agrees to keep it is good condition.

Sect. XIII. Provides for return of equipment on termination of the agreement.

Sect. XIV. Limits liabilities for non-performance caused by strikes, etc.

Sect. XV. Gives the addresses for notices.

Sect. XVI. Provides that the contracts shall be considered according to the law of New York.

Sect. XVII. Provides for arbitration (pp. 20-23).

Sect. XIX. Provides that Hungary, Roumania, and Bulgaria and that part of Jugoslavia which is contained in Hungary and Austria in 1914 shall not be effective until certain consents are obtained. Note to Schedule "A" limits provisions of Section 4 to the following portions of the territory only: Great Britain and eastern continent of Europe, except Russia, Union of South Africa, Australia, Tasmania, and New Zealand. (p. 25) Schedule "B" contains a list of apparatus comprising the complete electrical sound recording equipment referred to in the contract (p. 26).

27 and 28 constitute an assignment of this contract from International Western Electric Company to the Western Electric Company dated September 30, 1925, and the consent to such assignment by Columbia Corporation Company dated October 27, 1925.

[fol. 5534] EXTRACTS FROM EXHIBIT X-391

Agreement, made as of the first day of May, 1925, between International Western Electric Company, Incorporated, a Delaware corporation, hereinafter called the International Company, and The Gramophone Company, Limited, of Hayes, Middlesex, England, a British corporation, hereinafter called the Lessee:

* * * * * * *

1. The International Company agrees promptly to furnish to the Lessee, f. o. b. London, England, two complete

electrical sound recording equipments, each comprising the apparatus set forth in the schedule attached hereto and marked Schedule "B" of the Western Company's latest standard type, embodying such inventions and improvements of the Western Company as, in the judgment of the International Company's engineers are most practicable and necessary for use in recording sounds upon master records to be used in the manufacture of commercial phonograph records. The said sound recording equipments are to remain the property of the International Company, and the Lessee is hereby given the right subject to the conditions and agreements herein contained, to use the same during the term hereof for the purpose associated and subsidiary companies within said territory to use the same during the term hereof for the purpose of sound recording in the production of master phonograph records and for no other use or purpose.

* * * * * * *

4. The International Company agrees without limitation to the term of this agreement, that it will in those portions of said territory particularly specified in Part 2 of Schedule "A" at its own expense, defend any and all actions and suits that may at any time be brought against the Lessee or any of its associated or subsidiary companies or any of its or their customers for infringement of patents by reason of the employment by the Lessee or any of its associated or subsidiary companies, of the methods, systems and/or equipment covered hereby for the purpose and in the manner contemplated by this agreement and will pay and satisfy all judgments and decrees for profits, damages and/or costs which may be finally awarded against the Lessee and/or any of its associated or subsidiary companies, or any of its or their customers by the court of last resort in any such action or suit in those portions of said territory so particularly specified in Part 2 of Schedule "A" on account of any such infringement, provided, however, that the International Company's liability hereunder shall be limited to the amount of royalty actually received [fol. 5535] by it in respect of sales made by the Lessee and/or its associated or subsidiary companies in the particular country in which such judgment or decree is rend-

ered, plus fifty (50%) per cent. of the excess of any such judgment or decree over said amount, the Lessee indemnifying and saving harmless the International Company from the remainder of any such judgment, and provided further, that the International Company shall have been given prompt notice of any such actions, suits and claims of infringement and full opportunity to defend the same, and provided, further, that the International Company assumes no liability hereunder in respect of any such actions, suits or claims of infringement in any portion of said territory not particularly specified in Part 2 of Schedule "A".

* * * * * * *

8. The Lessee agrees to pay to the International Company a minimum royalty of thirty-five thousand ($35,000) dollars for the first twenty months of the term hereof ending January 1st, 1927, and a minimum royalty of twenty-five thousand ($25,000) dollars for each twelve months thereafter during the term of this agreement. Said minimum royalties for each twelve months' period subsequent to January 1st, 1927, shall be paid by the Lessee in quarter-annual installments of six thousand two hundred and fifty ($6,250.00) dollars each, and the initial payment of thirty-five thousand ($35,000.00) dollars, hereinabove provided to be made by the Lessee to the International Company shall be applied by the International Company in satisfaction of the minimum royalties for said first twenty months of the term hereof ending on January 1, 1927. Each of the minimum royalties above provided for shall be paid to and applied by the International Company in satisfaction pro tanto of royalties payable by the Lessee to the International Company in accordance with the provisions of this section, for the period in respect of which such minimum royalties shall be payable.

The Lessee shall pay to the International Company a royalty based upon its annual sales, and those of its associated and subsidiary companies in said territory (exclusive of sales to the Lessee or any of its associated and subsidiary companies), of commercial records produced in accordance with the Western Company's methods or systems and/or with the Western Company's apparatus or equipment in accordance with the following schedule:

[fol. 5536] 1. On each of the first two and one-half million records sold in any twelve months' period of the term of this contract, one cent (1¢) per record;

2. On each of the next two and one-half million records sold in any twelve months' period, three-quarters (¾¢) of one cent per record;

3. On each of the next five million records sold in any such twelve months' period, one-half (½¢) of one cent per record;

4. On records sold in excess of ten million in any such twelve months' period, one-quarter (¼¢) of one cent per record.

* * * * * * *

SCHEDULE "A"

Territories Covered

Part I. General description of territory:

The territory covered by this agreement includes all lands and islands in that portion of the globe lying eastward from 50° West longitude to 170° West longitude, including, as it does, all the countries of Europe and the island adjacent thereto, including England, Ireland, Scotland, Wales and Iceland, all the countries of Africa, and the islands adjacent thereto, all the countries and islands of Australasia, including the Australian archipelago and the islands of the South Sea, and shall include all the countries of Asia except the Chinese Empire, the Japanese Empire, Manchuria, Annam, Cochin China, Tonking, Cambodia and Corea; it shall include also all the islands adjacent to Asia except the Philippine Islands, Formosa, and those islands whether in Chinese or foreign possession lying in such relation to the coast of China as to be geographically or commercially a part of the Chinese Empire and excepting also all islands whether in Japanese or foreign possession lying in such relation to the Japanese Empire as to be geographically or commercially a part of the Japanese Empire.

Part 2. Particular Specification of countries covered by provisions of Section 4 relating to patent infringement actions:

Great Britain and Ireland.
France.
[fol. 5537] Belgium.
Netherlands.
Norway.
Sweden.
Austria.
Hungary.
Jugo-Slavia.
Czecho-Slovakia.
Turkey.
Greece.
Italy.
Switzerland.
Spain.
Portugal.
Denmark.
Germany.
Australia.
New Zealand.
Union of South Africa.

[fol. 5538] This exhibit is a copy of contract between International Western Electric Company, Inc., and The Gramophone Company, Ltd., of Hayes, Middlesex, England, dated May 1, 1925. In addition to the portions printed in full above, it contains provisions in substance as follows:

A recital that International is empowered to grant licenses to use methods, systems and apparatus of Western Electric Company concerning the electrical recording of sound in the territory specified in Schedule A.

Section 1 set forth in full (p. 7).

In section 2 the International agrees to give to Gramophone full instructions concerning the apparatus furnished, to advise it from time to time concerning improvements in the apparatus to furnish the services of competent engineers to give technical information, advice and assistance; and, in general, to see that Gramophone has the benefit, for itself and subsidiary corporations only, of the engineering assistance and advice of laboratory research and development work in making phonograph records and also the right to use additional apparatus or improvements produced or acquired by Western. Gramophone is to reimburse International for the expense of engineers and employees whose services are furnished lessee (pp. 8-9).

In section 3 International agrees, upon the request of Gramophone, to furnish to it such additional apparatus as International may be in a position to supply, consisting of additional equipments described in Schedule B or equipment required to supplement or replace the first or com-
[fol. 5539] plete equipments which International is to furnish, and equipment necessary to make available improvements or additions to the methods or systems for the elec-

trical recording of sound. Additional or supplement equipment is to be subject to the same terms as original equipment (p. 9-10).

The first paragraph of section 4 is printed in full above. It then provides for certain relief to Gramophone in case the use of the equipment is prevented by injunction (p. 10-15).

Section 5 provides that the obligation of International does not relate to any methods, processes, apparatus or materials for the manufacture of commercial records from master records, but only to the methods, system and apparatus employed for the receiving, transmitting and recording of sound upon master records from which commercial records may be manufactured (p. 15).

Section 6 provides that the rights granted are not exclusive and that they do not include the right to use apparatus in the production of phonograph records in synchronism or timed relation with motion pictures, but are limited to the production and sale of phonograph records for the same general purposes as the commercial records. International agrees not to grant same rights to others in the territory except to the Columbia Graphophone Company, or in the event that International shall terminate rights granted to the Columbia Company it shall have the right to make similar grants to not exceeding one other company, and International reserves the right to sell for other purposes equipment or apparatus involved in the use of Western's methods or systems for the electrical recording of sound. Gramophone agrees to promote the sale of the [fol. 5540] records produced under Western's methods and systems, but not to promote exclusively the sale of such records (pp. 15-17).

In section 7 Gramophone agrees that all master records produced by it under the licenses shall be for the exclusive use of Gramophone and its subsidiary companies in the manufacture of commercial records by or for it and its associated companies, except that it may make contracts for interexchange of master records with other companies without the territory, but it cannot authorize such other companies to record such master records out of the territory nor will it pass on any information or experience to such other companies (pp. 17-18).

After the portion of section 8 quoted above in full, the section then provides that "record" shall be read as "commercial record", whether the records embody one or more recorded surfaces, and defines certain other terms used in the section. It then provides that if the International grants a more favorable license in the territory involved, the terms of this contract shall be modified accordingly. There is also provided a method for the keeping of records by Gramophone and the auditing thereof by Western (p. 19-22).

Section 9 provides that International may cancel contract if the minimum royalties are not paid, but that such termination shall be in lieu of all other remedies. It also provides for termination in case of default in any of the terms of the contract by Gramophone (pp. 22-23).

Section 10 provides for the placing of notices on the records and the use on the records of the name of the International (p. 23-24).

[fol. 5541] Section 11 provides that the obligation to pay royalties on records shall survive the termination of the contract (p. 24).

Section 12 provides that title to all apparatus shall remain in the International and shall be insured by Gramophone and Gramophone shall be responsible for said apparatus (p. 25).

Section 13 provides that upon termination of the contract all apparatus shall be returned to International.

Section 14 limits liability for damages resulting from strikes, etc. (pp. 25, 26, 27).

Section 15 provides for the addressing of notices.

Section 16 provides that the construction of the contract shall be under the laws of the State of New York.

Section 17 provides for arbitration (pp. 27-28).

Section 18 provides that unless otherwise terminated the contract shall continue in force until January 1, 1936 and thereafter until terminated by either party on six months' written notice to the other of intention to terminate the same, and upon the expiration of said period of six months from such notice the contract shall terminate; provided, that no such notice shall be given by International prior to January 1, 1940 (pp. 28-29).

Section 19 excepts from the territory assigned the territory of Hungary, Roumania and Bulgaria and part of Jugo-Slavia the consent and approval of allied companies of International to be obtained (p. 29).

Section 20 provides that nothing contained in the contract shall provide for duplication of royalties.

[fol. 5542] Schedule A attached is printed above in full and Schedule B lists the apparatus comprising the complete electrical sound recording equipment referred to in the contract.

[fol. 5543] EXTRACTS FROM EXHIBIT X-392

Agreement made this 19th day of January, 1926, between Western Electric Company, Incorporated, a New York corporation, hereinafter called the Western Company, and The Gramophone Company Limited, an English joint stock company of Hayes, Middlesex, hereinafter called the Gramophone Company:

* * * * * * * *

1. The Western Company agrees that it will at its own cost and expense promptly after the execution of this Agreement furnish to the Gramophone Company:

(a) Drawings, specifications, full data and information concerning the mechanical talking machines and parts therefor heretofore developed by the Western Company, and

(b) One complete sample of each mechanical talking machine part (or one complete talking machine embodying the same) of each of the Western Company's present preferred types of such talking machine or parts, in each size which the Gramophone Company may reasonably require.

* * * * * * * *

5. If any suit, action or proceeding based upon the claim that the manufacture, use and/or sale of the inventions or improvements in the said acoustic apparatus mentioned in Section 1 of Article II hereof as embodied in the samples

or models furnished or to be furnished from time to time by the Western Company under the preceding provisions of Article I hereof or as embodied in any sample or model made by the Gramophone Company and on submission to the Western Company claimed or acknowledged by the Western Company to embody any invention or improvements within the scope of the license granted and agreed to be granted by the Western Company as in Article II hereof is mentioned constitutes an infringement of any letters patent or like privileges for the time being subsisting in any part of the territory where such manufacture, use and/or sale shall or may have taken place, should be brought against the Gramophone Company or any of its subsidiary [fol. 5544] or associated Companies and/or any of the purchasers of its goods, the Western Company will at the request of the Gramophone Company but at the expense of the Western Company furnish the services of a practical engineer or expert to assist in the defense of said suit, action or proceeding; and the Western Company will also furnish the Gramophone Company at the Western Company's own cost and expense all information in its possession, custody or control which may be useful in the defense of said suit, action or proceeding.

Article II

Licenses to the Gramophone Company

1. The licenses herein granted and agreed to be granted by the Western Company are under all patents or like privileges in any part of said territory and applications for patents or like privileges in any part of said territory for inventions or improvements (whether machines, processes or compositions of matter) relating or applicable to mechanical talking machines or parts thereof which are now or which may during the continuance of this agreement [fol. 5545] be owned or controlled by the Western Company or in respect of which it now has or during the continuance of this agreement may acquire the right to grant such licenses, specifically including all of the patents and applications specified or referred to in the first part of the schedule hereto. Patents, applications for patents and like privileges in said territory for inventions relating or appli-

cable to machines, processes or compositions of matter adapted and intended to be used for the manufacture of mechanical talking machines (as distinguished from those relating to the talking machines themselves) are also included in said licenses so far as the Western Company has acquired the same subsequent to October 1, 1925 or shall hereafter acquire the same, and only for use in such manufacture of mechanical talking machines and not generally. If any patents or patent applications for any inventions which are not applicable to mechanical talking machines shall have been included in said schedule, it shall be deemed an inadvertence and shall not enlarge the rights of the Gramophone Company hereunder; nor shall the omission from said schedule of any of the patents, applications for patents or like privileges, referred to in the first paragraph of this section, affect the rights of the Gramophone Company thereunder.

* * * * * * * *

Article IV.

Royalties to be Paid by the Gramophone Company and/or Its Subsidiary and Associated Companies

1. The Gramophone Company agrees for itself and its subsidiary or associated Companies, subject to the provisions hereof, to pay or cause to be paid to the Western Company as compensation for the licenses herein granted and agreed to be granted and for the obligations it has herein undertaken including the technical information and assistance to be rendered by the Western Company hereunder, a royalty upon all talking machines and parts thereof embodying any of the inventions or improvements herein licensed or agreed to be licensed to the Gramophone Company which have been or which shall hereafter be sold, leased or put into commercial use by the Gramophone Company and/or its subsidiary or associated companies, and/or by its sub-licensees, where such talking machines and/or parts at the time and place of either the manufacture, use or sale thereof are covered by any patent or similar protection then in force, or any application for patent or simi-

lar protection then pending under which the Western Com- [fol. 5546] pany herein licenses or agrees to license the Gramophone Company. Talking machines and/or parts manufactured under said licenses in any country where the same are covered by any of said patents or applications then in force shall be subject to royalty even though not protected in the country of sale or use, and similarly talking machines and/or parts sold or put into commercial use in a country where the same are covered by any of said patents or applications shall be subject to royalty even though manufactured in a country where such protection does not exist; the intent of this agreement being that royalty shall be paid in all cases where any of the license rights of manufacture, use or sale herein granted and agreed to be granted to the Gramophone Company are or were exercised by it or by its subsidiary or associated Companies or its sub-licensees, such royalty to be based upon the sales price (as hereinafter defined), or other compensation received by the Gramophone Company or its subsidiary or associated Companies or its sub-licensees for the apparatus covered by such license rights. Said royalty shall (except as hereinafter expressly provided) be based upon the aggregated total sales of such talking machines and/or parts thereof, as above mentioned, during each "royalty period" during the continuance hereof (the first royalty period being from the date of the first sales thereof by them to and including December 31, 1926, and each succeeding twelve months' period of the continuance of this agreement being a royalty period), the rates of royalty payable upon such sales during each royalty period being as follows:

Upon the first $300,000 of such sales in each royalty period	5%
Upon the second $300,000 of such sales	4%
Upon the third $300,000 of such sales	3%
Upon the fourth $300,000 of such sales	2%
Upon all such sales above $1,200,000	1%

* * * * * * *

2. The Western Company agrees to credit the said initial payment of Forty-two Thousand Dollars ($42,000) made by the Gramophone Company to the Western Company upon

the execution of this agreement against royalties accruing hereunder on account of said apparatus so sold, leased or put into commercial use hereunder during the first royalty period as above defined.

* * * * * * * *

[fol. 5547] 8. The Gramophone Company agrees for itself and its subsidiary and associated Companies, subject to the provisions hereof (including the provisions of Article VI hereof), to pay to the Western Company as royalty for the first royalty period aforesaid a minimum of Forty-two thousand dollars ($42,000), against which the Western Company shall credit as before stated the said initial payment of Forty-two thousand dollars ($42,000) made by the Gramophone Company upon the execution of this agreement and recited as part of the consideration hereof; and the Gramophone Company further agrees for itself and its subsidiary and associated Companies, subject to the provisions hereof, to pay or cause to be paid to the Western Company as royalty for each succeeding twelve months' royalty period (after the said first royalty period) during the further continuance of this agreement a minimum of Forty-two thousand dollars ($42,000). The amount (if any) necessary in addition to the royalty accruing at the regular rates for each twelve months' period in order to make up said minimum of Forty-two thousand dollars ($42,000) for that period shall be payable at the time the last quarterly statement covering such period is due. Royalties paid by the Gramophone Company and/or its subsidiary and associated companies in excess of Forty-two Thousand Dollars ($42,000) for any such royalty period shall not be credited against the minimum required for any other period. The said minimum sums shall be paid free from any deduction, including income tax, other than American income tax, if any, but any excess of the royalties in any royalty period over Forty-two Thousand Dollars ($42,000) shall be subject to deduction of British income tax on such excess.

* * * * * * * *

2. The Western Company warrants that it now owns or controls and will during and throughout the continuance

of this agreement regularly receive from the American Telephone and Telegraph Company, a New York corporation, and Bell Telephone Laboratories Incorporated, a New York corporation (both of which are associated companies of the Western Company), all rights for the territory covered by this agreement which are or may hereafter be owned, acquired or controlled by said associated companies, or either of them, relating or applicable to mechanical talking machines and that the Gramophone Company will by virtue of this agreement be entitled to and will receive licenses of the character and scope herein provided under all patents, applications for patents and similar applications in the territory which are now owned and controlled [fol. 5548] or which may hereafter during the term of this agreement be owned or controlled by the Western Company or by its said associated companies, or either of them, as if the same were expressly referred to and included in Section 1 of Article II hereof, all of which are to be deemed as comprised in any expression in this agreement or license contained referring to the patents of the Western Company or the Western Company's improvements by those or any similar or analogous descriptions.

* * * * * * *

Article XII

Duration and Termination of Agreement, Its Construction and Assignability

1. This agreement, unless otherwise terminated as herein provided, shall continue in force until January 1st, 1936, and thereafter until terminated by either party on six months' written notice to the other of intention to terminate the same, and upon the expiration of said period of six months from such notice this agreement shall terminate, provided that no such notice shall be given by the Western Company prior to January 1st, 1941, and upon the expiration of said period of six months from such notice this agreement and all licenses herein granted and agreed to be granted and all obligations of the respective parties hereunder shall terminate, except as herein otherwise specifically provided.

* * * * * * *

The Territorial Limits within which the Rights hereinbefore granted and agreed to be granted are to be operative, subject to the provisions of this agreement and subject in particular to Section 3 of Article II.

The territory covered by this agreement includes all lands and islands in that portion of the globe lying eastward from 30 degree West longitude to 170 degree West longitude, including, as it does, all the countries of Europe and the Islands adjacent thereto, including England, Ireland, Scotland, Wales, and Iceland, all the countries of Africa and the islands adjacent thereto, all the countries and islands of Australasia, including the Australian Archipelago and the islands of the South Sea, and shall include all the countries of Asia except the Chinese Empire, the Japanese Empire, Manchuria, Annam, Cochin China, Tonking, Cambodia and Corea; it shall include also the islands adjacent to Asia except the Philippine Islands, Formosa, and those islands whether in Chinese or foreign possession [fol. 5549] lying in such relation to the coast of China as to be geographically or commercially a part of the Chinese Empire and excepting also all islands whether in Japanese or foreign possession lying in such relation to the Japanese Empire as to be geographically or commercially a part of the Japanese Empire.

* * * * * * * *

[fol. 5550] This is a contract dated the 19th day of January, 1926, between the Western Electric Company, Inc., and The Gramophone Company, Ltd., an English stock company of Hayes, Middlesex. In addition to the portions of this contract appearing in full above, it contains provisions in substance as follows:

Section 2 provides for the furnishing of similar information and samples of future developments and inventions. Section 3 provides for the furnishing by Western to Gramophone of certain special assistance and advice in connection with manufacturing methods and apparatus, additional models or samples of apparatus adapted for use under the licenses, and services of experienced engineers to assist Gramophone; the assistance and technical information to be used by Gramophone Company and its subsidiary or associated companies and all inventions made by Western's engineers assisting Gramophone to be owned by Western but licensed to Gramophone. Section 4 provides in connection with the services rendered and additional samples or models to be furnished by Western, that the Gramophone Company shall reimburse Western for the full cost thereof. Section 5 is printed in full above (pp. 2-5).

Section 1 of Article II is printed in full above. Section 2 limits the application of the licenses to the particular embodiments of such inventions for which said licenses are expressed as granted. Section 3 provides that no rights are agreed to be granted to any use of said inventions for other than mechanical talking machines and are not to include uses for reproduction of sound in coordination with motion pictures or for talking machines or parts thereof [fol. 5551] for other than entertainment or right to sell for export to countries outside the territory licensed. Section 4 grants to Gramophone, subject to the reservations and exceptions above, in the territory referred to in the schedule, licenses under the patents referred to in Section 1 of Article II to make, use and sell for entertainment or educational purposes mechanical talking machines. Section 5 provides that the licenses shall be exclusive to Gramophone within the restricted fields, uses and purposes expressed as granted, but nothing therein contained shall restrict or limit Western in granting or exercising rights for other fields, uses and purposes. Section 6 covers the right of Gramophone to grant sub-licenses. Section 7 reserves to Gramophone the right to sell apparatus already manufactured in case of termination of contract (pp. 5-9).

Article III is printed in full above.

Part of Section 1 of Article IV is printed in full above. The remainder of this section excepts certain transactions from royalty payment, defines "total sales" and specifies the method of *arising* at the amount of such total sales. Section 2 printed in full above. Section 3 decreases the amount of royalty to be paid on sale of machines at retail price of $100 or less embodying no inventions of Western except the sound box and its component parts. Section 4 provides that talking machines not embodying any inventions licensed hereunder except those relating to needles or inventions which Gramophone shall not have had notice in writing of the rights of Western prior to the date of sale or lease are not subject to royalty. Section 5 provides that royalties do not apply to the sale of tungsten [fol. 5552] needles or needles embodying no inventions or improvements licensed hereunder. Section 6 provides that no apparatus sold shall be subject to more than one royalty. Section 7 provides that Gramophone may have parts manufactured outside of defined territory by people licensed by Western, the amount of royalties paid by such manufacturers to be deducted from Gramophone's royalties. Section 8 is printed in full above. Section 9 gives certain relief to Gramophone if use of patents is interrupted by injunction. Section 10 provides for the keeping and auditing of records by Gramophone (pp. 10-20).

Article V provides for the termination of the contract in case of default (pp. 20-22).

Article VI grants certain relief to Gramophone in case patents are not protected by Products and reserves to Gramophone the right to contest the validity of same upon expiration of the contract (pp. 22-25).

Article VII provides for the marking of apparatus.

Aritcle VIII contains warranty by Western, Section 2 of which is printed in full above.

Article IX grants relief to each party in certain contingencies.

Article X provides for addresses for notices, and Article XI for arbitration (pp. 26-31).

Pages 33 to 38 contain the schedule referred to in the contract, of which page 37 is printed in full above.

[fol. 5553] EXTRACTS FROM EXHIBIT X-393

Agreement made this 10th day of August, 1927, between Electrical Research Products Inc., a Delaware corporation, party of the first part, hereinafter called the Products Company, and The Gramophone Company, Limited, an English joint stock company of Hayes, Middlesex, party of the second part, hereinafter called the Gramophone Company:

* * * * * * * *

Whereas, heretofore the Western Electric Company, Incorporated, a corporation of New York, hereinafter called the Western Company, and the Gramophone Company entered into a certain agreement in writing dated the 19th day of January, 1926 (hereinafter referred to as the principal agreement), wherein and whereby the Western Company granted to the Gramophone Company certain rights and licenses with respect to acoustic apparatus;

* * * * * * *

Article II

Licenses to the Gramophone Company

1. The licenses herein granted and agreed to be granted by the Products Company are under all patents or like privileges in any part of said territory and applications for patents or like privileges in any part of said territory for inventions or improvements (whether machines, processes or compositions of matter) relating or applicable to mechanical or electrical talking machines or parts thereof which are now or which may during the continuance of this agreement be owned or controlled by the Products Company or in respect of which it now has or during the continuance of this agreement may acquire the right to grant such licenses, specifically including all of the patents and applications specified or referred to in the Schedule hereto. Patents, applications for patents and like privileges in said territory for inventions relating or applicable to machines, processes or compositions of matter adapted and intended to be used for the manufacture of mechanical or electrical talking machines (as distinguished from those relating to the talking machines themselves) are also included in said licenses so far as the Products Company has acquired the same subsequent to October 1, 1925, or shall hereafter [fol. 5554] acquire the same, and only for use in such manufacture of mechanical or electrical talking machines and not generally. If any patents or patent applications for any inventions which are not applicable to mechanical or electrical talking machines shall have been included in said Schedule, it shall be deemed an inadvertence and shall not enlarge the rights of the Gramophone Company hereunder; nor shall the omission from said Schedule of any of the patents, applications for patents or like privileges, referred to in this section, affect the rights of the Gramophone Company thereunder.

* * * * * * *

Article IV

Royalties to be Paid by the Gramophone Company and/or Its Subsidiary and Associated Companies

1. The Gramophone Company agrees for itself and its subsidiary or associated Companies, subject to the provisions hereof, to pay or cause to be paid to the Products Company as compensation for the licenses herein granted and agreed to be granted and for the obligations it has herein undertaken, including the technical information and assistance to be rendered by the Products Company hereunder, a royalty as hereinafter specified upon the total sales of all talking machines and parts thereof embodying any of the inventions or improvements herein licensed or agreed to be licensed to the Gramophone Company which have been or which shall hereafter be sold, leased or put into commercial use by the Gramophone Company and/or its subsidiary or associated Companies, and/or by its sub-licensees, where such talking machines and/or parts at the time and place of either the manufacture, use or sale thereof are covered by any patent or similar protection then in force, or any application for patent or similar protection then pending under which the Products Company herein licenses or agrees to license the Gramophone Company. Talking machines and/or parts manufactured under said licenses in any country where the same are covered by any of said patents or applications then in force shall be subject to royalty even though not protected in the country of sale or use, and similarly talking machines and/or parts sold or put into commercial use in a country where the same are covered by any of said patents or applications shall be subject to royalty even though manufacured in a country where such protection does not exist; the intent of this agreement being that royalty shall be paid in all cases where any of the license rights of manufacture, use or sale herein granted and agreed to be granted to the Gramophone Company are or were exercised by it or by its subsidiary or associated Companies or its sub-licensees, such [fol. 5555] royalty to be based upon the sales price (as hereinafter defined) or other compensation received by the Gramophone Company or its subsidiary or associated Companies or its sub-licensees for the apparatus covered by

such license rights. Said royalty shall (except as hereinafter expressly provided) be based upon the aggregated total sales of such talking machines and/or parts thereof, as above mentioned, during each "royalty period" during the continuance hereof (the first royalty period being from the date of the first sales thereof by them to and including December 31, 1928, and each succeeding twelve months' period of the continuance of this agreement being a royalty period). Provided that any such apparatus or talking machines embodying such apparatus made in one portion of the said territory and exported to another such portion to a subsidiary or associated Company of the Gramophone Company is not for the purposes of this agreement to be deemed as sold, leased or put into commercial use unless and until the same is in fact so sold, leased or put into such use by such subsidiary or associated Company. In cases of sales of combinations of acoustic reproducing and/or acoustic amplifying apparatus with electrical reproducing apparatus, the royalty hereby provided to be paid by the Gramophone Company to the Products Company shall be paid as provided herein upon the sales of such combinations in lieu of the royalty which would be payable by the Gramophone Company to the Products Company on the acoustic part or parts of such combinations, pursuant to the provisions of Section 1 of Article IV of the principal agreement.

The expression "total sales" as used herein means the total amount calculated on the principles in this Article IV mentioned realized by the Gramophone Company and its subsidiary or associated Companies, including any sublicensees aggregated during each royalty period as the sales price, rental or other compensation for said apparatus so sold, leased or put into commercial use by them hereunder. The expression "sales price" as used herein means in the case of wholesale sales the actual wholesale price, and in the case of sales made at retail prices by the Gramophone Company or its subsidiary or associated Companies the wholesale price to dealers ruling at the time in the country where such retail sale is made, or if there be more than one such wholesale price the higher or highest of such prices. In any country where there shall be no such wholesale price, the sales price shall be deemed to be the retail price less forty per cent (40%) thereof.

In order to arrive from time to time at the amount of such total sales and of the royalty in respect thereof payable [fol. 5556] able to the Products Company as aforesaid, the following provisions shall have effect, that is to say: where sales (including leasing and putting into commercial use) are effected in any currency, other than sterling, the total amount of such last mentioned sales during the three calendar months' period mentioned in Section 10 of this Article shall, in the first place, be converted into Sterling at the rate of exchange to be arrived at by taking the average of the mean quotations for such exchange as given in The Times newspaper, London, England, for the last business day of each month of the period. The amount of the Sterling as so ascertained shall then be added to the total amount of the sales effected in Sterling during the same period. The grand total as so ascertained shall then be converted into Dollars at the mean rate of the New York exchange as given in The Times for the last business day of such period. The Dollars, as so converted, shall be the dollar value of such sales on which royalty payable to the Products Company is to be calculated as aforesaid.

The said royalty shall be (a) a minimum royalty such that after all deductions for taxes or otherwise (other than British Income Tax imposed in respect of the amount of the Royalty) which the Gramophone Company would but for this provision be entitled for any cause to make, the Products Company shall receive a minimum amount of $15,000 for the first royalty period from the date hereof to the 31st December, 1928, and thereafter of $10,000 per year less British Income Tax as aforesaid and (b) an additional royalty calculated at such a rate that the Products Company shall receive a net amount, less British Income Tax, equal to 5 per cent of the said "total sales" during the first royalty period in excess of $300,000, and thereafter of the said "total sales" in excess of $200,000 per annum, and (c) such an additional sum as shall be equal to one-half of the amount so deducted for British Income Tax as aforesaid upon the said royalties.

2. The Gramophone Company agrees to exercise all reasonable and proper diligence to exploit and further the sale of apparatus pursuant to the licenses granted hereunder, to the end that such sales shall reach appreciable proportions as soon after the execution hereof as may be

reasonably possible. The Gramophone Company, however, agrees to pay to the Products Company on or before December 1, 1927, the said sum of Fifteen Thousand Dollars ($15,000) for the period from the date hereof to and including December 31, 1928, and for each calendar year thereafter during the term of this agreement on or before the 1st day of January of such year the said minimum [fol. 5557] sum of Ten Thousand Dollars ($10,000), (and pro rata for any fraction of such year), which payments shall be applied pro tanto in discharge of the royalties payable for said periods respectively under Section 1 of this Article IV hereof. The provisions of the last paragraph of Section 1 of this Article with regard to British Income Tax shall also apply to the payments in this Section 2 mentioned.

* * * * * * *

1. This agreement shall continue in force so long as the principal agreement is in effect and shall terminate whenever the principal agreement is terminated.

[fol. 5558] This contract, in addition to the portions quoted in full above, contained provisions, in substance as follows:

A recital of assignment of contract with Western Electric Company of January 19, 1926, to Electrical Research Products on January 3, 1927. Further recital that Gramophone Company desires to acquire licenses with respect to the reproduction of sound under the inventions or improvements of the Products Company (p. 2).

Article I provides that the Products Company furnish certain engineering and technical information and assistance, certain specifications and samples of each electrical talking machine part of each of Products' present preferred types, and such specifications and models of further electrical talking machines as Products might thereafter produce or acquire. It further provides that Products will assist Gramophone Company in its manufacturing processes (pp. 2–5).

Section 1 of Article II printed in full above. Section 2 recognizes that the inventions of some of said patents and applications may be applicable to other apparatus than that which Gramophone is licensed to make and that said licenses do not cover all embodiments of said inventions but are limited to the particular ones for which said licenses are expressed as granted. Section 3 provides that no rights are granted or agreed to be granted to Gramophone with respect to (a) reproduction of sound from other than stylus operating talking machine records; (b) for talking motion pictures; (c) for apparatus in theatres or other places where motion pictures are regularly publicly shown; (d) in [fol. 5559] combination with or use as a Public Address System; (e) for other than entertainment or educational purposes; or (f) in combination or use with radio receiving apparatus or parts. Section 4 provides that with these exceptions it is granted Gramophone in the territory described any and all patents and applications referred to in section 1 of Article II, as follows: (a) to make, use and sell for entertainment or educational purposes, devices or parts for the electrical reproduction of sound from stylus operating commercial talking machine records; and (b) to make mechanical talking machines or acoustic parts thereof for assembly for use for entertainment and social purposes in combination with devices or parts thereof for the electrical reproduction of sound from stylus operating commercial talking machine records. Section 5. Licenses granted to Gramophone, so far as Products has right to do so, are exclusive, and to the extent that they cannot grant exclusive licenses, they are non-exclusive. So far as exclusive, they shall not preclude exploitation by Products of devices or parts for electrical reproduction of sound in combination with apparatus for projection of motion pictures. Section 6 gives right to Gramophone to grant sub-licenses (pp. 5–9).

Article III

Licenses to the Products Company

1. The Gramophone Company hereby grants and agrees to grant to the Products Company (so far as and to the extent that the Gramophone Company has or may for the time being have any right and power in view of its existing and/or future rights and power and/or contractual obligations so to do) non exclusive licenses in the said territory under all patents applications for patents and inventions [fol. 5560] relating or applicable to electrical talking machines which the Gramophone Company now or hereafter during the continuance of this Agreement shall own or con-

trol or in respect of which it has or during the continuance of this Agreement shall acquire the right to grant such licenses to make and cause to be made and to use lease and sell apparatus systems and devices embodying any or all such inventions but only for uses and purposes and in fields which are non-competitive with the respective businesses as heretofore carried on by the Gramophone Company and/or its subsidiary and associated Companies. The said licenses are to be free from royalty and assignable by the Products Company only to its successors in business or to any Corporation directly or indirectly controlling or controlled by the Products Company.

2. If the Gramophone Company now or during the continuance of this agreement beneficially owns or controls patent rights in any countries outside the said territory for improvements in or applicable to electrical Talking Machines (excluding in any case the Lumiere Loud Speaker) and is freed by third parties entitled, as it considers and contends, to the preferential right to acquire such patent rights exclusively, the Gramophone Company will upon written request and at the expense of the Products Company at any time during the continuance of this agreement to the extent, if any, that the Gramophone Company may, having regard to what is hereinbefore stated consider it has the right so to do but not further or otherwise, grant to the Products Company non-exclusive licenses under any such patents, to manufacture, use, lease and sell apparatus systems and devices embodying any or all of such inventions but only for uses and purposes and in fields which are non-competitive with the respective businesses as heretofore [fol. 5561] carried on by the Victor Talking Machine Company of Camden, New Jersey, U. S. A., and/or its associated and subsidiary Companies. Said licenses if granted shall be free of royalty or other consideration than this agreement and for the period of the continuance of this agreement if such patent rights shall so long subsist, and shall be assignable only to the successors in business of the Products Company and the Products Company or its said successors shall have the right to sub-license the Western Company and/or its successors in business thereunder. It is to be understood that the Gramophone Company considers it is not now in a position to grant any such license.

Sections 1 and 2 of Article IV printed in full above. Section 3 provides Products may terminate contract if amount of royalty for any year after 1928 does not equal $10,000, or if Gramophone does not sell, lease or put into commercial use apparatus exclusively licensed to it to an amount in the aggregate at least equal to 60% of the total dollar sales in the field exclusively licensed. Sections 4, 5 and 6 provide that royalties do not apply on certain apparatus specified. Section 7 covers the situation resulting from injunctions preventing Gramophone from using patents licensed and for termination thereof in such case at the election of Gramophone. Section 8 provides for records and audits of records to be kept by Gramophone (pp. 11-18).

Article V provides for termination in case of default (p. 19).

Article VI gives certain rights to the Gramophone Company in case patents exclusively licensed to it are not pro-[fol. 5562] tected by Products (pp. 20-22).

Article VII provides for the marking of apparatus (pp. 22, 23).

Article VIII contains certain warranties by Products Company (pp. 23, 24).

Article IX relieves each party in contingency of strikes, riots, fires, insurrection, war, etc. (p. 24).

Article X pertains to notices.

Article XI provides for arbitration (pp. 25, 26).

Section 1 of Article XII is printed in full above.

Pages 27-40 contain schedule of patents referred to in Article II.

[fol. 5563] EXTRACTS FROM EXHIBIT X-394

Agreement for Western Electric Sound System, Plan B2-N. D. P.-52W between Electrical Research Products, Inc. (subsidiary of Western Electric Company, etc. (Form 315TS).

* * * * * * *

16. Products agrees that subject to the provisions hereof it will at its own expense defend any and all actions and suits which may during the term hereof be brought against the Exhibitor for infringement of any United States patent or patents relating to the apparatus or equipment furnished by Products hereunder, on account of any use of

said apparatus or equipment by the Exhibitor for the purpose and in the manner contemplated by this agreement and Products will pay or satisfy all judgments and decrees for profits, damages and/or costs which may be finally awarded against the Exhibitor by the Court of last resort in any such action or suit on account of any such infringement, provided that the Exhibitor shall give Products prompt notice (with written confirmation) of such action or suit, full information and all reasonable cooperation in connection therewith and full opportunity to defend the same, and provided, further, that this agreement shall not extend to any infringement or claim of infringement on account of the use of any of said equipment in combination with any apparatus or thing not furnished by Products, except films and records produced under licenses from Products where the alleged infringement resides in characteristics thereof or in methods or apparatus for producing the same specifically prescribed by Products and that the liability of Products under this agreement shall in no case exceed the total amount paid hereunder by the Exhibitor to Products. To the end that Products may protect itself and the Exhibitor from claims for infringement of patents, it is agreed that Products may at any time substitute for any of the equipment or parts thereof which may have been furnished to the Exhibitor hereunder, other equipment or parts which Products shall determine to be suitable for performing the function required, such substitution to be made without additional expense to the Exhibitor and with the least possible inconvenience to it or interruption of its business.

[fol. 5564] EXTRACTS FROM EXHIBIT X-395

Agreement Between American Telephone and Telegraph Co. and the Bell Telephone Company of Canada, Ltd., Covering Services, Licenses, and Privileges, Dated May 16, 1923

Whereas, by an agreement made on the first day of November, 1880, between the Canadian Telephone Company, Limited, The American Bell Telephone Company, The Bell Telephone Company of Canada and The American Speaking Telephone Company, the said The American Bell Telephone Company among other things agreed that it would, on the receipt of the same, execute and deliver or cause to be executed and delivered to the Canadian Telephone Company, Limited, due and sufficient instruments of assignment and conveyance vesting in it the whole right, title and interest of every kind and nature in, under or connected with the certain letters patent of the Dominion of Canada theretofore issued to Alexander Graham Bell, to wit: No. 7,789, August 22, 1877, and in and to any and all other letters patent or patent rights or licenses to use patented inventions of, or in, said Dominion of Canada which it, the said The American Bell Telephone Company, has or may hereafter acquire for telephones or telephonic apparatus or for instruments or devices applicable in any manner for use in connection with telephones or telephonic apparatus; and,

Whereas, the American Telephone and Telegraph Company has succeeded to the obligations of The American Bell Telephone Company under the said provision of the said contract, and The Bell Telephone Company of Canada, Limited, has succeeded to the rights of the Canadian Telephone Company, Limited, under the said provision of the said contract; and,

Whereas, neither The American Bell Telephone Company nor its successor, the American Telephone and Telegraph Company, is obligated by the terms of the said contract to patent its inventions in the Dominion of Canada; and,

Whereas, the American Telephone and Telegraph Company desires to be relieved from its obligations to assign to The Bell Telephone Company of Canada, Limited, any and all letters patent of the Dominion of Canada which it may hereafter acquire for telephones or telephonic apparatus or for instruments or devices applicable in any manner for use in connection therewith, and The Bell Telephone Company of Canada, Limited, desires to be made secure in the right to use all such inventions of the American Telephone and Telegraph Company relating to said telephones or telephonic apparatus through licenses under patents to be issued therefor:

* * * * * * *

First. The Canadian Company hereby releases and discharges the American Company from all further obligations under the provisions of the second section of the said contract of November 1, 1880, which obligations are referred to in the preamble hereof;

[fol. 5565] Second. The American Company agrees with the Canadian Company that it will (1) furnish the Canadian Company copies of specifications of all applications for United States patents for inventions relating to telephones and telephonic appliances and equipment, including cables, or applicable for use in the telephone system of the Canadian Company, which the American Company or the Western Electric Company, Incorporated, also a corporation of said State of New York, may hereafter file in the United States of America; (2) upon the request of the Canadian Company, patent or cause to be patented in the Dominion of Canada and Newfoundland such of the said inventions designated by the Canadian Company as it may have the right to have so patented; (3) and grant or cause to be granted to the Canadian Company licenses to make (including the right to have others make and manufacture for it), use and sell under each of such patents of the Dominion of Canada and Newfoundland; which licenses shall be non-exclusive and shall continue until the ends of the terms of such patents, respectively.

The American Company may, if and so long as it elects to do, perform its obligations under this second section of this contract through an arrangement to be made by it with the International Western Electric Company, Incorporated, hereinafter called the International Company, whereby such copies of specifications of applications shall be furnished to the International Company, and the International Company shall then proceed to take out the patents in question and to grant to the Canadian Company the licenses above provided for pursuant to the procedure outlined in a contract dated August 27, 1919, between said International Western Electric Company, Incorporated, Western Electric Company, Limited, the Northern Electric Company, Limited, and the Canadian Company.

* * * * * * *

[fol. 5566] Fourth. The American Company for the term of this contract, further agrees:

1. That it will afford to the Canadian Company the right to acquire and use, as and when completed and standardized all new and approved apparatus and developments in the art of telephony resulting from the research and development work conducted by or under the direction of the American Company and hereinafter referred to; provided, however, that where the use of such apparatus and/or developments involves the use of Canadian patents not owned or controlled by the American Company, the American Company does not undertake to secure for the Canadian Company rights under such patents.

2. That it will continuously prosecute its fundamental work of research, investigation and experimentation in the development of the art and science of telephony and in the development of plans, methods, systems and ideas designed to promote safety, economy and efficiency in the equipment, construction and operation of telephone plants, including that of the Canadian Company; provided, however, that if the American Company should discontinue prosecuting its said fundamental work of research, investigation and experimentation for the Associated Companies of the Bell System in the United States of America, then its obligation under this paragraph shall cease; but in such event a reasonable amount to be agreed upon between the parties will be deducted from the compensation hereinafter provided for.

3. That it will furnish to the Canadian Company advice and assistance in general engineering, plant, traffic, operating, commercial, accounting (including the auditing of accounts), patent, administrative and other matters, including legal matters so far as reasonably practicable in view of the difference between the legal systems of the Dominion of Canada and of the United States, pertaining to the efficient, economical and successful conduct of the telephone business of the Canadian Company; such advice and assistance to be given through the issuance to it of data, discussions and conclusions, including bulletins, books, circular letters, standard specifications and blue prints, and through the performance of specific work in cases of unusual magnitude and complexity, rendering such work necessary, as well as through personal conferences between

officials and experts of the respective companies and through extending to representatives of the Canadian Company the privilege of attending conferences of the American Company and its Associated Companies.

[fol. 5567] 4. That it will furnish to the Canadian Company advice and assistance in its financing for the extension, development or improvement of its telephone system and in the general matter of its finances, including assistance in securing funds on fair terms as and when needed for new construction and other expenditures, and active assistance in the marketing of the Canadian Company's securities, but not including any obligation on the part of the American Company to advance its own funds or to use its own credit for these purposes.

5. That for the betterment of the service throughout its territory the Canadian Company shall be entitled to extend to those telephone companies in the Dominion of Canada and Newfoundland with which it may wish to exchange data and advice, on such terms and conditions as it may determine, the benefit of such engineering and other technical advice and information in respect of construction, maintenance, repair and operation of plant as it may receive from the American Company.

Fifth. The Canadian Company further agrees that it will pay to the American Company at the office of the latter at 195 Broadway, New York City, in each year, beginning with the year 1923, the amount stated below:

The initial and each succeeding annual payment hereunder shall be the sum of Three hundred thousand dollars, provided, however, that whenever the gross telephone revenues of the Canadian Company for any calendar year shall be more than twenty million dollars, by two million dollars, or by a multiple thereof, then the annual payment for such year shall be an amount equal to the initial annual payment above fixed plus ten per cent thereof where such increase of revenue is two million dollars and where such increase is a multiple of two million dollars, plus an increase equal to a like multiple of ten per cent thereof.

If the gross telephone revenues of the Canadian Company for any calendar year shall be less by two million dollars, or any multiple thereof, than the then basis for the computation of the annual payment hereunder, then and in such event for each such two million dollars of decrease, or any multiple thereof, the annual payment hereunder shall [fol. 5568] be decreased by ten per cent of the initial annual payment hereunder or by a like multiple of such ten per cent, provided, however, that the annual payment hereunder shall in no event be less than the sum of three hundred thousand dollars, and provided further that the above provisions as to increase in the said annual payment on account of increases in revenue shall continue to be applicable; it being the intention of the parties that the annual payment shall not be less than three hundred thousand dollars, and that with this minimum it shall be increased or decreased, as the case may be, as above provided to correspond with increases or decreases in total gross annual telephone revenues.

* * * * * * *

Seventh. The term of this contract shall be ten years from the 1st of January, 1923, and thereafter until either party hereto shall give to the other one year's written notice of its election to terminate the same.

[fol. 5569] In addition to the provisions of this contract printed in full above, it contains, in substance, the following provisions:

Section 3. American Company agrees in acquiring from others United States patents, to make reasonable efforts to acquire at the same time such rights for Canada and Newfoundland. Where such additional rights can only be acquired at additional expense, they will be acquired only if authorized by the Canadian Company and at its expense (pp. 3 and 4).

Section 6. Right granted the American Company to cancel contract in case of default. Contract personal to Canadian Company and any transfer, including transfers by action of law, will be grounds for cancellation of contract by American Company (pp. 7 and 8).

Contract executed May 16, 1923.

[fol. 5570] EXTRACTS FROM EXHIBIT X-396

General Contract

This agreement, made this first day of November, 1880, by and between The Canadian Telephone Company, Limited, a corporation organized and existing under the laws of the Dominion of Canada, of the first part, The American Bell Telephone Company, a corporation organized and existing under the laws of the State of Massachusetts, of the second part, The Bell Telephone Company of Canada, a corporation organized and existing under the laws of the Dominion of Canada, of the third part; and The American Speaking Telephone Company, a corporation organized and existing under the laws of the State of New York, for itself and for the Gold and Stock Telegraph Company, and The Western Union Telegraph Company, also corporations organized and existing under the laws of the State of New York, of the fourth part, witnesseth:

First. The party of the first part hereby agrees that it will, from and out of, its capital stock of Three Hundred Thousand Dollars, divided into Three Thousand shares of the par value of One Hundred Dollars each, cause to be forthwith issued and delivered to the party of the second part Fifteen Hundred shares thereof of the par value of One Hundred and Fifty Thousand Dollars, in full consideration of and payment for the certain letters patent and patent rights in the Dominion of Canada herein stipulated to be assigned and conveyed to the party of the first part by the party of the second part.

Second. The party of the second part in consideration of the issuance and delivery to it of the said stock as herein provided, hereby agrees that it will on receipt of the same execute and deliver or cause to be executed and delivered to the party of the first part due and sufficient instruments of assignment and conveyance vesting in said party of the first part the whole right, title and interest of every kind and nature in, under or connected with the certain letters patent of the Dominion of Canada heretofore issued to Alexander Graham Bell, towit: No. 7789 August 22nd 1877; and in and to any and all other letters patent or patent rights or licenses to use patented inventions of or in said Dominion of Canada which it the said party of the second part has or may hereafter acquire for telephone or telephonic apparatus or for instruments or devices applicable in any manner for use in connection with telephones or telephonic apparatus.

[fol. 5571] Third. The party of the first part hereby further agrees to issue from and out of its capital stock as aforesaid, and to forthwith deliver to the party of the fourth part Five Hundred (500) shares thereof, of the value of Fifty Thousand Dollars, in full consideration of and payment for the interests in Letters Patent and Patent rights in said Dominion of Canada, herein stipulated to be assigned and conveyed by the said party of the fourth part; and the said Gold and Stock Telegraph Company to the party of the first part.

Fourth. The party of the fourth part in consideration of the issuance and delivery to it of the said Five Hundred shares of the capital stock of the party of the first part, hereby agrees that it will on receipt of the same, together with the said Gold and Stock Telegraph Company, duly assign, transfer and convey to the said party of the first part, by due and sufficient instruments and writings, all such interests as it, and the said Gold and Stock Telegraph Company, or either of them, now own or may hereafter acquire in any patent rights or letters patent of said Dominion of Canada for inventions or improvements in telephones or telephonic apparatus or for instruments or devices applicable in any manner for use in connection with telephones or telephonic apparatus, and particularly in the certain letters patent, heretofore issued in said Dominion of Canada to Elisha Gray, Thomas A. Edison and George M. Phelps as follows, towit:

Elisha Gray, No. 4948; July 7, 1875.
No. 4949, July 7, 1875.
No. 9480, Dec. 12, 1878.
No. 9481, Dec. 12, 1878.
No. 5496, Dec. 14 ,1875.
No. 6101, May 23, 1876.
No. 9482, Dec. 12, 1878.
No. 9483, Dec. 12, 1878.

No. 6201, June 16, 1876.
No. 8366, Jan. 26, 1878.
No. 8872, June 4, 1878.
Thomas A. Edison, No. 8026, Oct. 17, 1877.
No. 9923, May 1, 1879.
No. 9922, May 1, 1879.
G. M. Phelps, No. 10416, Sept. 2d, 1879.

[fol. 5572] And the said party of the first part hereby undertakes and agrees to pay to the party of the fourth part, the sum of Two Thousand Dollars per year for seven years beginning January 1st, 1881 and ending January 1st, 1887, in consideration for the assignment of the Telephone patents of Thomas A. Edison in the Dominion of Canada by the party of the fourth part to the party of the first part.

Fifth. It is further agreed by and between the parties hereto that the capital stock of the party of the first part, amounting to One Thousand shares of the par value of One Hundred Thousand Dollars remaining after the issues and deliveries hereinbefore provided for shall be issued and sold by the party of the first part as required in order to secure funds for the purchase and manufacture by it of telephones and telephonic apparatus, and that of said One Thousand shares of stock of the party of the first part; seven hundred and fifty shares thereof may be subscribed for and taken by the party of the second part, in paying the par value of Seventy-five Thousand Dollars therefor, and the remaining two hundred and fifty shares thereof may be subscribed for and taken by the party of the fourth part, in paying the par value of Twenty-five Thousand Dollars therefor, or in the like proportion if less than the whole one thousand shares shall be issued at any one time; the parties of the second and fourth parts hereby agreeing that if they or either of them shall fail to take and pay for their respective portions of the said stock herein provided for within the period of sixty days after an opportunity shall have been afforded them by the party of the first part to so take and pay for the same, the said party of the first part may thereupon proceed to sell and deliver to others than the parties of the second and fourth parts, the portion of stock which the party or parties hereto who shall have so failed to take and pay for the same would otherwise have been entitled to subscribe for and receive.

The parties of the second and fourth parts hereby agree between themselves that they will neither of them without first offering the same for sale to the other, sell or dispose of any of the stock of the party of the first part which they [fol. 5573] may respectively acquire under this article except such portion of said stock (Thirty-seven Thousand Five Hundred Dollars) as the party of the second part is under contract with Alexander M. Bell and Charles Williams Junior bound to transfer to said Bell and Williams in part consideration for the patents purchased from them, and not exceeding ten shares each to the Directors of said Company.

Sixth. The parties of the second and fourth parts hereby severally agree with the party of the first part that each of them respectively will forthwith sell, transfer and deliver to the party of the first part all the certain telephones and telephonic apparatus and plant belonging to each of them respectively within the said Dominion of Canada, and the said party of the first part hereby agree- that it will take the same and pay the parties of the second and fourth parts respectively therefor an amount in cash equal to the actual cost of the said telephones and telephonic apparatus to them respectively.

Seventh. The party of the third part from and out of its capital stock of Five Hundred Thousand Dollars, divided into five thousand shares of the par value of One Hundred Dollars each (whereof stock to the amount of One Hundred and Sixty-seven Thousand Dollars is to be issued to the party hereto of the first part in part consideration of an exclusive right to carry on the telephone business in said Dominion of Canada under the patents and patent rights of said party of the first part, and the remainder thereof is hereafter to be issued as may be required for the purchase and maintenance of telephone lines and exchanges, and the material necessary therefor), hereby agrees to forthwith issue and deliver to the party of the fourth part for the said Western Union Telegraph Company, One Hundred shares of said capital stock of the party of the third part in payment for the certain telephone exchanges of the said Western Union Telegraph Company situated in the Cities of St. John, New Brunswick and Halifax, Nova Scotia, and to issue to the party of the second part stock in payment for telephone exchanges as follows: For the exchanges purchased by said party of the second part, of the Dominion Telegraph Company, Seven Hundred and Fifty shares; for the exchange at London, Fifty shares; for the exchange at Windsor, Twenty-five shares; which said Telephone exchanges the said party of the third part agrees to take, and the parties of the second and fourth parts respectively agree to cause to be sold, transferred and delivered to the party of the third part.

* * * * * * *

[fol. 5574] EXHIBIT X-397

American Telephone and Telegraph Company

I hereby certify that the following is a true and correct copy of a resolution adopted by the Executive Committee of the American Telephone and Telegraph Company at a meeting held January 15, 1924:

Resolved, that of the surplus earnings for 1923 amounting to approximately $18,500,000, there be transferred to Reserve for Contingencies, $3,000,000 as of December 31, 1923.

A. A. Marsters, Secretary. (Seal.)

American Telephone and Telegraph Company

I hereby certify that the following is a true and correct copy of a resolution adopted by the Executive Committee of the American Telephone and Telegraph Company at a meeting held January 7, 1925:

Resolved, that of the surplus earnings for 1924 amounting to approximately $19,000,000 there be transferred to reserve for contingencies, $6,000,000 as of December 31, 1924.

A. A. Marsters, Secretary. (Seal.)

American Telephone and Telegraph Company

I hereby certify that the following is a true and correct copy of a resolution adopted by the Executive Committee of the American Telephone and Telegraph Company at a meeting held January 13, 1926:

Resolved, that of the surplus earnings for 1925 amounting to approximately $26,438,000, there be transferred to reserve for contingencies, $6,000,000 as of December 31, 1925.

A. A. Marsters, Secretary. (Seal.)

[fol. 5575] American Telephone and Telegraph Company

I hereby certify that the following is a true and correct copy of a resolution adopted by the Executive Committee of the American Telephone and Telegraph Company at a meeting held January 12, 1927:

Resolved, that of the surplus earnings for 1926 amounting to approximately $30,500,000, there be transferred to Reserve for Contingencies, $4,000,000 as of December 31, 1926.

A. A. Marsters, Secretary. (Seal.)

American Telephone and Telegraph Company

I hereby certify that the following is a true and correct copy of a resolution adopted by the Executive Committee of the American Telephone and Telegraph Company at a meeting held January 18, 1928:

Resolved, that the telephones carried on the books of the General Department having been sold, there be transferred as of December 31, 1927, from Reserve for Accrued Depreciation to Reserve for Contingencies the balance (approximately $14,400,000) remaining in Reserve for Accrued Depreciation with respect to telephones.

A. A. Marsters, Secretary. (Seal.)

[fol. 5576] Exhibit X-398

Electrical Research Products, Inc., General Auditing Dept. Condensed Summary of Results of Talking Motion Picture Business for the year 1929 compared with Budget for the year 1930.

Same; Results for year 1928 compared with Budget of 1929.

Profits on Sales of Sound Picture Equipment as Published for the years 1926 to 1930, Inc.

Combined Results of Western Electric Co., Inc., Electrical Research Products, Inc., and its Subsidiaries on Talking Motion Picture Business years 1926 to 1931.

Results on Talking Motion Picture Business 1926-1931 Foreign Subsidiaries—Gross Revenue.

Condensed Summary of Results for year 1927.

Summary of Results by Classes of Business—Twelve Months of 1930.

Same for 1931.

(These documents were furnished by plaintiff to defendants June 14, 1932, together with following statement of June 15, 1932:

"The main items of investment involved are plant at face value, merchandise, receivables and cash, less current accounts payable, in the Western Electric Company and in the Electrical Research Products, Inc., in this country and abroad.

Western Electric Company

The method of determining the amount of plant and merchandise investment devoted to sound picture business is in general by the use of standard shop costs. In this computation, however, there is excluded plant and merchandise investment of the Installation Department, Merchandise [fol. 5577] Department and distributing houses practically none of which is involved in the sound picture business.

The investment in receivables is determined definitely on the basis of the investment actually on the books in these receivables.

Cash and payables applicable to sound picture business are determined by the use in general of standard shop costs.

Electrical Research Products, Inc., Domestic

The apportionment of the elements of investment to sound picture business involves the fact that in 1927, 1928 and 1929, two separate sets of books were maintained as follows:

At 57th Street, Covering local operations.

At 195 Broadway, Covering general operations.

For 1930 and 1931 these books were merged and maintained at 57th Street. The apportionment was made as follows:

Plant: Practically 100% sound picture business.

Merchandise: All sound picture business at Western Shop cost less depreciation.

Receivables: As shown by the books with respect to Accounts with exhibitors and producers and with others in connection with non-theatrical sound picture business.

Cash: For 1927, 1928 and 1929, all cash on the 57th Street books plus practically all cash on the 195 Broadway books; for 1930 and 1931 approximately 90% of the total cash.

Payables: For 1927, 1928 and 1929, all payables on the 57th Street books for 1930 and 1931 apportioned between sound picture business and other business on the basis of volume. Payables include the reserve for royalties to be returned to the Vitaphone Corporation.

[fol. 5578] Electrical Research Products, Inc., Foreign

All investment in the foreign companies was with respect to sound picture business and represents capital stock plus the open account as carried on the Electrical Research Products Inc. domestic books plus surplus on the foreign subsidiary company books."

[fol. 5579] EXHIBIT X-398

Electrical Research Products, Inc., General Auditing Department

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Monthly Report No. 1

Condensed Summary of Results of Talking Motion Picture Business for the Year 1929 Compared with Budget for the Year 1930

(Expressed in Thousands of Dollars)

Assets and Liabilities:	a Budget Dec. 31, 1930	b Dec. 31, 1929	c Increase (a—b)	
1. Plant	$1,000	690	$310	1
2. Merchandise	7,800	6,913	887	2
3. Bills Receivable	1,000	2,131	(1,131)	3
4. Accounts Receivable	24,900	13,131	11,769	4
5. Cash	200	287	(87)	5
Total Assets	34,900	23,152	11,748	6
7. Company Investment	28,151	17,852	10,299	7

EXHIBIT X-398—Continued

Assets and Liabilities:	a Budget Dec. 31, 1930	b Dec. 31, 1929	c Increase (a—b)	
8. Advances on Exhibitors' Contracts.	600	262	338	8
9. Current Liabilities—Western Electric Co., Inc.	2,500	2,489	11	9
10. Other	900	520	380	10
11. Reserves for Depreciation of Plant..	1,000	519	481	11
12. Depreciation on Receivables	518	379	139	12
13. Contingencies	1,231	1,131	100	13
14. Total Liabilities	34,900	23,152	11,748	14

Revenue:	d Budget 1930	e 1929	f Increase (d—e)	g Per Cent Increase (f÷e)	
Operating Revenues:					
15. Equipment License Fees	$30,800	$30,191	$609	2.0	15
16. Theatre Service Fees	5,200	3,372	1,828	54.2	16
17. Royalties Received (Gross)	1,770	1,719	51	3.0	17
18. Royalties Received Foreign (Gross)	450	94	356	378.7	18
19. Sales (Foreign)	4.000	9.896	(5,896)	(59.6)	19
20. Total Operating Revenues.	42,220	45,272	(3,052)	(6.7)	20
Gross Income:					
Gross Margin:					
21. Equipment License Fees.	9,850	9,632	218	2.3	21
22. Theatre Service Fees	700	585	115	19.7	22
23. Royalties Received (Net)	800	489	311	63.6	23
24. Royalties Received Foreign (Net)	300	63	237	376.2	24
25. Gross Profits—Sales (Foreign).	450	1.324	(874)	(66.0)	25
26. Interest Received	700	527	173	32.8	26
27. Total Gross Income	12,800	12,620	180	1.4	27
Expenses:					
28. Acoustic Department	5,000	3,092	1,908	61.7	28
29. General Department	370	247	123	49.8	29
30. Engineering	2,371	2,393	(22)	(.9)	30
31. Federal Taxes	607	805	(198)	(24.6)	31
32. Total Expenses	8,348	6,537	1,811	27.7	32
33. Net Profit before Reserves	4,452	6,083	(1,631)	(26.8)	33
34. Reserves	452	0	(452)	......	34
35. Net Profit	4,000	6,083	(2,083)	(34.2)	35
36. Average Investment	24,000	16,396	7,605	46.4	36
Percentages:					
37. Relation of Gross Margin to Equipment License Fees	32.0	31.9	......	......	37
38. Relation of Gross Margin to Theatre Service	13.5	17.3	......	......	38
39. Relation of Royalties (Net) to Royalties (Gross)	45.2	28.4	......	......	39

Assets and Liabilities:	a Budget Dec. 31, 1930	b Dec. 31, 1929	c Increase (a—b)		
40. Relation of Royalties Foreign (Net) to Royalties Foreign (Gross).....	66.7	66.7	......	......	40
41. Relation of Gross Profits to Sales (Foreign).....................	11.3	13.4	......	......	41
Relation of Expense to Gross Income:					
42. Acoustic Department........	39.1	24.5	......	......	42
43. General Department.........	2.9	2.0	......	......	43
44. Engineering..................	18.5	19.0	......	......	44
45. Federal Taxes..............	4.7	6.3	......	......	45
46. Total....................	65.2	51.8	......	......	46
47. Return on Investment..........	16.7	87.1	......	......	47

Budget of General Expense includes $350,000 for Publicity.

[fol. 5580] Electrical Research Products Inc., General Auditing Department

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Monthly Report No. 1

Condensed Summary of Results for the Year 1928

Compared with Budget for the Year 1929

(Expressed in Thousands of Dollars)

Acoustic Department

Assets and Liabilities:	a Budget Dec. 31, 1929	b Dec. 31, 1928	c Increase (a−b)	
1. Plant..........................	$450	$203	$247	1
2. Merchandise....................	5,900	4,476	1,424	2
3. Unliquidated Engineering Expense.	0	76	(76)	3
4. Bills Receivable................	4,500	2,720	1,780	4
5. Accounts Receivable.............	17,610	8,357	9,253	5
6. Cash...........................	100	94	6	6
7. Total Assets..............	28,560	15,926	12,634	7
8. Company Investment............	26,710	12,445	14,265	8
9. Advances on Exhibitors Contracts.	750	2,419	(1,669)	9
10. Current Liabilities.............	750	955	(205)	10
11. Reserve for Depreciation of Plant..	350	107	243	11
12. Total Liabilities..........	28,560	15,926	12,634	12

Revenue:	d Budget 1929	e 1928	f Increase (d−e)	g Per Cent Increase (f ÷ e)	
Operating Revenues:					
13. Equipment License Fees..........	$41,600	$14,134	$27,466	194.4	13
14. Sales (Foreign)..................	3,353	475	2,878	605.9	14
15. Theatre Service Fees.........	3,000	946	2,054	217.1	15
16. Royalties Received (Gross)...	940	325	615	189.2	16
17. Royalties Received Foreign (Gross)..................	465	0	465	......	17
18. Total Operating Revenues..	49,358	15,880	33,478	210.8	18

Gross Income:

Gross Margin:

		d Budget 1929	e 1930	f Increase (d—e)	g Per Cent Increase (f ÷ e)	
	Revenue:					
19.	Equipment License Fees	11,230	5,268	5,962	113.2	19
20.	Sales (Foreign)	676	73	603	826.0	20
21.	Theatre Service Fees	600	195	405	207.7	21
22.	Royalties Received (Net)	400	135	265	196.3	22
23.	Royalties Received Foreign (Net)	310	0	310	......	23
24.	Interest Received	500	133	367	275.9	24
25.	Total Gross Income	13,716	5,804	7,912	136.3	25
	Expenses:					
26.	Acoustic Department	2,738	937	1,801	192.2	26
27.	General Department	150	243	(93)	(38.3)	27
28.	Engineering	2,234	1,400	834	59.6	28
29.	Federal Taxes	1,031	402	629	156.5	29
30.	Total Expenses	6,153	[illegible]982	3,171	106.3	30
31.	Net Profits before Reserves	7,563	2,822	4,741	168.0	31
32.	Reserves	1,433	325	1,108	340.9	32
33.	Net Profit	6,130	2,497	3,633	145.5	33
34.	Average Investment	16,500	4,465	12,035	269.5	34
	Percentages:					
35.	Relation of Gross Margin to Equipment License Fees	27.0	37.3	......	......	35
36.	Relation of Gross Margin to Sales (Foreign)	20.2	15.4	......	......	36
37.	Relation of Gross Margin to Theatre Service Fees	20.0	20.6	......	......	37
38.	Relation of Royalties (Net) to Royalties (Gross)	42.6	41.4	......	......	38
39.	Relation of Royalties (Net) to Royalties (Gross) (Foreign)	66.7	......	......	......	39
	Relation of Expense to Gross Income:					
40.	Acoustic Department	20.0	16.2	......	......	40
41.	General Department	1.1	4.2	......	......	41
42.	Engineering	16.3	24.1	......	......	42
43.	Federal Taxes	7.5	6.9	......	......	43
44.	Total	44.9	51.4	......	......	44
45.	Return on Investment	37.2	55.9	......	......	45

Date Issued, February 11, 1929.

R. H. Gregory, General Auditor.

(Here follows side folio 5581).

[fol. 5581]

Western Electric Co.

Profits on Sales of Sound Picture Equipment as Published for the Years 1926 to 1930 Inclusive

(Dollars in Thousands)

	Grand Total			1930			1929			1928			1927			1926			
				a	b	c	d	e	f	g	h	i	j	k	l				
	Total	W. E. Mfg.	Supplies	Total	W. E. Mfg.	Supplies	Total	W. E. Mfg.	Supplies	Total	W. E. Mfg.	Supplies	Total	W. E. Mfg.	Supplies	Total	W. E. Mfg.	Supplies	
Sales	$47,131	$42,351	$4,780	$9,978	$8,935	$1,043	$24,607	$22,329	$2,278	$9,159	$7,994	$1,165	$2,177	$1,983	$194	$1,210	$1,110	$100	1
Gross Profits:																			
Basic Gross Profits	13,475	13,245	230	2,604	2,557	47	6,919	6,811	108	2,519	2,465	54	779	765	14	654	647	7	2
Manufacturing Dept. Surplus	1,946	1,946	0	(430)	(430)	0	1,540	1,540	0	912	912	0	(75)	(75)	0	(1)	(1)	0	3
Effect of Inventory Revaluations and Reserves	(728)	(720)	(8)	(33)	(25)	(8)	(136)	(136)	0	(479)	(479)	0	(50)	(50)	0	(30)	(30)	0	4
Royalties Paid on Restricted Apparatus	(120)	(120)	0	0	0	0	0	0	0	0	0	0	(70)	(70)	0	(50)	(50)	0	5
Total Gross Profits (2 to 5)	14,573	14,351	222	2,141	2,102	39	8,323	8,215	108	2,952	2,898	54	584	570	14	573	566	7	6
Operating Interest	8	8	0	4	4	0	0	0	0	3	3	0	1	1	0	0	0	0	7
Total Income (6÷7)	14,581	14,359	222	2,145	2,106	39	8,323	8,215	108	2,955	2,901	54	585	571	14	573	566	7	8
Expenses:																			
Development Expense	3,233	3,233	0	776	776	0	1,397	1,397	0	803	803	0	194	194	0	63	63	0	9
Distribution Expense	2,737	2,544	193	608	535	73	1,232	1,170	62	539	502	37	178	160	18	180	177	3	10
Federal Taxes	1,001	995	6	169	169	0	640	636	4	117	115	2	29	29	......	46	46	0	11
Total Expenses 9 to 11)	6,971	6,772	199	1,553	1,480	73	3,269	3,203	66	1,459	1,420	39	401	383	18	289	786	3	12
Net Profits (8–12)	7,610	7,587	23	592	626	(34)	5,054	5,012	42	1,496	1,481	15	184	188	(4)	289	280	4	13
Average Investment	6,717(A)	6,540	177	8,322	8,166	156	16,275	16,290	435	6,200	5,990	210	1,712	1,657	55	627	598	29	14
Return on Investment	22.7%	23.2%	2.8%	7.1%	7.7%	(21.8)%	30.2%	30.8%	9.7%	24.1%	24.7%	7.2%	10.7%	11.3%	(7.3)%	45.3%	46.8%	13.8%	15

(A) Average investment for 5 years.

[fol. 5582] Combined Results of Western Electric Company, Incorporated, Electrical Research Products, Inc., and Its Subsidiaries on Talking Motion Picture Business, Years 1926–1931

(Dollars in Thousands)

	Total	1931	1930	1929	1928	1927	1926
Combined Results:							
Gross Revenue	$132,609	$22,542	$40,381	$50,475	$15,738	$2,263	$1,210
Net Profit	17,947	(1,485)	5.358	11,422	3.400	(1,032)	284
Average Investment	20,628(A)	18,718	41,285	49,527	9,928	3,683	627
Return on Average Investment	14.5	(7.9)	13.0	23.1	34.2	(28.0)	45.3
Western Electric Company, Incorporated:							
Sales	$49,218	$2,087	$9,978	$24,607	$9,159	$2,177	$1,210
Net Profit	7,551	(59)	592	5,054	1,496	184	284
Average Investment	6,008(A)	2,462	8,322	16,725	6,200	1,712	627
Return on Investment	20.9	(2.4)	7.1	30.2	24.1	10.7	45.3
Electrical Research Products Inc., Domestic:							
Gross Revenue	$105,943	$15,241	$27,288	$45,271	$15,880	$2,263	.....
Net Profit	9,278	(389)	1,792	6,136	2,754	(1,015)	.....
Average Investment	11,847(A)	11,182	24,465	29,118	4,244	2,071	.....
Return on Investment	13.1	(3.5)	7.3	21.1	64.9	(49.0)	.....
Foreign Subsidiaries:							
Gross Revenue	$41,076	$8,572	$18,217	$14,131	$156	.....	.....
Net Profit	2,296	(1,980)	2,181	2,130	(35)	.....	.....
Average Investment	3,910(A)	6,723	11,006	5,639	92	.....	.....
Return on Investment	9.8	(29.4)	19.8	37.8	(38.0)	.....	.....
Adjustments to Combine Results:							
Gross Revenue Adjustment for W. E. Co. Material Sales to ERPI and Products Co. Sales to ERPI Foreign Subsidiaries	($63,628)	($3,358)	($15,102)	($33,534)	($9,457)	($2,177)	.....
Profits Adjustment—Writedown of Inventories to W. E. Shop Cost	(1,178)	943	793	(1,898)	(815)	(201)	.....
Investment Adjustment—Reduction to W. E. Shop Cost of Inventories	(1,137)(A)	(1,649)	(2,508)	(1,955)	(608)	(100)	.....

(A) Average Investment for six years.

[fol. 5583] Results on Talking Motion Picture Business, 1926–1931

Foreign Subsidiaries—Gross Revenue

(Dollars in Thousands)

Gross Revenue (per No. 1 Reports):	Total	1931	1930	1929	1928	
London	$21,058.0	$4,245	$9,610.3	$7,047	$155.7	1
S. M. A., Inc.	3,514.1	1,202	1,556.1	756	......	2
Austria	1,251.3	113	814.3	324	......	3
Denmark	262.0	33	103.2	125.8	......	4
Germany	23.3	......	....	23.3	......	5
Holland	172.5	20	110.5	42	......	6
Italy	604.8	115	213.8	276	......	7
Near East	592.9	195	298.9	99	......	8
Poland	423.9	40	297.9	86	......	9
Roumania	38.0	38	....	....	......	10
Spain	1,222.5	438	654.5	130	......	11
Sweden	479.2	60	160.8	258.4	......	12
Switzerland	593.0	82	415.0	96	......	13
Argentina	678.1	173	257.1	248	......	14
Brazil	523.2	108	159.2	256	......	15
Chile	427.4	119	308.4	....	......	16
Cuba	997.7	278	376.7	343	......	17
Mexico	150.3	48	59.3	43	......	18
Asia	1,045.2	277	634.2	134(A)	......	19
Australia	5,314.3	691	1,515.3	3,108	......	20
New Zealand	1,462.4	194	588.4	680	......	21
Orient	243.2	103	83.5	56.7	......	22
Total Gross Revenue	41,077.3	8,572	18,217.4	14,132.2	155.7	23
Used	41,076	8,572	18,217	14,131	156	

From 57th Street to J. J. Stuebe by telephone. No No. 1 Report was issued for Asia in 1929.

[fol. 5584] Annual Report No. 1, X-398, P. 6

Electrical Research Products, Inc.

Acoustic Department

Condensed Summary of Results for the Year 1927

Assets and Liabilities:

1. Plant	$45,238.22	1
2. Merchandise	1,343,238.98	2
3. Installation in Process	20,257.66	3
4. Unliquidated Development Expense	368,652.23	4
5. Bills Receivable	998,189.29	5
6. Accounts Receivable	472,386.79	6
7. Doubtful Receivables	309,283.74	7
8. Cash	51,711.63	8
9. Total assets	3,608,958.54	9

10.	General Department Investment	2,960,864.03	10
11.	Advances on Exhibitors' Contracts	190,225.00	11
12.	Current Liabilities	69,399.43	12
	Reserves:		
13.	Royalties Returnable to Vitaphone Corporation	21,590.17	13
14.	Depreciation on Plant	18,254.66	14
15.	Depreciation on Doubtful Receivables	169,707.25	15
16.	Reduction of Merchandise Inventory to Fair Market Value	178,918.00	16
17.	Total liabilities	3,608,958.54	17
	Operating Revenues:		
18.	Equipment License Fees	1,854,923.24	18
19.	Theatre Service Fees	311,664.56	19
20.	Royalties Received and Accrued (Gross)	96,193.48	20
21.	Total operating revenues	2,262,781.28	21
	Gross Income:		
22.	Gross Margin—Equipment License Fees	58,762.61	22
23.	Theatre Service Fees	167,529.96	23
24.	Royalties Received and Accrued (Net)	45,985.59	24
25.	Interest Received	41,997.31	25
26.	Total gross income	314,275.47	26
	Expenses:		
27.	Acoustic Department—Bad Accounts	142,361.30	27
28.	Other Expenses	206,541.37	28
29.	General Department Charges	45,000.00	29
30.	Development at Standard Rates	250,643.00	30
31.	Total expenses	644,545.67	31
32.	Net Operating Income	(330,270.20)	32

( ) Indicates negative figure.

Date Issued Feb. 29, 1928.

(Here follow side folios 5585 and 5586)

X-398
P7.

Electrical Research Products Inc.
General Auditing Department

EXHIBIT X-398

Issued February 2, 1931

SUMMARY OF RESULTS BY CLASSES OF BUSINESS
TWELVE MONTHS OF 1930
(Expressed in Thousands of Dollars)

	Talking Motion Pictures																	Cable		Manufacturing Licensees		Investments		Total	
	Theatre		Nontheatrical Educational		Broadcasting		Recording		Replacements		Service		Export		Royalties										
	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget		Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget
Gross Operating Revenue	9,548	9,800	413	1,154	266	275	1,482	1,600	1,627	1,700	5,526	5,500	5,490	5,220			[illegible]	23	11	6	7			24,414	25,279
Gross Royalties															2,916	2,541	2,916	155	21	112	120			4,024	3,586
Total Gross Revenue	9,548	9,800	413	1,154	266	275	1,482	1,600	1,627	1,700	5,526	5,500	5,490	5,220	2,916	2,541	27,268	181	108	118	127			28,438	28,865
Equipment Cost	4,410	4,605	200	537	107	125	669	656	713	744			4,139	3,955			10,238	13	8	3	3			10,267	10,650
Operating Cost	2,455	2,541	613	519	66	46	501	454	418	533	4,029	4,180	690	755	67	73	8,839							8,841	9,113
Vitaphone Share of Royalties															555	391	555							555	391
A. T. & T. Co. Share of Royalties															771	840	771			3				837	700
I.S.E., E.E. & Davis Share of Royalties																				3	3			54	58
Total	6,865	7,165	813	1,056	173	171	1,170	1,120	1,131	1,281	4,029	4,180	4,829	4,710	1,393	1,304	20,403	13	8	9	9			20,550	21,104
Development																									
Bell Laboratories	355	369	16	43	8	10	54	53	58	59			333	317			824	88	101					948	1,000
A. T. & T. Royalty on Apparatus	122	150	6	19	3	4	19	23	19	26			135	137			305							305	369
Patent Expense																									
Broadway	58	67	4	8	2	2	14	10	15	11			86	57			218	11	6	2	2			230	169
Gordon																	[illegible]	34	35					34	35
E.R.P.I.	30	25	2	2	1	1	4	4	5	4			28	21			[illegible]							70	57
Errors in Design	63		2		1		6		7				40				[illegible]							99	
Experimental Work & Supplies	80	66	3	8	2	2	12	9	13	10			75	56			[illegible]							155	150
Total Development Expense	682	686	33	80	17	19	109	99	117	110			698	588			[illegible]	133	142	2	2			1,841	1,780
Total Cost Incl. Development	7,547	7,832	846	1,136	190	190	1,279	1,219	1,248	1,391	4,029	4,180	5,527	5,298	1,393	1,304	[illegible]	146	150	11	11			22,421	22,888
Gross Profit at Current Cost	2,001	1,968	(433)	18	56	85	203	381	379	309	1,497	1,320	(37)	(78)	1,523	1,237	5,189	35	(42)	107	116			6,017	5,977
Other Revenue																									
Interest	605	689			3		26								21	11	656					491	504	1,146	1,206
Dividends																						3,848	3,760	3,848	3,760
Miscellaneous																						803	843	803	843
Total Gross Income	2,606	2,657	(433)	18	59	85	229	381	379	309	1,497	1,320	(37)	(78)	1,544	1,248	5,844	35	(42)	107	116	5,142	5,107	11,814	11,786
General Expense																									
Administration & General Office	763	728	134	140	32	38	128	142	255	253	357	370	311	318	43	46	2,023	24	27	37	39	716	668	2,893	2,850
Sales																									
Field Direct	632	631	415	449	19	15											1,066							1,066	1,095
Branch Office Rent & Service	156	160	119	122													275							275	282
Promotion (Direct)			165	217													165							165	217
Publicity	128	133	26	36													154							154	169
General (Direct)	49	42	39	44	4	5											[illegible]							92	91
Home Office Rent & Service	60	65	45	48													[illegible]							105	113
Total Sales Expense	1,025	1,031	807	916	23	20											1,855							1,855	1,967
Engineering																									
Direct	195	204	145	155			25	51					42	40	416	436	[illegible]	5	5					838	915
Office Rent & Service	30	26	22	20			4	6					6	5	64	67	126	1	1					129	126
Charges from W. E. Co.	53	57	13	17		1	28	31	9	9	28	30	39	50			211	4	6			7	8	235	266
Total General Expense	2,106	2,090	1,177	1,258	55	59	185	230	264	262	385	400	398	413	523	551	6,038	37	39	37	39	723	676	5,950	6,134
Net Profit Before Reserves and Federal Taxes	500	567	(1,555)	(1,240)	4	26	44	151	115	47	1,112	920	[illegible]	(491)	1,021	697	806	(2)	(87)	70	77	4,419	4,431	5,864	5,650
Interest Paid	287	359	22	35	3	5	70	55	26	28	9	6	[illegible]	18			[illegible]					1,075	1,055	1,518	1,562
Net After Interest	213	208	(1,577)	(1,275)	1	21	(26)	95	89	19	1,103	914	(460)	(509)	1,021	691	364	(2)	(87)	70	77	3,343	3,376	4,346	4,088
Federal Taxes																									
Net Profit Before Reallocation	213	208	(1,577)	(1,275)	1	21	(26)	95	89	19	1,103	914	(460)	(509)	1,021	697	364	(2)	(87)	70	77	3,343	3,376	4,346	4,088
Cost of Educational Film Allocated Against Future Film Sales			165	217													165							165	217
Export Expense Allocated Against Foreign Dividends													460	509			460					(460)	(509)		
Final Net Profit on Domestic Business	213	208	(1,412)	(1,058)	1	21	(26)	95	89	19	1,103	914	0	0	1,021	691	[illegible]	(2)	(87)	70	77	2,883	2,867	4,511	4,305
% of Total Gross Revenue																									
Equipment Cost	46.0	47.0	48.4	46.5	43.5	45.5	45.1	41.0	43.8	44.0			75.4	75.8		-		7.1	7.8	2.5	2.4			36.1	36.9
Operating Cost	25.6	25.9	148.4	45.0	26.8	16.7	33.8	29.0	25.7	31.4	72.9	76.0	12.6	14.5	2.3	2.9		-		-				31.1	31.6
Development Expense	7.5	7.0	8.0	6.9	6.9	5.9	7.4	6.2	7.2	6.5	-		12.7	11.3		-		73.1	139.2	1.7	1.6			6.6	6.1
Sales Expense	10.7	10.5	195.4	79.6	9.3	7.3	-		-		-		-	-				-		-				6.5	5.8
General Expense	22.0	21.3	271.7	109.0	22.4	21.5	12.5	14.4	16.2	15.4	7.0	7.3	7.2	7.9	17.9	21.7		20.9	38.2	31.4	30.7		-	20.9	21.2
Net Profit Before Interest Deductions	5.2	5.8	(336.6)	(88.7)	1.6	9.5	(3.0)	9.4	7.1	2.8	20.1	16.7	.5	.3	35.0	27.4		(1.1)	(85.3)	59.3	60.6		-	21.2	20.3
Net Profit After Interest Deductions	2.2	2.1	(381.9)	(91.7)	.4	7.6	(1.8)	5.9	5.5	1.1	20.0	16.6	.0	.0	35.0	27.4		(1.1)	(85.3)	59.3	60.6		-	15.9	14.9

Includes 438 For [illegible]

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Electrical Research Products Inc.
General Accounting Department

E-1.1
SUMMARY OF RESULTS BY CLASSES OF BUSINESS
TWELVE MONTHS 1931
(Expressed in Thousands of Dollars)

Date Issued February 1, 1932

Sound Motion Pictures — Reproducing

	Theatre Actual	Theatre Budget	Non-Theatrical Actual	Non-Theatrical Budget	Broadcasting & Miscellaneous Actual	Broadcasting & Miscellaneous Budget	Recording Actual	Recording Budget	Replacements Actual	Replacements Budget	Theatre Service Actual	Theatre Service Budget	Export Actual	Export Budget	Royalties Actual	Royalties Budget	Total Actual
Gross Operating Revenue	$2,783	$4,000	$ 731	$1,850	$[illegible]	$500	$ 655	$1,850	$ 876	$8,000	$5,057	$5,500	$1,389	$1,990	$		[illegible]
Gross Royalties															[illegible]	[illegible]	[illegible]
Total Gross Revenue	2,783	4,000	731	1,850	[illegible]	500	655	1,850	876	8,000	5,057	5,500	1,389	1,990	[illegible]	3,16[illegible]	[illegible]
Equipment Cost	1,673	2,400	364	548	85	200	280	500	431	500			[illegible]	[illegible]			[illegible]
Operating Cost	633	1,114	500	398	70	189	176	850	884	551	3,899	3,555	1,080	1,000			[illegible]
Vitaphone Share of Royalties													171	177		30	[illegible]
A. T. & T. Co. Share of Royalties															591	646	[illegible]
I.S.E., E.R. & Davis Share of Royalties															787	824	[illegible]
	2,306	3,940	864	849	155	389	456	730	695	1,452	3,899	3,555	1,855	1,377	1,411	1,510	[illegible]
Development																	
Bell Laboratories	58	73	15	19	6	8			29	30	33	42	93	69	333	400	[illegible]
A. T. & T. Royalty on Apparatus	16	57	5	16	1	5	4	12	6	21			32	29			[illegible]
Patent Expense																	
Broadway	16	19	4	5	2	2											[illegible]
London									7	8	9	11	58	67	90	106	[illegible]
Development Engineering	29	29	7	8	3	3			12	12	17	17	87	88	167	169	[illegible]
Commercial Engineering							119	102									[illegible]
Errors in Design	3	9	1	2		1			1	4	2	5	5	5			[illegible]
Experimental Work and Supplies	13	15	3	4	1	1			2	6	7	7	8	9	19	33	[illegible]
Total Development Expense	135	[illegible]	32	56	[illegible]	[illegible]	123	114	56	85	68	82	33	33	75	78	[illegible]
Total Expense	2,551	1,757	897	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1,537	3,967	3,637	1,[illegible]	1,507	[illegible]	2,[illegible]	[illegible]
Gross Profit at Current Cost	282	1,057	(166)	347	116	151	76	406	163	446	1,090	1,863	(136)	1	[illegible]	[illegible]	[illegible]
Other Revenue																	
Interest																	
Dividends															17		17
Total Gross Income	282	1,057	(166)	347	116	151	76	406	163	446	1,090	1,863	(136)	1	[illegible]	[illegible]	[illegible]
General Expense																	
Administration and General Office	436	427	287	287	38	21	87	84	172	165	469	443	280	287	105	108	[illegible]
Sales																	1,[illegible]
Field	174	198	119		13	14					174	197					[illegible]
Home Office	27	36	22		8	29					27	35					[illegible]
Publicity	11	25	12	20		5			58	45	11	35					[illegible]
Promotion Expense			145	230			5		1	5					1	[illegible]	[illegible]
Picture Productions and Prints			195	211									44	44			[illegible]
Total Sales Expense	212	259	553	[illegible]	21	48		5	59	50	212	267	44	44			[illegible]
Engineering	2	1		1		12	191	185	1	1			7	2	1	5	[illegible]
Charges from Broadway	31	31	32	35	3	3	13	16	7	8	29	32	35	41	10	9	[illegible]
Total General Expense	681	718	812	725	62	85	291	285	239	299	710	742	365	318	113	123	[illegible]
Net Profit Before Reserves and Federal Taxes	(399)	339	(978)	(377)	54	67	(215)	180	(76)	146	980	1,121	(465)	(317)	633	683	[illegible]
Reserves for Contingencies	381	250	366	100			142	50	25	50			25	50			[illegible]
	(780)	89	(1,344)	(477)	54	67	(357)	70	(101)	196	980	1,121	[illegible]	(367)	633	683	[illegible]
Interest Paid	40	36	36	44		14	65	41	22	37	15	12	[illegible]	18			[illegible]
Net After Interest	(820)	53	(1,358)	(501)	54	53	(422)	29	(123)	159	965	1,109	(478)	(385)	633	683	[illegible]
Federal Taxes		17				2		1		8		57				30	[illegible]
Foreign Taxes															9	10	[illegible]
Net Profit Before Reallocation of Export Expense	(820)	36	(1,358)	(501)	54	51	(422)	28	(123)	151	965	1,052	(478)	(385)	624	643	[illegible]
Export Expense Allocated Against Foreign Dividends													478	385			[illegible]
Cost of Non-Theatrical Films Allocated Against Future Film Sales			195	211													[illegible]
Final Net Profit	(820)	36	(1,163)	(290)	54	51	(422)	28	(123)	151	965	1,052	0	0	624	643	[illegible]
% of Total Gross Revenue																	
Equipment Cost	61.4	50.6	49.8	43.8	29.9	40.0	42.7	39.7	49.3	45.0			80.1	75.1			
Operating Cost	23.2	23.2	68.4	26.1	26.6	26.8	26.9	18.9	25.6	27.6	65.2	64.6	12.9	11.1		1.6	
Development Expense	5.0	4.2	4.9	4.3	4.6	6.0	18.8	9.1	6.4	6.1	1.3	1.5	17.3	13.8	29.5	26.1	35.6
Sales Expense	7.8	5.4	75.6	36.9	7.4	9.6		.4	6.8	2.5	4.2	4.9	3.5	3.0		.2	
General Expense	24.0	15.0	111.1	57.9	21.8	16.8	44.4	20.7	27.3	11.1	14.0	13.5	23.3	15.9	10.4	4.9	2.9
Net Profit Before Interest Deductions	(28.6)	1.5	(154.2)	(21.3)	19.0	13.0	(54.5)	5.5	(11.6)	9.4	19.4	19.3	.6	1.1	20.7	20.3	35.9
Net Profit After Interest Deductions	(30.1)	.8	(159.1)	(23.2)	19.0	10.2	(54.6)	2.2	(14.1)	7.6	19.1	19.1	.0	.0	20.7	20.3	35.9

	Cable Actual	Cable Budget	Manufacturing Licensees Actual	Manufacturing Licensees Budget	Deferred Financing Actual	Deferred Financing Budget	Acoustic Actual	Acoustic Budget	Investments Actual	Investments Budget	Total Actual	Total Budget
Gross Operating Revenue	$ 30	$	$ 8	$	$560	$ 650	$ 33	$167	$	$	$12,896	$17,723
Gross Royalties	86	61	46	135							3,739	4,187
Total Gross Revenue	116	61	57	135	[illegible]	[illegible]	33	167			16,635	21,910
Equipment Cost	13		8				4				3,989	4,776
Operating Cost	[illegible]				1	9	8				5,082	6,184
Vitaphone Share of Royalties											591	646
A. T. & T. Co. Share of Royalties			2	5							799	900
I.S.E., E.R. & Davis Share of Royalties			1	5							185	53
	13		11	10	1	9	12				10,909	13,501
Bell Laboratories	44	58									707	[illegible]
A. T. & T. Royalty on Apparatus											64	140
Broadway	2	2									215	[illegible]
London	44	44									46	66
Development Engineering	3	3					11	11			328	332
Commercial Engineering											124	107
Errors in Design		1									89	100
Experimental Work and Supplies	2	2									153	150
Total Development Expense	[illegible]	118					11	11			1,6[illegible]	1,975
Total Expense	[illegible]	110	11	10	1	9	23	11			12,767	15,076
Gross Profit at Current Cost	5	(49)	46	125	567	641	10	156			3,868	6,834
Dividends					318	400			19		340	400
Total Gross Income	5	(49)	46	125	885	1,041	10	156	1,[illegible]	1,[illegible]	5,[illegible]	8,[illegible]
Sales	35	29	46	43	299	203	22	23			2,269	2,008
Field											480	409
Home Office											202	145
Publicity											36	100
Promotion Expense											193	278
Picture Productions and Prints											195	211
Total Sales Expense											1,105	1,143
Engineering							29	115			298	387
Charges from Broadway	7	7	5	5	31	34					218	233
Total General Expense	42	36	51	48	253	237	111	138			3,[illegible]	3,711
Net Profit Before Reserves and Federal Taxes	(37)	(85)	(5)	77	632	804	(101)	18	[illegible]	1,808	1,507	4,931
Reserves for Contingencies					316	404			666		1,876	904
	(37)	(85)	(5)	77	316	400	(101)	18	[illegible]	1,808	(364)	4,027
Interest Paid					161	180			202	108	471	536
Net After Interest	(37)	(85)	(5)	77	155	220	(101)	18	488	1,680	(840)	3,477
Federal Taxes						11		1				131
Foreign Taxes									108	883	174	344
Net Profit Before Reallocation of Export Expense	(37)	(85)	(5)	73	155	209	(101)	17	380	1,337	(1,014)	2,646
Export Expense Allocated Against Foreign Dividends									(478)	(385)		
Cost of Non-Theatrical Films Allocated Against Future Film Sales											195	211
Final Net Profit	(37)	(85)	(5)	73	155	209	(101)	17	[illegible]	952	(819)	3,[illegible]
Equipment Cost	11.4		14.0				12.1				24.4	25.4
Operating Cost						1.4	24.2				31.7	28.0
Development Expense	84.2	100.3					33.3	6.6			10.3	9.0
Sales Expense											6.5	5.2
General Expense	36.8	59.0	89.5	35.6	44.5	36.5	-	82.6			24.1	16.9
Net Profit Before Interest Deductions	(32.5)	(139.3)	(8.8)	54.1	56.0	59.8	-	10.8			(1.5)	17.8
Net Profit After Interest Deductions	(32.5)	(139.3)	(8.8)	54.1	27.3	32.2	-	10.2			(5.1)	14.6

5604

(1) Billing to Foreign Subsidiaries ... Trust ... 3-1-32

[fol. 5587]

EXTRACTS FROM EXHIBIT X-400

Supplement to City's Exhibits Furnished by Plaintiff

Supplement to City's Exhibit No. 44

Illinois Bell Telephone Company

Distribution of Chicago Gross American Telephone and Telegraph Company Tolls Between Illinois Bell Telephone Company and American Telephone and Telegraph Company—1926 to 1930.

	Chicago gross A. T. & T. Co. tolls (a)	I. B. T. Co.'s proportion* (Originating Comms. and annual charges on plant reserved for long lines purposes) (b)	A. T. & T. Co. Proportion (a)—(b) (c)
1926	$5,854,798.06	$1,436,482.08	$4,418,315.98
1927	6,319,045.97	1,667,786.43	4,651,259.54
1928	7,528,069.63	1,898,268.00	5,629,801.63
1929	9,202,218.47	2,991,800.16	6,210,418.31
1930	9,437,371.25	3,360,166.74	6,077,204.51

*In addition the Illinois Bell Telephone Company was reimbursed for cost of operating the Long Lines equipment, as follows:

	Credited to expense, etc., accounts	Credited to Account 510-message toll revenues	Total
1926	$1,215,758.57	....	$1,215,758.57
1927	1,415,849.08	....	1,415,849.08
1928	1,312,375.96	$506,978.29	1,819,354.25
1929	....	2,423,845.28	2,423,845.28
1930	....	2,340,183.95	2,340,183.95

[fol. 5588]

Supplement to City's Exhibit No. 44.

Illinois Bell Telephone Company

Distribution of Chicago Gross American Telephone and Telegraph Company Tolls Between Illinois Bell Telephone Company and American Telephone and Telegraph Company—Year 1931

Chicago gross A. T. & T. Co. tolls (a)	I. B. T. Co.'s Portion* (Originating Comms. and annual charges on plant reserved for long lines purposes (b)	A. T. & T. Co.'s Portion (a)—(b) (c)
$8,901,998.60	$3,513,558.59	$3,523,995.11

*In addition the Illinois Bell Telephone Company was reimbursed for cost of operating the Long Lines equipment, as follows:

Credited to expense, etc., accounts	Credited to Account 510-message toll revenues	Total
$..........	$1,864,444.90	$1,864,444.90

[fol. 5589] Supplement to City's Exhibit #53

This agrement, made this 10th day of June, 1921, by and between the American Telephone and Telegraph Company, a corporation of the State of New York (hereinafter called the "American Company"), party of the first part, and Illinois Bell Telephone Company, a corporation of the State of Illinois (hereinafter called the "Associated Company"), party of the second part, witnesseth:

Whereas, the American Company has adopted a Plan designated "Employees' Stock Plan—A Plan for Subscription for Stock of the American Telephone and Telegraph Company", dated May 1st, 1921, a copy of which is attached to and made a part hereof, under which its employees and employees of its subsidiaries may subscribe for shares of its capital stock, and the parties hereto desire to encourage and facilitate subscription, as therein provided;

Now, therefore, in consideration of the premises the parties hereto agree as follows:

First. The Associated Company will promptly notify its eligible employees of their rights in the premises and deliver to each such employee a copy of the Plan and a subscription blank, to be furnished by the American Company.

Second. The Associated Company will transmit to the American Company, in accordance with the latter's established routine, the subscription of each such employee which is accepted by its Treasurer acting as the agent of the American Company, and will certify to the facts showing the employee's right to subscribe for the number of shares indicated.

Third. The Associated Company will deduct from the wages of its employees whose subscriptions are accepted the installment payments provided by the Plan and pay to the American Company on or before the 20th of each month such sums and all other sums received by it under the Plan during the preceding month.

Fourth. Upon request of the American Company the As- [fol. 5590] sociated Company will perform in its territory any other services reasonably necessary to promote the success of the Plan.

Fifth. Neither party hereto shall make any charge to the other for any services performed hereunder.

Sixth. The Associated Company will in cases where it is deemed desirable apply to the American Company for its consent to offer the Plan to companies affiliated with the Associated Company, and, if and when such consent is given and the Plan accepted by such affiliated company, will forward to such company for distribution to its employees copies of the plan and subscription blanks furnished by the American Company; receive from such affiliated company and transmit to the American Company the subscriptions of such employees with proper certification as to the facts showing the employee's right to subscribe for the number of shares indicated on the subscription card; transmit to the American Company for such affiliated company all payments made by its employees under the Plan; arrange for such affiliated company to render the necessary assistance in carrying out the Plan; and the Associated Company will be responsible for the performance by such affiliated company of all its obligations in the premises.

In witness whereof the parties hereto have caused these presents to be signed and their respective corporate seals to be hereto affixed by their respective officers thereunto duly authorized, on the day and in the year first above written.

American Telephone and Telegraph Company, by (Sgd.) W. E. Gifford, Vice-President. Attest: (Sgd.) James Robb, Asst. Secretary. Illinois Bell Telephone Company, by (Sgd.) B. E. Sunny, President. Attest: (Sgd.) E. G. Drews, Secre- [fol. 5591] tary.

* * * * * * *

To the employees:

Under the First Stock Purchase Plan and its Extension, 22,155 employees have become stockholders owning 104,781 shares and under the Second Stock Purchase Plan 41,325 employees are now paying the installments which will entitle them to ownership in 174,500 shares.

As stockholders, you become financially interested in the nation-wide system which is giving telephone service from Maine to California and from Canada to Mexico, to which service you and your fellow employees are giving your life work. You become partners as well as employees.

Under the former plans, in becoming partners you bought out other partners. By the new plan, authorized by recent legislation, it is now possible for the capital which you furnish to be added to the capital of the company instead of merely replacing the capital of another investor withdrawing from the enterprise. To my mind that adds a new interest. Besides the satisfaction of working to some extent for yourself, with the new plan there is the added satisfaction of helping to provide for the extension of our service. To be a part of the Bell System and to be a part owner, are both things to be proud of.

(Sgd.) H. B. Thayer.

* * * * * * *

[fol. 5592] Employees' Stock Plan

A Plan for Subscriptions for Stock of the American Telephone and Telegraph Company

Any employee who at the time of his subscription has been for six months continuously in the employ of the American Telephone and Telegraph Company (herinafter referred to as the American Company) or any of its associated companies, may, on the first of May, 1921, and on the first day of any month thereafter, subscribe for stock of the American Company upon the following terms:

Section 1. Subscription.—a) The subscription price for such stock shall be $100 per share, until such time hereafter as a higher price shall be fixed by the American Company.

b) The employee shall exercise his right to subscribe by signing a subscription agreement in the form enclosed herewith and filing it with his immediate superior officer, on or before May 31, 1921, on the last day of any subsequent month in which he exercises such right.

c) The total subscription upon which any employee is paying at any one time shall not exceed a number of shares equal to one share of stock for each $300, or fraction thereof, of his then annual rate of pay, nor shall any employee subscribe for more than fifty shares in any one year.

Any employee may subscribe for less than the maximum number of shares to which he is entitled.

Section 2. Payments.—a) The subscription payments for the stock will be made by deductions from the employee's wages at the rate of $3.00 per share per month, such deductions to begin in July, 1921, for subscriptions [fol. 5593] during May, 1921. For subscriptions made in subsequent months the deductions from employee's wages will begin in the second month following that in which subscription was made.

For employees paid semi-monthly, $1.50 per share will be deducted semi-monthly; for employees paid weekly, 75 cents per share will be deducted for each of the first four weekly payroll periods ending in the calendar month. Receipts will be given employees for deductions.

b) Interest at the rate of 8% compounded quarterly will be allowed and credited to the employee's account on all amounts deducted from employee's wages from the dates of the respective credits until the date when dividends will begin to accrue upon the stock when issued after the subscription is fully paid.

c) At any time after 6 months from the date of the initial deduction under a subscription for stock under this plan any employee may pay the balance then unpaid on account of all or any of the shares of stock under such subscription and receive the certificate of stock to which he then becomes entitled.

d) Stock subscribed for under this Plan does not participate in any rights to subscribe for new stock issued by the American Company and offered to all shareholders, until payments are made in full and a certificate issued therefor.

Section 3. Stock Issued to Subscriber.—When stock is fully paid the American Company will issue or cause to be transferred to the subscriber certificates therefor. If installments are paid regularly as provided for herein, stock will be fully paid for in the 30th month after the month in which initial installment is paid.

Section 4. Subscription Agreement not Transferable.—Until stock is fully paid for, no employee shall pledge or in any manner alienate his rights under any subscription agreement under this Plan. A violation of this provision shall constitute a withdrawal by the employee from such subscription agreement and the only right of the employee or his assignee shall be to have the American Company pay to the employee, or to the person entitled, the total amount withheld from his wages on account of the purchase price of the stock in question, together with interest thereon at 4% per annum, compounded quarterly, and such payment shall operate as a cancellation and satisfaction of all rights under the subscription agreement involved.

[fol. 5594] Section 5. Termination of Subscription Agreements and Suspension of Payments

a) Termination of Service by Death.—In case an employee's service terminates by death before his stock is fully paid for, his subscription agreement or agreements will be cancelled and his estate will be entitled to receive the net amount accumulated on his subscriptions as a result of deductions from wages with interest at 8% compounded quarterly.

b) Termination of Service Otherwise than by Death.—In case an employee's service terminates for any cause other than by death before his stock is fully paid for, his subscription agreement or agreements will be cancelled and he will be entitled to receive the total amount withheld from his wages, with interest thereon at 6% per annum, compounded quarterly.

c) Temporary Absence.—Any employee, whose name is taken off the regular payroll by reason of leave of absence, temporary lay-off on account of reduction in force, or transfer to a disability payroll, may, at his option, (a) cancel any or all of his subscription agreements and in respect of any subscription so cancelled receive the amount to which he would be entitled if his service were permanently terminated otherwise than by death, or (b) make the required periodical payments on his subscription or subscriptions directly to the Treasurer of the company by which he is employed, or (c) suspend payments for the period his name is off the regular payroll, not exceeding three months, the deferred payments to be made up by uniform deductions from his pay during the following six months. In case an employee acting under option (b) or (c) in respect of any or all of his subscriptions fails to make payments as provided, his subscription agreement or agreements shall be cancelled and he will be entitled to receive the amount to which he would be entitled upon permanent termination of his service otherwise than by death.

d) Right to Withdraw from Plan.—Any employee continuing in the service may, at any time, withdraw from any or all of his subscription or purchase agreements as to any or all of the shares covered thereby upon filing an application therefor with his immediate superior for transmission to the Treasurer of the company by which he is employed. Upon the receipt of such application by the Treasurer, the employee will be entitled to receive the total amount withheld from his wages, as to each share in respect to which such withdrawal is requested, with interest thereon at 6% per annum, compounded quarterly, and his subscription [fol. 5595] agreements or agreements will be cancelled as to such share or shares.

e) Determination of Questions Arising under Plan.—Questions arising under this Plan as to term of employment, rate of pay, leave of absence and temporary lay-off, will be determined in accordance with the rules established under the Plan for Employees' Pensions, Disability Benefits and Death Benefits of the Company.

Section 6. Pensioners.—Employees who are pensioners are not entitled to subscribe under this Plan. Where an employee becomes a pensioner on or after the date of his subscription and prior to the date of the first deduction to be made from his pay, his subscription shall automatically be cancelled; but any employee who becomes a pensioner after payments have been made upon his subscription may elect to continue payments on stock for which he has previously subscribed and upon making such payments shall become entitled to receive a certificate therefor when fully paid, or to cancel his subscription agreement or agreements and receive the amount to which he would be entitled as an employee permanently terminating his service otherwise than by death.

Section 7. Changes in Plan.—The American Company reserves the right from time to time to change the terms upon which stock is offered to employees for subscription under this Plan, but such changes shall not affect the rights of employees under subscriptions theretofore made by them and accepted by the American Company.

Section 8.—This offer may be withdrawn by the American Company at any time without notice other than a refusal to accept further new subscriptions hereunder.

H. B. Thayer, President.

No employee is under any obligation to purchase stock. The present standing and future prospects of an employee will not be affected in the least degree by his decision as to the purchase of stock.

* * * * * * *

[fol. 5596] Supplemental to City's Exhibit No. 54

Illinois Bell Telephone Company

Payments Made to American Telephone and Telegraph Company Covering Collections under the Employees' Stock Plan

Year 1926	$1,154,086.16
1927	1,478,347.67
1928	1,803,449.85
1929	2,692,885.17
1930	3,377,477.87

Supplemental to City's Exhibit No. 54

Illinois Bell Telephone Company

Payments Made to American Telephone and Telegraph Company Covering Collections under the Employees' Stock Plan

Year 1931	$2,243,365.23

Supplemental to City's Exhibit No. 57

Nov. 11, 1931

Illinois Bell Telephone Company

Purchases from Western Electric Company

	Gross Purchases		Returned Material		Net	
Year	Chicago *	Entire Co.	Chicago *	Entire Co.	Chicago *	Entire Co.
1902	....	$1,429,440.27	....	$102,932.35	....	$1,326,507.92
1903	....	1,193,974.16	....	52,789.54	....	1,141,184.62
1904	....	846,182.57	....	166,499.74	....	679,682.83
1905	....	1,810,282.64	....	472,714.46	....	1,337,568.18
1906	....	3,438,058.27	....	677,198.85	....	2,760,859.42
1907	....	4,384,324.92	....	899,295.67	....	3,485,029.25
1908	$2,510,365.97	2,873,515.15	$872,743.51	936,020.10	$1,637,622.46	1,937,495.05
1909	2,553,944.59	3,011,369.19	766,292.07	852,574.46	1,787,652.52	2,158,794.73
1910	3,103,583.54	3,552,389.33	800,614.14	895,031.83	2,302,969.40	2,657,357.50
1911	3,645,312.91	4,114,227.35	745,664.38	864,903.84	2,899,648.53	3,249,323.51
1912	3,895,234.03	4,347,914.06	1,068,208.63	1,200,997.26	2,827,025.40	3,146,916.80
1913	5,743,307.14	6,304,314.69	1,408,019.19	1,527,982.77	4,335,287.95	4,776,331.92
1914	6,499,647.50	7,244,944.03	1,350,479.28	1,527,485.46	5,149,168.22	5,717,458.57
1915	4,215,370.27	4,816,883.92	1,181,616.79	1,318,313.81	3,033,753.48	3,498,570.11
1916	4,753,514.33	6,054,250.85	1,406,511.33	1,563,435.78	3,347,003.00	4,490,815.07
1917	7,034,462.24	8,851,554.70	2,196,009.89	2,421,540.16	4,838,452.35	6,430,014.54
1918	3,576,308.48	4,206,024.44	1,194,467.74	1,373,526.93	2,381,840.74	2,832,497.51
1919	4,707,201.48	5,489,666.87	1,125,969.41	1,272,454.82	3,581,232.07	4,217,212.05
1920	5,683,628.43	6,936,202.22	1,210,503.36	1,398,758.41	4,473,125.07	5,537,443.81
1921	10,406,202.12	12,642,958.74	1,822,722.07	2,153,680.68	8,583,480.05	10,489,278.06
1922	9,746,191.06	13,474,656.88	2,064,530.69	2,506,755.87	7,681,660.37	10,967,901.01
1923	10,608,690.11	13,638,227.04	2,834,617.38	3,266,000.66	7,174,072.73	10,372,226.38
1924	12,419,370.90	16,691,605.26	2,433,883.36	2,922,121.25	9,985,487.54	13,769,484.01
1925	16,031,817.61	22,023,624.24	3,111,883.89	3,827,577.08	12,919,933.72	18,196,047.16
1926	16,321,383.71	21,831,722.21	3,393,450.77	4,061,294.02	12,927,932.94	17,770,428.19
1927	20,094,086.34	26,437,262.69	4,152,830.96	4,972,918.55	15,941,255.38	21,464,344.14
1928	18,410,851.49	27,096,543.61	5,822,855.56	6,673,454.69	12,587,995.93	20,423,088.92
1929	20,706,494.38	29,193,070.95	6,224,049.51	7,428,375.32	14,482,444.87	21,764,695.63
1930	21,005,303.63	30,960,938.90	6,199,062.24	7,547,773.37	14,806,241.39	23,413,165.53

* Separation not available prior to 1908. The amounts shown for 1908 and subsequent years include certain purchases such as house service supplies made by Chicago Area used partly for State Area and do not include items purchased by State Area used partly for Chicago Area.

[fol. 5598]

Supplement to City's Exhibit No. 57

Illinois Bell Telephone Company

Purchases from Western Electric Company

	Gross Purchases		Returned Material		Net	
	Chicago*	Entire Co.	Chicago*	Entire Co.	Chicago*	Entire Co.
Year 1931	$12,471,279.34	$16,795,928.54	$6,008,224.10	$7,019,542.32	$6,463,055.24	$9,776,386.22

* These amounts include certain purchases such as house service supplies made by Chicago Area used partly for State Area and do not include items purchased by State Area used partly for Chicago Area.

Exhibit X-400

Supplemental to City's Exhibit No. 76

Illinois Bell Telephone Company

Advances from American Telephone and Telegraph Company During Years 1926 to 1930

Date	Amount	Interest Rate	Payments Date	Payments Amount	Balance at End of Month
Balance			12/31/25		$3,000,000.00
			1/21/26	$1,000,000.00	2,000,000.00
3/10/26	$1,500,000.00	6% less 2%			3,500,000.00
3/31/26	3,000,000.00	"			6,500,000.00
6/ 1/26	500,000.00	"			7,000,000.00
			6/ 9/26	250,688.19	6,749,311.81
6/30/26	1,000,000.00	"			7,749,311.81
7/ 1/26	1,500,000.00	"			9,249,311.81
9/30/26	1,000,000.00	"			10,249,311.81
10/ 1/26	1,500,000.00	"			11,749,311.81
			10/20/26	749,311.81	11,000,000.00
12/ 1/26	1,000,000.00	"			12,000,000.00
12/ 9/26	300,000.00	"			12,300,000.00
12/18/26	700,000.00	"			13,000,000.00
			12/23/26	700,000.00	12,300,000.00
12/31/26	1,500,000.00	"			13,800,000.00
			1/ 7/27	500,000.00	13,300,000.00
			1/15/27	13,300,000.00	0
3/31/27	1,200,000.00	"			1,200,000.00
			4/20/27	1,000,000.00	200,000.00
5/ 2/27	500,000.00	"			700,000.00
			5/21/27	500,000.00	200,000.00
6/ 1/27	1,000,000.00	"			1,200,000.00
6/13/27	750,000.00	"			1,950,000.00
			6/30/27	1,950,000.00	0
1/11/28	600,000.00	"	1/11/28	315,631.74	284,368.26
2/29/28	300,000.00	"			584,368.26
3/31/28	1,200,000.00	"			1,784,368.26
4/ 3/28	1,000,000.00	"			2,784,368.26
4/18/28	1,000,000.00	"			3,784,368.26
5/ 1/28	500,000.00	"			4,284,368.26

Exhibit X-400—Continued

Date	Amount	Interest Rate	Payments Date	Payments Amount	Balance at End of Month
6/ 1/28	800,000.00	"	5/16/28	200,000.00	4,084,368.26
6/11/28	200,000.00	"			4,884,368.26
6/30/28	1,900,000.00	"			5,084,368.26
7/11/28	350,000.00	"			6,984,368.26
					7,334,368.26
-/22/28	250,000.00	"	7/26/28	500,000.00	6,834,368.26
8/29/28	250,000.00	"			7,084,368.26
9/11/28	300,000.00	"			7,334,368.26
9/29/28	1,900,000.00	"			7,634,368.26
10/ 1/28	150,000.00	"			9,534,368.26
					9,684,368.26
12/ 1/28	1,600,000.00	"	10/20/28	700,000.00	8,984,368.26
[fol. 5600]					10,584,368.26
12/31/28	2,200,000.00	"	12/19/28	384,368.26	10,200,000.00
1/24/29	1,250,000.00	"			12,400,000.00
					13,650,000.00
2/27/29	500,000.00	"	2/ 1/29	500,000.00	13,150,000.00
3/11/29	500,000.00	"			13,650,000.00
3/30/29	1,800,000.00	"			14,150,000.00
4/30/29	600,000.00	"			15,950,000.00
6/ 1/29	1,200,000.00	"			16,550,000.00
6/11/29	250,000.00	"			17,750,000.00
6/29/29	2,000,000.00	"			18,000,000.00
					20,000,000.00
7/11/29	250,000.00	"	7/1 /29	19,849,900.00	150,100.00
					400,100.00
9/30/29	1,300,000.00	"	8/ 1/29	400,100.00	0
					1,300,000.00
			10/18/29	500,000.00	800,000.00
			10/30/29	300,000.00	500,000.00
12/ 2/29	300,000.00	"	11/14/29	500,000.00	0
12/31/29	1,900,000.00	"			300,000.00
					2,200,000.00
			1/ 2/30	2,200,000.00	0

Supplemental to City's Exhibit No. 76
Illinois Bell Telephone Company
Advances from American Telephone and Telegraph Company, Year 1931

None

[fol. 5601]

Exhibit X-400—Continued

Date	Name of Company	Amount	Interest Rate	Payments Date	Payments Amount	Balance at enp of Month
8/11/28	Bell Realty Trust	$80,000.00	6% less 2%			$80,000.00
9/29/28	“	20,000.00	“			100,000.00
12/ 1/28	“	50,000.00	“			150,000.00
				12/29/28	$35,000.00	115,000.00
2/27/29	“	25,000.00	“			140,000.00
4/11/29	“	25,000.00	“			165,000.00
6/29/29	“	25,000.00	“			190,000.00
7/18/29	“	15,000.00	“			205,000.00
8/30/29	“	20,000.00	“			225,000.00
10/21/29	“	20,000.00	“			245,000.00
11/13/29	“	10,000.00	“			255,000.00
12/ 3/29	“	15,000.00	“			270,000.00
1/10/30	“	10,000.00	“			280,000.00
2/10/30	“	15,000.00	“			295,000.00
3/10/30	“	15,000.00	“			310,000.00
4/10/30	“	10,000.00	“			320,000.00
5/10/30	“	15,000.00	“			335,000.00
7/10/30	“	10,000.00	“			345,000.00
7/25/30	“	15,000.00	“			360,000.00
8/ 9/30	“	15,000.00	“			375,000.00
8/29/30	“	15,000.00	“			390,000.00
10/10/30	“	15,000.00	“			405,000.00
11/10/30	“	15,000.00	“			420,000.00
12/10/30	“	15,000.00	“			435,000.00

Supplemental to City's Exhibit No. 76

Illinois Bell Telephone Company

Advances from Associated and Subsidiary Companies, Year 1931

Date	Name of Company	Amount	Interest Rate	Payments Date	Payments Amount	Balance at end of Month
12/31/30, Balance						$435,000.00
1/10/31	Bell Realty Trust	$10,000.00	6% less 2%			445,000.00
2/10/31	“	15,000.00	“			460,000.00
3/10/31	“	10,000.00	“			470,000.00
5/ 9/31	“	10,000.00	“			480,000.00
6/10/31	“	20,000.00	“			500,000.00

[fol. 5602] Exhibit X-400

Supplemental to City's Exhibit No. 76

Illinois Bell Telephone Company

Advances from Western Electric Company, Inc., Years 1926 to 1930

None

Supplemental to City's Exhibit No. 76

Illinois Bell Telephone Company

Advances from Western Electric Company, Inc., Year 1931

None

[fol. 5603]

EXHIBIT X–400

Supplemental to City's Exhibit No. 76

Illinois Bell Telephone Company

Advances to American Telephone and Telegraph Company, Years 1926 to 1930

Date	Amount	Interest Rate	Payments		Balance at end of Month
			Date	Amount	
1/15/27	$1,552,700.00	6% less 2%			$1,552,700.00
			3/ 3/27	$552,700.00	1,000,000.00
			3/31/27	1,000,000.00	0
6/30/27	3,500,000.00	"			3,500,000.00
			8/11/27	500,000.00	3,000,000.00
9/30/27	5,250,000.00				8,250,000.00
			12/ 1/27	500,000.00	7,750,00.000
			12/22/27	750,000.00	7,000,000.00
12/31/27	738,514.95	"	12/31/27	7,422,883.21	315,631.74
			1/11/28	315,631.74	0
8/26/29	1,000,000.00	"			1,000,000.00
			9/30/29	1,000,000.00	0
1/ 2/30	7,725,825.00	"			7,725,825.00
1/15/30	500,000.00	"			8,225,825.00
1/28/30	1,200,000.00	"			9,425,825.00
2/14/30	1,300,000.00	"			10,725,825.00
			2/28/30	500,000.00	10,225,825.00
			3/ 1/30	500,000.00	9,725,825.00
			3/11/30	500,000.00	9,225,825.00

			3/31/30	400,000.00	8,825,825.00
			5/ 7/30	1,700,000.00	7,125,825.00
			5/ 2/30	800,000.00	6,325,825.00
			6/ 2/30	800,000.00	5,525,825.00
			6/11/30	500,000.00	5,025,825.00
			6/30/30	2,700,000.00	2,325,825.00
7/ 1/30	7,946,360.00	"	....	....	10,272,185.00
			7/11/30	350,000.00	9,922,185.00
8/12/30	2,000,000.00	"	....	....	11,922,185.00
8/25/30	1,150,000.00	"	....	....	13,072,185.00
			9/30/30	2,300,000.00	10,772,185.00
10/20/30	700,000.00	"	....	....	11,472,185.00
11/ 7/30	500,000.00	"	....	....	11,972,185.00
			12/ 1/30	500,000.00	11,472,185.00
			12/31/30	2,300,000.00	9,172,185.00

[fol. 5604]

EXHIBIT X-400

Supplemental to City's Exhibit No. 76

Illinois Bell Telephone Company

Advances to American Telephone and Telegraph Company, Year 1931

Date	Amount	Interest Rate	Payments		Balance at End of Month
			Date	Amount	
12/31/30	Balance				$9,172,185.00
1/15/31	$1,500,000.00	6% less 2%			10,672,185.00
1/28/31	1,100,000.00	"			11,772,185.00
2/11/31	400,000.00	"			12,172,185.00
2/16/31	1,000,000.00	"			13,172,185.00
2/21/31	200,000.00	"			13,372,185.00
3/10/31	500,000.00	"			13,872,185.00
3/16/31	600,000.00	"			14,472,185.00
3/19/31	600,000.00	"			15,072,185.00
			3/31/31	2,800,000	12,272,185.00
			4/ 9/31	2,000,000	10,272,185.00
			4/15/31	1,000,000	9,272,185.00
4/20/31	300,000.00	"			9,572,185.00
4/25/31	300,000.00	"			9,872,185.00
5/12/31	500,000.00	"			10,372,185.00
5/15/31	600,000.00	"			10,972,185.00
5/19/31	500,000.00	"			11,472,185.00
			6/ 1/31	800,000	10,672,185.00
6/12/31	500,000.00	"			11,172,185.00
			6/19/31	800,000	10,372,185.00
			6/30/31	2,700,000	7,672,185.00
			8/ 6/31	2,300,000	5,372,185.00
8/11/31	800,000.00	"			6,172,185.00
8/13/31	500,000.00	"			6,672,185.00
8/17/31	500,000.00	"			7,172,185.00
8/19/31	300,000.00	"			7,472,185.00

9/11/31	600,000.00	"			8,072,185.00
9/18/31	700,000.00	"			8,772,185.00
			9/30/31	2,100,000	6,672,185.00
10/10/31	700,000.00	"			7,372,185.00
10/15/31	400,000.00	"			7,772,185.00
10/20/31	600,000.00	"			8,372,185.00
10/24/31	400,000.00	"			8,772,185.00
10/28/31	400,000.00	"			9,172,185.00
11/16/31	500,000.00	"			9,672,185.00
11/20/31	600,000.00	"			10,272,185.00
			12/ 1/31	1,000,000	9,272,185.00
			12/10/31	600,000	8,672,185.00
12/19/31	600,000.00	"			9,272,185.00
			12/31/31	2,500,000	6,772,185.[illegible]

[fol. 5605]

Exhibit X-400

Supplemental to City's Exhibit No. 76

Illinois Bell Telephone Company

Advances to Associated and Subsidiary Telephone Companies, Years 1926 to 1930

Date	Name of Telephone Company	Amount	Interest Rate	Payments Date	Payments Amount	Balance at end of month
1/3/28	Crown Point Telephone Co.	$1,950.00	6%	10/31/30	$1,950.00	0
1/7/29	Crown Point Telephone Co.	55,664.67	6%	10/31/30	55,664.67	0

Supplemental to City's Exhibit No. 76

Illinois Bell Telephone Company

Advances to Associated and Subsidiary Telephone Companies, Year 1931

None

Supplemental to City's Exhibit No. 76

Illinois Bell Telephone Company

Advances to Western Electric Company, Inc., Year 1931

None

Supplemental to City's Exhibit No. 76

Illinois Bell Telephone Company

Advances to Western Electric Company, Inc., Years 1926 to 1930

None

[fol. 5606]

Exhibit X-400

Supplemental to City's Exhibit No. 76

Illinois Bell Telephone Company Loans from Banks, Years 1926-30

Date	Name of Bank	Amount	Interest Rate	Payments	Balance at end of Month
12/30/27......	Bankers Trust Co.	$738,514.95	5½%	....	$738,514.95
6/30/28......	"	429,191.48	"	....	1,167,706.43
9/29/28......	"	3,449,522.75	"	....	4,617,229.18
12/31/28......	"	601,007.45	"	....	5,218,236.63
6/29/29......	"	623,050.12	"	....	5,841,286.75
12/31/29......	"	658,253.14	"	....	6,499,539.89
6/30/30......	"	701,605.39	"	....	7,201,145.28
12/31/30......	"	689,058.08	"	....	7,890,203.36

Note.—All of the above represent notes given for amounts borrowed from the Pension Fund established by the Illinois Bell Telephone Company which fund is held by the Bankers Trust Company as Trustee.

Supplemental to City's Exhibit No. 76

Illinois Bell Telephone Company Loans from Banks, Year 1931

Date	Name of Bank	Amount	Interest Rate	Payments	Balance at end of Month
12/31/30......	Balance	....	....	....	$7,890,203.36
6/30/31	Bankers Trust Co.	$716,283.34	5½%	....	8,606,486.70
12/31/31......	"	704,418.63	"	....	9,310,905.33

NOTE.—All of the above represent notes given for amounts borrowed from the Pension Fund established by the Illinois Bell Telephone Company which fund is held by the Bankers Trust Company as Trustee.

[fol. 5607]

Supplemental to City's Exhibit No. 80

Illinois Bell Telephone Company

Balance Sheets, Years 1926 to 1930

Assets	1926	1927	1928	1929	1930
Intangible Capital	$3,977.89	$3,977.89	$3,977.89	$3,977.89	$3,977.89
Right of Way	763,827.17	830,397.28	943,539.77	1,072,365.98	1,184,459.35
Land and Buildings	16,575,397.02	17,473,055.91	18,994,947.44	20,390,981.90	22,824,194.83
Central Office Equipment	53,073,641.70	57,858,630.10	66,568,999.99	72,263,839.78	76,784,166.48
Station Equipment	34,852,201.46	41,456,405.31	44,993,153.51	48,117,542.53	49,317,717.40
Exchange Lines	75,873,888.45	83,753,043.40	90,355,248.98	96,795,844.79	102,112,438.15
Toll Lines	15,893,868.86	17,181,722.19	18,977,469.39	21,626,483.91	24,135,724.14
Other Plant	1,275,417.15	1,418,016.39	1,708,839.35	2,004,199.29	2,169,828.75
General Equipment	3,300,558.79	3,708,295.16	4,105,787.69	4,310,577.74	4,415,715.92
Total Fixed Capital	201,612,778.49	223,683,543.63	246,651,964.01	266,585,813.81	282,948,222.91
Construction Work in Progress	1,419,118.27	5,754,088.97	4,430,178.84	3,025,404.33	5,436,845.42
Investment Securities	931,600.00	946,600.00	1,839,067.62	2,632,495.62	2,759,195.62
Adv. to System Corps. for Constr., Etc.	....	....	....	55,664.67	....
Miscellaneous Investments	40,129.12	73,872.19	142,673.19	229,500.27	295,335.97
Total Perm. and Long Term Investments	204,003,625.88	230,458,104.79	253,063,883.66	272,528,878.70	291,439,599.92
Cash and Deposits	1,224,623.46	1,276,301.35	1,193,023.55	1,061,805.46	1,331,548.72
Marketable Securities	23,035.82	15,456.71	22,273.09	23,937.05	30,074.91
Bills Receivable	818.79	53,348.72	11,356.06	13,843.46	3,039.99
Accounts Receivable	6,686,557.10	7,514,368.79	7,392,568.24	8,634,857.67	17,479,470.77
Materials and Supplies	954,626.53	822,066.99	903,467.81	1,749,527.57	885,021.34
Total Working Assets	8,889,661.70	9,681,542.56	9,522,688.75	11,483,971.21	19,729,155.73
Accrued Income Not Due	7,059.05	10,299.34	6,459.05	10,021.42	18,810.68
Sinking Fund Assets	250,000.00	250,000.00	250,000.00	250,000.00	250,000.00
Prepayments	716,927.29	755,592.27	785,280.04	782,524.05	834,206.51
Unamortized Debt Discount and Expense	3,637,837.09	3,514,171.21	3,390,505.33	3,266,839.45	3,143,173.57
Other Deferred Debits	358,144.26	138,160.10	328,270.84	3,240,617.81	2,766,216.84
Total Deferred Debit Items	4,962,908.64	4,657,923.58	4,754,056.21	7,539,981.31	6,993,596.92
Total Assets	$217,863,255.27	$244,807,870.27	$267,347,087.67	$291,562,852.64	$318,181,163.25

[fol. 5608]

Supplemental to City's Exhibit No. 80

Illinois Bell Telephone Company

Balance Sheets, Years 1926 to 1930

Liabilities	1926	1927	1928	1929	1930
Capital Stock, Common	$80,000,000.00	$110,000,000.00	$110,000,000.00	$110,000,000.00	$150,000,000.00
Capital Stock Installments				20,033,500.00	
Total Capital Stock	80,000,000.00	110,000,000.00	110,000,000.00	130,033,500.00	150,000,000.00
Premiums on Capital Stock	3,433.25	4,168.25	4,168.25	4,168.25	4,168.25
Funded Debt	49,137,400.00	49,139,400.00	49,101,900.00	48,976,200.00	48,976,200.00
Adv. From System Corps. For Constr., Etc.	13,800,000.00		12,400,000.00	2,200,000.00	
Total Long Term Debt	62,937,400.00	49,139,400.00	61,501,900.00	51,176,200.00	48,976,200.00
Bills Payable		745,387.10	5,333,236.63	6,769,539.89	8,325,203.36
Accounts Payable	5,099,959.03	7,425,299.99	6,474,574.74	6,631,168.52	5,628,989.61
Total Working Liabilities	5,099,959.03	8,170,687.09	11,807,811.37	13,400,708.41	13,954,192.97
Accrued Liabilities Not Due	6,426,826.57	6,998,870.23	8,205,273.69	15,721,466.35	18,261,175.61
Unextinguished Premium on Debt					
Insurance and Casualty Reserves					
Liability on Account of Provident Funds	3,500,000.00	3,465,847.01	2,955.28	1,165.07	1,150.00
Other Deferred Credit Items	53,775.47	66,794.81	195,284.87	62,728.26	109,872.65
Total Deferred Credit Items	3,553,775.47	3,532,641.82	198,240.15	63,893.33	111,022.65
Reserve for Accrued Depreciation	49,175,385.93	53,740,621.08	59,224,823.84	60,524,704.11	63,677,730.15
Reserve for Amort. of Intangible Capital	216,036.04	241,669.50	254,216.61	274,086.36	289,018.77
Total Fixed Capital Reserves	49,391,421.97	53,982,290.58	59,479,040.45	60,798,790.47	63,966,748.92
Undivided Profits		2,206,893.00	2,986,649.46	4,275,212.11	2,571,590.09
Appropriated Surplus	5,686,948.82	7,480,867.19	9,293,613.64	11,046,496.04	12,625,953.00
Corporate Surplus Unappropriated	4,763,490.16	3,292,052.11	3,870,390.66	5,042,417.68	7,710,111.76
Total Surplus and Undivided Profits	10,450,438.98	12,979,812.30	16,150,653.76	20,364,125.83	22,907,654.85
Total Liabilities	$217,863,255.27	$244,807,870.27	$267,347,087.67	$291,562,852.64	$318,181,163.25

[fol. 5609]

Supplemental to City's Exhibit No. 80

Illinois Bell Telephone Company

Balance Sheet, December 31, 1931

Asset	
Intangible Capital	$3,977.89
Right of Way	1,292,348.00
Land and Buildings	23,434,195.49
Central Office Equipment	80,463,721.60
Station Equipment	49,305,480.46
Exchange Lines	104,567,303.41
Toll Lines	25,025,994.49
Other Plant	2,323,147.82
General Equipment	4,182,496.74
Total Fixed Capital	290,598,665.90
Construction Work in Progress	664,891.89
Investment Securities	2,848,910.62
Adv. to System Corps for Constr., Etc.	
Miscellaneous Investments	409,544.53
Total Perm. and Long Term Investments	294,522,012.94

Liabilities	
Capital Stock, Common	$150,000,000.00
Capital Stock Installments	
Total Capital Stock	$150,000,000.00
Premiums on Capital Stock	4,168.25
Funded Debt	48,825,600.00
Adv. From System Corps. For Constr., Etc.	
Total Long Term Debt	48,825,600.00
Bills Payable	9,810,905.33
Accounts Payable	5,031,355.02
Total Working Liabilities	14,842,260.35
Accrued Liabilities Not Due	15,261,626.48
Unextinguished Premium on Debt	

Cash and Deposits	962,608.92
Marketable Securities	3,089,423.93
Bills Receivable	3,679.71
Accounts Receivable	15,365,971.32
Materials and Supplies	962,341.74
Total Working Assets	20,384,025.62
Accrued Income Not Due	150,466.89
Sinking Fund Assets	93,225.98
Prepayments	739,056.51
Unamortized Debt Discount and Expense	3,010,070.61
Other Deferred Debits	3,149,417.90
Total Deferred Debit Items	6,991,771.00
Total Assets	$322,048,276.45

Insurance Premium on Debt	....
Insurance and Casualty Reserves	....
Liability on Account of Provident Funds	5,430.00
Other Deferred Credit Items	99,143.58
Total Deferred Credit Items	104,573.58
Reserve for Accrued Depreciation	68,942,377.45
Reserve for Amort. of Intangible Capital	300,289.13
Total Fixed Capital Reserves	69,242,666.58
Undivided Profits	816,906.81
Appropriated Surplus	13,997,877.38
Corporate Surplus Unappropriated	8,952,597.02
Total Surplus and Undivided Profits	23,767,381.21
Total Liabilities	$322,048,276.45

[fol. 5610]

EXHIBIT X-400

Supplemental to City's Exhibit No. 81

Illinois Bell Telephone Company Dividends, 1926 to 1930

	Cash	Stock	Total
Year 1926	$6,400,000	$......	$6,400,000
1927	7,000,000	......	7,000,000
1928	8,800,000	......	8,800,000
1929	8,800,000	......	8,800,000
1930	10,400,000	......	10,400,000

Supplemental to City's Exhibit No. 81

Illinois Bell Telephone Company Dividends, 1931

Cash	Stock	Total
$12,000,000	....	$12,000,000

Supplemental to City's Exhibit No. 82

Illinois Bell Telephone Company, Entire Company

Net Earnings Available for Interest and Dividends

Year 1926	$11,919,892.32
1927	12,877,837.27
1928	14,840,766.06
1929	17,370,610.45
1930	17,365,972.37

[fol. 5611]

EXHIBIT X-400

Supplemental to City's Exhibit No. 82

Illinois Bell Telephone Company, Entire Company

Net Earnings Available for Interest and Dividends

Year 1931	$16,153,652.15

Supplemental to City's Exhibit No. 117

Illinois Bell Telephone Company, Chicago Exchange

Amount of Billing to the American Telephone and Telegraph Company for Operating the Toll Properties Devoted to Long Lines Service in Chicago, 1926 to 1930

Year	Amount
1926	$1,449,575.03
1927	1,696,846.94
1928	2,189,245.51
1929	2,902,641.34
1930	2,797,755.82

The above billing includes the following items incurred in connection with A. T. & T. Company leased line, special contract and telephotographic services, as well as the handling of A. T. & T. Company toll messages:

(a) Wages of toll operators;
(b) Operating clerical wages;
(c) Rest and Lunch Room expenses;
(d) Operators training expense;
(e) Direct supervision;
(f) Stationery and other central office supplies;
(g) Power used in transmitting Long Lines messages;
(h) Benefit payments to employees engaged on Long Lines traffic;
(i) Heat, light and janitor service in quarters used for Long Lines purposes;
(j) Other miscellaneous expenses;
(k) 10% administration charge computed on total of above items.

In addition, the billing up to March 1, 1929, includes the annual charges on building space used for Long Lines purposes in the Main Group Buildings. Such annual charges for the subsequent period are included in the billing covering annual charges on plant reserved for Long Lines purposes.

[fol. 5612]

Exhibit X-400

Supplemental to City's Exhibit No. 117

Illinois Bell Telephone Company, Chicago Exchange

Amount of Billing to the American Telephone and Telegraph Company for Operating the Toll Properties Devoted to Long Lines Service in Chicago

Year	Amount
1931	$2,277,702.39

City's Exhibit 142 (Revised to Include 1929, 1930 and 1931)

American Telephone and Telegraph Company

Average Loans to Each Licensee Company (Dividing the Sum of the Loans Outstanding on the First Day of January, April, July and October by 4) were:

	1929	1930	1931
New England Tel. & Tel. Co.	$8,462,500.00	$11,200,000.00	$14,675,000.00
Southern New England Tel. Co.	4,900,000.00	6,879,300.00	3,487,500.00
New York Tel. Co.	22,675,000.00	46,750,000,00	38,687,500.00
New Jersey Bell Tel. Co.	17,897,103.42	31,022,103.42	36,998,551.72
Bell Tel. Co. of Penna. and two Associated Cos.	9,075,000.00	13,852,500.00	12,496,250.00
Ches. and Pot. Tel. Cos.	12,448,263.31	19,610,763.31	13,873,709.36
Southern Bell Tel. & Tel. Co.	26,435,675.41	362,500.00	1,550,000.00
Cumberland Tel. & Tel. Co.	....	....	....
Ohio Bell Tel. Co.	3,506,708.69	9,275,000.00	23,632,671.25
Cinn. and Subn. Bell Tel. Co.	0	0	0
Michigan Bell Tel. Co.	37,854,885.95	34,596,846.49	40,215,000.00
Indiana Bell Tel. Co.	3,500,000.00	5,381,239.93	5,175,611.50
Wisconsin Tel. Co.	656,250.00	7,150,000.00	4,225,000.00
Illinois Bell Tel. Co.	12,412,500.00	550,000.00	0
Northwestern Bell Tel. Co.	3,175,000.00	21,577,390.00	28,277,738.50
Southwestern Bell Tel. Co.	5,375,000.00	10,525,000.00	3,925,000.00
Mountain States Tel. & Tel. Co.	13,887,500.00	12,325,000.00	11,275,000.00
Pacific Tel. and Tel. Co. and 3 Associated Cos.	63,526,880.48	36,626,630.48	23,824,000.00
Total	$245,788,267.26	$267,684,273.63	262,318,532.33

[fol. 5613]

EXHIBIT X-400

City's Exhibit 142-A (Revised to Include 1929, 1930, and 1931)

American Telephone and Telegraph Company

Amounts Received from All Associated Bell Companies for License Payments During the Years 1918-1928 Were as Follows (a):

*   *   *   *   *   *   *

	1929	1930	1931
New England Tel. & Tel. Co.	$1,080,838.98	$1,106,009.28	$1,106,937.03
Southern New England Tel. Co.	242,848.99	254,124.63	253,027.87
New York Telephone Company	2,937,169.35	3,151,726.53	3,104,455.36
New Jersey Bell Tel. Co.	697,108.14	720,456.11	712,817.22
Bell Tel. Co. of Penna. and two Associated Companies	1,066,132.54	1,100,627.99	1,068,335.23
Ches. and Pot. Tel. Co.	503,912.02	526,993.36	548,439.12
Cumberland Tel. and Tel. Co.	....	....	....
Southern Bell Tel. and Tel. Co.	876,467.00	895,161.36	854,046.44
Ohio Bell Tel. Co.	626,184.48	638,042.57	619,171.32
Cinn. and Subn. Bell Tel. Co.	152,561.45	154,809.49	152,101.45
Michigan Bell Tel. Co.	596,888.72	599,582.41	560,074.50
Indiana Bell Tel. Co.	195,586.50	196,149.48	187,541.01
Wisconsin Tel. Co.	255,642.92	262,501.88	256,277.57
Illinois Bell Tel. Co.	1,305,366.17	1,355,954.93	1,306,313.57
Northwestern Bell Tel. Co.	577,292.23	594,756.85	583,835.18
Kansas City Tel. Co.	....	....	....
Southwestern Bell Tel. Co.	1,207,533.86	1,244,798.71	1,207,907.47
Mountain States Tel. and Tel. Co.	315,472.22	325,552.37	319,772.35
Pacific Tel. and Tel. Co. and 3 Associated Companies	1,445,200.12	1,508,012.56	1,502,501.11
Bell Telephone Co. of Canada	373,382.62	390,629.12	379,806.87
Total	$14,455,588.31	15,025,889.63	14,718,360.67

(a) Bases for Payments: Years 1929-1930 and 1931—1½% of gross earnings.

[fol. 5614]

Exhibit X-400

City's Exhibit 142-C

Revised to Include 1929, 1930, and 1931

American Telephone and Telegraph Company, Illinois Bell Telephone Company

Estimated Requirements and Cash Taken

* * * * * * *

	Illinois Bell Tel. Co.		All Associated Companies	
	Estimated Requirements	Cash Taken	Estimated Requirements	Cash Taken
1929.....	$15,081,000 (b)	$13,131,303	$252,556,000	$220,924,950
1930.....	23,624,000 (b)	19,048,013	297,600,739	180,263,031
1931.....	9,925,000 (b)	0 (c)	129,583,000 (c)	77,327,470

(b) Exclusive of repayments of funds previously left with A. T. & T. Co. June 5, 1929.

Bold face in red.

(c) Does not include advances made under special authorizations as follows:

New York Tel. Co	$68,800,000
Ohio Bell Tel. Co	12,971,490
Total	$81,771,490

142—
1929—4.98
432 30—6.69

City's Exhibit 148

American Telephone and Telegraph Company

Cost of Capital Funds Procured by the American Company Through Sale of Stock, Bonds and Other Borrowings

	Ratio of Capital Funds Procured		Annual Cost		
	Stock	Bonds and Other Borrowings	Stock	Bonds and Other Borrowings	Total
1929..........	18.27	81.73	7.35	4.45	4.98
1930..........	75.77	24.23	7.30	4.76	6.69

[fol. 5615]

Exhibit X-400

11/11/31

Supplemental to City's Exhibit No. 151

Illinois Bell Telephone Company

Date	Total No. of Employees	No. of Employees Eligible to Subscribe	No. of Shares of A. T. & T. Stock Issued to Employees During Year	No. of Shares of A. T. & T. Stock under Subscription End of Year	% of Total Employees Subscribing
Dec. 31, 1926...	27,792	23,608	9,935	65,004	61.16
1927...	28,916	24,041	12,155	69,222	62.60
1928...	29,708	26,251	12,106	80,054	69.08
1929...	31,030	27,262	9,290	123,950	79.89
1930...	29,264	28,354	20,923	113,621	85.09

Supplemental to City's Exhibit No. 151

Illinois Bell Telephone Company

Dec. 31, 1931...	26,475	26,508	23,999	80,911	73.61

[fol. 5616] EXTRACTS FROM EXHIBIT X-402

All Correspondence Between Counsel and Parties

* * * * * * *

October 19th, 1931.

Messrs. Charles M. Bracelen, Horace Kent Tenney, William H. Thompson, Kenneth F. Burgess, attorneys and counsel for Illinois Bell Telephone Company.

GENTLEMEN:

* * * * * * *

8. Make available for inspection minute book of Executive Committee and of Board of Directors of A. T. & T. for each year 1919-1930 and of Western Electric for each year 1916-1930.

* * * * * * *

Yours very truly, (Signed) Benjamin F. Goldstein.

* * * * * * *

October 27, 1931.

Illinois Bell Telephone Company, 212 West Washington Street, Chicago

Mr. George I. Haight, 209 S. La Salle St., Chicago, Ill.;
Mr. Edmund D. Adcock, 209 S. La Salle St., Chicago, Ill.;
Mr. Benjamin F. Goldstein, 10 S. La Salle St., Chicago, Ill.

GENTLEMEN:

* * * * * * *

With respect to your letter of October 19, we decline to furnish the statements or inspections requested in Nos. 1, 2, 4, 7, 8 and 11. A statement is being prepared covering [fol. 5617] the information requested in No. 3.

* * * * * * *

Yours very truly, (Signed) C. M. Bracelen, Horace K. Tenney, W. H. Thompson, K. F. Burgess.

[fol. 5618] EXTRACTS FROM EXHIBIT X-403

Ruskin's Statement of Number of Pages in Cr. and Mr. Reports Furnished by Plaintiff at Later Date

* * * * * * *

Total M R and C R and Q R, pp.	1,703
Total pp. Prov. Est.	7,967
Total pp.	9,670

[fol. 5619] EXTRACTS FROM EXHIBIT X-404

This is to certify that the Graybar Electric Company, Inc., during the year 1929 maintained a department which tabulated our sales and gross profits among the following classifications:

Telephone Apparatus,
Lead Covered Cable,
Supplies.

This is to certify that we discontinued tabulating our sales and gross profits by classifications effective May 1, 1930, but again resumed the classification of these items effective May 1, 1931. The information for the years 1930 and 1931 is, therefore, not available.

M. E. Wagner, Assistant Secretary.

June 14, 1932.

(Here follows side folio 5620)

EXHIBIT X-405

% Profit on Investment in Business with Illinois Bell 1916 - 1931 and 1923 - 1931.

	a	b	c	d	e	f	g	h	i	j		k		l		m	n	o
	Bell Sales FAm	Bell Int. TA	Turnover (a ÷ b)	Bell Sales LCC	Bell Int. L.C.C.	Turnover (d ÷ e)	Bell Sales Supplies	Bell Int. Supplies	Turnover (g ÷ h)	Sales to Illinois Bell TA	%	LCC	%	Supplies	%	Illinois Bell Investment TA (j ÷ c)	LCC (k ÷ f)	Supplies (l ÷ i)
1916	23,226	29,613	.78	16,587	6,909	2.40	34,122	9,590	3.56	2,616	36	1,481	66	1,481	.6	3,226	617	416
17	35,765	44,473	.81	24,078	10,905	2.21	44,847	11,106	4.04	3,170	38	2,686	49	1,904	1	3,914	1,215	471
18	35,581	53,577	.66	9,868	7,478	1.32	33,768	9,620	3.51	2,255	34	398	1.3	838	(1.0)	3,417	302	239
19	34,972	51,707	.68	7,735	6,084	1.27	37,654	12,148	3.10	2,674	54	726	1.0	1,366	[illegible]	3,937	572	441
20	54,057	71,624	.76	16,138	8,468	1.91	60,515	18,822	3.22	3,135	66	765	5.1	1,900	.8	4,180	461	690
21	89,191	99,590	.90	11,505	7,720	1.49	42,189	18,020	2.34	8,690	46	437	15	2,186	.25	9,656	293	934
22	99,015	101,171	.98	16,927	8,047	2.10	44,005	13,871	3.17	7,213	46	1,136	44	2,654	.28	7,350	541	837
23	108,789	106,526	1.02	23,829	10,510	2.27	56,041	14,468	3.87	5,936	48	1,542	46	2,804	.6	5,120	679	725
24	143,201	128,705	1.11	34,226	16,068	2.13	55,873	13,715	4.07	8,753	68	2,093	30	3,111	.3	8,886	983	944
25	126,793	126,495	1.00	40,092	22,517	1.78	59,815	14,083	4.25	11,042	85	3,752	61	3,857	.8	11,046	2,108	926
26	134,080	118,982	1.13	42,703	25,153	1.66	70,420	15,620	4.51	9,911	85	3,919	1.1	4,417	1.0	8,638	2,361	979
27	133,138	126,438	1.05	37,776	26,424	1.43	70,148	15,509	4.52	13,585	91	3,459	[illegible]	4,722	1.2	12,862	2,324	1,045
28	136,467	120,742	1.13	43,339	24,892	1.74	88,002	15,744	5.59	12,779	10.3	3,212	5.1	4,901	1.2	11,309	1,846	877
29	178,169	149,564	1.19	63,915	34,468	1.85	130,208	20,495	6.36	13,326	1.9	2,708	14	6,265	1.1	11,198	1,464	983
30	195,128	197,446	.99	56,228	44,165	1.27	86,974	28,951	3.00	14,634	65	2,744	65	6,448	(1.0)	14,782	2,156	2,156
Total	1,527,151	1,526,327	1.00	445,448	264,798	1.72	914,674	231,764	3.95	119,383		34,060		48,868		119,216	17,848	12,368
1931	141,193	184,867	.76	21,579	43,575	.49	56,833	31,982	1.78	[illegible]771	45	538	(5.5)	8,078	(2.1)	1,981	1,138	2,760
Tot. 1916-31	1,668,177	1,721,204		467,027	302,873		971,506	263,746		123,654		31,618		52,886		125,196	19,986	15,122
Tot. 1923-31	1,296,398	1,269,749		364,187	247,262		674,406	170,557		94,011	57	23,989	58	41,557	.3	89,47[illegible]	15,845	11,195

[illegible] the ratios of net profit to sales all Bell [illegible]

EXHIBIT X-405

Illinois Bell 1916 - 1931 and 1923 - 1936

Sales to Illinois Bell TA	%	LCC	%	Supplies	%	Illinois Bell Investment TA (j-c)	LCC (k-f)	Supplies (l-i)	Net Profit - Ill. Bell TA	LCC	Supplies	Total (p+q+r)	Total Inv.	% Net Profit TA (p÷m)	LCC (q÷n)	Supplies (r÷o)	Total	Total Bell
2,616	36	1,481	66	1,481	.6	3,226	617	416	91	98	9	198	4,759	2.1	15.9	2.2	4.6	4.6
3,170	38	2,686	49	1,904		2,914	1,715	471	120	132	0	252	5,600	3.1	10.9	0	4.5	3.8
2,255	34	398	1.3	838	(1.0)	3,417	302	239	167	5	(8)	164	3,958	4.9	1.7	(3.3)	4.1	3.4
2,674	54	726	1.0	1,366	(1.0)	3,937	577	441	144	80	(3)	221	4,745	3.7	14.0	(.7)	4.5	3.8
3,135	66	765	5.1	1,900	.8	4,180	461	690	207	39	15	261	5,171	5.0	1.7	2.6	5.0	4.9
8,690	46	437	5.5	2,186	.5	9,656	793	934	921	24	55	1,000	10,188	9.5	1.2	5.9	9.2	8.9
7,203	46	1,136	4.4	2,654	.8	7,350	541	837	331	56	58	445	8,728	4.5	10.4	6.9	5.1	5.8
5,936	48	1,542	46	2,804	.6	5,120	679	725	261	71	17	349	7,224	4.5	10.5	2.3	4.8	4.7
8,753	68	2,093	30	3,111	.3	9,866	983	984	595	63	9	667	9,633	7.5	[illegible]	1.2	6.9	6.4
11,046	85	3,252	61	3,857	.8	11,467	2,108	926	1,160	229	31	1,420	14,060	10.5	10.9	3.4	10.1	10.0
9,761	85	3,919	1.1	4,417	1.0	8,638	2,361	979	830	43	44	917	11,978	9.6	1.8	4.5	7.7	7.8
13,585	9.3	3,459	8.4	4,722	1.3	12,862	2,324	1,045	1,311	284	61	1,655	16,228	10.2	12.2	5.8	10.2	10.1
12,779	10.8	3,212	5.1	4,901	1.3	11,308	1,846	877	1,303	164	64	1,531	14,032	11.5	8.9	2.3	10.9	10.7
13,326	6.9	2,708	14	6,255	1.1	11,198	1,464	983	760	227	88	1,075	13,645	6.8	15.5	9.0	7.9	8.5
14,634	46	2,746	6.5	6,448	(1.0)	14,782	[illegible]	2,156	173	173	(65)	781	19,093	4.6	8.1	(3.0)	4.1	4.3
119,383		34,060		48,858		119,216	17,848	12,868	8,773	1,688	975	10,326	149,427	7.4	9.5	3.0	7.3	7.0
4,271	8	558	(5.5)	8,028	(.7)	5,931	1,138	2,760	363	(9)	(106)	248	9,829					
123,654		31,618		52,886		125,147	18,986	15,128	9,236	1,679	269	11,184	159,256	7.4	8.8	1.8	7.0	
94,011	27	23,989	58	41,557	.3	88,47[illegible]	15,445	11,185	7,255	1,245	143	8,643	115,712	8.1	8.3	1.3	7.5	

%'s are the ratios of net profit to sales [illegible] Balance [redacted]

Based on balance of [illegible] shown along the [illegible] columns

[fol. 5621] EXTRACTS FROM EXHIBIT X-406

P. 3

[Reprinted from the Proceedings of the American Statistical Association, March, 1928]

Some Important Principles of Index Number Construction

By Robert W. Burgess

In order to provide a background of summarized facts as a basis for price forecasts, determination of policies, and analysis of operating results, the Western Electric Company maintains a considerable number of internal index numbers. The principal index numbers in use are as follows:

(a) An index number of the prices paid for all raw materials used in the manufacture of lead covered cable and another one for materials used in the manufacture of telephone apparatus.

(b) An index number of sales prices to Bell Telephone Companies of all merchandise sold to them by the Western Electric Company, either as a manufacturer or as purchasing agent for the Bell System. This index number is a composite of four index numbers covering:

(1) Lead covered cable.

(2) Telephone supplies—that is to say, telephone poles, directories, wire and strand, and various items purchased for the System and sold without change of form.

(3) Services, principally installation of central offices.

(4) Telephone apparatus, that is to say, all specialized telephone material, aside from lead covered cable.

(c) An index number of sales prices for the Graybar Company.

(d) A shop cost index for telephone apparatus.

(e) Indices of plant costs (buildings and machinery) for use in connection with special depreciation reserves, and as a guide for decisions as to new construction.

(f) Indices of weekly earnings of certain groups of employees.

X-406, P. 7

Uses of Index Numbers

The aim of the following discussion is to explain how index numbers of internal price and cost, though valuable as an aid in making management decisions, are not adapted to showing actual profits.

The main uses of price index numbers are:

1. To compare the average level of prices at different times. Such comparisons are more significant when made for various companies and various groups of commodities.

2. To reduce dollar value of sales at different times to the same price level so as to get an approximate measure of the trend of physical volume of sales. This method is valuable in the case of the Western Electric Company because there is no simple unit, other than the dollar, in which sales volume can be summarized.

The main use of index numbers of cost is to show the trend of costs insofar as changes in expenditure are due to actually paying more for the same thing, as distinguished from changes due to differences in design or changes associated with the inevitable reduction of costs of a new item during the first year or two of production.

In constructing price and cost index numbers, the aim is to show the trend, omitting entirely cases which are recognized as exceptional. For instance, when an item of new design is introduced, actual average costs will be somewhat high for some time till the methods of manufacture are adapted to the particular processes required and the personnel become familiar with the new work. All the expense of installing the new machinery and processes also will be an actual outgo of this period, though fairly distributed by accounting processes over a longer time. In order to get a figure representing true changes in cost levels, no items which have been in production for less than two years are included in the sample on which the cost index is based.

Even aside from new items, it is impracticable to include all items manufactured as a basis for the index. The attempt is, of course, made to select a typical sample, but there is a possibility that in any period the cost conditions for the less important items will be somewhat different from the conditions affecting the heavy runners used as samples. In particular, some items are produced in such small quantities or for such a short period that no bulletin costs are established and changes in such costs may not parallel changes in the principal items.

It is clear, then, that the index number of costs is not intended to give a complete picture of the fluctuations in total shop costs and cannot be used as a substitute for shop records of actual expenditures.

Turning now to the index of sales prices, this index intentionally omits from consideration items which are new and perhaps not yet priced in accord with shaken down costs. Moreover, the index, so far as the combination of the subclasses and the major classes is concerned, is based on average weights over a typical period rather than the actual quantity sold year by year.

[fol. 5623] X-406, P. 8

A comparison of the shop costs index and the sales price index would not give a valid picture of profits for any particular period for the following reasons:

1. The cost index does not cover new items for which sales prices are not usually high enough to cover initial costs with the usual margin of profits.

2. The cost index reflects only shop costs, not costs of distribution, development costs, nor general expense.

3. Neither the shop cost index nor the sales price index covers items manufactured in small quantities or manufactured for one or two years only. The price index includes, specifically, a much larger proportion of sales than does the shop cost index, but even so, is not all-inclusive.

4. The principal weights used in the sales price index numbers are average or typical quantities or values rather than quantities or values varying each year.

5. The sales price index for apparatus and equipment includes certain material manufactured by others than the Western Electric Company but sold to Bell Telephone Companies on the same basis as material of Western Electric manufacture.

6. The actual shop output of Western Electric factories includes some items not destined for Bell Telephone Companies.

7. A varying time lag, different for different items, exists between the time articles are completed at the factories and the time they are sold. The cost level of a particular month does not apply to the sales of that month.

8. The profits of a given year are seriously affected by inventory revaluations required at the end of the year. These adjustments are not considered in compiling the index of standard shop costs and are only one of many factors considered in changing prices.

RWB:ACF.
10/29/31.

[fol. 5624] X. 406, P. 43

Description of Method Used in Compiling the Trend of Western Electric Prices for Telephone Apparatus Sold to Bell Telephone Companies

General

This price trend was prepared to show the course of Western Electric Company prices for Telephone Apparatus sold to Bell Telephone Companies since the year 1914. This trend excludes the effect of price changes made as a result of major changes in design and the adjustment of introductory prices from a level which reflected the higher initial costs inherent in new production to the lower price level which resulted from the "shaken down" costs which naturally followed when initial production difficulties were ironed out.

[fol. 5625] X-406, P. 62

Index of Plant Costs

Buildings

Hawthorne, 1920 = 100

	Hawthorne	Kearny
1920	100	
1921	86	

	Hawthorne	Kearny
1922	75	..
1923	87	94
1924	91	96
1925	91	95
1926	89	96
1927	91	97
1928	92	97
1929	94	95
1930	93	98

[fol. 5626]

X-406, P. 64

Index of Plant Costs

Permanent Fixtures

Hawthorne, 1920=100

	Hawthorne	Kearny
1920	100	..
1921	93	..
1922	83	..
1923	93	92
1924	96	96
1925	100	95
1926	101	98
1927	100	96
1928	100	96
1929	100	98
1930	100	102

[fol. 5627]

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Index of Machinery Costs

	1914=100
1920	223
1921	200
1922	187
1923	200
1924	194
1925	203
1926	206
1927	209
1928	213
1929	212
1930	211

[fol. 5628] X-406, p. 70

Copy

JOR-6055-2C

February 7, 1931.

T. J. Savage, Manufacturing Accountant, 195 Broadway, New York:

Referring to your letter of February 3, 1931 and our telephone conversation of February 6, 1931, regarding machinery costs for 1929 and 1930.

Investigation shows that the price increase of 1930 over 1925 was 28%. Prices during 1930 were at practically the same level throughout the year and the 1930 ending cost would therefore show the same increase over 1925 as the average price increase for the year. It is also true that price fluctuations throughout 1929 were negligible thus making the 28% average price increase representative of the situation at the end of 1929.

This information was obtained from the Engineer of Manufacture Machinery Procurement Organization and has been confirmed with the Purchasing Department. We raised the question as to why 1930 costs were not less than 1929 as we would expect, but were informed that the economic situation had had no appreciable effect on machinery prices to date. The principal factors in machinery costs are labor and overhead charges, raw material having only a slight effect, which so far as 1930 is concerned is negligible.

(Signed) R. A. Granquist, Assistant Superintendent of Accounting.

EMS.

[fol. 5629] X-406, p. 71

November 13, 1931.

Mr. R. W. Burgess:

With reference to your inquiry as to conditions back of the 28% increase in costs of machinery purchased in 1930 and 1929 as compared with 1925 costs, as stated in the letter from R. A. Granquist to T. J. Savage of February 7, 1931, I find after discussion with several of our machinery experts that part of this increase was in fact due to changes in design and was not strictly a change in the cost of the same thing. No precise estimate is available as to how much of the cost change was due to each of these factors, but our engineers estimate that approximately 75% of the price change since 1925 represents a true change in cost level. Your assumption of 50% is therefore very conservative.

A. L. Luessenhop.

ALL.JW.

[fol. 5630] X-406, p. 72

(Copy.)

April 25, 1929.

Mr. R. W. Burgess:

Replying to your memorandum of April 9th regarding price trend of machinery purchased during the year 1928. I am giving below the price trend for the past four years and the present view for this year:

1925	100.0%
1926	112.5%
1927	113.5%
1928	118.0%
1929 Present View	120.0%

The following is an extract from Mr. Stahr's letter to me dated April 19th with respect to the 1928 and 1929 price trends:

"The rise in cost in 1928 and 1929 over that reported for 1927 can be attributed to the fact that machine tool manufacturers throughout the country are overloaded with work and are working beyond their normal capacity which necessitates overtime and Sunday work resulting in increased costs."

(Signed) D. B. Peckham.

DBP.VC.

[fol. 5631]

Exhibit X-408

Illinois Bell Telephone Company, Chicago Area

Book Cost of Central-Office Telephone Equipment

		Gross Additions	Retirements	Net Additions	Balance
January 1, 1923.	Manual Local	....	....	....	$17,806,899
	" Toll	....	....	....	1,737,115
	Dial	....	....	....	....
	Total	....	....	....	$19,544,014
December 31, 1923.	Manual Local	$3,120,153	$431,972	$2,688,181	$20,495,080
	" Toll	213,185	44,293	168,892	1,906,007
	Dial	5,064,290	....	5,064,290	5,064,290
	Total	$8,397,628	$476,265	$7,921,363	$27,465,377
December 31, 1924.	Manual Local	$2,401,313	$428,851	$1,972,462	$22,467,542
	" Toll	512,136	117,405	394,731	2,300,738
	Dial	17,634	360	17,274	5,081,564
	Total	$2,931,083	$546,616	$2,384,467	$29,849,844
December 31, 1925.	Manual Local	$3,488,053	$318,904	$3,169,149	$25,636,691
	" Toll	747,733	88,988	658,745	2,959,483
	Dial	2,154,854	2,424	2,152,430	7,233,994
	Total	$6,390,640	$410,316	$5,980,324	$35,830,168
December 31, 1926.	Manual Local	$3,928,195	$124,299	$3,803,896	$29,440,587
	" Toll	647,730	62,318	585,412	3,544,895
	Dial	935,980	26,065	909,915	8,143,909
	Total	$5,511,905	$212,682	$5,299,223	$41,129,391
December 31, 1927.	Manual Local	$2,710,549	$371,730	$2,338,819	$31,779,406

	Manual Toll	774,022	135,848	638,174	4,183,069
	Dial	431,658	41,269	390,389	8,534,298
	Total	$3,916,229	$548,847	$3,367,382	$44,496,773
December 31, 1928.	Manual Local	$1,838,324	$703,241	$1,135,083	$32,914,489
	“ Toll	615,110	89,030	526,080	4,709,149
	Dial	4,763,183	26,097	4,737,086	13,271,384
	Total	$7,216,617	$818,368	$6,398,249	$50,895,022
December 31, 1929.	Manual Local	$960,312	$2,437,334	$1,477,022*	$31,437,467
	“ Toll	3,892,030	2,056,740	1,835,290	6,544,439
	Dial	3,755,181	58,242	3,696,939	16,968,323
	Total	$8,607,523	$4,552,316	$4,055,207	$54,950,229
December 31, 1930.	Manual Local	$1,913,050	$697,403	$1,215,647	$32,653,114
	“ Toll	1,407,397	500,549	906,848	7,451,287
	Dial	472,889	187,756	285,133	17,253,456
	Total	$3,793,336	$1,385,708	$2,407,628	$57,357,857
December 31, 1931.	Manual Local	$552,463	$1,869,059	$1,316,596*	$31,336,518
	“ Toll	732,962	332,853	400,109	7,851,396
	Dial	3,668,459	33,662	3,634,797	20,888,253
	Total	$4,953,884	$2,235,574	$2,718.310	$60,076,167

* Red.

[fol. 5632]

EXHIBIT X-409

Illinois Bell Telephone Company, Chicago Exchange

Company Stations

	Total Inward Movement*	Total Outward Movement*	Net Increase	No. in Service End of Period
Year 1923	235,075	182,224	52,851	691,545
" 1924	263,868	213,477	50,391	741,936
" 1925	288,227	239,399	48,828	790,764
" 1926	307,364	250,058	57,306	848,070
" 1927	320,119	264,729	55,390	903,460
" 1928	323,343	284,788	38,555	942,015
" 1929	337,174	291,298	45,876	987,891
" 1930	303,981	310,547	6,566✱	981,325
" 1931	291,086	332,930	41,844✱	939,481

* Includes Changes of Address.
✱ Decrease.

[fol. 5633]

EXHIBIT X-410

Illinois Bell Telephone Company, Chicago Exchange

Figures Used in Arriving at Average Assets for 1923

	Dec. 31, 1922	Dec. 31, 1923
Total Plant in Service—per books	$84,400,336	$98,635,672
Less Displacement entry made on books during the year 1924 in connection with property actually retired prior to 1922	105,368	105,368
Net	84,294,968	98,530,304
General Equipment—per books	1,287,480	1,509,747
Total Plant in Service and General Equipment	85,582,443	100,040,051
Construction Work in Progress	6,019,435	812,543
Total—End of Year	$91,601,883	$100,852,594
Average for Year 1923		$96,227,238
Percent (a) Average for year 1923	96,227,238	95.413746%
of (b) Total end of year	100,852,594	

* * * * * * *

	Reproduction Cost New Less Depreciation of Plant in Service and General Equipment, Construction Work in Progress and Going Value	
	End of Year 1923 (Line 7—Exh. A-53)	Average for Year 1923 (Line 8—Exh. A-53) 95.41% of Line 7
Intrastate Exchange	$145,681,260	$138,994,490
" Toll	6,721,860	6,413,327
Total Intrastate	152,403,120	145,407,817
Interstate Toll	7,163,610	6,834,800
Total Chicago	$159,566,730	$152,242,617

* * * * * * *

	Book Cost of Plant in Service, General Equipment, and Construction Work in Progress	
	End of Year 1923 (Line 14—Exh. A-53)	Average for Year 1923 (Line 15—Exh. A-53) 95.41 — % of Line 14
Intrastate Exchange	$92,128,543	$87,903,294
" Toll	4,221,847	4,028,222
	96,350,390	91,931,516
Interstate Toll	4,502,204	4,295,722
Total Chicago	$100,852,594	$96,227,238

[fol. 5634] EXHIBIT X-415

Illinois Bell Telephone Company, Chicago Exchange

Public Pay Stations

(All Available for Local Service and Toll Service)

	One-party Lines	
	Main Stations	Extensions
December 31, 1923	11,082	987
" " 1924	12,015	985
" " 1925	13,037	1,033
" " 1926	14,214	1,053
" " 1927	15,705	1,192
" " 1928	16,857	1,432
" " 1929	18,409	1,198
" " 1930	20,440	1,364
" " 1931	22,057	1,475

[fol. 5635] EXTRACTS FROM EXHIBIT X-416

Advice No. 40, dated July 15, 1919, to Public Utilities Commission, Springfield, Ill., with accompanying schedules issued by Chicago Telephone Company, etc. (17 sheets). Attached petition with Exhibit A.

(Here follow side folios 5636, 5637, 5638, 5639, 5640, 5641, 5642, and 5643)

(6)

EXHIBIT X-416

7-16-19

STATE OF ILLINOIS PUBLIC UTILITIES COMMISSION

In the Matter of the Application
of the CHICAGO TELEPHONE COMPANY,
for authority to put into force
certain Rates throughout the
State of Illinois.

7/16 19

Application No. 411

The petition of the above named Chicago Telephone Company, Applicant, respectfully represents and shows:

1. That the applicant is a corporation duly organised and existing under the laws of the State of Illinois, with its principal place of business in the City of Chicago, Illinois, and that it owns within the State of Illinois, principally in the Counties of Cook, McHenry, Lake, Kane, Du Page, Kendall, Grundy and Will therein, certain plant, equipment or property to be used by it for the transmission of telephone messages between points within the State of Illinois, and that, as a public utility it is subject to the provisions of an act entitled "An Act to provide for the Regulation of Public Utilities" in force in the State of Illinois, herein referred to as the Public Utilities Act.

2. That the applicant on January 1, 1914, owned and operated the plant, equipment and property aforesaid, for the purposes aforesaid, and continued to own and operate the said plant up to and including July 31, 1918. That on the last mentioned date the control, operation and management of the aforesaid plant, equipment and property, and the possession thereof, was assumed by the Government of the United States pursuant to an Act of Congress, entitled, "Joint Resolution to authorize the President, in time of war, to supervise or take possession and assume control of any telegraph, telephone, marine cable, or radio system or systems or any part thereof and to operate the same in such manner as may be needful or desirable for the duration of the war, and to provide

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just compensation therefor." approved on the 16th day of July, 1918. and that the aforesaid possession, operation, control and management have continued as aforesaid from July 31, 1918 up to and including the date hereof, during all of which time this applicant has been engaged in the management and operation of its said properties as an agent of the United States Government, and during said last mentioned time has not had in effect any telephone rates of its own.

3. That pursuant to the provisions of the Public Utilities Act the applicant filed with the State Public Utilities Commission of Illinois on January 27, 191 its schedule of rates and charges which were in effect on July 1, 1913, and continued said rates in effect without change or modification or any application therefor up to and including July 31, 1918. That certain of said rates, to-wit, the charges and rates for telephone service within the City of Chicago and certain territory adjacent thereto, had been fixed and determined by ordinances of said City of Chicago passed by the City Council thereof on November 6, 1907 and May 26, 1913. That certain of said rates fixed by said ordinances were discriminatory and in violation of the provisions of said Public Utilities Act, but said discriminatory rates in the City of Chicago remained in effect without complaint until a formal complaint was filed before the State Public Utilities Commission of Illinois by one Myer J. Stein against this applicant and the City of Chicago, charging them among other things with discrimination in existing rates on file as aforesaid; and that on July 1, 1918 said Commission entered an order upon said complaint finding that discrimination in the said rates existed, and entered an order directing the applicant to file with the Commission for its approval a schedule of reasonable rates for both rental and toll

-[illegible]-

5537

4814B

telephone service within the territory served by said applicant within and without the City of Chicago, eliminating therefrom all discriminations of any kind as among, between or against individuals, communities or municipalities.

5. That after July 31, 1918 the Postmaster General of the United States, under authority of the Act of Congress aforesaid and the Proclamation of the President thereunder, continued in force the rates for toll and local exchange service which had been theretofore in force, and filed with the Public Utilities Commission; that on August 28, 1918 by order duly issued, the Postmaster General, acting under the authority aforesaid, determined upon and fixed certain charges for the installation and moving of telephone service and equipment, which were subsequently modified by further similar order on November 18, 1918, which said charges as modified as aforesaid, were put into effect by this applicant as an agent of the Government of the United States, and continued in force up to the date hereof.

6. That on December 13, 1918 the Postmaster General, acting under the authority aforesaid, ordered the applicant to put into effect certain rates for toll service within the State of Illinois; that the applicant was instructed to put said toll rates into effect on January 21, 1919, but was prevented from so doing by injunction issued by the Superior Court of Cook County, Illinois, and that said rates were not put into effect until midnight of June 6, 1919, when said rates were placed in effect by this applicant as agent for the Government of the United States, and have been continued in force up to the date hereof.

7. That prior to June 6, 1919 the Postmaster General of the United States, acting under the authority aforesaid, approved certain exchange telephone rates to be charged by the applicant

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as agent of the Government of the United States, within the State of Illinois, and that said rates so approved were put into effect by the applicant, as agent as aforesaid, on June 11, 1919, in the territory outside of the City of Chicago, and on June 16, 1919 in the City of Chicago, and have been continued in effect up to the date hereof.

8. That an Act of Congress of the United States, approved July 11, 1919 and in effect July 31, 1919, repealing in part said Act of Congress above referred to, provides that the toll and exchange rates now charged by the applicant as agent of the Government of the United States, for telephone service furnished by means of the properties of this applicant, are to remain in full force and effect until December 1, 1919 unless sooner modified or changed by the public authorities - State, municipal, or otherwise - having control or jurisdiction of tolls, charges and rates or by contract or by voluntary reduction.

9. That since the passage of the last mentioned Act of Congress, the City of Chicago, which, prior to the date on which Public Utilities Act became effective, exercised certain jurisdiction over the applicant herein, under the ordinances aforesaid, in connection with its rates and charges, has attempted to assert its jurisdiction to fix and determine the rates and charges for telephone service of this applicant, contrary to the provisions of said Public Utilities Act and to that end has served upon this applicant notice of its intention to proceed on the 12th day of August, 1919, with the regulating and fixing of rates for telephone service to be charged by the applicant in the City of Chicago; that in so doing the City of Chicago is asserting its right to modify or change the said rates as a

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public authority having control or jurisdiction of said rates in accordance with the provisions of the said Act of Congress, approved July 11, 1 1 , contrary to the provisions of the Public Utilities Act, which gives to the Public Utilities Commission of this State sole jurisdiction over the regulation of rates; and, further, that said City of Chicago claims that upon the restoration to this applicant of its telephone system on the 1st day of August, 1 19, in accordance with said Act of Congress, the rates prevailing at the time the Government of the United States took control of said system in Chicago, including the rates which this Honorable Commission has heretofore found to be discriminatory and unlawful, as hereinabove set forth, will automatically be restored as the lawful rates; as evidenced by the copy of said notice from the City of Chicago hereto attached as "Exhibit A".

10. That the expenses of operating the telephone system of the applicant have greatly increased since January 1, 1914 and particularly during the period from April, 1 17, when the United States entered the war, up to the present time, but that the revenues arising from said operation have only slightly increased during said period, and wholly out of proportion to the increased expenses; that during said last named period the

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applicant put into effect increases in its wage schedules in excess of One Million Eight Hundred Thousand Dollars ($1,800,000) a year more than had theretofore been paid, and that the prices of materials used in the telephone industry advanced substantially during said period, such increases in some instances amounting to approximately one hundred per cent. (100%) over the prices previously prevailing; that it will be necessary to continue in force the wage increases herein referred to and pay greatly increased prices for material during the remainder of the year 1919 and thereafter.

11. That during the period of Federal control the applicant kept its accounts in accordance with the standards of the Interstate Commerce Commission of the United States, and of the Public Utilities Commission of Illinois. It appears from said accounts that for the first five (5) months of the year 1919 the operation of the property of the applicant by the United States Government, under the rates in effect from January 1, 1914 to June 6, 1919 shows a deficit of the sum of $883,645.00 after the payment of the usual interest charges and dividends and an allowance for depreciation, as fixed by the United States Government. That if the applicant were compelled for any reason to put back into effect, after the Federal control period, the rates charged by the applicant prior to June 6, 1919, the applicant would not earn a fair return on its property, but that on the contrary the fixing of said rates would amount to a confiscation of the property of the applicant and the taking of its property without due process of law, contrary to the Constitution of the State of Illinois and to the Constitution of the United States of America.

12. That the rates and schedules for local exchange service in the City of Chicago, put in effect by the applicant on June 16, 1919 by direction and as agent of the United States Government, abolished certain kinds of service rendered by the applicant under

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the provisions of the ordinances of the City of Chicago herein referred to, eliminating all discriminatory rates arising out of the continuation of flat rate contracts to certain subscribers, and placed all subscribers on a measured service basis; that during the month of June and the month of July 1919 the applicant, pursuant to orders of the United States Government, has made and will make numerous changes in equipment and apparatus necessary to furnish service in accordance with the new schedules, and that it will be impossible for the applicant to return to a flat rate schedule without return to discriminatory rates and without great expense and serious inconvenience to the public in the City of Chicago.

That the rates at present in force are fair just and reasonable and will not earn more than a fair and reasonable return on the properties of this applicant.

13. That the operation of the system of this applicant by the Government of the United States during the time of War and the changes and financial and other problems incident thereto and to the operation of said system upon its restoration to this applicant, were not in the contemplation of the Legislature at the time of the adoption of the Public Utilities Act of this State, and that said matters and the other matters aforesaid present unusual and extraordinary conditions which render it necessary for this Commission to exercise its emergency powers and to allow this applicant to immediately put into effect certain rates, charges and classifications herein next referred to without the usual and customary notice to the Commission and to the public.

14. That application is hereby made for authority to put into effect (as soon as the existing rates now being charged under the authority of the United States government cease to

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be applicable to your petitioner,) the rates, charges and classifications which are filed herewith, being the same and identical with the rates, charges and classifications now charged and collected in the territory aforesaid by the applicant herein as agent of the Government of the United States.

15. That whereas an emergency exists because of the matters aforesaid and especially because of the irreparable damage and injury which will be caused to the applicant and to the public if the applicant is not permitted to charge the rates herewith filed as soon as the existing rates now being charged under the authority of the United States Government cease to be applicable to your petitioner and pending a full hearing and investigation by this Honorable Commission,

WHEREFORE the said Chicago Telephone Company prays the Public Utilities Commission of the State of Illinois to enter its order suspending the requirements of notice, setting this petition for immediate hearing, and after the said immediate and emergency hearing the said Commission enter an order granting the application herein and establishing the proposed rates of charge to continue in force upon such terms and conditions as the Commission may deem advisable, pending a further hearing and investigation of the aforesaid rates of charge to be made by this Honorable Commission, after such notice as the Commission may deem advisable, and that after said further hearing and investigation the Commission enter an order approving said rates, and prays for such other and further relief in the premises as to the Commission shall seem just and proper.

CHICAGO TELEPHONE COMPANY,
Petitioner,

by B. E. Sunny
Its President.

Holt Cutting and Sidley
Attorneys for Petitioner.

[fol. 5644] X-416, 15

Regulations

Exchange Service.—Subscribers to Chicago Exchange System service may, on the terms of their contracts, transmit local messages to all exchange telephones located within the limits of the City of Chicago.

A local message is a communication not exceeding five minutes' duration between subscribers' stations within the same exchange limits. By ordinance of the City of Chicago and these regulations the subscriber, the Company and its lessees and patrons are forbidden to charge any person more than five cents for a single message transmitted to any point within the City of Chicago from any telephone furnished under the contract of which these regulations are a part.

[fol. 5645] EXHIBIT X-418

Illinois Bell Telephone Company

Stock Purchased by A. T. & T. Co., Years 1929 to 1931, Inclusive

Of the $40,000,000 stock issue authorized by the Stockholders on September 26, 1928 and approved by the Illinois Commerce Commission's Order 18720, dated November 28, 1928, the following amount was purchased by the A. T. & T. Company under the Illinois Commerce Commission's Order 18842 dated February 28, 1929:

No. of Shares	Price Paid per Share	Total par Value	Amount Received in Excess of par Value
396,998	$100	$39,699,800*	....
35**	100	3,500	....
38***	150	3,800	$1,900
397,071		$39,707,100	$1,900

*Paid in three installments—50% July 1, 1929; 25% January 2, 1930 and July 1, 1930.

**Originally subscribed for by Jackson and Curtiss and on August 29, 1929 transferred to A. T. & T. Co. Last two installments of 25% each paid on January 2 and July 1, 1930 by A. T. & T. Company.

***Unsubscribed for stock purchased by A. T. & T. Company at $150 per share and paid in full on July 1, 1930.

[fol. 5646] EXHIBIT X-419

Illinois Bell Telephone Company

Price at Which American Telephone and Telegraph Company Stock was Offered to Employes of Illinois Bell Telephone Company During Years 1923 to 1931

Effective October 1, 1922	$115
February 1, 1924	118
January 1, 1925	121
June 1, 1925	125
November 1, 1926	130
September 1, 1929	150

There were no American Telephone and Telegraph Company bonds offered to employes.

[fol. 5647] EXTRACTS FROM EXHIBIT X-420

June 29, 1932.

Statement Showing Certain Matters, Things, and Transactions from the Record Books of Executive Committee Meetings of the American Telephone & Telegraph Company Covering the Period from August 17, 1920, to May 13, 1931.

The matter herein set forth is embraced in Volumes 9 and 10 of said records, Volume 9 covering the period from August 17, 1920, to September 7, 1925, Volume 10 covering the period from September 16, 1925 to May 13, 1931. During the interim between September 7, 1925, and September 16, 1925, no meetings of the Executive Committee were held.

The above records, being the minutes of the Executive Committee meetings, were produced in court for the inspection of defendants. On June 16, 1932, at the offices of the Illinois Bell Telephone Company, Mr. James Robb, Assistant Secretary of the American Telephone & Telegraph Company, who had and has in his possession said two volumes of said records, and Mr. Benjamin F. Goldstein, of counsel for defendants, and Mr. L. N. Jones of counsel for plaintiff, were present, and Mr. Goldstein examined said record books and Mr. Goldstein indicated at such conference and examination the various parts or portions of the records contained in the said two volumes of records of which he desired to have copies. It is the purpose of this statement to set forth in substance the matters and things appearing with reference to the various items indicated by Mr. Goldstein, and this statement to be offered in evidence by defendants, subject to objection as to materiality and relevancy by plaintiff.

[fol. 5648] X-420, 20

Vol. 9, P. 107:

On April 12, 1922, the following transactions took place:

"Vice President Gifford reported that it seemed desirable to organize a Long Lines Department Board for the operation of the Long Lines Department. Whereupon, it was

"Resolved to recommend to the Directors that authority be vested in the President to authorize such of the Vice Presidents as he may select, with the Director of the Long Lines Department, to take charge of and carry on the portion of business of this Company involved in the operation of its Long Lines Department, such authority to be exercised in accordance with the lines of general policy which have been or may be laid down by the Board of Directors."

[fol. 5649] X-420, 21

Vol. 9, P. 132:

On October 11, 1922, the following transactions took place:

"Referring to this Committee's action on April 28 and November 10, 1915, and May 28, 1919, approving this Company's activities in and relation to development in the radio field, and authorizing certain expenditures therefor, the President reported that this Company has participated actively in such development down to the present time, and has maintained pre-eminence therein; that while the relation of wireless development to wire systems has not changed from that originally contemplated as reported to this Committee, the scope and expense of such development already undertaken and also that desirable to undertake in the future, will exceed the amounts heretofore authorized by this Committee, and that the exact nature and cost of such as may yet be undertaken cannot be accurately foretold; and he recommended that the participation by this Company in such development, and the expenditures therefor, made and to be made, be approved and authorized. Whereupon, on motion, it was

"Resolved, that the recommendation of the President be approved."

[fol. 5650] X-420, 22

Vol. 9, P. 159:

On May 2, 1923, the following resolution was passed:

"Resolved, that in the event of the offer by the Illinois Bell Telephone Company of 100,000 shares of common stock for subscription by its stockholders at par, $100 per share, the President of this Company, Vice President Gifford and the Comptroller, or any one of those officers, be authorized in its behalf to subscribe and pay for pursuant to such offer, its proportion, say 98,850 shares, of such common stock, and to acquire additional shares of such new stock by the purchase of rights at not exceeding two dollars per right and subscription thereunder; provided, however, that before taking any action hereunder the authorization thereof by the Illinois Commerce Commission be first obtained."

Vol. 9, P. 169:

On August 21, 1923, the following resolution was passed:

"Resolved, that the officers be and they hereby are authorized to consent to the execution and delivery of the license agreement between the Western Electric Company, Inc., and the Stromberg-Carlson Telephone Manufacturing Company dated August 13, 1923, submitted to this meeting, and, to the extent of this Company's rights, title and interest in, to or under the patents and applications for patents listed in Schedule 'A' attached to said agreement, to join in the granting of the license therein granted to the Stromberg-Carlson Telephone Manufacturing Company under said patents and applications."

[fol. 5651] X-420, 24

Vol. 9, p. 191:

On February 6, 1924, the following resolution was passed:

"Resolved, that the Treasurer, whenever in his judgment the return thereon shall be better than if otherwise temporarily invested, be authorized to invest any surplus cash from time to time in temporary loans to the Western Electric Company, Incorporated, on that company's notes or on open account with interest; the period of each such loan to conform with the need of this Company for funds, and all such loans to be approved by the President or the Executive Vice President."

[fol. 5652] X-420, 26

Vol. 9, p. 195:

On February 19th, 1924, the following transactions took place:

"The President reported that it has been the custom for many years to vest in the Western Electric Company, Incorporated, or its foreign company, the International Western Electric Company, Incorporated, rights under foreign patents, and that under the established practice these rights go to them directly from the inventor and not through this Company; that on account of the laws of Newfoundland it was necessary to take the rights there under letters patent of Newfoundland No. 542 for new and useful improvements in, or relating to, means for reducing interference, in the name of this Company, and that in order to vest the rights under this patent in the International Western Electric Company, Incorporated, in conformity with the regular custom of the company, he had executed an assignment of the said patent to the International Western Electric Company, Incorporated, for the nominal consideration of One Dollar ($1.00).

Thereupon, upon motion, it was

"Resolved, that the action of the President in the premises be approved and confirmed, and that he be authorized to execute and deliver the said assignment."

Vol. 9, P. 215:

On June 25, 1924, the following resolution was passed:

"Resolved, that this Company acquire for cash at par, $100 per share, 100,000 shares of the common stock of the Indiana Bell Telephone Company, and that it cancel $1,000,000 face value of 7% time notes of the Indiana Bell Company owned by this Company, and interest due and unpaid at the date the transaction is closed, amounting at the present time to approximately $1,180,000, on demand and time notes of the Indiana Bell Company owned by this Company."

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Vol. 9, p. 237:

On December 17th, 1924, the following transactions took place:

"The President stated that it seemed desirable, for economy and efficiency, that the work heretofore carried on by the Engineering Department of the Western Electric Company, Incorporated, which includes work done for and at the expense of this Company, be turned over to, and thereafter be carried on by, a corporation to be organized, to be termed Bell Telephone Laboratories, Inc., one-half of the capital stock thereof to be owned by this Company and one-half by the Western Electric Company, Incorporated; such corporation to be operated without profit other than a reasonable return on investment. Whereupon, on motion, it was

"Resolved, that the President and the Executive Vice President, or either of them, be authorized on behalf of this Company to take all steps necessary for the organization of such company; to acquire and pay for one-half of its capital stock; to transfer to it from time to time any part or all of the work of allied nature carried on directly by this company; and to contract with that company upon mutually satisfactory terms for the performance by it for this company of work of the foregoing nature."

[fol. 5654] X-420, 31

Vol. 9, p. 241:

On January 7th, 1925, the following resolution was passed:

"Resolved, that as of December 31, 1924, there be appropriated from Reserve for Contingencies and added to the Employees' Benefit Fund Reserve already established under the Plan for Employees' Pensions, Disability Benefits and Death Benefits the amount of $1,000,000; provided, however, that as and when authorized by further action of the Board of Directors of this Company or by this Committee, said amount may be withdrawn from said reserve and appropriated to provide for pensions and death benefits, or either of them, or for analogous purposes under appropriate regulations."

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Vol. 9, p. 268:

On June 24th, 1925, the following transactions took place:

"The Illinois Bell Telephone Company having by its circular letter of June 19, 1925, offered to each of its stockholders the right to subscribe at par ($100 per share) for one new share of its capital stock for every seven shares held by him.

"Resolved, that the President, Vice President Houston and the Comptroller, or any one of those officers, be authorized, in behalf of this Company, to subscribe and to pay for, according to the terms of said circular letter, this Company's proportion—say 98,918 shares—of the stock so offered, and to acquire additional shares of such new stock either by the purchase of rights at not exceeding $2.50 each and subscription thereunder, or by the purchase of any unsubscribed stock at prices to be agreed upon, the foregoing authority to be subject to the approval of the transactions in their legal aspects by the Vice-President and General Counsel."

[fol. 5655] X-420, 34

Vol. 9, p. 269:

At the same meeting, the following transaction took place:

"The President reported that it is to the interest of this Company that the deficit of the Indiana Bell Telephone Company be wiped out, and to that end it is desirable that this Company cancel the indebtedness of the Indiana Bell Telephone Company to this Company to an amount equal to the deficit of the Indiana Bell Telephone Company as of June 30, 1925; the indebtedness to be cancelled to consist of approximately $620,000 principal amount of demand notes of the Indiana Bell Telephone Company owned by this Company, and of approximately $1,180,000 past due interest on notes of that company; and the President recommended that the President, Vice President Houston and the Comptroller, or any one of those officers, be authorized to make such cancellations of notes and interest, for the purpose stated. Whereupon, upon motion, the recommendation of the President was approved."

Vol. 9, p. 274:

On August 18, 1925, the Committee approved the letter of the President dated the 14th of August, 1925, to the Western Electric Company, Incorporated, touching the assignment to that Company of patent rights in foreign countries to inventions of the A. T. & T., such rights to be of the same character and scope as the rights which the Western Electric Company, Incorporated, will be obligated to grant, in respect to its own patents and inventions, under proposed contracts between Western Electric Company, Incorporated, International Telephone and Telegraph Company and International Western Electric Company, Incorporated.

[fol. 5656] X-420, 35

Note.—Copy of said letter requested by defendants.

Vol. 10, p. 1:

September 16, 1925, the Committee passed the following resolution:

"Resolved, that the President and Vice-President Houston, or either of them, be empowered to vote and to authorize the voting of the stock of the Western Electric Company, Incorporated, owned by this Company, at a special meeting of the stockholders of the Western Electric Company, Incorporated, (1) in favor of the approval of certain contracts authorized by the Board of Directors of that company on August 14, 1925, subject to the consent of the stockholders, covering the sale of the capital stock of the International Western Electric Company, Incorporated, held by the former company, and providing for continuing commercial and patent relations between those companies; and (2) to authorize changes in the capital structure of the Western Electric Company, Incorporated, so that the total number of shares which that company may thenceforth have shall be 1,000,000 shares, all of which shall be common stock without par value."

[fol. 5657] X-420, 36

Vol. 10, p. 3:

On September 30, 1925, it was reported to the Committee by the President that, pursuant to the authorization of June 24, 1925, demand notes of the Indiana Bell Telephone Company, totalling $586,485.78, had been cancelled and that thereupon this company's book value of $26,999,100 par value of the stock of the Indiana Bell Telephone Company owned by it, had been increased by that amount, or from $89.19 to $91.36 per share, and the President recommended that the actions of the officers in making such entries in the company's books be approved, which was done by the Committee.

[fol. 5658] X-420, 37

Vol. 10, P. 25:

March 3, 1926, the following resolution was passed by the Committee:

"The President reported that the Western Electric Company, Incorporated, on the 4th day of February, 1926, had entered into an agreement with The Telegraph Construction and Maintenance Company, Limited, with regard to continuously loaded submarine telegraph cables, in which, subject to the approval of this Company, licenses were granted to the Construction Company, as follows:

1. Exclusive licenses in the United States and in certain foreign countries for the manufacture and sale of such

cables, upon payment of stipulated royalties and subject to certain reservations, among which is the right of the Western Electric Company to manufacture and sell, and license others to manufacture and sell in the United States;

2. Non-exclusive licenses under United States and foreign patents to lay, land and use such cables.

Thereupon, upon motion, it was

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"Resolved, that the Western Electric Company, Incorporated, be and is hereby authorized to grant the licenses aforesaid in so far as the patent rights owned or controlled by this Company are involved, provided that the Western Electric Company will, upon the request of this Company, license this Company to manufacture, to have manufactured and to sell and to use in the United States continuously loaded submarine telegraph cables.

[fol. 5659] X-420, 38 (Cont'd)

"The President reported that the Western Electric Company, Incorporated, on the 19th day of January, 1926, had entered into an agreement with Felton & Guilleaume Carlswerk Aktien Gesellschaft, referred to as the F. & G. Company, with regard to continuously loaded submarine telegraph cables, in which, subject to the approval of this Company, the F. & G. Company was granted, upon payment of stipulated royalties, 'the sole and exclusive license to manufacture in Germany and to sell in Germany (but only to and for the exclusive use of the German Government or German cable companies or any German firms) continuously loaded submarine telegraph cables—and a non-exclusive license to lay, land and use in all countries' with certain exceptions. The license granted is 'under all patents of Western Electric Company, Incorporated, a New York Corporation, and Bell Telephone Laboratories, Incorporated, a New York corporation'."

Thereupon, upon motion, it was

"Resolved, that the Western Electric Company, Incorporated, be and is hereby authorized to grant the licenses aforesaid in so far as patent rights owned or controlled by this Company are involved.

[fol. 5660] X-420, 39

"The President reported that the Western Electric Company, Incorporated, on the 19th day of January, 1926, had entered into an agreement with the Gramophone Company, Limited, by which the latter was granted a license, upon payment of stipulated royalties, for sound boxes and other acoustic apparatus for practically all the world except North and South America. In that agreement the Western Company warranted that it would receive, for the territory involved, all patent rights which are or may hereafter be owned or controlled by this Company."

Thereupon, upon motion, it was

"Resolved, that the Western Electric Company, Incorporated, be and is hereby authorized to grant the licenses, aforesaid in so far as the patent rights owned or controlled by this Company are involved, subject to such royalty or other consideration, if any, as may be agreed upon and approved by the President.

"The President reported that Pursuant to the authority under the resolution of the Executive Committee dated July 17, 1923, this Company had sold to the Bell Telephone Securities Company 4,496 shares of the capital stock of this company, said shares being part of a total of approximately 17,500 shares remaining unsubscribed for and unissued under the Company's offer to stockholders dated August 24, 1922. These shares were sold from February 3 to February 8, 1926, inclusive, at the market price, the average sale price being $145.85 per share."

[fol. 5661] X-420, 41

Vol. 10, P. 71:

January 12, 1927, the following transaction took place:

"The President submitted a memorandum from the Comptroller dated January 10, 1927, setting forth the results of a study of the costs of the shares of capital stock of other companies owned by this Company on December

31, 1926, as shown by the books and records of this Company from its organization, and a comparison of such costs with the book values of the stocks on December 31, 1926; the total figures of the Company's holdings being:

Cost of stocks	$1,253,771,698
Book value	1,253,472,375
Excess of cost	$299,323

the stockholdings showing differences between their cost and book value, and those differences, being in detail as follows:

[fol. 5662] X-420, 42

Stockholding	Cost	Book value
New England Tel. & Tel. Co.	$72,251,446	$73,921,663
Southern New England Tel. Co.	9,647,829	9,628,147
New York Tel. Co., common	303,580,335	318,100,000
Southern Bell Tel. & Tel. Co.	81,812,681	79,788,921
Ohio Bell Telephone Co., common	50,041,148	44,998,920
Cincinnati & Suburban Bell Tel. Co.	6,009,148	6,293,032
Indiana Bell Telephone Co.	27,585,586	24,667,608
Wisconsin Telephone Co., common	24,973,835	22,655,958
Illinios Bell Telephone Co.	84,637,704	86,330,488
Northwestern Bell Tel. Co., common	66,039,490	63,517,107
Southwestern Bell Tel. Co., common	103,253,078	96,162,486
Mountain States Tel. & Tel. Co.	29,364,963	28,009,772
Pacific Tel. & Tel. Co., common	34,551,603	35,002,674
Bell Telephone Co. of Canada	16,666,094	16,988,489
" " " " " preferred	55,953,111	58,397,335
Central Union Telephone Co.	2,563,717	2,400,209
Cuban American Tel. & Tel. Co., common	......	2,625
Western Electric Company, Inc.	54,280,512	56,047,523
Totals	$1,023,212,280	$1,022,912,957

The President recommended that the book value of each of the above mentioned stocks be adjusted as of December 31, 1926, to equal the cost of such stock as shown above, and that the aggregate of the adjustments, an increase of $299,323 in the book values, be credited at that date to Reserve for Contingencies. Whereupon, on motion, it was.

"Resolved, that the recommendations of the President be approved, and that entries in the Company's accounts in accordance therewith be authorized."

[fol. 5663] X-420, 45

Vol. 10, p. 93:
August 17, 1927, the following transaction took place:

"The President reported that Electrical Research Products, Inc., proposes to enter into an agreement with The Gramophone Company, Limited, by which the licenses to the latter granted under an agreement with the Western Electric Company, Incorporated, dated January 19, 1926, covering sound boxes and other acoustic apparatus, should be extended also to include electrical phonographs, the territory covered by the licenses being practically all of the world except North America and South America. In the proposed agreement the Products Company warrants that it will receive, for the territory involved, all patent rights therefor which are or may hereafter be owned or controlled by this Company. The President reported further that, subject to the approval of the Executive Committee, he had given the assent of this Company to the grant of the aforesaid licenses in so far as its present rights are involved. Thereupon, upon motion, it was

"Resolved, that the action of the President in giving assent to the grant of the licenses aforesaid in so far as the patent rights owned or controlled by this Company are involved, subject to such royalty and other consideration, if any, as may be agreed upon and approved by the President, be and the same hereby is ratified and approved..

[fol. 5664] X-420, 46

Vol. 10, P. 96:

September 7, 1927, the following resolution was passed:

"Resolved, that the President and Vice President Cooper, and either of them, be authorized to sell from time to time to the Western Electric Company, Incorporated, at their face value and endorsed by this Company, without recourse, demand notes issued by the Associated Companies of the Bell System and now or hereafter owned by this Company, of a total face value not exceeding $50,000,000, and to agree on behalf of this Company (1) that the interest on notes so sold be continued to be paid to it, the Western Electric Company to be paid by this Company at the end of each calendar quarter such part thereof as may be agreed upon with said officers, not exceeding, however, the rate of 5% per annum, and (2) that this Company will, upon thirty days' notice in writing, repurchase at face value, plus accrued and unpaid interest at the rate agreed upon as above provided, any or all of the notes so sold; provided, however, that the Western Electric Company agree that it will not sell or call for payment any of the notes without first giving to this Company a thirty day opportunity so to repurchase them, and that this Company have the right upon like notice and basis to repurchase any or all of said notes, and to substitute upon its request from time to time, upon the same basis, for any of said notes held by the Western Electric Company, notes of other Associated Companies of the Bell System, of equal face value and with like endorsement."

[fol. 5665] X-420, 47

Vol. 10, P. 106:

November 16, 1927, the following resolution was passed:

"Resolved, that the President be authorized to offer for sale as of December 31, 1927, to the several companies licensees of this Company under existing License Agreements, the telephone (receivers, transmitters and induction coils) furnished and charged to the respective companies as of that date under the License Agreements, the prices therefor to be as follows:

Switchboard Receivers	$1.44
Switchboard Transmitters	1.73
Switchboard Induction Coils	.68
Substation Receivers	.97
Substation Transmitters	1.10
Substation Induction Coils	.38
Hand Sets	10.80

and in connection with said sale and as part of the same transaction, to offer to amend said License Agreements, as of January 1, 1928, so as (1) to relieve this Company from its obligation to furnish said telephones, and pertaining to the furnishing, delivery, replacement and repair thereof, and (2) to reduce to two per cent of their total gross earnings, as defined in said License Agreements, the payments therein provided to be made to this Company, provided that this Company shall retain the right, which is reserved when the payment was reduced from four and one-half per cent to four per cent effective January 1, 1926, to withdraw the reduction of one-half of one per cent of said earnings upon four months' notice in writing, and to fix the payment at two and one-half per cent thereof."

[fol. 5666] X-420, 49

Vol. 10, P. 127:

April 18, 1928, the following transaction took place:

"The President submitted to the meeting the contract dated March 30, 1928, between Western Electric Company, Incorporated, and International Standard Electric Corporation touching the exchange of patent rights and referring to the agreement dated October 1, 1925, between those companies, and he recommended that he be authorized on behalf of this company to assent thereto and to agree during the

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term thereof to grant to Western Electric Company, Incorporated, subject to such royalty or other consideration, if any, as may be agreed upon and approved by him, rights in respect of all foreign patents and foreign rights to inventions now owned or hereafter acquired by this Company, said rights to be of the same character and scope as the rights which Western Electric Company, Incorporated, is or will be obligated under said agreement to grant to International Standard Electric Corporation in respect of the patents, applications for patents and inventions of Western Electric Company, Incorporated. Whereupon, on motion, it was

"Resolved, that the recommendation of the President be approved."

[fol. 5667] X-420, 50

Vol. 10, P. 136:

May 23, 1928, the following resolution was passed:

"Resolved, that the President and the Vice-President and General Counsel, and either of them, be authorized to assent to the grant of non-exclusive licenses by the Western Electric Company, Incorporated, and the American Telephone and Telegraph Company to the Stromberg-Carlson

Telephone Manufacturing Company under the Nelson patent 1,620,733 of March 15, 1927, and the Pruessman patent 1,275,469 of August 13, 1918, in exchange for non-exclusive licenses to the Western Electric Company, Incorporated, and the American Telephone and Telegraph Company under three Levis applications owned by the Stromberg-Carlson Company, one of which applications is in interference with the above mentioned Nelson patent."

[fol. 5668] X-420, 51

Vol. 10, P. 137:

June 13, 1928, the following transaction took place:

"The President stated that Electrical Research Products Inc., a wholly owned subsidiary of Western Electric Company, Incorporated, proposes selling its holding of the capital stock (the whole) of Graybar Electric Company, Inc.; and he submitted a letter and memorandum from President Bloom of the Western Company setting out the situation as to the Graybar Company and outlining the plan and terms for its sale, and stating that in the unanimous opinion of the Board of Directors of the Western Company it is the only practicable method of effecting a sale of the Graybar Company. Whereupon, on motion, it was

"Resolved, that this Committee hereby records its view that the sale proposed is in the interest of this Company as a stockholder in Western Electric Company, Incorporated."

Vol. 10, P. 149:

October 24, 1928, the following transaction took place:

"The President read to the meeting the final report of this date by the Committee appointed by the Executive Committee at its meeting on January 4, 1928, to consider the experience under the Plan for Employees' Pensions, Disability Benefits and Death Benefits, and to recommend any changes that seem advisable; the conclusions and recommendations of that committee in its report being as follows:

'(a) No plan at all would, in its judgment, probably result in increasing rather than reducing total expenses. Certainly, it would result in loss which could not be measured in dollars and cents due to decreased morale and efficiency. The Committee knows of no better way in which the same amount of money could be spent for the value received. (For instance, an increase in wages of 3.2 per cent would not begin to result in the benefits that are obtained from the Plan.)

[fol. 5669] X-420, 52

"(b) That the benefits received by employees under the Plan are reasonable and consistent with general practice:

"(c) That the arrangements now in existence for meeting the financial obligations of the Plan be amended to provide that each of the Companies, shall, in due course, as conditions permit, base accruals on full service instead of beginning after fifteen years. This basis, when adopted by all companies, will require a constant annual provision for pensions of about 2.7 per cent (present basis is 1.9 per cent) of payroll to provide for the obligation accruing currently. This 2.7 per cent will not make up any of the accrued deficit for past service nor will it provide for the interest which is compounding annually on the accrued deficit. This deficit and interest thereon can, if advisable, be reduced by special appropriations of income or surplus from time to time. (The differential between 4 per cent interest on which basis charges are accrued and the 5½ per cent earned by the Pension Fund will operate to offset slightly the increasing deficit.) It should be noted that the current requirements of 2.7 per cent will remain substantially constant, while in the very nature of things the present basis would in time increase from 1.9 per cent of payroll to about 5 per cent, giving no consideration whatever to accruals during the first 15 years of service.

"(d) While it is inevitable that it should be desirable from time to time under the Plan to make changes based on experience, the Committee feels that beyond its preceding recommendation, such changes may be left for the management to recommend as occasion therefor arises."

Whereupon, on motion, it was

"Resolved, that the report be approved and the Committee discharged with the thanks of the Executive Committee.

[fol. 5670] X-420, 55

Vol. 10, P. 161:

January 16, 1929, the following transaction took place:

"Illinois Bell Telephone Company having by its circular letter of December 20, 1928, offered to each of its stockholders the right to subscribe at par ($100 per share) for one share of its capital stock for every two and three-quarters shares held by him,

"Resolved, that the President, Vice-President Cooper and the Comptroller, and any one of those officers, be authorized and directed to subscribe on behalf of this Company, according to the terms of said circular letter, for 396,425 shares of the stock so offered, (approximately this Company's proportion thereof), and to make payment therefor as provided in said circular letter; such authority to be subject to the approval of the transaction in its legal aspect by the Vice-President and General Counsel."

On motion, it was

"Resolved, that the President be authorized to buy at prices satisfactory to him, rights of subscription for new stock of Illinois Bell Telephone Company under its offer of December 20, 1928, and on behalf of this Company to make subscription and payment under such rights; such authority to be subject to the approval of the transaction in its legal aspect by the Vice-President and General Counsel."

[fol. 5671] X-420, 56

Vol. 10, P. 207:

December 18, 1929, the following resolution was passed:

"Resolved, that the President, Vice-President Cooper and Comptroller, and any one of those officers, be authorized to make temporary advances from time to time to Western Electric Company, Incorporated, on open account or demand notes at rates of interest satisfactory to the

President; such advances, together with the advance of $6,499,000 made under authority of this Committee's resolution of January 30, 1929, not to exceed a total of $30,000,000 to be at any time outstanding."

Vol. 10, P. 211:

January 15, 1930, the following resolutions were passed:

"Resolved, that authority for further advances to Western Electric Company, Incorporated, in excess of $16,499,000 now outstanding, under resolutions heretofore adopted by this Committee, be hereby terminated; and

"Resolved further, that the President, Vice President Cooper and the Comptroller, and any one of those officers, be authorized to make advances to that company from time to time during 1930 not to exceed a total of $66,499,000 (including the $16,499,000 now outstanding) to be at any time outstanding, on its demand notes with interest at 6% per annum (or at 5.88% after the customary discount for payment of interest monthly on or before the 20th of the following month); upon the understanding that not exceeding $50,000,000 of the foregoing advances may remain unpaid up to December 31, 1931."

[fol. 5672] X-420, 60

Vol. 10, P. 249:

September 17, 1930, the following resolution was passed:

"Resolved, to recommend to the Board of Directors that they authorize:

"1. The execution of the agreement dated September 11, 1930, submitted to this meeting, between this Company and Sterling Morton providing for the purchase from him by this Company of the 150,000 outstanding shares of common stock, and of not less than 51% (and as much more as shall be offered) of the 13,979 outstanding shares of preferred stock of Teletype Corporation) the consideration to be paid for each share of common stock to be one share of stock of this Company, and for each share of preferred stock $105 plus accrued dividends.

"2. The issue of 150,000 shares of the stock of this Company in payment for the common stock of Teletype Corporation.

"3. The sale of Western Electric Company, Incorporated, of said common stock for $30,000,000, and of said preferred stock at $105 per share plus accrued dividends.

"4. A loan of $30,000,000 to Western Electric Company, Incorporated, on its six months' note with interest at 4½% per annum."

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On motion, it was

"Resolved, that the President be authorized to execute on behalf of this Company the agreement dated this day, in the form submitted to this meeting, with De Forest Radio Company granting that company a non-exclusive license, for the purposes and upon the terms therein set forth, under certain patents of this company relating to radio telephone apparatus."

[fol. 5673] X-420, 135

The membership of the Executive Committee of the American Telephone & Telegraph Company is derived from the membership of the Board of Directors, pursuant to the By-laws of the American Telephone & Telegraph Company.

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American Telephone and Telegraph Company

I hereby certify that the following is a true and correct copy of a resolution adopted by the Executive Committee of the American Telephone and Telegraph Company at a meeting held April 28, 1915:

Resolved, that the officers be authorized in their discretion to expend not exceeding $250,000 in the development of wireless telephony.

(Signed) A. A. Marsters, Secretary. (Seal.)

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I hereby certify that the following is a true and correct copy of a resolution adopted by the Executive Committee of the American Telephone and Telegraph Company at a meeting held November 10, 1915:

Resolved, that the statement setting forth this Company's relations with and obligations toward wireless communication be approved for issue substantially as submitted to this meeting by the President; that this Company's policy as to wireless communication and the preparation therefor be approved as therein set forth, and that the officers be directed to prepare and submit from time to time plans and estimates for the development of this Company's system in accordance with that policy.

(Signed) A. A. Marsters, Secretary. (Seal.)

[fol. 5674] X-420, 139

American Telephone and Telegraph Company

The American Telephone and Telegraph Company and Its Relations with and Obligations Toward Wireless Communication

To make wireless communication understandable and to make plain both its possibilities and limitations, the governing conditions and principles, which to the layman are somewhat abstruse, must be explained.

There exists through all space some "ether" or other medium through which can be transmitted light, heat and electrical waves or vibrations or some such movement or activity as has all the manifestations of waves or vibrations.

Broadly speaking, the science of electricity is still undeveloped and unrevealed, but from its manifestations laws or rules of action have been deduced, and its action and effect are calculable.

The wireless telephone and telegraph, or operating radiograph, is the "generation" and "control" of electrical vibrations of great intensity thrown out into space, which seem to proceed in every direction, seem to conform to the curvature of the earth and seem to penetrate most material substances. They spread and fill space as do the waves of sound. Their intensity rapidly diminishes as do sound vibrations, probably in the ratio of the increase of the space filled by them as they pass out and onward, and like any sound, are intense or loud at the source, but fade away into silence as distance increases, so that at the distant receiving station they are of slight tenuity.

(Signed) A. A. M. (Seal.)

[fol. 5675] X-420, 140

American Telephone and Telegraph Company

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There is as yet no practical method of deflecting or reflecting these waves as is done with light or sound, and probably because of their great length there never will be.

The existence of these waves has long been known, but until Hertz discovered or invented a practical "detector" it was impossible to convert them into any tangible form. Since then many methods have been discovered, some one or more of which is utilized in the various wireless telegraph systems.

These waves are of different lengths, frequency and intensity; can be controlled so far as impulses or variability are concerned; and can be used for telephonic or telegraphic or signaling purposes.

The wave length and frequency can be availed of to get a certain range of selection, but selection is not secrecy as any receiver can be adjusted to all lengths and frequencies.

The intensity of these radiations is so great that any large number of sending stations erected near each other would seriously interfere with and confuse each other's outgoing transmission and even a small number would absolutely destroy the tenuous incoming vibrations, and all could be destroyed by extremely high tension and high frequency radiation in close proximity.

The nearest thing that can be compared to such a situation is a steam engine blowing off steam at high pressure when someone nearby is trying to converse. Under such

(Signed) A. A. M. (Seal.)

[fol. 5676] conditions conversation is impossible.

X-420, 141

American Telephone & Telegraph Company

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The most interesting and most useful characteristic of the radio vibrations, those which make possible distant telephonic communication, are that these vibrations—unlike the electrical speaking vibrations over the wire—retain their peculiar and essential speaking form even to the very faintest activity at the point of actual disappearance or loss to detection, and therefore, when magnified by the telephonic appliances used by the Bell System, the speech is distinct whether it be in distant Honolulu or Hong Kong or Paris or Petrograd.

The great obstacles to dependable usefulness, with commercial possibilities; the causes which confine this great achievement to particular undependable uses, are natural conditions as yet and probably forever uncontrollable.

In space, or through the "ether" and the earth, there seem to be continuous electrical "storms," activities or manifestations, which for the sake of clearness may be called natural disturbances. These natural disturbances are sometimes mild and not very serious, while at other times they are of such intensity and activity as to absolutely nullify and destroy the artificial vibrations of the wireless stations.

For long periods these natural disturbances will continue of sufficient intensity to make it impossible to send the artificial radiographs or at least to receive or detect them. In the midst of these storms there will be lulls or moments of quiet or comparative quiet,

(Signed) A. A. M. (Seal.)

[fol. 5677] X-420, 142

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and it is at these times that it is possible to use the wireless or radio for telegraphic or telephonic communication. In the quiet moments it is possible to communicate without much effort. In the less quiet moments, by repetition and continuous effort, messages and conversation can be got through. In the moments of great activity all effort is useless.

The coming and going of these natural disturbances are known only by their effect upon the artificial vibrations with which they come in conflict. There are no clouds or prevailing winds, barometer or thermometer to indicate or enable a forecast to be made. They fill or seem to fill all space, and even if their origin and course were determined, would probably be as uncontrollable as is the water in the midst of a great ocean when in its wildest moments; you might float upon it, but not with confidence.

Wireless telephony can be compared to an attempt to carry on all telephone exchange business over one great conductor connecting every one and over which all telegraph, all artificial electrical disturbance caused by transmission or power lines, and all the natural electrical disturbances were in full play at the same time.

These are the conditions that govern radiograph activity and limit its possibilities.

There are only two ways of carrying on wireless telephony, one by getting far away from all artificial disturbing causes and having only natural disturbances to contend

(Signed) A. A. M. (Seal.)

with, or by the use of one of the limited selectives which have only the interference of the natural disturbances.

American Telephone and Telegraph Company

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There are however, uses, many and important, probably as many and as important as can attach to any absolutely undependable thing. Distant communication will be possible some of the time. Short-distance communication will be possible sufficiently for communication with isolated places or things not otherwise to be reached.

The American Telephone and Telegraph Company has from its beginning been trying to build up an intercommunicating instrumentality, universal and interdependent, by which every one could reach every other connected with it—a service so well adapted to the use of all and of such great pecuniary and other advantage to all, rendered at a price so well within its value to all and so well within the reach of all, that none are too poor to take advantage of it or too independent to get along without it. This is the Bell System.

Whatever there is to add to this use or to this value or to increase its universality, this Company proposes to develop.

As fast as conditions make it possible, or potential business makes present extensions of prospective value to the system and to the public, either directly or indirectly, the American Telephone and Telegraph Company will extend, enlarge and amplify its system in every way that scientific research and development make possible and social or

(Signed) A. A. M. (Seal.)

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business demands make desirable.

To this end the American Telephone and Telegraph Company will, so soon as the necessary construction and equipment can be assembled, extend the universality of its system by wireless stations at selected points on the

[fol. 5679] X-420, 144

coast so located as to enable persons and places not able to be connected in any other way to maintain communication with the world through the Bell System.

There have been and will be many statements of what has been done and promises and prophecies as to what can be done, but so far nothing in the way of actual public communication has been done in wireless telephony except through the instrumentalities of this Company, and the probable future of what can be done is subject to the conditions outlined in this statement.

(Signed) A. A. M. (Seal.)

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I hereby certify that the following is a true and correct transcript of the minutes of a meeting of the Executive Committee of the American Telephone and Telegraph Company held May 28, 1919:

Vice President Thayer reported a plan to proceed with the Commercial developmnt of Ship to Shore telephony by wireless involving an expenditure by different departments of approximately $500,000, and it was

Resolved, that the inception of this extension of the Company's operations be approved and the proposed expenditure be authorized.

(Signed) A. A. Marsters, Secretary. (Seal.)

[fol. 5680] X-420, 146

American Telephone and Telegraph Company

May 22, 1919.

Mr. Vail:

As a result of the wireless telephone work done prior to this country's participation in the war and for the United States and the Allies during the war, the Bell System has, at the present time, a better status in wireless telephony both physically and from a patent standpoint than any other company or organization. In order, however, that practical results may develop it is necessary that much additional work be done and that it be done promptly; otherwise, it will be undertaken by others and we shall lose the situation which we now occupy. While the existing state of the art in regard to wireless telephony and the prospects of development indicate that such a system cannot successfully compete with wires under ordinary conditions, there are a number of fields where it is either the only practicable system of telephony, or where the peculiar difficulties in providing satisfactory wires may render it the preferred system. Enough has already been done by us to indicate that satisfactory physical results can be accomplished in all of these fields after proper development work has been completed. The art can best be advanced, at the present time, by a combination of practicable operation on a limited scale with extensive laboratory and field development work. By this we should expect to produce and practically demonstrate a commercial operating wireless telephone system giving commercial service up to two hundred miles of radio operation and connected with the toll line system of this Company, and we should also expect, in carrying out this development, to develop and demonstrate much of the art contributory to wireless telephony and telegraphy. We should obtain extensive information on matters important, not only to this art, but to operation in land line working and we would strengthen our patent situation.

The patent rights of this Company in the radio field, both telephony and telegraphy, our people who are qualified to form an opinion, believe to be stronger than those of any other company. They believe that in proceeding without at present acquiring any further patent rights it runs less risk of infringement of others' patents than any other operating company.

In order to ascertain whether Government control and regulation of radio operation is likely to seriously restrict it, we have had interviews with officers of the Navy and have learned from them that they will be glad to see this Company enter the field and would assist us by the regulation of wave-lengths so as to leave a considerable range of frequencies for radio telephone operation. They would also favorably consider the making of arrangements by which we could use Navy land stations if desired.

H. B. Thayer.

(Signed) A. A. M. (Seal.)

[fol. 5681] X-420, 150

Agreement

Agreement, made this 13th day of June, 1923, by and between Morkrum Company, a corporation of the State of Maine, having an office at 1410 Wrightwood Avenue, Chicago, Illinois, Western Electric Company, Incorporated, a corporation of the State of New York, having an office at 195 Broadway, New York, New York, (hereafter referred to as the "Western Company"), and American Telephone and Telegraph Company, a corporation of the State of New York, having an office at 195 Broadway, New York, New York, (Hereinafter referred to as the "Telephone Company");

Whereas, each of the parties to this agreement owns, controls and has the right to grant certain licenses under certain patents, applications and inventions relating to printing telegraph apparatus and systems, and it is mutually desired to exchange licenses between said parties as hereinafter provided;

Now, therefore, in consideration of the licenses herein granted and agreed to be granted and in consideration of the covenants and agreements herein contained, the parties hereto severally agree as follows:

1. Morkrum Company grants and agrees to grant to the Western Company and to the Telephone Company and

each of them, non-exclusive licenses to make and to cause to be made and to use and sell under all of Morkrum Company's United States patents, applications for United States patents and rights (for the United States) to inventions, relating or applicable to printing telegraph systems or apparatus, (specifically including the patents and applications in the attached list marked "Morkrum List of Patents and Applications") now owned or controlled by Morkrum Company or in respect to which Morkrum Company has the right to grant licenses, provided, however, that so long as the Morkrum Company remains in position

[fol. 5682] X-420, 151

to and does promptly supply to the Western Company and the Telephone Company such printing telegraph apparatus as they may respectively order from the Morkrum Company, (not exceeding the value of $75,000 for delivery in any one calendar month) the said license to make and cause to be made shall not apply to the specific forms or designs of the Morkrum Company's commercial apparatus, the intent being that the Western Company and the Telephone Company acquire no rights hereunder to copy or substantially copy the forms and designs of the Morkrum Company's apparatus except in case of the disability or failure of the Morkrum Company to supply the same as herein contemplated. In the event of the disability or failure of the Morkrum Company to promptly supply apparatus of such quality and in such quantities as the Western Company or the Telephone Company may order or offer to order from it (not exceeding the value of $75,000 for delivery in any one calendar month) and upon as favorable prices and terms as the Morkrum Company's most favorable prices and terms to other customers for similar apparatus in like quantities, said licenses to the Western Company and the Telephone Company shall not be so limited but shall during any such disability and for a period of one year thereafter in each case include the right to make and to cause to be made and to use and sell any and all apparatus including the specific designs of the Morkrum Company, under any and all said patents of the Morkrum Company.

2. Said licenses to the Western Company and the Telephone Company to use and sell are not limited to the use

and sale of apparatus manufactured by the Western Company or the Telephone Company, and except as provided in paragraph 3 hereof said licenses to use and sell extend to and include the right to use and sell printing telegraph apparatus and systems manufactured by anyone, whether manufactured under said patents or in infringement thereof.

In the event of sale or use by the Western Company or the Telephone Company of apparatus manufactured by others than the parties hereto in infringement of Morkrum Company's patents, Morkrum Company reserves the right to proceed against the manufacturers of such apparatus for the recovery of its damages and profits for such infringing manufacture, and for an injunction against further infringement. If any apparatus purchased by the Western Company or the Telephone Company from others shall at any time be determined by final decree of any court of competent jurisdiction to have been manufactured in infringement of the patents of the Morkrum Company, and if the Morkrum Company shall give written notice thereof to the Western Company and the Telephone Company, the Western Company and the Telephone Company will thereafter refrain from making further sales or additional installations of such apparatus manufactured in infringement of the Morkrum Company's patents.

3. The Western Company and the Telephone Company severally grant and agree to grant to the Morkrum Company non-exclusive licenses (except as hereinafter stated) under all their respective United States Patents and applications for United States patents and rights (for the United States) to inventions, relating to printing telegraph systems or apparatus, (specifically including the patents and applications in the attached lists marked "Western Company's List of Patents and Applications," and "Telephone Company's List of Patents and Applications," respectively) now owned or controlled by the Western Company or the Telephone Company or in respect of which the Western Company or the Telephone Company has the right to grant licenses, to make, use and sell, for use only in wire telegraphy for transmitting and receiving messages in the form of words, and for no other purpose,

printing telegraph transmitting and receiving apparatus and printing telegraph systems, (including synchronizing apparatus and Multiplex distributors) except that no rights

[fol. 5684] X-420, 153

are granted or agreed to be granted to the Morkrum Company in respect of the following kinds of systems or for the sale or use of printing telegraph apparatus, or any apparatus, for use in any such systems, namely:

(a) Radio telegraph systems,

(b) Carrier-current or so-called "guided wave" or "Wired wireless" systems,

(c) Ciphering and deciphering systems of the type exemplified by the following U. S. patents:

No.	Inventor	Issued
1,210,719	G. S. Vernam	July 22, 1919
1,320,908	R. D. Parker	Nov. 4, 1919
1,356,546	L. F. Morehouse	Oct. 16, 1920
1,415,106	L. F. Morehouse	May 9, 1922
1,416,765	G. S. Vernam	May 23, 1922
1,426,669	R. E. Pierce	Aug. 22, 1922

(d) Transmission of pictures,

(e) Forking or extension systems of the type exemplified by U. S. patent to Rainey, No. 1,407,042, dated February 21, 1922.

It is understood, however, that nothing herein contained shall be construed as implying any agreement by the Morkrum Company to refrain from the manufacture, use or sale of any apparatus for the uses above referred to, if no patented inventions of the Western Company or the Telephone Company are involved.

4. Each of the parties to this agreement hereby releases and forever discharges each of the other parties, and all purchasers and users of apparatus heretofore furnished by such other parties or either of them, from all claims, demands and rights of action on account of any past infringement or alleged infringement (in the manufacture, use or sale of the specific apparatus so furnished) of any of the patents under which licenses are herein granted or agreed to be granted by said parties, respectively.

5. All licenses herein granted and agreed to be granted are for the entire terms of the respective patents, and said licenses are free of royalty or other payment.

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American Telephone and Telegraph Company

August 14, 1925.

Western Electric Company, Incorporated, 195 Broadway,
New York, N. Y.

Gentlemen: We have examined the proposed contract dated August 14, 1925, between Western Electric Company, Incorporated, International Telephone and Telegraph Company and International Western Electric Company, Incorporated, and the Supplemental Contract therein referred to as Exhibit A, between Western Electric Company, Incorporated, and International Western Electric Company, Incorporated, copies of which are hereto attached and will be referred to in this letter as the "proposed contracts."

Under the existing relations between American Telephone and Telegraph Company and Western Electric Company, Incorporated, which have continued for many years, it has been the practice for Western Electric Company, Incorporated, to acquire all rights in foreign countries to inventions produced by employees of the American Telephone and Telegraph Company who are engaged in development work, a small consideration being paid to the inventor, in such cases.

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A formal contract is to be entered into between American Telephone and Telegraph Company and Western Electric Company, Incorporated, covering the acquisition by Western Electric Company, Incorporated, of foreign rights to inventions which may be acquired by American Telephone and Telegraph Company, but it may be impracticable to have such an agreement prepared and executed prior to the execution of said proposed contracts.

It is, however, agreed at this time, in consideration of your execution of said contracts and for the benefit of the parties thereto, that:

(1) American Telephone and Telegraph Company will, during the time said proposed contracts or either of them shall remain in force, grant to Western Electric Company, Incorporated, rights in respect of all foreign patents and foreign rights to inventions which are now owned or which may hereafter be acquired by American Telephone and Telegraph Company; such rights to be of the same character and scope as the rights which Western Electric Company, Incorporated, will be obligated to grant, in respect of its own patents and inventions, to International Western Electric Company, Incorporated, under said proposed contracts.

(2) In contracts of employment which the American Telephone and Telegraph Company may hereafter make with its regular employees it will, insofar as provision is made for the acquisition of patent rights to the inventions of such employees, provide also for the acquisition of all rights of the character and scope referred to in the fore-

going paragraph 1, in respect of said inventions of employees.

(3) With respect to inventions as to which the American Telephone and Telegraph Company is now or may become entitled to patent rights for the United States under existing contracts with such employees, the American Telephone and Telegraph Company will use its best endeavors to acquire for Western Electric Company, Incorporated, as in the past, all rights of the character and scope referred to in the foregoing paragraph 1.

(4) In cases where special agreements are made with experts or inventors who are not regularly employed but are retained for special work which may result in inventions, and where such agreements provide for assignment

of any rights to such inventions, such experts or inventors shall not be regarded as employees within the meaning of the foregoing provisions; but in all such cases unless such agreements shall cover rights to such inventions of the

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[fol. 5687] character and cope referred to in the foregoing paragraph 1, we will give you notice of such agreements, to the end that the parties to the proposed contracts may, if they so desire, negotiate with the persons so specifically retained for foreign rights to such inventions.

Yours very truly, W. S. Gifford, President.

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Agreement

This agreement, made this 6th day of October, 1925, between Automatic Electric Company, an Illinois corporation, hereinafter called the Automatic Company, party of the first part, and American Telephone and Telegraph Company, a New York corporation, hereinafter called the Telephone Company, and Western Electric Company, Incorporated, a New York corporation, hereinafter called the Western Company, parties of the second part, witnesseth:

Whereas, the Automatic Company and the Western Company have with the consent of the Telephone Company heretofore exchanged certain licenses under their respective United States patents, applications for patents and inventions: and it is mutually desired to exchange further licenses as herein provided:

Now, therefore, in consideration of the premises and of the mutual agreements herein contained, the parties hereto agree as follows:

1. The Automatic Company hereby grants and agrees to grant to Western Company and to the Telephone Company, and each of them, and to their respective successors in business, non-exclusive licenses to make and to cause to be made and to use and to sell for use only in the continental United States by the Telephone Company and the Associated Companies now or hereafter comprising the Bell

[fol. 5688] System and their controlled connecting Companies, and for use in Alaska by anyone, any and all apparatus, systems and devices, under all patents, applications for patents and inventions now owned or during the term of this agreement acquired by the Automatic Company or under which it has or may, during the term of this agreement, acquire the right to grant licenses.

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2. The Western Company and the Telephone Company hereby severally grant and agree to grant to the Automatic Company and its successors in business non-exclusive licenses to make and cause to be made and to use and sell for use only in the continental United States and Alaska automatic and semi-automatic telephone switching systems and telephone switching apparatus and devices, of the designs and types which have heretofore been made and sold by the Automatic Company for the Independent telephone trade; this license being granted under each; any and all of the patents, applications for patents and inventions covering said systems, apparatus and devices, which are now owned or which may during the term of this agreement be acquired by the Western Company or the Telephone Company or under which they or either of them have or may during the term of this agreement acquire the right to grant such licenses.

3. All licenses herein granted and agreed to be granted by either party to the other are for the entire terms of the respective patents, notwithstanding any termination of this agreement in other respects, and are free of royalty or other payment. Said licenses are granted only under United States patents and no rights are herein granted or agreed to be granted to either party for sales for use in territory other than the continental United States and Alaska; but nothing herein contained shall be construed as a limitation of or in derogation of rights or licenses heretofore granted by either party to the other, and nothing herein contained shall be construed as an agreement by either party to refrain from any manufacture, use or sale of any apparatus or thing outside the territory or scope [fol. 5689] of the licenses herein granted. In case of any

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manufacture, use or sale by either party not covered by the licenses herein granted or agreed to be granted to such party, it shall not be estopped to dispute or contest the validity and scope of any patent or patents under which it is licensed by or under this agreement, and in case of any action, suit or other proceeding by either party on account of any manufacture, use or sale of any apparatus or thing outside the territory or scope of said licenses, the party against whom such action, suit or proceeding is brought shall be free to interpose any and all defenses, to the same extent and with the same force and effect as though this agreement had never been made.

4. Each of the parties hereto agrees that it will so far as practicable make contracts with all its employees who are engaged in engineering or inventive work, or work in connection with which inventions are likely to be made, whereby said employees will agree to assign to the party by which they are employed rights to any and all inventions and improvements which have been or may be made by said employees in the line of their respective employment, to the end that all such inventions shall be included in the licenses herein granted and agreed to be granted.

5. The Automatic Company hereby releases the Western Company and the Telephone Company and the Associated Companies of the Bell System and all purchasers and users of apparatus heretofore furnished by the Western Company or the Telephone Company or either of them, from all claims, demands and rights of action on account of any infringement or alleged infringement of any United States patent or patents, by reason of the manufacture or sale of said apparatus so heretofore furnished or by reason of any past or future use or resale thereof.

6. The Western Company and the Telephone Company hereby severally release the Automatic Company and all [fol. 5690] purchasers and users of apparatus heretofore

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furnished by the Automatic Company, from all claims, demands and rights of action on account of any infringement or alleged infringement of any United States patent or patents, by reason of the manufacture or sale of said apparatus so heretofore furnished or by reason of any past or future use or resale thereof.

7. The reciprocal provisions of this agreement as to granting licenses under inventions hereafter made, upon which applications may be filed and patents may issue, shall not extend to or include patents, applications for patents or inventions acquired by the respective parties after December 31, 1929.

In witness whereof the parties hereto have caused this instrument to be executed by their proper officers, thereunto duly authorized, the day and year first above mentioned.

Automatic Electric Company, by (Signed) H. L. Gary, President. Attest: (Signed) Walter I. Patton, Secretary. Western Electric Company, Incorporated, by (Signed) H. A. Halligan, Vice President. Attest: (Signed) H. B. Gilmore, Secretary. American Telephone & Telegraph Company, by (Signed) W. S. Gifford, President. Attest: (Signed) A. A. Marsters, Secretary.

[fol. 5691] X-420, 205

This license agreement, made this 17th day of July, one thousand nine hundred and twenty-eight by and between Stromberg-Carlson Telephone Manufacturing Company, a corporation of the State of New York, having an office at Rochester, New York (hereinafter referred to as Stromberg-Carlson Company), Western Electric Company, Incorporated, a corporation of the State of New York, having an office at 195 Broadway, New York, New York (hereinafter referred to as Western Company), and American Telephone and Telegraph Company, a corporation of the State of New York, having an office at 195 Broadway, New York, New York (hereinafter referred to as Telephone Company), Witnesseth:

In consideration of the Mutual covenants and agreements herein contained, the parties hereto agree as follows:

1. Stromberg-Carlson Company hereby grants and agrees to grant to Western Company and Telephone Com-

pany and their successors in business non-exclusive, non-assignable licenses to make, to have made for them, to use and to sell throughout the United States, the inventions set forth in the following applications for Letters Patent of the United States, namely:

Serial No.	Filing date	Inventor	Case No.	Subject
753,141	12- 1-24	Levis	144	Manual Tel. Systems
(Pat. 1,678,068) 77,197	12-23-25	Levis	164	" " "
136,870	9-21-26	Levis	175	" " "

under all Letters Patent (and all reissues or extensions thereof) granted or to be granted upon said applications or any of them or upon any division, continuation or renewal thereof.

2. Western Company hereby grants to Stromberg-Carlson Company and its successors in business a non-exclusive, non-assignable license under Letters Patent No. 1,275,469, granted August 13, 1918 for Flexible Conductors invented by Albert Pruessman, and under any reissues or extensions thereof, to make, to have made for it, to use and to sell throughout the United States but only for telephone purposes, i. e., in connection with or as part of telephone exchange systems or of apparatus for use therein, including substation apparatus.

3. Telephone Company hereby grants to Stromberg-Carlson Company and its successors in business a non-exclusive, non-assignable license to make, to have made for it, to use and to sell throughout the United States under Letters Patent No. 1,620,733, granted March 15, 1927 for Telephone Systems invented by F. S. Nelson, and under any reissues or extensions thereof.

4. Each of the parties to this Agreement hereby releases and forever discharges each of the other parties and all purchasers and users of the apparatus heretofore furnished by such other parties, or either of them, from all claims, demands and rights of action on account of any acts of past infringement or alleged infringement of the patents under which the licenses are herein granted or agreed to be granted by the herein parties respectively, insofar as such acts if occurring subsequently to the date of this

agreement would have been within the licenses herein granted.

5. All licenses herein granted or agreed to be granted

[fol. 5693] X-420, 207

are for the entire terms of the respective patents and said licenses are free of royalty or other payment.

In witness whereof the parties hereto have caused this instrument to be executed by their respective officers thereunto duly authorized the day and year first above written.

Stromberg-Carlson Telephone Manufacturing Company by (Signed) W. Berg McCanne, President. Attest: (Signed) W. N. Angle, Secretary. Western Electric Company, Incorporated, by (Signed) Geo. C. Pratt, Vice President. Attest: (Signed) E. R. Finch, Assistant Secretary. American Telephone and Telegraph Company, by (Signed) C. M. Bracelen, Vice President. Attest: (Signed) A. A. Marsters, Secretary.

[fol. 5694] X-420, 208

A true and complete copy.
Attest:

(Signed) A. A. Marsters, Secretary.

Western Electric Company, Incorporated, Telephone and Telegraph Building, 195 Broadway, New York

Edgar S. Bloom, President

June 12, 1928.

Mr. W. S. Gifford, President American Telephone & Telegraph Company, 195 Broadway, New York City.

Dear Mr. Gifford: Attached hereto is a memorandum outlining the plan for the sale of the Graybar Electric Company. The Board of Directors of this Company are unanimous in their opinion that the plan outlined is the only practical method of effecting a sale of the Graybar Company.

The sale could not be made to the Graybar employees without the option arrangement under which they, who are the only purchasers we have been able to find, may at any time up to the end of five years return the property and receive their money back with six per cent interest.

Moreover, we believe it would not be sound policy to make the sale without the option, and the directors of this Company would be unwilling to recommend it, even though the Graybar employees would agree to purchase on that basis. We could not properly ask our employees to purchase the Company and assume a business risk that might

(Seal.)

[fol. 5695] X-420, 209

turn out to their serious financial disadvantage. The result of such an outcome of the sale would be so far reaching on the morale of Western Electric employees that the alternative of liquidating would be the only one we could adopt.

Very truly yours, (Sgd.) Edgar S. Bloom, President.

(Signed) A. A. M. (Seal.)

Enc.
O.

[fol. 5696] X-420, 210

Proposed Sale of Graybar Electric Company

June 6, 1928.

The sale of the Graybar Electric Company has been under consideration for the past two years. Various plans have been under discussion and about a year ago an endeavor was made to interest J. P. Morgan & Company in the matter. Messrs. Whitney and Ewing of that firm went into the situation with the Executives of the Graybar Company and the President of the Western Electric Company, and finally decided that they would not be interested in handling the sale as, in their opinion, it did not seem that there was much to be sold in the way of a going concern without certain assurances; which could not be given. This conclusion was reached after a frank discussion of the situation and a full disclosure to Messrs. Whitney and Ewing of the character of the Graybar business and its contractual relationships.

The conclusion reached by Messrs. Whitney and Ewing, in which the Graybar Executives and the President of the Western Electric Company concurred, was based on the following:

1. No assurance could be given that the Graybar Company would continue to distribute telephone apparatus, particularly central office switchboards, for the Western Electric Company. It was impossible to give such an assurance as we could not foreclose ourselves against withdrawing telephone apparatus from sale by the Graybar Company in the event that Bell System developments should indicate that it would be wise to take such action.

(Signed) A. A. M. (Seal.)

[fol. 5697] X-420, 211

2. An existing contract between the General Electric Company and the Graybar Company, covering sale of power apparatus to the amount of about $6,000,000 annually, was subject to cancellation in the event the Western Electric Company relinquished its control of the Graybar Company, and there was no possibility of securing consent of the General Electric Company to the transfer of the contract to the Graybar Company as an independently owned concern.

3. A substantial portion of the Graybar sales of general electrical supplies is the result of its close relationship with the Western Electric Company. The large purchasing power of the Western Electric Company has been an important influence in securing for the Graybar Company certain contracts to act as distributors for manufacturers from whom the Western Electric Company makes large purchases. Furthermore, important Graybar sales have been influenced by its relationship to the Western Electric Company. This is particularly true in connection with sales to the railroads; in which cases the Western Electric Company, as a large shipper, was an important influence in directing purchases to the Graybar Company.

Further consideration seemed to indicate that one of two courses were open to us—liquidation of the Company or the development of a plan which would enable the Graybar employees to purchase the Company.

As in our judgment the Company could only be liquidated for an amount substantially below its fair value, I discussed with the Graybar executives the possible sale of the Company to the Graybar employees. They were of the opinion that the General Electric Company might favorably consider continuing the power apparatus contract with the

(Signed) A. A. M. (Seal.)

[fol. 5698] X-420, 212

Graybar employees in control of the Company. The Graybar executives accordingly discussed the matter with Mr. Gerard Swope, President of the General Electric Company, to determine whether there was any basis on which the General Electric Company would agree to the transfer of the Power Apparatus contract to the Graybar Company in the event that the control of the Graybar Company was transferred to the Graybar employees. As a result of this discussion Mr. Swope made the following proposition:

1st. He would arrange to secure financial backing to aid the Graybar employees in purchasing the Company, provided it could be purchased for not to exceed the asset value.

2nd. He would arrange for the continuation of the General Electric Power Apparatus contract with the Graybar Company so long as the control of the Company remained with the employees.

Following this proposal the matter was under consideration with the Graybar Executives for nearly a year and a plan for the sale has been agreed upon as follows:

1. Rearrange Graybar financial structure. $15,000,000 par value common stock now outstanding to be reduced to $3,000,000 par value outstanding stock and $6,000,000 7% 10 year serial notes to be issued to the Western Electric Company.

2. Graybar Management Corporation to be organized. Stock to be held entirely by employees of the Graybar Electric Company and paid for in instalments over a period of five years, with the privilege of paying all or part of the balance due on April 1st of any year. Through Mr. Swope,

Graybar Management Corporation will borrow a sufficient amount to provide a total of $3,000,000 including the original instalments paid in by employees of the Graybar Com-

(Signed) A. A. M. (Seal.)

[fol. 5699] X-420, 213

pany who subscribe to Management Corporation stock.

Graybar Management Corporation will purchase on August 1, 1928, for $3,000,000 cash, the outstanding stock of the Graybar Electric Company totalling $3,000,000, par value. The net result of this is that we will receive a total of $9,000,000 for the property ($3,000,000 cash and $6,000,000 7% 10 year notes). In addition, the Graybar Electric Company will assume a pension obligation of the Western Electric Company to Graybar employees, amounting to approximately $1,000,000. By contract, when the Graybar Company was formed on January 1, 1926, the Western Electric Company assumed the accrued pension liability to that date of Western Electric Employees transferred to the Graybar Company. Including this liability, of which Western Electric Company is relieved, the purchase price is $10,000,000, which compares with the net book value of the property on March 1, 1928 of $8,858,000 (See statement attached).

4. Management Corporation shall have the option, any time after two years from August 1, 1928, and up to five years from that date, to resell the Graybar stock to the Electrical Research Products Company, in the event that the Management Corporation considers the Graybar stock an unattractive investment, at a price which will enable the Management Corporation to pay to each subscriber an amount equal to what he has paid on his stock subscriptions, plus interest at 6% per annum, compounded quarterly, less dividends received with interest thereon compounded quarterly. So long as notes to the Western Electric Company are outstanding, Electrical Research Products Company will share in Graybar earnings on the following basis:

(Signed) A. A. M. (Seal.)

[fol. 5700] X-420, 214

At the close of each year there will be deducted from the Graybar net earnings interest and an amount equivalent to

15% on the Graybar stock. Electrical Research Products Company will receive 60% of that balance, this percentage being reduced pro rate as the notes are paid off, i. e., 1% for each $100,000 note retired.

5. So long as any notes to the Western Electric Company are outstanding and so long as the option runs to the Management Corporation to have the Electrical Research Products Company repurchase the Graybar stock, the following conditions obtain:

(a) The Graybar Company shall not declare or pay any dividends in excess of 7% per annum except with the approval of the President of the Western Electric Company.

(b) The Graybar Company shall not borrow any money except with the approval of the President of the Western Electric Company.

(c) Undistributed net earnings not required in the ordinary conduct of the business to be applied to payment of notes.

(d) The business to be conducted in the usual, normal way, as at present, any change in policy, etc. to be first approved by the President of the Western Electric Company.

(e) Several other provisions, protective in their nature to the Western Electric Company, such as: Salary increases above $3,000 per year, increase in bonus payments, changes in accounting system, etc., may only be made with the ap-

(Signed) A. A. M. (Seal.)

proval of the President of the Western Electric Company.

[fol. 5701] X-420, 215

This seems to be the only practicable way in which we can realize an amount even approaching the fair value of our Graybar investment. Should we liquidate the company, in my judgment, it will be difficult to even realize $6,000,000, as during liquidation with a declining business, expenses would increase out of all proportion to the business done.

We would face the serious problem of determining our obligation to the 2,000 Graybar employees, of whom nearly 400 (20%) have a service record of fifteen years or more, and half that number 20 years or more. Some few could undoubtedly be absorbed in our organization, but we would still have a serious problem to face.

The Company has 66 building leases, many of which involve rentals in excess of $10,000 per year, running as follows:

Less than 5 years to run	25
5 to 10 years to run	34
Over 10 years to run	7
Total	66

We would undoubtedly sustain substantial losses in the disposal of these leases. Furthermore, the Company has continuing contracts for distribution of products. These contracts could probably be cancelled without cost to the Graybar Company except in two cases which have three years to run, and their cancellation will involve a total penalty of $500,000.

Referring to the statement attached hereto "Analysis of Graybar Sales and Profits for the year 1927," the net profits on General Electric business amount to $450,000. About half of this is power apparatus covered by the contract previously referred to, which is only transferrable

(Signed) A. A. M. (Seal.)

[fol. 5702] X-420, 216

with the consent of the General Electric Company. Telephone apparatus and lead covered cable cover Western Electric manufactured products.

While the Graybar Company is by contract the sales agent for Western Electric products in the United States to the general trade, that contract is being modified, in connection with the proposed sale, so that the Western Electric Company may, in its judgment, withdraw any item from the contract. It is thoroughly understood by the officials of the Graybar Company that, so long as good faith is exercised the Western Electric Company may, in its interest, or in the interest of the Bell System, withdraw every item from the contract.

(Sgd.) Edgar S. Bloom.

6/7/28.

(Signed) A. A. M. (Seal.)

[fol. 5703] X-420, 217

Graybar Book Assets, March 31, 1928

Plant		$1,317,000
Merchandise, Materials & Supplies		3,893,000
Receivables		6,403,000
Other Current Assets		3,971,000
Total		$15,584,000
Deduct:		
Current Liabilities	$5,478,000	
Reserve for Depreciation	1,073,000	
Reserve for Pensions	175,000	
		6,726,000
Net book assets		$8,858,000

Analysis of Graybar Sales and Profits for the Year 1927

Telephone Apparatus	$6,286,000	$1,880,000
Lead Covered Cable	2,734,000	465,000
General Electric	11,766,000	1,882,000
Supplies	47,926,000	6,671,000
Total	$68,712,000	$10,898,000
After deducting the overhead expenses, cost of distribution, etc., the net profits amounted to		$1,633,000

(Signed) A. A. M. (Seal.)

[fol. 5704] X-420, 218

This agreement, made this 11th day of September, 1930, between American Telephone and Telegraph Company, a New York corporation (hereinafter called Telephone), and Sterling Morton, of Chicago, Illinois (hereinafter called Morton), witnesseth:

Whereas, Morton represents that the holders of all of the common stock of Teletype have agreed to sell the Teletype stock owned by them and have deposited such stock with The Chase National Bank of the City of New York to be held for transfer in accordance with the terms of this agreement and the holders of fifty-one (51%) per cent of the preferred stock of Teletype have agreed to sell the Teletype stock owned by them and have deposited such stock with The Chase National Bank of the City of New York to be held for transfer in accordance with the terms of this agreement; and Telephone is prepared to purchase, after the above matters have been consummated, within the time and upon the terms hereinafter set forth, all but not less than all of the outstanding common stock of Tele-

[fol. 5705] X-420, 219

type and not less than fifty-one per cent (51%) (and as much more as shall be offered) of the outstanding preferred stock of Teletype;

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3. Morton represents to Telephone, and Telephone's purchase of the stock of Teletype shall be contingent upon the following:

(a) That the balance sheets and earnings statements of Teletype attached hereto, showing conditions as of December 31, 1929, April 30, 1930, and July 31, 1930, are true and accurate statements, and Morton represents that Frazer & Torbet, of Chicago, Illinois, certified public accountants, have certified that such statements are correct and represent the financial condition of Teletype as of the dates thereof and that on said dates there were no liabilities, contingent or otherwise, not appearing on said balance sheets and earnings statements, except such as have accrued under the plan for additional compensation to its officers and employees;

[fol. 5706] X-420, 286

Teletype Corporation

Balance Sheet, April 30, 1930

Assets:	
Current Assets:	
Cash and Marketable Securities	$2,126,520.59
Accounts Receivable—Trade	962,536.29
Inventories	1,910,421.21
Total Current Assets	$4,999,478.09

Fixed Assets:	
Land and Buildings	$1,404,996.02
Machine Tools	1,207,228.88
Furniture & Fixtures	78,179.28
Patents	217,379.56
Total Fixed Assets	$2,907,783.74
Other Deferred Charges	39,233.56
	$7,946,495.39
Liabilities and Capital Stock:	
Liabilities:	
Unmatured Mortgages on Property Purchased	$80,916.70
Accounts Payable	216,123.42
Taxes, etc	154,420.30
Total	$451,460.42
Reserve	336,414.15
Capital Stock:	
Preferred—13,979 shares	$1,397,900.00
Common and Surplus Represented by 150,000 Shares No Par Value Stock	5,760,720.82
	$7,946,495.39

[fol. 5707]

X-420,-287

Teletype Corporation

Balance Sheet as at December 31, 1929

Assets

Current Assets:				
Cash				$674,002.40
Call Money and Marketable Securities				1,002,534.13
Accounts Receivable				829,602.55
Inventories:				
Raw Material			$269,743.59	
Finished Units			291,663.88	
Test Units			248,749.72	
Parts Stores			674,522.79	
Consignments			75,498.86	
Work in Process			800,654.25	
Supplies			46,259.55	
Total Inventories				2,407,092.64
Total Current Assets				$4,913,231.72
Fixed Assets:	Cost	Depreciation	Net	
Land			$307,943.32	
Real Estate and Improvements	$4,945.50	$259.98	$4,685.52	
Buildings	1,098,946.36	25,852.40	1,073,093.96	
Machinery	952,665.42	103,188.27	849,477.15	
Building Equipment	23,523.02	9,528.82	13,994.20	
General Tools	98,428.52	48,108.15	50,320.37	
Special Tools	435,960.74	173,934.88	262,025.86	
Furniture and Fixtures	73,729.41	12,223.48	61,505.93	
Cost	$2,688,198.97			
Depreciation Reserve		$373,095.98		
Depreciated Value			$2,315,102.99	
Total Fixed Assets (Net Book Value)				2,623,046.31

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Deferred Charges:		
Patents		
Less: Amortization Reserve	$389,878.53	
	171,361.24	
Net Book Value		
Unaudited Expense	218,517.29	
Unexpired Insurance	11,429.21	
Bond Advances	27,817.69	
Advances to Employees	5,300.00	
Other Charges	926.36	
	4,198.44	
Total Deferred Charges		268,188.99
		$7,804,467.02

[fol. 5708]

Teletype Corporation

Balance Sheet as at December 31, 1929

Liabilities and Net Worth

Current Liabilities:				
Notes Payable				$112,583.34
Accounts Payable				148,961.12
Provision for Federal Tax				474,197.37
Accrued Payroll				30,459.34
Accrued Taxes				10,820.30
Credit Balances—Accounts Receivable				161.25
Accrued Auditing Expense				2,400.00
Dividends Payable				150,000.00
Provision for Additional Compensation				541,366.17
Total Current Liabilities				$1,470,948.89
Net Worth:				
Preferred Stock:				
Authorized—15,000 Shares.				
Outstanding—13,979 Shares, Par Value			$1,397,900.00	
Common Stock:				
Authorized and Outstanding 10,000 Shares—No Par Value. Paid in Value			1,500,000.00	
Surplus—January 1, 1929		$1,687,589.49		
Net Profit for 1929	$3,827,004.00			

Less Dividends Declared:				
Common Stock	$1,382,884.70			
Cash	697,853.00			
	$2,080,737.70			
Balance to Surplus		1,746,266.30		
		$3,433,855.79		
Plus: Addition for Prior Period		1,762.34		
Surplus December 31, 1929			3,435,618.13	
Net Worth				6,333,518.13
				$7,804,467.02

[fol. 5709]

X-420, 288

Teletype Corporation

Balance Sheet as of July 31, 1930, and December 31, 1929

Figures appearing in red in the original are preceded by a red line in this copy
A. A. Marsters.

Assets

	July 31, 1930	December 31, 1929	Increase —Decrease
Current Assets:			
Cash	1,526,613.81	624,002.40	902,611.41
Accounts Receivable	640,831.83	829,441.30	—188,609.47
Accounts Receivable Other	9,468.85	926.36	8,542.49
Notes Receivable	100,000.00	50,000.00	50,000.00
Investments	1,672,389.07	1,002,534.13	669,854.94
Investments in Associated Companies	187,501.00	....	187,501.00
	4,136,804.56	2,506,904.19	1,629,900.37
Inventories:			
Raw Material	171,809.69	269,743.59	—97,933.90
Finished Units	339,900.10	291,663.88	48,236.22
Test Units	307,791.74	248,749.72	59,042.02
Parts Stores	227,762.25	674,522.79	—446,760.54
Consignments	69,258.75	75,498.86	—6,240.11
Work in Process	590,205.26	800,654.25	—210,448.99
Supplies	46,259.55	46,259.55	....
Total Inventories	1,752,987.34	2,407,092.64	—654,105.30
Total Current Assets	5,889,791.90	4,913,996.83	975,795.07
Fixed Assets;			
Land	307,943.32	307,943.32	....
Real Estate Improvements	4,397.05	4,685.52	—288.47
Buildings	1,118,885.99	1,073,093.96	45,792.03
Machinery	824,195.88	849,477.15	—25,281.27
Building Equipment	18,186.98	13,994.20	4,192.78
General Tools	43,280.90	50,320.37	—7,039.47
Special Tools	359,092.19	262,025.86	97,066.33
Furniture & Fixtures	59,149.12	61,505.93	—2,356.81
Net Fixed Assets	2,735,131.43	2,623,046.31	112,085.12
Deferred Charges:			
Patents	408,501.75	389,878.53	....
Less Amortization Reserve	191,844.93	171,361.24	....
Net Book Value	216,656.82	218,517.29	—1,860.47
Unaudited Vouchers	16,153.24	11,429.21	4,724.03
Unexpired Insurance	30,451.93	27,817.69	2,634.24
Bond Advances	412.50	5,300.00	—4,887.50
Other Charges	3,495.02	4,198.44	—703.42
Total Deferred Charges	267,169.51	267,262.63	—93.12
	8,892,092.84	7,804,305.77	1,087,787.07

[fol. 5710]

Teletype Corporation

Balance Sheet as of July 31, 1930, and December 31, 1929

Figures appearing in red in the original are preceded by a red line in this copy

A. A. Marsters

Liability & Net Worth

		July 31, 1930	December 31, 1929	Increase — Decrease
Current Liabilities:				
Unmatured Mortgages on Property Purchased		79,666.72	112,583.34	−32,916.62
Accounts Payable		111,170.13	148,961.12	−37,790.99
Provision for Income Tax		238,309.87	474,197.37	−235,887.50
Provision for Auditing		505.00	2,400.00	−1,895.00
Payroll		54,726.58	30,459.34	24,267.24
Additional Compensation		36,414.15	541,366.17	−504,952.02
Dividends Payable		150,000.00	150,000.00	
Taxes Accrued		10,328.02	10,820.30	−492.28
Total		681,120.47	1,470,787.64	−789,667.17
Over Distributed O. H		61,039.38		61,039.38
Net worth:				
Capital Stock Preferred		1,397,900.00	1,397,900.00	
Capital Stock Common		1,500,000.00	1,500,000.00	
		2,897,900.00	2,897,900.00	
Surplus Beginning	3,435,618.13		3,435,618.13	
Profits before Income Tax:				
January	413,248.05			
February	259,753.88			
March	395,460.49			
April	431,624.04			
May	453,257.78			
June	561,909.36			
July	396,470.98			
	2,911,724.58			
Spls. Addns.	3,616.78			
	2,915,341.36			
Div. Paid	1,098,926.50			
	1,816,414.86			
Surplus Ending		5,252,032.99		
New Worth		8,149,932.99	6,333,518.13	1,816,414.86
		8,892,092.84	7,804,305.77	1,087,787.07

[fol. 5711] EXHIBIT X-420

Pages 218-285, inclusive. This is the contract between Sterling Morton and the American Telephone & Telegraph Company covering the purchase of the stock of Teletype Corporation, which, together with the attachments, comprises approximately 70 pages, from which the above excerpts alone are taken. The contract provides that Martin shall attempt to enter into contracts with Creed & Company and International Investment Company in the forms attached to the contract. These forms are attached to the contract in this exhibit and cover the exploitation of the products of the Teletype Corporation in the foreign field.

[fol. 5712] X-420, 289

Agreement

This agreement, made this 24th day of May, 1927, between Automatic Electric Inc., a Delaware corporation, American Telephone and Telegraph Company, a New York corporation, and Western Electric Company, Incorporated, a New York corporation, witnesseth:

Whereas, Automatic Electric Company, an Illinois corporation, and said American Telephone and Telegraph Company, and said Western Electric Company, Incorporated, heretofore entered into a certain agreement in writing dated the 6th day of October, 1925 providing for the exchange of certain licenses as in said agreement set forth; and

Whereas, the said Automatic Electric Company thereafter changed its name to Automatic Electric Securities Company, and by an agreement in writing dated the 30th day of June, 1926 between the said Automatic Electric Securities Company and said Automatic Electric Inc. and said American Telephone and Telegraph Company and said Western Electric Company, Incorporated, the said Automatic Electric Securities Company assigned to said Automatic Electric Inc. all its right, title and interest in, to and under said agreement dated October 6, 1925, and said Automatic Electric Inc. has thereby been substituted for said Automatic Electric Securities Company as party of the first part in said agreement of October 6, 1925; and

Whereas, by said agreement of October 6, 1925, in Section 7 thereof, it was agreed that the reciprocal provisions of said agreement as to granting licenses should not extend

[fol. 5713] X-420, 290

to or include patents, applications for patents, or inventions acquired by the respective parties after December 31, 1929; and

Whereas, it is now mutually desired to extend said agreement to include within the exchange of licenses therein provided for, patents, applications for patents, and inventions which may be acquired by the parties hereto respectively during a further period beyond that covered by said agreement of October 6, 1925.

Now, therefore, in consideration of the premises and of the mutual agreements herein contained, the parties hereto agree that the provisions of said agreements of October 6, 1925 and June 30, 1926 as to the reciprocal grant of licenses shall extend to and include all United States patents, applications for United States patents, and rights for the United States in respect of inventions, (so far as the same relate to the subject matter of the licenses therein agreed to be granted) which may be acquired by the parties hereto respectively until and including December 31, 1936, which date is hereby substituted, in Section 7 of said agreement of October 6, 1925, for the date December 31, 1929 therein written; and each of the parties hereto hereby grants and agrees to grant licenses of the character and scope and for the same territory and subject to the same terms, conditions and limitations as expressed in said agreements, under all such patents, applications for patents and rights which are now owned or which may hereafter until and including December 31, 1936 be acquired by said parties, respectively; said licenses to be for the entire terms of the respective patents issued and to be

[fol. 5714] X-420, 291

issued for said inventions, and all renewals, reissues and extensions thereof.

In witness whereof the parties hereto have caused this instrument to be executed by their respective proper officers thereunto duly authorized, and their respective corporate seals to be hereto affixed as of the day and year first above written.

Automatic Electric Inc., by H. L. Gary, President. Attest: Joseph P. Hauck, Ass't Secretary. American Telephone and Telegraph Company, by W. S. Gifford, President. Attest: A. A. Marsters, Secretary. Western Electric Company, Incorporated, by Edgar S. Bloom, President. Attest: H. B. Gilmore, Secretary.

[fol. 5715] EXTRACTS FROM EXHIBIT X-421

Western Electric Sheets Furnished in Connection with Gregory Exhibits 1 and 7 in Ohio Case

[fol. 5716]

X-421, P. 1

#55

11/11/31

Division of Western Electric Company Sales for 1928, 1929, and 1930 of Telephone Apparatus, Lead Covered Cable and Supplies to the Illinois Bell Telephone Company Between Chicago and State

(Dollars in Thousands)

	1928	Per Cent of Total	1929	Per Cent of Total	1930	Per Cent of Total
Total:						
Telephone Apparatus	$12,779	61.1	$13,326	59.8	$14,634	61.4
Lead Covered Cable	3,212	15.4	2,708	12.1	2,746	11.5
Supplies	4,901	23.5	6,255	28.1	6,468	27.1
	20,892	100.0	22,289	100.0	23,848	100.0
Chicago:						
Telephone Apparatus	7,720	59.5	9,537	64.0	9,118	60.2
Lead Covered Cable	1,801	13.9	1,336	9.0	1,409	9.3
Supplies	3,456	26.6	4,013	27.0	4,617	30.5
	12,977	100.0	14,886	100.0	15,144	100.0
State:						
Telephone Apparatus	5,059	63.9	3,789	51.2	5,516	63.4
Lead Covered Cable	1,411	17.8	1,372	18.5	1,337	15.3
Supplies	1,445	18.3	2,242	30.3	1,851	21.3
	7,915	100.0	7,403	100.0	8,704	100.0

[fol. 5717] X-421, p. 2

Non-Bell Assets Transferred to the Electrical Research Products, Inc.

Investments:		
Graybar Electric Company Stock	$6,699,000	
Northern Electric Company Stock	1,370,000	
Western Electric Company, Limited, of London Stock	1,000	
		$8,070,000
Marketable Securities:		
Liberty Bonds	21,549,000	
U. S. Treasury Notes	4,452,000	
U. S. Treasury Notes	4,692,000	
		30,693,000
Cash		1,000,000
Accounts Receivable less Accrued Liabilities		1,299,000
		41,062,000

[fol. 5718] X-421, p. 6

Sales to American Bell Telephone Company and American Telephone and Telegraph Company

1916 to 1930

	Total	Manufactures	Supplies
1916	$6,465,834	$3,840,699	$2,625,135
1917	11,113,616	5,830,125	5,283,491
1918	10,192,947	6,860,080	3,332,867
1919	8,456,180	5,789,719	2,666,461
1920	14,420,652	9,416,852	5,003,800
1921	10,410,861	8,554,531	1,856,330
1922	11,833,369	9,149,261	2,684,108
1923	16,254,515	11,159,317	5,095,198
1924	20,628,775	16,044,216	4,584,559
1925	21,283,047	17,458,757	3,824,290
1926	34,829,964	27,077,732	7,752,232
1927	34,063,405	26,948,252	7,115,153
1928	37,463,563	24,806,558	12,657,005
1929	65,386,163	40,666,709	24,719,454
1930	62,915,385	51,580,708	11,334,677
	365,718,276	265,183,516	100,534,760

[fol. 5719] X-421, p. 7

Division of Total Sales to Bell Customers

1916 to 1930, Inclusive

(Dollars in Thousands)

Year	Total Bell Telephone Companies	American Bell Telephone Company and Successor A. T. & T. Company	Illinois Bell Telephone Company (A)
1916	$73,915	$6,466	$5,478
1917	104,682	11,114	7,760
1918	79,217	10,193	3,491

Year	Total Bell Telephone Companies	American Bell Telephone Company and Successor A. T. & T. Company	Illinois Bell Telephone Company
1919	80,361	8,456	4,766
1920	130,712	14,421	5,800
1921	142,885	10,411	11,313
1922	159,957	11,833	10,993
1923	188,159	16,254	10,282
1924	233,300	20,629	13,957
1925	226,700	21,283	18,649
1926	247,203	34,830	18,097
1927	241,062	34,063	21,686
1928	267,808	37,464	20,892
1929	372,384	65,386	22,289
1930	338,830	62,915	23,848
Total	2,887,175	365,718	199,301

A. For the years 1916 to 1919, represents sales to the Chicago Telephone Company plus an estimate of 20% of the sales to the Central Union Telephone Company. Actual figures are being obtained and when available will be substituted for these estimates.

[fol. 5720] X-421, p. 8

Division of Sales of Lead Covered Cable

1916 to 1930, Inclusive

(Dollars in Thousands)

Year	Total Bell Telephone Companies	American Bell Telephone Company and Successor A. T. & T. Company	Illinois Bell Telephone Company (A)
1916	$16,587	$844	$1,481
1917	24,070	1,626	2,686
1918	9,868	2,043	398
1919	7,735	640	726
1920	16,138	2,135	765
1921	11,505	132	437
1922	16,937	875	1,136
1923	23,829	1,275	1,542
1924	34,226	2,517	2,093
1925	40,092	3,563	3,752
1926	42,703	6,838	3,919
1927	37,776	6,989	3,459
1928	4[illegible]339	10,956	3,212
1929	63,915	15,689	2,708
1930	56,728	17,479	2,746
Total	445,448	73,601	31,060

A. For the years 1916 to 1919, represents sales to the Chicago Telephone Company plus an estimate of 20% of the sales to the Central Union Telephone Company. Actual figures are being obtained and when available will be substituted for these estimates.

[fol. 5721]

X-421, P. 9

Division of Sales of Supplies

1916 to 1930, Inclusive

(Dollars in Thousands)

Year	Total Bell Telephone Companies	American Bell Telephone Company and Successor A. T. & T. Company	Illinois Bell Telephone Company (A)
1916	$34,122	$2,625	$1,481
1917	44,847	5,284	1,904
1918	33,768	3,333	838
1919	37,654	2,666	1,366
1920	60,515	5,004	1,900
1921	42,189	1,856	2,186
1922	44,005	2,684	2,654
1923	56,041	5,095	2,804
1924	55,873	4,585	3,111
1925	59,815	3,824	3,851
1926	70,420	7,752	4,417
1927	70,148	7,115	4,722
1928	88,002	12,657	4,901
1929	130,300	24,719	6,255
1930	86,974	11,335	6,468
Total	914,673	100,534	48,858

A. For the years 1916 to 1919, represents sales to the Chicago Telephone Company plus an estimate of 20% of the sales to the Central Union Telephone Company. Actual figures are being obtained and when available will be substituted for these estimates.

[fol. 5722]

X-421, P. 10

Division of Sales of Telephone Apparatus

1916 to 1930, Inclusive

(Dollars in Thousands)

Year	Total Bell Telephone Companies	American Bell Telephone Company and Successor A. T. & T. Company	Illinois Bell Telephone Company (A)
1916	$23,206	$2,997	$2,516
1917	35,765	4,204	3,170
1918	35,581	4,817	2,255
1919	34,972	5,150	2,674
1920	54,059	7,282	3,135
1921	89,191	8,423	8,690
1922	99,015	8,274	7,203
1923	108,289	9,884	5,936
1924	143,201	13,527	8,753
1925	126,793	13,896	11,046
1926	134,080	20,240	9,761

Year	Total Bell Telephone Companies	American Bell Telephone Company and Successor A. T. & T. Company	Illinois Bell Telephone Company (A)
1927	$133,138	$19,959	$13,505
1928	136,467	13,851	12,779
1929	178,169	24,978	13,326
1930	195,128	34,101	14,634
Total	1,527,054	191,583	119,383

A. For the years 1916 to 1919, represents sales to the Chicago Telephone Company plus an estimate of 20% of the sales to the Central Union Telephone Company. Actual figures are being obtained and when available will be substituted for these estimates.

X-421, P. 14

Air Reduction Company, Inc.

Earnings on Investment

(Dollars in Thousands)

	a 1931	b 1930	c 1929	d 1928	e 1927	f 1926	g 1925	h 1924	i 1923	j 1922	
Total Assetss less Depreciation	....	$35,890	$31,461	$24,429	$21,220	$18,644	$16,048	$12,820	....	....	1
Current Liabilities	....	2,043	1,967	1,655	1,345	1,334	1,001	747	....	....	2
Intangibles	....	0(A)	149	135	111	688	800	713	....	....	3
Investment less Depreeiation (1−2−3)	....	33,847	29,345	22,639	19,764	16,622	14,247	11,360	....	....	4
Depreciation	....	12,775	10,925	9,243	7,963	6,889	5,957	5,158	....	....	5
Investment before Depreciation (4+5)	....	46,622	40,270	31,882	27,727	23,511	20,204	16,518	....	x	6
Average Investment less Depreciation (4)	....	31,596	25,992	21,202	18,193	15,435	12,804	......	....	x	7
Average Investment before Depreciation (6)	....	43,446	36,076	29,805	25,619	21,858	18,361	......	....	x	8
Earnings Available for Interest and Dividends	....	5,250	5,973	3,209	2,413	2,262	2,017	......	....	x	9
Earnings on Investment less Depreciation (9÷7)	....	16.6	......	......	......	......	......		Per Cent		10
Earnings on Investment before Depreciation (9÷8)	....	12.1	16.6	10.8	9.4	10.3	11.0		Per Cent		11
		6 Years									
Five-Year Total of 7	....	$125,222	$93,626	......	......	......	......	......	....	....	12
Five-Year Total of 8	....	175,165	131,719	......	......	......	......	......	....	....	13
Five-Year Total of 9	....	21,124	15,874	......	......	......	......	......	....	....	14
Five-Year Earnings on Investment less Depreciation (14÷12)	....	16.9	17.0	......	......	......	......		Per Cent		15
Five-Year Earnings on Investment before Depreciation (14÷13)	....	12.1	12.1	......	......	......	......		Per Cent		16

(A) Moody's Deferred Assets of 273 are shown by stockholders' report to be prepaid items.

[fol. 5724]

X–421, P. 15

Analysis of Sales of Supplies to Non-Bell Customers

1916 to 1930, Inclusive

(Dollars in Thousands)

Year	Total	Domestic Customers (of Supply Department)	Export and Foreign	U. S. Government	Distributors: Graybar Electric Company, Inc.	Distributors: International Standard Electric Corporation	Distributors: Northern Electric Company, Limited	Distributors: Electrical Research Products Inc.	Other Customers
1916	$26,408	$22,383	$4,025						
1917	37,151	30,119	5,078	$1,954	....	....	....	....	....
1918	44,472	34,980	2,022	7,470	....	....	....	....	....
1919	42,411	40,076	1,042	1,293	....	....	....	....	....
1920	66,191	64,838	1,134	219	....	....	....	....	....
1921	35,962	35,541	421	....	....	....	....	....	....
1922	42,021	41,905	116	....	....	....	....	....	....
1923	55,493	55,383	110	....	....	....	....	....	....
1924	50,387	50,222	165	....	....	....	....	....	....
1925	56,261	56,050	211	....	....	....	....	....	....
1926	448	....	....	....	$241	$49	$68	....	$90
1927	470	....	....	....	155	33	88	$194	....
1928	367	....	....	....	176	36	155	0	....
1929	2,935	....	....	....	181	51	509	2,194	....
1930	1,624	....	....	....	166	50	286	1,057	65
Total	462,601	431,497	14,324	10,936	919	219	1,106	3,445	155

[fol. 5725]

X-421, P. 16, Schedule A

Analysis of Total Sales, 1916 to 1930

(Dollars Expressed in Thousands)

	Sales to All for analysis	Sales to Bell Customers See Schedule B Customers	Sales to Non-Bell Customers See Schedule C for analysis
1916	$106,987	$73,915	$33,072
1917	150,340	104,682	45,658
1918	145,226	79,217	66,009
1919	135,722	80,361	55,361
1920	206,112	130,712	75,400
1921	189,765	142,885	46,880
1922	210,941	159,957	50,984
1923	255,177	188,159	67,018
1924	298,281	233,300	64,981
1925	297,729	226,700	71,029
1926	263,105	247,203	15,902
1927	253,724	241,062	12,662
1928	287,931	267,808	20,123
1929	410,950	372,384	38,566
1930	361,478	338,830	22,648
Total	$3,573,468	$2,887,175	$686,293

[fol. 5726]

X-421, P. 17, Schedule B

Analysis of Sales to Bell Customers, 1916 to 1930

(Dollars Expressed in Thousands)

	a	b	c	d	e
	Total Sales to Bell Customers (Schedule A)	Sales to Associated Companies	Sales to Western Union Telegraph Company	Sales to Non-Associated Companies	Sales to Employees
1916	$73,915	$66,074	$6,875	$966	Sales to Emp. Inc. in Sales to Non-Assoc. Comp. Col. d.
1917	104,682	94,174	9,337	1,171	
1918	79,217	67,860	10,514	843	
1919	80,361	69,982	8,837	1,542	
1920	130,712	113,517	14,076	3,119	
1921	142,885	135,560	4,533	2,792	
1922	159,957	158,614	....	1,343	
1923	188,159	185,969	....	2,190	
1924	233,300	229,352	....	3,948	
1925	226,700	221,534	....	5,166	
1926	247,203	240,732	....	6,471	
1927	241,062	237,253	....	3,303	$506
1928	267,808	264,586	....	3,000	222
1929	372,384	366,902	....	5,339	143
1930	338,830	334,999	....	3,831	(Inc. in Non Bell)
Total	$2,887,175	$2,787,108	$54,172	$45,024	$871

[fol. 5727]

X–421, P. 18, Schedule C

Analysis of Sales to Non-Bell Customers, 1916 to 1930

(Dollars Expressed in Thousands)

	a	b	c	d	e	f	g	h	i
					Distributors				
	Total Sales to Non-Bell Customers (Schedule A)	Domestic Customers (of Supply Dept.)	Export and Foreign	U. S. Government	Graybar Elec. Co.	Int. Standard Elec. Co.	Northern Elec. Co.	Elec. Research Products	Other Customers (V)
1916	$33,072	$26,293	$6,779	....	xx	....	....	xx	xx
1917	45,658	33,676	7,879	$4,103	xx	....	....	xx	xx
1918	66,009	39,619	4,565	21,825	xx		....	xx	xx
1919	55,361	43,941	5,430	5,990	xx	(Included in	....	xx	xx
1920	75,400	69,385	5,185	830	xx	Export and	....	xx	xx
1921	46,880	40,178	6,702	....	xx	Foreign	....	xx	xx
1922	50,984	48,997	1,987	....	xx	Customers	....	xx	xx
1923	67,018	63,523	3,495	....	xx	Col. c.)	....	xx	xx
1924	64,981	60,708	4,273	....	xx	....	....	xx	xx
1925	71,029	67,585	3,444	....	xx	....	....	xx	xx
1926	15,902	....	....	....	$9,908	$2,448	$1,084	....	$2,462
1927	12,662	xx	....	....	6,817	1,953	1,373	$2,519	xx
1928	20,123	xx	....	....	7,186	1,780	1,846	9,311	xx
1929	38,566	xx	....	....	8,167	1,833	3,458	25,108	xx
1930	22,648	xx	....	....	7,054	1,272	2,986	10,518	818
Total	$686,293	$493,905	$49,739	$32,748	$39,132	$9,286	$10,747	$47,456	$3,280

(V) 1926 "Other Customers" includes Western Union Telegraph Company, Vitaphone Co., Victor Talking Machine Co., Inc., Columbia Phonograph Co., Inc., U. S. Government. 1930 "Other Customers" includes Aviation Companies and Employees.

[fol. 5728]

X–421, p. 20

Orders on Hand at December 31

(Dollars in Thousands)

	Total				Bell				Non-Bell			
	Total	T. A.	L. C. C.	Supplies	Total	T. A.	L. C. C.	Supplies	Total	T. A.	L. C. C.	Supplies
1916	$30,676	$17,050	$8,026	$5,600	......	......	......	$2,105	......	.....	.....	$3,495
1917	28,755	17,302	3,365	8,088	$18,021	$13,243	$1,969	2,809	$10,734	$4,059	$1,396	5,279
1918	26,265	17,498	1,235	7,532	14,911	10,805	818	3,288	11,354	6,693	417	4,244
1919	47,442	33,637	4,390	9,415	38,173	30,309	4,217	3,647	9,269	3,328	173	5,768
1920	82,655	61,291	8,058	13,306	68,345	56,538	4,897	6,910	14,310	4,753	3,161	6,396
1921	75,525	62,562	4,762	8,201	72,067	61,544	4,512	6,011	3,458	1,018	250	2,190
1922	62,069	44,643	7,187	10,239	55,018	42,432	6,371	6,215	7,051	2,211	816	4,024
1923	94,951	64,717	12,492	17,742	86,380	62,547	10,779	13,054	8,571	2,170	1,713	4,688
1924	92,014	73,092	9,132	9,790	84,810	70,857	7,757	6,196	7,204	2,235	1,375	3,594
1925	96,270	72,891	14,641	8,738	87,396	69,525	13,070	4,801	8,874	3,366	1,571	3,937
1926	79,880	64,111	11,517	4,252	77,934	62,430	11,268	4,236	1,946	1,681	249	16

Copied Feb. 3, 1932

[fol. 5729]

X-421, (21)

Orders on Hand at December 31

(Dollars in Thousands)

	Total				Bell				Non-Bell			
	Total	T. A.	L. C. C.	Supplies	Total	T. A.	L. C. C.	Supplies	Total	T. A.	L. C. C.	Supplies
1916	$30,676	$17,050	$8,026	$5,600	......	......	......	$2,105	......	......	......	$3,495
1917	28,755	17,302	3,365	8,088	$18,021	$13,243	$1,969	2,809	$10,734	$4,059	$1,396	5,279
1918	26,265	17,498	1,235	7,532	14,911	10,805	818	3,288	11,354	6,693	417	4,244
1919	47,442	33,637	4,390	9,415	38,173	30,309	4,217	3,647	9,269	3,328	173	5,768
1920	82,655	61,291	8,058	13,306	68,348	56,538	4,897	6,910	14,310	4,753	3,161	6,396
1921	75,525	62,562	4,762	8,201	72,067	61,544	4,512	6,011	3,458	1,018	250	2,190
1922	62,069	44,643	7,187	10,239	55,018	42,432	6,371	6,215	7,051	2,211	817	4,024
1923	94,951	64,717	12,492	17,742	86,380	62,547	10,779	13,054	8,571	2,170	1,813	4,688
1924	92,014	73,092	9,132	9,790	84,810	70,857	7,757	6,196	7,204	2,235	1,375	3,594
1925	96,270	72,891	14,641	8,738	87,396	69,525	13,070	4,801	8,874	3,366	1,571	3,937
1926	79,880	64,111	11,517	4,252	77,934	62,430	11,268	4,236	1,946	1,681	249	16

Copied Feb. 3, 1932 H/B

(Here follows side folio 5730)

EXHIBIT X-421*

Western Electric Company,
Incorporated
General Accounting Department.

CA-8.19-2

ANALYSIS OF RESERVE FOR CONTINGENCIES

YEARS ENDING DECEMBER 31ST (PRIOR TO 1910 NOVEMB

	Total	1927	1926	1925	1924	1923	1922	1921	1920	1919	1918	1917	1916
1.Credits to Reserve.													
1.1 From Profits-	$(11,900,000.00)										$(1,000,000.00)	$(2,000,000.00)	$ (500,000.00)
1.2 From Sales of Real Estate and Plant.													
Chicago Property	(415,696.88)												
New York Property (To Bell Tel. Lab., Inc.)	(1,066,302.15)			(1,066,302.15)				660.00					
Philadelphia	(87,472.44)		(1,626.11)	(85,846.33)									
Hawthorne.													
Part of Carey Tract	(1,360.00)		(1,360.00)										
2.Charges to Reserve.													
2.1 100% Depreciation on Patents-	4,181,678.00			2,000.00			(3,750.00)	6,240.00	12,150.00	41,800.00	[illegible]	[illegible]	[illegible]
Revaluation of													
2.2 Merchandise Inventories	1,013,498.88												
2.3 Plant	1,161,938.86												
2.4 Constituent Companies	.00		(590,737.74)	138,380.26 (641,142.00)	190.47	217,234.6	(22,477.78)	[illegible]	91,992.65	20,450.62	[illegible]	[illegible]	17,401.98
2.5 Investments in:													
Manufacturers' Junction Railway Company	4,569.92												
Northern Electric & Manufacturing Company, Ltd.	.00					(123,312.29)							
Imperial Wire & Cable Company, Ltd.	.00												
Nippon Denki Kabushiki Kaisha	.00												
2.6 Sundry Investments:													
American Telephone & Telegraph Company.													
20 Yr. 5% Collateral Trust Gold Bonds due 12/1/46-	.00							(39,683.25)	9,069.50	16,170.50	(3,713.00)	[illegible]	[illegible]
Anglo French Bonds.													
5 Yr. 5% External Loan Bonds due 11/15/20-	.00										(14,500.00)	9,750.00	4,750.00
Chemical Foundation Company, Inc.													
8 Shares Preferred Stock) Par Value $100													
2 Shares Common Stock) per Share	999.00						999.00						
Chicago Telephone Company.													
5% First Mortgage Bonds due 12/1/23	.00							(4,408.75)	1,575.00	1,050.00	(350.00)	[illegible]	
Commonwealth Edison Company.													
5% First Mortgage Bonds due 6/1/43	.00								(12,092.50)	4,000.00	(1,600.00)	10,300.00	
Cumberland Telephone & Telegraph Company.													
5% First & General Mortgage Gold Bonds due 1/1/37	.00						(30,120.00)	(38,410.00)	[illegible]	27,137.50	(10,020.00)	[illegible]	(1,670.00)
Dominion of Canada.													
10 Yr. 5% Gold Bonds due 4/1/31-	.00										(2,673.00)	4,837.50	(2,164.50)
Electrical Discount Corporation.													
800 Shares Common Stock, Par Value $100 per Share-	.00			[illegible]	(2,507.02)	1,733.26	1,623.90						
Liberty Loan, First.													
4% Gold Bonds due 1932 - 1947-	.00							(1,311.25)	807.88	239.80	(786.43)	1,050.00	
Liberty Loan, Second.													
10/25 Yr. 4-1/4% Convertible Gold Bonds due 1927 - 1942-	.00	31,079.80	(31,033.88)	[illegible]			(1,564.27)	(4,883.78)	2,997.05	1,303.50	1,775.50	392.00	
Liberty Loan, Third.													
10 Yr. 4-1/4% Gold Bonds due 9/15/28	.00	18,834.16	(18,834.16)				4,486.07	(62,815.09)	56,761.34	(8,888.17)	8,458.85		
Liberty Loan, Fourth.													
15/20 Yr. 4-1/4% Gold Bonds due 1933-1938	(8.19)	(8.19)						(7,022.60)	3,433.85	3,588.75			
Liberty Loan, Victory.													
5 Yr. 4-3/4% Gold Notes due 5/20/23-	.00							(15,970.00)	12,271.76	3,698.24			
Metropolitan W.S. Elevated Railway Company.													
27 Yr. 4% Extension Mortgage Gold Bonds due 7/1/38	(2,800.00)	(10,800.00	(6,000.00)	(4,000.00)	(30,000.00)	18,000.00	(29,000.00)	(13,000.00)	6,000.00	6,000.00	(8,000.00)	52,000.00	4,000.00
New York City Corporate Stock.													
4-1/4% New York City Corporate Stock due 1960-1964	(109.88)	(98.75)	(122.50)	86.71	(118.75)	849.38	(639.38)	(975.75)	528.75	839.04			
Northern Electric Company, Ltd.													
25 Yr. 5% First Mortgage Gold Bonds due 6/1/39	.00						(80,872.36)	(16,846.40)	12,000.00	14,000.00		12,968.75	
Peoples Gas Light & Coke Company.													
35 Yr. 5% Refunding Mortgage Gold Bonds due 9/1/47	.00							(13,268.75)	(880.00)	8,888.00	1,360.00	7,888.80	
Phenix Laboratories, Incorporated.													
250 Shares Common Stock, No par value-	.00				(10,195.89)		10,195.89						
Southern Bell Telephone Company.													
30 Yr. 5% First Mortgage Gold Bonds due 1/1/41	.00							(14,991.83)	84.33	10,125.00	(2,000.00)	7,750.00	
Treasury Notes 4-3/4% 1927	.00	2,444.92	(2,444.92)										
United Kingdom of Great Britain and Ireland.													
3 Yr. 5-1/2% Secured Temporary Gold Notes due 11/1/19-	.00										(4,687.50)	4,687.50	
Western Electric Company, Incorporated.													
5% First Mortgage Bonds due 12/31/22	.00						5,866.00	(8,391.00)				2,750.00	
2.7 Contributions.													
American National Red Cross 1917	80,000.00											80,000.00	
American Red Cross Second War Fund 1918	32,950.00										32,950.00		
United War Work Campaign, Incorporated (1918)	72,500.00										72,500.00		
Y.M.C.A. War Fund (1917)	20,000.00											20,000.00	
2.8 Power Plant Expense Charges	.00												
2.9 Extraordinary Expense in Connection with Eastland Disaster-	100,619.68												
2.10 Reserve for Self Insured Risks-	.00	103,493.67	(4,807.02)	(6,260.25)	(8,824.50)	(3,714.00)	(14,132.32)	(1,800.76)	(3,077.98)	(2,179.38)	(2,088.84)	(1,895.53)	(1,867.29)
3.Net Change or Credit for the Year-	00	145,251.41	(456,380.83)	(1,484,699.92)	(81,455.69)	110,391.18	(99,005.24)	(801,116.62)	215,984.13	180,690.40	(680,700.44)	(1,834,884.32)	1,864,923.21
4.Balance in Reserve for Contingencies at end of each year		(6,836,709.89)V	(6,969,360.98)	(6,313,876.65)	(4,859,076.73)	(4,807,619.04)	(4,918,010.19)	(4,819,004.95)	(4,617,888.33)	(4,838,472.46)	(4,984,182.86)	(4,333,462.42)	(2,800,878.10)

(V) Transferred to Surplus December 31, 1927.

EXHIBIT X-421

X-421

(22)

CA-8.19-2

ANALYSIS OF RESERVE FOR CONTINGENCIES

ARS ENDING DECEMBER 31ST (PRIOR TO 1910 NOVEMBER 30TH)

Date Issued Nov. 15, 1929.

1922	1921	1920	1919	1918	1917	1916	1915	1914	1913	1912	1911	1910	1909	1908	1907	1906
$	$	$	$	$(1,000,000.00)	$(2,000,000.00)	$ (500,000.00)	$ (683,000.00)	$ (800,000.00)	$(2,800,000.00)	$(2,000,000.00)	$ (750,000.00)	$(1,000,000.00)	$	$	$	$(1,000,000.00)
	660.00															
											(6,480.60)	(609,874.29)				
(3,750.00)	6,240.00	12,150.00	41,400.00	280,000.00	130,449.00	2,0[illegible],790.00		250,000.00	140,000.00	500,000.00	700,000.00					
(22,477.78)	36,020.57	91,992.65	20,450.62	5,[illegible]	1,74[illegible].25	17,401.95	(23,125.71)	(15,413.80)	1,264,[illegible].74	167,302.00	842,196.88					
									441,142.00							
									127,882.21							
									87,000.00		(87,000.00)					
									400,000.00	(210,000.00)	(190,000.00)					
										80,000.00	(80,000.00)					
	(39,683.25)	9,069.50	16,170.50	(3,713.00)	19,384.25	1,683.06	(1,683.06)									
				(14,800.00)	9,750.00	4,750.00										
999.00																
	(4,468.75)	1,575.00	1,060.00	(350.00)	2,187.50		6.25									
		(12,092.50)	4,000.00	(1,600.00)	10,000.00		(307.50)									
(30,120.00)	(38,410.00)	22,962.50	27,137.50	(10,020.00)	34,565.00	(1,670.00)	(14,612.50)	12,167.50								
				(2,673.00)	4,837.50	(2,164.50)										
1,823.90																
	(1,311.25)	807.88	239.80	(786.43)	1,050.00											
(1,584.27)	(4,883.78)	2,997.08	1,303.50	1,775.50	392.00											
4,486.07	(62,815.09)	56,761.34	(2,886.17)	8,450.85												
	(7,022.60)	3,433.85	3,888.75													
	(15,970.00)	12,271.76	3,498.84													
(29,000.00)	(13,000.00)	6,000.00	6,000.00	(8,000.00)	52,000.00	4,000.00	16,000.00	(4,000.00)								
(439.38)	(973.78)	528.75	839.04													
(20,872.38)	(16,846.60)	12,000.00	14,000.00		12,968.75		(1,250.00)									
	(13,868.75)	(850.00)	8,888.00	1,360.00	7,888.80		(118.75)									
10,198.89																
	(14,991.83)	84.33	10,125.00	(2,000.00)	7,750.00		(937.80)									
				(4,687.50)	4,687.50											
5,866.00	(8,391.00)				2,750.00		(225.00)									
				32,950.00	50,000.00											
				77,800.00												
					20,000.00											
							30,884.43	4,816.40	(21,109.48)	149,542.00	250,831.00	3,136.88	(401,200.00)			
							100,619.68									
(14,132.32)	(1,800.74)	(3,077.98)	(2,179.38)	(2,088.84)	(1,895.57)	(1,867.29)	(3,842.47)	(3,071.90)	(3,697.90)	(2,887.32)	(2,008.84)	(9,436.96)	(12,537.22)	(10,150.01)	(6,668.88)	
(99,008.24)	(201,116.62)	215,584.13	150,690.40	(680,700.44)	(1,832,884.32)	1,864,923.21	(548,802.15)	(251,801.80)	(44,128.63)	(1,316,013.32)	661,538.44	(1,416,175.36)	(413,737.22)	(10,150.01)	(6,668.88)	(1,000,000.00)
(4,918,010.15)	(4,819,004.95)	(4,617,888.33)	(4,838,672.46)	(4,984,162.86)	(4,333,462.42)	(2,800,578.10)	(4,348,801.31)	(3,798,909.16)	(3,845,107.36)	(3,300,980.73)	(2,184,967.41)	(2,846,808.88)	(1,420,330.48)	(1,016,993.27)	(1,006,668.88)	(1,000,000.00)

[fol. 5731] X-421, P. 23

Total Merchandise Inventories

1916 to 1930, Inclusive

(Dollars in Thousands)

1916	$33,002
1917	44,415
1918	45,047
1919	45,097
1920	72,210
1921	58,978
1922	52,702
1923	69,349
1924	67,953
1925	55,990
1926	61,456
1927	52,681
1928	60,177
1929	95,940
1930	86,678

[fol. 5732]

X–421, P. 26

Analysis of Other Income as Shown on Reports to Stockholders and Average Interest Rates on Advances to Subsidiaries

1916 to 1930, Inclusive

(Dollars in Thousands)

	1916	1917	1918	1919	1920	1921	9122	1923	1924
Interest received from:									
Marketable Securities	386	78	146	203	192	91	28	9	9
Advances to Subsidiaries (A)	430	789	103	58	458	802	606	505	437
Dividends received from:									
Subsidiaries	0	0	0	0	385	1,046	1,150	590	593
Others	0	0	0	1	0	0	0	0	0
Profit or Loss on Securities sold, Royalties and Other Miscellaneous	414	442	416	593	712	954	907	199	173
Total Gross Other Income	1,230	1,309	665	855	1,747	2,893	2,691	1,303	1,212
Average Interest Rate on Advances to Subsidiaries (A)	5%	5%	6%	6%	6%	6.9%	6.9%	6.9%	6.8%

	1925	1926	1927	1928	1929	1930
Interest received from:						
Marketable Securities	9	625	286	228	183	73
Advances to Subsidiaries (A)	624	549	530	1,186	2,426	2,233
Dividends received from:						
Subsidiaries	463	70	95	1,032	5,394	5,519
Others	52	262	0	0	0	0
Profit or Loss on Securities sold, Royalties and Other Miscellaneous	1,027	3,123	1,177	861	1,327	1,052
Total Gross Other Income	2,175	4,629	2,088	3,307	9,330	8,877

Expenses Applicable to Other Income:						
Federal Taxes				288	374	321
Other Expenses				229	381	410
Total Expenses				517	755	731
Net Other Income				2,790	8,575	8,146
Average Interest Rate on Advances to Subsidiaries (A)	6.8%	6.4%	6.4%	5.4%	6.0%	6.1%

(A) Includes Notes Receivable and Mortgages of Subsidiaries.

[fol. 5733]

X-421, P. 28

Analysis of Royalties, Patents Sold, and Other Miscellaneous Income for the Years 1928, 1929 and 1930

(Dollars in Thousands)

	1928	1929	1930
Royalties Received (A)	229	296	340
Patents Sold (B)	0	85	70
Interest on Class "C" Stocks	546	591	721
Interest on Advances to Automatic Electric Co., Inc.	98	116	113
Bank Interest Received (Broadway)	49	73	75
Interest from Mortgages and Contracts Assumed on Homes of Employees Transferred	3	30	52
Interest Paid on Adjustments of Prior Years' Federal Income Taxes	(12)	(2)	(63)
Profit or Loss on Revaluation of Securities	(56)	44	12
Amortization of Premiums on Securities	(38)	(16)	0
Revaluation of Teletype Corp. Stock to Reflect the Reduction of Teletype Surplus Account	0	0	(609)
Profit on Graybar Electric Co. Employees' Cancelled A. T. & T. Stock Subscriptions	0	0	267
Profit on Sale of Land to Manufacturers' Junc. Ry. Co.	0	0	28
Other	42	110	46
	861	1,327	1,052

(A) Royalties Received Represent:

(a) 1% of Northern Electric Co., Ltd. Sales of Telephone Apparatus.

(b) ½ of 1% of International Standard Electric Corp. Sales of Telephone Apparatus other than Telephone Apparatus Purchased from Western Electric Co., Inc.

(B) Patents were sold to The American Telephone and Telegraph Co.

[fol. 5734]

X-421, P. 29

Royalties Received by Subsidiaries of the Western Electric Co., Inc.

1909 to 1930

(Dollars in Thousands)

	Int'l. W. E. Co. Inc.	Foreign Subsidiaries of Int'l. W. E. Co. Inc.	Electrical Research Products Inc.	Graybar Electric Co. Inc.	Total
1909-1920	....	....	....	..	.....
1921	$8	....	....	..	8
1922	14	$26	....	..	40
1923	12	39	....	..	51
1924	77	168	....	..	245
1925	146	99	....	..	245
1926	....	....	....	$44	44
1927	....	....	$1,020	..	1,020
1928	....	....	1,125	..	1,125
1929	....	....	1,524	..	1,524
1930	....	....	2,582	..	2,582
Total 1909-1930	$257	$332	$6,251	44	$6,884

[fol. 5735] X-421, P. 31

Bond Discount and Expense on Sale of Bonds, 1916 to 1924, Inclusive

(Dollars in Thousands)

	Bond Discount				Bond Expense (A)				Total Bond Discount and Expense
	5's of '22	7's of '25	5's of '44	Total	5's of '22	7's of '25	5's of '44	Total	
1916...	$40	....	....	$40	$4	..	..	$4	$44
1917...	40	....	....	40	4	..	..	4	44
1918...	40	....	....	40	4	..	..	4	44
1919...	40	....	....	40	4	..	..	4	44
1920...	40	210	....	250	4	9	..	13	263
1921...	40	289	....	329	4	13	..	17	346
1922...	40	993 (B)	..	1,033	9	60	..	69	1,102
1923...	..	....	....	....	..	(3)	..	(3)	(3)
1924...	..	....	2,275	2,275	..	..	72	72	2,347
Totals	280	1,492	2,275	4,047	33	79	72	184	4,231

There has been no bond discount or expense on sale of bonds incurred or charged to expense or profits during the years 1925 to 1930, inclusive.

(A) Includes, in addition to amortization of initial bond expense, current payments to registrar, trustee and paying agent.

(B) Includes $78,000 premium paid on bonds called for redemption.

[fol. 5736] X-421, P. 41

Western Electric Company, Engineering Department
Expense by Apparatus Classifications for the Year 1922

	Total 12 months 1922	Portion chargeable to A. T. & T. Co.
Telephone and Telegraph Apparatus:		
Central Office—Manual and Machine Switching:		
Central Office Equipment	$3,125,713	$199,796
Private Branch Exchange Equipment	94,079	
Other	109,335	73,474
Total	3,329,127	273,270
Substation and Outside Plant	233,682	14,162
Transmitters, Receivers and Induction Coils	463,912	......
Other Apparatus Classed as Telephone under W. E. Co. and A. T. & T. Co. Contracts:		
Repeater Equipment	176,008	18,091
Loading Coils and Cases	31,159	60
Carrier Current Equipment	518,838	159,317
Repeater Bulbs and Vacuum Tubes	524,833	133,069
Radio Equipment	1,109,420	262,887
Loud Speaking Equipment	395,317	39,521
Testing Equipment	171,616	13,035
Total	2,927,191	625,980
Printing Telegraph	141,162	283
Total Telephone and Telegraph Apparatus	7,095,074	913,695

	Total 12 months 1922	Portion chargeable to A. T. & T. Co.
Cable:		
Lead Covered Cable	$167,597	$5,765
Submarine Cable	247,734	......
Total Cable	415,331	5,765
Other Chargeable:		
Foreign Activities	34,772	......
Not W. E. Merchandise Development	38,726	5,514
Inspection W. E.	21,610	......
Inspection Not W. E.	296,555	7,919
Other Miscellaneous Work	347,675	40,401
Total Other Chargeable	739,338	53,834
Grand Total	8,249,743	973,294

[fol. 5737] X-421, P. 42

Western Electric Company, Engineering Department

Expense by Apparatus Classifications for the Year 1923

	Total 12 months 1923	Portion chargeable to A. T. & T. Co.
Telephone and Telegraph Apparatus:		
Central Office—Manual and Machine Switching:		
Central Office Equipment	$3,684,683	$258,840
Private Branch Exchange Equipment	61,096	1,596
Other	95,795	63,874
Total	3,841,574	324,310
Substation and Outside Plant	296,116	13,144
Transmitters, Receivers and Induction Coils	415,644	8,384
Other Apparatus Classed as Telephone under W. E. Co. and A. T. & T. Co. Contracts:		
Repeater Equipment	163,882	19,670
Loading Coils and Cases	50,357	9,864
Carrier Current Equipment	530,329	178,786
Repeater Bulbs and Vacuum Tubes	335,394	155,554
Radio Equipment	1,155,152	318,066
Loud Speaking Equipment	366,405	67,975
Testing Equipment	286,227	3,506
Total	2,887,746	753,421
Printing Telegraph	110,142	......
Total Telephone and Telegraph Apparatus	7,551,222	1,099,259
Cable:		
Lead Covered Cable	134,983	3,814
Submarine Cable	271,911	63
Western Union Cable	117,578	......
Total Cable	524,472	3,877

	Total 12 months 1923	Portion chargeable to A. T. & T. Co.
Other Chargeable:		
Foreign Activities	$17,650	......
Not W. E. Merchandise Development	38,817	$3,782
Inspection W. E.	255,756	74
Inspection Not W. E.	400,698	11,978
Other Miscellaneous Work	404,152	100,311
Total Other Chargeable	1,117,073	116,145
Grand Total	9,192,767	1,219,281

[fol. 5738] X-421, P. 43

Western Electric Company, Engineering Department

Expense by Apparatus Classifications for the Year 1924

	Total 12 months 1924	Portion chargeable to A. T. & T. Co.
Telephone and Telegraph Apparatus:		
Local and Toll Central Office Equipment:		
Systems Adaptation of Not W. E. Products:		
Step-by-Step Machine Switching	$370,250	......
Other	75,219	4,191
Total Systems Adaptation of Not W. E. Products	445,469	4,191
Engineering W. E. Apparatus Manufactured by Suppliers:		
Ticket Distributing (Lamson)	12,454	......
Other	22,158	......
Total Engineering W. E. Apparatus Manufactured by Suppliers	34,612	......
Local and Toll Central Equipment	3,553,705	22,153
Total Local and Toll Central Office Equipment	4,033,786	26,344
Substation and Outside Plant	297,055	14,406
Transmitters, Receivers and Induction Coils	546,101	116,852
Other Apparatus Classed as Telephone under W. E. Co. and A. T. & T. Co. Contracts:		
Repeater Equipment	141,522	18,454
Loading Coils and Cases	57,478	15,003
Carrier Current Equipment	562,377	123,145
Repeater Bulbs and Vacuum Tubes	228,032	193,674
Radio Equipment	1,376,949	325,595
Testing Equipment	186,735	1,844
Other Communicating Apparatus and Systems	945,476	177,058
Total Other Apparatus Classed as Telephone under W. E. Co. and A. T. & T. Co. Contracts	3,498,569	854,773
Printing Telegraph	37,648	1,648
Total Telephone and Telegraph Apparatus	8,413,159	1,014,023

	Total 12 months 1924	Portion chargeable to A. T. & T. Co.
Cable:		
Lead Covered Cable	$171,248	($3,884)
Submarine Cable	132,966	......
Western Union Cable	186,550	......
Total Cables	490,764	(3,884)
Other Chargeable:		
Foreign Activities	15,758	......
Not W. E. Merchandise Development	31,707	4,822
Inspection W. E.	338,665	......
Inspection Not W. E.	487,757	22,940
Other Miscellaneous Work	489,829	54,545
Total Other Chargeable	1,363,716	82,307
Grand Total	10,267,639	1,092,446

[fol. 5739]

X-421, P. 44

Western Electric Company Investment in Products Company

On January 1, 1927 the Products Company was set up, at which time the following assets were transferred:

Investments:		
Graybar Company Stock	$6,699,000	
Northern Electric Company Stock	1,370,000	
W. E. Co. Limited of London Stock	1,000	
		$8,070,000
Marketable Securities:		
Liberty Bonds	21,549,000	
U. S. Treasury Notes	4,452,000	
U. S. Treasury Notes	4,692,000	
		30,693,000
Cash		1,000,000
Accounts Receivable less Accrued Liabilities		1,299,000
		41,062,000
Of this amount, capital was set up on the Products books of		1,000,000
And surplus was set up amounting to		40,062,000
During 1927 the Products Company earned		5,504,000

At December 31st the following revaluations were made increasing the value of the Products Company holdings in tha Northern Electric Company and the Graybar Electric Company:

On account of Graybar Electric Company	$1,800,000	
On account of Northern Electric Company	2,880,000	
		4,680,000
Total		50,246,000

Out of this the following dividends were paid to the Western Electric Company:

Regular dividend at $5.00 per share	$3,750,000	
Special dividend at $60.00 per share	45,000,000	
		48,750,000
Leaving a surplus at the end of 1927 on Products Company books of		1,496,000
On the Western Electric Company books as of January 1, 1927, the investment in Products Company was carried at		41,062,000
As of December 31, 1927 this investment was revalued to represent 750,000 shares of common stock at $3.00 per share, or		2,250,000
Resulting in a charge to surplus on Western's books of		**38,812,000**

This revaluation was arrived at as follows:

Capital stock and surplus of the Products Comapny—1/1/27	41,062,000
Estimated earnings of the Products Company for 1927	5,258,000
Revaluation of Graybar and Northern Electric investments	4,680,000
Total	51,000,000

[fol. 5740] X-421, P. 45

Total (Brought Forward)	$51,000,000
Less dividends paid	48,750,000
Estimated value of capital stock nad surplus on Products books at December 31, 1927	2,250,000

Which was equivalent to $3.00 a share on 750,000 shares.

At December 31, 1928, the Western Electric Company's holdings in the Products Company were increased from $2,250,000 to $6,250,000, reflecting the revaluation made by the Products Company of their capital stock from $1,000,000 to $5,000,000 as of this date. The stock investment in the Electrical Research Products, Inc., is now carried on the books of the Western Electric Company at $6,250,000.

[fol. 5741] X-421, P. 48

Basis of Price to Graybar Electric Company

The price basis to the Graybar Electric Company, from 1925 to 1930, was that in effect with the most favored customers excepting the Bell Telephone Companies. On an average such prices in many cases were from 2% to 6% higher than prices to Bell Companies and in no case lower.

[fol. 5742] X-421, P. 50

Some Instances of Acquisitions and Disposals of Property for Other Than Cash During the Period 1915 to 1930, Inclusive

1. On January 1, 1925, the Western Electric Company, Incorporated, sold the assets of its Engineering Department to the Bell Telephone Laboratories, Inc., receiving in payment therefor a demand note in the amount of $4,552,146.08.

2. On January 1, 1926, the Supply Department of the Western Electric Company, Incorporated, was sold to the Graybar Electric Company, Inc., for which was received 150,000 shares of common stock having a par value of $100.00 per share, and an interest bearing open account (against the Graybar Company) of $1,421,269.41.

3. On January 1, 1927, Non-Bell assets of the Western Electric Company, Incorporated, were sold to the Electri-

cal Research Products Inc. for 750,000 shares of no par value common stock.

4. On December 31, 1928, Graybar Electric Company, Inc., a wholly owned subsidiary of the Electrical Research Products Inc. was sold to the Graybar Management Corporation for $3,000,000.00 in cash and 60,000 shares of preferred stock, par value $100.00.

[fol. 5743]

X-421, P. 51

Profits on Sale of International Western Electric Company, Incorporated, to the International Telephone and Telegraph Corporation September 30, 1925

1. Selling Price		$29,306,534
2. Value at which Western Electric Company, Incorporated, carried its investment in International Western Electric Company, Incorporated:		
55,000 shares of Preferred Stock (Par $100)	$5,500,000	
100,000 shares of Common Stock	2,441,142	
Bills Receivable	11,821,311	
		19,762,453
		9,544,081
3. Special dividend received from International Western Electric Company, Incorporated, on September 30, 1925		9,700,000
		19,244,081
4. Deduct Reserves:		
(a) 100% reserve against certain assets purchased by Western Electric Company, Incorporated, from the International Western Electric Company, Incorporated, not included in sale	$677,986	
(b) Reserve for pension liability under agreement with International Telephone and Telegraph Corporation	1,300,000	
(c) Reserve for federal taxes and other probable expenses in connection with sale	1,311,000	
		3,288,986
Profits as shown in Stockholders' Report—1925		15,955,095

[fol. 5744]

X-421, P. 52

Earnings for 1931 and 1932 on Prospective Bell Business as Estimated June 10, 1931

(Dollars in Thousands)

	Sales	Total cost of sales	Net profits	Per cent net profits to sales	Per cent Return on Investment
15 Year Period (per Exhibit 1)	$2,887,200	$2,746,000	$141,200	4.9	7.0
1931	256,000	245,500	10,500	4.1	3.9
1932	239,000	223,400	15,600	6.5	5.8
Total	3,382,200	3,214,900	167,300	4.9	6.5

[fol. 5745] X-421, P. 55

Sales (Approximate) of Broadcasting Equipment to Graybar Electric Company, Inc.

1925 to 1930, Inclusive

(Dollars in Thousands)

1925	$1,446
1926	1,000
1927	505
1928	1,041
1929	929
1930	834
	5,755

Note

(a) Sales to Graybar Company of radio transmitting equipment for the United States Government are included in this statement.

(b) In addition to the sales to the Graybar Company, there were sales made about ten years ago, of two broadcasting equipments to Bell System Companies—one for station WEAF sold to American Telephone & Telegraph Company, and one for station WCAP sold to Chesapeake & Potomac Telephone Company. These stations are no longer owned by Bell System Companies. There were also sales in foreign countries aggregating approximately $500,000.

[fol. 5746]

Exhibit X–422

Stock Issue Data, 1920–1931, for American Telephone & Telegraph Company

(Requested by Attorneys for City of Chicago)

	Dates directors authorized issues	Dates when first official announcements of proposed financing were made	Dates when stockholders were advised of right to subscribe	Dates establishing stockholders of Record	Dates right to subscribe expired	Dates of payment for stock
1921	May 10, 1921	May 10, 1921	May 10, 1921	May 20, 1921	July 20, 1921	*July 20, 1921
					Installments—	July 20, 1921 Sept. 1, 1921 Nov. 7, 1921
1922	Aug. 24, 1922	Aug. 24, 1922	Aug. 24, 1922	Sept. 8, 1922	Nov. 1, 1922	*Nov. 1, 1922
					Installments—	Nov. 1, 1922 Mar. 1, 1923 July 2, 1923
1924	May 20, 1924	May 20, 1924	May 20, 1924	June 10, 1924	Aug. 1, 1924	*Aug. 1, 1924
					Installments—	Aug. 1, 1924 Dec. 1, 1924 Apr. 1, 1925
1926	May 19, 1926	May 19, 1926	May 19, 1926	June 8, 1926	Aug. 2, 1926	*Aug. 2, 1926
					Installments—	Aug. 2, 1926 Dec. 1, 1926 Apr. 1, 1927
1928	May 16, 1928	May 16, 1928	May 16, 1928	June 1, 1928	Aug. 1, 1928	*Aug. 1, 1928
					Installments—	Aug. 1, 1928 D3e. 1, 1928 Apr. 1, 1929
1929	Apr. 30, 1929	Apr. 30, 1929S	Apr. 30, 1929	May 10, 1929	July 1, 1929	July 1, 1929
(Ten Year Convertible 4½% Gold Debenture Bonds)						
1930	Apr. 16, 1930	Apr. 16, 1930	Apr. 16, 1930	May 23, 1930	Aug. 1, 1930	*Aug. 1, 1930
					Installments—	Aug. 1, 1930 Dec. 1, 1930 Apr. 1, 1931

* Payment in full, optional.

S. Notice to stockholders of special meeting to approve issue of bonds sent Mar. 29, 1929.

[fol. 5747] EXHIBIT X-423, P. 1

Approximate Sales of Panel and Step-by-Step Machine Switching Switchboards

1920-1931 Inclusive (A)

(Dollars in Thousands)

	Panel machine switching	Step-by-step machine switching
1920	$6,587	(B)
1921	23,873	(B)
1922	21,837	(B)
1923	17,477	$4,619
1924	13,264	8,452
1925	11,209	11,822
1926	11,175	12,157
1927	12,061	11,211
1928	14,014	13,026
1929	23,493	15,767
1930	26,970	19,128
1931	32,901	14,499
Total	214,861	110,681

A. Sales exclude Installation and Equipment Specifications but include manual and other W. E. Equipment and Equipment of not W. E. manufacture sold as part of panel and step-by-step switchboards.

B. Figures not available.

[fol. 5748] X-423, P. 2

Copy

Approximate Number of Lines of Panel and Step-by-step Machine Switching Switchboards

(1918-1931, Inclusive (A)

	Panel machine switching	Step-by-step machine switching
1918	10,000	11,200
1919	......	1,607
1920	85,858	32,073
1921	110,201	47,001
1922	109,818	59,449
1923	108,874	64,156
1924	138,515	113,440
1925	100,649	139,402
1926	99,529	196,320
1927	150,500	174,187
1928	188,880	272,300
1929	308,865	338,349
1930	340,550	388,080
1931	398,890	290,232
Total	2,151,129	2,127,796

A. Figures in each year are the number of lines on switchboard jobs initially shipped in that year. Total lines on a job would be included regardless of how small a portion of total job was shipped if initially shipped in December.

[fol. 5749] EXHIBIT X-424

Comp's Ex. 1—9/23/15. M. C. C.

Memorandum of Proposed Agreement Between the American Telephone and Telegraph Company and the Central Union Telephone Company

The American Company to waive its claim to the right to perform telephone service between Cuyahoga County, Ohio, within the territory of the Cleveland Telephone Company, and the following named counties in the State of Ohio, viz:

Lake, Ashtabula, Geauga, (Trumbull), Mahoning, Portage, Stark, Summit, Medina, Lorain, Erie, Huron, Richland, Ashland, and Wayne; and also between points within the territory of the City and Suburban Telegraph Association of Cincinnati and the following Counties, viz:

Brown, Highland, Clinton, Greene, Clark, Champaign, Miami, Montgomery and Preble, in the State of Ohio, and Wayne, Union, Fayette and Rush, in the State of Indiana; and also between points within the territory of the Chicago Telephone Company, and the following named Counties in the State of Illinois, viz:

Livingston, Marshall, Stark, Putnam, Bureau, LaSalle, Lee, Ogle, DeKalb, Winnebago and Boone; and also between St. Louis, Missouri, and the following named Counties within the State of Illinois, viz:

Madison, Bond, Fayette, Montgomery, Christian, Macon, Macoupin, Greene, Jersey, Calhoun, Pike, Scott and Morgan; and also between Janesville, Wisconsin, and the following named Counties within the State of Illinois, viz:

Winnebago and Boone.

The Central Union Company to waive its claims to the right to do business between points in the respective ter-

[fol. 5750] X-424, 2

ritories of the Cleveland Telephone Company, the Central District and Printing Telegraph Company, The City and Suburban Telegraph Association, the Chicago Telephone Company, the Wisconsin Telephone Company and The Bell Telephone Company of Missouri, and points in the territory of the Central Union Telephone Company outside the Counties hereinbefore mentioned.

The Central Union Company to waive its claims to the American Company all its rights to business between Toledo, Ohio, and Detroit, Michigan.

The Central Union Company also to grant to the American Company the right to do business between all points within the territory of the Central Union Company one hundred miles or more apart, reached by the copper metallic-circuit routes now owned or projected by the American Company, as shown by the diagram exhibit herewith, or by the above-mentioned metallic-circuit lines of the American Company in connection with the lines of the Central Union Company.

The provisions of this Memorandum to be put into effect immediately and to remain in force pending a final adjustment of questions involved, without prejudice to either party, or until ten days' written notice shall have been given by either party to the other of its desire to terminate the same. This arrangement does not include, however, the business in connection with Trumbull County, Ohio.

The business between Detroit and Toledo is expected from this temporary agreement.

Central Union Telephone Co., by H. B. Stone, President. American Telephone & Telegraph Co., by Edward J. Hall, Vice-President.

New York, February 15th, 1894.

[fol. 5751] EXTRACTS FROM EXHIBIT X-426

Contracts, Schedules, Filings and Documents of Illinois Bell Telephone Company relating to Exchange and Toll Services from Chicago Area, effective during period 1923-1931, both inclusive, comprising 280 pages from which the following extracts were taken:

[fol. 5752] X-426, (4)

Ill. C. C. No. 2. Original Sheet No. 2. Cancelling I. P. U. C. No. 1

Illinois Bell Telephone Company

Schedule of Toll Rates

Instructions

The Toll Tariffs consist of the following:

1. Instructions containing the classifications of service.
2. Table of Standard Rates and tables for converting the Initial Station-to-Station Day Rates, shown in the Tariffs, to the rates for other classes of service.
3. List of Special Toll Rates.
4. A United States Government Survey Map of the States of Illinois and a Mileage Scale thereto.
5. "List of Stations" containing all stations in the State of Illinois.
6. A Master Rate Machine with Set of Rate Charts; a mechanical apparatus by means of which rate information is condensed and rate quoting facilitated.

General

The service covered by these tariffs consists in furnishing for the use of patrons facilities, other than exchange facilities, intended for use in telephonic communication between the points listed. The exchange facilities used in connection with this service are the facilities required to establish connection between an exchange station and the toll board, or between an exchange station and the toll trunks, when such trunks are employed to effect connection with the toll board, and the use of such facilities is covered by the charges for exchange service.

Classification of Toll Service

The following classes of toll service are furnished:

Station-to-station Service:

A Station-to-Station Call is one on which the person originating the call does not specify a particular person to be reached at the called station but gives only the number of the telephone station desired or the name or address under which the telephone is listed.

NOTE. A call which would otherwise be a Station-to-Station Call is classed as a Person-to-Person Call, if request is made to reverse the charges.

Person-to-person Service:

A Person-to-Person Call is one on which the person originating the call specifies a particular person (or an extension station) to be reached at the called place. Under certain conditions a partial charge (known as a "Report Charge") is made where it is impossible to establish communication on a Person-to-Person Call.

Collect Call Service:

A Collect Call is a Person-to-Person Call, the charges for which are to be reversed.

Appointment Call Service:

An Appointment Call is a Person-to-Person Call on which the person originating the call wishes arrangements made in advance with the called station to talk at a specified time.

Messenger Call Service:

A Messenger Call is a Person-to-Person Call involving paid messenger service or requiring the use of a telephone not connected with the Bell System to bring the called party to a Bell Telephone.

Report Charges:

A Report Charge shall be made on Person-to-Person, Collect, Messenger and Appointment Calls, which cannot be completed for the following reasons:

1. If the called party is not available at the called telephone and a report to this effect is given the calling telephone within one hour from the time the call is filed (or within one hour beyond the delay reported to the calling telephone, when traffic to the called place is being accepted subject to delay).

2. If the called party refuses to talk.

3. If, when the call is ready for completion, the calling party refuses to talk or is not available at the calling telephone or no answer can be obtained from the calling telephone, provided this report is obtained within one hour from the time the call is filed (or within one hour beyond the delay reported to the calling telephone, when traffic to the called place is being accepted subject to delay).

4. If, on a collect call, the called telephone or called party refuses to accept the charge for the message.

Issued September 5, 1925.
Effective September 10, 1925.
By A. R. Bone, General Commercial Superintendent, 212 W. Washington St., Chicago, Ill.

[fol. 5753] X-426, (5)

Ill. C. C. No. 2. Revised Sheet No. 2. Cancelling Original.

Illinois Bell Telephone Company

Schedule of Toll Rates

Instructions

The Toll Tariffs consist of the following:

1. Instructions containing the classifications of service.

2. Table of Standard Rates and tables for converting the Initial Station-to-Station Day Rates, shown in the Tariffs, to the rates for other classes of service.

3. List of Special Toll Rates.

4. A United States Government Survey May of the State of Illinois and a Mileage Scale thereto.

5. "List of Stations" containing all stations in the State of Illinois.

6. A Master Rate Machine with Set of Rate Charts; a mechanical apparatus by means of which rate information is condensed and rate quoting facilitated.

General

The service covered by these tariffs consists in furnishing for the use of patrons facilities, other than exchange facilities, intended for use in telephonic communication between the points listed. The exchange facilities used in connection with this service are the facilities required to establish connection between an exchange station and the toll board, or between an exchange station and the toll trunks, when such trunks are employed to effect connection with the toll board, and the use of such facilities is covered by the charges for exchange service.

Classification of Toll Service

The following classes of toll service are furnished:

Station-to-station Service:

A Station-to-Station Call is one on which the person originating the call does not specify a particular person to be reached at the called station but gives only the number of the telephone station desired or the name or address under which the telephone is listed.

On Station-to-Station calls where the initial period rate is 25 cents or more, reversal of charges is permitted (at Station-to-Station Day, Evening or Night rates) provided "anyone" answering at the called station accepts the charges.

When the charges are not so accepted at the called station, and the calling party therefore cancels the call, the regular Report Charge will apply and be assessed against the calling party.

Person-to-person Service:

A Person-to-Person Call is one on which the person originating the call specifies a particular person (or an extension station) to be reached at the called place. Under certain conditions a partial charge (known as a "Report Charge") is made where it is impossible to establish communication on a Person-to-Person Call.

Collect Call Service:

A Collect Call is a Call, the charges for which are to be reversed. If the called telephone, or called party, refuses to accept the charge and the Call is cancelled, a Report Charge shall be made.

Appointment Call Service:

An Appointment Call is a Person-to-Person Call on which the person originating the call wishes arrangements made in advance with the called station to talk at a specified time.

Messenger Call Service:

A Messenger Call is a Person-to-Person Call involving paid messenger service or requiring the use of a telephone not connected with the Bell System to bring the called party to a Bell Telephone.

Report Charges:

A Report Charge shall be made on Person-to-Person, Collect, Messenger and Appointment Calls, which cannot be completed for the following reasons:

1. If the called party is not available at the called telephone and a report to this effect is given the calling telephone within one hour from the time the call is filed (or within one hour beyond the delay reported to the calling telephone, when traffic to the called place is being accepted subject to delay).

2. If the called party refuses to talk.

3. If, when the call is ready for completion, the calling party refuses to talk or is not available at the calling telephone or no answer can be obtained from the calling telephone, provided this report is obtained within one hour from the time the call is filed (or within one hour beyond the delay reported to the calling telephone, when traffic to the called place is being accepted subject to delay).

4. If, on a collect call, the called telephone or called party refuses to accept the charge for the message.

Issued September 1, 1926.
Effective October 1, 1926.
By A. R. Bone, General Commercial Superintendent, 212 W. Washington St., Chicago, Ill.

X-426, (20)

Illinois Bell Telephone Company

Traffic Agreement

Jan. 1, 1926.

Traffic Agreement Between Illinois Bell Telephone Company, a Corporation under the Laws of Illinois (Herein Called the Bell Company), and —— ——, a Corporation under the Laws of —— (Herein Called the Connecting Company).

Physical connection shall be established and telephone communications interchanged between the system operated by the Connecting Company shown on the annexed map, marked Exhibit "A" and made part hereof, and the system operated by the Bell Company (the latter being part of the general exchange and toll line system commonly known as the "Bell System") upon the following terms and conditions:

1. The Bell Company will connect its system with the lines of the Connecting Company at ——. The Connecting Company will not connect the lines of the Bell Company with the exchanges or toll lines of any individual, firm or corporation other than those indicated on said Exhibit "A" without the written consent of the Bell Company.

2. Each company will make the proper switchboard or other connections and perform the necessary operating for direct and prompt communication between its patrons and the patrons of the other. Each communication interchanged shall take the most direct and economical routing over which satisfactory telephone service can be furnished.

3. The Connecting Company will adopt and comply with the standards, operating methods and rules, including routing instructions, governing the toll service of the Bell Company; will accept both "outward" and "inward" communications on the basis that charges are to be collected at the "inward" station, when requested and agreed to by its patrons; and will require its patrons to observe the toll rules and regulations of the Bell Company.

4. Each company will construct, equip, maintain and operate its system so that good telephone service shall at all times be furnished to the public, and each will by itself or through others furnish adequate toll and exchange facilities therefor.

5. The charges for all communications interchanged hereunder shall be in accordance with such rates as the Bell Company may establish from time to time. No charge shall be made in excess of such rates except a reasonable charge for a messenger when necessary to notify a person for whom a call is received.

6. Each party will receive as full compensation for facilities furnished and services rendered in originating and terminating toll business interchanged hereunder, an amount to be determined in accordance with the following table:

[fol. 5755]

X-426, 21

Table of Commissions

Where the average revenue per cent paid and sent collect message is		The commission per cent paid and sent collect message is	Where the average revenue per cent paid and sent collect message is		The commission per cent paid and sent collect message is
Over	And not over		Over	And not over	
$0.00	$0.125	$0.0650	$0.50	$0.525	$0.1125
.125	.15	.0700	.525	.55	.1150
.15	.175	.0750	.55	.60	.1175
.175	.20	.0800	.60	.65	.1200
.20	.225	.0825	.65	.70	.1225
.225	.25	.0850	.70	.80	.1250
.25	.275	.0875	.80	.90	.1275
.275	.30	.0900	.90	1.00	.1300
.30	.325	.0925	1.00	1.10	.1325
.325	.35	.0950	1.10	1.20	.1350
.35	.375	.0975	1.20	1.30	.1375
.375	.40	.1000			
.40	.425	.1025			
.425	.45	.1050			
.45	.475	.1075			
.475	.50	.1100			

For average revenues per message above $1.30 the commission increases ¼c for each 10c increase in such average revenue per message.

The amount of commission for a given month is determined as follows:

(a) Ascertain the average revenue per sent paid and sent collect message by dividing the total amount of sent paid and sent collect charges, including report charges (but not including messenger charges), on business of that month, by the number of sent paid and sent collect messages.

(b) From the foregoing table of commissions, ascertain the amount of commission per message corresponding to the average revenue per message.

(c) Multiply the number of sent paid and sent collect messages by the amount of commission per message ascertained from the foregoing table of commissions.

Note.—The above compensation shall not be construed as compensation for connection of exchange subscribers with toll boards; such service is performed for the patron and compensated for in the exchange rate.

7. Over and above the commissions computed as above, either party whose average revenue per Outward message is 25 cents or more, and who tickets, times and handles to destination all messages originating at one or more of its offices shall receive an additional commission of 2 cents per Sent Paid and Sent Collect message originating at such offices and their tributaries and passing over the lines of the other party. Such additional commission will therefore apply to all messages passing over the lines of the Bell Company and originating at the following offices of the Connecting Company:——.

[fol. 5756] X-426, 22

8. On all communications passing over the toll lines of both parties hereto, the commissions determined as above shall first be deducted from the through tolls and the remainder shall be prorated in the proportion, in each case, which the length of the Connecting Company's toll line and that of its connecting companies, if involved, bears to the whole length of the toll line used, measured by air line distance between the point of transfer and the respective points of origin and termination.

To facilitate settlements between the parties hereto, the amount to which the Connecting Company shall be entitled hereunder for the use of its toll lines, if involved, shall be computed as an amount per message to be determined from a study of the business handled. Such a study shall be made of the first month's business interchanged hereunder and the amount per message so determined shall thereafter be used as a basis of subsequent monthly settlements until a new study be made at the request of either party, but not oftener than once in six months.

When completed, a copy of the summary sheets of the initial study and of each subsequent study of the traffic interchanged by and involving the lines of both parties hereto, showing the actual calculations and the mileage allowances used, shall be attached to and become part of this agreement, as Exhibit B. The said sheets of each subsequent study shall cancel and replace the sheets of the preceding study.

9. Each company shall collect all charges for communications originating on its system or the system of any of its connecting companies and shall account and be responsible to the other for the latter's share thereof. Each company shall keep proper records of its transactions hereunder, and such records, together with the vouchers relating thereto, shall at all reasonable times be subject to the inspection by the other. Accounts hereunder shall be adjusted and paid monthly and remittance in full shall be made by the debtor to the creditor within thirty (30) days after receipt of a statement covering the monthly settlements.

10. Under no conditions shall the lines of either company, or of its connecting companies, be exposed to high tension lines except when protected in accordance with the standard specifications of the Bell Company.

11. Neither party hereto shall, in the absence of any negligent act or omission on its part, be liable to the other party for any accident, damages, losses or costs incurred at, on or in connection with its lines or instruments, or by reason of any error in transmitting communications or for the failure of any conversation from any cause whatsoever, and each party hereto will hold the other party harmless from any claim for loss, cost, expense or damage arising out of any such accident, damages, losses, or costs, except as aforesaid.

12. If either company shall default in the payment of any sum due hereunder or shall violate any other provision

of this agreement, and if such default or violation shall continue for thirty (30) days after written notice thereof, the other company may terminate this agreement forthwith by written notice. In addition to the foregoing, the Bell Company may terminate this agreement forthwith in case the Connecting Company without the consent of the Bell Company connects the toll lines of the Bell Company with the exchange or toll lines of any individual, firm or corporation other than as shown in said Exhibit "A."

13. This agreement shall take effect on —— —, 192-, and, unless sooner terminated as herein provided, shall continue in force until and unless terminated by ninety (90) days' notice in writing from either company to the other.

In witness whereof the said companies have caused this agreement to be executed in their behalf this — day of ——, 192-.

Illinois Bell Telephone Co., by —— ——. —— ——, by —— ——.

[fol. 5757] X-426, 23

Illinois Bell Telephone Company

Traffic Agreement

Dec. 1, 1929.

Traffic Agreement Effective as of the — day of ——, 19—, Between the Illinois Bell Telephone Company, a Corporation under the Laws of the State of Illinois, Herein Called the Bell Company, and —— ——, a Corporation under the Laws of the State of ——, Herein Called the Connecting Company

Physical connection shall be established and telephone communications interchanged between the system operated by the Connecting Company as shown on the annexed map marked "Exhibit A," and made a part hereof, and the system operated by the Bell Company, including systems of other companies with which the Bell Company connects, upon the following terms and conditions:

1. The Bell Company will connect its system with the system of the Connecting Company, at the points indicated on "Exhibit A."

The Connecting Company will not, without the written consent of the Bell Company, connect the lines of the Bell Company with the exchanges or toll lines of any individual, firm or corporation other than those shown on said "Exhibit A."

2. Each Company will make the proper switchboard or other connections and perform the necessary operating for direct and prompt communication between its patrons and the patrons of the other.

3. With respect to all matters covered by this agreement, the Connecting Company will adopt and comply with the Bell Company's directions as to routes, over which communications are to be routed, and also with its operating methods and rules. The Connecting Company will accept both outward and inward communications on the basis that the charges are to be collected at the inward station when requested and agreed to by its patrons, and will require its patrons to observe the rules and regulations of the Bell Company. The Connecting Company will, upon request, furnish such information as the Bell Company may reasonably require.

4. Each company will construct, equip, maintain and operate its system so that good telephone service shall be furnished to the public at all times, and each will by itself or through others furnish adequate toll and exchange facilities therefor.

5. The charges for all communications interchanged hereunder shall be in accordance with such rates as the Bell Company may from time to time establish or adopt. No charge shall be made in excess of such rates, except a reasonable charge for a messenger, when necessary to notify a person for whom a call is received.

6. The amount to be received by each company for facilities furnished and services rendered hereunder shall be determined in accordance with the following Basis of Settlement. Each company shall collect all charges payable by its patrons for communications originating or terminating on its system or the system of any of its connecting companies and shall account and be responsible to the other for the latter's share thereof. Each company shall keep proper records of its transactions hereunder, and such

records shall be at all reasonable times subject to inspection by the other. Accounts hereunder shall be adjusted and paid monthly, and remittance in full shall be made by the debtor to the creditor within thirty (30) days after the close of the period covered by the monthly settlement.

Basis of Settlement

A. Definition:

The term "originating message" shall include only sent paid messages and sent collect messages.

[fol. 5758] X-426, 24

B. Commissions:

Where the average revenue per originating message is		The commission per message is		Where the average revenue per originating message is		The commission per message is	
Over	And not over	Schedule "A"	Schedule "B"	Over	And not over	Schedule "A"	Schedule "B"
$.00	$.125	$.065	$.005	$.425	$.45	$.105	$.045
.125	.15	.07	.008	.45	.475	.1075	.046
.15	.175	.075	.013	.475	.50	.11	.047
.175	.20	.08	.017	.50	.525	.1125	.048
.20	.225	.0825	.021	.525	.55	.115	.049
.225	.25	.085	.025	.55	.60	.117	.05
.25	.275	.0875	.029	.60	.65	.118	.052
.275	.30	.09	.033	.65	.70	.119	.054
.30	.325	.0925	.036	.70	.75	.12	.056
.325	.35	.095	.039	.75	.80	.121	.058
.35	.375	.0975	.041	.80	.85	.122	.059
.375	.40	.10	.043	.85	.90	.123	.06
.40	.425	.1025	.044	.90	.95	.124	.061
				.95	1.00	.125	.062

NOTE.—For average revenues per message above $1.00, the commission per message increases $.001 in both schedules for each 10c increase in revenue per message.

Schedule A will apply to all originating messages whether handled to completion by the originating company or passed to some other point, commonly known as a toll center for handling and completion to destination.

Schedule B will apply as additional commission to all originating messages that are handled and completed by the orginating company to destination.

The commission shown under Schedule A of the foregoing table shall be computed and the amount to which each Company is entitled thereunder shall be determined for a given month as follows:

a. Compute the average revenue per originating message by dividing the sum of the charges for such messages, including report charges, by the number of such messages during the month.

b. Ascertain from Schedule A the amount of commission per message corresponding to the average revenue per message.

c. Multiply the total number of such originating messages by the amount of commission per message so ascertained.

The additional commission shown under Schedule B of the foregoing table and the amount to which each company is entitled thereunder shall be determined for a given month as follows:

a. Compute the average revenue per originating message to which Schedule B shall apply by dividing the sum of the charges for such messages, including report charges, by the number of such messages during the month.

b. Ascertain from Schedule B the amount of additional commission per message corresponding to the average revenue per message.

c. Multiply the total number of such originating messages by the amount of additional commission per message so ascertained.

The commission determined as above is the total amount to be received by each company for facilities furnished and service rendered in originating and terminating communications interchanged under said Traffic Agreement but does not include compensation for the use of exchange service and facilities required to establish connection between an exchange station and the toll terminal plant, for the use of which facilities each company is compensated by its rates for exchange service.

7. For all communications interchanged hereunder, each company shall be entitled to receive as its share of the toll charges, including report charges, the proportion of such charges that the length of its toll lines used therefor bears to the total length of the toll lines so used. Measurements shall be by air-line distance over first routes shown in Bell

Company's routing instructions, between the point or points of connection of the systems of the companies and the respective originating and teerminating toll rate centers. The commissions applicable shall first be deducted from the toll charges and the remainder shall be subject to prorate.

[fol. 5[illegible]59] X-426, 25

To facilitate settlement between the companies the amount, to which Connecting Company shall be entitled as prorate, shall be determined from a study of the traffic interchanged during a month agreed upon between the companies, and equated as an amount per originating proratable message of Connecting Company.

Subsequent studies to determine whether there should be a change in the amount per originating message shall be made from time to time on request of either company, but not oftener than once in six months unless rendered necessary by physical changes in the toll system of either company or by important changes in toll routing.

The total amount to which Connecting Company shall be entitled as prorate in any month shall be determined by multiplying the amount per message so developed by the number of its originating proratable messages during such month.

8. The above provisions as to commissions and prorate shall not apply to trans-Atlantic and other similar trans-oceanic communications originating or terminating on the system of Connecting Company. In lieu of all charges for facilities furnished and services rendered in connection with trans-Atlantic communications, the Connecting Company shall be entitled to have included in the computations for ascertaining commissions and prorate, the number of messages and the same amount as if each such trans-Atlantic communication had been a person-to-person message to or from the City of New York.

9. Charges for messenger service shall not be included in the amount upon which commissions and prorates are calculated. Each company shall reimburse the other Company for such charges expended at the request of the company originating the message and any such amount shall

be included in the monthly settlement between the companies.

10. Each company shall take reasonable precautions in the location, construction and maintenance of its lines for protection against hazard and interference from foreign wire lines.

11. If either company shall default in the payment of any sum due hereunder, or shall violate any other provision of this agreement, and if such default or violation shall continue for thirty (30) days after written notice thereof, the other company may terminate this agreement forthwith by written notice.

In addition to the foregoing, the Bell Company may terminate this agreement forthwith in case the Connecting Company without written consent of the Bell Company connects the lines of the Bell Company with the exchange or lines of any individual, firm, or corporation other than as shown in said "Exhibit A."

12. The failure of either company hereto to comply with or to enforce or to insist upon compliance by the other company with any of the terms and conditions of this agreement, or the waiver by either company hereto of the same in any instance or instances, shall not be construed as a general waiver or relinquishment of any such terms or conditions, but the same shall be and remain at all times in full force and effect.

13. Except as to any sums due thereunder, this agreement cancels all previous agreements between the companies or their respective predecessors covering interchange of communications.

14. Unless sooner terminated as herein provided, this agreement shall continue in force until terminated by ninety (90) days prior notice in writing from either company to the other.

In witness whereof the respective companies have caused this agreement to be executed in their behalf this — day of ——, 19—.

Illinois Bell Telephone Company, by —— ——. ——
——, by —— ——.

[fol. 5760] X-426, 27

I. P. U. C. No. 1, Sheet No. 2

Illinois Bell Telephone Company—Chicago Exchange

Regulations

Use and Care of Equipment.—The subscriber shall not make, permit, or use any electrical or mechanical connections or apparatus with the lines or equipment furnished by the Company without the Company's consent. The lines and equipment on subscriber's premises shall be carefully protected and used for lawful purposes where installed, and upon the termination of his right of use subscriber agrees to surrender them to the company unimpaired or to insure, indemnify and pay the Company for any loss or injury to them arising from carelessness, accident or any other cause. At all reasonable times the Company shall have the right, which subscriber shall provide, of access from the street line, and of entering the premises of subscriber to install, inspect or repair the lines or equipment, or to remove them upon termination of the subscriber's right of use. Over the equipment furnished, the subscriber shall not use or permit the use of foul, abusive or profane language, nor impersonate any other individual with fraudulent or malicious intent.

Exchange Service.—Subscribers to Chicago Exchange System service may, on the terms of their contracts, transmit local messages to all exchange telephones located within the limits of the City of Chicago.

A local message is a communication not exceeding five minutes' duration between subscribers' stations within the same exchange limits. By ordinance of the City of Chicago and these regulations the subscriber, lessee or patron is forbidden to charge any person more than five cents for a single message transmitted to any point within the City of Chicago from any telephone furnished under the contract of which these regulations are a part.

The Company Does not Guarantee Uninterrupted Working of the Lines or Equipment.—For any complete failure of service of which notice in writing has been sent to the

Company's General Offices, and continued for more than twenty-four hours, thereafter, an abatement of the contract charge for the period of such interruption shall be made.

Subscriber's Telephone Number.—Each subscriber's telephone is designated by an exchange prefix and number, which are placed to the right of his name in the telephone directory. This prefix and number are no part of the contract with the Company, and may be changed by the Company when necessary.

Private Branch Exchange Operation.—Operators employed by the subscribers for the operation of private branch exchange switching apparatus shall comply with the operating rules of the Telephone Company and render service satisfactory to it.

Collections from coin boxes will be made about once a month, or oftener if necessary. In Coin Box Service a five-cent piece shall be dropped into the slot, in accordance with instructions on the instrument, each time a local call is made, and will be "collected" by the operator and retained by the Company if the subscriber is put into communication with any one at the telephone number called for. All other coins or tokens found in the box shall be redeemed by the subscriber at the rate for the service for which they were used. The Subscriber Shall Make Settlement and Pay Deficiency, if Any, When the Collector Calls.

Settlement for classes of service other than coin-box service is due upon receipt of bills rendered about the first of each month. As soon as possible after the 14th day of each month, the Company will mail to a delinquent subscriber a written notice of the amount due and unpaid, and of the Company's intention to discontinue the service unless the said amount be paid. If the amount remains unpaid seven days after the mailing of such notice, the service will be discontinued. All remittances should be made to Illinois Bell Telephone Company, Commercial Department, 212 West Washington Street, Chicago, Illinois.

The Company will not give service to an applicant unless all previous indebtedness of the applicant to the Company for telephone service at the same or other address of the applicant has been paid in full.

Alterations.—The subscriber agrees to notify the company promptly in writing whenever alterations or new construction on premises owned or leased by him will necessitate changes in the Company's equipment; and the subscriber agrees to pay the Company's current charges for such changes. Estimates furnished on application.

Change of Address or Location.—The Company will move the equipment to any point where the Company furnishes similar service, within the limits of the same Exchange system accessible with its facilities, upon written order, provided the subscriber agrees to pay the Company's current charges therefor.

After a removal, the subscriber shall pay the current rate for service at the location to which the removal is made.

Termination.—The subscriber or the Company may terminate the contract on current terms by giving ten days' written notice, in which case the subscriber shall pay in full to the end of such ten days; and the Company will refund the portion of any payment made in advance but still unearned at the end of such ten days.

Reinstatement Charges.—Whenever a subscriber's telephone service has been discontinued for non-payment or other breach of contract, a charge of $2.00 is made for the restoration of the service.

Issued December 27, 1920.
Effective January 1, 1921.

By A. R. Bone, General Commercial Superintendent, 212 W. Washington St., Chicago, Ill.

[fol. 5761] X-426, 28

I. P. U. C. No. 1, Revised Sheet No. 2. Cancelling Original

Illinois Bell Telephone Company—Chicago Exchange

Regulations

Use and Care of Equipment.—The subscriber shall not make, permit, or use any electrical or mechanical connections or apparatus with the lines or equipment furnished by the Company without the Company's consent. The lines and equipment on subscriber's premises shall be carefully protected and used for lawful purposes where installed, and upon the termination of his right of use subscriber agrees to surrender them to the company unimpaired or to insure, indemnify and pay the Company for any loss or injury to them arising from carelessness, accident or any other cause. At all reasonable times the Company shall have the right, which subscriber shall provide, of access from the street line, and of entering the premises of subscriber to install, inspect or repair the lines or equipment, or to remove them upon termination of the subscriber's right of use. Over the equipment furnished, the subscriber shall not use or permit the use of foul, abusive or profane language, nor impersonate any other individual with fraudulent or malicious intent.

Exchange Service.—Subscribers to Chicago Exchange System service may, on the terms of their contracts, transmit local messages to all exchange telephones located within the limits of the City of Chicago.

A local message is a communication not exceeding five minutes' duration between subscribers' stations within the same exchange limits. By ordinance of the City of Chicago and these regulations the subscriber, lessee or patron is forbidden to charge any person more than five cents for a single message transmitted to any point within the City of Chicago from any telephone furnished under the contract of which these regulations are a part.

The Company Does not Guarantee Uninterrupted Working of the Lines or Equipment.—For any complete failure of service of which notice in writing has been sent to the Company's General Offices, and continued for more than twenty-four hours, thereafter, an abatement of the contract charge for the period of such interruption shall be made.

Subscriber's Telephone Number.—Each subscriber's telephone is designated by an exchange prefix and number, which are placed to the right of his name in the telephone directory. This prefix and number are no part of the contract with the Company, and may be changed by the Company when necessary.

Private Branch Exchange Operation.—Operators employed by the subscribers for the operation of private branch exchange switching apparatus shall comply with the operating rules of the Telephone Company and render service satisfactory to it.

Settlement.—Collections from coin boxes will be made about once a month, or more often if necessary. In Coin Box Service a five-cent piece shall be dropped into the slot each time a local call is made, and will be "collected" by the operator and retained by the Company if the subscriber is put into communication with any one at the telephone number called. All other coins or tokens found in the coin box shall be redeemed by the subscriber at the rate for the service for which they were used. The Subscriber Shall Make Settlement and Pay Deficit, if Any, When the Collector Calls. If all amounts due are not paid to the collector at the time of collection, a final notice will be left with the subscriber or any other person on the premises, stating the amount due and notifying the subscriber that service will be denied if the amount is not paid within seven days. If said amount is not paid within seven days, the company may then deny service to subscriber.

Settlement for classes of service other than coin-box service is due upon receipt of bills, which are rendered once a month and are payable at the office of the Company. If not paid on or before the 14th day after the issuance of the bill, a written notice may be sent to subscriber, calling attention to the fact that the amount is due, and if payment is not made within seven days thereafter, the Company may discontinue service without further notice.

Settlement for Previous Indebtedness.—The Company will not furnish service to an applicant unless all previous indebtedness of the applicant to the Company, for telephone service at the same or other address of the applicant has been paid in full.

Alterations.—The subscriber agrees to notify the Company promptly in writing whenever alterations or new construction on premises owned or leased by him will necessitate changes in the Company's equipment; and the subscriber agrees to pay the Company's current charges for such changes. Estimates furnished on application.

Change of Address or location.—The Company will move the equipment to any point where the Company furnishes similar service within the limits of the same Exchange system accessible with its facilities, upon written order, provided the subscriber agrees to pay the Company's current charges therefor.

After a removal, the subscriber shall pay the current rate for service at the location to which the removal is made.

Termination.—The subscriber or the Company may terminate the contract on current terms by giving ten days' written notice, in which case the subscriber shall pay in full to the end of such ten days; and the Company will refund the portion of any payment made in advance but still unearned at the end of such ten days.

Reinstatement Charges.—Whenever a subscriber's telephone service has been discontinued for non-payment or other breach of contract, a charge of $2.00 is made for the restoration of the service.

Issued October 31, 1927.

Effective December 1, 1927.

By A. R. Bone, General Commercial Superintendent, 212 W. Washington St., Chicago, Ill.

[fol. 5762]

X-426, 35

I. P. U. C. No. 1. First Revised Sheet No. 5, Canceling Original

Illinois Bell Telephone Company—Chicago Exchange

Rates for Miscellaneous Service

Note.—Increased rates shown in heavy type

Business and Residence

	Monthly rate
Extension Line:	
a. Line connecting a switchboard of telephone in one premises with a switchboard or telephone in another premises, measured by the most direct street distance, for one-half mile or less	**$4.50**
b. For each additional quarter mile or fraction. . . .	**1.25**
c. Line connecting two private branch exchange switchboards or telephones of a subscriber in the same building.	**4.50**
Extension Telephone:	
Extension telephone in same premises with main telephone, or connected with main telephone by extension line as above—Business	.75
Same—Residence	.50

Not more than one extension is permitted on a four-party line; not more than three extensions are permitted on a two-party line; and not more than four extensions on a single line.

Extra Name:

For insertion in the telephone directory of names of telephone users on the same premises not partners, officers, employes or members of the family, each	.50

Private Line:

a. Telephone line connecting any two points within Chicago, measured by the most direct street distance, for one-half mile or less	4.50
b. For each additional quarter mile, or fraction	1.25
c. Telephones connected with private lines, each	.75

Spring Jacks:

Used in connection with terminal stations on switchboards, for each jack	.50

Key Cabinets:

Without lamp signals, one or two line	.50
With lamp signals, one to six lines, per key	.50
Extra Head Receiver with Cap or Hook	.08
Extra Double Head Receiver	.25
Extra Operator's Set (Breast plate transmitter and head receiver.)	.29

Long Distance Terminal:

For long distance and toll use only; terminates in the long distance switchboard; including mileage charge, measured by the most direct street distance, from the Exchange through which subscriber's line is operated to Toll center, 111 N. Franklin Street, for first one-half mile or less	4.50
For each additional quarter mile or fraction	1.25

Telegraph Privileges:

Private Line or Connecting Trunk equipped with composite circuit for telegraphing and telephoning, per station	2.08

(Above rental is in addition to regular rental for private line or connecting trunk.)

Service Furnished Outside of City Limits:

Subscriber's premises to nearest Metropolitan Exchange, measured by the most direct street distance, per mile	3.33
From nearest Metropolitan Exchange to Toll center, 111 N. Franklin Street, per mile	1.67
Class 1 MB service, including first 80 out-going messages	4.00

Additional messages as per Class 1 MB schedule.

*Plan D-9:

Special switch to cut out main or extension instrument; works automatically	.25

*Plan D-10:

Special switch to cut out main extension instrument	.25

*Plan D-11:

Special arrangement so that main telephone and extension can be used as a Private Line	.75

*Plan D-12:

Special switch so the extension telephone can be used with two different lines	.50

*Plan D-13:

Same as Plan D-12 with additional apparatus enabling the subscriber to cut out the main or extension telephone	.63

* Note. The above plans are not installed in connection with party lines, mileage extensions or mileage terminals.

Issued December 27, 1920.
Effective January 1, 1921.

By A. R. Bone, General Commercial Superintendent, 212 W. Washington St., Chicago, Ill.

[fol. 5763] X-426, 74

I. P. U. C. No. 565, Sheet No. 2

Chicago Telephone Company—Chicago Exchange

Regulations

Use and Care of Equipment.—The subscriber shall not make, permit, or use any electrical or mechanical connections or apparatus with the lines or equipment furnished by the Company without the Company's consent. The lines and equipment on subscriber's premises shall be carefully protected and used for lawful purposes where installed, and upon the termination of his right of use subscriber agrees to surrender them to the company unimpaired or to insure, indemnify and pay the company for any loss or injury to them arising from carelessness, accident or any other cause. At all reasonable times the Company shall have the right, which subscriber shall provide, of access from the street line, and of entering the premises of subscriber to install, inspect or repair the lines or equipment, or to remove them upon termination of the subscriber's right of use. Over the equipment furnished, the subscriber shall not use or permit the use of foul, abusive or profane language, nor impersonate any other individual with fraudulent or malicious intent.

Exchange Service.—Subscribers to Chicago Exchange System service may, on the terms of their contracts, transmit local messages to all exchange telephones located within the limits of the City of Chicago.

A local message is a communication not exceeding five minutes' duration between subscribers' stations within the same exchange limits. By ordinance of the City of Chicago and these regulations the subscriber, lessee or patron is forbidden to charge any person more than five cents for a single message transmitted to any point within the City of Chicago from any telephone furnished under the contract of which these regulations are a part.

The Company Does not Guarantee Uninterrupted Working of the Lines or Equipment.—For any complete failure of service of which notice in writing has been sent to the Company's General Offices, and continued for more than twenty-four hours thereafter, an abatement of the contract charge for the period of such interruption shall be made.

Subscriber's Telephone Number.—Each subscriber's telephone is designated by an exchange prefix and number, which are placed to the right of his name in the telephone directory. This prefix and number are no part of the contract with the Company, and may be changed by the Company when necessary.

Private Branch Exchange Operation.—Operators employed by the subscribers for the operation of private branch exchange switching apparatus shall comply with the operating rules of the Telephone Company and render service satisfactory to it.

Collections from coin boxes will be made about once a month, or oftener if necessary. In Nickel Coin Box Service a five-cent piece shall be dropped into the slot, in accordance with instructions on the instrument, each time a local call is made, and will be "collected" by the operator and retained by the Company if the subscriber is put into communication with any one at the telephone number called for. All other coins or token found in the box shall be redeemed by the subscriber at the rate for the service for which they were used. The subscriber shall make settlement and pay deficiency, if any, when the collector calls.

Settlements for classes of service other than nickel coin box service are due upon receipt of bills rendered about the first of each month. Payment should always be made before the 15th of the month. All remittances should be made to Chicago Telephone Company, Commercial Department, 212 W. Washington Street, Chicago. To avoid suspension of their service and inconvenience to their patrons and other users subscribers are urged to settle their accounts before they become delinquent.

Alterations.—The subscriber agrees to notify the company promptly in writing whenever alterations or new construction on premises owned or leased by him will necessitate changes in the Company's equipment, and the subscriber agrees to pay the Company's current charges for such changes. Estimates furnished on application.

Change of Address or Location.—The Company will move the equipment to any point where the Company furnishes similar service, within the limits of the same Exchange system accessible with its facilities, upon written order when the subscriber agrees to pay the Company's current charges therefor.

After a removal, the subscriber shall pay the current rate for service at the location to which the removal is made.

Termination.—The subscriber or the Company may terminate the contract on current terms by giving ten days' written notice, in which case the subscriber shall pay in full to the end of such ten days; and the Company will refund the portion of any payment made in advance but still unearned at the end of such ten days.

Reinstatement Charges.—Whenever a subscriber's telephone service has been discontinued for non-payment or other breach of contract, a charge of $2.00 is made for the restoration of the service.

Issued June 25, 1920.

Effective July 1, 1920.

By A. R. Bone, General Commercial Superintendent, 212 W. Washington St., Chicago.

[fol. 5764] X-426, P. 75

I. P. U. C. No. 42A, Sheet No. 4, Issued and Filed August 1, 1919, Effective August 1, 1919.

(Here follow side folios 5765, 5766, 5767, 5768, 5769, 5770, 5771, and 5772)

EXHIBIT X-426

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9

REGULATIONS

USE AND CARE OF EQUIPMENT.—The subscriber shall not make, permit, or use any electrical or mechanical connections or apparatus with the lines or equipment furnished by the Company without the Company's consent. The lines and equipment on subscriber's premises shall be carefully protected and used for lawful purposes where installed, and upon the termination of his right of use subscriber agrees to surrender them to the company unimpaired or to insure, indemnify and pay the company for any loss or injury to them arising from carelessness, accident or any other cause. At all reasonable times the Company shall have the right, which subscriber shall provide, of access from the street line, and of entering the premises of subscriber to install, inspect or repair the lines or equipment, or to remove them upon termination of the subscriber's right of use. Over the equipment furnished, the subscriber shall not use or permit the use of foul, abusive or profane language, nor impersonate any other individual with fraudulent or malicious intent.

EXCHANGE SERVICE.—Subscribers to Chicago Exchange System service may, on the terms of their contracts, transmit local messages to all exchange telephones located within the limits of the City of Chicago.

A local message is a communication not exceeding **five minutes' duration** between subscribers' stations within the same exchange limits. By ordinance of the City of Chicago and these regulations the subscriber, the Company and its lessees and patrons are forbidden to charge any person more than five cents for a single message transmitted to any point within the City of Chicago from any telephone furnished under the contract of which these regulations are a part.

THE COMPANY DOES NOT GUARANTEE UNINTERRUPTED WORKING OF THE LINES OR EQUIPMENT. For any complete failure of service of which notice in writing has been sent to the Company's General Offices, and continued for more than twenty-four hours thereafter, an abatement of the contract charge for the period of such interruption shall be made.

SUBSCRIBER'S TELEPHONE NUMBER.—Each subscriber's telephone is designated by an exchange prefix and number, which are placed to the right of his name in the telephone directory. This prefix and number are no part of the contract with the Company, and may be changed by the Company when necessary.

PRIVATE BRANCH EXCHANGE OPERATION.—Operators employed by the subscriber for the operation of private branch exchange switching apparatus shall comply with the operating rules of the Telephone Company and render service satisfactory to it.

COLLECTIONS from coin boxes will be made about once a month, or oftener if necessary. *In Nickel Coin Box Service a five-cent piece shall be dropped into the slot in accordance with instructions on the instrument, each time a local call is made,* and will be "collected" by the operator and retained by the Company if the subscriber is put into communication with **any one** at the telephone number called for. All other coins or tokens found in the box shall be redeemed by the subscriber at the rate for the service for which they were used. **The Subscriber Shall Make Settlement and Pay Deficiency, if Any, when the Collector Calls.**

SETTLEMENTS for classes of service other than nickel coin box service are due upon receipt of bills rendered about the first of each month. Payment should always be made *before* the 15th of the month. All remittances should be made to **Chicago Telephone Company, Commercial Department, 212 W. Washington Street, Chicago.** To avoid suspension of their service and inconvenience to their patrons and other users subscribers are urged to settle their accounts before they become delinquent.

ALTERATIONS.—The subscriber agrees to notify the Company promptly **in writing** whenever alterations or new construction on premises owned or leased by him will necessitate changes in the Company's equipment; and the subscriber agrees to pay the Company's current charges for such changes. Estimates furnished on application.

CHANGE OF ADDRESS OR LOCATION.—The Company will move the equipment to any point where the Company furnishes similar service, within the limits of the same Exchange system accessible with its facilities, upon written order when the subscriber agrees to pay the Company's current charges therefor.

After a removal, the subscriber shall pay the current rate for service at the location to which the removal is made.

TERMINATION.—The subscriber or the Company may terminate the contract on current terms by giving ten days' written notice, in which case the subscriber shall pay in full to the end of such ten days; and the Company will refund the portion of any payment made in advance but still unearned at the end of such ten days.

REINSTATEMENT CHARGES.—Whenever a subscriber's telephone service has been discontinued for non-payment or other breach of contract, a charge of $2.00 is made for the restoration of the service

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REGULATIONS WITH WHICH SUBSCRIBERS HAVE AGREED TO COMPLY

USE AND CARE OF EQUIPMENT.—The subscriber shall not make, permit, or use any electrical or mechanical connections or apparatus with the lines or equipment furnished by the Company without the Company's consent. The lines and equipment on subscriber's premises shall be carefully protected and used for lawful purposes where installed, and upon the termination of his right of use subscriber agrees to surrender them to the Company unimpaired or to insure, indemnify and pay the Company for any loss or injury to them arising from carelessness, accident or any other cause. At all reasonable times the Company shall have the right, which subscriber shall provide, of access from the street line, and of entering the premises of subscriber to install, inspect or repair the lines or equipment, or to remove them upon termination of the subscriber's right of use. Over the equipment furnished, the subscriber shall not use or permit the use of foul, abusive or profane language, or impersonate any other individual with fraud or malicious intent.

EXCHANGE SERVICE City or Neighborhood) Subscribers to Chicago Exchange System service may, on the terms of their contracts, transmit local messages to all exchange telephones located within the limits of the City of Chicago. Subscribers to Neighborhood Exchange service may transmit local messages to all exchange telephones within the limits of the Neighborhood Exchange in which their telephones are located.

A local message is a communication not exceeding **five minutes' duration** between subscribers' stations within the same exchange limits. By ordinance of the City of Chicago and these regulations the subscriber, the Company and its lessees and patrons, are forbidden to charge any person more than five cents for a single conversation or message transmitted to any point within the City of Chicago from any telephone furnished under the contract of which these regulations are a part. The use of classes of service is restricted by said ordinance and these regulations as follows:

Flat rate business service is furnished for the use of subscribers and their employes only in their business.

Flat rate residence service is furnished for the use of subscribers and their families only at their residences.

Measured service is furnished for business use of subscribers and their employes only in their business or for residence use of subscribers and their families only at their residences and for the use of such extra name users on the same premises as may be contracted for by the subscribers.

Nickel coin box service business or residence is for the use of subscribers (and others permitted by the subscribers) upon depositing proper coins.

THE COMPANY DOES NOT GUARANTEE UNINTERRUPTED WORKING OF THE LINES OR EQUIPMENT. For any complete failure of service of which notice in writing has been sent to the Company's General Offices, and continued for more than twenty-four hours thereafter, an abatement of the contract charge for the period of such interruption shall be made.

SUBSCRIBER'S TELEPHONE NUMBER.—Each subscriber's telephone is designated by an exchange prefix and number, which are placed to the right of his name in the telephone directory. This prefix and number are no part of the contract with the Company, and may be changed by the Company when necessary.

PRIVATE BRANCH EXCHANGE OPERATION.—Operators employed by the subscriber for the operation of private branch exchange switching apparatus shall comply with the operating rules of the Telephone Company and render service satisfactory to it.

COLLECTIONS from coin boxes will be made about once a month, or oftener if necessary. *In Nickel Coin Box Service a five-cent piece shall be dropped into the slot, in accordance with instructions on the instrument, each time a local call is made*, and will be retained by the Company if the subscriber is put into communication with **any one** at the telephone number called for. All other coins or tokens found in the box shall be redeemed by the subscriber at the rate for the service for which they were used. **The Subscriber Expressly Agrees to Make Settlement and Pay Deficiency if Any when the Collector Calls.**

Settlements for other classes of service are due upon receipt of bills rendered about the first of each month. Payment should always be made *before* the 15th of the month. All remittances should be made to **Chicago Telephone Company, Commercial Department, 212 W. Washington Street, Chicago.** Subscribers are urged to settle their accounts before they become delinquent to avoid suspension of their service and inconvenience to their patrons and other users.

ALTERATIONS.—The subscriber agrees to notify the Company promptly in writing whenever alterations or new construction on premises owned or leased by him will necessitate changes in the Company's equipment, and the subscriber agrees to pay the Company's current charges for such changes. Estimates furnished on application.

CHANGE OF ADDRESS OR LOCATION. The Company will move the equipment to any point where the Company furnishes similar service, within the limits of the same Exchange system accessible with its facilities, upon written order when the subscriber agrees to pay the Company's current charges therefor. Such removal will be made without charge if service without change in line on the premises of the subscriber, or in equipment or class of service, has been continuous at one address and in the *same name* for one year or more, but such removal without charge will constitute an express extension of the subscriber's contract for a period of one year from the completion of the removal. After a removal, the subscriber shall pay the current rate for service at the location to which the removal is made.

TERMINATION.—The subscriber or the Company may terminate the contract on current terms of liquidated damages applying to his class of equipment and service at any time before the equipment has been in use one year at one address or location and may terminate after said year by giving ten days' written notice, in which case the subscriber shall pay in full to the end of such ten days, and the Company will refund the portion of any payment made in advance unearned at the end of such ten days.

REINSTATEMENT CHARGES.—Whenever a subscriber's telephone service has been discontinued for nonpayment or other breach of contract, a charge of $2.00 is made for the restoration of the service.

APPROVED:

CHICAGO, ILLINOIS MAY 2 - 1917 19 Vice-President.

General Manager

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Effective July 1913 X-426 77

REGULATIONS WITH WHICH SUBSCRIBERS HAVE AGREED TO COMPLY

USE AND CARE OF EQUIPMENT.—The subscriber shall not make, permit, or use any electrical or mechanical connections or apparatus with the lines or equipment furnished by the Company without the Company's consent. The lines and equipment on subscriber's premises shall be carefully protected and used for lawful purposes where installed, and upon the termination of his right of use subscriber agrees to surrender them to the Company unimpaired or to insure, indemnify and pay the Company for any loss or injury to them arising from carelessness, accident or any other cause. At all reasonable times the Company shall have the right, which subscriber shall provide, of access from the street line, and of entering the premises of subscriber to install, inspect or repair the lines or equipment, or to remove them upon termination of the subscriber's right of use. Over the equipment furnished, the subscriber shall not use or permit the use of foul, abusive or profane language, or impersonate any other individual with fraudulent or malicious intent.

EXCHANGE SERVICE (City or Neighborhood).—Subscribers to Chicago Exchange System service may, on the terms of their contracts, transmit local messages to all exchange telephones located within the limits of the City of Chicago. Subscribers to Neighborhood Exchange service may transmit local messages to all exchange telephones within the limits of the Neighborhood Exchange in which their telephones are located.

A local message is a communication not exceeding **five minutes' duration** between subscribers' stations within the same exchange limits. By ordinance of the City of Chicago and these **regulations** the subscriber, the Company and its **lessees and patrons, are** forbidden to charge any person more than five cents for a single conversation or **message transmitted to any point** within the City of Chicago from any telephone furnished under the contract of **which these** regulations are a part. The use of classes of **service is** restricted by said ordinance and these regulations as follows:

Flat rate business service is furnished for the use of subscribers and their employes only in their business.

Flat rate residence service is furnished for the use of subscribers and their families only at their residences.

Measured service is furnished for business use of subscribers and their employes only in their business or for residence use of subscribers and their families only at their residences and for the use of such extra name users on the same premises as may be contracted for by the subscribers.

Nickel coin box service business or residence is for the use of subscribers (and others permitted by the subscribers) upon depositing proper coins.

THE COMPANY DOES NOT GUARANTEE UNINTERRUPTED WORKING OF THE LINES OR EQUIPMENT. For any complete failure of service of which notice in writing has been sent to the Company's General Offices, and continued for more than twenty-four hours thereafter, an abatement of the contract charge for the period of such interruption shall be made.

SUBSCRIBER'S TELEPHONE NUMBER.—Each subscriber's telephone is designated by an exchange prefix and number, which are placed to the right of his name in the telephone directory. This prefix and number are no part of the contract with the Company, and may be changed by the Company when necessary.

PRIVATE BRANCH EXCHANGE OPERATION.—Operators employed by the subscriber for the operation of private branch exchange switching apparatus shall comply with the operating rules of the Telephone Company and render service satisfactory to it.

COLLECTIONS from coin boxes will be made about once a month, or oftener if necessary. *In Nickel Coin Box Service a five-cent piece shall be dropped into the slot, in accordance with instructions on the instrument, each time a local call is made*, and will be retained by the Company if the subscriber is put into communication with **any one** at the telephone number called for. All other coins or tokens found in the box shall be redeemed by the subscriber at the rate for the service for which they were used. **The Subscriber Expressly Agrees to Make Settlement and Pay Deficiency if Any when the Collector Calls.**

Settlements for other classes of service are due upon receipt of bills rendered about the first of each month. Payment should always be made *before* the 15th of the month. All remittances should be made to **Chicago Telephone Company, Commercial Department, 212 W. Washington Street, Chicago.** Subscribers are urged to settle their accounts before they become delinquent to avoid suspension of their service and inconvenience to their patrons and other users.

ALTERATIONS.—The subscriber agrees to notify the Company promptly in writing whenever alterations or new construction on premises owned or leased by him will necessitate changes in the Company's equipment, and the subscriber agrees to pay the Company's current charges for such changes. Estimates furnished on application.

CHANGE OF ADDRESS OR LOCATION. The Company will move the equipment to any point where the Company furnishes similar service within the limits of the same Exchange system accessible with its facilities, upon written order when the subscriber agrees to pay the Company's current charges therefor. Such removal will be made without charge if service without change in line on the premises of the subscriber, or in equipment or class of service, has been continuous at one address and in the *same name* for one year or more, but such removal without charge will constitute an express extension of the subscriber's contract for a period of one year from the completion of the removal. After a removal, the subscriber shall pay the current rate for service at the location to which the removal is made.

TERMINATION.—The subscriber or the Company may terminate the contract on current terms of liquidated damages applying to his class of equipment and service at any time **before** the equipment has been in use one year at one address or location, and may terminate **after** said year by giving ten days' written notice, in which case the subscriber shall pay in full to the end of such ten days, and the Company will refund the portion of any payment made in advance unearned at the end of such ten days.

REINSTATEMENT CHARGES.—Whenever a subscriber's telephone service has been discontinued for non-payment or other breach of contract, a charge of $2.00 is made for the restoration of the service.

APPROVED: ____________________ Vice-President.

____________________ General Manager

CHICAGO, ILLINOIS____________________19

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A. SCHEDULE OF TOLL RATES

Station-to-Station Service

The term Station to Station service is defined as a connection between any two telephones, including private branch exchange switchboard operator, and does not contemplate the establishment of conversation between particular individuals.

Under Station to Station rates a charge for a message is made in all cases where a connection is established with the called station. The charges for a Station to Station message shall not be "reversed," i. e., collected at the called station.

MESSAGE RATES—STATION-TO-STATION BASIS

Day Rates: 4:30 A. M. to 8:30 P. M.

Air Line Mileage Distances		Initial Rate		Overtime Rate	
More than	But Not to Exceed	Rate	Minutes or Fraction Thereof	Rate	Minutes or Fraction Thereof
Miles	Miles				
0	12	$0.10	5	$0.05	3
12	18	.15	5	.05	2
18	24	.20	5	.05	2
24	32	.25	5	.05	1
32	40	.30	3	.10	1
40	48	.35	3	.10	1
48	56	.40	3	Overtime rate for distances more than 48 miles approximately one-third initial rate for each additional minute or fraction thereof.	

For each additional 8 miles or fraction thereof, 5 cents additional. All initial rates for distances beyond 56 miles are for periods of three minutes or fraction thereof.

Evening Rates: Between 8:30 P. M. and 12 Midnight. **One-half** of the day rates.

Night Rates: Between 12 Midnight and 4:30 A. M. **One-fourth** of the day rates.

Minimum "Evening" or "Night" rates, 25 cents.

In applying Day, Evening and Night rates, the time of day at the originating point shall govern.

The time at which connection is established governs the rate in determining whether the Day, Evening or Night charge applies.

If connection is established in one period and terminates in another, the rate in effect at the time the connection is established applies to the entire message.

Person-to-Person Service

Calls for particular individuals are accepted at a rate **one-fourth more** than those quoted under Station to-Station service, subject to the following regulations:

Orders for Person to Person service are accepted only under the condition that a limited charge (to be known as "**Report Charge**") will be made in the event the Company is unable to establish communication for any one of the following reasons:

1. When the order is to establish communication with a particular person in a given city, telephone address unknown, and the particular person cannot be secured within one hour (exclusive of any time during which "no circuits" or other cause prevents communication of the order to the distant city or exchange, or its completion).

2. When the designated person called refuses to talk.

3. When the report is returned that the designated person called is "out" or "out and will return at specified time" or "out and time of return unknown," "is absent from the city," and similar reports advising the calling subscriber of the facts ascertained when failure to complete the order is due solely to the circumstances of the called person or to fault in describing the location of the called person, and when all of the work preliminary to establishing communication with the called person is done.

4. When communication between the designated persons cannot be established because the designated person at the calling station is absent at the calling station, provided that no charge shall be made in such cases where the delay, if any, in establishing connection is greater than one hour.

5. When the designated person at the calling station refuses to talk when the facilities for communication have been established.

A **Report Charge** in addition to regular message charge is not made provided the call is completed on the day it is filed.

In any case where a Report Charge applies, the minimum Report Charge is 5 cents and the maximum $2.00, approximately **one-fourth** of the initial Station to Station rate.

No Person to Person rate shall be less than 15 cents.

To points where the Station to Station rate is 10 cents, a Person to Person call is accepted at the 15 cent rate.

The initial period on all Person to Person calls is three minutes. An additional charge is made for each additional minute or fraction thereof. On a 15 cent, 20 cent or 25 cent message the charge for each additional minute is 5 cents. On a 30 cent message the charge for each additional minute is 10 cents and on all messages where the initial rate is 40 cents or more a charge equal to approximately one-third the initial rate is made for each additional minute or fraction thereof.

Appointment Calls: An Appointment Call is a Person to Person call on which communication is to be established at a specified time.

The rate for an Appointment Call is approximately **one-half** more than the Station to Station rate, but in the case of any Appointment Call where the distant station is reached, whether the appointment be made or not, the Report Charge applicable in case of Person to Person calls shall be made.

Messenger Calls: Messenger Calls are Person-to-Person calls requiring the use of a messenger to secure a designated person.

The rates for Messenger Calls shall be the same as apply to Appointment Calls, plus any charges that may be required for the service of messengers.

Messenger charges incurred are to be paid even if desired conversation is not held.

Collect Calls: Collect Calls are Person-to-Person calls, the charges for which are "reversed," that is, to be collected from the called station, provided the charges are accepted by the person called.

Evening and Night Rates as described in Station-to-Station schedule do not apply to Person-to-Person calls, the rate being the same on these either day, evening or night.

Issued December 27, 1920.
Effective January 1, 1921.

By A. R. BONE, General Commercial Superintendent.
212 W. Washington St., Chicago, Ill.

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I. P. U. C. No.
CANCELING I. P. U. C. No. 3

CHICAGO TELEPHONE COMPANY
SCHEDULE OF TOLL RATES

Station-to-Station Service

The term Station-to-Station service is defined as a connection between any two telephones (including private branch exchange switchboard operators) and does not contemplate the establishment of conversation between particular individuals.

Under Station-to-Station rates a charge for a message is made in all cases where a connection is established with the called station. The charges for a Station-to-Station message shall not be "reversed," i.e., collected at the called station.

MESSAGE RATES (STATION-TO-STATION BASIS)

Day Rates:—4:30 A. M. to 8:30 P. M.

Airline Mileage Distances		Initial Rate		Overtime Rate	
More than	But Not to Exceed	Rate	Minutes or Fraction Thereof	Rate	Minutes or Fraction Thereof
Miles	Miles				
0	12	$0.10	5	$0.05	3
12	18	.15	5	.05	2
18	24	.20	5	.05	2
24	32	.25	5	.05	1
32	40	.30	3	.10	1
40	48	.35	3	.10	1
48	56	.40	3		

For each additional 8 miles or fraction thereof, 5 cents additional. All initial rates for distances beyond 56 miles are for periods of three minutes or fraction thereof.

Overtime rate for distances more than 48 miles approximately one third initial rate for each additional minute or fraction thereof.

Evening Rates: Between 8:30 P. M. and 12 Midnight, **One-half** of the day rates.

Night Rates: Between 12 Midnight and 4:30 A. M., **One-fourth** of the day rates.

Minimum "Evening" or "Night" rates, 25 cents.

In applying Day, Evening and Night rates, the time of day at the originating point shall govern.

The time at which connection is established governs the rate in determining whether the Day, Evening or Night charge applies.

If connection is established in one period and terminates in another, the rate in effect at the time the connection is established applies to the entire message.

Person-to-Person Service

Calls for particular individuals are accepted at a rate **one-fourth more** than those quoted under Station-to-Station service, subject to the following regulations:

Orders for Person-to-Person service are accepted only under the condition that a limited charge (to be known as **"Report Charge"**) will be made in the event the Company is unable to establish communication for any one of the following reasons:

(1)—When the order is to establish communication with a particular person in a given city, telephone address unknown, and the particular person cannot be secured within one hour (exclusive of any time during which "no circuits" or other cause prevents communication of the order to the distant city or exchange, or its completion).

2.—When the designated person called refuses to talk.

3.—When the report is returned that the designated person called is "out," or "out and will return at (specified time)" or "out and time of return unknown," "is absent from the city," and similar reports advising the calling subscriber of the facts ascertained when failure to complete the order is due solely to the circumstances of the called person or to fault in describing the location of the called person, and when all of the work preliminary to establishing communication with the called person is done.

4.—When communication between the designated persons cannot be established because the designated person at the calling station is absent from the calling station; provided that no charge shall be made in such cases where the delay, if any, in establishing connection is greater than one hour.

5.—When the designated person at the calling station refuses to talk when the facilities for communication have been established.

A **Report Charge** in addition to regular message charge is not made provided the call is completed on the day it is filed.

In any case where a Report Charge applies, the minimum Report Charge is 5 cents and the maximum $2.00—approximately **one-fourth** of the initial Station-to-Station rate.

No Person-to-Person rate shall be less than 15 cents.

To points where the Station-to-Station rate is 10 cents, a Person-to-Person call is accepted at the 15 cent rate.

The initial period on all Person-to-Person calls is three minutes. An additional charge is made for each additional minute or fraction thereof. On a 15 cent, 20 cent or 25 cent message the charge for each additional minute is 5 cents. On a 30 cent message the charge for each additional minute is 10 cents and on all messages where the initial rate is 40 cents or more a charge equal to approximately **one-third** the initial rate is made for each additional minute or fraction thereof.

Appointment Calls:—An Appointment Call is a Person-to-Person call on which communication is to be established at a specified time.

The rate for an Appointment Call is approximately **one-half** more than the Station-to-Station rate, but in the case of any Appointment Call, where the distant station is reached, whether the appointment be made or not, the Report Charge applicable in case of Person-to-Person calls shall be made.

Messenger Calls:—Messenger Calls are Person-to-Person calls requiring the use of a messenger to secure a designated person.

The rates for Messenger Calls shall be the same as apply to Appointment Calls, plus any charges that may be required for the service of messengers.

Messenger charges incurred are to be paid even if desired conversation is not held.

Collect Calls:—Collect Calls are Person-to-Person calls; the charges for which are "reversed"; that is, to be collected from the called station, provided the charges are accepted by the person called.

Evening and Night Rates as described in Station-to-Station schedule do not apply to Person-to-Person calls, the rate being the same on these either day, evening or night.

EFFECTIVE December 1, 1919.

ISSUED November 29, 1919.

BY A. R. Bone
GENERAL COMMERCIAL SUPERINTENDENT

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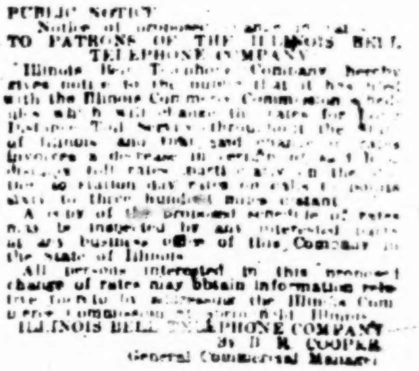
Tribune

Dec. 2, 1929.



PUBLIC NOTICE

Notice of proposed change in rates

TO PATRONS OF THE ILLINOIS BELL TELEPHONE COMPANY

Illinois Bell Telephone Company hereby gives notice to the public that it has filed with the Illinois Commerce Commission schedules which will change its rates for Long Distance Toll Service throughout the State of Illinois and that said change of rates involves a decrease in certain of such long distance toll rates particularly in the station to station day rates on calls to points sixty to three hundred miles distant.

A copy of the proposed schedule of rates may be inspected by any interested party at any business office of this Company in the State of Illinois.

All persons interested in this proposed change of rates may obtain information relative thereto by addressing the Illinois Commerce Commission at Springfield, Illinois.

ILLINOIS BELL TELEPHONE COMPANY
By D. R. COOPER
General Commercial Manager.

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August 1, 1919.

ADVICE NO. 41.

To the Public Utilities Commission,

St te of Illinois,

Springfield, Ill.

The accompanying Schedules of Local Exchange Rates, including Supplement No. 1 thereto, issued by this Company and numbered I.P.U.C. No. 401-A to I.P.U.C. No. 556-A, inclusive; also the accompanying Schedule of Toll Rates, I.P.U.C. No. 3; are sent you for filing in compliance with the requirements of the Public Utilities Commission Law, effective August 1, 1919.

Yours very truly,

General Commercial Superintendent.

Duplicate letter of [illegible] stamped
and returned [illegible]

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November 29, 1919.

ADVICE NO. 42

State of Illinois Public Utilities Commission,

Springfield, Illinois.

Gentlemen:

In accordance with the ruling and Order 8672 of your honorable commission, dated November 29,1919, we are forwarding herewith for your rate files the following modifications of our Toll Rate and Exchange Rate Schedules:

a. I.P.U.C. No.4, Toll Rate Schedule, cancelling I.P.U.C.No.3.

b. Supplement No.2, cancelling Supplement No.1, for I.P.U.C.No.422-A, Exchange Schedule for Chicago.

c. Supplement No.2, cancelling Supplement No.1 for I.P.U.C.Nos. 401-A to 564-A inclusive, excepting I.P.U.C.Nos. 413-A, 422-A, 127-A, 444-A, 464-A, 474-A, 488-A, 514-A and 5[illegible]3-[illegible]. Of the exceptions 4[illegible]2-A is Chicago and the others are obsolete numbers. This Supplement is furnished in duplicate, one copy for each volume; I and II, of our Local Exchange Rate schedules.

d. Two copies of an introductory explanatory note, one for each volume of our Local Exchange Rate schedules, as now filed.

Yours respectfully,

General Commercial Superintendent.

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ENGINEERING [illegible]

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and return[illegible]

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[fol. 5773] X-426, 158

Advice No. 49

June 25, 1920.

State of Illinois Public Utilities Commission, Springfield, Illinois.

GENTLEMEN: Accompanying schedule issued by the Chicago Telephone Company is transmitted to you for filing, together with three copies of the acceptance by said Company of the order, and of all the terms and conditions set forth therein, of the Commission dated June 19, 1920 (Nos. 8672 and 9291).

I. P. U. C. No. 565 Original Sheets Nos. 1 to 6 inclusive, cancelling I. P. U. C. No 422-A and all supplements thereto now on file. Effective July 1, 1920.

Also enclosed are two index sheets to replace those now filed in our Schedules of Local Exchange Rates, Volumes I and II.

Yours truly, Chicago Telephone Company, By —— ——, General Commercial Superintendent.

[fol. 5774] X-426, 162

Advice No. 108

September 5, 1925.

Illinois Commerce Commission, Section Rates and Tariffs, Springfield, Illinois.

GENTLEMEN: Desiring to give you a more complete Toll Rate Schedule, we have prepared and are forwarding you herewith Ill. C. C. No. 2, Sheets 1 to 32 inclusive, Schedule of Toll Rates, which cancels and replaces I. P. U. C. No. 1 Schedule of Toll Rates. Schedule Ill. C. C. No. 2 makes no change in our toll rate schedule or practices. The Master Rate Machine with Set of Rate Charts referred to in the new schedule is the same machine as you now have for use in connection with the I. P. U. C. No. 1 schedule and we have, therefore, not furnished you another machine.

As stated above, this new schedule makes no change in our toll rate schedule or practices and we would respectfully request your Honorable Commission to accept it, to be effective as of September 10, 1925.

Kindly acknowledge receipt by returning the extra copy of this letter attached hereto for that purpose.

Yours truly, —— ——, General Commercial Superintendent.

(Here follow side folios 5775, 5776, 5777, 5778, 5779, 5780, 5781, 5782, 5783, 5784, and 5785)

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Rates for Telephone Service Within the Chicago City Limits

The following classes of service are furnished at rates as shown, payments to be made monthly; and service subject to regulations (set forth on page 7, which are a part of the contract and with which the subscriber has agreed to comply.

THE RATES HEREIN STATED ARE THE PRESENT LEGAL RATES OF THIS COMPANY AS ON FILE WITH THE ILLINOIS COMMERCE COMMISSION.

Message Rate Service

Business

For use of Subscribers and their employes in their business. — Monthly Rate

CLASS 1 MB—Single Line.......... **$4.00**

Including 80 outgoing messages. Messages from 81 to 200, 4c each; all messages over 200 per month 3½c each.

Residence

For use of Subscribers and their families only, at their residences.

CLASS 1 MR—Single Line.......... **$3.75**

Including 75 outgoing messages. Messages from 76 to 200, 4c each; all messages over 200 per month 3½c each.

CLASS 2 MR—Two-Party Line.......... **$2.75**

Including 55 outgoing messages. Messages from 56 to 200, 4c each; all messages over 200 per month 3½c each.

Business or Residence

CLASS M TRUNK Single Line.......... **$2.00**

Including no messages, outgoing messages used over said lines to be accounted and paid for as a part of total messages from the main line. Auxiliary to any class 1 MB or 1 MR service, direct or in connection with Private Branch Exchange.

Any line of the above classes may be used wholly for incoming service, or outgoing, or both, as the subscriber may request.

General

All outgoing messages from the Message Rate lines of same subscriber on same premises shall be computed at the same rates as though transmitted over one single line.

Registers on Message Rate Service Lines.—At the request of any subscriber to a single party Message Rate service line not connected with a Private Branch Exchange or with a Dial Central Office, the Company will install upon the premises of such subscriber a register or registers for recording the number of outgoing messages over said line, at a charge of 50c per month for each register.

Method of Billing Messages.—A bill is rendered once a month for one month's guaranteed charges in advance and charges for any toll or additional messages in arrears.

Message Rate Service is furnished and billed on a monthly guarantee basis. Failure to use the minimum guaranteed number of messages in any monthly period, or the use of messages in excess of such number, does not entitle the subscriber to any allowance in any other monthly period.

Private Branch Exchanges

Business or Residence

Monthly Rate

1. **Switchboards,** including one operator's set with battery power and ringing current.
   - **Cordless,** capacity 3 trunks and 7 lines, per position.......... $3.00
   - **Cordless,** capacity 5 trunks and 12 lines, per position.......... $5.00
   - **Cord, Non-Multiple Type,** per position—1 to 30 line jacks.......... $6.00
   - Each additional strip, 10 jacks.......... $1.00
   - **Cord, Multiple Type,** based on cost of switchboard and wiring.
2. **Terminals or Extensions.**
   - Without dials, each.......... $ .75
   - With dial, each.......... $1.00
   - [illegible] P. B. X. system with dial areas, one dial [illegible] terminal or extension is furnished at the 75c rate for each trunk line connecting the P. B. X. system to the central office.
3. **Exchange Trunk Lines.**
   - **CLASS 1 MB TRUNK** same as class **1 MB**
   - **CLASS 1 MR TRUNK** same as class **1 MR**
   - **CLASS M TRUNK** auxiliary to either **1 MB** or **1 MR** service direct or **PBX** **$2.00**

Coin Box Service

Business

CLASS 1 CB—Single line, guarantee 20c per day, including four outgoing messages. Additional messages, 5c each.

CLASS 2 CB—Two-party line, guarantee 15 cents per day, including 3 outgoing messages. Additional messages, 5c each.

Residence

CLASS 1 CR—Single line, guarantee 20 cents per day, including four outgoing messages. Additional messages, 5c each.

CLASS 2 CR—Two-party line, guarantee 12½ cents per day, including 2½ outgoing messages. Additional messages, 5c each.

CLASS 4 CR—Four-party line, guarantee 9 cents per day, including 1.8 outgoing messages. Additional messages, 5c each.

General

Coin Box Service is furnished on a daily guarantee basis, Sundays and holidays included. At the time of each collection settlement is to be made by subscriber for an amount equivalent to the guaranteed minimum per day multiplied by the number of days since the last collection. Failure to use the minimum guaranteed number of messages in any such period between collections or the use of messages in excess of such number, does not entitle the subscriber to any allowance in any other month.

Time of Day Service

Dial or Call CAThedral 8000

If a telephone user asks the Telephone Company for the time, the Company will give the time as shown by the Company's standard clocks, on the following basis of charge:

a. Message Rate Service:

Each such completed transaction will be charged for on the subscriber's bill as one local message.

b. Coin Box Service:

Each such transaction will be completed upon the deposit of 5c in the coin box.

Rates for Miscellaneous Service

Extension Line — Monthly Rate

a. Line connecting a switchboard or telephone in one premises with a switchboard or telephone in another premises, measured by the most direct street distance, for one-half mile or less.......... **$4.50**

b. For each additional quarter mile or fraction.......... **$1.25**

c. Line connecting two private branch exchange switchboards or telephones of a subscriber in the same building.......... **$4.50**

Extension Telephone

Extension telephone in same premises with main telephone, or connected with main telephone by extension line as above.

Business.......... **.75**

Same, Residence.......... **.50**

Not more than one extension is permitted on a four-party line, not more than three extensions are permitted on a two-party line; and not more than four extensions on a single line.

Hand Telephone Set

Hand telephone sets, in place of desk or wall telephone sets in connection with all types of service except coin-box, extra charge.......... **.25**

Private Line

a. Telephone line connecting any two points within Chicago, measured by the most direct street distance, for one-half mile or less.......... **$4.50**

b. For each additional quarter mile, or fraction.......... **$1.25**

c. Telephones connected with private lines, each.......... **.75**

Service Connection Charges

1. For Individual and Party-line service, business or residence.......... **$3.50**
2. For each Extension station connected with any class of telephone service.......... **$3.50**
3. For Private Branch Exchange service:
   - **(a)** For each trunk line connecting the Private Branch Exchange with a central office.......... **$3.50**
   - **(b)** For each telephone connected to the Private Branch Exchange, except operators' telephone sets.......... **$3.50**
4. Provided where there is a change of residence premises and another tenant or occupant moves in and no change or move in the interior location of the said telephone instrument is made by the telephone company at the request of the incoming occupant, then no charge shall be made; provided this exemption shall not apply to business premises.

For charges for changes on the same premises see page 5, paragraph 3.

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REGULATIONS

With Which Subscribers Have Agreed to Comply

USE AND CARE OF EQUIPMENT

The subscriber shall not make, permit, or use any electrical or mechanical connections or apparatus with the lines or equipment furnished by the Company without the Company's consent. The lines and equipment on subscriber's premises shall be carefully protected and used for lawful purposes where installed, and upon the termination of his right of use subscriber agrees to surrender them to the Company unimpaired or to insure, indemnify and pay the Company for any loss or injury to them arising from carelessness, accident or any other cause. At all reasonable times the Company shall have the right, which subscriber shall provide, of access from the street line, and of entering the premises of subscriber to install, inspect or repair the lines or equipment, or to remove them upon termination of the subscriber's right of use. Over the equipment furnished, the subscriber shall not use or permit the use of foul, abusive or profane language, nor impersonate any other individual with fraudulent or malicious intent.

OWNERSHIP OF FACILITIES

All facilities provided by the Telephone Company, including directories, remain the property of the Company and are subject to the following regulations:

Foreign Equipment.

No apparatus or appliance not furnished by the Telephone Company shall be attached to or used in connection with the facilities furnished by the Company.

Directories.

Telephone directories containing the listings of subscribers, issued from time to time by the Telephone Company free of cost, are and remain the property of the Telephone Company. They shall not be mutilated and shall be surrendered to the carrier who delivers the subsequent issue. No binder, holder or auxiliary cover, except such as may be furnished by or with the consent of the Telephone Company, shall be used in connection with any telephone directory furnished by the Telephone Company.

EXCHANGE SERVICE

Subscribers to Chicago Exchange System service may, on the terms of their contracts, transmit local messages to all exchange telephones located within the limits of the City of Chicago.

A local message is a communication not exceeding **five minutes' duration** between subscribers' stations within the same exchange limits. By ordinance of the City of Chicago and these regulations the subscriber, lessee or patron is forbidden to charge any person more than five cents for a single message transmitted to any point within the City of Chicago, from any telephone furnished under the contract of which these regulations are a part.

The use of Classes of service is restricted as shown in Rate Schedule on page 6.

THE COMPANY DOES NOT GUARANTEE UNINTERRUPTED WORKING OF THE LINES OR EQUIPMENT

For any complete failure of service of which notice in writing has been sent to the Company's General Offices, and continued for more than twenty-four hours thereafter, an abatement of the contract charge for the period of such interruption shall be made.

SUBSCRIBER'S TELEPHONE NUMBER

Each subscriber's telephone is designated by an office name and number, which are placed to the right of his name in the telephone directory. This office name and number are no part of the contract with the Company, and may be changed by the Company when necessary.

PRIVATE BRANCH EXCHANGE OPERATION

Operators employed by the subscriber for the operation of private branch exchange switching apparatus shall comply with the operating rules of the Telephone Company and render service satisfactory to it.

SETTLEMENT

Collections from coin boxes will be made about once a month, or more often if necessary. **In Coin Box Service** a five-cent coin shall be dropped into the slot each time a local call is made, and will be "collected" by the operator and retained by the Company if the subscriber is put into communication with any one at the telephone number called. All other coins or tokens found in the coin box shall be redeemed by the subscriber at the rate for the service for which they were used. **The Subscriber Shall Make Settlement and Pay Deficit, if Any, When the Collector Calls.** If all amounts due are not paid to the collector at the time of collection, a final notice will be left with the subscriber or any other person on the premises, stating the amount due and notifying the subscriber that service will be denied if the amount is not paid within seven days. If said amount is not paid within seven days, the company may then deny service to subscriber.

Settlement for classes of service other than coin box service is due upon receipt of bills, which are rendered once a month and are payable at the office of the company. If not paid on or before the 14th day after the issuance of the bill, a written notice may be sent to subscriber, calling attention to the fact that the amount is due, and if payment is not made within seven days thereafter, the company may discontinue service without further notice.

SETTLEMENT FOR PREVIOUS INDEBTEDNESS

The Company will not furnish service to an applicant unless all previous indebtedness of the applicant to the Company, for telephone service at the same or other address of the applicant, has been paid in full.

ALTERATIONS

The subscriber agrees to notify the Company promptly in writing whenever alterations or new construction on premises owned or leased by him will necessitate changes in the Company's equipment and the subscriber agrees to pay the Company's current charges for such changes. Estimates furnished on application.

CHANGE OF ADDRESS OR LOCATION

The Company will move the equipment to any point where the Company furnishes similar service, within the limits of the same Exchange system accessible with its facilities, upon written order, provided the subscriber agrees to pay the Company's current charges therefor. After a removal, the subscriber shall pay the current rate for service at the location to which the removal is made.

TERMINATION

The subscriber or the company may terminate the contract on current terms by giving ten days' written notice, in which case the subscriber shall pay in full to the end of such ten days; and the Company will refund the portion of any payment made in advance unearned at the end of such ten days.

REINSTATEMENT CHARGES

Whenever a subscriber's telephone service has been discontinued for non-payment or other breach of contract, a charge of $2.00 is made for the restoration of the service.

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General Information for Subscribers

1—Definition of a Local Message

A local message is a communication not exceeding five minutes' duration between any two subscribers' stations in Chicago. An additional charge is made for each additional five minutes or fraction thereof.

2—Coin Box Service

As a local message is a communication not exceeding five minutes' duration between any two subscribers' stations in Chicago, an additional deposit of five cents (5c) is required for each additional five minutes or fraction thereof. Guarantees by the subscribers are **By the Day** (Sundays and holidays included) and not by the month. **Coin-box service is a Cash Prepayment Service Requiring Settlement in Full at the time the collector calls.** The Company cannot make collections from coin-box service telephones at night or on Sundays, or at other times than on the six working days of the week. To avoid error or misunderstanding, the subscriber or his representative is requested to be present at the time of collection to verify the count of coins and the settlement made. If subscribers cannot arrange to be present when collector calls, they should leave money for settlement with some one representing them. Where settlement is not made when collector calls, the Company is obliged to terminate (by notice left by collector) the contract under which the telephone service is furnished. Collectors have regular routes and make calls as nearly as possible on the same day of every month, and are unable to call at other times. Subscribers having coin-box service who expect to be absent from the city for more than one week should notify the Company so that collection may be deferred.

3—Message Rate Service

—*See page 6.*

4—Party Lines

Subscribers are necessarily associated on the line with others located nearest to them using the same class of service. Mutual accommodations accorded in public service of any kind where two or more persons are concerned should be extended between party line users.

5—Public Telephones

Public telephone facilities are provided in Drug Stores, Railroad Stations, Department Stores, Hotels, and at other locations throughout the city. A "Blue Bell" sign indicates a public telephone.

6—Telegrams by Telephone

You may telephone telegrams, cablegrams, or radiograms to the Postal Telegraph Cable Company or the Western Union Telegraph Company. The telegraph charges will appear on your monthly telephone bill.

You may also telephone your telegrams from public coin box telephones and deposit the charges for such messages in the coin box.

When calling either of these telegraph companies follow the instructions shown under its listing in this directory.

7—Private Branch Exchange Instructions and Employment Assistance

The Company maintains a free employment and training department and is prepared to provide Private Branch Exchange attendants for temporary or permanent positions.

If you wish the services of an attendant, call the Private Branch Exchange Employment and Training Department, **OFF**icial 9300, Extension 3012.

A representative of our Private Branch Exchange Department calls regularly at your premises to advise with you and your attendant regarding the operation of the equipment that the best results may be received by your through your switchboard. She is able to outline for you the best telephone practices to be followed by your attendant.

The assistance of this supervisor in any matter affecting your service may be obtained by calling **OFF**icial 9100 and asking for the Private Branch Exchange Supervisor.

Both of the above services are furnished without charge.

8—Attachments to Telephones

Telephone instruments have been designed as they are to produce the best result and are, necessarily, very sensitive and intricate. The various unauthorized devices offered for sale, which are supposed to improve transmission, eliminate noise, destroy germs, supplant the telephone directory, etc., are unnecessary. **Many of them get the telephone lines and instruments into trouble, and the Company, to protect its service, is compelled to remove them.**

Subscribers' contracts provide that no instruments or appliances not furnished by the Company shall be attached to or used in connection with its instruments or lines.

9—Identification of Employees

All employees of the Company whose duties require them to enter the premises of its subscribers for any purpose whatever are supplied with identification cards, each card bearing the photograph and name of the employee entitled to carry it. Any subscriber having the slightest doubt as to the identity or the right of the person representing himself to be an employee of the Company should inspect the credentials. **Beware of persons misrepresenting themselves as employees of the Telephone Company.**

10—Displaying Your Telephone Number.

It is a convenience to your customers to print your own telephone number on your letterheads, signs, etc. However, telephone numbers are subject to change and if used on stationery and other forms of advertising should, in the best interests of their service, be promptly corrected when, for any reason, a telephone number change is necessary.

11—Telephone Directories

Alphabetical directories are published in June and November. When any change in the telephone directory listing is desired, subscribers are requested to notify the Company as soon as possible, preferably not later than May 1st for Summer issue and October 1st for the Winter issue.

The Company assumes no liability for damages arising from errors or omissions in making up or printing its directories. Extraordinary precautions are taken to avoid errors.

12—Directories of Other Cities

Telephone Directories of the principal cities in the United States and Canada may be procured by any of our subscribers who will agree to pay the charge made by the issuing Company. Prices and other information can be obtained by calling **OFF**icial 9300, Extension 3538

"TIME OF DAY" SERVICE IN CHICAGO

CAT hedral 8000

THE purpose of this service is to meet the service needs of the public who may find it more convenient to get the time from the Telephone Company than in some other manner.

This service is available twenty-four hours a day from any telephone in Chicago at 5c per call, except that in the case of message rate service one message will be charged.

Call or Dial "CAT hedral 8000"

ILLINOIS BELL TELEPHONE COMPANY

5777

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EXACT COPY, AS FILED
WITH COMMISSION
IN Illinois Jan 1, 1914.

X-426 . 272

S. P. U. C. I. NO. 1

TARIFF AND ROUTE BOOK

9287
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American Telephone & Telegraph Company

LIST OF TELEPHONE OFFICES
IN THE STATE OF ILLINOIS ONLY

ALWAYS CONSULT THE
SUPPLEMENT FIRST

READ THE GENERAL INSTRUCTIONS
THEY ARE IMPORTANT

EFFECTIVE JANUARY 1, 1914

ISSUED BY
AMERICAN TELEPHONE AND TELEGRAPH COMPANY
BY H. S. BROOKS, GENERAL COMMERCIAL SUPERINTENDENT
LONG DISTANCE LINES DEPARTMENT
15 DEY STREET, NEW YORK, N. Y.

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EXHIBIT X-426

INSTRUCTIONS

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is book is for the use and guidance of offices on the lines of the American Telephone & Telegraph Company, including leased, and connecting lines, and takes effect January 1, 1914.

contains a complete list of all the offices of the American Telephone & Telegraph Company and its connections in the State and gives the "Other Line" charges.

upplements will be issued, giving all additions, Changes and Corrections from January 1, 1914. The *latest* supplement should sulted first.

es are classified as follows:

DIRECT—A "Check Direct" office is an office for which a monthly report, Form T 55, is made of its A. T. & T. business. Such offices are printed in heavy faced type. For example:

"CHICAGO."

—A Check" office is an office whose A. T. & T. business is included in the monthly report of its "Check Direct" office. A heck" office is followed by the abbreviation "c'k" and the name of its Check Direct office. F example:

"Marietta, c'k Canton."

NES—An "Other Line" office is an office where an "Other Line" rate is printed opposite the name of the office. For example:

"Merriam, 10—3 Fairfield."

in the columns headed "Square and Section" are to be used in ascertaining from the Rate Sheet the rate to the de-. Directions for the use of these numbers are given in the following Rules.

mbers in the column headed "Route Block" indicate the routing block in which the respective offices are located. They must ed in any way with the Square and Section numbers, as they are used for routing purposes only.

RATES.

RTAINING THE RATE TO ANY OFFICE. ALWAYS CONSULT THE SUPPLEMENT AND SPECIAL RATES FIRST.

THIS LINE RATES.

wing classes of business are or may be handled in whole or in part over the lines of the American Telephone and Telegraph

American Tel. & Tel. Co. business, usually termed "Long Distance."
Intraterritorial local business, usually termed "Local."
Intraterritorial local business, usually termed "Privileged."

American Tel. & Tel. Co. only quotes rates on Long Distance business.

or "Local" and "Privileged" business are quoted by the Associated Companies.

tions should not be made between offices where no rate is quoted by either Company.

Check Direct office is provided with a Rate Sheet showing the American Co.'s initial period and additional minute rates. beyond the initial period shall be charged at the additional minute rate. A fraction of an additional minute in excess nds shall be charged as a minute. For example, on a message of 7 minutes, 15 seconds duration charge should be made utes. On a message of 7 minutes, 20 seconds duration charge should be made for 8 minutes.

tion Rates are given in the Rate Sheets for the State of Illinois as they apply only to distances over five hundred miles.

RULES FOR FINDING RATES.

nd the Square Rate, ascertain from the Tariff and Route Book or Supplement the number of the Square of the office to which s wanted, then refer to the Rate Sheet. If no Special Rate is given, use the Square Rate.

r example: To find the rate to Chicago, it will be noted that the Chicago Square Number is 782. If, on referring to the heet, it is found that a rate is given for Square 782, that will be the rate to Chicago, unless a Special Rate is given.

re no rates are quoted, the American Telephone and Telegraph Company's lines are not used, and such rates are quoted by ated Company.

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"CHECK" OFFICES.

an office is given as "Check" another office, it takes the same rate as, and shall be considered as part of, its "Check Direct"

OTHER LINE RATES.

ther Line" rate to its "Check Direct" office is printed opposite each "Other Line" office, and should be collected in addition Line" rate, as shown in the following example:

Merriam, 10-3 Fairfield (sq. 569, sec. 86).

means in the case of Merriam, that the "Other Line" rate from Fairfield is ten (10) cents for the first three minutes, and cents for each additional minute, which added to the Fairfield rate, will give the through rate to Merriam.

square and section numbers are shown, as in the above illustrations, for the convenience of the operators in ascertaining the rate.

MESSENGER CHARGES.

charge for Messenger service shall be the amount actually disbursed and shall be made against the telephone from which the the service is received. Messenger charges may be made "Collect" if guaranteed by the party calling and accepted by the "Collect" Messenger charges shall be collected from the party called and shall not be reported by either office on monthly T 55.

AMERICAN TELEPHONE & TELEGRAPH COMPANY,
Long Distance Lines Department,
H. S. Brooks,
General Commercial Superintendent,
15 Dey Street, New York.

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TARIFF AND ROUTE BOOK

POINTS ON THE LINES OF THE

American Telephone and Telegraph Company

AND ON LEASED, OPERATED AND CONNECTING LINES
TOGETHER WITH DIRECTIONS FOR FINDING RATES AND ROUTES

ALWAYS CONSULT THE SUPPLEMENT FIRST

READ THE GENERAL INSTRUCTIONS
THEY ARE IMPORTANT

ISSUED BY
American Telephone and Telegraph Company
LONG DISTANCE LINES DEPARTMENT
195 BROADWAY, NEW YORK, N. Y.
MAY 1st, 1917

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GENERAL INSTRUCTIONS

1. This book contains a list of all points to which the American Telephone and Telegraph Company quotes and rates, directions for routing, rating, and reporting business handled in whole or in part over the of the American Telephone and Telegraph Company and takes effect May 1, 1917.

The arrangement of the list is as follows:
1. States in the United States in alphabetical order.
2. The Dominion of Canada.

The points in each State are listed alphabetically. All points in the Dominion of Canada are listed alphabetically.

2. **CLASSIFICATION.** For convenience in listing points are classified as Check Direct, Check and Other Line ding to their characteristics:

Check Direct. Any point requiring specific A. T. & T. rates or routes is a Check Direct point. A Check Direct point is printed in heavy faced type. For example, in the State of Oklahoma:

Square	Sect.		Route Block
2527	137	**ELK CITY 16** .... Route via Oklahoma V. E.	1279

A Check Direct point may either be a Toll Center or a Tributary.

A Toll Center is a point which handles its own toll traffic, together with toll traffic of other points known as Tributaries, making on such traffic the ticket from which the patron is billed.

A Tributary is a point, some or all of whose toll traffic is handled by another point known as its Toll Center, which Toll Center makes on such traffic the ticket from which the patron is billed.

Check. Any point which takes the A. T. & T. rates of another point (its Check Direct point) is a Check point. A Check point also takes the same routes as its Check Direct point unless otherwise specified. A Check point is followed by the abbreviation "ck" and the name of its Check Direct point. For example, in the State of Alabama:

Square	Sect.		Route Block
1556	55	Sneadville ck Altoona	

Other Line. An Other Line point is a point whose A. T. & T. rates are the sum of a uniform rate (known as the "Other Line" rate) and the A. T. & T. rates of a designated point. An Other Line point also takes the routes of such designated point unless otherwise specified. The Other Line point is indicated by an Other Line rate printed after the name of the point. The Other Line rate may be a flat rate or it may be an initial period rate with an additional minute rate. Example: In the State of Minnesota:

Square	Sect.		Route Block
(4890	104)	**WATERVILLE; 5c OTHER LINES 15** .... Route 644 to 646; 651 to 655; 663 to 674; 681 to 712; 1084 to 1089; 1135 to 1158; 1183 to 1441; via* Owatonna All other blocks via* Minneapolis	1447
(2298	96)	Turtle River ck Bemidji; 10c other lines	
(1302	96)	White Earth 25-5 Detroit	

3 Numbers in the columns headed "Square" and "Section" are to be used in finding rates. Numbers in the headed "Route Block" are to be used in finding routes. The square and section number of the points which Other Line rates are quoted, are printed in parentheses before the names of Other Line points and be used in determining the This Line rates only.

4 A number is printed immediately after the name of each Check Direct point for the purpose of determining dress to which Toll Charge Claim correspondence should be directed. The address represented by each numshown in the list on pages .... to .... inclusive.

5 **SUPPLEMENTS.** Supplements to this book, showing all changes subsequent to May 1, 1917, will be as needed. Each Supplement supersedes all previous Supplements. ALWAYS CONSULT THE LATEST SUPPLEMENT CONSULTING THE TARIFF AND ROUTE BOOK.

each Supplement all new points and all changes published for the first time will be indicated by a cross (✚) ng the name of the point.

each issue of the Supplement will be found a pink page headed "Additional and Changed Instructions."

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the heading, this page will be left blank. On it, under the heading, shall be pasted such additional in- r changes in the existing instructions, as may be issued between regular issues of the Supplement.

WHEN TO GIVE SERVICE. Except as specially provided in the Operating Instructions or by special gagement service is to be given only to points for which rates are quoted in the Rate Sheet furnished by n Telephone and Telegraph Company. Therefore, always make sure that a rate is quoted before service

ROUTING INSTRUCTIONS

CHECK AND OTHER LINE POINTS. The route to a Check point is the same as the route to its ect point, and the route to an Other Line point, not a Check Direct point, is the same as the route to from which it is Other Line, except when a circuit code appears in the listing of the Check point or the e point. (See Sections 10 and 13.)

CHECK DIRECT POINTS.

ck Numbers: Each Check Direct point is given a Route Block number which is shown after the name of in the column headed "Route Block." This Block number is used instead of the name of the point ting directions.

ification: Check Direct points are classified as follows

ass 1. A Class 1 point is a Toll Center furnished with a Special Route Book, containing routing directions for reaching all other Class 1 points. Class 1 points are followed by "Route Class 1." For example, in the State of Indiana:

Square	Sect.		Route Block
663	49	INDIANAPOLIS 3 Route Class 1	399

ass 2. A Class 2 point is not furnished with a Special Route Book. All Check Direct points not followed by "Route Class 1" are Class 2 points. Class 2 points followed by "Route via ......" or "Route via* ......" are Toll Centers. Class 2 points followed by "Route T. C. ......" are not Toll Centers. Following are examples of the above in the State of Ohio:

Square	Sect.		Route Block
2107	42	MOUNT ORAB 407 Route 1 to 461; 464 to 481; 488 to 491; 758 to 826; 840 to 863; 865 to 867; 1050 to 1055; 1060, 1061, 1605 to 1618; via Winchester All other blocks via Cincinnati	492

Square	Sect.		Route Block
2573	42	TIPPECANOE CITY 407 Route 496, 498, 500, 577, 583, 584, 586 to 589; 591 to 596; 599 to 602; 606, 610, 615, 624, 625, via* Dayton All other blocks via* Piqua	501a

Square	Sect.		Route Block
2418	34	WELLSVILLE 102 Route T. C. East Liverpool cl. 2	439

route to a point not a Toll Center, is the same as the route to its Toll Center, except when a circuit code follows "Route T. C. ......" (See Sections 15 and 17). For example, in the State of Louisiana:

Square	Sect.		Route Block
3492	151	OAKDALE 392 Route 1184, 1186 to 1191; 1195, 1199 to 1201; 1207, 1208, 1250 to 1283; 1360, 1361, T. C. De Ridder cl. 2 V. L. All other blocks T. C. Alexandria cl. 2 V. L.	1184

Route via* ——" indicates that traffic is to be relayed at the via* point, i. e., the point shown after "Route via*" (See Section 12).

Route via ——" indicates that traffic is not to be relayed at the via point, i. e., the point shown after "Route via." (See Section 11).

PLURAL LISTING. Certain points are listed with notation "Certain Subscribers connected with ——." ired subscriber cannot be reached through the first point, try the others in the order named. For example, the State of Pennsylvania:

Square	Sect.		Route Block
1099	80	Walnut Hill, Montgomery Co. ck Cheltenham *Certain subscribers connected with Ogontz*	

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she has, therefore, determined that she must reach Wilmington, N. C., via Darlington, S. C., using the proper class of circuit and pass the circuit code V.I.. to Fort Worth, her Via point, with the order.

(5) Abilene therefore reaches Fort Worth and passes her order saying:
"Wilmington, North Carolina, via Darlington, South Carolina, V.I. for Abilene, Class 2."
(6) Fort Worth builds up a circuit to Wilmington or instructs Abilene how to proceed.
(7) On reaching Wilmington, Abilene passes her call to Wilmington, as Wilmington is the Toll Center for Jacksonville.

QUALIFIED TOLL SERVICE

Calls to the subscribers of companies known as Subscribing Companies are under certain conditions, com over the lines of the American Telephone and Telegraph Company.
ch service may be given only to points preceded by the following symbols:
This symbol preceding the listing of a point listed once indicates that the point has both Bell and Subscribing any Service.
ample:

Square	Sect.		Route Block
316	25	▲JOHNSTOWN, CAMBRIA CO. 90 .... Route Class 1	361

This symbol preceding the listing of a point listed once indicates that the point has Subscribing Company s only.
ample:

Square	Sect.		Route Block
462	20	■Craigs Meadow ck Stroudsburg	

This symbol preceding the listing of a point listed twice, once without the symbol ■ and once with it indi at there is a different route and there may be a different rate for Bell and Subscribing Company Service. he listing without the symbol gives the rate and route information for Bell Service. The listing preceded by mbol ■ gives the route information for Subscribing Company Service.
ample:

Square	Sect.		Route Block
1845	21	Swiftwater ck Mount Pocono	
462	20	■Swiftwater ck Stroudsburg	

INSTRUCTIONS FOR DETERMINING RATES AND CHARGES

The following classes of business are or may be handled in whole or in part over the lines of the American and Telegraph Company.
American Telephone and Telegraph Company business.
Intraterritorial local toll business, usually termed "Local Toll."
Interterritorial local toll business, usually termed "Privileged."
al Toll" and "Privileged" business is normally handled over the lines of the Associated Companies.
for American Telephone and Telegraph Company business are quoted by the American Telephone and Company; for "Local Toll" and "Privileged" business by the Associated Companies.

RATE SHEETS. A Rate Sheet is provided for each Check Direct point showing the American Telephone graph Company's rates for the initial period and for each additional minute.

DURATION OF MESSAGE. On a message of less duration than the initial period, charge should be the initial period. On a message of greater duration than the initial period, a fraction of a minute in of 15 seconds should be charged as an additional minute. Example:—On a message of 7 minutes and 15 duration, charge should be made for 7 minutes; on a message of 7 minutes and 16 seconds duration, should be made for 8 minutes.

NIGHT AND DAY RATES. When a Night Rate is quoted, the Day Rate shall be charged from 6:00 6:00 P. M., and the Night Rate from 6:00 P. M. to 6:00 A. M.
a connection is established before 6:00 P. M. and continues until after 6:00 P. M., the charge shall be the day rate for the initial period and additional minutes, if any, before 6:00 P. M. and at the night rate for ning minutes of the connection. For example: If the initial period is three minutes, a connection estab 5:53 P. M. and completed at 6:08 P. M., shall be charged as 7 minutes at the day rate and 8 minutes at the rate. Similarly a connection established at 5:58 P. M. and completed at 6:07 P. M., shall be charged as 3 at the day rate and 6 minutes at the night rate.

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21. RULES FOR FINDING "THIS LINE" RATES.

Find in the latest Supplement or if not found there, in the Tariff and Route Book, the Square and Section of the point to which the rate is wanted, then refer to the Rate Sheet. If there is no Square rate use the Section rate. If both Square and Section rates are quoted use the Square rate.

22. Check and Other Line points take the same "This Line" rate as the points from which they are Check or Other Line unless a Special Rate is quoted in the Rate Sheet. The Square and Section number of the points from which Other Line rates are quoted, are printed in parentheses before the names of Other Lines points and should be used in determining the This Line rates only.

23. Certain points are listed with the notation "Certain subscribers connected with .... The rate is that of the point with which the subscriber is connected. Example, in the State of Pennsylvania:

Square	Sect.		Route Block
1069	80	Walnut Hill, Montgomery Co. ck Cheltenham *Certain subscribers connected with Ogontz*	

This means that if the subscriber is found to be connected to Ogontz, the rate to Ogontz should be used.

24. OTHER LINE RATES.

Other Line rates are printed after the names of certain points and should be collected in addition to the "This Line" rate.

Example 1, in the State of Minnesota:

Square	Sect.		Route Block
(1874	79)	Tower 50-15 & 25-5 *Duluth	

This means that the Other Line day rate between Tower and Duluth is fifty (50) cents for the first three minutes, and fifteen (15) cents for each additional minute, which added to the Duluth day rate, will give the through day rate to Tower. Also that the Other Line night rate from Duluth is twenty-five (25) cents for the first three minutes, and five (5) cents for each additional minute, which added to the Duluth night rate, will give the through night rate to Tower.

Example 2, in the State of Minnesota:

Square	Sect.		Route Block
(1403	103)	Ormsby 20-5 Fairmont	

In this case the Other Line day and night rates from Fairmont are the same, viz., twenty-five (25) cents for the first three minutes, and five (5) cents for each additional minute. This added to the Fairmont day or night rate, will give the through day or night rate to Ormsby.

Example 3, in the State of New Hampshire:

Square	Sect.		Route Block
(2983	3)	PROFILE HOUSE; 20c OTHER-LINES 14	15

In this case the Other Line charge (20c) should be collected irrespective of the duration of the connection, in addition to the Square or Section rate.

25. MESSENGER CHARGES.

The charge for Messenger Service shall be the amount actually disbursed, and shall be made against the telephone from which the request for service is received, or the charge may be made "Collect" if guaranteed by the calling party and accepted by the called party. Exception: Where the instructions at an office differ from the preceding, such instructions shall apply.

INSTRUCTIONS FOR PREPARING MONTHLY TOLL REPORTS

26. An American Telephone and Telegraph Company Monthly Toll Report (Form S. N. 338, 339) is required for each Check Direct point for which there is "outward" or "inward" business. The report shall include all business handled in whole or in part over the lines of the American Telephone and Telegraph Company, and also all business on which the rate is quoted by the American Telephone and Telegraph Company handled over the lines of an Associated Company.

The report shall cover the calendar month, and should be prepared directly after the close of the month's business. Unless otherwise instructed, the report shall be sent to the Auditor of Receipts, American Telephone and Telegraph Company, 195 Broadway, New York, N. Y.

27. Only the names of Check Direct Points (points printed in heavy faced type), shall be listed on the Month-

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[fol. 5786] EXTRACTS FROM EXHIBIT X-427

Pursuant to request of Defendants, plaintiff, on June 19, 1932, furnished copies of all contracts that ever existed in the Bell System containing a provision similar to Section 10 of the contract of December 23, 1881, with the Chicago Telephone Company, being City's Exhibit 23. The plaintiff has furnished two contracts as being the only ones ever made containing provisions similar to Section 10.

Agreement dated June 1, 1880, by and between the American Bell Telephone Co. and the Metropolitan Telephone Company; and,

Agreement dated May 7, 1880, between the National Bell Telephone Co. and the Pacific Bell Telephone Co.

Said two agreements are as follows:

[fol. 5787] X-427(2)

License and Agreement

This agreement, made this First day of June, A. D. 1880, by and between the American Bell Telephone Company, a corporation created under the laws of the State of Massachusetts, lessor and licensor, party of the first part, and The Metropolitan Telephone and Telegraph Company, lessee and licensee, party of the second part, witnesseth:

* * * * * * *

1. The licensor hereby grants and licenses to the party of the second part the full and exclusive right within and for all the territory hereinafter defined, to use and to license others to use, for all purposes for which the licensor has, or shall have, the right to use them (except so far as the Western Union Telegraph Company may have a right to acquire from the licensor telephones for transmitting telegraph messages under Article 14 of the contract of Nov. 10th, 1879, and except as hereinafter provided), telephones furnished by the party of the first part, embodying any invention in or relating to telephones or their use, which the party of the first part now has, or shall have, the right to use, either under any Letters Patent which it now owns or may hereafter acquire, or under any license or other grant or right which it has acquired or may hereafter acquire

under or in virtue of the contract of Nov. 10th, 1879, or otherwise, including such full and exclusive right as aforesaid to use such telephones on exchanges, as defined in said contract last named.

Such full and exclusive right of the party of the second part shall be perpetual as to all and each of the inventions or rights of use aforesaid owned or enjoyed, or to be owned or enjoyed, at any time by the party of the first part, except, however, as herein otherwise specially provided, and provided and so long only as the conditions to be performed by the party of the second part under this instrument are performed by it.

* * * * * * *

4. The territory of the party of the second part, and within and for which the right as defined in the second article shall be exclusive, is all the territory within a radius of thirty-three miles from the New York City Hall in all directions, and all the territory of Long Island, and of Monmouth County in the State of New Jersey, subject only to such existing exchange rights as have been granted for that part of said thirty-three mile territory which lies within the State of Connecticut.

* * * * * * *

10. In case the licensor, its successors or grantees shall desire to connect points within said territory with points outside said territory, they shall have the right to connect with or avail themselves of the lines and facilities of the party of the second part or its licensees, owners of exchanges or public lines, making a reasonable and suitable division of the tolls and profits of such extra territorial and through business; and if or so far as said licensee or its sub-licensees shall not have or shall not furnish suitable lines and facilities, then said National Bell Telephone Company may within said territory construct such lines and use such telephones as may be necessary for said purpose. And if the parties shall not agree as to such terms and facilities, they shall refer such questions to three disinterested arbitrators, one to be chosen by each party and those two to choose a third; and the written decisions and award of said three arbitrators or of a majority of them made after due hearing

or after reasonable notice and opportunity for both parties to be heard, shall be binding and final in the premises.

* * * * * * *

[fol. 5788] X-427, (6)

If, after possession is taken of any of such lines, fixtures, apparatus, appliances and premises by the licensor, in virtue of the foregoing provisions, it shall be determined, either by agreement of the parties or by final judgment or decree of a court of competent jurisdiction, that the rights granted by the licensor hereunder are lawfully terminated, the licensor shall pay to the party of the second part the fair value of such property, to be ascertained as of the time when such possession was so taken, with interest from said day to the day of payment; such value to be ascertained, in case of disagreement, by arbitrators to be agreed upon by the parties or by the judgment of a Court, and, upon payment or tender of said sum and interest, the title to such property shall pass to the licensor, as of the day when possession was so taken, and the licensee shall execute suitable conveyances, if required, to vest the same accordingly.

But, if, after such possession is so taken, the licensor shall not acquire title as aforesaid it shall return the property or premises taken to the licensee and account to it for all profits and earnings of the same, subject to expenses of operation, rentals of telephones, and other proper charges, and shall also be allowed and paid for the cost of all additions, made by it thereto as aforesaid in good faith, and in the exercise of a reasonable discretion.

If, without previously taking possession of any of the lines, exchanges and appliances as aforesaid, it shall be determined by agreement of the parties or by a final judgment or decree of a court of competent jurisdiction, that the rights granted by the licensor hereunder are lawfully terminated, the licensor may acquire said property upon paying its value with interest, to be ascertained as aforesaid as of the time when said right of possession accrued upon such termination; and upon payment or tender of said value and interest, the title to such property shall pass to the licensor, and the licensee shall execute suitable conveyances, if required to vest the same accordingly.

The lessor also reserves all its rights and remedies in law and in equity, under the patent laws or otherwise, including the remedy by injunction, against the party of the second part and those claiming under it, for the use of any of its patented inventions or instruments not justified by a subsisting license hereunder or for the violations of any other of its rights.

All sub-licensees to exchanges (if any such shall be granted) shall be in accordance with and shall in terms recognize in the party of the first part the right to have and to exercise against such sub-licensees all the rights and remedies provided for in this contract; but the default of any one sub-licensee shall not impair the rights of other sub-licensees nor of the party of the second part, provided the latter has and shall use reasonable diligence to prevent and redress such default and the continuance thereof.

13. The party of the second part promises that it will keep and observe all the stipulations herein contained on its part to be kept and performed. Whenever the licensor grants to others the rights for extra territorial lines or any other rights remaining to it, the stipulations hereof relating thereto shall be binding upon and enure to the benefit of such grantees in respect to the rights so granted, and the licensor shall not be responsible for their acts or defaults in respect to the same.

14. Inasmuch as the American Bell Telephone Company has bargained to aquire the telephones, patents, rights under patents and other ——.

[Pages 7 and 8 missing.]

[fol. 789] X-427, P. 9

This agreement, made this seventh day of May, A. D. 1880, by and between the National Bell Telephone Company, a corporation created under the laws of the State of Massachusetts, Lessor and Licensor, party of the first part, and the Pacific Bell Telephone Company, a corporation created under the laws of the State of California, Lessee and Licensee, party of the second part.

* * * * * * *

2. The licensor hereby grants to said party of the second part, under all patent rights which it now or hereafter may have the power to license under the full and exclusive right to use telephones procured from the licensor as hereinafter described for all purposes for which the licensor may properly use them under the terms of the contract of November

[fol. 5790] X-427, (10)

10th, 1879, between the National Bell Telephone Company of one part and the Western Union Telegraph Company for itself and its associates of the other part including the right to use them on exchanges as therein defined except as herein otherwise provided, and subject to the provisions hereof, so long as the rental therefor shall be duly paid to the licensor, and as the provisions hereof are not violated but not longer or otherwise and the party of the second part may grant said rights or any portion thereof to its customers and sub-licensees by contracts as provided in Article 7 hereof. * * *

* * * * * * *

P. 14:

12. In case the Licensor or its successors or grantees shall desire to connect points inside said territory with points outside said territory they shall have the right to connect with or avail themselves of the lines and facilities of the party of the second part or its licensees making a reasonable and suitable division of the tolls and profits of such extra-territorial and through business, and if, or so far as said licensees or its sub-licensee shall not have or shall not furnish suitable lines and facilities, then said National Bell Telephone Company may within said territory construct such lines and use such telephones as may be necessary for said purpose.

[fol. 5791] In addition to the portions of this exhibit, printed in full above, it contains, in substance, the following provisions:

In the first contract in the exhibit, that is, the contract of June 1, 1880, between the American Bell Telephone — and the Metropolitan Telephone and Telegraph Company, Section 1 is a recital that the lessor owns patents granted to Alexander Graham Bell and owns or has the right to use and may thereafter have the right to use sundry other inventions which are or may be embodied in electric speaking telephones and lessee desires to obtain the use of telephones under lease and license from the party of the first part.

Section 2. Printed in full above.

Section 3. American Company will not grant or transfer its title to the patents or grant licenses thereunder to any other party than the Metropolitan Company in the territory defined in the agreement (p. 2).

Section 4. Printed in full above.

Section 5. Licensor to furnish to the licensee speaking telephones made under patents owned or acquired by licensor.

Section 6. Licensor will license, to be used with such telephones, the inventions in call bells, switches, switchboards and other apparatus needed for such telephone lines which it can so license and upon such royalties as it may from time to time establish but not greater than for others in similar circumstances.

Section 7. Licensee admits validity of the patents (pp. 3-4).

[fol. 5792] Section 8. Licensee will include in its contracts with those who are to use the telephones, such provisions as the licensor may direct in order to protect the patents and indemnify licensor.

Section 9. Licensee will charge its subscribers such rental and royalties as licensor may fix from time to time and will pay to licensor as royalty 50% of the telephone rental and royalty fixed (p. 4).

Section 10. Printed in full above.

Section 11. The licensee shall perform all the obligations incumbent on the National Bell Telephone Company under Article 15 of the contract of November 10, 1879, and shall enjoy all the facilities therein provided for the benefit of said Company; one-half the commission of 15% and 10% therein stipulated is granted to and shall be paid to and enjoyed by said licensee. All other compensation therein provided for shall be entirely paid to and enjoyed by licensee (p. 5).

Section 12. First paragraph of this section describes the rights of licensor upon default of licensee. Remainder of section and section 13 printed in full above.

Section 14. Inasmuch as the American Bell has bargained to acquire the telephones, patents, rights under patents and other property of the National Bell Telephone Company, upon the execution of this agreement, provisions in the contract relating to the National shall enure to the benefit of the American Bell to the extent of the property and interests it shall so acquire.

Section 15. If anything contained in the contract shall be held contrary to law, no rights shall be given either party against the other by reason thereof (p. 7). The National Bell Telephone Company to the full extent of its right, title, [fol. 5793] and interest satisfies and confirms the grant and license under the contract and signs as a party to the contract (p. 9).

The contract on May 7, 1880, between the National Bell Telephone Company and the Pacific Bell Telephone Company contains similar provisions to the contract between the American Bell and the Metropolitan Telephone and Telegraph Company, the synopsis of which immediately precedes, except there is not involved the matters covered in Sections 11 and 14, etc., in the above contract.

There is omitted from Section 12, as printed above, the provision that if the parties shall not agree as to such terms and facilities, the question shall be referred to three disinterested arbitrators for decision.

[fol. 5794] EXTRACTS FROM EXHIBIT X-429

Order of July 31, 1919, in Connection with Petition X-416, I. P. U. C.

STATE OF ILLINOIS:

PUBLIC UTILITIES COMMISSION

No. 9291

In the Matter of the Application of THE CHICAGO TELEPHONE COMPANY for Authority to Put Into Force Certain Rates Throughout the State of Illinois

BY THE COMMISSION:

This is a petition filed by the Chicago Telephone Company on July 16, 1919, requesting that a temporary order be entered authorizing the company to put into force on August 1, 1919, for local and long distance telephone service in Illinois, schedules and rates which are substantially the same as those charged for such service by the company during the period of Federal Control.

A true understanding of the nature of the petition and the circumstances under which this application was made necessitates a brief review of the relations between the Chicago Telephone Company and the various governmental agencies under whose control it has operated.

Prior to the first day of January, 1914, the Chicago Telephone Company was a public utility operating a telephone system in the City of Chicago and adjacent communities under a charter granted to it by the State of Illinois. Its rates in the City of Chicago were fixed by ordinances adopted by the City Council of Chicago, and its rates in other cities and villages and communities were subject to regulation by their respective local authorities. Some of the ordinances so passed prescribed not only the rates to be charged for the service rendered, but also the kind of service to be offered by the company to the public, and in Chicago there had been offered, as one form of service, to the public for many years unlimited service at a flat rate.

[fol. 5795] The Public Utilities law of Illinois became effective on January 1, 1914, and thereafter the Chicago Telephone Company, as a public utility owning and operating a telephone system in this State, was subject to regulation by the Public Utilities Commission as to its rates and service. It could collect thereafter only such just and reasonable rates as were prescribed in the schedules duly filed by it with the Public Utilities Commission. Pursuant to the provisions of the Public Utilities law, the Chicago Telephone Company filed with the Commission on January 27, 1914, its schedule of rates and charges, which rates and charges became effective and thereafter continued in effect without change or modification up to and including the 31st day of July, 1918.

The Commission, however, in a proceeding instituted before it upon the complaint of Meyer J. Stein, had occasion to consider the reasonableness of said rates and schedules, and on July 15, 1918, entered an order finding that discrimination existed in said rates, and directing the Chicago Telephone Company to file with the Commission for its approval a schedule of reasonable rates for both local and toll telephone service within the territory served by said company within and without the city of Chicago, eliminating therefrom all discriminations of any kind as among, between, or against individuals, communities, or municipalities. An appeal was taken from the order so adopted by the Commission, and said order was thereafter duly affirmed by the Supreme Court of Illinois.

On July 16, 1918, the Congress of the United States, in the exercise of its constitutional power to make war, adopted a certain act entitled Joint Resolution to authorize the President in time of war to supervise or take possession and assume control of any telegraph, telephone, marine cable, or radio system or systems, or any part thereof, and to operate the same in such manner as may be needful or [fol. 5796] desirable, for the duration of the war, and to provide just compensation therefor.

Pursuant to the said act of Congress, the President of the United States issued a proclamation whereby he designated Albert S. Burleson, Postmaster General, to exercise the power and authority so conferred upon the President, and directed that the possession, operation, and control of all telephone and telegraph systems in the United States, including the properties owned and operated by the Chicago Telephone Company, should be assumed by the Federal Government from and after midnight of July 31, 1918.

In accordance with the terms of said act of Congress and the proclamation of the President, the Postmaster General thereupon proceeded to assume control of and to operate the property of the Chicago Telephone Company, the operation being carried on through its regularly constituted officers and employees. The rates for toll, and local exchange service theretofore in force were continued in effect by the Postmaster General until August 28, 1918, when, acting under his authority aforesaid, the Postmaster General prescribed certain charges for the installation and moving of telephone service and equipment, which charges were put into effect by the Chicago Telephone Company, and continued in effect as subsequently modified by an order of November 18, 1918.

On December 13, 1918, the Postmaster General ordered the applicant to put into effect certain rates for long distance toll service within the State of Illinois. The new rates so ordered were to become effective on January 21, 1919, but, prior to the effective date thereof, an injunction was obtained in the Superior Court of Cook County by the Attorney General of Illinois, acting under the direction of this Commission, restraining the said Chicago Telephone Company from charging for long distance telephone service between points lying wholly in Illinois, any rates other or [fol. 5797] different from the rates prescribed in the schedules duly filed with the Commission. The injunction so issued by the Superior Court was obeyed by the Chicago Telephone Company, and the proposed increased rates for long distance telephone service were not put into effect until midnight of June 6, 1919, the Supreme Court of the United States having decided on June 2, 1919, that the Postmaster General, under the authority aforesaid, had full power and authority to fix rates for telephone service both interstate and intrastate.

Prior to the date of said Supreme Court decision, there was no change attempted in the rates charged for local telephone service in the City of Chicago and suburban communities served by the applicant, but, on June 11, 1919, the Postmaster General put into effect, in the territory outside of Chicago, served by said company, and, on June 16, 1919, in the City of Chicago, certain increased rates covering local service in said communities, which rates have continued in effect up to this date. The increase so charged for service in the communities outside of Chicago amounted to 25% over and above the rates theretofore charged and collected. In the City of Chicago, the changes consisted not only in certain increases in the amount charged for measured service phones, but also in the abolishment of the service theretofore furnished upon a flat basis.

The act of Congress of July 16, 1918, under which the Government assumed control and operation of the telephone systems of the country, provided that the period of Federal control and operation should not continue beyond the date of the ratification of the terms of peace between the United States and Germany. Subsequent to the armistice of November 11, 1918, there developed considerable agitation for the immediate return of the telephone properties to their owners, and the Congress of the United States adopted an act which was approved by the President on July 11, 1919 which repealed the war control act [fol. 5798] of July 16, 1918, said repeal taking effect at midnight on July 31, 1919, said act, however, containing the following proviso:

"Provided, however, that the existing toll and exchange telephone rates as established or approved by the Postmaster General on or prior to June 6, 1919, shall continue in force for a period not to exceed four months after this act takes effect, unless sooner modified or changed by the public authorities, State, municipal, or otherwise, having control or jurisdiction of tolls, charges, or rates, or by contract, or by voluntary reduction."

The application of the Chicago Telephone Company filed with this Commission on July 16, 1919, sets out that the company has received notice from the City of Chicago that the said City will proceed on the 12th day of August, 1919, with the regulation and fixing of rates to be charged by the applicant for telephone service in the City of Chicago, and that the City of Chicago further claims that upon the restoration to the applicant of its telephone system on the 1st day of August, 1919, there will automatically be restored as the lawful rates applicable to all service furnished to the public by said company, the same rates and schedules heretofore prevailing at the time the Government of the United States took control of said system in Chicago, including the rates which this Commission has heretofore found to be discriminatory and unlawful.

The applicant further asserts in its petition that the expenses of operating its telephone system have greatly increased since January 1, 1914, and, in particular, during the period subsequent to the date when the United States entered the world war; that the increase in such operating expenses is wholly out of proportion to the slight increases in gross revenue received by said company; that during the period of the war the applicant has put into effect an increased wage schedule amounting to in excess of $1,800,000 per year; that the prices of materials used in the telephone industry have also substantially advanced, and that said increased cost of labor and materials will continue during the remainder of the year 1919 and there-[fol. 5799] after; that if the applicant is compelled to put back into force and effect the rates charged by it for service prior to June 6, 1919, it will not be enabled thereby to earn a fair return upon its property; that the rates and schedules charged by the applicant under the order of the Postmaster General herein referred to are fair, just, and reasonable, and will not earn more than a fair and reasonable return on its property; that an emergency exists by reason of the impending return of the telephone property to the applicant on August 1, 1919, and that irreparable damage and injury will be sustained by it unless it is by the order of this Commission authorized to increase schedules of telephone exchange rates and other charges applica- and investigation by the Commission.

At the time of the filing of said application, the Chicago Telephone Company filed with the Commission new schedules of telephone exchange rates and other charges applicable to the City of Chicago and all other cities, villages, and communities served by it in the State of Illinois, and long distance service furnished by it between points wholly within the State of Illinois, said schedules being substantially the same as those heretofore promulgated by the Postmaster General and charged by the Chicago Telephone Company during the period of Federal control. The petition requests the Commission to suspend the requirements of notice, set the petition for immediate hearing, and, in consideration of the emergency, to enter its order continuing the proposed rates and charges in force, upon such terms and conditions as the Commission may deem advisable.

[fol. 5800] It is therefore ordered that the rates and schedules filed in this proceeding by the Chicago Telephone Company on July 16, 1919 be suspended for a period of 120 days from August 1, 1919.

It is further ordered that the rates established and approved by the Postmaster General be, and the same are modified as hereinafter provided.

It is further ordered that the Chicago Telephone Company be permitted to charge and collect for local service rendered by it to its subscribers and patrons within the City of Chicago the rates heretofore charged by it for the service authorized in accordance with the Postmaster General's order and during the period of government control, subsequent to June 16, 1919, said permission to continue in effect until the 30th day of November, 1919, unless this order is sooner modified, altered, or changed by order of the Commission; Provided, however, that all patrons and customers using coin box or nickel service in class 4 CR, being 4-party line residence service, shall be entitled to thirty messages per month at a guarantee of $1.50 monthly, instead of forty messages for two dollars per month as prescribed in said Postmaster General's schedules, additional or excess messages to be charged for at four cents each.

[fol. 5801] In addition to the portions of this order, printed in full above, it contains, in substance, the following:

Seven hearings were held on the petition at which representatives of the City of Chicago and other municipalities were present. Evidence introduced tended to show that petitioner had suffered from substantial increase in its operating expenses, cost of labor and materials and resulting decrease in net revenues. No evidence was introduced showing the revenues from the Government rates in effect since June 11 and 16, 1919. Expert evidence showed that the Government rates (especially the abolition of flat rate service) necessitated several thousand changes in the physical equipment of the Company, which would make it difficult, if not impossible, to return to old standards upon short notice.

It became apparent to the commission that a full investigation could not be completed prior to August 1, 1919 in time to enter an order as to rates to become effective upon the termination of Government control. The commission, therefore, found that a temporary order should be entered insuring, so far as possible, the maintenance of the service and that in the state of the record the rights and interest of both the public and the Company could be best protected by permitting the Company to charge and collect, temporarily, the schedules in force during the period of Government control, subject to modifications specifically ordered. (P. 7-9.) It, therefore, ordered the continuance of the postmaster general rates with some specified modifications and set the case for further hearing.

[fol. 5802] EXTRACTS FROM EXHIBIT X-430

I. P. U. C. No. 2, Chicago Telephone Company, Schedule of Total Rates, Filed July 16, 1919, in Case #9291

(Here follows side folio 5803)

2

EXHIBIT X-430

I. P. U. C. No. 2
CANCELING I. P. U. C. NO. ORIGINAL

CHICAGO TELEPHONE COMPANY
SCHEDULE OF TOLL RATES

Station-to-Station Service

The term Station-to-Station service is defined as a connection between any two telephones (including private branch exchange switchboard operator) and does not contemplate the establishment of conversation between particular individuals.

Under Station-to-Station rates a charge for a message is made in all cases where a connection is established with the called station. The charges for a Station-to-Station message shall not be "reversed"; i. e., collected at the called station.

MESSAGE RATES (STATION-TO-STATION BASIS)

Day Rates:—4.30 A. M. to 8.30 P. M.

AIR LINE MILEAGE DISTANCES		INITIAL RATE		OVERTIME RATE	
More than Miles	But Not to Exceed Miles	Rate	Minutes or Fraction Thereof	Rate	Minutes or Fraction Thereof
0	12	$0.10	5	$0.05	3
12	18	.15	5	.05	2
18	24	.20	5	.05	2
24	32	.25	5	.05	1
32	40	.30	3	.10	1
40	48	.35	3	.10	1
48	56	.40	3	Overtime rate for distances more than 48 miles, approximately one-third initial rate for each additional minute or fraction thereof	

For each additional 8 miles or fraction thereof, 5 cents additional. All initial rates for distances beyond 56 miles are for periods of three minutes or fraction thereof.

Evening Rates:—Between 8.30 P. M. and 12 Midnight, **One-half** of the day rates.

Night Rates:—Between 12 Midnight and 4.30 A. M., **One-fourth** of the day rates.

Minimum "Evening" or "Night" rates, 25 cents.

In applying Day, Evening and Night rates, the time of day at the originating point shall govern.

The time at which connection is established governs the rate in determining whether the Day, Evening or Night charge applies.

If connection is established in one period and terminates in another, the rate in effect at the time the connection is established applies to the entire message.

Person-to-Person Service

Calls for particular individuals are accepted at a rate **one-fourth more** than those quoted under Station-to-Station service, subject to the following regulations:

Orders for Person-to-Person service are accepted only under the condition that a limited charge (to be known as **"Report Charge"**) will be made in the event the Company is unable to establish communication for any one of the following reasons:

1.—When the order is to establish communication with a particular person in a given city, telephone address unknown, and the particular person cannot be secured within one hour (exclusive of any time during which "no circuits" or other cause prevents communication of the order to the distant city or exchange, or its completion).

2.—When the designated person called refuses to talk.

3.—When the report is returned that the designated person called is "out" or "out and will return at (specified time)" or "out and time of return unknown," "is absent from the city," and similar reports advising the calling subscriber of the facts ascertained when failure to complete the order is due solely to the circumstances of the called person or to fault in describing the location of the called person, and when all of the work preliminary to establishing communication with the called person is done.

4.—When communication between the designated persons cannot be established because the designated person at the calling station is absent at the calling station; provided that no charge shall be made in such cases where the delay, if any, in establishing connection is greater than one hour.

5.—When the designated person at the calling station refuses to talk when the facilities for communication have been established.

A **Report Charge** in addition to regular message charge is not made provided the call is completed on the day it is filed.

In any case where a Report Charge applies, the minimum Report Charge is 5 cents and the maximum $2.00—approximately **one-fourth** of the initial Station-to-Station rate.

No Person-to-Person rate shall be less than 15 cents.

To points where the Station-to-Station rate is 10 cents, a Person-to-Person call is accepted at the 15 cent rate.

The initial period on all Person-to-Person calls is three minutes. An additional charge is made for each additional minute or fraction thereof. On a 15 cent, 20 cent or 25 cent message the charge for each additional minute is 5 cents. On a 30 cent message the charge for each additional minute is 10 cents, and on all messages where the initial rate is 40 cents or more a charge equal to approximately **one-third** the initial rate is made for each additional minute or fraction thereof.

Appointment Calls:—An Appointment Call is a Person-to-Person call on which communication is to be established at a specified time.

The rate for an Appointment Call is approximately **one-half** more than the Station-to-Station rate; but in the case of any Appointment Call, where the distant station is reached, whether the appointment be made or not, the Report Charge applicable in case of Person-to-Person calls shall be made.

Messenger Calls:—Messenger Calls are Person-to-Person calls requiring the use of a messenger to secure a designated person.

The rates for Messenger Calls shall be the same as apply to Appointment Calls, plus any charges that may be required for the service of messengers.

Messenger charges incurred are to be paid even if desired conversation is not held.

Collect Calls:—Collect Calls are Person-to-Person calls; the charges for which are "reversed"; that is, to be collected from the called station, provided the charges are accepted by the person called.

Evening and Night Rates as described in Station-to-Station schedule do not apply to Person-to-Person calls, the rate being the same on these either day, evening or night.

EFFECTIVE ______________

ISSUED ______________

BY A. R. Bone
GENERAL COMMERCIAL SUPERINTENDENT

5803

49384

[fol. 5804] EXTRACTS FROM EXHIBIT X-431

Petition of November 15, 1919, in Cases 8672 and 9291, I. P. U. C.

State of Illinois Public Utilities Commission

No. 8672

In the Matter of the Application of the CHICAGO TELEPHONE COMPANY to Increase Telephone Rates in All Its Exchanges (Except the City of Chicago) in the Counties of Cook, DuPage, Grundy, Kane, Kendall, Lake, McHenry and Will

No. 9291

In the Matter of the Application of the CHICAGO TELEPHONE COMPANY for Authority to Put Into Force Certain Rates Throughout the State of Illinois

(Page 6)

Your applicant therefore prays the State of Illinois Public Utilities Commission to enter its order:

(1) Permitting Chicago Telephone Company to charge and collect for local service rendered by it to its subscribers and patrons within the City of Chicago the rates now in effect, providing that the rate to all subscribers and patrons using coin-box four-party line residence service (Class 4 C. R.) shall be a guarantee of 7½ cents per day, including one and one-half outgoing messages, additional or excess messages to be charged for at 4 cents each.

(4) Permitting Chicago Telephone Company to charge for long distance telephone service to points lying wholly within the State of Illinois, the rates at present in force, provided that all person to person collect, appointment and messenger calls within points lying wholly within the State of Illinois shall be charged for at the rates for said calls set forth in the schedules filed with the Commission on July 16, 1919.

[fol. 5805]

EXHIBIT X-432

Illinois Bell Telephone Company

Data Relative to Stock Issues, 1920–1930

Year of Stock Offer	Date of notice to stockholders calling a meeting to approve proposed increase in capital stock	Date of meeting when directors authorized issue of additional stock	Date when stockholders were advised of plan of financing and right to subscribe	Date when right to subscribe expired	Date or dates of payment for stock
1921	May 25, 1921	June 15, 1921	June 17, 1921	August 24, 1921	August 24, 1921
1922	Mar. 4, 1922	Mar. 29, 1922	June 15, 1922	July 15, 1922	50% June 30, 1922
					or
					50% July 15, 1922
					25% Sept. 30, 1922
					25% Dec. 30, 1922
1923	Mar. 29, 1923	Apr. 12, 1923	May 29, 1923	June 30, 1923	Payment in full June 30, 1923 or
					Installments as follows:
					40% June 30, 1923
					* 20% Sept. 29, 1923
					* 20% Dec. 31, 1923
					20% Mar. 31, 1924
1925	Feb. 7, 1925	Mar. 25, 1925	June 19, 1925	July 29, 1925	50% July 29, 1925
					25% Sept. 30, 1925
					25% Dec. 31, 1925
1926	July 22, 1926	Sept. 22, 1926	Nov. 30, 1926	Jan. 15, 1927	50% Jan. 15, 1927
					25% June 30, 1927
					25% Sept. 30, 1927
1928	Sept. 10, 1928	Nov. 28, 1928	Dec. 20, 1928	March 1, 1929	50% July 1, 1929
					25% Jan. 2, 1930
					25% July 1, 1930

*Option to pay remaining balances on these dates.

[fol. 5806] EXHIBIT X-433 P. 1

(Copy)

Letter to Telephone Company Presidents.

August 26, 1927.

Prices on approximately fifty classes of telephone apparatus will be reduced, effective September 1, 1927, on shipments on and after that date and until further notice. These price reductions are due largely to the further introduction of labor saving machinery in our plants, improvements in manufacturing methods, increased efficiency of our personnel and a more stable production program which has been made possible by continued progress in standardizing and stocking apparatus and equipment.

Some of the more important classes of apparatus affected are:

Class	Percent Price Reduction
Relays	11
Flameproof Distributing Frame Wire	14
Relay Call Indicator Mounting Units	28
Straightforward Trunking Mounting Units	10
Subsets and Telephone Sets	3
Lamps (Switchboard)	18
Protector Blocks	24
Keys and Key Units	5
Dials	6
Fuses	7
Telephone Repeater Sets	26
Carrier Current Equipment	23

[fol. 5807] The prices effective September 1st will result in an annual reduction of approximately $3,750,000 to the Bell Telephone Companies based on the present volume of their purchases. Taking into consideration the loop cable prices made effective July 1, 1927, as announced in my letter of June 9th, price reductions made in the latter half of this year will aggregate over $5,000,000 on an annual basis. Price reductions made during the years 1926 and 1927, together with those covered by this letter, will total approximately $20,000,000 annually, on the present volume of purchases.

Substantial improvement has also been made in the cost of equipment specification and installation work. The outstanding factors contributing to this result were: Increased efficiency of our personnel, further simplification of equipment specification practices and installing methods, greater utilization of standardized equipment units and stocking plans, and the introduction of improved labor saving testing equipment.

In addition, through the excellent cooperation given by the various organizations of the Operating Companies, it has been possible to obtain a better coordination of our work, through the equalizing or leveling of load requirements, which has resulted in an appreciable reduction in costs.

Improvements made in equipment specifications and installation costs through 1926 and 1927 will result in an [fol. 5808] annual saving of at least $6,000,000 in addition to the $20,000,000 for apparatus and cable. Since our charges to you for this class of work are adjusted currently to changing costs, these savings as accomplished are reflected in our billing. The total price reductions referred to, including equipment specification and installation work, amount to 13% on our annual sales to the Bell Telephone Companies.

The changes to be made effective September 1, 1927 will be announced in detail through the usual medium of revisions to our Price List.

Yours very truly, (Signed) E. S. Bloom, President.

[fol. 5809] EXHIBIT X-434

October 17, 1930.

Mr. Frederick H. Reid, President Mountain States Telephone and Telegraph Company, 931 Fourteenth Street, Denver, Colorado.

DEAR MR. REID: During the years 1926 to 1929 many important reductions were made in the prices of our products and charges for our services to the Associated Companies, largely the result of our constant effort to increase the efficiency of our operations. Price reductions made since the beginning of 1926 have resulted in an annual saving to the Associated Companies of approximately $100,000,000 based on their present volume of purchases. This means that, at January 1, 1926, prices, the Associated Companies would have paid over 25% more for their 1930 purchases than the actual billing rendered.

During 1929 (January 1, February 1, and July 1) reductions in telephone apparatus prices amounting to over $12,000,000 annually. We had hoped to maintain these lower prices, and possibly make further reductions, in view of the estimates of last year that the future requirements of the Associated Companies would average close to $500,000,000 per year during the five years from 1930 to 1934.

As you know, in preparation for this estimated volume of business, large additions have been made to our manufacturing plants in order that we might satisfactorily meet the requirements of the Associated Companies. Unfortunately, however, as a result of the present depression the expected requirements of the Associated Companies have been continually decreasing, and it now appears that our volume of sales for the year 1930 will be about 25% less than the amount estimated in the Fall of 1929. Furthermore, present indications are that the volume for 1931 will be substantially below the 1930 total.

Under these circumstances it is impossible to maintain the present level of prices and we propose to readjust prices [fol. 5810] for Western Electric apparatus to approximately the level prevailing at the close of 1928. Therefore, effective on shipments made on and after November 1, 1930, and until further notice, prices for Western Electric apparatus, except lead covered cable, will be increased about 9% on the average. This will result in an increase of about $12,000,000 annually based on the present view of 1931 requirements of which about $2,000,000 will be effective in 1930.

Our present price level on telephone apparatus and equipment is about 72% of the January 1, 1926 level. With the readjustments effective November 1, 1930, the level will be about 79%, or 21% lower than at January 1, 1926.

Prices will be increased on practically all classes of apparatus and equipment except cable, and will be announced in detail through the usual revision of our Price List.

I am enclosing a list showing the approximate percentage increase for some of the more important items.

Sincerely yours, (Sgd.) Edgar S. Bloom, President.

Enc.

O.

[fol. 5811]

Important Price Increases

Effective November 1, 1930

	Per Cent Increase
Step-by-Step Systems—Mechanical Equipment	10
Panel Systems—Mechanical Equipment	12
Manual Central Office Switchboards:	
#1, #2 and #3—Standard Assemblies	6
#11—Standard Assemblies	20
P.B.X. Switchboards:	
#506—Standard Assemblies	3
#550-SC & 551—Standard Assemblies	11
Carrier Current Equipment	8
Repeater Equipment:	
Telephone Repeater Panels	13
Telephone Repeater Units & Bays—Standard Assemblies	25
Vacuum Tubes—#101, #102 and #104 Types	10
Common Systems:	
Condensers	10
Cords	6
Frames—Intermediate Distributing	18
Jacks and Jack Mountings	12
Keys, Key Units and Mountings	6
Message Registers	10
Mounting Units—Relay—Standard Assemblies	15
Protectors, Protector Mountings and Groups	14
Relays	10
Relay Racks	20
Substation Apparatus:	
Dials	11
Hand Telephone Sets	4
Subscribers' Sets	12
Loading Coils and Cases	5
Cable Terminals	10

(Here follows side folio 5812)

[fol. 5812]

EXTRACTS FROM EXHIBIT X-435, P. 24

This Copy for C. E. Moody

Associated Operating Companies

Excludes American Telephone and Telegraph Company, Long Lines

Distribution of Total Net Earnings for Month of December, 1929

	Net Telephone Earnings				Total Net Earnings					
	This Month	Increase Over Last Month	12 Months This Month	Increase Over Same Period Last Year	This Month	12 Months This Year	Interest This Month	Dividends This Month	This Month	Incr Last
New England Tel. and Tel. Co	$1,380,456	$210,471	$16,147,005	$1,655,762	$1,456,172	$16,672,590	$486,899	$738,358	$230,915	$2
Southern New England Tel. Co	351,765	17,987	3,904,086	353,655	366,321	4,047,006	52,827	233,333	80,161	
New York Telephone Company	2,978,784	33,881	35,529,574	2,997,639	3,289,452	39,321,566	1,058,771	2,006,082	224,599	2
New Jersey Bell Tel. Co	1,448,122	606,042	10,401,353	1,573,048	1,467,484	10,575,756	132,965	669,301	665,218	5
Bell Tel. Co. of Pennsylvania	1,434,576	120,903	17,053,026	694,605	1,607,014	17,941,022	487,377	711,042	408,595	
Ches. & Pot. Tel. Co	177,884	49,700	1,587,707	125,091	188,531	1,668,460	36,151	86,667	65,713	4
Ches. & Pot. Tel. Co. of Balt. City	256,747	1,678	2,881,240	137,931	259,890	2,902,562	23,035	196,329	40,526	
Ches. & Pot. Tel. Co. of Virginia	161,008	3,833	1,678,805	149,685	168,334	1,750,019	38,657	88,000	41,677	
Ches. & Pot. Tel. Co. of West Va	68,725	8,567	1,057,887	6,985	68,669	1,063,768	19,775	81,000	32,406	
Southern Bell Tel. and Tel. Co	1,230,338	90,694	12,806,542	764,276	1,332,019	13,233,670	305,583	833,326	193,110	10
Ohio Bell Telephone Company	724,035	26,733	8,644,860	437,437	788,274	9,047,345	75,781	718,815	6,322	3
Cinn. and Subn. Bell Tel. Co	200,436	1,284	2,339,239	142,594	219,752	2,521,728	3,592	164,217	51,943	
Michigan Bell Tel. Co	703,670	54,908	8,221,659	669,186	736,752	8,474,956	249,184	566,667	79,099	5
Indiana Bell Tel. Co	166,554	100,773	3,046,964	388	175,478	3,219,837	36,247	200,000	60,769	11
Wisconsin Telephone Company	327,458	91,914	3,926,041	151,121	350,652	4,040,292	32,353	199,857	118,442	8
Illinois Bell Tel. Co	1,474,617	119,163	16,879,659	2,667,423	1,519,995	17,370,611	456,675	733,334	329,986	19
Northwestern Bell Tel. Co	638,027	39,205	7,921,880	741,548	663,921	8,122,151	55,261	459,324	149,336	3
Southwestern Bell Tel. Co	1,774,213	52,139	21,058,516	2,475,432	1,913,460	21,938,367	350,424	1,060,415	502,621	
Mountain States Tel. and Tel. Co	455,768	32,262	4,728,692	441,142	467,768	4,962,701	140,427	256,265	71,076	1
Pacific Tel. and Tel. Co	1,873,377	88,353	22,334,990	1,936,130	1,984,132	23,558,483	750,129	952,500	281,503	9
Total Assoc. Oper. Cos.*	$17,826,559	$621,171	$202,149,729	$17,571,741	$19,102,262	$212,288,707	$4,742,176	$10,955,135	$3,404,951	$60

* Duplications excluded in Totals.

Date issued: January 30, 1930.

EXTRACTS FROM EXHIBIT X-435, P. 24

This Copy for C. E. Moody

Associated Operating Companies

Excludes American Telephone and Telegraph Company, Long Lines

Distribution of Total Net Earnings for Month of December, 1929

hone Earnings		Total Net Earnings				Undivided Profits				Rate of Depreciation During 1929	Net Telephone Earnings to Average Plant in Service During	
12 Months This Month	Increase Over Same Period Last Year	This Month	12 Months This Year	Interest This Month	Dividends This Month	This Month	Increase Over Last Month	12 Months This Year	Increase Over Same Period Last Year		1929	Same Period Last Year
$16,147,005	$1,655,762	$1,456,172	$16,672,590	$486,899	$738,358	$230,915	$220,796	$2,643,716	$1,192,034	4.20	6.39	6.05
3,904,086	353,655	366,321	4,047,006	52,827	233,333	80,161	18,883	775,176	28,926	4.62	6.87	6.83
35,529,574	2,997,639	3,289,452	39,321,566	1,058,771	2,006,082	224,599	279,530	5,582,543	486,523	4.69	5.78	5.73
10,401,353	1,573,048	1,467,484	10,575,756	132,965	669,301	665,218	598,377	1,306,469	305,818	4.44	6.72	6.36
17,053,026	694,605	1,607,014	17,941,022	487,377	711,042	408,595	5,999	4,160,159	114,368	4.69	6.77	6.93
1,587,707	125,091	188,531	1,668,460	36,151	86,667	65,713	47,817	277,728	158,996	4.44	5.94	6.80
2,881,240	137,931	259,890	2,902,562	23,035	196,329	40,526	1,503	325,358	59,073	5.13	6.66	6.61
1,678,805	149,685	168,334	1,750,019	38,657	88,000	41,677	2,422	314,849	29,226	4.93	7.02	6.79
1,057,887	6,985	68,669	1,063,768	19,775	81,000	32,106	9,568	110,618	111,483	5.11	5.18	5.59
12,806,542	764,276	1,332,019	13,233,670	305,583	833,326	193,110	107,786	618,419	655,006	5.34	6.48	6.62
8,644,860	437,437	788,274	9,047,345	75,781	718,815	6,322	37,950	163,080	673,564	5.49	6.09	6.32
2,339,239	142,594	219,752	2,521,728	3,592	164,217	51,943	1,744	501,556	245,322	5.06	7.58	8.47
8,221,659	669,186	736,752	8,474,956	249,184	566,667	79,099	51,042	787,290	375,996	5.24	5.62	5.88
3,046,964	388	175,478	3,219,837	36,247	200,000	60,769	116,836	537,525	92,791	5.52	7.81	8.22
3,926,041	151,121	350,652	4,040,292	32,353	199,857	118,442	86,363	1,478,694	26,295	4.35	7.14	7.43
16,879,659	2,667,423	1,519,995	17,370,611	456,675	733,334	329,986	194,533	4,273,422	1,283,817	4.77	6.73	6.20
7,921,880	741,548	663,921	8,122,151	55,261	459,324	149,336	34,997	2,241,955	297,068	4.72	7.49	7.35
21,058,516	2,475,432	1,913,460	21,938,367	350,424	1,060,415	502,621	854	5,714,428	1,003,916	5.33	7.80	7.47
4,728,692	441,142	467,768	4,962,701	140,427	256,265	71,076	10,843	859,265	176,665	4.90	6.25	6.43
22,334,990	1,936,130	1,984,132	23,558,482	750,129	952,500	281,503	96,159	4,193,616	691,055	4.79	6.55	6.55
$202,149,729	$17,571,741	$19,102,262	$212,288,707	$4,742,176	$10,955,135	$3,404,951	$608,910	$35,070,050	$2,680,075	4.83	6.52	6.47

C. A. Heiss, Comptroller.

[fol. 5813]

X-435, P. 25

This Copy for Mr. C. E. Moody

Bell Telephone System in United States

American Tel. and Tel. Co. Including its Interest in Bell System Companies (a)

	Dec. 31, 1929	Increase Over Dec. 31, 1928	% Increase	Minority Interest Dec. 31, 1929
Intangible Capital	$14,589,317	$1,145,785*	7.28*	$609,072
Physical Property	3,526,938,887	393,464,130	12.56	255,035,190
Investments	213,669,114	51,702,741	31.92	2,353,830
Cash and Deposits	67,537,774	101,803,931*	60.12*	3,323,994
Receivables	201,082,898	50,230,289	33.30	11,828,996
Total Assets	$4,023,817,990	$392,447,444	10.81	$273,151,082
Capital Stock — Common	$1,322,339,800	$32,648,400	2.53	$106,339,943
Funded Debt and Preferred Stock	1,134,908,629	168,690,775	17.46	57,518,427
Advances from System Corporations	0	0	0	30,996,586
Bills Payable	63,576,661	13,585,176	27.17	3,913,614
Other Payables (b)	274,830,468	45,333,450	19.75	10,934,444
Insurance and Casualty Reserve	131,188	31,868	32.09	66,580
Reserve for Depreciation	647,378,807	45,953,218	7.64	51,655,867
Surplus	580,652,437	86,204,557	17.43	11,725,621
Total Liabilities	$4,023,817,990	$392,447,444	10.81	$273,151,082

Book Asset Value per Share of American Tel. and Tel. Co. (a)

Capital Stock December 31, 1928, and December 31, 1929

	Dec. 31, 1928	Dec. 31, 1929
1. Excluding entire Reserve for Depreciation but including Intangible Capital	$138.00	$144.00
2. Including entire Reserve for Depreciation and including Intangible Capital	185.00	193.00
3. Excluding entire Reserve for Depreciation and Intangible Capital	137.00	143.00
4. Including entire Reserve for Depreciation and excluding Intangible Capital	184.00	192.00
% American Tel. and Tel. Co.'s interest in Bell System	94.89	95.09

(a) Without consideration of Western Electric Company, Inc., 195 and 205 Broadway Corporations and Bell Tel. Sec. Co., Inc., Surplus and Reserves.

(b) Includes Capital Stock Installments $72,173,617.

(*) Red figures.

Date issued: February 6, 1930.

C. A. Heiss, Comptroller.

(Here follow side folios 5814, 5815, and 5816)

N

EXHIBIT X-435

FORM S. N. 198 J (2)
This copy for
Mr. C. E. Moody

X-435

ASSOCIATED OPERATING COMPANIES

(Excludes American Tel. and Tel. Co., Long Lines).
Name of Company

32

No. 22B
SHEET 1

CR 67 A

REVIEW OF PROVISIONAL ESTIMATE

AS OF AUGUST 31, 1929.

(To be prepared as of March 31st, June 30th and August 31st)

EARNINGS AND EXPENSES ("000" Omitted)	This Year: Present View (a)	This Year: Provisional Estimate (b)	This Year: Increase over Prov. Est. (c)	Next Year: Present View (d)	Next Year: Forecast Per Prov. Est. (e)	
Exchange Revenues	693 424	680 027	13 397	738 973	716 266	1
Toll Revenues	262 245	249 820	12 425	290 619	270 761	2
Miscellaneous Operating Revenues	28 001	26 395	1 606	31 385	28 338	3
Total Telephone Revenues	983 670	956 242	27 428	1060 977	1015 365	4
Traffic Expenses	212 077	208 286	3 791	222 497	211 964	5
Commercial Expenses	99 577	95 756	3 821	107 989	100 860	6
General and Miscellaneous Expenses	40 530	35 949	4 581	43 559	57 795	7
Other Operation Expenses	35 478	38 279	2 801	38 934	41 027	8
Total Operation Expenses	387 662	378 270	9 392	412 979	391 646	9
Current Maintenance	165 457	157 454	8 003	181 856	167 037	10
Depreciation	151 983	151 714	269	166 424	163 705	11
Taxes	78 493	76 832	1 661	85 498	82 901	12
Total Telephone Expenses	783 595	764 270	19 325	846 757	805 289	13
Net Telephone Earnings	200 075	191 972	8 103	214 220	210 076	14
Sundry Net Earnings	10 328	10 848	520	11 621	11 517	15
Total Net Earnings	210 403	202 820	7 583	225 841	221 593	16
Deduct Interest	46 755	46 786	31	xxxx xxx	xxxx xxx	17
Balance Net Profits	163 648	156 034	7 614	xxxx xxx	xxxx xxx	18
Deduct Dividends (Paid and Accrued)—Preferred	12 253	12 255	2	xxxx xxx	xxxx xxx	19
Deduct Dividends (Paid and Accrued)—Common	117 876	117 958	82	xxxx xxx	xxxx xxx	20
Total Dividends	130 129	130 213	84	xxxx xxx	xxxx xxx	21
Undivided Profits	33 519	25 821	7 698	xxxx xxx	xxxx xxx	22
Average Plant in Service	3101 639	3106 586	4 947	3419 929	3368 731	23
Average Number of Company Stations	14 893	14 741	152	15 771	15 462	24
Net Tel. Earnings to Average Plant in Service (Annual Basis)	6.45%	6.18%	xxxxxxxx	6.26%	6.24%	25
Bal. Net Prof. (After Pref. Div.) to Aver. Com. Stock (Annual Basis)	10.11 %	9.59 %	xxxxxxxx	xxxxxxxx	xxxxxxxx	26

COMPANY STATIONS* TOLL USAGE AND CALLING RATE	This Year: Present View (f)	This Year: Provisional Estimate (g)	This Year: Increase over Prov. Est. (h)	Next Year: Present View (i)	Next Year: Forecast Per Prov. Est. (j)	
Total Inward Station Movement	4690 117	4439 252	250 865	4946 773	4640 000	27
Total Outward Station Movement	3829 441	3728 735	100 706	4082 173	3914 000	28
Net Station Gain	860 676	710 517	150 159	864 600	726 000	29
Toll Usage—Total Messages A-B ("000" Omitted)	673 670	668 213	5 457	738 771	731 703	30
—Total Messages Toll Board ("000" Omitted)	284 687	276 796	7 891	312 145	296 079	31
Total ("000" Omitted)	958 357	945 009	13 348	1050 916	1027 782	32
Average Daily Calling Rate Per Station—Local	-	-	-	-	-	33

CONSTRUCTION PROGRAM* ("000" Omitted)	Total Approved Estimates for Expenditures This Year (k)	Actual Expenditures 8 Mos. This Year (l)	This Year: Present View (m)	This Year: Provisional Estimate (n)	This Year: Increase over Prov. Est. (o)	Next Year: Present View (p)	Next Year: Forecast Per Prov. Est. (q)	
Right of Way	xxx xxx	1 957	3 432	2 971	461	xxx xxx	xxx xxx	34
Land and Buildings	xxx xxx	33 274	62 929	52 146	10 783	xxx xxx	xxx xxx	35
Central Office Equipment	xxx xxx	63 203	107 171	118 829	11 658	xxx xxx	xxx xxx	36
Station Equipment	xxx xxx	75 895	120 032	112 347	7 685	xxx xxx	xxx xxx	37
Exchange Lines	xxx xxx	82 401	128 378	120 145	8 233	xxx xxx	xxx xxx	38
Toll Lines	xxx xxx	45 307	76 665	66 227	10 438	xxx xxx	xxx xxx	39
Interest dur. Const. and Undis. Const. Expend.	xxx xxx	2 306	4 018	4 422	404	xxx xxx	xxx xxx	40
Total Gross Construction	445 834	304 343	502 625	477 087	25 538	579 206	464 522	41
Plant Removed or Abandoned	166 475	125 008	199 373	184 700	14 673	221 886	209 484	42
Net Additions	279 359	179 335	303 252	292 387	10 865	357 320	255 038	43

* **Excludes Purchases, Sales and Transfers.**

Show on reverse side or supplemental sheets, reasons for any important differences between "provisional estimate" and "present view" figures.

Date issued September 30, 1929.
Should be issued not later than the 25th.

C. A. Heiss,
Comptroller.

5814

4946A

X-435 Official File 34 CR 67B

FORM S. N. 196 L (5)

No. 22C

ASSOCIATED OPERATING COMPANIES

(Excludes American Tel.and Tel.Co.,Long Lines Dept.)

Name of Company

This Copy for

Mr.

PRESENT VIEW OF NEXT YEAR (1932)

(To be prepared as of May 1st and September 1st)

"000" Omitted

		Forecast Per 1931 Prov. Est. a	Present View as of May 1st b	Present View as of Sept. 1st c	Change from Previous View d	
	COMPANY STATIONS AND LINES					
1	Total Inward Station Movement	5 151	4 819	4 645	174	1
2	Total Outward Station Movement	4 415	4 335	4 356	21	2
3	Net Station Gain	736	484	289	[illegible]	3
4	Average Number of Company Stations	16 559	15 971	15 648	323	4
5	Net Gain in Exchange Circuits Serving Company Stations	483	328	206	[illegible]	5
	TOLL USAGE AND CALLING RATE					
6	Average Daily Calling Rate per Station—Local	5.27	5.18	5.12	.06	6
7	Toll Usage { Total messages A-B	661 399	607 471	562 966	44 505	7
8	Toll Usage { Total messages—Toll Board	341 759	315 453	293 952	[illegible]	8
	CONSTRUCTION PROGRAM					
9	Right of Way	3 238	2 081	1 788	293	9
10	Land and Buildings	43 474	25 046	16 422	8 624	10
11	Central Office Equipment	110 910	79 290	69 737	9 553	11
12	Station Equipment	142 069	134 481	129 444	5 037	12
13	Exchange Lines	112 870	89 762	75 615	14 147	13
14	Toll Lines	52 211	30 515	24 149	6 366	14
15	Interest during Construction and Undistributed Const. Expend	5 095	3 715	3 312	403	15
16	**Total Gross Construction**	469 867	364 890	320 467	44 423	16
17	Plant Removed or Abandoned	220 594	211 041	210 534	507	17
18	Net Additions	249 273	153 849	109 933	43 916	18
19	Average Plant in Service	3885 172	3797 022	3763 928	[illegible]	19
	REVENUES AND EXPENSES					
20	Exchange Revenues	799 760	763 201	743 351	19 850	20
21	Toll Revenues	303 799	278 034	255 254	22 780	21
22	Miscellaneous Operating Revenues	36 512	34 500	33 998	502	22
23	**Total Telephone Revenues**	1140 071	1075 735	1032 603	43 132	23
24	Traffic Expenses	219 010	201 397	188 446	12 951	24
25	Commercial Expenses	114 000	106 038	105 227	811	25
26	General and Miscellaneous Expenses	48 727	47 084	46 196	888	26
27	Other Operation Expenses	42 609	40 941	39 847	1 094	27
28	**Total Operation Expenses**	424 346	395 460	379 716	15 744	28
29	Current Maintenance	195 173	179 686	170 477	9 209	29
30	Depreciation	186 120	181 854	180 148	1 706	30
31	Taxes	97 902	94 261	91 819	2 442	31
32	**Total Telephone Expenses**	903 541	851 261	822 160	29 101	32
33	**Net Telephone Earnings**	236 530	224 474	210 443	14 031	33
34	Sundry Net Earnings	12 026	10 820	10 476	344	34
35	**Total Net Earnings**	248 556	235 294	220 919	14 375	35
36	Net Telephone Earnings to Average Plant in Service	6.09%	5.91%	5.59%	xxxxxxxx	36

Date issued **September 28, 1931.**

Should be issued not later than the 30th.

~~General Auditor.~~ C. A. H Comptroller. President

5815

4946B

[fol. 5816]

4946c

Exhibit X-435, 35

This copy for Mr. C. E. Moody

Associated Operating Companies

Statistical Units

For Twelve Months Ending December 31, 1929

Companies Ranked on Basis of Company Stations

	New York Tel. Co.	Pac. T. & T. Co.	Ill. Bell Tel. Co.	Southwest. Bell T. Co.	Bell T. Co. of Pa.	New Eng. T. & T. Co.	So. Bell T. & T. Co.	Ohio Bell Tel. Co.	Mich. Bell Tel. Co.	N. J. Bell Tel. Co.	Northwest. Bell T. Co.	Mtn. Sts. T. & T. Co.	Wis. Tel. Co.	So. New Eng. T. Co.	Ind. Bell Tel. Co.	Ches. & Pot. T. Co. of B. C.	Cinn. & Subn. Bell T. Co.	Che Pot. C (N.
Percentages (Annual Basis):																		
Total Tel. Rev. (Except Adv. & Dir.) to Avg. Plant in Ser.	32.6	29.4	36.4	31.1	28.4	28.8	31.1	30.7	28.5	31.6	31.6	29.0	32.3	29.4	33.9	30.8	33.9	30
Operation Expenses to Telephone Revenues	44.1	37.1	41.1	36.1	40.1	37.6	36.9	37.2	35.5	40.9	37.4	38.8	38.6	38.1	34.7	37.4	38.3	45
Telephone Expenses to Telephone Revenues	82.5	78.3	81.8	75.7	77.0	78.3	79.5	80.5	80.6	79.0	76.8	79.0	78.3	76.9	77.5	78.9	77.8	81
Current Maintance to Average Plant in Service	5.8	5.1	6.3	4.5	5.0	5.6	5.1	5.4	5.2	5.2	5.6	4.5	5.7	5.0	5.2	4.9	5.3	4
Depreciation to Average Plant in Service (Including Office Furniture and Fixtures)	4.7	4.8	4.8	5.3	4.7	4.2	5.3	5.5	5.2	4.4	4.7	4.9	4.4	4.6	5.5	5.1	5.1	4
Net Telephone Earnings to Average Plant in Service	5.8	6.6	6.7	7.8	6.8	6.4	6.5	6.1	5.6	6.7	7.5	6.3	7.1	6.9	7.8	6.7	7.6	5
Balance Net Profits (After Preferred Dividend) to Average Common Stock	10.0	11.5	11.9	12.1	12.9	10.4	8.5	7.2	7.1	9.3	11.5	10.2	13.7	10.2	9.8	9.2	11.3	10
Per Station Earnings and Expenses—(Monthly Averages—As Reported):																		
Exchange Revenues	5.02	3.79	4.10	3.39	3.62	3.66	3.43	4.07	4.07	3.74	2.97	2.90	3.02	3.20	3.71	4.10	4.25	3.
Toll Revenues	1.40	1.74	1.29	1.86	1.30	1.33	1.74	1.15	1.14	2.50	1.42	1.38	1.20	1.24	1.34	1.33	.47	.
Miscellaneous Operating Revenues	.18	.16	.09	.20	.23	.15	.13	.19	.15	.12	.14	.10	.11	.09	.13	.16	.06	.
(Toll Revenues A. T. and T. Co. and Assoc. Cos.*)	(1.98)	(1.81)	(1.58)	(2.16)	(1.81)	(1.60)	(2.17)	(1.70)	(1.64)	(2.76)	(1.71)	(1.56)	(1.50)	(1.69)	(1.99)	(1.82)	(1.07)	(1.
Total Telephone Revenues	6.60	5.69	5.48	5.45	5.15	5.14	5.30	5.41	5.36	6.36	4.53	4.44	4.33	4.53	5.18	5.59	4.78	4.
Operation Expenses	2.91	2.12	2.25	1.97	2.06	1.93	1.95	2.02	1.90	2.61	1.69	1.72	1.67	1.73	1.80	2.09	1.83	2.
Traffic	(1.51)	(1.14)	(1.37)	(1.09)	(1.01)	(1.10)	(1.09)	(1.13)	(1.06)	(1.39)	(.95)	(.93)	(1.03)	(1.01)	(1.07)	(1.06)	(1.20)	(1.
Commercial	(.83)	(.56)	(.53)	(.47)	(.62)	(.50)	(.43)	(.42)	(.47)	(.74)	(.36)	(.46)	(.38)	(.39)	(.38)	(.57)	(.27)	(
General and Miscellaneous	(.27)	(.23)	(.19)	(.23)	(.23)	(.19)	(.20)	(.26)	(.20)	(.26)	(.23)	(.20)	(.17)	(.20)	(.20)	(.28)	(.23)	(
Current Maintenance	1.16	.96	.93	.76	.88	.97	.87	.93	.95	1.02	.78	.66	.75	.77	.78	.86	.74	.
Depreciation	.95	.91	.72	.91	.83	.74	.90	.96	.98	.89	.68	.75	.58	.70	.83	.92	.72	.
Taxes	.42	.47	.58	.48	.20	.38	.49	.45	.49	.51	.33	.38	.39	.28	.60	.54	.43	.
Total Telephone Expenses	5.44	4.46	4.48	4.12	3.97	4.02	4.21	4.36	4.32	5.03	3.48	3.51	3.39	3.48	4.01	4.41	3.72	3.
Net Telephone Earnings	1.16	1.23	1.00	1.33	1.18	1.12	1.09	1.05	1.04	1.33	1.05	.93	.94	1.05	1.17	1.18	1.06	.
Plant Per Station—(Includes Construction Work in Progress):																		
At end of period	251.	238.	184.	214.	218.	218.	207.	219.	235.	248.	174.	189.	176.	197.	185.	215.	183.	187.
% Increase—Since December 31st last:																		
Plant in Service	9.9	11.9	8.1	9.0	7.7	7.2	8.5	10.4	12.0	10.4	11.2	14.1	10.7	11.2	10.2	4.8	[illegible]	8.
Company Stations	6.7	6.4	5.2	4.2	7.2	3.1	4.5	9.6	7.8	7.7	6.9	5.3	5.4	6.9	12.0	4.8	4.7	5.

Date issued—January 30, 1930.

* Not included in totals.

C. A.

EXHIBIT X-435, 35

This copy for Mr. C. E. Moody

Associated Operating Companies
Statistical Units
For Twelve Months Ending December 31, 1929

Companies Ranked on Basis of Company Stations

	New York Tel. Co.	Pac. T. & T. Co.	Ill. Bell Tel. Co.	Southwest. Bell T. Co.	Bell T. Co. of Pa.	New Eng. T. & T. Co.	So. Bell T. & T. Co.	Ohio Bell Tel. Co.	Mich. Bell Tel. Co.	N. J. Bell Tel. Co.	Northwest. Bell T. Co.	Mtn. Sts. T. & T. Co.	Wis. Tel. Co.	So. New Eng. T. Co.	Ind. Bell Tel. Co.	Ches. & Pot. T. Co. of B. C.	Cinn. & Subn. Bell T. Co.	Ches. & Pot. T. Co. (N. Y.)	Ches. & Pot. T. Co. of Va.	Ches. & Pot. T. Co. of W. Va.
l Basis):																				
cept Adv. & Dir.) to Avg. Plant in Ser.	32.6	29.4	36.4	31.1	28.4	28.8	31.1	30.7	28.5	31.6	31.6	29.0	32.3	29.4	33.9	30.8	33.9	30.5	31.6	29.1
to Telephone Revenues	44.1	37.1	41.1	36.1	40.1	37.6	36.9	37.2	35.5	40.9	37.4	38.8	38.6	38.1	34.7	37.4	38.3	45.3	39.8	41.7
s to Telephone Revenues	82.5	78.3	81.8	75.7	77.0	78.3	79.5	80.5	80.6	79.0	76.8	79.0	78.3	76.9	77.5	78.9	77.8	81.2	78.4	82.5
to Average Plant in Service	5.8	5.1	6.3	4.5	5.0	5.6	5.1	5.4	5.2	5.2	5.6	4.5	5.7	5.0	5.2	4.9	5.3	4.9	4.7	4.6
verage Plant in Service (Including Office xtures)	4.7	4.8	4.8	5.3	4.7	4.2	5.3	5.5	5.2	4.4	4.7	4.9	4.4	4.6	5.5	5.1	5.1	4.4	4.9	5.1
nings to Average Plant in Service	5.8	6.6	6.7	7.8	6.8	6.4	6.5	6.1	5.6	6.7	7.5	6.3	7.1	6.9	7.8	6.7	7.6	5.9	7.0	5.2
ts (After Preferred Dividend) to Average	10.0	11.5	11.9	12.1	12.9	10.4	8.5	7.2	7.1	9.3	11.5	10.2	13.7	10.2	9.8	9.2	11.3	10.1	10.4	5.3
gs and Expenses—(Monthly Averages—As																				
s.	5.02	3.79	4.10	3.39	3.62	3.66	3.43	4.07	4.07	3.74	2.97	2.90	3.02	3.20	3.71	4.10	4.25	3.88	3.37	2.94
	1.40	1.74	1.29	1.86	1.30	1.33	1.74	1.15	1.14	2.50	1.42	1.38	1.20	1.24	1.34	1.33	.47	.43	1.33	1.50
ating Revenues	.18	.16	.09	.20	.23	.15	.13	.19	.15	.12	.14	.16	.11	.09	.13	.16	.06	.25	.18	.15
T. and T. Co. and Assoc. Cos.*)	(1.98)	(1.81)	(1.58)	(2.16)	(1.81)	(1.60)	(2.17)	(1.70)	(1.64)	(2.76)	(1.71)	(1.56)	(1.50)	(1.69)	(1.99)	(1.82)	(1.07)	(1.06)	(1.86)	(2.00)
one Revenues	6.60	5.69	5.48	5.45	5.15	5.14	5.30	5.41	5.36	6.36	4.53	4.44	4.33	4.53	5.18	5.59	4.78	4.56	4.88	4.59
s.	2.91	2.12	2.25	1.97	2.06	1.93	1.95	2.02	1.90	2.61	1.69	1.72	1.67	1.73	1.80	2.09	1.83	2.06	1.94	1.91
	(1.51)	(1.14)	(1.37)	(1.09)	(1.01)	(1.10)	(1.09)	(1.13)	(1.06)	(1.39)	(.95)	(.93)	(1.03)	(1.01)	(1.07)	(1.06)	(1.20)	(1.20)	(1.03)	(1.00)
	(.83)	(.56)	(.53)	(.47)	(.62)	(.50)	(.43)	(.42)	(.47)	(.74)	(.36)	(.46)	(.38)	(.39)	(.38)	(.57)	(.27)	(.52)	(.46)	(.44)
liscellaneous	(.27)	(.23)	(.19)	(.23)	(.23)	(.19)	(.20)	(.26)	(.20)	(.26)	(.23)	(.20)	(.17)	(.20)	(.20)	(.28)	(.23)	(.24)	(.25)	(.28)
ice	1.16	.96	.93	.76	.88	.97	.87	.93	.95	1.02	.78	.66	.75	.77	.78	.86	.74	.71	.70	.72
	.95	.91	.72	.91	.83	.74	.90	.96	.98	.89	.68	.75	.58	.70	.83	.92	.72	.65	.75	.80
	.42	.47	.58	.48	.20	.38	.49	.45	.49	.51	.33	.38	.39	.28	.60	.54	.43	.28	.43	.36
one Expenses	5.44	4.46	4.48	4.12	3.97	4.02	4.21	4.36	4.32	5.03	3.48	3.51	3.39	3.48	4.01	4.41	3.72	3.70	3.82	3.79
ne Earnings	1.16	1.23	1.00	1.33	1.18	1.12	1.09	1.05	1.04	1.33	1.05	.93	.94	1.05	1.17	1.18	1.06	.86	1.06	.80
-(Includes Construction Work in Progress):																				
d.	251.	238.	184.	214.	218.	218.	207.	219.	235.	248.	174.	189.	176.	197.	185.	215.	183.	187.	187.	188.
December 31st last:																				
	9.9	11.9	8.1	9.0	7.7	7.2	8.5	10.4	12.0	10.4	11.2	14.1	10.7	11.2	10.2	4.8	3.9	8.4	8.7	6.1
	6.7	6.4	5.2	4.2	7.2	3.1	4.5	9.6	7.8	7.7	6.9	5.3	5.4	6.9	12.0	4.8	4.7	5.7	8.2	5.5

January 30, 1930.

* Not included in totals.

C. A. Heiss, Comptroller.

X-435, 40

This Copy for Mr. C. E. Moody

Bell Telephone System in United States

Years Ended December 31st

	1925	1926	1927	1928	1929	Per Cent Increase 1929 Over 1925
Gross Construction*	$364,440,703	$382,749,686	$377,104,349	$428,777,516	$588,022,404	61.3
Plant Displaced*	107,098,594	122,233,933	149,654,872	168,635,488	199,102,391	85.9
Net Additions*	$257,342,109	$260,515,753	$227,449,477	$260,142,028	$388,920,013	51.1
Total Inward Station Movement*	3,535,081	3,876,500	3,999,148	4,235,552	4,656,812	31.7
Net Station Gain*	730,184	765,197	698,282	750,004	821,452	12.5
Total Telephone Revenues and Sundry Net Earnings	$761,376,740	$844,832,976	$916,808,622	$1,003,320,014	$1,115,144,401	46.5
Total Telephone Expenses	578,933,145	639,962,627	700,238,022	760,597,580	838,457,737	44.8
Total Net Earnings	182,443,595	204,870,349	216,570,600	242,722,434	276,686,664	51.7
Deduct—Interest	45,940,664	49,809,330	50,511,448	51,634,795	59,581,792	29.7
Balance Net Profits	136,502,931	155,061,019	166,059,152	191,087,639	217,104,872	59.0
Deduct—Dividends	93,242,657	100,614,437	112,401,125	119,348,612	132,223,835	41.8
Undivided Profits	$43,260,274	$54,446,582	$53,658,027	$71,739,027	$84,881,037	96.2
Average Monthly Telephone Operating Revenues Per Station:						
Exchange	$3.649	$3.760	$3.796	$3.832	$3.869	6.0
Toll	1.586	1.673	1.703	1.840	1.982	25.0
Miscellaneous	.110	.119	.121	.130	.141	28.2
Total	5.345	5.552	5.620	5.802	5.992	12.1

X-435, 40—Continued

This Copy for Mr. C. E. Moody

Bell Telephone System in United States

Years Ended December 31st*

	1925	1926	1927	1928	1929	Per Cent Increase 1929 Over 1925
Average Monthly Net Telephone Operating Revenues Per Station	$1.685	$1.810	$1.809	$1.877	$1.890	12.2
Percentages (Annual Basis):						
Total Telephone Revenues (Excluding Advertising and Directory) to Average Plant in Service	31.5	31.3	30.9	31.2	31.2	x x
Operation Expenses to Telephone Revenue	39.5	38.4	38.2	37.9	38.3	x x
Telephone Expenses to Telephone Revenue	78.1	77.7	78.3	78.0	78.3	x x
Current Maintenance to Average Plant in Service	4.8	4.9	4.9	5.0	5.3	x x
Depreciation to Average Plant in Service (Including Office Furniture and Fixtures)	5.0	5.0	5.0	5.0	4.9	x x
Net Telephone Earnings to Average Plant in Service	7.0	7.1	6.8	7.0	6.9	x x
Balance Net Profits (After Preferred Dividend) to Average Common Stock	13.1	13.9	13.4	14.3	14.8	x x
Total Plant Per Station	$210.86	$216.57	$220.82	$226.85	$239.69	13.7
% Reserves to Plant (Excluding Land) and General Equipment in Service	21.53	21.11	20.28	20.24	19.59	x x

* Excludes Purchases, Sales and Transfers.

Division of Bell System Reports, January 30, 1930.

[fol. 5818]

EXHIBIT X436, P. 1

Illinois Bell Telephone Company, Chicago Area

Excess of Depreciation Expense on Unit Method over Company Method

	1923	1924	1925	1926	1927	1928	1929	1930	1931
Manual Central Office Buildings		$4,289	$13,891	$20,010	$26,460	$33,236	$46,084	$47,030	$47,003
All Other Buildings									
Local Manual C. O. Equipment	*$226,595	*212,529	*190,868	*136,769	*60,770	32,125	32,096	95,918	127,266
Dial C. O. Equipment	*30,477	*65,898	*69,979	*96,691	*107,041	*122,939	*176,389	*222,451	*263,116
Toll C. O. Equipment:									
Switchboard Equip.	*32,537	*28,812	*17,145	9,525	80,972	138,695	133,092	*143,221	*156,777
Line Equip.									
Underground Conduit									
Underground Cable	75,798	107,239	122,999	141,099	156,896	188,693	197,373	199,088	205,782
Station Equipment Pole Lines Aerial Cable Office Furn. & Fix.	68,221	70,611	79,848	89,030	98,481	113,007	120,628	130,294	131,080
Total	*$145,590	*$125,100	*$61,254	$26,204	$194,998	$382,817	$352,884	$106,658	$91,238

Net Excess for Period 1923-31, $882,855.

* = Red figures.

[fol. 5819]

X-436, P. 2

Manual Central Office Buildings

Comparison of Depreciation Rates Based Upon Company Method and Unit Method

Year	Company Method			Unit Method		
	Life	Sal.	Rate	Life	Sal.	Rate
1923	21.4 Yrs.	20%	3.7%	23.0 Yrs.	15%	3.7%
1924	21.4	20	3.7	22.3	15	3.8
1925	21.4	20	3.7	21.4	15	4.0
1926	21.4	20	3.7	20.8	15	4.1
1927	21.5	20	3.7	20.4	15	4.2
1928	21.5	20	3.7	19.9	15	4.3
1929	21.5	20	3.7	19.0	15	4.5
1930	21.5	20	3.7	19.0	15	4.5
1931	21.5	20	3.7	19.0	15	4.5

Difference in Depreciation Expense Resulting from Rates Based Upon Company and Unit Methods

Year	Average Investment	Excess of Unit Over Company Method	
		Rate	Amount
1923	$4,071,535	..%	......
1924	4,288,874	.1	$4,289
1925	4,630,202	.3	13,891
1926	5,002,598	.4	20,010
1927	5,291,970	.5	26,460
1928	5,539,310	.6	33,236
1929	5,760,535	.8	46,084
1930	5,878,730	.8	47,030
1931	5,875,427	.8	47,003

[fol. 5820]

X-436, P. 3

Dial Central Office Buildings

Comparison of Depreciation Rates Based Upon Company Method and Unit Method

Year	Company Method			Unit Method		
	Life	Sal.	Rate	Life	Sal.	Rate
1923-31	35 Yrs.	20%	2.3%	40 Yrs.	7%	2.3%

No change in Depreciation Expense resulting from Company and Unit Methods.

[fol. 5821]

X-436, P. 4

General Office Buidling

Company Method:

	(1) Investment	(2) Life	(3) $ Yrs.	(4) % Salvage
Structure	75	50	3750	......
Bldg. Equip. (1st life)	25	30	750	......
" " (2nd ")	25	20	500	......
	125	40	5000	......

Unit Method:

	(1)	(2)	(3) 1÷2	(4)	(5) 4×3
Structure	75	50	1.5	..	....
Bldg. Equip. (1st life)	25	30	.833	*10	*.083
	100	44	2.333	*3	*.083

	Life	Salvage	Rate
Company	40	..	2.5%
United Method	44	*3	2.3%

$4,000 diff. 12/31/30.
* = Red figures.

[fol. 5822]

X-436, P. 5

Local Manual C. O. Equipment

Comparison of Depreciation Rates Based Upon Company, Method and Unit Method

Year	Company Method Life	Salvage	Rate	Unit Method Life	Salvage	Rate
1923	12.4 Yrs.	10%	7.3%	15.4 Yrs.	6%	6.1%
1924	12.4	10	7.3	14.9	6	6.3
1925	12.4	10	7.3	14.4	7	6.5
1926	12.4	10	7.3	13.7	7	6.8
1927	12.4	10	7.3	13.1	7	7.1
1928	12.4	10	7.3	12.6	7	7.4
1929	12.4	10	7.3	12.5	8	7.4
1930	12.5	10	7.2	12.3	8	7.5
1931	12.7	10	7.1	12.2	8	7.5

Difference in Depreciation Expense Resulting from Rates Based Upon Company and Unit Methods.

Year	Average Investment	Excess of Unit over Company Method Rate	Amount
1923	$18,882,949	*1.2%	*$226,595
1924	21,252,930	*1.0	* 212,529
1925	23,858,560	* .8	* 190,868
1926	27,353,894	* .5	* 136,769
1927	30,385,084	* .2	* 60,770
1928	32,124,580	.1	32,125
1929	32,095,612	.1	32,096
1930	31,972,569	.3	95,918
1931	31,816,516	.4	127,266

*=red figures.

[fol. 5823] X-436 P. 6

Dial Central Office Equipment

Comparison of Depreciation Rates Based Upon Company Method and Unit Method

	Company Method			Unit Method		
Year	Life	Salvage	Rate	Life	Salvage	Rate
1923-31	18 Yrs.	5%	5.3%	25 Yrs.	0%	4.0%

Difference in Depreciation Expense Resulting From Rates Based Upon Company and Unit Methods

	Average	Excess of Unit Over Company Method	
Year	Investment	Rate	Amount
1923	$2,344,374	*1.3%	*$30,477
1924	5,069,102	*1.3	* 65,898
1925	5,382,997	*1.3	* 69,979
1926	7,437,756	*1.3	* 96,691
1927	8,233,910	*1.3	*107,041
1928	9,456,846	*1.3	*122,939
1929	13,568,385	*1.3	*176,389
1930	17,111,595	*1.3	*222,451
1931	20,239,674	*1.3	*263,116

*=means red figures.

[fol. 5824] X-436, P. 7

Toll Switchboard Equipment (Former Offices)

Comparison of Depreciation Rates Based Upon Company Method and Unit Method

	Company Method			Unit Method		
Year	Life	Salvage	Rate	Life	Salvage	Rate
1923	7.5 Yrs.	19%	10.8%	9.7 Yrs.	19%	8.4%
1924	7.5	19	10.8	9.2	20	8.7
1925	7.5	19	10.8	8.3	20	9.6
1926	7.5	19	10.8	6.9	21	11.4
1927	7.5	19	10.8	5.2	21	15.2
1928	7.5	19	10.8	4.4	22	17.7
1929	7.5	19	10.8	2.9	22	26.9

Difference in Depreciation Expense Resulting from Rates Based Upon Company and Unit Methods

	Average	Excess of Unit Over Company Method	
Year	Investment	Rate	Amount
1923	$1,355,703	*2.4%	*$32,537
1924	1,372,007	*2.1	* 28,812
1925	1,428,750	*1.2	* 17,145
1926	1,587,545	.6	9,525
1927	1,840,279	4.4	80,972
1928	2,010,077	6.9	138,695
1929	1,268,282	16.1	194,533

*=red figures.

[fol. 5825]

X-436, P. 8

Toll Switchboard Equipment (New Office)

Comparison of Depreciation Rates Based Upon Company Method and Unit Method

Year	Company Method			Unit Method		
	Life	Salvage	Rate	Life	Salvage	Rate
1930-31	8 Yrs.	20%	10.0%	15 Yrs.	10%	6.0%

Difference In Depreciation Expense Resulting from Rates Based Upon Company and Unit Methods

Year	Average Investment	Excess of Unit Over Company Method	
		Rate	Amount
1929........................	$1,536,021	*4.0%	*$61,441
1930........................	3,580,519	*4.0	*143,221
1931........................	3,919,427	*4.0	*156,777

*=red figures.

[fol. 5826]

X-436, P. 9

Illinois Bell Telephone Company, Chicago Area

Underground Cable

Year	Depreciation Expense Actually Charged	Increase in Depreciation Expense if Computed by "Unit" Method (15% of Actual Expense)
1923........................	$505,319	$75,798
1924........................	714,929	107,239
1925........................	819,993	122,999
1926........................	940,657	141,099
1927........................	1,045,972	156,896
1928........................	1,257,952	188,693
1929........................	1,315,822	197,373
1930........................	1,327,254	199,088
1931........................	1,371,881	205,782

[fol. 5827]

EXHIBIT X-436, P. 10

Illinois Bell Telephone Company, Chicago Area

Comparison of "Unit" and Company Depreciation Rates for Main Subscriber's Underground Cable

Year Placed	Average Investment During 1930 A	"Unit" Bases Rate for 1930 B.	"Unit" Bases Expense C = A x B	Company Basis Rate D	Company Basis Expense E = A x D	Difference in Expense F = C − E
1930	$349,360	5.50%	$19,215			
1929	868,739	4.59	39,875			
1928	1,556,064	4.12	64,110			
1927	1,500,380	3.86	57,915			
1926	1,437,122	3.66	52,599			
1925	1,444,004	3.50	50,540			
1924	672,451	3.37	22,662			
1923	716,589	3.26	23,361			
1922	467,128	3.16	14,761			
1921	167,488	3.07	5,142			
1920	162,192	2.97	4,817			
1919	173,539	2.91	5,050			
1918	139,144	2.83	3,938			
Sub-total plant Requiring Higher Rate on "Unit" Basis	$9,654,200		$363,985	2.8%	$270,318	$93,667
1917	463,902	2.77	12,850			
1916	472,023	2.71	12,792			
1915	662,429	2.65	17,554			
1914	763,127	2.60	19,841			
1913	429,622	2.54	10,912			
1912	242,185	2.50	6,055			
1911	255,814	2.45	6,267			
1910	179,025	2.39	4,279			
1909	347,358	2.35	8,163			
1908	229,483	2.31	5,301			
1907	276,409	2.27	6,274			
1906	106,592	2.23	2,377			
1905	81,375	2.18	1,774			
1904	7,573	2.14	162			
1903	70,738	2.10	1,485			
1902	30,156	2.06	621			
1901	12,285	2.02	248			
1900	35,730	1.99	711			
1899	1,906	1.94	37			
1898	3,501	1.90	67			
1897	1,858	1.86	35			
1896	944	1.83	17			
1895	357	1.79	6			
1894	137	1.76	2			
1893	2,580	1.72	44			
1892	344	1.69	6			
1891	368	1.64	6			
1890		1.62				
1889		1.58				
1888		1.57				
1887	424	1.53	6			
Sub-total plant Requiring Lower Rate on "Unit" Basis	$4,678,245		$117,892	2.8%	$130,991	$13,099
Total	$14,332,445	3.36%	$481,877	2.8%	$401,309	$80,568

[fol. 5828]

X-436, P. 11

Illinois Bell Telephone Company, Chicago Area

Station Equipment—Pole Lines, Aerial Cable, Office Furniture, and Fixtures

	Depreciation Expense Actually Charged	Increase in Depreciation Expense if Computed by "Unit" Method (5% of Actual Expense)
1923	$1,364,419	$68,221
1924	1,412,218	70,611
1925	1,596,966	79,848
1926	1,780,590	89,030
1927	1,969,618	98,481
1928	2,260,147	113,007
1929	2,412,570	120,628
1930	2,605,881	130,294
1931	2,621,604	131,080

(Here follow side folios 5829 and 5830)

X-437

FORM [illegible]

FINAL SUMMARY OF HISTORICAL DATA FOR MORTALITY STUDY

UPPER FIGURES PLANT REMAINING IN SERVICE AT BEGINNING OF Nth CALENDAR YEAR AFTER YEAR OF PLACING
LOWER FIGURES PLANT RETIRED DURING Nth CALENDAR YEAR AFTER YEAR OF PLACING

YEAR OF PLACING	(a) TOTAL AMOUNT OF PLANT PLACED	(b) TOTAL AMOUNT OF PLANT RETIRED	(c) TOTAL AMOUNT OF PLANT STILL IN SERVICE (a)-(b)	N= 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1900				XXXX																												[illegible]	[illegible]	[illegible]
1901				XXXX																											[illegible]	[illegible]	[illegible]	
1902				XXXX																										[illegible]	[illegible]	[illegible]		
1903				XXXX																									[illegible]	[illegible]	[illegible]			
1904				XXXX																								[illegible]	[illegible]	[illegible]				
1905				XXXX																							[illegible]	[illegible]	[illegible]					
1906				XXXX																						[illegible]	[illegible]	[illegible]						
1907				XXXX																					[illegible]	[illegible]	[illegible]							
1908				XXXX																				[illegible]	[illegible]	[illegible]								
1909				XXXX																			[illegible]	[illegible]	[illegible]									
1910				XXXX																		[illegible]	[illegible]	[illegible]										
1911				XXXX																	[illegible]	[illegible]	[illegible]											
1912				XXXX																[illegible]	[illegible]	[illegible]												
1913				XXXX															[illegible]	[illegible]	[illegible]													
1914				XXXX														[illegible]	[illegible]	[illegible]														
1915				XXXX													[illegible]	[illegible]	[illegible]															
1916				XXXX												[illegible]	[illegible]	[illegible]																
1917				XXXX											[illegible]	[illegible]	[illegible]																	
1918				XXXX										[illegible]	[illegible]	[illegible]																		
1919				XXXX									[illegible]	[illegible]	[illegible]																			
1920				XXXX								[illegible]	[illegible]	[illegible]																				
1921				XXXX							[illegible]	[illegible]	[illegible]																					
1922				XXXX						[illegible]	[illegible]	[illegible]																						
1923				XXXX					[illegible]	[illegible]	[illegible]																							
1924				XXXX				[illegible]	[illegible]	[illegible]																								
1925				XXXX			[illegible]	[illegible]	[illegible]																									
1926				XXXX		[illegible]	[illegible]	[illegible]																										
1927				XXXX	[illegible]	[illegible]	[illegible]																											
1928	1,169,101		[illegible]	XXXX 57	[illegible]	[illegible]																												
1929	652,344		[illegible]	XXXX	[illegible]																													
1930	574,463		[illegible]	XXXX 477																														
TOTAL				XXXX																														

EXHIBIT X-437

49568

FINAL SUMMARY OF HISTORICAL DATA FOR MORTALITY STUDY

1 4/27 72

UPPER FIGURES: PLANT REMAINING IN SERVICE AT BEGINNING OF Nth CALENDAR YEAR AFTER YEAR OF PLACING
LOWER FIGURES: PLANT RETIRED DURING Nth CALENDAR YEAR AFTER YEAR OF PLACING

YEAR OF PLACING	(a) TOTAL AMOUNT OF PLANT PLACED	(b) TOTAL AMOUNT OF PLANT RETIRED	(c) TOTAL AMOUNT OF PLANT STILL IN SERVICE (a-b)	N= 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
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[fol. 5831] EXHIBIT X-438, P. 1

A. T. & T. Co.

Use of Conversion Formula in Connection with Return on Entire Company Stock in Comparison with Return on That Portion of Stock Represented by Investment in Stock of Illinois Bell Telephone Company

	Entire Company Investment, Year 1930	Book Investment by A. T. & T. Co. in Stock of Ill. Bell Tel. Co. Year 1930
(1) Total Funds used in Business per X-287	$2,746,624,797	
(2) Book Investment in Capital Stock of Ill. Bell Tel. Co. per X-124		$134,335,909
(3) Return on Total Funds used in Business per X-287	197,980,485	
(4) Dividends Received on Cap. Stock of I. B. T. Co. per X-284		10,309,776
(5) Per Cent of Return on Funds or Investment	7.21%(c)	7.67%(d)
(6) Cost of Funds Used in Business per X-108	6.25	6.25
(7) Profit available for stockholders of A. T. & T. Co.	.96	1.42
(8) Item (7) expressed in per cent on par value of stock of A. T. & T. Co. stockholders (Item 7 times 100.00* ÷ 57.73 = 1.7322016)	1.66	2.46
(9) Dividend Rate included in Item (6) per X-108	8.78	8.78
(10) Per Cent Return Expressed on Capital Stock par Value	10.44(a)	11.24(b)

* Taken from X-108.

(a) Agrees with annual report of Directors of A. T. & T. Co. to stockholders, year, 1930, page 19 and also X-286.

(b) Agrees with X-127.

(c) Agrees with X-287.

(d) Agrees with X-126.

[fol. 5832]

EXHIBIT X-438, P. 2

A. T. & T. Co.

Comparison of Return on Entire Co. Stock with Portion of Stock Represented by Investment in Capital Stock of Illinois Bell Telephone Co., Year 1930

		Entire Company Investment	Book Investment by A. T. & T. Co. in Stock of Ill. Bell Tel. Co.
(1) Total Funds used in Business per X-287		$2,746,624,797	....
(2) Book Investment in Capital Stock of Ill. Bell Tel. Co. per X-124		....	$134,335,909
(3) Return on Total Funds Used in Business per X-287		197,980,485	....
(4) Dividends Received on Capital Stock of Ill. Bell Tel. Co. X-284		....	10,309,776
(5) Per Cent of Return on Funds or Investment		7.21%(c)	7.67%(d)
(6) Apportionment of Items (1) and (2) into elements of capital stock, premiums, surplus, etc.:			
(a) Capital Stock	57.73%*	1,585,669,600	77,552,120
(b) Capital stock premiums	7.55%*	207,419,730	10,142,361
(c) Surplus unappropriated and appropriated	13.34%*	366,311,399	17,920,410
(d) Capital Stock Investments	3.04%*	83,494,026	4,083,812
(e) Funded debt and loans	18.34%*	503,730,042	24,637,206
(f) Total	100.00%	2,746,624,797	134,335,909
(7) Interest and Amortization charges applicable to Capital Stock Installments and Funded Debt:			
(a) Capital Stock Installments (6.82%* of Item 6 (d))		5,695,443	278,516
(b) Funded Debt and Loans (5.3%* of Item 6 (e))		26,709,057	1,305,772
Total		32,404,500	1,584,288
(8) Dollars of Return represented by Items 3 and 4, less interest and amortization charges which is available return for capital stock premiums and surplus		165,575,985	8,725,488
(9) Return available for capital stock premiums and surplus (Item 8) related to capital stock—par value (Item 6a)		10.44(a)	11.25(b)

(c) Agrees with X-287.
(d) Agrees with X-126.
* Taken from X-108.

(a) Agrees with annual report of Directors of A. T. & T. Co., to Stockholders year 1930, page 19 and also X-286.

(b) Agrees with X-127 except for .01 of one per cent due to not carrying out decimals more than 2 places.

[fol. 5833] X-438, P. 3

Use of Conversion Formula in Connection with Investment in Telephone Instruments Shown in X-111, Year 1923

(1) Investment in Telephone Instruments Chicago Division per X-111	$1,077,794
(2) Return on Investment per X-111	420,592
(3) Per Cent of Return on Investment per X-111	39.02
(4) Cost of Funds Used in Business per X-108	6.87
(5) Profit Available for Stockholders of A. T. & T. Co	32.15
(6) Item (5) expressed in per cent on par value of stock of A. T. & T. Co. Stockholders (Item 5 times (100.00)÷63.39*=1.578)	50.73
(7) Dividend Rate included in item 4 per X-108	8.79
(8) Per Cent Return expressed on capital stock—par value	59.52(a)

*Taken from X-108.

(a) Agrees with X-111 except for .01 of one per cent due to carrying decimals only two places.

[fol. 5834] EXHIBIT X-439

June 29, 1932.

Mr. Edward L. Blackman, Illinois Bell Telephone Company,
212 W. Washington Street, Chicago, Illinois.

DEAR MR. BLACKMAN: I return you herewith four white sheets which contain a certain number of exhibits which I was to check, as stated on the record.

Page 1, entitled "A. T. & T. List of Rainwater Exhibits containing in one form or another the error inherent in Rainwater's method of converting the percent, etc." The list of exhibits stated on this sheet is correct.

Page 2, entitled "List of Rainwater Exhibits containing in one form or another the error inherent in Rainwater's use of figures for average loans of". The list on this sheet contains the following exhibit numbers not contained in the original list given to us: X-149, X-151, X-340. We have checked these three and we find X-149 does not use average loans computed in the manner shown in the heading on this page but is based on the average loans taken from X-103.

The same comment is applicable to X-151 and to X-340, page 4. Therefore these three exhibits should be removed from the list in the record.

Page 3, entitled "List of Rainwater Exhibits containing erroneous theory of interest and dividends, etc." This list contains the following exhibit numbers not contained in the original statement furnished us:

X-279 does not deal with interest and dividends. X-280 does not deal with interest and dividends. X-285 should be qualified by adding the clause "Except for pages 1, 2, 3, 4, 9, 10, 11, 12, 17, 18, 19, 20, 21 and 22. X-329, Line 9, X-330, Line 9, X-331, line 11, X-332, line 11, X-333 all figures, X-334 all figures and X-340 line 2, do not contain any computations whatsoever of the character shown in the heading on page 3 and therefore should be omitted from the list in the record.

Page 4. I am returning herewith page 4 without comment as reference to the same does not appear in the record.

If there is any question about these I suggest that Mr. Greene and Mr. Rainwater get together so they can agree on what these exhibits do or do not contain.

Yours very truly, —— ——.

BFG-McC.

Endorsed on cover: File No. 38,043. N. Illinois D. C. U. S. Term No. 440. Benjamin F. Lindheimer and others, constituting the Illinois Commerce Commission of the State of Illinois; Otto Kerner, Attorney General of the State of Illinois, and City of Chicago, appellants, vs. Illinois Bell Telephone Company. Filed September 8, 1933. File No. 440, O. T., 1933.

CLERK'S COPY.

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Vol. IX

TRANSCRIPT OF RECORD

ON CROSS APPEAL

Supreme Court of the United States

OCTOBER TERM, 1933

No. 440

BENJAMIN F. LINDHEIMER AND OTHERS, CONSTITUTING THE ILLINOIS COMMERCE COMMISSION OF THE STATE OF ILLINOIS; OTTO KERNER, ATTORNEY GENERAL OF THE STATE OF ILLINOIS, AND THE CITY OF CHICAGO, APPELLANTS,

vs.

ILLINOIS BELL TELEPHONE COMPANY

No. 548

ILLINOIS BELL TELEPHONE COMPANY, APPELLANT,

vs.

BENJAMIN F. LINDHEIMER AND OTHERS, CONSTITUTING THE ILLINOIS COMMERCE COMMISSION OF THE STATE OF ILLINOIS; OTTO KERNER, ATTORNEY GENERAL OF THE STATE OF ILLINOIS, AND THE CITY OF CHICAGO

APPEALS FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF ILLINOIS

FILED SEPTEMBER 8, 1933

FILED OCTOBER 25, 1933

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1933

No. 440

BENJAMIN F. LINDHEIMER AND OTHERS, CONSTITUTING THE ILLINOIS COMMERCE COMMISSION OF THE STATE OF ILLINOIS; OTTO KERNER, ATTORNEY GENERAL OF THE STATE OF ILLINOIS, AND THE CITY OF CHICAGO, APPELLANTS,

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APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES
FOR THE NORTHERN DISTRICT OF ILLINOIS

VOL. IX

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[fols. 5835 & 5836] [Caption omitted]

[fol. 5837]

IN UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF ILLINOIS, EASTERN DIVISION

In Equity. No. 3746

Illinois Bell Telephone Company, Plaintiff,

vs.

Benjamin F. Lindheimer, Ernest J. Kruetgen, Andrew Olson, G. Gale Gilbert, Phil W. Collins, Paul Samuell, Charles E. Byrne, the Persons Constituting the Illinois Commerce Commission of the State of Illinois, and Otto Kerner, Attorney General of the State of Illinois, Defendants, and City of Chicago, a Municipal Corporation, Intervenor

Petition for Appeal—Filed Sept. 26, 1933

To the Honorable Evan A. Evans and William M. Sparks, Circuit Judges for the Seventh Circuit, and the Honorable James H. Wilkerson, District Judge for said District, constituting a special statutory court pursuant to the provisions of Section 266 of the Judicial Code:

Comes now Illinois Bell Telephone Company, plaintiff, and hereby appeals to the Supreme Court of the United States from the final judgment and decree made and entered herein on the 28th day of June, 1933, because of errors prejudicial to plaintiff which are set forth in the assignment of errors presented and filed herewith.

Your petitioner respectfully prays that said appeal be allowed for the reversal and correction of the errors so complained of, that citation be issued as provided by law, [fols. 5838 & 5839] and that a transcript of the record, duly authenticated, be sent to the Supreme Court of the United States, in accordance with the rules of that Court.

Dated Chicago, Illinois, September 26, 1933.

Charles M. Bracelen, William H. Thompson, Edward L. Blackman, Kenneth F. Burgess, Leslie N. Jones, Solicitors for Plaintiff.

[fol. 5840] IN UNITED STATES DISTRICT COURT

[Title omitted]

PLAINTIFF'S ASSIGNMENT OF ERRORS—Filed Sept. 26, 1933

Comes now the Illinois Bell Telephone Company, plaintiff herein, and files the following assignment of errors upon which it will rely in the prosecution of the appeal herewith petitioned for in said cause.

1. In finding that the fair value of all of plaintiff's property in the Chicago area, including working cash capital, materials and supplies, construction work in progress, and going value, as an average amount during each of the years 1923 to 1932, inclusive, was the amount for each year found and specifically set out in Finding of Fact No. 1, the Court erred in each of the following respects, among others:

(a) By deducting from the amounts found by the Court for reproduction cost new for each of the years 1923 to 1928, inclusive, 16% of each of said amounts for alleged deprecia- [fol. 5841] tion of plaintiff's property and by deducting 15% for each of the succeeding years (Finding of Fact No. 6), which said deductions were excessive and approximately twice the amount which should have been deducted. (See Assignment of Error 7.)

(b) By restricting the amount allowed for going value to 8% of the reproduction cost new of the physical property of the plaintiff (Finding of Fact No. 7), which amount is inadequate and only approximately one-half of the amount which should have been allowed for the going value element of the property. (See Assignment of Error 8.)

(c) By failing and refusing to give any effect to price increases of telephone material which took place in 1930 and which continued through 1931 and 1932.

(d) By otherwise undervaluing the property of the plaintiff, particularly in the years 1930, 1931 and 1932.

2. In finding that the fair value of plaintiff's said Chicago area property used and useful in its entire intrastate business, as an average amount during each of the years 1923 to 1932 inclusive, was the amount for each year found and specifically set out in Finding of Fact No. 2, the Court

erred in each of the respects alleged in Assignment of Error 1.

3. In finding that the fair value of plaintiff's said Chicago area property used and useful in its intrastate toll business, as an average amount during each of the years 1923 to 1932 inclusive, was the amount for each year found and specifically set out in Finding of Fact No. 3, the Court erred in each of the respects alleged in Assignment of Error 1.

[fol. 5842] 4. The Court erred in finding that the fair value of all of plaintiff's property in the Chicago area, including working cash capital, material and supplies, construction work in progress and going value, as an average amount during the years 1923 to 1932, inclusive, was as follows for each of said years: 1923, $130,000,000; 1924, $143,000,000; 1925, $157,000,000; 1926, $161,000,000; 1927, $178,000,000; 1928, $186,000,000; 1929, $200,000,000; 1930, $205,000,000; 1931, $197,500,000; 1932, $185,000,000. (Finding of Fact No. 1.)

The Court erred in said finding for each of said years. (See assignment 1.)

5. The Court erred in finding that the fair value of plaintiff's Chicago area property used and useful in its entire intrastate business, as an average amount during each of the years 1923 to 1932, inclusive, was as follows for each of said years: 1923, $124,200,000; 1924, $136,500,000; 1925, $148,500,000; 1926, $151,500,000; 1927, $167,000,000; 1928, $173,000,000; 1929, $184,000,000; 1930, $187,120,000; 1931, $179,100,000; 1932 $166,500,000. (Finding of Fact No. 2.)

The Court erred in said finding for each of said years. (See assignment 2.)

6. The Court erred in finding that the fair value of plaintiff's Chicago area property, used and useful in its intrastate toll business, as an average amount during each of the years 1923 to 1932, inclusive, was as follows for each of said years: 1923, $5,515,000; 1924, $6,250,000; 1925, $7,200,000; 1926, $7,800,000; 1927, $9,300,000; 1928, $10,500,000; 1929, $12,600,000; 1930, $13,850,000; 1931, $13,600,000; 1932, $13,100,000. (Finding of Fact No. 3.)

The Court erred in said finding for each of said years. (See assignment 3.)

[fol. 5843] 7. The Court erred in finding that the fair rate or percentage of depreciation to be applied to the reproduction cost new of plaintiff's property in determining the valuations thereof for rate-making purposes was 16 per cent for the years 1923 to 1928, inclusive, and 15 per cent for the succeeding years (Finding of Fact No. 6).

The Court erred in said finding for each year.

8. The Court erred in finding that the amount to be added on account of going value to the reproduction cost new of the physical property of the plaintiff in determining the value of its property for rate-making purposes was 8 per cent thereof and in failing to find that the proper amount was 15 per cent (Finding of Fact No. 7).

9. In finding that the reasonable operating expenses of plaintiff, including expense of depreciation, for the intrastate portion of its Chicago area business for each of the years 1923 to 1931, both inclusive, were the amounts found and specifically set out in Finding of Fact No. 10, the Court erred in each of the following respects, among others:

(a) By restricting the amount included in said expenses for the annual charge for depreciation applicable to the intrastate portion of plaintiff's Chicago area property to the following amounts in the following years:

1923	$4,000,000
1924	4,250,000
1925	4,750,000
1926	5,400,000
1927	6,000,000
1928	6,650,000
1929	7,000,000
1930	7,200,000
1931	7,400,000

(Finding No. 26), said amounts being less than the amounts established by the evidence by more than $1,500,000 in each year (See Assignment of Error 16).

[fol. 5844] (b) By restricting the amounts included in said expenses for the expense of the services rendered to the plaintiff by the American Telephone and Telegraph

Company under its license contracts to the following amounts in the following years:

1923	$1,088,195
1924	1,156,046
1925	1,369,836
1926	1,412,867
1927	1,422,869
1928	1,005,063
1929	834,276
1930	864,131
1931	834,199

(Finding of Fact Nos. 22, 23, 24 and 25), said amounts in each year being either the cost of the services to the American Company, as found by the Court, or the payment therefor, whichever is less.

(c) By disallowing in part the expenses actually incurred by plaintiff, and represented by its purchases from the Western Electric Company made in November and December, 1930, and the whole of the years 1931 and 1932, of materials attributable to maintenance and other expense accounts, this being due to the Court's erroneous finding that a 10% increase in prices by the Western Electric was not proper (Finding of Fact No. 21).

10. In finding that the portions of the plaintiff's operating expenses which are allocated or should be allocated to its intrastate toll business for each of the years 1923 to 1931, inclusive, are the amounts found and specifically set out in Finding of Fact No. 11, the Court erred in each of the respects alleged in Assignment of Error 9.

11. The Court erred in finding that the reasonable operating expenses of the plaintiff, including expense of depreciation for the intrastate portion of its said Chicago area [fol. 5845] business for each of the years 1923 to 1931, inclusive, are the following amounts: 1923, $30,500,000; 1924, $32,170,000; 1925, $34,680,000; 1926, $37,880,000; 1927, $40,800,000; 1928, $45,050,000; 1929, $47,600,000; 1930, $48,560,000; 1931, $46,670,000 (Finding of Fact No. 10).

The Court erred in said finding for each year.
(See assignment 9.)

12. The Court erred in finding that the portions of plaintiff's said operating expenses which are allocated or should be allocated to its intrastate toll business for each of the years 1923 to 1931, inclusive, are the following amounts: 1923, $1,750,000; 1924, $1,875,000; 1925, $2,110,000; 1926, $2,570,000; 1927, $2,820,000; 1928, $3,480,000; 1929, $4,020,000; 1930, $4,133,000; 1931, $4,200,000. (Finding of Fact No. 11).

The Court erred in said finding for each year.

(See assignment 10.)

13. The Court erred in finding that in determining the reasonable operating expenses to be allowed to plaintiff after November 1, 1930, there should be a reduction of 10% from the prices charged by Western Electric Company on purchases made by plaintiff attributable to maintenance and other expense accounts, and in making this deduction in determining the amounts allowed in its findings of plaintiff's operating expenses (Finding of Fact No. 21).

14. The Court erred in finding that the amounts of the cost of the services rendered by the American Company to plaintiff under the license contracts which should be allocated to the operating expenses of the intrastate business of plaintiff for each of the years 1923 to 1931, inclusive, are as follows: 1923, $1,088,195; 1924, $1,156,046; 1925, $1,369,836; 1926, $1,412,867; 1927, $1,422,869; 1928, $1,005,063; 1929, $1,040,529; 1930, $1,191,882; 1931, $1,068,303 (Finding of Fact No. 22).

[fol. 5846] The Court erred in said finding for each year.

15. The Court erred in finding that, in determining plaintiff's reasonable operating expenses, the amounts to be charged on account of the license agreement for the years 1923 to 1928, inclusive, are the amounts found by it in its Finding No. 22 as the cost of the services for each of those years, and in finding that the amounts so to be charged for the years 1929 to 1931, inclusive, are the amounts found by the Court in its Finding No. 23 as charged on the books of the Company for each of those years.

The Court erred both in finding, for the years 1923 to 1928, that the amounts to be included in plaintiff's reasonable operating expenses for this item of expense were restricted to the costs to the American Company of the services rendered, and in finding the amount of said costs for each of those years. The Court also erred in finding that, for the years 1929 to 1931, the amounts which should be included in plaintiff's reasonable operating expenses for this item of expense were restricted to the amounts paid to the American Company as found in Finding No. 23.

16. The Court erred in finding that the reasonable and proper amount to be allowed as the annual charge for depreciation applicable to the intrastate portion of plaintiff's said Chicago area property for each of the years 1923 to 1931, inclusive, was as follows: 1923, $4,000,000; 1924, $4,250,000; 1925, $4,750,000; 1926, $5,400,000; 1927, $6,000,000; 1928, $6,650,000; 1929, $7,000,000; 1930, $7,200,000; 1931, $7,400,000 (Finding of Fact No. 26).

The Court erred in said finding for each year.

17. In finding the amount of the net income of the plaintiff available for return from that portion of its property used and useful in its intrastate business in its Chicago area for each of the years 1923 to 1932, inclusive, as found [fol. 5847] in Finding of Fact No. 27, the Court erred by overstating said net income by reason of disallowing a part of plaintiff's reasonable operating expenses in each of said years, as more particularly shown in Assignment of Error 9.

18. In finding the amount of the net income of the plaintiff available for return from that portion of its property used and useful in its intrastate business in its Chicago area under the rates fixed by the Illinois Commerce Commission by its order of August 16, 1923, effective October 1, 1923, for each of the years 1923 to 1932, inclusive, as found in Finding of Fact No. 30, the Court erred by overstating said net income by reason of disallowing a part of its reasonable operating expenses in each of said years, as more particularly shown in Assignment of Error 9.

19. The Court erred in finding that the net income available for return from that portion of plaintiff's property used and useful in its intrastate business in its Chicago area for each of the years 1923 to 1932, inclusive, was as follows: 1923, $6,646,183; 1924, $7,483,954; 1925, $7,880,451; 1926, $8,052,698; 1927, $8,363,580; 1928, $8,627,760; 1929,

$10,679,602; 1930, $10,138,263; 1931, $9,826,299; 1932, $8,000,000 (Finding of Fact No. 27).

The Court erred in said finding for each year.

20. The Court erred in finding that the net income available for return from that portion of plaintiff's property used and useful in its intrastate business in its Chicago area under the rates fixed by the Illinois Commerce Commission by its order of August 16, 1923, effective October 1, 1923, for each of the years 1923 to 1932, inclusive, was as follows: 1923, $5,104,515; 1924, $5,932,959; 1925, $6,297,890; [fol. 5848] 1926, $6,402,128; 1927, $6,686,503; 1928, $6,914,459; 1929, $8,939,602; 1930, $8,492,385; 1931, $8,392,555; 1932, $6,750,000 (Finding of Fact No. 30).

The Court erred in said finding for each year.

21. The Court erred in finding that the fair rate of return was 6½% for the year 1931 and 5½% for the year 1932 (Finding of Fact No. 32).

22. In finding the percentages which the plaintiff had earned upon the fair value of its intrastate property for each of the years 1923 to 1932, inclusive, as found in Finding of Fact No. 33, the Court erred by overstating the said percentages in each of said years. The error and overstatement are due to the Court's understatement of the fair value of the plaintiff's intrastate property in Finding of Fact No. 2, and to the Court's understatement of the plaintiff's reasonable operating expenses in Finding of Fact No. 10.

23. In finding the rates of return which the plaintiff would have received upon the fair value of its intrastate property in each of the years 1923 to 1932, inclusive, if the rates in suit had been in effect in each of said years, as found in Finding of Fact No. 34, the Court erred by overstating said rates of return in each of said years. The error and overstatement are due to the Court's understatement of the fair value of the plaintiff's intrastate property in Finding of Fact No. 2, and to the Court's understatement of the plaintiff's reasonable operating expenses in Finding of Fact No. 10.

24. The Court erred in finding that plaintiff has earned upon the fair value of its intrastate property for each of the years 1923 to 1932, inclusive, a return in percentages

as follows: 1923, 5.4%; 1924, 5.5%; 1925, 5.3%; 1926, 5.3%; [fols. 5849-5851] 1927, 5.0%; 1928, 5.0%; 1929, 5.8%; 1930, 5.3%; 1931, 5.5%; 1932, 4.8% (Finding of Fact No. 33).

The Court erred in said finding for each year.

The Court erred in finding that, if the rates in suit had been in effect, plaintiff would have received upon the fair value of its intrastate property rates of return for each of the years 1923 to 1932, inclusive, in percentages as follows: 1923, 4.1%; 1924, 4.4%; 1925, 4.2%; 1926, 4.2%; 1927, 4.0%; 1928, 4.0%; 1929, 4.9%; 1930, 4.5%; 1931, 4.7%; 1932, 4.1% (Finding of Fact No. 34).

The Court erred in said finding for each year.

Wherefore the plaintiff, Illinois Bell Telephone Company, prays that the judgment and decree of the Court in so far as it determines the matters above set forth be reversed and that the said errors be corrected.

Dated Chicago, Illinois, September 26, 1933.

Charles M. Bracelen, William H. Thompson, Edward L. Blackman, Kenneth F. Burgess, Leslie N. Jones, Solicitors for Plaintiff.

[fols. 5852 & 5853] IN UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF ILLINOIS, EASTERN DIVISION

In Equity. No. 3746

ILLINOIS BELL TELEPHONE COMPANY, Plaintiff,

vs.

BENJAMIN F. LINDHEIMER, ERNEST J. KRUETGEN, ANDREW OLSON, G. Gale Gilbert, Phil W. Collins, Paul Samuell, Charles E. Byrne, the Persons Constituting the Illinois Commerce Commission of the State of Illinois, and Otto Kerner, Attorney General of the State of Illinois, Defendants, and City of Chicago, a Municipal Corporation, Intervenor

ORDER ALLOWING APPEAL—Sept. 26, 1933

Upon the petition of plaintiff, Illinois Bell Telephone Company, for the allowance of an appeal to the Supreme Court of the United States from the decree entered herein on June 28, 1933, assignment of errors and statement of the basis of jurisdiction of the Supreme Court being presented and filed therewith:

Ordered, that said appeal be, and the same is, hereby allowed, as prayed.

It is further ordered that bond on appeal, to be approved by the Court, is fixed at the sum of One Thousand ($1,000.00) dollars.

Will M. Sparks, Circuit Judge. James H. Wilkerson, District Judge.

[fols. 5854-5857] Bond on appeal for $1,000.00, approved and filed Sept. 26, 1933, omitted in printing.

[fol. 5858] IN UNITED STATES DISTRICT COURT

[Title omitted]

STIPULATION FOR ADDITIONAL AND SUPPLEMENTAL STATEMENT OF EVIDENCE—Filed Oct. 24, 1933

Whereas Defendants, in submitting to the court for approval Statement of Evidence for the purpose of appeal, were not aware that Plaintiff also would appeal and did not include in said Statement of Evidence the additional narrative statement and the exhibits hereinafter specified which they now deem necessary to have in the record (except Exhibits D-20, D-21 and D-23, desired by Plaintiff), and

Whereas, Plaintiff desires to have in the record in the Supreme Court said Exhibits D-20, D-21 and D-23,

It is stipulated that the following exhibits and portions thereof be submitted to the court for approval as an Additional and Supplemental Statement of Evidence:

[fol. 5859] Additional Narrative Statement.

X-106.
X-107.
X-113.
X-114.
X-115.

X-116.
X-117.
X-118.
X-119.
X-120.
X-124.
X-127.
X-128.
X-136.
X-146.
X-147.
X-152.
X-219.
X-323.
X-324.

X-352.—1923 Annual Report of Illinois Bell Telephone Company, p. 2, par. 3.

X-354.—Pages 11, 23, 23½, 28, 35, 36 and 37.

X-366.—Pages 1 and 5.

X-376.

X-420.—Part of p. 5—Balance of page beginning with "Vol. 9, page 151".

Page 6—Entire page.

Page 7—Two resolutions at top of page; balance of page beginning with "Vol. 9, page 249".

Page 8—Entire page except last three lines.

Page 9—Entire page except first three lines.

Page 10—Balance of page beginning with "Vol. 10, page 74".

Page 11—First five lines.

Page 12—First resolution under "Vol. 10, page 117".

Page 13—Balance of page beginning with "Vol. 10, page 163".

Page 14—Entire page.

Page 15—First 2 full paragraphs.

[fols. 5860 & 5861] Page 17—Balance of page beginning with "Vol. 10, page 262".

Page 18—Entire page.

Page 19—First six lines.

X-402.—Letters dated July 28, 1931 and September 21, 1931.

D-20.

D-21.

D-23.

D-107.—Page 1, par. 2, and part of page 2.

D-113.

Deposition Exhibit 38—p. 4, first three paragraphs.

A-32.—Pages 8 and 9.

It is further stipulated that this Additional and Supplemental Statement of Evidence may be used by either party on all questions at issue in the Supreme Court of the United States in the case of Lindheimer et al. v. Illinois Bell Telephone Company, No. 440, October Term, 1933, and for the purposes of the appeal of Plaintiff.

Charles M. Bracelen, William H. Thompson, Edward L. Blackman, Kenneth F. Burgess, Leslie N. Jones, Solicitors for Plaintiff. Otto Kerner, Attorney General of the State of Illinois; Geo. I. Haight, Benjamin F. Goldstein, Edmund D. Adcock, Wm. H. Sexton, Solicitors for Defendants.

[fol. 5862] IN UNITED STATES DISTRICT COURT

[Title omitted]

ORDER APPROVING ADDITIONAL AND SUPPLEMENTAL STATEMENT OF EVIDENCE—Oct. 24, 1933

This cause coming on to be further heard on stipulation of the counsel for approval of an additional and supplemental narrative statement in simple and condensed form of the evidence adduced at the trial, and it appearing to the court that the foregoing Additional and Supplemental Statement of Evidence was lodged in due time with the clerk of this court and that all parties have stipulated that it be approved,

It is therefore ordered, adjudged and decreed that the foregoing Additional and Supplemental Statement of Evidence, together with the Statement of Evidence heretofore approved by this court on September 7th, 1933, be and the same is hereby settled, allowed and approved as a full, true and correct statement in simple and condensed form [fol. 5863] of all the testimony, documentary evidence and exhibits introduced in connection with all the proceedings and motions in the above cause essential for the decision of the questions presented by the appeals herein.

It is further ordered, adjudged and decreed that the said Additional and Supplemental Statement of Evidence as filed in the clerk's office shall be incorporated in the transcript of record by the clerk of this court on the appeal of this cause to the Supreme Court of the United States by Plaintiff herein.

Enter.

James H. Wilkerson, Judge.

Dated October 24, 1933.

[fol. 5864] IN UNITED STATES DISTRICT COURT

Additional and Supplemental Statement of Evidence—Filed Oct. 4, 1933

MOTION FOR RULE REQUIRING PLAINTIFF TO MAKE AVAILABLE CERTAIN DATA, ETC.

On May 3, 1932, Defendants, by their counsel, moved the Court, among other things, as follows:

"Pursuant to the hearing before the Court on Friday, April 22, 1932, now come the defendants and ask that the Court direct and enter a rule upon the plaintiff to make available for examination by the defendants or their counsel or representatives, the following data, documents and reports:

(1) Provisional Estimate Reports covering the years 1920 to 1931, both inclusive, prepared by Illinois Bell and sent to A. T. & T. Also Provisional Estimate Reports prepared by the several licensee companies and sent to A. T. & T., covering the same years. (A copy of the form on which said Provisional Estimate Reports are prepared, is attached hereto.)

(2) Review of Provisional Estimates prepared by Illinois Bell and sent to A. T. & T., covering the years 1920 to 1931, both inclusive, and Review of Provisional Estimates prepared by the several licensee companies and sent to A. T. & T., covering the same years. (Copy of forms #22-B, sheets 1, 2 and 3, upon which the reports were prepared, are hereto attached.) * * *"

After consideration of the argument of Counsel, the Court ruled, in part, as follows:

"We have made up our minds and tentatively we can dispose of some of this matter at the present time. The request set forth in the first sentence of No. 1 is granted.

"The request contained in the first clause of No. 2 is granted; to be specific, review of provisional estimates prepared by the Illinois Bell Telephone Company and sent to A. T. & T., covering the years from 1920 to 1931, both inclusive.

"The balance of that request, and the request set forth in the second sentence of Paragraph 1 we do not pass upon at the present time."

[fol. 5865] [File endorsement omitted]

[fol. 5866] Exhibit X-106

American Telephone and Telegraph Company

Allocation of Taxes, 1923-1930

(Heiss Exhibit No. 10)

1. The attached statements analyze for the years 1923 to 1930, inclusive, the total annual taxes of the company, the amounts thereof assigned to Long Lines, the amounts assigned to license contract activities (a) "direct" i. e., wholly license, and (b) "indirect" i. e., jointly license, and (c) the amounts assigned to non-license activities.

2. With the exception of the Federal income tax (see paragraph 4) the amounts reported as "Long Lines" taxes represent the charges currently made during the respective years in the separate subsidiary accounts maintained by that department. The apportionment of these taxes to the Long Lines was made at the time of payment as follows:

New York Excise Tax. This tax is based on gross earnings within the state. The Long Lines earnings within New York State were ascertainable from the accounts of that department and the tax was based thereon.

New York Franchise Tax, Massachusetts Franchise Tax, and Federal Capital Stock Tax (discontinued June 30, 1926). These taxes are based generally on value or earnings. Long Lines assets being ascertainable from its separate accounts, the apportionment was made on the basis of assets.

Long Lines State and Municipal Taxes. These are a wholly Long Lines charge.

Instrument Taxes, and Stamp and Miscellaneous Taxes. These are paid directly by and chargeable to the department of the company performing the license and other activities. No portion thereof is assignable to "Long Lines."

[fol. 5867] 3. After excluding amounts charged to Long Lines an apportionment of the remainder to

a) direct (wholly) license costs,
b) indirect (jointly) license costs, and
c) other (non-license) costs

was made on a like basis for the purpose of this cost study as follows:

New York Excise Tax (based on gross earnings within the state). The earnings allocated to license activities (chiefly license revenues, interest on advances to and on funds held available for use of licensee companies) and to non-license activities were ascertained and apportioned to license service activities accordingly.

New York Franchise Tax, Massachusetts Franchise Tax, and Federal Capital Stock Tax. The assets devoted to

a) direct (wholly) license activities,
b) indirect (jointly) license activities, and
c) other (non-license) activities

were ascertained and apportionment of the several taxes made on the basis of the respective assets.

Instrument Taxes. The entire amount of these taxes was assigned to indirect (jointly) license costs in this study.

Stamp and Miscellaneous Taxes. These taxes are allocated entirely to costs jointly license with the exception of minor amounts assigned to non-license activities.

4. Federal Income Tax. In this cost study this tax was apportioned to

a) Long Lines Department,
b) direct (wholly) license contract activities, and
c) all other activities (indirect-jointly-license and other-non-license),

on the basis of the respective taxable net income of each [fol. 5868] activity after apportioning the general company interest charges to each on the basis of the respective assets (producing taxable income) of each class. For the years in which the deductions applicable to Class (c) activities more than offset the earnings of that class subject to tax the excess deductions were applied to reduce the tax apportioned to direct (wholly) license activities.

5. Real Estate Tax. Tax on New York office building owned during 1923 to 1925 and is apportioned to direct (wholly) license, indirect (jointly) license and other (non-license) costs on the basis of the allocation of general departmental expenses. This tax was deducted from rent revenues in determining the net cost of carrying the investment in physical property and therefore is not included in amount shown as "Taxes" on Heiss Exhibit 10, Sheet 1.

July 6, 1931.

[fol. 5869]

American Telephone and Telegraph Company

Item 1(c)—Analysis of Taxes

Year 1920

	Total company	Long lines	Balance—taxes included in estimate of costs incurred in rendering license contract services
New York Excise	$74,458	$11,881	$62,577
New York Franchise	213,232	9,340	203,892
Massachusetts Franchise	574,662	39,588	535,074
Instrument	174,141	0	174,141
Long Lines State and Municipal	726,103	726,103	0
Federal Capital Stock	438,993	43,437	395,556
Federal Income	944,231	589,917	354,314
Stamp and Miscellaneous	16,715	0	16,715
Total	$3,162,535	$1,420,266	$1,742,269

Note.—Method of apportioning taxes is the same as used for the years 1923 to 1930.

December 2, 1931.

[fol. 5870]

American Telephone and Telegraph Company

Item 1(c)—Analysis of Taxes

Year 1921

	Total company	Long lines	Balance—taxes included in estimate of costs incurred in rendering license contract services
New York Excise	$82,187	$12,875	$69,312
New York Franchise	199,770	9,593	190,177
Massachusetts Franchise	706,360	59,100	647,260
Instrument	142,740	0	142,740
Long Lines State and Municipal	903,338	903,338	0
Federal Capital Stock	394,088	43,770	350,318
Federal Income	1,783,410	1,191,615	591,795
Stamp and Miscellaneous	67,047	0	67,047
Total	$4,278,940	$2,220,291	$2,058,649

Note.—Method of apportioning taxes is the same as used for the years 1923 to 1930.

December 2, 1931.

[fol. 5871] American Telephone and Telegraph Company

Item 1(c)—Analysis of Taxes

Year 1922

	Total company	Long lines	Balance—taxes included in estimate of costs incurred in rendering license contract services
New York Excise	$92,385	$12,938	$79,447
New York Franchise	230,695	12,107	218,588
Massachusetts Franchise	1,115,870	60,012	1,055,858
Instrument	240,734	0	240,734
Long Lines State and Municipal	1,000,794	1,000,794	0
Federal Capital Stock	522,572	54,167	468,405
Federal Income	2,641,938	1,837,111	804,827
Stamp and Miscellaneous	41,838	0	41,838
Total	$5,886,826	$2,977,129	$2,909,697

Note.—Method of apportioning taxes is the same as used for the years 1923 to 1930.

December 2, 1931.

[fol. 5872]

Exhibit X-106-P7

American Telephone and Telegraph Company

Analysis of Taxes

Year 1923

			Balance excluding long lines taxes				
				License			
	Total company (1)	Long lines (2)	Total col. (1) less col. (2) (3)	Direct (wholly license) (4)	Indirect (jointly license) (5)	Total col. (4) and col. (5) (6)	Other (non-license) (7)
New York Excise	$98,956	$14,453	$84,503		$84,291	$84,291	$212
New York Franchise	348,589	40,565	308,024	$56,520	251,021	307,541	483
Massachusetts Franchise	184,249	144,740	39,509		39,509	39,509	
Instrument	160,504		160,504		160,504	160,504	
Long Lines State and Municipal	1,155,440	1,155,440					
Federal Capital Stock	744,815	140,079	604,736	152,972	437,548	590,520	14,216
Federal Income	*3,657,766	1,883,602	1,774,164	1,614,805	159,359	1,774,164	
Stamp and Miscellaneous	26,128		26,128		26,128	26,128	
Total	$6,376,447	$3,378,879	$2,997,568	$1,824,297	$1,158,360	$2,982,657	$14,911

July 6, 1931.

*Accrued.

[fol. 5873]

Exhibit X-106-P8

American Telephone and Telegraph Company

Analysis of Taxes

Year 1924

	Total company (1)	Long lines (2)	Balance excluding long lines taxes				
			Total col. (1) less col. (2) (3)	License			Other (non-license) (7)
				Direct (wholly license) (4)	Indirect (jointly license) (5)	Total col. (4) and col. (5) (6)	
New York Excise	$105,791	$13,985	$91,806	....	$90,826	$90,826	$980
New York Franchise	353,772	38,474	315,298	$35,629	279,165	314,794	504
Massachusetts Franchise	676,500	138,459	538,041	....	538,041	538,041	
Instrument	185,559	....	185,559	....	185,559	185,559	....
Long Lines State and Municipal	1,460,939	1,460,939	....	....	....	....	....
Federal Capital Stock	884,207	191,714	692,493	194,976	493,294	688,270	4,223
Federal Income	3,693,595	2,004,988	1,688,607	1,606,615	81,992	1,688,607	....
Stamp and Miscellaneous	31,724	....	31,724	....	31,604	31,604	120
Total	$7,392,087	$3,848,559	$3,343,526	$1,837,220	$1,700,481	$3,537,701	$5,827

July 6, 1931.

[fol. 5874]

Exhibit X-106-P9

American Telephone and Telegraph Company

Analysis of Taxes

Year 1925

			Balance excluding long lines taxes				
				License			
	Total company (1)	Long lines (2)	Total col. (1) less col. (2) (3)	Direct (wholly license) (4)	Indirect (jointly license) (5)	Total col. (4) and col. (5) (6)	Other (non-license) (7)
New York Excise	$115,004	$15,323	$99,681	....	$98,972	$98,972	$709
New York Franchise	426,203	38,250	387,953	$38,608	347,803	386,413	1,540
Massachusetts Franchise	675,000	125,071	549,929	....	549,929	549,929	....
Instrument	208,833	....	208,633	....	208,833	208,833	....
Long Lines State and Municipal	1,504,322	1,504,322	....	....	....	....	....
Federal Capital Stock	1,008,177	195,694	812,483	233,826	577,875	811,701	782
Federal Income	4,177,494	2,305,629	1,871,865	1,851,254	20,611	1,871,865	....
Stamp and Miscellaneous	28,118	....	28,118	....	27,946	27,946	172
Total	$8,143,151	$4,184,289	$3,958,862	$2,123,688	$1,831,971	$3,955,659	$3,203

July 6, 1931.

[fol. 5875]

Exhibit X-106-P10

American Telephone and Telegraph Company

Analysis of Taxes

Year 1926

			Balance excluding long lines taxes				
				License			
	Total company (1)	Long lines (2)	Total col. (1) less col. (2) (3)	Direct (wholly license) (4)	Indirect (jointly license) (5)	Total col. (4) and col. (5) (6)	Other (non-license) (7)
New York Excise	$125,075	$11,041	$114,034	....	$113,409	$113,409	$625
New York Franchise	428,612	41,358	387,254	$33,534	353,188	386,722	532
Massachusetts Franchise	676,233	128,800	547,433	....	547,433	547,433	....
Instrument	16,830	....	16,830	....	16,830	16,830	....
Long Lines State and Municipal	1,562,857	1,562,857	....	....	....	....	....
Federal Capital Stock	549,509	101,819	447,690	117,739	329,542	447,281	409
Federal Income	4,657,241	2,786,339	1,870,902	1,374,637	496,265	1,870,902	....
Stamp and Miscellaneous	26,426	....	26,426	....	26,218	26,218	208
Total	$8,042,783	$4,632,214	$3,410,569	$1,525,910	$1,882,885	$3,408,795	$1,774

July 6, 1931.

[fol. 5876]

EXHIBIT X-106-P11

American Telephone and Telegraph Company

Analysis of Taxes

Year 1927

			Balance excluding long lines taxes				
				License			
	Total company (1)	Long lines (2)	Total col. (1) less col. (2) (3)	Direct (wholly license) (4)	Indirect (jointly license) (5)	Total col. (4) and col. (5) (6)	Other (non-license) (7)
New York Excise	$145,745	$3,957	$141,788	....	$141,079	$141,079	$709
New York Franchise	501,089	37,922	463,167	$39,788	423,075	462,863	304
Massachusetts Franchise	678,000	117,670	560,330	....	560,330	560,330	....
Instrument	17,342	....	17,342	....	17,342	17,342	....
Long Lines State and Municipal	1,885,805	1,885,805	....	....	....	....	....
Federal Income	4,443,311	2,249,764	2,193,547	2,156,280	*103,848	2,052,432	141,115
Stamp and Miscellaneous	10,119	....	10,119	....	10,024	10,024	95
Adjustment of Federal Capital Stock Tax for prior years	96,000	....	96,000	....	96,000	96,000	....
Total	$7,777,411	$4,295,118	$3,482,293	$2,196,068	$1,144,002	$3,340,070	$142,223

July 1, 1931.

* Red figures.

[fol. 5877]

EXHIBIT X-106-P12

American Telephone and Telegraph Company

Analysis of Taxes

Year 1928

	Total company (1)	Long lines (2)	Balance excluding long lines taxes				
			Total col. (1) less col. (2) (3)	License			Other (non-license) (7)
				Direct (wholly license) (4)	Indirect (jointly license) (5)	Total col. (4) and col. (5) (6)	
New York Excise	$133,756	$3,206	$130,552		$130,539	$130,539	$13
New York Franchise	490,964	27,413	463,551	$24,651	438,808	463,459	92
Massachusetts Franchise	680,000	79,593	600,407		600,407	600,407	
Long Lines State and Municipal	2,358,789	2,358,789					
Federal Income	4,068,915	3,581,695	487,220	260,538	226,682	487,220	
Stamp and Miscellaneous	10,610		10,610		10,376	10,376	234
Adjustment of Federal Capital Stock Tax for prior years	*1,969	18,160	*20,129		*20,129	*20,129	
Total	$7,741,067	$6,068,856	$1,672,211	$285,189	$1,386,683	$1,671,872	$339

July 6, 1931.

* Red figures.

[fol. 5878]

Exhibit X-106-P13

American Telephone and Telegraph Company

Analysis of Taxes

Year 1929

			Balance excluding long lines taxes				
				License			
	Total company (1)	Long lines (2)	Total col. (1) less col. (2) (3)	Direct (wholly license) (4)	Indirect (jointly license) (5)	Total col. (4) and col. (5) (6)	Other (non-license) (7)
New York Excise	$136,042	$3,606	$132,436	....	$132,395	$132,395	$41
New York Franchise	526,475	53,223	473,252	$27,401	445,523	472,924	328
Massachusetts Franchise	685,465	129,322	556,143	....	556,143	556,143	....
Long Lines State and Municipal	2,649,220	2,649,220	....	....	....	....	....
Federal Income	2,632,976	2,782,661	*149,685	67,004	*216,689	*149,685	....
Stamp and Miscellaneous	6,567	....	6,567	....	6,325	6,325	242
Total	$6,636,745	$5,618,032	$1,018,713	$94,405	$923,697	$1,018,102	$611

July 6, 1931.

* Red figures.

[fol. 5879]

EXHIBIT X-106-P14

American Telephone and Telegraph Company

Analysis of Taxes

Year 1930

			Balance excluding long lines taxes				
				License			
	Total company (1)	Long lines (2)	Total col. (1) less col. (2) (3)	Direct (wholly license) (4)	Indirect (jointly license) (5)	Total col. (4) and col. (5) (6)	Other (non-license) (7)
New York Excise	$158,641	$4,467	$154,174		$153,771	$153,771	$403
New York Franchise	546,848	50,446	496,402	$26,611	*465,624	492,235	4,167
Massachusetts Franchise	688,000	121,743	566,257		566,257	566,257	
Long Lines State and Municipal	2,485,198	2,485,198					
Federal Income	(a) 950,910	1,174,282	*223,372		*223,372	*223,372	
Stamp and Miscellaneous	265		265		7	7	258
Total	$4,829,862	$3,836,136	$993,726	$26,611	$962,287	$988,898	$4,828

(a) Estimated.

* Red figures.

July 6, 1931.

[fol. 5880]

EXHIBIT X 407

American Telephone and Telegraph Company

Instrument Maintenance

Years 1923-1927 (Heiss Exhibit No. 10)

Year	Depreciation expense charges (credited to the reserve) (1)	Instrument repairs (2)	Total instrument maintenance cols. (1) and (2)
1923	$2,133,172	$1,086,422	$3,219,594
1924	2,390,753	1,328,873	3,719,626
1925	2,648,034	1,613,737	4,261,771
1926	2,920,151	2,033,810	4,953,961
1927	3,150,992	2,066,815	5,217,807

NOTE. Instruments were sold to the licensee companies December 31, 1927.

July 6, 1931.

[fol. 5881]

EXHIBIT X-113

American Telephone and Telegraph Company

Per Cent of Return Considered Fair by Plaintiff on Investment in Telephone Instruments Used by Illinois Bell Telephone Company, Chicago Area, if Total Return is Reduced by Amount of Taxes of Instruments During Years 1923 to 1927, Inclusive

Item	Reference	Year ended Dec. 31, 1923	Year ended Dec. 31, 1924	Year ended Dec. 31, 1925	Year ended Dec. 31, 1926	Year ended Dec. 31, 1927
(1) Net Investment in Telephone Instruments Allocated to Chicago Area	A-166	$1,076,383	$1,229,090	$1,363,408	$1,500,641	$1,477,977
(2) Claimed Allowance for Furnishing Telephone Instruments	A-163	431,939 (a)	497,301 (a)	552,313 (a)	597,014 (a)	600,032 (a)
(3) Actual Cost of Furnishing Telephone Instruments	A-170	327,965 (b)	378,626 (b)	433,185 (b)	425,880 (b)	445,618 (b)
(4) Excess of Claimed Allowance over Actual Cost		103,974 (c)	118,675 (c)	119,128 (c)	171,134 (c)	154,414 (c)
(5) Return on Investment Included in Item 3	A-166	73,948	84,193	94,484	102,494	101,389
(6) Total Return on Investment Included in Item 2 (Item 4 plus Item 5)		177,922	202,868	213,612	273,628	255,803
(7) Per Cent of Return on Investment (Item 6 divided by Item 1)		16.53%	16.50%	15.66%	18.23%	17.31%
(8) Per Cent of Return on Investment Converted to Average Return to A. T. & T. Co. Stockholders on their Proportionate Investment in Capital Stock		24.03%	24.30%	23.24%	27.50%	25.65%

(a) Does not include an allowance for taxes.
(b) Includes taxes on instruments.
(c) This amount is less than claimed in Plaintiff's Exhibit A-200 by amount of taxes on instruments.

[fol. 5882]

EXHIBIT X-114

American Telephone and Telegraph Company

Per Cent of Return Considered Fair by Plaintiff on Investment in Telephone Instruments Used by Associated Companies per Plaintiff's Exhibits A-166 and A-198 During Years 1923 to 1927, Inclusive

Item	Reference	Year ended Dec. 31, 1923	Year ended Dec. 31, 1924	Year ended Dec. 31, 1925	Year ended Dec. 31, 1926	Year ended Dec. 31, 1927
(1) Net Investment in Telephone Instruments—A. T. & T. Co.	A-166	$16,318,631	$18,920,431	$20,985,998	$23,098,337	$22,407,037
(2) Investment Allocated to Long Lines	A-166	9,791	11,352	10,493	11,549	13,444
(3) Investment—Associated Companies	A-166	16,308,840	18,909,079	20,975,505	23,086,788	22,393,593
(4) Return on Investment—Associated Companies	A-166	1,120,417	1,295,272	1,453,603	1,576,827	1,536,201
(5) Per Cent of Return on Investment—Associated Companies (Item 4 divided by Item 3)	A-166(a)	6.87%	6.85%	6.93%	6.83%	6.86%
(6) Additional Return on Investment—Associated Companies—Claimed by Plaintiff to be necessary to produce Fair Return		$2,332,636	$2,719,135	$2,957,830	$2,871,368	$2,454,998
(7) Per Cent of Additional Return on Investment—Associated Companies (Item 6 divided by Item 3)		14.30%	14.38%	14.10%	12.44%	10.96%
(8) Total Return on Investment—Associated Companies—Claimed by Plaintiff to be necessary to produce Fair Return (Item 4 plus Item 6)		$3,453,053	$4,014,407	$4,411,433	$4,448,195	$3,991,199
(9) Per Cent of Total Return on Investment—Associated Companies (Item 8 divided by Item 3)		21.17%	21.23%	21.03%	19.27%	17.82%
(10) Per Cent of Total Return on Investment—Associated Companies, Converted to Average Return to A. T. & T. Co. Stockholders on their Proportionate Investment in Capital Stock		31.35%	31.89%	32.07%	29.20%	26.47%

(a) Agrees with Plaintiff's Exhibit A-164—Cost of Funds Used in Business.

[fol. 5883] **EXHIBIT X-115**

American Telephone and Telegraph Company

Comparison of Claims of Plaintiff for Return on Investment in Telephone Instruments Used by Illinois Bell Telephone Company, Chicago Division, with American Telephone and Telegraph Company's Actual Experience for Year Ended December 31, 1923

	Presentation during year 1929 (Record 1038) (a)	Presentation during year 1932 (Pl. Exhib.) A-163) (b)	Actual experience, year 1923 (Pl. Exhibits A-166 and A-170) (c)
(1) Investment or Value New	$3,494,271	$2,366,891	$2,066,474
(2) Depreciation	....	189,351	990,091
(3) Net Investment or Fair Value	3,494,271	2,177,540	1,076,383
(4) Total Cost of Furnishing Telephone Instruments	709,007	473,590	327,965
(5) Return on Investment included in Item (4)	279,542	174,203	73,948
(6) Per Cent of Return on Investment, per Plaintiff's Presentation (Item 5 divided by Item 3)	8.00%	8.00%	6.87%
(7) Actual Return on Investment Obtained	$454,990 (b)	$219,573 (c)	$73,948
(8) Per Cent of Actual Return on Net Investment (Item 7 divided by Item 3, column (c))	42.27%	20.40%	6.87%
(9) Per Cent of Actual Return on Net Investment Converted to Average Return to A. T. & T. Co. Stockholders	64.63%	30.13%	8.79%

(a) Plaintiff's Exhibit A-163 did not include allowance for taxes. In order to make figures comparable, actual taxes of year 1923 amounting to $41,651, are included.

(b) $709,007 − $327,965 + $73,948.

(c) 473,590 − 327,965 + 73,948.

[fol. 5884]

EXHIBIT X-116

American Telephone and Telegraph Company

Computation of Annual Cost of Furnishing Telephone Instruments to Chicago Division of Illinois Bell Telephone Company, Year Ended December 31, 1920

	Totals, all licensee companies	Illinois Bell Tel. Company, Chicago Div.
Average Stations in Service:		
All Licensees, using telephone instruments of A. T. & T. Co.	8,145,470	
Illinois Bell Telephone Co.—Chicago Division		559,226
Per cent, Chicago Division of All Licensees		6.865%
Average Investment in Telephone Instruments, Less Average Depreciation Reserve (Chicago Division 6.865%)	$11,064,999	$759,612
Return on Average Investment in Telephone Instruments, less Average Depreciation Reserve at 6.11% (Annual Cost of A. T. & T. Co. Funds)		46,412
Repairs (Chicago Division 6.865%)	560,460	38,476
Depreciation Expense (Chicago Division 6.865%)	1,752,249	120,292
Taxes (Actual)		83,623
Total Annual Cost of Furnishing Telephone Instruments		$288,803
Annual Cost of Furnishing Telephone Instruments Per Telephone Station in Service		$.5164

[fol. 5885]

EXHIBIT X-117

American Telephone and Telegraph Company

Profit on Furnishing Telephone Instruments to Chicago Division Illinois Bell Telephone Company on Basis of Annual Allowance of $1.13 per Station Made by Public Utilities Commission in Order of December 20, 1920

During Year Ended December 31, 1920

(1) Average telephone stations in service in Illinois Bell Telephone Co., Chicago Division	559,226
(2) Annual Allowance of P. U. C. at $1.13 per sta.	$631,925
(3) Cost of furnishing telephone instruments at $.5164 per station (a)	288,803
(4) Profit to A. T. & T. Co. (b)	343,122
(5) Ratio of cost of furnishing telephone instruments (item 3) to annual allowance of P. U. C. (item 2)	45.70%

(6) Ratio of profit to A. T. & T. Co. (item 4) to annual allowance of P. U. C. (item 2)	54.30%
(7) Ratio of profit to A. T. & T. Co. (item 4) to cost (item 3)	118.81%
(8) Per cent of profit to A. T. & T. Co. (item 4) to average investment ($759,612)	45.17%

(a) Details of these figures are shown on next page.

(b) "Profit to A. T. & T. Co." is the amount carried to corporate surplus after including in the cost of furnishing telephone instruments, the cost of funds which the A. T. & T. Co. represents was paid during the year 1920 for the funds invested in telephone instruments. The cost of funds includes interest on funded debt, interest on other obligations and dividends on the capital stock at the rate of 8% per annum.

[fol. 5886]

Exhibit X–118

American Telephone and Telegraph Company

Per Cent of Return on Investment from Furnishing Telephone Instruments to Chicago Division of Illinois Bell Telephone Company on Basis of Annual Allowance of $1.13 per Telephone Station Made by Public Utilities Commission in Order of December 20, 1920, During Year Ended December 31, 1920

(1) Average investment in telephone instruments, less depreciation	$759,612
(2) Return on average investment at rate of cost of funds (6.11%)	$46,412
(3) Additional profit to A. T. & T. Co. to corporate surplus	343,122
(4) Total return	$389,534
(5) Per cent of return on investment (item 4 to item 1)	51.28%
(6) Per cent of return on investment expressed in per cent of return to A. T. & T. Co. stockholders on their average capital stock investment	98.75%

[fol. 5887]

Exhibit X-119

American Telephone and Telegraph Company

Per Cent of Excess of Average Current Cost of Telephone Instruments Used by Illinois Bell Telephone Company, Chicago Division, Shown by Plaintiff's Exhibit A-163, over Book Cost Computed from Plaintiff's Exhibit A-66 During Years 1923 to 1927, Inclusive

Item	Reference	Year ended Dec. 31, 1923	Year ended Dec. 31, 1924	Year ended Dec. 31, 1925	Year ended Dec. 31, 1926	Year ended Dec. 31, 1927
(1) Total Investment in Telephone Instruments (Before Depreciation)	A-166	$31,329,013	$35,531,884	$39,373,616	$43,403,336	$42,848,662
(2) Investment Allocated to Long Lines	A-166 (a)	18,797	21,319	19,687	21,702	25,709
(3) Investment Allocated to Associated Companies	A-166	31,310,216	35,510,565	39,353,929	43,381,634	42,822,953
(4) Investment Allocated to Illinois Bell Telephone Company, Chicago Division	A-166 (b)	2,066,474	2,308,187	2,558,005	2,819,806	2,826,315
(5) Average Current Cost of Telephone Instruments	A-163	2,366,891	2,699,950	2,939,714	3,054,103	3,046,359
(6) Excess of Average Current Cost over Book Cost (Investment)		300,417	391,763	381,709	234,297	220,044
(7) Per Cent of Excess of Average Current Cost over Book Cost		14.54	16.97	14.92	8.31	7.78

(a) Using Per Cent in Column (2).
(b) Using Per Cent in Column (3).

[fol. 5888]

Exhibit X–120

American Telephone and Telegraph Company

Per Cent of Excess of Average Current Cost of Telephone Instruments Used by Bell System Shown by Defendants' Exhibit 122 over Book Cost Shown by Plaintiff's Exhibit A-166 During Years 1923 to 1927, Inclusive

Item	Reference	Year ended Dec. 31, 1923	Year ended Dec. 31, 1924	Year ended Dec. 31, 1925	Year ended Dec. 31, 1926	Year ended Dec. 31, 1927
(1) Average Current Cost	D-122	$36,712,948	$42,095,239	$46,392,461	$48,421,792	$46,937,162
(2) Book Cost (Before Depreciation)	A-166	31,329,013	35,531,884	39,373,616	43,403,336	42,848,662
(3) Excess of Average Current Cost over Book Cost		5,383,935	6,563,355	7,018,845	5,018,456	4,088,500
(4) Per Cent of Excess of Average Current Cost over Book Cost		17.18%	18.47%	17.83%	11.56%	9.54%

[fol. 5889]

EXHIBIT X-124

American Telephone and Telegraph Company

Capital Stock Holdings in Licensee Companies Showing Dividend Rates and Yields Thereon During Years 1920, 1921, and 1922

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
Bell Telephone Company of Pennsylvania:			
1. Average A. T. & T. Stock Holdings—Par Value	$7,507,325	$7,516,000	$7,516,000
2. Average A. T. & T. Stock Holdings—Book Value	7,515,552	7,533,970	7,533,970
3. Dividend Rate On Average A. T. & T. Stock Holdings—Par Value	6.00%	8.00%	8.00%
4. Yield to A. T. & T. On Average Stock Holdings—Book Value	5.99%	7.98%	7.98%
Central Union Telephone Company:			
1. Average A. T. & T. Stock Holdings—Par Value	5,448,428	....	....
2. Average A. T. & T. Stock Holdings—Book Value	3,347,038	....	....
3. Dividend Rate On Average A. T. & T. Stock Holdings—Par Value	0.00%	....	....
4. Yield to A. T. & T. On Average Stock Holdings—Book Value	0.00%	....	....
Chesapeake & Potomac Telephone Co. (Baltimore):			
1. Average A. T. & T. Stock Holdings—Par Value	....	....	1,600,000
2. Average A. T. & T. Stock Holdings—Book Value	....	....	1,600,000
3. Dividend Rate On Average A. T. & T. Stock Holdings—Par Value	....	....	6.00%
4. Yield to A. T. & T. On Average Stock Holdings—Book Value	....	....	6.00%
Chesapeake & Potomac Telephone Co. (W. Va.):			
1. Average A. T. & T. Stock Holdings—Par Value	....	....	3,412,700
2. Average A. T. & T. Stock Holdings—Book Value	....	....	3,412,700
3. Dividend Rate On Average A. T. & T. Stock Holdings—Par Value	....	....	0.00%
4. Yield to A. T. & T. On Average Stock Holdings—Book Value	....	....	0.00%
Cincinnati & Suburban Bell Telephone Co.:			
1. Average A. T. & T. Stock Holdings—Par Value	3,155,513	3,281,650	3,609,800
2. Average A. T. & T. Stock Holdings—Book Value	4,002,726	4,128,863	4,457,013
3. Dividend Rate On Average A. T. & T. Stock Holdings—Par Value	8.00%	8.00%	8.00%
4. Yield to A. T. & T. On Average Stock Holdings—Book Value	6.31%	6.36%	6.48%

Illinois Bell Telephone Company:			
1. Average A. T. & T. Stock Holdings—Par Value	39,377,800	44,355,350	49,367,225
2. Average A. T. & T. Stock Holdings—Book Value	46,462,494	51,440,543	56,452,540
3. Dividend Rate On Average A. T. & T. Stock Holdings—Par Value	8.00%	8.00%	8.00%
4. Yield to A. T. & T. On Average Stock Holdings—Book Value	6.78%	6.90%	7.00%
Indiana Bell Telephone Company:			
1. Average A. T. & T. Stock Holdings—Par Value	5,705,150	13,204,650	14,999,050
2. Average A. T. & T. Stock Holdings—Book Value	4,246,161	10,286,672	12,081,072
3. Dividend Rate On Average A. T. & T. Stock Holdings—Par Value	0.00%	0.00%	0.00%
4. Yield to A. T. & T. On Average Stock Holdings—Book Value	0.00%	0.00%	0.00%
[fol. 5890]			
Michigan State Telephone Co.:			
Common:			
1. Average A. T. & T. Stock Holdings—Par Value	$5,998,319	$5,999,307	$5,999,507
2. Average A. T. & T. Stock Holdings—Book Value	6,410,663	6,411,687	6,412,029
3. Dividend Rate On Average A. T. & T. Stock Holdings—Par Value	0.00%	0.00%	0.00%
4. Yield to A. T. & T. On Average Stock Holdings—Book Value	0.00%	0.00%	0.00%
Preferred:			
1. Average A. T. & T. Stock Holdings—Par Value	2,002,800	2,117,300	2,183,700
2. Average A. T. & T. Stock Holdings—Book Value	1,933,257	2,003,303	2,050,402
3. Dividend Rate On Average A. T. & T. Stock Holdings—Par Value	0.00%	0.00%	19.50%
4. Yield to A. T. & T. On Average Stock Holdings—Book Value	0.00%	0.00%	20.76%
Mountain States Telephone Co.:			
1. Average A. T. & T. Stock Holdings—Par Value	27,989,285	27,990,000	27,990,000
2. Average A. T. & T. Stock Holdings—Book Value	28,009,057	28,009,772	28,009,772
3. Dividend Rate On Average A. T. & T. Stock Holdings—Par Value	7.00%	7.00%	7.00%
4. Yield to A. T. & T. On Average Stock Holdings—Book Value	7.00%	7.00%	7.00%
New England Telephone & Telegraph Co.:			
1. Average A. T. & T. Stock Holdings—Par Value	38,514,000	38,514,000	38,514,000
2. Average A. T. & T. Stock Holdings—Book Value	43,345,602	43,345,602	43,345,602
3. Dividend Rate On Average A. T. & T. Stock Holdings—Par Value	7.50%	8.00%	8.00%
4. Yield to A. T. & T. On Average Stock Holdings—Book Value	6.66%	7.11%	7.11%

Exhibit X-124—Continued

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
New York Telephone Company:			
1. Average A. T. & T. Stock Holdings—Par Value	150,000,000	160,515,584	204,692,000
2. Average A. T. & T. Stock Holdings—Book Value	187,500,000	198,015,589	242,192,000
3. Dividend Rate On Average A. T. & T. Stock Holdings—Par Value	8.00%	8.00%	8.00%
4. Yield to A. T. & T. On Average Stock Holdings—Book Value	6.40%	6.48%	6.76%
Northwestern Bell Telephone Company:			
1. Average A. T. & T. Stock Holdings—Par Value	15,000,000	42,150,000	42,150,000
2. Average A. T. & T. Stock Holdings—Book Value	14,472,000	40,667,107	40,667,107
3. Dividend Rate On Average A. T. & T. Stock Holdings—Par Value	7.75%	4.00%	5.00%
4. Yield to A. T. & T. On Average Stock Holdings—Book Value	8.03%	4.15%	5.18%

[fol. 5891]

	Year Ended Dec. 31, 1920	Year Ended Dec. 31, 1921	Year Ended Dec. 31, 1922
Ohio Bell Telephone Company:			
Common:			
1. Average A. T. & T. Stock Holdings—Par Value	$15,498,900	$24,998,833	$28,498,800
2. Average A. T. & T. Stock Holdings—Book Value	12,558,260	19,999,053	23,498,945
3. Dividend Rate On Average A. T. & T. Stock Holdings—Par Value	0.00%	6.00%	0.00%
4. Yield to A. T. & T. On Average Stock Holdings—Book Value	0.00%	7.50%	0.00%
Preferred:			
1. Average A. T. & T. Stock Holdings—Par Value	....	700,000	17,708,505
2. Average A. T. & T. Stock Holdings—Book Value	....	642,250	16,247,553
3. Dividend Rate On Average A. T. & T. Stock Holdings—Par Value	....	7.00%	7.00%
4. Yield to A. T. & T. On Average Stock Holdings—Book Value	....	7.63%	7.63%
Pacific Telephone & Telegraph Company:			
Common:			
1. Average A. T. & T. Stock Holdings—Par Value	14,227,600	15,497,600	15,897,600
2. Average A. T. & T. Stock Holdings—Book Value	1,979,108	2,518,534	2,800,075
3. Dividend Rate On Average A. T. & T. Stock Holdings—Par Value	0.00%	0.00%	0.00%
4. Yield to A. T. & T. On Average Stock Holdings—Book Value	0.00%	0.00%	0.00%

Preferred:			
1. Average A. T. & T. Stock Holdings—Par Value	22,950,800	22,950,800	32,920,400
2. Average A. T. & T. Stock Holdings—Book Value	22,950,800	22,950,800	31,424,960
3. Dividend Rate On Average A. T. & T. Stock Holdings—Par Value	6.00%	6.00%	6.00%
4. Yield to A. T. & T. On Average Stock Holdings—Book Value	6,00%	6.00%	6.29%
Southern Bell Telephone Company:			
1. Average A. T. & T. Stock Holdings—Par Value	27,500,000	30,000,000	30,000,000
2. Average A. T. & T. Stock Holdings—Book Value	25,361,795	27,861,795	27,861,795
3. Dividend Rate On Average A. T. & T. Stock Holdings—Par Value	6.00%	6.00%	6.00%
4. Yield to A. T. & T. On Average Stock Holdings—Book Value	6.51%	6.46%	6.46%
Southern New England Telephone Company:			
1. Average A. T. & T. Stock Holdings—Par Value	3,985,100	5,001,400	5,501,550
2. Average A. T. & T. Stock Holdings—Book Value	4,277,097	5,293,397	5,793,547
3. Dividend Rate On Average A. T. & T. Stock Holdings—Par Value	7.50%	8.00%	8.00%
4. Yield to A. T. & T. On Average Stock Holdings—Book Value	6.99%	7.56%	7.60%
[fol. 5892]			
Southwestern Bell Telephone Co.:			
1. Average A. T. & T. Stock Holding—Par Value	$50,125,000	$60,000,000	$66,250,000
2. Average A. T. & T. Stock Holdings—Book Value	46,287,486	56,162,486	62,412,486
3. Dividend Rate On Average A. T. & T. Stock Holdings—Par Value	6.00%	7.25%	8.00%
4. Yield to A. T. & T. On Average Stock Holdings—Book Value	6.50%	7.75%	8.49%
Wisconsin Telephone Company:			
1. Average A. T. & T. Stock Holdings—Par Value	10,990,700	10,995,350	11,000,000
2. Average A. T. & T. Stock Holdings—Book Value	11,891,660	11,898,809	11,905,958
3. Dividend Rate on Average A. T. & T. Stock Holdings—Par Value	8.00%	8.00%	8.00%
4. Yield to A. T. & T. On Average Stock Holdings—Book Value	7.39%	7.39%	7.39%
Total—All Licensee Companies:			
1. Average A. T. & T. Stock Holdings—Par Value	$445,976,720	$515,787,829	$609,810,837
2. Average A. T. & T. Stock Holdings—Book Value	472,550,756	539,170,232	630,159,926
3. Dividend Rate On Average A. T. & T. Stock Holdings—Par Value	6.52%	6.66%	6.64%
4. Yield to A. T. & T. On Average Stock Holdings—Book Value	6.15%	6.37%	6.43%

(Here follow side folios 5893, 5894, 5895, 5896, and 5897)

[fol. 5893]

American Telephone and Telegraph Company

Capital Stock Holdings Showing Dividend Rates and Yields Thereon, in Licensee Companies During Years 1923 to 1930, Inclusive

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
Bell Telephone Company of Pennsylvania:								
1. Average A. T. & T. Stock Holdings—Par Value	$7,516,000	$35,786,767	$80,000,000	$80,000,000	$80,000,000	$80,000,000	$85,000,000	$90,000,000
2. Average A. T. & T. Stock Holdings—Book Value	7,533,970	38,261,047	86,316,050	86,316,050	86,316,050	86,316,050	91,316,050	96,316,050
3. Dividend Rate on Average A. T. & T. Stock Holdings—Par Value	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
4. Yield to A. T. & T. on Average Stock Holdings—Book Value	7.98%	7.48%	7.41%	7.41%	7.41%	7.41%	7.45%	7.48%
Chesapeake & Potamac Telephone Co. (Baltimore):								
1. Average A. T. & T. Stock Holdings—Par Value	12,014,743	17,174,300	17,174,300	17,174,300	26,824,300	26,824,300	26,824,300	27,618,225
2. Average A. T. & T. Holdings—Book Value	12,940,291	18,642,162	18,642,162	18,642,162	28,292,162	28,292,162	28,292,162	29,086,087
3. Dividend Rate on Average A. T. & T. Stock Holdings—Par Value	6.00%	6.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
4. Yield to A. T. & T. on Average Stock Holdings—Book Value	5.57%	5.53%	7.37%	7.37%	7.58%	7.58%	7.58%	7.60%
Chesapeake & Potomac Telephone Co. (New York):								
1. Average A. T. & T. Stock Holdings—Par Value	5,287,778	13,000,000	13,000,000	13,000,000	13,000,000	13,000,000	13,000,000	13,500,000
2. Average A. T. & T. Stock Holdings—Book Value	5,694,441	14,000,000	14,000,000	14,000,000	14,000,000	14,000,000	14,000,000	14,500,000
3. Dividend Rate on Average A. T. & T. Stock Holdings—Par Value	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
4. Yield to A. T. & T. on Average Stock Holdings—Book Value	7.43%	7.43%	7.43%	7.43%	7.43%	7.43%	7.43%	7.45%
Chesapeake & Potomac Telephone Co. (Virginia):								
1. Average A. T. & T. Stock Holdings—Par Value	7,173,696	9,000,000	9,000,000	9,000,000	13,200,000	13,200,000	13,200,000	14,400,000
2. Average A. T. & T. Stock Holdings—Book Value	7,173,696	9,000,000	9,000,000	9,000,000	13,200,000	13,200,000	13,200,000	14,400,000
3. Dividend Rate on Average A. T. & T. Stock Holdings—Par Value	7.50%	7.50%	6.00%	6.00%	6.00%	7.00%	8.00%	8.00%
4. Yield to A. T. & T. on Average Stock Holdings—Book Value	7.50%	7.50%	6.00%	6.00%	6.00%	7.00%	8.00%	8.00%
Chesapeake & Potomac Telephone Co. (West Virginia):								
1. Average A. T. & T. Stock Holdings—Par Value	9,581,350	10,500,000	10,500,000	11,925,000	16,200,000	16,200,000	16,200,000	16,200,000
2. Average A. T. & T. Stock Holdings—Book Value	9,581,350	10,500,000	10,500,000	11,925,000	16,200,000	16,200,000	16,200,000	16,200,000
3. Dividend Rate on Average A. T. & T. Stock Holdings—Par Value	7.00%	3.00%	6.00%	6.00%	6.00%	6.00%	6.00%	4.00%
4. Yield to A. T. & T. on Average Stock Holdings—Book Value	7.00%	3.00%	6.00%	6.00%	6.00%	6.00%	6.00%	4.00%
Cincinnati & Suburban Bell Telephone Co.:								
1. Average A. T. & T. Stock Holdings—Par Value	3,970,800	4,254,450	4,764,900	5,445,800	5,445,800	5,990,425	6,535,175	7,352,225
2. Average A. T. & T. Stock Holdings—Book Value	4,818,013	5,101,663	5,612,116	6,009,148	6,009,148	6,553,773	7,098,572	7,915,622
3. Dividend Rate on Average A. T. & T. Stock Holdings—Par Value	8.00%	8.00%	8.00%	8.00%	9.00%	9.00%	9.00%	9.00%
4. Yield to A. T. & T. on Average Stock Holdings—Book Value	6.59%	6.67%	6.79%	7.25%	8.16%	8.23%	8.29%	8.36%

[fol. 5894]

	Year Ended Dec. 31, 1923	Year Ended Dec. 31, 1924	Year Ended Dec. 31, 1925	Year Ended Dec. 31, 1926	Year Ended Dec. 31, 1927	Year Ended Dec. 31, 1928	Year Ended Dec. 31, 1929	Year Ended Dec. 31, 1930
Cumberland Telephone & Telegraph Co. (Ky.):								
1. Average A. T. & T. Stock Holdings—Par Value	$7,749,600	$7,749,600	$19,110,400	$........	$........	$........	$........	$........
2. Average A. T. & T. Stock Holdings—Book Value	7,749,600	7,749,600	19,543,246	....	....	....	....	....
3. Dividend Rate on Average A. T. & T. Stock Holdings—Par Value	0.00%	7.00%	7.00%	....	....	....	....	....
4. Yield to A. T. & T. on Average Stock Holdings—Book Value	0.00%	7.00%	6.84%	....	....	....	....	....
Diamond State Telephone Company:								
1. Average A. T. & T. Stock Holdings—Par Value	....	....	....	....	....	....	$1,250,000	$3,250,000
2. Average A. T. & T. Stock Holdings—Book Value	....	....	....	....	....	....	1,600,000	3,950,000
3. Dividend Rate on Average A. T. & T. Stock Holdings—Par Value	....	....	....	....	....	....	0.00%	8.00%
4. Yield to A. T. & T. on Average Stock Holdings—Book Value	....	....	....	....	....	....	0.00%	6.58%
Illinois Bell Telephone Company:								
1. Average A. T. & T. Stock Holdings—Par Value	$59,314,500	$66,750,950	$69,242,100	$79,214,500	$86,661,900	$109,016,750	$109,017,675	$128,872,200
2. Average A. T. & T. Stock Holdings—Book Value	66,410,793	74,851,757	76,342,269	86,330,488	92,088,083	114,461,965	114,463,353	134,335,909
3. Dividend Rate on Average A. T. & T. Stock Holdings—Par Value	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
4. Yield to A. T. & T. on Average Stock Holdings—Book Value	7.15%	7.13%	7.26%	7.34%	7.53%	7.62%	7.62%	7.67%
Indiana Bell Telephone Company:								
1. Average A. T. & T. Stock Holdings—Par Value	$14,999,050	$14,999,000	$20,999,050	$26,999,100	$26,999,100	$29,999,100	$29,999,100	$29,999,100
2. Average A. T. & T. Stock Holdings—Book Value	12,081,072	12,081,022	18,374,474	27,585,586	27,585,586	30,585,586	30,585,586	30,585,586
3. Dividend Rate on Average A. T. & T. Stock Holdings—Par Value	0.00%	0.00%	0.00%	4.00%	6.50%	8.00%	8.00%	8.00%
4. Yield to A. T. & T. on Average Stock Holdings—Book Value	0.00%	0.00%	0.00%	3.91%	6.36%	7.85%	7.85%	7.85%
Michigan Bell Telephone Company:								
1. Average A. T. & T. Stock Holdings—Par Value	$20,023,376	$32,805,107	$49,992,607	$49,989,607	$49,988,356	$84,989,107	$84,988,607	$99,988,606
2. Average A. T. & T. Stock Holdings—Book Value	20,435,979	33,217,710	50,405,210	50,402,210	50,400,959	85,401,710	85,401,210	100,400,210
3. Dividend Rate on Average A. T. & T. Stock Holdings—Par Value	6.50%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	5.00%
4. Yield to A. T. & T. on Average Stock Holdings—Book Value	6.37%	7.90%	7.93%	7.93%	7.93%	7.96%	7.96%	4.98%

1. Average A. T. & T. Stock Holdings—Par Value	$20,023,376	$32,805,107	$49,992,607	$49,989,607	$49,988,356	$84,989,107	$84,988,607	$99,988,606
2. Average A. T. & T. Stock Holdings—Book Value	20,435,979	33,217,710	50,405,210	50,402,210	50,400,959	85,401,710	85,401,210	100,400,210
3. Dividend Rate on Average A. T. & T. Stock Holdings—Par Value	6.50%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	5.00%
4. Yield to A. T. & T. on Average Stock Holdings—Book Value	6.37%	7.90%	7.93%	7.93%	7.93%	7.96%	7.96%	4.98%

[fol. 5895]

Mountain State Telephone Company:								
1. Average A. T. & T. Stock Holdings—Par Value	$27,990,000	$27,990,000	$27,990,000	$27,990,000	$27,990,000	$27,990,000	$27,990,000	$33,964,115
2. Average A. T. & T. Stock Holdings—Book Value	28,009,772	28,009,772	28,009,772	29,364,963	29,364,963	29,364,963	29,364,963	35,839,078
3. Dividend Rate on Average A. T. & T. Stock Holdings—Par Value	7.00%	7.00%	7.00%	7.25%	8.00%	8.00%	8.00%	8.00%
4. Yield to A. T. & T. on Average Stock Holdings—Book Value	7.00%	7.00%	7.00%	6.91%	7.63%	7.63%	7.63%	7.69%
New England Telephone and Telegraph Co.:								
1. Average A. T. & T. Stock Holdings—Par Value	$38,514,000	$45,781,850	$48,826,233	$67,767,925	68,589,300	68,598,300	68,589,300	78,049,587
2. Average A. T. & T. Stock Holdings—Book Value	43,345,602	50,616,359	53,664,251	71,801,063	72,251,446	72,251,446	72,251,446	82,440,175
3. Dividend Rate on Average A. T. & T. Stock Holdings—Par Value	8.00%	8.00%	6.00%	8.00%	8.00%	8.00%	8.00%	8.00%
4. Yield to A. T. & T. on Average Stock Holdings—Book Value	7.11%	7.24%	5.46%	7.55%	7.59%	7.59%	7.59%	7.57%
New Jersey Bell Telephone Company:								
1. Average A. T. & T. Stock Holdings—Par Value	....	....	....	....	....	$60,296,400	$100,395,200	$100,395,200
2. Average A. T. & T. Stock Holdings—Book Value	....	....	....	....	....	68,502,740	114,062,384	114,062,384
3. Dividend Rate on Average A. T. & T. Stock Holdings—Par Value	....	....	....	....	....	8.00%	8.00%	8.00%
4. Yield to A. T. & T. on Average Stock Holdings—Book Value	....	....	....	....	....	7.04%	7.04%	7.04%
New York Telephone Company:								
1. Average A. T. & T. Stock Holdings—Par Value	$204,692,000	$204,692,000	$204,692,000	$280,600,000	$280,600,000	$280,600,000	$280,600,000	$304,187,500
2. Average A. T. & T. Stock Holdings—Book Value	242,192,000	242,192,000	242,192,000	303,578,800	303,580,335	303,580,335	303,580,335	327,167,835
3. Dividend Rate on Average A. T. & T. Stock Holdings—Par Value	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
4. Yield to A. T. & T. on Average Stock Holdings—Book Value	6.76%	6.76%	6.76%	7.39%	7.39%	7.39%	7.39%	7.44%
Northwestern Bell Telephone Company:								
1. Average A. T. & T. Stock Holdings—Par Value	$42,150,000	$42,150,000	$59,287,500	$65,000,000	$65,000,000	$65,000,000	$65,000,000	$65,000,000
2. Average A. T. & T. Stock Holdings—Book Value	40,667,107	40,667,107	57,804,607	66,039,490	66,039,490	66,039,490	66,039,490	66,039,490
3. Dividend Rate on Average A. T. & T. Stock Holdings—Par Value	6.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
4. Yield to A. T. & T. on Average Stock Holdings—Book Value	6.22%	8.29%	8.21%	7.87%	7.87%	7.87%	7.87%	7.87%

[fol. 5896]

Ohio Bell Telephone Company:								
Common Stock:								
1. Average A. T. & T. Stock Holdings—Par Value	$28,498,800	$28,498,800	$32,998,800	$47,498,775	$49,998,800	$74,998,850	$88,748,900	$99,998,988
2. Average A. T. & T. Stock Holdings—Book Value	23,498,945	23,498,945	27,998,945	45,019,895	50,041,148	75,041,198	88,791,248	100,041,336
3. Dividend Rate on Average A. T. & T. Stock Holdings—Par Value	1.00%	3.00%	6.00%	6.00%	6.00%	7.00%	7.00%	6.25%
4. Yield to A. T. & T. on Average Stock Holdings—Book Value	1.21%	3.64%	7.07%	6.33%	5.99%	7.00%	7.00%	6.25%
Preferred Stock:								
1. Average A. T. & T. Stock Holdings—Par Value	16,661,500	16,164,100	15,612,375	15,484,750	15,479,800	15,409,225	15,389,000	15,505,825
2. Average A. T. & T. Stock Holdings—Book Value	15,843,291	15,918,291	15,804,305	15,766,035	15,760,996	15,689,137	15,668,546	15,792,824
3. Dividend Rate on Average A. T. & T. Stock Holdings—Par Value	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%
4. Yield to A. T. & T. on Average Stock Holdings—Book Value	7.36%	7.11%	6.91%	6.88%	6.88%	6.88%	6.88%	6.87%
Pacific Telephone & Telegraph Company:								
Common Stock:								
1. Average A. T. & T. Stock Holdings—Par Value	16,107,600	16,341,100	38,163,300	38,161,369	68,818,975	79,045,700	79,45,700	132,703,850
2. Average A. T. & T. Stock Holdings—Book Value	2,984,175	3,210,226	35,024,873	35,021,427	65,228,710	75,456,199	75,456,199	129,114,349
3. Dividend Rate on Average A. T. & T. Stock Holdings—Par Value	0.00%	0.00%	6.00%	7.00%	7.00%	7.00%	7.00%	7.00%
4. Yield to A. T. & T. on Average Stock Holdings—Book Value	0.00%	0.00%	6.54%	7.63%	7.39%	7.33%	7.33%	7.19%
Preferred Stock:								
1. Average A. T. & T. Stock Holdings—Par Value	42,390,000	55,711,187	64,042,700	64,042,700	64,042,700	64,042,700	64,042,700	64,042,700
2. Average A. T. & T. Stock Holdings—Book Value	39,433,970	51,100,683	58,397,335	55,953,111	55,953,111	55,953,111	55,953,111	55,953,111
3. Dividend Rate on Average A. T. & T. Stock Holdings—Par Value	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%
4. Yield to A. T. & T. on Average Stock Holdings—Book Value	6.45%	6.54%	6.58%	6.87%	6.87%	6.87%	6.87%	6.87%
Southern Bell Telephone Company:								
1. Average A. T. & T. Stock Holdings—Par Value	37,741,936	45,000,000	45,000,000	75,552,708(a)	94,998,200	99,998,100	118,747,725	124,998,700
2. Average A. T. & T. Stock Holdings—Book Value	35,603,731	42,861,795	42,861,795	76,126,401(a)	96,812,381	101,812,281	120,561,906	126,815,765
3. Dividend Rate on Average A. T. & T. Stock Holdings—Par Value	7.75%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
4. Yield to A. T. & T. on Average Stock Holdings—Book Value	8.22%	8.40%	8.40%	7.94%	7.85%	7.86%	7.88%	7.89%

[fol. 5897]

Southern New England Telephone Co.:

2. Average A. T. & T. Stock Holdings—Book Value	2,984,175	3,210,226	35,024,873	35,021,427	65,228,710	75,456,199	75,456,199	129,114,349
3. Dividend Rate on Average A. T. & T. Stock Holdings—Par Value	0.00%	0.00%	6.00%	7.00%	7.00%	7.00%	7.00%	7.00%
4. Yield to A. T. & T. on Average Stock Holdings—Book Value	0.00%	0.00%	6.54%	7.63%	7.39%	7.33%	7.33%	7.19%
Preferred Stock:								
1. Average A. T. & T. Stock Holdings—Par Value	42,390,000	55,711,187	64,042,700	64,042,700	64,042,700	64,042,700	64,042,700	64,042,700
2. Average A. T. & T. Stock Holdings—Book Value	39,433,970	51,100,683	58,397,335	55,953,111	55,953,111	55,953,111	55,953,111	55,953,111
3. Dividend Rate on Average A. T. & T. Stock Holdings—Par Value	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%
4. Yield to A. T. & T. on Average Stock Holdings—Book Value	6.45%	6.54%	6.58%	6.87%	6.87%	6.87%	6.87%	6.87%
Southern Bell Telephone Company:								
1. Average A. T. & T. Stock Holdings—Par Value	37,741,936	45,000,000	45,000,000	75,552,708(a)	94,998,200	99,998,100	118,747,725	124,998,700
2. Average A. T. & T. Stock Holdings—Book Value	35,603,731	42,861,795	42,861,795	76,126,401(a)	96,812,381	101,812,281	120,561,906	126,815,765
3. Dividend Rate on Average A. T. & T. Stock Holdings—Par Value	7.75%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
4. Yield to A. T. & T. on Average Stock Holdings—Book Value	8.22%	8.40%	8.40%	7.94%	7.85%	7.86%	7.88%	7.89%
[fol. 5897]								
Southern New England Telephone Co.:								
1. Average A. T. & T. Stock Holdings—Par Value	$6,001,700	$7,002,000	$7,505,150	$8,335,750	$9,336,100	$10,503,150	$11,670,200	$12,087,000
2. Average A. T. & T. Stock Holdings—Book Value	6,293,704	7,294,004	7,797,154	8,632,694	9,647,829	10,814,879	11,981,996	12,398,796
3. Dividend Rate on Average A. T. & T. Stock Holdings—Par Value	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
4. Yield to A. T. & T. on Average Stock Holdings—Book Value	7.63%	7.68%	7.70%	7.72%	7.74%	7.77%	7.79%	7.80%
Southwestern Bell Telephone Co.:								
1. Average A. T. & T. Stock Holdings—Par Value	$75,000,000	$75,000,000	$75,000,000	$86,250,000	$100,000,000	$120,000,000	$139,999,175	$154,998,900
2. Average A. T. & T. Stock Holdings—Book Value	71,162,486	71,162,486	71,162,486	85,602,986	103,253,077	123,253,077	143,252,252	158,251,978
3. Dividend Rate on Average A. T. & T. Stock Holdings—Par Value	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
4. Yield to A. T. & T. on Average Stock Holdings—Book Value	8.43%	8.43%	8.43%	8.06%	7.75%	7.79%	7.82%	7.84%
Wisconsin Telephone Company:								
1. Average A. T. & T. Stock Holdings—Par Value	11,000,000	15,950,000	19,550,000	21,375,000	21,937,500	23,575,000	25,650,000	28,000,000
2. Average A. T. & T. Stock Holdings—Book Value	11,905,958	16,885,958	20,455,958	23,439,896	25,161,335	26,798,835	28,873,835	31,223,835
3. Dividend Rate on Average A. T. & T. Stock Holdings—Par Value	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
4. Yield to A. T. & T. on Average Stock Holdings—Book Value	7.39%	7.56%	7.65%	7.30%	6.97%	7.04%	7.11%	7.17%
1. Total—All Companies—Average A. T. & T. Holdings—Par Value	$694,378,429	$792,301,211	$932,451,415	$1,090,807,284	$1,185,110,831	$1,369,268,107	$1,471,882,257	$1,645,112,721
2. Total—All Companies—Average A. T. & T. Holdings—Book Value	715,359,946	816,822,587	969,909,008	1,126,557,405	1,227,186,809	1,419,568,937	1,527,994,644	1,702,330,420
3. Composite Dividend Rate on Average A. T. & T. Holdings—Par Value	6.85%	7.18%	7.32%	7.59%	7.66%	7.75%	7.76%	7.51%
4. Composite Yield to A. T. & T. on Average Holdings—Book Value	3.65%	6.97%	7.03%	7.35%	7.39%	7.48%	7.48%	7.26%

NOTES.—All figures and computations herein refer only to stock actually issued. Unless otherwise specifically designated "A. T. & T. Stock Holdings" refer to common stock.
(a) Includes stock of Cumberland Telephone and Telegraph Company during portion of year 1926, which was exchanged for stock of Southern Bell Telephone Company.

[fol. 5898]

Exhibit X-127

American Telephone and Telegraph Company

Average Return to A. T. & T. Co. from Dividends on Its Investments in Capital Stocks of Licensee Companies Converted into Average Return to Stockholders of A. T. & T. Co. on Their Investments in Capital Stock of A. T. & T. Co. During Years 1920 to 1922, Inclusive

	Year ended Dec. 31, 1920	Year ended Dec. 31, 1921	Year ended Dec. 31, 1922
Bell Telephone Company of Pennsylvania	7.75%	11.31%	10.77%
Central Union Telephone Company	....	(a)	(a)
Chesapeake & Potomac Telephone Company (Baltimore)	(a)	(a)	7.36%
Chesapeake & Potomac Telephone Company (West Virginia)	(a)	(a)	....
Cincinnati & Suburban Bell Telephone Company	8.40%	8.17%	8.18%
Illinois Bell Telephone Company	9.34%	9.21%	9.08%
Indiana Bell Telephone Company	....	....	....
Michigan State Telephone Company (Common)	....	....	....
Michigan State Telephone Company (Preferred)	....	....	32.84% (b)
Mountain State Telephone Company	9.78%	9.41%	9.08%
New England Telephone and Telegraph Company	9.10%	9.62%	9.27%
New York Telephone Company	8.58%	8.40%	8.67%
Northwestern Bell Telephone Company	11.85%	3.88%	5.94%
Ohio Bell Telephone Company (Common)	....	10.38%	....
Ohio Bell Telephone Company (Preferred)	(a)	10.63%	10.17%
Pacific Telephone and Telegraph Company (Common)	....	....	....
Pacific Telephone and Telegraph Company (Preferred)	7.77%	7.47%	7.86%
Southern Bell Telephone Company	8.80%	8.36%	8.15%
Southern New England Telephone Company	9.76%	10.49%	10.12%
Southwestern Bell Telephone Company	8.78%	10.86%	11.65%
Wisconsin Telephone Company	10.57%	10.16%	9.76%
Average yield on Stock Holdings in all Licensee Companies	8.08%	8.19%	8.10%
Average yield on Stock Holdings in all Licensee Companies exclusive of Illinois Bell Telephone Company	7.94%	8.07%	7.99%

(a) There were no stock holdings in these years.
(b) These are accumulated dividends from October 1, 1919.

Exhibit X-127—Continued

American Telephone and Telegraph Company

Average Return to A. T. & T. Co. from Dividends on Its Investments in Capital Stocks of Licensee Companies Converted into Average Return to Stockholders of A. T. & T. Co. on Their Investments in Capital Stock of A. T. & T. Co. During Years 1923 to 1930, Inclusive

	Year ended Dec. 31, 1923	Year ended Dec. 31, 1924	Year ended Dec. 31, 1925	Year ended Dec. 31, 1926	Year ended Dec. 31, 1927	Year ended Dec. 31, 1928	Year ended Dec. 31, 1929	Year ended Dec. 31, 1930
Bell Telephone Company of Pennsylvania	10.54%	9.82%	9.68%	9.78%	9.79%	10.20%	10.42%	10.91%
Chesapeake and Potomac Telephone Company (Baltimore)	6.74%	6.69%	9.62%	9.71%	10.06%	10.48%	10.64%	11.12%
Chesapeake and Potomac Telephone Company (New York)	9.67%	9.74%	9.72%	9.81%	9.82%	10.28%	10.38%	10.86%
Chesapeake and Potomac Telephone Company (Virginia)	9.78%	9.85%	7.37%	7.47%	7.53%	9.53%	11.35%	11.81%
Chesapeake and Potomac Telephone Company (West Virginia)	8.99%	2.63%	7.37%	7.47%	7.53%	7.89%	7.97%	4.89%
Cincinnati and Suburban Bell Telephone Company	8.35%	8.52%	8.67%	9.51%	10.99%	11.55%	11.83%	12.44%
Cumberland Telephone and Telegraph Company (Kentucky)	0.00%	9.05%	8.75%	....	....	....	....	....
Diamond State Telephone Company	....	....	....	....	....	....	0.00%	9.35%
Illinois Bell Telephone Company	9.23%	9.26%	9.44%	9.66%	9.98%	10.54%	10.71%	11.24%
Indiana Bell Telephone Company	0.00%	0.00%	0.00%	4.05%	8.11%	10.92%	11.09%	11.55%
Michigan Bell Telephone Company	8.00%	10.50%	10.54%	10.63%	10.62%	11.10%	11.28%	6.58%
Mountain States Telephone Company	8.99%	9.05%	9.01%	8.96%	10.14%	10.56%	10.89%	11.28%
New England Telephone and Telegraph Company	9.17%	9.44%	6.48%	10.01%	10.08%	10.50%	10.65%	11.07%
New Jersey Bell Telephone Company	....	....	....	....	....	9.59%	9.79%	10.15%
New York Telephone Company	8.61%	8.67%	8.62%	9.74%	9.76%	10.17%	10.32%	10.84%
Northwestern Bell Telephone Company	7.76%	11.12%	11.00%	10.53%	10.52%	10.95%	11.13%	11.59%
Ohio Bell Telephone Company (Common)	.14%	3.66%	9.13%	8.01%	7.51%	9.53%	9.66%	8.78%
Ohio Bell Telephone Company (Preferred)	9.56%	9.23%	8.86%	8.91%	8.94%	9.33%	9.46%	9.86%
Pacific Telephone and Telegraph Company (Common)	0.00%	0.00%	8.25%	10.14%	9.76%	10.07%	10.22%	10.41%

EXHIBIT X–127

American Telephone and Telegraph Company

Average Return to A. T. & T. Co. from Dividends on Its Investments in Capital Stocks of Licensee Companies Converted into Average Return to Stockholders of A. T. & T. Co. on Their Investments in Capital Stock of A. T. & T. Co. During Years 1923 to 1930, Inclusive—Continued.

	Year ended Dec. 31, 1923	Year ended Dec. 31, 1924	Year ended Dec. 31, 1925	Year ended Dec. 31, 1926	Year ended Dec. 31, 1927	Year ended Dec. 31, 1928	Year ended Dec. 31, 1929	Year ended Dec. 31, 1930
Pacific Telephone and Telegraph Company (Preferred)	8.12%	8.81%	8.32%	8.89%	8.92%	9.32%	9.44%	9.86%
Southern Bell Telephone Company	10.92%	11.30%	11.31%	10.64%	10.49%	10.94%	11.14%	11.62%
Southern New England Telephone Company	9.99%	10.14%	10.16%	10.28%	10.32%	10.79%	10.99%	11.47%
Southeastern Bell Telephone Company	11.25%	11.35%	11.36%	10.84%	10.33%	10.82%	11.04%	11.54%
Wisconsin Telephone Company	9.61%	9.95%	10.08%	9.60%	9.08%	9.59%	9.85%	10.38%
Average yield on Stock Holdings in all Licensee Companies	8.44%	9.00%	9.06%	9.68%	9.76%	10.32%	10.47%	10.53%
Average yield on Stock Holdings in all Licensee Companies exclusive of Illinois Bell Telephone Company	8.35%	8.97%	9.03%	9.68%	9.74%	10.30%	10.45%	10.46%

*Red Figure.

[fol. 5900]

EXHIBIT X-128

American Telephone and Telegraph Company

Profit on Investment in Capital Stocks of Licensee Companies During Years 1920 to 1922, Inclusive

	Year ended Dec. 31, 1920	Year ended Dec. 31, 1921	Year ended Dec. 31, 1922
Bell Telephone Company of Pennsylvania:			
1. Yield to A. T. & T. Co. on Book Value of Stock Holdings	5.99%	7.98%	7.98%
2. Cost of Funds to A. T. & T. Company (a)	6.11%	6.68%	6.90%
3. Per cent of Profit to A. T. & T. Company	.12%*	1.30%	1.08%
4. Amount of Profit to A. T. & T. Co. on Stock Holdings (b)	$9,018.66*	$97,941.61	$81,366.88
Central Union Telephone Company:			
1. Yield to A. T. & T. Co. on Book Value of Stock Holdings	0.00%	....	....
2. Cost of Funds to A. T. & T. Company	6.11%	....	....
3. Per cent of Profit to A. T. & T. Company	6.11%*	....	....
4. Amount of Profit to A. T. & T. Co. on Stock Holdings	204,504.02*	....	....
Chesapeake & Potomac Telephone Company (Baltimore):			
1. Yield to A. T. & T. Co. on Book Value of Stock Holdings	....	....	6.00%
2. Cost of Funds to A. T. & T. Company	....	....	6.90%
3. Per cent of Profit to A. T. & T. Company	....	....	.90%*
4. Amount of Profit to A. T. & T. Co. on Stock Holdings	....	....	14,400.00*
Chesapeake & Potomac Telephone Company (W. Va.):			
1. Yield to A. T. & T. Co. on Book Value of Stock Holdings	....	....	0.00%
2. Cost of Funds to A. T. & T. Company	....	....	6.90%
3. Per cent of Profit to A. T. & T. Company	....	....	6.90%*
4. Amount of Profit to A. T. & T. Co. on Stock Holdings	....	....	235,476.30*

Cincinnati and Suburban Bell Telephone Company:			
1. Yield to A. T. & T. Co. on Book Value of Stock Holdings	6.31%	6.36%	6.48%
2. Cost of Funds to A. T. & T. Company	6.11%	6.68%	6.90%
3. Per cent of Profit to A. T. & T. Company	.20%	.32%*	.42%*
4. Amount of Profit to A. T. & T. Co. on Stock Holdings	8,005.45	13,212.36*	18,719.45*
Illinois Bell Telephone Company:			
1. Yield to A. T. & T. Co. on Book Value of Stock Holdings	6.78%	6.90%	7.00%
2. Cost of Funds to A. T. & T. Company	6.11%	6.68%	6.90%
3. Per cent of Profit to A. T. & T. Company	.67%	.22%	.10%
4. Amount of Profit to A. T. & T. Co. on Stock Holdings	311,298.71	113,169.19	56,452.54
Indiana Bell Telephone Company:			
1. Yield to A. T. & T. Co. on Book Value of Stock Holdings	0.00%	0.00%	0.00%
2. Cost of Funds to A. T. & T. Company	6.11%	6.68%	6.90%
3. Per cent of Profit to A. T. & T. Company	6.11%*	6.68%*	6.90%*
4. Amount of Profit to A. T. & T. Co. on Stock Holdings	259,440.44*	687,149.69*	833,593.97*
Michigan State Telephone Company:			
Common			
1. Yield to A. T. & T. Co. on Book Value of Stock Holdings	0.00%	0.00%	0.00%
2. Cost of Funds to A. T. & T. Company	6.11%	6.68%	6.90%
3. Per cent of Profit to A. T. & T. Company	6.11%*	6.68%*	6.90%*
4. Amount of Profit to A. T. & T. Co. on Stock Holdings	391,691.51*	428,300.69*	442,430.00*

*Red Figures (Losses).

(a) "Cost of funds to A. T. & T. Co." is the annual amount which the A. T. & T. Co. represents was paid by it currently on funds used in its business which were derived from its funded and other indebtedness, and from its capital and surplus. The annual cost of funds includes dividends paid by the A. T. & T. Co. at the rate of 8% for the year 1920 and for the first six months of 1921, and at the rate of 9% thereafter. The cost, as used above, was translated into a percentage of the funds.

(b) Profit or loss to A. T. & T. Co., as herein used, is the amount received by A. T. & T. Co. in excess of or less than its cost of funds as defined above.

EXHIBIT X-128—Continued

	Year ended Dec. 31, 1920	Year ended Dec. 31, 1921	Year ended Dec. 31, 1922
Preferred			
1. Yield to A. T. & T. Co. on Book Value of Stock Holdings	0.00%	0.00%	20.76%
2. Cost of Funds to A. T. & T. Company	6.11%	6.68%	6.90%
3. Per cent of Profit to A. T. & T. Company	6.11%*	6.68%*	13.86%
4. Amount of Profit to A. T. & T. Co. on Stock Holdings	118,122.00*	138,820.64*	284,241.16
[fol. 5901]			
Mountain States Telephone Company:			
1. Yield to A. T. & T. Co. on Book Value of Stock Holdings	7.00%	7.00%	7.00%
2. Cost of Funds to A. T. & T. Company	6.11%	6.68%	6.90%
3. Per cent of Profit to A. T. & T. Company	.89%	.32%	.10%
4. Amount of Profit to A. T. & T. Co. on Stock Holdings	$249,280.61	$89,631.27	$28,009.77
New England Telephone & Telegraph Co.:			
1. Yield to A. T. & T. Co. on Book Value of Stock Holdings	6.66%	7.11%	7.11%
2. Cost of Funds to A. T. & T. Company	6.11%	6.68%	6.90%
3. Per cent of Profit to A. T. & T. Company	.55%	.43%	.21%
4. Amount of Profit to A. T. & T. Co. on Stock Holdings	238,400.81	186,386.09	91,025.76
New York Telephone Company:			
1. Yield to A. T. & T. Co. on Book Value of Stock Holdings	6.40%	6.48%	6.76%
2. Cost of Funds to A. T. & T. Company	6.11%	6.68%	6.90%
3. Per cent of Profit to A. T. & T. Company	.29%	.20%*	.14%*
4. Amount of Profit to A. T. & T. Co. on Stock Holdings	543,750.00	396,031.18*	339,068.80*

Northwest Bell Telephone Company:			
1. Yield to A. T. & T. Co. on Book Value of Stock Holdings	8.03%	4.15%	5.18%
2. Cost of Funds to A. T. & T. Company	6.11%	6.68%	6.90%
3. Per cent of Profit to A. T. & T. Company	1.92%	2.53%*	1.72%*
4. Amount of Profit to A. T. & T. Co. on Stock Holdings	277,862.40	1,028,877.81*	699,474.24*
Ohio Bell Telephone Company:			
Common			
1. Yield to A. T. & T. Co. on Book Value of Stock Holdings	0.00%	7.50%	0.00%
2. Cost of Funds to A. T. & T. Company	6.11%	6.68%	6.90%
3. Per cent of Profit to A. T. & T. Company	6.11%*	.82%	6.90%*
4. Amount of Profit to A. T. & T. Co. on Stock Holdings	767,309.69*	163,992.23	1,621,427.21*
Preferred			
1. Yield to A. T. & T. Co. on Book Value of Stock Holdings	....	7.63%	7.63%
2. Cost of Funds to A. T. & T. Company	....	6.68%	6.90%
3. Per cent of Profit to A. T. & T. Company	....	.95%	.73%
4. Amount of Profit to A. T. & T. Co. on Stock Holdings	....	6,101.38	118,607.14
Pacific Telephone and Telegraph Company:			
Common			
1. Yield to A. T. & T. Co. on Book Value of Stock Holdings	0.00%	0.00%	0.00%
2. Cost of Funds to A. T. & T. Company	6.11%	6.68%	6.90%
3. Per cent of Profit to A. T. & T. Company	6.11%*	6.68%*	6.90%*
4. Amount of Profit to A. T. & T. Co. on Stock Holdings	120,923.50*	168,238.07*	193,205.18*

*Red Figures (Losses).

Exhibit X-128—Continued

	Year ended Dec. 31, 1920	Year ended Dec. 31, 1921	Year ended Dec. 31, 1922
Preferred			
1. Yield to A. T. & T. Co. on Book Value of Stock Holdings	6.00%	6.00%	6.29%
2. Cost of Funds to A. T. & T. Company	6.11%	6.68%	6.90%
3. Per cent of Profit to A. T. & T. Company	.11%*	.68%*	.61%*
4. Amount of Profit to A. T. & T. Co. on Stock Holdings	25,245.88*	156,065.44*	191,692.26*
Southern Bell Telephone Company:			
1. Yield to A. T. & T. Co. on Book Value of Stock Holdings	6.51%	6.46%	6.46%
2. Cost of Funds to A. T. & T. Company	6.11%	6.68%	6.90%
3. Per cent of Profit to A. T. & T. Company	.40%	.22%*	.44%*
4. Amount of Profit to A. T. & T. Co. on Stock Holdings	101,447.18	61,295.95*	122,591.90*

[fol. 5902]

	Year ended Dec. 31, 1920	Year ended Dec. 31, 1921	Year ended Dec. 31, 1922
Southern New England Telephone Company:			
1. Yield to A. T. & T. Co. on Book Value of Stock Holdings	6.99%	7.56%	7.60%
2. Cost of Funds to A. T. & T. Company	6.11%	6.68%	6.90%
3. Per cent of Profit to A. T. & T. Company	.88%	.88%	.70%
4. Amount of Profit to A. T. & T. Co. on Stock Holdings	37,638.45	46,581.89	40,554.83
Southwestern Bell Telephone Company:			
1. Yield to A. T. & T. Co. on Book Value of Stock Holdings	6.50%	7.75%	8.49%
2. Cost of Funds to A. T. & T. Company	6.11%	6.68%	6.90%
3. Per cent of Profit to A. T. & T. Company	.39%	1.07%	1.59%
4. Amount of Profit to A. T. & T. Co. on Stock Holdings	180,321.20	600,938.60	992,358.53

Wisconsin Telephone Company:			
1. Yield to A. T. & T. Co. on Book Value of Stock Holdings	7.39%	7.39%	7.39%
2. Cost of Funds to A. T. & T. Company	6.11%	6.68%	6.90%
3. Per cent of Profit to A. T. & T. Company	1.28%	.71%	.49%
4. Amount of Profit to A. T. & T. Co. on Stock Holdings	152,213.25	84,481.54	58,839.19
Total—All Licensee Companies:			
4. Total Amount of Profit to A. T. & T. Co. on Stock Holdings	204,162.36	1,683,758.03*	2,961,123.51*
Total—All Licensee Companies Exclusive of Ill. Bell Tel. Co.:			
4. Total Amount of Profit to A. T. & T. Co. on Stock Holdings	107,136.35*	1,796,937.22*	3,017,576.05*

* Red Figures (Losses).

NOTE.—Unless otherwise specifically designated, A. T. & T. Co. holdings refer to common stock.

(Here follow side folios 5903, 5904, 5905, 5906, and 5907).

[fol. 5903]

American Telephone and Telegraph Company

Profit on Capital Investment in Licensee Companies during Years 1923 to 1930, Inclusive

	Year ending December 31, 1923	Year ending December 31, 1924	Year ending December 31, 1925	Year ending December 31, 1926	Year ending December 31, 1927	Year ending December 31, 1928	Year ending December 31, 19
Bell Telephone Company of Pennsylvania:							
1. Yield to A. T. & T. Co. on book value of stock holdings	7.98%	7.48%	7.41%	7.41%	7.41%	7.41%	7.45
2. Cost of Funds to A. T. & T. Co. (a)	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.53
3. Per cent of Profit to A. T. & T. Co.	1.11%	.63%	.48%	.56%	.55%	.86%	92
4. Amount of Profit to A. T. & T. Co. on stock holdings (b)	$83,627.07	$241,044.60	$414,317.04	$500,633.09	$474,738.27	$742,318.03	$840,107.66
Chesapeake & Potomac Telephone Co. (Baltimore):							
1. Yield to A. T. & T. Co. on book value of stock holdings	5.57%	5.53%	7.37%	7.37%	7.58%	7.58%	7.58
2. Cost of Funds to A. T. & T. Co.	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.53
3. Per cent of Profit to A. T. & T. Co.	1.30%*	1.32%*	.44%	.54%	.72%	1.03%	1.0
4. Amount of Profit to A. T. & T. Co. on stock holdings	$168,223.78*	$246,076.54*	$82,025.51	$100,667.67	$203,703.57	$291,409.27	$297,067.7
Chesapeake & Potomac Telephone Co. (New York):							
1. Yield to A. T. & T. Co. on book value of stock holdings	7.43%	7.43%	7.43%	7.43%	7.43%	7.43%	7.4
2. Cost of Funds to A. T. & T. Co.	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.5
3. Per cent of Profit to A. T. & T. Co.	.56%	.58%	.50%	.60%	.57%	.88%	.9
4. Amount of Profit to A. T. & T. Co. on stock holdings	$31,888.87	$81,200.00	$70,000.00	$84,000.00	$79,800.00	$123,200.00	$126,000.0
Chesapeake & Potomac Telephone Co. (Va.):							
1. Yield to A. T. & T. Co. on book value of stock holdings	7.50%	7.50%	6.00%	6.00%	6.00%	7.00%	8.0
2. Cost of Funds to A. T. & T. Co.	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.5
3. Per cent of Profit to A. T. & T. Co.	.63%	.65%	.93%*	.83%*	.86%*	.45%	1.4
4. Amount of Profit to A. T. & T. Co. on stock holdings	$45,194.28	$58,500.00	$83,700.00*	$74,700.00*	$113,520.00*	$59,400.00	$194,040.0
Chesapeake & Potomac Telephone Co. (W. Va.):							
1. Yield to A. T. & T. Co. on book value of stock holdings	7.00%	3.00%	6.00%	6.00%	6.00%	6.00%	6.0
2. Cost of Funds to A. T. & T. Co.	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.5
3. Per cent of Profit to A. T. & T. Co.	.13%	3.85%*	.93%*	.83%*	.86%*	.55%*	.
4. Amount of Profit to A. T. & T. Co. on stock holdings	$12,455.75	$404,250.00*	$97,650.00*	$98,977.50*	$139,320.00*	$89,100.00*	$85,860.
Cincinnati & Suburban Bell Telephone Co.:							
1. Yield to A. T. & T. Co. on book value of stock holdings	6.59%	6.67%	6.79%	7.25%	8.16%	8.23%	8.2
2. Cost of Funds to A. T. & T. Co.	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.5
3. Per cent of Profit to A. T. & T. Co.	.28%*	.18%*	.14%*	.42%	1.30%	1.68%	1.
4. Amount of Profit to A. T. & T. Co. on stock holdings	$13,490.44*	$9,182.99*	$7,856.96*	$25,238.42	$78,118.92	$110,103.39	$124,934.
[fol. 5904]							
Cumberland Telephone & Telegraph Co. (Kentucky):							
1. Yield to A. T. & T. Co. on book value of stock holdings	0.00%	7.00%	6.84%				
2. Cost of Funds to A. T. & T. Co.	6.87%	6.85%	6.93%				
3. Per cent of Profit to A. T. & T. Co.	6.87%*	.15%	.09%*				
4. Amount of Profit to A. T. & T. Co. on stock holdings	$532,397.52*	$11,621.00	$17,588.92*				
Diamond State Telephone Company:							
1. Yield to A. T. & T. Co. on book value of stock holdings							0.
2. Cost of Funds to A. T. & T. Co.							6.
3. Per cent of Profit to A. T. & T. Co.							6.
4. Amount of Profit to A. T. & T. Co. on stock holdings							$104,480.
Illinois Bell Telephone Company:							
1. Yield to A. T. & T. Co. on book value of stock holdings	7.15%	7.13%	7.26%	7.34%	7.53%	7.62%	7.
2. Cost of Funds to A. T. & T. Co.	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.
3. Per cent of Profit to A. T. & T. Co.	.28%	.28%	.33%	.51%	.67%	1.07%	1
4. Amount of Profit to A. T. & T. Co. on stock holdings	$185,950.22	$209,584.92	$251,929.49	$440,285.49	$616,990.16	$1,224,743.03	$1,247,650.

American Telephone and Telegraph Company

Profit on Capital Investment in Licensee Companies during Years 1923 to 1930, Inclusive

	Year ending December 31, 1923	Year ending December 31, 1924	Year ending December 31, 1925	Year ending December 31, 1926	Year ending December 31, 1927	Year ending December 31, 1928	Year ending December 31, 1929	Year ending December 31, 1930
ny of Pennsylvania:								
& T. Co. on book value of stock holdings	7.98%	7.48%	7.41%	7.41%	7.41%	7.41%	7.45%	7.48%
to A. T. & T. Co. (a)	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.53%	6.25%
fit to A. T. & T. Co.	1.11%	.63%	.48%	.56%	.55%	.86%	.92%	1.23%
fit to A. T. & T. Co. on stock holdings (b)	$83,627.07	$241,044.60	$414,317.04	$500,633.09	$474,738.27	$742,318.03	$840,107.66	$1,184,687.42
c Telephone Co. (Baltimore):								
& T. Co. on book value of stock holdings	5.57%	5.53%	7.37%	7.37%	7.58%	7.58%	7.58%	7.60%
to A. T. & T. Co	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.53%	6.2[illegible]%
fit to A. T. & T. Co	1.30%*	1.32%*	.44%	.54%	.72%	1.03%	1.05%	1.35%
fit to A. T. & T. Co. on stock holdings	$168,223.78*	$246,076.54*	$82,025.51	$100,667.67	$203,703.57	$291,409.27	$297,067.70	$392,662.17
c Telephone Co. (New York):								
& T. Co. on book value of stock holdings	7.43%	7.43%	7.43%	7.43%	7.43%	7.43%	7.43%	7.45%
to A. T. & T. Co	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.53%	6.25%
fit to A. T. & T. Co	.56%	.58%	.50%	.60%	.57%	.88%	.90%	1.20%
fit to A. T. & T. Co. on stock holdings	$31,888.87	$81,200.00	$70,000.00	$84,000.00	$79,800.00	$123,200.00	$126,000.00	$174,000.00
Telephone Co. (Va.):								
T. Co. on book value of stock holdings	7.50%	7.50%	6.00%	6.00%	6.00%	7.00%	8.00%	8.00%
o A. T. & T. Co	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.53%	6.25%
fit to A. T. & T. Co	.63%	.65%	.93%*	.83%*	.86%*	.45%	1.47%	1.75%
it to A. T. & T. Co. on stock holdings	$45,194.28	$58,500.00	$83,700.00*	$74,700.00*	$113,520.00*	$59,400.00	$194,040.00	$252,000.00
Telephone Co. (W. Va.):								
T. Co. on book value of stock holdings	7.00%	3.00%	6.00%	6.00%	6.00%	6.00%	6.00%	4.00%
o A. T. & T. Co	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.53%	6.25%
t to A. T. & T. Co	.13%	3.85%*	.93%*	.83%*	.86%*	.55%*	.53%*	2.25%*
t to A. T. & T. Co. on stock holdings	$12,455.75	$404,250.00*	$97,650.00*	$98,977.50*	$139,320.00*	$89,100.00*	$85,860.00*	$364,500.00*
Bell Telephone Co.:								
T. Co. on book value of stock holdings	6.59%*	6.67%	6.79%	7.25%	8.16%	8.23%	8.29%	8.36%
o A. T. & T. Co	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.53%	6.25%
it to A. T. & T. Co	.28%*	.18%*	.14%*	.42%	1.30%	1.68%	1.76%	2.11%
t to A. T. & T. Co. on stock holdings	$13,490.44*	$9,182.99*	$7,856.96*	$25,238.42	$78,118.92	$110,103.39	$124,934.87	$167,019.62
& Telegraph Co. (Kentucky):								
T. Co. on book value of stock holdings	0.00%	7.00%	6.84%					
A. T. & T. Co	6.87%	6.85%	6.93%					
t to A. T. & T. Co	6.87%*	.15%	.09%*					
t to A. T. & T. Co. on stock holdings	$532,397.52*	$11,624.00	$17,588.92*					
ne Company:								
T. Co. on book value of stock holdings							0.00%	6.58%
A. T. & T. Co							6.53%	6.25%
t to A. T. & T. Co							6.53%*	.33%
t to A. T. & T. Co. on stock holdings							$104,480.00*	$13,035.00
Company:								
T. Co. on book value of stock holdings	7.15%	7.13%	7.26%	7.34%	7.53%	7.62%	7.62%	7.67%
A. T. & T. Co	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.53%	6.25%
t to A. T. & T. Co	.28%	.28%	.33%	.51%	.67%	1.07%	1.09%	1.42%
to A. T. & T. Co. on stock holdings	$185,950.22	$209,584.92	$251,929.49	$440,285.49	$616,990.16	$1,224,743.03	$1,247,650.55	$1,907,569.91

3. Per cent of Profit to A. T. & T. Co							
4. Amount of Profit to A. T. & T. Co. on stock holdings							
Illinois Bell Telephone Company:							
1. Yield to A. T. & T. Co. on book value of stock holdings	7.15%	7.13%	7.26%	7.34%	7.53%	7.62%	7
2. Cost of Funds to A. T. & T. Co	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	
3. Per cent of Profit to A. T. & T. Co	.28%	.28%	.33%	.51%	.67%	1.07%	1
4. Amount of Profit to A. T. & T. Co. on stock holdings	$185,950.22	$209,584.92	$251,929.49	$440,285.49	$616,990.16	$1,224,743.03	$1,247,65
Indiana Bell Telephone Company:							
1. Yield to A. T. & T. Co. on book value of stock holdings	0.00%	0.00%	0.00%	3.91%	6.36%	7.85%	7
2. Cost of Funds to A. T. & T. Co	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	
3. Per cent of Profit to A. T. & T. Co	6.87%*	6.85%*	6.93%*	2.92%*	.50%*	1.30%	1
4. Amount of Profit to A. T. & T. Co. on stock holdings	$829,969.65*	$827,550.00*	$1,273,351.05*	$805,499.11*	$137,927.93*	$397,612.62	$403,72
Michigan Bell Telephone Company:							
1. Yield to A. T. & T. Co. on book value of stock holdings	6.37%	7.90%	7.93%	7.93%	7.93%	7.96%	7
2. Cost of Funds to A. T. & T. Co	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	
3. Per cent of Profit to A. T. & T. Co	.50%*	1.05%	1.00%	1.10%	1.07%	1.41%	
4. Amount of Profit to A. T. & T. Co. on stoke holdings	$102,179.89*	$348,785.95	$504,052.10	$554,424.31	$539,290.26	$1,204,164.11	$1,221,23
Mountain States Telephone Co.:							
1. Yield to A. T. & T. Co. on book value of stock holdings	7.00%	7.06%	7.00%	6.91%	7.63%	7.63%	
2. Cost of Funds to A. T. & T. Co	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	
3. Per cent of Profit to A. T. & T. Co	.13%	.15%	.07%	.08%	.77%	1.08%	
4. Amount of Profit to A. T. & T. Co. on stock holdings	$36,412.70	$42,014.66	$19,606.84	$23,491.97	$226,110.22	$317,141.60	$323.01

[fol. 5905]

New England Tel. & Tel. Co.:							
1. Yield to A. T. & T. Co. on book value of stock holdings	7.11%	7.24%	5.46%	7.55%	7.59%	7.59%	
2. Cost of Funds to A. T. & T. Co	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	
3. Per cent of Profit to A. T. & T. Co	.24%	.39%	1.47%*	.72%	.73%	1.04%	
4. Amount of Profit to A. T. & T. Co. on stock holdings	$104,029.44	$197,403.80	$788,864.49*	$516,967.65	$527,435.55	$751,415.04	$765.86
New Jersey Bell Telephone Co.:							
1. Yield to A. T. & T. Co. on book value of stock holdings						7.04%	
2. Cost of Funds to A. T. & T. Co						6.55%	
3. Per cent of Profit to A. T. & T. Co						.49%	
4. Amount of Profit to A. T. & T. Co. on stock holdings						$335,[illegible]63.43	$581.71
New York Telephone Company:							
1. Yield to A. T. & T. Co. on book value of stock holdings	6.76%	6.76%	6.76%	7.39%	7.39%	7.39%	
2. Cost of Funds to A. T. & T. Co	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	
3. Per cent of Profit to A. T. & T. Co	.11%*	.09%*	.17%*	.56%	.53%	.84%	
4. Amount of Profit to A. T. & T. Co. on stock holdings	$266,411.20*	$217,972.80*	$411,726.40*	$1,700,041.28	$1,608,975.78	$2,550,074.81	$2,610,7
Northwestern Bell Telephone Company:							
1. Yield to A. T. & T. Co. on book value of stock holdings	6.22%	8.29%	8.21%	7.87%	7.87%	7.87%	
2. Cost of Funds to A. T. & T. Co	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	
3. Per cent of Profit to A. T. & T. Co	.65%*	1.44%	1.28%	1.04%	1.01%	1.32%	
4. Amount of Profit to A. T. & T. Co. on stock holdings	$642,336.20*	$585,606.34	$739,898.97	$686,810.70	$666,998.85	$871,721.27	$884,9
Ohio Bell Telephone Company:							
Common Stock:							
1. Yield to A. T. & T. Co. on book value of stock holdings	1.21%	3.64%	7.07%	6.33%	5.99%	7.00%	
2. Cost of Funds to A. T. & T. Co	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	
3. Per cent of Profit to A. T. & T. Co	5.66%*	3.21%*	.14%	.50%*	.87%*	.45%	
4. Amount of Profit to A. T. & T. Co. on stock holdings	$1,330,940.29*	$754,316.13*	$39,198.52	$225,099.48*	$435,357.99*	$337,685.39	$417,3
Preferred Stock:							
1. Yield to A. T. & T. Co. on book value of stock holdings	7.36%	7.11%	6.91%	6.88%	6.88%	6.88%	

it to A. T. & T. Co								
it to A. T. & T. Co. on stock holdings								
Company:								
T. Co. on book value of stock holdings	7.15%	7.13%	7.26%	7.34%	7.53%	7.62%	7.62%	7.67%
o A. T. & T. Co	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.53%	6.25%
it to A. T. & T. Co	.28%	.28%	.33%	.51%	.67%	1.07%	1.09%	1.42%
t to A. T. & T. Co. on stock holdings	$185,950.22	$209,584.92	$251,929.49	$440,285.49	$616,990.16	$1,224,743.03	$1,247,650.55	$1,907,569.91
Company:								
T. Co. on book value of stock holdings	0.00%	0.00%	0.00%	3.91%	6.36%	7.85%	7.85%	7.85%
A. T. & T. Co	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.53%	6.25%
t to A. T. & T. Co	6.87%*	6.85%*	6.93%*	2.92%*	.50%*	1.30%	1.32%	1.60%
t to A. T. & T. Co. on stock holdings	$829,969.65*	$827,550.00*	$1,273,351.05*	$805,499.11*	$137,927.93*	$397,612.62	$403,729.73	$489,369.38
e Company:								
T. Co. on book value of stock holdings	6.37%	7.90%	7.93%	7.93%	7.93%	7.96%	7.96%	4.98%
A. T. & T. Co	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.53%	6.25%
t to A. T. & T. Co	.50%*	1.05%	1.00%	1.10%	1.07%	1.41%	1.43%	1.27%*
to A. T. & T. Co. on stoke holdings	$102,179.89*	$348,785.95	$504,052.10	$554,424.31	$539,290.26	$1,204,164.11	$1,221,237.30	$1,275,082.67*
one Co.:								
T. Co. on book value of stock holdings	7.00%	7.06%	7.00%	6.91%	7.63%	7.63%	7.63%	7.69%
A. T. & T. Co	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.53%	6.25%
to A. T. & T. Co	.13%	.15%	.07%	.08%	.77%	1.08%	1.10%	1.44%
to A. T. & T. Co. on stock holdings	$36,412.70	$42,014.66	$19,606.84	$23,491.97	$226,110.22	$317,141.60	$323,014.59	$508,882.72
Co.:								
T. Co. on book value of stock holdings	7.11%	7.24%	5.46%	7.55%	7.59%	7.59%	7.59%	7.57%
A. T. & T. Co	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.53%	6.25%
to A. T. & T. Co	.24%*	.39%	1.47%*	.72%	.73%	1.04%	1.06%	1.32%
to A. T. & T. Co. on stock holdings	$104,029.44	$197,403.80	$788,864.49*	$516,967.65	$527,435.55	$751,415.04	$765,865.33	$1,088,210.31
ne Co.:								
T. Co. on book value of stock holdings						7.04%	7.04%	7.04%
A. T. & T. Co						6.55%	6.53%	6.25%
to A. T. & T. Co						.49%	.51%	.79%
to A. T. & T. Co. on stock holdings						$335,663.43	$581,718.16	$901,092.83
npany:								
Co. on book value of stock holdings	6.76%	6.76%	6.76%	7.39%	7.39%	7.39%	7.39%	7.44%
A. T. & T. Co	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.55%	6.25%
o A. T. & T. Co	.11%*	.09%*	.17%*	.56%	.53%	.84%	.86%	1.19%
o A. T. & T. Co. on stock holdings	$266,411.20*	$217,972.80*	$411,726.40*	$1,700,041.28	$1,608,975.78	$2,550,074.81	$2,610,790.88	$3,893,297.24
one Company:								
Co. on book value of stock holdings	6.22%	8.29%	8.21%	7.87%	7.87%	7.87%	7.87%	7.87%
T. & T. Co	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.53%	6.25%
o A. T. & T. Co	.65%*	1.44%	1.28%	1.04%	1.01%	1.32%	1.34%	1.62%
A. T. & T. Co. on stock holdings	$642,336.20*	$585,606.34	$739,898.97	$686,810.70	$666,998.85	$871,721.27	$884,929.17	$1,069,839.74
any:								
Co. on book value of stock holdings	1.21%	3.64%	7.07%	6.33%	5.99%	7.00%	7.00%	6.25%
T. & T. Co	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.53%	6.25%
A. T. & T. Co	5.66%*	3.21%*	.14%	.50%*	.87%*	.45%	.47%	0.00%
A. T. & T. Co. on stock holdings	$1,330,040.29*	$754,316.13*	$39,198.52	$225,099.48*	$435,357.99*	$337,685.39	$417,318.87	
Co. on book value of stock holdings	7.36%	7.11%	6.91%	6.88%	6.88%	6.88%	6.88%	6.87%

3. Per cent of Profit to A. T. & T. Co.							
4. Amount of Profit to A. T. & T. Co. on stock holdings	$77,632.13	$41,387.56	$3,160.86*	$7,883.02	$3,152.20	$51,774.15	$54,839.91

[fol. 5906]

Pacific Telephone & Telegraph Co.:							
Common Stock:							
1. Yield to A. T. & T. Co. on book value of stock holdings	0.00%	0.00%	6.54%	7.63%	7.39%	7.33%	7.33
2. Cost of Funds to A. T. & T. Co.	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.53
3. Per cent of Profit to A. T. & T. Co.	6.87%*	6.85%*	.39%*	.80%	.53%	.78%	80
4. Amount of Profit to A. T. & T. Co. on stock holdings	$205,012.82*	$219,900.48*	$136,597.00*	$280,171.42	$345,712.16	$588,558.35	$603,649.59
Preferred Stock:							
1. Yield to A. T. & T. Co. on book value of stock holdings	6.45%	6.54%	6.58%	6.87%	6.87%	6.87%	6.87
2. Cost of Funds to A. T. & T. Co.	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.53
3. Per cent of Profit to A. T. & T. Co.	.42%*	.31%*	.35%*	.04%	.01%	.32%	34
4. Amount of Profit to A. T. & T. Co. on stock holdings	$165,622.67*	$158,412.12*	$204,390.67*	$22,381.24	$5,595.31	$170,049.96	$190,240.58
Southern Bell Telephone Co.:							
1. Yield to A. T. & T. Co. on book value of stock holdings	8.22%	8.40%	8.40%	7.94%	7.85%	7.86%	7.88
2. Cost of Funds to A. T. & T. Co.	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.53
3. Per cent of Profit to A. T. & T. Co.	1.35%	1.55%	1.47%	1.11%	.99%	1.31%	1.35
4. Amount of Profit to A. T. & T. Co. on stock holdings	$480,650.37	$664,357.82	$630,068.39	$845,003.05	$958,442.57	$1,333,740.88	$1,627,585.73
Southern New England Tel. Co.:							
1. Yield to A. T. & T. Co. on book value of stock holdings	7.63%	7.68%	7.70%	7.72%	7.74%	7.77%	7.79
2. Cost of Funds to A. T. & T. Co.	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.53
3. Per cent of Profit to A. T. & T. Co.	.76%	.83%	.77%	.89%	.88%	1.22%	1.26
4. Amount of Profit to A. T. & T. Co. on stock holdings	$47,832.15	$60,540.23	$60,038.09	$76,830.98	$84,900.89	$131,941.32	$150,973.15
Southwestern Bell Telephone Co.:							
1. Yield to A. T. & T. Co. on book value of stock holdings	8.43%	8.43%	8.43%	8.06%	7.75%	7.79%	7.82
2. Cost of Funds to A. T. & T. Co.	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.53
3. Per cent of Profit to A. T. & T. Co.	1.56%	1.56%	1.50%	1.23%	.89%	1.24%	1.29
4. Amount of Profit to A. T. & T. Co. on stock holdings	$1,110,134.78	$1,124,367.28	$1,067,437.29	$1,052,916.73	$918,952.39	$1,528,338.15	$1,847,954.05
Wisconsin Telephone Co.:							
1. Yield to A. T. & T. Co. on book value of stock holdings	7.39%	7.56%	7.65%	7.30%	6.97%	8.04%	7.11
2. Cost of Funds to A. T. & T. Co.	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.53
3. Per cent of Profit to A. T. & T. Co.	.52%	.71%	.72%	.47%	.11%	.49%	.58
4. Amount of Profit to A. T. & T. Co. on stock holdings	$61,910.98	$119,890.30	$147,282.90	$110,167.51	$27,677.47	$131,314.29	$167,468.24
Total—All Licensee Companies:							
4. Total Amount of Profit to A. T. & T. Co. on Stock Holdings	$1,599,965.72*	$948,646.41	$1,000,968.79	$5,823,638.44	$6,540,468.65	$13,172,269.29	$14,490,776.0

[fol. 5907]

Total—All Licensee Companies Exclusive of Ill. Bell. Tel. Co.:							
4. Total amount of Profit to A. T. & T. Co. on stock holdings	$1,785,915.94*	$739,061.49	$749,039.30	$5,383,352.95	$5,923,478.49	$11,947,526.26	$13,243,125.5

* Red Figures (Losses).

NOTE.—Unless otherwise specifically designated, "A. T. & T. holdings" refer to common stock.

(a) "Cost of funds to A. T. & T. Co." is the annual amount which the A. T. & T. Co. represents was paid by it currently on funds used in its business which were derived from its funded and other indebtedness, and from its capital and surplus. The annual cost of funds includes dividends paid by the A. T. & T. Co. at the rate of 8% for the year 1920 and for the first six months of 1921, and at the rate of 9% thereafter. The cost, as used above, was translated into a percentage of the funds.

(b) Profit or loss to A. T. & T. Co., as herein used, is the amount received by A. T. & T. Co. in excess of or less than its cost of funds as defined above.

Profit to A. T. & T. Co								
ofit to A. T. & T. Co. on stock holdings	$77,632.13	$41,387.56	$3,160.86*	$7,883.02	$3,152.20	$51,774.15	$54,839.91	$97,915.51
Telegraph Co.:								
& T. Co. on book value of stock holdings	0.00%	0.00%	6.54%	7.63%	7.39%	7.33%	7.33%	7.19%
to A. T. & T. Co	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.53%	6.25%
ofit to A. T. & T. Co	6.87%*	6.85%*	.39%*	.80%	.53%	.78%	.80%	.94%
ofit to A. T. & T. Co. on stock holdings	$205,012.82*	$219,900.48*	$136,597.00*	$280,171.42	$345,712.16	$588,558.35	$603,649.59	$1,213,674.88
& T. Co. on book value of stock holdings	6.45%	6.54%	6.58%	6.87%	6.87%	6.87%	6.87%	6.87%
to A. T. & T. Co	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.53%	6.25%
ofit to A. T. & T. Co	.42%*	.31%*	.35%*	.04%	.01%	.32%	.34%	.62%
ofit to A. T. & T. Co. on stock holdings	$165,622.67*	$158,412.12*	$204,390.67*	$22,381.24	$5,595.31	$179,049.96	$190,240.58	$346,909.29
ne Co.:								
& T. Co. on book value of stock holdings	8.22%	8.40%	8.40%	7.94%	7.85%	7.86%	7.88%	7.89%
to A. T. & T. Co	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.53%	6.25%
fit to A. T. & T. Co	1.35%	1.55%	1.47%	1.11%	.99%	1.31%	1.35%	1.64%
fit to A. T. & T. Co. on stock holdings	$480,650.37	$664,357.82	$630,068.39	$845,003.05	$958,442.57	$1,333,740.88	$1,627,585.73	$2,079,778.55
l Tel. Co.:								
& T. Co. on book value of stock holdings	7.63%	7.68%	7.70%	7.72%	7.74%	7.77%	7.79%	7.80%
o A. T. & T. Co	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.53%	6.25%
fit to A. T. & T. Co	.76%	.83%	.77%	.89%	.88%	1.22%	1.26%	1.55%
it to A. T. & T. Co. on stock holdings	$47,832.15	$60,540.23	$60,038.09	$76,830.98	$84,900.89	$131,941.32	$150,973.15	$192,181.34
phone Co.:								
T. Co. on book value of stock holdings	8.43%	8.43%	8.43%	8.06%	7.75%	7.79%	7.82%	7.84%
o A. T. & T. Co	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.53%	6.25%
it to A. T. & T. Co	1.56%	1.56%	1.50%	1.23%	.89%	1.24%	1.29%	1.59%
t to A. T. & T. Co. on stock holdings	$1,110,134.78	$1,124,367.28	$1,067,437.29	$1,052,916.73	$918,952.39	$1,528,338.15	$1,847,954.05	$2,516,206.45
o.:								
T. Co. on book value of stock holdings	7.39%	7.56%	7.65%	7.30%	6.97%	8.04%	7.11%	7.17%
A. T. & T. Co	6.87%	6.85%	6.93%	6.83%	6.86%	6.55%	6.53%	6.25%
t to A. T. & T. Co	.52%	.71%	.72%	.47%	.11%	.49%	.58%	.92%
t to A. T. & T. Co. on stock holdings	$61,910.98	$149,890.30	$147,282.90	$110,167.51	$27,677.47	$131,314.29	$167,468.24	$287,259.28
panies:								
Profit to A. T. & T. Co. on Stock Holdings	$1,599,965.72*	$948,646.41	$1,000,968.79	$5,823,638.44	$6,540,468.65	$13,172,269.29	$14,490,776.06	$17,136,008.97
panies Exclusive of Ill. Bell. Tel. Co.:								
Profit to A. T. & T. Co. on stock holdings	$1,785,915.94*	$739,061.49	$749,039.30	$5,383,352.95	$5,923,478.49	$11,947,526.26	$13,243,125.51	$15,228,439.06

* Red Figures (Losses).

NOTE.—Unless otherwise specifically designated, "A. T. & T. holdings" refer to common stock.

(a) "Cost of funds to A. T. & T. Co." is the annual amount which the A. T. & T. Co. represents was paid by it currently on funds used in its business which were derived from its funded and other indebtedness, and from its capital and surplus. The annual cost of funds includes dividends paid by the A. T. & T. Co. at the rate of 8% for the year 1920 and for the first six months of 1921, and at the rate of 9% thereafter. The cost, as used above, was translated into a percentage of the funds.

(b) Profit or loss to A. T. & T. Co., as herein used, is the amount received by A. T. & T. Co. in excess of or less than its cost of funds as defined above.

170—440

[fol. 5908]

EXHIBIT X-136

American Telephone and Telegraph Company

Percentage Relationships of Average Investments in Capital Stocks of Licensee Companies and in Loans to Licensee Companies to Total Average Investments (Stock and Loans) in Licensee Companies, Years Ended December 31, 1920 to 1922, Inclusive

	Year ended Dec. 31, 1920	Year ended Dec. 31, 1921	Year ended Dec. 31, 1922
Bell Telephone Company of Pennsylvania (a):			
Average A. T. & T. stock holdings—Book Value	80.59%	100.00%	100.00%
Average Loans	19.41%	....	....
Central Union Telephone Company:			
Average A. T. & T. stock holdings—Book Value	7.92%	....	....
Average Loans	92.00%	....	....
Chesapeake and Potomac Telephone Companies:			
Average A. T. & T. stock holdings—Book Value	....	....	64.45%
Average Loans	100.00%	100.00%	35.55%
Cincinnati and Suburban Bell Telephone Company:			
Average A. T. & T. stock holdings—Book Value	100.00%	100.00%	100.00%
Cumberland Telephone and Telegraph Company:			
Average Loans	100.00%	100.00%	100.00%
Illinois Bell Telephone Company:			
Average A. T. & T. stock holdings—Book Value	96.83%	94.14%	98.70%
Average Loans	3.17%	5.86%	1.30%
Indiana Bell Telephone Company:			
Average A. T. & T. stock holdings—Book Value	35.16%	47.55%	46.75%
Average Loans	64.84%	52.45%	53.25%

(a) Including Associated Companies.

EXHIBIT X-136—Continued

American Telephone and Telegraph Company

Percentage Relationships of Average Investments in Capital Stocks of Licensee Companies and in Loans to Licensee Companies to Total Average Investments (Stock and Loans) in Licensee Companies, Years Ended December 31, 1920 to 1922, Inclusive

	Year ended Dec. 31, 1920	Year ended Dec. 31, 1921	Year ended Dec. 31, 1922
Michigan State Telephone Company:			
Average A. T. & T. stock holdings—Book Value—Common	24.01%	21.18%	24.34%
Average A. T. & T. stock holdings—Book Value—Preferred	7.24%	6.62%	7.79%
Average Loans	68.75%	72.20%	67.87%
Mountain States Telephone Company:			
Average A. T. & T. stock holdings—Book Value	94.64%	90.99%	88.23%
Average Loans	5.36%	9.01%	11.77%
New England Telephone and Telegraph Company (a):			
Average A. T. & T. stock holdings—Book Value	99.18%	85.14%	86.31%
Average Loans	.82%	14.86%	13.69%
[fol. 5909]			
New York Telephone Company:			
Average A. T. & T. stock holdings—Book Value	89.35%	80.05%	93.52%
Average Loans	10.65%	19.95%	6.48%
Northwestern Bell Telephone Company:			
Average A. T. & T. stock holdings—Book Value	36.06%	78.91%	89.28%
Average Loans	63.94%	21.09%	10.72%
Ohio Bell Telephone Company:			
Average A. T. & T. stock holdings—Book Value—Common	58.66%	50.29%	51.36%
Average A. T. & T. stock holdings—Book Value—Preferred	....	1.61%	35.51%
Average Loans	41.34%	48.10%	13.13%

Pacific Telephone and Telegraph Company (a):			
Average A. T. & T. stock holdings—Book Value—Common	6.04%	6.57%	5.93%
Average A. T. & T. stock holdings—Book Value—Preferred	70.10%	59.88%	66.58%
Average Loans	23.86%	33.55%	27.49%
Southern Bell Telephone Company:			
Average A. T. & T. stock holdings—Book Value	88.90%	76.28%	67.44%
Average Loans	11.10%	23.72%	32.56%
Southern New England Telephone Company:			
Average A. T. & T. stock holdings—Book Value	68.51%	72.67%	68.24%
Average Loans	31.49%	27.33%	31.76%
Southwestern Bell Telephone Company (a):			
Average A. T. & T. stock holdings—Book Value	64.13%	66.89%	69.57%
Average Loans	35.87%	33.11%	30.43%
Wisconsin Telephone Company:			
Average A. T. & T. stock holdings—Book Value	89.12%	76.53%	83.12%
Average Loans	10.88%	23.47%	16.88%
Total All Licensee Companies:			
Average A. T. & T. stock holdings—Book Value—Common	68.99%	70.31%	75.32%
Average A. T. & T. stock holdings—Book Value—Preferred	3.83%	3.50%	6.45%
Average Loans	27.18%	26.19%	18.23%
Total All Licensee Companies Exclusive of Ill. Bell Tel. Co.:			
Average A. T. & T. stock holdings—Book Value—Common	66.76%	68.38%	73.44%
Average A. T. & T. stock holdings—Book Value—Preferred	4.14%	3.79%	6.97%
Average Loans	29.10%	27.83%	19.59%

NOTE.—All figures and computations herein refer only to stock actually issued. Unless otherwise specifically designated "A. T. & T. Stock Holdings" refer to common stock.

(a) Including Associated Companies.

(Here follow side folios 5910 and 5911)

[fol. 5910]

American Telephone and Telegraph Company

Percentage Relationships of Average Investments in Capital Stocks of Licensee Companies and in Loans to Licensee Companies to Total Average Investments (Stock and Loans) in Licensee Companies, Years Ended December 31, 1923 to 1930, Inclusive

	Year ended Dec. 31, 1923	Year ended Dec. 31, 1924	Year ended Dec. 31, 1925	Year ended Dec. 31, 1926	Year ended Dec. 31, 1927	Year ended Dec. 31, 1928	Year ended Dec. 31, 1929	Year ended Dec. 31, 1930
Bell Telephone Company of Pennsylvania (b):								
Average A. T. & T. stock holdings—Book Value	71.44%	66.99%	77.61%	100.00%	93.26%	99.05%	91.10% (c)	87.86% (c)
Average Loans	28.56%	33.01%	22.39%	......	6.74%	.95%	8.90%	12.14%
Chesapeake and Potomac Telephone Companies (b):								
Average A. T. & T. stock holdings—Book Value	87.70%	91.91%	81.63%	75.13%	95.34%	90.40%	85.21%	79.09%
Average Loans	12.30%	8.09%	18.37%	24.87%	4.66%	9.60%	14.79%	20.91%
Cincinnati and Suburban Bell Telephone Company:								
Average A. T. & T. stock holdings—Book Value	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Cumberland Telephone and Telegraph Company:								
Average A. T. & T. stock holdings—Book Value	47.87%	67.64%	71.50%	......	......	......	......	......
Average Loans	52.13%	32.36%	28.50%	100.00%	......	......	......	......
Illinois Bell Telephone Company:								
Average A. T. & T. stock holdings—Book Value	99.70%	100.00%	97.05%	92.62%	96.09%	96.16%	90.22%	99.59%
Average Loans	.30%	......	2.95%	7.38%	3.91%	3.84%	9.78%	.41%
Indiana Bell Telephone Company:								
Average A. T. & T. stock holdings—Book Value	42.38%	40.46%	53.15%	80.79%	80.93%	89.73%	89.73%	85.04%
Average Loans	57.62%	59.54%	46.85%	19.21%	19.07%	10.27%	10.27%	14.96%
Michigan Bell Telephone Company:								
Average A. T. & T. stock holdings—Book Value	49.33%	61.62%	81.73%	67.21%	56.70%	81.66%	69.29%	74.37%
Average Loans	50.67%	38.38%	18.27%	32.79%	43.30%	18.34%	30.71%	25.63%
Mountain States Telephone Company:								
Average A. T. & T. stock holdings—Book Value	88.98%	94.84%	95.81%	95.53%	95.18%	86.72%	67.89%	74.14%
Average Loans	11.02%	5.16%	4.19%	4.47%	4.82%	13.28%	32.11%	25.86%
New England Telephone and Telegraph Company:								
Average A. T. & T. stock holdings—Book Value	92.65%	71.82%	58.60%	84.67%	100.00%	95.82%	89.52%	88.04%
Average Loans	7.35%	28.18%	41.40%	15.33%	......	4.18%	10.48%	11.96%
New Jersey Bell Telephone Company:								
Average A. T. & T. stock holdings—Book Value	......	......	......	......	......	72.00%	86.44%	78.62%
Average Loans	......	......	......	......	100.00%	28.00%	13.56%	21.38%
New York Telephone Company:								
Average A. T. & T. stock holdings—Book Value	96.37%	86.84%	80.39%	88.89%	86.56%	94.43%	93.05%	87.50%
Average Loans	3.63%	13.16%	19.61%	11.11%	13.44%	5.57%	6.95%	12.50%
[fol. 5911]								
Northwestern Bell Telephone Company:								
Average A. T. & T. stock holdings—Book Value	100.00%	100.00%	92.76%	96.26%	99.89%	99.16%	95.41%	75.37%
Average Loans	......	......	7.24%	3.74%	.11%	.84%	4.59%	24.63%
Ohio Bell Telephone Company:								
Average A. T. & T. stock holdings—Book Value—Common	48.08%	44.96%	48.64%	63.12%	57.45%	77.85%	82.24%	79.97%
Average A. T. & T. stock holdings—Book Value—Preferred	32.42%	30.45%	27.45%	22.11%	18.10%	16.28%	14.51%	12.62%
Average Loans	19.50%	24.59%	23.91%	14.77%	24.45%	5.87%	3.25%	7.41%
Pacific Telephone and Telegraph Company (b):								
Average A. T. & T. stock holdings—Book Value—Common	5.55%	3.66%	27.36%	25.50%	41.76%	43.63%	38.71%	58.24%
Average A. T. & T. stock holdings—Book Value—Preferred	73.32%	58.21%	45.62%	40.74%	35.83%	32.35%	28.70%	25.24%
Average Loans	21.13%	38.13%	27.02%	33.76%	22.41%	24.02%	32.59%	16.52%
Southern Bell Telephone Company:								
Average A. T. & T. stock holdings—Book Value	76.50%	95.03%	94.58%	91.30% (a)	86.93%	84.48%	82.02%	99.71%
Average Loans	23.50%	4.97%	5.42%	8.70%	13.07%	15.52%	17.98%	.29%
Southern New England Telephone Company:								

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Pacific Telephone and Telegraph Company (b):								
Average A. T. & T. stock holdings—Book Value—Common	5.55%	3.66%	27.36%	25.50%	41.76%	43.63%	38.71%	58.24%
Average A. T. & T. stock holdings—Book Value—Preferred	73.32%	58.21%	45.62%	40.74%	35.83%	32.35%	28.70%	25.24%
Average Loans	21.13%	38.13%	27.02%	33.76%	22.41%	24.02%	32.59%	16.52%
Southern Bell Telephone Company:								
Average A. T. & T. stock holdings—Book Value	76.50%	95.03%	94.58%	91.30% (a)	86.93%	84.48%	82.02%	99.71%
Average Loans	23.50%	4.97%	5.42%	8.70%	13.07%	15.52%	17.98%	.29%
Southern New England Telephone Company:								
Average A. T. & T. stock holdings—Book Value	77.05%	79.77%	69.95%	71.47%	77.90%	67.93%	70.97%	64.32%
Average Loans	22.95%	20.23%	30.05%	28.53%	22.10%	32.07%	29.03%	35.68%
Southwestern Bell Telephone Company (b):								
Average A. T. & T. stock holdings—Book Value	80.17%	93.17%	100.00%	92.83%	91.22%	93.08%	96.38%	93.76%
Average Loans	19.83%	6.83%	......	7.17%	8.78%	6.92%	3.62%	6.24%
Wisconsin Telephone Company:								
Average A. T. & T. stock holdings—Book Value	78.49%	97.09%	98.14%	99.36%	97.25%	91.98%	97.78%	81.37%
Average Loans	21.51%	2.91%	1.86%	.64%	2.75%	8.02%	2.22%	18.63%
Total All Licensee Companies:								
Average A. T. & T. stock holdings—Book Value—Common	78.58%	75.23%	74.55%	79.97%	81.29%	84.75%	82.10%	82.77%
Average A. T. & T. stock holdings—Book Value—Preferred	6.58%	6.73%	6.18%	5.44%	5.04%	4.50%	4.04%	3.64%
Average Loans	14.84%	18.04%	19.27%	14.59%	13.67%	10.75%	13.86%	13.59%
Total All Licensee Companies Exclusive of Ill. Bell Tel. Co.:								
Average A. T. & T. stock holdings—Book Value—Common	76.76%	73.22%	72.98%	79.01%	80.22%	83.82%	81.48%	81.53%
Average A. T. & T. stock holdings—Book Value—Preferred	7.15%	7.27%	6.61%	5.85%	5.41%	4.87%	4.35%	3.91%
Average Loans	16.09%	19.51%	20.41%	15.14%	14.37%	11.31%	14.17%	14.56%

NOTE.—All figures and computations herein refer only to stock actually issued. Unless otherwise specifically designated "A. T. & T. Stock Holdings" refer to common stock.

(a) Includes stock of Cumberland Telephone and Telegraph Company during portion of year 1926, which was exchanged for stock of Southern Bell Telephone Company.
(b) Including Associated Companies.
(c) Includes Diamond State Telephone Company.

[fol. 5912]

EXHIBIT X-146

American Telephone and Telegraph Company

Return from License Contract Operations with Illinois Bell Telephone Company in Excess of the Average Return from License Contract Operations with Other Licensee Companies During Years 1920 to 1922, Inclusive

	Year ended Dec. 31, 1920	Year ended Dec. 31, 1921	Year ended Dec. 31, 1922
(1) Return from License Contract Operations with Illinois Bell Telephone Co.	14.50%	15.47%	9.67%
(2) Return from License Contract Operations with Other Licensee Companies	8.47%	8.02%	7.95%
(3) Per Cent of Return from Other Licensee Companies to Return from Illinois Bell Telephone Company (Item 2 Divided by Item 1)	58.41%	51.84%	82.21%
(4) Amount of Return from License Contract Operations with Illinois Bell Telephone Company	$723,666	$1,025,035	$1,138,666
(5) Amount of Return from License Contract Operations with Illinois Bell Telephone Company Reduced to Basis of Average Return from Other Licensee Companies (Item 3 Times Item 4)	422,693	531,378	936,097
(6) Excess of Return from Illinois Bell Telephone Company over Return Based on Average of Other Licensee Companies	300,973	493,657	202,569

[fol. 5913]

American Telephone and Telegraph Company

Return from License Contract Operations with Illinois Bell Telephone Company in Excess of the Average Return From License Contract Operations with Other Licensee Companies During Years 1923 to 1927, Inclusive

	Year ended Dec. 31, 1923	Year ended Dec. 31, 1924	Year ended Dec. 31, 1925	Year ended Dec. 31, 1926	Year ended Dec. 31, 1927
(1) Return from License Contract Operations with Illinois Bell Telephone Company	18.84%	18.94%	12.98%	9.67%	11.08%
(2) Return from License Contract Operations with Other Licensee Companies	8.57%	8.15%	8.16%	7.94%	8.64%
(3) Per Cent of Return from Other Licensee Companies to Return from Illinois Bell Telephone Company (Item 2 Divided by Item 1)	45.49%	43.03%	62.87%	82.11%	77.98%
(4) Amount of Return from License Contract Operations with Illinois Bell Telephone Company	$1,007,964	$1,060,190	$1,341,187	$1,443,828	$1,421,516
(5) Amount of Return from License Contfact Operations with Illinois Bell Telephone Company Reduced to Basis of Average Return from Other Licensee Companies. (Item 3 Times Item 4)	458,523	456,200	843,204	1,185,527	1,108,498
(6) Excess of Return from Illinois Bell Telephone Company over Return Based on Average of Other Licensee Companies	549,441	603,990	497,983	258,301	313,018

[fol. 5914]

American Telephone and Telegraph Company

Cost of Other Services Charged to License Contract Operations Paid by Illinois Bell Telephone Company in Excess of the Average Payment of Cost of Other Services by Other Licensee Companies During Years 1928 to 1930, Inclusive

	Year ended Dec. 31, 1928	Year ended Dec. 31, 1929	Year ended Dec. 31, 1930
(1) Balance of License Payment Available for Other Services—Illinois Bell Telephone Company.	$1,214,061	$1,101,615	$990,131
(2) Cost of Other Services—Illinois Bell Telephone Company	1,324,147	1,435,971	1,748,997
(3) Per Cent of Other Services Paid by Illinois Bell Telephone Company	91.69%	76.72%	56.61%
(4) Balance of License Payment Available for Other Services—Other Licensee Companies	12,061,412	9,189,998	7,928,483
(5) Cost of Other Services—Other Licensee Companies	13,254,122	14,055,195	17,128,494
(6) Per Cent of Other Services Paid by Other Licensee Companies	91.00%	65.39%	46.29%
(7) Other Services Paid by Illinois Bell Telephone Company on Basis of Other Licensee Companies (Item 2 Times Item 6)	1,204,974	938,981	809,611
(8) Excess of Actual Payment of Other Services by Illinois Bell Telephone Company Over Average Payment of Other Licensee Companies (Item I Minus Item 7)	9,087	162,634	180,520

(Here follows side folio 5915)

[fol. 5915]

EXHIBIT X-147

American Telephone and Telegraph Company

Return from License Contract Operations under Present Rates and Under Attacked Rates with Illinois Bell Telephone Company, Chicago Division, in Excess of the Average Return from License Contract Operations with Other Licensee Companies During Years 1923 to 1930, Inclusive

	Year ended Dec. 31, 1923	Year ended Dec. 31, 1924	Year ended Dec. 31, 1925	Year ended Dec. 31, 1926	Year ended Dec. 31, 1927	Year ended Dec. 31, 1928	Year ended Dec. 31, 1929	Year ended Dec. 31, 1930
(1) Return under Present Revenues from Illinois Bell Telephone Co., Entire Company, in Excess of Average Return from Other Licensee Companies	$549,441	$603,990	$497,983	$258,301	$313,018	$9,087	$162,634	$180,520
(2) Decrease in Return from Illinois Bell Telephone Company, Due to Reduction in Revenues on Account of Attacked Rates	24,746	98,330	96,467	90,924	87,952	43,614	33,692	33,039
(3) Return under Attacked Rates from Illinois Bell Telephone Company, Entire Company, in Excess of Average Return from Other License Companies	524,695	505,660	401,516	167,377	225,066	34,527*	128,942	147,481
(4) Return under Present Revenues from Illinois Bell Telephone Co., Entire Company, in Excess of Average Return from Other Licensee Companies, Prorated to Chicago Division and Groups Therein on Basis of License Payments: (a)								
Total Chicago Division	407,960	447,194	362,781	186,287	223,526	6,440	116,023	128,909
Chicago Division Intrastate	396,916	433,665	350,680	179,364	214,480	6,109	105,127	116,363
Chicago Division Intrastate Exchange	379,389	413,190	332,354	168,800	201,208	5,716	98,085	108,493
(5) Return under Attacked Rates from Illinois Bell Telephone Co., Entire Company, in Excess of Average Return from Other Licensee Companies, Prorated to Chicago Division and Groups Therein—(Item 4 Minus Item 2):								
Total Chicago Division	383,214	348,864	266,314	95,363	135,574	37,174*	82,331	95,870
Chicago Division Intrastate	372,170	335,335	254,213	88,440	126,528	37,505*	71,435	83,324
Chicago Division Intrastate Exchange	354,643	314,860	235,887	77,876	113,256	37,898*	64,393	75,454

* Red Figures.

(a) License Payments of Chicago Division Intrastate and Chicago Division Intrastate Exchange Were Taken from Defendants' Interstate Separation.

[fol. 5916]

EXHIBIT X–152

American Telephone and Telegraph Company

Composite of Estimated Requirements, Plant Investment and Gross Additions % Long Lines of Associated Operating Companies and Long Lines (Basis of Plaintiff's Exhibit A-169), Years 1923 to 1931

	Estimated requirements (1)	Plant investment (2)	Gross additions (3)	Composite of cols. (1), (2) and (3) (4)
1923	7.9	6.2	4.5	6.2
1924	3.6	6.3	4.7	5.5
1925	4.9	6.1	5.2	5.4
1926	9.7	5.9	8.1	7.9
1927	13.8	6.4	8.9	9.7
1928	18.7	7.1	11.2	12.3
1929	22.7	7.9	15.2	15.3
1930	24.1	9.3	16.3	16.6
1931	23.5	9.9	10.7	14.7

Composite of Estimated Requirements, Plant Inestment and Gross Additions % Chicago Area of Associated Operating Companies (Basis of Plaintiff's Exhibit A-169), Years 1923 to 1931

	Estimated requirements (1)	Plant investment (2)	Gross additions (3)	Composite of cols. (1), (2) and (3), (4)
1923	2.7	5.9	4.2	4.3
1924	2.9	5.6	4.7	4.4
1925	4.6	5.4	5.7	5.2
1926	5.7	5.5	5.7	5.6
1927	7.2	5.5	6.4	6.4
1928	7.7	5.5	6.2	6.5
1929	4.1	5.6	5.0	4.9
1930	5.4	5.4	4.5	5.1
1931	5.2	5.3	3.6	4.7

[fol. 5917]

American Telephone and Telegraph Company

Estimated Requirements (as Shown by Work Sheets of Plaintiff's Exhibit A-169), Years 1923-1931

Year	Associated companies and long lines (1)	Long lines (2)		Associated companies (3)	Illinois Bell Tel. Co. (4)	Chicago area (5)		
		Amount	% of col. (1)			% of col. (4) (a)	Amount	% of col. (3)
1923	$182,622,000	$14,344,000	7.9	$168,278,000	$6,600,000	69.1	$4,560,600	2.7
1924	256,535,000	14,311,000	5.6	242,224,000	10,080,000	69.5	7,005,600	2.9
1925	244,236,000	11,848,000	4.9	232,388,000	15,327,000	69.9	10,713,573	4.6
1926	213,219,000	20,667,000	9.7	192,552,000	15,612,000	70.0	10,928,400	5.7
1927	202,987,000	28,056,000	13.8	174,931,000	18,153,000	69.7	12,652,641	7.2
1928	214,233,000	40,108,000	18.7	174,125,000	19,400,000	69.1	13,405,400	7.7
1929	326,894,000	74,338,000	22.7	252,556,000	15,081,000	68.6	10,345,566	4.1
1930	391,959,739	94,359,000	24.1	297,600,739	23,624,000	68.0	16,064,320	5.4
1931	169,388,000	39,805,000	23.5	129,583,000	9,925,000	67.6	6,709,300	5.2

(a) Based on ratio of Plant—Chicago Area to Illinois Bell Telephone Company. Sources of Information—CR 13 (City Exhibit 142C).

(Here follows side folios 5918, 5919, 5920, and 5921)

X-219

1-SHEET
1923-TO 1930

P-1

EXHIBIT X-219

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

AVERAGE NUMBER OF STATIONS IN SERVICE OF EACH COMPANY RECEIVING LICENSE SERVICES AND THE CITY OF CHICAGO - YEARS 1923-1930, INCL.

	Year 1923	Year 1924	Year 1925	Year 1926	Year 1927	Year 1928	Year 1929	Year 1930
New England Tel. and Tel. Co.	967,804	1,040,646	1,089,630	1,111,470	1,151,096	1,176,406	1,207,393	1,247,471
Southern New England Tel. Co.	208,353	225,146	242,209	259,459	276,383	290,688	310,763	326,442
New York Telephone Company	1,944,095	2,146,501	2,353,196	2,512,385	2,572,641	2,389,736	2,558,534	2,628,919
New Jersey Bell Telephone Company	x x x	x x x	x x x	x x x	232,074	602,532	649,689	683,053
Bell Telephone Company of Pennsylvania	895,651	966,512	1,013,768	1,081,400	1,025,045	1,091,257	1,171,962	1,265,846
Diamond State Telephone Company	23,329	24,240	25,159	26,362	27,633	29,111	31,084	33,192
Ches.and Pot.Tel.Co.	104,861	112,068	121,014	130,654	139,115	146,132	154,479	162,669
Ches.and Pot.Tel.Co. of Baltimore City	154,135	164,579	171,479	180,710	189,423	194,065	203,398	212,564
Ches.and Pot.Tel.Co. of Virginia	100,322	105,643	111,530	116,205	119,892	125,453	132,624	143,884
Ches.and Pot.Tel.Co. of West Virginia	80,954	87,419	91,542	95,426	100,132	104,423	110,064	115,411
Southern Bell Tel. and Tel. Co.	563,905	636,112	741,097	808,859	874,137	928,518	980,412	1,003,983
Ohio Bell Telephone Company	492,979	500,937	520,241	545,348	585,262	622,544	684,092	715,677
Cincinnati and Suburban Bell Tel. Co.	135,340	145,207	154,231	160,612	167,321	175,465	183,569	186,257
Michigan Bell Telephone Company	372,145	439,817	478,728	525,576	567,711	605,725	658,782	681,976
Indiana Bell Telephone Company	178,265	178,789	182,786	189,311	194,448	199,868	217,312	228,207
Wisconsin Telephone Company	233,697	259,889	277,268	295,677	311,988	328,617	348,526	362,824
Illinois Bell Telephone Company (a)	938,517	1,017,856	1,090,075	1,169,251	1,252,670	1,331,613	1,407,805	1,445,657
Northwestern Bell Tel. Co.	502,646	529,652	548,137	556,354	581,139	594,447	627,155	654,970
Southwestern Bell Tel. Co. (b)	846,112	902,312	973,357	1,113,207	1,180,533	1,264,282	1,324,277	1,364,890

Illinois Bell Telephone Company . . . . . (a)	938,517	1,017,856	1,090,075	1,169,251	1,252,670	1,331,613	1,407,805	1,445,657
Northwestern Bell Tel. Co.	502,646	529,652	548,137	556,354	581,139	594,447	627,155	654,970
Southwestern Bell Tel. Co. . . . . (b)	846,112	902,312	973,357	1,113,207	1,180,533	1,264,282	1,324,277	1,364,890
Mountain States Tel. and Tel. Co.	329,425	340,526	354,788	369,802	383,740	400,036	423,268	439,878
Pacific Tel. and Tel. Co.	957,749	1,058,967	1,145,913	1,239,322	1,332,826	1,409,953	1,507,886	1,612,318
Bell Telephone Company of Canada	458,395	512,426	559,417	605,727	645,528	689,978	739,711	774,996
American Tel. and Tel. Co., Long Lines . (c)								
(a) Includes City of Chicago	665,060	714,938	761,971	815,485	873,221	917,904	963,998	984,357

(b) Includes Kansas City Telephone Co.

(c) Has no stations comparable with Associated Companies' stations.

5918

August 21, 1931.

Form 3102

EXHIBIT X-323

ILLINOIS BELL TELEPHONE COMPANY

MONT CLARE OFFICE

CHICAGO, ILLINOIS.

MANUAL AND PANEL MACHINE SWITCHING EQUIPMENT

COMPARATIVE COSTS AT 12-31-33 AND 12-31-45

		AT 12-31-33 (15 Chicago Offices Assumed Mach. Sw.)		AT 12-31-45 (Chicago Offices Assumed 100% Machine Switching)	
		PLAN I	PLAN II	PLAN I	PLAN II
		New Manual Office 8660 lines	New Panel M.Sw. Office 8660 lines(2 full units)	New Manual Office 17124 lines	New Panel M.Sw. Office 17124 lines(3.7 units)
FIRST COSTS					
1. App. and Install. Material		433 000	1002 900	944 000	1819 600
2. Eng., Draft., Wrt., and Install. Labor		143 000	315 000	336 000	644 000
3. Total.		576 000	1317 900	1280 000	2463 600
4. W.E.Co. Bill		($67 per L.) 582 000	($154 per L.) 1336 000	($76 per L.) 1292 000	($146 per L.) 2498 000 (Pres. Price ($142 per L.) 2438 000 (With 5% Reduction in Costs after 19
6. Interest during Construction		22 000	58 000	47 000	100 000
7. Rent during Construction		30 000	41 000	42 000	56 000
8. Plt., Traff., and Comml. Eng.		3 000	9 000	7 000	20 000
9. Cutover and Tel. Co. Work		70 000	140 000	110 000	200 000
10. Other Equip. and Power Service		15 000	55 000	25 000	60 000
Total Indirect		140 000	303 000	231 000	436 000
TOTAL "X" OFFICE		722 000	1639 000	1523 000	2874 000
13. Excess Cost C.I. over S.F. Trk. Equip. Other Offices		-	84 000 (Note #2)	-	- (Note #2)
14. P.B.X. Equipment		17 000	21 000	34 000	43 000
15. Manual Substation		245 000	-	442 000	-
Dial "		-	358 000 (Note #3)	-	654 000 (Note #3)
16. Building Cost		227 000	311 000	315 000	430 000
TOTAL OTHER ITEMS		489 000	774 000	791 000	1127 000
GRAND TOTAL		1211 000	2413 000	2314 000	4001 000
ANNUAL CHARGES AND TRAFFIC EXPENSE					
18. A.C. "X" Offices	12.8%	92 400	209 800	194 900	367 900
" Excess Cost C.I. over S.F. Trks. Other Offices		-	13 100*	-	-
" P.B.X.	15.4%	2 600	3 200	5 200	6 600
" Manual Substation	12.5%	30 600	-	55 300	-
" Dial "	13.0%	-	46 500	-	85 000
19. Mtce., Labor "X" Office		39 000	77 300	67 900	121 800
20. " Matl. " "		4 700	4 900	11 100	8 000
19-20(c) " Dial Substation		-	4 500*	-	8 400*
Excess Mtce. C.I. over S.F. Trks. Other Offices		-	2 500*	-	-
21. Power Bill		2 500	5 000	4 900	9 800
22. Building Space		39 600	54 200	57 500	76 700
Excess Cost Cordless "B" over Inc. Selec. Other Offices		2 200* (Note #2)	-	19 700* (Note #2)	-
[illegible] Expense Cordless "B" Other Offices		3 100* (" #2)	-	43 600* (" #2)	-

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EXHIBIT X-323

MANUAL AND PANEL MACHINE SWITCHING EQUIPMENT
COMPARATIVE COSTS AT 12-31-33 AND 12-31-45

SHEET "A"

July 7, 1925.

	AT 12-31-33 (15 Chicago Offices Assumed Mach. Sw.) PLAN I	PLAN II	AT 12-31-45 (Chicago Offices Assumed 100% Machine Switching) PLAN I	PLAN II
	New Manual Office	New Panel M.Sw. Office	New Manual Office	New Panel M.Sw. Office
	8660 lines	8660 lines(2 full units))	17124 lines	17124 lines(3.7 units)
	433 000	1002 900	944 000	1819 600
	143 000	315 000	336 000	644 000
	576 000	1317 900	1280 000	2463 600
	($67 per L.)582 000	($154 per L.)1336 000	($76 per L.)1292 000	($146 per L.)2498 000(Pres.Prices)
				($142 per L.)2438 000(With 5% Reduction in Costs after 1935)
	22 000	58 000	47 000	100 000
	30 000	41 000	42 000	56 000
	3 000	9 000	7 000	20 000
	70 000	140 000	110 000	200 000
	15 000	55 000	25 000	60 000
	140 000	303 000	231 000	436 000
	722 000	1639 000	1523 000	2874 000
Other Offices	-	84 000 (Note #2)	-	- (Note #2)
	17 000	21 000	34 000	43 000
	245 000	-	442 000	-
	-	358 000 (Note #3)	-	654 000 (Note #3)
	227 000	311 000	315 000	430 000
	489 000	774 000	791 000	1127 000
	1211 000	2413 000	2314 000	4001 000
	92 400	209 800	194 900	367 900
her Offices	-	13 100*	-	-
	2 600	3 200	5 200	6 600
	30 600	-	55 300	-
	-	46 500	-	85 000
	39 000	77 300	67 900	121 800
	4 700	4 900	11 100	8 000
	-	4 500*	-	8 400*
er Offices	-	2 500*	-	-
	2 500	5 000	4 900	9 800
	39 600	54 200	57 500	76 700
ec. Other Offices	2 200* (Note #2)	-	12 700* (Note #2)	-
ther Offices	3 100* (" #2)	-	43 600* (" #2)	

NOTES

(1) Important Characteristics of Office

	C.R. per Line	H.T.	Product
1-MR	1.15	110"	195
2-MR	.82	210"	172
C.B.	1.21	215"	261
Equiv.	1.10	190"	210

	12-31-33	12-31-45
MACH. SW. FRAMES	156	279
POS. OPERATED		
Mach. Sw.	18.49	23.1
Manual	78.88	160.29
B.Hr.Pos.Cost $2418		
LINES		
1-MR	2235	5001
2-MR	2055	3780
C.B.	4370	8343
TOTAL LINES	8660	17124
TOTAL STATIONS	19047	35561

(2) At 12-31-33 - 15 Chicago Offices are assumed on Mach. Sw. Basis. At 12-31-45 - All Chicago Offices except Mont Clare are assumed Machine Switching.

(3) The cost of changing the present special 48000-ohm subsets to relay sets has not been included, since the change is assumed to be made in either plan.

(4) Installations are assumed on a 3-year basis, beginning at

[illegible]	4 700		4 900	11 100		8 000
19 20(c) " Dial Substation	–		4 500*	–		8 400*
Excess Mtce. C.I. over S.F.Trks. Other Offices	–		2 500*	–		–
21. Power Bill	2 500		5 000	4 900		9 800
22. Building Space	39 600		54 200	57 500		76 700
Excess Cost Cordless "B" over Inc. Selec. Other Offices	2 200*	(Note #2)	–	19 700*	(Note #2)	–
Excess Traffic Expense Cordless "B" Other Offices	3 100*	(" #2)	–	45 600*	(" #2)	–
26. Traffic Expense "X" Offices	190 700		44 700	387 600		55 900
	$407 400		$465 700	$847 700		$740 100
SAVING MACH. SWITCHING OVER MANUAL			$ 58 300 *			$107 600
" " " " " PER LINE			$ 6.73 *			$6.29

	4 700		4 900		11 100		8 000
	-		4 500*		-		8 400'
Offices	-		2 500*		-		-
	2 500		5 000		4 900		9 800
	39 600		54 200		57 500		76 700
Other Offices	2 200*	(Note #2)	-		19 700*	(Note #2)	-
er Offices	3 100*	(" #2)	-		45 600*	(" #2)	-
	190 700		44 700		387 600		55 900
	$407 400		$445 700		$847 700		$740 100
			$ 58 300	#			
LINE			$ 6.73	#			$107 600
							$6.28

(3) The cost of changing the present special 48000-ohm subsets to relay sets has not been included, since the change is assumed to be made in either plan.

(4) Installations are assumed on a 3-year basis, beginning at 12-31-27.

* Excess Cost.

RED FIGURES

Form 3102

EXHIBIT X-323

ILLINOIS BELL TELEPHONE COMPANY

MONT CLARE OFFICE

CHICAGO, ILLINOIS

MANUAL AND PANEL MACHINE SWITCHING EQUIPMENT

COMPARATIVE COSTS AT 12-31-45

BASED ON TRAFFIC WITH OTHER CHICAGO OFFICES BEING ASSUMED 60% MACHINE SWITCHING AND 40% MANUAL

		PLAN I New Manual Office 17124 Lines		PLAN II New Panel Mach. Sw. Office 17124 Lines (3.7 Units)	
FIRST COSTS					
1. App. and Install. Material		944 000		1819 600	
2. Eng., Draft., and Install. Labor		336 000		644 000	
3. Total,		1280 000		2463 000	
4. W.E.Co. Bill	($76 per line)	1292 000	($146 per line)	2498 000	(Present Prices)
			($142 per line)	2438 000	(With 5% reduction in cost after 1933)
6. Interest during Construction		47 000		100 000	
7. Rent during Construction		42 000		56 000	
8. Plant, Traffic, and Comml. Eng.		7 000		20 000	
9. Cutover and Tel. Co. Work		110 000		200 000	
10. Other Equipment and Power Service		25 000		60 000	
Total Indirect,		231 000		436 000	
TOTAL "X" OFFICE		1523 000		2874 000	
14. P.B.X. Equipment		34 000		43 000	
15. Manual Substations		442 000		-	
Dial "		-		654 000	
16. Building Cost		315 000		430 000	
TOTAL OTHER ITEMS		791 000		1127 000	
GRAND TOTAL		2314 000		4001 000	
ANNUAL CHARGES AND TRAFFIC EXPENSE					
18. A.C. "X" Office 12.8%		194 900		367 900	
" P.B.X. Equipment 15.4%		5 200		6 600	
" Man. Substation 12.5%		55 300		-	
" Dial " 13.0%		-		85 000	
19. Mtce. Labor "X" Office		67 900		121 800	
20. " Matl. " "		11 100		8 000	
19-20(c) Excess Mtce. Dial Substation		-		8 400	
21. Power Bill		4 900		9 800	
22. Building Space		57 500		76 700	
Excess Cordless "B" over Inc. Selec. Other Offices		19 700		-	
Excess Traffic Expense Cordless "B" Other Offices		43 600		-	
Traffic Expense "X" Office		387 600		55 900	
TOTAL (100% Mach. Sw. Basis (See Sheet "A")		847 700		740 100	
CORRECTIONS FOR 60% MACHINE SWITCHING BASIS					
Excess A.C. Cordless "B" over Inc. Selec. Mont Clare		-		7 900	
" " Call Indic. " " " Other Offices		-			

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Sheet "B"

EXHIBIT X-323

MANUAL AND PANEL MACHINE SWITCHING EQUIPMENT
COMPARATIVE COSTS AT 12-31-45
BASED ON TRAFFIC WITH OTHER CHICAGO OFFICES BEING ASSUMED 60% MACNINE SWITCNING AND 40% MANUAL

July 7, 1925.

		PLAN I New Manual Office 17124 Lines		PLAN II New Panel Mach. Sw. Office 17124 Lines (3.7 Units)	
		944 000		1819 600	
		336 000		644 000	
		1280 000		2463 000	Notes 1, 2, 3, and 4. See Sheet "A".
	($76 per line)	1292 000	($146 per line)	2498 000	(Present Prices)
			($142 per line)	2438 000	(With 5% reduction in cost after 1933)
		47 000		100 000	
		42 000		56 000	
		7 000		20 000	
		110 000		200 000	
		25 000		60 000	
		231 000		436 000	
		1523 000		2874 000	
		34 000		43 000	
		442 000		-	
		-		654 000	
		315 000		430 000	
		791 000		1127 000	
		2314 000		4001 000	
		194 900		367 900	
		5 200		6 600	
		55 300		-	
		-		85 000	
		67 900		121 800	
		11 100		8 000	
		-		8 400	
		4 900		9 800	
		57 500		76 700	
ther Offices		19 700		-	
her Offices		43 600		-	
		387 600		55 900	
"A")		847 700		740 100	
IS					
e. Mont Clare		-		7 000	* RED FIGURES
		-		13 000	

Excess Cordless "B" over Inc. Selec. Other Offices	19 700	-	
Excess Traffic Expense Cordless "B" Other Offices	43 600	-	
Traffic Expense "X" Office	387 600	55 900	
TOTAL (100% Mach. Sw. Basis (See Sheet "A")	847 700	740 100	
CORRECTIONS FOR 60% MACHINE SWITCHING BASIS			
Excess A.C. Cordless "B" over Inc. Selec. Mont Clare	-	7 000	
" " Call Indic. " " " Other Offices	-	13 000	* REL
Traffic Expense Cordless "B" Mont Clare	-	22 100	
" " Call Indic. Other Offices	-	20 200	
" " S.F. over Cordless "B" Other Offices	2 000	-	
" " S.F. over C.I. Mont Clare	3 300 *	-	
TOTAL 60% MACHINE SWITCHING BASIS	846 400	802 400	
SAVING MACHINE SWITCHING OVER MANUAL	-	44 000	
" " " " " PER LINE	-	$2.57	

Other Offices	19 700	-
ther Offices	43 600	-
	387 600	55 900
t "A")	847 700	740 100
IS		
.oc. Mont Clare	-	7 000
" Other Offices	-	13 000
re	-	22 100
ces	-	20 200
' Other Offices	2 000	-
are	3 300 *	-
	846 400	802 400
	-	44 000
ER LINE	-	$2.57

* RED FIGURES

Form 3102

EXHIBIT X-323

ILLINOIS BELL TELEPHONE COMPANY

MONT CLARE OFFICE

CHICAGO, ILLINOIS

MANUAL AND PANEL MACHINE SWITCHING EQUIPMENT

COMPARATIVE COSTS AT 7-31-28 (1 UNIT)

(APPROXIMATE COSTS BASED ON 1933 FIGURES) (5 CHICAGO OFFICES ASSUMED MACHINE SWITCHING)

			PLAN I		PLAN II		
			New Manual Office 4550 Lines (One full unit)		New Panel Mach. Sw. Office 4550 Lines	(1)	Importan
FIRST COSTS							
1.							1-MR
2.							2-MR
3.							C.B.
4. W.E.Co. Bill		($70 per Line)	517 000	($168 per L.)	767 000		
							Equivalen
6. Interest during Construction			13 000		34 000		
7. Rent during Construction			30 000		41 000		
8. Plant, Traff., and Comml. Eng.			2 000		7 000		MACH.SW.
9. Cutover and Tel. Co. Work			35 000		70 000		
10. Other Equipment and Power Service			6 000		53 000		POS. OPER
Total Indirect.			88 000		205 000		Mach. Sw
TOTAL "X" OFFICE.			405 000		972 000		Manual
							B.Hr. Pos
13. Excess Cost C.I. over S.F. Trk. Equip. Other Offices			-		60 000		
14. P.B.X. Equipment			7 000		9 000		LINES
15. Manual Substations			131 000		-		1-MR
Dial "			-		190 000		2-MR
16. Building Cost			227 000		311 000		C.B.
TOTAL OTHER ITEMS			365 000		570 000		TOTAL L
GRAND TOTAL			770 000		1542 000		TOTAL S
ANNUAL CHARGES AND TRAFFIC EXPENSE						(2)	At 7-31-2
18. A.C. "X" Office	12.8%		51 800		124 400		on Mach
" Excess Cost C.I. over S.F.Trks. Other Offices			-		9 400*		
" P.B.X.	15.4%		1 100		1 400		
" Manual Substations	12.8%		16 400		-		* Excess Cost
" Dial "	13.0%		-		24 700		
19. Mtce. Labor "X" Office			24 700		56 000		
20. " Matl. " "			2 300		2 700		
19-20(c) " Dial Substations			-		2 500*		
Excess Mtce. C.I. over S.F.Trks. Other Offices			-		1 800*		
21. Power Bill			1 300		2 600		
22. Building Space			39 600		54 200		
Excess Cost Cordless "B" over Inc. Selec. Other Offices)					-		

EXHIBIT X-323

P-3

SHEET "C"

MANUAL AND PANEL MACHINE SWITCHING EQUIPMENT

COMPARATIVE COSTS AT 7-31-28 (1 UNIT).

(APPROXIMATE COSTS BASED ON 1933 FIGURES) (5 CHICAGO OFFICES ASSUMED MACHINE SWITCHING)

July 7, 1925.

	PLAN I New Manual Office 4550 Lines (One full unit)	PLAN II New Panel Mach. Sw. Office 4550 Lines
	($70 per Line) 317 000	($168 per L.) 767 000
	13 000	34 000
	30 000	41 000
	2 000	7 000
	35 000	70 000
	6 000	53 000
	88 000	205 000
	406 000	972 000
uip. Other Offices	-	60 000
	7 000	9 000
	131 000	-
	-	190 000
	227 000	311 000
	365 000	570 000
	770 000	1542 000
	51 800	124 400
. Other Offices	-	9 400*
	1 100	1 400
	16 400	-
	-	24 700
	24 700	56 000
	2 300	2 700
	-	2 500*
her Offices	-	1 800*
	1 300	2 600
	39 600	54 200
Selec. Other Offices)		-

NOTES

(1) Important Characteristics of Office

	C.R. per Line	H.T.	Product
1-MR	1.15	110"	195
2-MR	.82	210"	172
C.B.	1.21	213"	251
Equivalent	1.10	190"	210

	12-31-28
MACH.SW. FRAMES	87
POS. OPERATED	
Mach. Sw.	9.51
Manual	38.42
B.Hr. Pos. Cost $2418	
LINES	
1-MR	1054
2-MR	616
C.B.	2880
TOTAL LINES	4550
TOTAL STATIONS	10000

(2) At 7-31-28 - 5 Chicago Offices are assumed on Machine Switching Basis.

* Excess Cost.

	–	2 500*	
Excess Mtce. C.I. over B.F.Trks. Other Offices	–	1 800*	
21. Power Bill	1 300	2 600	
22. Building Space	39 600	54 200	
Excess Cost Cordless "B" over Inc. Selec. Other Offices)		–	
Excess Traffic Expense Cordless "B" Other Offices)	1 000	–	
25. Traffic Expense "X" Offices	92 900	25 000	* REL
	231 100	302 700	
SAVING MACHINE SWITCHING OVER MANUAL		$ 71 600 *	
" " " " " PER LINE		$ 15.73 *	

	-	2 500"	
fices	-	1 800"	
	1 300	2 600	
	39 600	54 200	
Other Offices)		-	
Offices)	1 000	-	
	92 900	23 000	
	231 100	302 700	* RED FIGURES
,INE		$ 71 600 *	
		$ 15.73 *	

[fol. 5922]

EXHIBIT X-323

June 15, 1932.

Merrimac Study, July 7, 1925

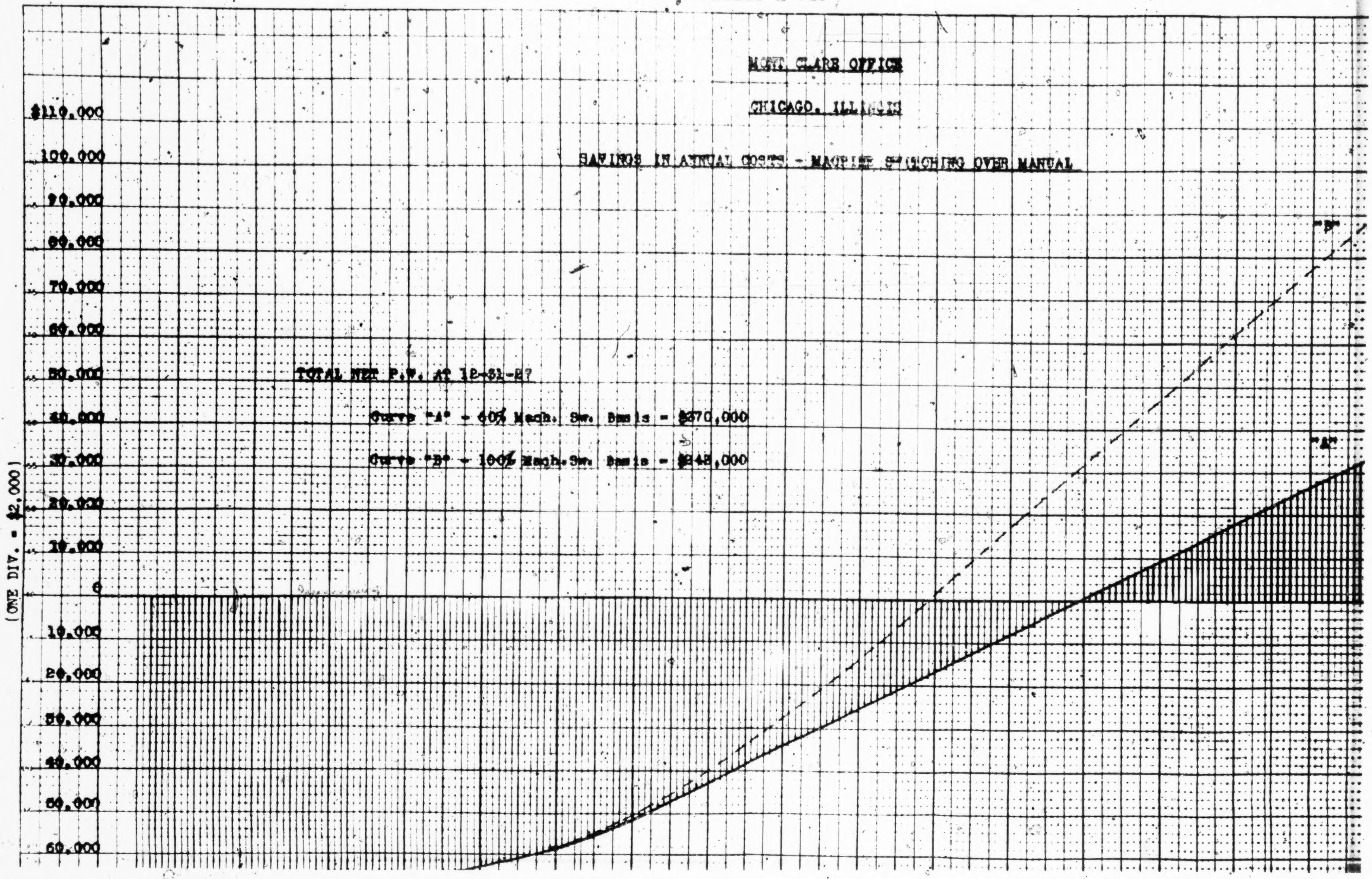
Breakdown of Annual Charge Percentages

Central Office Equipment:		
Interest	7.0%	
Insurance	0.1	
Taxes	2.0	
Depreciation	3.7	(14 Yrs., 16% Salv.) Int. 7%.
	12.8%	
Private Branch Exchanges:		
Interest	7.0%	
Taxes	2.0	
Depreciation	6.4	(7 Yrs., 45% Salv.) Int. 7%.
	15.4%	
Substations:		
Manual:		
Interest	7.0%	
Taxes	2.0	
Depreciation	3.5	(5 Yrs., 70% Salv. of Appar.) Int. 7%.
	12.5%	
Dial:		
Interest	7.0%	
Taxes	2.0	
Depreciation	4.0	(5 Yrs., 70% Salv. of Appar.) Int. 7%.
	13.0%	

RJF:MF

(Here follows side folios 5923, 5924 and 5925)

EXHIBIT X-323



MONT CLARE OFFICE

CHICAGO, ILLINOIS

SAVINGS IN ANNUAL COSTS - MACHINE SWITCHING OVER MANUAL

TOTAL NET P.W. AT 12-31-27

Curve "A" - 60% Mach. Sw. Basis - $370,000

Curve "B" - 100% Mach. Sw. Basis - $245,000

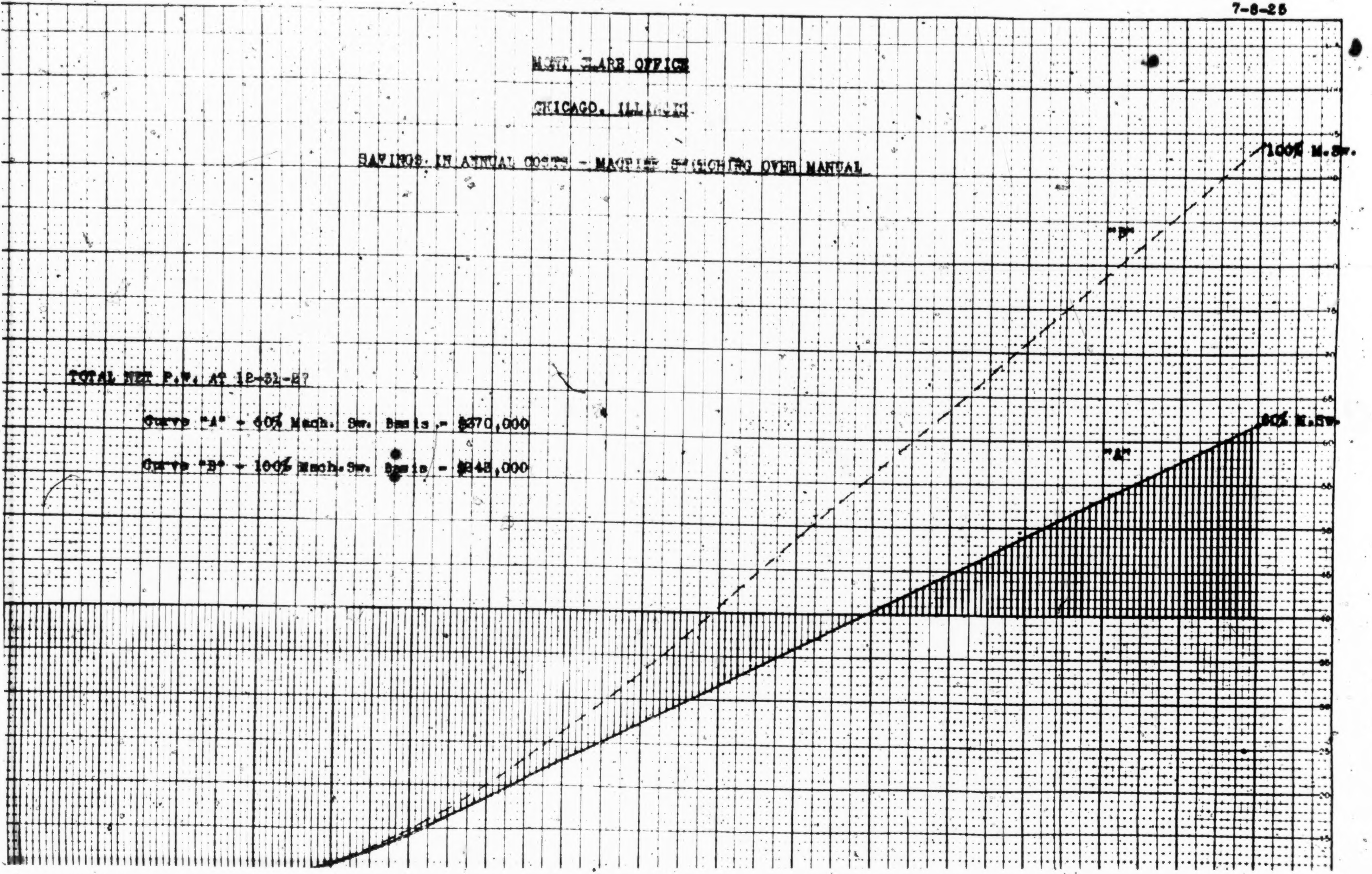
EXHIBIT X-323

7-8-25

MONT CLARE OFFICE

CHICAGO, ILLINOIS

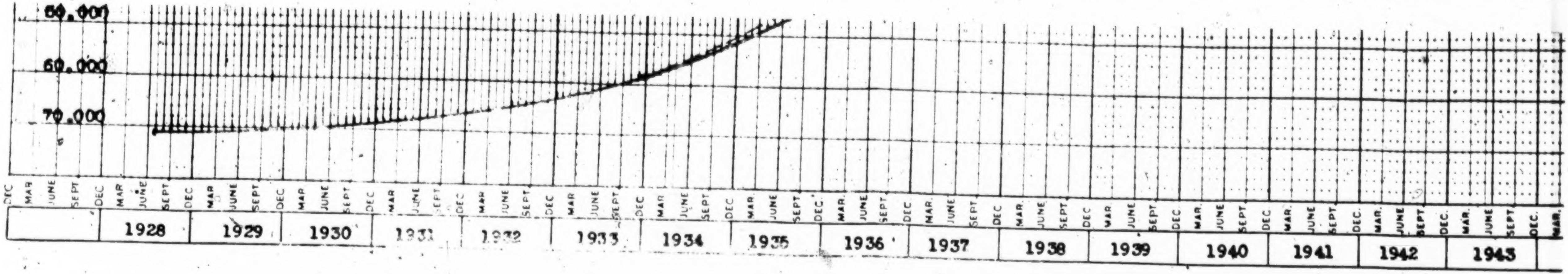
SAVINGS IN ANNUAL COSTS - MACHINE SWITCHING OVER MANUAL



TOTAL NET P.W. AT 12-31-27

Curve "A" - 60% Mach. Sw. Basis - $370,000

Curve "B" - 100% Mach. Sw. Basis - $245,000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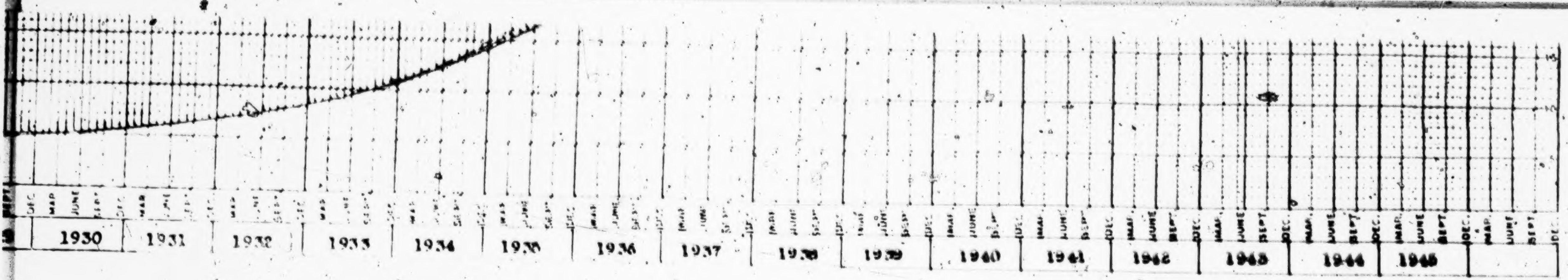
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5923

EXHIBIT X-323

P.W. Savings Mach Sw over Manual

AT 12-31-27

* [illegible] Page

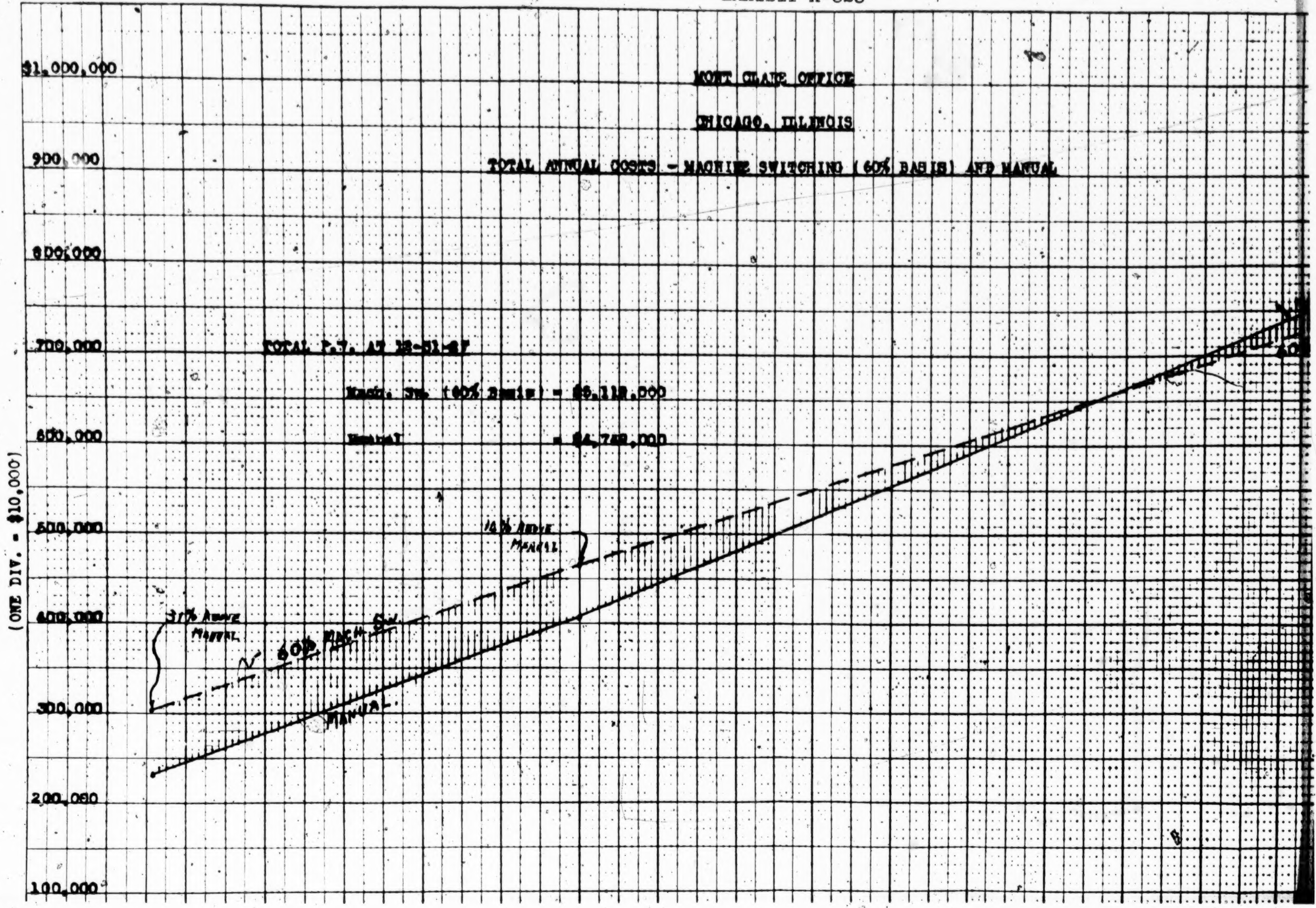
Form 3220

P-6 7-8-25

YEAR	FACTOR	— 60% MACH. SW. —			— 100% MACH. SW. —		
		A.C.	P.W.		A.C.	P.W.	
1928	.935	71000	66400		71000	66400	
1929	.873	70000	61100		70000	61100	
1930	.816	68500	55800		68500	55800	
1931	.763	66000	50300		66000	50300	
1932	.713	63000	44900		63000	44900	
1933	.666	58300	38800		58300	38800	
1934	.623	50000	31200		49800	31000	
1935	.582	42000	24400		39000	22700	
1936	.544	33500	18200		27000	14700	
1937	.508	24600	12500		13500	6850	
1938	475	16000	7600		2000	950	
1939	.444	7500	3340		17000	7550	
1940	.415	1000	415		32000	13300	
1941	.388	10000	3900		47000	18200	
1942	.362	18200	6600		62000	22400	
1943	.339	27000	9150		77500	26200	
1944	.317	36000	11400		92000	29200	
1945	.296	44000	13000		107600	31800	
		Total Losses		414,500 *			392,600 *
		Total Savings		44500			149600
		NET LOSSES		370,000 *			243,000 *

*-RED FIGURES

EXHIBIT X-323



MONT CLARE OFFICE

CHICAGO, ILLINOIS

TOTAL ANNUAL COSTS - MACHINE SWITCHING (60% BASIS) AND MANUAL

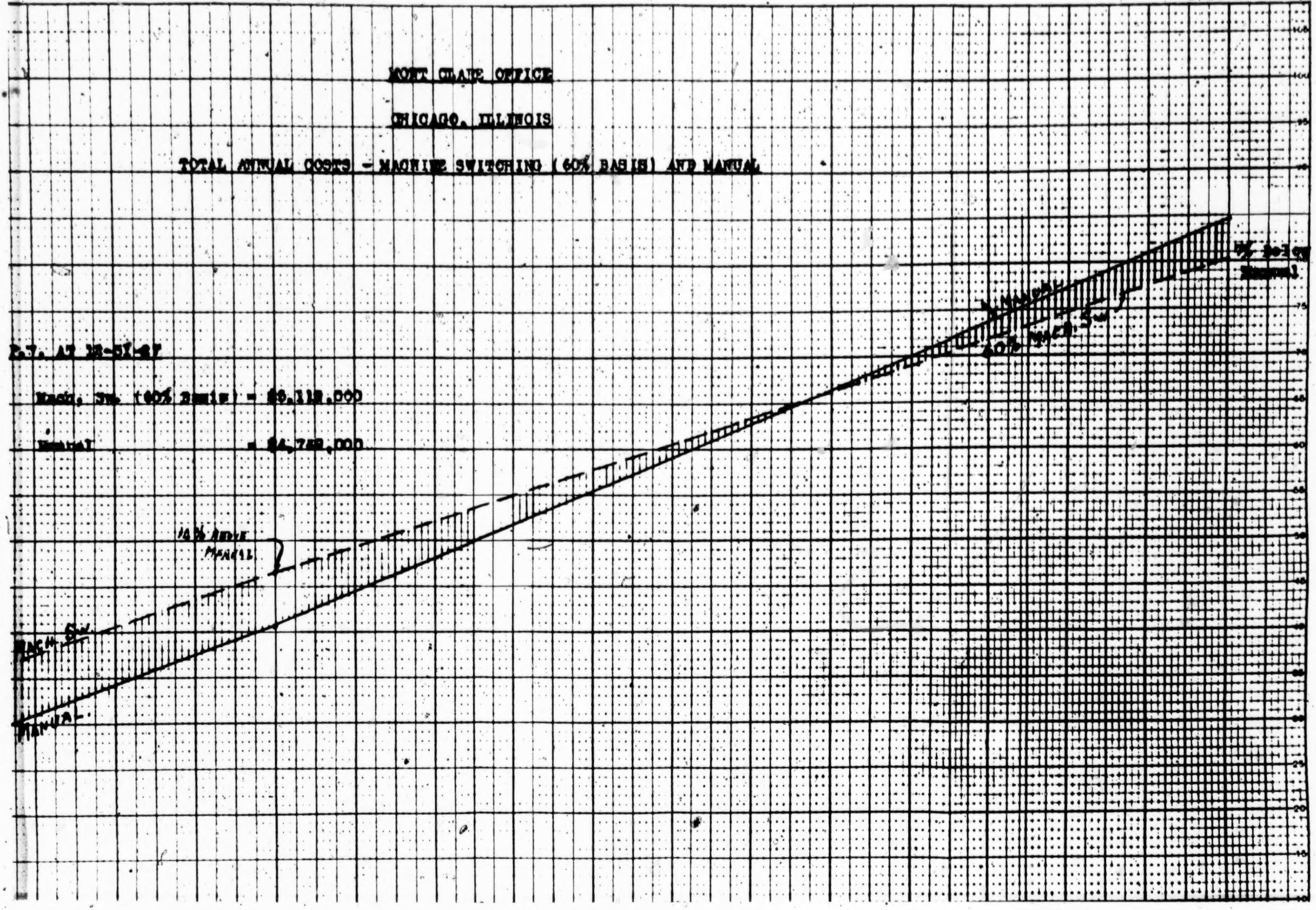
TOTAL P.W. AT 12-31-27

Mach. Sw. (60% Basis) = $6,112,000

Manual = $4,742,000

EXHIBIT X-323

7-6-25



MONT CLARE OFFICE

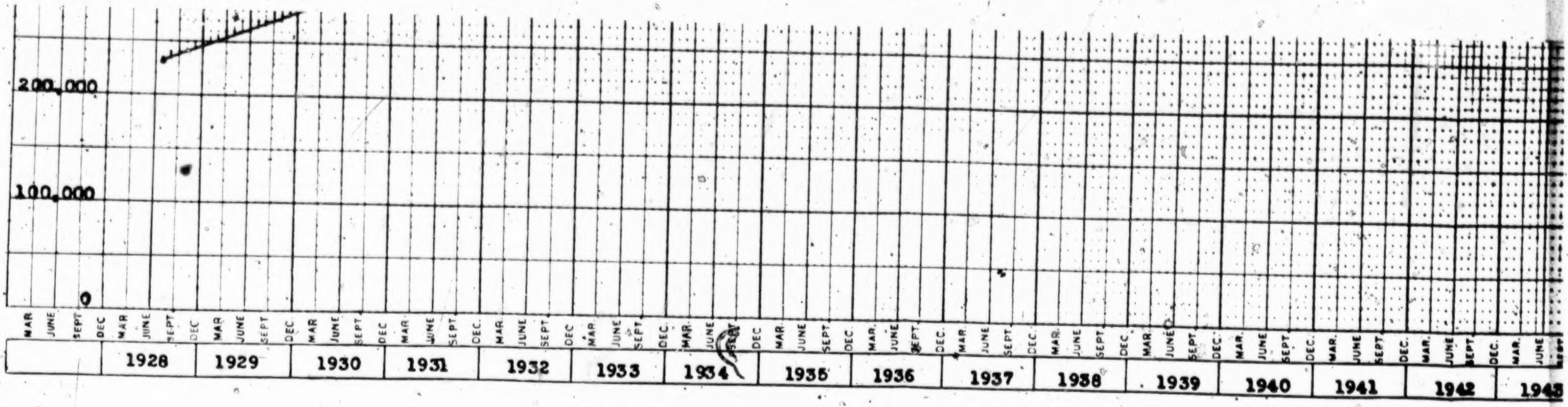
CHICAGO, ILLINOIS

TOTAL ANNUAL COSTS - MACHINE SWITCHING (60% BASIS) AND MANUAL

P.V. AT 12-31-27

Mach. Sw. (60% Basis) = $5,112,000

Manual = $4,742,000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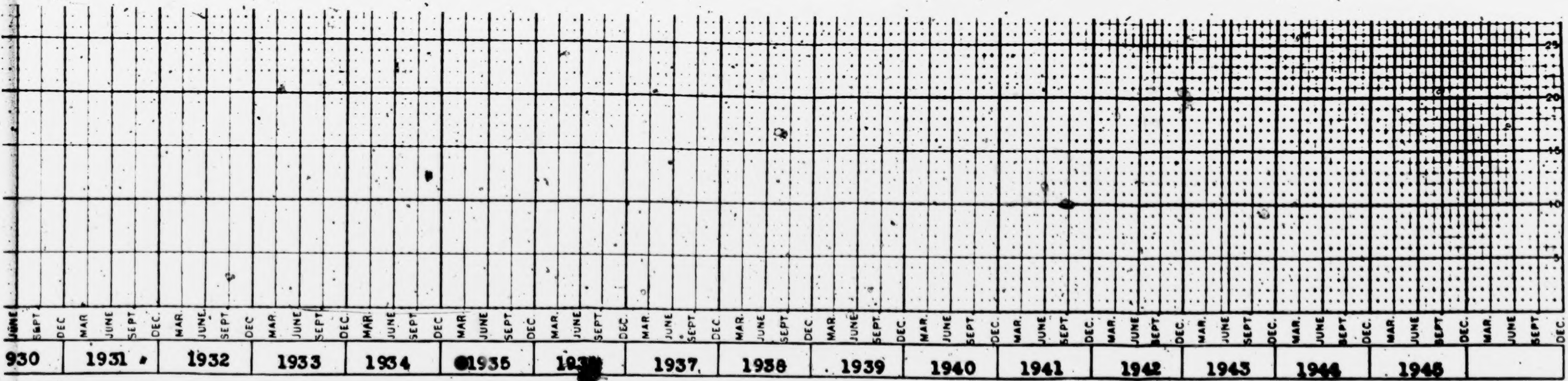
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5925

[fol. 5926] Exhibit X-324

Subject: Central Office Equipment, Edgewater Area, Chicago

American Telephone and Telegraph Company

Bell System

Bancroft Gherard, Vice President and Chief Engineer. Karl W. Waterson, Assistant Chief Engineer. Harry P. Charlesworth, Plant Engineer. Lloyd B. Wilson, Commercial Engineer

195 Broadway,
New York, October 20, 1926.
October 2—27663—PA3.1.

Mr. W. O. Kurtz, Chief Engineer, Illinois Bell Telephone Company, Chicago, Ill.

Dear Mr. Kurtz: This is to confirm our recent telephone conversation concerning the type of equipment to be provided for relief purposes in the Edgewater area, Chicago, as discussed in your letter of October 2.

We have carefully reviewed the cost study you made comparing manual and machine service for the Edgewater area and, broadly, have no comments or suggestions to offer with regard to it. A number of details were considered with your people and these, I believe, are being included in the final comparison.

I note that the study indicates some cost penalty with the machine equipment during the initial period, while a very marked saving with this equipment is indicated in the ultimate. From our review of the data available and from the visit which Mr. Harrison made to the Edgewater area during his recent trip to Chicago, we feel as you do that [fol. 5927] in the ultimate there are decided overall advantages with machine equipment. Also, while it is, of course, impossible to predict with any degree of accuracy the effect of the different assumptions that have been made under the various plans, yet we are inclined to feel that the cost difference indicated in the machine plan during the initial period is not of such moment as might first appear to be the case, when it is considered that the machine plan is on a broader and more comprehensive basis as to the future than the manual plan. A further point is that consideration of the trend of the machine program throughout the System would seem to indicate that the amount of machine traffic estimated for this office in 1945 is not at all unreasonable. In addition it is not unlikely that some increase in operating labor costs will obtain, the extent of the increase doubtless being influenced by the amount of machine equipment in the Chicago exchange.

As we review the situation broadly here, we are impressed with the fact that while there is some cost penalty on an engineering study basis with the machine plan during the initial period, yet when the expenditures are considered on a book basis, something in the order of 2 per cent is earned on the excess capital requirements even during this period, with an improvement in return indicated each succeeding year. This is not a particularly unfavorable showing, considering that a new system is proposed for such a large area in Chicago. Considering all the various factors involved, therefore, we agree with you that there would be [fol. 5928] advantage in proceeding with the machine plan unless there are some local considerations bearing on the problem with which we are not familiar, such for example as the effect of this project on the return for the exchange as a whole.

What I have said in the foregoing is based on the assumption that there is nothing proposed in the future in connection with the handling of four party subscribers in Chicago which would have a controlling bearing on the type of equipment for the Edgewater area. There is nothing that we have in mind that would affect the immediate plan of procedure at this time, and I am simply mentioning this question of the ultimate arrangement of serving the four party subscribers because it seems to us that it is a matter which is becoming increasingly important, particularly with the extension of the machine program in Chicago.

I shall be interested to know of your final conclusions in connection with this matter, and in case we can be of any further service with regard to it, I shall appreciate it if you will let us know.

Yours very truly, H. P. Charlesworth, Plant Engineer.

[fol. 5929]

EXHIBIT X-324

June 15, 1932.

Longbeach Study, September 20, 1926

Breakdown of Annual Charge Percentages

Central Office Equipment:		
Interest	7.0%	
Insurance	0.1	
Taxes	2.0	
Depreciation	3.7	(14 Years, 16% Salv.).
	12.8%	
Private Branch Exchanges:		
Interest	7.0%	
Taxes	2.0	
Depreciation	6.4	(7 Years, 45% Salv.)
	15.4%	
Substations:		
Manual:		
Interest	7.0%	
Taxes	2.0	
Depreciation	3.0	(5 Years, 70% Salv. of Appar.)
	12.0%	
Dial:		
Interest	7.0%	
Taxes	2.0	
Depreciation	3.7	(5 Years, 70% Salv. of Appar.)
	12.7%	

RJF:MF.

(Here follows side folio 5930, Exhibit X-324)

EXHIBIT X-324

Form 3102

ILLINOIS BELL TELEPHONE COMPANY
EDGEWATER OFFICE
CHICAGO, ILLINOIS.

MANUAL RELIEF IN ADJACENT BUILDING
VS.
PANEL MACHINE SWITCHING RELIEF IN A SEPARATE BUILDING ON A NEW LOT
COMPARATIVE COSTS AT 12-31-22 and 12-31-45

		At 12-31-32		At 12-31-45		
First Costs		Manual Relief	Mach. Switching Relief	Manual Relief	Mach. Switching Relief	
1. Apparatus			$ 903 000		$ 2 653 000	(1)
2. Eng., Draft., Install. Labor			217 000		554 000	
3. Total			1 120 000		3 207 000	LIN
4. W.E. Co. Bill		$ 392 000	1 129 000	$ 1 270 000	3 234 000	Man.R
		($63/L.)	($129/L.)	($72/L.)	($109/L.)	1-
6. Interest During Construction		10 000	43 000	40 000	104 000	2-
7. Rent During Construction		22 000	40 000	31 000	61 000	C
8. Plant, Traf., and Commercial Eng.		3 000	10 000	9 000	30 000	N.S.
9. Cut-over and Tel. Co. Work		-	45 000	-	144 000	1-
10. Other C.O. Equip. and Power Service		5 000	56 000	27 000	67 000	2-
Total Indirect		40 000	194 000	107 000	406 000	C
Total "X" Office (New)		432 000	1 323 000	1 377 000	3 640 000	
Add'l. C.I. Equip. in Edgewater		-	28 000	-	47 000	C.R.
Present "X" Office (Common)		836 000	836 000	836 000	836 000	C.
" "X" " (Excess)		629 000	442 000	629 000	-	H.
13. Equipment Other Offices (See Note 2)		136 000	216 000	362 000	365 000	Pr
14. Excess P.B.X. Equipment		-	8 000	-	12 000	
15. Substations (Common Equip. omitted)		109 000	159 000	428 000	636 000	M.SW.
16. Building, new		232 000	439 000	325 000	679 000	Pos.
" Present (Common and omitted)		-	-	-	-	Man.
Present Land (Common and omitted)		-	-	-	-	M.S.
Additional Land		50 000	137 000	50 000	137 000	B.Hr.
Improvements on Land		36 000	28 000	-	-	
Land held for future M.S. Bldg.		137 000	-	137 000	-	(2)
Improvements on above Land		28 000	-	28 000	-	
ANNUAL CHARGES AND TRAFFIC EXPENSE						
18. A.C. "X" Office, new	(12.8%)	55 300	169 300	176 300	465 900	
A.C. C.I. Equip. Edgewater	(12.8%)	-	3 600	-	6 000	
A.C. "X" Office, Pres. (Common)	(12.8%)	107 100	107 100	107 100	107 100	
A.C. "X" Office, Pres. (Excess)	(12.8%)	80 400	56 700	80 400	-	(3)
A.C. Equip. Other Offices	(12.8%)	17 400	27 600	46 400	46 700	
A.C. Excess P.B.X.	(15.4%)	-	1 200	-	1 800	
A.C. Substations, Manual	(12.0%)	13 000	-	51 400	-	
A.C. " Dial	(12.7%)	-	20 200	-	80 800	
19 &20. Mtce. Labor and Material "X" Office		95 000	119 000	125 000	175 000	
" " " " Other Offices		3 300	6 400	8 000	15 000	*
" Excess, Dial		-	2 300	-	8 900	
21. Power Bill		7 200	9 500	10 000	17 500	
22. Building Space (Present Bldg. omitted)		43 300	83 700	61 300	121 100	

EXHIBIT X-324

P-5

SHEET "A"

SEPT. 20, 1926.

MANUAL RELIEF IN ADJACENT BUILDING
VS.
PANEL MACHINE SWITCHING RELIEF IN A SEPARATE BUILDING ON A NEW LOT
COMPARATIVE COSTS AT 12-31-22 and 12-31-45

At 12-31-32		At 12-31-45	
Manual Relief	Mach. Switching Relief	Manual Relief	Mach. Switching Relief
	$ 903 000		$ 2 653 000
	217 000		554 000
	1 120 000		3 207 000
$ 392 000	1 129 000	$ 1 270 000	3 234 000
($63/L.)	($129/L.)	($72/L.)	($109/L.)
10 000	43 000	40 000	104 000
22 000	40 000	31 000	61 000
3 000	10 000	9 000	30 000
-	45 000	-	144 000
5 000	56 000	27 000	67 000
40 000	194 000	107 000	406 000
432 000	1 323 000	1 377 000	3 640 000
-	28 000	-	47 000
836 000	836 000	836 000	836 000
629 000	442 000	629 000	-
136 000	216 000	362 000	365 000
-	8 000	-	12 000
109 000	159 000	428 000	636 000
232 000	439 000	325 000	679 000
-	-	-	-
-	-	-	-
50 000	137 000	50 000	137 000
36 000	28 000	-	-
137 000	-	137 000	-
28 000	-	28 000	-
55 300	169 300	176 300	465 900
-	3 600	-	6 000
107 100	107 100	107 100	107 100
80 400	56 700	80 400	-
17 400	27 600	46 400	46 700
-	1 200	-	1 800
13 000	-	51 400	-
-	20 200	-	80 800
95 000	119 000	125 000	175 000
3 300	6 400	8 000	15 000
-	2 300	-	8 900
7 200	9 500	10 000	17 500
43 300	83 700	61 300	121 100

Notes

(1) Important Characteristics of Office.

	12-31-32		12-31-45	
LINES	**MAN.**	**M.S.**	**MAN.**	**M.S.**
Man. Relief				
1-M.R.	14,100	-	22,926	-
2-M.R.	5,670	-	7,645	-
C.B.	8,066	-	9,650	-
M.S. Relief				
1-M.R.	5,130	8,970	-	22,926
2-M.R.	5,670	-	1,000	6,645
C.B.	8,066	-	9,650	
C.R. x H.T.				
C.R. per line		1.15		1.05
H.T.		185"		185"
Product		213		194
M.SW. FRAMES		138		409
Pos. Operated				
Man. Relief	223.4	-	328.8	
M.S. "	151.3	20.4	84.2	48.2
B.Hr. Pos. Cost		$2.768		$ 2,768

(2) A reduction of 1/3 in the price of C.I. equipment is assumed after 1932 in accordance with a letter dated August 12, 1926 from the A.T. and T. Co. to the Local Traffic Engineer.

(3) A 5.0% reduction in the cost of panel machine switching equipment is assumed after 1933.

* RED FIGURES

A.C. " Dial (12.7%)	-			
19 &20.Mtce.Labor and Material "X" Office	95 000	119 000	125 000	175 000
" " " " Other Offices	3 300	6 400	8 000	15 000
" Excess, Dial	-	2 300	-	8 900
21.Power Bill	7 200	9 500	10 000	17 500
22.Building Space (Present Bldg. omitted)	43 300	83 700	61 300	121 100
A.C.on Land & Imp. held for future M.Sw. Bldg.	17 500	-	17 500	-
23. Tie Cables	-	1 000	-	5 000
26.Traffic Expense "X" Office	618 400	478 500	910 200	366 400
" " Other Offices (Excess)	5 200	-	41[illegible] 400	-
Dismantling Loss Amortized - C.O. Equipment	-	14 800	-	37 400
" " " - Substations	-	1 800	-	1 800
" " " - Improvements on Land	5 200	3 200	5 200	3 200
Equiv. Credit due Rental	7 000 *	1 600 *	7 000 *	1 600 *
" " " Distant Office Frames	-	3 000 *	-	10 000 *
	$ 1 061 300	$ 1 101 300	$ 1 633 200	$ 1 448 000
Annual Saving Mach.Sw. over Manual		$40 000 *		185 200
" " " " " per line		$4.40 *		$ 6.27

	-			
	95 000	119 000	125 000	175 000
s	3 300	6 400	8 000	15 000
	-	2 300	-	8 900
	7 200	9 500	10 000	17 500
	43 300	83 700	61 300	121 100
Bldg.	17 500	-	17 500	-
	-	1 000	-	5 000
	618 400	478 500	910 200	366 400
	5 200	-	41 400	-
ent	-	14 800	-	37 400
	-	1 800	-	1 800
s on Land	5 200	3 200	5 200	3 200
	7 000 *	1 600 *	7 000 *	1 600 *
	-	3 000 *	-	10 000 *
	$ 1 061 300	$ 1 101 300	$ 1 633 200	$ 1 448 000
		$40 000 *		185 200
		$4.40 *		$ 6.27

* RED FIGURES

[fol. 5931] EXHIBIT X-352

Extract.

Page 2, 3rd paragraph:

"Ten Million Dollars ($10,000,000) additional capital stock of the Company was authorized by the stockholders on April 9, 1923, to be sold to the stockholders at par. This has been subscribed and is being paid in installments, the final payment of 20% to be made on March 31, 1924."

(Here follow side folios 5932, 5933, 5934, 5935, 5936, 5937, 5938 and 5939)

[fol. 5932]

EXHIBIT X-354

Illinois Bell Telephone Company

Provisional Financial Plan[1]—1923

Statement F

	Requirements:			
	For Plant and Equipment—			
1	Gross Additions to Plant (incl. Int. during const.)	$17,400,000		
2	Plus Cost of Removing Plant	500,000		
3	Less Salvage (incl. gross wiring gain)	2,430,000	$15,470,000	
4	Extraordinary Repairs (Net)		40,000	
5	General Equipment (260 Gross less Salvage)		440,000	
6	Total for Plant and Equipment			$15,950,000
	For Investments and Advances—			
	Investment Securities, Increase (106-109)			
7	Stocks—to Increase Percent of Control[2]			
8	Other Investment Securities[2]			
9	Advances to be made System Corp. (110)[2] (Advances to be called should be included under Financing, line 44)			
10	Miscellaneous Investments, Increase (111)		*2,000	
11	Total for Investments and Advances			*2,000
	For Increased Current Assets—			
12	Bills Receivable (new loans) (117)[2] (Bills Receivable, maturing or to be called, should be included under Financing, line 44)			
13	Accounts Receivable, Increase (115, 118, 119, 120)		235,000	
14	Materials and Supplies, Increase (122-01-02 and 03)		*100,000	
15	Cash Balance, Increase		*1,500,000	
16	Total for Increased Current Assets			*1,365,000
17	For Obligations maturing or expected to pay[2]			34,564,000
18	For Sinking Funds			
19	For Purchase of Going or Completed Plant—From Associated Companies[3]			
20	For Purchase of Going or Completed Plant—From Non-Associated Companies[3]			1,045,000
21	Grand Total Requirements			$50,192,000
	Expected Current Resources:			
	Undivided Cash Earnings—			
22	"Balance for Corporate Surplus"			$1,765,000
23	Plus charges against Income, etc., not payable in cash in current year			
24	Wiring Loss (Net)	$480,000		
25	Amortization of Debt Discount and Exp. (338)			
26	Accrued Liabilities not due, Increase (166, 167)	5,000		
27	Service Billed in Advance, Increase (164)			
28	Matured Int. & Dividends Unpaid, Increase (162)			485,000
29	Less Credits to Income, etc., not received in cash in current year (except 313-02)			
30	Accrued Income not due, Increase (124)			
31	Matured Int. and Dividends Rec., Increase (121)			
32	Release of Premiums on Debt (339)			
33	Prepayments, Increase (129-133)	15,000		15,000
34	Total Undivided Cash Earnings			$2,235,000
	Reserves—			
35	Deprec'n of Plant and Equipment (608, 609 & 340)	$6,860,000		
36	Deprec'n Ch'g'd Clearing Accounts (701-2-3-& 4)	310,000		
37	Unexpend. Inc. other Res. (169+170 less 350 or 411)	25,000		
38	Total Reserves			7,195,000
39	Increased Current Liabilities (158, 159, 160, 161)			*479,000
40	Sale of Going or Completed Plant—To Associated Companies[3]			50,000
41	Sale of Going or Completed Plant—To Non-Associated Companies[3]			12,000
42	Grand Total Expected Current Resources			$9,013,000
	Balance, Net Requirements			$41,179,000
	Financing Proposed for Above Net Requirements:			
44	Advances and Bills Receivable, maturing or to be called[2]			45,000
45	Stocks to be sold A. T. & T. Co.			
46	Stocks or Bonds to be sold others[2]			
47	Borrow from Bankers or others[2]			
48	Borrow from A. T. & T. Co.			6,600,000
49	Other			34,534,000
50	Total Financing			$41,179,000

* Red figures.
Date Issued, No. 27, 1922

[fol. 5933]

EXHIBIT X-354

Illinois Bell Telephone Company

Provisional Financial Plan—1924[1]

Supplement to Statement F

	Requirements:			
	For Plant and Equipment:			
1	Gross Additions to Plant (incl. Int. during const.)	$19,000,000		
2	Plus Cost of Removing Plant	580,000		
3	Less Salvage (incl. gross wiring gain)	2,790,000	$16,790,000	
4	Extraordinary Repairs (Net)		100,000	
5	General Equipment (260 Gross less Salvage)		420,000	
6	Total for Plant and Equipment			$17,310,000
	For Investments and Advances—			
	Investment Securities, Increase (106-109):			
7	Stocks—to Increase Percent of Control[2]	$	$	
8	Other Investment Securities[2]			
9	Advances to be made System Corp. (110)[2] (Except to A. T. & T. Co.)			
10	Miscellaneous Investments, Increase (111) (Excl. transfers from and to Accounts 211 & 212)			
11	Total for Investments and Advances			
	For Increased Current Assets—			
12	Bills Receivable (new loans) (117)[2] (Except to A. T. & T. Co.)			
13	Accounts Receivable, Increase (115, 118, 119, 120) (Except loans on open account to A. T. & T. Co.)		$310,000	
14	Materials and Supplies, Increase (122-01-02 and 03)		*50,000	
15	Cash and Marketable Securities, Increase (113-114-116)		*10,000	
16	Total for Increased Current Assets			$250,000
17	For Obligations maturing or expected to pay[2] (except to A. T. & T. Co.)			8,000
18	For Sinking Funds			500,000
19	For Purchase of Going or Completed Plant—From Associated Companies[3]			
20	For Purchase of Going or Completed Plant—From Non-Associated Companies[3]			1,472,000
21	Miscellaneous Debit Adjustments (See Notes 2 and 4)			155,000
22	Grand Total Requirements			$19,385,000
	Expected Current Resources:			
	Undivided Cash Earnings:			
23	"Balance for Corporate Surplus"			$2,023,000
24	Plus Charges against Income, etc., not payable in cash in current year:			
25	Wiring Loss (Net)	$560,000		
26	Amortization of Debt Discount and Exp. (338)	125,000		
27	Accrued Liabilities not due, Increase (166, 167)	380,000		
28	Service Billed in Advance, Increase (164)			
29	Matured Int. & Dividends Unpaid, Increase (162)			$1,065,000
30	Less Credits to Income, etc., not received in cash in current year (except 313-02)			
31	Accrued Income not due, Increase (124)			
32	Matured Int. and Dividends Rec., Increase (121)			
33	Release of Premiums on Debt (339)			
34	Prepayments, Increase (129-133)	15,000		15,000
35	Total Undivided Cash Earnings			$3,073,000
	Reserves—			
36	Deprec'n of Plant and Equipment (608, 609 & 340)	$7,610,000		
37	Deprec'n Ch'g'd Clearing Accounts (701-2-3 & 4)	250,000		
38	Unexpend. Inc. other Res. (169 + 170 less 350 or 411)	45,000		
39	Total Reserves			7,905,000
40	Increased Current Liabilities (158, 159, 160, 161) (Except loans carried in Account 160)			
41	Sale of Going or Completed Plant—To Associated Companies[3]			609,000
42	Sale of Going or Completed Plant—To Non-Associated Companies[3]			150,000
43	Miscellaneous Credit Adjustments[2]			12,000
44	Grand Total Expected Current Resources			$11,749,000
45	Balance, Net Requirements			$7,636,000

Financing Proposed for Above Net Requirements†

46	Securities Sold A. T. & T. Co.	$1,980,000	Investment Securities Sold Others	
47	Loans from A. T. & T. Co.		Stock and Bonds of Company Sold Others	3,000
48	Loans to A. T. & T. Co. Repaid	5,600,000	Borrowed from Bankers and Others	
49	Less—Loans from A. T. & T. Co. Repaid		Advances & Bills Rec'ble., Maturing—from others	53,000
50	Less—Loans to A. T. & T. Co.			
51	Net Financing from A. T. & T. Co.	7,580,000	Total Financing from Others	56,000
			Grand Total Financing	$7,636,000

† Basis of Net Cash Received.
* Red figures.
Date Issued: Nov. 14, 1923.

[fol. 5934]

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[1] Show amounts to nearest thousand dollars, but show last three digits.

[2] Specify detail on this side of report (or on Supplementary Statement).

[3] Cash Requirement or Resource only. Submit detail of contemplated purchases, and sales on separate statements.

[4] Include on Line 21 that portion of account (135) covering "expense on funded debt" in connection with new issues. The par value of securities to be sold should be shown on this side of the report.

[fol. 5935] EXHIBIT X 354

Line 21

13	Accounts Receivable, Increase (115, 118, 119, 120) (Except loans on open account to A. T. & T. Co.)		$310,000	
14	Materials and Supplies, Increase (122-01-02 and 03)		*50,000	
15	Cash and Marketable Securities, Increase (113-114-116)		*10,000	
16	Total for Increased Current Assets			$250,000
17	For Obligations maturing or expected to pay[2] (except to A. T. & T. Co.)			8,000
18	For Sinking Funds			500,000
19	For Purchase of Going or Completed Plant—From Associated Companies[3]			
20	For Purchase of Going or Completed Plant—From Non-Associated Companies[3]			1,472,000
21	Miscellaneous Debit Adjustments (See Notes 2 and 4)			155,000
22	Grand Total Requirements			$19,385,000
	Expected Current Resources:			
	Undivided Cash Earnings:			
23	"Balance for Corporate Surplus"			$2,023,000
24	Plus Charges against Income, etc., not payable in cash in current year:			
25	Wiring Loss (Net)	$560,000		
26	Amortization of Debt Discount and Exp. (338)	125,000		
27	Accrued Liabilities not due, Increase (166, 167)	380,000		
28	Service Billed in Advance, Increase (164)			
29	Matured Int. & Dividends Unpaid, Increase (162)			$1,065,000
30	Less Credits to Income, etc., not received in cash in current year (except 313-02)			
31	Accrued Income not due, Increase (124)			
32	Matured Int. and Dividends Rec., Increase (121)			
33	Release of Premiums on Debt (339)			
34	Prepayments, Increase (129-133)	15,000		15,000
35	Total Undivided Cash Earnings			$3,073,000
	Reserves—			
36	Deprec'n of Plant and Equipment (608, 609 & 340)	$7,610,000		
37	Deprec'n Ch'g'd Clearing Accounts (701-2-3 & 4)	250,000		
38	Unexpend. Inc. other Res. (169 + 170 less 350 or 411)	45,000		
39	Total Reserves			7,905,000
40	Increased Current Liabilities (158, 159, 160, 161) (Except loans carried in Account 160)			609,000
41	Sale of Going or Completed Plant—To Associated Companies[3]			150,000
42	Sale of Going or Completed Plant—To Non-Associated Companies[3]			12,000
43	Miscellaneous Credit Adjustments[2]			
44	Grand Total Expected Current Resources			$11,749,000
45	Balance, Net Requirements			$7,636,000

Financing Proposed for Above Net Requirements†

46	Securities Sold A. T. & T. Co.	$1,980,000	Investment Securities Sold Others	
47	Loans from A. T. & T. Co.		Stock and Bonds of Company Sold Others	3,000
48	Loans to A. T. & T. Co. Repaid	5,600,000	Borrowed from Bankers and Others	
49	Less—Loans from A. T. & T. Co. Repaid		Advances & Bills Rec'ble., Maturing—from others	53,000
50	Less—Loans to A. T. & T. Co.			
51	Net Financing from A. T. & T. Co.	7,580,000	Total Financing from Others	56,000
			Grand Total Financing	$7,636,000

† Basis of Net Cash Received.
* Red figures.
Date Issued: Nov. 14, 1923.

[fol. 5934]

[1] Show amounts to nearest thousand dollars, but show last three digits.
[2] Specify detail on this side of report (or on Supplementary Statement).
[3] Cash Requirement or Resource only. Submit detail of contemplated purchases, and sales on separate statements.
[4] Include on Line 21 that portion of account (135) covering "expense on funded debt" in connection with new issues. The par value of securities to be sold should be shown on this side of the report.

[fol. 5935] EXHIBIT X-354

November 12, 1924.

1925 Provisional Estimate Illinois Bell Telephone Company

Supplement to Statement F

Line 12

Decrease in Special Deposits (114) to retire Home Telephone Company of Champaign County bonds (See Line 17)	$20,000

Line 17

Estimated amount of Home Telephone Company of Champaign County bonds that will be retired in 1925	20,000

Line 19

Purchase of interest in underground conduit at Hessville, Indiana from A. T. and T. Company	8,000

Line 20

Purchase of following properties from Other Companies:	
Vermillion County Telephone Company	1,163,000
Cairo, Illinois Exchange	175,000
Watseka, Illinois Exchange	80,000
Total	$1,418,000

Line 21

Decrease in Suspense Account (136) balances.	40,000
Transfers (Contra of those included in other requirements and resources) (Credit Items)	60,000
Total	$100,000

Line 33

Notes	Maturing	Amount
Barker Telephone System	1- 1-25	$1,600
Inter-County Telephone Company	3- 6-25	394
R. I. Thornton	3-16-25	130
T. E. and K. M. Coman	Demand	80
Total		$2,204

Line 35

Sale of Interest in Toll U. G. Conduit and Toll U. G. Cable to A. T. and T. Company	$72,000

Line 37

Estimated Surplus Items	4,000
Interest to be paid from Sinking Fund on bonds to be retired	1,000
Total	5,000
Decrease in Deferred Credit Items (170-A)	3,000
Balance	$2,000

Line 40

Estimated portion of $10,000,000 of new stock to be sold "Others"	$102,000

[fol. 5936]

EXHIBIT X-354

Illinois Bell Telephone Company

Statement F

Provisional Financial Plan—1927[1]

	Requirements:			
1	Gross Additions to Plant (incl. Int. during Const.)	$36,500,000		
2	Plus Cost of Removing Plant	630,000		
3	Less Salvage (incl. gross wiring gain)	4,400,000	$32,730,000	
4	Extraordinary Repairs (Net)		210,000	
5	General Equipment (Gross less Net Salvage)		740,000	
6	Total for Plant and Equipment			$33,680,000
7	Stocks—to Increase Percent of Control (106)[2]			
8	Other Investment Securities (106-109)[2]			
9	Advances and Bills Receivable (new loans) (110, 117)[2] (Except to A. T. & T. Co.)			
10	Miscellaneous Investments, Increase (111) (Excludes transfers from and to Accounts 211 & 212)			
11	Total for Investments and Advances			
12	Cash and Marketable Securities, Increase (113, 114, 116)[2]		*$5,000	
13	Accounts Receivable, Increase (115, 118, 119, 120, 123) (Except loans on open account to A. T. & T. Co.)		375,000	
14	Materials and Supplies, Increase (122 less 122-10)			
15	Total for Increased Current Assets			$370,000
16	Prepayments, Increase (129-133)			5,000
17	Obligations maturing or expected to be paid (153, 155, 157, 163)[2] (Except to A. T. & T. Co.)			
18	Sinking Funds			500,000
19	Purchase of Going or Completed Plant—From Bell Operating Companies[2]			93,000
20	Purchase of Going or Completed Plant—From Other Companies[2]			1,210,000
21	Miscellaneous Debit Items[2]			20,000
22	Grand Total Requirements			$35,878,000
	Resources:			
23	Undivided Profits (Under Existing and Expected Rates,	$1,895,000 + 22,000		$1,917,000
	Charges to Income, etc., not payable in cash in current year:			
24	Wiring Loss (Net)	$1,170,000		
25	Amortization of Debt Discount and Expense (338)	125,000		
26	Accrued Liabilities not Due, Increase (166,167)	620,000		
27	Matured Interest and Dividends Unpaid, Increase (162)		$1,915,000	
	Less Credits to Income, etc., not receivable in cash in current year:			
28	Accrued Income not Due, Increase (124)			
29	Matured Interest and Dividends Rec., Increase (121)			
30	Net Charges or Credits to Income, etc., not payable or receivable in cash in current year			1,915,000
31	Depreciation & Amortization (340, 608 & 609) & depreciation charged Clear'g Accts. (701-2-3 & 4)			10,720,000
32	Investment Securities Sold[2] (Except to A. T. & T. Co.)			
33	Advances and Bills Receivable Maturing—from Others[2]			
34	Increased Current Liabilities (158, 159, 160, 161, 164, 165) (Except loans from A. T. & T. Co.)			2,331,000
35	Sale of Going or Completed Plant—To Bell Operating Companies[2]			
36	Sale of Going or Completed Plant—To Other Companies[2]			
37	Miscellaneous Credit Items[2]			505,000
38	Grand Total Resources			$17,388,000
39	Balance Net Requirements			$18,490,000

Financing Proposed for Above Net Requirements:

40	Stocks and Bonds of Co. sold Others[2]	$147,000	Stocks & Bonds of Co. sold A. T. & T. Co.	$14,853,000
41	Borrowed from Bankers and Others[2]		Investment Securities sold A. T. & T. Co.[2]	
42	Other[2]	190,000	Loans from A. T. & T. Co. (Net)	3,300,000
43	Total Financing from Others	$337,000	Net Financing from A. T. & T. Co.	$18,153,000
44			Grand Total Financing	$18,490,000

1. Show amounts to nearest thousand dollars, but show last three digits.
2. Specify detail on reverse side of report (or on Supplementary Statement).

Date Issued, ...

* Red figures.

[fol. 5937] Sheet No. 1

Illinois Bell Telephone Company; Provisional Estimate, 1927

Supplement to Statement F

Line 12

5 Per Cent Note, S. B. and H. Eden, maturing 3-1-27	$5,000

Line 19

Purchase from A. T. and T. Co., additional interest in the following toll lines:

Chicago-Terre Haute Cable, Chicago Heights to Beecher	27,000
Chicago-Highlands Cable	19,000
Chicago-Peoria Open Wire Line	30,000
Chicago-Milwaukee Open Wire Line	9,000
Chicago-St. Louis Line, Joliet to Wilmington	8,000
Total	$93,000

Line 21

Estimated increase in Suspense Account (136) balances	$5,000
Estimated surplus charges	15,000
Total	$20,000

Line 37

Estimated withdrawals from the Sinking Fund in accordance with Trust Deed covering the 1923 Bond Issue	$500,000
Estimated Surplus Credits	3,000
Estimated increase in Other Deferred Credits (170 A)	2,000
Total	$505,000

[fol. 5938] Sheet No. 2

Line 40

Estimated portion of installments from **"Others" on $30,000,000 of new stock to be**

10	Miscellaneous Investments, Increase (111) (Excludes transfers from and to Accounts 211 & 212)			
11	Total for Investments and Advances			
12	Cash and Marketable Securities, Increase (113, 114, 116)²		*$5,000	
13	Accounts Receivable, Increase (115, 118, 119, 120, 123) (Except loans on open account to A. T. & T. Co.)		375,000	
14	Materials and Supplies, Increase (122 less 122-10)			
15	Total for Increased Current Assets			$370,000
16	Prepayments, Increase (129-133)			5,000
17	Obligations maturing or expected to be paid (153, 155, 157, 163)² (Except to A. T. & T. Co.)			
18	Sinking Funds			500,000
19	Purchase of Going or Completed Plant—From Bell Operating Companies²			93,000
20	Purchase of Going or Completed Plant—From Other Companies²			1,210,000
21	Miscellaneous Debit Items²			20,000
22	Grand Total Requirements			$35,878,000
	Resources:			
23	Undivided Profits (Under Existing and Expected Rates	$1,895,000 + 22,000		$1,917,000
	Charges to Income, etc., not payable in cash in current year:			
24	Wiring Loss (Net)	$1,170,000		
25	Amortization of Debt Discount and Expense (338)	125,000		
26	Accrued Liabilities not Due, Increase (166, 167)	620,000		
27	Matured Interest and Dividends Unpaid, Increase (162)		$1,915,000	
	Less Credits to Income, etc., not receivable in cash in current year:			
28	Accrued Income not Due, Increase (124)			
29	Matured Interest and Dividends Rec., Increase (121)			
30	Net Charges or Credits to Income, etc., not payable or receivable in cash in current year			1,915,000
31	Depreciation & Amortization (340, 608 & 609) & depreciation-charged Clear'g Accts. (701-2-3 & 4)			10,720,000
32	Investment Securities Sold² (Except to A. T. & T. Co.)			
33	Advances and Bills Receivable Maturing—from Others²			
34	Increased Current Liabilities (158, 159, 160, 161, 164, 165) (Except loans from A. T. & T. Co.)			2,331,000
35	Sale of Going or Completed Plant—To Bell Operating Companies²			
36	Sale of Going or Completed Plant—To Other Companies²			
37	Miscellaneous Credit Items²			505,000
38	Grand Total Resources			$17,388,000
39	Balance Net Requirements			$18,490,000

Financing Proposed for Above Net Requirements:

40	Stocks and Bonds of Co. sold Others²	$147,000	Stocks & Bonds of Co. sold A. T. & T. Co	$14,853,000
41	Borrowed from Bankers and Others²		Investment Securities sold A. T. & T. Co.²	
42	Other²	190,000	Loans from A. T. & T. Co. (Net)	3,300,000
43	Total Financing from Others	$337,000	Net Financing from A. T. & T. Co.	$18,153,000
44			Grand Total Financing	$18,490,000

1. Show amounts to nearest thousand dollars, but show last three digits.
2. Specify detail on reverse side of report (or on Supplementary Statement).

Date Issued

* Red figures.

[fol. 5937] Sheet No. 1

Illinois Bell Telephone Company; Provisional Estimate, 1927

Supplement to Statement F

Line 12

5 Per Cent Note, S. B. and H. Eden, maturing 3-1-27	$5,000

Line 19

Purchase from A. T. and T. Co., additional interest in the following toll lines:

Chicago-Terre Haute Cable, Chicago Heights to Beecher	27,000
Chicago-Highlands Cable	19,000
Chicago-Peoria Open Wire Line	30,000
Chicago-Milwaukee Open Wire Line	9,000
Chicago-St. Louis Line, Joliet to Wilmington	8,000
Total	$93,000

Line 20

Purchase of the following properties from the Central Union Telephone Company:

Vermilion County Telephone Company	$1,132,000
Watseka Telephone Company	78,000
Total	$1,210,000

Line 21

Estimated increase in Suspense Account (136) balances	$5,000
Estimated surplus charges	15,000
Total	$20,000

Line 37

Estimated withdrawals from the Sinking Fund in accordance with Trust Deed covering the 1923 Bond Issue	$500,000
Estimated Surplus Credits	3,000
Estimated increase in Other Deferred Credits (170 A)	2,000
Total	$505,000

[fol. 5938] Sheet No. 2

Line 40

Estimated portion of installments from "Others" on $30,000,000 of new stock to be issued 9-30-27	$147,000

Line 42

6 Per Cent Bonds, maturing 11-30-39 to be assumed in the purchase of The Vermilion County Telephone Co. included in Line 20	$190,000

November 10, 1926.

Western Electric Company,
Incorporated
General Accounting Department

X-366

~~TELEPHONE-DEPARTMENT~~

P.1

Date Issued ~~June-8,-1926~~

CA- 4.13

NET PROFITS BEFORE DEDUCTING FEDERAL TAXES ON SALES OF NEW A.T. & T. INSTRUMENTS IN EXCESS OF 20% OVER COMPLETE COST PROVIDED UNDER 1882 CONTRACT AND SURPLUS RESULTING FROM BILLING OF WAREHOUSE EXPENSE APPLYING ON NEW AND REPAIRED A. T. & T. INSTRUMENTS JANUARY 1, 1915 TO DECEMBER 31, 1926.

(Expressed in Thousands of Dollars)

1. 1926 Results.	a Analysis of 1926 Actual Selling Price Based on Estimated Cost	b Based on Actual Costs 1926 Selling Price Would Have Been	c Difference (a-b)	
Shop Cost - - - - - - - - - - - - - -	$3,716,497	$3,498,871	$217,626 +	1
Development Expense - - - - - - - - -	382,799	442,000	59,201 -	2
Distribution Expense - - - - - - - -	286,170	278,600	7,570 +	3
Complete Cost - - - - - - - - - -	4,385,466	4,219,471	165,995 +	4
Profits (20% of Line 4) - - - - - - -	877,093	843,894	33,199 +	5
Selling Price - - - - - - - - - - - -	5,262,559	5,063,365	199,194 +	6
Selling Price (on basis of Col.b) -	5,063,365			7
Profits more than 20% over Complete Cost by (6 - 7) - -	199,194			8

2. Results from January 1, 1915 to December 31, 1926.

Profits and Losses due to not revising selling prices as costs changed.		
1919 Prices increased August 16, 1919.		
If new sales prices based on Shop Estimate of Costs for 1919 had been put into effect January 16, 1919, Profits would have been increased 21% or - - - - - - - - - -	376,000	9
1920 Prices increased September 16, 1920.		
If new sales prices based on Shop Estimate of Costs for 1920 had been put into effect January 16, 1920, Profits would have been increased 23% or - - - - - - - - - -	618,000	10
Total for 1919 and 1920 - - - - - - - - - - - - - - -	994,000	11
1921 Prices decreased November 16, 1921.		
If new sales prices based on Shop Estimate of Costs for 1921 had been put into effect January 16, 1921, Profits would have been decreased 19% or - - - - - - - - - -	800,000	12
Net due to not changing prices promptly - -	194,000	13
Surplus representing excess of Development Loading included ~~figured~~ in prices ~~at-Standard-Rates~~ over Actual Expense - - - - - - - - - - -	798,000	14
Surplus representing excess of Distribution Loading included ~~figured~~ in prices ~~at-Standard-Rates~~ over Actual Expense - - - - - - - - - - - -	22,000	15
	1,014,000	16
Surplus representing excess of estimated Shop Costs used in determining Selling Prices over the Actual Shop Costs - - - -	451,000	17
	563,000	18
Profits - 20% of Line 18 - - - - - - - - - - - - - - - - - -	112,000	19
Total Profit from January 1, 1915 to December 31, 1926 in excess of 20% over Complete Cost - - - - - - - - - - - - - - -	675,000	20
Surplus in billing of Warehouse Expense January 1, 1915, to December 31, 1926 -	69,000(u)	21
Grand Total Surplus (20 + 21) - - - - - - - - - - - - - - - - - -	606,000	22

EXHIBIT X-366

Date Issued: June 8, 1926

Western Electric Company, Incorporated, General Accounting Department

Telephone Department

Scat. 4.14

Net Profits on Investment in New A. T. & T. Instruments, 1916 to 1925

The return on investment in new A. T. & T. instruments for 1925 was 8.5%, as compared with 14.2% in 1924. The lower return in 1925 results principally from the current shop cost of instruments exceeding the estimated shop cost used as basis for prices by $255,000. Excluding effect of this item the 1925 return would have been 12.3%.

	a	b	c	d	e	f	g	
	Sales	Net profits on sales of A. T. & T. instruments before deducting taxes	Per Cent of sales (b÷a)	Federal taxes	Net profits after deducting taxes (b−d)	Average investment (S)	Return on investment (e÷f)	
1925	$5,017,587	$624,363 (U)	12.4	$85,000	$571,363 (V)	$6,707,000	8.5%	1
1924	4,900,159	975,243	19.9	117,000	858,243	6,052,000	14.2	2
1923	4,496,482	698,036	15.5	78,961	619,075	5,482,000	11.3	3
1922	4,342,821	893,321	20.6	111,665	781,656	5,045,000	15.5	4
1921	4,597,725	1,064,303	23.1	106,431	957,872	6,054,000	15.8	5
1920	3,852,712	606,029	15.7	60,603	545,426	5,262,000	10.4	6
1919	2,530,083	$\boxed{187,453}$	$\boxed{7.4}$	0	$\boxed{187,453}$	3,196,000	$\boxed{5.9}$	7
1918	2,230,155	123,923	5.6	14,871	109,052	2,601,000	4.2	8
1917	2,420,569	422,791	17.5	30,864	391,927	2,813,000	13.9	9
1916	2,200,641	180,690	8.2	4,517	176,173	2,934,000	6.0	10
	36,588,934	5,401,246	14.8	609,912	4,823,334	4,615,000	10.5	11

☐ Indicates negative figures.

(S) Average investment represents the book cost of plant and working assets less current accounts payable.

(U) Reconciled with Scat-4.13 report as follows:

	1925	
Column, b, line 5, Scat-4.13		
Profit W. E. Company should earn (20% over completed cost before adding Federal Income Tax) Column a, line 8, Scat-4.13	$878,645	12
Profits less than 20% by	254,282	13
Total net profit before deducting Federal Income Tax (12—13)	624,363	14

(V) Includes "Other Income Received" applicable to A. T. & T. Instruments amounting to $32,000.

Copy to: General Telephone Sales Manager, General Contract Sales Manager, Telephone Price Manager, Comptroller, Assistant Comptroller, Chief Statistician.

[fol. 5941] Exhibit X-376

(Copy)

Kellogg Switchboard and Supply Company, Chicago, Illinois

September 18, 1922.

Mr. F. B. Gleason, General Sales Manager, Western Electric Co., 195 Broadway, New York.

Dear Mr. Gleason: I am in receipt of your letter of September 13th enclosing specifications and drawings of a lamp which would be satisfactory to the Bell System. We find that our terminals and terminal block will not meet your specifications which would require that we work to *to* dimensions for terminals and terminal blocks, given on your sketches E. S. 281811 and 281812. This we would be glad to do, but would require about 60 days to make up the necessary tools.

We are mailing you under another cover terminal blocks for our lamps made of Bakelite, also one of our lamps fitted with a bakelite base, to show you what we would propose for your lamp mounting block, should we make same here.

We quote you on these lamps a price of 35¢ each f. o. b. Chicago, less 10%, plus another 10% to you for distributing charges, or a net price to you of 35¢, less 10% and 10%.

Yours very truly, (Sgd.) J. B. Edwards, President.

[fol. 5942] (Copy)

November 11, 1922.

Mr. J. B. Edwards, President Kellogg Switchboard and Supply Company, Adams and Aberdeen Streets, Chicago, Illinois.

Dear Mr. Edwards: We have been looking into the suggestion contained in your letter of September 18th, that we consider using bakelite mounting blocks for our lamps. We find that the maple mounting blocks are preferable from our standpoint, and any lamps which you may furnish us should therefore be in accordance with the specifications sent you with my letter of September 13th.

Your letter of September 18th also refers to a price to us for lamps made in accordance with these specifications of 35¢ each f. o. b. Chicago, less 10 and 10, making a net price of 28.35¢. As explained to you in connection with your previous quotation, it is essential that the price to the Associated Bell Companies for the lamp which you make be no higher than the price which they are now paying for the lamp we manufacture. As we have to cover our cost of inspection, freight and handling, it is necessary that the price which we pay you shall not exceed 25¢ each f. o. b. Chicago. In view of the quantity of these lamps which we are planning to order, we trust you will be able to quote us a price which will enable us to satisfy our customers and which will at the same time be entirely satisfactory to you.

We are ready to place our initial order as soon as this question of price can be settled.

Yours very truly, —— ——, General Telephone Sales Manager.

[fol. 5943] (Copy)

Kellogg Switchboard and Supply Company, Adams and Aberdeen Street

November 15, 1922.

Mr. F. B. Gleason, Genl. Tel. Sales Manager, Western Electric Co., 195 Broadway, New York City.

Dear Mr. Gleason: Replying to your letter of November 11th, as stated therein, this lamp order seems to be contingent on the price mentioned of 25¢ each.

While platinum is a little high at this time for that price, yet in the long run I think the price will be very fair and in view of the quantity you have in mind, this is to advise we will be glad to accept your order for delivery at the price of 25¢ each, F. O. B. Chicago.

I would request, as you know this involves new tooling throughout on the terminal blocks, that you furnish us with a set of specifications and drawings complete for these parts; also we would like to have you specify the coloring for the terminal block and if you so desire, the processing, if there is any that you prefer to have, as of course, we wish to make the lamps conform as far as possible to your regular specifications.

Hoping to receive this order with the drawings and specifications in the near future, I remain,

Yours very truly, (Sgd.) J. B. Edwards, President.

[fol. 5944] (Copy)

December 4, 1922.

J. B. Edwards, President Kellogg Swbd. and Supply Co.,
Adams and Aberdeen Sts., Chicago, Illinois.

Dear Mr. Edwards: Answering your letter of November 27th.

You may proceed with our order for 180,000 Type 2-G Lamps, to be delivered at the rate of 30,000 per month, beginning February 1923.

It is understood that these lamps will be made in accordance with the specifications submitted to you with my letter of September the 13th and will be subject to our inspection. Our formal order will be sent you in a few days through the regular channels.

Yours very truly, (Sgd.) F. B. Gleason, General Telephone Sales Manager.

[fol. 5945] (Copy)

April 14, 1923.

Memorandum for File

Mr. Gleason told me this morning that he had discussed with Mr. Edwards the question of prices on Kellogg additions and he was assured that the price to us would be—

30 and 5 off the price to the miscellaneous independent customers

20 and 5 off that for the larger independent customers

10 and 5 off their best price to any of their independent customers

SWM JE.

Copied—EC.

[fol. 5946] Copy

May 8, 1923.

J. B. Edwards, President Kellogg Switchboard and Supply Company, Adams and Aberdeen Streets, Chicago, Illinois.

Dear Mr. Edwards: In accordance with our talk in Chicago on April 30th, we will take immediate steps towards placing on your factory orders for various quantities and types of magneto telephone subscriber sets, beginning with the 300-K, 305-AC, 315-H and 317-AH types, on which prices were quoted in your letters of May 23rd and 26th, which prices are subject to a 5% discount as agreed to in a subsequent talk during my previous visit to Chicago.

Within the next few weeks Mr. J. B. Harlow, Telephone Sales Engineer, and Mr. J. H. Hellweg, Hawthorne Merchandise Manager, together with representatives of our Engineering and Manufacturing Departments, will confer with your people as to the detailed procedure to be followed.

In getting this work started, I should like to summarize in brief, for their guidance, certain general matters we agreed to in our talk last week, and in our previous negotiations. The quotations you have furnished us so far are f. o. b. your Chicago factory or delivered at Hawthorne. The terms of payment are ninety days. You have not quoted us on any other types of magneto sets than those [fol. 5947] referred to above, but it is our intention to place orders with you for other types of magneto sets. We understand that you will quote us prices consistent with and on the same terms as the quotations already received. While we are satisfied that the prices quoted represent a fair basis upon which to proceed with initial orders, it is your belief and our expectation, that should the initial orders work out satisfactorily to both parties, lower prices consistent with shaken-down production costs will be quoted for any subsequent orders which we might decide to place with your Company. We have every hope that such further orders will be forthcoming, but that of course must be contingent upon the satisfactory performance on the initial orders from the standpoint of quality and service as well as price.

Questions regarding the transfer of tools and possibly piece parts and materials the size and type of initial orders, and stocks and deliveries, will be taken up by Mr. Harlow and Mr. Hellweg when they confer with your people in Chicago.

Yours very truly, —— ——, General Telephone Sales Manager.

JE.

[fol. 5948] Copy

Kellogg Switchboard & Supply Co., Adams and Aberdeen
Street, Chicago

May 16, 1923.

Mr. F. B. Gleason, General Telephone Sales Manager,
Western Electric Company, 195 Broadway, New York
City, N. Y.

Dear Mr. Gleason: Replying to your letter of May 14th regarding the Victor and Delmar additions, beg to advise this matter is now in the hands of our engineering department and we will advise you of the prices as soon as they have completed their specifications.

On this subject, take what we call "maintenance material" from our catalogue, we are pricing this at a discount to you of 10 and 5%. On our larger orders involving estimates we are also pricing these to run to you at a discount of 10 and 5% below our best billing elsewhere, as was understood during our conversation here, namely that you were to receive for the Western Electric Company this extra 5%.

The question arises this morning on some orders direct to us from the Southwestern Bell. One order in particular No. CE 10729. We will hold this as well as similar orders awaiting instructions as to how we shall bill these. Shall we bill direct to the Southwestern Bell; will we bill at your price, or will we bill them to you?

We would be glad to hear from you at your early convenience on this matter, as we are holding up considerable billing waiting instructions.

Yours very truly, (Signed) J. B. Edwards, President.

JBE: IH.
Copied—EC.

[fol. 5949] **Exhibit X-402**

Copy

American Telephone and Telegraph Company, 195 Broadway, New York

Charles M. Bracelen, Vice-President and General Counsel:

September 21, 1931.

Mr. Benjamin F. Goldstein, Attorney-at-law, Otis Building,
Chicago, Ill.

Dear Sir: I acknowledge receipt of your letter of September 15th asking that you be permitted to inspect, at the office of the Illinois Bell Telephone Company in Chicago, 101 reports and forms itemized in a list attached to your letter.

There will be made available to you at once at the office of the Illinois Bell Telephone Company, under the supervision of Mr. W. D. Kurtz, General Manager of the company, all of the reports and forms referred to in the list, with the exception of the following:

196 L	36. Comparison of Actual Results with view No. 22A.
196 L(2)	37. Review of Provisional Estimate 22B—Sheet 1.
196 L(3)	38. Review of Provisional Estimate 22B—Sheet 2.
196 L(4)	39. Review of Provisional Estimate 22B—Sheet 3.
196 L	40. Present view of Next Year No. 22C.

(Furnish copy of letter to A. T. & T. Co. accompanying Provisional Estimate when sent.)

731	54. Summary of Provisional Estimate 1931, Statement A.
732	55. Supplemental Data on Stations, Plant, Revenue and Expenses—Prov. Estimate 1931 Statement B.
733	56. Estimate Plant and General Equipment Expenditures 1931-1933.

[fol. 5950] Provisional Estimate 1931 Statement C.
734 57. Estimate of Cash Requirements—Statement D—Provisional Estimate—Estimated quantities of new materials required to be delivered in 1931-1932-1933.
735 58. Prov. Estimate 1931—Statement E.

The reports above listed we decline to furnish.

The request for information with respect to amounts owing to or from the American Telephone and Telegraph Company, the Western Electric Company and/or the Illinois Bell Telephone Company, is answered in a letter which I am mailing you today."

Very truly yours, C. M. Bracelen, Vice-President and General Counsel.

[fol. 5951] Benjamin F. Goldstein, Attorney & Counselor,
Otis Building, Chicago

Telephone Dearborn 8244

July 28, 1931.

Messrs. Charles N. Bracelen, Horace Kent Tenney, William M. Thompson, Kenneth M. Burgess, Attorneys and Counsel for Illinois Bell Telephone Company.

Gentlemen: On July 17, 1931, we wrote you as follows:

"We hope to have ready within a short time our request with reference to the further information desired covering the Heiss testimony and exhibits."

We are enclosing you herewith our request for such additional information, which request is made pursuant to our letter of May 28, 1931, and subject to the conditions therein stated. To the extent that you consider that the exhibits offered before the Ohio Commission, copies of which were sent to us, supply the information requested by us herewith, you will please so indicate.

We will appreciate very much if you will advise us as soon as you conveniently can whether and when you will furnish, and/or make available the data requested by us herewith and in our letter of July 17, 1931, so that we may regulate our plans accordingly.

Very truly yours, —— ——.

BFG-McC.

[fol. 5952] "Defendants' Request, Made July 28, 1931, In re American Telephone & Telegraph Company (A. T. & T.). Relationship to Bell System in Illinois Bell Telephone Company vs. Frank L. Smith, et al."

1. Furnish Annual Budget showing for each year 1918-1930, both inclusive, receipts and disbursements, and requirements of A. T. & T.

2. Furnish for inspection sample forms of all monthly, annual and other periodic reports made by associate companies (and special forms, if any, of reports made by Illinois Bell), by Western Electric and by all other subsidiaries of A. T. & T. and/or Western Electric to the A. T. & T. and/or to the Western Electric.

3. Furnish for inspection "fundamental plans" covering Chicago since 1910, including all studies as part thereof.

4. Give full statement of arrangement, 1918-1930, both inclusive, between A. T. & T. and the user of the service indicated below and arrangement between A. T. & T. and the Illinois Bell covering its share of the revenue for such service; where special contract is used, so state; where standard form of contract with licensee is used, produce form of contract:

(a) Telegraph circuits for private use of individuals and institutions, and for use of governmental departments in Chicago (press associations, newspapers, commercial, financial and other organizations). State—(1) number of circuits used in Chicago; (2) how much property in Chicago belongs to the A. T. & T. used in that service; (3) who owns and who is manufacturer of telegraph printers used in service; (4) gross revenue to A. T. & T. and to Illinois Bell from such service yearly from 1918-1930, both inclusive;

(b) Telephone Circuits provided for private use in long distance service—State—(1) number of such circuits in use in Chicago; (2) number of hours of operation contracted for; (3) how much property in Chicago belongs to A. T. & T. used in that service; (4) gross revenue to A. T. & T. and to Illinois Bell from such service—yearly 1918-1930, both inclusive;

(c) Foreign Exchange Service—state (1) number of lines in use in Chicago; (2) gross revenue to A. T. & T. and to Illinois Bell from such service yearly 1918-1930, both inclusive;

(d) Networks of telephone circuits for transmitting programs from studios or other places at which they are picked up to the radio station or system of stations from which they are broadcast—state (1) number of radio stations in Chicago and within the Chicago control area using circuits regularly; (2) number of circuits in use in Chicago; (3) apparatus manufactured by Western Electric and used in furnishing and/or receiving this service; (4) number of [fol. 5953] telephone men of Illinois Bell used in that service; (5) gross revenue to A. T. & T. and to Illinois Bell from such service yearly to 1930, inclusive; (6) property of A. T. & T. in Chicago in use in service;

(e) Telephoto service—state (1) property of A. T. & T. in Chicago in use in service; (2) number of customers in Chicago using service; (3) gross revenue to A. T. & T. and Illinois Bell from such service yearly to 1930, inclusive; (4) apparatus manufactured by Western Electric and used in this service;

(f) Telephone service in connection with aircraft operations—state (1) stations in Chicago using service; (2) property of A. T. & T. used in that service in Chicago; (3) gross revenue to the A. T. & T. and Illinois Bell from that service yearly to 1930, inclusive; (4) apparatus manufactured by Western Electric and used in this service;

(g) Telephone services to railroads and other public utilities—state (1) number of railroads using train dispatching service in Chicago; (2) number of private telephone circuits used by such railroads in Chicago to or from areas outside Chicago and leased by A. T. & T.; (3) special services or private wires leased by A. T. & T. to electric power companies, oil pipe line companies and other utilities in Chicago; (4) gross revenue to A. T. & T. and to Illinois Bell from services yearly 1918-1930, both inclusive.

5. Furnish list as of January 1st each year 1918-1931, both inclusive, of personnel of Bell Telephone Laboratories, Inc. and of its corresponding department in the Western Electric (prior to 1925) who came from Licensee Companies.

6. Furnish statement showing number of hand telephones purchased by A. T. & T. yearly to December 31,

1927, and made available to Bell licensees—number of hand telephones sold to Illinois Bell on December 31, 1927; number of hand telephones and desk telephones in use in Bell System on January 1, 1927, Jan. 1, 1928, January 1, 1929, January 1, 1930, January 1, 1931. State when hand sets were first manufactured by Western Electric; when application- for patents were filed; when hand sets were first installed in Bell System; when hand sets were made available or standard for Bell System installation.

7. Furnish statements showing A. T. & T. arrangement with customers for use of Bell System facilities in:

(a) Short period and full talk service
(b) Morse service
(c) Key town calling plan
(d) Sequence calling plan

and arrangement with Illinois Bell for the use of the latter's facilities in Chicago in connection with each class of service.

[fol. 5954] 8. Furnish statement covering teletype service from date when service became available in Chicago to June 30, 1931, including:

(a) Price paid by A. T. & T. and Western Electric for Teletype Company.

(b) Balance sheet of Teletype Company on date of purchase by A. T. & T. and on date of purchase by Western Electric.

(c) Number of concerns using service and number of machines in service in Chicago.

(d) Arrangement between A. T. & T. and the Illinois Bell for use of the latter's Chicago facilities in connection with teletype service using also A. T. & T. facilities;

(e) Facilities in Chicago owned by A. T. & T. and Western Electric and/or any of their subsidiaries in Chicago devoted to teletype service—classify facilities.

(f) Arrangement by A. T. & T. and/or Illinois Bell with users of teletype service making use of Chicago facilities of Illinois Bell and/or A. T. & T.

(g) Give gross receipts of A. T. & T. from that service in Chicago and portion paid to Illinois Bell, where facilities are jointly used.

(h) State who owns patents to teletype and tapetype equipment in use in Chicago and what arrangement is made with user of service for sale or lease of such equipment.

9. Furnish yearly statement 1918-1930, both inclusive, showing:

(a) Number of additional shares of A. T. & T. stock offered to shareholders at par, stating proportion of new shares to shares held.

(b) Offers to stockholders of A. T. & T. of bonds—give bases of offer as to price of bonds and amount to be allotted each stockholder.

(c) Price at which stock was offered to Bell System employees' stock plan.

(d) Price of stock at which bondholders could convert their bonds into A. T. & T. stock during period to 1931.

(e) As to stock offered under (a), show—

(1) Market value of a share of A. T. & T. stock at opening and closing date of subscriptions to new A. T. & T. stock.

(2) Average shares offered per holder.

(3) Average shares per subscription:

(a) Fully paid
(b) Installment

(4) Number of fully paid subscriptions and number of installment subscriptions.

[fol. 5955] (5) Number of rights purchase and sale transactions; number of rights involved in rights transactions handled through the offices of

(a) Illinois Bell.
(b) A. T. & T.
(c) Bell Telephone Securities Co.
(d) All Bell Licensees.

(6) Subscriptions for new stock filed at the offices of

(a) Illinois Bell.
(b) A. T. & T.
(c) Bell Telephone Securities Co.
(d) All Bell Licensees, showing in each case:

(1) Number of transactions,
(2) Amount of stock subscribed according to

(1) Fully paid subscriptions,
(2) Installment subscriptions.

(7) Follow-up by all Licensees and by Illinois Bell of stockholders who had failed to utilize their subscription rights, showing:

(a) Number of persons listed sent to Licensees and to Illinois Bell,

(b) Number of stockholders reached by—

(1) Telephone conversation,
(2) Personal interviews,
(3) Letters.

(f) Show data corresponding to (e) above covering offer of bonds to stockholders.

(g) Expense to A. T. & T. and/or to Bell Telephone Securities Company in connection with each issue, itemizing major items of expense and stating portion of expense included in License Contract Service expense in Heiss Exhibits;

(h) Show amount of compensation paid to Licensees and to Illinois Bell, or to their respective employees, for services rendered in connection with stock and bond offers, and amount for expense reimbursed to Illinois Bell, and/or to their respective employees.

(i) Show yearly amounts collected by Illinois Bell on account of stock and bond subscriptions and remitted to A. T. & T. and/or Bell Telephone Securities Company.

10. State whether A. T. & T. makes arrangements with customers for "Trade Mark Where to Buy It Service" in directories, and if it does, state arrangement between A. T. & T. and Illinois Bell for compensation to Illinois Bell for use of its directories in that service.

[fol. 5956] 11. State for each year 1918-1930, both inclusive, amount of A. T. & T. stock purchased by holders of convertible bonds through exercise of the conversion privilege—the price paid for stock—amount of premium above par received by A. T. & T. for stock so sold.

12. Furnish copy of Contracts between A. T. & T. and the Western Union Telegraph Co. and Postal Telegraph & Cable Corporation, covering:

(a) Use of Bell System facilities for transmission of telegraph messages.
(b) Use of apparatus developed by Bell Telephone Laboratories by which a single pair of telegraph wires may be made to serve as several telegraph channels.
(c) Use of Bell System telephoto service for transmission of facsimile signatures. State arrangement between A. T. & T. and Illinois Bell covering latter's share of compensation for use of its facilities in those services.

13. Extend Heiss Exhibit 10 and all supporting exhibits to cover the years 1918 to 1922, both inclusive.

14. Furnish statement showing for each of the years 1918-1930, both inclusive:

(a) Income and Expense accounts for A. T. & T.
(b) Portion of Income and Expense accounts allocated to Long Lines Department—itemized.
(c) Portion of Income and Expense accounts allocated to operations other than to Long Lines Department and to License Contract services—itemized.

(d) Average investment in Long Lines Department before and after deducting the depreciation reserve account.
(e) Average investment to which the income and expense accounts stated in (c) above are applicable.

15. Furnish statement showing for each year from 1918-1930, both inclusive, the

(a) Amount of salaries and number of persons whose salaries were subject to apportionment between—A. T. & T.—and any of its subsidiaries or any of the subsidiaries of the Western Electric. State basis and amount apportioned to each company.
(b) Amount of salaries and number of persons whose salaries were subject to apportionment between departments furnishing license contract services and non-license contract services of A. T. & T.
(c) Amount of salaries and number of persons whose salaries were subject to apportionment between departments of the Western Electric furnishing license contract

services (Department of Western Electric, a portion of whose expense of operation was charged to A. T. & T. prior to organization of Bell Telephone Laboratories, Inc.) and non-license contract operations of Western Electric.

[fol. 5957]. 16. Furnish Organization Chart for each of the years 1916, 1918, 1925, 1929, 1931, if possible for:

(a) A. T. & T.
(b) Bell Telephone Laboratories, Inc.
(c) Department of Western Electric performing functions taken over by Bell Telephone Laboratories, Inc.
(d) Other Departments of Western Electric a portion of whose expense was chargeable to A. T. & T. and allocated to License Contract services.

17. State name of person in each department shown in above charts who is familiar with and is qualified to testify regarding the facts of its operation.

18. Furnish for inspection the Consolidated Income Tax Returns of A. T. & T. and its subsidiary companies, beginning with the first such statements filed to 1930, inclusive.

19. Furnish December monthly report made by Illinois Bell and of Long Lines Department for each year 1918-1930, both inclusive.

20. Furnish for inspection A. T. & T. advertising copy for each year, 1918-1930, both inclusive, whose expense is charged as part of license contract service expense.

21. Furnish statement showing for each of the years 1918-1930, both inclusive:

(a) Number of units of receivers, transmitters and induction coils owned by A. T. & T. and in use by Associated Companies, and number of units of each held in reserve by A. T. & T. for them.
(b) Investment of A. T. & T. in receivers, transmitters and induction coils and average depreciation reserve.
(c) Price per unit paid to Western Electric by A. T. & T. and by non-Bell customers—also by Associated Companies and non-Bell customers 1928-1930, both inclusive.

(d) Depreciation expense, maintenance expense and taxes on telephone instruments.

(e) Analysis of depreciation reserve on telephone instruments from 1912-1927, both inclusive—and of $5,629,467 transferred from appropriated surplus to depreciation reserve in July, 1912.

(f) Amount of purchases by A. T. & T. of receivers, transmitters and induction coils and amount of sales by Western Electric to non-Bell customers, 1918 to 1927, both inclusive.

(g) Depreciation rates, life and salvage figures, on telephone instruments 1918-1927, both inclusive.

22. Furnish analysis of Surplus Account of A. T. & T., 1918-1930, both inclusive, separating appropriated and unappropriated surplus accounts.

[fol. 5958] 23. Furnish all blank accounting forms nominally approved by Comptroller, and all blank accounting forms in use by Illinois Bell and by Long Lines Department not approved by Comptroller.

24. Furnish for inspection catalogue of forms in use in Bell System, including Long Lines Department.

25. Furnish forms for use of associated, affiliated companies and Long Lines Department in preparing Budgets, together with intructions how to fill out.

26. Furnish A. T. & T. Treasurer's statement 1918-1930, both inclusive—quarterly, if possible.

27. Furnish December monthly report for each year 1918-1930, both inclusive, where possible, of "Analysis of Expense by classes of work", of—

(a) Department of Development and Research of A. T. & T.,

(b) Bell Telephone Laboratories, Inc.

28. Furnish Balance Sheets and Income statements, and Treasurer's cash statements of all subsidiary companies of A. T. & T. for each of the years 1918-1930, both inclusive.

29. Furnish Yearly, A. T. & T. Report to Interstate Commerce Commission for years 1918-1922, both inclusive.

30. Furnish revised or new License Contract, of any, with Illinois Bell in force since 1926.

31. Furnish Interstate Commerce Commission annual report Schedules and prescribed accounts in which "Estimated Costs of Rendering License Contract Services" are contained for each year 1918-1922, both inclusive.

32. Furnish Estimated Cost to Illinois Bell of services under the License Contract based on an apportionment of Total License Payments by all companies 1918-1930, both inclusive, "to correspond to Heiss Exhibit 20."

33. Furnish for inspection work sheets showing underlying data used in computations including average number of stations in service, balance sheet and income statement of companies using license services.

34. Furnish Analysis for each year 1918-1930, both inclusive, of Departmental Expense of A. T. & T. and portion allocated:

(a) Long Lines Department.
(b) License Contract service.
(c) Other Operations.

35. Furnish copies yearly booklet issued by Bell Telephone Securities Company and samples of all pamphlets and literature issued by it since date of organization.

[fol. 5959] 36. Furnish Analysis of Estimated Costs of carrying physical property investment, of holding funds available for licensees and of temporary financing of licensees for eacy year 1918-1922, both inclusive, similar to analysis already furnished for years 1923-1930, both inclusive.

37. Furnish statement showing for each of the years 1918-1930, both inclusive:

(a) Book cost of real estate owned by A. T. & T. and/or its subsidiaries.
(b) Cash.
(c) Deposits.
(d) Employees' Working Fund devoted to A. T. & T. operations and separate.

(1) Portion of (a), (b), (c) and (d) considered as devoted to License Contract services, to Long Lines Department, to other operations of A. T. & T. Company.

38. Furnish statement showing for each year 1918-1930, both inclusive, kind and amount of securities received by A. T. & T. for "cash taken" by associated companies and by Illinois Bell; also furnish statement to correspond to City Exhibit 142-C as extended and analyzed by prewent requests showing "Estimated Requirements", "Cash Taken", "Securities Received by A. T. & T. for "Cash Taken", to cover

(a) All subsidiary and/or affiliated companies of A. T. & T. and/or of Western Electric (by company) other than associated companies included in City Exhibit 142-C

(b) Long Lines Department

(c) Operations of A. T. & T. other than Long Lines Department.

39. Extend to include years 1929-2930, both inclusive the following exhibits prepared by Mr. Heiss and appearing in Record Vol. VI.:

(a) City Exhibit 142 (page 2291) "Average Loans to Each Licensee Company"

(b) City Exhibit 142-A (page 2292) "Amounts Received from all Associated Bell Companies for License Payments"

(c) City Exhibit 142-C "Estimated Requirements and Cash Taken".

(d) City Exhibit 142-D "Variations from 5.88% Charge for Funds". Furnish statement to correspond to this exhibit to cover subsidiary or affiliated companies of A. T. & T. and/or Western Electric other than licensees.

(e) City Exhibit 142-E "Cost of Capital"

(f) City Exhibit 142-F (Major Cases of Proceeds from Public Financing placed with A. T. & T. etc." Furnish statement showing for each year total average amount of money of licensees or other subsidiary or licensee companies placed with A. T. & T. on deposit (by company)

(g) City Exhibit 148 "Cost of Capital etc."

[fol. 5960] 40. State basis of sale of New York Office Building to Real Estate Corporation 1925-1926, shown in Heiss Exhibits as devoted to License Contract service prior to date of sale. State rental included in License Contract service charges, for use of building after date of sale.

41. Furnish Annual Report to stockholders of A. T. & T. each year 1918-1930, both inclusive.

42. Furnish for inspection the audits of A. T. & T. for each year 1918-1930, both inclusive, made by accounting firms such as Lybrand, Ross Bros. & Montgomery.

43. Furnish copy of contract between Bell Telephone Laboratories, Inc., and A. T. & T., Western Electric, Electric Research Products, Inc., and Teletype Corporation, covering services of the Bell Telephone Laboratories, Inc. to each and the basis of charge to each therefor; if no formal contract exists, state basis of arrangement in each case.

44. Where any item of Revenue or Expense used in the computations to arrive at estimated costs incurred in Rendering License Contract Service, Long Lines services and other operations, does not correspond in amount to that item used in the A. T. & T. income tax return (as a separate corporation), show:

(a) Amount used in computation.
(b) Amount used in tax return.

Where the amount used in the tax return has not been accepted by the Internal Revenue Department, show also the amount claimed by it as proper, and the amount comprised, if any. State the last year that the Federal Income Tax return has been audited by the Treasury Department. State the result of the audit for all years from the date when consolidated income tax returns were first filed. Have any changes been made voluntarily by the A. T. & T. since the filing of its consolidated Income Tax Returns, and if so, state year and character of changes made.

45. Where the estimated cost of rendering the License Contract services includes payments made by the A. T. & T. to the Western Electric and/or to the Bell Telephone Laboratories, Inc., and/or to any other subsidiaries of the A. T. & T. or of Western Electric or of Bell Telephone Laboratories, Inc., state amount of payment in each case, name of company rendering service and indicate the books

of record showing payments made by A. T. & T. for each year 1918-1930, both inclusive.

46. Furnish statement showing receipts and disbursements of A. T. & T. (quarterly, if possible) allocable to:

(a) License Contract Services.
(b) Dividends and interest on A. T. & T. securities and/or their retirement.
(c) Other operations of A. T. & T.

[fol. 5961] 47. Furnish statement showing amount paid by A. T. & T. for advertising each year 1918-1930, both inclusive, and apportionment thereof to

(a) Long Lines Department.
(b) License Contract Services.
(c) Western Electric.
(d) Other operations of A. T. & T.

State portion of payments made to licensees for advertising.

48. Furnish statement showing for each year 1918-1930, both inclusive:

(a) Bond discount included in computation of "average cost of funds used in business".
(b) Amount of bond discount charged as expense in same year in Federal Income Tax return.
(c) Amount of bond discount charged as expense in same year in Annual Report to stockholders.
(d) Amount of discount charged as expense in same year in report filed with Interstate Commerce Commission and Illinois Commerce Commission.

49. Furnish statement showing sale to Illinois Bell on December 31, 1927, of telephone instruments to correspond to statement submitted showing sale to Ohio Bell Telephone Co.

50. Furnish for inspection copies of Annual Estimate and Five Year Estimate made to A. T. & T. by Illinois Bell and by Bell Licensees of requirements for each year 1918-1930, both inclusive.

51. Furnish analysis of taxes for years 1918-1922, both inclusive, to correspond to analysis furnished in Ohio Case

July 6, 1931, for years 1923-1930, both inclusive. Furnish amount of taxes paid on instruments in possession of Illinois Bell yearly 1918-1927, both inclusive. Furnish for inspection work sheets of underlying data on which computations are based.

52. Furnish for each year 1918-1930, both inclusive, analysis of "Sundry Items", included in "Estimated Cost of License Contract Services", classifying all items of expense aggregating or exceeding in any year $25,000.

53. Furnish statement as of January 1st of each year, 1918-1930, both inclusive, showing number of patents and patent applications of:

(a) Employees of A. T. & T.—Long Lines Department.
(b) Employees of A. T. & T.—not in Long Lines Department.
(c) Employees of Western Electric subdivided into

(1) Department of Bell Telephone Laboratories to January 1, 1925.
(2) In departments other than (1).

[fol. 5962] (d) Employees of Bell Telephone Laboratories, Inc.
(e) Employees of Licensee Companies.
(f) Persons outside Bell System.

If possible, subdivide number of patents and patent applications according to whether they cover:

(a) Receivers, transmitters and induction coils.
(b) Telephone apparatus for

(1) Long distance service exclusively.
(2) Toll and Long Distance Service.
(3) Exchange Service.

(c) Non-telephone apparatus.
(d) Machinery, tools, fixtures of Western Electric.
(e) Teletype Corporation, Electric Research Products.

54. Furnish statement for each year showing the savings, if any, to the A. T. & T. Company in Federal Income taxes resulting from its filing and paying taxes on the basis of Consolidated Income Tax Returns, and charging the subsidiary companies on the basis of separate returns.

55. Furnish statement for each year showing Federal Income tax paid by the A. T. & T. Company in addition to tax paid, or refund of tax paid, on basis of the return as filed, name of company, whose year's income was covered by such additional or refund payment, and reason for additional or refund payment. Did company named make additional payment or receive refund?

56. Furnish statement for each year 1918-1930, both inclusive, showing average number of stations in service of each company receiving license services, and in Chicago.

57. Furnish copies of "Long Period Forecast" and "Short Period Forecast" for Chicago made since 1909.

[fol. 5963]

Exhibit X-420

Excerpts

Page 5:

"Volume 9, Page 151

On March 7, 1923, the Committee passed the following resolutions:

"The President reported that after study of the proposed provisional estimate work for 1923 of the Bell System, it was expected that the gross additions to plant of the Bell System in 1923 would total approximately $275,000,000, and the expenditures for purchases of operating properties approximately $10,000,000; and he recommended that the following advances for the year 1923, amounting to $152,875,000 for work under provisional estimates and for other requirements, be authorized; the funds, within the limits respectively stated below, to be advanced to each company or department of this Company at such times during 1923 and on such bases as the officers of this Company may determine:

"Whereupon, on motion, it was

"Resolved: that the recommendation of the President be [fol. 5964] approved, and that the President, Vice President Gifford and the Comptroller, or any one of those officers, be authorized to advance $152,875,000 during 1923 as set forth in said recommendation.

"On motion, it was

P. 6:

"Resolved: That the advances heretofore made to the various associated companies and to departments of this Company under the authority of this Committee's resolution of December 20, 1922, be charged to and treated as parts of the advances for work under the 1923 provisional estimates authorized by the foregoing resolution."

The licensees and departments of American Telephone & Telegraph Company named in said resolution and the amounts for each licensee and for each department of American Telephone & Telegraph Company by said resolution and by resolutions of the committee authorizing increases in said amounts for the year 1923, are shown by C. R. 13 for that year—D. Exhibit 113.

Volume 9, Page 189

On February 6, 1924, the Committee passed the following resolutions:

[fol. 5965] "The President stated that study of the proposed provisional estimate work for 1924 of the Bell System shows expected gross additions during the year to plant of the Bell System totaling $351,216,000, and he recommended that the following advances for the year 1924, amounting to $231,751,000 for work under provisional estimates and for other requirements, be authorized; the funds, within the limits respectively stated below, to be advanced to each company, or to the designated department of this Company, at such times during 1924 as the officers of this Company may determine, on notes or open account at not less than 6% per annum.

P. 7:

"Whereupon, on motion, it was

"Resolved: That the recommendation of the President be approved, and that the President, the Executive Vice President and the Comptroller, or any one of those officers, be authorized to advance $231,751,000 during 1924 as set forth in said recommendation.

On motion, it was

"Resolved: That the advances heretofore made to the various associated companies and to departments of this [fol. 5966] Company pursuant to this Committee's resolution of December 19, 1923, authorizing a total of $50,000,000 thereof for work under the 1924 provisional estimates, be charged to and treated as parts of the advances authorized by the preceding resolution to be made for such work and for other requirements."

Volume 9, Page 249

P. 8:

On February 4, 1925, the Committee passed the following resolutions:

"The President stated that study of the proposed provisional estimate work for 1925 of the Bell System shows expected gross additions during the year to plant of the Bell System totalling $353,344,000, and he recommended that the following advances for the year 1925, amounting to $223,749,000 for work under provisional estimates and for other requirements, be authorized; the funds, within the limits respectively stated below, to be advanced to each company, or to the designated department of this Company, at such times during 1925 as the officers of this Company [fol. 5967] may determine, on notes or open account at not less than 6% per annum.

"Whereupon, on motion, it was

"Resolved: That the recommendation of the President be approved, and that the President and the Comptroller, or either of them, be authorized to advance $223,749,000 during 1925 as set forth in said recommendation.

On motion, it was

"Resolved: That the advances heretofore made to the various associated companies and to departments of this Company pursuant to this Committee's resolution of December 17, 1924, authorizing a total of $50,000,000 thereof for work under the 1925 provisional estimates, be charged to and treated as parts of the advances authorized by the preceding resolution to be made for such work and for other requirements."

P. 9:

Volume 10, Page 19

On February 3, 1926, the Committee passed the following resolutions:

[fol. 5968] "The President stated that study of the provisional estimates for 1926 of the Bell System shows expected gross additions during the year to plant of the Bell System totalling $388,834,000, and he recommended that the following advances for the year 1926, amounting to $222,850,000, be authorized; the funds, within the limits respectively stated below, to be advanced to each company, or to the designated department of this Company, at such times during 1926 as the officers of this Company may determine, on notes or open account at not less than 6% per anuum (i. e., at not less than 5.88% after the customary discount for payment of interest monthly on or before the 20th of the following month):

"Whereupon, on motion, it was

"Resolved: that the recommendation of the President be approved, and that the President, Vice President Houston and the Comptroller, or any one of those officers, be authorized to advance $222,850,000 during 1926 as set forth in said recommendation."

[fol. 5969] Pp. 10 and 11.

Volume 10, Page 74

On January 19, 1927, the Committee passed the following resolutions:

"The President stated that study of the provisional estimates for 1927 of the Bell System shows expected gross additions during the year to plant of the Bell System totaling $395,039,000, and he recommended that the following advances for the year 1927, amounting to $201,418,000, be authorized; the funds, within the limits respectively stated below, to be advanced to each company, or to the designated department of this Company, at such times during 1927 as the officers of this Company may determine, on notes or open account at not less than 6% per annum (i. e., at not less than 5.88% after the customary discount for payment of interest monthly on or before the 20th of the following month)."

[fol. 5970] P. 12:

Volume 10, Page 117

On January 18, 1928, the Committee passed the following resolutions:

"The President stated that the provisional estimate for 1928 of the Bell System shows expected gross additions during the year to plant of the Bell System amounting to $400,000,000, and he recommended that advances during 1928 totalling $180,000,000 be authorized; the advances to any company, or to the Long Lines Department of this Company, not to exceed the amounts respectively shown below, and within those limits to be made at such times during 1928 as the officers of this Company may determine; such advances to Associated Companies to be made on notes or open account at not less than 6% per annum (i. e., at not less than 5.88% after the customary discount for payment of interest monthly on or before the 20th of the following month)."

[fol. 5971] P. 13:

Volume 10, Page 163

On January 30, 1929, the Committee passed the following resolutions:

"The President stated that the provisional estimate of the Bell System for 1929 showed expected gross additions to plant during the year amounting to $558,000,000, and that the requirements of the Associated Companies and the Long Lines Department of this Company for cash advances during 1929, as stated in their respective estimates, are:

"He recommended:

P. 14:

"1. That advances to the Associated Companies and the Long Lines Department during 1929, not exceeding the total of $270,000,000, be authorized; that the advances to any one of those companies, or to the Long Lines Department, shall not exceed the amounts respectively stated above; that, within the limits stated, the advances be made at such times during 1929 as the officers might determine; and that, in the case of the Associated Companies, such advances be made on notes or open account, at a rate of interest not less than 6% per annum (i. e., at not less than [fol. 5972] 5.88% after the customary discount for payment of interest monthly on or before the 20th of the following month);

"2. That, in determining the total of such advances and the amount of such advances to any company or the Long Lines Department, there shall be deducted all repayments (except repayments through the issue of stock) during 1929 of any such advances and of any other advances heretofore authorized by this Committee or the Board of Directors;

"3. That in addition, the officers be authorized to make advances during 1929, on notes or open account, at said minimum rate of interest, to Western Electric Company, Incorporated, not to exceed a total of $36,000,000 outstanding at any time, and to other Bell System companies not to exceed a total of $4,000,000 outstanding at any time; such advances to be repaid on or before December 31, 1929.

"Whereupon, on motion, it was

[fol. 5973] P. 15:

"Resolved: that the recommendations of the President be approved, and that the President, Vice President Cooper and the Comptroller, and any one of those officers, be authorized to make said advances from time to time during 1929.

On motion, it was

Resolved: that the advances heretofore made to the various associated companies and to the Long Lines Department of this Company pursuant to this Committee's resolution of December 19, 1928, authorizing a total of $25,000,000 thereof for work under the 1929 provisional estimates, be charged to and treated as part of the advances authorized by the preceding resolution."

[fol. 5974] P. 17:

Volume 10, Page 262

On January 14, 1931, the Committee passed the following resolutions:

"The President stated that the provisional estimate of the Bell System for 1931 shows expected gross construction during the year amounting to $468,000,000, and that the requirements of the several companies and the Long Lines Department of this Company for cash advances during 1931, as stated in their respective estimates, are: "He recommended:

P. 18:

"1. That the net advances to the foregoing companies and to the Long Lines Department of this Company during 1931 not exceeding the total of $169,388,000 be authorized; that the net advances to any one of those companies or to the Long Lines Department shall not exceed the amounts respectively stated above; that, within the limits stated, the advances be made at such times during 1931 as the officers might determine; and that such advances, other than those to the Long Lines Department, be made on notes or open account at a rate of interest not less than 6% per annum (i. e., at not less than 5.88% after [fol. 5975] the customary discount for payment of interest monthly on or before the 20th of the following month);

"2. That in addition, the officers be authorized to make advances during 1931, on notes or open account, at said minimum rate of interest, to Bell System companies not to exceed a total of $5,000,000 outstanding at any time; such advances to be repaid on or before December 31, 1931.

Whereupon, on motion, it was

"Resolved: that the recommendations of the President be approved, and that the President, Vice President Cooper and the Comptroller, and any one of those officers, be authorized to make said advances from time to time during 1931.

"On motion, it was

"Resolved: that the advances heretofore made to the various associated companies and to the Long Lines Department of this Company pursuant to this Committee's resolution of December 17, 1930, authorizing a total of $20,000,000 thereof for work under the 1931 provisional estimates, be charged to and treated as part of the advances [fol. 5976] authorized by the preceding resolution."

[fol. 5977]

Exhibit D-20

Analysis of the Cost of Sales of Telephone Apparatus to Bell Customers, 1916 to 1930, Inclusive

(Dollars in Thousands)

Year	Current cost of sales before interest and expenses	Additions to employees' benefit fund	Additional depreciation of plant	Expenses				Interest received	Total cost	Year
				Development	Merchandising	General	Federal taxes			
1916	$19,563	......	......	$1,174	$275	$1,546	$15	$(196)	$22,377	1916
1917	30,821	......	......	1,579	278	1,864	104	(236)	34,410	1917
1918	29,119	......	......	1,617	441	1,840	271	(325)	32,963	1918
1919	27,644	......	......	2,131	906	2,583	167	(359)	33,072	1919
1920	44,544	......	......	2,981	1,140	2,094	223	(485)	50,497	1920
1921	72,199	......	......	4,530	960	2,499	267	(708)	79,747	1921
1922	86,007	......	......	4,277	1,172	3,287	358	(662)	94,439	1922
1923	91,150	......	......	4,923	1,664	5,319	571	(106)	103,521	1923
1924	110,889	$2,000	$1,563	8,966	1,920	6,013	2,443	(270)	133,524	1924
1925	92,978	2,881	1,696	6,754	1,989	6,154	2,125	(1,125)	113,452	1925
1926	94,093	3,064	1,532	8,996	9,450	3,311	2,908	(638)	122,716	1926
1927	91,499	2,803	993	10,754	9,620	3,528	1,695	(641)	120,251	1927
1928	98,618	208	1,346	7,864	11,278	2,782	1,061	(577)	122,580	1928
1929	143,199	......	......	8,142	13,896	2,980	540	(720)	168,037	1929
1930	157,822	......	......	11,308	13,065	3,391	717	(129)	186,174	1930
Total	1,190,145	10,956	7,130	85,996	68,054	49,191	13,465	(7,177)	1,417,760	

[fol. 5978]

EXHIBIT D–21

Analysis of the Cost of Sales of Lead Covered Cable to Bell Customers, 1916 to 1930, Inclusive

(Dollars in Thousands)

Year	Current cost of sales before interest and expenses	Additions to employees' benefit fund	Additional depreciation of plant	Expenses				Interest received	Total cost	Year
				Development	Merchandising	General	Federal taxes			
1916	$15,321	.....	.....	$53	$38	$85	$19	$(27)	$15,489	1916
1917	22,732	.....	.....	83	(12)	67	88	(65)	22,893	1917
1918	9,564	.....	.....	56	106	47	14	(49)	9,738	1918
1919	6,709	.....	.....	89	15	50	72	(47)	6,888	1919
1920	14,950	.....	.....	249	17	95	51	(52)	15,310	1920
1921	10,628	.....	.....	232	(43)	72	18	(38)	10,869	1921
1922	15,513	.....	.....	526	(35)	98	65	(57)	16,110	1922
1923	21,860	.....	.....	361	187	158	169	(7)	22,728	1923
1924	32,408	.....	.....	255	206	187	118	19	33,193	1924
1925	36,106	$293	$270	213	233	200	388	(64)	37,639	1925
1926	40,068	263	382	411	645	219	267	(36)	42,219	1926
1927	31,764	266	653	599	829	154	470	(45)	34,690	1927
1928	38,591	21	485	1,008	498	182	379	(46)	41,118	1928
1929	56,399	.....	.....	768	639	213	597	(63)	58,553	1929
1930	51,031	.....	.....	936	603	198	380	(19)	53,129	1930
Total	403,644	843	1,790	5,839	3,926	2,025	3,095	(596)	420,566	

[fol. 5979]

Exhibit D–23

Exhibit G

Analysis of Cost of Sales of W. E. Manufactures to Non-Bell Customers, 1916 to 1930, Inclusive

(Dollars in Thousands)

Year	Current cost of sales before interest and expenses	Additions to employees' benefit fund	Additional depreciation of plant	Expenses				Interest received	Total cost	Year
				Development	Merchandising	General	Federal taxes			
1916	$5,102	...	...	$244	$431	$441	$8	$(48)	$6,178	1916
1917	6,013	...	...	307	443	709	73	(13)	7,532	1917
1918	17,368	...	...	845	271	1,275	168	7	19,934	1918
1919	10,105	...	...	724	321	618	92	22	11,882	1919
1920	7,035	...	...	425	428	472	51	(36)	8,375	1920
1921	8,608	...	...	445	501	387	19	(51)	9,909	1921
1922	5,503	...	...	652	786	449	149	(40)	7,499	1922
1923	6,995	...	...	1,006	765	627	259	(39)	9,613	1923
1924	10,033	...	...	1,309	976	840	224	(30)	13,352	1924
1925	10,020	$442(U)	$202	2,777	1,015	1,050	280	(246)	15,540	1925
1926	10,921	233	188	1,030	946	376	92	(14)	13,772	1926
1927	8,262	192	137	1,024	693	407	196	(5)	10,906	1927
1928	13,487	13	169	1,439	892	951	227	(8)	17,170	1928
1929	23,811	...	...	2,114	1,415	1,211	759	(14)	29,296	1929
1930	15,531	...	...	1,772	1,167	1,108	180	(6)	19,752	1930
Total	158,794	880	696	16,113	11,050	10,921	2,777	(521)	200,710	

U Includes $227,000 Reserve for Graybar Electric Company, Inc., Pension Fund.

[fol. 5980] EXHIBIT D-107

Excerpt

* * * * * * *

P. 1, par. 2:

"The proposed program, which totals $19,000,000 for Gross Additions to Plant, includes approximately $700,000 for additional plant for the Long Lines Department in Chicago. The completion of this program during 1924 will require $7,636,000 beyond our estimated current resources, but will not require any new financing."

* * * * * * *

[fol. 5981] Excerpt

P. 2, par. (b):

While rate cases are pending in several exchanges outside Chicago, no provision was made in the exchange revenue for the changes which may result, as there is no indication at this time as to when a decision will be reached. In Chicago we are, as you know, contesting in the Federal Court a Commission Order reducing our exchange rates, and we have assumed that the present rates will continue throughout the period of the forecast.

(Here follows side folios 5982 to 5999.)

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

TOTAL BELL SYSTEM FINANCING AUTHORIZED AND ACTUAL RESULTS THEREUN
FOR TWELVE MONTHS ENDING DECEMBER 31, 1923

Name of Company Ref. - M.R.22	[illegible] Net Financing Allotment for Year 1923 30a (a)	[illegible] Gross [illegible] Stocks [illegible] A. [illegible] Repaid 25c, 26c, 27c (b)	Allotment from American Tele Less Cr Adv made to A. T. [illegible] & T. Co Repaid 28c, 29c (c)	Actual Net Financing under Allotment 30b (d)	Prese for R der 1923 Allo 3 (
New England Tel. and Tel. Co.	$ 9,349,000	$ 19,249,000	$ 0	$ 19,249,000	-
Southern New England Tel. Co.	967,000	1,900,000	500,000	1,400,000	-
New York Telephone Company	39,521,000	55,068,200	0	55,068,200	-
Bell Tel. Co. of Pennsylvania	7,660,000	17,800,000	1,600,000	16,200,000	-
Chesapeake and Potomac Tel. Co. . . .	3,475,000	13,355,700	9,230,704	a) 4,124,996	-
Southern Bell Tel. and Tel. Co. . . .	1,670,000	17,240,000	15,146,238	2,093,762	-
Cumberland Tel. and Tel. Co.	2,700,000	9,474,600	8,199,600	1,275,000	-
Total Southern Group	4,370,000	26,714,600	23,345,838	3,368,762	-
Ohio Bell Telephone Company	1,857,000	7,275,000	5,539,392	1,735,608	-
Cincinnati and Suburban Bell Tel. Co..	361,000	361,000	0	361,000	-
Michigan State Telephone Company . . .	8,077,000	28,850,000	21,198,700	7,651,300	-
Indiana Bell Telephone Company	933,000	985,196	60,196	925,000	-
Wisconsin Telephone Company	3,850,000	5,800,650	4,326,794	1,473,856	-
Illinois Bell Telephone Company . . .	6,600,000	26,289,250	29,503,574	3,214,324*	-
Northwestern Bell Telephone Company. .	1,294,000*	5,365,174	7,656,858	2,291,684*	-
Southwestern Bell Telephone Company. .	30,796,000	44,211,853	22,525,000	21,686,853	-
Mountain States Tel. and Tel. Co. . .	1,275,000	1,250,000	3,900,698	2,650,698*	-

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

D-113
p.1

BELL SYSTEM FINANCING AUTHORIZED AND ACTUAL RESULTS THEREUNDER
FOR TWELVE MONTHS ENDING DECEMBER 31, 1923

Allotment from American Telephone and Telegraph Company

	Gross [illegible] Repaid 25c, 26c, 27c (b)	Less Cr Adv made to A.T. & T. Co. Repaid 28c, 29c (c)	Actual Net Financing under Allotment 30c (d)	Present View for Remainder of Year 1923 Net Allotment 30d (e)	Total Present View for Year 1923 Net Allotment 30e (f)	Increase of Present View for Year Over Allotment 30f (g)	Change from Last Month's View for Year 30g (h)
00	$ 19,249,000		$ 19,249,000	-	$ 19,249,000	$ 9,900,000	$ 0
00	1,900,000	500,000	1,400,000	-	1,400,000	433,000	500,000
00	55,068,200	0	55,068,200	-	55,068,200	15,547,200	0
00	17,800,000	1,600,000	16,200,000	-	16,200,000	8,540,000	3,914,000
00	13,355,700	9,230,704	a) 4,124,996	-	4,124,996	649,996	90,000
00	17,240,000	15,146,238	2,093,762	-	2,093,762	423,762	80,917*
00	9,474,600	8,199,600	1,275,000	-	1,275,000	1,425,000*	116,061
00	26,714,600	23,345,838	3,368,762	-	3,368,762	1,001,238*	35,144
00	7,275,000	5,539,392	1,735,608	-	1,735,608	121,392*	78,419
00	361,000	0	361,000	-	361,000	0	0
00	28,850,000	21,198,700	7,651,300	-	7,651,300	425,700*	0
00	985,196	60,196	925,000	-	925,000	8,000*	0
00	5,800,650	4,326,794	1,473,856	-	1,473,856	2,376,144*	9,856
00	26,289,250	29,503,574	3,214,324*	-	3,214,324*	9,814,324*	1*
00*	5,535,174	7,826,858	2,291,684*	-	2,291,684*	997,684*	3,214
00	44,211,853	22,525,000	21,686,853	-	21,686,853	9,1[illegible]9,147*	0
00	1,250,000	3,900,698	2,650,698*	-	2,650,698*	3,925,698*	0

Northwestern Bell Telephone Company . .	1,294,000	[illegible]	[illegible]		
Southwestern Bell Telephone Company . .	30,796,000	44,211,853	22,525,000	21,686,853	-
Mountain States Tel. and Tel. Co. . .	1,275,000	1,250,000	3,900,698	2,650,698*	-
Pacific Tel and Tel. Co.	22,131,000	31,100,000	0	31,100,000	-
Total Associated Companies	139,928,000	285,875,623	129,687,754	156,187,869	-
Central Union Telephone Company . . .	0	50,000	0	50,000	-
American Tel. and Tel. Co. - General .	2,855,000	2,694,264	0	2,694,264	-
American Tel. and Tel. Co. - Long Lines .	9,159,000	13,813,413	0	13,813,413	-
Total	$151,942,000	$302,433,300	$129,687,754	$172,745,546	-

Date issued - Febru[illegible]

(OVER)

* Red Figures

4,000	[illegible]	[illegible]					
6,000	44,211,853	22,525,000	21,686,853	-	21,686,853	9,109,147*	0
5,000	1,250,000	3,900,698	2,650,698*	-	2,650,698*	3,925,698*	0
1,000	31,100,000	0	31,100,000	-	31,100,000	8,969,000	0
8,000	285,875,623	129,687,754	156,187,869	-	156,187,869	16,259,869	4,473,794
0	50,000	0	50,000	-	50,000	50,000	50,000
5,000	2,694,264	0	2,694,264	-	2,694,264	160,736*	105,736*
9,000	13,813,413	0	13,813,413	-	13,813,413	4,654,413	481,587*
2,000	$302,433,300	$129,687,754	$172,745,546	-	$172,745,546	$20,803,546	$3,936,471

5982

(OVER)

C. A. Heiss,
Comptroller

a) Chesapeake and Potomac Telephone Company	(West Virginia)	$1,175,000
" " " " "	(Balto. City)	1,899,996
" " " " "	(New York)	600,000
" " " " "	(Virginia)	450,000
		$4,124,996

b) Authorized Net Financing Allotment for Year 1923				$151,942,000
Loans to A.T.&T Co. included in Prov. Est. of the Northwestern Bell Tel. Co.				1,294,000
				153,236,000
Approved by Executive Committee				
Aug. 8,	1923	- Long Lines Department	$5,185,000	
" 8,	"	- Pacific Tel. and Tel. Co.	9,200,000	
Sept. 19,	"	- Bell Telephone Co. of Pennsylvania	8,400,000	
" 19,	"	- New England Tel. and Tel. Co.	5,750,000	
Dec. 19,	"	- New York Telephone Company	5,000,000	33,535,000
Transfers -				
Oct. 16,	"	- New York Telephone Company	8,000,000*	
" 16,	"	- Ohio Bell Telephone Company	1,000,000*	
" 16,	"	- Illinois Bell Telephone Company	6,000,000*	
" 16,	"	- Southwestern Bell Telephone Company	3,000,000*	0
Total Allotment Advances Authorized				186,771,000

(*) Red Figure

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

TOTAL BELL SYSTEM FINANCING AUTHORIZED AND ACTUAL RESULTS THERE
FOR TWELVE MONTHS ENDING DECEMBER 31, 1923

Name of Company Ref. - M.R.23	Fianacing from Others Authorized Net Financing 35a (a)	Actual Gross Financing (Proceeds) 36c (b)	Present View for Remainder of Year 36d (c)	Total Present View for Year 36e (d)	Increase Present Vi for Year Over Authorize Financin 36f (e)
New England Tel. and Tel. Co.	$ 0	$ 846,387	$ -	$ 846,387	$ 846,3
Southern New England Tel. Co.	1,333,000	691,387	-	691,387	641,3
New York Telephone Company	12,041,000	9,496,990	-	9,496,990	2,544,0
Bell Tel. Co. of Pennsylvania.	34,650,000	40,748,720	-	40,748,720	6,098,7
Chesapeake and Potomac Tel. Co.	526,000	496,629	-	496,629	29,3
Southern Bell Tel. and Tel. Co.	23,000	42,000	-	42,000	19,0
Cumberland Tel. and Tel. Co.	18,000	19,300	-	19,300	1,3
Total Southern Group.	41,000	61,300	-	61,300	20,3
Ohio Bell Telephone Company.	37,000	313,595	-	313,595	276,5
Cincinnati and Suburban Bell Tel. Co. .	864,000	869,246	-	869,246	5,2
Michigan State Telephone Company	0	20,313	-	20,313	20,3
Indiana Bell Telephone Company.	7,000	25,000	-	25,000	18,0
Wisconsin Telephone Company	786,000	736,225	-	736,225	49,7
Illinois Bell Telephone Company.	a)34,579,000	46,145,260	-	46,145,260	11,566,2
Northwestern Bell Tel. Co.	22,000	245,938	-	245,938	223,9
Southwestern Bell Tel. Co.	4,000,000	5,468,678	-	5,468,678	1,468,6
Mountain States Tel. and Tel. Co.	78,000	49,130	-	49,130	28,8

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

TOTAL BELL SYSTEM FINANCING AUTHORIZED AND ACTUAL RESULTS THEREUNDER FOR TWELVE MONTHS ENDING DECEMBER 31, 1923

	Fianacing from Others					Grand Total Allotment and Other Financing	
zed ing	Actual Gross Financing (Proceeds) 36c (b)	Present View for Remainder of Year 36d (c)	Total Present View for Year 36e (d)	Increase of Present View for Year Over Authorized Financing 36f (e)	Total Authorized Net Financing for Year 1923 34a (f)	Total Present View for Year 1923 Net Financing 34e (g)	Total Inc of Present View for Year Over Authorized Financing 34f (h)
0	$ 846,387	$ -	$ 846,387	$ 846,387	$ 9,349,000	$ 20,095,387	$ 10,746,387
,000	691,387	-	691,387	641,613*	2,300,000	2,091,387	208,613*
,000	9,496,990	-	9,496,990	2,544,010*	51,562,000	64,565,190	13,003,190
,000	40,748,720	-	40,748,720	6,098,720	42,310,000	56,946,720	14,636,720
,000	496,629	-	496,629	29,371*	4,000,000	4,620,636	620,636
,000	42,000	-	42,000	19,000	1,683,000	2,135,762	452,762
,000	19,300	-	19,300	1,300	2,718,000	1,294,300	1,423,700*
,000	61,300	-	61,300	20,300	4,401,000	3,430,062	970,938*
,000	313,595	-	313,595	276,595	1,914,000	2,049,191	135,191
,000	869,246	-	869,246	9,246	1,215,000	1,220,246	5,246
0	20,313	-	20,313	20,313	8,077,000	7,671,613	405,387*
,000	25,000	-	25,000	18,000	940,000	950,000	10,000
,000	736,225	-	736,225	49,775*	4,636,000	2,210,081	2,425,919*
000	46,145,260	-	46,145,260	11,566,260	a)41,179,000	b)42,930,936	1,751,936
000	245,938	-	245,938	223,938	1,272,000*	2,035,745*	763,745*
000	5,468,678	-	5,468,678	1,468,678	34,796,000	27,155,531	7,640,469*
000	49,130	-	49,130	28,870*	1,353,000	2,601,568*	3,954,568*

Southwestern Bell Tel. Co.	4,000,000	5,468,678	-	5,468,678	1,468,678
Mountain States Tel. and Tel. Co. . . .	78,000	49,130	-	49,130	28,870*
Pacific Tel. and Tel. Co.	0	91,516	-	91,516	91,516
Total Associated Companies	a)88,964,000	106,306,314	-	106,306,314	17,342,314
Central Union Telephone Company.	0	0	-	0	0
American Tel. and Tel. Co. - General . .	-	-	-	-	-
American Tel. and Tel. Co. - Long Lines.	-	-	-	-	-
Total	a)$88,964,000	$106,306,314	$ -	$106,306,314	$17,342,314

Date Issued - February 26, 1924

* Red Figures

(OVER)

			[illegible]	[illegible]	[illegible]	[illegible]	763,745*
00,000	5,468,678	-	5,468,678	1,468,678	34,796,000	27,155,531	7,640,469*
78,000	49,130*	-	49,130	28,870*	1,353,000	2,601,568*	3,954,568*
0	91,516	-	91,516	91,516	22,131,000	31,191,516	9,060,516
54,000	106,306,314	-	106,306,314	17,342,314	a)228,891,000	b)262,491,183	33,600,183
0	0	-	0	0	0	50,000	50,000
-	-	-	-	-	2,855,000	2,694,264	160,736*
-	-	-	-	-	9,159,000	13,815,413	4,656,413
4,000	$106,306,314	$ -	$106,306,314	$17,342,314	a)$240,905,000	b)$279,050,860	$38,145,860

(OVER)

C. A. Heiss,
Comptroller.

a) Includes $15,530,000 account of payment by Illinois Bell Tel.Co. of Indebtedness to Central Union Telephone Company.

b) Includes $15,530,179 covering notes paid by Illinois Bell Tel.Co. to Central Union Tel.Co.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY.

TOTAL ADVANCES AUTHORIZED FOR 1924 AND PAYMENTS THEREUNDER FOR TWELVE MONTHS ENDING DECEMBER 31, 1924.

		Advances Authorized by Executive Committee				
	Total Authorized (a)	Net Advances Thereunder (b)	% Advanced (c)	Balance Available (d)	Transfers (Vote Dec 3,1924) (e)	Final Distribut (f)
New England Tel. and Tel. Co.	$ 26,016,000	$ 25,600,000	98.4	$ 416,000	416,000*	$ 25,600,
Southern New England Tel. Co.	1,500,000	1,500,000	-	300*	300	1,500,
New York Telephone Company	70,250,000	71,902,080	-	1,652,080*	1,652,080	71,902,
Bell Tel. Co. of Penna.	39,257,000	29,400,000	74.9	9,857,000	9,857,000*	29,400,
Chesapeake and Potomac Tel. Co.	8,234,000	c) 8,400,000	-	166,000*	166,000	8,400,
Southern Bell Tel. and Tel. Co.	3,589,000	3,645,000	-	56,000*	56,000	3,645,
Cumberland Tel. and Tel. Co.	8,464,000	8,520,000	-	56,000*	56,000	8,520,
Total Southern Group	12,053,000	12,165,000	-	112,000*	112,000	12,165,
Ohio Bell Telephone Company	4,582,000	5,700,000	-	1,118,000*	1,118,000	5,700,
Cincinnati and Suburban Bell Tel. Co.	567,000	567,300	-	300*	300	567,
Michigan Bell Telephone Company	16,450,000	15,194,535	92.4	1,255,465	1,255,465*	15,194,
Indiana Bell Telephone Company	1,915,000	1,690,000	88.3	225,000	225,000*	1,690,
Wisconsin Telephone Company	3,225,000	3,500,000	-	275,000*	275,000	3,500,
Illinois Bell Telephone Company	10,080,000	10,771,018	-	691,018*	691,018	10,771,
Northwestern Bell Telephone Company	0	0	0	0	0	
Southwestern Bell Telephone Company	10,000,000	8,200,578	82.0	1,799,422	1,799,422*	8,200
Mountain States Tel. and Tel. Co.	775,000	0	0	775,000	775,000*	
Pacific Tel. and Tel. Co.	37,320,000	35,762,500	95.8	1,557,500	1,557,500*	35,762
Total	242,224,000	230,353,311	95.1	11,870,689	11,870,689*	230,353
A. T. and T. Co., General	2,716,000	2,138,049	78.7	577,951	577,951*	2,138
A. T. and T. Co., Long Lines	14,311,000	15,729,507	-	1,418,507*	1,418,507	15,729
Unused Balance					11,030,133	11,030
Total	$259,251,000	$248,220,867	95.7	$11,030,133	$ 0	$259,251

TOTAL NET ADVANCES BY MONTHS (b - g).

January	$14,574,888	May	$14,586,749	Sept
February	16,121,753	June	31,200,906	Octo
March	22,398,261	July	22,223,918	Nove
April	14,848,531	August	12,827,586	Dece

EGRAPH COMPANY.

D PAYMENTS THEREUNDER FOR
MBER 31, 1924.

utive Committee					
lance ilable (d)	Transfers (Vote Dec 3,1924) (e)	Final Distribution (f)	Net Advances to A.T & T.Co. (g)	Proceeds from Sale of Securities to Public Retained by Asso Cos. (h)	Total Allotments (f - g + h) (i)
416,000	416,000*	$ 25,600,000	$	a)$ 2,919,400	$ 28,519,400
300*	300	1,500,300			1,500,300
652,080*	1,652,080	71,902,080			71,902,080
857,000	9,857,000*	29,400,000		b) 7,538,329	36,938,329
166,000*	166,000	8,400,000			8,400,000
56,000*	56,000	3,645,000			3,645,000
56,000*	56,000	8,520,000			8,520,000
112,000*	112,000	12,165,000			12,165,000
118,000*	1,118,000	5,700,000			5,700,000
300*	300	567,300			567,300
255,465	1,255,465*	15,194,535			15,194,535
225,000	225,000*	1,690,000			1,690,000
275,000*	275,000	3,500,000			3,500,000
691,018*	691,018	10,771,018			10,771,018
0	0	0	77,790		d) 77,790*
799,422	1,799,422*	8,200,578			e) 8,200,578
775,000	775,000*	0	174,302		174,302*
557,500	1,557,500*	35,762,500			f)35,762,500
870,689	11,870,689*	230,353,311	252,092	10,457,729	240,558,948
577,951	577,951*	2,138,049			2,138,049
418,507*	1,418,507	15,729,507			15,729,507
	11,030,133	11,030,133			0
030,133	$ 0	$259,251,000	$252,092	$10,457,729	$258,426,504

NTHS (b - g)

. . . .	$14,586,749	September	. . . .	$29,888,185
. . . .	31,200,906	October	. . . .	17,239,729
. . . .	22,223,918	November	. . . .	13,291,239
. . . .	12,827,586	December	. . . .	38,767,030

TOTAL NET ADVANCES BY MONTHS (b - g)

January	$14,574,888	May	$14,586,749	Sep
February	16,121,753	June	31,200,906	Oct
March	22,398,261	July	22,223,918	Nov
April	14,848,531	August	12,827,586	Dec

Date issued - February 10, 1925.

* Red Figures

(OVER)

74,888
21,753
98,261
48,531

TOTAL NET ADVANCES BY MONTHS (b - g)

May	$14,586,749	September	$29,888,185
June	31,200,906	October	17,239,729
July	22,223,918	November	13,291,239
August	12,827,586	December	38,767,030

C. A. Heiss,
Comptroller.

(OVER)

a) Receipts from sale of stock		$ 6,919,400
Remitted to A. T. and T. Co.		4,000,000
		$ 2,919,400
b) Receipts from sale of Preferred Stock(Incl.$5,843,729 in Dec.1923		19,638,329
Remitted to American Tel.and Tel.Co. (Incl.$1,600,000 in Dec.1923		12,100,000
		$ 7,538,329
c) Chesapeake and Potomac Tel. Co. of West Virginia		$ 1,500,000
" " " " " " Virginia		1,725,000
" " " " " " Baltimore City		4,150,000
" " " " " " (New York)		1,025,000
		$ 8,400,000
d) Amount provided in Provisional Estimate		$ 1,032,000
Amount provided and not forwarded to A. T. and T. Co.		954,210
Net Amount remitted to American Tel. and Tel. Co.		77,790
e) Excludes $45,041,666 received February 7, 1924 from Southwestern B.T.Co., proceeds from $50,000,000 Bond Issue -		
Notes Paid	$20,874,761	
Loans Paid	600,000	
Loans on Open Account	23,566,905	$45,041,666
f) Excludes $3,225,337 received from Pacific Tel. and Tel.Co., proceeds from 36,861 shares of Preferred Stock sold to Public -		
Notes Paid		$ 3,225,337

This copy for
Mr. Green.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

TOTAL ADVANCES AUTHORIZED FOR 1925 AND PAYMENTS THEREUNDER FOR TWELVE MONTHS ENDING DECEMBER 31, 1925

	Advances Authorized by Executive Committee					
	Total Authorized (a)	Net Advances Thereunder (b)	Per Cent Advanced (c)	Balance Available (d)	Transfers (Vote Dec 2,1925) (e)	Fin Distri (f
New England Tel. and Tel. Co.	$ 24,362,000	$ 17,950,000	73.7	$ 6,412,000	$ 6,412,000*	$ 17,9
Southern New England Tel. Co.	700,000	800,300	-	100,300*	100,300	8
New York Telephone Company	49,367,000	41,657,000	64.4	7,710,000	7,710,000*	41,6
Bell Tel. Co. of Pennsylvania	22,777,000	22,400,000	98.3	377,000	377,000*	22,4
Ches. and Pot. Tel. Co.	6,475,000	c) 7,082,324	-	607,324*	607,324	7,0
Southern Bell Tel. and Tel. Co.	4,791,000	7,629,745	-	2,838,745*	2,838,745	7,6
Cumberland Tel. and Tel. Co.	7,463,000	8,054,646	-	591,646*	591,646	8,0
Total Southern Group	12,254,000	15,684,391	-	3,430,391*	3,430,391	15,6
Ohio Bell Telephone Company	8,954,000	7,900,000	88.2	1,054,000	1,054,000*	7,9
Cinn. and Subn. Bell Tel. Co.	908,000	907,700	100.0	300	300*	9
Michigan Bell Tel. Co.	11,525,000	13,075,000	-	1,550,000*	1,550,000	13,0
Wisconsin Telephone Company	3,183,000	2,300,000	72.3	883,000	883,000*	2,3
Illinois Bell Tel. Co.	15,327,000	15,364,266	-	37,266*	37,266	15,3
Northwestern Bell Tel. Co.	d)30,307,000	27,600,000	91.1	2,707,000	2,707,000*	27,6
Southwestern Bell Tel. Co.	14,300,000	12,962,309	90.6	1,337,691	1,337,691*	12,9
Mountain States Tel. and Tel. Co.	350,000	0	0	350,000	350,000*	
Pacific Tel. and Tel. Co.	31,599,000	34,900,000	-	3,301,000*	3,301,000	34,9
Total	232,388,000	220,583,290	94.9	11,804,710	11,804,710*	220,5
A.T. and T. Co. - General	2,163,000	2,512,460	-	349,460*	349,460	2,5
" " " " - Long Lines	11,848,000	9,425,614	79.6	2,422,386	2,422,386*	9,4
Contingencies	7,000,000	0		7,000,000	7,000,000*	
Unused Balance					20,877,636	20,8
Total	$253,399,000	$232,521,364	91.8	$20,877,636	0	$253,3

TOTAL NET ADVANCES BY MONTHS

January	$18,083,102	May	$ 9,638,036
February	33,937,464	June	32,596,388
March	23,873,562	July	11,636,276
April	12,342,681	August	6,634,957

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

TOTAL ADVANCES AUTHORIZED FOR 1925 AND PAYMENTS THEREUNDER FOR TWELVE MONTHS ENDING DECEMBER 31, 1925

Advances Authorized by Executive Committee							
Net Advances Thereunder (b)	Per Cent Advanced (c)	Balance Available (d)	Transfers (Vote Dec 2,1925) (e)	Final Distribution (f)	Net Advances to A.T.& T. Co. (g)	Proceeds from Sale of Securities to Public Retained by Assoc. Cos. (h)	Total Allotments (b - g + h) (i)
$ 17,950,000	73.7	$ 6,412,000	$ 6,412,000*	$ 17,950,000		a) $3,067,150	$ 21,017,150
800,300	-	100,300*	100,300	800,300			800,300
41,657,000	64.4	7,710,000	7,710,000*	41,657,000			41,657,000
22,400,000	98.3	377,000	377,000*	22,400,000	b)		22,400,000
c) 7,082,324	-	607,324*	607,324	7,082,324			7,082,324
7,629,745	-	2,838,745*	2,838,745	7,629,745			7,629,745
8,054,646	-	591,646*	591,646	8,054,646			80,054,646
15,684,391	-	3,430,391*	3,430,391	15,684,391			15,684,391
7,900,000	88.2	1,054,000	1,054,000*	7,900,000			7,900,000
907,700	100.0	300	300*	907,700			907,700
13,075,000	-	1,550,000*	1,550,000	13,075,000			13,075,000
2,300,000	72.3	883,000	883,000*	2,300,000			2,300,000
15,364,266	-	37,266*	37,266	15,364,266			15,364,266
27,600,000	91.1	2,707,000	2,707,000*	27,600,000			27,600,000
12,962,309	90.6	1,337,691	1,337,691*	12,962,309			12,962,309
0	0	350,000	350,000*	0			0
34,900,000	-	3,301,000*	3,301,000	34,900,000	e)		34,900,000
220,583,290	94.9	11,804,710	11,804,710*	220,583,290		3,067,150	223,650,440
2,512,460	-	349,460*	349,460	2,512,460			2,512,460
9,425,614	79.6	2,422,386	2,422,386*	9,425,614			9,425,614
0		7,000,000	7,000,000*	0			0
			20,877,636	20,877,636			
$232,521,364	91.8	$20,877,636	0	$253,399,000		$3,067,150	$235,588,514

TOTAL NET ADVANCES BY MONTHS

May	$ 9,638,036	September	$25,895,147
June	32,596,388	October	12,559,937
July	11,636,276	November	6,460,055
August	6,634,957	December	38,833,759

TOTAL NET ADVANCES BY MONTHS

January	$18,083,102	May	$ 9,638,036
February	33,937,464	June	32,596,388
March	23,873,562	July	11,636,276
April	12,342,681	August	6,634,957

(For notes see Sheet No. 2)

Date issued - February 10, 1926.

* Red Figures.

TOTAL NET ADVANCES BY MONTHS

May	$ 9,638,036	September	$25,895,147
June	32,596,388	October	12,559,937
July	11,636,276	November	6,460,055
August	6,634,957	December	38,833,759

(For notes see Sheet No. 2)

C. A. Heiss,
Comptroller.

5988

a)	Receipts from Sale of Stock		$10,912,850
	Remitted to American Tel. and Tel. Co.		7,845,700
			$ 3,067,150
b)	Excludes $48,500,000 received Oct. 1, 1925 from Bell Tel. Co. of Penna. proceeds from $50,000,000 Bond Issue -		
	Notes Paid	$32,300,000	
	Loan on Open Account	16,200,000	$48,500,000
c)	Ches. and Pot. Tel. Co. of Baltimore City		$ 2,925,000
	" " " " " " Virginia		1,125,000
	" " " " " " West Virginia.		2,200,000
	" " " " " (New York)		832,324
			$ 7,082,324
d)	Authorization by Ex. Com. January 20, 1925 to be advanced in connection with the redemption on February 2, 1925 of First Mortgage 7% Bonds not to exceed.		$31,000,000
	Amount not required for redemption of Bonds.		1,350,000
	Net amount authorized by Ex. Com. vote January 20,1925		29,650,000
	Authorized by Ex. Com.vote February 4, 1925 for other requirements.		657,000
	Total amount authorized to be advanced the Northwestern Bell Tel. Co.		$30,307,000
e)	Excludes $3,701,300 received in March, 1925 from the Pacific Tel. and Tel. Co. proceeds from 37,013 shares of Preferred Stock sold to public - Notes paid		$ 3,701,300

This Copy for
Mr. Green

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

TOTAL ADVANCES AUTHORIZED FOR 1926 AND PAYMENTS THEREUNDER F
TWELVE MONTHS ENDING DECEMBER 31, 1926

	Advances Authorized By Executive Committee					
	Total Authorized (a)	Net Advances Thereunder (b)	Per Cent Advanced (c)	Balance Available (d)	Net Advances to A.T.&T.Co. (e)	Proceeds from Sale of Securities To Public Retained by Asso. Cos. (f)
New England Tel. and Tel. Co. . .	$ 19,117,000	$ 11,750,000	61.46	$ 7,367,000	$ a)	$ 229,946
Southern New England Tel. Co. .	233,000	0	0	233,000	416,200	
New York Telephone Company . .	35,100,000	33,350,000	95.01	1,750,000		
Bell Tel. Co. of Pennsylvania .	15,758,000	13,000,000	82.50	2,758,000		
Del. and Atl. Tel. and Tel. Co.	800,000	550,000	68.75	250,000		
Ches. and Pot. Tel. Co.	7,575,000	b) 5,801,730	76.59	1,773,270		
Southern Bell Tel.and Tel.Co. .	22,102,000	23,655,531	-	c) 1,553,531*		
Ohio Bell Tel. Co.	9,861,000	d) 11,231,000	-	c) 1,370,000*		
Michigan Bell Tel. Co.	14,000,000	12,850,000	91.79	1,150,000		
Wisconsin Telephone Company . .	2,553,000	750,000	29.38	1,803,000		
Illinois Bell Tel. Co.	15,612,000	10,800,000	69.18	4,812,000		
Northwestern Bell Tel. Co. . .	1,876,000	0	0	1,876,000	e) 763,667	
Southwestern Bell Tel. Co. . .	22,700,000	18,362,353	80.89	4,337,647		
Mountain States Tel.and Tel.Co.	325,000	0	0	325,000	154,000	
Pacific Tel. and Tel. Co. . . .	24,940,000	20,500,000	82.20	4,440,000		
Total	192,552,000	162,600,614	84.45	29,951,386	1,333,867	229,946
A.T. and T.Co. - General . . .	2,131,000	1,515,886	71.13	615,114		
A.T. and T.Co. - Long Lines . .	20,667,000	20,968,008	-	c) 301,008*		
Contingencies	7,500,000	0	0	c) 7,500,000		
Total	f)$222,850,000	$185,084,508	83.06	$37,765,492	$1,333,867	$229,946

TOTAL NET ADVANCE BY MONTHS

January	$ 6,563,375	May	$ 7,783,473	September	$ 18,654,265

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY

TOTAL ADVANCES AUTHORIZED FOR 1926 AND PAYMENTS THEREUNDER FOR TWELVE MONTHS ENDING DECEMBER 31, 1926

	Advances Authorized By Executive Committee						
	Total Authorized (a)	Net Advances Thereunder (b)	Per Cent Advanced (c)	Balance Available (d)	Net Advances to A.T.&T.Co. (e)	Proceeds from Sale of Securities To Public Retained by Asso. Cos. (f)	Total Allotments (b-e+f) (g)
nd Tel. Co. . .	$ 19,117,000	$ 11,750,000	61.46	$ 7,367,000	$ a)	$ 229,946	$ 11,979,946
nd Tel. Co. . .	233,000	0	0	233,000	416,200		416,200*
Company . .	35,100,000	33,350,000	95.01	1,750,000			33,350,000
ennsylvania .	15,758,000	13,000,000	82.50	2,758,000			13,000,000
and Tel. Co.	800,000	550,000	68.75	250,000			550,000
. Co.	7,575,000	b) 5,801,730	76.59	1,773,270			5,801,730
and Tel.Co. .	22,102,000	23,655,531	-	c) 1,553,531*			23,655,531
. . . .	9,861,000	d) 11,231,000	-	c) 1,370,000*			11,231,000
Co.	14,000,000	12,850,000	91.79	1,150,000			12,850,000
e Company . .	2,553,000	750,000	29.38	1,803,000			750,000
Co.	15,612,000	10,800,000	69.18	4,812,000			10,800,000
Tel. Co. . .	1,876,000	0	0	1,876,000	e) 763,667		763,667*
Tel. Co. . .	22,700,000	18,362,353	80.89	4,337,647			18,362,353
l.and Tel.Co.	325,000	0	0	325,000	154,000		154,000*
el. Co. . . .	24,940,000	20,500,000	82.20	4,440,000			20,500,000
. . . .	192,552,000	162,600,614	84.45	29,951,386	1,333,867	229,946	161,496,693
eneral . . .	2,131,000	1,515,886	71.13	615,114			1,515,886
ng Lines . .	20,667,000	20,968,008	-	c) 301,008*			20,968,008
. . . .	7,500,000	0	0	c) 7,500,000			
. . . .	f)$222,850,000	$185,084,508	83.06	$37,765,492	$1,333,867	$229,946	$183,980,587

TOTAL NET ADVANCE BY MONTHS

TOTAL NET ADVANCE BY MONTHS

January	$ 6,563,375	May	$ 7,783,473	September	$ 18,654,265
February	2,594,341	June	30,096,823	October	11,380,804
March	26,772,280	July	20,362,840	November	9,653,860
April	5,919,482	August	4,666,269	December	40,636,696

(See Sheet No. 2 for Notes)

Date issued - February 9, 1927.

C. A. Heis

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* Red figures.

TOTAL NET ADVANCE BY MONTHS

563,375	May	$ 7,783,473	September	$ 18,654,265
594,341	June	30,096,823	October	11,380,804
772,280	July	20,362,840	November	9,653,860
919,482	August	4,666,269	December	40,636,696

(See Sheet No. 2 for Notes)

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C. A. Heiss,

Comptroller.

5990

a) Excludes $36,000,000 received May 26, 1926 from New England Tel. and Tel. Co. proceeds from $40,000,000 Bond Issue:

Notes Paid	$27,150,000
Endorsed Pacific Notes Purchased	9,450,000
	$36,600,000

b) Chesapeake and Potomac Tel. Co. of Baltimore City . . . . $ 2,450,000

Chesapeake and Potomac Tel. Co. of Baltimore City	$ 2,450,000
" " " " " " Virginia	732,202
" " " " " " West Virginia	744,528
" " " " " " (New York).	1,875,000
	$ 5,801,730

c) Overdrawals of authorized allotments approved by President Gifford, January 19, 1927, as chargeable to contingent item of $7,500,000:

Contingencies		$ 7,500,000
Overdrawals-		
Southern Bell Tel. and Tel. Co..	$1,553,531	
Ohio Bell Telephone Company	1,370,000	
American Tel.and Tel.Co. - Long Lines . .	301,008	3,224,559
Contingencies not used.		$ 4,275,441

d) Does not include $5,000,000 for stock purchased June 30, 1926 authorized by Executive Committee May 5, 1926. The proceeds were used to retire Cuyahega Tel. Co. and U.S. Tel. Co. bonds called July 1, 1926.

e) Excludes proceeds from sale of Preferred Stock remitted to American Tel. and Tel. Co. . . . . $ 4,406,333

f) Voted February 3, 1926 and September 15, 1926.

This copy for
Mr. Uhrig.

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

TOTAL ADVANCES AUTHORIZED FOR 1927 AND PAYMENTS THEREUNDER FOR TWELVE MONTHS ENDING DECEMBER 31, 1927

		Advances Authorized by Executive Committee			
		Total Authorized	Net Advances Thereunder	Per Cent Advanced	Balance Available
New England Tel. and Tel. Co.		$ 6,204,000	$ 1,500,000	24.18	$ 4,704,000
Southern New England Tel. Co.	a)	4,134,000	4,000,000	96.76	134,000
New York Telephone Co.	b)	34,018,000	26,736,685	78.60	7,281,315
New Jersey Bell Tel. Co.	b)	5,644,000	4,325,000	76.63	1,319,000
Bell Tel. Co. of Pennsylvania	a)	8,829,000	6,605,000	74.81	2,224,000
Ches. and Pot. Tel. Co. (New York)		x	1,225,000	x	x
" " " " " of B. C.		x	1,450,000	x	x
" " " " " " Va.		x	650,000	x	x
" " " " " " W. Va.		x	775,000	x	x
Total (Ches. and Pot.)		6,175,000	4,100,000	66.40	2,075,000
Southern Bell Tel. and Tel. Co.		16,210,000	12,169,886	75.08	4,040,114
Ohio Bell Telephone Company	a)	8,436,000	7,935,304	94.04	500,696
Michigan Bell Telephone Company		19,300,000	15,660,000	81.14	3,640,000
Indiana Bell Telephone Company		580,000	0	0	580,000
Wisconsin Telephone Company		2,776,000	1,900,000	68.44	876,000
Illinois Bell Telephone Company		18,153,000	12,167,168	67.03	5,985,832
Northwestern Bell Tel. Co.		540,000	750,000	x	210,000*
Southwestern Bell Tel. Co.		21,100,000	15,670,480	74.27	5,429,520
Mountain States Tel. and Tel. Co.	a)	2,300,000	1,404,000	61.04	896,000
Pacific Tel. and Tel. Co.		20,532,000	15,800,000	76.95	c) 4,732,000
Total		174,931,000	130,723,523	74.73	44,207,477
A. T. and T. Co. - Long Lines	a)	28,056,000	27,282,752	97.24	773,248
A. T. and T. Co. - General		1,881,000	1,287,481	68.45	593,519
Contingencies		7,500,000			7,500,000
Unallocated Transfer of Allotment	a)	10,950,000*	x	x	10,950,000*
Total	d)	$201,418,000	$159,293,756	79.09	$42,124,244

TOTAL NET ADVANCES BY MONTHS

January	$10,127,628	May	$ 7,438,792	September	
February	1,991,861	June	23,763,316	October	
March	21,221,214	July	13,611,248	November	
April	4,847,270	August	2,865,077	December	

a) Includes additional amounts authorized by Executive Committee October 5, 1927 as follows:

AMERICAN TELEPHONE AND TELEGRAPH COMPANY

TOTAL ADVANCES AUTHORIZED FOR 1927 AND PAYMENTS THEREUNDER FOR TWELVE MONTHS ENDING DECEMBER 31, 1927

		Advances Authorized by Executive Committee					
		Total Authorized	Net Advances Thereunder	Per Cent Advanced	Balance Available	Net Advances to A. T. & T. Co.	Total Allotments
Co		$ 6,204,000	$ 1,500,000	24.18	$ 4,704,000	$	$ 1,500,000
Co	a)	4,134,000	4,000,000	96.76	134,000		4,000,000
	b)	34,018,000	26,736,685	78.60	7,281,315		26,736,685
	b)	5,644,000	4,325,000	76.63	1,319,000		4,325,000
nia	a)	8,829,000	6,605,000	74.81	2,224,000		6,605,000
ew York)		x	1,225,000	x	x		1,225,000
B. C		x	1,450,000	x	x		1,450,000
Va		x	650,000	x	x		650,000
W. Va		x	775,000	x	x		775,000
)		6,175,000	4,100,000	66.40	2,075,000		4,100,000
Co		16,210,000	12,169,886	75.08	4,040,114		12,169,886
y	a)	8,436,000	7,935,304	94.04	500,696		7,935,304
mpany		19,300,000	15,660,000	81.14	3,640,000		15,660,000
pany		580,000	0	0	580,000	200,000	200,000*
y		2,776,000	1,900,000	68.44	876,000		1,900,000
mpany		18,153,000	12,167,168	67.03	5,985,832		12,167,168
		540,000	750,000	x	210,000*		750,000
		21,100,000	15,670,480	74.27	5,429,520		15,670,480
el. Co	a)	2,300,000	1,404,000	61.04	896,000		1,404,000
		20,532,000	15,800,000	76.95	c) 4,732,000		15,800,000
		174,931,000	130,723,523	74.73	44,207,477	200,000	130,523,523
nes	a)	28,056,000	27,282,752	97.24	773,248		27,282,752
		1,881,000	1,287,481	68.45	593,519		1,287,481
lotment		7,500,000			7,500,000		
	a)	10,950,000*	x	x	10,950,000*		
	d)	$201,418,000	$159,293,756	79.09	$42,124,244	200,000	$159,093,756

TOTAL NET ADVANCES BY MONTHS

	$10,127,628	May	$ 7,438,792	September	$19,567,289
	1,991,861	June	23,763,316	October	11,228,308
	21,221,214	July	13,611,248	November	6,422,369
	4,847,270	August	2,865,077	December	36,009,384

Includes additional amounts authorized by Executive Committee October 5, 1927 as follows:

Southern New England Telephone Company $3,000,000

April	21,221,214	July	[illegible]	October	
	4,847,270	August	13,611,248	November	
			2,865,077	December	

a) Includes additional amounts authorized by Executive Committee October 5, 1927 as follows:

Southern New England Telephone Company	$3,000,000
Bell Telephone Company of Pennsylvania	1,200,000
Ohio Bell Telephone Company	2,800,000
Mountain States Tel. and Tel. Co.	1,000,000
American Tel. and Tel. Co., Long Lines Department	2,950,000
	$10,950,000

the foregoing in lieu of $10,950,000 of the advances authorized by resolution January 19 made to others than the above named.

b) Reflects the transfer of $5,000,000 from the authorized allotment of the New York Telephone to that of the New Jersey Bell Telephone Company as voted by the Executive Committee Octo

c) Does not reflect proceeds received by Pacific Tel. and Tel. Co. from Common Stock sold to and remitted to American Tel. and Tel. Co. - $9,147,600.

d) Voted January 19, 1927 and October 5, 1927.

Date issued - February 10, 1928.

C. A.

* Red Figures.

21,221,214	July	[illegible]	October	[illegible]
4,847,270	August	13,611,248	November	11,228,308
		2,865,077	December	6,422,369
				36,009,384

ncludes additional amounts authorized by Executive Committee October 5, 1927 as follows:

Southern New England Telephone Company	$3,000,000
Bell Telephone Company of Pennsylvania	1,200,000
Ohio Bell Telephone Company	2,800,000
Mountain States Tel. and Tel. Co.	1,000,000
American Tel. and Tel. Co., Long Lines Department	2,950,000
	$10,950,000

the foregoing in lieu of $10,950,000 of the advances authorized by resolution January 19, 1927 made to others than the above named.

eflects the transfer of $5,000,000 from the authorized allotment of the New York Telephone Company to that of the New Jersey Bell Telephone Company as voted by the Executive Committee October 5, 1927.

oes not reflect proceeds received by Pacific Tel. and Tel. Co. from Common Stock sold to Public and remitted to American Tel. and Tel. Co. - $9,147,600.

oted January 19, 1927 and October 5, 1927.

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C. A. Heiss,
Comptroller.

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This copy for
Mr. Uhrig.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY

TOTAL ADVANCES AUTHORIZED FOR 1928 AND PAYMENTS THEREUNDER FOR YEAR ENDING DECEMBER 31, 1928

	Total Authorized	Advanced (Net) to Dec.31, 1928	Per Cent Advanced	Balance Not Used
New England Tel. and Tel. Co.	$ 5,151,000	$ 667,200	12.95	$ 4,483,800
Southern New England Tel. Co. . . . a)	3,000,000	2,500,000	83.33	500,000
New York Telephone Company	30,604,000	27,701,145	90.51	2,902,855
New Jersey Bell Telephone Company	10,126,000	10,100,000	99.74	26,000
Bell Tel. Co. of Pa.	11,444,000	7,322,469	63.99	4,121,531
Ches. and Pot. Tel. Co. (New York).	x	100,000*	x	x
" " " " " of D.C. . .	x	700,000	x	x
" " " " " Virginia . .	x	350,000	x	x
" " " " " West Va. . .	x	1,325,000	x	x
Total Ches. and Pot. Group . .	3,950,000	2,275,000	57.59	1,675,000
Southern Bell. Tel. and Tel. Co. .	14,376,000	14,139,848	98.36	236,152
Ohio Bell Telephone Company. . . b)	8,628,000	7,118,089	82.50	1,509,911
Michigan Bell Telephone Company . .	17,500,000	17,390,000	99.37	110,000
Indiana Bell Telephone Company . . b)	550,000	477,868	86.89	72,132
Wisconsin Telephone Company	1,882,000	1,136,153	60.37	745,847
Illinois Bell Telephone Company . .	19,400,000	12,715,632	65.54	6,684,368
Northwestern Bell Tel. Co.	2,545,000	0	0	2,545,000
Southwestern Bell Tel. Co.	20,200,000	14,131,270	69.96	6,068,730
Mountain States Tel. and Tel. Co. .	7,000,000	6,642,114	94.89	357,886
Pacific Tel. and Tel. Co.	17,769,000	16,200,000	91.17	1,569,000
A. T. and T. Co. - Long Lines . . . b)	40,108,000	39,311,195	98.01	796,805
Unallocated Reduction in Total Allotment . . . . b)	31,233,000*	-	-	31,233,000*
Total . . . . a)	$183,000,000	$179,827,983	98.27	$ 3,172,017

TOTAL NET ADVANCES BY MONTHS

January	$ 7,503,308	May	$8,545,000	September	$29,474,962
February	231,911*	June	29,817,393	October	8,175,000
March	16,250,411	July	11,611,153	November	10,507,848
April	10,550,000	August . . .	4,042,200	December	43,582,619

For Notes, see Sheet No. 2.

Date issued - January 23, 1929.

C. A. Heiss,
Comptroller.

* Red Figures.

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a) Authorized by Executive Committee as follows:

January 18,1928 - Advances to Associated Companies and Long Lines Department not to exceed in the aggregate	$180,000,000
November 7,1928 - Advances to the Southern New England Tel.Co. in addition to the advances authorized January 18,1928	3,000,000
Total	$183,000,000

b) Includes additional amounts voted Nov. 7, 1928 to be made from unused portions of advances authorized other companies January 18, 1928:

Ohio Bell Telephone Company	$ 2,500,000
Indiana Bell Tel. Co.	450,000
Long Lines Department	11,200,000
Unallocated reduction in total allotment	$14,150,000*

NOTE: This statement does not reflect -

(1) Net cash payments for purchase of stock (subscriptions):

Cinn. and Subn. Bell Tel. Co.	$ 1,089,250
Ohio Bell Telephone Company	985,619
Southwestern Bell Tel. Co.	2,502,080
	$ 4,576,949

(2) Proceeds from sale of Preferred Stock of Tri-State Tel. and Tel. Co. to public remitted to A. T. and T. Co. by Northwestern Bell Tel. Co.	$ 2,045,138
(3) Proceeds from sale of Southern New England Tel. Co. Stock to public remitted to A. T. and T. Co. and applied in payment of prior year indebtadness	$ 3,662,072

(*) Red figures.

This Copy for
Mr. C. A. Nixon

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY

TOTAL ADVANCES AUTHORIZED FOR 1929 AND PAYMENTS THEREUNDER FOR TWELVE MONTHS ENDING DECEMBER 31, 1929

	a) Total Authorized	Advanced (Net) to Dec.31,1929	Per Cent Advanced	Authorized Exceeds Advanced
New England Tel. and Tel. Co.	$ 11,727,000	$11,750,000	100.20	b) $ 23,000*
Southern New England Tel. Co.	7,100,000	6,900,000	97.18	200,000
New York Telephone Company.	48,702,000	47,500,000	97.53	1,202,000
New Jersey Bell Tel. Co.	13,023,000	12,500,000	95.98	523,000
Bell Tel. Co. of Pennsylvania	18,580,000	15,500,000	83.42	3,080,000
Ches. and Pot. Tel. Co.	x	c) 2,975,000	x	x
Ches. and Pot. Tel. Co. of Balto. City.	x	1,425,000	x	x
Ches. and Pot. Tel. Co. of Virginia . .	x	2,150,000	x	x
Ches. and Pot. Tel. Co. of West Va. . .	x	1,550,000	x	x
Total Ches. and Pot. Group . . .	8,425,000	8,100,000	96.14	325,000
Southern Bell Tel. and Tel. Co.	14,767,000 d)	0	0	14,767,000
Ohio Bell Tel. Co.	17,342,000	17,500,000	100.91	b) 158,000*
Michigan Bell Tel. Co.	16,400,000	16,650,000	101.52	b) 250,000*
Indiana Bell Tel. Co.	1,474,000	1,250,050	84.81	223,950
Wisconsin Tel. Co.	6,724,000	5,825,000	86.63	899,000
Illinois Bell Tel. Co.	15,081,000	9,649,900	63.99	5,431,100
Northwestern Bell Tel. Co.	6,931,000	6,500,000	93.78	431,000
Southwestern Bell Tel. Co.	21,400,000	17,150,000	80.14	4,250,000
Mountain States Tel. and Tel. Co.	8,276,000	8,250,000	99.69	26,000
Pacific Tel. and Tel. Co.	36,604,000	35,900,000	98.08	704,000
American T. and T. Co., Long Lines. . .	74,338,000	74,426,586	100.12	b) 88,586*
Unallocated Reduction in Total Allotment	20,994,000*	-	-	20,994,000*
Total Associated Companies and Long Lines Department	$305,900,000	$295,351,536	96.55	$10,548,464
Western Electric Company, Inc. . . . . e)	$ x	$ 16,499,000	x	$ x

TOTAL NET ADVANCES BY MONTHS (EXCEPT WESTERN ELECTRIC CO., INC.)

Jan. . .	$13,822,920	Apr. . .	$13,800,000	July . . .	$22,025,000	Oct. . .	$20,900,000
Feb. . .	7,553,915	May. . .	12,475,000	Aug. . .	9,799,900	Nov. . .	7,700,134
Mar. . .	32,999,962	June . .	55,398,117	Sept. . .	43,599,952	Dec. . .	55,276,636

Date issued - January 25, 1930.

C. A. Heiss,
Comptroller.

(*) Red figures

a) Executive Committee votes on January 30, 1929, September 4, 1929, October 30, 1929 and December 4, 1929, authorized:

Advances to Associated Companies and the Long Lines Department of the amounts specified for each, the total for all companies not to exceed	$300,900,000
Advances to any company in excess of the amount specifically authorized for that company, the total for all companies not to exceed	5,000,000
Grand Total	$305,900,000

b) **Advances** in excess of amounts specifically authorized, the total for all not to exceed $5,000,000 (See Note a)):

New England Tel. and Tel. Co.	$ 23,000
Ohio Bell Telephone Company	158,000
Michigan Bell Telephone Company	250,000
Long Lines Department	88,586
	$ 519,586

c) **Excludes** payment for New England Tel. and Tel. Co. bonds . . $ 396,120

d) **Excludes:**

Advances made during 1929, repaid	$ 10,299,366
Repurchase of Michigan Bell notes	6,150,000
	$ 16,449,366

Disposition of proceeds from Southern Bell bond issue, November 1, 1929:

Repayment of advances made during 1929	$ 10,299,866
Repayment of advances made in prior years	9,423,490
Purchase of Michigan Bell notes	11,900,000
Retained by Southern Bell Company	29,977
	$ 31,653,333

e) Loaned . . . . $ 66,000,000
Paid 49,501,000

Net. . . . . $ 16,499,000

Loans authorized by Executive Committee Votes dated January 30, 1929 and December 15, 1929. Not more than $50,000,000 is to be outstanding at one time.

This copy for
Mr. Uhrig.

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY

TOTAL ADVANCES AUTHORIZED FOR 1930 AND PAYMENTS THEREUNDER FOR YEAR ENDING DECEMBER 31, 1930

	Total Authorized	Advanced (Net) to Dec.31,1930	Per Cent Advanced	Balance Authorized Unused
New England Tel. and Tel. Co. . . .	$ 10,026,000	$ 9,467,900	94.43	$ 558,100
Southern New England Tel. Co. . . .	1,800,000 b)	1,800,000	100.00	0
New York Telephone Company. . . .	67,488,000	46,250,000	66.53	21,238,000
New Jersey Bell Tel. Co.	14,440,000	13,000,000	90.03	1,440,000
Bell Tel. Co. of Pennsylvania . .	22,144,000	17,525,000	79.14	4,619,000
Diamond State Telephone Company .	571,000	495,000	86.69	76,000
Ches.and Pot.Tel.Co. (New York) .	1,400,000	1,200,000	85.71	200,000
Ches.and Pot.Tel.Co. of B.C. . .	4,200,000	1,952,927	46.50	2,247,073
Ches.and Pot.Tel.Co. of Va. . . .	4,700,000 c)	2,949,724	62.76	1,750,276
Ches.and Pot.Tel.Co. of W. Va. .	2,900,000 d)	0	-	2,900,000
Southern Bell Te.and Tel.Co. . .	17,226,000 e)	3,000,000	17.41	14,228,000
Ohio Bell Telephone Company . . .	14,211,000	11,400,000	80.22	2,811,000
Michigan Bell Telephone Company .	19,200,000	14,622,614	76.16	4,577,386
Indiana Bell Telephone Company. .	2,836,000	2,809,307	99.06	26,693
Wisconsin Telephone Company . . .	8,525,000 b)	8,525,000	100.00	0
Illinois Bell Telephone Company .	23,624,000 f)	0		23,624,000
Northwestern Bell Tel. Co. . . .	24,477,739 b)	24,477,739	100.00	0
Southwestern Bell Tel. Co. . . .	24,700,000	13,550,000	54.86	11,150,000
Mountain States Tel.and Tel. Co. .	1,454,000	197,500	13.58	1,256,500
Pacific Tel. and Tel. Co.	31,676,000	7,040,320	22.23	24,635,680
American T.and T.Co.,Long Lines .	94,359,000	82,742,875	87.69	11,616,125
Unallocated Reduction in Total Allotment	26,959,739*	-	-	26,959,739*
Total Associated Companies and Long Lines Department	a) $365,000,000	$263,005,906	72.06	$101,994,094
Western Electric Co., Inc. . . .	g) 50,000,000	$ 0	-	$ 50,000,000

TOTAL ADVANCES BY MONTHS EXCEPT WESTERN ELECTRIC CO. INC. (H)

Jan. . .	$22,864,932	Apr. . .	$ 9,634,215	July. .	$22,117,000	Oct. .	$ 8,716,427
Feb. . .	29,006,518	May. . .	17,924,765	Aug. . .	4,275,018	Nov. .	11,338,662
Mar. . .	25,422,596	June . .	42,874,982	Sept. . .	30,971,906	Dec. .	37,858,885

Date issued - January 20, 1931.

C. A. Heiss,
Comptroller.

* Red Figures.

5997

(a) Executive Committee vote dated January 29, 1930 as modified by votes of September 3, 1930 and December 3, 1930.

(b) Reflects net advances made under Executive Committee vote dated December 3, 1930 as follows:

Southern New England Telephone Company	$1,800,000
Wisconsin Telephone Company	206,000
Northwestern Bell Telephone Company	3,074,739
Total	$5,080,739

(c)

Advanced during year		$4,325,000
Repaid during year:		
From proceeds of Stock Issue September 30, 1930:		
Total proceeds	$4,800,000	
Applied to prior years' advances	3,474,724	
Applied to 1930 advances	$1,325,276	
Other repayments	50,000	1,375,276
Net advances under allotment vote		$2,949,724

(d) Does not reflect repayments in excess of advances made . . $ 75,000

(e) Excludes repurchase of endorsed notes of Michigan Bell Telephone Company $5,750,000

(f) Does not reflect amounts left with A.T. and T.Co. on open account (net) $9,172,185

(g) Authorized by Executive Committee vote dated January 15, 1930 -

Advanced during year	$32,000,000
Repaid during year	48,499,000
Repayments in excess of advances made	$16,499,000

Does not reflect special advance of $30,000,000 on September 30, 1930 in connection with purchase of Teletype Corporation common stock (Ex.Com.vote dated September 17, 1930.)

(h) Adjusted to reflect advances previously allocated to temporary vote providing for repayment on or before December 31, 1930, subsequently authorized by Executive Committee in its vote of December 3, 1930 (shown in (b) above); also adjusted to exclude amounts shown in (d) and (f) above, previously included as credits to allotment.

This Copy for
Mr. C. Uhrig

CR 13
D-113
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AMERICAN TELEPHONE AND TELEGRAPH COMPANY

TOTAL ADVANCES AUTHORIZED FOR 1931 AND PAYMENTS THEREUNDER FOR YEAR 1931

	Total Authorized	Advanced (Net) to Dec.31,1931	Per Cent Advanced	Balance Authorized Unused
New England Tel. and Tel. Co.. . .	$ 8,300,000	$ 8,300,000	100.00	$ 0
Southern New England Tel. Co.. . .	4,900,000	4,200,000	85.71	700,000
New York Telephone Company	29,900,000	a)28,800,000	96.32	1,100,000
New Jersey Bell Tel. Co.	12,765,000	11,552,897	90.50	1,212,103
Bell Tel. Co. of Pennsylvania. . .	12,378,000	7,275,000	58.77	5,103,000
Diamond State Telephone Company. .	240,000	40,000	-	280,000
Ches. and Pot. Tel. Co..	725,000	a) 302,651	-	1,027,651
Ches.and Pot.Tel.Co. of Balt.City.	950,000	950,000	100.00	0
Ches.and Pot.Tel.Co. of Virginia .	1,550,000	575,276	37.11	974,724
Ches.and Pot.Tel.Co. of West Va. .	1,900,000	950,000	50.00	950,000
Southern Bell Tel. and Tel. Co.. .	3,903,000	1,700,000	-	5,603,000
Ohio Bell Telephone Company . . .	4,564,000	a) 2,269,315	49.72	2,294,685
Michigan Bell Telephone Company. .	8,400,000	1,150,000	13.69	7,250,000
Indiana Bell Telephone Company . .	2,341,000	1,954,982	83.51	386,018
Wisconsin Telephone Company. . . .	5,566,000	2,400,000	43.12	3,166,000
Illinois Bell Telephone Company. .	9,925,000	2,400,000	24.18	7,525,000
Northwestern Bell Tel. Co.	7,387,000	4,000,000	54.15	3,387,000
Southwestern Bell Tel. Co.	7,100,000	1,450,000	-	8,550,000
Mountain States Tel. and Tel. Co. .	1,560,000	550,000	35.26	1,010,000
Pacific Tel. and Tel. Co..	5,525,000	1,498,000	-	7,023,000
American T.and T.Co., Long Lines .	38,875,000	20,729,570	53.32	18,145,430
Eastern Tel.and Tel.Co. (Canada) .	355,000	355,000	100.00	0
Transpacific Communication Co.,Ltd.	575,000	462,000	80.35	113,000
Authorized transfer of unused balances (b)	296,000	-	-	296,000
Total	c)$169,388,000	$93,883,389	55.43	$75,504,611

(a) Does not reflect advances made under special authorizations as follows:

New York Telephone Company	$ 68,800,000
Ches.and Pot.Tel.Co. (N.Y.)	2,000,000
Ohio Bell Telephone Company	29,630,685
Total	$100,430,685

(b) Authorized by Executive Committee December 16, 1931 $500,000
Allocated to:

New England Tel.and Tel.Co. . . .	$241,000	
Eastern Tel.and Tel.Co. (Canada).	55,000	$296,000

(c) Authorized by Executive Committee January 14, 1931.

Note: Amounts shown in red represent payments in excess of advance made.

Date issued - January 30, 1932.

C. A. Heiss,
Comptroller.

[fol. 6000] DEPOSITION EXHIBIT No. 38

Excerpts

(Page 4, first 3 paragraphs:)

"The Advantages of Planning

"In order to meet the requirements of the telephone business, the Engineering Departments of the System are constantly developing new designs and changing present designs with the object of improving the quality of, or reducing the cost of telephone service. This means that the products that we are manufacturing are constantly undergoing development, with the result that we are continually confronted with changing manufacturing problems.

"The decisions reached by the various organizations of the Bell System to proceed with the introduction of the new and changed designs just referred to are based entirely on improved service, lower costs, or both; consequently, before any work on new developments can be done the Manufacturing Department must furnish firm estimates of the cost of one or any number of pieces of apparatus that may be required.

"This is made possible by our ability to plan a job in detail on paper and to make an accurate appraisal of the manufacturing costs before production is started. The cost established, selling prices can be determined, and a final decision made by the System as to the merits of any new development."

[fol. 6001]

EXHIBIT A–32

Per Cent Condition of Station Apparatus Inspected at 1174 Subscribers' Stations (Includes Per Cent Condition of Teletypewriters in Same Account)

Account 231

Subscribers' Telephone Equipment

Component parts	No. insp.	Good condition	Fair condition	Poor condition	Average%	Ratio of total	Composite
1—Transmitter	1065	976–92%	74–77%	15–62%	90.54	8.65	7.83
2—Receiver	1065	1002–94%	53–87%	10–79%	93.51	7.71	7.21
3—Pedestal & Base	962	811–90%	99–71%	52–52%	85.99	15.67	13.47
4—Hand Set	109	106–98%	1–95%	2–92%	97.06	4.37	4.24
5—Hand Set Mtg.	109	108–97%	0–90%	1–83%	96.88	1.68	1.63
6—Dial	299	278–92%	17–75%	4–58%	90.60	3.34	3.03
7—Rec. Cord	1174	1091–83%	47–50%	36–17%	79.65	1.51	1.20
8—Inst. Cord	1069	965–83%	49–50%	55–17%	78.10	3.17	2.48
9—Signal Case	1118	1084–96%	29–88%	5–80%	95.75	27.54	26.36
10—*7 Coin Coll.	461	435–96%	22–90%	4–84%	96.68	17.18	16.43
11—*50 Coin Coll.	141	131–95%	9–84%	1–73%	94.18	6.20	5.84
12—Sta. Protector	785	775–97%	7–90%	3–83%	96.89	2.98	2.89
Total Subscribers' Telephone Equipment Per Cent Condition						100.00	92.61
Relation to Total Class	....	....	....	....	92.61	97.25	90.06

Teletypewriter Equipment

Type *	No. insp.	Good condition	Fair condition	Poor condition	Zero condition	Average %	Ratio of total	Composite
10	32	....	..	....	32	0.0	14.14	0.00
12	169	....	..	169	..	25.0	28.24	7.06
13	72	....	72	....	..	80.0	21.01	16.80
14	353	353	..	....	..	90.0	32.71	29.44
15	23	23	..	....	..	90.0	3.90	3.51
Total	649	376	72	169	32	....	100.00	....
Total Teletypewriter Equipment Per Cent Condition	....	....	..	....	..			56.81
Relation to Total Class	....	....	..	....	..	56.81	2.75	1.56
Composite Per Cent Condition	....	....	..	....	..	......	100.00	91.62

[fols. 6002 & 6003]

EXHIBIT A-32

Per Cent Condition of Station Apparatus Inspected at the Warehouse and which had been Removed from Subscribers' Premises in Connection with the Station Movement in the Regular Course of Business

(Equivalent of 3538 Stations)

Account 231

Component parts	Good condition	Fair condition	Poor condition	Average %	Ratio of total	Composite
1—Transmitter	3124-92%	42-77%	40-62%	91.43	8.65	7.91
2—Receiver	2985-94%	94-87%	127-79%	93.20	7.71	7.19
3—Pedestal & Base	2815-90%	143-71%	121-52%	87.62	15.67	13.73
4—Hand Set	323-98%	6-95%	3-92%	97.89	4.37	4.28
5—Hand Set. Mtg.	326-97%	4-90%	2-83%	96.83	1.68	1.63
6—Dial	552-92%	2-75%	0-58%	91.94	3.34	3.07
7—Receiver Cords	3416-83%	56-50%	66-17%	81.25	1.51	1.23
8—Instrument Cords	3161-83%	121-50%	129-17%	79.33	3.17	2.51
9—Signal Case	3092-96%	98-88%	63-80%	95.52	27.54	26.29
10—*7 Coin Collectors	1698-96%	194-90%	51-84%	96.09	17.18	16.34
11—*50 Coin Collectors	72-95%	8-84%	8-73%	92.00	6.20	5.70
12—Protector	0-97%	0-90%	0-83%	City 96.89	2.98	City 2.89
				Av.		Av.
Total	....	....	....	.....	100.00	.....
Per Cent Condition	....	....	....	.....	.....	92.77

NOTE.—This inspection was made for the purpose of checking the results of the inspection made at subscribers' stations to determine whether the latter was representative.

[fol. 6004] IN UNITED STATES DISTRICT COURT

[Title omitted]

STIPULATION FOR TRANSCRIPT OF RECORD—Filed Oct. 24, 1933

It is hereby stipulated and agreed by and between the parties hereto, by their respective counsel, that, in addition to the transcript of record now in the Supreme Court of the United States in the case of Lindheimer, et al., v. Illinois Bell Telephone Company, No. 440, October Term, 1933, the following portions of the record shall constitute the transcript of record on the appeal to the Supreme Court of the United States by Plaintiff, the same as if directed by præcipe for record, and the following portions of the record shall be certified by the Clerk for said appeal:

1. Placita.

2. Petition for appeal filed by Illinois Bell Telephone Company in said cause on September 26, 1933.

3. Plaintiff's assignment of errors filed in said cause on September 26, 1933.

[fol. 6005] 4. Statement showing basis of jurisdiction of the Supreme Court (entitled "Jurisdictional Statement on Cross-Appeal"), filed by Illinois Bell Telephone Company on September 26, 1933.

5. Order allowing appeal of Illinois Bell Telephone Company entered in said cause on September 26, 1933.

6. Bond on Appeal filed by Illinois Bell Telephone Company on September 26, 1933, and approved on the same date.

7. Citation in said cause issued on September 26, 1933, together with proof of service thereof.

8. Notice to appellees given pursuant to Rule 12, paragraph 2, Rules of the Supreme Court of the United States, and proof of service thereof.

9. Stipulation for Additional and Supplemental Statement of Evidence, filed October 24, 1933.

10. Order approving Additional and Supplemental Statement of Evidence, entered October 24, 1933.

11. Additional and Supplemental Statement of Evidence, filed and approved October 24, 1933.

12. This Stipulation for Transcript of Record.

Charles M. Bracelen, William H. Thompson, Edward L. Blackman, Kenneth F. Burgess, Leslie N. Jones, Solicitors for Plaintiff. Otto Kerner, Attorney General of the State of Illinois; Benjamin F. Goldstein, Edmund D. Adcock, Geo. I. Haight, Wm. H. Sexton, Solicitors for Defendants.

[fol. 6006] Clerk's certificate to foregoing transcript omitted in printing.

[fols. 6007–6009] Citation in usual form showing service on Otto Kerner et al., filed September 28, 1933, omitted in printing.

[fol. 6010] IN SUPREME COURT OF THE UNITED STATES

STATEMENT OF POINTS UPON WHICH APPELLANT INTENDS TO RELY, MADE PURSUANT TO RULE 13 OF RULES OF THE SUPREME COURT OF THE UNITED STATES, AND DESIGNATION OF PARTS OF RECORD TO BE PRINTED.—Filed Oct. 25, 1933

Illinois Bell Telephone Company, appellant, states that the points upon which it intends to rely upon its appeal herein are as follows:

I. Valuation

The statutory court undervalued the property of the plaintiff by a substantial amount in each of the years involved in the case. Such undervaluation is in large part *of* the result of the court's errors in the following respects:

[fol. 6011] A. The court undervalued plaintiff's physical property new by approximately 5% in 1930, 10% in 1931, and 15% in 1932, and in those years departed from the method which it had adopted in finding such values for the years 1923 to 1929, inclusive, in that it disregarded the prices for telephone apparatus current in the years 1930 to 1932, inclusive, and rejected for those years plaintiff's appraisal of its physical property new.

The court's action in this respect is not sustained by the evidence.

B. The amount found and deducted by the court in each year for existing depreciation in the property is approximately twice the amount shown by the evidence.

C. The amount found and allowed by the court in each year for the element of going value is approximately one-half of the amount shown by the evidence.

The foregoing points are covered by plaintiff's Assignments of Error Nos. 1 to 8, inclusive, upon which the plaintiff relies.

II. Operating Expenses

The statutory court disallowed substantial amounts of the plaintiff's reasonable and proper operating expenses in each of the years involved in the case, specifications whereof are as follows:

A. The court's allowance for the annual charge for depreciation is less in each year than the reasonable and proper amount shown by the evidence, such deficiency in the allowance in the several years ranging from approximately $1,100,000 to $2,100,000.

B. The amount found by the court and included in the plaintiff's reasonable operating expenses on account of the services rendered to the plaintiff by the American Telephone and Telegraph Company under the license contract is less in each year than the amount shown by the evidence, by sums ranging from approximately $200,000 to $630,000 in the several years, respectively.

C. The court, in determining the plaintiff's reasonable operating expenses for the period subsequent to November 1, 1930, deducted an amount equal to 10% of plaintiff's purchases from the Western Electric Company during that period attributable to maintenance and other expense accounts.

This action by the court is not sustained by the evidence.

The foregoing points are covered by plaintiff's Assignments of Error Nos. 9 to 16, inclusive, upon which the plaintiff relies.

III. Net Earnings

The statutory court's findings of the net earnings of plaintiff, under the rates charged and under the contested rates, are excessive by the amount of the operating expenses erroneously disallowed, as above set forth. Its findings of the rate per cent of such net earnings to the fair value of the property are likewise excessive, both by reason of the undervaluation of the property and the disallowance of operating expenses, as above set forth.

[fol. 6013] This point is covered by plaintiff's Assignments of Error Nos. 17 to 25 (except No. 21), inclusive, upon which the plaintiff relies.

IV. Fair Rate of Return

The statutory court erred in finding that the fair rate of return was 6½% for the year 1931 and 5½% for the year 1932 (Assignment of Error No. 21).

Appellant further states that the parts of the record which it thinks necessary for the consideration of the foregoing points are contained in the transcript of record heretofore returned and filed in this court upon the appeal herein of the defendants, and that the only additional parts of the record which it thinks necessary to be printed for the consideration of the court upon the present appeal are the following papers herein, namely:

1. Petition for Appeal filed herein by Illinois Bell Telephone Company, plaintiff, on September 26, 1933.
2. Plaintiff's Assignment of Errors filed herein on September 26, 1933.
3. Statement of Basis of Jurisdiction of the Supreme Court (entitled Jurisdictional Statement on Cross-Appeal) filed herein by plaintiff on September 26, 1933.
4. Order Allowing Appeal of Illinois Bell Telephone Company entered herein on September 26, 1933.
5. Bond on Appeal of Illinois Bell Telephone Company filed and approved on September 26, 1933.
6. Citation issued herein on September 26, 1933, together with proof of service thereof.
7. Notice pursuant to Rule 12, paragraph 2 of the Rules of the Supreme Court of the United States, and proof of service thereof.

[fol. 6014] 8. Stipulation for additional and supplemental statement of evidence, filed October 24, 1933.

9. Order approving additional and supplemental statement of evidence entered October 24, 1933.

10. Stipulation for transcript of record filed October 24, 1933.

11. Exhibits D-20, D-21 and D-23, as the same appear in the additional and supplemetnal statement of evidence herein.

Charles M. Bracelen, William H. Thompson, Edward L. Blackman, Kenneth F. Burgess, Solicitors for Appellants.

Service of the above and foregoing is acknowledged this 24th day of October, 1933.

Benjamin F. Goldstein, Otto Kerner, Attorney General; Wm. H. Sexton, Corp'n Counsel; Geo. I. Haight, Edmund D. Adcock, Solicitors for Appellees.

[fol. 6015] [File endorsement omitted.]

[fol. 6016] IN SUPREME COURT OF THE UNITED STATES

DESIGNATION OF ADDITIONAL PARTS OF RECORD TO BE PRINTED —Filed Oct. 25, 1933

Appellees state that the additional parts of the record which they think necessary to be printed for the consideration of the Court upon the present appeal is the balance of the additional and supplemental statement of evidence herein not designated by appellant.

Otto Kerner, Attorney General; Wm. H. Sexton, Corp'n Counsel; Benjamin F. Goldstein, Geo. I. Haight, Edmund D. Adcock, Solicitors for Appellees.

[fols. 6017 & 6018] Service of the above and foregoing is acknowledged this 24th day of October, 1933.

Charles M. Bracelen, William H. Thompson, Edward L. Blackman, Kenneth F. Burgess, Leslie N. Jones, Solicitors for Appellants.

[fol. 6019] [File endorsement omitted.]

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SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1933

No. 440

BENJAMIN F. LINDHEIMER AND OTHERS, CONSTITUTING THE ILLINOIS COMMERCE COMMISSION OF THE STATE OF ILLINOIS; OTTO KERNER, ATTORNEY GENERAL OF THE STATE OF ILLINOIS, AND THE CITY OF CHICAGO, APPELLANTS,

vs.

ILLINOIS BELL TELEPHONE COMPANY.

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF ILLINOIS.

STATEMENT SHOWING BASIS OF JURISDICTION AS REQUIRED BY RULE 12.

In compliance with Rule 12 of this Court, appellants state:

(*a*)

The basis of this Court's jurisdiction is that this case was heard by the Federal statutory court of three judges sitting in the District Court, Northern District of Illinois, Eastern Division, under the provisions of Section 266 of the Judicial Code as amended (Sec. 380, Title 28, U. S. Code annotated), which provides for a direct appeal to the Supreme Court from a final decree granting or denying a permanent injunction of a suit of the character of this one.

(*b*)

The decree herein sought to be reviewed was entered by said court on June 28, 1933, and the application for the appeal to this Court was presented to said court on June 28, 1933, and the order allowing appeal was entered June 28, 1933.

(*c*)

The Illinois Bell Telephone Company filed its bill of complaint in said district court to restrain the Illinois Commerce Commission, a body duly created by the statutes of the State of Illinois, and the Attorney General of said State from enforcing against the plaintiff certain rates for telephone service fixed for the city of Chicago by said Commission, through its order of August 16, 1923. The bill alleged that the rates so fixed did not afford a fair return upon the fair value, at the time of use, of its property, used and useful in and exclusively devoted to intrastate telephone service in the said city of Chicago, but that said rates were confiscatory, unfair and unreasonable, and contrary to law and void, and in violation of the plaintiff's rights under the 14th Amendment of the Constitution of the United States.

The city of Chicago was given leave to intervene by an order entered September 27, 1923, and an interlocutory decree was entered December 21, 1923, from which an appeal was taken to this Court, and said interlocutory decree was affirmed October 19, 1925 (*Smith et al.* v. *Illinois Bell Telephone Company,* 269 U. S. 531). A final decree was entered on February 28, 1930, from which an appeal was taken to this Court and said final decree was reversed (*Smith et al.* v. *Illinois Bell Telephone Company,* 282 U. S. 133). Additional evidence was heard, pursuant to the mandate of this Court, following which the final decree herein sought to be reviewed was entered on June 28, 1933.

The final decree entered June 28, 1933, held that the telephone rates prescribed for the city of Chicago by said Illinois Commerce Commission's order of August 16, 1923, were confiscatory and deprived plaintiff of its property without due process of law and denied plaintiff equal protection of the law under the Federal Constitution.

(*d*)

The jurisdiction of this Court is sustained by the said statutory provision granting direct appeal from the order of the district court in such case (Section 266 of the Judicial Code, Title 28, Sec. 380 U. S. Code).

Interstate Busses Corporation v. *Blodgett*, 276 U. S. 245.

Benjamin F. Lindheimer,
Ernest J. Kruetgen,
Andrew Olson,
G. Gale Gilbert,
Phil. W. Collins,
Paul Samuell,
Charles E. Byrne,
Constituting the Illinois Commerce Commission.
Otto Kerner,
Attorney General of the State of Illinois.
City of Chicago,
Appellants,
By Wm. H. Sexton,
Corporation Counsel.
Benjamin F. Goldstein,
George I. Haight,
Edmund D. Adcock,
Special Attorney.

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1933

No. 440

BENJAMIN F. LINDHEIMER and Others, Constituting the Illinois Commerce Commission of the State of Illinois; OTTO KERNER, Attorney General of the State of Illinois, and the CITY OF CHICAGO, Appellants,

vs.

ILLINOIS BELL TELEPHONE COMPANY.

MOTION BY APPELLANTS TO ADVANCE CASE.

And now come all of said appellants, by their solicitors, and move that a hearing of the said cause be advanced to January 15, 1934, or to an early date thereafter. By agreement, appellants' brief is to be printed and delivered to appellee on November 22, 1933, and appellee's brief is to be printed and delivered to appellants on January 3, 1934. On the basis of that agreement, appellee has no objection to this motion to advance the hearing of this cause.

A Statement of the Matters Involved.

Appellants appeal from the final decree entered on June 28, 1933, by the District Court of the United States for the Northern District of Illinois, Eastern Division, pursuant to Section 266 of the Judicial Code, enjoining them from enforcing on grounds of confiscation the rates for telephone service in the city of Chicago prescribed by the final order of the Illinois Commerce Commission made August 16, 1923, and directing that appellee retain the amounts collected by it during the period of the litigation in excess of the sums chargeable under the said order, which amounts now aggregate in excess of $17,000,000, exclusive of interest.

The final decree herein, incorporating by reference the district court's opinion of April 29, 1933, was entered as a result of hearings held pursuant to the opinion and decree of this Court given on December 1, 1930, in the case of *Smith* v. *Illinois Bell Telephone Company*, 282 U. S. 133, which reversed the final decree of the district court theretofore entered on February 28, 1930, and remanded the cause for further hearings in conformity therewith.

The final decree of June 28, 1933, embraces certain findings, which we summarize and explain as follows:

1. *Fair Return.*

The district court found that, to avoid confiscation, the fair return on the rate base as found by it was 7½ per cent for each of the years 1923 to 1927 inclusive, 7 per cent for the years 1928 to 1930 inclusive, 6½ per cent for 1931, and 5½ per cent for 1932. The record shows that such rate of return would enable appellee to pay interest and amortization on money borrowed and would yield to appellee's stockholders on their investment allocable to appellee's Chicago intrastate business a rate of return on capital stock ranging from 10.94 per cent in 1931 to 21.04 per cent in 1925, and a rate of return on capital and surplus ranging from 9.47 per cent in 1931 to 18.95 per cent in 1923. Such rate of return was exclusive of and in addition to the advantages of pecuniary profit to the investors of appellee, specified below, allowed by the district court, and not received by ordinary investors in other business undertakings outside the Bell System. The record shows that the recorded net income from the existing rates under which appellee had functioned during the period of the litigation and on the basis of which it had doubled its capital investment, would yield a return of from 4.37 per cent to 5.86 per cent on the rate base as found by the district court. From such recorded income appellee was able to pay an 8 per cent cash dividend each year during the litigation on such outstanding capitalization, and to carry $8,950,000 to surplus. The record also shows that the reduction in recorded net income which would have resulted had the rates in suit been in force, ranged from $454,000 to $614,000 during the years 1923 to 1927 inclusive, $1,200,000 in 1928 and 1929, $892,000 in 1930, and $228,000 in 1931, and for the entire period aggregated $6,420,000.

The district court applied to appellee that part of the standard of the Bluefield case covering the required minimum return by comparison with the return generally received by investors in other business undertakings on the basis that appellee was an ordinary public utility bearing the ordinary relationship to its investors. Such application failed to give effect to the fact that appellee was part of a system which functioned under a mutual plan of operation, under which appellee burdened its operations for the benefit of the American Telephone & Telegraph Company as consideration for the reciprocal benefits from that company as its investor and as its financing agency. The district court gave effect to the burdens on appellee in its findings on separation of revenues, license contract service and payments, Western Electric Company, maintenance, and value of property in service for rate making purposes, but failed to give effect to the reciprocal benefits to be received from the American Telephone & Telegraph Company in its findings on fair return.

The district court's findings on fair return failed to give effect to appellee's actual experience during the period under investigation under the recorded income from the existing rates, and to the comparable actual experience of the Associated Companies of the Bell System, and failed to make any application of that part of the standard of the Bluefield case covering the required minimum return to attract capital and to maintain the stability of the securities of the complaining utility.

2. *Separation of Revenues.*

The district court, without discussion, followed appellee's allocation for each year under investigation to interstate toll business of substantial portions of gross and net revenues arising under the existing rates—ranging from \$350,000 to \$650,000, and from \$260,000 to \$500,000 respectively, and of substantial portions of net revenues arising under the rates in suit—ranging from \$254,000 to \$485,000 respectively. Similar allocation was made of portions of the Chicago intrastate exchange service revenues under the existing rates to the intrastate toll business—ranging from \$650,000 to \$1,300,000, and from \$450,000 to \$1,050,000 respectively. The above separation was made on the basis of an alleged universal understanding that the Chicago exchange service rates compensate appellee for every interstate and intrastate toll use of the Chicago exchange plant facilities by the subscribers to the toll services who may or may not be subscribers to the Chicago exchange service, or to any of the services of appellee. The record shows that such alleged understanding was not expressed in any filed rate schedules covering the Chicago exchange service rates, was not contained in any document filed in connection therewith, and disregarded appellee's fifty years' history of Chicago exchange service rate making and appellee's fifty years' history of its contractual relations with the operators of the toll services.

3. *License Contract Service and Payments.*

The district court, on the basis of appellee's presentation, included in appellee's license contract costs allocable to its operating expenses each year under investigation amounts ranging from $590,000 to $790,000, which included:

(*a*) A portion of the American Telephone & Telegraph Company's expenses applicable to it as a holding company investor of the securities of appellee covering the cost of raising capital to make the investment, of servicing the outstanding securities issued to raise such capital, and of operating 10 departments whose operations are concerned in whole or in part with its functions as such holding company investor;

(*b*) a portion of the American Telephone & Telegraph Company's Development and Research expense to develop inventions applicable to the non-telephone communication field, to the telephone communication field outside the field covered by Western Electric sales to its retail customers, and to the American Telephone & Telegraph Company as the operator of the long-distance service, as the holding company investor in the securities of appellee, and as the licensor, for valuable consideration, of the Western Electric Company to manufacture and sell to appellee products embodying the results of the development and research work covered by such expenses;

(*c*) a portion of the $30,395,800 transferred from 1923 to 1927 inclusive by the American Telephone & Telegraph Company to its reserve for contingencies.

4. *Depreciation Expense.*

The district court found depreciation expense charges property chargeable as operating expenses under the existing rates and under the rates in suit during each year under investigation, which exceeded the charges prescribed by the Commission's Order of December 20, 1920, establishing the telephone rates in force during the litigation, and by the Commission's Order of August 16, 1923, establishing the telephone rates attacked herein. Such allowed annual charges were from $1,100,000 to $1,500,000 more than those prescribed by the 1920 order, and from $1,200,000 to $3,400,000 more than those prescribed by the 1923 order.

The district court gave no effect to the facts that (*a*) the commission's order on depreciation in each case was made pursuant to the statutory provision in effect in Illinois, (which statutory provision exists in fifteen other States), obligating the utility to conform its depreciation charges to the amount fixed by the commission in the exercise of its power granted under such statute; (*b*) no attack has ever been made on the 1920 order and no ground exists to hold void that portion thereof covering depreciation; and (*c*) when attacked, the 1923 order on depreciation must be treated with the respect to be attached to a legislative act. The district court made no finding that either the 1920 order or the 1923 order on depreciation was void, but made findings which gave effect to appellee's showing on depreciation expense which showing (*a*) included substantial annual contributions computed on the straight line method for anticipated depreciation on future additions to buildings and central office equipment contemplated to be acquired, and to be placed in service from time to time in 1974, and (*b*) gave effect to its reproduction cost estimate for each year.

5. *Western Electric Company.*

The district court, on the basis of appellee's presentation, found—(*a*) the costs, profits and investment allocable to Bell business separated from that allocable to non-Bell business; (*b*) the relationship between such costs, profits and investment so determined for Bell business and that for business with appellee; and (*c*) the reasonableness of the profits from business with appellee so determined—in each case on the basis of the permanent continuous relationship of the Western Electric Company and the Bell System throughout the period of the litigation and prior thereto to 1916, considered as a single unit of time. The district court did not determine the Western Electric profits from Bell business and from appellee and the reasonableness thereof in the light of the different uses made of the Western Electric prices in connection with the estimates upon which the charge of confiscation was predicated for each year of the litigation, as found by the Court. The record shows that such uses cover (*a*) the substantial purchases made each year attributable to maintenance and other expense charges; (*b*) the purchases over a period of years reflected by the book cost of plant of each year; and (*c*) the assumed purchases which would be made during the group of years of the assumed construction period for appellee's reproduction estimate of the plant in service each year on the basis of the Western Electric prices of the year of revaluation.

On the basis of the district court's finding of Western Electric profits from Bell business and from business with appellee for each of the years 1923 to 1931 inclusive, the rate of return to Western Electric therefrom for each such years viewed as a separate unit of time is grossly excessive.

6. *Maintenance.*

The district court found as a proper expense charge for each year of the litigation the amount of maintenance charges shown by appellee, which maintenance charges covered substantial purchases from the Western Electric Company ranging from $1,446,000 to $4,520,000 per year during the years when the Western Electric Company profits from its business with appellee as found by the district court were grossly excessive.

7. *Value of Property for Rate Making Purposes.*

The district court found the fair value of the Chicago intrastate property in service for each of the years under investigation based upon the reproduction cost estimate of appellee. Such fair value was from 40 per cent to 80 per cent more than appellee's capitalization, including surplus, allocable to such business in each year. Such findings of fair value (*a*) gave effect to appellee's reproduction cost new estimates of the physical property, based upon the application of index numbers and of the Western Electric prices of the year of revaluation, (*b*) were not based on appraisals of the property other than land and buildings, and (*c*) gave effect to appellee's showing of undistributed construction costs (overheads) which were from three to five times the amount of overheads shown by appellee's experience during the period under investigation, when its plant account increased over 85 per cent.

The district court's finding on undepreciated value new of the property in service gave effect to the reproduction cost new estimates for each year under investigation, except that for the years 1930, 1931 and 1932 it reduced the same by 10 per cent to eliminate the effect of the 10 per cent increase in Western Electric prices in 1930.

The district court's finding of rate base (*a*) included for going value amounts which were more than twice the amounts prescribed by the Illinois Commerce Commission's order of August 16, 1923, and represented from 13 per cent to 16 per cent of the capitalization allocable to the Chicago intrastate service, including over $50,000,000 of capital invested during the period of the litigation on the basis of purchasing appellee's securities at or below par, and (*b*) deducted for depreciation in valuation 16 per cent of the reproduction cost new estimates for the years 1923 to 1928, inclusive, and 15 per cent for the succeeding years, which deductions were from $4,700,000 to $17,300,000 less than the amounts in the depreciation reserve account as of the same dates, on the basis of the district court's findings on depreciation expense.

Reasons for the Application for Advancement.

1. This is a case once adjudicated by this Court upon the merits, and again brought up (Paragraph 5 of Rule 20 of the Rules of Practice of the United States Supreme Court).

2. The pendency of this case has prevented, since 1923, and now prevents, any further investigation into the rates, revenues, and expenses of appellee, as many of the questions which must arise in such investigation are awaiting final disposition of this case.

3. Many issues arising from the relationships between appellee and the American Telephone & Telegraph Company covering revenues, expenses and rate of return awaiting final disposition in this case are also present in every investigation before the Illinois Commerce Commission relating to the proper rates to be charged by appellee in the many communities in the State of Illinois.

4. Disposition of this case should dispose of and settle the controversy as to the proper rules covering the account-

ing between the holding company and its subsidiary operating utilities, the weight to be given to reproduction cost new of property, the propriety of deducting from the valuations of property, for rate making purposes, the amount included in the reserve for depreciation, and the jurisdiction of State commissions over the method of determining the amount of depreciation expenses of telephone companies, and the proper application of the standard of the Bluefield case to the mutual plan of operation, under which the twenty-four Bell Telephone Operating Companies functioned.

5. The difficulty of identifying the subscribers to whom refund must be made, should the final decree be reversed by this Court, is so increasing with time as to tend to render such reversal ineffective as to charges already made.

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Ernest J. Kruetgen,
Andrew Olson,
G. Gale Gilbert,
Phil W. Collins,
Paul Samuell,
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Constituting Illinois Commerce
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IN THE

Supreme Court of the United States

October Term, A. D. 1933.

No. 440

BENJAMIN F. LINDHEIMER, ERNEST J. KRUETGEN, ANDREW OLSON, G. GALE GILBERT, PHIL. W. COLLINS, PAUL SAMUELL and CHARLES E. BYRNE, the persons constituting the Illinois Commerce Commission of the State of Illinois, and OTTO KERNER, Attorney General of the State of Illinois,

Appellants;

and

CITY OF CHICAGO, a municipal corporation,

Appellant,

vs.

ILLINOIS BELL TELEPHONE COMPANY,

Appellee.

Appeal from District Court of the United States, for the Northern District of Illinois, Eastern Division (3746).

BRIEF AND ARGUMENT FOR APPELLANTS.

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CHAMPLIN-SHEALY COMPANY, CHICAGO 365

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IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1933.

No. 440

BENJAMIN F. LINDHEIMER, ERNEST J. KRUETGEN, ANDREW OLSON, G. GALE GILBERT, PHIL. W. COLLINS, PAUL SAMUELL and CHARLES E. BYRNE, the persons constituting the Illinois Commerce Commission of the State of Illinois, and OTTO KERNER, Attorney General of the State of Illinois,
Appellants,

and

CITY OF CHICAGO, a municipal corporation,
Appellant,

vs.

ILLINOIS BELL TELEPHONE COMPANY,
Appellee.

APPEAL FROM DISTRICT COURT OF THE UNITED STATES, FOR THE NORTHERN DISTRICT OF ILLINOIS, EASTERN DIVISION (3746).

BRIEF AND ARGUMENT FOR APPELLANTS.

EXPLANATION OF TERMS.

American Bell	American Bell Telephone Company, predecessor of American Telephone & Telegraph Co.
American Company	American Telephone & Telegraph Company.
Appendix	Note: The Appendix is printed in a separate volume.
Associated Companies	Licensee companies of the American Company in the United States.
A. T. & T.	American Telephone & Telegraph Company.
Automatic Electric	Automatic Electric Company, an Illinois corporation.
Bluefield Case	*Bluefield Waterworks & Improvement Co.* v. *Public Service Commission of West Virginia,* 262 U. S. 679.
Central Union	Central Union Telephone Company.
Chicago Company	Chicago Telephone Company to 1921, and Illinois Bell Telephone Company since 1921.
Commission	The Illinois Public Utilities Commission prior to 1921, and the Illinois Commerce Commission, successor thereto thereafter.
Denver Water Company Case	*Denver* v. *Denver Water Company,* 246 U. S. 178.
Graybar	Graybar Electric Company.
Houston Case	*Houston* v. *Southwestern Bell Tel. Co.,* 259 U. S. 318.

International Standard Electric	International Standard Electric Company, successor to International Western Electric Co.
International Western	International Western Electric Company, Inc., a subsidiary of Western.
Los Angeles Case	*Los Angeles Gas & Electric Co.* v. *Railroad Commission*, 289 U. S. 287.
McCardle Case	*McCardle* v. *Indianapolis Water Co.*, 272 U. S. 400.
Minnesota Rate Cases	Minnesota Rate Cases, 230 U. S. 352.
Missouri Rate Cases	Missouri Rate Cases, 230 U. S. 424.
Northern Electric	Northern Electric Company, Ltd.
O.R.	Old Record, being Volumes I to VII of the record in this case before this Court in the October Term 1930, containing the evidence introduced during the 1929 hearings.
Products	Electrical Research Products, Inc., a subsidiary of Western.
R. .... Record	Note: Roman numeral following "R." (for example R. I) indicates Record Vol. I. Similarly R. I, 40—for example — indicates Record Vol. I, page 40.
Smith Case	*Smith* v. *Illinois Bell Tel. Co.*, 282 U. S. 133.
Southwestern Bell Case	*State of Missouri ex rel. Southwestern Bell Tel. Co.* v. *Public Service Commission of Missouri*, 262 U. S. 276.

Telephone plant	Appellee's physical property exclusive of land, buildings and general equipment.
United Railways Case	*United Railways & Electric Co. of Baltimore* v. *West*, 280 U. S. 234.
Wabash Valley Electric Case	*Wabash Valley Electric Co.* v. *Young*, 287 U. S. 488.
Western	Western Electric Company, an Illinois corporation to 1915, and a New York corporation since 1915.
Western Union	Western Union Telegraph Co.
Willcox Case	*Willcox* v. *Consolidated Gas Co.*, 212 U. S. 19.

BRIEF ON BEHALF OF APPELLANTS.

Opinion of the District Court.

The Opinion of the District Court (R. III, 2502) is reported in 3 Fed. (Supp.) 595 (1933).

Jurisdiction.

This is a direct appeal from a final decree (R. III, 2524), entered on June 28, 1933, by the District Court of the United States for the Northern District of Illinois, Eastern Division, pursuant to Section 266 of the Judicial Code, enjoining from enforcement, on grounds of confiscation, the rates for telephone service in the City of Chicago prescribed by the final Order of the Illinois Commerce Commission made August 16, 1923 (O.R. I, 14). This Court found jurisdiction on October 9, 1933. On motion by Appellants, this case was advanced and oral argument set for January 15, 1934.*

Appellee filed a Cross-Appeal (R. IX, 4969).

Statement of the Case.

Appellants here are the members of the Illinois Commerce Commission (hereinafter referred to as Commission), the Attorney General of the State of Illinois, who were defendants in the Court below, and the City of Chicago which was permitted to intervene as a defendant (O.R. I, 178). Appellee is the Illinois Bell Telephone Company

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*A copy of this brief and the Appendix were delivered on November 27, 1933, to each of Appellee's counsel as per agreement of counsel.

(hereinafter referred to as Company), which was complainant in the Court below.

The Commission's Order of August 16, 1923, the enforcement of which was enjoined below, reduced the rates for four classes of coin box telephone service charges as fixed by the Public Utilities Commission (the predecessor of the present Commission) by Order of December 20, 1920 which is still in force (R. III, 2485). On December 21, 1923, the District Court granted the Company a temporary injunction, upon condition that it agree to refund to its subscribers the amounts paid by them in excess of the sums chargeable under the Commission's Order, should the relief prayed be finally denied. This fund now aggregates in excess of $18,200,000 exclusive of interest (R. VII, 4082).

Upon appeal by Appellants, the interlocutory decree was affirmed by this Court on October 19, 1925 (*Smith* v. *Illinois Bell Telephone Co.*, 269 U. S. 531). A final decree was entered on February 28, 1930 (O.R. I, 199). Appeal therefrom was taken to this Court and reversal had (*Smith* v. *Illinois Bell Telephone Co.*, 282 U. S. 133). Appellants' motion for a decree dismissing the Bill of Complaint was denied by Order of the District Court (R. III, 2484). Appellants' Motion in this Court for leave to file Petition for the Writ of Mandamus for the annulment of said Order was denied on April 13, 1931 (283 U. S. 794). Appellants' Appeal to this Court from such Order was dismissed May 25, 1931 (283 U. S. 808).

The final decree herein (R. III, 2524), incorporating by reference the District Court's Opinion of April 29, 1933 (R. III, 2502), was entered on June 28, 1933, after two years of exchange of information, extensive takings of depositions by Appellants in New York City (R. III, 2495, 2498), on motions by Appellants for the production of documents (R. III, 2493; R. IX, 4973), and after five months' hearings had been had commencing February 23, 1932, on the additional evidence adduced in pursuance of the Mandate of this Court (R. III, 2479).

The District Court found the intrastate revenues for each of the years 1923 to 1931, inclusive, on the basis of Appellee's presentation.

The District Court found the operating expenses under the existing rates, on the basis of Appellee's presentation, subject to three adjustments. It reduced Appellee's license payment as proper operating expense for the years 1923 to 1928, inclusive. Such reductions ranged from $31,000 to $631,000 per year (Appendix, p. 128). It reduced the depreciation expense charges for each of the years 1923 to 1931, inclusive. Such reductions ranged from $1,100,000 to $2,100,000 per year (Appendix, p. 95). It reduced the maintenance charges as operating expenses in the year 1931 by $366,000 (Appendix, p. 128).

The District Court found, on the basis of Appellee's presentation, the amounts by which the intrastate net earnings would have been reduced if the rates in suit had been effective. Such reductions ranged from $1,270,000 in the year 1932 to $1,740,000 in the year 1929 (R. III, 2521).

The District Court found the rate base, for the years 1923 to 1931, inclusive, on the basis of Appellee's presentation, subject to four adjustments: It reduced Going Value from 15% of the reproduction cost new estimate to 8% thereof (R. III, 2392-3; 2516). It increased the deduction from the reproduction cost new of the property to represent depreciation in valuation, from 9% thereof for the years 1923 to 1927, inclusive, as claimed by Appellee, to 16% thereof, and increased the deduction from 8% thereof, as claimed by Appellee for the years following thereafter, to 15% thereof (R. IV, 2850a; R. III, 2516). It reduced Appellee's reproduction cost new estimate for the years 1930 and 1931 as fair value by 10% thereof in each case to eliminate, as the District Court claimed, the effect of an increase of 10.2% in Western's prices in the year 1930, which prices were used by Appellee in its 1930 and 1931 reproduction cost estimate (R. III, 2519; Appendix, pp. 86, 93). It then made some further slight adjustments to round out the dollars involved (Appendix, pp. 93, 86). It found a rate base value for the year 1932 and stated that it was based on the maintenance of the 1929 price level of Western (R. III, 2508-9). The record closed July 1, 1932. The rate base in each year was based on the average of the reproduction cost new estimates at the beginning and end of the year of revaluation.

The District Court found 7½% as a fair return for the years 1923 to 1927 instead of 8% as claimed by Appellee; 7% for each of the years 1928 to 1930, inclusive, as claimed by Appellee; 6½% for 1931 and 5½% for 1932, instead of 7½% and 8%, respectively, as claimed by Appellee (R. III, 2591, 2397).

The District Court found that Appellee's return under the existing rates for the years 1923 to 1931, inclusive, ranged from 4.8% to 5.8%, and that if the rates in suit had been in effect, the rate of return under the attacked rates would have been from 4% to 4.9% per year (R. III, 2521).

The District Court made no finding covering the adequacy or inadequacy of the return under the existing rates but found the attacked rates confiscatory for each year of the litigation and at the date of its decree (R. III, 2522).

The District Court found Appellee's separation of interstate and intrastate property, revenues and expenses to be "reasonably accurate" (R. III, 2504). Appellee's separation included the allocation to interstate toll services of substantial amounts of intrastate exchange service gross and net revenues under the existing rates and under the rates in suit. Such amounts range from $260,000 to $650,000 per year (R. VII, 4354a).

The District Court found the license payments as proper operating expenses for the period 1923 to 1927, inclusive, to be from $1,650,000 to $1,900,000 per year. Such amounts covered rental of telephone instruments and services. For the years 1928 to 1931, inclusive, it allowed from $830,000 to $1,030,000 per year. Such amounts for these years covered services only as the telephone instruments had been sold to the Associated Companies in 1927 (R. III, 2509-12). The allowances for the years 1923 to 1928, inclusive, covered Appellee's portion of the American Company's total expenses allocated to License Contract operations (R. III, 2519-20). Such allowances for the years 1929 to 1931, inclusive, covered Appellee's License Contract payments to the American Company, which were less than Appellee's portion of the American Company's total expenses found by the District Court applicable to its License Contract operations (R. III, 2520). Included in the District Court's allowances for each year were amounts ranging from $590,000 to $790,000—and aggregating $6,129,428 for the period 1923 to 1931, inclusive—to cover (R. I, 861-4): (1) a portion of the American Company's Development and Research expense—aggregating $46,000,000 for the period—to develop inventions, whose use the American Company licensed to five manufacturers for valuable consideration; (2) a portion of the American Company's expenses—aggregating $11,032,000 for the period—applicable to it as a Holding Company investor of the securities of the Associated Companies. Such expenses were incurred by the American Company in direct sales to its own investors of new issues of securities during the period of the litigation, and in servicing all of the American Company's outstanding securities; (3) a portion of the American Company's expenses—aggregating $52,516,000 for the period—to operate ten departments, whose operations are concerned in whole or in part with its functions as such Holding Company investor; (4) a portion of the $30,395,800 appropriated by the American Company from 1924 to 1928, inclusive, to its Reserve for Contingencies. The District Court's allowances for each year did not give effect to (1) the American Company's use, without proper compensation, of Appellee's facilities and personnel in the sale of more than $52,000,000 of the American Company's securities in Appellee's territory; (2) the American Company's use of Appellee's resources, credit and management to finance the Central Union properties to liquidate $17,500,000 frozen assets of the American Company and to relieve it of further losses in connection therewith; (3) Appellee's surrender of its right to participate in the current receipts and profits of the American Company's Long Distance business transacted in Chicago as consideration for the use of the Chicago Exchange plant facilities in such business; (4) Appellee's portion of the $14,395,799 profit made by the American Company in 1927 in the sale to the Associated Companies of the telephone instruments theretofore licensed by it to them (R. VI, 4024).

The District Court found as proper annual depreciation allowances ranging from $4,000,000 to $7,400,000 per year (R. III, 2520). Such allowances, the District Court stated, gave consideration (1) to Appellee's recorded depreciation expense charges computed on the basis of the original cost of depreciable property, (2) to the allowances by the 1920 Order and by the 1923 Order, (3) to such charges and allowances adjusted in each case to give effect to the "present value" of the property to which they were applicable, and (4) to the experience of the Associated Companies (R. III, 2513). Such annual allowances were from $1,100,000 to $2,100,000 less than Appellee's corresponding claims for each year computed on the basis of the reproduction cost new estimate of its depreciable property. They were from $220,000 to $733,000 less than Appellee's corresponding book figures for each year based on the original cost of its property. They were from $1,100,000 to $1,500,000 more than the corresponding yearly allowances prescribed by the 1920 Order. They were from $1,200,000 to $3,400,000 more than the corresponding yearly allowances by the 1923 Order (Appendix, p. 95).

Approximately 40% of Appellee's claimed and recorded depreciation expense charges covered depreciation on buildings and central office equipment in service and anticipated depreciation on contemplated future additions thereto expected to be acquired and to be placed in service from time to time to 1974 (Appendix, p. 96). Appellee's practice in respect thereto was also the practice of the Associated Companies whose experience was considered by the District Court (R. II, 1181, 1201). The District Court did not find void either the 1920 or the 1923 order on depreciation expense charges. The allowances by the Commission's Orders were made pursuant to statutory provision of Illinois, obligating Appellee to conform its depreciation expense charges to the amounts prescribed by the Commission.

The District Court found that Appellee's purchases from Western during the period 1923 to 1931, inclusive, chargeable to construction accounts, ranged from $8,100,000 to

$17,300,000 per year; that its purchases during the same period attributable to maintenance and other expense accounts, ranged from $1,400,000 to $4,500,000 per year (R. III, 2516-7). In addition to use in purchases, Western's prices entered in the following manner into the estimates upon which the charge of confiscation was predicated and sustained for each year: Western's *current prices of each year of the litigation* were used also in Appellee's reproduction cost new estimate of each such year; on the basis of such estimates the District Court predicated its findings on Rate Base Value and on Depreciation Expense charges. In such estimates Western's current prices of the year of revaluation beginning with 1923 were used to convert to the price level each of such years the book cost of most of the gross additions and retirements of each year of the period prior thereto and back to 1911 (R. I, 16).

The District Court found that Western's sales to Appellee "have been a reasonable, fair and representative cross section" of its sales to the Bell System; that Western's earning experience with the Bell System over the period under investigation fairly corresponded to its experience with Appellee in the same period (R. III, 2519). It found that on account of Western's permanent relations to the Bell System several factors entered into Western's operations making for variable earnings from year to year, and that "it is, therefore, necessary in arriving at what are reasonable earnings on investment and profit on sales in the Bell business of Western, to take into consideration the results of a period of years and not merely a single year" (R. III, 2507-8). The District Court found that, except for Western's 1930 increase in prices, Western's profits and prices to the Bell System and to Appellee were reasonable on the basis of Western's average profit on Bell sales and average earnings from Bell business, considered for the periods 1916 to 1932 and 1923 to 1932 as single units of time; that in view of the general price trends during the years 1931 and 1932, the advance in prices in 1930 should be eliminated from the computations upon which the charge of confiscation is determined for those years (R. III, 2508, 2517). Western's rate of return from Bell business during each of the years 1924 to 1929, inclusive, as determined by the District Court, ranged from 10% to 90% greater than the average period rate of return as found by it.

The District Court's findings of net earnings from Bell business separated from non-Bell business were based on Appellees' presentation thereof. Such presentation separated Western's total operating expenses and manufacturing facilities between Bell and non-Bell sales as separate classes of business on the basis of their respective standard shop cost of sales. Such shop cost forms part of Western's accounting system to measure the efficiency of its manufacturing operations, and comprise assumed labor, material and overhead costs (R. I, 383, 331). Appellee's presentation allocated to Bell business substantially all of Western's Development and Research expense applicable to licensed manufacturers and distributors of Western, who paid Western valuable consideration for the use of its inventions in their fields (R. II, 3654a; R. II, 1628-30).

The District Court failed to deduct from Western's "average investment" as defined by it, five items: (1) the pension fund reserve; (2) notes payable to trustee of pension fund; (3) the amount of working reserves; (4) current liabilities other than payables; and (5) cash not used in the operating end of the business and received from non-operating activities (R. II, 1614-22).

The net earnings shown in Appellee's presentation for the years 1924 to 1929, inclusive, were determined after deducting more than $20,000,000 from current income: (1) to make up the excess of original cost of plant in service in the years 1924 to 1927, inclusive, over their prognosticated reproduction value during the ensuing ten to fifteen years; (2) to make up under-accruals of the years prior to 1923 for its pension fund liability; and (3) to cover depreciation in excess of the yearly amounts allowed by the Internal Revenue Department (R. II, 1622-24; R. VI, 3917).

The District Court found the net earnings from the existing rates for each year of the litigation. Such earnings exceeded Appellee's showing of corresponding recorded earnings by yearly amounts ranging from $445,000 to $1,204,000 (Appendix, p. 119). It found also the net earnings from the attacked rates for each year of the litigation; such earnings were lower than Appellee's showing of corresponding recorded earnings by yearly amounts ranging from $71,000 to $1,294,000 (Appendix, p. 121). The District Court found that "applying the standard prescribed by the Supreme Court" the required rate of return to avoid confiscation, related to rate base as determined by it, for each year of the litigation, was the per cent stated above (*supra*, 8). It found that in the application of such standard "one of the factors to be considered is that of the rates 'generally being made at the same time and in the same general part of the country on investments in other business undertakings, which are attended by corresponding risks and uncertainties.'" It stated that it gave weight to the facts of which courts take judicial notice relative to the general decline in corporate earnings during the years 1931 and 1932; that a public utility enjoying Appellee's advantages was not entitled to the large earnings made by many undertakings during the periods of great prosperity, and on the other hand its returns in times of adversity should not be reduced to the extent that the earnings of many private corporations have been impaired. It stated that the range in the required minimum rate of return to avoid confiscation as found by it gave weight "to all of the elements which under the ruling of the Supreme Court we are required to consider" (R. III, 2514).

The District Court did not apply to Appellee the "attraction of capital and maintenance of credit" test of compensatory rates set forth in *Bluefield Water Works Improvement Co.* v. *Public Service Commission of Virginia,* 262 U. S. 679 (1923); it applied the "comparative return" test repeated in the *Bluefield* Case from *Willcox* v. *Consolidated Gas Co.,* 212 U. S. 19 (1909), but used therein only the investment experience outside the Bell System. It did not use therein the actual financing and financial experience of Appellee during the period under investigation and the comparable actual financial and financing experience of the other Associated Companies under returns which were not in excess of the net income estimated to be produced by the attacked rates. Nor did it give effect in its test to the special character of the return to Appellee's investors resulting from its findings—on Separation of Revenues, License Contract Services and Payments, Depreciation Expense, and Western's Profits and Prices—which created advantages of additional pecuniary profits as part of the return to such investors which are not received by investors outside the Bell System.

The "Appendix" to this brief is intended to present for convenient reference, various computations and detailed accounts from the record on the 1930 appeal to this Court

(*Smith* v. *Illinois Bell Tel. Co.*, 282 U. S. 133) and designated herein as "O. R.," and also from the present record on appeal.

The present record is necessarily voluminous. It covers the ten years involved, 1923 to 1932, inclusive. The facts in relation to each year differ. In some respects so do the issues.

The evidence required by the directions of this Court involves the examination of the books of account and the activities of many corporations—some of which do a world-wide business. In some instances, allocations of revenues, expenses and property are required in ramified corporate activities. Such allocations require consideration also of practices founded on contracts and relationships that go back half a century to the beginning of the telephone industry.

Further, the District Court's Opinion and Findings of Fact do not reveal in many instances the basis upon which conclusions were reached. This necessitates the employment of some of the material contained in the Appendix, and also a large portion of the record on appeal.

Specification of Errors.

A specification of such of the assigned errors as Appellants urge is that the District Court erred:

1-10 (R. III, 2528-31)	(In allocating to interstate toll business (and to intrastate toll business substan- (tial portions of gross and net revenues (from Chicago intrastate exchange serv- (ice under the existing rates and under (the rates in suit.
22-31 37-160 11-23 32-36 (R. III, 2531-40)	(In allowing as proper operating expenses (amounts to cover a portion of the Amer- (ican Company's expense of Development (and Research, of direct sales to its in- (vestors of new issues of securities and (of servicing its outstanding securities, of (operating ten departments whose opera- (tions are concerned with its function as (a Holding Company investor and of its (appropriation of $30,395,800 to its Re- (serve for Contingencies.
160(a), (b), (c), (e-1), (e-2), (h-1), (h-2), (h-3), (i) (R. III, 2570-74)	(In failing to find and to give effect to (valuable considerations received by the (American Company from Appellee ap- (plicable as additional compensation for (License Contract services.
38-65 (R. III, 2541-9)	(In allowing as proper depreciation ex- (pense charges under the existing rates (and under the attacked rates amounts in (excess of those prescribed by the Com- (mission's Orders of 1920 and 1923, re- (spectively.
40-44 (R. III, 2542-3)	(In failing to find and to give effect to the (fact that had Appellee conformed its de- (preciation expense charges to the allow- (ances by the Commission's 1920 Order, (Appellee's recorded net earnings would

	(have been increased by more than the re- (duction in revenues caused by the at- (tacked telephone rates.
66-123 (R. III, 2549-63)	(In its finding on Western's rate of re- (turn from its Bell business and from its (business with Appellee.
75-83 87 88-91 108-110 114 (R. III, 2553, 2555-7, 2560-1)	(In failing to give effect to the fact that (the separation of Western's total operat- (ing expenses and manufacturing facili- (ties between Bell and non-Bell sales as (separate classes of business was on the (basis of their respective "standard shop (cost of sales" which comprise assumed (labor, material and overhead costs.
66-74, 84-86 (R. III, 2549-52, 2555-6)	(In its findings on Western's "average in- (vestment" and net earnings.
92-107 111-113 115-123a (R. III, 2557-63)	(In its findings on the reasonableness of (Western's earnings on the basis of pe- (riods of years 1916 to 1932, inclusive, (and 1923 to 1932, inclusive, considered as (single units of time, instead of for each (year under investigation.
124-125, 146-148 (R. III, 2563-4, 2568)	(In its findings on fair rate base value.
126-139C (R. III, 2564-[illegible])	(In failing to find and to give effect to the (fact that Appellee's method employed in (its showing on reproduction cost new (could not produce a reproduction cost (new estimate, could not measure the fair (value of the property and was not based (on an honest and intelligent forecast as (to the probable price and wage levels (during a reasonable period in the future.
140-145 (R. III, 2567-8)	(In failing to find and to give effect to the (fact that there should be deducted from (the reproduction cost new estimate of the

(depreciable property the percentage
(thereof equal to the percentage which the
(amount of Appellee's depreciation re-
(serve was of undepreciated book cost of
(such property.

149-155
164-168
(R. III, 2568-9,
2576)

(In its findings on the required minimum
(return to avoid confiscation and on the
(constitutional inadequacy of the attacked
(rates.

158-160
171
(R. III, 2570-4,
2577)

(In failing to find and to give effect to the
(fact, in its application of the returns on
(corporate investments outside the Bell
(System to test the inadequacy of Appel-
(lee's return from the attacked rates, that
(its findings on revenues and expenses
(and Western created advantages of addi-
(tional pecuniary profit which are not re-
(ceived by the ordinary investors outside
(the Bell System.

155-157
152-154
161-163
(R. III, 2568-9,
2574-5)

(In failing to give effect to Appellee's ac-
(tual financing and financial experience
(under the recorded net income produced
(by the existing rates, to the effect there-
(on estimated to be produced by the at-
(tacked rates, and to the comparable ac-
(tual financing and financial experience of
(the other Associated Companies under
(returns not in excess of the net income
(estimated to be produced by the attacked
(rates.

166
(R. III, 2576)

(In denying Appellants' motion to require
(Appellee to make available for inspec-
(tion the Minute Books of the Board of
(Directors of the American Company.

172
(R. III, 2577)

(In failing to find that at all times since
(the effective date of the Order of the Illi-
(nois Commerce Commission of August
(16, 1923, the telephone rates prescribed in
(said Order have been, and ~~they are now,~~

	(constitutionally adequate; that said Order is valid.
168-170 173-178 (R. III, 2576, 2578)	(In failing to find that Appellee's bill of complaint should be dismissed for want of equity, and in not ordering the refund of the charges collected in excess of those prescribed by the Order of August 16, 1923.

SUMMARY OF ARGUMENT.

Preliminary Statement.

PERIOD 1923-1929, INCLUSIVE.

This Court is asked to review a decree of the District Court which voids state action to reduce existing telephone service charges in Chicago for the benefit of the lowest class of telephone subscribers by more than $2,000,000 per year and aggregating $15,000,000, exclusive of interest, for the seven-year period 1923 to 1929, inclusive. On the District Court's findings, the effect of such reduction would have been merely to reduce by $5,300,000 the $8,700,000 surplus which Appellee showed on its books that it had accumulated during this period from its Chicago Intrastate business under the existing rates in effect since 1920. This surplus remained after making the following payments: all operating expenses, interest and amortization on money borrowed, and an 8% cash dividend on outstanding stock, including therein $31,220,000 capital stock sold to its stockholders at par during this period.

The reduction in gross revenue of more than $2,000,000 per year by the attacked rates, as found by the District Court, would have decreased such *recorded* return under the existing rates by less than $650,000 per year in the period 1923 to 1927, inclusive, and by $1,200,000 in each of the years 1928 and 1929. The difference between such reduction in gross revenues and the recorded earnings arises from two considerations. The District Court found that such recorded figures overstated operating expenses by $6,156,712. Such sum is made up from excessive depreciation expense charges and license contract payments disallowed by the District Court. Furthermore, $3,615,931 in franchise and federal income taxes, license contract payments to the American Company, and administrative expenses applicable thereto would not have been paid by Appellee had its gross revenues been reduced by the enjoined rates.

By the "attraction of capital and maintenance of credit" test of compensatory rates of the *Bluefield* Case, and by the "comparative return" test of compensatory rates of the *Willcox* Case, using therein for comparison the actual comparable experience of the other Associated Companies of the Bell System, Appellee's recorded return during each year of this period is clearly compensatory. The reduction thereof of the $5,300,000, as found by the District Court, had the attacked rates been put into effect, could not have caused confiscation. The yield from the recorded return under the existing rates ranged from 9.22% to 11.5% on outstanding capital stock and from 8.10% to 10.03% on corresponding capital and surplus. The yield from the attacked rates, as found by the Court, ranged from 7.43% to 10.07% on outstanding capital stock and from 6.53% to 8.91% on corresponding capital and surplus.

The District Court, without applying either of the above standards, found the attacked rates confiscatory on the basis already stated.

To be compensatory under the standard applied by the District Court, it would have been necessary for Appellee's Chicago intrastate telephone service charges to yield sufficient to enable it to pay an 8% cash dividend on all outstanding stock and to have carried to surplus over $36,000,000, which amount was only $4,000,000 less than the entire equity investment in the business at the beginning of the litigation. Such yield would represent a yearly rate of return ranging from 15.1% to 20.63% on outstanding capital stock and from 13.2% to 18.9% on corresponding capital and surplus.

The net income available for return under the existing rates, and under the attacked rates as found by the District Court, which produced the above results, were only part of the returns which Appellee's investors received from it. The additional returns are comprised in nine advantages of additional pecuniary profit, received by the American Company as Appellee's equity investor, at Appellee's expense, and confirmed by the District Court's findings on Revenues and Expenses. These additional returns are not received by the ordinary investor in business undertakings outside the Bell System.

Adjusting the District Court's findings to eliminate the undue burden on Appellee of providing such advantages, and to conform the character of the return to Appellee's investors to that received by the ordinary investor outside the Bell System, *i. e.* "net cash income available for return," such adjusted rate of return is clearly compensatory even on the standard applied by the District Court. Such return related to a rate base in excess of capitalization (stock, surplus and funded debt) applicable thereto, ranged from 8.6% to 10.6% during this period.

1930-1931.

The reduction in existing telephone service charges by the attacked rates in 1930 would be $1,870,000 and in 1931,

$1,632,000. However, the reduction in Appellee's recorded return from the existing rates would have been only $892,000 and $229,000, respectively. The difference in each case represents overstated depreciation and maintenance charges disallowed by the District Court in the amounts of $753,000 and $1,204,000, respectively, and savings in taxes and expenses exceeding $200,000 per year through the reduction in income.

The recorded return under the existing rates in 1930 permitted payment of an 8% cash dividend of $6,100,000 on $76,850,000 outstanding capital stock applicable to Chicago Intrastate business, and accumulation of $639,000 to surplus. The return from the attacked rates in 1930, as found by the District Court, would have fallen short by $253,000 of earning such payment. The recorded return under the existing rates in 1931 fell short by $275,000 of earning the 8% cash dividend of $6,963,000 on $87,045,000 outstanding capital stock applicable to Chicago intrastate business, and the attacked rates would have increased the shortage by $229,000. But such yield in each case was after absorbing as operating expense the cost of providing for the American Company, as Appellee's equity investor, the advantages of additional pecuniary profit as recognized by the District Court's findings on Revenues and Expenses, which are not received by investors outside the Bell System. Some of these advantages increase in value to the American Company and in burden on Appellee in periods of depression.

On the basis of the same tests of compensatory rates applied by Appellants to cover the period 1923 to 1929, inclusive, as above stated (*supra*, 22), the recorded return from the existing rates is clearly compensatory in each of the years 1930 and 1931, and the reduction thereof of $892,000 and $229,000, respectively, as found by the District Court, had the attacked rates been put into effect, could not have caused confiscation. The yield from the recorded return of the existing rates represented for 1930 8.83% on outstanding capital stock and 7.55% on corresponding capital and surplus, and from the attacked rates 7.67% on outstanding capital stock and 6.55% on corresponding capital and surplus. For 1931 the yield from the recorded return of the existing rates represented 7.68% on outstanding capital stock and 6.65% on corresponding capital and surplus, and from the attacked rates 7.42% on outstanding capital stock and 6.42% on corresponding capital and surplus.

On the basis of the same test which it applied for the prior period, as above stated (*supra*, 22), the District Court found the attacked rates confiscatory in 1930 and 1931. To be compensatory on the basis of the District Court's findings, it would have been necessary for Appellee's Chicago Intrastate telephone service charges to yield sufficient to pay an 8% cash dividend in each year on all outstanding capital stock and to have carried to surplus $4,350,000 in 1930, and $2,740,000 in 1931—such yield representing for 1930, 13.6% return on outstanding capital stock and 11.6% on corresponding capital and surplus, and representing for 1931, 11.15% return on outstanding capital stock and 9.65% return on corresponding capital and surplus, respectively.

Adjusting the District Court's findings to eliminate therefrom the undue burden on Appellee of providing the advantages of additional pecuniary profit for the American Company as Appellee's equity investor, such adjusted rate of return from the attacked rates is clearly compensatory even on the standard applied by the District Court.

Such return related to a rate base in excess of capitalization (stock, surplus and funded debt) applicable thereto, ranged from 8.3% to 7.5% during this period.

1932-1933.

The record closed July 1, 1932. No estimate was shown of the reduction in existing telephone service charges by the attacked rates in 1932. The Court found, on the basis of Appellee's estimate in May, 1932, that the reduction in net revenue which would have been caused, had the attacked rates been in effect was $1,270,000, but the estimated recorded return under the existing rates would have been reduced only $71,300. The difference presumably represented excessive depreciation and maintenance expense charges absorbed by the estimated recorded return and disallowed by the District Court. On the basis of the 1931 capitalization, the recorded return under the existing rates and the attacked rates would have yielded 5.6% on outstanding capital stock applicable to Chicago Intrastate business, after absorbing the costs of providing for the American Company as Appellee's equity investor, the advantages of additional pecuniary profit not received by investors outside the Bell System. No other facts appear in the record by which to test the inadequacy of such recorded return or the attacked rates.

But the District Court, upon a finding of rate base value for the entire year and a finding of required minimum return based on judicial notice of returns to the ordinary investor outside the Bell System, found the attacked rates confiscatory for 1932 and at the date of the Opinion April 29, 1933, and the Decree June 28, 1933.

Summary of Points.

ALLOCATION OF CHICAGO INTRASTATE EXCHANGE SERVICE REVENUES TO INTERSTATE TOLL SERVICES (Infra, 49).

Appellee's allocation of exchange service revenues to interstate toll service was made in violation of the direction of this Court on December 1, 1930, that the separation of revenues, expenses and property between intrastate and interstate business should be made on the basis of use.

Such allocation was based on an alleged universal understanding claimed to be in effect from the beginning of the telephone industry that the exchange service company is compensated by the exchange service rates for every use of its exchange plant facilities in the interstate toll services rendered by a different company—such as the American Company—and even though the patrons of the interstate toll service may or may not be subscribers to the exchange service or to any service of the owner of such exchange plant facilities. Appellee assumed but did not prove that such alleged universal understanding had application to its Chicago Exchange. Contrary to this assumption, the fifty years' history of its exchange service ratemaking in Chicago shows that Appellee's attempt in 1893 to cover by its Chicago exchange service rates the interstate uses of its exchange plant facilities, was held illegal by the State Courts as violative of the 1889 Telephone Franchise under which it was operating in Chicago, and which continued in effect to 1907. Such alleged universal understanding is contrary to the provisions of the 1907 and 1913 Telephone Franchises, in effect to 1929. It is contrary to the provisions of the Chicago exchange service rate schedules filed with the State Commission beginning with 1914 as required by Statute. It is contrary to the representations made by Appellee in its pleadings in various proceedings before the State Commission covering its Chicago exchange service and rates, including the existing and attacked rates herein involved. It is contrary to the Commission's orders entered pursuant thereto. The assumed application of the alleged universal understanding is contrary to Appellee's fifty years' history of contractual relations with the operators of the interstate toll services using its Chicago exchange plant facilities. Such relations between Appellee and the American Company as the operator of the long distance service, are controlled by Section 10 of the Original License Contract of 1881, by which Appellee was granted "the right to a reasonable and suitable division of the tolls and profits" of the American Company's long distance business transacted in Chicago as consideration for the use in that service of Appellee's Chicago exchange plant facilities. This grant was originally given only to Appellee and to two other Associated Companies in the Bell System. The record shows that as late as 1930 such contractual relations covering Chicago differed from those prevailing under the standard agreement between the American Company and the other Associated Companies covering the same subject matter. Relations between Appellee and other operators of connecting company interstate toll services are controlled by contracts whose provisions clearly indicate that Appellee's share of the interstate toll services revenues was intended to cover compensation to it for the use therein of its Chicago exchange plant facilities.

The record shows that such alleged universal understanding was not contained, by express declaration or necessary implication, in any filed rate schedules covering

Chicago exchange service rates. The extension of the scope of such filed rates to cover the unfiled alleged universal understanding violates many provisions of the Illinois Statutes regulating Appellee's operations as a public utility.

Finally Appellee did not prove the existence of any such alleged universal understanding by adequate proof to support a finding of confiscation to void state action.

LICENSE CONTRACT SERVICES AND PAYMENTS.

(Infra, 81).

The argument shows that the District Court should have reduced by amounts ranging from $575,000 to $754,000 per year the license contract payments which it found proper operating expenses, such reductions covering the American Company's expenses applicable to its non-license contract operations, but which expenses Appellee erroneously allocated to License Contract operations.

During the period of the litigation the American Company's operations covered four distinct fields. One was the License Contract operations to provide in part efficient and economical management for the Associated Companies. The second field of operations—Licensing of Inventions—covers the licensing, for valuable consideration, of inventions developed by the American Company's Development and Research Work for use in three separate classes of undertakings. These are: (a) in the motion picture industry and others in non-telephone business throughout the world; (b) in telephone communication equipment manufactured by Western for sale in the Bell System and to other retail customers and to distributors for resale in this country and abroad; and (c) in telephone communication equipment manufactured by four manufacturers other than Western for sale outside the Bell System in this country and abroad. A third field of operations—Holding Company—covers the American Company's activities as the sole or principal equity investor in and banker of the Associated Companies with whom it has license contract relations, and as the sole or principal equity investor in and banker of Western and of other non-telephone operating corporations. The fourth field of operations—Owner and Operator of the Long Lines—covers its activities as the operator of (a) interstate message communication services between the Associated Companies and outside the Bell System throughout the world; (b) telegraph and teletypewriter services; (c) chain radio broadcasting; (d) transoceanic radio telephone service; (e) radio telephone service to mobile stations; and (f) picture transmission and photo-telegraphy relating to electrical transmission of pictures.

In the regular course of its business the American Company does not allocate its total expenses between the four fields of its operations, or to the revenues received therefrom or from any portion thereof. It does not attempt to limit the license payments which are established as a uniform percentage of gross operating revenues of each Associated Company to cover only the part of its total expenses and reasonable return on investment applicable to its License Contract operations. In lieu of a strict accounting the American Company employs the practice of the Mutual Life Insurance Companies to assure to each Associated Company, and through it to the community served, the full benefit of the contributions of each of them without discrimination in favor of any other Associated Company or of any of its own non-license contract operations. That part of the yearly license payments which proves not to have been needed inures to the benefit of such Associated Company as a part of the return to the American Company on its investment in their securities and as an aid in financing them. Appellee's presentation, on which the District Court's findings on License Contract were based, did not follow the American Company's practice. It attempted to allocate to License Contract Operations the proper proportion of the American Company's expense in each of its twelve operating departments and in all of its operations covering all four fields of activities. This allocation was made in the face of the admission by Appellee's principal witness therein that as late as 1931 "this matter of separating expenses here, license contract expenses from other expenses, was quite a mystery and the department heads could not tell me very much."

PART I.

The American Company's Expense of Development and Research (Infra, 89).

Appellee's distribution of the American Company's $46,000,000 Development & Research expense between License Contract and other operations of the American Company did not allocate any portion of such expense to the American Company's operations as the Licensor of Inventions other than for use in the field of Western's retail sales of telephone communication equipment. Nor did Appellee offset as a credit against the Development and Research expense properly allocable to such Licensing of Inventions to other retail customers and to distributors for resale in this country and abroad; and (c) in telephone communication equipment manufactured by four manufacturers other than Western for sale outside the Bell System in this country and abroad. A third field of operations—Holding Company—covers the American Company's activities as the sole or principal equity investor in and banker of the Associated Companies with whom it has license contract relations, and as the sole or principal equity investor in and banker of Western and of other non-telephone operating corporations. The fourth field of operations—Owner and Operator of the Long Lines—covers its activities as the operator of (a) interstate message communication services between the Associated Companies and outside the Bell System throughout the world; (b) telegraph and teletypewriter services; (c) chain radio broadcasting; (d) transoceanic radio telephone service; (e) radio telephone service to mobile stations; and (f) picture transmission and photo-telegraphy relating to electrical transmission of pictures.

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PART I.

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Appellee's distribution of the American Company's $46,000,000 Development & Research expense between License Contract and other operations of the American Company did not allocate any portion of such expense to the American Company's operations as the Licensor of Inventions other than for use in the field of Western's retail sales of telephone communication equipment. Nor did Appellee offset as a credit against the Development and Research expense properly allocable to such Licensing of Inventions operations, any portion of the substantial cash royalties and other values received by the American Company and its subsidiaries from all the other fields covered by them.

The distribution between the Long Lines and the Associated Companies of the portion determined by Appellee applicable to License Contract operations was made on the basis of plant in service. Such basis of distribution gives no effect to the fact that such work covered problems having dissimilar application to and dissimilar results on dissimilar operations of dissimilar plants of the Associated Companies on the one hand, and of the Long Lines on the other hand. Such allocation unduly burdened the Associated Companies for the unjust enrichment of the American Company by an aggregate amount exceeding $20,000,000 during the period of the litigation.

PART II.

The American Company's Expense of Direct Distribution of New Securities and of Servicing Outstanding Securities (Infra, 174).

Appellee allocated to License Contract operations 94% of the $3,000,000 spent by the American Company to raise capital by direct sales of its stocks and bonds to its investors during the period of the litigation without the intervention of bankers, and 94% of the $7,350,000 spent by it to service all of its outstanding securities including such new securities and those issued by it prior to 1923. The servicing expense covers the transfer of stock, handling dividends, paying interest coupons, etc., expense of the character incurred by any large company having securities outstanding in the hands of many investors. Appellee arrived at the 94% figure on the basis that the capital raised by the American Company for investment in the Associated Companies during the period of the litigation and prior thereto represented 94%, and the American Company's capital raised for and used in its investment in non-Associated Companies and activities represented 6% of the total capital raised by and used in the American Company's entire operations.

The entire expense allocated to License Contract operations covering the direct distribution of new securities and of servicing outstanding securities should have been charged to the American Company's Holding Company operations as investor in the securities of the Associated Companies; the investment in and funds required for License Contract operations were negligible, and the use thereof was otherwise compensated. The American Company's Holding Company operations as investor in Appellee neither come within the express provisions of the License Contract nor can they be implied therefrom. As investor in Appellee the American Company is not entitled to reimbursement of expenses for raising funds to increase or to maintain its investment in the stock of Appellee. Such reimbursement, if made, violates the orders of the Illinois Commerce Commission, under which the American Company purchased stock in Appellee.

PART III.

The American Company's Expense of Operating Ten Departments (Infra, 184).

Appellee allocated to License Contract Operations from 90% to 100% of the American Company's entire expenses of conducting ten of its twelve departments, whose operations are concerned in whole or in part with its functions as a Holding Company. The expense of these departments ranges from $4,389,000 to $7,500,000 per year. Their operations include, among others, the activities of the President, Secretary, Treasurer, Comptroller, Legal Counsel and their respective staffs, the Directors, Committees and others in their relations to all the activities of the American Company. Appellee's allocation was made on the basis as stated by Appellee's witness who made it, that

> "all we had to do as regards that third group" (Holding Company operations) "is to see that our investment is so much, our dividends are so much, and those are the same dividends that anyone else receives. Now the cost of holding those stocks and the cost of the custodianship of them is a pleasure rather than a hardship."

The record shows that the American Company's Holding Company operations involve the investment as of 1923 of $662,529,359 in the stocks of the Associated Companies (R. VI, 4025). This increased to $1,939,270,421 by the end of 1931 (R. VIII, 4424). Corresponding investments in other companies increased from $92,938,687 to $168,855,388 during the same period (R. VI, 4008R, 4027; R. VIII, 4424). It raised $1,166,488,700 (R. VIII, 4373-4, 4425), in new capital and retired $346,468,200 in funded debt (R. V, 3307-18-23-31), during the same period.

No part of the expense of the operations of these departments should have been allocated to License Contract operations. The portion thereof, if any, applicable to License Contract operations is negligible and is otherwise compensated. Neither under the License Contract nor as investor in Appellee is the American Company entitled to reimbursement of its expenses of the character described.

PART IV.

The American Company's $30,395,000 Appropriations to Reserve for Contingencies (Infra, 194).

In 1900 the American Company established a "Reserve for Contingencies." In the years 1924 to 1927, inclusive, it appropriated thereto from earnings $30,395,000. Appellee allocated this entire sum to License Contract operations. The basis of the allocation was the unsupported statement of the American Company's Comptroller (who was neither a director nor a member of the Executive Committee which made the appropriations) that the controlling factor in such appropriations and in similar ones since 1919 was the apprehensions of the directors of the American Company, that there might be losses incurred in connection with their patent infringement liability under their license contract obligation to hold the Associated Companies harmless in the use of telephonic appliances embodying inventions recommended by the American Company.

No part of such appropriations is properly allocable to License Contract operations. The obligation to which the appropriations were claimed to have application did not become a part of Appellee's License Contract until September, 1930. Such appropriations, even if supported by adequate proof, as to the purpose thereof, could have no application to the American Company's obligation under Appellee's License Contract in effect from 1919 to 1930 to provide insurance against patent infringement liability as such appropriations lacked the necessary essentials therefor. The witness' unsupported version of these appropriations is contrary to the American Company's appropriations of $43,000,000 from 1900 to 1918 to the same Reserve for Contingencies to provide, as it said in the regular course of its business "for fluctuations in gross and net revenue caused by varied business conditions." It is contrary to the purpose of the transfers made from that Reserve prior to and during the period of the appropriations from 1919 to 1928. It is contrary to the position on the same subject matter taken by the same witness in the Michigan Telephone litigation in 1929, in the Ohio Telephone litigation in 1931, and in the exhibits furnished to Appellants in the present litigation prior to his testimony therein on this subject matter.

PART V.

Considerations Received by the American Company Applicable as Additional Compensation for License Contract Services Not Considered by the District Court (Infra, 217).

The District Court's findings erroneously give no effect to the four considerations stated above (*supra*, 10), received by the American Company from Appellee in addition to the License Contract payments which are applicable as additional compensation for the License Contract services rendered to Appellee during the period of the litigation.

WESTERN'S PROFITS AND PRICES (Infra, 233).

This Court directed that findings be made of Western's profits from Bell business and from Appellee and of the reasonableness thereof in the light of the different uses made of Western's prices in connection with the estimates upon which the charge of confiscation was predicated for each year of the litigation, as found by the District Court. Such uses cover (a) the substantial purchases made each year attributable to maintenance and other expense charges; (b) the use of Western's current prices of each year of the litigation as a factor in the index number computations to produce the reproduction cost estimate in the year of revaluation of the telephone plant in service,—on the basis of which estimate the District Court predicated its findings on Rate base value and on Depreciation expense charges for each year of the litigation.

The District Court found—(a) the costs, profits and investment allocable to Bell business separated from that allocable to non-Bell business; (b) the relationship between such costs, profits and investment so determined for Bell business and that for business with Appellee; and (c) the reasonableness of the profits from business with Appellee so determined—in each case on the basis of the permanent continuous relationship of Western and the Bell System throughout the period of the litigation considered as a single unit of time, and throughout that period together with the period prior thereto to 1916 as a single unit of time. Such findings have application, if at all, to justify the use of the composite of Western's prices over the period considered as a single unit of time, but cannot justify the use of only current prices for the particular purposes which Appellee chose to make of them in connection with its estimates upon which its charge of confiscation was predicated and sustained by the District Court.

Appellee's distribution, on the basis of "standard shop costs" of sales, of Western's expenses between the Bell and non-Bell sales of each of the periods 1916 to 1932, inclusive, and 1923 to 1932, inclusive, considered as single units of time, or for each year thereof, is fatally defective. It assumed but did not prove that each class of sales for each period or for each year was a fair and representative cross-section of the combined sales of each such period of year.

Appellee's separation of Western manufacturing facilities between Bell and non-Bell sales considered as separate classes of business on the basis of their standard shop costs of sales, is fatally defective. It assumed but did not prove that the usage of plant facilities by items and class of products follows shop cost of sales embracing labor, material and overhead, and assumed but did not prove that shop cost of sales and cost of production are synonymous.

Appellee's excuses of expediency and economy for not making a proper separation of Western's operating expenses and manufacturing facilities are of no avail, as its use of Western's profits and prices in its presentation on the issue of Rate Base Value, Depreciation Expense, Maintenance Expense, and Fair Return for each year of the litigation, and the District Court's findings based thereon, are in each case predicated on strict proof of proper separation of each of these years.

Appellee's allocation of Western's Development and Research expense between the Bell and non-Bell business unduly burdened the Bell sales for the unjust enrichment of Western's non-Bell business. No allocation was made of any portion of such expense to the licensed manufacturers, and its distributors who paid Western valuable considerations for the use of its inventions in their fields.

The District Court's finding that Western's rate of return on total Bell sales can fairly be related to its sales to Appellee, has no application to such relationship in any single year, but only cover a period of years. Such finding was predicated on the basis that over a period of years Western's sales to Appellee constituted a fair and representative cross-section of Western's sales to all Bell customers in the same period, but no such cross-section for any one year was or could be shown or found.

The District Court's finding that it is necessary, in determining the reasonableness of Western's return on Bell business, to take into consideration the reasonableness over a period of years and not merely a single year, precludes the determination of the reasonableness of Western's current prices used in the estimates upon which Appellee's charge of confiscation for each year of the litigation was predicated and sustained.

The standards applied by the District Court to determine the reasonableness of Western's prices and profits did not and could not determine their reasonableness for any one year or over a period of years. The comparison of Western's ratio of sales with that of other manufacturers shows merely the rapidity and turnover of capital and not the reasonableness of the earnings thereon. The comparison of Western's per cent of operating earnings to depreciated and undepreciated investments from Bell business with that of other manufacturers proves nothing. The figures used for such other manufacturers include also non-operating earnings or consolidated holding company operating and non-operating earnings. The method of computing inventory valuations, depreciation expense charges and extraordinary charges and reserves are different from those used by Western.

Western's reduction in prices to its Bell customers during the period 1921 to 1929, inclusive, was established on the basis of prognosticated earning results under the reduced prices, and do not and can not prove that Western's return from its Bell business on such prices before or after each such reduction was reasonable.

The percentage figures related to Western's depreciated and undepreciated "average investment," as defined by it, from Bell business, have no significance whatsoever as a yardstick by which to determine the reasonableness of its earnings therefrom for any year or over a period of years. The failure to deduct from such investment the five items already stated (*supra,* 13) makes such "average investment," before and after depreciation deductions, grossly inflated as the measure of the invested capital on which Western's investors are entitled to a return.

Measured by the sufficiency of Western's net earnings from Bell business as found by the District Court to pay operating expenses, interest and amortization on money borrowed, and to yield a reasonable return on its equity investment (capital and surplus), such net earnings are grossly excessive for each of the years 1924 to 1929, inclusive.

But such excessive return resulting from the District Court's finding of Western's net earnings from Bell business understates by more than $20,000,000 its actual net earnings arrived therefrom during the years 1924 to 1929, inclusive, resulting from Appellee's improper deductions from current income of the three items already stated (*supra,* 14).

The District Court's findings render impossible the determination of the extent to which Western's excessive return enters into the estimates upon which the charge of confiscation for each year of the litigation was sustained. The per cent of net earnings to Bell sales as found by the District Court does not and cannot measure the extent to which the prices used in the findings were excessive. Appellee's method to produce its reproduction estimate renders impossible of determination the amount of material contained therein to which Western's prices have application.

RATE BASE VALUE (Infra 316).

The Chicago intrastate rate base value as found by the District Court exceeded the corresponding average outstanding capitalization (stock, surplus and funded debt) in every year of the period 1923 to 1931, inclusive. Such excess for the period 1923 to 1929, inclusive, ranged from 52% to 83% of corresponding outstanding capitalization; for the year 1930 was 41% and for the year 1931 was 33% of corresponding outstanding capitalization. Such value exceeded Appellee's entire company average outstanding capitalization in each of the years 1923 to 1927. The Chicago intrastate rate base value was more than the entire company outstanding capitalization in the years 1923 to 1927; was 97% and 92% thereof in 1928 and 1929; was 84% and 77% thereof in 1930 and 1931. But during this period the capitalization applicable to Chicago intrastate business ranged from 58% to 63% of entire company capitalization.

Appellee's method could not possibly produce a reproduction cost estimate of telephone plant, exclusive of overheads, for each year of the litigation. Such estimate assumed that the property was put together historically. On such basis the estimate preserves in its result the higher costs of piecemeal construction and the higher costs of manufacturing material and construction labor which enter into gross additions prior to such improvements. Appellee's estimates proceeded on the basis that during the entire life of the property revalued, prices had been those current at the date of revaluation and that actual cost, with adjustment in price level by the use of index numbers, would produce the reproduction cost new of such property as of such date. But in its index number computations covering the plant prior to June 30, 1923, Appellee assumed but did not prove that the gross additions each year beginning with 1911 consisted of the identical items and quantities as the selected items and quantities of the 1923 plant accounts which Appellee used in its material index computations. Appellee assumed also but did not prove that the gross additions were constructed each year from 1911 to 1923 by a gang makeup corresponding to the theoretical gang makeup based on the average labor conditions of the entire period 1911 to 1923 considered as a single unit of time.

The District Court's finding that the average of the beginning and end of the year reproduction cost estimate of telephone plant measured the fair value new of the property was inconsistent with its finding on Western's profits and prices.

The reproduction cost new estimate of all physical property for each of the years 1923 to 1929, inclusive, and as adjusted by the District Court for the years subsequent thereto and accepted as fair value, did not make the honest and intelligent forecast as to the probable prices and wage levels during the reasonable period of the immediate future, within the specifications of the *McCardle* Case. Six annual reductions in Western's prices aggregating over 30% of the 1923 prices and foreseeable conditions indicating further cheapening of plant and reduction in prices were disregarded by the District Court.

The theoretical overhead charges included in Appellee's reproduction cost estimate for each year were improperly determined to form the basis of a valid finding as fair value new. Appellee is not entitled to capitalize overheads which it charged as operating expense under the special conditions of the record. Appellee's method of computing the theoretical overheads unjustly enriched its investors on the amount of their investment added during the period of the litigation. Appellee's inclusion of theoretical overheads in excess of book overheads on the basis that the property will be rebuilt is a repudiation of the basis on which its current price estimates of telephone plant exclusive of overheads were predicated, as already stated.

The method of computing Going Value as found by the District Court unjustly enriched Appellee's investors on the amount of their investment added during the period of the litigation, and was excessive to the extent that the reproduction cost new estimates given effect therein were excessive.

The District Court's findings on fair rate base value should have deducted from the reproduction cost new of the depreciable property each year the percentage thereof equal to the percentage which the amount of Appellee's depreciation reserve was of the undepreciated book cost of such property as of the same date. The use by Appellee of the straight line method of determining depreciation expense charges on property in service involves the principle that it has no right to a return on the amount of property cost which is represented by the balance in the depreciation reserve. Appellee's method of computing the reproduction cost new of its property at any given date requires that effect be given thereto in determining the amount to be deducted from the reproduction cost new of the entire property to reflect the portion thereof on which a finding of rate base value can be predicated. The District Court's deduction of depreciation was a compromise fiat and has no support in fact or in law.

On the record, no measure appears upon which a valid finding of the fair value of Appellee's property in service can be based other than book cost of Appellee's property. The fair rate base, giving effect to the book cost of Appellee's property, is more than the fair value of the property on which Appellee is entitled to a fair return.

DEPRECIATION EXPENSE CHARGES (Infra, 378).

The District Court, in determining the net income produced by the telephone rates prescribed by the 1920 Order, disregarded the evidentiary value of and the legal consequences to be attached to the 1920 Order on depreciation expense charges as a valid legislative act. Such Commission's Order on depreciation expense charges was made pursuant to the statutory provision in effect in Illinois (which statutory provision exists in fifteen other States), obligating the utility to conform its depreciation charges to the amount fixed by the Commission in the exercise of its power granted under such statute. No attack has ever been made on the 1920 Order. No ground exists to hold void the portion thereof covering depreciation. Had Appellee confined its depreciation expense charges to the allowances made by the 1920 Order, the recorded net earnings would have been increased in each year of the litigation by more than the reduction in revenues caused by the attacked telephone rates. Under such circumstances, Appellee never should have brought the suit, and the District Court upon being advised of the facts should not have entertained it.

The District Court in determining the net income estimated to be produced by the attacked rates prescribed by the 1923 Order, disregarded the fact that when attacked, the 1923 Order on depreciation expense charges must be treated with the respect to be attached to a legislative act. The District Court made no finding that either the 1920 Order or the 1923 Order on depreciation expense charges was void. It viewed the evidence and made findings thereon as an administrative tribunal substituting for the Commission.

The District Court could not make, in any event, a valid finding of the proper annual depreciation expense allowance on the basis of the classes of evidence to which it claimed it gave consideration. Appellee included in its depreciation expense charges substantial annual contributions from current income, computed on the straight line method, for anticipated depreciation on future additions to such buildings and equipment to be acquired and to be placed in service from time to time to 1974 under the following conditions: (a) where the acquisition and placing of the contemplated future property in the future service is within the sole and uncontrolled discretion and power of Appellee; (b) where no provision whatsoever has been made at the date of such annual contributions to assure that such contemplated future property will in fact be acquired and be placed in the future service; and (c) where no provision has been made at the date of such annual contributions to assure that, to the extent that Appellee does not in fact place in the future service such contemplated future property, it will account to its telephone users for the amount of such annual advance contributions and for the earnings thereon applicable thereto.

Appellee is not constitutionally entitled to receive advance reimbursement for anticipated consumption in service of future properties to be acquired and to be placed therein under the three conditions above stated. Appellee's financial program to provide such contributions makes its telephone customers involuntary investors who provide a large portion of its current capital in service without their right of interest therein. The computations and the claimed grounds of justification of the program in each case are based on and give effect to arbitrary assumptions which Appellee did not and could not prove.

Appellee's recorded depreciation expense charges, made applicable to its reproduction cost estimate, could not form the basis for a valid finding on depreciation expense charges. Appellee's financial program to provide annual advance contributions from income, above stated, precludes the possibility of using the reproduction value of the property in service as a base for the computation of the amount thereof in the manner used by Appellee. Appellee's situation is opposite to that which was before this Court in the *United Railways* Case, and upon which this Court concluded that the reproduction value of the property was the proper base upon which to compute depreciation expense charges, in that: (a) the depreciation expense charges are intended by Appellee to provide a retirement reserve for capital in service and not a reserve for replacement thereof at the date of retirement; (b) the use in the service of long-lived property not to be retired to 1984 precludes the possibility of reaching the same conclusion of fact as that to which this Court attached legal consequences in that case, to-wit: the conclusion of fact that the cost of retired property at the time of replacement "is for all practical purposes present value"; (c) the reproduction cost new estimates which Appellee used in its depreciation expense computations were determined in violation of law as already stated (*supra*, 42) and could not become "the present value" of the property for such use as required by the *United Railways* Case.

The experience of the Associated Companies could not become the basis for a valid finding on depreciation expense charges for the same reason that Appellee's recorded charges could not so become, as already stated. The depreciation allowances by the 1920 Order and by the 1923 Order on depreciation expense charges, made applicable to the reproduction cost new of Appellee's property, could not become the basis for a valid finding on depreciation expense charges for the same reasons that Appellee's recorded charges so made applicable could not so become, as already stated. On the basis of the District Court's findings on depreciation expense charges it is impossible to determine the extent to which they are based on any one or more of the above four classes of evidence.

FAIR RETURN (Infra, 449).

The District Court's use of the investment experience outside the Bell System in its application to Appellee of the "comparative return" test of compensatory rates of the *Willcox* Case, was fatally defective. Unsupported general statements or judicial notice covering post-war returns on corporate investments outside the Bell System should not be accepted as adequate proof to support a finding of confiscation which voids State action. The use of the average cost of money to other business undertakings outside the Bell System as a basis of actual or probable cost to Appellee of credit money, must be predicated upon the knowledge and experience of a very small group of companies in other industries. The determination of the cost of Appellee for money raised through the issue of stock cannot be based upon general percentage figure statements, which take no account of the varying experience of corporate stock financing during the period under investigation.

What rate of return related to a given rate base will produce sufficient income so that "there should still remain something to pass to the surplus account" requires detailed knowledge of the corporate structure of the company to which such rate of return has application; no uniformity in respect to such corporate structures existed during the period of the litigation.

No showing was made that any existing or new utility was or could be financed in the manner assumed by the District Court's findings, which capitalized every dollar of net book investment, including surplus, plus the unrecorded values due to going value and to revaluation on the basis of the reproduction value thereof.

The District Court's application of the returns on corporate investments outside the Bell System to test the inadequacy of Appellee's return to its investors from the attacked rates, disregards the special character of the return to them resulting from the District Court's findings on Separation of Revenues, Licenses, Contract Payments, Depreciation Expense, and Western, which created advantages of additional pecuniary profit as part of the return to such investor which are not received by investors outside the Bell System.

Adjusting the District Court's findings to eliminate the undue burden on Appellee of providing such advantages, and to conform the character of the return received by Appellee's investors to that received by the ordinary investor outside of the Bell System, such adjusted return ranges from 8.7% to 10.6% for the period 1923 to 1927, inclusive, from 8.3% to 9.5% for the period 1928 to 1930, inclusive, and 7.5% for the year 1931. Such returns are clearly compensatory, even on the standard applied by the District Court.

Discussion of Specific Points of Brief and Errors of District Court.

ALLOCATION OF CHICAGO INTRASTATE EXCHANGE SERVICE REVENUES TO INTERSTATE TOLL SERVICES.

PRELIMINARY STATEMENT.

What the District Court Did.

The District Court, without discussion,* adopted in all applicable findings Appellee's allocations of its revenues, expenses and property between the interstate and intrastate services and between the intrastate exchange and the intrastate toll service. To the allocation of revenues Appellants raised objections at the hearings (R. I, 273-4) and on appeal (R. III, 2528-31).

Appellee allocated a portion of the Chicago exchange property and expenses to interstate toll business on the basis of use. To such a basis of allocation Appellants raised and now raise no objection. But Appellee went farther. It allocated to interstate toll business the following substantial amounts of Chicago exchange service revenues which it determined were applicable to cover compensation to it for all interstate uses of its Chicago exchange plant facilities by all persons, subscribers and non-subsubscribers of its Chicago exchange service (R. VII, 4342-43, 4354a):

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*The District Court discussed the allocation of property and expenses, as to which there was no issue at the hearings (R. III, 2503-4).

	Under Present Rates		Under Rates in Suit
	Gross	Net	Net
1923	$356,041	$260,614	$245,042
1924	383,633	278,223	262,398
1925	453,006	327,430	309,505
1926	460,104	335,599	317,915
1927	509,369	373,025	354,372
1928	588,491	448,464	427,655
1929	650,247	508,729	486,875
1930	648,613	492,965	472,469
1931	601,189	448,700	431,580
1932	Not Available		

Appellee endeavors to justify its position on the following basis:

(1) The scope of Appellee's filed Chicago exchange service rates—as covering compensation to Appellee for measured use of its Chicago plant facilities in the local service within the city limits by subscribers to that service—is extended by an unfiled universal understanding that such rates compensate Appellee also for every interstate use of the same facilities by non-subscribers and by subscribers of its Chicago Exchange Service (R. I, 274, 275, 297, 301).

(2) Therefore Appellee's Chicago exchange service rates have actually been fixed to compensate Appellee for every interstate use of its Chicago exchange plant facilities.

(3) Therefore Appellee properly allocated to interstate toll business the portion of the Chicago exchange service revenues determined by it to cover its compensation for every interstate use of its Chicago exchange plant facilities, as directed by this Court on December 1, 1930 in this case.

SUMMARY STATEMENT OF APPELLANTS' CONTENTIONS.

I. Appellee's allocation of a portion of the Chicago exchange service revenues to interstate toll business violated the Direction of this Court of December 1, 1930, in this case.

II. Appellee's claim that its Chicago exchange service rates compensate it for every interstate use of its Chicago exchange plant facilities produces fantastic results.

III. Appellee's allocation assumes but does not prove that an alleged universal understanding to the effect that its Chicago exchange service rates compensate the exchange service operator for every interstate use of its exchange plant facilities has application to Chicago.

A. Appellee's claim disregards its fifty years' history of exchange service rate making.

B. Appellee's claim disregards its fifty years' history of its contractual relations with the operators of the interstate toll services.

IV. The extension of the scope of the filed Chicago exchange service rates to cover an unfiled alleged universal understanding that such rates compensate Appellee for every interstate use of its Chicago exchange plant facilities, violates the provisions of the Illinois Statutes regulating Appellee's operations as a public utility.

V. Appellee did not prove the existence of universal understanding that exchange service rates compensate the exchange service operator for every interstate use of its exchange plant facilities.

A. Appellee failed to prove the existence of a universal understanding covering interstate uses by non-subscribers of the exchange service.

B. Appellee failed to prove the existence of a universal understanding covering the interstate uses by subscribers of the exchange service.

DISCUSSION AS TO CONTENTION NUMBERED I.

I.

APPELLEE'S ALLOCATION OF A PORTION OF THE CHICAGO EXCHANGE SERVICE REVENUES TO INTERSTATE TOLL BUSINESS VIOLATED THE DIRECTION OF THIS COURT OF DECEMBER 1, 1930, IN THIS CASE.

This Court, in its Opinion of December 1, 1930, said:

> "It appears that the property of the Chicago Company is used to render (1) what is called exchange service, all of which is intrastate, (2) intrastate toll service over its own lines and under arrangements with companies other than the American Company, (3) interstate toll service, which includes all the toll service rendered under arrangements with the American Company."* (282 U. S. 133, 146-7.)

This Court pointed out that Appellee had allocated its exchange plant facilities entirely to intrastate business, which allocation was adopted by the District Court as a matter of convenience; that Appellants disputed this allocation on the ground that the exchange plant facilities were used in the interstate long distance service of the American Company for which use the American Company had not compensated Appellee; that Appellants contended the result would be affected either by eliminating from the intrastate business the value of the property and expenses in fact used in the long distance service or by adding to Appellee's intrastate business proper compensation from the long distance business.

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*An identical finding was made by the District Court in its Opinion of January 31, 1930 (O.R. I, 84).

This Court also pointed out that the District Court disposed of Appellants' contentions by examining the compensation paid by the American Company for the use in its long distance service of Appellee's facilities in Chicago, including the exchange plant facilities, instead of by allocating to interstate business the value of the exchange plant facilities used and the expenses incurred in connection with long distance service.

This Court held that the proper method of disposing of Appellants' contentions was to make the allocation to interstate business, and said:

> "It is obvious that unless an apportionment is made, the intrastate service to which the exchange property is allocated will bear an undue burden—to what extent is a matter of controversy" (282 U. S. 133, 151).

In a footnote to this last sentence this Court said:

> "In *Houston* v. *Southwestern Bell Telephone Co.*, 259 U. S. 318, 322, relating to the ordinance of the City of Houston prescribing telephone rates for the Company which operated not only the Houston local exchange but also long distance toll lines connecting the local exchange with various towns and cities in Texas and several other States, the Company in practice and for the purpose of the suit, 'credited the local exchange with 25% of the long distance toll revenues received from calls originating in Houston as compensation for the use made of the local plant in rendering long distance service,' and upon the facts there shown the Court held that the allowance was reasonably sufficient" (282 U. S. 133, 151).

This Court held also that, assuming the District Court's method of disposing of Appellants' contentions was proper, it had used a wrong basis of computation and an improper standard in determining the reasonableness of the American Company's compensation to Appellee.

Appellants' interpretation is that this Court's review of the above issue was predicated on the fact that Appellee's intrastate business had not compensated it for the interstate uses of its Chicago exchange plant facilities. Appellee's allocation to interstate business, in the 1932 hearings, of a portion of the revenues from its intrastate exchange business as compensation to it for the interstate uses of its exchange plant facilities was, as Appellants view it, a contradiction of this Court's views. Such allocation produces the identical effect of undue burden on the Chicago exchange service rates that was produced by Appellee's failure at the 1929 hearings to allocate to the interstate toll service the portions of the exchange plant facilities in fact used in such toll service for which Appellee had not been compensated by or through such toll service.

DISCUSSION AS TO CONTENTION NUMBERED II.

II.

APPELLEE'S CLAIM THAT ITS CHICAGO EXCHANGE SERVICE RATES COMPENSATE IT FOR EVERY INTERSTATE USE OF ITS CHICAGO EXCHANGE PLANT FACILITIES PRODUCES FANTASTIC RESULTS.

The consideration that Appellee's position, adopted by the District Court, produces fantastic results, if it does not condemn it, at least should require that such claim be supported by clear and convincing proof and be in accordance with established legal principles (*Missouri Rate Cases,* 230 U. S. 474, at 501, 507, (1913)).

Appellee's Claim.

As the basis for its allocation Appellee claims:

A. This Court, in its Opinion of December 1, 1930, and the District Court, in its Opinion of 1930, were each wrong in finding

> "It appears that the property of the Chicago Company is used to render (1) what is called exchange service, all of which is intrastate, (2) intrastate toll service over its own lines and under arrangements with companies other than the American Company, (3) interstate toll service, which includes all the toll service rendered under arrangements with the American Company" (282 U. S. 133, 146-7).[*]

According to Appellee, its "exchange service" not only covers "service between telephone stations within the same local service area" as defined above, which is intrastate, but also includes (a) a portion of the intrastate toll service "between telephone stations located in different local service areas in the same state," and a portion of the interstate toll service "between telephone stations located in different local service areas in different states,"—such portion in each case being from the subscriber's or public pay station to the toll board. Appellee claims also that the rates for "exchange service" always did and now do compensate it not only for these three distinct uses of its Chicago exchange plant facilities by the *subscribers thereto* but also for every use of the same facilities in the interstate toll services *by non-subscribers of any of its services or by non-subscribers of its Chicago exchange service* (*infra*, 75).

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[*] In New York Tel. Co. v. Prendergast, 36 Fed. (2nd) 54, the Statutory Court held:

> "It thus furnishes both intra-state and inter-state toll service. Telephone exchange service is service between telephone stations within the same local service area and the plaintiff's exchange service in the state is an intrastate service. Telephone toll service is between telephone stations located in different local service areas. The state is divided into a number of local service areas. The telephone exchange service and the intrastate toll service together constituting the whole of the plaintiff's telephone service between points within the State of New York."

To the same effect, see Board of Utility Comrs. v. New York Tel. Co. 271 U. S. 23, at 26 (1926).

Appellee's claim not only places part of *the interstate* services within the jurisdiction of *state governmental authority** but leads also to fantastic results which are illustrated by the following examples:

EXAMPLE I.

A French merchant arrives in Chicago on his way to visit relatives in San Francisco. Finding that time will not permit his journey West, he calls San Francisco from a public pay station in Chicago and engages in a long distance telephone conversation which runs a full hour. According to Appellee's view, the American Company's charge to that merchant for the long distance call collected by Appellee does not cover compensation for this use of its Chicago exchange plant facilities for the hour of his conversation; such compensation is not paid to Appellee by the American Company or by the merchant, but is paid to Appellee by Appellee's own subscribers to the Chicago exchange service whose rates were intended to and did cover compensation to Appellee for such use. Similarly, if the same merchant went to a public pay station to receive a long distance communication from his relatives in San Francisco, which ran for another hour, Appellee in its view would be compensated by its Chicago exchange service rates for the use of its Chicago exchange plant facilities for the full hour of his conversation.

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*The result of Appellee's claim in respect to the intrastate toll service is shown in the Appendix (Appendix, p. 124).

EXAMPLE II.

The Western distributor of a high priced automobile who lives in one of the suburbs of Chicago, maintains an office in the down town business district of Chicago to transact his out of town business. In his office he has installed the Chicago individual measured business exchange service at a cost of $4 per month. This service entitles him without extra charge to a minimum number of eighty local calls in Chicago and to additional local calls at a graduated cost per call (O.R. IV, 1308). He uses up the minimum number of local calls to which he is entitled each month, but no more. He, however,

(a) originates and receives long distance communications over the Chicago exchange plant facilities and the American Company's lines, to and from the automobile factory in Detroit; and

(b) originates and receives long distance communications to and from his agents in Missouri, Iowa and Kansas—all of which communications aggregate a full period of four hours each day of the week, except Sunday.

According to Appellee's view, the American Company's long distance charges to the distributor do not cover compensation for such four hours' use in the long distance service of Appellee's Chicago exchange plant facilities; such compensation is not paid to it by the American Company or by the distributor as part of the charge for the long distance call, but is paid by Appellee's own subscribers to its Chicago exchange service whose rates were intended to and did cover compensation to Appellee for such use; only to the extent that such distributor is a subscriber of the Chicago exchange service does he bear any portion of such compensation.

EXAMPLE III.

The distributor in the second Example (*supra*, 57) calls the office number of his agent in Kansas City, Missouri, at nine forenoon and the report is returned that no one answers the call. Similar report is repeated to the subscriber by the operator each hour to 5 P. M. At that time the distributor cancels the call. According to Appellee, the American Company's revenues from its other customers in the long distance service provide compensation to it for the use of the American Company's facilities in making the report for which the distributor is not charged; but Appellee's revenues from its own Chicago exchange service rates provide compensation to Appellee for the use of its Chicago exchange plant facilities in making such report.

EXAMPLE IV.

An outstanding feature of the period beginning with 1923 has been the rapid growth in the Bell System of the long distance business and the comparatively more rapid growth of the long haul long distance business of the American Company.

During the period 1923 to 1928, inclusive, the interstate long distance business in Chicago increased 62½% and for the period 1923 to 1930, inclusive, increased 99%; after giving effect to the increase in number of stations the interstate long distance business increased in Chicago during the period 1923 to 1928, inclusive, 17%, and increased by

1930, 33%. But the New York-Chicago long distance telephone business increased during the period 1923 to 1928, inclusive, 194% and the transcontinental business between New York and Chicago, on one end, and Los Angeles and San Francisco, on the other end, increased 430% during this period (R. V, 3162). This increase in long distance business is in striking contrast to the decrease of 8% in the number of Chicago local exchange calls per station from 1923 to 1928, inclusive, and to the decrease of 12% in such number of calls per station from 1923 to 1930 (R. IV, 2700-3).

According to Appellee's method of allocation of exchange service revenues, the greater the growth of the long distance service, the greater the use of Appellee's Chicago exchange plant facilities in such service, the greater the contribution to long distance service by Chicago exchange service rates the smaller the portion of the Chicago exchange service revenues remaining to cover operating expenses and provide a return on investment applicable to the Chicago exchange service from which the rates were originally collected by Appellee.

The mere statement of these fantastic results of Appellee's position adopted by the District Court jars one's sense of fairness!

DISCUSSION AS TO CONTENTION NUMBERED III.

III.

APPELLEE'S ALLOCATION ASSUMES BUT DOES NOT PROVE THAT AN ALLEGED UNIVERSAL UNDERSTANDING TO THE EFFECT THAT ITS CHICAGO EXCHANGE SERVICE RATES COMPENSATE THE EXCHANGE SERVICE OPERATOR FOR EVERY INTERSTATE USE OF ITS EXCHANGE PLANT FACILITIES HAS APPLICATION TO CHICAGO.

A.

Appellee's claim disregards its fifty years' history of exchange service rate-making.

Appellee offered no proof that the alleged universal understanding had application to Chicago. It merely so assumed. Such assumption substitutes an imaginary history for its own history of exchange service rate-making in Chicago.

The Chicago exchange service rates in effect during the period of this litigation were those fixed by the Public Utilities Commission's final Order of December 1, 1920 (O.R. I, 5), in Case 9291 which was commenced by Appellee's petition on July 16, 1919 (R. VIII, 4814a), asking authority to modify certain rates established by its 1907 and 1913 Telephone Franchises of the City of Chicago as contained in rate schedules filed with the Public Utilities Commission on January 27, 1914. The 1907 Telephone Franchise established certain new exchange service rates and modified other existing exchange service rates established under Appellee's 1889 Telephone Franchise from the City of Chicago, as construed in the case of *Chicago Telephone Company* v. *Illinois Mfg. Assn.*, 106 Ill. App. 54 (1903). The 1889 Telephone Franchise covered exchange service rates then in effect which appellee had established under its Original License Contract of 1881 from the American Bell (O.R. VI, 1925). The Original License Contract of 1881 granted to Appellee the license to use telephone instruments, among others, in the "exchange service," as defined in the Western Union Contract of 1879 (O.R. VI, 1932).

As this history of rate making comes from many documents, a narrative statement thereof is presented in the Appendix hereto, pages 1-26. It shows

Period 1881-1889.

(1) Appellee's Chicago exchange service established pursuant to its Original License Contract of 1881 was not intended to cover the use by the *subscribers* to that service of the Chicago exchange plant facilities in interstate toll service;

(2) Appellee's Chicago exchange service rates were not intended to compensate Appellee for any interstate toll uses of its Chicago exchange plant facilities by *subscribers* or by *non-subscribers* of its Chicago exchange service;

(3) By Section 10 of the Original License Contract of 1881, Appellee was given the right to a "reasonable and suitable division" of the receipts and profits of interstate toll services in Chicago for all interstate toll uses of its Chicago exchange plant facilities, if and when interstate toll services were established by the American Bell, predecessor to the American Company.

(4) No interstate toll services had been established to 1889 making use of the Chicago exchange plant facilities.

Period 1889-1906.

(5) Appellee in 1889 accepted a twenty-year franchise from the City of Chicago which prohibited Appellee from increasing the rates for Chicago exchange service then in effect.

(6) In 1893 the American Company, licensee of the American Bell in the long distance service, extended its lines to Chicago to connect with the Chicago exchange plant facilities for the purpose of offering an interstate toll service making use of such facilities pursuant to Section 10 of the Original License Contract of 1881.

(7) Appellee attempted to expand the Chicago exchange service by including therein the unlimited use by its *own subscribers* of the Chicago exchange plant facilities for the purpose of transmitting or receiving messages in the interstate toll service of the American Company and to increase the Chicago exchange service flat rate of $125 per year to cover compensation to Appellee for such unlimited uses. But Appellee was enjoined, the Court holding that Appellee's action violated the provisions of the 1889 Franchise (*Chicago Tel. Co.* v. *Illinois Mfg. Assn.*, 106 Ill. App. 54).

Period 1907-1914.

(8) A new telephone franchise was put into effect in Chicago in 1907 and modified in 1913, establishing classifications of unlimited and measured Chicago exchange service and rates. But nowhere in such franchises is there any provision—(a) by which subscribers or non-subscribers of Appellee's Chicago exchange service were given the right,

without additional charge, to the unlimited use of the Chicago exchange plant facilities to transmit or to receive interstate toll messages over the wires of the American Company or of connecting companies; (b) by which it was intended that Appellee should be compensated through the Chicago exchange service rates for every use of the Chicago exchange plant facilities in interstate toll service.

(9) By the 1907 Telephone Franchise, in effect to 1929, Appellee was prohibited from entering into any contract with any other company in respect to the Chicago exchange service rates to be charged in Chicago.

Period 1914-1933.

(10) By Section 33 of the Public Utilities Act, in effect January 1, 1914, Appellee was required to file, as of that date, schedules showing all services and charges and classifications for every service performed by it. Pursuant to the above provisions, Appellee filed with the Public Utilities Commission on January 27, 1914, its schedules of Chicago exchange service rates in force July 1, 1913, as fixed by the 1907 and 1913 Telephone Franchises. Included as part of said Chicago exchange rate schedules it also filed a sheet entitled "Regulations." As a part thereof appears the following paragraphs:

> "*Exchange Service (City or Neighborhood)*—Subscribers to Chicago Exchange System service may, on the terms of their contracts, transmit local messages to all exchange telephones located within the limits of the City of Chicago. Subscribers to Neighborhood Exchange service may transmit local messages to all exchange telephones within the limits of the Neighborhood Exchange in which their telephones are located.
>
> A local message is a communication not exceeding five minutes' duration between subscribers' stations

> within the same exchange limits. By ordinance of the City of Chicago and these regulations the subscriber, the Company and its lessees and patrons, are forbidden to charge any person more than five cents for a single conversation or message transmitted to any point within the City of Chicago from any telephone furnished under the contract of which these regulations are a part. The use of classes of service is restricted by said ordinance and these regulations as follows:
>
> Flat rate business service is furnished for the use of subscribers and their employees only in their business.
>
> Flat rate residence service is furnished for the use of subscribers and their families only at their residence.
>
> Measured service is furnished for business use of subscribers and their employes only in their business or for residence use of subscribers and their families only at their residence and for the use of any extra name users on the same premises as may be contracted for by the subscribers.
>
> Nickel coin box service business or residence is for the use of subscribers (and others permitted by the subscribers) upon depositing proper coins" (Appendix, p. 10).

Appellants call attention to the fact that Appellee added the definition of *local message* above quoted, which does not appear in the 1907 and 1913 Telephone Franchises (Appendix, pp. 6, 9). The definition contains two important elements—one the limitation of the communication to "'subscribers' stations within the same exchange limits," and, second, the limitation in duration of time of a local message. The first shows Appellee's own conclusion that the service to be covered by the exchange service rates was confined to the transmission of communications within the limits of the City of Chicago; the second shows that Appellee went even beyond the Ordinance in establishing measured use as the basis for charging. Appellee's policy in this respect is entirely inconsistent with any inferred policy to require the exchange service rates to compensate Appellee for the interstate toll uses of the Chicago exchange plant facilities under conditions where such uses may be unlimited in number of messages and in duration of time per message and may be made by non-subscribers of any of Appellee's services or of its Chicago exchange service.

(11) All the Chicago exchange service rate schedules filed from 1914 to date, including those under which Appellee collected the Chicago exchange service revenues allocated to interstate toll services, contain the same definition and scope of Chicago exchange service rates as was contained in the original schedule filed in 1914.

(12) Appellee's petition filed in 1919, in the proceedings in which the Commission's Order of December 20, 1920, was issued establishing the existing Chicago exchange service rates, the language of that Order and the language of the Commission's Order of August 16, 1923, now under investigation, all clearly show that they were dealing with the Chicago exchange service defined and described in the original schedule filed in 1914 (*supra*, 63) and the rates therefor.

B.

Appellee's claim disregards its fifty years' history of its contractual relations with the operators of the interstate toll services.

LONG DISTANCE ARRANGEMENT.

Appellee's assumption that any universal understanding covering the interstate uses of exchange plant facilities has application to Chicago substitutes an imaginary history for its own history of contractual relations with the operators of the interstate toll service. As this history comes from many documents, a narrative statement thereof is presented in the Appendix hereto, pages 27-37. It shows:

(1) In 1881 the American Bell and the Western Union licensee operating in Chicago joined to transfer their business to Appellee to be organized and operated under an American Bell license contract issued in the same year. By this contract, Appellee was granted a perpetual exclusive license to do a local exchange area, local toll, and connecting company telephone business in seven counties in Illinois and in two counties in Indiana. By the same contract the American Bell was given an option to use in extraterritorial business such of Appellee's facilities as were necessary, by paying therefor a "reasonable and suitable division of the tolls and profits" of such extraterritorial business. Such a right of participation was contained in the contracts of only two other licensees—one operating in New York City, and the other in San Francisco (R. VIII, 4925-31). The compensation to all other licensees was fixed, by a standard form contract, on a per message basis, which limited its maximum amount irrespective of the cost to them of furnishing their exchange plant facilities or of the profits of the extraterritorial business from the use of such facilities.

(2) After the extension of the American Company's long distance service to Chicago in 1893, it and Appellee, from time to time, to February 1, 1919, established and readjusted, according to the standard of Section 10 of the Original License Contract of 1881, compensation to Appellee for the use in such service of the various parts of

Appellee's necessary facilities, including therein the compensation for the use of its Chicago exchange plant facilities (1891 Contract; 1896 Modification; 1899 Modification; 1911 Toll Trunk Arrangement; 1911 Long Lines plant arrangement) (O.R. VI, 1934, 1971, 1972).

(3) In December, 1917, the standard arrangement between the American Company and its licensees in respect to compensation for the use of the latter's exchange plant facilities in the American Company's long distance service, already described, was still recognized by the American Company and by Appellee as not to be applicable "in the City of Chicago because of the special conditions which obtain here" (O.R. VI, 1974, 1973).

(4) No contract between the parties prior to February 1, 1919, required that Appellee include as part of the rates for its own Chicago exchange service compensation to it for the use in the American Company's long distance service by the American Company, or by the latter's customers (whether subscribers or non-subscribers of the Chicago exchange service), of the Chicago exchange plant facilities. Nor did any contract create a right in the American Company and/or in its customers to use, free of charge, in the long distance service, the Chicago exchange plant facilities.

(5) Beginning with 1917 the American Company started to revise the License Contract with its licensees. Appellee's revised contract labeled "Memorandum" was prepared by the Legal Department of the American Company (O.R. V, 1602) and was in the new standard form of contract. It was executed in November, 1918, effective February 1, 1919 and recited that it was merely "restating and reaffirming contractual relations." This Memorandum provided that Appellee was

not to make any charge to the American Company or to the latter's customers for its or their use of the Appellee's exchange plant facilities in transmitting or in receiving communications from or to Appellee's exchanges over the American Company's wires, whether or not such customers were subscribers to any of Appellee's own services, —for all of which use Appellee was "compensated by its rates for exchange service." The 1930 license contract which superseded the 1919 Memorandum contained the same requirement in respect to Appellee's not receiving compensation from the American Company and/or its customers for the use in the long distance service of Appellee's exchange service facilities, and contained the same recital that for such use Appellee was "compensated by its rates for exchange service." But accompanying the execution of the 1930 contract was an exchange of letters between the parties that: "The provisions of the license agreement do not apply to the division of tolls and originating commissions for the Chicago area" (R. V, 2998-9).

The 1919 and 1930 contracts were executed without the consent and approval of the Illinois Commerce Commission and were not filed with it before or after their respective effective dates. Nor has Appellee before or after 1919 to date filed and published any schedule showing the right of the American Company and of its customers who are non-customers of Appellee and of the customers of Appellee who are not customers of the exchange service, to use, free of charge, in the long distance service, the exchange plant facilities (O.R. V, 1785). Nor has it filed and published any schedule showing that the right to use in the long distance service the Chicago exchange plant facilities was a part of the services covered by the various filed Chicago local exchange rates (O.R. V, 1785).

Appellee's settlements with the American Company have been on the basis of the arrangement specified in the 1919 Memorandum and 1930 contract.

From Appellee's exchange service rate-making history (*supra,* 60), it is clear that the recital in the 1919 Memorandum and in the 1930 contract that for the uses in the long distance telephone service Appellee "was compensated by its rates for exchange service" could have no application to Chicago, whatever may have been its application in the other portions of Appellee's territory.

In the light of Appellee's special situation in Chicago, the arrangement provided for in the 1919 Memorandum and 1930 Contract covering the use by the American Company and its customers in the long distance service of the Chicago exchange plant facilities can be reconciled and be effective only on the following theory: that instead of including compensation for the use in the long distance service of its Chicago exchange plant facilities in its accounting with the American Company under Section 10 of the Original License Contract of 1881 "for a reasonable and suitable division of the tolls and profits" of the long distance business transacted in Chicago, Appellee will take credit for such use as part of its return to the American Company investor on the latter's investment in Appellee's Chicago intrastate exchange service. Such construction is in conformity with the American Company's Mutual Plan of Operation of the Bell System, made effective in 1918 through the 1919 Memorandum in respect to Appellee's License Contract payment to the American Company (*infra,* 82). Such an arrangement between Appellee and the American Company as its investor is purely an accounting arrangement and is an act of management; Appellants' complaint in respect thereto is only that Appellee's allocation, followed by the District Court, preserved for the American Company the benefit thereof, but Appellee's presentation and the District Court's findings on License Contract Services and Payments and Fair Return (*infra*, 83, 450) failed to preserve for Appellee the reciprocal benefit under the accounting arrangement to which it was entitled.

Appellee, however, construes the 1919 Memorandum and 1930 Contract covering long distance service as affirmations of a rate-making practice in effect in Chicago. By so doing Appellee's Chicago intrastate business is burdened for the benefit of the American Company as operator of the Long Distance service but the American Company as the investor in Appellee's business still retains the right to a *fair return* measured by the standard for the ordinary investor in the ordinary public utility bearing the ordinary relation to its investors. This conversion of the accounting arrangement into an alleged rate-making practice has no factual support (*supra*, 63), and violates the Illinois Statutes relating to Appellee's operations as a public utility in the respects to be considered hereafter (*infra*, 72 *et seq.*).

Connecting Company Arrangements.

Wisconsin Telephone Company.

By agreement between Appellee and the Wisconsin Telephone Company in effect prior to 1910 Appellee received no originating commission, but received 80% of all revenues of interconnecting business originating in or received by it (O.R. IV, 1334). Beginning with 1910 each company received an originating commission on the basis of a percentage of the toll charge; the distribution of the balance was on a basis agreed upon.

Nothing appears in the record to indicate that the use of the exchange plant facilities was not intended to be covered either by the connecting company rates or in the settlement between the parties (O.R. IV, 1328).

Indiana Bell Telephone Company, Central Union Telephone Company and Southwestern Bell Telephone Company.

Appellee from time to time had connecting company agreements with the Central Union Telephone Company, the Indiana Bell Telephone Company and the Southwestern Bell Telephone Company. In each case the settlement with Appellee provided for an originating commission. In no case was there anything to indicate that the use of the exchange plant facilities was not intended to be covered either by the connecting company rates or by the settlement between the parties (O.R. IV, 1328, 1337, 1341).

These agreements were in conformity with the general practice in the United States (*Smith* v. *Illinois Bell Tel. Co.*, 282 U. S. 133; *Houston* Case, 259 U. S. 318; *Southern Bell Tel. & Tel. Co.* v. *Railroad Commission of Georgia*, 274 Fed. 438, certiorari denied 262 U. S. 761; *Pacific Tel. & Tel. Co.* v. *Whitcomb*, 12 Fed. (2d) 279).

DISCUSSION AS TO CONTENTION NUMBERED IV.

IV.

THE EXTENSION OF THE SCOPE OF THE FILED CHICAGO EXCHANGE SERVICE RATES TO COVER AN UNFILED ALLEGED UNIVERSAL UNDERSTANDING THAT SUCH RATES COMPENSATE APPELLEE FOR EVERY INTERSTATE USE OF ITS CHICAGO EXCHANGE PLANT FACILITIES VIOLATES THE PROVISIONS OF THE ILLINOIS STATUTES REGULATNG APPELLEE'S OPERATIONS AS A PUBLIC UTILITY.

The extension of the scope of the filed exchange service and rates by an unfiled alleged universal understanding covering such service and rates involves the violation of many sections of the Illinois Statutes regulating public utilities in effect since 1914. Similar violation would be caused if any contention is made that the 1919 Memorandum did not *affirm* but provided for the rate-making practice that "for such (long distance) use," the Appellee "was compensated by its rates for exchange service" (*supra*, 68). Such sections are:*

Section 33.

This section requires that every public utility file with the Commission, print, and keep open on inspection, schedules showing all rates and other charges for any service performed by it. As part of such schedules there must be filed

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*The Illinois Statute from which these sections are quoted appears in the Appendix (p. 38-45).

> "all rules, regulations, * * * privileges and contracts that in any manner affect the rates charged or to be charged for any service" (Appendix, pp. 38-39).

The form of the schedules to be filed and posted is prescribed in Section 34 of the Act (Appendix, pp. 39-40).

Section 35.

By this section a public utility is required not

> "to perform any service or to furnish any product or commodity unless or until the rates and other charges and classifications, rules and regulations relating thereto, applicable to such service, product or commodity have been filed and published in accordance with the provisions of this Act" (Appendix, pp. 40-41).

Section 36.

This section prohibits any public utility from making any changes in

> "* * * any rate or any charge or classification, or in any rule, regulation, practice, or contract relating to or affecting any rate or other charge, classification or service, or in any privilege or facility, except after thirty days' notice to the Commission and to the public as herein provided. * * * Such proposed changes must be plainly indicated on the new schedule filed with the Commission by some character to be designated by the Commission, immediately preceding or following the item" (Appendix, pp. 41-43).

Section 38.

This section, in force since 1917, prohibits any utility from granting any preference or advantage to any corporation or person.

The alleged universal understanding, as a rate making practice, arbitrarily prefers non-subscribers of the Chicago exchange service, who, as customers of the American Company, get free service at the expense of subscribers of the exchange service who are not customers of the American Company.

The alleged universal understanding arbitrarily prefers non-subscribers of the exchange service, who, as customers of the American Company, get free service at the expense of subscribers of the exchange service who are also customers of the American Company; the latter absorb their pro rata portion of the cost of their own use in the long distance service of the exchange plant facilities (*Southern Bell Tel. & Tel. Co.* v. *R. R. Comm. of Georgia*, 274 Fed. 438; certiorari denied, 262 U. S. 761). It arbitrarily prefers the subscribers of the exchange service who are customers of the American Company over the subscribers of the exchange service who are not customers of the American Company; the latter absorb part of the cost of rendering service to the former. There are twenty-two classes of exchange service (O.R. VI, 2134, Exhibit A). It is common knowledge that only a small percentage of local exchange subscribers are the large users of long distance service. This is confirmed by Appellee's witness (R: I, 277). It is unfair to *compel all subscribers for exchange service* to pay for a *right to use* the exchange plant facilities for a special use unless the probability of the exercise of the *right to that special use is distributed generally among such subscribers.**

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*The State Public Service Commission of Oregon found that where the cost to the exchange of making available its necessary facilities for the toll service is in excess of the revenue received by the exchange through the originating commission, "a discrimination in rates is constituted in favor of large toll users and against the majority of local subscribers adversely affecting approximately 70 per cent of the telephone users." (In re Pacific Tel. & Tel. Co., P. U. R. 1923, A. 531.)

The alleged universal understanding arbitrarily prefers the local toll service of Appellee over the subscribers of the local exchange service. The original long distance arrangement embodied in Section 10 of the Original License Contract of 1881 was part of the consideration for the grant to Appellee of licenses for both exchange service and local toll services (Appendix, p. 2). Any loss to Appellee resulting from the use in long distance service of any part of its necessary facilities would be an expense common to both the exchange service and local toll services and subject to apportionment between them. The alleged universal understanding to cover by Appellee's exchange service rates the entire loss, creates an arbitrary discrimination in favor of the local toll service.

DISCUSSION AS TO CONTENTION NUMBERED V.

V.

APPELLEE DID NOT PROVE THE EXISTENCE OF A UNIVERSAL UNDERSTANDING THAT EXCHANGE SERVICE RATES COMPENSATE THE EXCHANGE SERVICE OPERATOR FOR EVERY INTERSTATE USE OF ITS EXCHANGE PLANT FACILITIES.

A.

Appellee failed to prove the existence of a universal understanding covering interstate uses by non-subscribers of the exchange service.

The non-subscriber uses of exchange plant facilities come largely through public pay stations. From 1923 to 1931 the number of public pay stations in Chicago increased 100%, from 11,000 to 22,000, the number of subscriber stations increased 42%, from 680,000 in 1923 to 969,000 in 1929, declining .5% to 917,000 in 1931. The popularity of use of public pay stations in Chicago is evidenced by the fact that both in number of stations and in revenue received, they showed an increase in the depression years 1930 and 1931 over 1929; the subscriber stations showed decreases in number of stations in 1930 and 1931, and a decrease in revenue in 1931; the public pay stations, though representing from 1.6% to 2.35% of total stations, constituted from 8.65% to 9.01% of total exchange revenues of the ten years under investigation (Appendix, p. 37).

Appellee endeavored to prove that an alleged universal understanding exists to the effect that non-subscribers of the exchange service in Chicago and in every other community can use the public pay stations therein to receive and to transmit long-distance message communications without paying for the use of such stations and the local facilities of each such community, the expense of which use is absorbed by the local exchange service subscribers of each such community. Appellee's proof consisted of:

(1) The recital in the Tariff and Route Book of the American Company's long-distance service, beginning with its Supplement of June 1, 1917, that:

> "The service covered by this tariff consists in furnishing for the use of patrons facilities, other than exchange facilities, intended for use in telephonic communication between the points listed. The exchange facilities used in connection with this service are the facilities required to establish connection between an exchange station and the toll board, or between an exchange station and the toll trunks, when such trunks are employed to effect connection with the toll board, and the use of such facilities is covered by

the charges for exchange service" (Appendix, p. 33) and

(2) The arrangement contained in the standard form of License Contract covering the use, without compensation to the exchange service operator, of exchange plant facilities in the American Company's long-distance service (R. V, 3005-7; O.R. IV, 1205).

It is clear of course that the recital in the American Company's schedule books could not bind Appellee or any other exchange service operator. As an accurate expression of a universal fact, such recital is of course contrary to Appellee's history. The record shows that the American Company, in December, 1917, in its dealings with Appellee, overlooked the special situation in Chicago in respect to long-distance uses of the Chicago exchange plant ~~facilities and later made a correction to give effect to such~~ special situation (O.R. VI, 1973). Nor does the record show any revision of the long-distance charges to conform to the scope of service as narrowed in 1917.

But there is nothing inconsistent between such recital and the arrangement covering the use of the exchange plant facilities of the Associated Companies, including Appellee, beginning with 1917 under the Mutual Plan of Operation of the Bell System. The record shows that the American Company, as the operator of the long-distance service, was able to pay operating expenses, interest and amortization on money borrowed applicable to such service and to yield an unreasonably large rate of return on its equity investment therein. Such rate of return, expressed as a percentage of outstanding capital and of corresponding capital and surplus, was:

	Per Cent Return on Capital and Surplus (R. VIII, 4396)	Per Cent Return on Capital Stock (R. VIII, 4398)
1923	18.95	23.53
1924	16.99	20.97
1925	19.70	24.12
1926	17.17	21.42
1927	14.27	17.89
1928	14.66	19.31
1929	13.53	17.94
1930	8.51	11.67

Certainly the excess over a reasonable return on investment, as appears from the above, is more than sufficient to offset, among others, the reduction in return on the American Company's equity investment in Appellee to which it would otherwise be entitled, as consideration for the American Company's use, without otherwise compensating Appellee, of the Chicago exchange plant facilities in the long-distance service (*infra,* 492, 494), to which compensation Appellee and only two other exchange service licensees were ever entitled (*supra,* 66).

B.

Appellee failed to prove the existence of a universal understanding covering the interstate uses by subscribers of the exchange service.

Appellee offered as proof of a universal understanding covering the interstate uses by subscribers to exchange service and compensation therefor as part of the exchange service and rates, two classes of evidence in addition to those already discussed (*supra,* 76) covering interstate uses by non-subscribers of the exchange service:

(1) recitals in certain filed schedule sheets of independent telephone companies in Illinois and elsewhere, substantially as follows (R. IV, 2793, *et seq.*):

> "The local exchange rates herein shown are for local exchange service which includes service and connection with the toll boards having connected thereto the toll lines with the .... local exchange.
>
> "The Company acts as the agent for the long distance companies for the purpose only of quoting and collecting charges for service over the long distance lines of these companies and is not responsible or liable for any acts or omissions on the part of the owners or employees of said long distance companies or their connections."

(2) general statements of three witnesses (R. I, 274-5, 298, 300-1).

Insofar as the filed sheets represent the published rate-making practice of the utility concerned, they have no application here as Appellee did not establish any such practice by filing them in conformity with law. Insofar as they represent an affirmation of a pre-existing universal understanding, analysis of such schedules shows that convenience in the particular case and not a universal understanding governed the practice. Thus the Illinois sheets were all filed since *1923* by eight non-Bell companies out of several hundred operating in the State (R. IV, 2793-2807); such sheets were parts of schedules covering twenty-three communities, of which fifteen had from 69 to 500 telephone stations, four had from 500 to 1,000 stations, two from 1,000 to 2,000 stations, one had 3,719 stations, and one had 9,448 stations (R. VIII, 4454). In each case the sheets were part of *flat rate* schedules covering rural and village or city service (R. II, 1830-1; R. VIII, 4413-20). In each case the exchange service operator did not offer any toll service, but acted as agent to quote rates and collect charges (R. VIII, 4413, 4415). The schedules of non-Bell companies in other states covered situations similar to those in Illinois.

The general statements of a universal understanding were given by two employees of the American Company and by an employee of the New England Telephone & Telegraph Company (R. I, 270, 295, 300), no one of whom gave consideration to the facts of Appellee's history of exchange service rate-making and of its contractual relations to the operators of the interstate toll services, or to the provisions of the Illinois Statutes regulating Appellee's operations as a public utility (*supra,* 72). Insofar as their testimony covers situations such as that of the farmer lines in Illinois, or of the special situations elsewhere, already discussed (*supra,* 79), their testimony merely states the practice where convenience dictates the rate-making policy of the exchange service operator and no more.

In any event, their general statements in a field so important should not be accepted as adequate proof to support a finding of confiscation which voids state action (*Missouri Rate Cases,* 231 U. S. 474, at 501-2, 507).

LICENSE CONTRACT SERVICES AND PAYMENTS.

Introduction.

The story of the License Contract operations covers Appellee's relationship to the American Company. The activities of the American Company, during the period of the litigation embraced seven distinct fields:

(1) as Licensor, for valuable consideration, of inventions for use in the motion picture industry and others within the non-telephone field throughout the world;

(2) as Licensor, for valuable consideration, of inventions to four manufacturers other than Western for use in telephone communication equipment sold outside the Bell System in this country and abroad;

(3) as Licensor, for valuable consideration, of inventions to Western for use in telephone communication equipment sold to the Bell System, to other retail customers, and to distributors for resale throughout the world;

(4) As Owner and Operator of the Long Lines property in the long distance service;

(5) as Holding Company investor in the Associated Companies;

(6) as Holding Company investor in Western and other non-operating subsidiaries; and

(7) as Provider in part under the License Contract, of the efficient and economical management of such Associated Companies.

To cover the cost of the License Contract services (Item 7), the Associated Companies are charged yearly uniform assessments measured by a percentage of their current gross operating revenues.

In the regular course of its business, the American Company employs the practice of Mutual Life Insurance Companies to assure to each Associated Company and through it to the community served, the full benefit of the contributions of each of them without discrimination in favor of any other Associated Company or of any of its own non-license operations. The part of the yearly assessment which proves not to have been needed inures to the benefit of such Associated Companies as a part of the return to the American Company on its investment in their securities as an aid in financing them.* (See *Penn Mutual Life* v. *Lederer,* 252 U. S. 523 (1919); *Pacific Gas Co.* v. *San Francisco,* 265 U. S. 403, at 424 (1924)).

Appellee, however, did not follow the American Company's practice; it attempted to allocate to License Contract operations the proper proportion of the American Company's total expense in each department covering the seven different classes of operations, in the face of the admission by the Comptroller of the American Company, as Appellee's witness, that as late as 1931:

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*The American Company states:

"In the Bell Telephone System taken as a whole more than in any other utility, profits are conserved within the System for the benefit of **the public and the stockholders.** There are intercompany profits on use of patents, on expert engineering advice, etc., and on manufacturers, but either through the 4½% payment or the dividends of the manufacturing company, these profits come to the treasury of the American Telephone & Telegraph Company, the financing company of the System. Except for the dividends on the small amount of stock of the associated companies in the hands of the public all profits of the Bell Telephone System ultimately come to the treasury of the American Telephone & Telegraph Company" (O.R. VII, 2583 (21)). "It retains for the ultimate benefit of the System and the public what the System itself has produced" (O.R. VII, 2602 (7)). (Boldface ours.)

> "This matter of separating expenses here, license contract expenses from other expenses, was quite a mystery and the department heads could not tell me very much" (R. II, 1175).

To show the fundamental errors in Appellee's presentation upon which the District Court's findings were based, requires the recounting of each of the relationships of the American Company. But as the same relationships are involved in the determination of issues herein covering Appellee's allocation of the expense of most of the departments of the American Company, the recounting of such relationships is given under the topic "American Company's Expense of Development and Research" (*infra,* 89 *et seq.*) to avoid duplication which otherwise would be necessary.

What the District Court Did.

In the years 1923 to 1925, inclusive, Appellee paid to the American Company 4½% and in 1926 and 1927 4% of its current gross operating earnings to cover rental of telephone instruments plus compensation for services specified in the License Contract then in effect (*Smith* v. *Illinois Bell Tel. Co.*, 282 U. S. 133, at 156, 157 (1930)). The telephone instruments were sold to the Associated Companies in 1927 (R. III, 2520; R. VIII, 4828), and the License payment was reduced effective January 1, 1928, to 2% of gross operating earnings to cover services only (*Smith* Case, *supra*). Beginning with 1929 the percentage has been 1½% (R. III, 2520).

Appellee's License payments applicable to its Chicago Intrastate business during the period under investigation, and the amounts found by the District Court properly chargeable as operating expenses are:

	Payments (R. III, 2519)	District Court's Finding of Proper Charges (R. III, 2519)	Difference
	a	b	a-b
1923........	$1,662,014	$1,088,195	$573,819
1924........	1,787,095	1,156,046	631,049
1925........	1,901,069	1,369,836	531,233
1926........	1,845,571	1,421,867	432,704
1927........	1,980,880	1,422,869	558,011
1928........	1,036,616	1,005,063	31,553
1929........	834,276	834,276	......
1930........	864,131	864,131	......
1931........	834,199	834,199	......

The District Court's findings of the proper charges to operating expenses for the years 1923 to 1927, inclusive, represent the total of (1) the fair rental of telephone instruments measured by the maintenance and depreciation charges as found by the District Court plus a return of 6% on the American Company's investment therein, (2) reimbursement of the American Company's expenses incurred in certain operations specified by the District Court (R. III, 2510-12), and (3) a return on the American Company's investment employed in its License Contract operations sufficient to pay interest and amortization on money borrowed and a 9% dividend on the capital stock applicable thereto. The District Court's findings of the proper charges to operating expenses for the years 1928 to 1931, inclusive, exclude provision for fair rental of telephone instruments as they were sold to the Licensees in 1927, and for the years 1929 to 1931, inclusive, represent the amounts paid by Appellee although they were less than the American Company's expenses determined by the District Court as applicable to License Contract operations. The difference between the amounts so paid and charged are:

	District Court's Finding of American Company's Costs	Payments Made	Difference
	a	b	a-b
1929........	$1,040,529	$834,276	$206,253
1930........	1,191,882	864,131	327,751
1931........	1,068,303	834,199	234,104

The District Court disallowed for each year as part of the License Contract costs two items of expense (a) the difference between the income on and cost of obtaining the money for the revolving fund which the American Company claimed it held to make temporary advances to the Associated Companies, and (b) the federal income and franchise taxes paid by the American Company—on the ground that the operations covered by them are not under the License Contract. The total of such disallowed items ranged from $61,000 to $401,000 per year (R. III, 2511-12). For the years 1923 to 1928, inclusive, the District Court disallowed also as part of the License Contract costs properly chargeable as operating expense the excess of the amount actually paid under the percentage provisions of the License Contract and the American Company's expenses determined by it as applicable to License Contract operations, ranging from $31,553 to $631,049 per year (*supra*, 84; R. III, 2519).

The record contains no facts from which a finding could be made in respect to the License Contract services and charges for 1932, and the District Court made no finding thereon. But the District Court's finding on Appellee's return for 1932 under the existing rates and under the attacked rates gives effect to whatever payment Appellee made as proper.

Appellants' Position.

Appellants contend that the District Court's allowance was excessive for each year of the period by the following amounts (Appendix, p. 54):

	Appellants' Contentions	District Court's Findings	Excess
	(a)	(b).	(b)—(a)
1923	$513,000	$1,088,195	$575,195
1924	565,000	1,156,046	591,046
1925	629,000	1,369,836	740,836
1926	668,003	1,412,867	744,867
1927	713,000	1,422,869	709,869
1928	251,000	1,005,063	754,063
1929	248,000	834,276	586,276
1930	251,000	864,131	613,131
1931	243,000	834,199	591,199

The amounts which Appellants contend should be excluded cover the classes of expense of the American Company which include:

(1) a portion of the American Company's Development and Research expense to develop inventions applicable to the non-telephone field, to the telephone communication field outside the field covered by Western sales to its retail customers, and to the American Company—as the operator of the long-distance service, as the Holding Company investor in the securities of Appellee, and as the Licensor, for valuable consideration, of Western to manufacture and sell to Appellee products embodying the results of the Development and Research work covered by such expenses;

(2) a portion of the American Company's expenses applicable to it as a Holding Company investor of the stock of Appellee covering the cost of raising capital to make the investment, of servicing the American Company's out-

standing securities issued since 1886, and of operating ten departments whose operations are concerned in whole or in part with its functions as such Holding Company investor;

(3) the $30,395,800 transferred from 1924 to 1928, inclusive, by the American Company to its Reserve for Contingencies created in 1900.

Appellants further contend that any benefit which Appellee might have received from the classes of expenses so excluded was more than compensated by the four considerations of value (*supra*, 10; *infra*, 247) other than the percentage of Appellee's current gross operating revenues, received by the American Company from Appellee, which considerations (a) burdened Appellee's operating expenses for the benefit of the American Company, (b) were properly applicable as additional compensation for License Contract services rendered to Appellee, and (c) were not taken into consideration by Appellee or by the District Court in their determinations on License Contract.

Under Fair Return (*infra*, 464 *et seq.*) Appellants treat the portion of the recorded License Payment and the portion allowed as operating expense by the District Court, in excess in each case of the amount claimed by Appellants to be proper, as an advantage of additional pecuniary profit to the American Company on its investment in Appellee which is not received by the ordinary investor on his investment in business undertakings outside the Bell System.

Discussion.

The discussion on License Contract proceeds in the following order:

PAGE

Part I: The American Company's Expense of Development and Research 89

Part II: The American Company's Expense of Direct Distribution of New Securities and of Servicing Outstanding Securities 174

Part III: The American Company's Expense of Operating Ten Departments 184

Part IV: The American Company's $30,395,000 Appropriations to Reserve for Contingencies 194

Part V. Considerations Received by The American Company Applicable as Additional Compensation for License Contract Services Not Considered by the District Court 217

Part I.

American Company's Expense of Development and Research.*

Preliminary Statement of Facts.

The District Court found that the American Company's Development and Research expenses allocable to License Contract operations and properly chargeable to Chicago Intrastate Expenses were (R. III, 2509; R. IV, 2953-61, 2734-42):

1923	$139,476
1924	145,247
1925	160,036
1926	197,747
1927	241,935
1928	242,605
1929	293,601
1930	387,281
1931	355,295
1932	Undisclosed

Appellants' position is that the maximum which should have been charged to License payments as operating expense is (Appendix, p. 55):

1923	$ 7,100
1924	9,339
1925	9,810
1926	15,187
1927	30,169
1928	31,800
1929	30,212
1930	28,891
1931	25,120

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*The issue presented in the text is distinct from the issue presented by Appellee's allocation of Western's Development and Research expense between Bell and non-Bell business and discussed herein, infra, 271.

The two principal classes of work covered by the Development and Research expense[*] of the American Company were:

I. Work concerned with the protection of the telephone and telegraph plant from inductive interference from neighboring trolley wires, high tension circuits, electrolysis and lightning (R. I, 622; R. IV, 2844A-W). The expense of this class of work was comparatively small, ranging from $146,000 to $725,000 per year, and is not disputed (Appendix, p. 55):

II. Work in the development of the telephone art for the production of improved instrumentalities for the giving of electrical communication services (R. I., 622-5). The expense of this class of work was (R. I, 624; R. IV, 2845; R. IV, 2844A-W):

1923	$2,737,022
1924	2,920,670
1925	3,381,286
1926	3,983,571
1927	4,717,500
1928	4,824,186
1929	6,323,556
1930	9,143,027
1931	8,245,961
1932 (not available)	
Total	$46,276,779

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[*] The Development and Research expense of the American Company for the years 1923 and 1924 was in each case the sum of the total expense of the department of the American Company known as "Development and Research," organized in 1919 (R. I, 616), plus a portion of the expense of the Engineering Department of Western billed to the American Company in each of said years (R. I, 617). The Development and Research expense of the American Company for each of the years 1925 to 1931, inclusive, was the sum of the total expense of its department of Development and Research, plus a portion of the expense of Bell Telephone Laboratories, Inc., a corporation organized in 1925 to take over the work of the Engineering Department of the Western (R. I, 617).

The work of the Engineering Department of Western and of the Bell

Chicago's portion of the expense was computed by Appellee through Dr. Jewett, Vice-President of the American Company, on the basis of allocating to Appellee as *one of the beneficiaries* of the development work a portion of the expense thereof (R. I., 629).

Beneficiaries of American Company's Development Work Classified.

In respect to benefits received, the beneficiaries of the development work, other than the American Company itself, may be grouped into two classes:

Class I—Beneficiaries of inventions embodied in telephone communication equipment:

Class II—Beneficiaries of the inventions embodied in special commercial products which were developed from the telephone communication field, but which found their commercial usefulness outside the telephone communication field.

Each of these two classes may be subdivided as follows:

Class I.

Beneficiaries of Inventions Embodied in Telephone Communication Equipment.

A. Western—Licensee since 1882 of inventions for use in telephone communication equipment for sale in the United States and for export. Such sales were made to the following classes of purchasers:

Telephone Laboratories, Inc., the expense of which was billed to the American Company, was of the same character as that of the American Company's department of Development and Research, except that the former made use of the laboratory facilities which the latter did not have (R. I, 616, 617).

(1) The Bell System customers:
  (a) 24 Associated Companies—licensees of the American Company;
  (b) The American Company's Long Lines;
  (c) The American Company as a purchaser to December 31, 1927, of telephone instruments leased to the Associated Companies and to its Long Lines.

(2) Non-Bell customers:
  (a) Retail customers in the United States (to 1925);
  (b) Distributors for resale abroad;
  (c) Distributors for resale in the United States (after 1925).

B. International Western—Licensee from 1918 to 1925 of inventions for use in telephone communication equipment for sale in all foreign countries other than Canada.

C. International Standard—Licensee since 1925 of inventions for use in telephone communication equipment for sale in all foreign countries other than Canada.

D. Northern Electric—Licensee since 1919 of inventions for use in telephone communication equipment for sale in Canada.

E. Automatic Electric—Licensee since 1925 of inventions for use in telephone communication equipment for sale in the United States and Canada outside the Bell System.

Class II.

Beneficiaries of the American Company's Inventions Embodied in Special Commercial Products.

A. Western—Licensee since 1919 to manufacture special commercial products for sale or license throughout the world. To the date of the closing of the record herein, the principal licensed users have been:

(1) The motion picture producers and exhibitors comprising the 90% of the Motion Picture Industry in the United States and abroad—using systems and apparatus for the recording and reproducing of sound in timed relation with the taking and projection of motion pictures (R. II, 1243);

(2) Victor Talking Machine Company—using synchronized records for use in motion picture theatres (R. VIII, 4690, 4701);

(3) All the leading Phonograph Companies throughout the world—using systems and apparatus for the electrical or mechanical recording and reproducing of sound on or from phonograph records for use other than in synchronism or timed relation with motion pictures (R. VIII, 4827, 4708, 4715, 4719, 4726);

(4) Radio broadcasting stations—using the receiving and transmitting apparatus for commercial broadcasting (R. V, 3223, 3229, 3251-5);

(5) Other large users of special commercial products, including (a) airport ground stations and airplanes—using radio telephone equipment for the despatching of airplanes and for the maintenance of two-way telephone communication between the pilots and the airport personnel; (b) ocean liners and harbor craft of all kinds—using marine radio telephone equipment for ship to shore telephone service; and (c) schools, churches, auditoriums and others—using loud speaker equipment and public address systems (R. V, 3535, 3252, 3335).

Beginning with 1927, these licenses were granted to Electrical Research Products, Inc. (hereinafter designated as Products) a wholly owned subsidiary of Western organized for that purpose (R. I, 321-2; R. VIII, 4565, 4571).

What the District Court Did.

The District Court's finding (No. 22, R. III, 2519), without discussion, adopted Appellee's presentation of the Development and Research expenses to 1932 as properly chargeable to Chicago as an operating expense. No showing or finding was made for 1932.

Appellee's presentation was:

(1) Dr. Jewett eliminated certain items which passed through the books of the Department of Development and Research but which were not properly charged to that department (R. I., 623).

(2) Dr. Jewett then allocated the American Company's entire Development and Research expense to Western's sales of telephone communication equipment manufactured by it without allocating any portion of such expense to Western's sales of special commercial products or to the four licensed manufacturers other than Western.

(3) Dr. Jewett then allocated the expense between Western's Bell and non-Bell sales on the basis of the relative sales to each class. In the non-Bell sales to distributors for resale, he included only Western's price to them.

(4) The Bell System portion, allocated as above stated, Dr. Jewett then prorated among the Associated Companies and the American Company's Long Lines on the basis of plant in service. He determined Chicago's portion on the basis of the ratio of the plant in service in Chicago to the total plant in service in the territory of all the Associated Companies and the Long Lines (R. I, 721).

(5) Appellee's showing of the License Contract costs properly chargeable to Chicago, made through Mr. Heiss, Comptroller of the American Company, included as a part thereof the entire portion of the expense determined by Dr. Jewett in the manner above stated (R. IV, 2953-60).

To the District Court's findings, Appellants assigned error (R. III, 2533-6) and in support of their position offer the following:

SUMMARY STATEMENT OF APPELLANTS' CONTENTIONS.

I. The allocation to Western's sales of telephone communication equipment of the portion of the American Company's development and research expense applicable to special commercial products unjustly enriched the American Company by $5,226,141, cash royalties received from 1923 to 1931, inclusive, and by the value of the right to receive thereafter royalties for the use in such field of its inventions developed prior thereto and by the excessive return on its investment in Products.

II. The allocation to Western's sales of telephone communication equipment of the portion of the American Company's development and research expense applicable to the other four licensed manufacturers of such equipment unjustly enriched the American Company by a substantial portion of more than $20,000,000 received from them during the period 1923 to 1931, inclusive, and the value of the right to receive thereafter royalties from them.

III. The allocation to Western's Bell sales of the portion of the American Company's development and research expense applicable to Western distributors for resale unjustly enriched the American Company by a substantial portion of more than $20,000,000 received from them during the period 1923 to 1931, inclusive, and by the value of the right to receive thereafter royalties from them.

IV. The allocation of the Bell System portion of the American Company's development and research expense between the Associated Companies on the one hand, and the American Company's Long Lines on the other hand, on the basis of plant in service, unjustly enriched the American Company by more than $20,000,000.

A. Appellee allocated pooled expenses of work covering problems having dissimilar application to and dissimilar results on dissimilar operations of dissimilar plants of the Associated Companies, on the one hand and of the Long Lines, on the other hand.

B. Appellee's allocation assumes but does not prove that the allocation on the basis of plant investment of the pooled expenses having dissimilar applications to and having dissimilar effects on the Associated Companies and on the Long Lines will produce a fair result to each of them.

C. Appellee's allocation by classification between the Associated Companies and the Long Lines did not and could not prove the reasonableness of its allocation of the Bell portion of development and research expense between the Associated Companies and the Long Lines.

D. The American Company was unjustly enriched by Appellee's allocation, approved by the District Court, at the expense of the Associated Companies for the period 1923 to 1931, inclusive, by an amount in excess of $20,000,000.

V. The allocation to the License Contract payment of the portion of the American Company's development and research expense applicable to it as the Holding Company

Investor in the Associated Companies, and as the Licensor of Western to manufacture and sell to them products embodying the result covered by such expense unjustly enriched the American Company by more than $6,000,000.

VI. The District Court's finding that the entire amount of charge to license contract payments to cover development and research expense should be allocated to operating expense and no part thereof to fixed capital account, unduly burdened Appellee's customers to the extent of from 25% to 75% of such charge during the years 1923 to 1931, inclusive.

DISCUSSION AS TO CONTENTION NUMBERED I.

I.

THE ALLOCATION TO WESTERN'S SALES OF TELEPHONE COMMUNICATION EQUIPMENT OF THE PORTION OF THE AMERICAN COMPANY'S DEVELOPMENT AND RESEARCH EXPENSE APPLICABLE TO SPECIAL COMMERCIAL PRODUCTS UNJUSTLY ENRICHED THE AMERICAN COMPANY BY $5,226,141 CASH ROYALTIES RECEIVED FROM 1923 TO 1931, INCLUSIVE, AND BY THE VALUE OF THE RIGHT TO RECEIVE THEREAFTER ROYALTIES FOR THE USE IN SUCH FIELD OF ITS INVENTIONS DEVELOPED PRIOR THERETO, AND BY THE EXCESSIVE RETURN ON ITS INVESTMENT IN PRODUCTS.

Dr. Jewett explained his failure to allocate any portion of the Development and Research expense to purchases of special commercial products, on the ground that "to whatever extent the benefits of the research and development work of the American Company are found in the special commercial products, those values have been paid for in ways other than by an allocation of the credit for expense of development and research'' (R, I, 720).

The District Court adopted Dr. Jewett's allocation of expense, but failed to carry out his intent to have proper offsetting credit allowed for the values received by the American Company from the non-telephone field (R. III, 2519).

Historical Basis for the Payment of Royalties to the American Company for the Use of Its Inventions in Telephones.

The arrangements covering the use of the American Company's inventions embodied in special commercial products date back to 1879.

Period 1879-1919.

Western Union Contract of 1879.

By the Western Union Contract of 1879 (Appendix, p. 1), the National Bell agreed to rent and not to sell Telephones in the United States and to pay over to the Western Union 20% of the rent and royalties received by it during the 17-year period of the contract, plus 20% of the net profits on all Telephones manufactured by it or through it and exported to foreign countries and to Canada (O.R. VI, 1887).

The term ''telephone'' was defined therein as (O.R. VI, 1888, Art. 2 (1)):

> ''an instrument for electrically transmitting or receiving articulate speech, and is understood to mean either a transmitting instrument, incapable of use as a receiver, a receiving instrument incapable of use as a

transmitter, or an instrument capable of being used both as a transmitter and receiver."

The contract contemplated that the National Bell might acquire the inventions in telephones; provided for reimbursement from rentals or from the Western Union for the cost incurred in such acquisition; and provided that if the inventions acquired covered rights in telephones "which are to be applied to purposes other than telephonic," the cost should be pro-rated according to the purpose for which they were to be used" (O.R. VI, 1895).

The contract also granted to the National Bell, without royalty to the Western Union, an exclusive license to make and use, and to license others to make and use, all inventions then owned or thereafter acquired by the National Bell in call bells, switches and other appliances (called herein "Telephonic Appliances") for use on telephone lines in connection with Telephones (Art. 5, O.R. VI, 1894).

Western Electric Contract of 1882.

The difference in treatment of Telephones and Telephonic Appliances required by the Western Union Contract of 1882 was preserved in the perpetual manufacturing license contract granted in 1882 by the American Bell, as the successor to the National Bell, to Western, a manufacturing company organized by the American Bell, and in which the American Bell owned 50.8% of the original 10,000 shares of stock (O.R. VI, 2064); of which 24% was given as bonus consideration for such license (R. VIII, 4376a). At this point we consider only the treatment of "Telephones." On page 116, the treatment of Telephonic Appliances is considered.*

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*The difference in treatment of Telephones and Telephonic Appliances was preserved also in the license contracts of the Associated Companies (**infra**, 117).

By the Western Electric Contract of 1882, Western was given the exclusive right to manufacture, on a cost plus basis, Telephones for—but only for—the American Bell and its successors and assigns, whether for use in the United States or for export, whether for use in the telephone field or in the non-telephone field; the consent or release of the American Bell, upon conditions stipulated by the American Bell, was required to permit Western to sell Telephones to others than the American Bell. Western agreed to sell to the American Bell, at the latter's election, at actual cost, all inventions in Telephones, which Western then owned or might thereafter acquire and agreed to embody in Telephones such inventions as the American Bell might develop and/or acquire and from time to time prescribe. The American Bell was not obligated to undertake development and research work to develop inventions in Telephones, but if it did so, its cost was not to be reimbursed by the Western Electric; such cost was part of the American Bell's expense of doing business, to be liquidated, if at all, from income received by it through the sale or use of the Telephones (O.R, VI, 2068).

The term "Telephone" was broadened in the Western Electric Contract of 1882 to include many products which were not covered by the term "Telephone" in the Western Union Contract of 1879. In addition to receivers and transmitters, "Telephone" under the Western Electric Contract of 1882 was defined to embrace also "all attachments and devices which serve to cause, to improve, or to modify the articulating current or the effect thereof" (O.R. VI, 2068-9).

Period 1919-1932.

Commercial Application of Inventions in Telephones Within and Outside Telephone Communication Field.

Prior to 1919, the items which had been developed and were classified as "Telephones" under the Western Electric Contract of 1882 found application in the *telephone field* only—such items were principally telephone instruments, receivers and transmitters—and devices such as repeaters to revivify or amplify the message currents, used almost exclusively in the American Company's Long Distance Message Communication and Telegraph Services (*infra,* 117).

Beginning with 1919, however, the situation changed. Inventions within the classification of "Telephones," under the Western Electric Contract of 1882, found commercial application in the non-telephone field, and were embodied in items manufactured by Western and known as Special Commercial Products. Such products included vacuum tubes and related apparatus for use in the non-telephone field (1919)*; loud speader equipment (1921); current supply set as accessory to loud speaker equipment and a voice frequency signalling system (1922); input equipment for radio broadcasting (1924); electrical phonograph recording and reproducing apparatus, audiophones and audiometers for noise measurement, picture transmission equipment, talking motion picture equipment (1925); phonograph sound boxes and accoustic apparatus, talking picture equipment, and electro-magnetic sound reproducers (1926); talk-

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*The year indicated in parenthesis is the year of release by the American Company to Western to manufacture and sell in the non-telephone field (R. VIII, 4634-7). The story of the development of the inventions is given in R. V, 3599 *et seq.*

ing picture equipment (1927); electrical recording apparatus for broadcasting (1929); stethescope, sound measurement apparatus and radio telephone equipment (1930); public address system, music distribution system, sound picture system, radio broadcasting system, input equipment for radio broadcasting, photoelectric cells for industrial purposes (1931) (R. VIII, 4634-7). The users of these products are classified on page 91, *supra.*

Revenues and Values Received by the American Company for the Use of Its Inventions in Telephones in the Non-Telephone Field.

Beginning with 1919, written releases were given from time to time by the American Company to Western to manufacture and sell special commercial products (R. VIII, 4634) embodying the American Company's inventions in "Telephones" as defined under the Western Electric Contract of 1882 (O.R. VI, 2068-9). Such releases provided for the payment of royalties to the American Company on two bases:

(a) Where the product manufactured by Western was sold, the American Company was to receive a per cent of the selling price ranging from 5% to 10%. In 1928, for convenience, the parties agreed on a flat royalty of 3½% of all sales of special commercial products (R. VIII, 4639).

(b) Where the product was sold or licensed for use under a royalty agreement the American Company was to receive, in addition to the royalty on Western's sale of the product, a portion ranging from 5% to 33⅓% of the gross royalties received by Western or by its subsidiaries, as agents, for the use of the system or apparatus.

The revenues and values received were:

(1) During the period 1923 to 1931, inclusive, the American Company received as its share of the royalties from licensees for the manufacture and use of special commercial products, $5,226,141 (R. VII, 4149-53; R. VIII, 4640):

	Western	Motion Picture Industry	Phonograph Companies	Radio Broadcasting Stations and Others	Total
1923........	94,477				94,477
1924........	67,677			45,859	113,536
1925........	82,797		42,923	86,796	212,516
1926........	77,414		93,645	89.922	260,981
1927........	203,223	29,883	167,660	139,661	540,427
1928........	218,298	43,010	163,084	81,501	505,893
1929........	899,934	245,146	57,595	30,426	1,233,101
1930........	514,653	526,242	62,087	26,673	1,129,655
1931........	162,048	902,242	54,085	17,180	1,135,555
1932	not available	not available	not available	not available	not available
Total...	$2,320,521	$1,746,523	$641,079	$518,018	$5,226,141

(2) On December 31, 1931, the American Company had the right to receive thereafter:

(a) Royalties from outstanding licenses to Western for the sale of special commercial products outside the telephone communication field embodying the American Company's patents and inventions (R. VII, 4149-52; VIII, 4640);

(b) Royalties from outstanding licenses to the motion picture producers and exhibitors comprising over 90% of the industry in the United States and abroad, to the Victor Talking Machine Company, to the Columbia Phonograph Company, to the Gramophone Company, Ltd., to The International Standard Electric Company and to others, for the use of the American Company's patents and inventions embodied in systems and apparatus used by them outside the telephone communication field (R. VIII, 4701a, 4708, 4719, 4726, 4741, 4749).

From the record it is impossible to state definitely the unexpired life of the patents for inventions or the length of the period beyond 1931 during which the American Company will continue to receive royalties from Western on sales of special commercial products embodying inventions developed prior to that date. The licenses for the use of such products would indicate that sales of such products might continue to 1940 and beyond (R. VIII, 4732). The licenses to the Motion Picture Industry were granted from and after 1927, and their period was usually ten years (R. II, 1243). The licenses to the Phonograph Companies were granted beginning with 1925 and their period extended in some cases to 1935—in others to 1940 and beyond (R. VIII, 4732).

None of the licenses requires further development and research work beyond 1931 by the American Company for its share of the royalties to be received thereafter. As such work resulting in the inventions embodied in these products had all been done prior to December 31, 1931, and the cost thereof currently charged during this period, the right of the American Company on December 31, 1931, to receive royalties in respect to the sales of these products for the many years beyond 1931 is as much *an item of value* to be considered as the cash royalties actually received to 1932.

That the right is valuable, no one can doubt. That the value of the annuities is great and will continue in spite of the depression may be judged from the fact that the royalties from the Motion Picture Industry showed continued increase (R. VII, 4149-53; R. VIII, 4640) in the face of declining sales of new installations in the last two years (R. IV, 2840a).

(3) The American Company as the investor in over 98% of the stock in Western, received the benefit of the

unreasonably large return which Products earned through the exploitation of the inventions developed in the telephone communication field prior to its organization in 1927 (*infra,* 276). The return on the capital and surplus of Products resulting from its operations was (R. VI, 3957):

1927	63.6%
1928	51.0%
1929	68.1%
1930	18.2%

Nor does such rate of return give effect to the value of the right of Products on December 31, 1930, to receive two-thirds of the royalties yet to come on the long term royalty contracts to the Motion Picture Industry and to the Phonograph Companies extending to 1940 and beyond (*supra,* 103). The fact that Products spent much money to make the inventions commercially practical in the non-telephone field beginning with 1927, or that Products is a separate corporation, neither closes the door to a full disclosure and consideration of such profits nor relieves Appellee from the burden to justify the license payment as an operating expense by a fair presentation of the profits made by the American Company therefrom, including profits which it for convenience chose to have remain in the treasury of its subsidiaries.

The District Court should have allocated a portion of the Development and Research expense to the non-telephone field (*Smith* Case, 282 U. S. 133, 157) or should have offset the burden on Appellee through its failure so to do by crediting the revenues and values received by the American Company and its subsidiaries applicable thereto (*Smith* Case, 282 U. S. 133, 157; *Southwestern Bell Tel. Co.* v. *Pub. Serv. Co.,* 262 U. S. 276).

DISCUSSION AS TO CONTENTION NUMBERED II.

II.

THE ALLOCATION TO WESTERN'S SALES OF TELEPHONE COMMUNICATION EQUIPMENT OF THE PORTION OF THE AMERICAN COMPANY'S DEVELOPMENT AND RESEARCH EXPENSE APPLICABLE TO THE OTHER FOUR LICENSED MANUFACTURERS OF SUCH EQUIPMENT UNJUSTLY ENRICHED THE AMERICAN COMPANY BY A SUBSTANTIAL PORTION OF MORE THAN $20,000,000 RECEIVED FROM THEM DURING THE PERIOD 1923 TO 1931, INCLUSIVE, AND THE VALUE OF THE RIGHT TO RECEIVE THEREAFTER ROYALTIES FROM THEM.

What Dr. Jewett Did.

Dr. Jewett received from Western the figures of its Bell and non-Bell sales (R. I, 630-1) and on the basis thereof allocated the entire amount of Development and Research expense between the two classes of business (R. IV, 2846-7).

Western's sales cover:

(1) Western's Bell sales.

(2) Western's non-Bell sales for use in the United States:

- (a) 1923-1925—Sales made direct to the ultimate user (R. VIII, 4878);
- (b) 1926-Nov. 1, 1928—Sales to Graybar Electric Company, a wholly owned subsidiary, for resale (R. VIII, 4878);
- (c) Nov. 1, 1928—Sales to Graybar Electric Company, an independent distributor, for resale.

- (3) Western's non-Bell sales for export:
  - (a) For export to foreign countries other than Canada:
    - (1) 1923-1925—Sales to International Western, a wholly owned subsidiary, for resale to countries where no International Western factories were established (R. VIII, 4878);
    - (2) 1926—Sales to International Standard Electric, an independent distributor, for resale in foreign countries other than Canada (R. VIII, 4878).
  - (b) For export to Canada:
    - (1) 1923—Sales to Northern Electric, in which Western held a substantial though not a controlling stock interest, a distributor for resale (R. VIII, 4878).

What Dr. Jewett Did Not Do.

But Dr. Jewett did not allocate any portion of the American Company's Development and Research expense to the four licensed manufacturers: International Western, International Standard Electric, Northern Electric and Automatic, and did not credit as an offset the following revenues and values received by the American Company from them for such licenses:

1. LICENSE TO INTERNATIONAL WESTERN.

Prior to 1918, Western operated in foreign countries through subsidiaries and its own foreign factories. From 1915 to 1919, the foreign activities of Western were interrupted by the War; the foreign sales, if any, were largely of war materials and of telephone materials particularly adapted to the conduct of the War; practically no effort was made abroad to develop the telephone art or to use the inventions developed in the United States (R. I, 496). In 1918 Western's foreign subsidiaries and foreign factories were turned over to International Western, a wholly owned subsidiary. From and after the date of its organization to October 1, 1925, when its business was sold to the International Telephone & Telegraph Co. (*infra*, 109), International Western received all the foreign rights to the inventions of the American Company and of Western then owned or thereafter developed. *The American Company received no compensation therefor or reimbursement for any portion of the cost of developing its own inventions* (R. VIII, 4845, 4849). International Western had its own factories in England, on the continent of Europe and in Japan and was engaged in *manufacturing and selling* telephone communication equipment in those places (R. I, 320). Only where its own local manufacturing was not possible, did International Western sell telephone communication equipment manufactured by Western's factories in the United States and sold to it as distributor for resale (R. I, 329). Obviously telephone communication equipment received the same benefit of the same inventions of the American Company, whether manufactured by the Western for export, to which Dr. Jewett gave effect, or manufactured by the foreign factory of the International Western, to which Dr. Jewett did not give effect in his allocation (R. VIII, 4528).

The record shows:

	Western's Sales to International Western for Resale		Total International Western Sales	
1920			$41,300,000	(R. VIII, 4529)
1921	$6,702,000	(R. VIII, 4878)	$41,000,000	(R. VIII, 4529)
1922	$1,987,000	(R. VIII, 4537)	$35,000,000	(R. VIII, 4534)
1923	$3,495,000	(R. VIII, 4537)	$36,500,000	(R. VIII, 4546)
1924	$4,273,000	(R. VIII, 4556)	$43,800,000	(R. VIII, 4557)
1925	$3,443,000	(R. VIII, 4561)	Not available	(R. VIII, 4562)

The record does not show the distribution of sales of International Western between supplies and telephone communication equipment; nor does it show the sales for 1925.

Turning now to the values received by the American Company for the use of its inventions, we find that International Western started in 1918 with a capital of $7,500,000 (R. VIII, 4528; R. VI, 3927). On its capital and surplus, International Western earned in

1919	7.7%
1920	5.9%
1921	12.6%
1922	15.8%
1923	11.9%
1924	30.6%
1925	8.5% (6 months) (R. VI, 3928).

From 1920 to 1925, Western received in current cash dividends $3,912,500, and on September 30, 1925, a special cash dividend out of surplus of $9,700,000 (R. VI, 3927).

On October 1, 1925, the International Telephone and Telegraph Company acquired the interest of Western in International Western and in the latter's foreign telephone business outside of Canada and Newfoundland (R. VIII, 4560). As part of the same transaction, the American Company and Western each granted to the International Standard Electric (successor in name of International Western) a license to the foreign rights in the inventions of the American Company and Western in telephone communication equipment then in effect and thereafter to be acquired by each of them for a period of 15 years (R. VIII, 4822, 4845-7), and appointed the International Standard Electric to act for 15 years as the exclusive distributor of Western's products in all countries except the United States, Canada and Newfoundland. The consideration paid to Western for the conveyance of its interest, and for the grant of patent rights by it and by the American Company and for the commercial contract were:

(1) $29,306,534 in cash (R. VIII, 4890, 4563);

(2) The payment by the International Standard Electric of a yearly royalty of ½% of its sales of telephone communication equipment other than such which it purchased from the Western (R. VIII, 4884);

(3) The right to use patents developed or owned by the International Standard Electric (R. I, 494).

The $29,306,534 cash represented $9,544,081 more than Western's investment in International Western at the date of sale on September 30, 1925, after Western first withdrew and paid to itself a cash dividend out of the accumulated surplus of $9,700,000 in the treasury of International Western (R. VIII, 4890), and resulted in a net profit to the Western of $6,255,095 (R. VIII, 4890; R. VI, 3927). This amount the Western passed on to the American Company on December 31, 1927, as part of a special $47,938,865 cash dividend* received by the American Company from Western.

That the American Company's grant of patent rights was considered an important consideration is unmistakably clear from the statements of the International Telephone and Telegraph Company itself. To raise the $29,306,534 the International Telephone and Telegraph Company sold a $35,000,000 bond issue to J. P. Morgan and Company in 1925, the bonds being immediately resold to the public. In the letter to J. P. Morgan and Company, which the latter reproduced in its circular reselling the bonds, the President of the International Telephone and Telegraph Co. stated:

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*Western transferred to Products at the date of its organization December 31, 1926, $41,693,000 in cash and United States Government Securities and its stock investments in three companies valued at $8,070,000. On December 31, 1927, Products declared a regular dividend to Western of $3,750,000, and a special dividend of $45,000,000 (R. V, 3723) and Western declared a special cash dividend of $48,750,000 of which the American Company received $47,938,865 (R. V, 3321).

> "International Telephone and Telegraph have a 15-year Contract to act as exclusive distributors of Western Electric products in all countries except United States, Canada and Newfoundland. International Standard Electric will have also an agreement under which are acquired rights to several groups of telephone patents which taken together are by far the most valuable in existence" (R. V, 3613).

2. LICENSE TO INTERNATIONAL STANDARD ELECTRIC—1925.

Beginning with October 1, 1925, International Standard Electric received, under the license just stated (R. V, 3613), the benefit of the American Company's inventions for use in telephone communication equipment manufactured by its own factories. Western received the specified royalties from the International Standard Electric each year since 1925, but the amount thereof is included with royalties received from other sources and the exact amount thereof cannot therefore be determined (R. VIII, 4884). The American Company, of course, benefited therefrom as equity investor in Western.

Western sold to International Standard Electric telephone communication equipment each year beginning with 1926 (R. VIII, 4878) and Appellee included such sales (R. VIII, 4878) as part of the non-Bell sales participating in the benefits of the development and research work of the American Company. But Appellee did not include as part of such sales any sales made by International Standard Electric from its foreign factories making use of the American Company's inventions. The amount of such sales is not in the record. Nor did it give consideration as an offsetting credit against the cost of the American Company's development and research work to any portion of the profit from the cash consideration paid in 1925, or of the royalties received to 1932, or of the right to receive royalties thereafter to 1940 (*supra,* 109).

3. LICENSE TO NORTHERN ELECTRIC COMPANY, LTD.

International Western in 1919 granted to the Northern Electric Company, Ltd., a Canadian Corporation, 43% of whose stock Western owned (R. I, 491; R. VIII, 4675, 4679), a perpetual non-exclusive license to the invention which International Western then owned or thereafter would acquire (*supra,* 108) covering telephone communication equipment. Such rights, of course, included those received from the American Company. The Northern Electric was given the right to purchase telephone communication equipment products from Western or to manufacture or to have them manufactured in Canada. The Northern Electric agreed to pay for such license 1% of its sales of such products (R. VIII, 4679, 4684). On September 30, 1925, International Western assigned its interests in the license contract to Western (R. VIII, 4689).

Appellee included as part of the non-Bell sales Western's sales to the Northern Electric (R. VIII, 4878). It did not include nor does the record show the amount of the Northern Electric sales of telephone communication equipment from its own factories. Nor did Appellee give consideration as offsetting credit to the benefits which the American Company received through its investment in Western (a) from the royalties paid by the Northern Electric for the license to use the American Company's inventions and (b) the unreasonably large return received by the Western from its investment in the Northern Electric.

For the period 1923 to 1926 the royalties paid by the Northern Electric to Western were $223,000. For the period beginning with 1926 the record does not separate the royalties received by Western from the Northern Electric from other royalties (R. VIII, 4878).

The return to Western on its $1,300,000 investment in the Northern Electric during the period under investigation was (R. VI, 3959):

1923	18.9%
1924	18.0
1925	25.1
1926	41.0
1927	39.8
1928	37.8
1929	46.5
1930	16.7

4. License to Automatic Electric Company.

In 1919, Western contracted to purchase from the Automatic Electric Company step-by-step central office equipment for a period of five years (R. I, 462; R. VI, 3765; R. VIII, 4593). As part of the same transaction, the American Company procured a five-year option from the owners of a controlling interest in the stock of the Automatic to purchase the stock (R. VI, 3765). The purpose of the option was to give "assurance that the quality and price of the apparatus delivered would be satisfactory" (R. I, 463). The terms of the option were such as to hold down the profits of the Automatic (R. VIII, 4597; R. VI, 3765-9; R. I, 463).

On the expiration of the 1919 contract, Western made another purchasing contract with the Automatic covering the same subject-matter, to expire December 31, 1929 (R. VIII, 4613). As part of the same transaction, the American Company's option having expired, another option was given to December 31, 1929, covering the controlling stock of Automatic, but the option was made to run to Western instead of to the American Company (R. I, 463).

In 1925 the American Company, Western and Automatic entered into an agreement to continue to December 31, 1929 (R. VIII, 4847-50), by the terms of which:

> (1) *Automatic* granted to the American Company and Western a non-exclusive license to use the patents and inventions of Automatic then owned or thereafter acquired prior to December 31, 1929, for the full period of such patents, for use in the United States by the Bell System and non-Bell customers of Western and by anyone in Alaska;
>
> (2) *The American Company and Western* granted to Automatic a non-exclusive license to use their respective inventions and patents then owned or thereafter acquired prior to December 31, 1929, for the full period of such patents for use in the United States and Canada and covering "automatic, semi-automatic telephone switching systems and telephone switching apparatus and devices of the designs and types which have heretofore been made and sold by the Automatic Company for the Independent telephone trade" (R. VIII, 4848).

By 1927 the owners of Automatic had undertaken to expand their telephone operations and had acquired many independent telephone operating companies (R. I, 464),—prospective purchasers of equipment manufactured by Automatic.

On May 24, 1927, the American Company, Western and Automatic extended the period during which the exchange of licenses provided for in the 1925 contract should continue to December 31, 1936 (R. VIII, 4868-9). At the same time Western extended its contract with Automatic to purchase step-by-step equipment from the Automatic to

December 31, 1936 (R. VIII, 4617, at 4622). As part of the same transaction, Products received the obligation of Automatic for $4,000,000 payable over the period to 1936, which obligation was paid in full prior to 1931 (R. VI, 3958).*

Appellee produced a witness who stated that as part of the transaction of May 24, 1927, Western's option on the controlling stock of the Automatic was surrendered to the owner of such stock (R. I, 463). The $4,000,000 was passed on to the American Company through Western's dividend of $47,938,865 on December 31, 1927 (R. I, 465).

What part of the $4,000,000 represents the consideration for the extension of the American Company's license to use its inventions, the record does not show. The record shows that the President of Western, who as President of Products, carried on this transaction, and who also executed, on behalf of Western, the patent license agreement of May 24, 1927 (R. VIII, 4868), recorded at about the time of the transaction that "the figure of four million dollars was arrived at on the basis that the payment was fully warranted for the assets involved" (R. VIII, 4609). Neither Appellee nor the District Court gave effect to this payment or to any portion thereof.

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*The $4,000,000 transaction is discussed in greater detail infra, 272, et seq.

DISCUSSION AS TO CONTENTION NUMBERED III.

III.

THE ALLOCATION TO WESTERN'S BELL SALES OF THE PORTION OF THE AMERICAN COMPANY'S DEVELOPMENT AND RESEACH EXPENSE APPLICABLE TO WESTERN'S DISTRIBUTORS FOR RESALE UNJUSTLY ENRICHED THE AMERICAN COMPANY BY A SUBSTANTIAL PORTION OF MORE THAN $20,000,000 RECEIVED FROM THEM DURING THE PERIOD 1923 TO 1931, INCLUSIVE, AND BY THE VALUE OF THE RIGHT TO RECEIVE THEREAFTER ROYALTIES FROM THEM.

Preliminary Statement.

The arrangements covering the use of the American Company's inventions embodied in telephonic appliances manufactured by Western date back to 1879.

Period 1879-1919.

Western Union Contract of 1879.

By the Western Union Contract of 1879 the National Bell was granted, without royalty to the Western Union, an exclusive license to make, use and to license others to to make and use, inventions in telephonic appliances (*supra*, 98).

Western Electric Contract of 1882.

By the Western Electric Contract of 1882, Western was granted an exclusive manufacturing license to manufacture for sale in the United States or for export, telephonic appliances embodying the American Company's inventions. Western agreed to reimburse the American Company the cost of inventions which Western desired to have licensed to it. In this respect the arrangement was opposite to that covering the American Company's inventions in telephones (*supra,* 98). As consideration for the manufacturing license Western gave to the National Bell* 2,000 shares of stock representing 24 per cent of its outstanding stock (*infra,* 168).

Prior to 1919, the American Company's Engineering Department undertook fundamental research and the exploration of new ideas leading to inventions in telephonic appliances, but the cost thereof was reimbursed by Western as the inventions were licensed to Western under the Western Electric Contract of 1882. During the same period, Western's Engineering Department undertook the same work as the American Company, and, in addition, undertook research work with respect to the designing of equipment and the development of manufacturing processes to be employed in manufacturing the equipment embodying the inventions developed by it and by the American Company (R. III, 2144).

License Contracts with Associated Companies.

Prior to 1919 the American Company was not obligated to the Associated Companies to conduct development and research work to develop inventions for use in telephonic appliances. But the Associated Companies had the right to demand, and the American Company had the obligation to make available such inventions as did develop and which were embodied in telephonic appliances manufactured by Western upon the payment by such Associated Companies of such uniform royalties as the American Company from time to time might establish. Such royalties, if any, were specified to be in addition to the royalties for the use of inventions in Telephones (O.R. VI, 1927), but whether such royalties were to be in addition to or as part of the manufacturer's price was not stated in the contract between the parties (O.R. VII, 1927). But no such additional or separate royalty was in fact charged by the American Company to 1919.

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*In 1899 the American Company by assignment, succeeded to this stock (O.R. VI, 2067).

Non-Bell Sales.

Prior to 1908, telephonic appliances, manufactured by Western, were available only to the Associated Companies by purchase from Western. Beginning with 1908 telephonic appliances manufactured by Western became available also to non-Bell customers by purchase. But such non-Bell purchasers paid no royalty or compensation to the American Company for the use of its inventions embodied in such appliances (R. VIII, 4884).

Prior to 1919, Western's sales price of a telephonic appliance to Bell and non-Bell customers paid for the item, plus all royalties and compensation for the value of the American Company's inventions as well as for Western's inventions embodied therein.

Period 1919-1932.

Organization of Department of Development and Research.

In 1919 the American Company organized the Department of Development and Research (R. I, 616; R. III, 2144). This department took over the development and research work of the Engineering Departments of the American Company and of Western, and took over from Western the duty of making the final determination as to which and when inventions should be embodied in telephonic appliances, and should be made available as standard in the Bell System (R. III, 2144, 2146).

Beginning with 1919 the Engineering Department of Western confined its activities to research work to develop designs and manufacturing processes for the manufacture of telephonic appliances embodying the inventions of Western and of the American Company (R. III, 2144, 2146).

Revision of Western Electric Contract of 1882.

By revision of its arrangement with Western the American Company, after 1919, was not reimbursed by Western for the cost to the former of developing inventions embodied in telephonic appliances manufactured by the latter (R. I, 722). But Western continued to use the American Company's inventions in telephonic appliances sold to its Bell System and non-Bell customers.

Revision of Associated Companies' License Contracts.

By revision of its License Contracts with its Associated Companies, the American Company obligated itself, beginning with 1919, to conduct development and research work to develop inventions in telephonic appliances, but the American Company was given the right to determine what inventions were to be embodied in telephonic appliances. For this work the American Company, beginning with 1919, was to receive, through the yearly license payments, royalty for the use by the Associated Companies of inventions embodied in telephonic appliances manufactured by Western, *such royalty being in addition to and separate from the price paid by them to the Western Electric for the telephonic appliances* (O.R. IV, 1196, at 1206-8).

Non-Bell Sales.

After 1919, as before, the non-Bell customers of Western made no royalty payment direct to the American Company for the license to use the American Company's inventions embodied in telephonic appliances purchased by them. As before 1919, they continued thereafter to make the single payment to Western to cover the sales price of the item plus royalty and compensation for the value of the inventions of the American Company and of Western embodied therein (R. I, 514-5).

What Dr. Jewett Did.

Dr. Jewett allocated the entire Development and Research expense between the Bell System and non-Bell customers of the Western on the basis of their respective purchases of Western's telephonic appliances (including lead covered cable). His declared purpose was to allocate to the non-Bell field its proper portion of such expense (R. I, 629-30). But this he did not in fact do.

What Dr. Jewett Did Not Do.

Dr. Jewett failed to give effect to the fact that the Bell sales figures used by him in all cases represented retail sales; the non-Bell sales figures used by him for the period 1923 to 1925, inclusive, represented Western's retail sales in the United States and Western's sales to distributors for *resale* abroad; the non-Bell sales figures used by him beginning with 1926 represented Western's *sales to distributors* for resale in the United States and abroad (*supra*, 91).

Dr. Jewett did not give effect to the revenues received by Western from the distributors in addition to the sales price to them for the product sold. Nor did Dr. Jewett give effect to the sales price of the distributors to the ultimate users of the telephonic appliances.

It is, of course, obvious that by including only a portion of the price to distributors on non-Bell sales and the entire retail sales price on Bell sales, the Bell System portion of Development and Research expense is enlarged. Against this enlargement of burden Dr. Jewett failed to offset, as a credit, compensation which Western received from its distributors in addition to the sales price to them for their use and license to permit others to use the American Company's inventions, which compensation was passed on to the American Company through the earnings on the bonus stock given by Western to the American Company for the manufacturing license granted in 1882 and on the American Company's investment in Western (*infra*, 304). Thus:

Graybar Electric Company—1926-1928:

Prior to 1926, Western sold its telephonic appliances to non-Bell customers in the United States through a special department called the "Supply Department," which it had organized in 1922 (but not incorporated), as a separate department of its business (R. VIII, 4532-3), to which Western's Telephone Department, representing the manufacturing end of the business, made sales of its products. In 1926 Western incorporated its Supply Department as the Graybar Electric Company, a wholly owned subsidiary (hereinafter referred to as Graybar), to handle the same busines which it theretofore handled as part of Western (R. VI, 3939-43). For that purpose Graybar received an exclusive distributor's license, including therein a license for the purpose of sale, of any "rights to inventions or patents" which Western may acquire in "telephonic appliances"—which rights would of course cover also the American Company's inventions embodied in such appliances. Neither Western nor the American Company received any royalty for such license.

The extent to which Graybar as a distributor was favored in price by Western during the period that Western owned all its stock, may be seen from the following comparisons covering Western's products and those of other manufacturers (R. VI, 3929):

GRAYBAR SALES AND PROFITS—1926-1928
(000 omitted)

	1926		1927		1928	
	Western Manufactures	Other Manufactures	Western Manufactures	Other Manufactures	Western Manufactures	Other Manufactures
Graybar Sales	$12,172	$64,416	$9,020	$59,692	$9,789	$62,913
Gross profit after deducting price paid to manufacturer	$2,708	$9,049	$2,345	$8,553	$2,428	$9,087
% Gross Profit to Sales	22.2%	14.0%	26.0%	14.3%	24.8%	14.4%
Expenses to Sales	12.3%	13.97%	15.0%	13.2%	13.6%	13.3%
Net Profit	$1,204	$21	$993	$640	$1,097	$1,303
Net Profit to Sales	9.9%	.03%	11.0%	1.1%	11.2%	2.1%

Such a striking difference in Gross and Net Profit to Sales, in the face of Graybar's own expense ratio to sales being about the same for Western's and others' business, normally could result only from the fact that Western's prices to Graybar do not cover all the costs covered by the prices of other manufacturers to distributors. But Western made up for the reduced sales prices to Graybar on its manufactures and for the license to use the American Company's inventions without royalty, and for the non-payment to Western for royalty on purchases, by the unreasonably large return which it received on its investment in that company during the period 1926-1928, inclusive. Graybar's earnings available to Western during the three-year period aggregated $5,534,000, representing an average yearly return of 23.58% on the average Western investment in *capital* and *surplus* in that subsidiary, which return when expressed on the average capital outstanding stock was 27.53% on the average capital (R. VI, 3939). These profits were part of the $47,938,865 cash dividend paid by the Western to the American Company on December 31, 1927 (*supra*, 110).

Graybar Electric Company—1929-1931.

Western transferred to Products in 1927 its Graybar stock. In 1928 Products sold such stock to the Graybar Management Corporation, acting for the Graybar employees (R. VI, 3830, 3834; R. VIII, 4830, 4890).

The purchaser paid for the stock $3,000,000 in cash and 60,000 shares of preferred stock of the par value of $6,000,000, such consideration aggregating in amount the net book value of the physical assets of Graybar (R. VIII, 4890). Appellee claims that no profit was made on the sale (R. I, 366-7).

But as part of the same reorganization, Western terminated the sales agency given to Graybar at the date of its organization. Simultaneously therewith it constituted Graybar as its exclusive sales agent to 1943—and thereafter until terminated by one year's notice—to distribute in the United States outside the Bell System, Western's manufactures of telephonic appliances and certain special commercial products for use outside the telephone field (R. VI, 3943-56).

As part of the same reorganization Graybar agreed to pay to Western out of its "net earnings" as defined in the agreement 1% thereof for each 1,000 shares of preferred stock outstanding from time to time, but Western was not to stand any of the losses of Graybar (R. VI, 3943-56).

During 1929 and 1930 Western held the following number of shares of preferred stock of Graybar:

1929	60,000
1930	55,000

Under this provision Products received the following:

1929	$1,105,000
1930	318,895*

Western, beginning with 1929, sold its telephonic appliances to the non-Bell users in the telephone field in the United States through Graybar. The record discloses that it is impossible to determine Graybar's sales of Western's manufactures of telephonic appliances (R. VIII, 4802).

The Graybar payments were made to Products, and to the Weco Corporation, a wholly owned subsidiary of Western organized in 1930 to take over the non-operating assets of Products.

In the case of the International Standard Electric as the foreign distributor of Western's products, Western received a cash consideration and a royalty for the grant (*supra*, 111). In the case of the Northern Electric, as the Canadian distributor, Western received a royalty for the grant (*supra*, 112). In the case of Graybar, Western claimed that no profit was intended to be made from the sales of its investment interest in Graybar (*supra*, 123). The participation by Western in the profits of Graybar must therefore be in whole or in part the consideration for the exclusive sales agency contract of November 1, 1928 (R. VI, 3943-56).*

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*In 1931, adjustments were made which resulted in a credit to Graybar of $11,367 applicable to 1929-30 profit sharing.

International Western—International Standard Electric—Northern Electric.

Western sold telephonic appliances for foreign countries other than Canada through two distributors: International Western (1923 to 1925) and International Standard Electric (1926 to 1932), and sold them for export to Canada through Northern Electric (1923 to 1932). How much difference there was between Western's price to its distributors and the retail price, the record does not show. But Western, in addition to the sales price to International Western, received from it unreasonably large current returns on investment to 1925, and large profits on the sale of the business in 1925, representing in part the sales price of the right to use the American Company's inventions embodied in telephonic appliances (*supra,* 109). Western, in addition to the sales price to the International Standard Electric, received large compensation for the grant of the distributor's license (*supra,* 110). Western, in addition to the sales price to Northern Electric, received royalty for the distributor's license, plus an unreasonably large return on its investment in that company (R. VI, 3959).

The suggestion that the profit sharing is in the nature of an investment return because the agreement covering it is printed on the back of the preferred stock certificate can be dismissed with the observation that the same profit participation arrangement was provided for in the original plan, submitted to and approved by the American Company which called for the issuance of $6,000,000 face amount of notes instead of $6,000,000 par value preferred stock (R. VIII, 4852-3; 4830). Certainly preferred stock investment participation in earnings on the basis stipulated in the Graybar arrangement would be a most extraordinarily high price for the common stock to pay for its capital. It is significant that the arrangement in respect to the notes was contained in the Minute Book of the Executive Committee of the American Company which book was not made available until the last few days of the hearings (R. II, 1786) on the ground that Appellants' demand was a "fishing bill" (infra, 202). When this arrangement was finally disclosed it was too late to bring out the facts.

DISCUSSION AS TO CONTENTION NUMBERED IV.

IV.

THE ALLOCATION OF THE BELL SYSTEM PORTION OF THE AMERICAN COMPANY'S DEVELOPMENT AND RESEARCH EXPENSE BETWEEN THE ASSOCIATED COMPANIES, ON THE ONE HAND, AND THE AMERICAN COMPANY'S LONG LINES ON THE OTHER HAND, ON THE BASIS OF PLANT IN SERVICE, UNJUSTLY ENRICHED THE AMERICAN COMPANY BY MORE THAN $20,000,000.

What Appellee Did.

The Bell System portion of Development and Research expenses, allocated as above discussed, was prorated by Appellee among the Associated Companies and the American Company's Long Lines on the basis of plant in service. It determined Chicago's portion on the basis of the ratio of the plant in service in Chicago to the total plant in service in the territory of all the Associated Companies and the Long Lines (R. IV, 2848). The District Court followed Appellee's presentation.

Preliminary Statement.

The amount allocated by Appellee to the Long Lines, to the Associated Companies and to Chicago Intrastate business, and the amount which Appellee should have allocated to each, are (R. IV, 2844; 2848; Appendix, p. 55):

	Long Lines Proportion		Associated Companies (exclusive of Long Lines)		Chicago Intrastate	
	Appellee's Allocation	Appellants' Allocation	Appellee's Allocation	Appellants' Allocation	Appellee's Allocation	Appellants' Allocation
1923	$163,760	$1,432,601	$2,565,579	$1,296,738	$139,476	$ 70,475
1924	180,882	1,667,326	2,784,394	1,297,950	145,247	67,669
1925	200,752	1,990,963	3,201,821	1,411,610	160,036	70,613
1926	235,434	2,273,376	3,894,984	1,857,042	197,747	94,201
1927	321,335	2,627,828	4,861,480	2,554,987	241,935	127,035
1928	359,658	2,590,987	4,929,423	2,698,094	242,605	132,684
1929	512,097	3,507,957	6,226,017	3,230,157	293,601	152,315
1930	833,478	5,429,211	8,427,389	3,831,656	387,281	176,024
1931	822,254	4,791,780	7,833,055	3,363,529	355,295	175,208
1932	Amount not available					
Total			44,724,142	22,041,763		

Discussion.

A.

Appellee allocated pooled expenses of work covering problems having dissimilar application to and dissimilar results on dissimilar operations of dissimilar plants of the Associated Companies, on the one hand, and of the Long Lines, on the other hand.

Considered as a whole, the Bell System furnished the following classes of service through the following agencies during the period of the litigation:

A. *Message Communication*

(1) Local exchange service within cities or exchange areas—Associated Companies exclusively.

(2) Toll Service under 50 miles—Associated Companies exclusively (since 1925) (R. I, 634).

(3) Toll Service over 50 miles—Long Lines and some Associated Companies (R. I, 634).

B. *Telegraph and Teletypewriter Service*

Long Lines almost exclusively (*infra*, 148).

C. *Radio Broadcasting*

Long Lines operates all chain broadcasting; the Associated Companies' operations in this field are practically confined to such as is done in connection with Long Lines (*infra*, 144).

D. *Transoceanic Radio Telephone Service*

Long Lines exclusively (*infra*, 139).

E. *Radio Telephone Service to Mobile Stations*

Long Lines exclusively (*infra*, 140).

F. *Picture Transmission and Photo-Telegraphy Relating to Electrical Transmission of Pictures*

Long Lines exclusively (*infra*, 150).

In respect to items of plant, Long Lines has no telephone instruments, no subscribers' loops, no P. B. X. switchboards, no central offices for handling local business and no interoffice trunks (R. I, 634, 639). It does have toll central offices, lead covered cable and other outside plant similar to that of the twenty-four Associated Companies. On the other hand, the large Associated Companies in their message communication business have practically all the classes of plant that the Long Lines operates (R. I, 641-6).

In respect to the problems of the Bell System, those of the Associated Companies and of the Long Lines are in some respects identical, in some respects similar and in some respects dissimilar (R. I., 721).

In respect to the time of commercial application of the Development and Research work in the Bell System, the results of a large portion of such work found application in the Long Lines plant prior to 1932, and have yet to find application in the plants of the Associated Companies. The results of a large portion of such work which found application in the plant of the Associated Companies prior to 1932 found their application first in the Long Lines, and the results of a large portion of the work which has as yet found no application in the plants of the Bell System would find its application first in the Long Lines and later in that of the Associated Companies (R. I., 691, 695).

What Appellee Claimed It Did.

Dr. Jewett testified that all of the work of his department was for the benefit of the Bell System as a whole (R. I, 630; R. III, 2146); that it was impossible to limit the application or result of his expenditures to any one object or any class of property (R. I, 632-3); that money spent to accomplish one result often accomplished two or three others, but not the result sought; and that all the work done should be considered and prorated as a whole (R. I, 629, 630).

B.

Appellee's allocation assumes but does not prove that the allocation on the basis of plant investment of the pooled expenses having dissimilar applications to and having dissimilar effects on the Associated Companies and on the Long Lines will produce a fair result to each of them.

Allocation on the basis of plant investment of pooled expenses of work covering dissimilar problems having dissimilar application to and dissimilar results on dissimilar operations of dissimilar plants, is justifiable only if the percentage of total benefits to each of the participants bears a reasonable relation to the percentage of total expense borne by it—the allocation must bear a fair relation to the realities of the situation (*Smith* v. *Illinois Bell Tel.*

Co., 282 U. S. 133, at 151; *Wood* v. *Vandalia*, 231 U. S. 1). Where the expenditures are for different purposes or have different effects, or apply to different operations, it is obvious that any particular expenditure exclusively for the benefit of the Long Lines, or which benefits it beyond the per cent of such expenditure borne by the Long Lines, must be offset to the Associated Companies, considered as a unit exclusive of the Long Lines, by much greater benefits from other expenses which they receive either exclusively or in excess of the per cent of such expenditure borne by them considered as a unit. To illustrate: In 1930 the Long Lines bore only 9% of the total development and research expense allocable to Associated Companies plus the Long Lines (*supra*, 127); for every $100 of such expense incurred exclusively for the Associated Companies, the Long Lines would be burdened and they would be enriched by $9.00. Similarly, for every $100 of such expense incurred exclusively for the Long Lines, the Associated Companies would be burdened and the Long Lines would be enriched $91. Similar effect is produced where an expenditure incurred for both the Associated Companies and for the Long Lines benefits one or the other in excess of the per cent of expense allocated to each of them respectively. Appellee had the burden to justify the allocation and had the burden to prove its assumption. It attempted to do so by an allocation of the various classifications of Development and Research expense (R. I., 721). It failed in its proof.

C.

Appellee's allocation by classification between the Associated Companies and the Long Lines did not and could not prove the reasonableness of its allocation of the Bell portion of development and research expense between the Associated Companies and the Long Lines.

Appellee showed three classes of expenditures:

CLASS I.

Expenses having present application solely to plant and operations of the Associated Companies.

Appellee claimed that the Development and Research expense of the period 1923 to 1931 inclusive relating solely to the plant and operations of the Associated Companies from which the Long Lines received no benefit ranged from $470,000 to $695,000 per year (Appendix, p. 56).

To the extent that any portion of these expenses were allocated to the Long Lines, the Associated Companies were enriched and the Long Lines were burdened by from $29,000 to $66,000 per year and aggregating for the period $353,678 (Appendix, p. 56).

CLASS II.

Expenses having present application in varying degree to plant and operations of both the Long Lines and Associated Companies.

Appellee claimed that the Development and Research work of the period 1923 to 1931, inclusive, which had present application to the plants and operations of both the Associated Companies and the Long Lines in varying degrees involved yearly expenditures ranged from $784,000 to $3,707,000 (Appendix, p. 57).

The burden on the Long Lines from the expenditures of Class I incurred exclusively for the benefit of the Associated Companies represents less than 3% in any year but 1923 and 5.1% in 1923, of the yearly total of expenses in Class II (Appendix, p. 57).

If, therefore, the Long Lines received more than 11.5% as a maximum of total benefit from the total of the expenses of Class II, the enrichment to the Associated Companies at its expense in respect to Class I expenditures would be offset and the Long Lines could have no complaint (Appendix, p. 57).

On the other hand, if the Long Lines received more than such 11.5% benefit, it would be enriched from the allocation of the combined expenses incurred in Classes I and II, at the expense of the Associated Companies.

The difference in effect of burden on the Long Lines resulting from expenses incurred for the exclusive or greater benefit of the Associated Companies on the one hand and of burden resulting from expenses incurred for the exclusive or greater benefit of the Long Lines on the other hand, requires that the Appellee show that the benefits from joint expenditures were sufficiently more to the Associated Companies to justify the greater portion of the joint expenses allocated to them.

Appellee failed in its proof. It merely claimed that the toll equipment in the local companies is "many times the amount of the Long Lines" (R. I, 637); that power equipment is used a great deal more "by the Associated Companies than by the Long Lines" (R. I, 637). It did not claim and failed to show the comparative relation of expense to benefits in the case of "testing and maintenance equipment" and "miscellaneous" under "Central Office Systems and Apparatus"; of "Other Communication Systems and Apparatus"; of "Submarine Cable"; of "Fundamental Studies"; of "Interference and Preventions."

CLASS III.

Expenses covering Radio Transmission Systems and Wire and General Transmission Systems having present application almost exclusively to the plant and operations of the Long Lines.

Expenses covering Radio transmission system during the period 1923 to 1931 inclusive ranged from $400,000 to $2,000,000 per year and aggregated for the period $9,650,000. Expenses covering wire and general transmission systems ranged from $1,000,000 to $3,500,000 per year and aggregated $26,315,000 for the period. The former class of expenses ranged from 13.47% to 20.9% and the latter class ranged from 26.5% to 40.6% of the total yearly Development and Research Expense (Appendix, p. 58).

RADIO EXPENSE.

Appellee allocated to the Associated Companies 88.7% or $8,563,064 radio development expense for the period 1923 to 1931 inclusive and 7.1% or $687,029 to the Long Lines (Appendix, p. 59). On the record no part of the entire expense is properly chargeable to the Associated Companies.

The following facts prove conclusively that the field intended by the American Company to be covered by the expense was that of the Long Lines and that substantially all the commercial results of the work applicable to such expense during the period of the litigation had application to the Long Lines; that any incidental benefit which the Associated Companies might have received for this work was compensated for by considerations other than the license payment.

Period to 1923.

(1) As a result of three separate investigations, made in 1915, 1919 and 1922 (R. VIII, 4834-5, 4840, 4817), the American Company had concluded by the end of 1922 that the then existing state of the art and the probable developments in the future, together with the inherent limitations of radio, confined its field of application solely to that covered by Long Lines operations (R. VIII, 4840; R. V, 3252-3).

(2) Similarly by the end of 1922, the actual and foreseeable application of radio as a commercial activity in its limited fields and the position of the American Company and of the Western in the radio industry induced the American Company to undertake, or were relied on by it in undertaking the large development and research radio program from 1923 to 1931, inclusive. Thus:

By the end of 1922 the American Company had obtained a pre-eminent position in radio as a result of its control of fundamental patents in that field covering inventions which had been developed in the course of its reaserch work in wired telephony (R. V, 3350). Principal among these inventions were: vacuum tubes necessary for radio *receiving sets* (R. V, 3507); the inventions and methods required in the construction of *transmitting apparatus* and their use in connection with various circuits; vacuum tubes as oscillators (R. V, 3508); and filters (R. V, 3510-1).

By cross license contracts between the American Company, the General Electric Company on July 1, 1920 (R. V, 3251), and the extensions thereof to include Western, Radio Corporation of America (R. V, 3251), the United Fruit Company (R. V, 3536), the Wireless Specialty Apparatus Company (R. V, 3536), the Westinghouse Electric and Manufacturing Company (R. V, 3251), the American Company was granted (R. V, 3531-3):

(a) the benefit for use in the field of wired and wireless telephony of the patents and patent rights then owned or thereafter to be acquired by them to 1930 having application in the field of radio telephony (R. I, 651);

(b) the benefit of the results of their development and research work having application in the field of radio telephony (R. I, 651);

(c) complete licenses in the field of commercial and public service radio telephony and in the field of wired telephony including its *use in connection with broadcasting* (R. V, 3531); and

(d) the right to manufacture radio telephone equipment for commercial and public service uses (R. V, 3251-2, 3286-7). This right Western acquired (R. V, 3533-4, *infra*, 136).

By the end of 1922 broadcasting as a field of practical application of Radio was in process of development by the American Company (R. V, 3294). In November, 1922, the American Company itself established Radio Broadcast station WEAF, largely for promotion and demonstration purposes (R. V, 3301; R. VIII, 4891). At that time the American Company's development and research expert on radio said:

> "We are watching with large interest the apparently great appeal of radio telephone broadcasting to the

general public—the difficulties of radio for ordinary telephone work, that is, the spreading out over wide territory and non-secrecy are just the characteristics which are desirable in broadcasting. It may be that here there is a service in which radio telephony can assume considerable commercial importance and much more than justify the large amount of development work which must be given to it" (R. V, 3596).

By the end of 1922 the American Company's research work had convinced it that further development work would bring about satisfactory results in the two fields of communication where radio telephony was deemed practical, i.e., where radio was the "only practical system of telephony or where the peculiar difficulties in providing satisfactory wires may render it the preferred system" (R. VIII, 4840). In the previous year, radio telephone connections had been made to extend long distance conversations to Catalina Island (O.R. VII, 2622).

By the end of 1922, Western had been established as an important manufacturer in the radio industry. On July 1, 1920, Western was granted the right to make use of the licenses granted the American Company by the General Electric in the cross license agreement of July 1, 1920 (*supra,* 135), and thereby became the leading manufacturer of radio receiving and transmitting apparatus for commercial broadcasting (R. V, 3254). By the end of 1922 Western had already equipped or was in process of equipping radio stations. Its sales of radio receiving and radio transmitting equipment in 1922 totaled $1,517,269, (R. IV, 2840-A).

(3) From 1910 to 1919 the American Company's Development and Research expense for Radio was $161,750 (R. V, 3751) out of appropriations of $250,000 for that purpose (R. V, 3751; R. VIII, 4834). From 1919 to the end

of 1922, $1,730,518 (R. V, 3751) was spent on radio development and research instead of $500,000 authorized in 1919 (R. VIII, 4839). But by the end of 1922, although the conclusions as to the limitations of radio in telephone communication were the same as that reached in 1915 and 1919, the American Company's Executive Committee not only approved the excess expenses theretofore incurred but authorized its President to proceed with further development work although advised by him that the

> "scope and expense of such development desirable to undertake in the future will exceed the amounts heretofore authorized by this Committee, and that the exact nature and cost of such as may yet be undertaken can not be accurately foretold" (R. VIII, 4817-8).

Period 1923 to 1931, Inclusive.

The actual results to the Long Lines and to Western from the radio development program during the period 1923 to 1931, inclusive, more than justified their assuming the entire expense of the radio development program undertaken during such period. Thus:

Revenues from Radio Development—Long Lines and Western.

Radio Broadcasting.

Radio broadcasting resulted in the development of networks of telephone circuits for transmitting programs from studios or other places at which they are picked up to the radio station or system of stations from which they are broadcast (R. V, 3169). In the United States wire telephone systems are employed almost exclusively for this national broadcasting (R. V, 3223).

In 1929 over 30,000 miles of program transmission circuits were in use and over 40,000 miles of telegraph wires were used to exercise control thereover (R. V, 3223). These net-works were all served by the Long Lines (R. V, 3224, 3228). Radio broadcasting produced the following commercial results:

(1) The revenue to the Long Lines during the period 1923 to 1930, inclusive, from the use of its wires for broadcasting of programs (after deducting the portion thereof paid to the participating companies) was $10,419,418 (R. V, 3450a), of which amount $9,500,000 was received in the years 1927 to 1930, inclusive (Appendix, p. 60). The figures for 1931 were not available.

(2) Western's sales of radio receiving and transmitting apparatus during the period 1923 to 1931, inclusive, aggregated $18,768,677 (Appendix, p. 60).

(3) Resales by Graybar, 1926-1931, inclusive, of broadcasting equipment manufactured by Western exceeded $4,400,000 (R. VIII, 4891).

(4) Resales were made by Products of input equipment for broadcasting stations manufactured by Western, the amount of such sales not being disclosed on the record.

(5) Western's sales to the Bell System of special telephonic appliances and transmission circuits required to handle chain broadcasting on the large scale developed in the late years (R. I, 660, 659; R. V, 3224, 3343; O.R. VII, 2671). The amount of such sales is not disclosed. The record does show, however, that beginning with 1926 the purchases by the American Company of Western's manufactures other than lead-covered cable jumped by leaps and bounds (R. VIII, 4872). How much was due to broadcasting development and how much to the other developments of Long Lines (*supra*, 127) the record does not show.

(6) Revenues came to Long Lines from message tolls resulting from the popularizing of long distance calling as part of the technique of radio broadcasting. Calls from afar are solicited and received by announcers of radio stations. The large increase in message communication beginning with 1928, coincided with the development of chain broadcasting and caused the American Company to then acknowledge that "the country is becoming long distance minded" (R. V, 3328).

(7) $1,242,000 in royalties was received by the American Company on Western's sales of radio receiving and transmitting apparatus (R. VII, 4149-53; R. VIII, 4640) and from licenses to broadcasting stations (R. VI, 3764).

Trans-Oceanic Radio Telephone Service 1927-1931.

In January, 1927, regular trans-oceanic radio telephone service with London was inaugurated (R. V, 3316, 3321).

By 1931 practically every country in the world was connected to the American Company's Long Lines plant, the important exceptions being Japan, Russia, China, New Zealand and South Africa (R. V, 3342; R. VIII, 4422). On December 31, 1930, there were 35,300,000 telephones throughout the world; 32,200,000 of these were connected to the Long Lines plant of the American Company (R. V, 3342). By the end of 1928 the volume of trans-Atlantic telephone business at times overloaded the radio telephone facilities to such an extent that the American Company considered further facilities were required (R. V, 3329). The American Company took steps to develop and lay a trans-Atlantic telephone cable and to develop more radio channels (R. V, 3328-9). In 1929 there was in service one long wave and one short wave telephone radio circuit between Europe and North America. By 1930 two short wave circuits were added (R. V, 3325). By 1929 work was going forward on the development and research work of a new trans-Atlantic telephone cable "which will supplement the present radio channels" (R. VIII, 4422). This work continued in 1930 and 1931 (R. VIII, 4422).

Radio Service to Mobile Stations 1929-1931.

Ship-to-shore radio telephone service was established on a commercial basis in 1929 (R. V, 3325, 3169). By the end of 1931 this service was extended to seven ocean liners (R. VIII, 4422). By 1930 there was established a special transmitting and receiving station for this purpose intended not only as a demonstration of the technical features of such a service, but to afford an indication of the extent to which such a service will be used under commercial conditions (R. V, 3170). Radio stations were being installed in 1932 for ship-to-shore service with tug boats and other harbor crafts at Boston, New York, Seattle, San Francisco and Los Angeles (R. VI, 4021-2). Studies were under way in 1929 to determine the practicability of providing a radio telephone service with moving trains (R. V, 3169).

By 1930 installations of Western radio telephone equipment was being made in airport ground stations and airplanes (R. V, 3343; R. IV, 2840a). By the end of 1931 the major part of the air transport routes of the United States, including about 90 airport ground stations and about 250 airplanes had been supplied with equipment for the despatching of airplanes and for the maintenance of two-way telephone communication between the pilots and the airport personnel (R. VIII, 4422).

In this service teletypewriter circuits are furnished by the Long Lines. As of December 31, 1931, about 3,000 miles were used to transmit meteorological information and other communications relating to air transportation (R. VIII, 4422; R. V, 3221).

How much revenue the Long Lines received from service to mobile stations does not appear from the record. How much were the sales of teletypewriter equipment from the Teletype Corporation, wholly owned subsidiary of Western, the record does not show. The record does show that the Long Lines receipts from teletypewriter service furnished other than to the press increased from $3,179,000 in 1929 to $4,679,000 in 1930 (R. V, 3450a), a larger increase than that of any other of the Long Lines' services and comparable only to the increase in receipts from broadcasting (*supra,* 137). The record shows that Western sold $1,240,000 aviation communication equipment in the two years 1930 and 1931 (R. IV, 2840a). The record does not show how much are Western's sales of two-way radio telephone equipments for ship-to-shore, nor the marine radio telephone equipment for harbor crafts such as tug boats, ferry boats, lighters, municipal fire boats, pilot boats and fishing crafts (R. V, 3249).

Profits from Radio Development to Long Lines.

As bearing on the question of the extent to which the Long Lines prospered during this period and the extent to which these services contributed thereto the following *undisputed* facts are significant:

From 1923 to 1926, inclusive, the Long Lines' average depreciated investment in fixed capital increased 42% from $92,000,000 to $131,000,000 (R. VIII, 4406). Yet the per cent return on such depreciated investment of the Long Lines compares with the per cent return on corresponding investment for all Associated Companies, was (R. VIII, 4405-6):

	Long Lines	Assoc. Co.
1922	21.0	7.24
1923	20.0	6.73
1924	17.7	6.46
1925	19.5	7.16
1926	17.8	7.71

The period of major radio development, beginning with 1927, is even more spectacular from the standpoint of Long Lines' earnings. Long distance message telephone rates were reduced $3,000,000 on December 1, 1926 (R. V, 3317), $1,500,000 on December 1, 1927 (O.R. VII, 2680), $5,000,000 on February 1, 1929, and $5,000,000 on January 1, 1930 (R. V, 3220). This represented an average cumulative yearly reduction in 1927 of $3,000,000, or 4.4 per cent of message revenues; in 1928, $4,500,000, or 5.4 per cent of message revenues; in 1929 $9,500,000, or 10 per cent of message revenues; and in 1930, $14,500,000, or 15 per cent of message revenues* (R. V, 3450a, 3450b).

During the same period the Long Lines average depreciated investment in fixed capital was (R. VIII, 4406):

		Per Cent of Increase Over 1926
1926	$131,000,000	
1927	158,000,000	20.6
1928	188,000,000	43.5
1929	236,000,000	80.2
1930	314,000,000	139.7

But in the face of the voluntary reduction in rates ranging from 3 per cent to 15 per cent of the total message revenues and in the face of the increase in investment ranging from 20.6 per cent to 139.7 per cent during the period, the per cent return on depreciated investment in fixed capital was (R. VIII, 4406):

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*In 1931 the four reductions represented an annual estimated savings to long distance service users of $20,000,000 (R. V, 3220).

1926	17.8
1927	15.1
1928	15.8
1929	14.6
1930	9.3

In viewing 1930, it is significant that the teletypewriter and broadcasting revenues increased 50 per cent and 25 per cent respectively over the previous year, whereas the other services either showed a decline or made only slight gains over 1929 (R. V, 3450b).

The above showing compares with the following showing of the Associated Companies on depreciated investment in fixed capital (R. VIII, 4403):

1926	7.71
1927	7.45
1928	7.81
1929	7.84
1930	7.03

The full significance of the comparison between the showing of the Long Lines and of the Associated Companies requires consideration of two facts:

(1) the Long Lines plant investment is built in advance of and to provide for increasing business *five years ahead of construction* (R. III, 2211).

(2) the increase in depreciated investment in fixed capital of the Associated Companies as follows:

		Per Cent of Increase Over 1926
1926	$1,985,000,000	
1927	2,150,000,000	8.3
1928	2,345,000,000	18.6
1929	2,562,000,000	29.0
1930	2,818,000,000	42.0

was not as rapid as that of the Long Lines (*supra*, 142).

The comparison between the rate return of the Long Lines and of the Associated Companies on their respective equity investment (capital and surplus), shows the difference in their relative earning position (R. VIII, 4395-6):

	Associated Companies	Long Lines
1923............	6.90%	18.95%
1924............	7.37	16.99
1925............	7.51	19.70
1926............	7.87	17.17
1927............	7.88	14.27
1928............	7.91	14.66
1929............	8.00	13.53
1930............	7.70	8.51

From the above facts, Appellants conclude that the actual results to the Long Lines from the radio development program during the period 1923 to 1931, inclusive, more than justified its assuming the entire expense of the radio development program undertaken during such period. Any doubt in this respect is removed when consideration is given to Western's earnings from the same development which are discussed *infra*, 304.

The alleged present and prospective commercial benefits to the Associated Companies from the radio development program are admittedly highly speculative and have been and will be adequately compensated for through ways other than by the license payment. Thus:

Revenues from Radio Development—Associated Companies.

Radio Broadcasting.

The Associated Companies could receive revenues for the use of their facilities in connection with broadcasting from two sources: one from their own subscribers and second from the Long Lines. The record is not complete on either phase of this business but certain facts are significant. Appellee was represented to have many broadcasting stations as its own customers in Chicago, which next to New York is the largest of such radio centers in the country (R. V, 3304, 3328, 3169). But the record shows that Appellee's revenues from the use of its facilities in connection with broadcasting other than in conjunction with the Long Lines operations were negligible, aggregating for the period 1923 to 1930, inclusive, $98,615 (R. VIII, 4450a). The Long Lines' revenue for the use of its wires in long distance, above stated, are *after* deducting from the gross receipts $2,522,080[*] (R. V, 3450a-b). In other words, the Associated Companies' share from the gross revenues from chain broadcasting, which was intended to be the mainstay to support radio development expenses, was less than 20%, although they bore over 90% of the radio development and research expense (*supra*, 127).

Trans-oceanic Service and Service to Mobile Stations.

These services are not furnished by the Associated Companies.

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[*] Whether such deduction represents the portion paid to the Associated Companies as their share for participating in furnishing facilities, exclusive or inclusive of the amount paid Appellee under its special arrangement the record does not show. Assuming that the deductions of $2,522,080 from gross receipts do not cover Appellee's special arrangement, a deduction should be made for the additional amount, if any, which the Long Lines paid to Appellee for the operation of the Long Lines' plant under such special arrangement which the Long Lines would not have been required to pay if the broadcasting services had not been furnished through such plant. The record does not show that amount. But the record does show the return which Appellee received in Chicago from its interstate services, including the Long Lines service, and from its own services. Neither showing indicates that Appellee could possibly have benefited in Chicago either from the use of its facilities in connection with radio broadcasting, or from message communication resulting therefrom (Appendix, p. 124).

Future Use of Radio.

Dr. Jewett testified that the work on wires for use particularly in radio broadcasting has proceeded to a point where it is possible that something might develop therefrom in the future that might be useful in *new plant,* both in the fields of the Long Lines and the Associated Companies to make possible the use of the same wires for telephone communication and for music transmission, which is now hardly possible to do (R. I, 661). As to such, Dr. Jewett testified (R. I, 661-2):

> "Looking at the time ahead, I should say there is relatively more use in the plant of the associate companies than in the plant of the Long Lines. Of course, you will appreciate that I am having to project myself somewhat into the future, but I am doing it because of my knowledge of the inherent characteristics of this new thing which has only recently come clearly into our art, and it is of a character which makes it available for use over distances which are such that it will be a substitute for existing types of plant now employed very largely by the associate companies and also by the Long Lines."

This claim is subject to the following limitations:

(1) If, when and as the discovery reaches the stage of practical application, it will be in the new plant of the Long Lines and of the Associated Companies. What ratio of one to the other will then exist no one knows or can now tell. As to whether it will be of more benefit to them than to the Long Lines is pure guess. Even if such guess be sound, the extent of the additional benefit is of course pure speculation and was not even guessed at by the witness. Without knowledge of such extent, the reasonableness of the greater allocation of expense to the Associated Companies cannot be determined.

(2) If, when and as the discovery reaches the stages of practical application, it will require new plant, i. e., new business for Western and profits to the American Company as the equity investor thereof and as the owner of 183,675 shares of bonus stock given to the American Company as part consideration for the manufacturing license covering products sold to the Bell System (*infra,* 168).

(3) The use of the discovery in the new plant requires that the Associated Companies use wires which are "three times as good as the ordinary telephone circuit" (R. I, 660). By so doing the standard of efficiency of the plant for telephone service is raised beyond the degree necessary for that service (*infra,* 164).

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Dr. Jewett further testified that experiments in ultra-short wave radio have developed a cable structure to be used in the *future* if the cost thereof will permit, to provide channels for radio transmission, plus telephone, plus telegraph, plus music sound transmissions (R. I, 658) and that if, when and as developed it could be used in the plant of the Associated Companies (R. I, 659).

This claimed future benefit to the Associated Companies as a basis for justifying the allocation as made by which the Associated Companies bear more than 90% of the cost of the entire radio development is subject to the same objections just stated against the similar use of proposed wire construction (*supra,* 146) and for the reasons already stated, this claim must fail.

WIRE AND GENERAL TRANSMISSION SYSTEMS DEVELOPMENT EXPENSE.

Telegraph Transmission Equipment and Methods Related to Telegraph and Teletypewriter Services.

The work in this field relates to the various classes of telegraph and teletypewriter services furnished almost exclusively by the Long Lines. The total of the Development and Research expense included in the classification of Wire Transmission System which is specifically identified to cover work relating to these services for the period 1923 to 1931 was $2,130,243 (Appendix, p. 61), of which more than 90% was charged to the Associated Companies.

Although the American Company handles practically no commercial telegraph business, it furnishes a large mileage of telegraph circuits for the private use of individuals and institutions and for the use of Governmental Departments (R. V, 3168-9). Since 1914, the Long Lines has provided telegraph circuits to the newspaper and press Associations (R. V, 3168, 3220). Since 1924, this service has been broadened to include banks, stock brokerage houses, bond and security houses, and other financial institutions operating over large areas as the Federal Reserve Board, and industries where branch offices are located in different cities (R. V, 3220, 3228). As already noted, the airways are universally equipped with this service (*supra*, 140).*

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*Prior to 1928 the greater part of such telegraph circuits were operated by highspeed Morse telegraph. Since that date telegraph printers or teletype machines have come into use (R. V, 3168). In 1923 Western made arrangements with the Mokrum-Kleinschmidt Companies to manufacture printer apparatus for the Bell System. But the American Company and Western both had developed inventions in that art and in 1923, the American Company and Western licensed the Mokrum Company the use of certain of their respective patents, inventions and ap-

The Long Lines revenues received from the telegraph and teletypewriter services aggregated for the period 1920 to 1922, inclusive, $22,901,495, and for the period 1923 to 1930, inclusive, $104,973,663 (Appendix, p. 62; R. V, 3450a-b). The figures for 1931 are not in the record.

The growth in revenue from these services kept pace with the growth in revenue from message tolls during this period. In 1922 the Long Lines' revenues from these services represented 24.8%; in 1930, 26% of revenues from message tolls (R. V, 3450a-b).

On the other hand, Appellee's revenues from telegraph and teletypewriter service to its own subscribers for the entire period 1923 to 1930, inclusive, aggregated $43,400 (R. VIII, 4450c).

The amount which the Associated Companies received during the same period from the Long Lines for these services was $29,000,000 (R. V, 3450a-b) or 22% of the total revenues from the services, although the Associated Companies were charged more than 90% of the development and research expenses applicable thereto (*supra*, 127).

Future Use of Teletypewriters.

Appellee claimed that because of recent developments the potential use of teletypewriters is in the field of the Associated Companies (R. I, 712). Appellee failed to point out that the future service was also in the long dis-

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plications relating to printing telegraph apparatus and systems listed in the contract (R. VIII, 4851) and received in return a license to use the Mokrum Company's patents, inventions and applications without royalty if the latter did not supply the orders of the Western for apparatus for use in the Bell System (R. VIII, 4851). But the American Company retained the inventions on ciphering and deciphering systems developed by the American Company's Department of Development and Research. This relationship continued to 1930 when the American Company purchased the stock of Teletype Corporation, which took over Mokrum Company and Mokrum-Kleinschmidt Company, and as part of the same transaction sold it to Western (R. V, 3220; R. VIII, 4833, 4859).

tance service (R. V, 3224); that such future service contemplates the use of apparatus manufactured by the Teletype Corporation, and that the method by which Western acquired the Teletype Company already capitalized in 1930 for at least $15,000,000 the future earnings of this branch of the business on which the Associated Companies must provide a return* (R. I, 459).

Picture Transmission and Photo Telegraphy Relating to the Electrical Transmission of Pictures.

The work in this field relates to the service for the electrical transmission of pictures, which was inaugurated in 1925, and is furnished exclusively by the *Long Lines* (R. V, 3169, 3218, 3223, 3328).

The total of the Development and Research expense which is specifically identified to cover work relating to this service was $1,194,791 (Appendix, p. 62), of which more than 90% was charged to the Associated Companies.

By 1924 the method had been developed for electrically transmitting photographs, drawings, handwriting, finger prints, etc., over telephone circuits. The first public demonstration was made in May, 1924 (R. V, 3304). The service was established on a commercial basis between the cities of New York, Chicago and San Francisco in 1925 (R. V, 3169). In 1926 the service was extended to include also Los Angeles, St. Louis, Cleveland, Boston and Atlanta (R. V, 3316).

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*The American Company exchanged in 1930 $15,000,000 par amount of its stock for the entire capital stock of the corporation owning the Teletype Corporation business and as part of the same transaction sold the Teletype Corporation stock to Western for $30,000,000 (R. I, 459). Western carried the investment on its books at the purchase price and revised the balance sheet of Teletype Corporation to give effect thereto by adding an item of goodwill of $23,813,000 (R. I, 460; R. V, 3693-4).

Pictures may be sent from any of the above cities to one or more of the other cities which are reached by this service. Newspapers use this service for the transmission of pictures. The service is also used to transmit pictures of legal documents, advertising material to be simultaneously released at a number of separate points, pictures showing new styles in ladies' wearing apparel, personal greetings in the handwriting of the sender and finger prints of criminals. By arrangement with the American Company in 1928 (R. V, 3328-9) the Western Union and the Postal Telegraph Companies accept telegraph messages for "facsimile" transmission over the Long Lines Picture System between those cities which the system reaches (R. V, 3169).

The record does not show the Long Lines' revenues for this service. When originally put into use the American Company considered "that it seems probable that it may result in a considerable service which will utilize our circuits at times when they are not required for regular telephone service" (R. V, 3304). But certainly no part of the Development and Research expense in this field should be allocated to the Associated Companies.

CARRIER TELEPHONE EQUIPMENT AND CIRCUITS.

The total of the Development and Research expense which is specifically identified to cover this work was $1,558,254 (Appendix, p. 63) of which more than 90% was charged to the Associated Companies.

By the use of the Carrier System, a number of independent telephone conversations are simultaneously carried by a single pair of wires (R. V, 3322). The Carrier System was first applied in 1918 in the Long Lines (R. I, 666). It has application to open wire construction and became a substantial factor in providing for the growth of the longer haul facilities of the Long Lines, for distances exceeding 250 to 300 miles (R. V, 3218). To 1923, Carrier telephony was used substantially only on the Long Lines and on the very long lines of the Associated Companies (R. I, 666). After 1923, the System was developed to a point where its application became possible on shorter length open wires which increased its value to the Long Lines and also extended its use to the Associated Companies (R. I, 666). This Carrier development reduced the cost of rendering long distance service and contributed towards making possible the toll message rate reductions in 1926-27 (R. V, 3218). After 1924, the Long Lines withdrew from the field of message communication between distances less than 40 miles, and transferred its facilities within that field to the Associated Companies (R. I, 672). Later developments of the art have tended to shorten the length of wire to which application of the carrier art may be made but at the present time the uses thereof are confined to toll lines (R. I, 727).

The application of the carrier art to telephony covered by the above expenses relates solely to *open wire* structures, and is therefore confined to country where open wire construction is chiefly employed as in the West and in the sections of scattered traffic (R. V, 3218).

It would, therefore, have as yet little or no application to the Chicago Area and to the sections of heavy traffic where *toll cable* has replaced open wire construction (R. V, 3218). The application of the carrier art to cables is still in the experimental stage (*infra*, 153).

It should also be borne in mind that even on the American Company's claim, the benefit to Long Lines during the period under investigation from this development is far in excess of the ratio of total benefit therefrom to which it is entitled by virtue of the small portion of the expense having allocated to it (R. I, 687). Furthermore, the increase in use by the Associated Companies must come as a result of improvements "which increase the efficiency and decrease the first cost and operational cost of the equipment." By so doing, therefore, the Development and Research work in this field will increase the potential field for the products of the Western, from which operations the American Company will receive increased returns on its investment in the Western on the 183,675 shares of Western stock which it now owns and which represents the bonus stock given to the American Company for the license it gave to Western to act as the manufacturer for the Bell System (*infra,* 168).

CARRIER ON CABLE.

The total of the Development and Research expense which is specifically intended to cover the application of the carrier art to cable in 1930-1931 was $1,552,405 (Appendix, p. 63) of which more than 90% was charged to the Associated Companies.

This work relates to the attempt to apply to cable wires the carrier art which as already noted (*supra,* 151) had been successfully applied to open wire structures. The work has not gone beyond the experimental stage. The American Company's witness expressed an opinion (R. I, 668):

> "That this development will have a very considerable field for use in the future in all the companies, that is, both in the plants of the Long Lines and the plants of the Associated Companies. As to the exact ultimate length of circuits over which it may be ap-

> plied, I cannot, of course, say with exactitude, but I have no reason to doubt that the field of its first application will be on circuits of inherently short lengths."

This last sentence was to overcome the consideration that carrier telephony as applied to open wires had first application in Long Lines.

Assuming that the application of the carrier art to cables will be in short lengths so as to include also the Associated Companies, there is nothing in the record to indicate that, if, when, and as applied, this new art will benefit at such time the Associated Companies and the Long Lines in the same ratio as the ratio of expense allocated to them respectively —i. e., more than 90% to the Associated Companies and less than 10% to the Long Lines. It is impossible to determine whether such application will have general application through all the Bell System, so as to make the allocation on the basis of plant investment between the Associated Companies and Appellee fair. It is impossible to determine whether such application will have application within the Chicago area in the exchange plant and in the toll plant in the same ratio as that used to allocate the license payments in 1930 and 1931 between the intrastate toll and exchange services. And, of course, it is impossible to determine the extent to which such development will find application in the field of telephony from which the Long Lines alone benefit.

TELEVISION.

The total amount of Development and Research expense specifically identified as covering the work in this field from 1926 to 1931, inclusive, was $674,990 (Appendix, p. 64) of which more than 90% was charged to the Associated Companies.

The American Company said in its Annual Report for 1928 (R. V, 3329):

> "Television was first demonstrated by the Bell Telephone Laboratories in 1927. In 1928, further progress was made and a new transmitting device which is capable of putting upon the television circuit outdoor scenes was developed. Work on television with the idea that it might ultimately be supplemental to the telephone is being continued.
>
> The Bell Telephone Laboratories have scientific knowledge that would enable them to set up circuits which could carry instantaneously the human voice and the human sight around the world, but how to make this economically practical is yet to be devised. Progress will undoubtedly be made by a gradual extension of the present units."

In its Annual Report for 1930, the American Company said (R. V, 3343):

> "Scientific progress in television was marked by a demonstration of two-way television and speech over wires. It was impressive in showing what it is possible to do in the present state of the art in eliminating distance in sight and sound. The equipment however, remains necessarily complicated and expensive, requiring expert attention and larger units of apparatus. The commercial possibilities of television are still uncertain."

These statements tend to confirm the tendency which was found in the case of every new service development from the Development and Research work; that is, the new service finds first application in the Long Lines, and then perhaps in the toll service of the Associated Companies and finally perhaps in their exchange service. Such is the history of radio, of picture transmission (*supra*, 150; R. I, 712), of the use of wires in connection with broadcasting (R. I, 712). On the basis of the American Company's allocation, the Associated Companies bear all but a minor portion of the Development and Research expense instead of the Long Lines; and the Exchange service bears all but a minor portion of the Associated Companies' portion. Certainly such basis of allocation enriches the Long Lines and toll branches of the business at the expense of the Exchange service customers. Moreover, Television, if, when and as it reaches commercial application will require circuits of different character than ordinary telephone circuits (R. I, 659). This means additional business for Western to provide additional profits to the American Company.

VACUUM TUBES.

The total amount of Development and Research expense specifically identified as covering the work in this field was $2,539,024 (Appendix, p. 64) of which more than 90% was charged to the Associated Companies.

Vacuum tubes found their first application in the Long Lines wire plant as telephone amplifiers or repeaters (R. I, 663). They made possible the extension of long distance service over large areas beginning with the transcontinental line in 1915 (R. I, 671). Vacuum tubes found application in and made possible the development of carrier telephony and telegraphy (R. I, 669), the former development being largely, and the latter development almost entirely Long Lines activities (*supra*, 148). Vacuum tubes found application in the whole field of radio (R. I, 669). The strategic patent position of the American Company through control of the vacuum tube enabled it to bargain for and to procure the licenses already enumerated from the General Electric Company and others in the radio field (*supra*, 135).

Vacuum tubes found application and are the heart of the talking motion picture development and of the reproduction of sound from records (R. III, 2164-5; R. VIII, 4715).

The American Company claimed that the field for use of vacuum tubes as amplifying devices has been extended to the Associated Companies plant and will be extended still more as improvements are made in the future in the vacuum tubes and their cost reduced (R. I, 669-672). It points to the history of the last ten years. By 1921 there were about 1000 repeater installations in service practically all of which were in the plant of the Long Lines. By 1925 that usage had grown to approximately 7,500, of which about one-third were in the plants of the Associated Companies. By the end of 1930, the total number had grown to 81,500, of which still about one-third were in the plants of the Associated Companies and two-thirds were in the plant of the Long Lines (R. I, 671).

Appellee's allocation distributed the $2,539,024 expense covering work on vacuum tubes between the Associated Companies and the Long Lines on the basis of $2,252,114 to the former and $180,271 to the latter. But the Long Lines, the American Company and the Western were the beneficiaries of all or of substantially all of the vacuum tube development in all of these fields (*supra*, 135), the share of the Long Lines alone being more than sufficient to justify its payment of the entire cost of such development (*supra*, 137, *et seq.*). The benefit to the Associated Companies is off-set by the use of their exchange property in long distance service (*infra*, 164).

VOIGE FREQUENCY—CROSS INDUCTION GENERAL AND MISCELLANEOUS.

The total Development and Research expense specifically identified as covering the work in these fields was $6,648,505 (Appendix, p. 65), of which more than 90% was charged to the Associated Companies.

Insofar as the work done which was covered by the heading "General and Miscellaneous" had application to the work, the allocation of the expense of which is in issue as above analyzed, the allocation of General and Miscellaneous expense should follow the allocation of the expense of such other work in the manner hereinabove urged by Appellants.

As to the balance, if any, of expense covered by the heading "General and Miscellaneous" and by the heading "Voice Frequency" and "Cross Induction," the record does not disclose the nature of the work other than that it is of a fundamental character and for the period 1923 to 1931 found application first in the Long Lines (R. I, 725). Nothing appears to indicate what portion, if any, had application in the Associated Companies' plant and operations—certainly not to the extent of bearing any relation to the per cent of expense allocated to the Associated Companies and to the Long Lines (R. I, 725, 717).

Transmission—that is, the ability of the subscriber to carry on conversation—has been one of the principal problems of the long distance service since the beginning of the new license contract arrangement in 1919 (R. I, 693); and development during this period of a transmission character found their first and largest application in the plant of the Long Lines (R. I, 695).

By 1919 the developments to create and to provide for the extensive and intensive use of the long distance service, involved (a) the increase in the number of circuits without increasing the number of open wires through the use of phantom circuits and carrier current systems; (b) the extension of the radius of long distance communication through the use of amplifying devices, such as repeaters; and (c) increase in the number of wires through the use of cables (R. V, 3353).

The first transcontinental Long Lines circuit was completed in 1915 (O.R. VII, 2640), the second in 1923 (R. V, 3302); and the third in 1925 (O.R. 2658; R. V, 3310). These transcontinental circuits made use of open wire and carrier circuits (R. V, 3162-3), and only to a limited extent cables. The limitation in the use of cables for long haul business was due to the transmission problems involved. The extension of the use of cables for long haul service has featured the period from 1918 to 1932. The extension has appeared slow but in accomplishment has been outstanding owing to the difficulties in transmission which it was necessary to overcome.*

The use of cable for very long circuits made necessary a higher grade of transmission over them (R. V, 3336); the improvement in the quality of transmission required the solution of many scientific problems (R. V, 3295-6), and "required an entirely new adaptation of physical principles many of which are themselves new and therefore applicable only in the hands of those who are highly trained" (R. V,

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*At the end of 1919 the American Company said:

"Cables in long distance lines have always greatly limited the distance through which speech may be transmitted but as the increase in the number of long distance wires has made necessary the employment of increased lengths of long distance cable, the technical difficulties in the transmission of speech through such circuits have seemed at times to be almost insurmountable" (R. V, 3353).

3336). Some of the problems presented by the use of long circuits in toll cables arise from the variations in the temperature of a circuit, the slowing up of the travel of sound waves over cable circuits compared to open wire circuits, the echo effect produced by the voice wave travel over cable circuits, the difference in the echo effect produced by the fact that the transmission delay is not the same for sound waves of different frequencies, and the interference with conversation due to the delay which is added to the ordinary time elapsing between question and answer (R. V, 3162-4). These problems have been solved for toll cable construction of different lengths and such construction has gone forward (R. V, 3164),* but continued Development and Research work was, during the period, and still is, necessary to make possible the extension of cable circuit construction, not only for transcontinental service, but for international connections (R. V, 3165).

Another source of transmission problems of Long Lines service which was partially solved during this period and still awaits full solution is the use of wires for broadcasting on a national scale. The circuits used for broadcasting during the period to 1932 were open wires, but the quality of transmission required to transmit music from broadcasting stations was much higher than for ordinary telephone conversations over open wires (R. I, 660). The ordinary telephone circuit therefore could not be used for that purpose; and interconnecting circuits for broadcasting on a national scale required special design, construction, maintenance and operation to give good transmission results over the wide range of frequencies used in broadcasting (R. V,

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*By the end of 1918 the Long Lines toll cable extended from Boston to Washington and to Philadelphia. By the end of 1919 it was extended to Harrisburg, Pennsylvania (R. V, 3353); by 1923 to Cleveland, Ohio (R. V, 3302); by 1925 to Chicago, Illinois (R. V, 3310); and by 1932 to St. Louis, Omaha and Kansas City (R. VIII, 4422).

3343; R. I, 660). As the importance to Long Lines of radio broadcasting revenues increased, the Development and Research department undertook the solution of the problem required to replace open wire circuits by cable circuits for use in radio broadcasting. By the end of 1930 progress had been made by the Department overcoming the scientific problems involved and had reached the stage of designing new cable circuits which could handle the broadcasting as well as the open wire circuits (R. V, 3343). In 1931 study was continued in respect to wide frequency band transmission over cable (R. VIII, 4423), broadcasting using such bands (R. V, 3343).

Another source of transmission problems came from the extensive use of repeaters in the long distance circuits. Such use involved the danger of "cross talk" between circuits and required Development and Research work for the proper arrangement of repeaters, of the separate circuits and of groups of circuits as a whole (R. V, 3597).

The record discloses no particular transmission problems involved in the exchange portion of the plant other than those involved in the handset, which the American Company has designated as exclusively an exchange problem (R. I, 681). But this problem has not been included by the American Company under the sub-heads now being considered Nor does the record show any other transmission problems of the Associated Companies which required or received solution during the period under investigation.

We conclude, therefore, that the Development and Research expense covering the items of Voice Frequency—Cross Induction—General and Miscellaneous should be considered all as exclusively for the benefit of the Long Lines.

D.

The American Company was unjustly enriched by Appellee's allocation, approved by the District Court, at the expense of the Associated Companies for the period 1923 to 1931, inclusive, by an amount in excess of $20,000,000.

For the reasons already given, the Development and Research expense included in the classifications—Wire Transmission Systems, General Transmission Systems and Radio Transmission Systems—should be considered exclusively Long Lines expense, in the aggregate amount of $26,312,029. Of this amount $23,338,770 was allocated to the Associated Companies (Appendix, p. 58), and to that extent the American Company Long Lines has been enriched at the expense of the Associated Companies.

As already noted (*supra*, 131) the maximum enrichment of the Associated Companies at the expense of the Long Lines for Class I expenses, was $353,678, on the assumption that this Class of expense is exclusively for the benefit of the Associated Companies.

As already noted (*supra*, 131) the Class II expenses are claimed by the American Company to be for the joint benefit of the Long Lines and the Associated Companies; but the record does not disclose that the ratio of benefits between the Long Lines and the Associated Companies bears any relation to the ratio of expense between them. On the most favorable assumption for Appellee that from Class II expenses the Associated Companies benefit nine times as much as the Long Lines the unjust enrichment to the Long Lines from the allocation of Class I and III expenses combined was a net amount in excess of $20,000,000.

Appellants submit, however, that the unjust enrichment to the Long Lines of $20,000,000, is the minimum enrichment. Appellants deny that the Class I expenses are exclusively for the Associated Companies and that Class II expenses can be divided in the manner above stated (*supra*, 131).

The exchange property, that is, the property used by the customer at the subscriber's station and from that station to the long distance switchboard or to the toll trunks when used in connection with the long distance switchboard, is used as the terminal facilities by the Long Lines in furnishing its long distance service (*supra*, 54).* The same property is used also as the terminal facilities by Appellee and the other Associated Companies in furnishing their own local exchange services. To render satisfactory long distance service every portion of the facilities used in that service, including the terminals, must have the standard of efficiency set up for such satisfactory service. Similarly, to render local exchange service every portion of the facilities used in that service including the terminals must have the standard of efficiency set up for such satisfactory service. *If the efficiency of the terminals is established on the same standard for use in the exchange service and in the long distance service*, it is obvious that:

(1) the maintenance or improvement or degradation of the efficiency of the terminals for use in the one service will constitute the identical maintenance, improvement, or degradation of the efficiency of the terminals for use in the other service;

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*To make the analogy of a long distance call and travel over a railroad comparable, we must assume that the owner of a private car in Chicago leases the starting apparatus, the entire track from Chicago to New York, the terminal facilities necessary to the operation of the entire track, plus the apparatus necessary to stop the car in New York—all for his exclusive use during the entire period when the private car travels to New York and back to the starting point in Chicago.

(2) nothing can be done to affect the standard of efficiency for the one service which will not affect the standard for the other service;

(3) the same result follows, whether the standard is viewed as the standard for use in the exchange service only, or is viewed as the common standard for both. Significance does not attach to the view that the standard of efficiency of the exchange property is the standard for use in exchange service only, or that it is the standard for use in that service and in the long distance service.

Significance attaches to the historical facts that

(1) the American Company originally established the efficiency of the exchange property for use in exchange service alone at the higher *level* of the standard required to permit the Long Lines to furnish long distance service at the standard established for the latter service (R. I, 700, 739-40; O.R. VII, 2499, 2670);

(2) as the American Company raised the standard of satisfactory long distance service, it conformed the standard of efficiency of the exchange property to accomplish the raised standard; thereby automatically raising the standard of efficiency of the same property for use in the exchange service.

In the regular course of its business the American Company has said that the long distance service requires a higher standard of maintenance of plant than local exchange service:

> "Every exchange line is a long distance line; every exchange station is the center for that station, of the entire Bell System" (O.R. VII, 2524).

The standard of the long distance service determines the standard of maintenance of the entire exchange plant used in all services. The American Company so proclaimed.*

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*"Limited local service can be given by a plant that would be useless in a comprehensive system made up of local exchanges and toll,

The first transcontinental line in 1915 was the result not only of the developments of the vacuum tube, the loading coil, and the repeater which were in Long Lines plant but also "through comprehensive improvements and refinements in line switchboards and all the instrumentalities employed" (R. V, 3222).

From these historical facts it follows that action taken to maintain the standard of efficiency of such exchange property for use in the exchange service at the level of the standard set up for satisfactory long distance service, benefits the Long Lines whether action is viewed as taken to maintain the level of the standard for exchange service only, as the Appellee's witnesses view it for the purpose of this case, or whether the action is viewed as taken to maintain the standard to give both classes of service, as the American Company views it in the regular course of its business, and as Appellants maintain is the proper view to take.

An illustration of the effect of this policy appears in the development of the receiver and transmitter. When long distance service was established in Chicago in 1893, it was necessary to use special telephone receivers and transmitters for that service as the instruments used in the exchange service were not satisfactory to meet the transmission requirements for the extended service (R. I, 700). Then the instruments used in long distance service became

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and particularly in connection with long distance service. Although 90% of the connections are purely local, the 10% that are not local are more important * * * and must be equally available through one station equipment. For that reason the Bell plant must be maintained at a higher standard than would be necessary if it were a purely local exchange service" (O.R. VII, 2499).

"In the telephone business the apparatus used is of a highly intricate, technical and complicated character. Therefore to make possible satisfactory communication between individuals in the same town or city, or between individuals located in places either near or far apart, it is necessary that the apparatus at both ends and throughout the length of the line be of certain standards and of the highest quality" (O.R. VII, 2670).

standard for that service and for the local service, thereby raising the standard to that of the long distance service. The development of the instruments since the early days has been along the same lines.*

An analogous situation relates to the circuits now used for radio broadcasting, which are three times as good as the ordinary telephone circuit (R. I, 660-1). If and when new circuits are developed to provide interchangeable telephone communication and music transmission, the standard will be the same for telephone communication and music transmission but the standard for both will be that of the higher level necessary to permit music transmission (R. I, 712-3).

Under those circumstances whether one views the standard as that of telephone communication or of that plus music transmission, the telephone service has been burdened to *benefit* the music transmission service.

We conclude therefore that a portion of the Class I expenses which the American Company claimed to be exclusively Associated Companies' expense in fact benefits the Long Lines. Such benefit more than offsets any incidental benefit to the Associated Companies from the work covered by the Class III expenses. Appellee's allocation of Development and Research Expense unjustly enriched the Long Lines by an amount in excess of $20,000,000 at the expense of the Associated Companies, including Appellee.

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*Dr. Jewett testified:

"The whole basis upon which the Bell System has been built up (and, so far as I know, it is a basis which has carried over into all American telephony) was that the transmitter and the receiver (which are the dynamo and the motor, if you will, of the electrical communication system) should be each of the highest possible efficiency, and uniformly at that high efficiency. The whole urge has been always, over the entire history of telephony in this country, to increase the efficiency of the transmitter and the receiver. As these efficiencies were increased, so that you had more energy given out and less energy required at the receiver, they have resulted in an extension of telephony, because it has been possible by those means to go farther with a given size of connecting wire plant, or to cheapen the wire plant by making it smaller for a given distance.

"Now, the result of that long course of rigid adherence to a principle was to build up a vast local intercity and interstate communication plant which required the high standards of transmission and reception of the transmitter and receiver and all plant was engineered on the basis that those high standards were in the plant (R. I, 698-9).

"That service had been engineered to a point when the phone on one's desk must be one that could be used either in local service or a call to New York City" (R. I, 699-700).

DISCUSSION AS TO CONTENTION NUMBERED V.

V.

THE ALLOCATION TO THE LICENSE CONTRACT PAYMENT OF THE PORTION OF THE AMERICAN COMPANY'S DEVELOPMENT AND RESEARCH EXPENSE APPLICABLE TO IT AS THE HOLDING COMPANY INVESTOR IN THE ASSOCIATED COMPANIES, AND AS THE LICENSOR OF WESTERN TO MANUFACTURE AND SELL TO THEM PRODUCTS EMBODYING THE RESULT COVERED BY SUCH EXPENSE, UNJUSTLY ENRICHED THE AMERICAN COMPANY BY MORE THAN $6,000,000.

The American Company was compensated for its Development and Research work for the Associated Companies by four different considerations:

(1) Bonus stock from Western and the earnings thereon for the license to manufacture and sell to the Bell System telephone communication equipment embodying the American Company's inventions;

(2) Earnings on the American Company's investment in the Western;

(3) Added protection on the American Company investment in the Associated Companies;

(4) License Contract Payments.

Appellee and the District Court allocated the entire Development and Research expense against the License Contract payments. The extent to which such allocation was unfair to the Appellee is shown by the substantial character of the three sources of values not considered by them.

(1) Bonus Stock from Western.

In 1881 the American Company said (O.R. VII, 2354):

> "to obtain a permanent interest in the manufacture of telephones and apparatus, as well as to ensure the highest standards in the same, we have bought the plant and business of Charles Williams, Jr., of Boston, and an interest in the Western Electric Manufacturing Company of Illinois, and propose to merge the two in a consolidated company, which will avail of the good will, business and patents owned by that company, as well as our own, and secure an economical management for the whole of our manufacturing interests. We expect to make this an important and valuable part of our business."

The history of this bonus stock from 1882 to 1930 is detailed in the Appendix (Appendix, p. 66-7). It shows that in 1922 the book value of this stock was $3,670,071, represented by 24,490 shares. The cash dividends on this stock during the eight-year period 1923 to 1930, inclusive, totaled $6,091,000 and on December 31, 1930, the book value of the stock had increased from earnings $2,053,242 to $5,723,313, represented by 183,675 shares (Appendix, p. 66-7).

In respect to this bonus stock, the American Company's work of development and research has significance in three aspects. *First*, the value of the use of the American Company's work was partly paid for by this stock. *Second*, this work stimulated Western manufactures and created profits to enhance the value of such bonus stock and to provide the dividends thereon. *Third,* through its policy of standardization, the American Company confined practically all purchases of telephonic appliances for the Associated Companies to Western, the American Company determining the necessity for and utility of such purchases and specifying the general character thereof. By arranging all contact between the Associated Companies and Western through its own departments, the American Company acted at the same time as the selling agent for Western and as the purchasing agent for each Associated Company, including Appellee. This arrangement, therefore, assured to the American Company continued returns on and enhancement of its bonus stock; its Development and Research expense is, therefore, its investment in part for that purpose.

(2) Returns on American Company's Investment in Western.

For the years 1926 to 1930, inclusive, it is possible to determine the return to Western from its business with the Bell System. The record reveals that on the District Court's findings, Western's per cent return from Bell business on capital and surplus was (Appendix, p. 72):

1926	16.13%
1927	21.87
1928	26.47
1929	19.83
1930	8.30

During the period 1923 to 1930, inclusive, the American Company received in cash dividends a yearly average of over 25% on its average investment of $64,000,000, which return represented an average yearly return to the American Company's stockholders of over 39% on their capital stock holdings applicable to the American Company's investment in the Western* (R. VIII, 4377).

(3) Added Protection on the American Company's Investment in the Associated Companies.

The fact that the American Company as the investor in the Associated Companies could specify what new inventions, discoveries and improvements in the art should be woven into the plant of the Associated Companies protected its investment against impairment through failure to keep abreast or ahead of the art. The American Company considered such protection of substantial value (R. III, 2146, 2163; O.R. VII, 2539). Certainly it is a value which the ordinary investor does not receive from ordinary business undertakings of similar risks and uncertainties (R. I, 205).

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*Appellee's witness on Rate of Return testified:

"If I were getting a true picture of the earnings of the American Telephone and Telegraph Company, I would take the earnings and the undistributed earnings from all of the subsidiaries. I omitted the undistributed earnings of the Western Electric Company and its subsidiaries, simply because it seemed to be a custom of the company to treat that as an investment, and not as a telephone operating property" (R. II, 1366).

DISCUSSION AS TO CONTENTION NUMBERED VI.

VI.

THE DISTRICT COURT'S FINDING THAT THE ENTIRE AMOUNT OF CHARGE TO LICENSE CONTRACT PAYMENTS TO COVER DEVELOPMENT AND RESEARCH EXPENSE SHOULD BE ALLOCATED TO OPERATING EXPENSE AND NO PART THEREOF TO FIXED CAPITAL ACCOUNT, UNDULY BURDENED APPELLEE'S CUSTOMERS TO THE EXTENT OF FROM 25% TO 75% OF SUCH CHARGE DURING THE YEARS 1923 TO 1931, INCLUSIVE.

The District Court found that from 80% to 90% of Western's sales of telephone communication equipment are carried into the capital accounts of Appellee, and the balance used for maintenance purposes and carried into operating expenses (R. III, 2506-7, 2517). As already noted, the non-Bell companies purchasing the equipment embodying the American Company's inventions make no direct payment to the American Company as royalty or compensation for the use of such inventions; the charge is loaded into the price of the article sold by Western (Appendix, p. 73). This is true of patented articles of similar character purchased by Appellee and other companies from other manufacturers, who develop inventions through Development and Research work, including the teletypewriters purchased by the Bell System prior to 1930 (R. IV, 2840a; R. VIII, 4859).

The District Court allocated as operating expense the License Payment covering the Development work for inventions on apparatus which go into fixed capital account.

By so doing, it amortizes that expense in the year in which it is paid. The result of this treatment is that Appellee's telephone service charges are required to provide current earnings to cover 100% of the license payment to the American Company for the value of the Development and Research work, whereas the telephone service charges in the territory of the non-Bell customers need provide current earnings only to cover the depreciation expense charges and return on the amount in the capital account applicable to such values. In the Appendix hereto (Appendix, pp. 68-9) are given in detail the computations showing the effect on the telephone service charges in the Bell and non-Bell territories of such difference in treatment of royalty payments. These computations show that if the non-Bell method of payment and accounting practice had prevailed in Appellee's Chicago Intrastate business during the period 1923 to 1931, inclusive, only $1,078,461, or 49.85%, of the $2,163,223 Development and Research costs which Appellee allocated to such business would have been charged to operating expenses under the existing rates; that the reduction in operating expense in respect to such costs would have ranged from a maximum 77.11% of the allocated cost in 1923 to a minimum 24.03% in 1931; that such reduction would have ranged from $87,526 to $174,486 per year, aggregating $1,084,761 for the period. Such computations show also that such reduction would have been increased had the attacked rates been in effect.

Account No. 527 of the Uniform System of Accounts, in force since 1913, and covering the License Contract payment as an operating expense* (R. VIII, 4463, at 4473) does not cover the Development and Research provisions of the License Contract, as they did not come into being until 1919 (*supra*, 119).

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*"527 Licensee Revenue—Dr. When a telephone company is granted by another telephone company the use of its patents, or is furnished instruments and equipment and general supervision under an agreement for apportioning the revenues of the licensee, the proportion accruing to the licensor should be included by the licensee in this account" (R. VIII, 4463, at 4473).

The Uniform System of Accounts was intended to have uniform application to all telephone companies of the same class and to the same operations of each company. As Appellee and other telephone companies charge the Development and Research expense for inventions included in the manufacturer's price of items which go into the fixed capital account in the case of purchases other than of Western's manufactures, no reason exists for making any difference in treatment of such payment if and when made through the license contract payment by the Associated Companies to cover Western's manufactures.

Part II.

The American Company's Expense of Direct Distribution of New Securities and of Servicing Outstanding Securities.

Preliminary Statement.

The fields of operation of the American Company as a corporation have been stated (*supra*, 81). The investment in each field during the period of the litigation was:

1. At the beginning of 1923 the American Company's book investment in stock of Associated Companies aggregated $662,529,359, which increased to $1,939,270,421 by the end of 1931 (R. VI, 4025; R. VIII, 4424).

2. In 1923 the American Company's book investment in stocks of companies other than the Associated Companies—Western, Bell Telephone Laboratories Inc., and 195 Broadway Corporation—aggregated $92,938,687, which increased to $168,855,388 by the end of 1931 (R. VI, 4008R, 4027; R. VIII, 4424).

3. In 1923 the depreciated book cost of Long Lines property was $91,625,198, which increased to $310,266,469 in 1930 (R. VIII, 4406).

4. From 1923 to 1927, inclusive, the depreciated book cost of telephone instruments used in the License Contract operations increased from $16,318,631 to $22,407,040 (R. IV, 2951; R. VI, 4012, 4016); the other assets used in such operations, as found by the District Court, included the buildings housing the General Staff as well as the other personnel of the American Company and one-half of the investment in the Bell Telephone Laboratories, Inc.—all

having a book value not in excess of $15,500,000 to the end of 1931 (R. VII, 4093, 4147).

5. Licensing, for valuable consideration, inventions for commercial use in products distributed in the non-telephone field, and in the telephone field within and outside of the Bell System, required no special property investment.

The two fields of activity of the American Company, that is, ownership of stock and other securities of the Associated Companies and of other companies, are referred to herein as the Holding Company operations; the licensing of inventions is referred to herein as Royalty Operations.

During the years 1923 to 1930, inclusive, the American Company sold to bankers $250,000,000 face amount of bonds* and sold direct to its own stockholders, without the intervention of bankers as the medium of distribution, $977,278,400 par amount of stock and $219,112,700 face amount of bonds.**

Such direct distribution was accomplished by the American Company through the use of its own personnel, some of whom were regular employees but most of whom were specially recruited for the job, and through the use of those of the Associated Companies (R. V, 3179-3216).

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*In 1923 and 1930 the American Company sold debenture bond issues of the face value of $100,000,000 and $150,000,000, respectively, to J. P. Morgan and Company at 94.75% and 96.50% of face value respectively (R. VII, 4260A; R. I, 871).

**In 1923, about $20,000,000 par amount of stock of the American Company was offered by it at par to its stockholders in accordance with the previous offer made in 1922 (R. VII, 4373). Additional stock issues of the American Company were offered to them at par as follows:

1924	$151,157,500	(R. V, 3216)
1926	154,127,500	(R. V, 3214)
1928	185,863,000	(R. V, 3204)
1930	257,940,700	(R. V, 3191)

In 1929 the American Company offered to its stockholders at face value $219,112,700 Ten Year Convertible Bonds (R. V, 3194). In 1930, practically all of these bonds were converted into the American Company's stock on the basis of $180 per share and in connection therewith $206,189,700 par amount of stock was issued (R. VIII, 4374).

$3,153,919 represents that portion of the total expense of direct distribution during the period 1923 to 1931, inclusive, which the American Company itself paid through its Treasury Department (R. I, 861; R. V, 3185), exclusive of the expense incurred by the Associated Companies including Appellee and not reimbursed to them (*infra*, 219 *et seq.*). This $3,153,919 expense of direct distribution was in lieu of the discount or underwriting fee paid to bankers where securities are sold to them for resale (R. I, 872). The American Company charged as part of its own operating expenses its expenses of direct distribution of new securities (R. IV, 2917; R. I, 881) but charged to surplus the discount on the sale of securities to bankers.

What the District Court Did.

The District Court followed Appellee's allocations which allocated in each of the years 1923 to 1931, inclusive, 6% of the American Company's expense of direct distribution of new securities to the Holding Company and Royalty operations of the American Company, aggregating for the period $189,235, and 94% of such expense to License Contract operations, aggregating for the period $2,982,684 (R. I, 881; R. IV, 2917). Appellee amortized the discount on the sale of securities to bankers over the period of the loans and charged such amortized amount as part of the License Contract costs only when it became part of the costs of funds as used in License Contract operations. The amount of resulting burden is negligible and no issue is raised herein in respect thereto.

During the same nine-year period the American Company spent $7,879,066 (R. I, 861-4) to service all of its outstanding stocks and bonds; that is to say, the transfer of the stock, handling of the dividends, paying interest coupons, etc., expense of the character which any large company would have that has its securities outstanding in the hands of many investors* (R. I, 878). Appellee, allocated 6% of this servicing expense to the Holding Company and Royalty operations of the American Company, aggregating for the period $472,745, and 94% of such expense to License Contract operations, aggregating for the period $7,356,221 (R. I, 881; R. IV, 2917).

The 6% and 94% figures were determined by Mr. Heiss, Comptroller of the American Company, as Appellee's witness who made the allocations "on a percentage given by Mr. Blair-Smith * * * that is, the 6 per cent that I use in column 3 is the figure which Mr. Blair-Smith said should be allocated outside of the license contract work in his department" (R. I, 881).

Mr. Blair-Smith, Treasurer of the American Company, testified (R. I, 867):

> "The amount of money that has been raised by American Telephone and Telegraph Company and invested in Western Electric, in Bell Telephone Securities Company, in Bell Laboratories and in the 195 Broadway Corporation, is about 6 per cent of the assets of the American Telephone and Telegraph Company. That is where I get my 6 per cent."

The above shows clearly that the allocation of the Treasury Department expense merged the American Company's

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*At the beginning of 1923 the American Company had outstanding $669,347,400 par amount of stock in the hands of 248,925 stockholders, the average stockholding being 26.89 shares; at the end of 1931 the outstanding stock had increased to $1,865,836,100; the number of stockholders had increased to 644,903, and the average stockholding was 28.93 shares (R. V, 3299; R. VIII, 4421). During the nine-year period the American Company had had 875,000 transfers of stock, involving the cancellation of 2,100,000 stock certificates and the issue of 1,800,000 new stock certificates; 14,800,000 dividend checks were drawn (R. I, 860-864). The funded debt of the American Company at the beginning of 1923 was $226,604,800, which increased by the end of 1931 to $458,300,900 (R. V, 3299; R. VIII, 4425), but the record does not show the number of funded debt investors nor the average holding thereof.

License Contract relationship with its investor relationship to the Associated Companies and included as part of the License Contract costs the entire costs incident to such investor relationship.

The American Company's expense of direct distribution of new securities and of servicing outstanding securities aggregating $11,032,985 represented over 85% of the entire Treasury Department expense of $13,033,999 for the nine-year period (R. I, 861). The difference of $2,001,014 represented the American Company's expenses (1) of financing the General Department which conducted the License Contract Operations, (2) of handling the Employees' Stock Plan, (3) of advising the Associated Companies in their treasury work, and of handling funds and making advances to the Associated Companies. Appellants assigned error to the District Court's findings on this part of the License Contract charges (R. III, 2537) and in support of their position Appellants offer the following:

SUMMARY STATEMENT OF APPELLANTS' CONTENTIONS.

I. The American Company's Holding Company operations as investor in Appellee do not come within the License Contract.

II. The American Company as the investor in Appellee is not entitled to reimbursement of expenses of raising funds to make or maintain its investment in the stock of Appellee.

A. The reimbursement to the American Company violates the orders of the Illinois Commerce Commission under which the American Company purchased stock in Appellee and is contrary to law.

B. Appellee's showing of alleged savings through concentrated holdings of its stock is illusory.

DISCUSSION AS TO CONTENTION NUMBERED I.

I.

THE AMERICAN COMPANY'S HOLDING COMPANY OPERATIONS AS INVESTOR IN APPELLEE DO NOT COME WITHIN THE LICENSE CONTRACT.

The License Contract does not cover the allocation to License Contract operations, of the expense of the American Company's direct distribution of new securities, and of servicing outstanding securities applicable to its investments in the Associated Companies.

The License Contract* is not predicated upon the American Company, or any assignee of the American Company, owning any stock in Appellee. On the contrary it expressly provides that the American Company may at any time relieve itself of all of the obligations of the License Contract by the mere act of assigning its interest in the License Contract to an assignee who shall agree to perform the stipulations thereof, whether such assignee be a $1,000 corporation or be a corporation not owning a single share of stock

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*The License Contract requires the American Company to furnish:
"(b) Advice and assistance in any financing required to be done by the Licensee in the extension, development or improvement of its telephone system within its said territory and in the general matter of its finances; aid in securing funds on fair terms, as and when needed for new construction and other expenditures, but not, at any time, to a greater extent than the then condition of the finances and credit of the Licensor may permit; active assistance in the marketing of the Licensee's securities; and such other necessary financial support and assistance in the premises as will tend to serve the best interests of both companies" (O.R. IV. 1207).

in Appellee (O.R. IV, 1215), or be a corporation having three stockholders, of whom two own one share each.

Nor can any justification be predicated on Appellee's financing operations covering credit obligations. Appellee's bonds were sold in 1923 to J. P. Morgan & Company at a discount, and no claim is made that the American Company as the investor in Appellee owned any of them (R. I, 871). The American Company received deposits from Appellee and made negligible temporary advances to it during the period under investigation (O.R. VI, 2103; R. VIII, 4786-89; R. V, 3083-90). But Appellee at the 1932 hearings denied that the American Company's expense in making such loans was properly chargeable as a License Contract expense (R. I, 1003; R. II, 1054-60); and the District Court held that the American Company's expense in holding funds available to make such loans was not covered by the License Contract (R. III, 2511).

DISCUSSION AS TO CONTENTION NUMBERED II.

II.

THE AMERICAN COMPANY AS THE INVESTOR IN APPELLEE IS NOT ENTITLED TO REIMBURSEMENT OF EXPENSES OF RAISING FUNDS TO MAKE OR MAINTAIN ITS INVESTMENT IN THE STOCK OF APPELLEE.

Appellee offered the following justification *outside the License Contract*: The expenses of raising money and of servicing outstanding securities would be incurred by any corporation having its securities well scattered; Appellee is saved such expense by having nearly all of its stock represented by a few certificates owned by the American Company; therefore Appellee should stand a portion of the American Company's expense of raising funds and of servicing outstanding securities as compensation to the American Company for effecting such saving; the measure of that portion is the amount of such saving (R. I, 866, 876, 878; R. II, 1061-66).

A.

The reimbursement to the American Company violates the orders of the Illinois Commerce Commission under which the American Company purchased stock in Appellee and is contrary to law.

The issue and sale by Appellee of its stock during the period under investigation were in each case authorized by the Illinois Commerce Commission (O.R. V, 1833); the purchase by the American Company of its pro rata share of each authorized issue was, in each case, approved by the same Commission on petition of Appellee and the American Company (O.R. IV, 1530-46). Each authorization specified that the issue and sale by Appellee of its stock to all its stockholders and that the purchase by the American Company of its pro rata share of such stock and stock not subscribed by others should in each case be at not less than par (O.R. IV, 1530-46). The American Company paid par during the period 1923 to 1931, inclusive, for its pro rata portion of stock, paying 8% dividends (O.R. V, 1833). Any reimbursement to the American Company would constitute a rebate and would result in the purchase of stock at less than par in violation of the orders.*

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*Any claim that the American Company rendered a service in purchasing unsubscribed stock at a premium can be dismissed with the observation that the total premiums paid on stock during this period aggregated $1,257 (R. VIII, 4793; O.R. VI, 2120B).

The reimbursement to the American Company disregards established principles of law. A stockholder as such is not entitled to such reimbursement. There is nothing in the law which requires or entitles a corporation to give any advantage to a majority corporate stockholder because such majority corporate stockholder itself has scattered stockholders, over a majority corporate stockholder which has only three stockholders of whom two own one share each or over a majority stockholder which is a partnership of many persons, or over an individual majority stockholder who issued or caused to be issued certificates of participation in his stock investments and who has issued extensively his own credit obligations as a medium of financing, or over any minority corporate or individual stockholder.

B.

Appellee's showing of alleged savings through concentrated holdings of its stock is illusory.

Appellee produced some imaginary figures purporting to indicate the extent of the saving to it through having the American Company as the owner of over 98.5% of its stock and having a total number of stockholders ranging from 141 in 1923 to 167 in 1930 (R. IV, 2964-6). Appellee computed what it estimated it might have had to spend to issue and service $10,000,000 par value of stock each year for nine years if its stock were held in units of 15 or 30 shares each (R. IV, 2964). In fact however Appellee did not sell its stock, applicable to its Chicago Intrastate business, in any such manner.* Appellee included as part of the additional costs $10,000 (R. IV, 2965) as the expense of an annual audit by an outside firm although Appellee also included under the "Comptroller's Department" expense chargeable as a License Contract cost a portion of the American Company's Traveling Auditor's expense ranging from $134,890 to $252,061 per year, on the ground that such Auditor saved Appellee the expense of an outside audit (R. IV, 2918-21). Appellee included as part of the additional cost the expense of sending out annual reports, although Appellee included under "Administration Department" expense a part of the American Company's cost of printing and sending out its annual reports (R. VIII, 4504a-g). Appellee computed that an increase of 88% in the number of shareholders holding 30 shares each from 1923 to 1929 would involve an increase of 215% in expense of servicing securities during that period, but the experience of the American Company shows that an increase of 88% in the number of shareholders during that period holding an average of 28 shares each actually resulted in an increase of only 23% in the expense of servicing (R. I, 861-864). Appellee included as part of the additional cost the expense of issuing new securities but Appellee already included in its operating expenses all or most of the cost to it of assisting the American Company to sell the latter's stock to Appellee's employees under the Employee's Stock Plan, on the installment plan, and of assisting the American Company to sell the latter's stock to the public in Appellee's territory (*infra*, 220). In Appellee's imaginary set-up such cost would be used to distribute Appellee's stock and not the American Company's stock. On Appellee's own figures (which as will later be shown represent but a small portion of Appellee's actual cost of rendering these services, *infra*, 221), the cost to Appellee to assist the American Company will cover the whole or the major portion of Appellee's alleged costs in its imaginary set-up (R. VI, 3809-10).

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* Appellee's stockholders purchased $10,000,000 of capital stock in each of the years 1924 and 1925, $30,000,000 in 1927 and $40,000,000 in 1930 (Appendix, p. 125). $54,874,813, or 61%, of such $90,000,000 capital stock is allocable to Chicago intrastate business (Appendix, p. 125).

Part III.

The American Company's Expense of Operating Ten Departments.

What the District Court Did.

The District Court followed Appellee's allocation of the American Company's current expense applicable in the operation of its ten departments of (1) public relations, (2) Comptroller, (3) Secretary, (4) Administration (including sundry items), (5) General Service Bureau, (6) legal, (7) treasury (other than direct distribution and servicing of securities), (8) personnel, (9) information, (10) operations—c (general).

The total expenses of these departments range from $4,389,000 to $7,548,000 per year (Appendix, p. 46). Their work has to do in whole or in part with the general administration of all the business of the American Company. From 90% to 100% of the expenses of the departments was charged to License Contract operations. The allocations of the expenses of the first eight departments to License Contract operations were made by Mr. Heiss, Comptroller of the American Company, on the basis of the picture which he testified he had of the American Company:

> "The primary activities of the American Telephone and Telegraph Company taken as a whole are three. One is the operation of its Long Lines. That has been taken out in my allocation. The Long Lines expenses, and assets and everything have been excluded. The second activity is the license contract—is to render

> service to the companies under the license contract arrangement. And the third activity is simply the miscellaneous—minor miscellaneous activities that we may carry on, which is reflected by the very first diagram I think that Mr. Blackman introduced in that case. That is also reflected by the elimination which I have made in this case. That is my picture of the American Telephone and Telegraph Company. * * *
>
> "The investor relationship of the American Telephone and Telegraph Company can be included in the third group, the miscellaneous, but divided into two parts. All we have to do as regards that third group is to see that our investment in stocks is so much, our dividends are so much, and those are the same dividends that anyone else receives. Now, the cost of holding those stocks, and the cost of the custodianship of them, is a pleasure rather than a burden" (R. I, 984, 987).

The chart to which Mr. Heiss referred was A-99 (R. IV, 2834A), which was thus characterized by Appellee's witness, who offered it:

> "The chart taken as a whole shows that practically the entire property of the American Company owned by it directly or indirectly is represented by its interest in the twenty odd associated companies and in facilities serving those companies" (R. I, 524).*

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*"Mr. Blackman: And in that little chart that I put in evidence at the beginning of this branch of proof, that divides up the assets of the Bell System into little grooved squares. You will see that there is practically nothing but the associate companies and the Long Lines.

"Of course, there is the Western Electric, which we colored in light blue because while it was not an associate company, itself, its activities were directed 95 per cent, or thereabouts, to the service of the associate companies, and the proof that has been introduced tends to show that it sells its goods to them at a price that is not only reasonable, but lower than it would have the right to charge for an ordinary manufacturing profit.

"Now, Mr. Heiss has allocated these things on the basis as I understand it, that the Administrative Department of the American Telephone and Telegraph Company administers all the other departments, which, of course, it does.

"Now, the energies of those other departments are directed; about 95 percent, to the service of the associate companies under this license contract" (R. I, 894-5).

Obviously such a picture views the American Company as the operator of the property of the Associated Companies and disregards its Holding Company operations as an investor in their securities to which a large part of its administration expenses have application. By so viewing the American Company's operations, Appellee merged its License Contract relationship with its investor relationship to the Associated Companies, and included as part of the License Contract costs the entire cost to the American Company of the work of these departments relating to the exercise of its functions as a corporation owning investment securities in the Associated Companies and having outstanding its own securities in the hands of its own investors. The District Court followed Appellee's allocation, to which Appellants assigned error (R. III, 2520).

In support of their position, Appellants offer the following:

SUMMARY STATEMENT OF APPELLANTS' CONTENTIONS.

I. Appellee's allocation produces a fantastic result.

II. The American Company's Holding Company operations as investor in Appellee do not come within the License Contract.

III. The American Company is not entitled to reimbursement of expenses incurred in its own operations incident to its ownership of the stock of Appellee.

DISCUSSION AS TO CONTENTION NUMBERED I.

I.

APPELLEE'S ALLOCATION PRODUCES A FANTASTIC RESULT.

As illustrative of the result produced, contrast the American Company operations in 1928 in the regular course of its business with Appellee's allocation of expenses incurred in connection therewith.

In 1928 the total License Contract revenues of the American Company aggregated $17,622,365 (O.R. VI, 2292). In 1928 the American Company's ownership of the stocks of the Associated Companies, as carried on its books, represented an average investment of $1,419,568,937, on which it received $106,169,963 in cash dividends. Its share in the undivided profits in the treasuries of the Associated Companies was $26,096,550 (R. VII, 4366a). The average yield from cash dividends on its investment in 1928 was 7.48% (R. VI, 4027). Its total earnings from the Associated Companies related to its investment in them (including as part of the investment the portion of surplus of each Associated Company applicable to the American Company's capital investment), represented an average return of 8.38%.*

The cash dividends received by the American Company in 1928 from the Associated Companies represented 45.03% of its total earnings from all sources, including Long Lines (R. VI, 4008J). In December, 1928, the number of stockholders of the American Company was 454,596, an increase of 31,016 for the year of 1928 (R. V, 3332). The outstanding capital stock of the American Company increased in 1928 through direct distribution to its stockholders by $186,275,800 while its funded debt decreased by $3,901,900. On December 31, 1928, the American Company had outstanding funded debt of $380,196,000, and capital stock of $1,289,691,400 (R. V, 3331). The dividend payments by the American Company during 1928 aggregated $103,821,440 and interest payments, $23,087,116. It retired funded debt or deposited for sinking fund retirement of funded debt $3,134,798.14 (R. VII, 4111). It had an audit made by outside auditors, held an annual meeting of stockholders and had meetings of directors as a Board of Directors and as an Executive Committee (R. VIII, 4829-31).

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*Computed from R. VII, 4366a.

The annual audit actually cost $8,000 (R. VIII, 4504f). Mr. Heiss charged the American Company as a Holding Company 5% or $400 for the outside auditing. However, Appellee's chief accountant produced a computation that an annual audit by an outside concern would cost Appellee $10,000 (R. IV, 2965). The printing and distribution of the Annual Reports to stockholders of the American Company, (including advertising) actually cost $31,889 (R. VIII, 4504f). Mr. Heiss allocated to the American Company as a Holding Company $1,594. However, Appellee's chief accountant charged that an Annual Report would require 4c postage per mailing (R. IV, 2966). On this basis the postage necessary to mail the reports to 454,596 stockholders (R. V, 3332) would itself amount to $18,184, or more than ten times as much as the entire cost allocated by Mr. Heiss to the Holding Company. As indicative of the opportunistic points of view of Appellee's witnesses, we note that its own chief accountant, testifying to justify the American Company's charges to Appellee on the ground that the American Company saved Appellee the expenses incident to having many stockholders, showed the large cost of Annual Reports as one of the elements of saving (R. I, 989). Appellee's witness, Mr. Heiss, testifying to justify the propriety of charging a negligible amount to the American Company as a corporation having many stockholders, testified:

> "I also charged against the license contract the annual reports of the American Telephone and Telegraph Company because the business of the American Telephone and Telegraph Company, after you take out the Long Lines, is almost entirely license contract. They didn't send out these reports, as incident to their acquiring or holding stocks. The people throughout the United States, the Associates are interested in those reports" (R. I, 989-990).

The American Company in 1928 paid its directors in fees $32,670 (R. VIII, 4504f). Mr. Heiss allocated $1,633 to the American Company as a Holding Company. Mr. Heiss testified:

> "I charged as part of the license contract costs the fees paid to the Directors of the American Telephone and Telegraph Company when they met, because they deal to the extent of 95% of their activity with license contract activities" (R. I, 989).

But access to the Minute Book of the Board of Directors, which would show the nature of their work, was denied to Appellants (R. VIII, 4801; *infra*, 202). Appellants' motion to compel production (R. III, 2493) was denied by the District Court (R. III, 2500), to which ruling Appellants excepted and have assigned error (R. III, 2576, 2500). From colloquy between Court and Counsel it would appear that the theory of charging the directors' fees was that Appellee was a department of the American Company (R. I, 892-5, 989).

The salaries of the President of the American Company and his staff and the General Administration Department for the year 1928 were $369,857 (R. VIII, 4504f). Mr. Heiss allocated to the Holding Company operations, $18,493, the equivalent of pay for less than three weeks' work.

The Secretary's Department expenses were shown as $68,463, but Mr. Heiss allocated but $3,423 to the non-License Contract operations, which was less than the amount which he allocated to Chicago as its share of the expenses of that department (R. IV, 2924-5).

As to the Comptroller's Department, whose total expenses for 1928 are shown to be $1,484,471, (R. IV, 2920), Mr. Heiss deducted 5% or $74,233 for non-License Contract operations (R. I, 885-6). His approach is illustrated by his description of the work of the Comptroller's General Books and Records Division (R. I, 883-4):

> "A considerable part of that work is of direct benefit to the associate companies. For instance, the relations with the companies in the advancement of funds to them from time to time is one direct relationship; the matters relating to the employees' stock plan is another. Then, as regards the keeping of the books, this department keeps the books and the records for the several departments, and for the Company as a whole, and in that respect it goes back indirectly as a benefit to the associate companies and the Long Lines.
>
> "The assets of the Associated Companies represent more than 90 per cent of the total assets of American Telephone and Telegraph Company and I have figured that the expenses of my department follow these assets" (R. I, 867).

From the above, it is clear that Mr. Heiss was merging the License Contract relationship and the investor relationship to the Associated Companies to pass on to them the entire expenses of the American Company in connection with such investor relationship. Such treatment is also evident from the colloquy between him, his counsel and the Court, reproduced in the margin.* That such treatment was limited to passing on only the expenses and not the benefits is apparent from his testimony (R. II, 1170):

> "Q. Mr. Heiss, if the A. T. & T. makes the investigation in the radio field and charges all the expense to the licensees, to satisfy them that there is nothing in the radio field that is going to hurt them, and as a result of this investigation the A. T. & T. get an idea, gets ideas, and the A. T. & T. can sell those ideas for ten million dollars, it is your thought, is it, that the A. T. & T. can keep the ten million dollars, or is entitled to a credit for the ten million dollars?
>
> "A. Looking at it from the approach that we have here, where we are contracting parties, if we give the service to the companies that we agreed to give them under the license contract agreement, and if out of that research we get certain by-products that we can sell in other fields, it is not any concern of anyone what the American Company does with those by-products, that is if we are contracting parties. That is the property of the American Company to use it as it wants to."

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*"Judge Wilkerson: Now, on the theory of this case we heard advanced here before, besides the services rendered under this contract, all the American Telephone and Telegraph had to do was to vote the stock of the Illinois Bell. Now, why should you charge a part of the salary of the President of the American Telephone and Telegraph Company to the Illinois Bell?

"The Witness: Well, your Honor, let's look at the functions of the American Company. First we have the Long Lines Department. Now, the expenses of the Long Lines Department are entirely excluded from these figures. Now, what is left of the work of the American Company is very largely the work done in serving the associate companies under the license contract, and generally" (R. I, 892).

* * * * * *

"Judge Wilkerson: I understand that; but I wanted to know in particular in regard to the President.

"The Witness: All right. Now, the President supervises all of this work, and if the work of these various departments is chargeable against the associate companies, then the expense of the executive who has general supervision and directs generally all of those activities should be likewise apportioned.

"Judge Wilkerson: You have made this set-up on a theory which

The expenses of the Information Department covering advertisements were charged to License Contract Operations. But these advertisements show:

(1) That the American Company is featured as an institution. Thus we find the headings "What is the A. T. & T." "Where the Bell System's Profit Goes," "How Many are 421,000 Stockholders?" (R. VIII, 4625, 4629, 4631);

(2) Each of the advertisements is either declared to be an advertisement of the American Company or is in the name of the American Company (R. VIII, 4625-31);

(3) Many of the advertisements discuss the relationship of the American Company to its stockholders (R. VIII, 4625-8, 4630-1);

(4) Some of the advertisements discuss the question of Western as a manufacturer of telephone instruments (R. VIII, 4625-6, 4630); and

(5) Some of the advertisements refer to the Bell Telephone Laboratories' work (R. VIII, 4625-8).

Nothing can be done in the Department of operations (c) general which does not benefit Western or the American Company in its Holding Company relations at the same time that it benefits the Associated Companies. Yet the entire expense of the Department was charged to License Contract operations (R. IV, 2852a).

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disregards, really, corporate form, and treats the business as—looks at it as an entire organization?

"The Witness: Substantially that. That is, that the expenses of the American Company are expenses in addition to those of the associate companies.

"Judge Wilkerson: That is you have made this on the theory which the defense is contending in this case, namely, that the corporate form is to be eliminated, and that we are to look at it as if it was one organization. Now, accepting that as the argument, you have made that on this theory; do I understand it?

"Mr. Blackman: I think that approaches it, sir. What we have done is this: we have tried to give what the Supreme Court said we should give, and that is the fair share of all our expenses connected with this license contract which we should allocate to the Chicago area" (R. I, 892-893).

DISCUSSION AS TO CONTENTION NUMBERED II.

II.

THE AMERICAN COMPANY'S HOLDING COMPANY OPERATIONS AS INVESTOR IN APPELLEE DO NOT COME WITHIN THE LICENSE CONTRACT.

For the reasons already stated, the creation or maintenance of the American Company's investor relationship to Appellee is not covered by the License Contract (*supra*, 179), and the expenses incident to such relationship cannot be justified by such contract.

DISCUSSION AS TO CONTENTION NUMBERED III.

III.

THE AMERICAN COMPANY IS NOT ENTITLED TO REIMBURSEMENT OF EXPENSES INCURRED IN ITS OWN OPERATIONS INCIDENT TO ITS OWNERSHIP OF THE STOCK OF APPELLEE.

The District Court's findings on Fair Return and Appellee's showing thereon, treated the American Company investor relationship to Appellee as that of the ordinary investor to the ordinary public utility corporation (R. I, 202-5; R. III, 2514, *infra*, 528). By considering the American Company's expenses as a Holding Company investor in the stock of Appellee as License Contract expenses properly chargeable to Appellee's operating expenses, the American Company as investor receives an *advantage of additional pecuniary profit* which is not received by Appellee's other investors or by the ordinary investor in business undertakings outside the Bell System. No reason is given for any such preference and no justification exists therefor. The District Court's findings on Fair Return and License Contract charges covering the American Company's operations of its ten departments above enumerated cannot both be correct.

Part IV.

The American Company's $30,395,000 Appropriation to Reserve for Contingencies.

What the District Court Did.

The District Court found that under the License Contract the American Company was "obligated to insure and hold harmless" Appellee and the other Associated "against loss or damage from suits or judgments" for patent infringement in the use of telephonic appliances recommended by the American Company; that such obligation constituted a substantial liability; that the American Company's Appropriation to its Reserve for Contingencies of $30,395,800 in the years 1924 to 1928, inclusive, represented a contingency reserve over the period January 1, 1923 to January 1, 1932, to meet such liability; that such a reserve was reasonable; that the charge to Appellee, as part of its operating expenses, to cover compensation to the American Company for the benefit of such obligation should be the amount of such reserve applicable to Appellee's Chicago intrastate business ranging from $98,382 in 1931 to $281,740 in 1925 and aggregating for the period $1,405,326 (R. III, 2510-1). To these findings Appellants assigned error (R. III, 2539), and in support of their position offer the following:

SUMMARY STATEMENT OF APPELLANTS' CONTENTIONS.

I. The District Court disregarded Appellee's License Contract in force to September 25, 1930, covering the American Company's obligation for patent protection in the use of telephonic appliances and its relation to the alleged reserve which the District Court claimed the American Company set up as financial protection against its consequences.

II. The American Company's appropriations from 1924 to 1928, inclusive, to its Reserve for Contingencies created in 1900 were not intended by it to be and could not legally become a Reserve against financial liability on its patent protection obligation to Appellee.

III. The amount of the appropriations to the Reserve for Contingencies cannot become the measure of compensation to the American Company for the benefits of its obligations for patent protection.

IV. The District Court's finding that the entire amount of charge to License Contract payments to cover patent protection should be allocated to operating expense and no part thereof to fixed capital account, unduly burdened Appellee's customers to the extent of at least 40% of such charge during the years 1923 to 1931, inclusive.

DISCUSSION AS TO CONTENTION NUMBERED I.

I.

THE DISTRICT COURT DISREGARDED APPELLEE'S LICENSE CONTRACT IN FORCE TO SEPTEMBER 25, 1930, COVERING THE AMERICAN COMPANY'S OBLIGATION FOR PATENT PROTECTION IN THE USE OF TELEPHONIC APPLIANCES AND ITS RELATION TO THE ALLEGED RESERVE WHICH THE DISTRICT COURT CLAIMED THE AMERICAN COMPANY SET UP AS FINANCIAL PROTECTION AGAINST ITS CONSEQUENCES.

Neither the Western Electric Contract of 1882 (O.R. VI, 2068), nor the 1908 modification thereof (O.R. VI, 2075) required the American Company to protect Western against infringement suits on patents owned by the American Company or by Western which were embodied in telephone instruments or telephonic appliances manufactured by Western; the latter assumed all such liability (O.R. VI, 2070).

The Western Electric contracts with Appellee have never contained protective provisions against infringement liability in the use of telephonic appliances (O.R. VI, 2033-8). Western had no general obligation to its non-Bell customers covering such protection. Upon request it agreed to protect such customers without increasing the sales price of the items involved (R. II, 1076).

Under its Original License Contract of 1881 in force to 1919, Appellee was indemnified and saved harmless by the American Company against patent infringement liability in the use of telephone instruments embodying the *Bell* patents; it contained no such protective provisions covering the use of telephonic appliances. (O.R. VI, 1925-33.) The American Company claimed, however, that prior to 1919 it made available its legal and technical experts in defense of Appellee in suits wherein the latter was charged with patent infringement in the use of telephonic appliances recommended for purchase by the American Company. (R. II, 1216.)

As shown above (*supra*, 119) the 1919 License Contract changed the then existing contractual relationship between the American Company, Appellee and Western in respect to the development of inventions for use in telephonic appliances and changed the method of providing for the costs thereof (O.R. IV, 1196).

Sec. 9a of the same 1919 License Contract gave Appellee the right, in respect to leased telephone instruments, to

> "protection and defense against and to be saved harmless from all actions or suits, charging infringement of patents arising out of the use thereof" (O.R. IV, 1206).

The same Section 9a gave Appellee the right in respect to telephonic appliances purchased pursuant to the American Company's recommendations, to

> "ample provision for protecting and defending against and insuring the Licensee against judgments for damage and profits in, all actions or suits, charging infringement of patents, arising out of the use thereof" (O.R. IV, 1206).

The American Company sold to Appellee in 1927 the telephone instruments theretofore leased to it and thereafter Appellee purchased such items from Western (*infra*, 231).

Sec. 2 of the License Contract of September 15, 1930, which superseded the 1919 License Contract covering the use of telephone instruments and telephonic appliances recommended by the American Company, provided:

> "The Licensee shall be protected and saved harmless by the Licensor from all actions or suits charging infringement of patents arising from the use of any telephones or telephonic devices, apparatus, methods, or systems which the Licensor may recommend" (R. V, 3001).

The District Court (R. III, 2510) following Appellee (R. III, 2412), treated Section 9a of the 1919 License Contract and Section 2 of the 1930 License Contract as creating identical obligations by the American Company and having an identical relation to the alleged Reserve which Appellee claimed the American Company set up as a financial protection against its consequences.

For the purposes of the issues discussed herein, the patent provisions of the two Contracts differ (1) in the nature and extent of Appellee's rights and of the American Company's obligations; (2) in the significance and necessary requirements of a reserve set up by the American Company for protection against patent infringement liability; and (3) in the significance of the use of the amount of the reserve as the yardstick to measure the charge to the Associated Companies for patent protection.

(1) Section 2 of the 1930 Contract creates an absolute indemnity liability of the American Company, for the enforcement and satisfaction of which, all of its unpledged assets, aggregating several billions in amount, became available. The obligation of Section 9a of the 1919 Contract to "make ample provision for protecting and defending and insuring against judgments, etc." would be

satisfied and discharged (a) if it paid premiums to an insurance company or companies and the latter became insolvent or were not able to pay the judgments as rendered against the licensees; or (b) if it set aside a fraction only of its several billions of assets as a trust fund, which appeared ample at the date of creation or from time to time but for some unforeseeable reason turned out not to be ample when judgments were rendered against the licensees.

(2) A reserve set up by the American Company as "financial protection" against its infringement liability under Section 2 of the 1930 Contract would not in anywise limit or discharge its liability to Appellee on the one hand, and on the other hand, would not enlarge the rights of Appellee unless the funds in the reserve were liened for the benefit of the obligees of the indemnity obligations of the American Company. The reserve would, however, be an act of conservative management to safeguard the continued payment of dividends and to prevent impairment of the American Company's surplus and capital, by large judgments in future years against the Associated Companies. A reserve set up by the American Company in connection with its obligation under Section 9a of the 1919 Contract, if ample in amount and if set aside as a trust fund for the benefit of Appellee and others similarly situated, free from the creditors of the American Company and free from the possibility of re-transfer to Surplus or to other Reserves will constitute the total action required to be taken by the American Company and discharges its full liability to Appellee and to others similarly situated. But unless so limited, the reserve is of no practical benefit to Appellee pending the time when judgments are in fact entered and is of no practical benefit to it at the date of

such judgments if the American Company prior thereto should have transferred out for other purposes the whole or any part of such reserve or if at the time of such judgments, the American Company should be unable to pay its creditors from its other assets.

Under the 1930 Contract, the Reserve has significance as the American Company's protection against its own undischarged obligation and risk; under the 1919 Contract, the Reserve becomes the insurance protection against Appellee's risk and operates as a discharge of the American Company's obligation.

(3) The value to Appellee of the American Company's obligation under Section 2 of the 1930 Contract is measured by the value of the Entire Unpledged Assets of the American Company available for unsecured creditors including Appellee; the Reserve whether liened or not, may be considered as the measure of the possible net effect of the similar risks undertaken by it; the Reserve does not measure the full value of the obligation. The value to Appellee of the American Company's obligation under Section 9 (a) of the 1919 Contract is measured by the value of the trusteed reserve and no more. It is all that the American Company contributes as consideration for the payment by Appellee and by the other licensees for patent protection. If, therefore, they are required to pay the American Company the full amount of the trusteed reserve the American Company contributes nothing whatsoever and becomes unjustly enriched to the extent that it is able to use the funds in the reserve and receive the earnings thereon pending their use in discharging judgments against the licensees.

DISCUSSION AS TO CONTENTION NUMBERED II.

II.

THE AMERICAN COMPANY'S APPROPRIATIONS FROM 1924 TO 1928, INCLUSIVE, TO ITS RESERVE FOR CONTINGENCIES CREATED IN 1900 WERE NOT INTENDED BY IT TO BE AND COULD NOT LEGALLY BECOME A RESERVE AGAINST FINANCIAL LIABILITY ON ITS PATENT PROTECTION OBLIGATION TO APPELLEE.

In January, 1924, the Executive Committee of the American Company authorized the transfer of $3,000,000 from the surplus earnings of 1923 (R. V, 3433) to its Reserve for Contingencies which had been created in 1900 (*infra,* 204). In January, 1925, similar authorization was made to cover $3,000,000 of the surplus earnings of 1924 (R. VIII, 4821), and at the same time $1,000,000 was ordered transferred from the Reserve for Contingencies to the Employees' Benefit Fund Reserve.[*]

The Executive Committee authorized the transfer to the Reserve for Contingencies of $6,000,000 in January, 1925, and $4,000,000 in January, 1926, from the surplus earnings of the previous year. In January, 1928, the Committee authorized the transfer to the Reserve for Contingencies of the $14,395,799 balance in the depreciation reserve account applicable to the leased telephone instruments, remaining after their sale to the Licensees in 1927 R. VI, 4024). No subsequent transfers to the Reserve for Contingencies have been authorized (R. II, 1089).

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[*] The resolution reads "That as of December 31, 1924, there be appropriated from Reserve for Contingencies and added to the Employees' Benefit Fund Reserve already established under the Plan for Employees' Pensions, Disability Benefits and Death Benefits the amount of $1,000,000, provided, however, that as and when authorized by further action of the Board of Directors of this Company or by this Committee, said amount may be withdrawn from said Reserve and appropriated to provide for pensions and death benefit, or either of them, or for analogous purposes under appropriate regulations" (R. VIII, 4821).

The Executive Committee, composed of directors, acted for the Board of Directors (R. VIII, 4834). The purpose of the Reserve for Contingencies and of the specific additions thereto was not stated in the Minutes of the Meetings of the Executive Committee (R. VIII, 4760-1). The Minute Book of the Board of Directors was not produced and access to it was refused Appellants (*supra,* 189) on the ground, as claimed by Appellee, that Appellants' demand therefor "is a plain fishing bill."*

Mr. Heiss, who entered the employ of the American Company in 1913 and became its Comptroller in 1920 (R. I, 819), but who never has been a director, testified over

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* Plaintiff's Brief in Opposition to Defendants' Motion of November 3, 1931, pages 6-7 (R. III, 2493-4), stated:

"(a) **Defendant's demand for the minute books of the plaintiff and of the American Telephone and Telegraph Company is a plain 'fishing bill.'**

"In their motion, defendants demand the right to an 'inspection of the minute book of the Board of Directors of the Illinois Bell Telephone Company and of the Board of Directors and Executive Committee of the American Telephone and Telegraph Company covering the years 1923 to 1930. (Motion paper, page 1 and page 36.)

"The only foundation for this demand which we have been able to find in defendants' voluminous papers is the following statement on page 37:

" 'Relevancy. An important method to determine the policies of plaintiff and of the A. T. & T., the real operator of the facilities of plaintiff, is by examination of the record of the proceedings wherein these policies were formulated. The policies are pertinent in the determination of the extent to which they are intended for the benefit of the utility service or the non-utility service of each company, and the extent to which the expenses and expenditures charged to the utility service in fact are incurred in connection with or for the benefit of the non-utility service. Without these records defendants and this court will be hampered and must depend upon the representations of plaintiff without verification.'

"The above statement of defendants shows affirmatively that with respect to the minute books of the two companies their application is a 'fishing excursion' pure and simple and in plain violation of the restrictions which the courts have uniformly put upon discoveries under Equity Rule 58 or under a bill of discovery."

Appellants' objections that "this reserve for contingencies was determined upon by myself and the President and was set up by the Executive Committee" (R. II, 1166); that regularly each year, beginning with 1919, the American Company had made substantial transfers to this contingency reserve. He stated that the controlling factor in the establishment of this large contingency reserve was the apprehension of the directors of the company that there might be large losses incurred in connection with patent suits; that this apprehension was aroused largely because of the great activity in the development of electrical communication following and resulting from the War and the great number of patents which had been taken out in the field of electrical communication (R. II, 1088, 1089).

Mr. Heiss stated that there were no further additions to the Reserve after January, 1928, because $14,395,000 then transferred was considered sufficient to provide for several years (R. II, 1089). Mr. Heiss in his exhibits and for the purpose of this case spread the $14,395,000 appropriation over the period 1927 to 1931 inclusive* (R. II, 1089, 1167; R. V, 2980c).

Mr. Heiss' testimony is the only evidence in the record to support the District Court's finding that "The American Company provided for meeting such possible losses by setting up a contingent reserve over the period from January 1, 1923 to January 1, 1932" (R. III, 2510).

But the record shows:

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*Mr. Heiss distributed the $14,395,000 over a four-year period to the end of 1931 because he knew "it was the intention that it should cover for several years the provision that we felt ought to be made for contingencies" (R. II. 1089). **Sed quaere** if the hearings had continued another year—would the "several years" include 1932; or if the hearings had ended in 1939 would the "several years" have ended then? The opportunistic character of Mr. Heiss' testimony appears *infra*, 206.

During the period 1900 to 1918, inclusive, the American Company appropriated from 39% to 66% of the current surplus earnings after dividends to a Reserve for Contingencies; the appropriations for the period aggregated $43,268,477, representing 50% of the period's surplus earnings (Appendix, p. 52). But during the period 1900 to 1918, inclusive, the American Company had no obligation to Western or to the Associated Companies, to cover patent infringement liability in the use of telephonic appliances recommended by the American Company and embodying the several thousand patents owned or controlled by it (*supra*, 196).

In 1910 the American Company stated the purpose of the appropriations for Contingencies to be:

> "To make adequate provision for future contingencies it would seem to be plain that in an increasing business there must also be an increasing reserve.
>
> * * *
>
> Reserves are a provision for deterioration and obsolescence of plant beyond that which can be covered by current maintenance and current replacements, and also *for deterioration of assets and for fluctuations in gross and net revenue caused by varied* business conditions" (O.R. VII, 2471. Italics ours).

During the period 1919 to 1926, inclusive, the American Company appropriated from 13% to 55% of the current surplus earnings after dividends to its Reserve for Contingencies; the appropriations for the period aggregated $37,000,000, representing 25% of the period's surplus earnings (Appendix, p. 53). In addition the American Company transferred in January, 1928, to its Reserve for Contingencies the $14,395,799 on leased telephone instruments remaining after their sale to the Associated Companies in 1927 (R. VI, 4024).

Other than the testimony of Mr. Heiss, nothing appears to indicate that there was an abandonment in 1919, or thereafter, of the purpose stated in 1910 for the Reserve for Contingencies. On the contrary the following facts confirm the continuance of such purpose to date.

The financial statements of the American Company to the end of 1911 showed the Surplus, Reserve for Contingencies, and Reserve for Depreciation on telephone instruments and Long Lines Plant as one item; thereafter to 1930 the Reserve for Depreciation and the Reserve for Contingencies were shown as one account and separated from the surplus account.* Beginning with 1930, the Reserve for Contingencies was shown as a separate account from the Reserve for Depreciation (R. V, 3346). As of December 31, 1930, the amount shown in the Reserve for Contingencies was $64,664,444.18 (R. V, 3346). How much it was on December 31, 1918, the record does not show. The net amount of $15,602,033 was withdrawn and charged against the Reserve for Contingencies from 1900 to 1929, inclusive, including the $1,000,000 withdrawn in 1925 and added to the Employee's Benefit Fund Reserve (*supra,* 201; R. VIII, 4824). That such large withdrawals were not made to satisfy judgments or claims of patent infringements is evident from the history of patent litigation as told by the American Company's witnesses (*infra,* 211). How and when the other withdrawals were made which were charged to the Reserve for Contingencies, the purpose thereof and the portion thereof withdrawn and charged during the period 1919 to 1932, inclusive—all relevant facts—can be found, if at all, in *the Minute Books of the Board of Directors* of the *American Company* which were not produced and access to which was refused Appellants by Appellee and by the District Court (*supra*, 189, 202).

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*O.R. VII, 2483, 2485, 2675; R. V, 3292, 3299, 3307, 3318, 3323, 3331, 3339.

Neither in the exhibits offered by Mr. Heiss in the Michigan Telephone litigation in 1929 (R. I, 1000; R. VI, 3769), nor in the Ohio Telephone litigation in 1932 (R. I, 1001; R. VI, 3772a-b, 3773-4), nor in the exhibits prepared by him and sent to Appellants prior to the hearings (R. VIII, 4505) in which he testified, did he show the Reserve for Contingencies as having application to patent infringement liability, or any specific items to cover such liability.*

Significant it is that in his testimony and in the exhibits offered in connection therewith at the 1932 hearings herein (R. V, 2980a-c), Mr. Heiss considered that the American Company's liability arising from its patent protection obligation for the entire period 1923 to 1932, inclusive, was predicated on "Section 2 of the License Contract," which of course did not go into effect until September 25, 1930.

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*A glimpse behind the scenes reveals the following illuminating situation covering Mr. Heiss' testimony in the final hearings herein in 1932:

Mr. Heiss testified:

"* * * for 1931 in Ohio I used $2,500,000 and here I used $750,011. The last year is not comparable, because I have excluded there the factor in connection with the large amount of money which we had available in New York, and which I did not charge up against the license contract.

Q. But the difference of that factor is an additional $700,000 there?

A. I think it amounts to $700,000 or more, but it all goes to show, Mr. Goldstein, my conservatism in the Ohio case where I was on my own.

Q. Yes.

A. And in this case I was at the mercy of my attorneys, and I had to make the deductions as they outlined the specifications.

In connection with the Ohio case, I discussed the matter (but not the deduction) with the heads of the departments. As I said a while ago, this matter of separating expenses here, license contract expenses from other expenses, was quite a mystery, and the department heads could not tell me very much" (R. II, 1175-6).

Mr. Heiss testified also:

"Now another factor in Michigan was the difference in the cost of money. At the time, in 1928, when I hadn't much experience in this matter, I was told in conjunction with our people to set up the money costs in the way that I described. Now, that will make a difference of two or three million dollars.

"We had a method which I used in 1928, and I saw fit to change that method, after mature consideration, for these present cases" (R. I, 1002).

In the light of the above facts, Appellants submit that Mr. Heiss' version of the purpose of the transfers to the Reserve for Contingencies as transfers to a Patent Liability Reserve should be disregarded. The District Court's finding based thereon is unsupported by any facts in the record.

Assuming, however, that his version is given credence, the transfers should not be considered as creating a Patent Liability Reserve having application to the American Company's obligation to Appellee under Section 9a of the 1919 License Contract, because such Reserve for Contingencies was not circumscribed by the following essentials to make it of practical benefit to Appellee:

(1) The funds in the Reserve were not trusteed for the benefit of Appellee and others similarly situated;

(2) Withdrawals from the Reserve were not limited to such only as had application to the subject matter of patent protection—witness the withdrawal in 1925 to the Employees' Benefit Reserve (R. VIII, 4821);

(3) The Reserve was not protected against clearance to Surplus and distribution as dividends to stockholders—witness Western's action in 1927 in respect to its Reserve (R. VIII, 4880a; R. I, 475);

(4) The Reserve was not protected against claims of creditors of the American Company.

DISCUSSION AS TO CONTENTION NUMBERED III.

III.

THE AMOUNT OF THE APPROPRIATIONS TO THE RESERVE FOR CONTINGENCIES CAN NOT BECOME THE MEASURE OF COMPENSATION TO THE AMERICAN COMPANY FOR THE BENEFITS OF ITS OBLIGATIONS FOR PATENT PROTECTION.

(1) For the reasons already stated, the full amount of a Reserve for Patent Infringement Liability established to protect the American Company against financial liability under its obligation created by Section 9a of the 1919 License Contract can not be used as the measure of premiums to be paid by the Associated Companies for that protection (*supra*, 200).

(2) The $14,395,799 balance in the Depreciation Reserve Account after the sale of telephone instruments in 1927, which was transferred to Reserve for Contingencies represents profit to the Amercan Company on such sale. To such profit the American Company was not entitled. By the amount of this profit the American Company was unjustly enriched at the expense of the Associated Companies (*infra*, 231). To consider such profit as becoming a Reserve for Patent Protection beginning with 1927 and for five years thereafter and to charge the Associated Companies the amount thereof would be to unjustly enrich the American Company at their expense *a second time by the* same amount of $14,395,799 through the device of a bookkeeping transfer from one Reserve to another.

(3) For the reasons already stated, the charge to License Contract payments of the entire amount of the

appropriations to a Reserve for Patent Infringement Liability unjustly enriches the American Company to the extent of the portion thereof applicable to:

(a) the bonus stock and the earnings thereon received by the American Company from Western for the license to manufacture and sell to the Bell System telephone appliances recommended by the American Company embodying its inventions (*supra*, 168).

(b) the earnings on the American Company's investment in Western, as the manufacturer of such appliances (*supra*, 169), and

(c) the added protection which such Reserve gives to the American Company's investment in the Associated Companies. The fact that the American Company as the investor in Appellee can protect its investment therein against impairment through Appellee's use of patents and apparatus at the expense of Appellee in manner and amount determined by the American Company is an advantage of additional security not received by the ordinary investor from ordinary business undertakings of similar risks and uncertainties. But Appellee's showing and the District Court's findings on Fair Return based thereon were predicated on the existence of the ordinary investor relationship between Appellee and the American Company (R. I, 202-5; R. III, 2514; *infra*, 528).

(4) To give Western a clear field to embody in telephonic appliances patents recommended by the American Company, the American Company pursued the policy of (a) purchasing patents (R. II, 1217), (b) purchasing licenses (R. II, 1218), (c) exchanging licenses and patents (R. II, 1217). The direct payments for patents during the period 1923 to 1931 was $1,601,754, plus a portion of the

legal expense incurred in connection therewith of the total legal expense of $1,842,614 (R. I, 913). Prior to 1923 the American Company followed the same purchase policy incurring also large expenses (R. II, 1217-19) all of which Appellee has included as part of the "Legal Department" *expense* claimed as part of the *cost* of furnishing the license contract services (*supra,* 184). For the same purpose, Western spent during the period 1923-1930, inclusive, as much as or more than the American Company and such expense was currently charged during those years as part of Western's expenses to be covered by the sales price of its products (R. V, 3472-3).*

These direct expenses are in addition to the large expense of the Law Department of the American Company which Appellee included as part of the "Legal Department" expense to be covered by the license payment (*supra,* 184) and the large expense of the experts in the Bell Telephone Laboratories, Inc. for investigation to minimize the risk of infringements, which expense is covered by Western sales price of its products (R. I, 514-5). Similarly one of the purposes of the huge expenditures for Development and Research was to keep ahead of the art and prevent the necessity of paying tribute to outside patentees (R. III, 2157).

It is significant in this connection to note that from the War to 1923 the American Company and Western had by contracts and licenses—

(a) procured a clear field for the use in wired telephony of inventions in radio through the General Electric Company contract of July 1, 1920, and its extensions already noted (*supra,* 135);

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*Prior to 1923 Western charged its large purchases of patents to its Reserve for Contingencies (R. VIII, 4880a), but the District Court allowed their charges as current operating expenses.

(b) procured a clear field in the telegraph field through exchange of licenses in 1923 with the Mokrum Company (R. VIII, 4841);

(c) procured a clear field in respect to machine switching patents which represented the big development in telephonic appliances for the Associated Companies during the period under investigation by arrangements with Automatic Electric Company (R. VIII, 4847), with Kellogg Switchboard & Supply Co. (R. V, 3709) and with Stromberg-Carlson Mfg. Co. (R. V, 3704) and with individuals controlling important patents (R. II, 1216).

It is such *insurance* which furnished the real protection to the American Company, to Western, and to the Associated Companies against the possibility of infringement liability (R. II, 1217-18).

That the risk of patent infringement liability could be eliminated without *serious loss* to the *American Company*, is evidenced by the history of the American Company and Western since 1900. With more than thirty years of telephonic history to draw on, no payment was shown to have been made by the American Company or by Western of any substantial amount of damages or expenses growing out of their respective patent infringement liabilities (R. II, 1213). With thirteen years' history since the War no substantial payment was made although the number of patents and applications has doubled since 1918. The record discloses a suit in 1900 involving switchboards which was disposed of (O.R. III, 1011), and a claim in respect to telephone instruments which was settled for a few hundred dollars in 1915 (R. II, 1218). The pending suits by Kellogg Switchboard and Supply Company, which Appellee emphasized, are illuminating (R. II, 1219). In the first place the suits covering straight-forward trunking and the use of number 11 switchboards* have already been determined in favor of the American Company (*Kellogg Switchboard and Supply Company* v. *Michigan Bell Tel. Co. and American Tel. & Tel. Co.,* 2 Fed. Supp. 335 (1932). In the second place, the proposal for settlement illustrates the folly of permitting the American Company to set up a reserve as a financial protection against patent infringement liability at the expense of the Associated Companies. According to the American Company, the Kellogg Company offered to settle on the basis of $5,000,000 in cash, the grant of a non-exclusive license under certain American Company's patents and the agreement of the American Company to purchase the manufactured products of the Kellogg Company and to pay therefor the cost plus 20% (R. II, 1219). As the Kellogg Company is a manufacturer of telephonic appliances already doing business through Western with the Bell System (R. V, 3739) and as the development and research expenses of developing patents is paid for by the Associated Companies (Appendix, p. 73), the settlement would, in effect, mean (a) the payment by the American Company of $5,000,000, (b) the grant of license to use patents developed at the Associated Companies' expense and (c) an increase in purchases by the Associated Companies from the Kellogg Company through Western (O. R. IV, 2070). By so doing, the American Company would escape the major portion of the liability.

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*However, no number 11 switchboards are used in the Chicago area (R. II, 1317).

(5) Under the 1919* and 1930** License Contracts the American Company has the right to assign its obligations to an assignee (even of nominal or no financial responsibility), and by so doing to release itself of further obligations under them. The American Company does not obligate itself to assign, transfer or make available to the assignee the reserve, even if properly created, to cover possible infringements during the service life of the apparatus subsequent to the date of assignment. A reserve, therefore, built up in excess of the amount required to meet the infringements to the date of assignment or appropriations made, as in 1927, but claimed to cover protection against the *risk of future years;* furnishes no *legal protection* to the Associated Companies, and if reimbursed to the American Company, is without consideration and unjustly enriches it at the expense of the Associated Companies.

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*Section 13 of the 1919 License Contract provides (O.R. IV, 1214):

"If the licensor shall transfer to any party who shall agree to perform the stipulations hereof, its title to the telephones furnished and licensed hereunder and the patent rights under which they are licensed, and its then existing rights hereunder, the provisions hereof shall inure to the benefit of and be binding upon such party in respect of all things done or to be done after such assignment, as if it were named a party hereto, and the Licensor shall no longer be responsible hereunder."

**Section 13 of the 1930 License Contract provides (R. V, 3008):

"If the Licensor shall transfer to any party who shall agree to perform the stipulations hereof, its title to the patent rights under which telephones and apparatus are licensed herein, and its then existing rights hereunder, the provisions hereof shall inure to the benefit of and be binding upon such party in respect of all things done or to be done after such assignment, as if it were named a party hereof, and the Licensor shall no longer be responsible hereunder."

DISCUSSION AS TO CONTENTION NUMBERED IV.

IV.

THE DISTRICT COURT'S FINDING THAT THE ENTIRE AMOUNT OF CHARGE TO LICENSE CONTRACT PAYMENTS TO COVER PATENT PROTECTION SHOULD BE ALLOCATED TO OPERATING EXPENSE AND NO PART THEREOF TO FIXED CAPITAL ACCOUNT, UNDULY BURDENED APPELLEE'S CUSTOMERS TO THE EXTENT OF AT LEAST 40% OF SUCH CHARGE DURING THE YEARS 1923 TO 1931, INCLUSIVE.

The Stromberg-Carlson Manufacturing Company (R. VIII, 4662) and the Automatic Electric (R. VIII, 4613, 4617) guaranteed Western and the purchasers of the latter against patent infringement liability on patents embodied in the apparatus manufactured by them and sold to Western for resale, including sales to the Bell System. In the case of the Automatic such apparatus involved machine switching equipment, the Bell System purchases of which were in excess of $40,000,000 to 1932 (R. V, 3739). In each case the manufacturers' sales price included the premiums, if any, to cover insurance against patent infringement liability (R. VIII, 4663, 4616, 4622). In each case the purchases by Appellee were on the recommendation of the American Company (R. II, 1211).

Independent telephone companies are indemnified by Western against patent infringement liability on the same telephonic appliances which Western sells to Appellee without any indemnification (R. II, 1076, 1169; R. VIII, 4662, 4617).

Purchases of telephonic appliances whether manufactured by Western or by other manufacturers are recorded in the construction accounts except as to the small percentage thereof applicable to maintenance and other expense accounts (*supra*, 171 *et seq.*). When recorded on the construction accounts such price, including the portion thereof applicable as premium for patent protection, is amortized over the service life of the item involved, if purchased by Appellee from manufacturers other than Western.

But the District Court allocated as an operating expense the premium paid through the License Payment to the American Company to cover patent protection on appliances which go into fixed capital. By so doing it amortizes the entire premium in the year in which it is paid. There is no reason for this difference in treatment.

Account 527 of the Uniform System of Accounts in force since 1913 and covering the License Payment as an operating expense (*supra*, 172) does not cover the patent protection provisions of the License Contract, as they did not come into being until 1919 (*supra*, 119).

The Uniform System of Accounts was intended to *have uniform application to all telephone companies of the same class and to the same operations of all companies.* The Uniform System of Accounts does not require that every part of the License Payment be included as an operating expense (R. VIII, 4473). General Expense Account 668 covering "Insurance" contemplates that premiums on insurance may be charged under certain circumstances to fixed capital account (R. VIII, 4475). As Appellee and other telephone companies charge premiums for protection against patent infringement liability to fixed capital account in the case of purchases other than of Western's manufactures no reason exists for making any difference in treatment of such payment, if and when made through the License Contract payment by the Associated Companies to cover Western's manufactures.

If the License payment to cover patent protection were distributed among the fixed capital accounts and operating expenses in conformity with the recording of the purchase price of Western's manufactures, the existing telephone service charges for Intrastate business would be relieved to the extent of 41% of the charge made, and the attacked rates to the extent of 45% thereof (Appendix, p. 47).

If patent protection to Appellee is necessary, and if the charges were made to it in the manner that the Automatic Company and Stromberg Company make to Appellee and others and as Western makes to its non-Bell customers, the question of the reasonableness of the charge could be tested by the experience of manufacturers having similar risks, such as the manufacturers above mentioned, or the General Electric Company, the Westinghouse Electric Manufacturing Company and others similarly situated. By changing the character of the insurance, in scope, in method of payment and in method of accounting, Appellee has made it impossible for any one challenging the charge to present the experience of others and for reviewing authorities to use such experience as a standard of the reasonableness of the action under question. The record shows no facts to prove the reasonableness of the amount charged; the principle of law that the charge was an act of management being *prima facie* reasonable was never intended to have application to a situation where as here the party seeking the benefit thereof has made it impossible for those challenging the action to test the same by the ordinary standards applicable under similar circumstances.

Part V.

Considerations Received by the American Company Applicable as Additional Compensation for License Contract Services Not Considered by the District Court.

The American Company received from Appellee four considerations of value other than the License Contract payment, for which the District Court gave no credit, although Appellants made the request therefor (R. III, 2436, 2441). Appellee's request for findings on License Contract provided that all offsets ~~and credits~~ be given effect in connection therewith (R. III, 2416). The District Court's opinion and findings on License Contract made no mention of and gave no effect to any credits or offsets (R. III, 2509-12; 2519-20). For the District Court's failure so to do, Appellants assigned error (R. III, 2570-72) and in support of their position offer the following:

SUMMARY STATEMENT OF APPELLANTS' CONTENTIONS.

I. The American Company did not reimburse Appellee for its expenses incurred in the direct distribution in Appellee's territory of the American Company's new issues of securities.

II. Appellee received no credit for financing the Central Union Properties to liquidate $17,500,000 frozen assets of the American Company and to relieve it of incurring further losses in connection therewith.

III. Appellee received no credit for the surrender of its right under Section 10 of the Original License Contract of 1881 to participate in the receipts and profits of the long-distance business in Chicago as part consideration for the License Contract arrangement in effect during the period of the litigation.

IV. Appellee received no credit for its proportion of the $14,395,799 profit made by the American Company in 1927 on the sale to the Associated Companies of the telephone instruments theretofore leased to them.

DISCUSSION AS TO CONTENTION NUMBERED I.

I.

THE AMERICAN COMPANY DID NOT REIMBURSE APPELLEE FOR ITS EXPENSES INCURRED IN THE DIRECT DISTRIBUTION IN APPELLEE'S TERRITORY OF THE AMERICAN COMPANY'S NEW ISSUES OF SECURITIES.

Neither Appellee nor the District Court allowed Appellee credit for the expenses incurred by it in assisting in the sale of the American Company's stocks and bonds through (a) the sale of the American Company's securities to the public in Appellee's territory, (b) the buying and selling stock rights and taking stock subscriptions, and (c) selling the American Company's stock to Appellee's employees. Such expenses were charged by Appellee to operating expenses and allowed by the District Court as proper, to which findings Appellants assigned error (R. III, 2570).

APPELLEE'S SERVICES.

A.

Sale of American Company's securities to public.

For the period 1923-1930, inclusive, Appellee collected $27,382,749 for the account of the American Company covering partial payments from Appellee's sales of the American Company's securities to the public in Appellee's territory (R. VI, 3812); and the net remittances to the American Company during that period were $26,610,947 (R. VI, 3812). In 1931 $2,924,352 was collected by Appellee and $2,760,131 was remitted, such collections representing in the latter part of the year some payments by employees who purchased the stock as the same came below their Employees' Stock Plan subscription figures (R. II, 1266). Such sales to the public were made through Appellee's facilities and employees for cash or monthly payments.

B.

Buying and Selling Stock Rights and Taking Stock Subscriptions.

Beginning with 1924, Appellee used its facilities to enable the American Company to carry out campaigns for direct sales of the latter's securities to its stockholders in connection with stock offerings of 1924, 1926, 1928 and 1930 (R. V, 3216).

The facilities were used to help stockholders arrange to buy or sell their rights (R. V, 3192), and to contact stockholders to utilize their rights to subscribe or to cash in the value thereof (R. V, 3193). The Appellee's record in these campaigns was among the best in the Bell System (R. V, 3198, 3193).

Such rights transactions alone involved $2,456,500 for the period (R. VI, 3812-3). The collections on stock subscriptions paid in full and installment payments on these four issues aggregated $5,899,134.43 (R. VI, 3812-3).

C.

Employees' Stock Plan.

During the period 1923-1931, inclusive, Appellee collected from its employees $22,989,482 for the account of the American Company to cover installment payments on stock purchases made by them through Appellee, and after making settlements with employees for repurchases, etc., remitted to the American Company the net amount of $16,738,169 (R. VI, 3812).

In 1923, 45% of the 23,831 employees of Appellee were subscribers to the Bell System Employees' Stock Plan in effect since 1914 (R. VIII, 4772-8; O.R. VI, 2031; O.R. VII, 2513 (17); O.R. VI, 2318); by the end of 1930 over 85% of the 29,600 employees were subscribers (R. VIII, 4800). By agreement with the American Company the sale of stock and collection and transmission of all proceeds thereof were through Appellee's facilities (*Idem.*). In 1923, 38,037 shares were under subscription (O.R. VI, 2318); at the end of 1930, 113,621 shares were under subscription (R. VIII, 4800). In spite of the depression, 73.6% of the 26,475 employees were subscribers on December 31, 1931, to 80,911 shares (R. VIII, 4800). During the period 1923-1931, inclusive, there were issued to employees over 125,000 shares of the American Company fully paid up (O.R. VI, 2318; R. VIII, 4800).

D.

Total Remittances.

The total remittances by Appellee derived from sales of the American Company's securities were $52,008,382.25 for the period 1923-1931 (R. VI, 3812). This amount was 59% (R. VI, 4027) of the $89,418,000 paid by the American Company to Appellee in purchasing Appellee's stock offerings during the same period.

COMPENSATION TO APPELLEE FOR SELLING AMERICAN COMPANY'S SECURITIES.

A.

Employees' Stock Plan.

For selling American Company's stock to its employees Appellee received neither compensation nor reimbursement of expense (R. II, 1258). Appellee estimated that the cost to it in the Chicago Division of rendering such service to the American Company during the period was from $29,701 to $45,263 per year (R. VI, 3809).

But analysis of these figures reveals that:

(a) No record was kept of the time spent by employees on the work. The computation is based on 1932 estimates of what time was spent as far back as 1923 (R. II, 1259). Such estimates were made for the purpose of this case by employees, all or practically all of whom were doing so in their adverse interest, as stockholders of the American Company.

(b) No portion of the general administration or other executive department expense was charged as part of the costs representing general supervision similar to the supervision claimed by Appellee for the President and other Executives and administrative officials of the American Company in relation to License Contract services (*supra*, 187).

(c) In computing the allocable portion of the annual charges for facilities, Appellee considered only the particular space occupied by the employees working on such sales plan and then only on the basis of *book cost valuation*, without giving effect to the Reproduction Value of the property and without giving effect to Going Value. (R. II, 1258).

B.

Selling Securities to the Public.

From 1923 to 1928, inclusive, Appellee received $9,000 a year, $5,700 to cover accounting service and $3,300 to cover commercial services such as collections, etc. Beginning with 1929 the compensation has been $3,600 a year (R. VI, 3811). This compensation was apparently to cover the *entire company* operations (R. VI, 3811). Where Appellee mailed circulars or annual reports of the American Company the incidental expenses in connection therewith were also billed (R. II, 1261).

Appellee estimated that its cost in the Chicago Division of handling this work for the period was from $15,100 to $19,600 per year (R. VI, 3810).

After deducting the compensation (apparently the full company amount), and reimbursement of the miscellaneous expenses of mailing Appellee's estimates, Appellee estimated its net cost in the Chicago Division for which it received no reimbursement was from $6,800 to $19,700 per year (R. VI, 3810).

These computations were made on the same basis and in the same manner as in the case of the estimated costs of administering the Employees' Stock Plan (R. II, 1260), and are subject to the same objections that (*supra*, 221):

(a) The estimates were made in 1932 by interested employees, with no records available from which their representations can be checked.

(b) No Going Value was given effect.

(c) No reproduction cost value was given effect.

C.

Sales of Stock Rights and Subscriptions.

Appellee did not charge nor has it estimated the cost to it of using space in connection with these transactions nor any overhead, such as it included in connection with its estimates of costs of selling stock to the public (R. II, 1262). It was reimbursed only the direct expense of making contacts and reporting (R. VI, 3811).

Conclusion.

On the assumption that the American Company is a *contracting party* to render service to Appellee under the license contract without reference to the American Company's investor relationship—there is no more reason why the American Company, without adequately compensating Appellee, should get the use of the benefit of Appellee's organization and facilities than if the United States Steel Corporation should arrange to have its stock sold by Appellee to Appellee's employees (R. I, 989). Indeed, viewed from the telephone subscribers' viewpoint, the sale of the American Company's securities represents a *loss* in the sacrifice of loyalty of Appellee's employees to Appellee's own interest in their daily and intimate contact with the American Company's Long Lines operations using the facilities of Appellee in the long distance service. With a large portion of Appellee's property and personnel in the telephone operations of both parties; with allocation of joint expenses and joint uses of property dependent entirely on the judgment of Appellee's employees; with the physical impossibility of check in most instances and with the lack of available data to check in many instances the judgment of such employees,—the *loyalty* of Appellee's employees to Appellee is the only assurance which Appellee's telephone subscribers can have that Appellee's interest will not be sacrificed in any case in which the interest of Appellee and the American Company conflict or are adverse.

DISCUSSION AS TO CONTENTION NUMBERED II.

II.

APPELLEE RECEIVED NO CREDIT FOR FINANCING THE CENTRAL UNION PROPERTIES TO LIQUIDATE $17,500,000 FROZEN ASSETS OF THE AMERICAN COMPANY AND TO RELIEVE IT OF INCURRING FURTHER LOSSES IN CONNECTION THEREWITH.

The downstate properties of Appellee were acquired on December 1, 1920. They were part of the properties of the Central Union, a licensee of the American Company.

In 1913 there was owing to the American Company from the Central Union $34,303,000. The Central Union then had outstanding $5,450,000 capital stock, against which there was an impairment of capital account in the amount of $4,600,000. From 1914 to 1919, the properties were operated by receivers (R. I, 418). During the period of the receivership, its properties were operated at a loss (O.R. I, 578-9), and by April 30, 1919, the impairment of its capital account had increased to $11,900,000 and by December 31, 1919, to $13,990,000. In the course of the receivership, the American Company also agreed to hold in suspense the 4½% license payment currently due to it under the Central Union License contract (O.R. VI, 2125).

On the latter date the American Company owned $5,400,000 of capital stock, all of which had been wiped out (O.R. I, 580), and held $56,117,000 credit obligations (O.R. I, 580, 584-5).

During the year 1920 the American Company effected a reorganization of the properties of the Central Union by selling portions thereof to Appellee, to the Indiana Bell Telephone Company, and to the Ohio Bell Telephone Company (O.R. VII, 2608, 9 (29, 31)).

The sales price in 1920 of the Central Union properties to the three Associated Companies was sufficient to pay off the entire indebtedness to the American Company in the amount of $60,472,000 (O.R. I, 596), and sufficient to restore its entire capital account at $100 a share for 54,000 shares, and to create a surplus of $1,360,000 (O.R. I, 593).

The purchase price by Appellee was represented by $15,000,000 in notes with expressed maturity in 1923, when the mortgage indebtedness of $19,000,000 on its own property, created in 1909, likewise matured. The notes were paid off in cash in 1923 out of the proceeds of its new and refunding bond issue of $50,000,000 (O.R. V, 1610; O.R. VII, 2609 (32)). The transfer to Appellee of the title to the Central Union properties was a paper transfer insofar as the American Company was concerned, as it owned 99% of the stock of both companies (O.R. VI, 1982, 2283). The sale to Appellee resulted in a reduction in the capital deficit of the Central Union in the amount of $3,700,000 (O.R. I, 590), and liquidated $13,800,000 of indebtedness to the American Company (*Idem.*).

In paying off the purchase money obligations in 1923, Appellee rendered the following financial services to the American Company during the period under investigation:

(a) using the credit of Appellee to liquidate to the American Company $13,800,000 long past due indebtedness and accumulated interest from the Central Union which had been impaired and which could not be liquidated upon the credit of the latter company;

(b) using the credit of Appellee to permit the American Company to withdraw in cash more than the entire amount of its capital investment in the Central Union properties transferred to Appellee, which prior thereto had been wiped out, and on which it had not received any return for many years. But although the American Company withdrew its capital investment, it still retained the same interest in the future earnings of the properties conveyed to Appellee through its ownership of 99% of the stock of Appellee. On the other hand, the American Company did not withdraw its capital investment in the properties sold to the Indiana Bell Telephone Company and to the Ohio Bell Telephone Company, as it took stock from them for part of the purchase price (O.R.

VII, 2608-9 (29, 31)). From 1920 to 1925 the Indiana Bell paid no dividends on its capital stock and in 1926 paid 4% (R. VI, 4026). Nor did it pay interest to the American Company on the notes given in payment for the purchase for several years thereafter (O.R. VI, 1815-16). In 1924 the American Company cancelled $1,000,000 face value of such notes and $1,180,000 accrued interest (R. VIII, 4820). In 1925 the American Company cancelled $620,000 demand notes held by it, plus $1,180,000 past due interest (R. VIII, 4822). The amount so cancelled exceeded by $304,939 the entire license payments made by the Indiana Bell for the period 1920 to 1930, inclusive, and exceeded by $960,034 the license payments made by it for the period 1923-1931, inclusive.

The Ohio Bell paid no dividends in 1920, 6% in 1921, no dividends in 1922, 1% in 1923 and 3% in 1924 (R. VI, 4026).

(c) using the credit of Appellee to finance thereafter the Central Union properties conveyed to it in lieu of using the credit of the American Company, theretofore for many years the sole credit for that purpose.

In this connection, Appellants direct attention to the fact that at the date of the Central Union purchase it had a depreciation reserve of $3,504,340 (R. VII, 4075), or 22% of book investment (R. VII, 4076), applicable to the properties purchased. Appellee's purchase price wiped out that reserve; by the end of 1922 there was only $995,570 depreciation reserve applicable to the investment represented by the Central Union purchase or 5.43% of the book investment (R, VII, 4075-6).

The American Company's experts on Depreciation tell us regarding an adequate depreciation reserve account, that:

> "As business considerations, several advantages of the reserve account appear: An adequate reserve account appearing in the balance sheet is a sign that the integrity of the company's assets is being maintained. The appearance of the account in this way before investors assists the company to attract capital for extensions and betterments on favorable terms and as a result of these features, the depreciation reserve account assists a company to maintain service to its users with economy and in a high grade manner" (R. VI, 3802).

What then shall we say of the service which Appellee rendered to the American Company in 1923 and thereafter, when it enabled the American Company to clear the depreciation reserve of the Central Union as a profit and also have the use of Appellee's depreciation reserve on the latter's Chicago properties the largest per cent to book investment in the Bell System in 1922 (30.5%) and 1923 (29.4%) to window dress the Central Union balance sheet to attract capital to liquidate the frozen debts of the Central Union to the American Company? (R. VII, 4076.)

What then shall we say of Appellee's service to the American Company beginning with 1923 through the use of Appellee's showing of its depreciation reserves, which represented the largest or practically the largest per cent to book cost of plant of any Bell operating company, to window dress the financial sheets of the Central Union properties to attract capital for its needs, which prior to 1920 the American Company itself was required to do?* (R. VII, 4088a.)

Appellee's service to the American Company in the Central Union purchase balances and offsets any conceivable service which the American Company could have rendered Appellee through the License Contract for which it was not otherwise compensated than through the license payment recommended by Appellee as proper.

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*The depreciation reserve and amortization reserve account of the Chicago Division and of the Illinois Division (Central Union) for the period under investigation related to book investment was (See footnote following page).

DISCUSSION AS TO CONTENTION NUMBERED III.

III.

APPELLEE RECEIVED NO CREDIT FOR THE SURRENDER OF ITS RIGHT UNDER SECTION 10 OF THE ORIGINAL LICENSE CONTRACT OF 1881 TO PARTICIPATE IN THE RECEIPTS AND PROFITS OF THE LONG DISTANCE BUSINESS IN CHICAGO AS PART CONSIDERATION FOR THE LICENSE CONTRACT ARRANGEMENT IN EFFECT DURING THE PERIOD OF THE LITIGATION.

As already noted, under Section 10 of its Original License Contract of 1881, Appellee had the right to compensation from the American Company for the use by the latter in its long distance service of the Chicago exchange plant facilities—such compensation to be measured by a reasonable and suitable division of the receipts and profits of the long distance business originated and received in the territory of Appellee in Chicago (*supra*, 61).

	Chicago Division (R. VII, 4076)	Illinois Division (R. VII, 4076)
1923	29.37%	5.95%
1924	28.94	7.04
1925	28.25	3.96
1926	28.19	3.53
1927	28.78	2.77
1928	27.98	6.35
1929	26.70	5.75
1930	26.91	6.49
1931	28.11	8.24

The right which Appellee had was not the right which the other Associated Companies had under the standard form of contract. Only two other Associated Companies ever had such a right, and the record does not show that their right was preserved to 1919 as in the case of Appellee (*supra,* 66). Appellee's yearly settlements with the American Company since 1919 gave no effect to that right of compensation.

Measured by the part of the Chicago Exchange service revenues, which Appellee allocated to interstate toll service to cover the use of the Chicago Exchange plant facilities in that service, the value of Appellee's surrendered right would range from $350,000 to $650,000 per year (*supra,* 50). But such amounts would be minimum amounts as they do not give effect to the participation in the unreasonably large profits of the long distance service, as required by Section 10 of the Original License Contract (*supra,* 61).

To give Appellee credit on account of its surrender of rights in the long distance arrangement does not involve the difficulty of jurisdiction on grounds that the long distance service and the distribution of joint revenues is an interstate service. This Court held that in determining the question of the reasonableness of actions taken within the scope of intrastate commerce, an investigation may be made of actions taken in interstate commerce to measure the extent to which the actions taken in intrastate commerce are burdened thereby. (*Western Distributing Co.* v. *Public Service Commission*, 285 U. S. 119, at 125 (1932)). That Appellee's intrastate service would be burdened by its failure to receive compensation from the American Company, even though the interstate separation were made in compliance with the direction of this

Court, is clear from the fact that, to the extent that Appellee's cash resources would be increased by this compensation, Appellee would not require the services of the American Company in meeting its such requirements.

DISCUSSION AS TO CONTENTION NUMBERED IV.

IV.

APPELLEE RECEIVED NO CREDIT FOR ITS PROPORTION OF THE $14,395,799 PROFIT MADE BY THE AMERICAN COMPANY IN 1927 ON THE SALE TO THE ASSOCIATED COMPANIES OF THE TELEPHONE INSTRUMENTS THERETOFORE LEASED TO THEM.

On December 31, 1927, the American Company showed on its books a capital investment in telephone instruments, allocable to the Associated Companies, of $46,583,314 (R. VI, 4024), against which there was a balance in the depreciation reserve account aggregating $22,795,386, or 48.93% of the capital investment (R. VI, 4024).

The American Company, pursuant to authorization of its Executive Committee, sold to the Associated Companies, including Appellee, as of that date, the telephone instruments at prices specified therein (R. VIII, 4828). The selling price was established on the basis of current Western prices on new instruments less 20% (R. VI, 4024), and for all instruments sold to the Associated Companies was $38,183,727 (R. VI, 4024), of which $2,520,126 is allocable to Chicago Intrastate business. The profit of the American Company on this sale was $14,395,799, of which $917,076 is allocable to increase in price over undepreciated book cost, and $13,478,723 represents the unused balance in the depreciation reserve account on the sold instruments (R. VI, 4024). The profit allocable to Chicago Intrastate business is $726,540* (R. VI, 4024).

In December, 1927, Appellee recorded on its books in its fixed capital account, as part of the Station Apparatus Account, its investment in the telephone instruments allocable to Chicago at the price paid to the American Company (R. VII, 4076).

The total amount of this $14,395,799 represented profit to the American Company under its License Contract operations. The claim by Mr. Heiss that the balance in the American Company's depreciation reserve account after the sale in 1927 included $5,829,447 which had been transferred in July, 1912, from surplus to depreciation reserve account and such $5,829,447 transferred back to surplus in 1927 (R. I, 943), is contrary to the history of such depreciation reserve account dating back to 1884, as narrated in the Appendix (Appendix, pp. 48-51).

Such profit is available as compensation to the American Company for License Contract services not otherwise compensated for in the amounts claimed by Appellants to be proper.

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*Effect has been given to reduction in depreciation reserve resulting from District Court's allowance of only 6% depreciation on instruments as compared with the American Company's charge of 7%.

WESTERN'S PROFITS AND PRICES.

Preliminary Statement.

With one modification applicable to 1930 and thereafter, the District Court's findings on Western's Profits and Prices followed Appellee's presentation thereof. The controversy between the parties in respect thereto is sharp and clearly defined, and embraces three classes of issues.

One class of issues arises from the difference in viewpoint on the precise question to which this Court's direction on this subject matter had application. Appellee's presentation and the District Court's findings have application to a question of abuse of intercorporate relationship to be viewed in the light of the permanent and continuous relationship of the parties over the entire period of the litigation and for the years prior thereto back to 1916.* Appellants' contentions have application to the question of confiscation for each year of the litigation based upon the use of Western's prices to arrive at the estimates upon which the charge of confiscation for each such year was predicated and sustained.

The second class of issues arises from the failure by the District Court to give effect to this consideration: Appellee made a presentation of the reproduction cost new estimate for each year of the litigation of the portion of the plant accounts covering Western's products, as the basis for the District Court's findings on Rate Base Value and Depreciation Expense Charges. In such presentation, Appellee chose to make a different use of Western's prices than the use which it made of the same prices in the regular course of its business. Its reproduction cost estimate of each year of the litigation used and reflected only Western's *current prices of the year of revaluation and none other.* In its regular operations its book accounts in each year use and reflect the *composite of Western's prices over the period* covered by the purchases of Western's products in service in such year including the current purchases, which have been entered therein. The District Court's findings on the reasonableness of Western's profits were made, as it claimed, to cover Appellee's purchases from Western. Appellants' contentions are directed to the non-application of such findings to justify the use of *only current prices* for the particular purposes which Appellee chose to make of them at the 1932 final hearings in this case.*

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*Western, the New York Corporation, was organized in 1916 to take over Western, the Illinois Corporation, organized in 1881.

The third class of issue arises from the failure by the District Court to give effect to this consideration: The District Court's determination of what it designated as "rate of earnings on its investment in Bell business" was predicated on the separation of Western's total expenses of operation and manufacturing facilities between Bell and non-Bell business on the basis of "standard shop costs"** of their respective sales, which separation could not possibly produce the result claimed for it, but which separation, if adopted, unduly burdened

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*At the 1929 hearings Appellee's presentation and the District Court's findings on Depreciation Expense Charges were based on book cost figures as the base to which the depreciation rate was applied (O.R. I, 191, 198; O.R. IV, 1195).

**The standard shop costs, explained in detail, infra, 248, are assumed labor, material and overhead costs of individual items of manufacture used as part of Western's accounting system to measure, among others, the efficiency of its manufacturing operations.

Bell business for the benefit of non-Bell business; gave effect in arriving at "net earnings" to deductions from gross income of items which, under applicable legal principles, are clearly not current operating expenses; related the net earnings, so determined, to an "average investment" which is so measured that it bears no relation either to the rate base used in determining the rate of return of regulated industries or to the rate base commonly used by business men and investors in determining the rate of earnings of unregulated industries; used the percentage figures so produced as the yardstick for comparison of Western's earning experience with the earning experiences of other industries upon incomplete data reported in Investment Manuals, which reports do not permit computation of percentage figures comparable to those used as the yardstick in such comparison.

Appellants' contentions are directed to show that Western's net earnings from Bell business, as determined by the District Court, are clearly excessive on the basis of their ability to provide for the payment of interest and amortization on money borrowed and to provide an excessive return to the American Company as the investor in the equity (capital and surplus) of Western applicable to Bell business in each of the years of the litigation; that such excessive return is increased if effect is given to the adjustments to such net earnings claimed proper by Appellants, and to the unjust enrichment of the non-Bell business at the expense of the Bell business resulting from Appellee's separation between them of Western's operating expenses; that on the basis of the District Court's findings it is impossible to determine the extent to which such excess earnings enter into the estimates upon which the charge of confiscation for each year of the litigation was sustained.

This Court's Direction.

This Court directed that findings be made of Western's profits from Bell business and from Appellee and of the reasonableness thereof in the light of the different uses made of Western's prices in connection with the estimates upon which the charge of confiscation was predicated for each year of the litigation, as found by the District Court (282 U. S. 133, 152-3). Such uses cover (a) the substantial purchases made each year by Appellee for its Chicago intrastate business, ranging from $1,400,000 to $3,990,000 attributable to maintenance and other expense charges included in the District Court's finding of proper operating expense each year; (b) the use of Western's current prices of each year of the litigation as a factor in the index number computations to measure the difference between the value of Appellee's plant for the Chicago intrastate business in 1911 plus the book cost of gross additions and retirements for each of the years beginning with 1912 to the date of revaluation, to produce the reproduction estimate in such year of the plant in service exclusive of land and buildings (R. I, 15-6, 30) —on the basis of which estimate the District Court predicated its findings on Rate Base Value and Depreciation Expense Charges for each year of the litigation.

What the District Court Did.

The District Court found that Appellee's showing of the percentage of Western's earnings on Bell sales, related to average investment,* to average investment less the amount of depreciation reserve account, and to such sales, was correct for each of the years 1916 to 1932, for that total period and for the period 1923 to 1932 inclusive, as follows (R. III, 2518):

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*The District Court defined "average investment" to include "plant and manufacturing facilities, merchandise, receivables and cash, less current accounts payable, all at cost to Western, except merchandise, which is cost or market, whichever is lower" (R. III, 2507).

	Profit on Sales	Earnings on Average Investment	Earnings on Average Investment Less Amount of Depreciation Reserve Account
1916	.5	.8	1.1
1917	2.3	3.6	4.4
1918	2.7	3.1	3.9
1919	3.4	3.9	5.0
1920	3.7	4.9	6.1
1921	7.7	8.7	10.7
1922	4.0	5.2	6.6
1923	3.4	4.8	6.2
1924	4.7	6.9	8.8
1925	7.2	10.2	12.9
1926	5.2	8.3	10.6
1927	6.9	10.4	13.6
1928	6.8	11.8	15.8
1929	4.8	9.1	11.7
1930	3.5	4.6	5.8
1931	5.0	4.2	5.6
1932	(3.9)	(2.3)	(3.3)
Period 1916-1932	4.5	5.9	7.6
Period 1923-1932	4.7	6.1	8.

The District Court found that Western's earning experience with the Bell System during the period under investigation fairly corresponded to Western's experience with Appellee during the same period; that Western's sales to Appellee for use in its entire business and for use in its Chicago area "have been a reasonably fair and representative cross section" of Western's sales to the Bell System (R. III, 2519). It found that Western's relationship to the Bell System was permanent and not casual; that mostly on account thereof, several factors entered into Western's operations making for variable earnings from year to year; that "it is, therefore, necessary in arriving at what are reasonable earnings on investment and profit on sales in the Bell business of Western to take into consideration the results for a period of years, and not merely a single year'' (R. III, 2507-8). It found that ''Western's rate of earnings on its investment in its Bell business and on its investment less the amount of its depreciation reserve account has been substantially one-third lower'' than those of other large manufacturing companies of comparable risks and hazards (R. III, 2508). It found that Western, because of its relationship with the Bell System, had no sales expense and no credit risk and manufactured more efficiently and more economically because of the advance estimates sent to it of Bell System requirements; that these advantages, however, were passed on to the Bell customers in the prices charged to them. It found that during the period 1921 to 1929 inclusive Western had made eight reductions and one increase in price to the Bell System, the net effect of which was to reduce the price level on December 31, 1929, to 58.3% of that on December 31, 1920; that on November 1, 1930, Western increased such prices 10.2%, which increase continued thereafter. It found that ''Western's rate of profit on sales in its Bell business, as distinguished from earnings on investment, has been less than one-half of the rate of profit made on sales by other large comparable manufacturing industries.'' It found that except for the 1930 increase in prices, Western's profits and prices to the Bell System and to Appellee were reasonable; that in view of the general price trends during the years 1931 and 1932 the advance in prices in 1930 should be eliminated from the computations upon which the charge of confiscation is determined for those years (R. III, 2507-9). It found that Appellee assumed the burden to show and had shown that the prices of goods sold by Western to Appellee, except for the 1930 increase, "were fair and reasonable"; that the prices of the apparatus manufactured and sold by Western to Appellee were no higher than prices received from the sale by other manufacturers to other purchasers; and that the net earnings of Western were not excessive (R. III, 2507-8). It found that the Associated Companies purchased substantially all their telephone communication equipment from Western; that Appellee's purchases chargeable to its construction accounts applicable to the Chicago area ranged from $8,100,000 to $17,350,000 per year during the period 1923 to 1931, inclusive, and its purchases chargeable to maintenance and other expense accounts from $1,440,000 to $4,500,000 per year of the same period (R. III, 2516-7).

To these findings Appellants assigned error (R. III, 2549-63), and in support of their position offer the following:

SUMMARY STATEMENT OF APPELLANTS' CONTENTIONS.

I. The District Court's findings on Western's rate of return from Bell business, separated from non-Bell business, produce fantastic results.

II. Appellee's separation of Western's total operating expenses between Bell and non-Bell sales as separate classes of business, on the basis of their respective "standard shop costs of sales" is in violation of law.

A. Western's standard shop costs bear no relation to the conditions under which its products are manufactured.

B. The gross variations between the actual and standard cost of entire production in each year are substantial and represent corresponding substantial variations in Western's profits from Bell sales and from non-Bell sales considered as separate classes of business.

C. Appellee's distribution of the gross variations of entire production each year between Bell and non-Bell sales on the basis of their respective standard shop costs of sales assumes but does not prove that each class of sales was a fair and representative cross section of their combined sales of each such year.

D. Appellee's distribution of the gross variations of entire production of each of the periods 1916 to 1932, inclusive, and 1923 to 1932, inclusive, between the Bell and non-Bell sales of each such period considered as a single unit of time on the basis of their respective standard shop costs of sales assumes but does not prove that each class of sales for each period was a fair and representative cross section of the combined sales of each such period.

III. Appellee's separation of Western's manufacturing facilities between Bell and non-Bell sales considered as separate classes of business on the basis of their respective "standard shop costs of sales" is in violation of law.

A. Appellee assumes but does not prove that the usage of plant facilities by items and classes of products follows their shop cost of sales.

B. Appellee assumes but does not prove that "shop cost of sales" and "cost of production" are synonymous.

IV. Appellee cannot avail itself of excuses of expediency and economy for not making a proper separation of Western's operating expenses and manufacturing facilities.

A. Appellee's use of Western's profits and prices in its presentation on the issues of rate base value, depreciation expense, maintenance expense, and fair return, for each year of the litigation and the District Court's findings based thereon are predicated on strict proof of proper separation for each of such years.

B. Appellee's justification would unduly burden its subscribers with the consequences of Western's failure to maintain its standard shop cost system responsive to the actual conditions of manufacture.

V. Appellee's allocation of Western's Development and Research expense between Bell and non-Bell business unduly burdened the former for the unjust enrichment of the latter.

A. The allocation to Bell sales of the portion of Western's Development and Research expense applicable to the four licensed manufacturers of its inventions unduly burdened such Bell sales.

B. The allocation to Western's Bell sales of the portion of its Development and Research expense applicable to its distributors for resale unduly burdened such Bell sales.

C. The allocation to Bell sales of the portion of Western's Development and Research expenses applicable to Products unduly burdened such Bell sales.

VI. Western's Rate of Return on total Bell sales cannot be related to its sales to Appellee in the same year on the basis of their relative purchases.

A. Proof was not and could not be made that Western's sales to Appellee in each year of the litigation was a fair and representative cross section of its total Bell sales of the same year.

B. The District Court's finding that Western's sales to Appellee over a period of years was a fair and representative cross section of Western's sales to all Bell customers in the same period makes possible only the relation of Western's average rate of return on Bell sales to its sales to Appellee during such period.

VII. The District Court's finding that it is necessary in determining the reasonableness of Western's return on Bell business "to take into consideration the results of a period of years and not merely a single year" precludes the determination of the reasonableness of Western's prices used in the estimates upon which Appellee's charge of confiscation for each year of the litigation was predicated and sustained.

VIII. The standards applied by the District Court to determine the reasonableness of Western's prices and profits on Bell business did not and could not determine their reasonableness for any one year or over a period of years.

A. The District Court's finding that Western's rate of profit on Bell business has been less than one-half of that made by other manufacturers proves nothing as to the reasonableness of its prices and earnings in such business for any one year or over a period of years.

B. The District Court's finding that Western's rate of earnings on its undepreciated and depreciated average investment in its Bell business "has been substantially one-third lower than" that of other manufacturing companies of comparable risks and hazards, proves nothing as to the reasonableness of its prices and earnings in such business for any one year or over a period of years.

C. The reduction in prices to its Bell customers during the period 1921 to 1929, inclusive, did not and could not prove that Western's return from its Bell business on such prices before or after each such reduction was reasonable.

IX. Percentage figures related to Western's depreciated or undepreciated "average investment" in Bell business as found by the District Court have no significance whatsoever as a yardstick by which to determine the reasonableness of Western's earnings from Bell business for any one year or over a period of years.

A. The amount of reserve for pension fund should be deducted from gross assets in determining the investment on which to compute a rate of return to Western's investors.

B. The amount of notes payable to trustees of pension fund should be deducted from gross assets in determining the investment on which to compute a rate of return to Western's investors.

C. The amount of working reserves should be deducted from gross assets in determining the investment on which to compute a rate of return to Western's investors.

D. The amount of current notes payable should be deducted from gross assets in determining the investment on which to compute a rate of return to Western's investors.

E. The amount of cash from non-operating activities should not be included as part of the investment on which to compute a rate of return to Western's investors.

X. Western's net earnings from Bell business, as determined by the District Court, from the prices used in the estimates upon which the charge of confiscation for each year of the litigation was predicated and sustained, are excessive.

XI. Western's earnings from Bell business, as found by the District Court, are understated in each of the years 1924 to 1929, inclusive.

A. Appellee improperly deducted over $7,000,000 from current income of the years 1924 to 1927, inclusive, to make up the excess of original cost of plant in service over their prognosticated reproduction value during the ensuing ten to fifteen years.

B. Appellee improperly deducted $7,275,000 from current income for the years 1925 to 1927, inclusive, to make up under-accruals of the years prior to 1923 for its pension fund liability.

C. Appellee improperly deducted $1,831,000 from current income of 1928 to cover depreciation on machinery for the years 1924 to 1927, inclusive, in excess of the amount charged during such years.

D. Appellee improperly deducted against current income of the years 1924 to 1929, inclusive, $4,100,000 for depreciation on tools, furniture and fixtures in excess of the yearly amounts allowed by the Internal Revenue Department.

XII. The District Court's findings render impossible the determination of the extent to which Western's excessive returns entered into the estimates upon which the charge of confiscation for each year of the litigation was sustained.

A. The per cent of net earnings to Bell sales as found by the District Court does not and cannot measure the extent to which the prices used in the District Court's findings were excessive.

B. The District Court's findings do not permit determination of the extent to which the depreciation expense allowance and rate base value as found by it were inflated by the excess profits of Western included in the prices used in arriving at such findings.

DISCUSSION AS TO CONTENTION NUMBERED 1.

I.

THE DISTRICT COURT'S FINDINGS ON WESTERN'S RATE OF RETURN FROM BELL BUSINESS SEPARATED FROM NON-BELL BUSINESS PRODUCE FANTASTIC RESULTS.

The District Court found Western's rate of return from Bell business related to "average investment," as defined by it, less the amount of the depreciation reserve account. Such rate of return compares with that derived from combined Bell and non-Bell business and from non-Bell business considered as a separate class of business, computed on the same rate base, as follows:

	Combined (Appendix, pp. 82, 83)	Bell (Appendix, pp. 84, 85)	Non-Bell (Appendix, pp. 70, 71)	
1916	4.0%	1.1%	14.3%	
1917	8.4	4.4	23.4	
1918	7.4	3.9	17.0	
1919	7.4	5.0	14.5	
1920	7.1	6.1	10.5	
1921	6.5	10.7	11.1	(red)
1922	7.2	6.6	11.4	
1923	7.9	6.2	18.9	
1924	9.3	8.8	13.3	
1925	10.8	12.9	3.7	(red)
1926	11.3	10.6	25.3	
1927	13.9	13.6	19.	
1928	16.8	15.8	28.9	
1929	14.3	11.7	38.1	
1930	6.0	5.8	10.2	
1931	5.3	5.6	1.4	(red)

For the years 1926 to 1930, inclusive, it is possible to compute from such rate of return so determined what Western's stockholders would earn on their equity investment (capital and surplus) after paying interest and amortization on money borrowed as follows (Appendix, p. 72):

	Combined	Bell	Non-Bell
1926	17.37	16.13	41.05
1927	22.40	21.87	32.54
1928	28.19	26.47	50.36
1929	24.34	19.83	65.75
1930	8.66	8.30	15.03

The contrast in Western's rate of return from the two classes of business,—in the light of the unreasonably large returns of Western's subsidiaries as distributors of Western's products during the same years (*supra*, 105, 121), and in the light of the relationship of the parties involved—produces a result in the instant case of the same fantastic character as that which this Court found in the *Missouri Rate Cases* (230 U. S. 474, at 501-2, 507), and in respect to which this Court there held that the party making use thereof to support a charge of confiscation must prove by "clear and convincing proof" the facts alleged as the basis thereof and the law alleged to be properly applicable thereto.

DISCUSSION AS TO CONTENTION NUMBERED II.

II.

APPELLEE'S SEPARATION OF WESTERN'S TOTAL OPERATING EXPENSES BETWEEN BELL AND NON-BELL SALES, AS SEPARATE CLASSES OF BUSINESS, ON THE BASIS OF THEIR RESPECTIVE "STANDARD SHOP COSTS OF SALES," IS IN VIOLATION OF LAW.

THE LAW.

To constitute a proper showing of the amount of property used and expenses incurred in one of two services using joint property and incurring common expenses, the method of apportionment of property and expenses must bear a reasonable relation to the realities of the situation (*Minnesota Rate Cases*, 230 U. S. 352 (1913); *Smith* v. *Illinois Bell Tel. Co.*, 282 U. S. 133 (1930). The determination of the amount of property actually used and the proper apportionment of expenses incurred in the two services is defective if made on any basis which assumes that the amount of property used and expenses incurred bear the same relation in both services to the unit of measurement employed as the basis of comparison between such services, when in fact the relation of property and expenses therein may differ (*Missouri Rate Cases*, 230 U. S. 474 (1913); *Minnesota Rate Cases, supra; Smith* v. *Illinois Bell Tel. Co., supra*). Before a particular unit of measurement can properly be employed as the basis of comparison between two services, there must be evidence to justify the conclusion that the relation of the amount of property used and of expenses incurred to the unit of measurement is the same in both cases of services, or if there is a material difference, there must be evidence to show its nature and the extent of such variation (*Wood* v. *Vandalia R. Co.*, 231 U. S. 1 (1914)).

The District Court's Error.

The fundamental error of Appellee's separation of Western's operating expenses and manufacturing facilities between Bell and non-Bell sales, and the District Court's findings based thereon, lies in the assumption that their respective standard shop costs of sales bear the same relation to the expenses of operation and manufacturing facilities applicable to each class of business. Appellee offered no proof whatsoever in support of such assumption. The following discussion shows that it is contrary to Western's actual experience as known to Appellee.

"Standard Shop Costs."

The net earnings of Western on its total business, Bell and non-Bell combined, for each year under investigation, are available from its records. But no records are available to show such earnings for each of such classes of business considered as a separate unit of business or for each customer included therein.

The amount of Bell and non-Bell sales considered as separate classes of business is available for each year, but not the cost of sales. To determine cost of sales requires the totaling of the inventory on hand at the beginning of the year, plus the cost of production in the year, less the inventory on hand at the end of the year (R. II, 1651-2). Western's records show the actual costs of entire production each year, but not divided as to each item manufactured or as to the portion thereof allocable to Bell and non-Bell sales considered separately.

But Western does maintain an accounting system of the "standard shop cost" of the individual items, which accounting system it has used for the purpose, among others, of measuring the efficiency of its manufacturing operations (R. I, 383).

Standard shop costs are made up of three estimated or assumed facts—first, direct labor cost; second, material cost; and, third, shop overhead, consisting of manufacturing costs other than direct labor and material, such as salaries paid to supervisors, changes, repairs, clerical help, depreciation, power and light, etc., which are estimated upon the basis of an assumed volume of business and operating conditions, and which become part of the standard shop cost by means of a "loading" applied as a percentage of the assumed labor hours (R. I, 511, 513). Standard shop costs are applied to over 100,000 separate piece parts which enter into more than 20,000 separate forms of apparatus, made from 18,000 different kinds, sizes and shapes of raw material (R. V, 3266; R. I, 375, 407). Prior to 1925, Western's manufactures were confined to telephone communication equipment sold to Bell and non-Bell customers. Beginning with 1925, Western has also manufactured and sold each year, for use in the non-telephone field, special commercial products, including aviation equipment, broadcast receiving and transmitting apparatus, phonograph recording and reproducing apparatus and talking motion equipment (R. IV, 2840A).

Western maintains as *constant* the assumed labor, material and overhead costs for each item from the date when they are established until revised, irrespective of and in spite of the current and actual fluctuations during the course of manufacture of each or all of the three factors making up the standard shop cost of each such item (R. I, 383).

If the actual and assumed cost of production of each item were the same, it would be possible to determine the cost of Bell and non-Bell sales separately, on the basis of their standard shop cost of sales. But in fact the actual and assumed cost are not the same. The per cent of labor, of material and of overhead cost, which enters into the total costs of one item will not be the same as the per cent of each element of cost which enters into the total cost of another item (R. I, 378). The conditions as to each and all of these three elements are not the same, for any day, or month, or year (R. I, 378). Each customer does not purchase the same day or week or month the same number of kinds of manufactured products composed of the same number of piece parts to which the variation in labor, material and overhead of manufacture will have the same effect of increasing or decreasing the actual cost in relation to the standard shop cost of each piece part or of all piece parts making up such purchases (R. I, 378). Therefore, the variations between the actual and standard cost of labor, material and overhead will be different for each separate piece part and will be different for the products of each customer in each year (R. I, 378). The net effect of such variations in increasing or decreasing the actual compared with the standard cost of production will be different for the products of each customer or group of customers each year.

In determining for each year the actual cost of Bell and non-Bell sales considered as two separate classes of business, Appellee used their respective standard shop costs of sales which it adjusted by apportioning thereto their respective proportions of the variations between the actual and standard cost of entire production. Such apportionment of variations was made on the basis of the standard shop costs of each class of sales.

Inventory adjustments due to revaluation of inventories were also apportioned on the basis of standard shop costs of sales. The actual cost of production and inventory revaluation (called Current Cost of Sales Before Interest and Expenses) represented more than eighty per cent of the entire operating expenses for each year (Appendix, p. 73). The remaining cost of doing business includes development, distribution and general expenses, interest and federal income taxes. Of these only a small portion are directly related and require no apportionment to Bell and non-Bell business; the balance was apportioned on the basis of standard shop cost of each class of sales. In the Appendix hereto (Appendix, p. 73) is reproduced Exhibit D19 (R. V, 3654A) showing the complete picture of Western's operating expenses divided between Bell and non-Bell business for each year, 1916 to 1930, inclusive. Appellants' attack relates to the figures appearing under the item "Current Cost of Sales Before Interest and Expenses."

A.

Western's standard shop costs bear no relation to the conditions under which its products are manufactured.

STANDARD MATERIAL COSTS.

Western has allowed its standard material costs to remain constant for many years. To illustrate: The actual and standard costs of copper and lead have been (R. V, 3738; R. VI, 3904a-h):

COPPER.

	Standard Cost (Per 100 Pounds	Average Actual Cost (Per 100 Pounds)
1924	$18.00	$13.33
1925	15.00	14.49
1926	15.00	14.22
1927	15.00	13.35
1928	15.00	14.81
1929	15 00	18.03
1930	15.00	13.85
1931	15.00	10.40
1932	15.00	6.25

LEAD.

	Standard Cost (Per 100 Pounds	Average Actual Cost (Per 100 Pounds)
1918	$4.50	$7.45
1919	4.50	5.78
1920	4.50	7.92
1921	8 50	4.39
1922	5.00	5.50
1923	5.00	7.38
1924	5.00	7.92
1925	8.00	8.96
1926	8.00	8.42
1927	8.00	6 80
1928	8.00	6.30
1929	8.00	6.83
1930	8.00	5.60
1931	8.00	4.22

STANDARD WAGE SCALE.

Changes in the standard wage scale for piece parts fixed by Western are made only in intervals of from one to three years, irrespective of the current fluctuations in labor conditions and labor costs* (R. I, 383). The *con-*

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*The fluctuations referred to in the text are not the graduated labor scale used by Western as a basis for compensation based on years of service or kind of labor performed, but the fluctuations due to the changes from time to time in the piece rate paid for the same operation by the same kind of labor having the same year of service.

stant labor wage which Western was using in March, 1932, and since 1929 as a basis for its standard shop costs of those years had been established in 1929 (R. I, 383).

STANDARD OVERHEAD.

As overhead becomes part of standard shop costs by means of a "loading" applied as a percentage of assumed labor hours, the amount of overhead applied as the component part of standard shop costs has no relation to the actual conditions of manufacture (R. I, 385).

B.

The gross variations between the actual and standard cost of entire production in each year are substantial and represent corresponding substantial variations in Western's profits from Bell sales and from non-Bell sales considered as separate classes of business.

Western's net earnings for each of the years 1916 to 1931, inclusive, from Bell and non-Bell business combined, as found by the District Court, and the gross variations for the entire production of each such year considered as a separate unit of time are (in thousands of dollars) (R. VI, 3892c-d):

	Variations				
	Net Earnings	Total	Telephone Apparatus and Special Commercial Products Combined	Lead-Covered Cable	Supplies
1916	$ 1,852	$ 7,945	$ 2,529	$ 5.416	
1917	5,725	20,336	9,349	11,443	
1918	5,639	13,344	8,777	4,567	
1919	5,450	10,195	8,111	2,084	
1920	7,319	21,414	16,248	5,166	
1921	8,285	11,443	7,342	4,145	
1922	8,032	5,999	4,904	1,255	
1923	9,339	9,580	6,622	3,044	
1924	13,171	13,447	8,311	5,141	$ 255
1925	15,655	14,721	6,697	8,089	63
1926	14,594	17,334	14,251	3,315	..
1927	18,023	14,251	10,646	4,217	464
1928	20,778	19,372	15,225	5.271	212
1929	24,498	32,967	30,798	5,406	1,389
1930	13,247	28,065	17,382	10,952	169
1931	10,881	32,875	16,400	16,066	409
1916-1931 Total	$182,488	$273,288	$183,592	$95,577	$2,961

In respect to the cost of Bell and non-Bell sales considered as separate classes of business, to each of whom less than the entire production is sold, the gross variations of entire production which increase cost may affect the products sold to one class and those which decrease cost may affect products sold to the other class. Corresponding variations would then occur in respect to Western's profits on the particular products and from their sales to each such class of business. As each dollar of variation increases or decreases the expense of producing the products to each class of business the effect of the variation is on the net profits of Western in respect to the class of business to which such products were sold.

As the percentage of gross variations of entire production subject to distribution ranged from 74.7% to 429.0% of Western's net earnings from Bell and non-Bell sales combined in the years under investigation (*supra,* 254), a small error in such distribution in any year of that period would substantially vary Western's net earnings in such year for each such class of business considered separately. To illustrate:

On the basis of the District Court's findings, Western's net earnings in 1929 from Bell and non-Bell sales combined were $24,498,000 and from each such class of sales considered separately, $17,999,000 and $6,499,000, respectively. Such separated net earnings were predicated on the proper distribution of $32,967,000 of gross variations applicable to the entire production of 1929 on the basis of $34,954,000 of such variations to Bell sales and $2,639,000 to non-Bell sales (R. VI, 3892c). A ten per cent error in such distribution to the Bell business would have increased or decreased the net earnings from Bell business by 19.4% and correspondingly decreased or increased the net earnings from non-Bell business by 52.6%. Western's rate of return from Bell business in 1929 of 11.7% as found by the District Court, would become 13.9% or 9.9% and the rate of return from non-Bell business of 38.1%, as found by the District Court, would become 58.1% or 18.1%. The rate of return related to Western's capital and surplus would be changed from 19.8% to 23.6% or 15.9% for Bell business, and from 65.7% to 100.2% or 31.2% for non-Bell business (*supra,* 246).

C.

Appellee's distribution of the gross variations of entire production each year between Bell and non-Bell sales on the basis of their respective standard shop costs of sales assumes but does not prove that each class of sales was a fair and representative cross section of their combined sales of each such year.

Appellee's employment of standard shop costs of Bell and non-Bell sales of a single year, to distribute between them the variations applicable to the entire production of the same year to arrive at the actual cost of such sales, assumes that the standard shop cost of the merchandise sold to each class of business in any single year bears the same relation to the actual cost of entire production during that year as the variations to bring the standard cost of production of such merchandise to their actual cost of production bears to the total variations applicable to entire production (R. II, 1604). Such an assumption could be possible only provided that the Bell and non-Bell sales during the year contained items of each and every kind of merchandise or in combinations which would bring about the same result—i. e., Bell and non-Bell sales were each a fair and representative cross section of their combined sales of the year.

Appellee made no such showing and the District Court made no finding in respect thereto. Such assumption is contrary to Western's actual experience. In no year did special commercial products represent one per cent of Bell sales; such products represented from 21.1% to 68.8% of non-Bell sales of the years 1923 to 1931, inclusive (R. IV, 2840a). The non-Bell customers of telephone communication equipment embrace retail customers plus jobbers who purchase for distribution in the United States, Canada and abroad (R. II, 1401). It is arbitrary to assume, as Appellee did (R. II, 1401) that simply because the same item of equipment sold to Bell and non-Bell customers is produced by the same machine, there is such a fair and representative distribution between such two classes of customers of the 100,000 items in 20,000 combinations made by different machines each year, that proper distribution will result between such classes each year of the total variations applicable to the entire production of such items. Appellants know of no mathematical law that will produce such a result, of which the District Court could take judicial notice.

There is no basis for Appellee's showing of Western's profits from Bell sales and for the District Court's findings based thereon for each year of the period under investigation.

D.

Appellee's distribution of the gross variations of entire production of each of the periods 1916 to 1932, inclusive, and 1923 to 1932, inclusive, between the Bell and non-Bell sales of each such period considered as a single unit of time on the basis of their respective standard shop costs of sales assumes but does not prove that each class of sales for each period was a fair and representative cross section of the combined sales of each such period.

Appellee claimed that if the entire production of a period of years were considered as a single unit of business and time, the overall variations which increased and those which decreased the actual cost of such production over the standard cost thereof would offset each other. The overall net effect of such variations thus being negligible, the significance of such variations on the separate costs and profits of Bell and non-Bell business respectively in the same period and on the issues in respect thereto was negligible (R. I, 569). As proof thereof Appellee showed that the offset of the $58,817,000 increasing-cost variations and $52,493,000 decreasing-cost variations for entire production of the period 1923 to 1930, inclusive, resulted in $6,326,000 overall net variations on such entire production, or, .7% of the actual cost of the entire production of such period (R. I, 569; R. V, 3738). Appellee made a similar showing for the period 1921 to 1930, inclusive, of $59,290,000 increasing-cost variations and $61,123,000 decreasing-cost variations resulting in overall net variations of $1,833,000 or .2% of the actual cost of entire production of such period (R. I, 569, 442; R. V, 3738; R. VI, 3893, 3900, 3903).

Appellants contend: there is no possible relation between the overall net effect of the variations of entire production on Western's earnings from *all of its customers who purchase its entire production considered as a single unit* and on net earnings from its business with any one or more but less than all of its customers, if taken separately or as a unit, *who do not purchase its entire production.* To illustrate: Assume that Western's accounts receivable of its Bell and non-Bell customers in 1929, covering the 100,000 items in 20,000 combinations, were in error in each item ranging from one cent to $25,000 per item, some errors being in the direction of increasing the amount of charge above the amount in fact due and others in the direction of reducing the charge below the amount in fact due. Assume the Bell purchases were 90,000 items. Assume that the total of the errors which increased the charges in 1929 were $16,000,000 and the total of the errors which decreased the charges were $15,999,999.99.* On that basis the overall net effect of all the variations from the actual charges for all customers, *considered as a unit*, would be one cent, and Western's net profits from such combined business would be affected by only one cent. But obviously the overall net effect of one cent would prove nothing as to the net effect of the errors on the 90,000 items covered by the charges to the Bell System on Western's profits from such business. The same difference in situation would exist, of course, if, instead of considering the overall net effect of the variations on all accounts receivable of a single year, the total of the accounts receivable for a group of years considered as a single unit of time were considered. In such case, the overall net error of one cent would prove nothing as to the net effect of the errors applicable to Bell sales on Western's profits therefrom in such period.

The only condition under which the distribution of the variations applicable to the entire production of a period of years could properly be made between Bell and non-Bell sales of such period on the basis of their respective standard shop costs of sales would be that such Bell and non-Bell sales as separate units of business were each a fair and representative cross section of their combined sales of the same period. *Such a showing, if made, would then permit determination of the actual cost of Bell sales for that period of time considered as one unit of time but would not permit determination of the actual cost of Bell sales in any one year of such period.*

Similarly the showing of the overall net effect of variations for entire production in any one period considered as a single unit of time could have no probative value on the overall net effect of variations for entire production in any other period considered as a single unit of time. Only by a coincidence would the effect be the same. Western's actual experience shows they are not the same (R. II, 1605; R. VI, 3896). Indeed Appellee conceded that the period 1921 to 1930 was selected for its study, because during that period there were not the violent fluctuations in labor and material prices or in conditions of manufacture such as had prevailed prior to 1921 and have prevailed during the depression period subsequent to 1930 (R. I, 444).

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*The gross variations of entire production for 1929 were $17,720,000 decreasing-cost variations, and $15,247,000 increasing-cost variations, resulting in net variations of $2,473,000 (R. VI, 3892C).

Appellants know of no mathematical law that would tend to balance out such variations in any given period of years, of which the District Court could take judicial notice. The District Court made no finding in respect thereto for each of the periods 1923 to 1932, inclusive, and 1916 to 1932, inclusive, respectively. For the reasons stated, Western's actual experience makes such a showing impossible.

There is no basis for Appellee's showing of Western's profits from Bell business and for the District Court's findings based thereon for each of the periods 1923 to 1932, inclusive, and 1916 to 1932, inclusive, respectively.

DISCUSSION AS TO CONTENTION NUMBERED III.

III.

APPELLEE'S SEPARATION OF WESTERN'S MANUFACTURING FACILITIES BETWEEN BELL AND NON-BELL SALES CONSIDERED AS SEPARATE CLASSES OF BUSINESS ON THE BASIS OF THEIR RESPECTIVE "STANDARD SHOP COSTS OF SALES" IS IN VIOLATION OF LAW.

What the District Court Did.

Appellee determined the average investment in Bell and non-Bell operations on the basis of the standard shop costs of sales of each class, claiming that such allocation was on the basis of usage (R. I, 386). The District Court, without discussion, followed such allocation.

A.

Appellee assumes but does not prove that the usage of plant facilities by items and classes of products follows their shop cost of sales.

Appellee's allocation bears no relation to the realities of the situation and therefore is in violation of law (*supra*, 247).

Appellee's claim assumes that the usage of facilities for the manufacture of one class of merchandise is in the same ratio to the total usage of the facilities for the manufacture of both classes of merchandise as the standard shop cost of sales of that class is to the total standard shop cost of all sales. This assumption is arbitrary and contrary to fact. The standard shop costs of sales include factors of labor, material and overhead in varying proportions (*supra*, 250-1). Neither labor, nor material, nor overhead have any relation to the amount of machinery, tools or space used or occupied in the manufacture of any item. The manufacture of certain articles may require hand labor, whereas other articles are manufactured by the use of expensive equipment. The manufacture of one article may require the same time and facilities as the manufacture of another article but the material may be more expensive in one than in the other.

The effect of using cost of sales as the basis of allocation of facilities will be to penalize one portion of the business for the benefit of the other where fast and slow moving items are combined. Appellants demonstrated this effect by combining plant accounts of companies having high and low ratios of cost of sales to plant and then apportioning the combined plant accounts on the basis of their respective cost of sales (R. II, 1651; R. VI, 4004). In each case the business with a high ratio cost of sales to plant was penalized. In the case of *Chrysler Corporation and Willys Overland*, the former was penalized by an addition of $18,489,000 to its plant account of $126,767,000, for the benefit of the latter; in the case of *Chrysler Corporation and International Cement Corporation*, the former was penalized by an addition of $43,696,000 for the benefit of the latter. Proctor & Gamble Company was penalized by an addition of $58,105,000 to its plant account of $67,700,000 for the benefit of American Radiator & Standard Sanitary Corporation.

Appellee's allocation assumes (1) that the movement of the portion of the 100,000 items in 20,000 combinations, which comprises special commercial products for use in non-telephone fields, moves as fast as the portion which comprises telephone communication equipment, and (2) that the movement of telephone communication equipment to Bell and non-Bell customers is with the same rapidity. Appellee offered no proof of its assumption, although it had available within its possession all the facilities to make a test thereof. The assumption is not supported by the general conclusion that Western manufactures telephone communication equipment of the same general type for its Bell and non-Bell customers, and until after its manufacture has been completed and the articles are assembled and sold, it is not known whether they will be purchased by Bell or non-Bell customers (R. II, 1592-3). Such general conclusion disregards special commercial products and itself is based on the assumption of identical rapidity of movement of the different items comprising telephone communication equipment which Appellee did not prove. Under such circumstances, and in view of the importance of the matter, conclusions based upon general assumptions should not be accepted as the basis for a finding of confiscation (*Missouri Rate Cases,* 230 U. S. 474, at 501, 507).

B.

Appellee assumes but does not prove that "shop cost of sales" and "cost of production" are synonymous.

Another inherent fatal defect in Appellee's use of standard shop cost of sales as a measure of usage of facilities is that it assumes *that cost of sales and cost of production are synonymous.*

Obviously they are not. Cost of sales of each year is the cost of the merchandise sold during that year, irrespective of the time when they were manufactured. Cost of production is the cost of producing the merchandise during that year irrespective of the time when they are sold and even though they may never be sold.

To determine cost of sales requires the totaling of the inventory on hand at the beginning of the year, plus the cost of production in the year, less the inventory on hand at the end of the year. (R. II, 1651-2).

Appellee's basis of allocation does not use the production of the current year to determine the usage for that year, but uses instead a part of the production of previous years and a part of the production of the current year. The effect of such a usage is incongruous (R. II, 1652).

To make the cost of sales and cost of production synonymous involves the assumption that the opening and closing inventories would be composed of the same kinds and quantities of product. The record shows such assumption is contrary to Western's actual experience (R. I, 478). Of the 100,000 piece parts making up 20,000 combinations of special commercial products and telephonic appliances, it would be a miracle if any combination or group of combinations of items would make actual use of the manufacturing facilities in the same ratio as do other combinations or groups of combinations. It would be a miracle if all items moved at the same rate. As between Bell and non-Bell sales, the situation is even more difficult, as the items are not of the same kind.' Only by a miracle could the opening and closing inventories be as assumed for the purpose of the allocation. Such lack of probability exists whether the operations of a single year or of a period of years are considered separately or as a unit.

There is no basis for Appellee's showing of average investment applicable to Bell business and for the District Court's finding based thereon, for each of the years

1916 to 1932, inclusive, or for the period 1923 to 1932, inclusive, or 1916 or 1932, inclusive, respectively.

DISCUSSION AS TO CONTENTION NUMBERED IV.

IV.

APPELLEE CANNOT AVAIL ITSELF OF EXCUSES OF EXPEDIENCY AND ECONOMY FOR NOT MAKING A PROPER SEPARATION OF WESTERN'S OPERATING EXPENSES AND MANUFACTURING FACILITIES.

Appellee offered no explanation for its failure since December 1, 1930, to make a test over a reasonable period of time on the basis of Western's actual experience—to the facts of which it alone had access—to permit determination at the hearings in 1932 of the relation of its many assumptions to such experience and to permit findings to be based thereon in order that Appellee's presentation might qualify within the specifications laid down by this Court in the Missouri Rate Cases (230 U. S. 474, at 501, 507).*

Appellee claimed as justification for its use of standard shop costs as the basis for its separation that Western did not maintain a separate accounting system for Bell business separated from non-Bell business, and that for Western to install such a system would entail a large expense (R. I, 436). Appellants' position is that: whatever may be the efficacy of such claim under other conditions, Appellee cannot avail itself thereof under the conditions revealed in the record herein.

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*Appellee's study covering the overall net effect of the ~~valuations~~ variations discussed in the text (supra, 258) was undertaken after the final hearings began and the issue on separation raised (R. I, 134).

A.

Appellee's use of Western's profits and prices in its presentation on the issues of Rate Base Value, Depreciation Expense, Maintenance Expense and Fair Return for each year of the litigation, and the District Court's findings based thereon, are predicated on strict proof of proper separation for each of such years.

Appellee's presentation and the District Court's findings based thereon, covering Rate Base Value, Depreciation Expense Charges and Maintenance Expense, were predicated on the use of Western's prices of each year of the litigation considered as a separate unit of time and not on the use of the average of Western's prices of a group of years considered as a single unit of time. Such presentation and findings preserve for Appellee the maximum advantages of a proper presentation on Western's profits for each year of the litigation considered as a separate unit of time.

Under such circumstances Appellee cannot fairly claim that its presentation on Western's profits should be accepted as adequate for each such years when such presentation was predicated upon the claimed proper distribution of variations over a *group of years* considered as a single unit of time (*supra*, 258), and then only on the basis of assumptions which Appellee did not prove, and which proof Appellee seeks to have avoided on grounds of expediency and upon a separation of investment which is meaningless.

Appellee's presentation on Fair Return and the District Court's findings based thereon dealt with each year of the litigation as a separate unit of time. Such presentation and findings measured the return to Appellee's investors, including the American Company, as the equity investor, considered as an ordinary investor. The total return on investment for the ordinary investor in the ordinary utility corporation is represented by and must come from the utility's yearly net cash income available for return. But Appellee and the District Court failed to give effect to the consideration that under the mutual Plan of Operation in effect in the Bell system during the period of the litigation, the American Company determines the necessity for and the character of the equipment to meet the requirements of the constituent operating companies and requires them to pay to Western as the manufacturing department of the Bell System, uniform prices therefor (R. IV, 3002; O.R. VI, 1198-9), and the part thereof which proves not to have been needed to produce a reasonable return on the American Company's investment in Western allocable to Bell business inures to the benefit of such operating companies as a part of the return to the American Company on its investment in their securities and as an aid in financing them (*infra*, 464): This repayment of the redundancy in price is made possible because the prices to the Bell System may produce an unreasonable return on the American Company's investment in Western allocable thereto, or because the allocation of revenues, expenses and property between Bell and non-Bell business, may produce an excessive return on the American Company's investment in Western allocable to the non-Bell business, or because the development and research work of Western, whose entire expense has been charged to its own manufactures, produces inventions which find their commercial usefulness in the telephone field not covered by such manufactures, but for th benefit of which Western is compensated by such other field.

Under such circumstances Appellee can no more justify its inability to make a proper separation for each year of the litigation on the ground that so to do would burden, with an accounting expense, Western and the American Company as the latter's equity investor, than could a Mutual Life Insurance Company justify its failure to determine accurately the cost-factors entering into the yearly premium on grounds of economy and at the same time retain the excess portion of the year's premium established under the Mutual Plan under which it was functioning.

B.

Appellee's justification would unduly burden its subscribers with the consequences of Western's failure to maintain its standard shop cost system responsive to the actual conditions of manufacture.

Appellee assumed the burden to show the reasonableness of Western's profits realized from Bell business as its method of proof that the advantages to Western from its position as the manufacturing department of the Bell System were passed on to the operating companies (*supra*, 237-8). Such proof is necessary to justify any use of Western's prices. To sustain its burden, Appellee chose to use the standard shop cost of sales to determine Western's profits from Bell business, and it is that choice which Appellee must defend. Had Western maintained the competitive relationship of the ordinary manufacturer to Appellee, the ordinary method of proof of the reasonableness of its prices would be available, and in such method standard shop costs would not be an integral part.

Appellee's failure to make a proper separation does not arise from the fact that Western uses a standard shop cost system. It arises from the fact that in the administration of that system Western has permitted the assumed material and labor costs to lag behind the corresponding actual costs for long periods of time, and the assumed operating conditions of manufacture to take on a significance which does not accord with the actual conditions of manufacture of the products to which they relate. For such failure Western alone is responsible. The fact, therefore, that a hundred other manufacturers use a standard shop cost system to measure the efficiency of their manufacturing operations (R. I, 383; R. II, 1334) has no probative value on the determination of the particular issue involved herein in respect thereto.

By its presentation Appellee made standard shop costs a factor in price-making as in fact Western itself does in relation to Bell System prices (R. V, 3717; R. I, 379; R. II, 1600). It is inconceivable that 15 cent copper and 8 cent lead or 1929 labor costs would continue as a price-making factor during the depression in respect to competitive manufacturers. Western's own experience with other manufacturers is instructive. In 1924 Western contracted to have the Automatic Electric Company manufacture step-by-step equipment (R. VIII, 4613-25) for sale to the Bell System. In this agreement provision was made that Automatic's prices were to be a designated per cent above cost. Such cost was specified to be determined by standard costs carefully defined and outlined in the contract between the parties plus adjustments for variations. But under such arrangement Western, as the purchaser, had the right to reject the price, in which case the prevailing price continued pending arbitration, and review of such prices was provided to be made yearly. By so doing Western made adequate provision to cause Automatic's standard costs to become and remain responsive to actual conditions of manufacture. Western made no such provision covering its own manufactures for sale to the Bell System.

Western's failure to maintain the current responsiveness of its standard shop cost system destroys its value as a factor in price-making. To illustrate:

In May, 1932, Western's Comptroller presented Appellee's showing of Western's profits in the instant case. On June 10, 1931, he testified in the Ohio Bell Case (R. I, 590) on the same subject matter and made a similar presentation. In that case he estimated that Bell sales for 1931 would be $256,000,000 and the net profits derived therefrom $10,500,000. In the instant case, he presented a statement showing $219,500,000 actual Bell sales in 1931, and $10,500,000 net earnings derived therefrom (R. IV, 2978; R. II, 1071). A system or showing of distribution of manufacturing and operating costs which can arrive at the same net profits from $219,500,000 sales as from $256,000,000 sales requires more to justify it as the basis for a finding of confiscation than the consideration that Western maintains constant the material costs for a long period of time in order to avoid fluctuations in material prices in its "cost keeping" records (R. I, 383) and that Western considers the labor cost conditions since 1929 so unstable as not to warrant a change in the old standard price rates (*Idem*).

DISCUSSION AS TO CONTENTION NUMBERED V.

V.

APPELLEE'S ALLOCATION OF WESTERN'S DEVELOPMENT AND RESEARCH EXPENSE BETWEEN BELL AND NON-BELL BUSINESS UNDULY BURDENED THE FORMER FOR THE UNJUST ENRICHMENT OF THE LATTER.

Preliminary Statement.

Western's Development and Research Expenses include:

(a) that portion of the expenses of the Engineering Department of the Western prior to 1925 and of the Bell Telephone Laboratories, Inc., thereafter which was allocable and billed to the Western and not billed to the American Company, and which covered the work of developing patents and inventions to be embodied in manufactured products (*supra*, 90);

(b) expenses of the Patent Department covering purchase of patents and royalties and license fees paid for the use of patents;

(c) expenses of the Installation Department for standardization (R. V, 3718).

Western's yearly Development and Research expenses during the period 1916 to 1922, inclusive, ranged from $1,500,000 to $5,500,000 per year; thereafter to 1930, inclusive, they ranged from $6,500,000 in 1923 to $14,000,000 in 1930. The total expenses for the period were $108,300,000 of which $84,971,000, was spent in the years 1923 to 1930, inclusive (R. V, 3654a; Appendix, pp. 73-4).

Appellee allocated these expenses between Bell and non-Bell sales on the basis of the respective standard shop costs of each class of sales (R. I, 331).

A.

The allocation to Bell sales of the portion of Western's Development and Research expense applicable to the four licensed manufacturers of its inventions unduly burdened such Bell sales.

The same four manufacturers—International Western, International Standard Electric, Northern Electric and Automatic—who were licensed to use the results of the American Company's Development and Research work, were also licensed to use the results of Western's Development and Research work (*supra*, 106). Appellee did not allocate any portion of Western's Development and Research expense to them and did not credit as an offset the revenue and value received by Western from them for such licenses (*supra*, 107-113). Its failure so to do unduly burdened Western's manufactures and, to the extent of more than 90% thereof, Bell Sales, and unjustly enriched the Western investment in non-Bell business to the extent of the portion of the substantial revenues received for these four manufacturers to which Western is entitled by virtue of the licenses granted by it to them (*supra*, 106).

In the case of Automatic the entire $4,000,000 received by Products (*supra*, 113), exclusive of the part thereof allocable to the American Company's Development and Research expense, should be included as Bell System revenues of Western. Appellee's claim that the $4,000,000 was given for the surrender of the *option* (*supra*, 115) which has no relation to Bell business is answered by the following facts:

On May 24, 1927, the American Company, Western and the Automatic extended the period during which the exchange of licenses provided for in the 1925 contract already referred to should continue to December 31, 1936 (R. VIII, 4868). By contract dated May 24, 1927, but acknowledged on May 26, 1927, Western extended its merchandise contract with the Sales Agency of Automatic to December 31, 1936 (R. VIII, 4617-25), on a cost plus basis, with provision for reduction in the event of excess volume over the minimum volume therein provided (R. VIII, 4619).

On the same day Automatic's Sales Agency paid Products $500,000 cash and agreed to make nine payments aggregating $3,500,000, spread over the period of the merchandise contract to 1936 (R. VIII, 4610-11).

On the same day, the President of Products, who was also President of Western, advised the Vice-President of the Sales Agency, who executed the purchase contract of May 24, 1927 (R. V, 3738-9):

> "I agree that in the event the results should not conform to expectations between now and December 31, 1930, I, or my successor, will, upon a proper showing of facts, give the matter fair consideration and reduce the amount from $4,000,000 to some intermediate figure not below $3,000,000. After December 31, 1930, however, no reduction in the basic amount will be considered.
>
> In the event that such claim should be made and I am not then president of Electrical Research Products Inc. I obligate myself to see that this phase of the arrangement is carried out in good faith."

In a memorandum prepared by the President of Western, the following appears:

> "The figure of four million dollars was arrived at on the basis that the payment was fully warranted for

the assets involved, and consideration was also given to the volume of business which the Automatic Electric would receive up to the end of 1930, and profits which would result therefrom, as follows:

Year	Minimum Volume Contract of May 24/27 at A. E. 1925 Prices	Estimated Annual Vol. of Business		A. E. Co.
		At A. E. Co. 1925 Prices	At Proposed Prices in Contract of May 24, 1927	Profit on Est. Vol. Under Contract of May 24/27
1927	$3,300,000	$5,300,000	$4,523,000	$694,000
1928	3,300,000	4,700,000	4,313,000	674,000
1929	3,300,000	3,380,000	3,137,000	520,000
1930	2,600,000	2,800,000	2,492,000	325,000

The payment of four million dollars was agreed upon after the Gary interests had estimated the probable results under the contract on the basis of the minimum volume of business per year as set forth above and as in the contract. It was stated, however, to Mr. H. L. Gary that in our judgment the volume would undoubtedly be somewhat greater than the minimum so that the results would probably be more attractive than he had figured on the basis of the minimum figures."

The $4,000,000 was paid prior to 1931, but was not reflected in Appellee's exhibits on Western profits from Bell business. The sales of the Automatic to Western during the period 1916 to 1930 are as follows (R. V, 3739):

(Dollars in thousands.)

1916	...	1921	4,660	1926	6,620
1917	9	1922	4,503	1927	4,442
1918	143	1923	4,170	1928	3,623
1919	417	1924	6,435	1929	4,804
1920	1,967	1925	7,555	1930	5,497

Appellants' version of this transaction is:

(1) The reason for the option was stated to be to give "assurance that the quality and price of the apparatus delivered would be satisfactory to us" (R. I, 463). With the

extension of the 1924 contract to 1936 the same reasons existed subsequent to 1927 as prior thereto for retaining the option for the benefit of the Bell System.

(2) The consideration for the payment was the extension of the patent license contracts of 1925, of the merchandise contract of 1924, and the surrender of the option given to protect the Bell interests—all concerned with Bell business and making use of the services for which the Bell System was paying.

(3) The profits of Automatic, not being in the record, it is impossible to say that its prices were reasonable.

The entire amount should be considered as Western profits from Bell business.

B.

The allocation to Western's Bell sales of the portion of its Development and Research expense applicable to its distributors for resale unduly burdened such Bell sales.

Western's sales only cover sales to Graybar as a distributor (R. VIII, 4878; R. VII, 3939-40). Graybar's license was paid for by the grant to Western of a special participation in its profits (*supra*, 123). The same reasons already stated which require that a portion of such profits be allocated to the License Contract, also require that a portion of such profits should also be credited to the Bell business of Western as an offset against the Development and Research expense applicable to Graybar sales charged thereto.

C.

The allocation to Bell sales of the portion of Western's Development and Research expenses applicable to Products unduly burdened such Bell sales.

On December 31, 1926, Products was organized for the purpose of promoting the inventions of the American Company and of the Western which found application in the non-telephone field. To the extent that the American Company's inventions were used, royalties were paid by Products, as already stated. No compensation was paid to Western to cover the inventions developed prior to 1927 and used thereafter (R. VIII, 4535, 4547, 4565). The largest portion of Western's development expense prior to 1927 was absorbed through Bell sales (Appendix, p. 73); to that extent has the Bell business contributed to the profits of Products, and should share therein.

Products realized rate of return related to its capital and surplus was (R. VI, 3956-7):

1927	63.6%
1928	51.0%
1929	68.1%
1930	18.2%

DISCUSSION AS TO CONTENTION NUMBERED VI.

VI.

WESTERN'S RATE OF RETURN ON TOTAL BELL SALES CANNOT BE RELATED TO ITS SALES TO APPELLEE IN THE SAME YEAR ON THE BASIS OF THEIR RELATIVE PURCHASES.

For the purpose of the following discussion we assume that Appellee's separation of Western's operating expenses and manufacturing facilities between Bell and non-Bell sales is correct, as found by the District Court. The present discussion proves conclusively that Western's return from Bell business considered as a single unit of business cannot be treated as fairly representing Western's return for each year on its sales to Appellee. The impossibility of such determination makes impossible the required proof of the reasonableness of Western's current prices in each year of the litigation considered as a separate unit of time. The impossibility of such determination renders improper their use in the reproduction estimates of each year of the litigation.

Western's sales to Appellee were available from its records, but neither the actual costs of such sales nor the investment applicable thereto were available from Western's records. Appellee and the District Court related Western's rate of return on total Bell sales considered as a unit to such sales on the basis of their relative purchases.

A.

Proof was not and could not be made that Western's sales to Appellee in each year of the litigation was a fair and representative cross-section of its total Bell sales of the same year.

Thus far we have dealt with the proper distribution to the Bell and non-Bell sales of the gross variations between the actual and standard cost of Western's entire production of each year. We now consider the distribution to Appellee of its proportion of the gross variations applicable to Bell business as a unit. The distribution of the Bell System's gross variations to one or more operating companies of the Bell System who purchase *less than the total of Bell purchases* in such year, presents the identical problem, already discussed, inherent in the proper distribution of the gross variations of entire production to Bell and non-Bell sales considered as two single classes of business (*supra*, 247). For the reasons already stated such proper distribution to Appellee's purchases in any year requires that Western's sales to Appellee represent a fair and representative cross-section of its total sales to the Bell System in the same year (*supra*, 257). Without such distribution there can be no relation between Western's rate of return on its total Bell sales and on its sales to Appellee for that year.

The District Court found that Western's sales to Appellee for use in its entire business and for use in its Chicago area "have been a reasonably fair and representative cross-section" of Western's sales to all its Bell customers (R. III, 2519). Though nothing appears in the Opinion to indicate what period of time this finding on comparability was intended to cover, it is clear that it did not and could not cover the sales of *each year considered as a separate unit of time.* Appellee conceded that it had no information to show and that it would not expect to find that each year's sales to Appellee represented a fair and representative cross-section of Western's sales to all its Bell customers in that year (R. I, 440).

B.

The District Court's finding that Western's sales to Appellee over a period of years was a fair and representative cross-section of Western's sales to all Bell customers in the same period makes possible only the relation of Western's average Rate of Return on Bell sales to its sales to Appellee during such period.

Western's Comptroller, as Appellee's witness, testified that Appellee's purchases over a long term of years were a fair cross-section of the purchases by the Bell System as a unit (R. I, 441). Such conclusion was based on (a) common sense plus an intimate knowledge of Western's manufactures and (b) a study, made for the purpose of the hearings, showing relative purchases by Appellee of 17 important items during the period 1924 to 1930, inclusive (R. VIII, 4431-2A). But analysis of that study reveals (R. VIII, 4432A) that Appellee's purchases of large multiple sections averaged for the 7-year period 10.6% of corresponding total Bell System purchases but such average resulted from Appellee's purchases during the years ranging from 3.5% to 45.3% of corresponding total Bell purchases in the same year. Similar range exists for each of the other items as shown in the analysis reproduced in the Appendix (Appendix pp. 75-81). Analysis also reveals that the per cents of total Bell purchases for each item varies for each year and over a period of years, and that such variation continues irrespective of the number of years included in the study, the detailed discussion of which appears in the Record (R. VIII, 4434-44; R. II, 2017).

Whether the conclusion is reached, as Appellants contended before the District Court (R. III, 2451-2) and now contend (R. III, 2554), that there is a complete absence of a fair and representative cross-section even over a period of years, or whether the District Court's finding to the contrary is sustained, the most that can be said in favor of such finding is that it has application to a long period of years considered as a single unit of time. For the reasons stated (*infra*, 281) such a finding permits the conclusion only that Western's *average rate of return on Bell sales of that period bears relation to Western's average rate of return during the same period on business with Appellee; but such finding can have no such application to any one year of that period or to any other period.*

DISCUSSION AS TO CONTENTION NUMBERED VII.

VII.

THE DISTRICT COURT'S FINDING THAT IT IS NECESSARY IN DETERMINING THE REASONABLENESS OF WESTERN'S RETURN ON BELL BUSINESS "TO TAKE INTO CONSIDERATION THE RESULTS OF A PERIOD OF YEARS AND NOT MERELY A SINGLE YEAR" PRECLUDES THE DETERMINATION OF THE REASONABLENESS OF WESTERN'S PRICES USED IN THE ESTIMATES UPON WHICH APPELLEE'S CHARGE OF CONFISCATION FOR EACH YEAR OF THE LITIGATION WAS PREDICATED AND SUSTAINED.

The District Court found that on its Bell business Western's average rate of return on "average investment," as defined by it, less the amount of depreciation reserve account was 8%, for the period 1923 to 1932, inclusive, and for the period 1916 to 1932, inclusive, was 7.6%; that with the exception of 1923 its rate of return during each of the years 1924 to 1929, inclusive, was higher than either average return (R. III, 2518):

1923	6.2%
1924	8.8
1925	12.9
1926	10.6
1927	13.6
1928	15.8
1929	11.7

that with the exception of 1921 its rate of return in each of the years 1916 to 1922, inclusive, was less than either average rate of return, and ranged from 1.1% to 6.6% per year; that in 1930 and 1931 such rate of return was 5.8% and 5.6%, respectively, and for 1932 Western suffered a loss of 3.3% (*supra*, 245).

The District Court found that in determining the reasonableness of Western's rate of return from Bell business and from business with Appellee, the earning results for a period of years must be taken into consideration and not merely a single year, and that so considered Western's rate of return from such business was fair and reasonable during the periods 1916 to 1932, inclusive, and 1923 to 1932, inclusive, subject to the elimination of the effect of the 10.2% increase in Western's price in 1930, and that subject thereto Western's profits in any of its dealings with Appellee have been fair and reasonable (R. III, 2519).

If the question presented were one of abuse of intercorporate relationship, Western's experience with the Bell System and its comparable experience with Appellee over a period of years would have application. But such question is not presented on the record; the question presented is one of confiscation for each of the years 1923 to 1932, inclusive, considered as separate units of time and predicated upon estimates which make use of Western's current prices for certain specific purposes (*supra*, 266).

The only prices to which the average earning experience of a period of years could have application are the composite prices of the period covered by such experience. For the period covering the purchases reflected in the book cost figures of each year, such book cost figures reflect the composite prices to which the average earning experience of such period has application. But Appellee rejected book cost figures as the basis upon which to determine the rate base value and depreciation expense. Thus:

Appellee used Western's *current 1928 prices* to revalue in 1928 its property accounts covering Western's products, to arrive at the rate base value for 1928. Appellee effected such revaluation by converting the prices of gross additions in 1911 and thereafter to the 1928 level (*infra,* 329). From Bell business done on the 1928 prices Western received at least 15.8% return as found by the District Court (*supra,* 245). Such 15.8% return was over twice the 17 year average return of 7.6% and over 98% higher than the average 10 year return of 8% found by the District Court.

Appellee's presentation and the District Court's finding of rate base value for each of the years 1924 to 1929, inclusive, convert on the basis of Western's current prices the entire property account of each such years covering Western's products then in service. But the District Court found that Western had received a rate of return during the years 1924 to 1929, inclusive, which was from 10% to 90% higher than the 8% average return upon which the District Court predicated its finding of the reasonableness thereof. Similarly the District Court's finding of depreciation allowance for each of the years 1924 to 1929, inclusive, give effect to the same prices in the reproduction estimates for the entire *depreciable plant account* covering Western's products in service in each such years.

The District Court's finding of rate base value in 1930, 1931 and 1932 and of depreciation allowance for each of the same three years was intended to give effect to Appellee's reproduction cost estimates using Western's 1929 prices to convert the entire property account of each of the years 1930, 1931 and 1932 covering Western's products then in service. From Western's 1929 prices Western received 11.8% return as found by the District Court, which return is 40% above the average rate of return found by it to be reasonable (R. III, 2518).

Similarly the District Court found, as proper operating expense for each of the years 1924 to 1929, inclusive, the maintenance charges as presented by Appellee which covered purchases from Western ranging from $1,400,000 in 1924 to $3,990,000 in 1929 chargeable thereto. On the basis of the earnings from Bell business done on these prices in each of these years, they are clearly excessive.

There is no more reason to justify the use of Western's current prices which are excessive on the ground that its prices in the past were below some reasonable standard than there is to justify the recovery of past losses by current charges. There is no more reason to justify the use of such prices on the ground that prices in the future will be sufficiently lower to make the average price fair by some standard of reasonableness than there would be to justify excessive charges for service now because conditions in the future may reduce them sufficiently to bring the average within limits of fairness.

DISCUSSION AS TO CONTENTION NUMBERED VIII.

VIII.

THE STANDARDS APPLIED BY THE DISTRICT COURT TO DETERMINE THE REASONABLENESS OF WESTERN'S PRICES AND PROFITS ON BELL BUSINESS DID NOT AND COULD NOT DETERMINE THEIR REASONABLENESS FOR ANY ONE YEAR OR OVER A PERIOD OF YEARS.

The District Court used three standards (R. III, 2508):

(1) "Its rate of profit on sales in its business as distinguished from earnings on investment has been less than

one-half of the rate of profit made on sales by other large, comparable manufacturing industries."

(2) "Western's rate of earnings on its investment in its Bell business and on its investment, less the amount in the depreciation reserve account, has been substantially one-third lower than those of other manufacturing companies whose risks and hazards make them fairly comparable with Western."

(3) Western's reduction in prices during the period of the litigation passed on to its Bell customers all reduction in costs arising from Western's relationship to the Bell System.

A.

The District Court's finding that Western's rate of profit on Bell business has been less than one-half of that made by other manufacturers proves nothing as to the reasonableness of its prices and earnings in such business for any one year or over a period of years.

The District Court's finding was based on Appellee's showing that, taking the period 1925 to 1930, inclusive, as a single unit of time, thirty-eight manufacturers other than Western earned 11.6% on sales and Western earned on its sales to Bell customers 6.4% (R. I, 334); that thirty-two of such companies earned a larger per cent profit on sales than Western and only six earned less (R. IV, 2825).

Such comparison has no probative value on the question of the reasonableness of Western's net profits on Bell business in any year or over a period of years. The District Court found that 5.2% profit of Bell sales produced a 10.6% return in 1926, but in 1929 4.8% profit on Bell sales produced a 15.8% return; that 3.4% profit on Bell sales produced a 6.2% return in 1923, and the same 3.4% profit on non-Bell sales produced a 13.3% return in 1924 (R. III, 2518). Analysis of the thirty-eight companies involved in Appellee's comparison shows (R. VI, 4001-2; R. II, 1651), among others, that:

Reo Motors with 4.3% net profits to sales had 8.8% net profits to average investment in the six-year period under investigation; National Supply Co. during the same period had 33.2% net profits to sales and only 8.7% net profits to average investment; Atlas Powder with 5% net profits to sales had 8% net profits to average investment; Hupp Motor with 5% net profits to sales had 10.9% net profits to average investment; Columbia Carbon with 26.7% net profits to sales had 9.4% net profits to average investment; and St. Regis Paper with 16.8% net profits to sales had only 5.6% net profits to average investment. On the basis of the profit to sales ratio, Reo cars would be priced too low but National Supply Co.'s products too high. On the basis of the profit to sales and profit to investment ratios, Reo cars would be priced too high but National Supply Co.'s products too low.

The real significance of ratio of net profits to sales in its relation to return is the rapidity of turnover of capital (R. II, 1651; R. VI, 4003). If the sales are no more in dollars than the capital used in the service, the ratio of net profits to sales must be high to provide the depreciation and rate of return percentage on investment. But if the sales are in excess of the capital, the per cent net profits to sales need be a corresponding smaller rate of return percentage. The following comparison explains why Western requires only a small margin of profit on sales to produce a high return on investment (R. VI, 4003):

Ratio of Sales to Average Investment for Year 1927.

	National Supply	Columbia Carbon	St. Regis Paper	Western
Land, buildings, machinery after depreciation	1.43	.83	1.45	7.56
Merchandise	.64	3.08	2.59	4.45
Receivables	.71	8.78	8.54	6.37
Cash	1.76	6.26	11.23	40.15
Current liabilities	2.29	10.01	8.84	6.54
Net average investment after depreciation	.26	.59	.86	2.59
Per cent net profits (before interest deductions) to sales	36.28	23.04	15.52	7.62

B.

The District Court's finding that Western's rate of earnings on its undepreciated and depreciated average investment in its Bell business "has been substantially one-third lower than" that of other manufacturing companies of comparable risks and hazards, proves nothing as to the reasonableness of its prices and earnings in such business for any one year or over a period of years.

The District Court's finding was based on Appellee's showing, taken from several Investment Manuals, that Western's average rate of return from its Bell business related to average investment as defined by it was 8.2% before and 10.9% after depreciation reserve deductions during the period 1925 to 1930, inclusive, considered as a single unit of time, whereas the average rate of return of eighty-eight large manufacturing companies was 11.9% before and 14.5% after depreciation reserve deductions for the same six-year period considering such eighty-eight companies as a unit (R. II, 1339; R. V, 3150).

Analysis of the eighty-eight companies whose composite average results are compared shows:

(1) For Western's rate of return, Appellee used only the portion of Western's operating earnings and average investment applicable to Bell sales, but for twenty companies used the operating and non-operating earnings and assets of the company but not including subsidiaries; for sixty-three companies Appellee used the consolidated subsidiary and parent company total operating and non-operating earnings and assets, and for five companies Appellee used consolidated subsidiary and parent company total earnings part of the time and used parent company total earnings and assets, part of the time (R. II, 1648; R. VI, 3965).

The comparison of operating results with those of operating and non-operating activities combined, is meaningless. Non-operating income includes, among others, dividends (R. VI, 3892a). On the one hand, dividends may not represent the entire operating earnings of the issuer corporation; on the other hand, the stocks to which the dividends have application may be carried on the books of the owner corporation at a nominal value, or at an amount which reflects less than the amount of capital and surplus of the issuer corporation to which such stock has application. Certainly the value of the stocks on the books of the owner corporation would in no event reflect the additional assets of the issuer corporation applicable to funded debt and current liabilities, other than accounts payable (R. II, 1684; R. VI, 3963; R. VIII, 4875), which assets were included as part of the average investment used in Appellee's comparison.

To illustrate: In 1929 Western's non-operating earnings included $5,395,000 dividends (R. VI, 3892a). Of such amount $5,250,000 came from Products (R. V, 3724). The stock investment in Products was carried in 1929 on the books of Western at $6,250,000 (R. V, 3723). The rate of return on the basis of such book value was 84%. But Products' average capital and surplus in 1929 was $9,600,000 (R. V, 3724) or 53% greater than the amount that Western carried such investment on its books. Western's *total* earnings available for dividends was $6,899,000 or 68% on capital and surplus—17% less than the 84% return on the basis of the dividends related to Western's book investment in Products. But Products' average investment in 1929, on the basis of the District Court's definition thereof, was at least $40,000,000 to which were applicable $8,500,000 in net earnings representing a return of 21% (R. V, 3724). Under such circumstances the non-operating results are bound to present a much more favorable picture than would be presented by operating results only.

The Investment Manuals from which Appellee procured the data for its comparison do not show the detailed non-operating earnings and the character of the assets applicable thereto, of the corporations used by Appellee in its comparison. Thus, we find for the General Electric Company, an item "Other Income" embracing from $10,000,000 to $20,000,000 a year, and representing from thirty to fifty per cent of its entire net earnings. We find also an asset item "Associated Cos. and Miscellaneous Securities" embracing from $68,000,000 to $204,000,000 per year, and representing from fifteen to twenty-three per cent of the average investment of each year of the period used by Appellee in its comparison (Poor's Industrials 1931, pp. 2093-4). But no breakdown of these items appears anywhere. Poor's does show, however, that the General Electric Company has some wholly owned subsidiary companies, some companies in which it has a controlling stock interest and some companies in which it has a substantial though not a controlling interest (*idem*, p. 2092). Without a breakdown of these items, any comparison between Western's operating results and General Electric Company's combined operating and non-operating results means nothing (R. IV, 2823; R. II, 1648-9; R. VI, 3963-4).

As illustrative of the distorted picture produced by the comparison of Western's operating earnings with the total subsidiary and parent company combined operating and non-operating earnings of the sixty-three companies, Appellant's direct attention to the unreasonably large rate of return of Western's subsidiary companies arising from their exploitation of the developments of Western, the expenses of which were included in Western's operating earnings. Under such circumstances it is unfair to compare the operations of one company, bearing the expenses from which the subsidiary companies received large revenues, with another company whose showing includes the receipts to offset such expenses.

(2) The adjustments to surplus by the eighty-eight companies of the character which Appellee charged to current operating earnings in the case of Western (R. VI, 3988-4001). Some of these are:

(a) Reduction in Book value of capital assets (American Agricultural Company—$10,297,293; Union Carbide $39,794,031).
(b) Patents Written off (Burroughs Adding Machine Company $3,099,212; Dupont $5,354,104).
(c) Adjustment of special tools, dies and patterns—(Continental Motors $2,209,792; Hudson Motors $2,000,000; Willys-Overland $6,125,488).
(d) Appropriation for pension reserve (Dupont $4,880,729, $3,807,968).
(e) Adjustment of patent account (Electric Storage Battery $4,999,999).

(f) Depreciation adjustment for prior years (Goodyear Tire & Rubber Co. $497,125).

(g) Adjustment of physical property value (International Shoe Co. $12,480,944—Credit).

(h) Patents and good will written off (Goodyear Tire & Rubber Co. $10,209,274; National Cash Register Co. $1,683,334; $4,081,268).

(i) Reserve for patents, plant and equipment (Radio Corporation $11,069,234).

(j) Write down of inventories (Radio Corporation $10,359,000).

(k) Write down of inventory commitments, contingencies (Willys-Overland $2,683,724).

(l) Unamortized value of patents (Union Carbide $29,423,509).

(m) Patents, charters, etc. (Westinghouse—$4,621,-784).

(n) Obsolescence of plant (Atlas Powder Co.—$1,900,000).

(o) Reserve from prior years earnings released to income (International Harvester Co.—$11,000,000 Credit).

Appellee did not reflect these facts in its comparisons (R. II, 1650; R. IV, 2823, 2825). Appellee gave no consideration to them other than to claim that the overall *net differences* between *credits and debits* to *surplus* are negligible when related to the full six-year period for all the companies as a unit (R. II, 1339, 1372). But such claim has the same relation to the issue involved as does the 1 cent over-all *net difference* in credits and debits in the case set out in connection with the discussion of Standard Shop Cost variations (*supra*, 258).

(3) Seven of the eighty-eight companies carry their inventories at cost for the entire period or for part of the six-year period (R. II, 1650); Western carries its inventory at cost or market whichever is lower, with the additional reduction to maintain its inventory on a rapid turnover

basis (R. I, 400). To the extent of the reduction from cost to market, the rate of return of Western is not comparable to that of the seven companies. To illustrate: The amount of reductions from cost to the fair market value of Western's closing inventory used in its computations of net profits for the year 1930 aggregate $6,808,000 by way of reduction of profits (R. V, 3685; R. I, 399). Without information of the opening inventory it is impossible to determine the effect on the net profits of such reductions. But the fact that such large adjustments are made indicates the danger of using comparisons of profits computed on different bases.

(4) The available data from the sources used by Appellee discloses that in the case of twelve companies the depreciation policy is not shown.

Included among the eighty-eight companies whose "risks and hazards" the District Court found, make them "fairly comparable" to Western, are six companies owning and operating mines; three companies, phosphate, sodium and/or limestone deposits; three companies, timber lands; two companies, rubber plantations; one company, gas wells, oil wells, and pipe lines (R. II, 1651). Their operations involve the question of depletion of investment and return in those particular assets—an entirely different problem with special significance in the combined showing of earnings and current capital return with which Appellee compares only the current operating earning return of Western (R. II, 1651).

Five companies use depreciation rates in conformity with rates approved by the Internal Revenue Department (R. VI, 3985); Western's net earnings on Bell business which Appellee uses in its comparison, give effect to the depreciation expense charges which are at least $10,000,000 in excess of those approved by the Internal Revenue Department (R. VI, 3960; R. II, 1621-1622). It cannot be fairly assumed that for them the approved expense is the correct expense, but for Western it is $10,000,000 less than the correct expense.

In the case of most of the companies it does not appear whether the depreciation rate is established on a sinking fund basis or on a straight line method (R. VI, 3967-84). The significance of that factor, of course, lies in the disposition of the depreciation reserve in connection with valuation (*infra*, 365). In the absence of information in respect to the depreciation policy on each company involved in the comparison, such comparison based upon return on investment is meaningless.

Assuming, however, that the average showing of the six year period had probative value to support a finding on the reasonableness of Western's profits for the six year period considered as a single unit of time, no such probative value can attach for each year of that period. The record does not contain each year's experience of the eighty-eight companies covered by the average return of the six year period. Western's 8.8% rate of return for 1925 on Bell business, as found by the District Court, is 20% lower than the 10.8% combined Bell and non-Bell return and compares with a loss of 3.7% on non-Bell business only (Appendix, pp. 70-1, 82-3). Yet, Western's return from Bell business for the six-year period 1925-1930 was but a fraction of that from non-Bell business (*supra*, 245). Such average return would have no probative value to support a finding on the reasonableness of Western's current prices used in the estimates to sustain the charge of confiscation in 1925.

C.

The reduction in prices to its Bell customers during the period 1921 to 1929, inclusive, did not and could not prove that Western's return from its Bell business on such prices before or after each such reduction was reasonable.

Western's price policy was claimed to be,—that whenever a reasonable profit could be *foreseen* at lower prices than then prevailing, reductions were accordingly made (R. I, 450). Such a policy does not adjust prices for the purpose of returning to the Bell customers any redundancy in price on sales actually made prior to the reduction in excess of the amount required to provide reasonable profit—similar to the practice of mutual life insurance companies (*supra,* 82). Nor does such policy to return to the Bell customers any redundancy in price on sales actually made on the reduced price in case the realized profits exceed the prognostication upon which the reduction is made. The price reductions gave consideration to the administrative reports showing the earning results on the basis of *standard costs* (R. I, 382); from them the probable future results under the estimated volume for the ensuing year were prognosticated. For it should be borne in mind that, according to Appellee, the savings to Western's Bell customers resulting from the reduction in prices have been made possible by standardization of products and increased efficiency of its manufacturing operations (R. I, 566).

The following were the price reductions or price increases and realized return as found by the District Court, during the period under investigation (R. III, 2508, 2518).

	Price Reduction or Increase	Realized Return
1921	— 1.7	10.7
1922	—10.7	6.6
1923	+ 0.2	6.2
1924	— 5.6	8.8
1925	— 1.1	12.9
1926	— 8.7	10.6
1927	— 4.9	13.6
1928	—10.3	15.8
1929	— 8.6	11.7
1930	+10.2	5.8

Certainly no conclusion as to the reasonableness of the realized return in the years 1925 to 1929, inclusive, can be drawn from the price cuts of those or any other years, any more than such conclusion could be drawn from the price reductions of 1922 when the realized return was but a fraction of such later returns.

Nor can any such conclusion be drawn from the finding that by its reduction in prices Western passed on to its Bell customers the reduction in costs resulting from the advantages—elimination of credit risks, selling expenses and production and distribution economies resulting from long-time planning on the basis of advance estimates—which Western had by virtue of its relationship to the Bell System (*Smith* v. *Illinois Bell Tel. Co.*, 282 U.S. 133, at 153; O.R. III, 1117; O.R. VI, 2331; O.R. IV, 1556). As Appellee made no showing of the measure of such reduction in costs, such a finding is necessarily predicated on proof that the reduced price covers the actual cost of production and distribution plus *only a reasonable return on investment* and cannot itself serve as such proof.

DISCUSSION AS TO CONTENTION NUMBERED IX.

IX.

PERCENTAGE FIGURES RELATED TO WESTERN'S DEPRECIATED OR UNDEPRECIATED "AVERAGE INVESTMENT" IN BELL BUSINESS AS FOUND BY THE DISTRICT COURT HAVE NO SIGNIFICANCE WHATSOEVER AS A YARDSTICK BY WHICH TO DETERMINE THE REASONABLENESS OF WESTERN'S EARNINGS FROM BELL BUSINESS FOR ANY ONE YEAR OR OVER A PERIOD OF YEARS.

The per cent of earnings on undepreciated and depreciated average investment from Bell business as found by the District Court for the years 1926 to 1930, inclusive, would be sufficient to pay interest and amortization on money borrowed, and to yield the following per cent return on average capital and surplus allocable to such business in the same years:

	On Average Investment	On Depreciated Average Investment	On Capital and Surplus
1926	8.3	10.6	16.13
1927	10.4	13.6	21.87
1928	11.8	15.8	26.47
1929	9.1	11.7	19.83
1930	4.6	5.8	8.30

Such a striking difference challenges attention to the real significance of the percentage figures found by the District Court.

The District Court measured Western's "investment" in Bell business by what it defined as "average investment": to-wit: "plant and manufacturing facilities, merchandise, receivables and cash, less current accounts payable, all at cost to Western, except merchandise which is cost or market, whichever is lower" (R. III, 2507).

The District Court did not deduct (1) working reserves, (2) pension fund reserves, (3) notes payable to trustee of pension fund, (4) current notes payable, and (5) non-operating cash.

Its failure so to do renders the "average investment" meaningless as the measure of the amount of invested capital on which Western's investors are entitled to receive a return and renders meaningless the percentage figures derived by relating earnings thereto.

A.

The amount of reserve for Pension Fund should be deducted from gross assets in determining the investment on which to compute a rate of return to Western's investors.

From 1926 to 1927, inclusive, Western retained in its treasury as part of its assets the Pension Fund Reserve accruals ranging from $2,000, to $15,300,000 a year during the period 1923 to 1927, inclusive (R. VI, 3909), of which approximately 90% is applicable to Bell business (R. VI, 3910; R. I, 351). The District Court's average investment did not deduct such Reserve for any year of the period 1916 to 1931, inclusive (R. II, 1616). When Western in 1924 determined the amount then in the fund and revised its basis of computation and made additional charges to make up past deficiencies it considered only the principal of the fund then accumulated (R. I, 349). The principal of the pension fund accruals was billed and charged as an operating expense each year on the basis that no income thereon was to be added thereto as a part thereof. On such a basis, therefore, to provide earnings thereon, as the District Court did, of from 8.8% to 15.8% (Appendix, pp. 84-5) unjustly enriches to that extent Western's stockholders at the expense of its Bell customers (R. II, 1616).

B.

The amount of Notes Payable to Trustees of Pension Fund should be deducted from gross assets in determining the investment on which to compute a rate of return to Western's investors.

To give Western the advantage, under the Federal Income Tax Law, of deducting as an operating expense the current charges to profit for pension fund accruals (R. I, 351), Western arranged in 1928 with the Bankers Trust Company of New York to administer, as Trustee, the pension fund, which theretofore it had carried in its treasury. Under the Trust Arrangement (R. VII, 4153; R. I, 351) Western had the right to advise the Trustee as to the investment of the pension fund accruals deposited with the Trustee. Since the inception of the plan, Western had advised the Trustee to loan those acruals to it on its unsecured notes (R. I, 351), such liability on December 31st of each year being:

1928 $21,064,706 (R. VIII, 4573; R. II, 1616).
1929, $26,128,933 (R. VIII, 4577).
1930, $31,481,085 (R. VIII, 4584).
1931, $35,822,963 (R. VIII, 4587).

The notes were on demand, bearing 5½% interest (R. I, 352), and are part of Western's current liabilities other than accounts payable (R. VIII, 4573, 4577, 4584, 4587).

The principal of the pension fund accruals was built up and charged as an operating expense each year on an annuity basis to provide that such principal, plus the compounded earnings thereon, should equal the amount required at the date of retirement of the employees the then value of the required pensions (R. I, 352). On such basis, of course, the more the earnings on the principal the smaller the principal deductions as operating expenses. The accruals by Western "contemplate that the fund shall have future earnings at 4 per cent compound interest" (R. I, 352). But certainly if the principal is to be used in Western's business to earn in 1928, 15.8% and in 1929, 11.7%, such earning rate should be given effect in the computations. The District Court's treatment of this item unjustly enriches Western's stockholder at the expense of its Bell customers.

C.

The amount of Working Reserves should be deducted from gross assets in determining the investment on which to compute a rate of return to Western's investors.

Appellee failed to deduct for the years 1926 to 1930, inclusive, the working reserves which represent accrued interest, accrued taxes and accrued accounts payable. They range from $6,900,000 to $11,100,000, of which over 90% is applicable to Bell business (R. VI, 3909, 3910).

For the years prior to 1926, Appellee's working papers show that it included these items as "Accounts Payable" and deducted them in arriving at "Average Investment" (R. II, 1617). No explanation was given for the change in the method of handling the items in the exhibits for the period beginning with 1926 (*Idem.*). In the annual reports to stockholders for each year from 1910 to date, Western has included such reserves as "current liabilities" and not as "capital liabilities."[*] The accruals for each of these items of expense are built up on the basis that they will not receive earnings pending use; otherwise the current accruals should be reduced to give effect to such earnings. It is a repudiation of the basis upon which the charges as operating expenses were made in respect to these items to permit Western's investors to earn from 10% to 15% a year on such reserves for the years 1926 to 1929, inclusive, pending their use to pay interest, taxes, etc.

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[*] R. VIII, 4515, 4516, 4517, 4521, 4522, 4524, 4525, 4526, 4528, 4532, 4537, 4552, 4555, 4559, 4564, 4565, 4568, 4573, 4577, 4584, 4587.

D.

The amount of current notes payable should be deducted from gross assets in determining the investment on which to compute a rate of return to Western's investors.

Beginning with 1922 the American Company supplied Western with a part of its temporary working capital and left with Western its own funds not currently required for its own operations. To evidence such loans Western gave its notes due on demand or on before one year from date (R. I, 457). In the years 1923, 1929 and 1930 the yearly average of such temporary funds ranged from $17,000,000 to $22,000,000 per year; in the other years from $600,000 to $6,000,000 per year (R. V, 3690-1). The American Company claimed that this financing "furnishes the money on the cheapest basis that the Western could get it" (R. I, 869), and that "the licensees get the benefit of this financing by American Telephone and Telegraph Company of Western Electric because Western Electric gets cheap money" (R. I, 870).

In addition, Western borrowed from banks, Trustee of Pension Fund and others on demand and on short time notes, amounts ranging from $6,000,000 to $26,000,000 per year, in the period 1922 to 1930, inclusive. Over 90% of the principal of these loans was allocated to Bell business (R. VI, 3909). Appellee did not deduct this item (R. I, 457-8; R. II, 1330).

There are three reasons why this item should be deducted:

(1) By not deducting the principal of the American Company's loans in any year in which Western's per cent of return on "average investment" less the amount of the depreciation reserve account exceeds the interest rate paid the American Company, Appellee repudiates the American Company's representation in respect to the beneficial effect of such loans to the Associated Companies.

(2) Appellee's treatment of "current liabilities" in arriving at "average investment" is contrary to the treatment made thereof by Appellee's witness, who testified on what would constitute fair earnings from Western's Bell business. Mr. Bloom, President of Western, testified:

> "Not less than 10 per cent on the book cost would have been fair earnings for the Western Electric Company in its business with the Bell Associated Companies during the period 1916 to 1931. By 'book cost' I mean the cost of the assets devoted to the Bell business less the current liabilities" (R. I, 414).

The witness did not define "current liabilities." But, beginning with 1926, Western's annual reports bear the signature of Mr. Bloom, who, as President of Western, presented the report to its stockholders on its behalf (R. I, 404). In such reports the "capital liabilities" only include the capital stock and the funded debt of Western; the "current liabilities" include all the notes and accounts payable (other than funded debt) and working reserves (accrued interest, taxes, payroll and items not yet due) (R. VIII, 4565, 4568, 4573, 4577, 4584).

(3) Appellee's treatment of "current liabilities" in arriving at "average investment" is contrary to the treatment made thereof by Appellee at the 1929 hearings in its presentation of the rate of return of manufacturing companies to sustain its claim for a fair return. At the 1929 hearings, Appellee, through an executive of the American Company whom it qualified as an expert on finance (O.R. I, 869) made a showing of the rate of return in 1923 of selected manufacturers. Such showing was made by relating their net earnings available for interest on *funded debt and dividends* to a rate *base* from which *current* liabilities had been deducted. That expert testified:

> "I have information available for the year 1923 showing the per cent earned on investment of companies other than public utilities, such as motor companies and other manufacturing companies. For the purpose of determining what the Rate of Return on investment was on large well-known manufacturing companies in 1923, I made a study, taking those manufacturing companies whose earnings were at least $1,000,000 per year. I did that in order to obtain the large representative companies. I took as the net investment the total assets minus all intangibles and the current liabilities. * * * In the main the source of this information was Moody's Manual of Industrial Companies" (O.R. II, 871).
>
> "The average investment for the year I arrived at by taking the simple average of the net investment at the beginning and at the end of the year. For net earnings I took the amount remaining after all charges, including depreciation, and Federal income tax, so as to arrive as closely as possible at the balance available for interest and dividend" (O.R. II, 871).

This expert's presentation was on the basis of net earnings available for interest on *funded* debt and dividends (O.R. II, 871) not for interest on funded and current interest-bearing debt and dividends.

And Moody's Manual of Industrial Corporations shows "current liabilities" as including current interest-bearing obligations of the classes not deducted by Appellee's showing at the 1932 hearings and by the District Court's findings based thereon (R. II, 1165).

E.

The amount of cash from non-operating activities should not be included as part of the investment on which to compute a rate of return to Western's investors.

Appellee failed to deduct the amounts shown in the record (R. VI, 3910-1) representing cash in excess of the amount which Western, in the regular course of its business, calculated was the normal cash balances required for its manufacturing operations (R. II, 1615; R. VII, 4097 *et seq.*). The amounts range from $900,000 to $20,500,000.

The American Company claims that it loses money each year to provide and hold funds available so that the Associated Companies can have provided, in advance of construction, the expenditures thereof. Western claims that condition as one of the advantages of the Bell System relationship and the financing of Western is predicated on, and gives effect to, contemplated receipts from the Bell System with meticulous care to the very date of expected payment (R. VII, 4097 *et seq.*).

During the year 1925 Western received large sums of money from its sale of International Western properties (R. I, 468, 471), from its special dividend on September 30, 1925, of $9,700,000 from International Western (R. VI, 3927; R. II, 1628), and from its earnings in its own business. In 1925 such surplus funds were represented by large amounts of cash in excess of $20,000,000 (R. V, 3696;

R. VII, 4103; R. I, 468) and in the following year were represented by United States Government securities aggregating $30,000,000 (R. VIII, 4871; R. I, 472). These were transferred to Products on December 31, 1926, as "non-Bell assets" (R. I, 472). But Appellee considered such cash funds in 1925 as Western operating assets to be allocated between Bell and non-Bell customers on the basis that $18,340,000 of such excess funds were considered as part of the Bell average investment on which the District Court found Western earned over 12% from Bell business.

DISCUSSION AS TO CONTENTION NUMBERED X.

X.

WESTERN'S NET EARNINGS FROM BELL BUSINESS, AS DETERMINED BY THE DISTRICT COURT, FROM THE PRICES USED IN THE ESTIMATES UPON WHICH THE CHARGE OF CONFISCATION FOR EACH YEAR OF THE LITIGATION WAS PREDICATED AND SUSTAINED, ARE EXCESSIVE.

Western's net earnings available for return from Bell business, as found by the District Court, would be sufficient to pay interest and amortization on money borrowed and to yield the following per cent return on average capital and surplus allocable to such business in the years 1926 to 1930, inclusive (Appendix, p. 72):

1926	16.13%
1927	21.87
1928	26.47
1929	19.83
1930	8.30

But such was not the total return which the American Company would receive on its equity investment in Western. During the same year the American Company as the equity investor in Western's non-Bell operating investment would receive the following yield on capital and surplus (Appendix, p. 72):

1926	41.05%
1927	32.54
1928	50.36
1929	65.75
1930	15.03

To the extent that the Bell business was unduly burdened and the non-Bell business unjustly enriched by the failure of Appellee to make the proper separation of operating expenses on the basis of standard shop cost of sales (*supra,* 247) or of development and research expense (*supra,* 271), the American Company's return on Bell business is reflected in the fantastic earnings of the non-Bell business produced by Appellee's separation.

For the year 1925 the rate of return from Bell business as found by the District Court was higher than for 1926 (*supra,* 245), and such return translated into a return on capital and surplus would exceed the 16.13% shown for 1926. Such earnings would therefore be excessive for 1925.

For the years prior to 1926 it is impossible to translate the rate of return on the rate base found by the District Court for Bell and non-Bell business into a rate of return on capital and surplus applicable thereto for the reason that prior to 1926 Western's retail supply business was conducted as a department of its manufacturing business and the comparable data for that department is not available to permit the same allocation as for the years subsequent to 1925 when that department was transferred to Graybar Electric (R. VI, 3939). But the rate of return found by the District Court of 8.8% for Bell business and

13.3% for non-Bell business in 1924 (Appendix, pp. 84, 71), indicates that if translated into a return on capital and surplus they would yield excessive returns—the capital and surplus being substantially lower than the rate base figure used by the District Court in arriving at its percentage figures of earnings (Appendix, p. 72).

For the reasons already stated (*supra*, 296), the fact that the capital and surplus are substantially lower than the District Court's rate base used in its computations does not in any wise impair the validity of using them in the yardstick to arrive at reasonable earnings as known in the business world.

For the three years 1930 to 1932, inclusive, the District Court maintained the 1929 prices in the determination of rate base value, depreciation expense charges and maintenance charges by eliminating from its computations the 10% increase made in 1930 (R. III, 2519). The 1929 prices are clearly excessive (*supra*, 305). On the basis of the reproduction of Appellee's property the purchases during each of the years of the assumed construction period would exceed Appellee's purchases in 1929 to which Western's rate of return for that year had application. Western's operating results arising from the prices used in the revaluing of Appellee's property in 1930, 1931 and 1932 clearly would be as good if not better than those which Western actually had in 1929. To use prices to revalue property in the depression years, when such prices produce for the manufacturer 19.83% on capital and surplus, is fantastic.

We have in this way accounted for every year of the litigation but 1923, when on the District Court's finding the rate of return from Bell business was 6.2% and non-

Bell business 18.9%. For the reason stated (*supra,* 304), such return is excessive.

As Western's current prices in each year of the litigation were entered in the estimates upon which the charge of confiscation for each year was predicated and found, it follows that Western's prices so fixed were excessive.

DISCUSSION AS TO CONTENTION NUMBERED XI.

XI.

WESTERN'S EARNINGS FROM BELL BUSINESS AS FOUND BY THE DISTRICT COURT, ARE UNDERSTATED IN EACH OF THE YEARS 1924 TO 1929, INCLUSIVE.

The District Court's findings understate Western's earnings from Bell business by improperly including as "operating expenses" four substantial items.

Their effect is indicated by the following comparison of the return on capital and surplus which resulted from the District Court's findings, and which would have resulted had the District Court made the four adjustments thereto requested by Appellants in the years 1926 to 1929, inclusive (R. VI, 3959, 3922-5):

	District Court		Adjusted	
	Bell	Non-Bell	Bell	Non-Bell
1926......	16.13	41.05	21.53	33.48
1927......	21.87	32.54	25.90	29.47
1928......	26.47	50.36	29.00	43.78
1929......	19.83	65.75	21.48	56.93
1930......	8.30	15.03	7.17	11.50

A.

Appellee improperly deducted over $7,000,000 from current income of the years 1924 to 1927, inclusive, to make up the excess of original cost of plant in service over their prognosticated reproduction value during the ensuing ten to fifteen years.

Appellee's showing on Western's earnings on Bell business deducted as operating expenses the following amounts to cover what it has designated as "extraordinary depreciation" (R. VI, 3817):

1924	$1,563,000
1925	1,966,000
1926	1,914,000
1927	1,666,000
	$7,109,000

These amounts represent current deductions from current income to make up the excess of original cost over the reproduction cost new estimate of its property in service. Such estimates were predicated upon current forecasts of probable future construction costs. The period of the forecasts for the 1924 and 1925 appropriations was ten years (R. V, 3746W, 3747, 3746S, 3746E) and the period of the forecasts for the 1926 and 1927 appropriations was fifteen years (R. V, 3743-6).

Appellee's showing of Western's rate of return based upon Western's records did not reflect any deduction from the book investment to cover the amount of the shrinkage in value in respect to which the appropriations from income were made. Book cost was used in every year, including 1931 (R. II, 1621; R. I, 363).

Late in the final hearings herein after the deductions from income were questioned by Appellants (R. II, 1621; R. VI, 3917) Appellee produced Western's outside auditors who testified that if such deductions were made as operating expenses, corresponding adjustment should be made to Western's investment account in determining its Rate of Return (R. II, 1384, 1402). Appellee's revised exhibits gave effect to such testimony (R. V, 3133-4). The District Court without discussion adopted Appellee's revised showing (R. III, 2517).

The following discussion proves conclusively that the deductions as operating expenses and from investment are contrary to law.

(1) Western uses the straight-line method of computing annual depreciation expense charges against earnings in such amounts as will distribute evenly through the service life of the property the ENTIRE ORIGINAL COST of property in service less salvage (R. I, 356). By such method the integrity of the investment on the basis of original cost is preserved in full (R. VI, 3755-61). Any additional recovery from earnings pending the retirement of the property on the ground that the original investment will not be covered constitutes a repudiation of the basis on which the depreciation rate was computed, and results in the unjust enrichment of Western to the extent of the excess charge.

(2) Nor can such deductions be justified on the claim of a special reserve to offset a cheaper replacement of existing plant (R. VI, 3782). Such claim is inconsistent with the basis upon which the straight-line method has been justified by Appellee and the Bell System: they deny that the depreciation expense charges are to provide replacements (R. VI, 3755-61, 3781-2, *infra,* 436).

(3) The deductions from average investment in determining rate of return do not undo the effect of the improper deductions as operating expenses, they merely spread them over a longer period of time* (Appendix, pp. 71, 84); their effect is to distort the picture upon which the charge of confiscation is predicated in each year of the period involved and to distort the return on investment which Western's investors in fact received each year. In addition, the District Court's treatment prejudices Western's showing by comparison with other manufacturers on the basis of the ratio of net earnings to sales (*supra,* 285).

B.

Appellee improperly deducted $7,275,000 from current income for the years 1925 to 1927, inclusive, to make up underaccruals of the years prior to 1923 for its pension fund liability.

At least since 1906 Western made pension fund accruals to a reserve; at the end of 1923 Western established such accruals on an actuarial basis (R. I, 348). According to its actuarial study it determined that as of December 31, 1923, the minimum required fund should have been $10,962,000 instead of $2,000,000 in principal. To make up the deficit, Western appropriated from the earnings of the period 1925 to 1927 the sum of $7,275,000 in excess of the accruals which it appropriated to provide for the pension fund liability required for each such year, in accordance with its actuarial computations (R. VI, 3917):

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*The significance of the forecasts of 1924 to 1927 and of the action taken thereon in relation to the failure by Appellee and by the District Court to value Appellee's property in the light of future conditions are discussed (infra, 349).

1925	$1,663,000
1926	2,905,000
1927	2,707,000
	$7,275,000

Appellee's original showing of Western's earnings at the final hearings was predicated upon such overaccruals as proper deductions in the years when made (R. IV, 2916-19). After Appellants questioned Appellee's failure to redistribute the accruals over the years in which the deficiency was supposed to exist (R. II, 1620; R. VI, 3909-10), Appellee presented another actuarial study (R. IV, 2977) based on the testimony of an insurance company actuary which showed an overaccrual in the three years of $1,066,000, $2,388,000, and $2,192,000, respectively, aggregating for the three years $5,516,000. This same study showed substantially larger underaccruals for the period prior to 1925 than that shown in Western's previous study (R. IV, 2977), and substantial underaccruals for the period subsequent to 1927 and a deficit in the pension fund reserve as of the end of 1931 (R. IV, 2977). Appellee made no redistribution of the overaccruals shown by either study, in its revised showing of Western's earnings from Bell business* (R. IV, 2978); the District Court followed Appellee's showing.

The charge to current operating expense of the overaccruals in the years when made is clearly wrong. (1) Proper distribution of operating expense in each year of the litigation is required to permit determination of the issue of the reasonableness of Western's prices in the uses made of them by Appellee (*supra,* 236). (2) The accounting practice of making up deficiencies in past pension fund accruals through appropriations from current earnings of the future period is not the practice followed by other manufacturers with whom the District Court compared Western in respect to their comparative earning record (R. II, 1621). In the case of the Dupont Company, the surplus was used to make up such deficiency to the extent of $8,600,000 (R. II, 1620; R. VI, 3998). (3) The computations upon which the claimed deficiency was established to require overaccruals were unfair and defective. The deficiency was computed in each study on the basis that the pension fund accruals would have a 4% earning rate in spite of the fact that Western employed such funds in the business which produce the earning rate far in excess thereof (*supra,* 237). The earnings on the pension fund, at the rate of earnings earned during the years of the studies would have made up the claimed deficit in whole or in large part. And the balance of such deficit, if any, could have been absorbed by the excess pension fund reserve in the light of the depression with its change in labor wage scale and reduction in personnel (R. I, 383).

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*The adjustment for pension fund accruals of 1924 found by the District Court (R. III, 2518) was made on the basis of Appellee's concession that it had included $120,000 accruals applicable to non-Bell business in Bell System operating expenses.

C.

Appellee improperly deducted $1,831,000 from current income of 1928 to cover depreciation on machinery for the years 1924 to 1927, inclusive, in excess of the amount charged during such years.

From 1924 to 1927, Western's depreciation reserve against machinery ranged from 43% to 45%. This depreciation reserve had been built up through a depreciation rate of 7½%. In 1928 Western raised the current depreciation rate on machinery from 7½% to 10%, and also appropriated an additional $2,000,000 to make the 10% rate retroactive for the period 1924 to 1927, inclusive. The entire $2,000,000, however, was charged against the 1928 earnings (R. I, 363). Appellee's showing on Western's rate of return from Bell business and the District Court's findings based thereon gave effect to $1,831,000 as the portion applicable to such sales (R. VI, 3917). The 7½% rate was in conformity with the general practice of manufacturing companies, as shown in the case of the eighty-eight companies which the District Court used as a basis of comparison in respect to the reasonableness of Western's earnings (R. II, 1677; R. VI, 3985). The $1,831,000 deduction should not be allowed as an operating expense.

D.

Appellee improperly deducted against current income of the years 1924 to 1929, inclusive, $4,100,000 for depreciation on tools, furniture and fixtures in excess of the yearly amounts allowed by the Internal Revenue Department.

The practice of Western has been to so charge depreciation on small tools, furniture and fixtures as to maintain the reserve at 95 per cent to 100 per cent for each account (R. V, 3674B). Appellants spread the charge over a four and six-year life respectively, instead of charging off the entire purchases in the year in which made, as is the practice of Western. Appellants' adjustment conforms to the amounts of depreciation allowed Western by the Internal Revenue Department (R. II, 1622). Five of the eighty-eight companies with whom Appellants compared Western's earnings are reported as determining their depreciation charges "in conformity with the rulings of the Internal

Revenue Department'' (R. II, 1649; R. VI, 3895)). Appellants' adjustment had the effect of increasing the net income in ten of the years in the period 1916 to 1930, inclusive, by an aggregate amount of $10,015,000 (R. VI, 3917), and of decreasing the same in five years by $1,295,000 (R. VI, 3917). In 1929 the adjustment increased earnings by $4,334,000; the increases of the years 1924 and 1928 offset the decreases of the years 1924 to 1927, inclusive.

DISCUSSION AS TO CONTENTION NUMBERED XII.

XII.

THE DISTRICT COURT'S FINDINGS RENDER IMPOSSIBLE THE DETERMINATION OF THE EXTENT TO WHICH WESTERN'S EXCESSIVE RETURNS ENTER INTO THE ESTIMATES UPON WHICH THE CHARGE OF CONFISCATION FOR EACH YEAR OF THE LITIGATION WAS SUSTAINED.

A.

The per cent of net earnings to Bell sales as found by the District Court does not and cannot measure the extent to which the prices used in the District Court's findings were excessive.

Before the percentage of net earnings to Bell sales, as found by the District Court, could have probative value to determine the maximum extent to which Western's net earnings could be considered as entering into the estimates of Fair Rate Base Value, Depreciation Expense and Maintenance Expense, it would be necessary to determine:

(1) the extent to which the net earnings from Bell business as found by the District Court have been unduly burdened by

(a) Appellee's separation, on the basis of standard shop cost of sales, of operating expenses between Bell and non-Bell business (*supra*, 247);

(b) Appellee's separation of Western's Development and Research expenses between Bell and non-Bell business (*supra*, 271);

(c) Appellee's improper loading of operating expenses by four substantial deductions from gross income (*supra*, 307).

Items (a) and (b) cannot be determined from the record.

(2) The amount of material entering the gross additions and retirements of each year beginning with 1912, and entering into the Reproduction cost estimates of each of the years of the litigation as the basis for Fair Value. Such determination is impossible because no division of material and labor was made of the plant in service in 1911 and of the retirements thereafter to June 30, 1923, as parts of the reproduction cost estimate as of that date and for each year thereafter (*infra*, 333).

B.

The District Court's findings do not permit determination of the extent to which the depreciation expense allowance and rate base value as found by it were inflated by the excess profits of Western included in the prices used in arriving at such findings.

Without a determination of the net earnings from the Bell business of the material covered by each reproduction cost estimate it is impossible to determine the extent to which the excessive earnings enter into such estimates on which the District Court's findings of Depreciation Expense Charges and Rate Base Value were based (*infra*, 316, 378).

RATE BASE VALUE.

Preliminary Statement.

1. The Chicago intrastate rate base value as found by the District Court was higher in every year of the period 1923 to 1931, inclusive, than the corresponding average outstanding capitalization (stock, surplus and funded* debt). Such excess for the period 1923 to 1929, inclusive, ranged from $55,000,000 to $68,000,000 per year and represented from 52% to 83% of corresponding outstanding capitalization. Such excess for the year 1930 was $54,700,000, representing 41% of corresponding outstanding capitalization, and was $44,100,000 in the year 1931, representing 33% of corresponding outstanding capitalization. It should be borne in mind in this connection that in every year of the litigation the average outstanding capitalization corresponds to the same year's average book value of fixed plant, construction work in progress, materials and supplies, and working cash capital, as claimed by Appellee and found by the District Court, less the amount of the recorded depreciation reserve account (Appendix, pp. 87-8; R. VII, 4223-4).

2. The Chicago intrastate rate base value as found by the District Court exceeded Appellee's entire company average outstanding capitalization (stock, surplus and funded debt) in each of the years 1923 to 1927, inclusive. In 1928 and 1929 the Chicago intrastate base value represented

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*Funded debt as used herein includes bonded debt, notes to pension fund trustee, advances from System Corporations and Bell Realty Trust, stock installments on which interest was paid and other small miscellaneous items (R. V, 3083-90; R. VIII, 4457-61; R. VI, 4009-19).

97% and 92%, respectively, of Appellee's entire company capitalization, and in 1930 and 1931 represented 84% and 77% of such corresponding capitalization. But the capitalization applicable to Chicago Intrastate business ranged from 58% to 63% of Appellee's entire company capitalization during said period (Appendix, p. 87).

What the District Court Did.

The District Court found the fair rate base value for the entire Chicago Division and then allocated a part thereof to Chicago intrastate business. The allocation is not in issue.

Period 1923-1929, Inclusive.

The District Court found the fair rate base value for each of the years 1923 to 1929, inclusive, on the basis that:

(1) Appellee's estimates of reproduction cost new for each year are "substantially correct" (R. III, 2504).

(2) "the fair rate of depreciation to be applied to the reproduction cost new in determining the valuations for rate making purposes" is 16% for the years 1923 to 1928, inclusive, and 15% for the succeeding years (R. III, 2515);

(3) "the amount to be added on account of going value to the reproduction cost new of the physical property of the plaintiff in determining valuations for rate making purposes is eight per cent thereof" (R. III, 2516);

(4) the amounts of working cash capital, materials and supplies, and average construction work in progress as presented by Appellee are correct and in respect to which there is no issue (R. III, 2505);

(5) the fair rate base value for the entire Chicago area ranged from $130,000,000 to $200,000,000 per year—such

amounts represented the sum total of the following: the average of reproduction cost new estimate of the property as to the beginning and end of each year, going value, working cash capital, materials and supplies and construction work in progress, less the depreciation percentages determined for each of the years; minus or plus amounts ranging from $434,000 to $5,278,000 per year (Appendix, pp. 86, 93). No explanation for these minus or plus adjustments appears in the Opinion.

Period 1930-1931, Inclusive.

The fair rate base value for the entire Chicago area, as found by the District Court, was $205,000,000 for 1930 and $197,500,000 for 1931, respectively. Such amounts were determined on the same basis as those for the previous years subject to two adjustments: (1) a 10% cut from Appellee's reproduction cost new estimate of 1930 and 1931, to offset, as the District Court claimed, the 10.2% increase in prices by Western on November 1, 1930, which continued thereafter, and which prices were used by Appellee in such estimates (R. III, 2508); and (2) an unexplained deduction of $319,800 for 1930 and an addition of $43,500 for 1931 (Appendix, pp. 86, 93).

1932.

The District Court found the fair rate base value to be $185,000,000, although Appellee made no presentation covering that year, and although the record closed on July 1, 1932 (R. III, 2515). The District Court stated that it intended the 1932 valuation to reflect Western's 1929 prices.

To these findings, Appellants assigned error (R. III, 2563-7).

Appellants' Position.

Appellants' position is:

(1) On the basis of Appellee's presentation and the record no evidence appears upon which a valid finding can be made of the undepreciated value of its property in service of any greater value new than appears on Appellee's books for each of the years of the litigation (*United Fuel Gas Co., et al.* v. *Railroad Commission of Kentucky*, 278 U. S. 300, at 318; R. III, 2458-9).

(2) A rate base giving effect to such book cost of property is more than the fair value of property in each such year on which Appellee is entitled to a return.

(3) The rate base value for each of the years of the litigation should embrace the total of the following:

(a) the book cost of fixed plant less the amount of the depreciation reserve account which gives effect to the depreciation allowances as determined for operating expense purposes;

(b) construction work in progress, materials and supplies, and working cash capital as found by the District Court;

(c) the amount of Going Value allowed by the Commission's Order of August 16, 1923.

On the basis that the depreciation reserve account used in the computations gives effect to the 1923 Order on depreciation expense charges, Appellants claim and have used herein as the proper intrastate rate base value for each year of the litigation the following (Appendix, p. 88, *infra*, 498).

1923	$ 70,303,280
1924	81,284,072
1925	92,377,047
1926	103,940,975
1927	117,958,532
1928	131,125,170
1929	142,367,088
1930	154,030,558
1931	158,813,267

In support of their position, Appellants offer the following:

SUMMARY STATEMENT OF APPELLANTS' CONTENTIONS.

I. The District Court's findings of fair rate base value produce fantastic results.

II. Appellee's method could not possibly produce, for any year of the litigation, a reproduction cost new estimate of its telephone plant, exclusive of overheads.

A. Appellee's use of the book cost of gross additions and retirements as the base to which it applied its index numbers, preserves in its result the higher costs (1) of manufacturing materials and (2) of construction labor, which prevailed prior to various improvements therein, and (3) of piecemeal construction.

B. Appellee's method of computing its material index assumes but does not prove that Appellee's gross additions each year beginning with 1911 consisted of the identical items and quantities as the selected items and quantities of the 1923 plant accounts which Appellee used in its computations.

C. Appellee's method of computing its labor index assumes but does not prove that Appellee's gross additions were constructed each year from 1911 to 1923 by a gang makeup corresponding to the theoretical gang makeup based on the average labor conditions of the entire period 1911 to 1923, inclusive, considered as a single unit of time.

D. On the record it is impossible to determine the extent of distortion produced by Appellee's use of book cost of gross additions and retirements and index numbers to arrive at its reproduction cost new estimate.

III. The reproduction cost new estimates of telephone plant can not measure the fair value new of such property.

A. The District Court's findings of fair value new are inconsistent with its findings on Western's Profits and Prices.

B. The basis upon which Appellee made its presentation of Western's Profits and Prices precludes the possibility of using Western's current prices in the reproduction cost new estimates as fair value.

IV. Appellee's reproduction cost new estimates of all physical property for each of the years 1923 to 1929, inclusive, and those for the years 1930 and 1931 as adjusted, did not make an honest and intelligent forecast as to the probable prices and wage levels during a reasonable period in the immediate future.

A. Western's current prices used in each reproduction cost new estimate from 1923 to 1929, inclusive, and for 1930 and 1931, inclusive, as adjusted by the District Court, cannot represent fair value determined in compliance with the *McCardle* Case.

B. The District Court's acceptance as fair value of the average of the beginning and end of the year reproduction cost new estimates of buildings is contrary to its findings on Western's Profits and Prices.

C. Foreseeable conditions indicating cheapening of plant and reduction in prices were disregarded by the District Court.

V. The overhead charges included in Appellee's reproduction cost new estimates for each year were improperly determined to form the basis for a valid finding of fair value new.

A. Appellee is not entitled to capitalize overheads which it charges as operating expense, under the special conditions of this record.

B. Appellee's method of computing the theoretical overheads unjustly enriches its investors on the additional capital invested during the period of the litigation.

C. Appellee's inclusion of theoretical overheads in excess of book overheads on the basis that the property will be rebuilt is a repudiation of the basis on which its current price estimates of the telephone plant were predicated.

VI. The rate base value which is based on Appellee's book cost of property is more than the fair value thereof on which Appellee is entitled to a return.

VII. The District Court's method of computing Going Value as part of the rate base was improper and unduly burdened the telephone service charges during the period of the litigation.

A. The District Court's method of computing Going Value unjustly enriches Appellee's investors on the additional capital invested during the period of the litigation.

B. The use by the District Court of Appellee's reproduction cost new estimate of each year as the base to which it applied the 8% figure to determine Going Value, renders the amount thereof arbitrary and grossly excessive.

VIII. The District Court's findings on fair rate base value should have deducted from the reproduction cost new of the depreciable property of each year a percentage thereof equal to the percentage which the amount of Appellee's depreciation reserve was of the undepreciated book cost of such property as of the same date.

A. That portion of the depreciation reserve which represents the advance contributions made prior to and during the period of the litigation, inclusive, for anticipated depreciation on contemplated future additions to central office equipment and buildings, should be deducted from the rate base to prevent the unjust enrichment of Appellee.

B. The use by Appellee of the straight line method of determining depreciation expense charges on property in service involves the principle that it has no right to a return on the amount of property cost which is represented by the balance in the depreciation reserve.

C. Appellee's method of computing the reproduction cost new of its property to arrive at the rate base on which it is entitled to a return requires that it should be reduced by the percentage thereof equal to the percentage which the amount of Appellee's depreciation reserve was of the undepreciated book cost of such property as of the same date.

D. The District Court's finding on the per cent of the reproduction cost new which should be deducted in arriving at the fair rate base value is a compromise fiat and has no support either in law or in fact.

DISCUSSION AS TO CONTENTION NUMBERED I.

I.

THE DISTRICT COURT'S FINDINGS OF FAIR RATE BASE VALUE PRODUCE FANTASTIC RESULTS.

In the *Missouri Rate* Cases (230 U. S. 474, at 501-2, 507) this Court was asked to find confiscation on a fantastic rate base—40% in excess of the utility's outstanding capitalization—such value having been calculated by the claimed application of that part of the rule of *Smyth* v. *Ames*, which fixes the rate base as the "fair value" of the property. In view thereof this Court there insisted on

> "clear and convincing proof that the value actually existed, and that the different items of property were estimated respectively by correct methods and in accordance with the proper criteria of value." (*Ibid*, at 501.)

The District Court's finding on fair rate base value produces in the instant case a result in Appellee's favor, as pointed out above (*supra*, 316), more fantastic than that shown in the *Missouri Rate* Cases and the same character of proof there required should be made applicable in the instant case.

The breakdown of the District Court's Finding of Rate Base Value is reproduced in the Appendix (p. 93). It shows:

(1) *Physical Plant Exclusive of Overheads.*

A. Plant Other than Land, Buildings and General Equipment—Referred to herein as Telephone Plant.

The increase in valuation of telephone plant over the corresponding book cost thereof ranges from $25,300,000 in 1923, representing 30.1%, to $6,800,000 in 1929, representing 4.5% of such book costs.

On January 1, 1919, the book cost of such plant was $52,510,213 (R. VII, 4076(a)), to which were added gross additions of $47,322,064 by 1923 and $124,024,889 additional by the end of 1929 (R. IV, 2776(a)-(b); R. VII, 4076(b)).

The valuation of telephone plant in 1930 and 1931 before giving effect to the District Court's reduction to offset the increase in Western's prices after 1929, exceeded by $8,000,000 and $8,900,000, respectively, the corresponding book cost of each such years. Such increases represent 5% and 5.5% of such respective book costs. After giving effect to such reduction, the valuation for each of such years was less by $1,700,000 and $10,360,000 than the corresponding book costs, or 1.1% and 6.4% thereof respectively. The gross additions were $18,900,000 for 1930 and $16,500,000 for 1931 (R. IV, 2776b-2677).

B. Buildings.

The increase in valuation of buildings over the corresponding book cost thereof ranges from $4,500,000 in 1923, or 51.5% thereof, to $4,900,000 in 1929, or 38.6% thereof. On July 31, 1911, the book cost of buildings was $2,300,000 (R. VIII, 4495) which increased to $8,487,000 by December 31, 1918 (R. VII, 4076(a)), to which latter amount were added gross additions of $1,030,411 by 1923, and $4,795,891 additional by the end of 1929 (R. IV, 2776(a)-(b); R. VII, 4076(b)). The increase in valuation of buildings over the corresponding book cost thereof in 1930 was $4,600,000 and in 1931 was $1,400,000, or 33.6% and 10.2% thereof respectively. The gross additions to buildings were for 1930 $1,435,000 and for 1931 $71,000 (R. IV, 2776b-2677).

C. Total Physical Property.

The increase in valuation of total physical property over the corresponding book cost ranges from $30,200,000 in 1923, representing 33%, to $13,000,000 in 1929, representing 7.8% of such book cost. The increase in valuation, before the District Court's adjustments, represented 7.9% in 1930 and 6.3% in 1931 over corresponding book costs thereof respectively. After the District Court's adjustments, such valuation was $4,200,000 more in 1930 than corresponding book costs, representing 2.4% thereof, and was less by $7,800,000 in 1931 than corresponding book costs, representing 4.3% thereof.

(2) *Overheads.*

The theoretical overheads in excess of the book overheads ranged from $16,000,000 in 1923 to $21,900,000 in 1929, to $23,100,000 in 1930 and to $22,900,000 in 1931 before the District Court's adjustments, and to $21,300,000 in 1930 and $19,400,000 in 1931 after the District Court's adjustments. The excess of theoretical overheads over book overheads ranged from 419% to 175% thereof.

(3) *Relation of Increase in Physical Plant Valuation to Increase in Overheads.*

In 1923 the increase in valuation of physical property is 89% greater than the increase in overheads. Beginning with 1927 the increase in overheads exceeds the increase in valuation of physical property. By 1929 the increase in overheads is 68% greater than such increase in valuation of physical property. In 1930 and 1931 the increase in overheads, before the District Court's adjustment, is 66% and 99%, respectively, greater than such respective increases in physical property. On the basis of the combined increases representing 100%, each of these classes of increases represents the following percentage of such total:

	Overheads	Physical Property
1923	34.7	65.3
1924	36.5	63.5
1925	39.9	60.1
1926	45.8	54.2
1927	53.7	46.3
1928	59.8	40.2
1929	62.7	37.3
1930 (before D.C. adj.)	62.4	37.6
1930 (after D.C. adj.)	83.6	16.4
1931 (before D.C. adj.)	66.5	33.5
1931 (after D.C. adj.)	167.0	67.0*

*Red.

(4) *Going Value.*

Going Value ranged from $11,300,000 in 1923 to $16,900,000 in 1929; to $17,000,000 in 1930; and to $16,400,000 in 1931, and represented from 16.5% to 12.1% of corresponding outstanding capitalization (stock, surplus and funded debt).

(5) *Relation of Separate Classes of Increases to Total Increase in Valuation.*

In 1923 the increase in valuation of physical property represented $30,200,000 of the total increase in valuation of $53,200,000. Beginning with 1925 the increase in overheads and Going Value of $31,400,000 exceeded the increase in physical property valuation by $4,000,000. By 1929 the increase in valuation of physical property represented only $13,000,000 out of a total increase of $48,300,000. In 1930 the increase in valuation of physical property, after the

District Court's adjustment, represented only $4,200,000 of the total increase in valuation of $42,200,000. In 1931 the physical property was valued, after giving effect to the District Court's adjustments, at $7,800,000 less than the book cost thereof, although the finding of fair value exceeded the book cost by $28,000,000.

DISCUSSION AS TO CONTENTION NUMBERED II.

II.

APPELLEE'S METHOD COULD NOT POSSIBLY PRODUCE, FOR ANY YEAR OF THE LITIGATION, A REPRODUCTION COST NEW ESTIMATE OF ITS TELEPHONE PLANT, EXCLUSIVE OF OVERHEADS.

What Appellee Did Not Do.

Appellee offered appraisals of spot reproduction new values of land and buildings (R. I, 63-4). General Equipment was appraised at book cost (R. IV, 2674(a)).

Appellee's reproduction cost new estimate for each year of telephone plant was not based upon a current inventory and appraisal or upon any inventory or appraisal subsequent to 1911 (R. I, 25-6). The 1911 appraisal, for such property, aggregated $22,113,328 (O.R. IV, 1158). The amount of corresponding property covered by Appellee's reproduction cost new estimates of December 31, 1923, aggregated $109,708,255, and as of December 31, 1931, $173,495,428 (R. IV, 2600, 2660-1; Appendix, p. 93). The present discussion deals only with such telephone plant.

What Appellee Did.

Appellee presented reproduction cost new estimates of the property as of June 30, 1923 (R. IV, 2597-8) and as of December 31 of each year from 1923 to 1931, inclusive (R. IV, 2598-2681). These estimates, exclusive of overheads, were results obtained by adjusting the 1911 appraisal and the book cost of all subsequent gross additions and retirements to the date of each of the current estimates by means of index numbers purporting to measure the changes in cost levels. These estimates, exclusive of overheads, represented the following percentages in excess of corresponding book costs (Appendix, p. 93):

1923	30.15%
1924	27.96
1925	22.10
1926	15.12
1927	9.17
1928	6.02
1929	4.54
1930 (before D. C. Adj.)	5.02
1930 (after D. C. Adj.)	1.10*
1931 (before D. C. Adj.)	5.49
1931 (after D. C. Adj.)	6.35*

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*Red.

Fundamental Error in What Appellee Did.

Appellee's reproduction cost new estimate of telephone plant, exclusive of overheads, proceeded upon the following assumption: that the property was put together historically but that during its entire life prices had been those current at the date of revaluation and that actual cost with such adjustment in price level would produce the reproduction cost new of such property as of such date.

Such procedure could not produce the intended results.

DISCUSSION.

A.

Appellee's use of the book cost of gross additions and retirements as the base to which it applied its index numbers, preserves in its result the higher costs (1) of manufacturing materials and (2) of construction labor, which prevailed prior to various improvements therein, and (3) of piecemeal construction.

(1) Appellee's reproduction cost new estimates of each year of the litigation preserve in their result the higher costs of manufacture which entered into the book cost of materials purchased prior to the improvements in Western's manufacturing methods, during the period beginning with 1911 to the date of each such estimate.

The District Court found that Western maintains a group of engineers who plan its manufacturing operations and constantly study the problem of cheapening its products (R. III, 2507). For the period 1916 to 1931, inclusive, the charges to Western's operating expense to cover their activities exceeded $13,000,000 (R. I, 510). The savings realized from the construction work are reflected in the eight annual reductions in Western's prices during the period 1921 to 1931, inclusive (R. VIII, 4512, 4561, 4564, 4567, 4573, 4581, 4585; R. III, 2508).

Appellee's justification for the American Company's Development and Research expense was based, in part, on the claim that its development work led to a cheapening of the costs of the products through improvements in the art, leading to new types of products and also to cheaper costs of producing existing products (R. I, 611-2).

These improvements made through the work of both companies in respect to existing products are reflected *only* in those purchases made subsequent to the dates of such improvements. Appellee's use of the book cost of gross additions each year gives effect to the results of such improvements only for additions made subsequent thereto (*Chesapeake and Potomac Telephone Co. of Virginia* v. *Commonwealth of Virginia*, 147 Va. 43 (1927)). Appellee's annual purchases from Western chargeable to its construction accounts for the years 1923 to 1929, inclusive, ranged from $8,100,000 to $17,300,000 and for 1930 and 1931 were $16,500,000 and $8,800,000, respectively (R. III, 2516). Nothing said by this Court in the *McCardle* Case (272 U. S. 400 (at 417-8)) in respect to the necessity for the reproduction cost estimate having application to the identical and not to a substitute plant, requires the adherence to such earlier and more costly methods of manufacture.

(2) Appellee's reproduction cost new estimates of each year of the litigation preserve in their results the higher labor costs which entered into the book cost of gross additions made prior to the introduction of new and more economical construction methods beginning with 1911 to the date of each such estimate.

According to Appellee much of the American Company's Development and Research work since 1919 has been to develop improved and more economical methods of construction, including, among others, pole lines, manholes and conduit, and to improve going efficiency for all classes of construction (R. III, 2248-51). The books reflect such improvements only to the extent of the gross additions made subsequent thereto.

(3) Appellee's reproduction cost new estimates of each year of the litigation preserve in their results the higher costs which are inherent in the extension of the small amount of plant in 1911 to meet the current requirements by piecemeal additions thereafter to the date of each such estimate (*Chesapeake and Potomac Telephone Company of Virginia* v. *Commonwealth of Virginia*, 147 Va. 43, at 52, 54 (1927).

Appellee's reproduction program contemplates that no part of the plant will be cut into service until the fourth year after the commencement of construction; 19.4% of the entire plant would be free of adjustment to the necessity or convenience of the service (R. IV, 2662a-70). Appellee's reproduction program contemplates also that after the commencement of service in the fourth year, a large proportion of the plant will be spare plant of no immediate use in the service (R. I, 24; O.R. II, 739; R. IV, 2662a-70). Obviously, under such a program, construction can proceed with an economy which it would be impossible to duplicate during the period of expanding operations which tax the capacity of existing facilities and require additions thereto to meet them. The latter conditions in the book costs involve a much greater proportion of small, discontinuous, isolated or localized jobs, the necessity for which would not exist in the reproduction program (R. II, 1476, 1488).

B.

Appellee's method of computing its material index assumes but does not prove that Appellee's gross additions each year beginning with 1911 consisted of the identical items and quantities as the selected items and quantities of the 1923 plant accounts which Appellee used in its computations.

What Appellee Did.

Appellee did not price out, on the basis of the prices current at June 30, 1923, the plant items making up the gross additions of each year prior to such date. Appellee dealt with the dollars of such gross additions to adjust them to the cost level of June 30, 1923, by means of index numbers which made use of representative plant items as of June 30, 1923.

Appellee developed an index of material prices and of labor costs, together with the ratios between them, for the purpose of adjusting, by means thereof, the book cost of gross additions and retirements of each year beginning with 1911 to the cost level of June 30, 1923. For each reproduction cost new estimate subsequent to June 30, 1923, Appellee developed similar index numbers for the purpose of converting the June 30, 1923, estimate and all gross additions and retirements subsequent thereto to the reproduction cost level prevailing at the end of each year thereafter (R. II, 1440). Obviously any error in the June 30, 1923, estimate will be carried over into each subsequent estimate.

It is essential to bear in mind, therefore, that the fatal errors shown herein which invalidate the June 30, 1923, reproduction cost new estimate invalidate as well the esti-

mate for each subsequent year of the litigation and render the yearly rate base predicated thereon fatally defective.

Material Index.

For the estimates subsequent to June 30, 1923, the items and quantities used in the preparation of the indices were based upon the items and quantities actually placed in service in each year (R. I, 16). Appellee, however, used a different method of computing the material index for the June 30, 1923, estimate. For the 1923 estimate Appellee selected items and quantities of the many kinds of product which comprised each plant account* on June 30, 1923, which items and quantities are referred to herein as "1923 specified items and quantities." These items and quantities Appellee determined were representative of the plant as it stood on that date (R. I, 15). For the one plant account "Central Office Telephone Equipment" Appellee selected eighteen different kinds of items which it considered representative of the account (O.R. IV, 1109).

Appellee computed for each of the years 1911 to 1923 the prices of such 1923 selected quantities of specified items in accordance with the following procedure:

(a) If Appellee's records revealed that it had in any year or years purchased such identical items, Appellee used the purchase price paid by it to price out the 1923 specified items and quantities to reflect the price thereof as of the date of such purchase.

(b) If Appellee's records did not show purchases, Appellee used Western's quoted prices of prior years to price out the 1923 specified items and quantities to reflect the price thereof as of the date of such quotation.

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*Under the Uniform System of Accounts prescribed by the Interstate Commerce Commission, each "plant account" covers a definite class of plant, such as Central Office Telephone Equipment, Exchange Pole Lines, Toll Underground Cable, etc. (R. VIII, 4467).

(c) For any 1923 specified item which had not been manufactured in prior years, Appellee estimated what such item would have cost in such prior period, had it been manufactured (R. I, 30, 40-1, 49).

Appellee totaled for each year from 1911 to June 30, 1923, the current prices, determined in the above manner, of the 1923 specified items and quantities, and computed the ratio between the yearly total in each case and the corresponding total as of June 30, 1923. Appellee considered such ratio as the measure or index of the variation in price between each of these prior years and June 30, 1923, of the quantities and items which actually were added to the plant during each such year.

Appellee determined a labor index in the manner described below (*infra*, 337) and also determined from its construction records the proportions of material and labor costs each year in each construction account covering gross additions. It then weighted the material and labor indices so determined to arrive at the composite index which Appellee considered was the index or measure of the variation in construction costs between each of the years prior to June 30, 1923, and that date (O.R. IV, 1172-4).

Fundamental Error in application of Material Index (as part of Composite Index) to Gross Additions of the period prior to June 30, 1923.

Appellee applied the composite index number as above determined to the book cost of the gross additions each year beginning with 1911 and considered that by so doing it had arrived at the cost of reproducing such gross additions at the cost level of June 30, 1923.

Appellee's conclusion assumes that the reproduction cost new estimate which is produced by pricing out for each year from 1911 to June 30, 1923, the specific items in the specific quantities selected by it from the 1923 plant accounts would also be produced (a) if the actual gross additions in each of said years beginning with 1911 contained different items than those of the 1923 plant; (b) if such gross additions contained different quantities of the same items as those of the 1923 plant; and (c) if such gross additions were subject to variations in relative price changes covering the various items making up each of Appellee's plant accounts in each year. By "relative price changes" we mean that where Western increases or decreases its prices from time to time, the per cent of increase or decrease respectively will not be the same for the different items making up each plant account at the time of such price change.

That the difference in items will substantially affect the result, needs no argument. That the difference in quantity will substantially affect the result, even though there is no difference in items and no change in the relative price level, is illustrated by two examples in the Appendix (Appendix, pp. 89-92). These examples show that a slight change in the relative quantities of the same three selected items—that is, a change from quantities of two, five and three to four, four and two respectively—will change the result over 10%, even though the identical items are used, and even though there is no change at all in the relative price level between the three items.

If, however, the relative price level in the above case were also changed so that the price level of Item No. 2 is lower than Item 1, and the price level of Item 3 lower than Item 2 to the extent of approximately 10% in each case, the result will be affected by over 13%.

The changes in result of 10% to 13% upon the basis of the above slight variation in quantity and in relative price level would be substantially modified if the variation in quantity or in price level were changed to a greater degree. The striking examples reproduced in the Appendix show that a combination of such variables is possible which may produce an absurd result, towit: that prices apparently decreased from 1912 to 1923 (Appendix, pp. 89-92).

The record shows that the items are not the same for each year beginning with 1911 (O.R. III, 979-995); that the quantities of identical items are not the same for each year beginning with 1911 (O.R. II, 653), and that the relative variation in price level as between items making up each of the plant accounts is not the same beginning with 1911 (O.R. IV, 1169-70; R. VIII, 4941).

Appellee's application of material index numbers on the basis of the assumptions made by it in connection therewith is fatally defective.

C.

Appellee's method of computing its labor index assumes but does not prove that Appellee's gross additions were constructed each year from 1911 to 1923 by a gang makeup corresponding to the theoretical gang makeup based on the average labor conditions of the entire period 1911 to 1923, inclusive, considered as a single unit of time.

What Appellee Did.

Appellee did not select, as in the case of material, any gang makeup representative of its practice at June 30, 1923, or at any other specified time. Instead Appellee developed a theoretical gang makeup which was computed in the following manner:

Appellee found the number of each class of workmen, such as linemen, groundmen, cable splicers, and foremen, shown by the construction department payrolls during each of the years 1911 to June 30, 1923, inclusive. Appellee, however, drew no distinction between the kind of work performed by them, whether construction or maintenance, and drew no distinction between the type of plant on which they worked, whether pole lines, cable, conduit, etc. (R. I, 37).

Appellee determined for each year the number of each class of workmen, and determined how many of each class would be required to provide a theoretical gang makeup consisting of one foreman and the same proportion of each such class as the proportion which the total number of each class bore to the total number of foremen. Appellants direct attention to the following table illustrating the theoretical gang makeup used by Appellee for the pole line account (R. I, 37):*

	Number on Payroll			Average Number per Gang		
Year	Foremen	Linemen	Groundmen	Foremen	Linemen	Groundmen
1911..........	72	136	136	1.0	1.9	1.9
1912..........	51	110	128	1.0	2.2	2.5
1913..........	67	172	151	1.0	2.6	2.3
1914..........	86	164	162	1.0	1.9	1.9
1915..........	56	126	123	1.0	2.3	2.2
1916..........	47	114	171	1.0	2.4	3.6
1917..........	51	102	146	1.0	2.0	2.9
1918..........	16	66	12	1.0	4.1	.8
1919..........	15	61	10	1.0	4.1	.7
1920..........	16	51	12	1.0	3.2	.8
1921..........	14	45	5	1.0	3.2	.4
1922..........	16	56	20	1.0	3.5	1.2
1923..........	15	60	28	1.0	4.0	1.9
Total..........	522	1,263	1,104			
Aver. per gang	1.0	2.4	2.1			

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*Appellee's reproduction cost new witness testified:

"I took the number of foremen, the number of linemen and the

Appellee determined that the theoretical gang makeup for its index number calculations should consist of one foreman and the average number of the other workmen per gang determined by dividing the total number of workmen during the entire period as shown above by the total number of foremen. In the case of pole lines cited above, such typical gang consisted of one foreman, three linemen, and two groundmen (R. I, 37). Appellee assumed that this theoretical gang makeup for pole construction would be representative of and would reflect the actual construction gangs which did in fact construct the pole lines built in each of the years 1911 to 1923, inclusive.

Appellee, on such assumption, merely priced out the labor cost of this typical gang for each plant account on the basis of the average wages paid in all plant accounts during each of such years for each class of workmen composing it. It then computed the ratio between the labor cost of the theoretical gang for each such year to the labor cost of this same theoretical gang on June 30, 1923. Appellee considered such ratio as the measure or index of the variation in labor cost of the work done between each of these prior years to June 30, 1923 (O.R. II, 659).

Appellee's conclusion covering the labor index is predicated upon assumptions similar to those which it made in connection with its material index, to-wit: that the reproduction cost new estimate which is built up by pricing out for each year from 1911 to June 30, 1923, the specific types

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number of groundmen in the employ of the Company for the period of 1911 to 1923, inclusive, which I had for every quarter as I just described. These were general construction men who did line work, cable work and wire work and what not; they also did some maintenance work. I have before me the list of the number of each type of man for each year, and the average for that entire period is 1 foreman, 2.4 linemen and 2.1 groundmen, which I rounded out to 1, 3 and 2. That is the approximate average of the way work was done" (R. I, 37).

and number of workmen making up the theoretical gang used in the labor index computations, would also be produced (a) if the type of workmen in each of the years beginning with 1911 were different than the types used in the theoretical gang; (b) if the types of workmen were the same but the number of workmen of each type were different than the number of the same class of workmen used in such theoretical gang; and (c) if such different classes of workmen were subject to differences in relative increases or decreases in labor wage scale in each of said years.

The examples used in connection with the material index may be used also to show the result of the existence of each of the three variables in connection with the gang makeup Appendix, pp. 89-92).

The record shows that the gang makeup was different for each year (*supra*, 338), and that the relative change in wage scale was not the same for each class of labor (O.R. IV, 1177).

Appellee's application of the labor index numbers on the basis of the assumptions made by it in connection therewith is fatally defective.

D.

On the record it is impossible to determine the extent of distortion produced by Appellee's use of book cost of gross additions and retirements and index numbers to arrive at its reproduction cost new estimate.

Failure to Make Appraisal Fatal to Appellee.

In the absence of an actual appraisal, the effect of the use of book costs to arrive at the reproduction cost estimate cannot be determined. The consideration that the gross additions during each year of the period beginning with 1923 approximates the average yearly gross additions of the theoretical construction period assumed by Appellee has no application to the determination of the effect of the conditions under which the construction would take place in either case (*supra*, 332). In the absence of an appraisal, the effect of the use of the cross-section of 1923 plant plus the use of the theoretical gang makeup cannot be determined.

Appellee's Measure of Distortion Is Itself Based on Unproved Assumption.

Appellee claims that only a negligible distortion of the picture can possibly result from Appellee's assumption that it purchased and placed in service in every year beginning with 1911 the identical items in the identical quantities as those of the 1923 plant account which Appellee used in its material index, and from Appellee's assumption that the actual construction of each year beginning with 1911 would be by a gang makeup identical with the theoretical gang makeup which it used in its labor index. In support of its claim, Appellee produced a study of approximately 5% of the plant in service during 1923 (O.R. II, 653-4), representing all of the plant actually installed in three outside plant accounts during the period 1920 to June, 1923, inclusive—pole lines, aerial cable and underground cable. This study purported to show a difference of less than one-half per cent between the result of pricing out the actual installation on the basis of the June 30, 1923 prices, and of applying the index numbers to the book costs of the accounts in the manner above stated (O.R. IV, 1548). Appellants' position is that such study does not prove Appellee's claim. Such study is itself predicated on the assumption that price variations in each class of plant were horizontal.

The principal variations in an account like poles do not consist of variations in kinds of items but rather in respect to the lengths of the same kind of item. Similarly the principal variations in an account like cable do not consist of variations in kinds of items but rather in sizes of the same kind. The factors which chiefly determine changes in price for either class would not involve such substantial variations in size as to produce serious variations in price changes between sizes. Copper and lead costs are the controlling factors in cable prices (R. VIII, 4561).

But this same condition cannot be assumed to exist in such an account as "Central Office Telephone Equipment." Appellee's material index used a cross-section of that one account consisting of eighteen widely different classes of plant, as indicated in the margin.* The record shows that a large multiple section of central office switchboard which would be included in this account includes many different kinds of items going to make up the 100,000 or more piece parts manufactured by Western in 18,000 different combinations (R. II, 1923). The record also shows that the price variations of the items which go to make up central office equipment are not uniform. Western's reduction in price of 4.9% in 1927, as found by the District Court (R. III, 2508), is the average result of variations in approximately fifty classes of telephone apparatus, of which many constitute the one group designated as "central office telephone equipment." But such variations within that one group range from 5% for keys and key units (R. VIII, 4941), forming parts of cord circuits, to 24% for protector blocks forming a part of the frames and protectors, to 18% for switchboard lamps (R. II, 1923), to 11% for relays (R. II, 1923), to 10% for straightforward trunking mounting units (R. VIII, 4941), to 28% for the relay call indicator mounting units (R. II, 1923). Similar wide range is shown in the price increase of November 1, 1930, covering the various kinds of items making up central office equipment (R. VIII, 4944). More than mere assumption is necessary to prove that Western's price policy prior to 1920 was different than that for the period subsequent thereto.

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*These items are (O.R. IV, 1169):

Subscribers' sections.
Subscribers' cord circuits.
Subscribers' line circuits.
Outgoing trunk multiple jacks.
Message registers.
Outgoing call circuits.
Trunk sections.
Subscribers' multiple jacks.
Incoming trunk circuits.
Toll sections.
Toll primary answering jack circuits.
Toll secondary answering jacks.
Toll cord circuits.
Toll recording trunk answering jacks.
Toll line multiple jacks.
Toll recording cord circuits.
Frames and protectors.
Power plants.

Appellee's application of index numbers to book costs computed in the above manner could not possibly produce a reproduction cost estimate as of June 30, 1923. As this estimate is the basic link for each subsequent estimate, each of them is likewise fatally defective.

DISCUSSION AS TO CONTENTION NUMBERED III.

III.

THE REPRODUCTION COST NEW ESTIMATES OF TELEPHONE PLANT CAN NOT MEASURE THE FAIR VALUE NEW OF SUCH PROPERTY.

A.

The District Court's findings of Fair Value New are Inconsistent With Its Findings on Western's Profits and Prices.

The District Court's findings for each of the years 1923 to 1929, inclusive, that Appellee's reproduction cost new estimate, which made use of Western's current prices during the year of revaluation as an integral part thereof, represented the undepreciated fair value for that year, are inconsistent with:

(1) The District Court's findings that the reasonableness of Western's earnings from Bell business in each of the years 1923 to 1929, inclusive, should be determined on the basis of the average experience of a period of years considered as a single unit of time and not for any one year thereof (*supra*, 238);

(2) The District Court's finding that Western's earnings from the Bell System bear relation to its earnings from business with Appellee on the basis of the average experience of a period of years considered as a single unit of time and not of any one year thereof (*supra*, 277);

(3) The District Court's finding of Western's rate of earnings on investment from Bell business, in each of the years 1923 to 1929, inclusive, done on the current prices used in Appellee's reproduction cost new estimate of the same years. Such rate of earnings was grossly in excess of the average rate of earnings on which it based its reasonableness of each year's results, and produced excessive returns to Western's investors (*supra*, 279);

(4) The District Court's finding that volume production and advance estimates have been essential factors in Western's price policy during the period of the litigation (R. III, 2507). The District Court's finding on fair value assumes that the advance estimates to Western at the beginning of ~~the~~ nine or ten-year construction period covering an increased and assured volume of business would have no effect on its prices. Yet Western made six annual reductions in its prices beginning with 1924; the:

1923 prices were reduced over 30% by the end of 1929 (R. III, 2508).

(5) The District Court's findings of Western's earnings and investment in Bell business separated from non-Bell business on the basis of Appellee's presentation thereof which can be justified, if at all, only on the basis of the earning results of a period of years considered as a single unit of time and not of any one year thereof (*supra*, 266).

The District Court found the rate base for the years 1930 and 1931 by reducing Appellee's reproduction cost new estimate to eliminate the effect of the 10.2% increase in Western's prices made in 1930. Such adjusted fair value in each year therefore gives effect to the 1929 prices; the District Court's findings thereof are therefore subject to the same fatal defects as those just stated in respect to its 1929 valuation (*supra*, 344).

B.

The basis upon which Appellee made its presentation of Western's Profits and Prices precludes the possibility of using Western's current prices in the reproduction cost new estimates as fair value.

To arrive at the portion of Western's earnings allocable to Bell business considered as a unit and to Appellee as a component part thereof separately, Appellee's presentation distributed the variations between actual and standard costs of entire production between Bell and non-Bell sales and between the latter sales and those to Appellee. Such variations gave effect, among others, to actual volume compared to the estimated volume of manufactures of a given year (*supra*, 253). The showing of such an effect precludes the possibility of varying the volume of production of any item or items in any given year without varying correspondingly the effect of such changing volume on the amount and character of the variations.

The reproduction program of Appellee's property necessarily involves the purchase of a different yearly volume of equipment composed of different items and of different quantities thereof than the actual purchases made by Appellee in the year of revaluation. No showing was made of the net effect of Western's profits from business to be done with Appellee under the assumed program as a result of the difference in variations between actual and standard cost of producing such equipment.

Appellee presented for 1930 (R. IV, 2662(a)), but refused to present when requested by Appellants so to do (R. I, 54) a construction program covering the 1924 to 1929 reproduction cost estimates from which could be seen the difference between the actual gross additions covering purchases of specific kinds of equipment by Appellee in the year of revaluation and the annual corresponding construction covering similar purchases which Appellee contemplated under its construction program (R. I, 45). Comparing the construction program for the 1930 reproduction cost estimate with the actual construction of 1930:

Appellee's reproduction program for the year 1930 calls for gross additions of central office equipment of $10,000,000 in each of three years, $9,000,000 in one year, $7,000,000 in one year, $4,000,000 in one year, and $1,800,000 in one year, a total of $51,400,000 (R. IV, 2662a). Appellee's actual gross additions in 1930 of the same equipment was $3,793,000 (R. IV, 2776b). Appellee's construction program in the 1930 estimate calls for construction of $8,000,-

000 underground cable in one year, $7,000,000 in each of two years, $5,000,000 in each of two years, $3,000,000 in each of two years, and $1,000,000 in each of two years. The actual construction in 1930 was $2,685,000 (R. IV, 2776(b)). On the other hand, the construction program calls for gross additions of $6,000,000 of station equipment in each of two years, $5,000,000 in each of two years, $4,000,000 in each of two years, $3,600,000 in one year, and $1,000,000 in one year. The actual gross additions in 1930 were $8,757,000 (R. IV, 2776).

DISCUSSION AS TO CONTENTION NUMBERED IV.

IV.

APPELLEE'S REPRODUCTION COST NEW ESTIMATES OF ALL PHYSICAL PROPERTY FOR EACH OF THE YEARS 1923 to 1929, INCLUSIVE, AND THOSE FOR THE YEARS 1930 AND 1931 AS ADJUSTED, DID NOT MAKE AN HONEST AND INTELLIGENT FORECAST AS TO THE PROBABLE PRICES AND WAGE LEVELS DURING A REASONABLE PERIOD IN THE IMMEDIATE FUTURE.

In determining present value, not only must consideration be given to prices and wages prevailing at the date of revaluation, but also "in the light of all the circumstances, there must be an honest and intelligent forecast during a reasonable period in the immediate future" (*McCardle v. Indianapolis Water Co.*, 272 U. S. 400). Whether the reasonable period is the assumed construction period (R. IV, 2662(a)) or is a longer or shorter period has not, as far as Appellants are aware, been determined by this Court.

In the instant case, the District Court adopted as the fair value new of the physical property for each year of the period 1923 to 1929, inclusive, the average of the reproduction cost new estimates at the beginning and end of each year (Appendix, p. 86). For 1930 and 1931 it used the same basis after adjusting Appellee's reproduction cost new estimate to eliminate the effect of the 1930 increase in Western's prices. The fair value new therefore reflects in each case the current prices of the year of revaluation. The assumed construction period for the reproduction cost new estimates of 1923 to 1927, inclusive, was nine years; for the later estimates, ten years (R. I, 43, 47).

Whatever may be the rule in other cases, there are special reasons in this case why fair value new as determined by the District Court does not meet the specifications of the *McCardle* Case.

A.

Western's current prices used in each Reproduction Cost New Estimate from 1923 to 1929, inclusive, and for 1930 and 1931, inclusive, as adjusted by the District Court, cannot represent fair value determined in compliance with the McCardle Case.

Western's current prices used in the reproduction cost new estimates of 1923 to 1929, inclusive, and for 1930 and 1931, inclusive, as adjusted by the District Court, were established under a price-reducing policy of the manufacturer, as found by the District Court (R. III, 2508). From 1924 to 1929, inclusive, prices were reduced over 30% (*supra*, 294).

The averaging of the beginning and end of the year estimates gives only partial effect to the downward trend of such prices within the same year. Such averaging process, to produce fair value is based on the assumption: that if Appellee were to reproduce the 1923 property or the property in service in any of the six years, it would contract with Western for all the material during a nine or ten-year period on the basis of the first year's prices without making provision for forecasting probable prices during that period or even at the end of the first year of such period. Such assumption is contrary to Appellee's own practice. Appellee's engineering studies in 1926 covering future construction took into account forecasts of substantial reductions in Western's prices in 1933-1934 (R. IX, 5018B, 5024A). During the period 1923-1929, inclusive, Appellee's gross additions to physical plant covering Western's purchases were 194% of the book value of such plant on January 1, 1923. Yet the per cent of such total gross additions made in any one year of that period did not exceed 17.9% of such total.

The District Court's findings of fair value for 1930 and 1931 gave effect to the 1929 prices and are therefore subject to the same limitation as that stated herein in respect to the reproduction cost new estimate of 1929.

B.

The District Court's acceptance as fair value of the average of the beginning and end of the year reproduction cost new estimates of buildings is contrary to its findings on Western's profits and prices.

The District Court allowed as proper operating expenses Appellee's deductions of over $7,000,000 from Western's current income for the years 1924-1927, inclusive, to make up the excess of original cost of plant in service over its prognosticated reproduction value during the ensuing 10 to 15 years (*supra*, 308). It thus appears that when Appellee deemed it for the best interests of its investors to reflect the fair value of property, it made the forecast which this Court in the *McCardle* Case held should be made in determining the fair value of property for rate-making purposes. The District Court accepted such presentation and based its findings of Western's profits thereon.

The District Court's findings on Appellee's rate base value and on Western's profits, therefore, involve the principle that the telephone rates are to be established on the basis of giving effect to the book cost or reproduction cost new of property, whichever is higher.

Appellants direct attention to the study made by Western in 1927 in the regular course of its business. It shows that in respect to the Hawthorne buildings, located in Chicago, the probable average level during the ten-year period from 1931 to 1940, inclusive, was 84% of the 1927 level and 91% of the 1931 level (R. V, 3746d), 1927 cost level was within 4% of the building cost level of 1928-29 (R. IV, 2679).

C.

Foreseeable conditions indicating cheapening of plant and reduction in prices were disregarded by the District Court.

On the basis of the cost reducing activities of Western and the American Company, already discussed, a foreseeable condition of cheaper plant existed in each of the years beginning with 1923 for a reasonable period thereafter. Appellee's claimed justification for much of the expense of the American Company's Development and Research work was predicated on the development by that work of the telephone art during the period following 1923 to the point where reasonable expectation may be had that in the distant future the cost of new plant to be added will be cheapened in relation to Appellee's existing plant now in service (R. I, 695). Appellee claimed also that the benefits of such work subsequent to 1932 would be reflected in the plants of the Associated Companies and particularly in the exchange plants to a greater extent than for the period prior thereto (R. I, 695). On that basis a foreseeable condition exists of cheaper plant. Appellee's engineering studies in 1926 contemplated reductions in 1933-34 (R. IX, 5018C, 5024A). In these essential facts the record in the instant case even for the years prior to 1930 differs from that presented in the *McCardle* Case (272 U. S. 400, at 412). In these essential facts, the present record presents for each year beginning with 1923 a parallel situation to that which appeared in *Los Angeles Gas & Elect. Co. v. Railroad Commission,* 289 U. S. 287 (1933), covering the reproduction cost new estimate by the utility. Moreover events since 1929 have rendered unreliable prognostications on the basis of prices of that or prior years on which to predicate a finding of fair value for that year and thereafter in support of a finding of confiscation (*Los Angeles* Case, *supra*).

In respect to the 1930, 1931 and 1932 valuations, the District Court held:

> "Considering, however, the reduction in prices prior to November 1, 1930, we are of the opinion that plaintiff is entitled to a maintenance of the 1930 price level during the years 1931 and 1932."

As already shown, the price reduction policy did not reflect the reasonableness of the profits of Western after the reduction (*supra,* 294); the 1929 prices in effect in 1930 prior to November 1, 1930, were excessive (*supra,* 305). The District Court's conclusion that the 1929 prices which were already too high on the basis of 1929 conditions should be maintained during the period of the depression, is clearly untenable.

DISCUSSION AS TO CONTENTION NUMBERED V.

V.

THE OVERHEAD CHARGES INCLUDED IN APPELLEE'S REPRODUCTION COST NEW ESTIMATES FOR EACH YEAR WERE IMPROPERLY DETERMINED TO FORM THE BASIS FOR A VALID FINDING OF FAIR VALUE NEW.

Preliminary Statement.

The rule of *Smyth* v. *Ames* was originally intended to check the book investment of property by the lower current costs thereof. Beginning with the *Willcox* Case, the application was intended to reflect the higher current costs of labor and material, particularly during and since the World War. In the course of the present litigation, such higher current costs had disappeared; but the application of the rule is made by the District Court to give to Appellee the benefit of theoretical overheads which are developed under a construction program, which bear relation neither to the historical experience of Appellee nor to experience of any other company, and whose amounts are dependent solely upon the opinion of interested witnesses.

Prior to 1920 Appellee included in its capitalized overheads the item designated as "Engineering." But interest during construction, taxes, insurance, traffic engineering, commercial engineering and general expense charged to construction were not capitalized, but were charged to operating expense (O.R. V, 1731). The capitalized overheads for the period prior to 1920 ranged from 1.3% to 2.9% of the book cost of gross additions of that period.

From 1920 to 1930, inclusive, Appellee capitalized all the overheads which it had not capitalized prior to 1920 excepting only taxes and insurance during construction, which latter two items continued to be charged as operating expense. The capitalized overheads for the period 1920 to 1930, inclusive, ranged from 5.1% to 8.9% of the book cost of gross additions of that period. The capitalized overheads in 1931 were 9.7%.

The theoretical overheads included in Appellee's reproduction cost new estimates covered the amounts which Appellee estimated would be incurred by it on a reproduction program of its property during that portion of the nine or ten-year construction period during which the newly constructed property would not be in actual use in the public service (O.R. II, 668; R. I, 21, 56). Such theoretical overheads covered all of the overhead items which Appellee had not capitalized on its books prior to 1931. Such theoretical overheads ranged from 16.9% to 18.2% of the combined labor and material costs in the reproduction cost new estimates. The excess of theoretical overheads over corresponding book overheads in each of the reproduction cost new estimates was (Appendix, p. 93):

1923	$16,084,801
1924	17,159,795
1925	18,232,454
1926	19,116,952
1927	19,847,020
1928	20,840,017
1929	21,962,866
1930 (before D. C. adj.)	23,073,281
1930 (after D. C. adj.)	21,348,775
1931 (before D. C. adj.)	22,861,466
1931 (after D. C. adj.)	19,401,003

A.

Appellee is not entitled to capitalize overheads which it charges as operating expense, under the special conditions of this record.

Taxes and insurance during construction should not be capitalized in Appellee's reproduction cost new estimate for each of the years 1923 to 1930, inclusive, as these items are included in the District Court's findings of operating expenses for the same years (Appendix, p. 128). The aggregate of these two items included in such reproduction cost new estimates range from $2,600,000 to $6,300,000 (R. IV, 2598-2662).

Appellee's presentation of revenues and expenses before the Commission on the basis of which it was granted the increase in rates in 1920 (O.R. IV, 1281; O.R. II, 770), and Appellee's presentation before the District Court on which it procured its temporary injunction (O.R. II, 163-175; O.R. V, 261), were in each case predicated on the inclusion as operating expense items which it now claims should be capitalized. Had it so capitalized these items in the past, such presentations would have shown increased revenues which might have affected the relief granted Appellee. Fair play requires that Appellee should not repudiate the basis upon which it has made such representations to unjustly enrich itself at its subscribers' expense.

B.

Appellee's method of computing the theoretical overheads unjustly enriches its investors on the additional capital invested during the period of the litigation.

Appellee's investors doubled their investment during the period of the litigation by purchasing its securities at par for stock and below par for bonds (O.R. VI, 2120b; R. VIII, 4792-4). The overheads in Appellee's reproduction cost estimate in excess of those actually incurred increase with the dollars of investment included therein. The excess applicable to the additional investment made during the period of the litigation by Appellee's investors merely represents an appreciation of such additional investment over the amount actually placed therein, for which such investors have paid nothing. It is one thing to consider the revaluation of investments made in the past to reflect current cost values, and quite another thing to permit the current investment during the litigation to enhance in value for rate-making purposes through the sole circumstance of being placed therein.

C.

Appellee's inclusion of theoretical overheads in excess of book overheads on the basis that the property will be rebuilt is a repudiation of the basis on which its current price estimates of the telephone plant were predicated.

As noted above, the reproduction cost estimates of telephone plant proceeded on the assumption that the property was put together historically (*supra*, 329).

It is a repudiation of that basis to assume for the purpose of increasing the overheads that the property will not be put together historically, but will be rebuilt under a different plan. Appellee's reproduction cost new estimate preserves in its result all the increased cost of the historical construction of the property and all the increased costs arising from the theoretical reconstruction program. Estimates so determined should not be accepted as the measure of fair value upon which to base a finding of confiscation.

DISCUSSION AS TO CONTENTION NUMBERED VI.

VI.

THE RATE BASE VALUE WHICH IS BASED ON APPELLEE'S BOOK COST OF PROPERTY IS MORE THAN THE FAIR VALUE THEREOF ON WHICH APPELLEE IS ENTITLED TO A RETURN.

(1) Appellee's book cost of property preserves in its result the higher cost of piecemeal construction and the higher costs of manufacture and of construction methods in respect to all portions thereof added prior to the improvements in such methods. Such improvements continued throughout the period of the litigation (*supra,* 330).

(2) In view of the annual reductions in Western's prices, the price reduction policy of Western and the development and research activities of the Bell System—the current book costs of the telephone plant in any one year of the litigation are higher than would result from the "honest and intelligent forecast" of the immediate future as required by the *McCardle* Case to form the measure of fair value new (*supra,* 348). Appellee's telephone plant represents more than 80% of its entire plant account (Appendix, p. 93).

(3) Appellee uses in the regular course of business the straight line method of computing depreciation expense charges on the basis of the book cost of depreciable property (*infra,* 365). Depreciable property represents more than 90% of all property revalued. Appellee guarantees thereby to its investors the return of the principal of their investment irrespective of the reduction in prices which Appellee as part of the Bell System undertakes to effect through development and research work. According to the American Company, "it is fairly certain that investors in telephone securities are not primarily interested in property as such but are interested in safeguarding the money in the property which, so far as it will some day be lost in operations, is therefore what should be covered by the depreciation provision" (R. VI, 3781-2; *infra,* 436). If that be fairly certain of other investors, certainly it must be certain of the American Company itself, the operator of the development and research work, the financing agency of and the *investor* in Appellee.

(4) Western's current prices of the years 1924 to 1929, inclusive, which entered into the book cost of current additions each year of the litigation, reflect excessive profits to Western, and as such inflate the book cost of property of that period (*supra,* 304, 315).

(5) The book cost of the property since 1929 clearly exceeds the current fair value of the property (*supra,* 330).

(6) The Chicago intrastate rate base value used by Appellants which gives effect to such book cost exceeds outstanding capitalization (stock, surplus and funded debt) by the following amounts (Appendix, p. 88):

1923	$ 1,423,901
1924	4,171,188
1925	11,093,625
1926	13,928,596
1927	19,000,526
1928	20,881,882
1929	21,225,932
1930	21,676,619
1931	23,869,773

DISCUSSION AS TO CONTENTION NUMBERED VII.

VII.

THE DISTRICT COURT'S METHOD OF COMPUTING GOING VALUE AS PART OF THE RATE BASE WAS IMPROPER AND UNDULY BURDENED THE TELEPHONE SERVICE CHARGES DURING THE PERIOD OF THE LITIGATION.

What the District Court Did.

The District Court found that the Going Value was 8% of the reproduction cost new estimate of the property for each year. The amounts allowed for Going Value applicable to Chicago intrastate business were (Appendix, p. 86):

1923	$11,340,894
1924	12,201,330
1925	13,148,371
1926	14,026,833
1927	14,809,376
1928	15,777,021
1929	16,877,281
1930	16,977,619
1931	16,391,666

Such amounts represented the following per cent of total outstanding capitalization (stock, surplus and funded debt) of each year, including therein all the additions to capital made during the period of the litigation:

1923	16.5%
1924	15.8
1925	16.2
1926	15.6
1927	15.0
1928	14.3
1929	13.9
1930	12.8
1931	12.1

The District Court's allowance represents less than that claimed by Appellee (R. III, 2393) on the basis that Going Value should be allowed in the amount of 15% of each year's reproduction cost new estimate (R. I, 24).

Appellants contended that the amount to be allowed should not exceed the allowance by the Commission's 1923 Order (R. III, 2461). Appellants contended (R. III, 2568), and now contend, that the proper amount is $4,009,692, which is the intrastate portion of such allowance, which allowance is the same as that prescribed by the 1920 Order of the predecessor Commission, effective January 1, 1921 (O.R., 1294).

A.

The District Court's method of computing Going Value unjustly enriches Appellee's investors on the additional capital invested during the period of the litigation.

The application of a percentage figure to the reproduction cost estimate of each year to determine the amount of Going Value increases such amount as the dollars invested in Appellee's property increase and are included in such reproduction cost estimates.

During the period of the litigation Appellee's investors doubled their investment by purchasing its securities at par for stock and below par for bonds (*supra*, 355). As in the case of excess theoretical overheads, discussed *supra*, 355, the Going Value applicable to the additional investment made during the period of the litigation by Appellee's investors merely represents an appreciation of such additional investment over the amount actually placed therein, for which such investors have paid nothing. Such allowance therefore unjustly enriches them at the expense of the telephone subscribers.

The method followed by the District Court in the instant case is not the method which was followed by the Statutory Court in the case of *New York Telephone Co. v. Prendergast*, 36 Fed. (2d) 54 (1929). In that case the Court reduced the $48,000,000 claimed by the Company and the $35,000,000 allowed by the master for Going Value to $10,000,000. Of the amount allowed $7,500,000 was made applicable to New York City as part of the rate base value for 1924, the first year covered by the decree. Such allowance was not increased as part of the rate base of the subsequent years of the litigation to 1928, although the rate base of the last year covered by the decree exceeded that of the first year by $152,000,000 (36 Fed. (2nd) 54, at 68) or 30% of the 1924 rate base. The allowance represented 2.2% of the rate base as found by the District Court for the year 1928 and less than 4% of the 1924 rate base, which exceeded $300,000,000.

B.

The use by the District Court of Appellee's reproduction cost new estimate of each year as the base to which it applied the 8% figure to determine Going Value, renders the amount thereof arbitrary and grossly excessive.

For the reasons stated above, Appellee's reproduction cost new estimate was arbitrary, grossly excessive, and cannot be accepted as a measure of value (*supra*, 324, *et. seq.*). The application of a percentage to such figures results in a Going Value which is excessive in the same proportion as the reproduction cost new estimate.

DISCUSSION AS TO CONTENTION NUMBERED VIII.

VIII.

THE DISTRICT COURT'S FINDINGS ON FAIR RATE BASE VALUE SHOULD HAVE DEDUCTED FROM THE REPRODUCTION COST NEW OF THE DEPRECIABLE PROPERTY OF EACH YEAR A PERCENTAGE THEREOF EQUAL TO THE PERCENTAGE WHICH THE AMOUNT OF APPELLEE'S DEPRECIATION RESERVE WAS OF THE UNDEPRECIATED BOOK COST OF SUCH PROPERTY AS OF THE SAME DATE.

What the District Court Did.

The District Court's findings on depreciation in valuation represent a compromise. Appellee's presentation was made on the basis that the reproduction cost new estimate should be reduced by the percentage which it determined the property in service had deteriorated in condition from a perfect condition as new property, as revealed by an inspection of the property on December 31, 1930, plus the general knowledge of its operations prior thereto to 1923 (R. I, 73; R. IV, 2682). Appellee's presentation showed that 9% should be deducted for the years 1923 to 1928, inclusive, and 8% thereafter (R. III, 2390).

Appellants' position before the District Court was that from the value new as of any given date determined either on the basis of the book cost or reproduction cost new estimate of the property, there should be deducted therefrom the percentage thereof equal to the percentage which the amount of Appellee's depreciation reserve was of the undepreciated book cost of such property as of the same date (R. III, 2456-8). Such percentage ranged from 29.37% to 27.98% during the period 1923 to 1928, inclusive, and from 28.11% to 26.70% for the period 1929 to 1931, inclusive, on the basis of the recorded depreciation expense charges (Appendix, p. 94); and ranged from 29.83% to 27.37% during the period 1923 to 1928, inclusive, and from 26.28% to 25.43% for the period 1929 to 1931, inclusive, on the basis of the District Court's findings on depreciation expense charges (Appendix, p. 94). The grounds for Appellants' position, stated in its requested findings (R. III, 2456-8) are those presented herewith.

The District Court, without discussion, found that the deduction should be 16% for the years 1923 to 1928, inclusive, and 15% thereafter (R. III, 2505). The dollar differences between the deductions on the basis of the District Court's findings and on the basis of Appellants' position are (Appendix, p. 87):

1923	$19,605,570
1924	19,628,890
1925	19,919,782
1926	20,251,240
1927	21,344,013
1928	22,423,092
1929	23,796,966
1930	21,964,245
1931	22,005,810

To the District Court's findings Appellants assigned error (R. III, 2567-8).

A.

That portion of the depreciation reserve which represents the advance contributions made prior to and during the period of the litigation, inclusive, for anticipated depreciation on contemplated future additions to central office equipment and buildings, should be deducted from the rate base to prevent the unjust enrichment of Appellee.

Appellee's book investment in buildings and central office equipment represents the following per cent of total depreciable property* (*infra,* 403, Appendix, p. 96).

1923	41.44%	1927	40.00%
1924	40.83	1928	41.27
1925	41.23	1929	41.17
1926	41.47	1930	41.36
		1931	41.94

The advance contributions for anticipated depreciation charges, included as part of the depreciation expense charges, are all reflected in the depreciation reserve account before the date when Appellee actually places into service the contemplated future additions. The funds go into plant or working capital (R. II, 1191).

One of the necessary consequences of Appellee's practice is that it must give credit currently for all income on the total amount of the advance contributions prior to the date (after the date of placing in service of the additions) when Appellee would under the law be entitled to such advance contributions as current reimbursements of property consumption together with the income thereon (*infra,* 411).

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*The dollar amounts are shown (Appendix, p. 96).

Appellee having invested the funds in property placed in service, credit must be given for all income which such property produces by virtue thereof, whether the rate base is determined on the basis of book cost or reproduction cost estimate. Such credit must include not only the income on the advance contributions made during the period 1923-1931, inclusive, but also the income on the advance contributions made prior to 1923 and reflected in the depreciation reserve as of December 31, 1922, and on the income on said contributions during such prior period.

What portion of the depreciation reserve is represented by such accumulations the record does not show and Appellee has made no showing to prove. But Appellee did admit that the advance contributions "like all the rest of our depreciation expense, finds its way into the general funds of the company and it goes into plant and working capital" (R. II, 1191).

The depreciation in existing property which the District Court found was only a portion of the depreciation reserve (Appendix, p. 87; *supra,* 361):

As the record does not show what per cent of the depreciation reserve is represented by the cumulative advance contributions, the remainder of the depreciation reserve should be held to represent the advance contributions. By deducting the entire depreciation reserve, the same result would be accomplished as by giving credit for the income on these funds included therein.

B.

The use by Appellee of the straight line method of determining depreciation expense charges on property in service involves the principle that it has no right to a return on the amount of property cost which is represented by the balance in the depreciation reserve.

Appellee uses the straight line method of determining depreciation expense charges on property in service (O.R. V, 1672). This method is intended to provide a fund which does not require any additional income accumulations thereon to provide the full reimbursement of the capital consumption to which Appellee is entitled under the law (*United Railways* v. *West,* 280 U. S. 234, 284, note 55).

Appellee's use of this method can be justified only on the theory that Appellee has elected to treat the funds represented by the balance in the depreciation reserve as payment for a portion of its capital investment in the service consumed and to be consumed in respect to which it is entitled to reimbursement during the service life of the property.

Turn to the mortgage field. A issues $1,200,000 principal amount of bonds, due in ten years. A is required to deposit with T as depositary to apply on principal, $120,000 yearly, in equal monthly installments of $10,000. The deposits as made monthly may be either *pro tanto* payment of the principal or deposits for the better securing of the debt. The mortgage indenture usually provides which situation shall prevail. If it is the first—the debt of A is reduced to the extent of the deposit; interest thereon from A ceases; the holder of the bonds evidencing the amount of indebtedness covered by the deposits ceases to enjoy ~~any of the~~ benefits of the security of the mortgage, but does enjoy the benefit of any earnings on the deposit. If it is the second—A's debt is not reduced by the deposit and A's obligation to pay interest on the full amount of the debt is not discharged, but A is entitled to receive the benefit of any earnings on the deposit.

Where the earnings on the deposit and on the principal debt are the same, it is not material whether the deposit is prepayment or sinking fund, in the absence of special considerations such as the default or bankruptcy of the Trustee. The fact that T may be the owner of the bonds issued by A in its own right or may be trustee for the owners or may be agent for the owners or may act in any other capacity for the owners of A's obligations, would not change the result.

The mortgage situation is analogous to Appellee's situation in respect to its depreciation expense charges and depreciation reserve. Assume that Appellee's investors have made available to it $1,200,000 to invest in plant to be used by its subscribers. Such subscribers have the obligation to pay as part of the cost of the service rendered to them, through rates, $1,200,000 in equal monthly installments being determined upon the basis of payment in full, in ten years, and being made on the basis that when received by Appellee they will go into its treasury as its own funds free from the claims of the subscribers and on which it will be entitled to receive all income derived therefrom, including a return (for its investors). Receipt of the installments on that basis constitutes an election to treat the amount of each such monthly installment as a part payment for the property consumed or to be consumed in the service during such ten-year period.

Warrant for the proposed principle is found in the statutory provisions on the subject-matter of depreciation in the States of Arizona, Indiana, Minnesota, Missouri, New Jersey, Ohio, Oregon, Tennessee, Utah and Wisconsin (*infra*, 386).

In the dissenting opinion in the *United Railways* Case (280 U. S. 234, at 286) it was stated:

> "Nor need we express an opinion on the relation between a utility's depreciation reserve and the valuation of the accrued depreciation of its property. See Proposed Report of the Interstate Commerce Commission, note 14, *supra*, at pp. 20-24. While it is true that the annual depreciation charge does not purport to measure the current actual consumption of plant, it may be that the credit balance in the depreciation reserve is good evidence of the amount of accrued depreciation. See *New York Teleph. Co. v. Prendergast*, District Court, S. D. N. Y., decided November 7, 1929. **It may also be that so much of the depreciation reserve as has not been used for retirements or replacements should be subtracted from the present value of the utility's property in determining the rate base, on the theory that the amounts thus contributed by the public represent a part payment for the property consumed or to be consumed in service.** Compare Burns' Anno. Ind. Stat. (1926), vol. 3, Secs. 12693-12696, p. 1245. These matters are not involved in the case at bar and as to them no opinion is expressed." (Bold face ours.)

In *New York Telephone Co.* v. *Prendergast*, 36 Fed. (2) 54, the Court held that the balance in the depreciation reserve should be deducted from reproduction value new to arrive at the rate base on the ground that it was the best evidence on the amount of accrued depreciation.

The Interstate Commerce Commission in its Orders on Depreciation (O.R. I, 320) (1926); 177 I. C. C. 351, at 408 (1931), reaches the same conclusion that the deduction should be made of the balance in the depreciation reserve, in arriving at fair value, although by a different process of reasoning. The Order of the Interstate Commerce Commission entered November 2, 1926, stated as follows:

> "It is essential to bear in mind, however, that there is an inseparable connection between the straight line method and the principle that accrued depreciation represented by the depreciation reserve must be deducted in ascertaining the rate base value. If any other principle should hereafter be adopted by the courts, a reconsideration of the entire question of depreciation accounting would at once become necessary" (O.R. I, 320).

The subject matter was considered again, and in its final order of July 28, 1931, the same Commission reached the same conclusion on the ground that "the same elements which produce depreciation for accounting purposes likewise produce depreciation for valuation purposes, and they cannot properly be observed and taken into account in one case and at the same time be overlooked and neglected in another" (Depreciation Charges of Telephone Companies, 177 I. C. C. 351 at 408 (1931)).

The principle which Appellants urge in the instant case as the basis for the deduction of the depreciation reserve in respect to property in service has the advantage over the principle of a presumption sought to be invoked in the *New York Telephone* Case and by the Interstate Commerce Commission that depreciation, in fact, has occurred to the extent of the balance in the depreciation reserve; the presumption may be contrary to fact.

The proposed principle is based upon the familiar equitable principle of not permitting the repudiation of a course of conduct which leads to the unjust enrichment of the repudiating party at the expense of the complaining party.

The proposed principle is consistent with the proposition established by this Court's opinion of December 1, 1930, in the instant case, that the parties (or competent governmental or reviewing authority acting for them) may at any time revise the schedule of payments covering the balance of the total capital not yet reimbursed; may at any time take into account the relation of the amount already reimbursed to the total amount of capital to be reimbursed during the entire period of service life to determine the balance yet to be reimbursed during the remaining service life and to determine the rate of future reimbursements on account thereof (*Smith* v. *Illinois Bell Tel. Co.* 282 U. S. 133, at 158-9; but the utility can not be required to use any of the moneys already reimbursed to it to reimburse itself for the balance not yet reimbursed to relieve the subscribers of the obligation to make reimbursement of such balance.

The proposed principle is consistent with *Board v. New York Tel. Co.* (271 U. S. 23),—that case holding merely that the subscribers cannot prevent the utility from electing to treat the installments as part payment and to enjoy all the benefits derived from its election. This Court has never passed on the proposition that the utility having made the election and claiming the benefits thereof, is bound by the legal consequence flowing therefrom in its relation to the subscribers who have made the reimbursement.

The significance of this Court's decision in the *United Railways* Case, on the issue now under discussion is the necessary connection held to exist between the basis of determining depreciation expense charges and the capital accounts. Depreciation charges are held to reimburse capital consumed (*United Railways* Case, *supra*, at 253, 254). It follows that the utility cannot receive more than one return from the same amount of capital. This double return can be avoided in one of two ways: either it continues to receive a return on the original investment, represented by the capital account, in which case it makes available for reimbursement the income from the additions provided for through the depreciation reserve, or at its election it retains the latter income and gives up its right to receive a return on the percentage of rate base property represented by the ratio of the balance of the depreciation reserve account to the original cost of the property as shown on its books. It cannot claim both.

From this it follows that the effect of the principle involved is the same whether the property investment is valued at book cost or reproduction cost new.

C.

Appellee's method of computing the reproduction cost new of its property to arrive at the rate base on which it is entitled to a return requires that it should be reduced by the percentage thereof equal to the percentage which the amount of Appellee's depreciation reserve was of the undepreciated book cost of such property as of the same date.

Assume in the example given above (*supra*, 366) that at the end of five years, one-half of the $1,200,000, or $600,000, had been recovered through the depreciation expense charges and had been invested in additions to plant. Assume that the reproduction cost new estimate represents a 25% increase over book cost, due to increased labor and material costs, to theoretical overheads in excess of those incurred in actual construction and to the inclusion of Going Value as a part thereof. The reproduction cost new estimate of the original investment would then become $1,500,000 and of the additions $750,000, or a total of $2,250,000. If only $600,000 were deducted, the rate base would become $1,650,000. But obviously all that Appellee would be entitled to earn would be a return on one-half of the original investment, or $600,000 appreciated by 25%, or a total of $750,000, plus a return on the $600,000 additions appreciated by 25%, or a total of $750,000, making a rate base of $1,500,000 and not $1,650,000. The consideration that for accounting convenience Appellee does not credit against the recorded capital account currently with each reimbursement*, and that Appellee's computations to produce its reproduction cost new estimate make use of the original cost figures of plant, as shown in the recorded capital accounts, should not be made the device to unjustly enrich Appellee's investors at the expense of its subscribers.

D.

The District Court's finding on the per cent of the reproduction cost new which should be deducted in arriving at the fair rate base value is a compromise fiat and has no support either in law or in fact.

Appellee's presentation was on the basis that the deterioration in condition of the property in service from a perfect condition as new property determines the amount to be deducted therefrom for rate-making purposes. On that basis:

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*Western, which also used the straight line method of computing Depreciation Expense Charges, deducted the amount of the depreciation reserve account from its recorded book cost of property on its balance sheets of the years prior to 1914 (R. VIII, 4513-17).

1. *Manual central office equipment scheduled for retirement in* 1931-1932 *was valued at not less than* 86% *of spot reproduction cost new on December* 31, 1930.

For depreciation expense computations, Appellee determined that the service life of manual central office equipment was thirteen years and the estimated salvage 10%, resulting in a depreciation rate of 6.9% per year, including the last year of service life for each unit of central office equipment (R. IV, 2863).

For depreciation in valuation computations, Appellee dealt with the manual central office equipment of six offices which were scheduled for retirement in 1931 and 1932, as follows:

Name of Office (1)	Book Cost December 31, 1930 (R. VII, 4084-5) (2)	Year of Initial Installation (R. IV, 2866a) (3)	Estimated Year of Retirement (R. IV, 2866a) (4)	Per Cent of Value New at Which Appellee Included the Property in Rate Base (R. V, 3606-7) (5)	Salvage Actually Realized Upon Retirement (R. V, 3143) (6)
Dearborn	$1,259,779	1921	1-31-1931 (a)	94.21%	(b)
Delaware	441,408	1900	1931	89.67	5.3%
Tandem	328,303	(b)	1931 (c)	86.81	1.0
Canal	699,017	1902	1932	91.03	(b)
Monroe	861,100	1899	1932	92.34	(b)
West	723,478	1901	1932	90.87	(b)
Average Actual Salvage Realized upon Retirement of eight central offices from Jan. 1, 1919 to Jan. 1, 1932, (R. V, 3143)					13.6%

(a) Actual date.
(b) Data not in record.
(c) R. V, 3143.

The inspection of the above six offices was made in the spring of 1931 (R. I, 76). In the case of the Dearborn office the inspection was not completed until February 21, 1931 (R. I, 136), subsequent to the retirement date of the office (R. I, 138).

Appellee's instructions to its inspectors reveal the scope of the inquiry covered by their work, as follows:

> "These instructions are intended to cover the inspection of manual central office telephone equipment for the purpose of listing observable defects in the various kinds of equipment so that a comparison can be made of the condition of the existing equipment with similar new equipment (R. V, 3607-8).

Obviously neither a purchaser of the property nor Appellee as the reproducer of the property would pay 94.21% of $1,259,779 or $1,184,193 for the Dearborn equipment in 1930 with full knowledge that within a few weeks or months thereafter its entire earning power would be destroyed.

2. *Manual central office buildings scheduled for retirement in* 1931-1932 *were valued at not less than* 75% *of reproduction cost new on December* 31, 1930.

For depreciation expense computations Appellee determined that the service life of manual central office buildings was 25 years and the estimated salvage 20%, resulting in a depreciation rate of 3.2% per year, effective January 1, 1932, including the last year of service life.

The following is a complete list of buildings, actually retired in 1931, or estimated by Appellee to be retired in 1932, showing the per cent of valuation new claimed for them by Appellee in its valuation computations as of December 31, 1930, and the per cent of salvage which Appellee, in its depreciation expense computations, estimated would be received upon the retirement of said buildings:

Name of Building (1)	Book Cost as of December 31, 1930 (2)	Year of Initial Construction (R IV, 2866a) (3)	Estimated Year of Retirement (R. IV, 2866a) (4)	Per Cent of Value New Claimed by Appellee for Valuation purposes Dec. 31, 1930 (R. VII, 4086-7) (5)	Salvage Estimated by Appellee's Witness on Depreciation Expense Computations (R. IV, 2866a) (6)
Delaware	$ 68,421	1900	1931	85.57%	55.9%
Canal	117,971	1902	1932	89.56	32.3
Main	452,967	1888	1932	75.78	0
Monroe	174,508	1899	1932	90.38	14.5
Morrell Pk.	58,228	1897	1932	77.51	25.9
Toll	530,286	1908	1932	83.05	0
West	199,548	1900	1932	85.97	11.1

3. 1927 *Model Lincoln automobile was valued on December* 31, 1930, *at 82% of original cost new.*

On December 31, 1930, Appellee was the owner of a 1927 model Lincoln automobile purchased in 1927 at a cost of $5,862.60. Appellee's depreciation rates applicable to this car were 24% during 1928 and 1929, and 21% during 1930 (R. II, 1735). The rate for 1928 and 1929 was predicated upon a life of three and one-half years and a salvage of 15%, and the rate for 1930 was predicated upon a life [illegible] four years and a salvage of 15% (R. IV, 2853-4). By December 31, 1930, this Lincoln car had run 23,836 miles (R. II, 1735). Appellee's inspector determined that this automobile on December 31, 1930, was in an 82% condition. Such determination was made by computing the ratio between the 23,836 miles which the car had already run up to December 31, 1930, and 150,000 miles which he determined would be the maximum mileage for the usefulness of this car. On the basis of this determination the present value of the 1927 Lincoln car would be $4,807.33; the inspector admitted that the market value as of December 31, 1930, of a 1927 Model Lincoln car was probably $775 (R. I, 165).

Appellee's rate base included the 1927 Model of Lincoln automobile at a value of $4,807.33—82% of the original cost—in the face of the fact that the market value of that car was approximately $775 (R. I, 165; R. II, 1735).

Per cent condition determined by inspection has probative value (a) to determine the extent to which property maintenance has been neglected and efficiency of operation impaired, (b) to determine the loss in service capacity in the case of items of property whose service lives are limited by wear and tear or the action of the elements, and (c) realized obsolescence apparent at the time of inspection (Interstate Commerce Commission Order, 177 I. C. C. 351, at 398-99, 401, 402). But such per cent condition excludes from consideration obsolescence and inadequacy resulting from age, changes in the art, public requirements * * * casualties, changes in public demand, and losses from destruction of property by extraordinary casualties (O.R. IV, 1191; *Chesapeake & Potomac Tel. Co.* v. *Whitman*, 3 Fed. (2d) 938, 943).

Such per cent condition, even if it reflected the operation of all causes of property retirement, would not measure the depreciation in valuation to be deducted for rate-making purposes. By viewing the property consumption as of the date of valuation, Appellee assumes that all of the consumption for which it has been reimbursed up to that date occurred prior to the date of valuation. In establishing the annual charges, however, from which the reimbursements to that date were accumulated, Appellee established the period of consumption as the total service life of the property and apportioned the total consumption over the entire period in equal average installments (*infra*, 383). These installments, as already noted, need not correspond to the actual consumption which in fact had taken place up to the date of valuation (*supra*, 367). The conclusion by Appellee that the consumption which in fact took place up to the date of valuation corresponds exactly to the average consumption based upon the percentage of total consumption, is a guess.

A repudiation of the basis on which the depreciation expense charge is established will result if the scope of the causes of retirement is narrowed in determining depreciation in valuation, and/or if the period during which the causes of retirement are expected to operate to produce the property consumption covered by the depreciation in valuation is limited to the period ending at the date of valuation.

3. The *McCardle* Case does not justify Appellee's presentation. In that case this Court held, on the basis of the facts as presented, that:

> "Mr. Elmes testified that he made an inspection and estimate of all the actual depreciation. He estimated $443,044 would be required to restore the property as of appraisal date to its condition when first installed and put in practical operation. He deducted that amount. The testimony of competent valuation engineers who examined the property and made estimates in respect of its condition is to be preferred to mere calculations based on averages and assumed probabilities. The deduction made in the city's estimate cannot be approved" (*McCardle* Case, 272 U. S. 400, 416).

(a) Obviously if a utility has property whose service lives are limited by wear and tear, or the action of the elements, the inspection method is proper and may be the only method to determine the amount of depreciation in valuation. The Bell System claims that in the telephone industry only a small portion of the property used in the public service is of the character whose service lives are limited by wear and tear or the action of the elements (*Depreciation Charges of Telephone Companies,* 177 I. C. C. 351 at 401; O.R. II, 888-9). The inspection method of determining depreciation in valuation, proper in one case, will necessarily not be proper in the other.

(b) The annual charges to operating expense to cover depreciation were not determined in the *McCardle* Case by the straight line method, but were based on Retirement Expense, as provided by the Accounting Rules for water utilities (Record, *McCardle* v. *Indianapolis Water Co.*, 272 U. S. 400; *Brief of Appellee*, p. 128). The retirement expense method provides for only the current retirements except that to a small extent some provision may be made for certain large units of property. Under this method the utility is not reimbursed for the consumption of property until it is finally retired (O.R. I, 266).

Appellee's presentation is fatally defective. The only other evidence in the record upon which the District Court could make a valid finding on depreciation in valuation was the depreciation reserve account on Appellee's books and the adjustments thereto which would have resulted had the depreciation charges been recorded as found by the District Court. But such facts the District Court did not use.

DEPRECIATION EXPENSE CHARGES.

Preliminary Statement.

What the District Court Did.

The District Court stated that in reaching its conclusions on the subject matter of depreciation expense charges it gave effect to the following classes of evidence:

(1) Appellee's recorded depreciation expense charges;

(2) Appellee's recorded depreciation expense charges made applicable to the reproduction cost new of its property;

(3) The experience of other Bell System operating companies in respect to depreciation expense charges; and

(4) The 1920 and 1923 Orders on depreciation expense charges and to such charges made applicable to the reproduction cost new of its property (R. III, 2513).

The District Court found as proper annual depreciation allowances which represented a compromise between the claims of the parties, from which findings all parties appealed and to which they assigned error (R. III, 2541-49; R. IX, 4967).

The annual depreciation allowances found by the District Court for each of the years 1923 to 1931, inclusive, were from 14% to 33% less or from $1,149,000 to $2,132,000 less than Appellee's corresponding claims for each year, on the basis of the reproduction cost new estimate of its depreciable property, aggregating for the period $14,634,269. They were from 5% to 9% less or from $220,000 to $733,000 less than Appellee's corresponding book figures for each year based on the original cost of said property, aggregating for the period $3,634,976. But such annual allowances were from 21% to 50% more or from $1,116,000 to $1,572,000 more than the corresponding yearly allowances prescribed by the 1920 Order, aggregating for the period $11,925,805. They were from 36% to 97% more or from $1,200,000 to $3,450,000 more than the corresponding yearly allowances by the 1923 Order, aggregating for the period $20,678,874 (Appendix, p. 95).

Appellants' position is that: the 1920 Order on depreciation expense charges determined the amounts thereof to be deducted as proper operating expense in determining the net income under the existing rates and the 1923 Order on depreciation expense charges determined the amounts thereof in respect to the attacked rates. In support of their position Appellants offer the following:

SUMMARY STATEMENT OF APPELLANTS' CONTENTIONS.

I. The District Court disregarded the evidentiary value of and the legal consequence to be attached to the Commission's 1920 Order on depreciation expense charges as a valid legislative act, in determining the net income produced by the telephone rates prescribed by that Order.

A. The State of Illinois, by statute in 1914, exercised its prerogative to compel Appellee to accept the State's judgment when expressed by the Commission as to the amount of depreciation expense charges on intrastate telephone property to be covered by its telephone rates for intrastate telephone service.

B. No legislative act of the State of Illinois, and no judicial determination since January 1, 1921, has destroyed or modified the binding force of the 1920 Order on depreciation expense charges in the determination of the net income produced by the telephone rates prescribed by that Order.

C. On the present pleadings and record no ground exists to hold void the 1920 Order on depreciation expense charges.

D. The District Court substituted itself for the Illinois Commission as the administrative tribunal.

II. The District Court disregarded the evidentiary value of and the legal consequences to be attached to the 1923 Order on depreciation expense charges as a legislative act in determining the net income estimated to be produced by the telephone rates prescribed by that Order.

III. The District Court could not make a valid finding on depreciation expense charges on the basis of the recorded depreciation expense charges.

A. Appellee is not constitutionally entitled to recover advance reimbursement for anticipated consumption in service of future additions to buildings and central office equipment contemplated to be acquired and to be placed in the service from time to time to 1974.

B. Appellee's use of the straight line method of computing the advance contributions is in violation of law.

C. Appellee's financial program to provide advance contributions produces the fantastic result of making its telephone customers involuntary investors who provide a large portion of its current capital in service without their right of interest therein.

D. Appellee's financial program to provide the advance contributions is based on and gives effect to arbitrary assumptions.

E. Appellee's justification for its financial program to provide advance contributions is based on and gives effect to arbitrary assumptions.

IV. The District Court could not make a valid finding on depreciation expense charges on the basis of Appellee's showing of its recorded depreciation expense charges adjusted "to make the amounts of such allowances correspond with the present value of the property at the time such amounts were set up on the books of the company."

A. Appellee's financial program to provide annual advance contributions for anticipated depreciation on contemplated future additions to buildings and central office equipment precludes the possibility of using the reproduction value of property in service as a base for the computation of the amounts thereof.

B. The investors in Bell Telephone securities "are not primarily interested in property, as such, but are interested in safeguarding the money invested in the property which so far as it will some day be lost in operations, is, therefore, what should be covered by the depreciation provision."

C. The present record precludes the possibility of reaching the same conclusion of fact as that to which this Court attached legal consequences in the *United Railways* Case (280 U. S. 234), to-wit: the conclusion of fact that the cost of retired property at the time of replacement "is for all practical purposes present value.".

D. The base which Appellee used in its depreciation expense computations was not the "present value" of the property which this Court in the *United Railways* Case held was the proper base for depreciation expense computations in respect to the property covered thereby.

E. Appellee's position before the District Court in 1932 repudiates the position which it took in the 1929 hearings in this case, in the regular course of its business in relation to its investors, and before the Interstate Commerce Commission since the decision in the *United Railways* Case.

V. The District Court could not make a valid finding on depreciation expense charges on the basis of the experience of other Associated Companies in respect to depreciation expense charges as disclosed in the record.

VI. The District Court could not make a valid finding on depreciation expense charges on the basis of the 1920 and 1923 Orders on depreciation, made applicable to the reproduction cost new of Appellee's property.

VII. On the basis of the District Court's findings on depreciation expense charges, it is impossible to determine the extent to which they are based on any one or more of the classes of evidence to which it claimed it gave consideration.

DISCUSSION AS TO CONTENTION NUMBERED I.

I.

THE DISTRICT COURT DISREGARDED THE EVIDENTIARY VALUE OF AND THE LEGAL CONSEQUENCE TO BE ATTACHED TO THE COMMISSION'S 1920 ORDER ON DEPRECIATION EXPENSE CHARGES AS A VALID LEGISLATIVE ACT, IN DETERMINING THE NET INCOME PRODUCED BY THE TELEPHONE RATES PRESCRIBED BY THAT ORDER.

The District Court made no specific finding that the 1920 Order on depreciation expense charges was void. Its findings on depreciation expense charges to be covered by the existing telephone service charges prescribed by the 1920 Order clearly indicate that it exercised its own independent judgment on that subject matter on new evidence, and arrived at a result which was different than that found by the Commission. Such action was clearly in violation of law.

A.

The State of Illinois, by statute in 1914, exercised its prerogative to compel Appellee to accept the State's judgment when expressed by the Commission as to the amount of depreciation expense charges on intrastate telephone property to be covered by its telephone rates for intrastate telephone service.

Appellee uses the straight line method of determining depreciation expense charges. By the use of this method it is reimbursed, through its telephone rates, by each installment, an equal number of dollars, which amount represents an equal portion of the total depreciation expense of property in service, which, as has been determined, will be consumed within the period covered by all the installments. But that method does not, *per se,* determine whose judgment—Appellee's or the State's—shall fix, with finality (in the absence of abuse) how many dollars of reimbursement shall be recovered and what portion thereof shall be included in each such annual installment. Nor is such determination had by any requirement imposed on Appellee to properly record the amount of depreciation expense charges in its accounting records. (*Havre de Grace & Perryville Bridge Co.* v. *Towers*, 132 Md. 16, 22-23, 103 Atl. 319, 321 (1918).) Nor is such determination had by the consideration that the Commission, as an incident of rate-making which is a legislative function, must give some consideration to the item of depreciation expense charge as a charge against gross income. (*Knoxville* v. *Knoxville Water Co.*, 212 U. S. 1 (1909); *United Railways & Elec. Co.* v. *West*, 280 U. S. 234 (1930).)

The District Court, in deciding whether the rates for telephone service fixed by the Commission are confiscatory, must determine for itself, upon offered evidence, what sum would be earned by it, (*Ohio Valley Water Co.* v. *Ben Avon Borough*, 253 U. S. 287 (1920)), and, as an incident thereof, must determine for itself what the depreciation expense charges would be (*Missouri ex rel. S. W. Bell Tel. Co.* v. *Public Service Comm.*, 262 U. S. 276, 291 (1923)). But such determination does not *per se* determine the evidentiary value to be attached to the Commission's Order on depreciation expense charges.

There is now no legal doubt about the prerogative of the State to compel a utility, subject to its jurisdiction, to accept that State's judgment, expressed by a Commission or other administrative tribunal, on the amount of depreciation expense charges to be covered by such utility's rates for service, if the State chooses so to do. (*Smith* Case, 282 U. S. 133.)* However, the exercise by the State of its prerogative must be indicated by express statutory declaration and cannot be inferred from the exercise by the State of its prerogative to compel the utility to accept the State's judgment, as expressed by a Commission, on the character of accounting records in which the utility is compelled to record all expense items or to record depreciation expense charges specifically, when properly determined, or to compel the utility to accept the State's judgment, as expressed by a Commission, on the rates for service to be charged by the utility. (*Havre de Grace & Perryville Bridge Co.* v. *Towers, supra,* 384).

Section 14 of the State Public Utilities Commission Act, in force from 1914 to July 1, 1921 (Illinois Laws 1913, *ibid.,* Art. II, Sec. 14, p. 468), and Section 14 of the Illinois Commerce Commission Act in effect thereafter (Laws 1921, *ibid.,* Art. II, Sec. 14, p. 711; O.R. I, 76), provide:

> "The Commission may, from time to time, ascertain and determine, and by order fix, the proper and adequate rate of depreciation of the several classes of property for each public utility; and each public utility shall conform its depreciation accounts to the rates so ascertained, determined and fixed."

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*Reasons of economic necessity, supporting the constitutionality of paragraph 5 of Section 20 of the Interstate Commerce Act as amended by the Transportation Act (Act Feb. 28, 1920, C. 91; 41 Stat. 493), obligating interstate carriers to accept Congress' judgment, as expressed by Order of the Interstate Commerce Commission, are fully set forth in the Report of the Interstate Commerce Commission on Depreciation, dated November 2, 1926, 118 I. C. C. 295, reproduced as Comm. Ex. 27 (O.R. I, 282-292).

Similar provision exists in fifteen other States* and in the Transportation Act of 1920** but does not exist in twenty-nine States.*** Of the other States with public utility regulatory laws, one creates limited authority in its Commission,[1] and the other two create no authority in their Commission[2] over depreciation expense charges.

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*Arizona, California, Colorado, Idaho, Indiana, Minnesota, Missouri, New Hampshire, New Jersey, Ohio, Oregon, Pennsylvania, Tennessee, Utah, Wisconsin (Appendix, 97-115).

**By paragraph 5 of Section 20 of the Interstate Commerce Act, as amended by Transportation Act of 1920 (41 Stat. 493, Act Feb. 28, 1920, C. 91), Congress (a) obligates the Interstate Commerce Commission to originate depreciation charges on interstate property and to make changes therein; and (b) obligates the utility to conform its depreciation charges to the amount, as fixed (O.R. I, 263-4). This obligation is in addition to and distinct from the obligation imposed on the Commission to prescribe a general system of accounts (Hepburn Act, June 29, 1906, C. 3591, Sec. 7, 34 Stat. 594, as amended Act, February 28, 1920, C. 91, 41 Stat. 493), and to originate and change rates and other charges for services to be rendered by interstate carriers (Sec. 15 (1) of Interstate Commerce Act, as amended by Transportation Act, February 28, 1920, C. 91, Sec. 418 (1), 41 Stat. 484).

***Arkansas, Connecticut, Delaware, Florida, Georgia, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Michigan, Mississippi, Montana, Nevada, New Mexico, New York, North Carolina, North Dakota, Oklahoma, Rhode Island, South Carolina, South Dakota, Texas, Vermont, Virginia, Washington, West Virginia, Wyoming. Since the record closed, the state of Washington enacted a statute on March 3, 1933, effective March 18, 1933, which contains a provision similar to that which exists in Illinois respecting depreciation expense charges (Laws of Washington, 1933, pp. 611-12).

In Fourteen of these States, statutory enactment has granted power to regulatory body to prescribe a system of accounts to be kept by utilities: Georgia—Parks Ann. Code, 1914, Sec. 2663; Iowa—Code, 1924, Sec. 7910 (Electric Companies); Maine—Rev. Stat., 1916, C. 55, Sec. 19; Maryland—Ann. Code (Bagby), 1924, Art. 23, Sec. 387; Michigan—Compiled Laws, 1915, Sec. 4847 (Electric Companies); Montana—Rev. Code, 1921, Sec. 3885; Nevada—Rev. Laws, 1922, Sec. 18, p. 3157; New York—McKinney's Consol. Laws, 1926, Supp. Book 47, Sec. 66 (Gas and Electric Companies); North Dakota—Comp. Laws, 1913, C. 11, Sec. 4609; Rhode Island—Gen. Laws, 1923; South Carolina—Code of 1922, No. 525; Washington—Remington's Comp. Stat., 1922, Sec. 10416; West Virginia—Barnes' Code, 1923, C. 150, Sec. 26; Wyoming—Comp. Stat. 1920, Secs. 5467, 5496. In one of these states (Kansas—Rev. Stat. 1923, Secs. 66-122), statutory enactment has granted power to a regulatory body to prescribe accounting records to record depreciation expense charges, when determined. In twenty-one of these states, statutory enactment has granted power to a regulatory body to approve or revise the rates and other charges made by a utility for service to be rendered to the public and/or to originate and/or change rates and other charges for such services: Arkansas—Crawford & Moses Sess. Laws, 1921-1923, Act 124, Sec. 17; Connecticut—Gen. Stat., 1918, Sec. 3735, Laws 1920-1921, C. 3280; Georgia—Acts 1878-1879, Title 12, Sec. VI; Kansas—1923 Rev. Stat., Secs.

The power in the Commission to originate the amount of depreciation expense charges and to make changes therein and to require the utility to conform its depreciation expense charges to the amount so fixed, is in addition to and distinct from the power granted by the Illinois State Legislature to the Commission—

> (1) "to require all public utilities to keep such accounts as will adequately reflect depreciation, obsolescence and the progress of the arts" (Illinois Laws 1913, *ibid.*, Art. II, Sec. 14, p. 468) and
>
> (2) "to establish a uniform system of accounts to be kept by public utilities" which system, when established by the Commission, must be kept by the utilities under its jurisdiction (Laws 1913, *ibid.*, Art. II, Sec. 13, p. 468);

66-108, 66-110, 66-117; Louisiana—Marr's Ann. Rev. Stat. Supp. 1926, pp. 1275-1276 (Commission Council of City of New Orleans); Maine—Rev. Stat. 1916, C. 55, Secs. 25, 46, Laws 1923, C. 31, Secs. 43, 45, 48; Maryland—Ann. Code (Bagby) 1924, Art. 23, Secs. 387, 396; Michigan—Acts 1923, p. 150 (Electric Companies); Montana—Rev. Code 1921, Secs. 3897-3899; Nevada—Rev. Laws 1922, p. 3159; New Mexico—Laws 1921, C. 94; New York—McKinney's Consol. Laws 1926 Supp., Book 47, Secs. 65, 66 (Gas and Electric Companies); North Carolina—Consol. Stat. 1919, Sec. 1066; North Dakota—Comp. Laws 1913, Sec. 4609, Chaps. 4, 12; Oklahoma—Comp. Laws 1921, Sec. 3463; Rhode Island—Gen. Laws 1923, Secs. 3681-3700; South Carolina—Code of 1922, p. 1786; Vermont—Gen. Laws 1917, Sec. 5061 (IV), 5066; Virginia—Code of 1924, Sec. 4071; Washington—Remington's Comp. Stat. 1922, Sec. 10390 (Gas, Electric and Water Companies); Wyoming—Comp. Stat. 1920, Sec. 5472.

[1] Massachusetts requires the utility to set up depreciation expense charges on intrastate property, subject to revision by the regulatory body only if such charges are not sufficient (Appendix, p. 102). The same power is conferred upon the regulatory body in Massachusetts as is conferred in Illinois covering depreciation accounting records, general systems of account, and rates for services to be rendered by the utility to the public (Mass. Gen. Laws 1921, C. 164, Sec. 81 (Accounts); id., Sec. 93 (rates).)

[2] In Alabama (by statutory enactment) and Nebraska (by constitutional provision), the public utility is required to set up depreciation expense charges on intrastate property, but neither authority nor obligation is created in any regulatory body to approve or to revise the managerial act of the utility in fixing or changing the amount of depreciation expense charges, or to originate the amount or to make any change therein and to require the utility to conform its depreciation expense charges to any allowance fixed by such regulatory body (Appendix, pp. 97). In Alabama the same power is conferred on the regulatory body as is conferred in Illinois covering depreciation accounting records, general systems of account and rates for services to be rendered by the utility to the public (Ala. Code 1923, Secs. 9786-9788 (accounts); id., Secs. 9763, 9764, 7035, 9770 (rates)). In Nebraska there are no such statutory provisions covering these subject matters.

(3) "'to approve the rates or other charges originated by the utility for service to be rendered the public or to fix rates or other charges in excess of or less than those originated by the utility itself'' (Laws 1913, *ibid.*, Art. IV, Sec. 33, pp. 476-477; Laws 1921, *ibid.*, Art. IV, Sec. 33, p. 720; R. I, 87).

B.

No legislative act of the State of Illinois, and no judicial determination since January 1, 1921, has destroyed or modified the binding force of the 1920 order on depreciation expense charges in the determination of the net income produced by the telephone rates prescribed by that order.

Since the Commission's Order of 1920—no order has been made by it affecting the telephone rates and depreciation expense charges for Chicago intrastate service and Chicago intrastate property other than the order of 1923. The 1923 Order contained the Commission's expression of the State's judgment on depreciation expense charges.

This later judgment would have superseded the State's judgment on depreciation expense charges, as expressed in the 1920 Order, had the 1923 Order ever been put into effect. But the telephone rates prescribed by the 1923 Order were enjoined by the District Court and have never been in force. Whether or not the portion of the 1923 Order, on depreciation expense charges, is in force (not having been specifically enjoined), so as to supersede the 1920 Order on depreciation expense charges, need not now be considered. We need not consider whether the later order should be used in determining the net income produced after 1923 by the telephone rates prescribed by the 1920 Order. The 1923 Order prescribed depreciation expense charges which were less in amount each year than those prescribed by the 1920 Order (Appendix, p. 95).

Any contention that even though enjoined, the circumstance that the Commission in 1923 attempted to express a new judgment on depreciation expense charges destroyed the 1920 judgment would lead to the absurd result of leaving no State judgment in force in spite of the clear intent of the State to have Appellee follow the State's judgment on depreciation expense charges.

Nor need we consider at this point whether the annual depreciation allowance fixed by the 1920 Order is the maximum which Appellee could include as its depreciation expense charge in each of the years 1923-1932, inclusive, in determining whether the depreciation allowance fixed by the 1923 Order was constitutionally adequate, or in determining the amount properly to be charged against gross income, in the event that the District Court had held the annual allowance fixed by the 1923 Order was not adequate for any year or years of this period. At this point we are considering only the binding force of the annual allowance fixed by the 1920 Order in the determination of the net income produced by telephone rates prescribed by that same Order.

C.

On the present pleadings and record no ground exists to hold void the 1920 Order on depreciation expense charges.

The pleadings and record show that Appellee has not attacked, in these proceedings, the 1920 Order on depreciation expense charges on the ground that

(1) the telephone rates prescribed by the same 1920 Order are constitutionally inadequate on the basis of Appellee's judgment of the amount of depreciation expense charges to be covered by them—on the contrary, Appellee's court action was to maintain such telephone rates in force; or

(2) the 1920 Order on depreciation expense charges is otherwise confiscatory; or

(3) the proceedings in which the 1920 Order was issued were irregular so as to make void the portion of the Order covering depreciation expense charges; or

(4) the 1920 Order on depreciation expense charges was supported by no evidence or by insufficient evidence.

Appellee, at the hearings leading up to the District Court's decree of February 1, 1930, reversed by this Court on December 1, 1930, justified its failure to conform its depreciation expense charges to the amounts fixed by the Commission's orders by what it conceived the legal situation to be in 1920 and thereafter, resulting from (1) the Act of Congress in 1920, which granted jurisdiction to the Interstate Commerce Commission to prescribe depreciation rates for telephone companies doing an interstate business; (2) the action of the Interstate Commerce Commission in having the subject-matter under consideration even though no final determination had as yet been made; (3) the action of the Interstate Commerce Commission in prescribing its accounting rules to record expenses, including depreciation charges; (4) the action of the Interstate Commerce Commission in directing Appellee and other utilities, engaged in interstate commerce, to observe the requirements of these accounting rules; and (5) the action of the Interstate Commerce Commission in directing these utilities to continue to include in their accounts the amount of depreciation expense charges which properly should be included therein pending the determination and order by the Interstate Commerce Commission fixing such amounts (O.R. II, 880-885).

This Court's Opinion of December 1, 1930, held against Appellee's position on each proposition. (*Smith* Case, 282 U. S. 133, at 159.)

D.

The District Court substituted itself for the Illinois Commission as the administrative tribunal.

The District Court substituted itself as the administrative tribunal for the Illinois Commission. Neither the statutes of the State of Illinois, nor the Constitution of the United States, nor the Act of Congress under which the District Court is functioning in the instant case, confer on it any such administrative powers.

By its action, the District Court disregarded the fact that the subject matter of depreciation expense charges involves substantial property rights (*United Railways* Case, 280 U. S. 234 (1930)) of a local character and not arising in interstate commerce and disregarded its legal obligation to apply the valid local statutory law dealing therewith in this case wherein the constitutionality of the legislative act, or its enforcement, was not in issue. *Brine* v. *Insurance Co.,* 96 U. S. 627 (1877); *Orvis* v. *Powell,* 98 U. S. 176 (1878); *Case* v. *Kelly,* 133 U. S. 21 (1890); *Missouri, etc. Trust Co.* v. *Krumseig,* 172 U. S. 351 (1899.). By its action, the District Court failed to recognize and to give full effect to State action within the scope of its normal field in relation to the domestic concern of operations exclusively intrastate, of utilities subject to its jurisdiction.

(*Railroad Commission* v. *Maxcy,* 281 U. S. 82 (1930); *Smith* v. *Illinois Bell Tel. Co.,* 282 U. S. 133, at 160; *Board* v. *Great Northern Ry. Co.,* 281 U. S. 412, at 421 (1930); *United Fuel Gas Co.* v. *Commission,* 278 U. S. 300 (1929); *Harkin* v. *Brundage,* 276 U. S. 36 (1928).)

DISCUSSION AS TO CONTENTION NUMBERED II.

II.

THE DISTRICT COURT DISREGARDED THE EVIDENTIARY VALUE OF AND THE LEGAL CONSEQUENCES TO BE ATTACHED TO THE 1923 ORDER ON DEPRECIATION EXPENSE CHARGES AS A LEGISLATIVE ACT IN DETERMINING THE NET INCOME ESTIMATED TO BE PRODUCED BY THE TELEPHONE RATES PRESCRIBED BY THAT ORDER.

The District Court made no specific finding that the 1923 Order on depreciation expense charges was void. Its findings on depreciation expense charges to be covered by the attacked telephone service charges prescribed by the 1923 Order clearly indicate that it exercised its own independent judgment on that subject matter on new evidence, and arrived at a result which was different than that found by the Commission. Such action was clearly in violation of law.

On review by a District Court in a confiscation case, of a State Commission's Order on telephone rates in the twenty-nine states (*supra,* 386) where the State has not compelled the utility to accept its judgment on the depreciation allowance as expressed by a valid Commission Order, the Commission's finding as to the proper depreciation allowance in the same order would be a finding of fact in respect to the managerial discretion of the utility and like any other fact found by the Commission of such nature, would not have any more evidentiary value, if any at all, than findings on any other fact incident to the determination of the telephone rates under attack. (*Ohio Valley Water Company* v. *Ben Avon Borough,* 253 U. S. 287 (1920).)

On review in a similar proceeding of a State Commission's Order on telephone rates in the sixteen states (*supra,* 386), where the Commission has determined the proper depreciation expense charge, pursuant to statutory authority or obligation of the character of Section 14 of the Illinois Commerce Commission Law, the Commission's finding therein as to the proper depreciation expense charges, even though attacked, attains special significance of a legislative direction to the utility to accept the State's judgment within the field of proper legislative action. Such direction cannot be disregarded by the District Court in the absence of the determination by it that such direction by the Commission was not itself a valid direction, or was so arbitrary as to be void.

The specific direction by this Court of December 1, 1930, that the District Court determine the fact of the amount which Appellee may properly charge as depreciation expense charges against gross income produced by the attacked telephone rates did not in any wise change the duty of the District Court in respect to the proper recognition of the legal consequences attaching to and the evidentiary value of the depreciation allowance prescribed by the 1923 Order. Such a direction was a direction to do that which every District Court must do in order "to decide whether a proposed (telephone) rate is confiscatory" (*Missouri, ex rel, S. W. Bell* v. *Public Service Comm.*, 262 U. S. 276, 291 (1923)), but which action the District Court did not take in the 1930 decree because its conclusion in respect to other issues rendered such action unnecessary. Such direction could not have been intended to effect a change in the scope of power which the District Court had prior to such direction, in determining the subsidiary question: "What the operating expenses and charges which so operating, would be" (*ibid.*, at 291).

On the issue of validity of the 1923 Order on depreciation expense charges, this Court held adversely to the District Court's contention that the Commission could not consider past accumulations in fixing annual depreciation expense allowances. This Court also held adversely to Appellee's contention as to the lack of the power of the State of Illinois to act on the subject matter of depreciation expense charges by holding that until the Interstate Commerce Commission acted, the State could act and that the District Court, in reviewing the State's action, could also act on the subject matter of depreciation expense charges. Such ruling did not, of course, change the scope of the District Court's power. (*Smith* Case, 282 U. S. 133, at 159, 160.)

Nor did this Court change the scope of the power of the District Court by indicating various factors, some of which were of general application and others of which had special application to the unique features of Bell System operation by which the District Court could determine the issue of the claimed errors in the Commission's 1923 Order on depreciation expense charges. (*Smith* Case, *supra*, at 158-160.)

DISCUSSION AS TO CONTENTION NUMBERED III.

III.

THE DISTRICT COURT COULD NOT MAKE A VALID FINDING ON DEPRECIATION EXPENSE CHARGES ON THE BASIS OF THE RECORDED DEPRECIATION EXPENSE CHARGES.

The following discussion shows that the District Court could not make a valid finding on the basis of the classes of evidence to which it claimed it gave consideration (*supra,* 378) either that Appellee had sustained its burden to prove that the State's judgment on the proper annual depreciation expense charges was so arbitrary as to be void, or that disregarding the evidentiary value of the Commission's judgment as a legislative Act, the District Court could find from Appellee's showing the proper annual depreciation allowance.

A.

Appellee is not constitutionally entitled to recover advance reimbursement for anticipated consumption in service of future additions to buildings and central office equipment contemplated to be acquired and to be placed in the service from time to time to 1974.

What Appellee Did.

Appellee admitted that its depreciation rates and expense charges for the period 1923 to 1931, inclusive, included as part thereof annual advance contributions by its telephone users, computed on the straight line method, for anticipated depreciation on contemplated future additions to buildings and central office equipment (R. II, 1107, 1142).

As illustrative of Appellee's practice, Appellants direct attention to the following experience of Appellee in respect to the

Merrimac Exchange Building.

In 1926 Appellee built the Merrimac Exchange Building as a manual central office at an initial cost of $235,560. From the date of construction to 1929, inclusive, there were added $2,661 in additions and Appellee had retirements of $341, making a net investment in 1929 of $237,880 (R. VI, 3774b). In 1930 Appellee's depreciation expense expert, Mr. Turner, made a study to determine the depreciation expense charges applicable to that building for the year and to be covered by the Chicago Exchange service charges for 1930 (R. II, 1105).

I. Mr. Turner made five assumptions:

(1) He assumed that the ultimate retirement of the building would be in 1984 and that its "over all life"—i. e., the estimated life from the period of the initial construction to the retirement of the actual construction—was fifty-eight years.

(2) He assumed that during the future fifty-five years Appellee would increase its investment in that building by $1,054,000 or 4.4 times its investment at the date of study, through the following contemplated future additions and would have the following contemplated future retirements:

	Contemplated Future Additions.	Contemplated Future Retirements.
1931	$ 152,000	$ 10,000
1944	645,000	75,000
1954	95,000	10,000
1964	100,000	11,000
1974	62,000	9,000
1984	....	1,176,880
	$1,054,000	$1,291,880
1929 Investment	237,880	
Total Gross Investment	$1,291,880*	

On the basis of this assumption he calculated that the "average life" of the building,—i. e., the weighted average of the estimated life of the initial construction in 1926 plus the estimated life of all the additions to 1974—was 37.9 years (R. VI, 3774b).

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*The schedule of equipment for the Merrimac Building was estimated to be (R. VI, 3774a):

Year.	Contemplated Future Additions.	Contemplated Future Retirements.
1930	$ 61,300	$ 400
1931	71,000	3,100
1932	289,300	4,200
1933	109.200	3,500
1934	170,000	700
1935	95,000	200
1936	87,700	200
1937	91,600	300
1938	86,000	400
1939	69,900	200
1940	63,800	200
1941	51,900	100
1942	56,300	500
1943	55,000	300
1944	26,000	1,990,148
	$1,384,000	$2,004,448
1929 Investment	620,448	
Total	$2,004,448	

(3) He assumed that the price level for labor and material in Chicago in 1931, in 1944, in 1954, in 1964 and in 1974 would be the same as the price level for labor and material which prevailed in Chicago during the years 1928-1929 (R. II, 1112).

(4) He assumed that the retirements in the years 1931, 1944, 1954, 1964 and 1974 would bring no salvage whatsoever (R. II, 1431).

(5) He assumed that at the end of its life in 1984 the salvage on that building would be $184,770.

II. Mr. Turner testified:

> "On the principle as I have just stated it, we start in in 1926 to establish a depreciation rate and a depreciation charge against income so that by 1984 we will get back the $235,000 that we put in in 1926, the $3,000 that we put in by 1930, and the approximately one million dollars that we expect to put in at various times in 1931, 1944, 1954, 1964, and 1974. Of course, we are using a rate that will restore the total amounts that I spoke of, but only applying it to the investment we actually have as a measure, in order to get the number of dollars which will enable us to come out whole on $1,176,880 in 1984" (R. II, 1105). "In the case of the Merrimac Building, we would start off in 1926 to accumulate money to reimburse ourselves in 1984 for the depreciation that would accrue on the additions from 1974 to 1984, plus the reimbursement required for interim retirements during the period" (R. II, 1142).

Appellee accomplished this result by employing the "average life" of 37.9 years in determining the uniform depreciation rate to be applied throughout the 58-year-overall life of the building instead of employing actual service life of 58 years in determining the depreciation rate for the initial construction and employing the actual service life for each addition thereto in determining the depreciation rate for each such addition.

It is, of course, clear that if Appellee establishes a depreciation expense charge for each year of the 37.9 years of the "average life of the Merrimac Exchange building" to return to it at the end of the 58 years its investment in the initial construction which it estimates to have a life of 58 years, the depreciation expense charge for each of the 37.9 years of the "average life" represents one of two things: either a depreciation expense charge on the actual investment in 1926, in which case it is excessive as not being spread over the 58-year period; or it represents a combined expense charge, (a) part of which is a depreciation expense charge to reimburse Appellee at the end of 58 years, for its actual investment made in 1926; and (b) part of which is an advance contribution for the anticipated depreciation on contemplated future additions although the depreciation will in fact begin only at the scheduled date for the placing of such additions in service and continue until the end of the 58-year period when such future additions must be retired with the retirement of the original construction. Appellee conceded that the depreciation expense charge was the combined charge above described (R. II, 1142, *supra*, 398).

The result of Appellee's practice may be illustrated by the following example where only a single *addition* is considered. Assume a building cost $100,000 to construct in 1926. It is expected that after being used for 40 years, it will be increased in size by additional units or by additional stories in 1966 at an estimated further cost of $100,000; at the end of 50 years, 1976, the building is expected to be pulled down. Disregard the matter of salvage. Appellee would apply a 2% rate to the $100,000 actual investment each year for fifty years from 1926, if only that investment were sought to be recovered in 1976. Appellee, under Mr. Turner's method, would apply a 3⅓% rate* to the same $100,000 actual investment from 1926 to 1966 to recover not only the proportionate part ($80,000) of the depreciation on that actual investment to 1966, but also to provide 1⅓% of $100,000 for forty years, or $53,333.33 of advance contributions for the anticipated depreciation on the contemplated $100,000 addition to be placed in service in 1966 during the period 1966 to 1976. Similarly, during the period 1966 to 1976 the 3⅓% rate applied to the actual investment of $100,000 placed in service in 1926 and to the $100,000 actual investment placed in service in 1966 gives to Appellee reimbursement which, as to the initial investment of $100,000, is more than what it would have been if considered separately during this ten-year period and which, as to the 1966 additional investment is less than what it would have been if considered separately during this ten-year period.

If $25,000 of the original unit should be scheduled for retirement at the date of installing the $100,000 addition forty years hence, Appellee, under Mr. Turner's method, would recover during the forty years not only the proportionate part ($85,000) of the depreciation on the actual investment to 1966 but also $54,130 of advance contributions for the anticipated depreciation on the con-

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*The 3⅓% rate is arrived at in the following manner:

	Investment.	Life.	Dollar Years.
Original unit	$100,000	50	$5,000,000
Addition	100,000	10	1,000,000
Total	$200,000		$6,000,000

$6,000,000 ÷ $200,000 = 30 years average life. 100% (investment) minus salvage (none) divided by 30 years equals depreciation rate of 3⅓%.

templated $100,000 addition to be placed in service in 1966.

What Appellee Did Not Do.

(1) Appellee made no provision during the period of the advance contributions:

(a) to assure that the contemplated future property would in fact be acquired and be placed in the future service;

(b) to assure that to the extent that Appellee does not in fact acquire and place in the future service such contemplated future property it will account to its telephone users for the amount of the advance contributions and the earnings thereon (R. II, 1192).

(2) Appellee computed the annual advance contributions on the straight line method without taking into account the earnings which such contributions would earn to the date when the contemplated future additions would in fact be placed in the service and thereafter to the date when Appellee would under the law become entitled to such contributions as reimbursement for consumption in service and the earnings thereon applicable thereto (R. II, 1104, 1191).

Appellee's Justification for What It Did.

Appellee justified the depreciation treatment of buildings and central office equipment on the ground that:

(1) a single building or a single central office plus the contemplated future additions thereto in each case constitute a "group" of units; the group basis of depreciation treatment of such units as applied by Appellee corresponds

to the "group" basis of depreciation treatment of *units in service* such as poles, which the accounting rules of the Interstate Commerce Commission requires *to be applied to plant in service* (R. II, 1140, 1141);

(2) Appellee's depreciation treatment of buildings and central office equipment is an integral part of its depreciation treatment of all of its depreciable property; the net effect of the entire scheme is more favorable to its subscribers for the period 1923 to 1931, inclusive, than if Appellee had revised for that period its depreciation treatment of all of its depreciable property and as part of such revised treatment had considered only the buildings and central office equipment in service without giving effect to possible future additions thereto.

(3) Appellee's depreciation treatment of buildings and central office equipment benefits the subscribers in the earlier years of the life of the property, in that the depreciation expense charges applicable to such period are lowered to the extent that the retirement date is deferred through the plan of providing against inadequacy by contemplated future additions; and the subscribers of the later years are likewise benefited by the same plan to the extent that the portion of the depreciation expense charges applicable to the period subsequent to the date when the additions would go into service has been reimbursed in the period prior to such installation.

Appellee's Justification for What It Did Not Do.

Appellee offered no justification for its collection of the advance contributions and the earnings thereon without making provision as above stated for the assurance of their proper use or return.

Appellee justified the use of the straight line method of computing the advance contributions on the ground that such contributions were for the same purpose as the depreciation expense charges covering reimbursement for consumption in service of capital *actually employed therein,* which latter charges are required by the Interstate Commerce Commission accounting rules to be computed by the straight line method. But Appellee offered no justification for the retention of the earnings without accounting therefor prior to the date when Appellee would be entitled to retain the same as reimbursement for consumption in service of the capital *actually* employed therein.

AMOUNT OF ADVANCE CONTRIBUTIONS INCLUDED IN APPELLEE'S RECORDED DEPRECIATION EXPENSE CHARGES.

The undepreciated book investment in service in buildings and central office equipment ranged from $36,800,000 in 1923 to $74,700,000 in 1931, representing from 40% to 42% of the total depreciable property in service (Appendix, p. 96).

The depreciation expense charges on buildings and central office equipment, ranging from $2,200,000 to $4,400,000 per year, represent from 47% to 50% of the total recorded depreciation expense charges; are three times the amount by which the 1923 Order decreased the depreciation allowance fixed by the 1920 Order; are 70% more than the amounts by which the depreciation allowances of the 1920 Order were lower than Appellee's recorded depreciation expense charges; and are 10% more than the amounts by which the depreciation allowance of the 1923 Order were lower than Appellee's recorded depreciation expense charges in the years 1923 to 1931, inclusive (Appendix, p. 96).

Appellee did not show the portion of the recorded depreciation expense charges on buildings and central office equipment represented by advance contributions. Nor can such portion be determined with accuracy from the available data in the record. That it was substantial appears from the following facts:

Prior to 1928 Appellee did not make any detailed program setting forth the dates and amount of contemplated additions and retirements to the final retirement date of the original installation (R. II, 1114). Prior to 1928 effect was given to contemplated future additions, based purely on the judgment of Appellee's employee who set up the current depreciation rates and charges (R. II, 1115, 1107).

How much such advance contributions increased the depreciation rates and charges on buildings and central office equipment for the period 1923 to 1927, inclusive, the record does not show, nor is it possible to determine. Appellee refused to produce its President, who was in charge of the depreciation expense work for Appellee during the years 1923 to 1927, inclusive, to explain the basis of the depreciation rates and charges which he set up for these years. Appellee claimed that he was not available for that purpose (R. II, 1119); although he was available and was produced as Appellee's witness at the final hearings on other phases of its case (R. I, 388). Appellee offered, over Appellants' objections, the depreciation exhibits A-125-129 (R. IV, 2853-85) covering the years 1923 to 1927, through another witness, who admitted he did not know the basis upon which they were established for these years (R. II, 1116).

Beginning with 1930, Appellee made specific estimates of contemplated future dates of contemplated future additions and contemplated future retirements to and of *Manual Central office* buildings and to and of *Manual Central office* equipment and specific estimates of the amount of such contemplated future additions and retirements (R. II, 1115), in manner similar to that illustrated above (*supra,* 396). But no detailed estimates were made by it in respect to contemplated additions to *Dial Central* office buildings and to *Dial Central* office equipment, although in each of the cases advance contributions were included as part of the depreciation rates in respect to such property (R. II, 1115).

How much such advance contributions increased the depreciation rates or expense charges on dial central office equipment and buildings the record does not show, nor is it possible to determine.

The undepreciated book investment in Manual Central office buildings on December 31, 1929, was $5,775,086. As of that date Appellee contemplated future additions thereto to be placed in service from 1931 to 1974 in the aggregate amount of $5,995,000, all to be retired by 1984 (R. VII, 4081).

The undepreciated book investment in Manual Central office equipment as of December 31, 1929, was $31,081,262. As of that date Appellee contemplated future additions thereto to be placed in service from 1930 to 1944 in the aggregate amount of $11,563,000, all to be retired by 1944 (R. VII, 4081).

Appellee's final depreciation expense charges established after 1928 were the result of the application of judgment to the results of the computations making use of this detailed program of future additions and retirements (R. II, 1123). It is therefore impossible to determine by mathematical calculations alone, even on the basis of the detailed program used in respect to Manual Central office buildings and Manual Central office equipment, what portion of the current depreciation rate and charges in respect to such items is represented by the depreciation expense charges on property in service and what portion by the advance contributions for anticipated depreciation on contemplated future additions.

Issue Presented.

The issue presented on the record is the constitutional right * of Appellee to recover through its telephone service charges during the period under investigation annual advance contributions as advance reimbursement for the anticipated depreciation on property contemplated to be acquired in the future and to be placed in the service to 1974 under the following special conditions:

(a) where the acquisition and placing of the contemplated future property in the future service is within the sole and uncontrolled discretion and power of Appellee;

(b) where no provision whatsoever has been made at the date of such annual advance contributions to assure that such contemplated future property will in fact be acquired and placed in the future service (R. II, 1190); and

(c) where no provision whatsoever has been made at the date of such annual advance contributions to assure that to the extent that Appellee does not in fact acquire and place in the future service such contemplated future

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*Whether the Commission, in its discretion could permit such advance contributions and on what terms, is not in issue here.

property it will account to its telephone users for the amount of such annual advance contributions and for the earnings thereon applicable thereto.

Such advance contributions have no relation to *any property of Appellee in service or to property which Appellee is obligated to place in service.* There is no relation between Appellee's expense charges to cover these annual advance contributions and the expense charge which this Court sustained in *United Railways* Case:

> "One of the items of expense to be ascertained and deducted is the amount necessary to *restore property* worn out or impaired so as to continually maintain it as nearly as practical at the same level of efficiency for the public service. The amount set aside periodically for this purpose is the so-called depreciation allowance" (*United Ry. and Elect. Co. of Baltimore* v. *West*, 280 U. S. 234, 253),

or the expense charge which this Court sanctioned in the *Knoxville* Case, wherein it held that the utility

> "is entitled to see that from earnings the value of the property *invested* is kept unimpaired, so that at the end of any given term of years the original investment remains as it was at the beginning (*Knoxville* v. *Knoxville Water Co.*, 212 U. S. 1, 13),"

or the expense charge which the Bell System defined as the "depreciation expense charge" before the Interstate Commerce Commission in the hearings on "Depreciation Charges of Telephone Companies":

> "It is the using up of the property that constitutes the expense, the money measure of which for the entire period of the service life is the number of dollars of cost of the property, less the net salvage dollars. It is *essentially the same in this respect as if the company had on hand on January 1, twelve hundred tons of coal that it had bought and paid for at ten dollars a ton, and would use up during the year*

> *one hundred tons a month.* The expense for coal will be one thousand dollars a month. The fact that the entire twelve thousand dollars was paid for the coal in advance of its use will not alter the accounting, if it is to be strictly correct. It is to be noted that in this respect the accounting for depreciation is no different. *The company buys and pays for its property in advance and then uses it up and its accounts* should reflect the expense currently as it is used up*" (Italics ours). (Brief of Bell System quoted by Interstate Commerce Commission in its Order of July 28, 1931—177 I. C. C. 351, at 399),

or the expense charge to cover depreciation as defined by the Interstate Commerce Commission:

> "We therefore find that depreciation is the loss in service value not restored by current maintenance and incurred in connection with the consumption and prospective retirement of property in the course of service from causes against which the carrier is not protected by insurance, which are known to be in current operation, and whose effect can be forecast with a reasonable approach to accuracy" (*Depreciation Charges of Telephone Companies*, 177 I. C. C. 351, at 422 (1931)),

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*The Interstate Commerce Commission stated its understanding of the Bell System's position:

"These quotations leave no doubt that under this view of the matter the depreciation charge is based on the cost of property which has been consumed or used up, in service during the year; that the depreciation reserve is intended to represent the accumulated total cost of property which has been used up in this way but has not yet been written out of the investment account; and that money corresponding to this reserve has gone into the general funds of the company and thence into property which has taken the place of the part which is deemed to have been used up, thus maintaining the capital unimpaired." (Depreciation Charges of Telephone Companies, 177 I. C. C. 351, at 399.)

"The balance in the depreciation reserve, they (telephone companies) say, does not necessarily reflect the accrued depreciation of the property but should correspond to the 'reserve requirements for plant in service.' In other words, the 'reserve should at any time reflect approximately the difference between the total cost less net salvage of the plant then in service and the total of the accruals to be made in respect of that plant during the remaining service life'." (Ibid., at 400.)

or the expense charge to cover depreciation as defined in Section 23 of the Uniform System of Accounts:

> "*Depreciation of plant and equipment.*—Telephone companies should include in operating expenses depreciation charges for the purpose of creating proper and adequate reserve to cover the expenses of depreciation currently accruing in the *tangible fixed capital*" (Italics ours) (O.R. IV, 1190).

Under the conditions above stated, the annual advance contributions are no more proper operating expenses of the period during which they were charged than would be a current charge to start a pension fund for employees who have not yet been hired (and who perhaps are not yet born) but who may be required by the expansion of the Company in 1931, 1944, 1954, 1964 and in 1974. (*Galveston Electric Co.* v. *Galveston*, 258 U. S. 388, 399; *Lincoln Gas & Electric Co.* v. *Lincoln*, 250 U. S. 258, 267.)

B.

Appellee's use of the straight line method of computing the advance contributions is in violation of law.

Appellants do not question the right of Appellee to use the straight line method of computing the annual installments as current reimbursements for depreciation on *property in service.*

The issue is:

Assuming Appellee has the constitutional right to collect advance contributions, does it have the legal right to use the straight line method in determining the annual amounts thereof prior to the date when the future project is scheduled to be placed in service?

Fair dealing and the necessary implications from Appellee's declared motive in collecting the advance contributions (*supra,* 402; R. II, 1138) requires that Appellee spread them over the period prior to such additions being placed in service in such manner as

(1) To assure that the principal of the fund plus the compounded income accretions thereon received prior to the scheduled date for the placing in service of Appellee's contemplated future investment, *will equal* but not *exceed* the number of dollars to which Appellee would be entitled if it had received reimbursement on the straight line method after the investment is in fact made.

Taking the Merrimac Building, it is clear that to provide $51,303.50* in 1974 does not require forty-eight yearly deposits of $1,069.65 each, but forty-eight yearly deposits of the following amounts giving effect to the following assumed earning rates thereon (R. VIII, 4654):

4%	5%	6%	7%	8%
$368.41	$272.83	$199.98	$145.24	$104.66

Appellee's expense charges covering annual advance contributions were computed on the basis of the $1,069.65 installments (R. II, 1104).

(2) To assure that if the principal of the fund *plus* the compounded income accretions thereon received prior to such scheduled date for the placing in service of Appellee's contemplated future investment, exceed the number of dollars to which Appellee would become entitled by way of reimbursement on the straight line method after the investment is in fact made, such excess earnings will in one form or other be reflected in benefit to the telephone users and not to the creditors or stockholders of Appellee. To make forty-eight yearly deposits of $1,069.65 each will provide at the end of forty-eight years not $51,303.50 but the

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*48/58 x 62,000.

following amounts, giving effect to the following assumed earning rates thereon (R. VIII, 4655-6):

4%	5%	6%	7%	8%
$148,963	$201,121	$274,434	$377,875	$524,270

Appellee made no such provision (R. II, 1191).

(3) To assure that the earnings on the advance contributions will be used to minimize the burden of the telephone users who make them by applying such earnings to reduce the principal of the annual advance contributions during the period prior to the scheduled date for placing in service of Appellee's contemplated future additions. To require the present telephone users to pay $1,069.65 a year for 48 years, giving them the benefit of the earnings thereon either currently or at the end of the period, instead of reducing the principal of such contributions on an annuity basis giving effect to the compounded earnings to the dates when Appellee will become entitled to the earnings, is to convert the present telephone users into investors of capital. The hardship on such telephone users to raise the cash to make such investments, is as much to be considered as their equitable treatment after the investment is made.

(4) To assure that if the facts should turn out to be different than those which Appellee assumed as the basis for its computations, neither Appellee nor the subscribers will be prejudiced thereby for the benefit of the other. In 1929, Appellee could foresee only the factors which would continue the expansion of its operations and not the conditions which might retard them (R. II, 1108). Not foreseeing the depression, it made no provision for such possibility (R. I, 761). But it is obvious that if on account of the depression or of a slowing up of business, Appellee should defer the date set by Mr. Turner for any future

additions, as was in fact done in 1932 (R. II, 1109), but not the final date of retirement of the building as a unit, the deferment will shorten the life of the contemplated future additions. This shortening effect tends to increase current depreciation expense charges to the present telephone users and to decrease the depreciation expense charges for the future generation of telephone users forty to fifty years hence (R. II, 1109).

(5) To assure that Appellee receives no additional advantage from the fact that at the date of making the contemplated future investment (as in the case of the $62,000 future addition to the Merrimac Building to be placed in service in 1974 to be retired in 1984), Appellee will have collected through annual advance contributions made prior to 1974, an amount equivalent to at least *several years'* depreciation yet to take place in the property.

The straight line method of computing annual depreciation expense charges on property in service can not be used to compute the annual advance contributions for anticipated depreciation on contemplated future additions because there is no way by which the subscribers can be assured fair treatment in respect to any and all of the five situations above stated.

Such fair treatment can be effected only by computing such annual advance contributions on the following basis: to wit, in each year, beginning with the year of the original installation, annual annuities to provide the exact amount to which Appellee would have been entitled each year subsequent to the scheduled date of the contemplated future addition, had Appellee computed the depreciation expense charges applicable to such future investment on the basis of spreading the amount thereof over the period of its own service life.

Appellee uses such annuity method in its actuarial computations to provide the pension fund requirements covering employees in service (R. VII, 4162, 4163, 4175-6) and in its engineering studies to determine the advisability of placing in service future additions (R. V, 3268-82; R. VIII, 4640; R. VIII, 4451; R, II, 1993-4).

C.

Appellee's financial program to provide advance contributions produces the fantastic result of making its telephone customers involuntary investors who provide a large portion of its current capital in service without their right of interest therein.

(1) The effect of requiring the advance contributions is to provide Appellee with a fund to make future investments.

(2) The effect of the factor of growth is to constantly replenish and maintain such fund (*infra*, 431-2).

(3) The effect of Appellee's claim that the advance contributions are to be included within the scope of "depreciation expense" is to attach the same legal consequences thereto which Appellee claims should attach to depreciation expense reimbursements made through the use of the straight line method of calculating depreciation expense charges. Such legal consequences are that the permanent fund plus all earnings thereon are free and clear of the claims of the subscribers from whose telephone service charges the fund was collected, and are free and clear of any claim of credit to such subscribers on account thereof in determining the return to which Appellee is constitutionally entitled or otherwise.

The combination of these three effects creates the following fantastic results:

(1) To the extent of the amount of the advance contributions plus the earnings thereon, Appellee has made its telephone users *involuntary investors in its capital employed in their service, without their right of interest therein.*

(2) The total of the fund of such advance contributions goes into the treasury of Appellee to provide its capital requirements and working capital and to become its additional assets (a) to increase the security for its outstanding credit obligations; and (b) to increase the equity behind its outstanding capital stock.

The importance and significance of this customer—involuntary—investor relationship may be noted from the fact that the largest portion of the capital funds raised by utilities and others in the open market is to provide for extensions and betterments (R. VII, 4336f-4340g).

(3) The earnings on this fund are reflected into the earning and surplus accounts and not into the depreciation reserve account. Such earnings, therefore, provide and make available additional earnings and assets to meet the current interest and dividend requirements on Appellee's capital obligations, to meet the maturing principal of its outstanding credit obligations, and to improve the earning record of Appellee in its relation to its capital investors.

(4) To the extent that on account of the depression or of a slowing up of business, Appellee should defer the date set for any contemplated future additions, as was done in 1932 (R. II, 1108), but not the final date of retirement of the building or equipment as a unit—*the*

depression will increase the period during which Appellee's capital investors will continue to reap the benefits of the earnings on the fund already contributed by its subscribers.

Such a fantastic result, if it does not condemn the program, should require at least clear and convincing proof of the legality thereof, the necessity therefor, and each of the factors entering into the determination thereof (*Missouri Rate* Cases, 230 U. S. 474). The following discussion shows that Appellee failed in its proof.

D.

Appellee's financial program to provide the advance contributions is based on and gives effect to arbitrary assumptions.

(1) Appellee *assumed* that the price level for labor and material in 1931, in 1944, in 1954, in 1964 and in 1974 would be the same as the price level for labor and material which prevailed in Chicago in 1928-1929 (*supra*, 398).

This assumption gave no effect to the facts that:

(a) The experts of Western, a constituent part of the Bell System, had concluded as early as 1924 that building costs in Chicago would drop in the ensuing ten years and had concluded in 1927 that they would drop from 1931 to 1940, approximately 15% below the 1927 building cost level (R. V, 3657-8; R. V, 3659-73) which latter cost level was within 4% of the building cost level of 1928-29 (R. IV, 2679). Indeed, in its presentation on Western's Profits and Prices, Appellee gave effect to such conclusion and the District Court's findings were based thereon (*supra*, 308).

(b) Appellee's claimed justification for much of the expense covering the American Company's Development and Research work was predicated on the development by that work of the telephone art during the period following 1923 to the point where reasonable expectation may be had that in the distant future the cost of new plant to be added will be cheapened in relation to Appellee's existing plant now in service (R. I, 695).

(c) Appellee claimed that the benefits of the American Company's Development and Research work subsequent to 1932 would be reflected in the plant of the Associated Companies and particularly in the exchange plants to a greater extent than for the period prior thereto. On that basis, a foreseeable condition exists of cheaper plant and higher salvage and longer life (R. I, 695). Indeed, the American Company's relationship in this respect is one of the unique factors which the Interstate Commerce Commission and this Court in its Opinion of December 1, 1930, emphasized to be taken into account in respect to depreciation expense charges in the Bell System (*Depreciation Charges of Telephone Company*, 177 I. C. C. 351, at 402 (1931); *Smith* v. *Illinois Bell Tel. Co.*, 282 U. S. 133, at 151 (1930)).

(d) The events since 1929 have rendered unreliable prognostications on the basis of 1928-9 prices on which to predicate findings of confiscation (*Los Angeles Gas & Elect. Co.* v. *Railroad Commission*, 289 U. S. 287, at 311 (1933)).

(2) Appellee's claimed provision in respect to the character of plant to be placed in service and the costs thereof fifty years hence is contrary to the American Company's position that such provision is impossible (*infra*, 436).

(3) Appellee *assumed an expanding business to* 1974 *which would require periodic additions.* What conditions would exist in the neighborhoods during the next forty years to require the assumed expansion program, Appellee did not know (R. II, 1110-1111); its long-time forecasts as aids to its construction program—*i. e.*, its fundamental plans—did not extend beyond twenty years (R. II, 1105). What facts there were to justify the conclusion that the telephone industry in general and in Chicago in particular, would not reach the saturation point in the next forty years or that the rate of growth of the infancy of the industry would continue indefinitely in general and in Chicago in particular do not appear.* It does appear, however, that the recent extension of the telephone use to the classes of lower than average earning power of a few years ago has already reached the point where Appellee claims its growth has become sensitive to economic conditions (R. I, 157).

To Appellee it was not even necessary to visualize the conditions in any particular neighborhood as a basis for its assumptions. Instead, its assumptions were predicated on

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* Beginning with 1900 there was one Bell telephone to each of the following number of the total population of Chicago and of the United States:

	Chicago. (O.R. VI, 2299)	United States.
1900	61	90 (O.R. VII, 2637)
1908	12	22 (O.R. VII, 2431)
1910	9	17 (O.R. VII, 2452)
1915	6	11 (O.R. VII, 2542)
1918	5	10 (O.R. VII, 2577)
1922	4	8 (O.R. VII, 2637)
1923	4	7 (O.R. VII, 2656)
1929	3 (a)	6 (R. VIII, 4430c)
1930	3 (a)	6 (R. VIII, 4430c)

(a) R. VIII, 4812; Department of Commerce Bureau of The Census—"Estimated Population July 1 For Cities Having 100,000 or more Inhabitants on April 1 of Last Census Year Prior to Year Estimated."

the proposition that if in the case of the Merrimac Building it guessed wrong as to:—

(a) the necessity for any expansion program;

(b) the dates assumed for the expansion to take place; or

(c) the amount of the additions to be made or the retirements to be had, or salvage to be recovered—it might also guess wrong as to one or more of these same three essentials in respect to one or more of the many other buildings of similar character now in service in Chicago and included in the same study, or which might come into existence and be included in future studies, and such errors would in the long run so counteract each other that a possible injustice to the present or future subscribers for an error in one case would be overcome by the possible injustice to Appellee from its error in the other case or cases (R. II, 1111).

(4) The probability of error in Appellee's assumptions is demonstrated by the following comparison of Appellee's estimates for the 1929 study on which the 1930 depreciation expense charge was made and its actual experience in respect thereto:

In 1929 Appellee estimated the contemplated gross additions to Manual Central offices for 1930 to be $1,435,000 and for 1931, $1,587,000. Appellee's actual gross additions for 1930 were $1,571,090, or 10 per cent *more* than the 1929 estimate and for 1931 were $690,304, or 56 per cent *less* than its 1929 estimate. Appellee's 1929 estimate of the contemplated retirements for 1930 was $18,000 and for 1931, $1,853,187. Appellee's actual experience during these two years showed actual retirements in 1930 of $378,811, or 2000 per cent *more* than the 1929 estimate and in 1931 of $1,839,467, or 1 per cent *less* than its 1929 estimate (R. VII, 4090a).

Mr. Turner's estimate for contemplated net additions for 1930 was 19 per cent *higher* than Appellee's actual experience in 1930, and the 1931 estimated net retirements were 77 *per cent less* than the actual. For the two years 1930 and 1931, Appellee estimated contemplated net additions of $1,150,813; in fact Appellee only made $43,116 net additions during these two years or 4 per cent of its estimate.

The following variation between Appellee's 1929 estimate of Appellee's contemplated future additions and retirements in 1930 and 1931 for four central offices and Appellee's actual experience in respect thereto is instructive:

	Estimated Gross Additions	Actual Gross Additions	Estimated Retirements	Actual Retirements	Estimated Net Additions	Actual Net Additions	Percentage of Estimated Net Additions (e) to Actual Net Additions (f)
	(a)	(b)	(c)	(d)	(e)	(f)	
Merrimac							
1930....	61,300	59,735	400	10,345	60,900	49,390	
1931....	71,000	23,378	3,100	3,244	67,900	20,134	
Total...	132,300	83,113	3,500	13,589	128,800	69,524	185%
Kedzie							
1930....	36,000	122,411	700	16,884	35,300	105,527	
1931....	51,100	14,527	6,200	8,515	44,900	6,012	
Total...	87,100	136,938	6,900	25,399	80,200	111,539	72
Prospect							
1930....	103,000	40,083	700	12,905	102,300	27,178	
1931....	117,000	9,723	6,200	7,069	110,800	2,654	
Total...	220,000	49,806	6,900	19,974	213,100	29,832	714
Stewart							
1930....	179,400	77,426	1,000	21,979	178,400	55,447	
1931....	144,000	6,811	8,000	3,575	136,000	3,236	
Total...	323,400	84,237	9,000	25,554	314,400	68,683	536

That the probability of error is inherent in the process used by Appellee in its determination and is not due necessarily to sudden changes in conditions, is apparent from the comparison which Appellee made in 1932 between the assumptions and conclusions which it would have used to determine proper depreciation rates for the years 1923 to 1927, inclusive, with those previously employed by it in arriving at the depreciation expense charges shown on its books.

Mr. Turner, as Appellee's witness on depreciation expense charges in 1932, looking back to 1923, would have established in respect to the same central office equipment which Mr. Hale, as Appellee's depreciation expense expert, considered in 1923, depreciation expense charges for that year in an amount which was $150,253.19 *less* than the amount of depreciation expense charges therein fixed by Mr. Hale (R. II, 1278). But Mr. Turner on cross-examination admitted that he himself was in error in his 1932 judgment of the proper depreciation expense charges for 1923 on central office equipment to the extent of $50,000—Mr. Turner having failed in his restudy of Mr. Hale's study to give effect to the lower depreciation rate applicable to the dial central office equipment which went into service on or before July, 1923 (R. II, 1284). So that according to Mr. Turner's judgment in 1932, as corrected by the cross-examination, Appellee's depreciation expense charges on central office equipment as shown on its books and as established by Mr. Hale were too high by $200,253.19.

According to Appellee's Exhibit A-125 (R. IV, 2853), the average service life of central office equipment as viewed by Mr. Hale was only ten years. According to Mr. Turner, Mr. Hale had developed by his mathematical computation an average service life in 1923 of 10.51 years which service life Mr. Hale *lowered,* as a result of applying the factor of judgment, to ten years. But Mr. Turner's mathematical calculations developed that the average service life should have been 11.8 years as of 1923, which service life Mr. Turner *raised* as a result of applying the factor of judgment to thirteen years (R. II, 1285). But Mr. Turner's judgment as thus expressed, required further adjustment to give effect to the actual experience of central offices actually retired between 1923 and 1932, resulting in a final judgment of average service life of 12.52 years, which figure Mr. Turner rounds out to 12.5 years (R. VI, 3818).

Turn, however, to an item of property—exchange underground cable—which is viewed to have a much longer average service life—25 years—and therefore to be subject to influence in greater degree by the factor of judgment. Mr. Turner in 1932 found that Mr. Hale's conclusion in respect to this item in 1923 resulted in an understatement of depreciation expense charges, in the amount of $157,246.48 (R. VI, 3822). Mr. Turner would have increased the depreciation expense charges in respect to this item over Mr. Hale's determination by 33 per cent (*Idem*).

Turn to another item—station apparatus—having an average service life, according to Mr. Hale, of five years, as reflected in the recorded depreciation expense charges—and having an average service life, according to Mr. Turner of seven years, as reflected in Mr. Turner's restudy. Mr. Turner found in 1932 that Mr. Hale's conclusion in respect to salvage to be derived therefrom was too conservative and as a result thereof Mr. Turner found that Appellee's books recorded excessive depreciation expense charges in respect to this item by $108,671.38 (R. VI, 3822).

It is instructive to note also that the differences from Mr. Hale's conclusions which Mr. Turner developed in 1932 for the year 1923, dealing with five items of plant, continued in some subsequent years as to some of the items, but, according to Mr. Turner, with different effect (R. II, 1279-81).

E.

Appellee's justification for its financial program to provide advance contributions is based on and gives effect to arbitrary assumptions.

First Ground for Justification.

(1) Appellee's justification (*supra,* 401) based upon the accounting rules of the Interstate Commerce Commission in respect to the group basis of depreciation treatment disregards the essential fact that such rules cover *plant in service.* Nowhere in the Uniform System of Accounts or in the two Orders on Depreciation entered in 1926 and 1931 (O.R. I, 259-386; 177 I. C. C. 351 (1931); R. VIII, 4463-76), does the Interstate Commerce Commission by express language or implication extend its rules to include therein contemplated future additions to be acquired and to be placed in service under the conditions of this record.

There is no more reason in Appellee's justification than there would be to claim that the group basis of determining pension fund requirements covering employees in service justified the advance provision for pension fund to cover employees not yet in service but who are expected to be placed therein on the expansion of the business 25 years hence.

Second Ground for Justification.

(2) Appellee, on rebuttal on the day before the closing of the final hearings, presented a study purporting to show a recomputation of the depreciation expense charges for

the period 1923 to 1931, inclusive (R. II, 1426; R. VIII, 4949-56b). The recomputation (a) eliminated advance collections applicable to future additions to buildings and central office equipment in service, and (b) applied the unit basis of depreciation treatment to certain other classes of property instead of the group basis, as under present methods. The decrease arising from elimination of the advance collections was estimated at $1,470,000; the increase arising from the application of the unit instead of the group basis of depreciation treatment was estimated at $2,300,000, resulting in a net increase in expense of $830,000 (R. II, 1388). The necessary connection between such decrease and increase is claimed by Appellee to be based on the following consideration:

Appellee claims that the necessary implication of Appellants' contention that depreciation expense charges applicable to additions to buildings and central office equipment should be collected during the period *after* installation of such additions and *not in advance thereof*, is that the depreciation expense charges for each central office or building in service must be determined on the basis of its own individual experience and not on the basis of the group average experience of buildings or equipment in service. Appellee claims further that such individual or unit basis of depreciation treatment of each building and central office necessarily implies that similar individual or unit basis of depreciation treatment should be applied to every other unit of property to which Appellee now applies the group basis of depreciation treatment (R. II, 1427-32).

Appellee's position is fundamentally unsound and its recomputation meaningless. Under its present practice, Appellee computes the annual depreciation expense charges for all items of plant in service other than buildings and central offices, on the basis of the group average life experience, and applies the group average to the individual units, in manner similar to the actuarial methods of life insurance (R. I, 773). In the case of buildings and central offices, Appellee now computes the annual depreciation expense charges by determining the life of each individual building and office on the basis of its *own* experience, and then compositing the depreciation expense charges so determined (R. II, 1773; R. IV, 2864a, 2866a). But the reason that Appellee uses the average experience in the one case and the individual experience in the other is *not that advance collections* are recovered applicable to additions to buildings and central offices in service and are not collected in the case of the other classes of plant; the fact of such advance collections has nothing to do with such difference in treatment. Appellee selects the unit basis for one class of property in service and the group basis of depreciation accounting for the other classes of property in service on the ground, as it claims, of accounting convenience; that, unlike poles and desk stands in service, neither buildings nor central offices in service constitute such a natural group in each case that the average experience of the group can be fairly substituted for the actual experience of each building or each central office.

Appellants' objections to advance collections applicable to future additions to buildings and central office equipment would apply as well if Appellee had used the group basis of depreciation treatment for such classes of property in service, and in connection therewith had made provision for such advance collections. Such objections are distinct from and in addition to any objections that arise from Appellee's use of the unit instead of the group basis of depreciation treatment for *buildings and central office equipment in service* (R. III, 2431; R. II, 1762).

The elimination of the inflation in charge arising from the advance collections has no possible relation to the question whether the individual or the average group experience should be used in determining the depreciation expense charge of such *property in service*. Such elimination certainly carries with it no possible implication in respect to the depreciation treatment of the property in service.

Nor does it follow that Appellee's continued use of the unit basis of depreciation treatment of buildings and central offices in service, but eliminating advance collections for future additions thereto, carries with it the necessary implication that Appellee must use the unit basis of depreciation treatment also for poles, desk stands, underground cable, and all other items of property in service to which it now applies the group basis of depreciation treatment. Under its present practice, Appellee does not justify its use of the group basis of depreciation treatment to such items of plant on the basis of the depreciation treatment of buildings and central office equipment; on the contrary it denies there is any similarity between them to justify similar treatment. The elimination of the advance collections does not eliminate such dissimilarity and has no relation to it.

Corresponding to the unsoundness of the basis for the recomputation, is the arbitrariness of the many assumptions which enter as to some items, and the complete lack of data to support the recomputation as to other items involved therein—glaring proof of the lack of practical wisdom of the District Court's lending aid to Appellee to evade the conclusion by the State of Illinois in common with other states and with Congress: that the subject matter of depreciation expense charges is one which cannot safely be left within the managerial discretion of the utility itself (*supra*, 383). To illustrate:

(a) Appellee's recomputation on manual central office buildings included ten buildings, which were to be converted into dial buildings by 1944—seven of which were estimated to have a service life extending to and beyond 1970* and three of which beyond 1980.** Appellee's recomputation assumes that the elimination of further additions results in a decrease of 25% in its estimate of the salvage of all buildings, including these ten buildings from the estimate based on their inclusion; if viewed without future additions the average salvage which these buildings would bring would be only 15% of their estimated book investment at the time of retirement, instead of 20% thereof (R. VIII, 4950).

This conclusion was reached in the face of the fact that it involved a knowledge of the character of the structure at retirement, which could not be determined at least until after the conversion, and a knowledge of conditions surrounding the structure at the time of retirement,*** which

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*(R. IV, 2866a.)

Austin	1977	Pullman	1979
Hyde Park	1974	Rogers Park	1975
LaFayette	1976	South Chicago	1978
Lakeview	1975		

**(R. IV, 2866a.)

Beverly	1980	Merrimac	1984
Kildare	1983		

***Mr. Turner testified:

"Although the (dial) buildings are expected to have a longer life and will therefore be older at the time of disposal, I have estimated the same net salvage for dial buildings that I have used for manual buildings, that is, 20 per cent. I did this because I think a larger percentage of these buildings will be located more favorably with reference to commercial streets or areas. There are also certain parts of the design of the buildings more attractive to commercial purchasers; one of these is that the first floor is placed at street level, whereas in most of our existing buildings, the first floor is several feet above the level of the street" (R. I, 770).

Appellee did not attempt to guess, as appears from the following testimony of its depreciation expense expert (R. II, 1110):

> "We did not attempt to visualize any conditions that might exist in 1974 with reference to a particular neighborhood."

(b) Appellee's recomputation showed that inclusion or exclusion of advance collections applicable to future additions of dial central office buildings would not change the depreciation rate thereon (R. VIII, 4950). But an examination of the work sheets on this item (R. VIII, 4950) disclosed that its conclusions assumed two variations from the previous study, upon which the recorded rates were established. In its previous study, wherein the future additions were considered, Appellee computed an average life of 35 years and 20% salvage. In the restudy, wherein it disregarded additions, it assumed a life of 30 years but assumed salvage of 7%—a reduction in salvage of 65% (R. VIII, 4950).

As bearing upon the weight to be given to this particular item, Appellants direct attention to the following facts:

On account of the lack of experience with dial property, the 20% salvage figure used in Appellee's previous study was based on the experience of manual office buildings and was established at the same salvage rate as that of manual office buildings (R. I, 770). However, it now appears that in the recomputation, the prognosticated salvage at the end of the service life of manual central office buildings represents a drop from 20% to 15%—25% reduction (*supra*, 426); the prognosticated salvage on dial buildings calls for a drop from 20% to 7% representing a 65% reduction. No reason for this sudden shift in position appears in the record. Mr. Turner, as Appellee's witness, testified in respect to salvage on dial buildings in the recomputation:

> "Now, I worked that out very roughly; I have taken what I consider a typical example, and determined what proportion of that initial construction might be expected to survive through an entire period of 50 years, what portion would be retired when an addition is made, and what portion is represented by building equipment, elevators, steam heating plants and so on, and how long they would live on the average" (R. II, 1432).

Apparently, however, this rough treatment was accurate enough to cause the reduction in salvage to be exactly enough to offset the increase in life due to the elimination of future additions so as to maintain unchanged the depreciation rate, irrespective of the inclusion or exclusion of the future additions.

Appellee's vision of the small value at retirement of these buildings extending into such remote future to 1984 is in striking contrast to the closer vision which Appellee had when its witness, at the final hearings, viewed as of December 31, 1930, the depreciation in valuation new of the buildings to be retired in 1931 and 1932 and the per cent condition for the purpose of valuation:

	Date of Retirement. (R. IV, 2866a.)	Per Cent Condition of Reproduction Value New at December 31, 1930, for Purpose of Valuation (R. VII, 4086-7).
Dearborn	1931	94.21%
Delaware	1931	85.57%
Canal	1932	89.56%
Main	1932	75.78%
Monroe	1932	90.37%
West	1932	85.97%

And Appellee contended at the hearings before the District Court (R. IV, 2682A; R. III, 2390) and contends on cross appeal before this Court (R. IX, 5064) that it is entitled to receive a return on such per cent of the valuation new of these buildings in 1930 and 1931 (*supra* 428). Appellee's contention is on the basis presumably that a purchaser of the property, or Appellee as the reproducer of the property, would pay these per cents of the value new of the respective properties, even though within a few weeks or months thereafter their entire earning power would be destroyed.

(c) In respect to dial central office equipment we have an extraordinary presentation. Appellee claims that the salvage on manual central office equipment has been lowered below normal for the immediate future because of the introduction of the dial operation (R. I, 762). Since its estimates pertaining to dial equipment are based on the manual equipment, it follows that unless there comes into operation a new method to replace the dial operation, it is reasonable to expect that in 1984 when the Merrimac Building is taken out of service the salvage on the equipment therein will be greater than the present estimate of salvage, which is admittedly subnormal. But in the recomputation, Appellee not only did not give effect to this consideration; he decreased the salvage.

(d) Appellee's recomputation in respect to station equipment, pole lines, aerial cable and office furniture and fixtures, showed that its depreciation expense charges would be increased if it changed from the group basis to the unit basis of depreciation treatment. Although Appellee admitted it had no working papers whatsoever to support its recomputation, it did conclude that for the period 1923 to 1931, inclusive, the change would result in an increase of $901,200, representing an increase of an even 5% on each year's actual charge (R. VIII, 4955), which increase was largely responsible for the final result of the recomputation. All this in the face of the elaborate studies which Appellee claims necessary to arrive at the proper depreciation rate in respect to these items (R. IV, 2867-2870f, 2875-2881).

(e) Appellee's recomputation in respect to underground cable showed that its depreciation expense charges would be increased, if it changed from the group basis to the unit basis of depreciation treatment, by $1,394,967, representing an even 15% of each actual charge. But as to this class of property the actual charges were predicated on studies based in part on incomplete data of the older records and resulted in an overaccrual of from 9% to 15% (R. II, 1717). The recomputation employed the same data (R. II, 1432).

Third Ground for Justification.

(3) Appellee's justification on the ground that its subscribers are benefited (*supra*, 402), disregards its own experience and the necessary consequences of the assumption on which its program is predicated.

Appellee's position would be sound only if Appellee planned that its operations should be conducted through one or more offices built *at the same time,* and that the expansion of such operations should be met only through *additions* to such *existing office or offices* and not through the placing in service of *new offices.*

It is obvious however that if a new central office is placed in service during the period when the late additions are being made to an existing office and the same depreciation treatment is used in connection therewith, as was used for the original office, the subscribers of the late period of the existing office, while receiving the advantage of the advance collections made during the period prior to the installation of the late additions thereto, are being charged with advance collections to provide a portion of the anticipated depreciation expense on the contemplated future additions to the new office. To the extent that expansion is met by the placing in service of *new structures* rather than by additions to *existing* structures, do the burdens of advance collections offset benefits realized from additions to such existing structures.*

In Chicago, during the period 1923 to 1931, inclusive, there were added fifteen new central offices of which thirteen were dial, representing an outlay of $20,900,000 (R. VII, 4089), and two were manual, representing an outlay of $850,000 (R. IV, 2864a). The amount of future additions which Appellee included in its computations upon which the depreciation expense charges covering these central offices were based is not in the record and can not be definitely fixed (*supra*, 405). During the same period eight central offices were retired from service (R. II, 1735). The dial program of Appellee calls for the entire city to be dial operated by the end of 1944 (R. II, 1109). On the other hand, during the period 1923 to 1931, the additions to existing offices aggregated approximately $30,000,000 (R. IV, 2776).

Of the many existing manual central offices which are scheduled to go out of service during the period to 1944, some are scheduled to have no additions during the last quarter or more of service life (R. II, 1728). But as dial central offices, according to Appellee, enjoy a much longer service life than manual central offices (R. I, 762), the effect of such longer service life will offset the effects of the shorter service life investment of later additions of the existing structure, and the burden will still remain covering the advance collections applicable to such new offices. The effect of the factor of growth is to constantly replenish and maintain the fund of advance collections for the benefit of Appellee.

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*Appellee's depreciation expense witness, Mr. Turner, testified:

"A. Of course, our problem is broader than just for the City of Chicago: we have numerous exchanges outside of Chicago that have but a single office, and there you would get this inequitable condition that I spoke of. I mean by 'inequitable' that it would place a burden on the subscribers attached to the office towards the end of its over-all life. Even in the City of Chicago the situation resulting from the consideration of future additions would not necessarily equalize the condition unless it so happened that at a particular time the new offices, with their lower depreciation rate, would exactly offset the older offices with their higher depreciation rates" (R. II, 1138-39).

Moreover the contemplated result of Appellee's program would be upset if inadequacy as a factor in the shortening of the life of the existing structures were removed by Appellee through the installation of such new offices. In such case, Appellee's subscribers contribute advance contributions applicable to the future additions to the new offices; continue to pay the depreciation expense charges during the full period of the service life of the existing offices predicated on the rate which gives effect to additions which will never be made; and receive no credit for the advance contributions made on the basis that such additions would be made. In such case Appellee alone has benefited by the advance collections to which it is not entitled (*supra*, 403, *et seq.*). The record shows that Appellee has relieved inadequacy in respect to existing structures by new structures. In the case of the Edgewater manual central office installed in 1907 (R. IV, 2864A) and estimated to be retired in 1940, the record (R. II, 1729) shows that the capacity would be reached September 30, 1928, requiring additions thereto. But Appellee did not make the additions. Instead it built the new Longbeach office within one block of the Edgewater office to relieve the older office (R. II, 1728-30). Similarly, Appellee placed in service the new Merrimac office to relieve three existing offices instead of providing additions thereto (R. II, 1730-31).

DISCUSSION AS TO CONTENTION NUMBERED IV.

IV.

THE DISTRICT COURT COULD NOT MAKE A VALID FINDING ON DEPRECIATION EXPENSE CHARGES ON THE BASIS OF APPELLEE'S SHOWING OF ITS RECORDED DEPRECIATION EXPENSE CHARGES ADJUSTED "TO MAKE THE AMOUNTS OF SUCH ALLOWANCES CORRESPOND WITH THE PRESENT VALUE OF THE PROPERTY AT THE TIME SUCH AMOUNTS WERE SET UP ON THE BOOKS OF THE COMPANY."

Preliminary Statement.

Appellee made a showing of its recorded depreciation expense charges for each year 1923 to 1931, inclusive, adjusted to its reproduction cost new estimate of the Chicago Intrastate property in reliance on the case of *United Railways* v. *West* (280 U. S. 234 (1930)). Such adjustment was made by applying to its reproduction cost new estimate of the property the same depreciation class rate which it had applied to the book cost of plant (Appendix, p. 97).

The adjusted amounts exceeded the recorded amount for each year by amounts ranging from $712,000 to $1,912,000 per year (Appendix, p. 97). No corresponding figures appear in the record for 1932.

The District Court stated that it gave consideration to these adjusted charges; how much, the record does not show, and it is impossible to determine (*infra*, 448). Appellants point out five reasons why no consideration should have been given thereto:

A.

Appellee's financial program to provide annual advance contributions for anticipated depreciation on contemplated future additions to Buildings and Central Office equipment precludes the possibility of using the reproduction value of property in service as a base for the computation of the amounts thereof.

Appellants here discuss only the propriety of using the rate base as a yardstick from which Appellee computes the number of dollars of annual contributions for anticipated depreciation on contemplated future additions.

Assume $500,000 is the book cost of the original investment in 1926 to be retired from service in 1976 and $500,000 is the additional investment to be put in service in 1966; assume no salvage to be had at the date of retirement in 1976. The annual advance contributions required, according to Appellee would be 1⅓% of $500,000 for 40 years or $6,666 per year, aggregating $266,000 (*supra*, 403). It is obvious that if the 1⅓% rate is applied for 1926 to a base amount more than $500,000, or is applied in any year thereafter to 1966 to a base amount in excess of $500,000, the advance contributions will be proportionately increased and Appellee will have a fund in excess of its $500,000 requirements and in excess of the amount which it claimed necessary to make it whole in 1976. By changing the amount of the rate base and not making corresponding change in the rate applied thereto, Appellee would be unjustly enriched if the effect of the change were to increase the amount of the rate base and would be prejudiced if the effect were to reduce the amount of the rate base.*

As the reproduction cost figures were much higher than the book cost figures, the effect of applying the same rate thereto as Appellee applied to the book cost figures, was to *increase contributions for anticipated depreciation beyond the amount which Appellee claimed it would need* for that purpose—Appellee and its capital investors would be unjustly enriched thereby at the expense of the telephone users.

So long as the depreciation rates and charges include as a part thereof advance contributions for anticipated depreciation on contemplated future additions, Appellee is precluded from the possibility of calculating depreciation expense charges in respect to central offices and buildings —which represent over 40% of total depreciable property (*supra*, 403)—on the basis of the value of its property in excess of that evidenced by book cost without revising the depreciation rate in a manner to prevent its unjust enrichment as above defined.

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*Appellee's depreciation expense witness, Mr. Woodford, testified:

"If the rate were applied to any amount other than cost the amount of the accrual produced would be different than the amount based upon cost; that is obvious. If the reproduction costs were higher, the accrual would be higher, and if the reproduction costs were lower, the accrual would be lower than on the book cost basis. Actually, we do not make our accruals on our books on that basis; we make our accruals on the basis of cost.

The percentage which we apply on our books is for the purpose of accumulating over the entire life of the building, the amount which we expect to have invested in that building including the initial construction and the additions" (R. II, 1192).

B.

The investors in Bell Telephone securities "are not primarily interested in property, as such, but are interested in safeguarding the money invested in the property which so far as it will some day be lost in operations, is, therefore, what should be covered by the depreciation provision."

The situation in the Bell System is opposite to the situation which was before this Court in the *United Railways* Case and upon which the following conclusion was predicated:

> "One of the items of expense to be ascertained and deducted is the amount necessary to *restore property worn out or impaired*, so as continuously to maintain it as nearly as practicable at the same level of efficiency for the public service" (280 U. S. 253).

According to two of the American Company's experts on depreciation matters:

> "It is, of course, evident from what has just been said that the Bell System depreciation reserve is a retirement reserve, not a replacement reserve. Under the theory as stated, the amount of replacement cannot affect the amount of this depreciation expense. It is what the company loses in the way of original capital consumed which determines the amount of the loss, which would be exactly the same regardless of whether or not replacements are made. Telephone companies moreover seldom make replacements in kind, some other or different equipment or construction being usually necessary. It would be impossible to estimate years ahead what replacement costs are going to be, and in any event it is fairly certain that investors in telephone securities are not primarily interested in property as such but are interested in safeguarding the money invested in

> the property which so far as it will some day be lost in operations, is therefore what should be covered by the depreciation provision" (R. VI, 3781-2).

Consider the example which the Bell System used before the Interstate Commerce Commission to illustrate their position on depreciation just stated (*supra,* 407). Assume Appellee had on hand on January 1, 1200 tons of coal that it had bought and paid for at $10 a ton, and would use during the year 100 tons a month. To make the payment, Appellee borrowed from the American Company $12,000 to be retired at the end of the year, and arranged to make twelve equal monthly deposits in its local bank for ultimate retirement of the debt. Obviously each monthly deposit is not varied on the basis of what it might cost Appellee to replace the coal consumed during the current month, or at the end of the twelve months' period, or on the basis that Appellee will ever purchase any more coal.

To bring the above example within the specifications of the situation discussed in the *United Railways* Case, it would be necessary to assume that on January 1, Appellee not only purchased the 1200 tons of coal, but also contracted to have the coal merchant deliver to Appellee at the end of the year an additional 1200 tons of coal to replace the first purchase, and to be paid for at the date of delivery on the basis of the then open market price; and that Appellee arranged for twelve monthly deposits in the local bank during the year of the consumption of the first purchase to provide the purchase price for the second purchase. In such a case, each monthly deposit will vary as Appellee's estimate of the probable year-end market price of coal varies, and perhaps "this for all practical purposes" means "present value" (*United Railways* Case) at the date of the deposit, if the foreseeable conditions justify such conclusion. The same result will follow if instead of the second 1200 tons being delivered at the end of the year, twelve monthly deliveries were to be made during the year of consumption of the first purchase, and payment was made at each delivery date on the basis of the then market price. The monthly deposits or payments for the second purchase are governed by the principle of the *United Railways* Case; to extend the principle also to the monthly deposits for the retirement of the debt incurred to finance the first purchase, would result in a surplus of deposited funds in a rising market and in a shortage of funds in a declining market for coal. If such deposits were turned over to or were earmarked for the American Company, it would then be either unjustly enriched or unduly burdened at the expense or for the benefit of Appellee's subscribers, from whose telephone service charges such deposits were provided.

There is no difference in effect between the assumed unjust enrichment and that which the American Company and other investors in Appellee receive under the District Court's findings on depreciation expense charges, which give effect to the *present value,* in excess of original cost, of the capital consumed and to be consumed during its service life in determining the *reimbursement* to which such investors are entitled on account thereof.

C.

The present record precludes the possibility of reaching the same conclusion of fact as that to which this Court attached legal consequences in the United Railways Case (280 U. S. 234), to-wit: the conclusion of fact that the cost of retired property at the time of replacement "is for all practical purposes present value."

This Court in the *United Railways* Case said:

> "The 'utility is entitled to see that from earnings the value of the property invested is kept unimpaired, so that at the end of any given term of years the original investment remains as it was at the beginning,' *Knoxville* v. *Knoxville Water Co.* This naturally calls for expenditures equal to the cost of worn out equipment at the time of replacement; and this for all *practical purposes means present value*" (280 U. S. 254).

The record in the instant case discloses that some buildings in service and additions to be made thereto to 1974 are not expected to be retired until 1984 (R. IV, 2866a); that some central office equipment in service and additions to be made thereto to 1943 are not expected to be retired until 1944 (R. IV, 2866b); that the foreseeable values of buildings and equipment are expected to be less than current value based on current prices (R. I, 352); that Appellee has charged to expense large license payments whose justification is represented to be the future cheapening of the newer plant (*supra*, 416).

The record in the *United Railways* Case permitted this Court to attach legal consequences to the *conclusion of fact* that the cost of retired property at the time of replacement is for all practical purposes "present value." The record in the instant case precludes the possibility of reaching the same *conclusion of fact* as that reached in the *United Railways* Case. The legal consequences attached to the facts of the *United Railways* Case can have no application to the instant case.

D.

The base which Appellee used in its depreciation expense computations was not the "present value" of the property which this Court in the United Railways Case held was the proper base for depreciation expense computations in respect to the property covered thereby.

The "present value" referred to by this Court in the *West* Case is the "present value" determined in accordance with its opinion in *McCardle* v. *Indianapolis Water Co.* (272 U. S. 400), wherein it held (408):

> "But in determining present value consideration must be given to prices and wages prevailing at the time of the investigation; and in the light of all the circumstances, there must be an honest and intelligent forecast as to probable prices and wage levels during a reasonable period in the immediate future."

Appellee's presentation of Western's Profits and Prices to show the reasonableness of Western's prices used in Appellee's reproduction estimates of each year precludes the possibility of using them as "present value" (*supra*, 343). Such estimates are grossly in excess thereof (*supra*, 344).

Similarly, Appellee's reproduction estimate of buildings based on prices current in the year of revaluation does not represent "present value" in each such year and is grossly in excess thereof (*supra*, 347).

E.

Appellee's position before the District Court in 1932 repudiates the position which it took in the 1929 hearings in this case, in the regular course of its business in relation to its investors, and before the Interstate Commerce Commission, since the decision in the United Railways Case.

Appellee's position at the 1932 hearings repudiates its presentation at the 1929 hearings of the depreciation expense charges on the basis of its book figures (O.R. II, 886-93). Its witness on the depreciation expense in 1929 was Mr. Hale, President of Appellee in 1932. He then testified in its behalf on depreciation expense as follows:

> "The objective of depreciation is to determine the amount of dollars per year which must be accumulated so that at the end of the life of the property now in service you would have accumulated an amount equal to its original cost" (O.R. II, 888).

This testimony was in the face of the decision in *Michigan Public Utilities Commission* v. *Michigan State Tel. Co.*, 228 Mich. 658, at 673 (1924); in *Cincinnati & Suburban Bell Tel. Co.* v. *Public Utilities Commission*, 148 N. E. 817, at 824 (Ohio, 1925); and in *Kansas* v. *Southwestern Bell Tel. Co.*, 115 Kan. 236, at 254, 292-94 (1924).

Appellee in 1932 repudiates the position it has taken in the regular course of its business in relation to its investors, who receive its annual reports based on its books, the Interstate Commerce Commission, with whom it files annual reports, since the decision of this Court in the *United Railways* Case. On the basis of its position its books have not and do not now record the true facts.

DISCUSSION AS TO CONTENTION NUMBERED V.

V.

THE DISTRICT COURT COULD NOT MAKE A VALID FINDING ON DEPRECIATION EXPENSE CHARGES ON THE BASIS OF THE EXPERIENCE OF OTHER ASSOCIATED COMPANIES IN RESPECT TO DEPRECIATION EXPENSE CHARGES AS DISCLOSED IN THE RECORD.

Appellee presented exhibits showing comparisons of what the depreciation expense charges of each of the other Associated Companies actually were on a company basis and what it would have been if each such company had used the rates used by Appellee in the Chicago area (R. V, 2982a-2987). Appellee also made a comparison between the rates for Chicago and New York City (R. V, 3144a; R. II, 1393).

These comparisons showed that for the entire period 1923 to 1931 the average depreciation rates of all the other Associated Companies, taken as a whole, were slightly higher than the Chicago rates; that of the individual companies, twelve had in effect rates as high as or higher than, and eight had in effect rates lower than, those in effect in Chicago; that the rates of the companies operating in territory including Washington, D. C., Cincinnati and Los Angeles were in each case as high as or higher than the Chicago rates; and that the rates for New York City for the three years 1929, 1930 and 1931 (the only years during which separate rates were applied in New York City) were substantially higher than the Chicago rates (R. IV-V, 2982a-2987; R. V, 3144a; R. II, 1185-7; 1392-3).

The District Court's findings, giving effect to this presentation, are fatally defective because:

(1) The practice of recovering through telephone service advance collections applicable to additions to buildings and central office equipment is generally followed in the Bell System (R. II, 1181, 1201). If such advance collections are not proper operating expenses in this case, as Appellants contend, certainly the charges of such other companies are improper. But even if such charges are proper operating expenses, the amounts thereof depend on the particular conditions in the community which will determine the time and rate of *growth* in the far distant future and on the judgment of the depreciation expert, to the fullest extent prior to 1928 (R. II, 1201-2) and to a large extent thereafter (*supra,* 404). Appellee's presentation must be on the basis either that growth in each community in the Bell System forty or fifty years hence will be similar, or that some mathematical law exists which will flatten out the dissimilarities into an *average* which will bear a fair relation to the then situation in Chicago in particular.

(2) The comparison between depreciation rates in Chicago with those covering total company territory is meaningless. Appellee's witnesses on depreciation expense charges have testified that the following factors have probative value in making a comparison between Appellee's rates in Chicago and those of other communities:

(a) Growth, increase in population, in business and in new customers (R. II, 1099);

(b) New subscribers, additional facilities to existing subscribers, increase in calling rates and holding time, gradual extension of residences and business into vacant areas within the city (R. II, 1100);

(c) Judgment enters as a factor into average service life figures (R. II, 1123);

(d) Maintenance policy, major changes in accounting methods; gross additions and retirements of property (R. II, 1124);

(e) Prospective growth in plant, number of stations calling rates from provisional estimates and fundamental plans; future additions of buildings and central office equipment (R. II, 1125);

(f) Accounting methods as to extraordinary repairs, the fact as to whether the property is new or second-hand, wear and tear not covered by current repairs, obsolescence and inadequacy resulting from physical age, supersession by new inventions and discoveries, changes in popular demand and public requirements (R. II, 1126);

(g) Rate of growth and retirement; history of each company as to the purchase of going plant, the condition at which it was entered on the books and the amount of depreciation reserve which was set up on the books with respect to such purchases; growths of the depreciation reserve and net charges to the depreciation reserve by primary plant accounts for each year; extent to which other companies took into account the fact that on account of the depression there would be a deferment in future additions; the varying amounts of investment in central office equipment, such as manual and dial, central office buildings, manual and dial; the policy of each of the other companies in respect to the re-use of its own equipment and material (R. II, 1202).

More than mere judicial notice is required to prove that rates applicable to a metropolitan area like Chicago would bear relation to the composite rate of other Associated Companies like the Mountain States Tel. & Tel. Co. which covers only mountainous rural territory and small cities, the largest of which, according to the United States 1930 Census, are Denver, Colo. (pop. 288,000), Salt Lake City, Utah (140,000), and El Paso, Texas (102,000). More than mere judicial notice is required to prove that the rates applicable to Chicago alone would bear relation to the composite rate of the New York Telephone Company covering New York City and its other areas combined.

(3) The difference in the business and financial sections of Chicago and New York City and the existence of the subway in the one and not in the other are sufficient to vary the characteristics surrounding their depreciation requirements if considered on a city basis only.

(4) This Court's direction of December 1, 1930, required that "careful analysis" be made of the Bell System situations which were employed as the basis for comparison covering depreciation of expense charges (282 U. S. 133, at 158). Appellee not only did not present such analysis but resisted Appellants' attempt so to do. One of the sources from which knowledge of the facts bearing on Bell System depreciation rates may be obtained, is the Provisional Estimates (R. H, 1954-8) of the Associated Companies, which form the basis for policy determinations within the Bell System (*infra*, 504).

On September 21, 1931 (R. IX, 5033-4), Appellee refused Appellants' request for the Provisional Estimates of the Associated Companies made by Appellants' counsel on July 28, 1931 (R. IX, 5035); on January 11, 1932, during the taking of the depositions in New York, it again refused Appellants' request for these documents (R. III, 2265). The final hearings commenced in February, 1932, and the Provisional Estimates were not produced by Appellee as part of its case or otherwise. The District Court refused to pass on Appellants' Motion of May 3, 1932, for their production (R. IX, 4973). They were finally made available on June 4, 1932 (R. II, 1944), twenty-seven days before the conclusion of the hearing. They consisted of sixteen volumes of tables of statistics, reports and letters, comprising between eight and ten thousand pages (R. VIII, 4802), and they contained material bearing on comparability or lack of comparability of conditions in one company as compared with another company respecting depreciation (R. II, 1960).

Proper study of these records, for the purpose of determining whether a fair comparison may be made between the depreciation expense charges of each of the other companies and that of Appellee in Chicago, was estimated to require from three to six months (R. II, 1960). From the cursory examination, it appears that there is a complete lack of comparability for that purpose between the conditions in Chicago and in other portions of the Bell System (R. II, 1961-3; R. VIII, 4437, 4438a, 4439, 4445).

But the Provisional Estimates did reveal the extent to which the depreciation expense charges in the other portions of the Bell System truly reflect the effect of the actual conditions existing in their respective territories. The letter from the President of the Bell Telephone Company of Pennsylvania, to the President of the American Telephone & Telegraph Company, dated November 27, 1922, relating to the Provisional Estimates of the former company for 1923 (R. II, 1948) said:

> "The rate of depreciation has been assumed to be the present rate, 5.2 per cent. In our letter to Mr. Gherardi, dated May 27th, we recommended certain revisions in the depreciation rates, which would result in a reduction of approximately $300,000 for the year 1923. In his letter of October 2nd Mr. Gherardi concurred in these revised rates as reasonable and proper, and suggests that we take the matter up with Mr. Heiss before any actual changes were made. On October 17th Mr. Heiss expressed his approval of the changes in rates, but suggested that we do not adopt the new schedule pending the determination by the Interstate Commerce Commission of its policies. Under these circumstances, therefore, the 1923 provisional estimate provides for depreciation at the present filed rates. We can, however, be ready at any moment to adopt the new schedule upon receipt of advice from Mr. Heiss."

How many other Associated Companies were likewise waiting for the same advice and for how long a period the record does not show, nor was it possible to determine in the few crowded days of the hearings after the discovery of this situation. But it does appear that the final order of the Interstate Commerce Commission was not issued until 1931 (177 I. C. C. 351 (1931)).

DISCUSSION AS TO CONTENTION NUMBERED VI.

VI.

THE DISTRICT COURT COULD NOT MAKE A VALID FINDING ON DEPRECIATION EXPENSE CHARGES ON THE BASIS OF THE 1920 AND 1923 ORDERS ON DEPRECIATION, MADE APPLICABLE TO THE REPRODUCTION COST NEW OF APPELLEE'S PROPERTY.

The same principles which preclude a valid finding on the basis of the recorded depreciation expense charges made applicable to the reproduction cost estimates of Appellee's property, preclude also a valid finding on the basis of making applicable the Commission's depreciation expense allowances to such reproduction cost new estimates (*supra*, 433).

DISCUSSION AS TO CONTENTION NUMBERED VII.

VII.

ON THE BASIS OF THE DISTRICT COURT'S FINDINGS ON DEPRECIATION EXPENSE CHARGES, IT IS IMPOSSIBLE TO DETERMINE THE EXTENT TO WHICH THEY ARE BASED ON ANY ONE OR MORE OF THE CLASSES OF EVIDENCE TO WHICH IT CLAIMED IT GAVE CONSIDERATION.

Although the District Court's depreciation allowance was less than the recorded depreciation expense charges, it can not be said that such deduction took into account the advance collections. The amount thereof can not be determined from the record. Such deduction may have been intended to remove the inflation in such recorded charges through other errors which Appellants showed to exist therein (R. III, 2431-32). How much more the reduction would have been, in any event, had the factor of reproduction cost new estimate not entered into its consideration, it is impossible to tell.

Under Fair Return (*infra*, 467) Appellants treat the advance collections as an advantage of additional pecuniary profit to Appellee's investors which is not received by the ordinary investor on his investment in business undertakings outside the Bell System.

FAIR RETURN.

PRELIMINARY STATEMENT.

What the District Court Did.

The District Court found that the rates in suit were confiscatory for each of the years under investigation and at the date of the Decree, June 28, 1933 (R. III, 2524). It enjoined the enforcement of the attacked rates and held that Appellee was entitled to retain the amounts collected by it during the period of the litigation in excess of the sums chargeable under the attacked order—which amounts aggregate, to December 31, 1931, $17,000,000, exclusive of interest (R. VII, 4082). The record was closed on July 1, 1932 (R. II, 2052, 2102).

The District Court found the following rates of return from Appellee's Chicago intrastate business under the existing rates, and under the rates in suit, and the required minimum rate of return to avoid confiscation all related to the rate base value as found by it (R. III, 2521-2):

	Under Existing Rates	Under Rates in Suit	Required Minimum Rate of Return
1923	5.4%	4.1%	7½%
1924	5.5	4.4	7½
1925	5.3	4.2	7½
1926	5.3	4.2	7½
1927	5.0	4.0	7½
1928	5.0	4.0	7
1929	5.8	4.9	7
1930	5.3	4.5	7
1931	5.5	4.7	6½
1932	4.8	4.1	5½

In its findings of the required minimum rate of return, the District Court applied the "comparative return" test of compensatory rates set forth originally in *Willcox* v. *Consolidated Gas Co.* (212 U. S. 19, at 48, 49 (1909)), using therein the claimed experience of business undertakings outside the Bell System (R. III, 2514). The District Court did not apply the "comparative return" test using therein the experience of the Associated Companies within the Bell System; nor did the District Court apply the "attraction of capital and maintenance of credit" test of compensatory rates of *Bluefield Water Works, etc.* v. *Commission* (262 U. S. 679, at 693 (1923)).

It stated that its findings for 1931 and 1932 gave weight to "the general decline in corporate earnings" during those years; that in its findings on fair return it gave effect to the consideration that in times of great prosperity a utility having the advantages of Appellee was not entitled to the large earnings made by many undertakings and that in times of business adversity its return "should not be reduced to the extent that the earnings of many private corporations have been impaired." (R. III, 2514.)

The District Court's findings of required minimum rate of return for each year under investigation represented a prognostication for such year as the basis for future action and did not represent a determination of the inadequacy of the attacked rates during each of such years on the basis of Appellee's actual experience of such year. Appellee's showing was directed to such prognostication, Appellants' to such actual experience.

Appellee's Showing.

Appellee's showing of required minimum rate of return was 8% on the rate base for rate-making purposes for the years 1923 to 1927, inclusive, 7% for the years 1928 to 1930, inclusive, and for the first part of 1931, and 8% thereafter (R. I, 160). Appellee's prognostication assumed that:

(1) Appellee's operations and financing would be as an independent entity apart from the Bell System, or if considered a part thereof, Appellee would receive no benefit therefrom by way of reduction in rate of return required in the assumed financing (R. I, 205, 202-4);

(2) Such financing contemplated the sale of Appellee's securities to underwriters for resale to provide funds sufficient to build or to buy Appellee outright at the rate base value (R. I, 193-4);

(3) The required return on such funds would be represented by "net cash income available for return" and would exclude any advantages of additional pecuniary profit to the underwriters or investors from Appellee (R. I, 194);

(4) Such required return so determined would be equal to that received in underwritings of similar character covering other business undertakings of corresponding risks and uncertainties (R. I, 194); and

(5) The prognosticated rate of return so determined represented such "generally received" rate of return, as determined by

(a) the unsupported general statements of witnesses (R. I, 199-200) and

(b) the percentage resulting from the American Company's average carrying charges related to its own average outstanding credit and capital obligations plus surplus. Such percentage for the years 1923 to 1927, inclusive, ranged from 6.83% to 6.93%; for the period 1928 to 1930 ranged from 6.25% to 6.55%; and for the year 1931 was 6.42% (R. IV, 2944).

Appellants' Showing.

Appellants offered the actual financial and financing experience of Appellee during the period under investigation under the recorded net income produced by the existing rates; the reduction, if any, in such recorded net income estimated to be produced by the attacked rates; and the comparable actual financial and financing experience of the other Associated Companies under returns which were not in excess of such reduced net income.

Appellants' Position.

Appellants' position is:

(1) Under the tests which the District Court failed to apply—the "attraction of capital and maintenance of credit" test, and the "comparative return" test based upon the experience of the Associated Companies of the Bell System (*supra*, 450) the attacked rates are clearly compensatory in each year of the litigation and at the date of the District Court's final decree; and

(2) The District Court's findings that the attacked rates are not compensatory on the basis of the comparative return test of the *Willcox* Case but using therein the claimed experience outside the Bell System, are fatally defective. The conclusion as to such outside experience, based on judicial notice and unsupported general statements covering the intricate and complex field of post-war corporate finance should not be accepted as adequate proof to sustain a finding of confiscation. The application to Appellee of such experience gives no effect to the difference between the character of return to Appellee's investors created by the District Court's findings on Separation of

Revenues, License Contract, Depreciation Expense and Western, and the return to the ordinary investor in business undertakings outside the Bell System.

In support of their position, Appellants offer the following:

SUMMARY STATEMENT OF APPELLANTS' CONTENTIONS.

I. Appellee's recorded return from its Chicago Intrastate business under the existing rates for each year of the litigation without giving effect to the District Court's adjustments thereto, was *more than* the required minimum return to avoid confiscation.

A. The issue of the constitutional inadequacy of the attacked rates must be determined by viewing the expected experience under the attacked rates in relation to Appellee's actual experience under the existing rates.

B. Appellee's position taken in its pleadings before the Commission and District Court and its course of conduct during the period of the litigation prove conclusively that the Recorded Return from its Chicago Intrastate business under the existing rates was constitutionally adequate during each year thereof.

C. Appellee's actual experience under the existing rates during the period of the litigation proves conclusively that Appellee's Recorded Return from its Chicago intrastate business under the existing rates, without giving effect to the District Court's adjustments thereto, in each of the years thereof was more than the required minimum to avoid confiscation.

II. The reduction in Appellee's recorded return from its Chicago Intrastate business under the existing rates which would have resulted if the attacked rates had been in effect, would not have caused confiscation in any of the years of the litigation.

A. The net income available for return under the attacked rates as found by the District Court is compensatory for each year of the litigation.

B. The net income available for return under the attacked rates as found by the District Court, but adjusted to give effect to Appellants' adjustments, is compensatory for each year of the litigation.

III. The District Court's finding of the required minimum return to avoid confiscation produced fantastic results when applied to Appellee's actual experience during the period under investigation.

IV. The District Court's use of the investment experience outside the Bell System in its application to Appellee of the comparative return test of compensatory rates of the *Willcox* Case was fatally defective.

A. Unsupported general statements or judicial notice covering post-war returns on corporate investments outside the Bell System should not be accepted as adequate proof in support of a finding of confiscation.

B. Unsupported general statements or judicial notice covering returns on investments of corporations outside the Bell System whose entire property values are represented by outstanding securities should not be accepted in support of a finding of confiscation.

C. The application of the returns on corporate investments outside the Bell System to test the inadequacy of Appellee's return to its investors from the attacked rates, as found by the District Court, disregards the special character of the return to Appellee's investors resulting from the District Court's findings on Separation of Revenues, License Contract Payments, Depreciation Expense and Western.

V. Appellee's showing of the percentage resulting from the American Company's average carrying charges related to average outstanding credit and capital obligations plus surplus cannot be used to support the District Court's findings of the required minimum rate of return and on the inadequacy of the attacked rates.

DISCUSSION AS TO CONTENTION NUMBERED I.

I.

APPELLEE'S RECORDED RETURN FROM ITS CHICAGO INTRASTATE BUSINESS UNDER THE EXISTING RATES FOR EACH YEAR OF THE LITIGATION, WITHOUT GIVING EFFECT TO THE DISTRICT COURT'S ADJUSTMENTS THERETO, WAS MORE THAN THE REQUIRED MINIMUM RETURN TO AVOID CONFISCATION.

A.

The issue of the constitutional inadequacy of the attacked rates must be determined by viewing the expected experience under the attacked rates in relation to Appellee's actual experience under the existing rates.

During the entire period of the litigation, Appellee functioned under rates prescribed by the Commission's order of December 20, 1920, and maintained in force from 1923 to date by the injunctions of the District Court. The recorded net cash income available for return from Appellee's Chicago Intrastate business under the existing rates was from $2,330,000 to $5,224,000 less per year than the corresponding prognosticated minimum cash return to avoid confiscation as found by the District Court, the aggregate shortage for the period 1923 to 1932, inclusive, being in excess of $37,000,000. The yearly rate of return produced by such recorded net cash income available for return related to the District Court's finding of rate base, equalled from 4.09% to 5.56%, or from 58.27% to 79.43% of the prognosticated required minimum rate of return, as found by the District Court (Appendix, p. 118).

The District Court's finding of the Chicago Intrastate net cash income available for return from the existing rates exceeded by from $445,000 to $1,200,000 per year the corresponding recorded figures during each year under investigation. Such excess aggregated for the period, 1923 to 1932, inclusive, more than $9,200,000 (Appendix, p. 119). Such increase in recorded net income resulted from the District Court's adjustments on Depreciation Expense (*supra*, 378), License Payment (*supra*, 84), and Maintenance (Appendix, p. 128) and are herein referred to as the "District Court's adjustments."

The District Court found that the reduction in Chicago intrastate net cash income which would have resulted if the attacked rates had been in effect during the same period ranged from $1,270,000 to $1,740,000 per annum, aggregating for the period $15,800,000 (Appendix, p. 120).*

Giving effect to the District Court's adjustments which increased the recorded net cash return under the existing rates, the net reduction in recorded cash return which would have resulted if the attacked rates had been in effect during the same period ranged from $450,000 to $650,000 per year in the period 1923 to 1927, inclusive, was $1,200,000 in each of the years 1928 and 1929, $890,000 in 1930, $220,000 in 1931, and $71,300 in 1932, aggregating for the period $6,500,000 (Appendix, p. 121).

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*The reduction in annual telephone service charges by the attacked rates for the period 1923 to 1931, inclusive, ranged from $1,600,000 to $2,200,000, and aggregated over $17,000,000 (R. VII, 4082). No corresponding figures are available for 1932.

The District Court found that the attacked rates were confiscatory. It made no express finding on the constitutional adequacy or inadequacy of the existing rates. If Appellee's existing rates are confiscatory, Appellee's actual experience, and not the experience of other business undertakings, determines the issue of the constitutional inadequacy of the attacked rates. If Appellee's existing rates are not confiscatory, certainly the prognosticated required minimum cash return as found by the District Court in excess of the recorded net cash return under the existing rates, would be the wrong standard by which to determine the issue of the constitutional inadequacy of the attacked rates.

On the basis of the District Court's determination of the issue of Fair Return, its findings of the rate of return realized from the existing rates have no significance whatsoever, although this Court's direction gave special significance thereto. This Court in its Opinion of December 1, 1930 (282 U. S. 133, 161) stated:

> "The record of the Illinois Company shows that for many years it has been able to expand its business so as to meet increasing demands, to pay its operating expenses, including interest on money borrowed, to pay dividends of eight per cent upon its capital stock, and to accumulate a surplus. It was found by the court that the reduction in revenue caused by the rates in question, as applied to the entire business for the year 1923, would amount to about $1,700,000, and the question is whether the loss when ascertained with re-

spect to the intrastate business would cause confiscation under the applicable standard as above set forth in the *Bluefield* case, *supra.* In order to determine this question, the court should find the rate of return which was realized from the intrastate business and the rate of return which it is fair to conclude would have been realized from that business under the prescribed rates."

B.

Appellee's position taken in its pleadings before the Commission and District Court and its course of conduct during the period of the litigation prove conclusively that the Recorded Return from its Chicago Intrastate business under the existing rates was constitutionally adequate during each year thereof.

The existing rates were prescribed by the Commission's order of December 20, 1920, which granted a portion of the increase in rates which Appellee sought by petition before the Public Utilities Commission in a proceeding commenced by Appellee in 1919 (O.R. IV, 1305). With Appellee's consent, the rate base was established by the Commission to include the fixed plant valued at the *original cost* on July 31, 1919, *less the full amount of the depreciation reserve account,* although Appellee showed and the Commission found that the reproduction cost new of such fixed plant on that date was 46.6% higher than its original cost.* The rates were measured to produce a return of 7.9% on the rate base as of July 31, 1919, without giving effect to additions to plant from that date to December 31, 1920, aggregating $7,273,820 (R. VII, 4072A; OR. IV, 1287). Obviously, if the rate base had included such property and

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*Original cost $65,611,820.
Reproduction cost 7/31/1919, $96,178,733 (O.R. IV, 1287).

had been calculated on the basis used by the District Court in the instant case, the 7.9% return would have been reduced to 4.84% or less (Appendix, p. 121-3).

Appellee accepted the 1920 Order, and has continued to function under its prescribed rates from its effective date to the present time, under the protection of the injunctions issued by the District Court (O.R. I, 189, *Smith Case, supra,* at 162; R. III, 2485). Appellee has taken no steps to have increased the rates prescribed by the 1920 Order, although under the Illinois Commerce Commission Act it had a right so to do at any time after two years from the effective date of such Order, to-wit: January 1, 1921 (O.R. I, 114). On the contrary, Appellee voluntarily reduced its Intrastate toll rates on February 1, 1929, by an estimated amount of $62,000 per year and on January 1, 1930, by an estimated yearly amount of $262,000 (R. VIII, 4509-10). These reductions were made in the face of the fact that the net income available for return from such business was confiscatory on the basis of the standard applied by the District Court (Appendix, p. 124).

Similarly, Appellee voluntarily reduced its showing, as recorded on its books, of return from existing rates, for the period 1923 to 1929, inclusive, by increasing its yearly operating expenses, through the charge thereto of depreciation expense ranging from $1,398,326 to $2,096,461 (R. VII, 4072A) in excess of the charge allowed by the 1920 Order, such excess aggregating for the seven years $12,387,424, and through the charge thereto of License Contract payments for the period 1923 to 1927, inclusive, ranging from $223,248 to $387,285 (R. IV, 2734; R. VI, 4030s; O.R. IV, 1302) in excess of the charge allowed by the same

Order, and aggregating for the seven-year period $1,557,744.*

The Commission issued a Citation on September 13, 1921, to Appellee to show cause why the rates prescribed by the 1920 Order "*should not be reduced*" because these rates were granted "under excessively high operating conditions," whereas the Commission believed that operating conditions at the time of the citation were lower than when the 1920 Order was issued (O.R. I, 10).

In its Answer filed thereafter, Appellee alleged:

> "That the rates and charges of respondent (Appellee), referred to in said order and citation, were authorized and approved as just and reasonable by an order of the Public Utilities Commission of Illinois (predecessor of this Commission) entered on the 20th day of December, 1920, after an extensive investigation by said Commission, in a proceeding before it known as Docket No. 9291, in which respondent filed with said Commission certain schedules of rates for its approval; that said order of said Commission finding such rates and charges just and reasonable has not been reversed or set aside and now remains in full force and effect" (O.R. I, 11-12). "Respondent (Appellee) avers that its rates and charges heretofore approved and authorized by the aforesaid order of the Public Utilities Commission of Illinois, entered on December 20, 1920, and now in full force and effect, are just and reasonable, and that the burden of proof is upon whomsoever avers, or seeks to show, that said rates are unjust and unreasonable" (O.R. I, 13).

In the Bill of Complaint filed on September 20, 1923 (O.R. I, 1), before the District Court to enjoin the attacked rates, Appellee alleged:

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*Corresponding figures for the year 1932 are not available (R. IV, 2742).

> "*Tenth.*
>
> "That the Illinois Commerce Commission, under the laws of the State of Illinois, had no authority to prescribe rates to be charged by the plaintiff (Appellee) in lieu of the present rates of the plaintiff (Appellee) except upon a valid finding that the said present rates are unjust, unreasonable, discriminatory or preferential, or in anywise in violation of any provisions of law; that the finding of said Illinois Commerce Commission in said order of August 16, 1923, that the present rates of the plaintiff (Appellee) are unjust and unreasonable is void, as appears from said finding, and that the rates therein prescribed are therefore contrary to law and void * * *" (O.R. I, 7).

The Bill of Complaint has never been amended. The Appellee has not by any other or additional pleadings in the instant case or otherwise attacked the rates prescribed by the 1920 Order as unreasonable or as constitutionally inadequate.

C.

Appellee's actual experience under the existing rates during the period of the litigation proves conclusively that Appellee's Recorded Return from its Chicago Intrastate business under the existing rates without giving effect to the District Court's adjustments thereto, in each of the years thereof, was more than the required minimum to avoid confiscation.

PERIOD 1923-1929, INCLUSIVE.

Appellee's financial history during the period 1923 to 1929, inclusive, proves conclusively the sufficiency of the Chicago Intrastate recorded return to "assure confidence in the financial soundness of the utility," and the adequacy of such recorded return "to enable it to raise money necessary for the proper discharge of its public duties." (*Bluefield Water Works Improvement Co.* v. *Pub. Serv. Com. of Va.*, 262 U. S. 679; *Los Angeles Gas & Elect. Co.* v. *R. R. Com.*, 77 L. Ed. 820; *Smith* v. *Illinois Bell Telephone Co.*, 282 U. S. 133; *United Rys.* v. *West*, 280 U. S. 234.)

Appellee's Stock Investors.

On December 31, 1922, Appellee had outstanding $60,000,000 capital stock, of which $37,700,000 (R. V, 3083) capital stock was allocable to its Chicago Intrastate business. Appellee's stockholders purchased $10,000,000 of capital stock in each of the years 1924 and 1925, $30,000,000 in 1927, and paid on installment subscriptions $20,000,000 in 1929; of which the American Company's share is $69,531,400 (Appendix, p. 125). $43,301,413 of such issued stock and installments is allocable to Chicago Intrastate business, and the American Company's share thereof is $43,012,124 (Appendix, p. 125).

Appellee received par* for its stock (including a proportionate share of surplus and unrecorded values, if any, resulting from revaluation of assets and from going value). During each of the seven years Appellee's Chicago Intrastate business paid from current earnings 8% cash dividends on outstanding stock including $31,220,000 capital stock sold at par and carried to surplus amounts ranging from $683,800 to $2,327,000 per year, aggregating for the entire seven-year period $8,729,789 (Appendix, p. 126). Such accumulated surplus was over three times Appellee's Chicago Intrastate surplus ($2,491,215) on December 31, 1922 (O.R. VI, 2120b; R. V, 3083).

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*The only premiums on stock sales were $522 for 29 shares in 1925 and $735 for 49 shares in 1927 (R. VIII, 4815).

The recorded net cash income available for return under the existing rates—without giving effect to the District Court's adjustments thereto, aggregating $6,156,712—was sufficient to enable Appellee to pay interest and amortization on money borrowed, 8% interest on installments and to yield to Appellee's stockholders, on their equity investment allocable to Appellee's Chicago Intrastate business, the following rate of return, expressed as a percentage of return on average outstanding capital and on average outstanding capital and surplus including therein the $31,220,000 capital stock applicable thereto and sold by Appellee at par:*

Year	Rate of Return on Average Capital Stock	Rate of Return on Average Capital Stock and Surplus
1923	10.95%	10.05%
1924	10.86	9.88
1925	11.25	10.03
1926	10.25	9.10
1927	9.26	8.10
1928	9.22	8.10
1929	11.50	9.81

Such rate of return is more than the rate which Appellee's witnesses testified would be sufficient to permit it to attract equity capital and to maintain its credit and stability of outstanding securities (R. I, 209). On the authority of the *United Railways* Case and the *Wabash Valley Electric* Case such cash return—as the entire return to Appellee's investors—would be compensatory.

The important thing to note, however, is that the above rate of return in each year is not the entire return to Appellee's investors. It is only a portion thereof. Thus:

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*The table in the text is taken from the following sources: R. II, 1395-1403; R. IV, 2734-40, 2748-56, 2968, 2973; R. V, 3083-9; R. VII, 4075, 4078; R. VIII, 4457-61, 4792-3.

Such rate of return was earned after absorbing, as operating expense, the expense of furnishing, as part of the return to the American Company as the equity investor in Appellee, the following nine advantages of additional pecuniary profit which were confirmed by the District Court's findings herein, and which are not available to or received by the ordinary investor in ordinary public utility or other business undertakings outside the Bell System:

(1) The receipt by the American Company of reimbursement from Appellee of the entire amount of the American Company's expense allocable to the latter as the Holding Company investor in the securities of Appellee of—

(a) distributing the American Company's own stocks and bonds offered by it to its own investors during the period 1923 to 1929, inclusive (*supra,* 174);

(b) servicing all of the American Company's securities outstanding in the hands of its investors during the same period, issued since 1886 through subscription by its stockholders or through underwriters (*supra,* 176);

(c) operating ten departments of the American Company, whose operations are concerned in whole or in part with the functions of the American Company as the Holding Company investor in the securities of the Associated Companies (*supra,* 184);

(2) The receipt by the American Company of substantial royalties and profits from the non-telephone field and from the telephone field outside the Bell System for the use therein of patents and inventions, the expense of development of which was charged as an operating expense of the Associated Companies (*supra,* 97, 106);

(3) The free use of the Chicago exchange plant facilities in the interstate services of the American Company, the expenses of which use Appellee reimbursed itself by allocating to the interstate toll services substantial portions of the intrastate exchange service revenues each year (*supra*, 68);

(4) The use free of charge and without payment of adequate compensation, of Appellee's facilities and personnel to merchandise the American Company's stocks and bonds in Appellee's territory to the public and to Appellee's employes—the expenses of which use are charged by Appellee as part of Appellee's operating expenses (*supra* 218);

(5) The receipt by the American Company of unreasonably large returns on its investment in Long Lines ranging from 13½% to 19.7% on its capital and surplus invested therein during the years 1923 to 1929, inclusive (*supra*, 144), resulting in whole or in part from—

(a) the discriminatory allocation between that department and the Associated Companies, of the Bell System portion of development and research expense of the American Company charged to such companies as part of the license contract costs (*supra*, 126);

(b) the surrender by Appellee of its right under Section 10 of the Original License Contract of 1881 to participate in the receipts and profits of the long distance business transacted in Chicago; this advantage the American Company received from Appellee but not from the other Associated Companies (*supra*, 229);

(c) the construction and engineering of Appellee's plant to conform to the plan deemed advisable by the

American Company to enable it to furnish satisfactory and profitable long distance service (*supra,* 164);

(d) the transfer, with the consent of Appellee, of the allegiance of its employees to the American Company as the operator of the long distance service (*supra,* 224);

(e) the right granted by Appellee to the American Company to settle all questions of policy and operation of Appellee on any question that might affect any other Company in the Bell System in which the American Company is also an investor or that might affect the long distance service of which the American Company was the operator (O.R. VI, 2077-8).

(6) The receipt by the American Company from Western of

(a) substantial royalties as consideration for the franchise to the latter to sell its manufactures to Appellee (*supra,* 167);

(b) unreasonably large returns on the American Company's investment in Western resulting from such manufactures—the American Company as the investor in Appellee providing capital to purchase such manufactures and acting at the same time as the purchasing agent for Appellee and as selling agent for Western (*supra,* 169; O.R. III, 1120; O.R. VI, 2196);

(c) unreasonably large returns on its investment in Western allocable to non-Bell business resulting from the arbitrary separation of expenses and property between the Bell and non-Bell business and from the failure to allocate to the non-Bell business its proper portion of Western's Development and Research expense (*supra,* 247, 271).

(7) The use in 1923 and thereafter of Appellee's resources and credit—

(a) to liquidate to the American Company $13,800,000 long-past-due indebtedness of the Central Union Telephone Company, which had been impaired and which could not be liquidated upon the credit of the latter;

(b) to permit the American Company to withdraw in cash as a profit $3,700,000 from the sale of the Central Union properties in Illinois to Appellee; and

(c) to finance, beginning with 1923, the Central Union properties in Illinois in lieu of using the American Company's credit, theretofore for many years the sole credit for that purpose (*supra*, 224).

(8) The receipt by the American Company of:

(a) the excess of license payment over the amount found by the District Court properly chargeable as an operating expense (*supra*, 84);

(b) more than $725,000 profit on its transfer to Appellee of telephone instruments on December 31, 1927, representing Appellee's Chicago intrastate portion of the $14,395,799 profit made by the American Company in its transfer of telephone instruments to the Associated Companies on that date (*supra*, 231).

(9) The use of the large fund and the accumulated earnings thereon, of advance contributions for anticipated depreciation on contemplated future investments of capital:

(a) to provide and make available additional earnings and assets to meet the current interest and dividend requirements on Appellee's credit and capital obligations;

(b) to meet the maturing principal of Appellee's outstanding credit obligations; and

(c) to increase the equity behind its outstanding capital obligations (*supra*, 414).

Such cash rate of return and nine advantages of additional pecuniary profit were earned for the American Company, as Appellee's equity investor, who also enjoyed the following four advantages of additional security which were confirmed by the District Court and which are not enjoyed by the ordinary investor in the ordinary public utility or other business undertaking outside the Bell System:

(1) The specification by the American Company, as the investor in Appellee, what new inventions, discoveries and improvements in the art should be woven into the plant of Appellee to protect the American Company's investment against impairment through failure to keep abreast or ahead of the art (*supra,* 170).

(2) The security of investment resulting from the insurance by the American Company, at the expense of Appellee, as found by the District Court, against patent infringement liability in the use of Appellee's property in which the American Company is the principal investor (*supra,* 209).

(3) The joinder of Appellee's employees and the employes of the other Associated Companies, of the Long Lines, and of Western, under a plan where the American Company as principal investor in each of them can shift experienced personnel from one section of the country to the other as it sees fit, to protect its interests wherever situated, to strengthen the organization wherever necessary (*supra,* 219, 222).

(4) The use of the large fund and the accumulated earnings thereon, of advance contributions for anticipated depreciation on contemplated future investments of capital:

(a) to increase the security for Appellee's outstanding credit obligations and to increase the equity behind its outstanding capital obligations;

(b) to improve Appellee's earning record in its relation to its capital investors; and,

(c) to provide a large portion of Appellee's capital funds employed in the telephone service from the telephone users, as involuntary investors without their right of interest therein, in lieu of raising such funds through the issue of securities to its capital investors (*supra*, 413).

At this point Appellants direct attention to the consideration that only Appellee's *equity investors* receive the first eight advantages of *additional pecuniary profit* and the first three advantages of additional security enumerated above. For that reason, if for none other, the determination of the issue of Fair Return must view the situation on the basis of return to the *different classes of Appellee's investors* considered separately, and not to all *classes* of investors considered as a unit. To that extent is the instant case distinguishable in treatment from that ordinarily made in respect to that issue.

The significance of these advantages of additional pecuniary profit and additional security, confirmed by the District Court's findings on Revenues and Expenses, on the issue of the inadequacy of the cash return is determinable either by viewing them as additional returns whose measure in dollars cannot be definitely ascertained, and for that reason the inadequacy of such cash return cannot be proved by Appellee (*Chesapeake & Potomac Tel. Co.* v. *Whitman*, 3 Fed. (2d) 938; *Chesapeake & Potomac Tel. Co. of Virginia* v. *Comm. of Virginia*, 147 Va. 43); or by comparing the cash return plus these advantages produced by Appellee's operations with the comparable average cash return plus advantages produced by the other Associated Companies from their operations, the return of the latter Companies not having been shown to be constitutionally inadequate.

Appellee and Other Associated Companies.

Comparison between Appellee's recorded return from its Chicago Intrastate business under the existing rates, without giving effect to the District Court's adjustments thereto, and the corresponding average return from the operations of the other Associated Companies proves conclusively that such recorded return was compensatory for each of the years 1923 to 1929, inclusive.

(1). The rate of return on average common stock and surplus of such companies and of Appellee's Chicago Intrastate business was:

	Other Associated Companies (R. VI, 4027; R. VII, 4362) (a)	Appellee (Supra, 463) (b)	Difference in Dollars (b—a) (c)*
1923......	7.19%	10.05%	$1,177,496
1924......	6.80%	9.88%	1,444,805
1925......	7.59%	10.03%	1,207,483
1926......	8.40%	9.10%	393,188
1927......	8.44%	8.10%	211,048**
1928......	8.72%	8.10%	480,696**
1929......	8.71%	9.81%	857,660
Total			$4,388,888

*Col. (c)—Computed by applying per cents in columns (a) and (b) to Chicago Div. Intrastate portion of capital Stock and Surplus (R. V, 3084-5; R. VIII, 4457-61).

**Red.

On the basis of total company net earnings, the comparison between Appellee's rate of return and that of such other companies related to their respective capital and surplus is:

	Other Associated Companies (a)	Appellee (b)	Difference in Dollars (b)--(a) (c)
1923	7.19%	9.74%	$1,650,695
1924	6.80%	9.82%	2,223,116
1925	7.59%	9.44%	1,439,701
1926	8.40%	9.24%	752,420
1927	8.44%	9.28%	832,708
1928	8.72%	9.46%	924,592
1929	8.71%	10.19%	1,904,018
Total			$9,727,250

(2) In addition to the above excess cash return, Appellee's Chicago Intrastate business under the existing rates contributed to the American Company:

(a) in License payments the following amounts in excess of the average payment by the other Associated Companies (R. VII, 4064):

1923	$ 432,468
1924	501,857
1925	449,002
1926	348,971
1927	395,861
1928	127,511
1929	234,742
Total	$2,490,412

and

(b) in "the reasonable and suitable division of the tolls and profits of the long distance business" transacted in Chicago to which Appellee was entitled under Section 10 of the Original License Contract of 1881 and representing minimum contributions of from $260,000 to $508,000 a year during the period 1923 to 1929, inclusive, and aggregating for the period at least $2,532,000 (*supra*, 50). The other Associated Companies made no such contribution (*supra*, 66).

During the period 1923 to 1929, inclusive, the American Company increased its investment in the capital stock of the other Associated Companies by yearly additions ranging from $70,000,000 to $150,000,000 and aggregating for the period more than $850,000,000, which increase was $260,000,000 more than the American Company's entire stockholdings in them on December 31, 1922 (Appendix p. 134). Obviously the American Company could not and would not more than double its investment in such companies through regular yearly additions during the seven-year period unless the yearly return thereon were adequate. In the absence of a showing that the average cash net earnings from the operations of the Associated Companies are inadequate, no issue of confiscation can arise as to the cash net earnings from the operations of Appellee so long as Appellee's showing is as good or is better than such average, after having absorbed as operating expense the costs of the advantages of additional profit and additional security equal to that of the other Associated Companies (*infra*, 535).

Appellee's Bond Investors.

Appellee's financial and financing experience with the general public is equally impressive.

Appellee has borrowed no money from banks since August, 1921 (O.R. VI, 2115); its current liabilities for money borrowed have been negligible (O.R. VI, 2120b; R. VIII, 4781, 4792-4).

Appellee's outstanding bonded debt during this period originated in the $50,000,000 bond issue sold in 1923, the proceeds of which were used to retire $19,000,000 maturing bonded indebtedness issued in 1909, to retire $15,000,000 purchase money notes of Appellee given for the purchase of the Central Union properties, and to provide $11,000,000 additional working capital (O.R. IV, 1578). $31,400,000 of such bonded indebtedness is allocable in 1923 to the Chicago Intrastate business (R. V, 3083 ratios).

The $50,000,000 bond issue was sold to J. P. Morgan & Co. in 1923 to cost* Appellee 5.53% (R. VII, 4260a). This cost was lower than the cost to:

(1) The American Company on its issue of $100,000,000 bonds in the same year; such cost being 5.95% (R. VII, 4260a);

(2) Eleven of twelve of the public utilities (other than Bell System companies) on their bond issues, aggregating $93,000,000, sold in the same year under authorization of public service commissions; such costs ranging from 5.77 per cent to 6.69 per cent (R. VII, 4285).

The yield on offering price** of Appellee's bonds in 1923 was 5.31 per cent (R. VII, 4260a). This yield was lower than the yield on offering price of:

(1) the American Company's $100,000,000 bonds sold to the public in the same year; such yield being 5.63 per cent (R. VII, 4260a);

(2) thirty-four of thirty-five public utility (other than Bell System) bond issues, aggregating $280,000,000 sold to the public in the same year; such yields ranging from 5.62 per cent to 7.00 per cent (R. VII, 4293-5).

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*The term "Cost" is the annual cost of money to issuing companies for the bond issues above defined, representing the interest and amortization of discount.

**The term "yield on offering price" is the annual yield to maturity to the purchaser of the above mentioned bonds and is based on the price paid by the first retail purchaser upon public offering of the bond issues by bankers.

The spread* on Appellee's bond issue in 1923 was .22 of one per cent (R. VII, 4260a). This spread was lower than the spread on:

(1) the American Company's bond issue of the same year; such spread being .32 of one per cent (R. VII, 4260a);

(2) eleven of twelve of the public utility (other than Bell System) bond issues, aggregating $93,000,000, sold in the same year under authorization of public service commissions; such spreads ranging from .26 of one per cent to .58 of one per cent (R. VII, 4285, 4293-5).

As bearing upon the stability of Appellee's bonds during the period subsequent to their original issue, the record shows:

(1) The yield on resale price** to the holder of Appellee's bonds was (R. VII, 4336a):

1923	5.36½%
1924	5.27%
1925	5.04%
1926	4.85½%
1927	4.72%
1928	4.70½%
1929	4.80½%

Such yield was lower during said years than the yield on resale price on:

(a) The American Company's bonds offered to the public in 1923 (R. VII, 4336a) and, in all but one of said years, the American Company's bonds offered to the public in 1925 (R. VII, 4336c),

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*The term "spread" is the difference between "cost" and "yield on offering price" representing the bankers' margin of profit or commissions.

**The term "yield on resale price" is the annual yield to maturity to the purchaser of the bonds on resale, the resale price used being the average of the high and low market price in the year of resale.

(b) 92 per cent of the number and 91 per cent of the amount, of public utility (other than Bell System) bond issues offered to the public in the years 1923-1929 and resold in open market in each of said years. (Appendix p. 137).

(2) Appellee's bonds were classified at the time of public offering and for two years thereafter as AA bonds, according to Moody's Ratings; thereafter in each of the years 1925 to 1929, inclusive, they were classified as AAA bonds (R. VII, 4336a). Moody's Ratings have come to have a significance to investors in the selection of their investments; AAA rating denotes the highest grade investment, attractive to the most conservative investor (R. I, 188).

Consider now the other Associated Companies' financial and financing experience with the general public under their lower cash return. The record shows that even their securities compare with the highest grade securities of other business undertakings. Thus:

During the period 1923 to 1929, inclusive, the cost to the other Associated Companies on their bond issues ranged from 5 per cent to 5.70 per cent (R. VII, 4260a). Such cost was lower during said years than the cost on 90 per cent of bond issues sold in corresponding years under authorization of public service commissions (Appendix, p. 138).

The spread on the bond issues of the other Associated Companies in the period 1923 to 1929, inclusive, was as follows: .22 of one per cent in 1923; .26 of one per cent in 1924; .19 of one per cent in 1925 and 1926; and .33 of one per cent in 1929 (R. VII, 4260a). These spreads were substantially lower than the spreads on the bond issues of public utilities sold in each of such years (except 1929), under authorizations of public service commissions (R. VII, 4190a; Appendix, p. 147).

The yield on offering price on the bond issues of the other Associated Companies offered to the public during the period ranged from 4.83 per cent to 5.44 per cent (R. VII, 4260a). Such yield was lower than the yield on offering price of 93 per cent of the number (aggregating 226 bond issues) and 92 per cent of the amount (aggregating $2,458,000,000) of public utility bond issues sold in corresponding years during this period (Appendix, p. 139).

As bearing upon the stability of the bonds of the other Associated Companies, the record shows:

The average yield on resale price on their bonds offered during this period was (R. VII, 4336a-e):

1923	5.20%
1924	5.19%
1925	4.97%
1926	4.84%
1927	4.63%
1928	4.48%
1929	4.86%

Such yield was lower during said years than the yield on resale price on 95 per cent of the number and 92 per cent of the amount of public utility bond issues offered to the public in the years 1923 to 1929 and resold in open market in each of said years (Appendix, p. 140).

The bonds of the other Associated Companies were classified in the years 1923-1925 as AAA or AA, according to Moody's Ratings; and thereafter were classified as AAA bonds. Such rating denotes the highest grade investment, attractive to the most conservative investor (R. I, 188).

Stock of the five Associated Companies traded on exchanges during the years 1923-1929, inclusive, sold on low yields as follows (R. VII, 4232-4a):

Average Yield on Resale Price of Stock of

	Cin. & Sub. B. T. Company	New England T. & T. Company	Mountain States T. & T. Company	Pacific T. & T. Company	Southern New England T. & T. Company
1923	5.63	6.91½	6.73		6.22
1924	5.22½	7.54½	6.48		6.02
1925	4.75	5.48	6.33	5.73	5.62
1926	4.62	6.99	5.96	5.60½	5.31
1927	4.41	6.32	5.50	4.98	4.91
1928	4.00½	5.52½	5.11½	4.48½	4.78½
1929	3.88	5.25	4.92½	4.26	4.70

Appellee's Past Financial History.

Appellee's financial history from the date of its organization shows certainty and regularity of income for a long time prior to the period of litigation, a factor which this Court considered pertinent in the determination of Fair Return (*United Railways Case,* 280 U. S. 234, at 250 (1930)).

Appellee was organized and received its Original License Contract to conduct a telephone business on December 23, 1881 (O.R. VI, 1925). Its operations from that date to December 31, 1920, were confined to Chicago and suburban territory, with more than 79.41% of its investment in Chicago as of December 31, 1920 (R. VII, 4079).

Appellee's capital stock increased from $500,000 in 1881 to $60,000,000 on December 31, 1922 (Appendix, p. 126).

On its constantly increasing capitalization, Appellee paid the following cash and stock dividends:

	Cash Dividends (O.R. V, 1860)	Stock Dividends (O.R. VI, 2120)
1882 to 1892	20% to 51%	
1893 to 1899	12%	
1900	12%	16%—10,000 shares
1901	12%	
1902 to Oct., 1908	10%	
1908		25%—45,000 shares
1908 to 1923	8%	

It is significant that only two other Associated Companies paid an 8% cash dividend rate throughout the period from 1914 (Appendix, p. 136). With the exception of the years 1917 and 1918 (O.R. 2120b), Appellee's cash dividends were always paid from current earnings.

With the exception of 55,000 shares issued as stock dividends in 1900 and 1908 and premiums of $2911 (O.R. VI, 2120b), Appellee received *par* for its stock (including a proportionate share of surplus and unrecorded values, if any, resulting from revaluation of assets and from going value), although the open market price was substantially higher (O.R. VI, 2275).

In 1920, Appellee acquired the Central Union properties, which as already shown, had been in receivership from 1914 to 1919, had been operated at a loss for many years, and had not yielded returns sufficient to pay interest on indebtedness or return on its capital stock (*supra,* p. 224). Appellee's management and credit reversed this financial history and the Central Union properties thereafter were no longer a burden to the American Company; on the contrary they soon contributed their portion of the return necessary to sustain Appellee's sound financial position.

CONCLUSION.

If considered as the entire return, the recorded return under the existing rates, without giving effect to the District Court's adjustments thereto, was clearly compensatory for each of the years 1923 to 1929, inclusive. The recorded return was more than compensatory when considered in connection with the advantages of additional pecuniary profit and additional security confirmed by the District Court's findings on Revenues and Expenses for the benefit of Appellee's investors as part of the return on their investment.

1930.

On the basis of its recorded net income available for return—without giving effect to the District Court's adjustments thereto of $753,042—Appellee's Chicago intrastate business earned 8.83% per share of average outstanding stock, including therein $23,600,000 capital stock sold at par during the year, and 7.55% on outstanding capital and surplus applicable thereto; it paid an 8% cash dividend on outstanding stock including therein the $23,600,000 capital stock sold at par,* and carried to surplus $639,109 (R. IV, 2968; R. II, 1395-1403; R. V, 3083-90).**

Such rate of return in 1930 (on the basis of the District Court's finding of rate base value) was higher than that of any of the years 1923 to 1928, inclusive (Appendix, p. 118). Such cash return was earned, over and above the advantages of additional pecuniary profit and additional security, enumerated above, which are received by the American Company as Appellee's equity investor, but which are not received by the ordinary investor outside the Bell System (*supra*, 464). The advantage of additional pecuniary profit received by the American Company under its long distance arrangement with Appellee and not received from the other Associated Companies, was greater in 1930 than in any of the years prior to 1929 (*supra*, 50, 66). Appellee's recorded cash return in 1930 was also after voluntarily increasing its operating expenses through the charge thereto of depreciation expenses which were $1,958,592 in excess of the charge allowed by the 1920 Order (R. V, 3145; R. IV, 2741; R. VII, 4070a-4071).

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*The dividend rate of the following Associated Companies was reduced in 1930 as follows: Chesapeake & Potomac Tel. Co. (W. Va.) from 6% to 4%; Michigan Bell Tel. Co., from 8% to 5%; Ohio Bell Tel. Co., from 7% to 6¼% (R. VI, 4026).

**Appellee earned its 8% cash dividend in 1931 on its entire capitalization and carried $816,907 to surplus (R. VIII, 4511).

In 1930 Appellee sold at par $40,000,000 capital stock, of which $23,647,200 is allocable to Chicago Intrastate business (Appendix, p. 125). 99.15% (R. VI, 4025) of such stock was purchased by the American Company. Appellee did not issue bonds in 1930, but the bonds issued in 1923 continued to be rated as AAA and to sell on resale on a yield which was lower than the yield of such bonds on offering price (R. VII, 4336a). Appellee's bonds sold in 1930 to yield 4.67%, while the American Company's bonds issued in 1923 sold to yield 4.76%. The yield on resale price on Appellee's bonds was lower than the yield on resale price on 93 per cent of the number, and 91 per cent of the amount of public utility (other than Bell System) bond issues offered to the public in the years 1923-1930 and resold in open market in 1930 (Appendix, p. 141).

Appellee's unadjusted recorded return from its Chicago intrastate operations was $32,000 more than the average return of the other Associated Companies on their respective outstanding capital and surplus. On the basis of Appellee's total company net earnings, the return on its outstanding capital stock and surplus exceeded the average of the other Associated Companies in the year 1930 by $1,583,431.

In addition to such excess return, Appellee's license payment in 1930 exceeded the average of such companies by $195,999 (R. VII, 4063-4), and its contribution to the American Company—not made by them—through the long distance arrangement was at least $490,000 (R. VII, 4354a; *supra,* 50, 66, 471).

On the basis of their respective smaller returns, the other Associated Companies were able to attract more than $150,000,000 of capital from the American Company in 1930 through the sale of their stock at par; their bonds continued to be rated as AAA and to sell on resale on a yield which was lower than the yield of such bonds on offering price (R. VII, 4336a-e). The average yield on the resale price in 1930 of their bonds was 4.57 per cent (R. VII, 4336a-e). Such yield was lower than the yield on resale price on 95 per cent of the number and 94 per cent of the amount, of public utility bond issues offered to the public in the years 1923-1930 and resold in open market in 1930 (Appendix, p. 142).

Stock of the five Associated Companies traded on exchange in 1930 sold in the open market on yields ranging from 4.28% to 5.64½% (R. VII, 4232-4).

CONCLUSION.

If considered as the total return, the unadjusted recorded return under the existing rates was clearly compensatory for 1930; it was more than compensatory when considered in connection with the advantages of additional pecuniary profit and additional security received by Appellee's investors as part of the return on their investment.

1931.

On the basis of its Chicago intrastate recorded net income available for return—without giving effect to the District Court's adjustments thereto of $1,204,976—Appellee earned 7.68% per share of average outstanding stock, and 6.65% on outstanding capital and surplus applicable thereto, and fell short of paying out of current earnings its 8% cash dividends of $6,963,434 by only $275,894 (R. IV, 2973; R. VII, 4077-9, 4075; R. VIII, 4506-4513; R. II, 1395-1403).* The rate of return in 1931 (on the basis of the District Court's finding of rate base value) was higher than that of any of the years 1923 to 1928, inclusive (Appendix, p. 118).

Such cash return was earned over and above the advantages of additional pecuniary profit and additional security, enumerated above, which are received by the American Company as Appellee's equity investor, and which are not received by the ordinary investor outside the Bell System (*supra*, 464). The advantage of additional pecuniary profit to the American Company through the long distance arrangement with Appellee, and not received from the other Associated Companies, was greater in 1931 than in any of the years prior to 1929 (*supra*, 50, 66, 471). Such cash return in 1931 was also after voluntarily increasing its operating expenses through the charge thereto of depreciation expense which was $2,018,960 (R. V, 3145; R.

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*Appellee earned its 8% cash dividend in 1931 on its entire capitalization and carried $816,907 to surplus (R. VIII, 4506-4513). The dividend rate of the following Associated Companies was reduced in 1931: Michigan Bell Tel. Co., from 5% to 4% (Moody's Manual of Public Utilities, 1932, p. 134); Ohio Bell Tel. Co., from 6¼% to 6% (Moody's ibid, at 153).

VII, 4070a-1; R. IV, 2742) in excess of the charge allowed by the Illinois Commission's 1920 Order. The depression in 1931 increased for Appellee's investors the advantages of additional pecuniary profit in funds of advance contributions for anticipated depreciation in contemplated future additions (*supra*, 411).

In 1931 Appellee sold no stocks or bonds. The bonds issued in 1923 continued to be rated as AAA. The yield on resale price in 1931 to the holder of Appellee's bonds was 4.76½ per cent (R. VII, 4336a). This yield was lower than the yield on resale price in 1931 to the holder of:

(a) the American Company's $100,000,000 bonds sold to the public in 1923 (R. VII, 4336a);

(b) all of the ten public utility (other than Bell System) bond issues, aggregating $176,000,000 offered to the public in 1923 (R. VII, 4336f);

(c) twenty-six public utility (other than Bell System) bond issues, aggregating $225,000,000 of the twenty-eight aggregating $265,000,000 offered to the public in 1924 (R. VII, 4336g);

(d) twenty-seven public utility (other than Bell System) bond issues, aggregating $303,000,000 of the thirty aggregating $350,000,000 offered to the public in 1925 (R. VII, 4336h-i);

(e) the American Company's $125,000,000 bonds offered to the public in 1925 (R. VII, 4336c);

(f) fifty public utility (other than Bell System) bond issues, aggregating $657,000,000 of the fifty-four aggregating $700,000,000 offered to the public in 1926 (R. VII, 4336i);

(g) seventy-three public utility (other than Bell System) bond issues, aggregating $1,327,000,000 of the eighty-three aggregating $1,566,000,000 offered to the public in 1927 (R. VII, 4336j-k);

(h) fifty-seven public utility (other than Bell System) bond issues, aggregating $775,000,000 of the sixty aggregating $845,000,000 offered to the public in 1928 and resold in open market in 1931 (R. VII, 4336l);

(i) thirty-one public utility (other than Bell System) bond issues, aggregating $404,000,000 of the thirty-two aggregating $428,000,000 offered to the public in 1929 (R. VII, 4336m);

(j) fifty-one public utility (other than Bell System) bond issues, aggregating $851,000,000 of the fifty-six aggregating $900,000,000 offered to the public in 1930 (R. VII, 4336m-n);

(k) the American Company's $150,000,000 bonds offered to the public in 1930 (R. VII, 4336e);

(1) twenty-six public utility (other than Bell System) bond issues aggregating $523,000,000 of the thirty-nine aggregating $847,000,000 offered to the public in 1931 (R. VII, 4336m-n).

Appellee's bonds in 1931 sold on a lower yield on resale than the yield on offering price. *The investor in 1931 who had purchased Appellee's bonds in 1923 could have sold his investment in 1931 at a profit.* Contrasted with this, more than 77 per cent of the amount of public utility bond issues offered to the public in the years 1923-1931 and resold in open market in 1931 sold on resale in 1931 on a yield which was higher than the yield on their offering price (Appendix, p. 143). Approximately 63 per cent of the amount of railroad and 87 per cent of the amount of industrial and other bond issues offered to the public in the years 1923-1931 and resold in open market in 1931 sold on resale in

1931 on a yield which was higher than their yield in offering price (R. VII, 4210a, 4249-50, 4259-60).

The record does not contain the earnings of the other Associated Companies. It does show, however, that Appellee's license payment exceeded the average payment of such companies by $226,361 (R. VII, 4063-4) and Appellee's contribution to the American Company—not made by them—through the long distance arrangement was at least $448,000. The bonds of the other Associated Companies continued to be rated AAA in 1931, and to sell on resale on a yield which was lower than the yield on such bonds on offering price (R. VII, 4336a-e). Contrast this with the experience of 77 per cent of the amount of public utilities, 63 per cent of the amount of railroads and 87 per cent of the amount of industrial bond issues offered to the public in the years 1923 to 1931 whose yield on resale price in 1931 was higher than the yield on public offering (*supra*, 484). Stock of the five Associated Companies traded on exchanges in 1931 sold in the open market on yields averaging from 5.86½% to 7.00½% (R. VII, 4232-4a).

1932.

On the basis of Appellee's estimate of Chicago intrastate recorded net earnings available for return, without giving effect to the District Court's adjustments thereto, Appellee earned 5.6% on the average outstanding capital stock of 1931* (Appendix, p. 127). The rate of return on the basis of the District Court's findings of rate base value for 1932 was only .72% less than 1931 (Appendix, p. 118), although the District Court found a one per cent difference between the fair return of those years on the basis of the experience of other business undertakings. Such cash return was in addition to the advantages of additional pecuniary profit and additional security enumerated above, received by the American Company as the equity investor of Appellee (*supra,* 464), but which are not received by the ordinary investor outside the Bell System (*infra,* 528; *supra,* 464). The advantage for Appellee's investors in the fund of advance contributions for anticipated depreciation in contemplated future additions, was increased by the depression of 1932 (*supra,* 414). No other facts appear in the record from which deductions and comparisons may be made for 1932 as were made for the years prior thereto.*

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*Moody's shows that no bonds or stocks were issued by Appellee in 1932 (Moody's Manual of Public Utilities (1933) p. 828).

In the light of the state of depression in 1931 and 1932, such recorded net income, if considered as total return, and certainly if considered in connection with the advantages of

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*Moody's shows that Appellee paid 8% dividends in 1932 (ibid, p. 828); and that reductions in the dividend rate in 1932 of other Bell System Companies were as follows: Chesapeake & Potomac Tel. Co. (W. Va.) from 4% to 2% (ibid, at p. 824); Michigan Bell Tel. Co. from 4% to 2½% (ibid, at p. 831); New Jersey Bell Tel. Co. from 8% to 7¼% (ibid, at p. 837); and Ohio Bell Tel. Co from 6% to 4¾% (ibid, at p. 847).

Moody's shows that in 1932 the average yield on resale price on five Associated Company bonds, including those of Appellee, is lower than that of other utilities as follows:

Month	Bell System Bonds (Moody's, ibid, p. a138)	Electric Power & Light Company Bonds (Moody's, ibid, p. a110)	Gas Company Bonds (Moody's, ibid, p. a130)	Electric Railway Company Bonds (Moody's, ibid, p. a123)
Jan.	5.06%	5.17%	5.19%	13.39%
Feb.	5.10	5.23	5.34	13.89
Mar.	4.93	5.02	5.12	13.96
April	4.89	5.08	5.15	14.79
May	4.92	5.23	5.27	17.79
June	4.95	5.35	5.46	19.31
July	4.93	5.18	5.34	18.24
Aug.	4.76	4.90	5.08	14.98
Sept.	4.67	4.78	4.94	14.09
Oct.	4.57	4.65	4.79	15.34
Nov.	4.56	4.63	4.73	17.20
Dec.	4.50	4.55	4.68	17.73

additional pecuniary profit and additional security received by its investors as part of the return on their investment was certainly not confiscatory.

DISCUSSION AS TO CONTENTION NUMBERED II.

II.

THE REDUCTION IN APPELLEE'S RECORDED RETURN FROM ITS CHICAGO INTRASTATE BUSINESS UNDER THE EXISTING RATES WHICH WOULD HAVE RESULTED IF THE ATTACKED RATES HAD BEEN IN EFFECT WOULD NOT HAVE CAUSED CONFISCATION IN ANY OF THE YEARS OF THE LITIGATION.

A.

The net income available for return under the attacked rates as found by the District Court is compensatory for each year of the litigation.

PERIOD 1923-1929, INCLUSIVE.

Although the attacked rates would have reduced gross revenues by more than $2,000,000 per year (R. VII, 4082) and net revenues by more than $1,500,000 a year (Appendix, p. 120), the *recorded return* upon which Appellee financed itself would have been reduced by less than $652,000 in each of the years 1923 to 1927, inclusive, and by less than $1,294,000 in 1928 and 1929, respectively (Appendix, p. 121). For the seven-year period, the total reduction would have been, in gross revenues, $15,072,103 (R. VII, 4082); in net revenues $11,456,172 (Appendix, p. 120); in recorded return $5,299,460 (Appendix, p. 121). The difference between such reduction in net revenues and in recorded return—$6,156,712—represents the amount of the adjustments made to such recorded return by the District Court's findings on License Contract Payments and Depreciation Expense Charges (R. III, 2519-20; Appendix, pp. 95, 128).

On the basis of the District Court's findings, the net earnings available for return under the attacked rates in each of the years 1923 to 1927, inclusive, and in 1929 would have yielded sufficient to pay operating expenses, to pay interest and amortization on money borrowed, to pay an 8% cash dividend on outstanding capital stock including $31,222,747 capital stock sold at par, and to carry to surplus amounts ranging from $69,473 to $1,033,020 per year, and aggregating for the six-year period $3,815,787 (Appendix, p. 129). Of such accumulated surplus $385,458 would have been necessary to make up the shortage in 1928 of net earnings to permit the payment of an 8% dividend for that year (Appendix, p. 129).

The net cash income available for return under the rates in suit, as found by the District Court, would have been sufficient to enable Appellee to pay interest and amortization on money borrowed and to yield to Appellee's stockholders on their equity investment allocable to Appellee's Chicago intrastate business, the following rates of return, expressed as a percentage of return on average outstanding capital and on average outstanding capital and surplus, including therein $31,222,747 capital stock applicable thereto sold by Appellee during this period at par:

Year	Rate of Return on Average Capital Stock	Rate of Return on Average Capital and Surplus
1923	9.47%	8.70%
1924	9.79	8.91
1925	10.07	8.98
1926	8.95	7.94
1927	8.13	7.11
1928	7.43	6.53
1929	9.56	8.15

Sources:

R. III, 2521; R. IV, 2748-56; R. V, 3083-90; R. VII, 4075, 4077-9; R. VIII, 4457-61, 4792-4.

Such cash return from the attacked rates in each year is more than the 7½% return to 1927 and the 7% return thereafter which the District Court found as the current per cent of return generally made on similar investments in other business undertakings outside the Bell System (R. III, 2514).

But such cash return was not the total return. In addition to the above rate of return the District Court confirmed as operating expense the expense of furnishing as part of the return to the American Company as Appellee's equity investor all the advantages of additional pecuniary profit and additional security other than a portion of the license payment (Item 8a, *supra*, 467) received under the existing rates, which advantages are not received by the ordinary investor outside the Bell System.

Appellee's showing under the attacked rates by comparison with the average of the other Associated Companies, suffers by the reduction in recorded net income available for return produced by the attacked rates, and by the reduction in the advantage of pecuniary profit furnished to the American Company as equity investor in Appellee, to the extent of the excess of license payment over the amount held properly chargeable as an operating expense in each of the years 1923 to 1928, inclusive (Item 8a, *supra*, 467). Such comparison shows:

(1) The rate of return from Appellee's Chicago Intrastate business under the attacked rates as found by the District Court, compares as follows with the average rate of return realized by the other Associated Companies related to their respective average outstanding capital and surplus:

	23 Other Associated Companies (a)	**Appellee (b)**	**Difference in Dollars (b—a) (c)**
1923	7.19	8.70%	$ 622,013
1924	6.80	8.91	990,199
1925	7.59	8.98	688,076
1926	8.40	7.94	258,425*
1927	8.44	7.11	825,463*
1928	8.72	6.53	1,690,443*
1929	8.71	8.15	436,529*
Total			$ 910,572*

Col. (f)—computed by applying per cents in columns (d) and (e) to Chicago Div. Intrastate portion of capital stock and surplus (R. V, 3083-90; R. VIII, 4457-61).

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*Red.

Appellee's entire company net earnings available for return under the attacked rates compares as follows with that of the other Associated Companies related to their respective average capital and surplus outstanding:

	23 Other Associated Companies (a)	Appellee (b)	Difference in Dollars (b—a) (e)
1923	7.19	8.88	$1,095,212
1924	6.80	9.20	1,768,510
1925	7.59	8.78	920,294
1926	8.40	8.51	100,807
1927	8.44	8.66	218,292
1928	8.72	8.49	285,155*
1929	8.71	9.19	609,828
Total			$4,427,788

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*Red.

(2) On the basis of the District Court's *allowance of license payments* as operating expense, Appellee's contribution to the American Company of advantages of pecuniary profit under the attacked rates would fall short of the corresponding average contribution by the other Associated Companies in the years 1923 to 1927, inclusive, by amounts ranging from $166,000 to $250,000 per year and aggregating for these five years $997,076; and would exceed the corresponding average contribution in the years 1928 and 1929 by $52,000 (R. III, 2519; R. VII, 4063-4) and $201,000, respectively—the net shortage for the seven-year period being $743,681.

(3) Appellee's Chicago intrastate rate of return plus license payment to the American Company under the attacked rates, as found by the District Court, exceeded the average of the other Associated Companies in the years 1923 to 1925, inclusive, by amounts ranging from $455,916 to $762,677 per year and aggregating for the three-year

period $1,727,971, and fell short in the years 1926 to 1929, inclusive, by amounts ranging from $235,479 to $1,638,098 per year and aggregating for the four-year period $3,382,224, a net shortage of $1,654,253.[*]

Such net shortage would be more than offset by the advantage of pecuniary profit (*supra,* 464) received by the American Company from Appellee and not received from the other Associated Companies resulting from the surrender by Appellee of its right to participate in the receipts and profits of the long distance business transacted in Chicago (*supra,* 50, 66, 471).

In the light of the actual financial and financing experience of the other Associated Companies, as well as of Appellee during this period, the reduction in recorded net cash income by the attacked rates could not have caused confiscation in any of the years 1923 to 1929, inclusive, ~~entirely~~. respectively,

1930.

On the basis of the District Court's findings, the attacked rates in 1930 would have reduced gross revenues by $1,870,000, net revenues by $1,645,000, but would have reduced the recorded return by only $892,000 (R. III, 2520-1; R. VII, 4082, Appendix, p. 121). The difference between such reduction in net revenues and in recorded return—$753,000—represents the amount of the adjustments made to such recorded return by the District Court's findings on Depreciation Expense charges and Maintenance Expense (R. III, 2519-20; Appendix, pp. 95, 128).

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[*] On the basis of Appellee's entire company operations, Appellee's rate of return plus license payment (as found by Court) under the attacked rates exceeded the average of the other Associated Companies in the years 1923 to 1925, inclusive, and in 1929 by amounts ranging from $738,770 to $1,643,121 per year and aggregating for the four-year period $4,218,556, and fell short in the years 1926 to 1928 by amounts ranging from $164,520 to $351,235 per year and aggregating for the three-year period $630,408, a net excess of $3,588,148.

On the basis of the District Court's findings, Appellee would have earned sufficient to pay operating expenses, to pay interest and amortization on money borrowed, and would have fallen short by only $253,727 of earning its 8% dividend of $6,148,243 applicable to its Chicago Intrastate business.*

Such cash return would yield to its investors 7.67% on outstanding capital stock including the $23,600,000 (R. VIII, 4815) capital stock sold in 1930 at par, allocable thereto—a higher percentage than the 7% return which the District Court found as the current per cent of return generally made on similar investments in other business undertakings outside the Bell System; and 6.55% on corresponding capital and surplus.

The rate of return from the attacked rates in 1930 (on the basis of the District Court's finding of rate base value) would have been higher than in any of the years 1923 to 1928, inclusive (R. III, 2522). But such cash return would not constitute the total return to the American Company as Appellee's equity investor. In addition thereto, the American Company would receive all the advantages of additional pecuniary profit and additional security received under the existing rates other than a portion of the license payment, which advantages are not received by the ordinary investor outside the Bell System (*supra,* 464, *infra,* 528).

Appellee's showing under the attacked rates would have fallen short of the average return on outstanding capital and surplus of the other Associated Companies by $860,617 on the basis of allocating the entire Chicago intrastate capitalization to *operating revenues* (R. VII, 4362-64a; R. VI, 4027; R. V, 3083-90; R. VIII, 4457-61; R. III, 2521).*

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*Appellee's 8% dividend on its entire capitalization would have been earned by its entire company operations in 1930 if the attacked rates had been in effect, by $1,678,754 (R. V, 3090; R. VIII, 4510; Appendix, p. 121).

Appellee's Chicago intrastate contribution to the American Company in respect to the license payment (as found by the District Court) would have exceeded the average of such companies by $162,277 (R. III, 2519; R. VII, 4063-4), leaving a net shortage of $698,340.

This net shortage in Appellee's showing would be offset by the special contribution ($490,000) made to the American Company by Appellee's Chicago intrastate business in the long distance arrangement (*supra,* 50). In the light of the compensatory character of the recorded return in 1930 and of that of the other Associated Companies, the slight reduction in comparative return could not have caused confiscation—certainly not to the extent of permitting Appellee to get the full advantage of $1,645,000 net income from the enjoined rates at the expense of $1,870,000 to its subscribers.

1931.

On the basis of the District Court's finding, the attacked rates would have reduced gross revenues by $1,632,000 (R. VII, 4082), net revenues by $1,433,000, but would have reduced recorded return by only $229,000 (Appendix, pp. 120-1). The difference between such reduction in net revenues and in recorded return—$1,204,000—represents the amount of the adjustments made to such recorded return by the District Court's findings on Depreciation Expense charges and Maintenance Expense (R. III, 2519-20; Appendix, pp. 95, 128). Such shortage would merely offset the amount of excess contribution which Appellee's intrastate business made in 1931 to the American Company ($199,000) through the license payment over the average of the other Associated Companies (R. VII, 4063-4). The yield from the attacked rates would have been 7.42% on outstanding capital stock, and 6.42% on corresponding capital and surplus.

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*Appellee's showing under the attacked rates would have exceeded the average of the other Associated Companies by $690,595 on the basis of the entire company showing (R. VII, 4362-64a; R. VI, 4025, 4027; R. V, 3083-90; R. VIII, 4457-61; Appendix, p. 121).

In the light of the compensatory character of the recorded return in 1931 (*supra*, 482) the slight reduction in recorded return could not have caused confiscation in 1931—certainly not to the extent of permitting Appellee to get the full advantage of $1,433,000 net income from the enjoined rates at the expense of $1,632,000 to its subscribers. To so do would give Appellee a greater net return than it showed for 1930 on an investment which was $8,000,000 less than that of 1930, as determined by the District Court (R. III, 2515)—clearly a fantastic result.

1932.

The record closed in July, 1932. In May, 1932, Appellee estimated that its Chicago Intrastate net earnings for 1931 would be reduced by $1,800,000 in 1932 on account of the depression, and that the additional loss in net revenues would be $1,270,000 for the year if the attacked rates were in effect (R. II, 1082). The District Court used these estimates in finding the net income available for return under the attacked rates for 1932 (R. III, 2521). On the basis of the District Court's finding the recorded return under the existing rates for 1932 would have been reduced by only $71,300 (Appendix, p. 121). The difference between such reduction in net revenues and in recorded return—$1,198,700—must represent the amount intended to cover the adjustments to such recorded return on Depreciation Expense charges and Maintenance Expense. But the District Court made no findings on either item of expense.

The District Court's findings on the return from the attacked rates is arbitrary. It assumes, contrary to fact, that the effect of the District Court's adjustments covering depreciation expense charges and maintenance for 1932 on the recorded net income for that year will be the same as the effect of such adjustments for 1931 on the recorded net income for that year. The recorded net return for 1929 was reduced in 1930 through operations by $848,000 (Appendix, p. 118), and the reduction in net revenues in 1930, if the attacked rates had been in effect, was estimated at $1,645,000 (Appendix, p. 120), a total loss of $2,493,000. But the difference between the District Court's finding of net income under the existing rates in 1929 and 1930 plus the reduction in net revenues in 1930 if the attacked rates had been in effect was only $2,187,000 (Appendix, pp. 119-20). The recorded return of 1930 was reduced in 1931 through operations by $764,000 (Appendix, p. 118), and the reduction in net revenues by the attacked rates was $1,433,000 (Appendix, p. 120), a total loss of $2,197,000. The difference between the District Court's finding of net income under the existing rates in 1930 and 1931 plus the reduction in net revenues in 1931 if the attacked rates had been in effect was only $1,746,000 (Appendix, pp. 119-20). Had the District Court given effect to the adjustments in respect to depreciation expense charges and maintenance in manner similar to that of the previous years, the net income under the attacked rates would have been several hundred thousand dollars greater than the recorded return for 1932. In any event, the District Court did not and could not make a finding on maintenance and depreciation expense charges. Without such findings, its finding on the rate of return from the attacked rates is arbitrary.

Assuming, however, such a finding were not arbitrary, the net revenue from the attacked rates as found by the District Court was only part of the return to Appellee's investors. Such net income would have been earned after absorbing as operating expense the costs of providing the advantages of additional pecuniary profit and additional security, confirmed by the District Court, which are not received by investors outside the Bell System.

In no event should the $71,000 shrinkage permit Appellee to retain $1,270,000 at the expense of a much larger charge to its subscribers. The 1932 showing under the recorded return was compensatory.

B.

The net income available for return under the attacked rates as found by the District Court but adjusted to give effect to Appellants' adjustments, is compensatory for each year of the litigation.

Thus far we have dealt with the situation on the basis that the District Court's finding on every issue other than Fair Return was correct.

1. Giving effect to Appellants' contentions on Separation of Revenue, License Contract Payments and Depreciation Expense, and to their contentions that the Rate Base Value should be measured by (a) the book cost of plant less the amount of the depreciation reserve account, (b) Going Value as prescribed by the Commission in the attacked Order, and (c) material and supplies and cash working capital as found by the District Court, the rate of

return from the attacked rates related to such rate base is (Appendix, p. 135):

1923	10.6%
1924	9.8
1925	9.3
1926	8.9
1927	8.7
1928	8.6
1929	9.5
1930	8.3
1931	7.5

Such rate of return above shown would be even higher if, from the operating expenses, were deducted the excess depreciation expense charges and maintenance expense, and if from the rate base were deducted excess costs, all due to and reflected in the excessive return realized by Western during the years of the litigation from sales to Appellee. Even on the basis of the District Court's fantastic findings of required minimum rate of return to avoid confiscation, the attacked rates are compensatory.

2. Giving effect to the Appellants' contention that the 1920 Order on Depreciation should determine the depreciation expense charges in the computations of the net earnings available for return from the existing rates, (*supra*, 383), the recorded return understated Appellee's actual return from such rates by the difference between the recorded depreciation charges and those prescribed by the 1920 Order as follows (Appendix, p. 136):

1923	$1,552,903
1924	1,336,432
1925	1,490,059
1926	1,658,501
1927	1,758,082
1928	1,931,509
1929	1,855,743
1930	1,958,592
1931	2,018,960

Such understatement of net earnings exceeds in each year the reduction in net earnings which would have been caused if the attacked rates would have been placed in effect (Appendix, p. 136).

Appellee, therefore, would not have suffered any reduction in recorded net earnings had the attacked rates been put in effect and had Appellee complied with the Commission's Order on Depreciation.

As the recorded return was compensatory (*supra*, 455), suit should never have been brought.

DISCUSSION AS TO CONTENTION NUMBERED III.

III.

THE DISTRICT COURT'S FINDINGS OF THE REQUIRED MINIMUM RETURN TO AVOID CONFISCATION PRODUCED FANTASTIC RESULTS WHEN APPLIED TO APPELLEE'S ACTUAL EXPERIENCE DURING THE PERIOD UNDER INVESTIGATION.

In the *Willcox* Case (212 U. S. 19, at 48, 49 (1909)) this Court announced for the first time a test of compensatory rates in reliance upon the "fair return" part of the rule in *Smyth* v. *Ames* (169 U. S. 466 (1898)). The test fixed the rate of return deemed "fair" as equal to that "generally received on investments in other business undertakings of corresponding risks and uncertainties". This remained the test for that purpose until *Bluefield Water Works, etc.* v. *Commission* (262 U. S. 679, at 693 (1923)). In that period the test was applied in the *Willcox* Case to sustain state action and again in *Denver* v. *Denver Water Company*, (246 U. S. 178 (1915), to void state action. In the *Willcox* Case, the situation was presented when for the first time the rate base upon which the rate of return was claimed exceeded the utility's capitalization, and both parties to the litigation used the comparative return on local investments as the yardstick by which to measure the adequacy of the stated return (*Willcox* Case, 212 U. S. 19 at 29, 31, 37). In the *Denver* Case the apparent simplicity of prewar finance justified this Court to view corporate securities, and "secured loans on residence and business properties" of the same locality in the same category (*Denver* Case, *supra*, at 194).

In the *Southwestern Bell* Case (262 U. S. 276 (1923)) was visioned the possibility of a fantastic result in favor of the utility from the strict application of the "comparative return" test of the *Willcox* Case, even when based upon sufficient facts. The visioned fantastic result was a required minimum rate of return to avoid confiscation of 41% on outstanding capital of the utility, produced by the application of a current 8% return to the current fair value of the property originally acquired with such capital (*Southwestern Bell Tel. Co.* v. *Commission,* 262 U. S. 276, at 305).

The language of the test of compensatory return of the *Willcox* Case was repeated in the *Bluefield* Case, to which was added the test which fixes the return deemed "fair" as the return "sufficient to assure confidence in the financial soundness of the utility to maintain its credit and to raise money necessary for the proper discharge of its public duties" (*Bluefield* Case, *supra,* at 693). In the *United Railways* Case this Court announced that for a return to be so sufficient it must provide enough so that "after paying all expenses of operation, setting aside the necessary sums for depreciation, payment of interest and reasonable dividends, there should still remain something to be passed to the surplus account'' (*United Railways* Case, *supra,* at 252).

In every case since the *Bluefield* Case where the issue of confiscation required the application of the ''return'' part of the rule of *Smyth* v. *Ames,* this Court applied in reliance thereon the ''attraction of capital and maintenance of credit'' test announced in the *Bluefield* Case and not the ''comparative return'' test of the *Willcox* Case. In so doing, this Court took into account the factual situation of the utility concerned, in respect to its current and past earning experience, its current and past financing experience, its dividend record, and any special facilities which it might have for financing as part of a system organized for that purpose, and which the ordinary utility company does not possess (*Smith* v. *Illinois Bell Telephone Company,* 282 U. S. 133, 161; *Wabash Valley Electric Company* v. *Young,* 287 U. S. 488, at 501-2 (1933)).

The District Court in the instant case claimed that it applied the ''comparative return'' test of the *Willcox* Case using therein the claimed experience of other business undertakings *outside* the Bell System.

The District Court's claimed application of the test of compensatory rate of return upon the basis of such experience produced in the instant case a result in Appellee's favor at least as fantastic as that visioned in the *Southwestern Bell* Case. In that case the consideration that a fantastic result might be produced by the strict application of such test was suggested as a reason for condemning it. The consideration that a fantastic result would in fact be produced in the instant case by the District Court's claimed application of the same test, if it does not condemn the test itself, at least should cause this Court to insist on the same ''clear and convincing proof'' of the proper application of such test, of the applicable experience of the business undertakings relied on, and of the applicable essential facts necessary to render their experience and that of Appellee comparable, as this Court demanded in the *Missouri Rate Cases* in respect to proof of the fantastic value therein claimed (230 U. S. 474, at 501, 507).

That the District Court's findings of Required Minimum Return to avoid confiscation produced a fantastic result in the instant case is clear. The required minimum return to avoid confiscation of 7½% in the years 1923 to 1927, inclusive, 7% in the years 1928 to 1930, inclusive, and 6½% in 1931 would enable Appellee to pay interest and amortization on money borrowed, and would yield to Appellee's stockholders on their equity investment (capital and surplus), allocable to Appellee's Chicago Intrastate buisness, the following rate of return, expressed as a percentage of return on average outstanding capital and average outstanding capital and surplus:*

	Rate of Return on Capital Stock	Rate of Return on Capital and Surplus
1923	20.63%	18.95%
1924	19.88	18.09
1925	21.04	18.76
1926	18.84	16.72
1927	18.89	16.52
1928	15.10	13.27
1929	15.49	13.21
1930	13.66	11.67
1931	11.15	9.65
1932	Not available	Not available

Included in such outstanding capitalization to which such rate of return would have application would be $54,000,000 capital stock purchased by Appellee's stockholders at *par during the very period of the litigation* (Appendix, p. 125).

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*The sources of the table in the text are: R. III, 2515, 2521; R. IV, 2748-56; R. V, 3083-90; R. VII, 4075, 4077-9; R. VIII, 4457-61, 4792-4.

But such rate of return would not constitute the entire return to Appellee's investors. Such rate of return would be earned after absorbing, as operating expense, the expenses of furnishing as part of the return to the American Company, the equity investor in Appellee, the advantages of additional pecuniary profit, already described, confirmed by the District Court's findings, which are not received by the ordinary investor in the ordinary public utility or other business undertakings outside the Bell System, and the special advantages of additional pecuniary profit in the long distance arrangement with Appellee which the American Company did not receive from the other Associated Companies (*supra*, 471).

Such unreasonably large rate of return and advantages of additional pecuniary profit would be earned for the American Company, Appellee's equity investor who would also enjoy the advantages of additional security above described and confirmed by the District Court's findings which are not enjoyed by the ordinary investor in the ordinary public utility or other business undertakings outside the Bell System.

The District Court's required minimum cash return to avoid confiscation would enable Appellee to pay interest and amortization on money borrowed, to pay cash dividends of eight per cent upon its capital stock allocable to its Chicago Intrastate business and to carry to surplus from $4,700,000 to $5,900,000 per year during the period 1923 to 1929, inclusive, aggregating for the seven years $36,719,773, and to carry to surplus $4,350,000 in 1930, and $2,740,000 in 1931—a total accumulated surplus of $43,-

816,344 (Appendix, p. 130). No figures are available for 1932.

Such $43,816,344 accumulated surplus would exceed by $3,593,498 the total investment (capital and surplus) (O.R. VI, 2120b; R. V, 3083, ratio) on December 31, 1922, which Appellee's stockholders had in the Chicago Intrastate business and would be only $5,497,374 less than the total additions to their average investment in that business during the period 1923 to 1931, inclusive, through their purchase of Appellee's stock. Such accumulated surplus would exceed by $24,000,000 the surplus accumulated by Appellee during the same period from all of its operations (O.R. VI, 2120b; R. VIII, 4792-4) although Appellee's Chicago Intrastate capital investment for the period represented only 61.04% of Appellee's entire company investment (R. V, 3083-90).

The financing machinery of the Bell System requires that at the end of each year each Associated Company prepare, under the direction of the American Company, and forward to it, a Provisional Estimate. These Estimates form the basis on which the American Company made its investments in the Associated Companies, including Appellee, during the period under investigation (R. VIII, 4506, 4513). Their function is described as follows by the Comptroller of the American Company (R. I, 977-8):

> "Each licensee company [Associated Company] sends a provisional estimate which is the starting point in giving its estimated requirements, as they see them. We review them, but it is very seldom that we make any changes unless they are obviously miscellaneous items of financing and so forth that should be handled—that might be handled on some other and better basis. So that we might change the amount of the estimated requirements slightly, but generally it is the amount of the provisional estimate. My department and others

> in the company review it, and it finally terminates in an authorization by the executive committee" (R. I, 977). Such authorization is to make the American Company's investment in the Associated Companies (R. I, 977, 961).

In each Estimate is shown, among others, the actual and estimated future Net Telephone Earnings Related to Undepreciated Average Book Cost of Plant in Service. The Provisional Estimates submitted prior to 1930 showed the actual earnings recorded on the books of each Associated Company covering the year of the Provisional Estimate and the year prior thereto and showed the estimated future earnings covering five years subsequent to the year of the Provisional Estimate; in the 1930 Provisional Estimate, only a three-year forecast was included.

The actual and estimated earning results appearing in each Provisional Estimate are reproduced in the Appendix hereto (Appendix, p. 131). On the basis of these estimates, the American Company purchased $89,418,500 of Appellee's stock (R. VI, 4025). Comparing these results with the District Court's finding of Required Minimum Return to avoid confiscation, we find:

(1) Appellee's showing of actual net telephone earnings related to the undepreciated book cost of average plant in service, in its entire company operations and related to average outstanding stock compares as follows with the District Court's finding of required return related to the corresponding rate bases:

	Provisional Estimate Rate of Return		District Court's Finding of Required Minimum Rate of Return	
	On Average Book Plant in Service	On Capital Stock	On Average Book Plant in Service	On Capital Stock
1923	6.04	10.51	10.67	20.63
1924	6.18	10.79	10.34	19.88
1925	6.41	11.70	10.05	21.04
1926	6.13	11.09	9.15	18.84
1927	5.92	10.37	9.13	18.89
1928	6.20	10.72	8.12	15.10
1929	6.73	11.88	8.05	15.49

(2) The range of prognosticated future earnings related to book cost of plant in service for the five-year period as shown in each Provisional Estimate is:

	Rates on Book Cost of Plant in Service
1923 Provisional Estimate	5.56% to 6.82%
1924 " "	5.71% to 6.13%
1925 " "	5.69% to 5.92%
1926 " "	5.83% to 6.60%
1927 " "	5.69% to 6.47%
1928 " "	5.93% to 6.77%
1929 " "	6.00% to 6.41%
1930 " "	5.38% to 6.04%

The District Court's findings of required minimum returns and the American Company's actions as investor in Appellee cannot be reconciled.

On the basis of the average return of the other Associated Companies during the years 1923 to 1930, inclusive, Appellee would have earned from $3,500,000 to $5,500,000 less per year than the required minimum return found by the District Court—the total shortage would have been over $36,000,000 (Appendix, p. 133).

Though the American Company almost tripled its investment in the other Associated Companies during the eight-year period 1923 to 1930, inclusive, by making equity investments in them of $1,027,730,780 (R. VI, 4025), the District Court's findings of required minimum return to avoid confiscation would indicate that the telephone industry represented by the Bell System had been under a heavy blanket of confiscation during this period.

Enough has been shown already to prove that the result produced by the District Court's Findings on the Required Minimum Return to avoid confiscation is fantastic. We now pass to the errors which produced such result.

DISCUSSION AS TO CONTENTION NUMBERED IV.

IV.

THE DISTRICT COURT'S USE OF THE INVESTMENT EXPERIENCE OUTSIDE THE BELL SYSTEM IN ITS APPLICATION TO APPELLEE OF THE COMPARATIVE RETURN TEST OF COMPENSATORY RATES OF THE WILLCOX CASE WAS FATALLY DEFECTIVE.

A.

Unsupported general statements or judicial notice covering post-war returns on corporate investments outside the Bell System should not be accepted as adequate proof in support of a finding of confiscation.

The District Court's conclusion as to the current returns on investments outside the Bell System was based either on judicial notice or on the unsupported general statements of Appellee's two banker witnesses.* Appellants' position is that neither their unsupported general statements nor judicial notice covering the return generally received in underwritings of other business undertakings outside the Bell System should be accepted as adequate proof to sustain a finding of confiscation to void state action where the issue involved covers the important and intricate subject of post-war corporate finance. (*Missouri Rate Cases,* 230 U. S. 474, at 501, 507.)

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*One banker—the Vice-President of the National City Bank and its affiliate, the National City Company—underwriters of Bell System securities—testified in detail on the basis of the assumptions discussed in the text—the other, who merely confirmed his testimony, was Vice-President of the Chicago bank which acted as Appellee's depositary and on whose board of directors were Appellee's two principal executive officers (R. I, 151; R. II, 1153, 1155).

The apparent simplicity of pre-war and immediate post-war corporate finance which justified this Court in the *Denver Water Co.* Case (*supra,* 500) and justified this and other courts in dealing with that period to view corporate securities, real estate mortgage securities and legal interest rates in the same category as presented;* and the investment characteristics of that period which justified courts to view the comparative return requirements of senior and junior securities on the basis of their comparative risk positions as presented** disappeared in the decade covered by the present litigation.

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*Denver v. Denver Water Co., 246 U. S. 178, at 194; Lincoln Gas & Electric Co. v. Lincoln, 250 U. S. 256, at 259 (1918); Record. Lincoln Gas & Electric Co. v. Lincoln, (250 U. S. 256, 1918; record covered period 1907 to 1915), pp. 54, 55; Record, Galveston Electric Co. v. City of Galveston (258 U. S. 388, 1922; record covered period 1918 to June 30, 1920), pp. 137, 130, 70-76; Record, Brush Electric Co. v. City of Galveston (262 U. S. 443, 1923; record covered period 1919-1920), pp. 218, 245; Record, City of Fort Smith v. Southwestern (270 U. S. 627, 1926; record covered year 1922), pp. 193-194; Reno Power, Lt. & Water Co. v. Public Service Commission, 298 Fed. 790, at 792 (1923; case covered period 1920-1921); City of Minneapolis v. Rand, 285 Fed. 818, at 830 (1923; case covered period 1919-1920); Joplin Gas Co. v. Public Service Commission, 296 Fed 271, at 281 (1924; case covered period 1920-1923).

**Record, Southwestern Bell Telephone Company v. Public Service Commission of Missouri (262 U. S. 276, 1923, record covered period 1918-1919), p. 159; Record, Bluefield Water Works & Improvement Co. v. Public Service Commission (262 U. S. 679, 1923, record covered period 1918-1920), p. 95, Brief of Appellants, pp. 40-43; Record, Patterson v. Mobile Gas Co. (271 U. S. 131, 1926, record covered period 1921-1922), p. 405, Brief of Appellee, pp. 109-110; Record, McCardle v. Indianapolis Water Co. (272 U. S. 400, 1926, record covered period 1919-1923), p. 76, Brief of Appellee, p. 122.

To present the intricacies of corporate finance of the past decade and the variable factors therein influencing investment demands for corporate securities, Appellants presented before the District Court studies* covering:

(1) 878 bond issues aggregating $14,344,000,000 of bonds representing all the long term** bond issues of $5,000,000 or over issued during the period 1921-1931, inclusive, by railroads, public utilities and industrials.

(2) the stock issues of such corporations, and

(3) the financing data of the Bell System.

Examination of the records presented in this Court in the cases involving Fair Return since the World War discloses that no such data has been presented to this Court; Appellants therefore have incorporated in the appeal record in the instant case the essential parts of such studies, summary charts of which are reproduced in the Appendix hereto (Appendix, pp. 144-149).

The studies show that each step in the process of fixing the annual cost of new corporate issues (as in the case of depreciation expense calculations), is "beset with difficulties, because of the variables which attend every determination involved," and that the exactitude of the banker's opinions in respect thereto is "delusive" (*United Railways* Case, 280 U. S. 234, at 282, 283).

These studies show that:

Credit Obligations.

A.

In the determination of the actual or probable cost to Appellee of credit money in any given year:

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*R. II, 1741, et seq.; R. VII, 4190 A to 4345.

**Long term bonds refer to bonds maturing in five years or more from date of issue.

1. *No significance attaches to the "average cost" of money—or to the component parts thereof, "average spread" (banker's commission or discount) and "average yield" on public offering price—in any given year or over a period of years, based upon the experience of bonds issued therein by other business undertakings and not grouped according to some investment rating classification.*[1] *To illustrate:*

(a) The "average cost" of money to railroads in 1923 was 5.50 per cent (R. VII, 4190a, Appendix, p. 147), but the cost of money to one railroad[2] was 4.76 per cent, to another,[3] 6.52 per cent. The "average cost" of money to public utilities in 1923 was 6.03 per cent (R. VII, 4190a), but the cost of money to one utility[4] was 5.29 per cent, to another,[5] 6.69 per cent and to Appellee, 5.53 per cent (R. VII, 4260a).

(b) The "average spread"* in 1924 on railroad bond issues was .23 per cent, on public utility bond issues, .40

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(1) Appellee's banker witness on Fair Return testified (R. I, 185):

"In connection with the various classes of securities, investors have come to think of bonds in certain classifications: bonds legal for savings banks and bonds not legal. They have also come to think of the classifications in the terms in which some of the established services have rated them, that is, as A-1 bonds or as Triple-A bonds. Many investors have in mind those ratings in connection with the type of securities purchased.

We have as fields for bonds, the savings bank, the trust funds, the so-called conservative investor, the so-called speculative investor, and the so-called business man risk investor. And all of these various classes of investors do not buy the same kind of bonds. The savings banks, the trustees, and the conservative investors are very likely to confine their purchases to bonds of the general character rated by Moody as Triple-A bonds. Generally speaking, the trust funds would confine their purchases to Triple-A bonds. The conservative investor would buy a higher-rated, or more conservative bond than the speculative investor."

Appellants have used Moody's ratings.

(2) Delaware, Lackawanna & Western R. R. (R. VII, 4284a).

(3) Southern Railway Co., ibid.

(4) Spring Valley Water Co. (R. VII, 4285).

(5) Illinois Power & Light Corporation, ibid.

*The examples in the text covering cost of money and spread are taken from the exhibits embodying the study of 330 long term bond per cent (R. VII, 4190a, Appendix, p. 147), but the spread on one railroad bond issue[1] was .11 per cent, on another[2] 1.11 per cent, on one public utility bond issue[3] was .20 per cent, on another[4] 1.07 per cent.

(c) The "average yield" on public offering prices** in 1926 on railroad bond issues was 5.10 per cent, on public utility bond issues, 5.42 per cent (R. VII, 4198), but the yield on public offering on one railroad bond issue[5] was 4.51 per cent, on another,[6] 6.41 per cent, on one public utility bond issue[7] was 4.80 per cent, on another,[8] 6.65 per cent.

2. *No significance attaches to the trend of the "average cost" of money—or of the component parts thereof—based upon the experience of bonds issued over a period of years and not grouped according to some investment rating. To illustrate:*

(a) The trend of the "average cost" of money to public utilities between the years 1926 and 1927 was downwards to the extent of .31 per cent (R. VII, 4190a, Appendix, p. 147),

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issues offered during the years 1921 to 1931, inclusive, aggregating $6,138,000,000 of issues other than industrials as shown in the records of the Interstate Commerce Commission, and of ten State Commissions (R. II, 1751). The study is summarized in charts, R. VII, 4190a, b and 4192d, e.

(1) Louisville & Nashville R. R. Co. 1st & Ref. 4½'s "C" (R. VII, 4262, 4275).

(2) Florida & Western & Northern R. C. Co., 1st M. 7's "A" (R. VII, 4263, 4275).

(3) Cleveland Electric Illuminating Co. Gen. M. "A" (R. VII, 4286, 4295).

(4) Ohio Public Service Company, 1st M. & Ref. Bonds (R. VII, 4286, 4297).

**The examples in the text covering yield on offering price are taken from the exhibits embodying the study of 829 long term bond issues offered during the years 1923 to 1931, inclusive, aggregating $13,809,000 of issuers of all classes (R. II, 1752). The study is summarized in charts (R. VII, 4196a and 4216a).

(5) Norfolk & Western Ry. Co., 1st & Gen. M. 4's (R. VII, 4265).

(6) Seaboard Air Line Ry. 1st, Cons. M. 6's "A" (R. VII, 4264).

(7) Connecticut Lt. & Pr. Co., 1st M. 4½'s (R. VII, 4301).

(8) General Public Utilities Co., 1st M. & Coll. Tr. 6½'s (R. VII, 4303).

but the cost of money to two utilities[1] issuing bonds in both years increased .63 per cent and .61 per cent, respectively, and to a third,[2] decreased .03 per cent. The trend of the "average cost" of money to railroads between the years 1930 and 1931 was downwards to the extent of .03 per cent (R. VII, 4190a, Appendix, p. 147), but the cost of money to six railroads issuing bonds in both years was as to four[3] increased .77 per cent, .68 per cent, .32 per cent and .03 per cent, respectively, and, as to two,[4] decreased .40 and .20 per cent, respectively.

(b) The trend of the "average spread" on public utility bonds between the years 1923 and 1924 was upwards to the extent of .09 per cent (R. VII, 4192c-93), but the spread on one utility's bonds[5] issued in both years decreased .21 per cent, on another's[6] remained the same, and on a third's[7] increased .02 per cent.

(c) The trend of the "average yield" on public offering on public utility bonds between the years 1924 and 1925 was downwards to the extent of .25 per cent (R. VII, 4196a-4200; Appendix, p. 146), but the yield on public offering of one utility's bonds[8] issued in both years increased .15 per cent, on another's[9], decreased .07 per cent.

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[1] Public Service of No. Illinois; Illinois Power & Light Corporation (R. VII, 4288-9).

[2] Southern California Edison Co. (R. VII, 4288-9).

[3] Cincinnati Union Terminal Co.; Louisville & Nashville R. R. Co.; Missouri Pacific; Southern Pacific Co. (R. VII, 4281-3).

[4] Pennsylvania R. R. Co.; Boston & Maine R. R. (R. VII, 4281-3).

[5] Illinois Power & Light Corp. 1st and ref. 6's "A" (1923), 1st and ref. 5½'s (1924) (R. VII, 4286, 4296-7).

[6] Pacific Gas & Elec. Co., 1st and Ref. Mtg. Bonds (1923), 1st and Ref. Mtg. Bonds (1924) (R. VII, 4285, 4294-6).

[7] Southern California Edison Co., Gen. and Ref. Mtg. (1923); Ref. Mtg. Bonds (1924) (R. VII, 4285).

[8] Cities Service Power & Lt. Co., 1st M d's (1924), Ref. Deb. 6's (1925) (R. VII, 4297, 4299).

[9] American Power & Lt. Co., Deb. 6's (1924), Deb. 6's (1925) (R VII, 4296, 4298).

B.

The determination of the actual or probable cost to Appellee of credit obligations in any year or over a period of years based upon the experience of bonds issued therein by other business undertakings and grouped according to some investment classification must give effect, among others, to the following factors:

1. *There is a wide range in the "average cost" of bond money—and in the component parts thereof—between bond groups of different ratings in the same industry in any given year. To illustrate:*

(a) The "average cost" in 1925 and 1930 of bond money grouped by Moody's ratings to railroads and public utilities was as follows (R. VII, 4193-5; Appendix, p. 145):

Bond Issues by Ratings	—Railroads— 1925	1930	Public Utilities 1925	1930
AAA	5.17%	4.80%	5.24%	4.88%
AA	5.43%	4.85%	5.70%	4.94%
A	6.06%	4.93%	5.93%	5.09%
BAA	..	5.32%	6.86%	6.40%
BA	6.75%	5.51%	..	..

(b) The "average spread" in 1924 and 1927 on railroad and public utility bond issues grouped by Moody's ratings was as follows (R. VII, 4193-4; Appendix, p. 145):

Bond Issues by Ratings	—Railroads— 1924	1927	Public Utilities 1924	1927
AAA	.19%	.14%	.20%	.13%
AA	.25%	.14%	.32%	.20%
A	.26%	.16%	.37%	.24%
BAA	1.11%	.18%	.71%	.43%
BA	..	.21%	..	..

(c) The "average yield" on public offering price in 1929 and 1931 on railroad and public utility bond issues grouped by Moody's ratings was as follows (R. VII, 4195; Appendix, p. 146):

Bond Issues by Ratings	—Railroads— 1929	1931	Public Utilities 1929	1931
AAA	4.67%	4.56%	4.75%	4.34%
AA	4.85%	4.62%	5.14%	4.55%
A	4.93%	5.21%	5.39%	4.73%

2. The significance of the average cost—and of the component parts thereof—related to any particular group of bond issues of the same rating is dependent upon the extent of the range in respect thereto within the particular group. To illustrate:

(a) The average cost in 1931 to public utilities issuing AAA bonds was 4.52 per cent (R. VII, 4195), but the cost on one AAA bond issue[1] was 4.37 per cent, on another,[2] 4.65 per cent. The average cost in 1931 to railroads issuing AAA bonds was 4.70 per cent, but the cost on one AAA bond issue[3] was 4.50 per cent, on another,[4] 5.56 per cent.

(b) The average spread in 1931 on AAA public utility bond issues was .18 per cent (R. VII, 4195), but the spread on one AAA issue[5] was .14 per cent, on another[6] .23 per cent. The average spread in 1931 on AAA railroad bond issues was .14 per cent (R. VII, 4195), but the spread on

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(1) Consolidated Gas Elec. Lt. & Pr. Co. 1st & Ref. M. S. F. 4's (R. VII, 4291).

(2) Consolidated Gas Co. of N. Y. 20 year Gold Deb. Bonds (R. VII, 4291).

(3) Pennsylvania R. R. Gen. Mtg. "D" (R. VII, 4283).

(4) Louisville & Nashville R. R. Co. Secured 5's (R. VII, 4283).

(5) Commonwealth Edison Co. 1st Mtg. Bonds "F" (R. VII, 4291, 4317).

(6) Consolidated Gas Co. of N. Y. 20 year Gold Deb. Bonds (R. VII, 4291, 4317).

one AAA bond issue[7] was .11 per cent, on another[8] .31 per cent.

(c) The average yield in 1931 on public offering price on AAA public utility bond issues was 4.34 per cent (R. VII, 4195), but the yield on offering price on one AAA issue[9] was 4.22 per cent, on another,[10] 4.45 per cent. The average yield in 1931 on public offering price on AAA railroad bond issues was 4.56 per cent (R. VII, 4195), but the yield on offering price on one AAA issue[11] was 4.40 per cent, on another,[12] 5.12 per cent.

Bond Issues by Ratings	High Yield	Low Yield	Range
AAA	4.45%	4.22%	.23%
AA	4.78%	4.23%	.55%
A	6.70%	4.44%	2.26%

This table belongs under Paragraph 3 of page 516 following.

3. *The range within each rating group in respect to the component parts making up cost of money grows wider as the investment rating of the group grows inferior. To illustrate:*

(a) In 1924 ranges in yield on public offering price of public utility bonds grouped by ratings was (R. VII, 4250);

Bond Issues by Ratings	High Yield	Low Yield	Range
AAA	5.10%	5.00%	.10%
AA	5.79%	5.00%	.79%
A	6.35%	5.52%	.83%
BAA	7.02%	5.71%	1.31%

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(7) New York Central Ref. & Imp. M. "A" (R. VII, 4272, 4283).

(8) Louisville & Nashville R. R. Co. Secured 5's (R. VII, 4272, 4283).

(9) Consolidated Gas Elec. Lt. & Pr. Co. of Balt. 1st & Ref. M. 4's (R. VII, 4317).

(10) Buffalo General Elec. Co. Gen. & Ref. M. 4½'s (R. VII, 4317).

(11) Philadelphia, Baltimore & Washington R. R. Co. Gen. M. "C" (R. VII, 4272).

(12) Cincinnati Union Terminal Co. 1st M. "B" (R. VII, 4272).

(b) In 1927 ranges in yield on public offering price of public utility bonds grouped by ratings was (R. VII, 4251):

Bond Issues by Ratings	High Yield	Low Yield	Range
AAA	4.78%	4.55%	.23%
AA	5.06%	4.58%	.48%
A	5.50%	4.71%	.79%
BAA	7.30%	4.90%	2.40%

(c) In 1931 ranges in yield on public offering price of public utility bonds grouped by ratings was (R. VII, 4252):

Table indicated on page 515 belongs here.

4. *Only in the case of bonds of the highest ratings is the yield on public offering substantially equivalent to the yield on current resale price of the outstanding highest grade bonds* (R. VII, 4210a, 4211-15; Appendix, p. 148).* *To illustrate:*

(a) The yield on resale price of AAA public utility outstanding in the years 1923-1931, inclusive, compares as follows with the yield on public offering of public utility AAA bonds in each of said years:

	Yield on Resale Price (R. VII, 4213)	Yield on Public Offering (R. VII, 4197-4200)
1923	5.55%	5.52%
1924	5.12	5.05
1925	4.90	5.00
1926	4.82	4.91
1927	4.65	4.74
1928	4.67	4.49
1929	4.81	4.89
1930	4.66	4.78
1931	4.66	4.33

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*The examples herein given relating to yield on resale price are taken from exhibits embodying the study of 720 long term bond issues offered during the years 1923 to 1931 and aggregating $11,347,000,000 of issuers of all classes. The study is summarized in charts R. VII, 4200a, 4204a, 4210a, 4216a, and 4218a.

5. *Appellee's bonds and the bonds of the other Associated Companies are all of the highest investment rating group; only a small percentage of the bonds of other business undertakings are in the same class* (Appendix, p. 144; R. VII, 4192a, 4196a, 4216a). *To illustrate:*

(a) In the years 1923 to 1925 *all* the Associated Companies' bond issues (including Appellee's) aggregating $410,000,000 were rated either AAA or AA; and in the years 1926 to 1931 *all* the Bell System bond issues aggregating $451,000,000 as well as all previously issued and outstanding bond issues were rated AAA (R. VII, 4192a, 4216a).

(b) Of the total amount of $6,892,000,000 public utility bonds issued in these years 9% were rated AAA and 17% were rated AA (R. VII, 4192a).

(c) Of the total amount of $3,544,000,000 industrial and other bonds issued in these years, 9% were rated AAA and 10% were rated AA (R. VII, 4192a).

(d) Of the total amount of $3,046,000,000 railroad bonds issued in these years 35% were rated AAA and 20% were rated AA (R. VII, 4192a).[*]

CONCLUSION.

The above studies indicate:

1. The experience of bond issues in any year or over a period of years affords no valid basis for the determination of the actual or probable cost to Appellee of credit money in any given year.

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[*] The examples herein given are taken from the exhibits embodying the study of 878 long term bond issues of $5,000,000 or more issued during the years 1923 to 1931, inclusive, aggregating $14,345,000,000 of issuers of all classes (R. II, 1742). The study is summarized in chart form (R. VII, 4192a; Appendix, p. 144).

2. The use of the average cost of money to other business undertakings outside the Bell System as a basis of actual or probable cost to Appellee of credit money must be predicated upon the knowledge of the experience of a very small group of companies in other industries. Neither unsupported general statements in respect to such other business undertakings nor judicial notice by a court in respect thereto *per se* indicate knowledge of or familiarity with such a small group of companies.

3. The experience of the small group above referred to as a basis of actual or probable cost to Appellee of credit money reveals that their average cost of credit money in the years 1923 to 1931, inclusive, was as follows (R. VII, 4192-5):

	Railroads	Public Utilities
1923	5.24%	5.77%
1924	5.28%	5.20%
1925	5.17%	5.24%
1926	4.75%	5.08%
1927	4.74%	4.88%
1928	4.41%	4.58%
1929	4.82%	4.93%
1930	4.80%	4.88%
1931	4.70%	4.52%

4. The actual or probable cost of credit money to Appellee in the years 1923 to 1931, inclusive, may have been more or less than the average cost above shown, and the determination thereof depends upon the knowledge of the experience of those companies within the said small group of business undertakings most comparable to Appellee and not upon unsupported general statements in respect to such other business undertakings or of judicial notice by a court in respect thereto.

Capital Stock Securities.

During the period under investigation factors other than the investment position of capital obligations determined their price. As was stated in 1929:

> "Today the attitude on the part of the investors has changed. They want to share in the growth of commerce and industry. They believe that the property of the best railroads, public utilities and industrials is so completely assured that their equities involve no more than a reasonable risk and, furthermore carry a high degree of certainty of income together with a substantial appreciation in price as the country grows."*
>
> "......... Probably for the first time in the history of this country there is a widespread investment movement in the direction of long term investments in stock, wherein the investor looks forward to capital increment rather than to annual dividend return."**

Beginning with 1925 in the case of companies having AAA bonds outstanding, with 1926 in the case of companies having AA, A and BAA bonds outstanding, and with 1928 in the case of companies having BA bonds outstanding, and continuing in each case through 1930 the stocks of these companies sold on a lower yield than their bonds (Appendix, p. 149; R. VII, 4281D). This experience indicates that junior securities did not sell on the basis of their inferior risk position, and is clearly indicative of the change during these years in investment characteristics from that of prior years described by this Court wherein "investors insist on higher yields on stock than current rates of interest on bonds." (*McCardle v. Indianapolis Water Co.*, 272 U. S. 400, at 419 (1926).***

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*C. A. Dice, New Levels in the Stock Market (1929), p. 2.

**"Confiscatory Rates," 39 Yale Law Journal, 151, at 179 (1929).

***The opinion covered the period 1921 to 1924.

During this period there was an increasing appetite on the part of the investor for capital stock securities. In 1928 over half of all new securities issued were stocks* and in 1929 common stock financing exceeded mortgage bond and debenture financing.**

On December 31, 1922, Appellee had outstanding $19,000,000 bonds issued in 1909, $15,000,000 purchase money obligations covering the Central Union purchase in 1920 (*supra,* 472-3) and $60,000,000 stock (O.R. VI, 2120b). During the years 1923 to 1931, inclusive, Appellee issued $50,000,000 in bonds (to retire such $34,000,000 indebtedness and to provide $11,000,000 additional capital after deducting the discount (*supra,* 472-3)) and $90,000,000 par amount of stock (R. VIII, 4940). As of December 31, 1922, the American Company had outstanding $226,604,800 bonds and $715,083,854 stock, including installments (R. V, 3299); at the end of 1931 the bonds had increased to $471,423,515 and the stock to $1,938,175,376 (R. VIII, 4425). Similarly the Bell System as a unit had outstanding on December 31, 1922, $646,033,165 bonds and $837,007,344 stock (R. V, 3298); at the end of 1931 the bonds had increased to $1,054,824,529 and the stock to $2,172,897,419 (R. VIII, 4428). Such experience is in contrast to that of prior years described by this Court as of 1923, that:

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*C. A. Dice, op. cit. p. 238.

**Moody's Manual on Public Utilities for the year 1930 comments on significant trends in financing in the electric light and power industry, as follows (P. XXVI):

> "The great volume of financing by electric power and light companies in recent years, warrants some consideration as to the more important trends in methods used and types of securities issued. The general practice over a long period of years and even up to 1928 was to finance properties largely by first mortgage bonds. Due to the stability of the industry and the growing necessity of its product, properties were often mortgaged up to 75 per cent of their value with recognized safety. The equity remained small during the years of expansion, both because of the demands of the investment market for mortgage bonds and because of the desire of promoters to trade on their equity to increase the earning power by establishing a maximum fixed return on the large amounts of new capital demanded. However, with the consequent rapid advance in the prices of common stocks of these companies arising both from a recognition of their investment qualities and the general demand of investors for equity securities, the common stocks began to command a premium which caused a turn by companies to common stock financing. The sale of new stock through bankers and through the offering of rights reached large proportions and common stock financing in 1929, as reported by the Electrical World, exceeded bond and debenture financing for the first time in the history of the industry. The estimated financing in 1929 was as follows: Mortgage bonds, $215,882,500; debentures, $292,200,000; notes, $15,325,000; preferred stock, $286,248,000; and common stock, $505,803,262 of which $63,870,500 represented new issues and $441,932,762 subscribed through rights offered to stockholders. In addition to this financing, $145,000,000 of securities are estimated to have been sold locally to customers, making total financing amounting to $1,460,458,762, which of course includes that done for refunding purposes."

> "About 75 per cent of the capital invested in utilities is represented by bonds. He who buys seeks primarily safety. If he can obtain it, he is content with a low rate of interest."*

This increased appetite for common stocks had several very significant effects on the financing practices of this period, each of which had a definite bearing on the cost of junior financing as an element in the determination of fair return. Among these are the following:

(1) *Companies offered credit securities with stock conversion privileges or with stock purchase warrants attached.* The total amount of such offerings in this period in issues of $5,000,000 or over on the part of public utilities exceeded $1,067,000,000, of industrials exceeded $1,153,000,000, of railroads exceeded $273,000,000 and of Bell System Companies exceeded $200,000,000 (R. VII, 4253, 4258, 4248, 4245). Such financing permitted the utility to attract capital from the original subscriber on a price basis commensurate with that of a security of a senior risk position. To illustrate:

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*Southwestern Bell Telephone Co. v. Public Service Commission, 262 U. S. 276, at 307.

The American Company sold $219,000,000 debentures at par in 1929, convertible into stock, at the option of the holder, at par upon payment of $80 per share. Practically all of these debentures were converted into stock, more than $206,000,000 of stock having been issued in connection therewith by the end of 1931 (R. VIII, 4374). This capital stock was raised on a 5% basis, whereas during the period of such conversion $150,000,000 were sold by the same company at a price which cost it 5.22 per cent and yielded the purchaser 5.03 per cent (R. VII, 4260a).

The International Telephone & Telegraph Company sold $56,911,400 debentures in December, 1928, at 98 (R. VII, 4310), convertible into stock at the option of the holder at the price per share of $64.1564.* By the end of 1930 more than $19,000,000 had been converted into stock.** This capital stock was raised on a 3.18 per cent basis, whereas during the period of such conversion $50,000,000 bonds were sold by the same company at a price which yielded the purchaser 5.25 per cent (R. VII, 4315).

(2) *Companies offered at frequent intervals issues of stock to existing stockholders on a basis more favorable than the yield on open market price on their outstanding stock.* A definite value was thus given to the "right" of each shareholder to buy such new stock. New subscribers would purchase stock at a low yield in the expectation that thereafter they would participate in additional issues on favorable terms and improve the yield on their total investment. To illustrate:

The rights on the American Company's 1928 issue of stock sold from $11.37½ to $16.12½ (R. V, 3208); on its

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*Moody's Manual of Public Utilities, 1931, p. 1946.

**Idem. The dividend rate on this stock was 2% (idem).

1930 issue of stock sold from $17.00 to $21.00 (R. V, 3192). Purchasers subscribed for the American Company's stock offered to the public in 1927 and 1928 on a 4.91 per cent and a 4.78 per cent basis respectively (R. VIII, 4374). Purchasers in the open market were buying at a price which yielded them as low as 2.90 per cent (R. VII, 4233).

In 1930 the American Company exchanged $15,000,000 par amount of its own stock for the stock of the Teletype Corporation and as part of the same transaction turned over the latter stock to Western for $30,000,000 on the basis that the open market price of the American Company's stock given as consideration therefor was $200 per share (R. I, 459). On this basis, the American Company's stock was sold on the basis of a 4½ per cent yield.

CONCLUSION.

The above experience of stock financing in the last decade indicates that the determination of the cost to Appellee for capital obligations in the years under investigation cannot be based upon:

(1) A relation to the actual or probable cost of credit obligations, or unsupported general statements in connection therewith; or

(2) General percentage figure statements which take no account of the varying experience of corporate stock financing during the period under investigation.*

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*"In the light of this new development, this modern type of finance, resulting from a new attitude of mind on the part of the common stock investor who looks now to the future by way of securing new shares in capital ownership, rather than to the immediate present by way of annual yields, must there not be a complete revision of such percentage figures as the Supreme Court has had before it in determining the over-all rate?" "Confiscatory Rates," 39 Yale Law Journal, 151, at 180 (1929).

Amount to Be Carried to Surplus.

In the *United Railways* Case this Court held that a utility is constitutionally entitled to have earnings sufficient so that, after paying all expenses of operation, interest and reasonable dividends "there should still remain something to be passed to the surplus account" (280 U. S. 234 at 251-2).

Whether a given rate of return related to a given rate base value will produce the "something to be passed to the surplus account," depends upon the following factors, among others:

(1) Amount of outstanding securities;
(2) Interest rate on credit obligations;
(3) Dividend Rate on stock;
(4) Rate base value to which Rate of Return is to be related.

To illustrate:

Example I:

Assume the following facts, to correspond to those of the *United Railways* Case:

(a) $76,000,000 outstanding capitalization, consisting of $52,000,000 bonds and $24,000,000 stock;
(b) 7% interest rate plus amortization on the bonds;
(c) $75,000,000 Rate Base;
(d) 7.44% Rate of Return on Rate Base.

In this Example

(1) The rate base value is less than the total outstanding capitalization;

(2) The interest rate on credit obligations is high;

(3) The ratio of credit obligations to total capitalization is high (68.4%).

The rate of return must exceed the interest rate by a large margin to produce the reasonable dividends and pass something on to surplus. A 7.44% rate of return will yield 8% on the stock, after interest payments. In view of the high interest rate, an 8% dividend rate would seem necessary, and nothing would remain to pass on to surplus.

Example II:

Modify Example I only to the extent of reducing the interest rate and amortization to 5½% to correspond to the interest rate and amortization on Appellee's credit obligations. The same 7.44% related to the same $75,000,000 rate base would be sufficient to pay interest on the bonds and to yield 11.3 + % on outstanding stock. With bonds yielding 5½%, a dividend rate of 8% on par would be attractive and the amount carried to surplus would represent over 40% of a year's dividend requirements.

Example III:

Modify Example II only to the extent of increasing the rate base to an amount which exceeds the total capitalization by 75% to correspond to the relation of the minimum rate base value as found by the District Court in the period 1923 to 1927, inclusive, when it also found the required minimum rate of return to be 7½% to Appellee's outstanding capitalization applicable thereto (*supra,* 316, 449; Appendix, p. 87). A 7.44% return on a rate base of $133,000,000 will be sufficient to pay the 5½% interest and amortization on the bonds and to yield 29.3% on outstanding capitalization. The amount carried to surplus will represent approximately three years' dividend requirements.

CONCLUSION.

The above examples indicate:

(1) What rate of return related to a given rate base will produce sufficient net income so that "there should still remain something to pass to the surplus account," requires detailed knowledge of the corporate structure of the company to which such rate of return has application.

(2) The above studies of credit and stock obligations show that, at least during the post-war period covered by the litigation, no such uniformity exists in the corporate structure of business undertakings outside the Bell System as to permit judicial notice thereof or general unsupported statements thereon to be accepted as adequate proof to support a finding of confiscation which voids state action.

B.

Unsupported general statements or judicial notice covering returns on investments of corporations outside the Bell System whose entire property values are represented by outstanding securities should not be accepted in support of a finding of confiscation.

No showing was made that any new utility was or could be financed or an existing utility was or could be refinanced during the period of the litigation in the assumed manner of capitalizing every dollar of net book investment, including surplus, and of capitalizing the unrecorded values, due to going value and to revaluation on the basis of the reproduction value of the property computed, as Appellee contended, and as the District Court allowed.

One of the elements of strength of the Bell System, which the American Company uses in its literature to investors, is its conservative corporate structure. It advertises that:

> "The high market rating of the American Telephone stock and the high standing of the Bell System securities in general are the result of the stability of the telephone industry, the record of earnings and the conservative financial policy of the Bell System" (R. V, 3435, 3429).
>
> "This strength and the conservative financial structure of the System are reflected in the charts . . . . . These show that on December 31, 1925, surplus and reserves of the Bell System were equal to nearly 37% of total capital obligations, and that the mortgage debt of the System on the same date was less than 18% and funded debt less than 32% of net assets" (R. V, 3439).
>
> "At the end of 1930 the funded debt of the A. T. & T. Co. was less than 15 per cent. of its net assets, while for the Bell System as a whole........the funded debt was less than 22 per cent. The mortgage debt of the system was under 14 per cent of the book value of the physical property" (R. V, 3422).

That the financial structure has a significance in financing was admitted by Appellee's banker witness (R. I, 208-9). Indeed, this same witness testified in the *United Railways* Case (R. I, 210) that one of the difficulties in financing that company arose from its unbalanced financial structure.*

Appellee's presentation and the District Court's findings give no effect to the factors which have assisted the Bell System to finance on a favorable basis; they apply the rate of return on an assumed basis of capitalization which rarely if ever is met in actual experience,* and which is not a subject matter of judicial notice.

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*"It seems to me, that the Company has arrived at a critical stage from the standpoint of protecting or improving its credit. The Company at present has what we term an unbalanced financial structure. Its ratio of debt to stock is too large for the Company to endure good credit. There should be a greater proportion of stock, a greater equity above the funded debt, and it seems to me that the Company's endeavor should be, when ever its credit will permit it to do so, to finance by issuing stock in order to improve the ratio of equity securities to those bearing a fixed charge." Testimony of Allen G. Hoyt, Record (United Rys. v. West, 280 U. S. 234 (1930)) volume 2, pp. 533-4.

C.

The application of the returns on corporate investments outside the Bell System to test the inadequacy of Appellee's return to its investors from the attacked rates, as found by the District Court, disregards the special character of the return to Appellee's investors resulting from the District Court's findings on Separation of Revenues, License Contract Payments, Depreciation Expense, and Western.

This Court pointed out that Appellee "was not an ordinary public utility company" but was "a component part of a large system to which the benefits of its operations accrue" and which "was organized for the purpose of maintaining the credit of the constituent companies and securing their efficient and economical management" (*Smith* Case, 282 U. S. 133 at 161, 151).

The American Company, as the responsible head of the Bell System, has stated that:

> "The Bell Telephone System occupies a unique position, and one not generally understood, because it differs so widely in form of organization and in relation to the public and the investors from other enterprises to which it might be expected to be similar. In the annual reports which have grown up to be vehicles of information to the public as well as to the stockholders, we have attempted to set forth the reasons why the structure of the System is what it is, what the relations of the parts are to each other and all the other

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*The purchase of Dodge Bros. Motor Company by Chrysler Corporation through Dillon Read & Co. is one of the few examples of a complete sell-out on the basis assumed by Appellee and the District Court. (Moody's, Industrials, 1929, p. 1133). But here, the securities of Chrysler Corporation and of Dodge Brothers combined were issued.

> facts which should be available to present and prospective investors in the securities of the System" (O.R. VII, 2619, p. 15; O.R. VII, 2678).

The ordinary returns on corporate investments outside the Bell System embrace only the cash income available for return of the issuer corporation, and do not include any advantages of additional profit not otherwise compensated. The District Court's findings on Separation of Revenues (*supra,* 49), License Contract Payments (*supra,* 83), Depreciation Expense (*supra,* 378) and Western's Profits (*supra,* 236) preserved for the American Company, as the equity investor in Appellee, the many advantages of additional profit enumerated above (*supra,* 464) which are not received as part of the return on corporate investments outside the Bell System.

By so doing the District Court preserved substantially all of the burdens on Appellee's operating expenses for the benefit of the American Company under the Mutual Plan of Operation of the Bell System (*supra,* 82), but its findings on Fair Return failed to give effect to the following reciprocal benefits to which Appellee was entitled as consideration therefor from the American Company as its equity investor and as its financing agency:

(1) *The American Company has made itself the financing company to provide the permanent capital for the Associated Companies of the Bell System.*

Since February 1, 1919, the American Company has made its consent necessary before Appellee may finance directly with the public through the sale of credit securities (O. R. IV, 1507-8). Since 1911 the financing of permanent capital by Appellee has been either by sale of its stock to its stockholders, which in effect means to the American Company, or by the sale of its credit obligations to the public after the

American Company has consented thereto and made available to the holders of such securities the benefits of the position of Appellee as an operating division of the Bell System (O. R. IV, 1567).

(2) *The American Company, as the financing company, has provided a cooperative plan for the financing of the Associated Companies.*

The American Company has established and uses the following cooperative plan of financing the needs of the Bell System:

(a) The physical assets of the American Company and the physical assets of all of the Associated Companies are pooled to form the rate base upon which the adequate per cent amount of return is calculated in order to attract the investors of the American Company, who are considered the investors of the Bell System (O.R. VII, 2604, (11); 2616 (6-7); 2633 (13)). If the American Company considered itself an operating company of the long distance service and a holding company of capital and credit securities in the Associated Companies, the American Company should consider as a rate base for the purpose just mentioned, the physical assets of the American Company and the book cost or value of such capital and credit securities and not the assets of the American Company plus the book cost or value of the physical assets of such Associated Companies.

(b) All of the earnings in the treasury of the American Company over and above the actual expenses of the Central Administration, plus all of the net earnings of Western, plus all of the earnings of the Long Lines, are pooled with the net earnings of the Associated Companies from their own operations, for the financing of all of the parts of the Bell System (O.R. VII, 2681 (6-7); 2584 (21-22)).

(c) The cash dividends paid to the American Company by the Associated Companies are pooled with the net earnings of its own treasury from the long distance service, from the 4½% payments remaining above the expenses of the Central Administration, from royalties, and with the cash dividends from Western, to form the fund to pay the cash return to its own investors as the investors of the Bell System (O.R. VII, 2681 (6-7)).

(d) The surplus in the treasury of each Associated Company is pooled with the surplus of the net profits of the Central Administration, the surplus of the net profits from Long Lines, to form the combined surplus to safeguard the continuity of dividends to the investors of the Bell System from the American Company.

(e) All of the funds derived by the American Company from its investors are used to finance every part of the Bell System (O.R. VII, 2638 (40); 2655 (40)).

(f) The American Company, by consenting to the pledge by an Associated Company of the latter's rights under its contract defining its relationship to the Bell System, makes available to the holders of the credit securities issued by each such Associated Company, the same benefits of the cooperative financing plan as are available to the stock investors of the American Company as investors of the Bell System. The inter-relation between the market position of these stock investments and the cost of financing and position of the credit obligations issued by the Associated Companies is one factor considered by the American Company itself in determining the necessary cash dividends required to attract its investors and to maintain the market position of their investments (O.R. VII, 2616 (6, 7)).

(3) *The required net earnings from the operations of each Associated Company are admittedly less than the*

minimum per cent return necessary to attract capital or to maintain the stability of its securities under the cooperative plan of financing the Associated Companies of the Bell System.

From the above analysis it is obvious that the net earnings from the operations of Appellee need not be and cannot be as large as if it were operating as an independent enterprise. In the Bell System the net earnings available to attract the capital investors of the Associated Companies—that is, the stockholders of the American Company —are to be found in two treasuries, *i. e.*, that of the Associated Company, and that of the American Company. An examination of the Annual Reports of the American Company beginning with 1914 reveals that the net earnings left in the treasury of the Associated Companies of the Bell System have been far below the combined net earnings available to the investors of the Bell System and below the minimum net earnings which in the case of an independent enterprise would be required to avoid confiscation (O.R. VII, 2670 (8)). Thus we find for the years 1923 to 1930, inclusive, as already shown, the low ratio of net earnings remaining in the treasury of the Associated Companies to the book cost of plant—ranging from 5.36% to 6.48% (R. VII, 4090E, F)—a per cent return admittedly far below the minimum considered legally adequate for independent enterprises when considered on the basis of present value. Yet in each of such years, dividends were earned by practically all of said Associated Companies plus a margin; in each of such years, the American Company, by combining the Bell System earnings in its own treasury with the Bell System earnings in the treasury of the separate companies, has earned its nine per cent dividend plus a margin, as appears from the following statement:

AMERICAN COMPANY—RATE OF RETURN

(R. VIII, 4374a, 4375-92, 4394, 43

	Rate of Return on Entire Investment	Rate of Return on Capital and Surplus Expressed on		Rate of Return on Entire Investment	Rate of Return on Capital and Surplus Expressed on		Rate of Return on Entire Investment	Rate of Return on Capital and Surplus Expressed on		Rate of Return on Entire Investment	Rate of Return on Capital and Surplus Expressed on	
		Outstanding Stock and Surplus	Outstanding Stock		Outstanding Stock and Surplus	Outstanding Stock		Outstanding Stock and Surplus	Outstanding Stock		Outstanding Stock and Surplus	Outstandi Stock
	12/31/23	12/31/23	12/31/23	12/31/24	12/31/24	12/31/24	1[illegible]/31/25	12/31/25	12/31/25	12/31/26	12/31/26	12/31/26
(1) Holding Co.	7.12	7.49	9.18	7.39	7.91	9.67	[illegible].61	8.27	10.02	7.99	8.70	10.73
(2) Stock in Western.............	9.06	9.94	12.24	9.06	10.06	12.36	10.19	11.71	14.26	13.59	15.97	19.90
(3) Associated Companies—Stock*												
Appellee	7.18	7.57	9.28	7.16	7.61	9.31	7.28	7.83	9.47	7.34	7.86	9.66
Others	6.59	6.83	8.35	6.95	7.34	8.97	7.01	7.47	9.03	7.35	7.87	9.68
All	6.65	6.90	8.[illegible]4	6.97	7.37	9.00	7.04	7.51	9.08	7.35	7.87	9.68
(4) License Contract Operations:												
Appellee	18.84	22.25	27.67	18.94	22.81	28.21	12.98	15.43	18.84	9.67	10.88	13.48
Others	8.57	9.32	11.47	8.15	8.89	10.90	8.16	9.00	10.92	7.94	8.64	10.64
All	8.82	9.63	11.86	8.37	9.17	11.25	8.31	9.20	11.16	8.03	8.76	10.79
Long Lines	8.82	9.63	11.86	8.37	9.17	11.25	8.31	9.20	11.16	8.03	8.76	10.79
Total	8.82	9.63	11.86	8.37	9.17	11.25	8.31	9.20	11.16	8.03	8.76	10.79
(5) Long Lines	16.22	18.95	23.53	14.43	16.90	20.97	16.19	19.70	24.12	14.52	17.17	21.42
(6) Entire Company	8.40	9.10	11.20	8.33	9.12	11.15	8.61	9.60	11.66	8.66	9.57	11.83

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*Including Capital Stock Installments.

CAN COMPANY—RATE OF RETURN FROM ALL OPERATIONS.

(R. VIII, 4374a, 4375-92, 4394, 4396, 4398)

e of Return ı Capital ı Surplus ressed on		Rate of Return on Entire Investment	Rate of Return on Capital and Surplus Expressed on		Rate of Return on Entire Investment	Rate of Return on Capital and Surplus Expressed on		Rate of Return on Entire Investment	Rate of Return on Capital and Surplus Expressed on		Rate of Return on Entire Investment	Rate of Return on Capital and Surplus Expressed on		Rate of Return on Entire Investment	Rate of Return on Capital and Surplus Expressed on	
ng d ı	Outstanding Stock		Outstanding Stock and Surplus	Outstanding Stock		Outstanding Stock and Surplus	Outstanding Stock		Outstanding Stock and Surplus	Outstanding Stock		Outstanding Stock and Surplus	Outstanding Stock		Outstanding Stock and Surplus	Outstanding Stock
5	12/31/25	12/31/26	12/31/26	12/31/26	12/31/27	12/31/27	12/31/27	12/31/28	12/31/28	12/31/28	12/31/29	12/31/29	12/31/29	12/31/30	12/31/30	12/31/30
	10.02	7.99	8.70	10.73	11.76	13.38	16.75	8.29	8.91	11.64	9.01	9.91	13.06	7.84	8.41	11.53
	14.26	13.59	15.97	19.90	101.91	127.16	161.16	20.38	23.76	31.47	29.63	35.65	47.81	16.87	19.47	27.18
	9.47	7.34	7.86	9.66	7.58	8.10	10.06	7.62	8.08	10.54	7.65	8.21	10.76	7.71	8.25	11.31
	9.03	7.35	7.87	9.68	7.38	7.85	9.74	7.47	7.90	10.30	7.47	7.99	10.45	7.22	7.65	10.46
	9.08	7.35	7.87	9.68	7.40	7.88	9.77	7.48	7.91	10.31	7.48	8.00	10.47	7.26	7.70	10.53
	18.84	9.67	10.88	13.48	11.08	12.52	15.67									
	10.92	7.94	8.64	10.64	8.64	9.44	11.76									
	11.16	8.03	8.76	10.79	8.75	9.58	11.93									
	11.16	8.03	8.76	10.79	8.75	9.58	11.93									
	11.16	8.03	8.76	10:79	8.75	9.58	11.94	6.04	6.14	7.95	4.77	4.62	5.90	3.46	3.05	3.95
	24.12	14.52	17.17	21.42	12.47	14.27	17.89	12.97	14.66	19.31	11.91	13.53	17.94	7.92	8.51	11.67
	11.66	8.66	9.57	11.83	11.33	12.84	16.06	8.52	9.19	12.02	8.77	9.61	12.64	7.21	7.64	10.44

The American Company increased its dividends from 8% to 9% in 1921 and has continued to pay the 9% dividend rate throughout the depression (R. V, 3421)—a record equaled by few, if any, other large enterprises.

Nor has the American Company experienced any difficulty either in attracting capital or in maintaining the stability of its securities in comparison with those of other companies with whom it must compete for capital. Indeed, in 1923, the combined showing of the Bell System under the cooperative plan just described was such as to cause the American Company to admit:

> "There are few, if any, important stocks which have greater stability as to earnings than the stock of your company and its market stability may be compared with high grade bonds of railroads and industrial companies rather than with stocks." (O.R. VII, 2646, (12)).

Nor have the credit obligations of the Associated Companies issued to and held by the public suffered as a result of the showing from their own operations in comparison with that of other companies with which the Bell System competed for capital. Their record has been stated above (*supra,* 475, 481, 485).

Nor has the showing of Appellee impaired the stability of its securities in comparison with those of such other enterprises (O.R. VI, 2160; *supra,* 472, 480, 483).

(4) *The yardstick which the American Company would use to test the inadequacy of Appellee's Chicago intrastate return, as found by the District Court, and which gives proper effect to that Court's findings on Revenues and Expenses, is the average per cent return on a comparable basis, on the American Company's investment of the Associated Companies as a whole, as used in fact or as*

found necessary to finance their needs and to maintain the stability of their securities.

The minimum average net earnings from the operations of the Associated Companies as a whole, after having absorbed the costs of providing the American Company with the advantages of additional profit and additional security under the Mutual Plan of Operation, must be such that when pooled with the contributions made by the American Company itself, they will be adequate to attract capital and to maintain the stability of the securities of the Bell System (O.R. VII, 2618 (12)).

The constitutional inadequacy of the rates of any particular Associated Company may therefore be determined by viewing the relation of the net earnings from its own operations to the average required minimum net earnings, on a comparable basis, of all Associated Companies bearing the same relation to the American Company as the Associated Company under investigation, and predicated upon (a) its and their operations having absorbed the costs of services and payments required to be made by it and by them as part of its and their contributions to the operation of the Bell System as a unified single operating entity, and (b) the sufficiency of the average minimum net earnings from the operations of all the Associated Companies when pooled with the contributions by the American Company to such operations, to provide the minimum net earnings which the Bell System as a single operating entity requires to attract capital for the Associated Companies and to maintain the stability of their securities during the period under investigation. In the absence of a showing that the average net earnings from the operations of all Associated Companies are inadequate no issue of confiscation can arise as to the net earnings from the operations of any single Associated Company so long as such Associated Company's showing is as good as or is better than such average.

This yardstick which the American Company in fact uses as the basis for making its investments in the Associated Companies, but which Appellee abandoned in its presentation in this case, at least has the advantage of being made applicable to comparable and easily available, accumulated data of the experience of the Bell System. Appellants used this yardstick in the application of the "comparative return" test of compensatory rates (*supra*, 489). Such application revealed that Appellee's attacked rates as well as the existing rates were compensatory throughout the period of the litigation.

By using the returns on corporate investment outside the Bell System instead of within the Bell System, the District Court gave no effect to the benefit to Appellee from the cooperative plan of the Bell System to which it was entitled on the basis of the District Court's findings on Revenues and Expenses.

DISCUSSION AS TO CONTENTION NUMBERED V.

V.

APPELLEE'S SHOWING OF THE PERCENTAGE RESULTING FROM THE AMERICAN COMPANY'S AVERAGE CARRYING CHARGES RELATED TO AVERAGE OUTSTANDING CREDIT AND CAPITAL OBLIGATIONS PLUS SURPLUS CANNOT BE USED TO SUPPORT THE DISTRICT COURT'S FINDINGS OF THE REQUIRED MINIMUM RATE OF RETURN AND ON THE INADEQUACY OF THE ATTACKED RATES.

Appellee showed the percentage resulting from the American Company's average carrying charges related to its own average outstanding credit and capital obligations plus surplus. Such percentage for the years 1923 to 1927, inclusive, ranged from 6.83% to 6.93%; for the period 1928 to 1930 ranged from 6.25% to 6.55%; and for the year 1931 was 6.42% (R. IV, 2944). Such showing cannot be used to support the District Court's finding of required minimum rate of return and on the inadequacy of the attacked rates for the following reasons:

(a) The $9 cash dividend rate on the American Company's outstanding stock related to its capital and surplus, does not represent the cash rate of return to its investors on their entire equity investment. The American Company's capital and surplus represents only the equity investment in its *book* asset investment. Such book asset investment only reflects its equity investment in the Associated Companies to the extent of the value at which it has recorded its investment in their common stocks, and reflects its book property investment in the Long Lines. Such recorded values do not capitalize (a) the surplus of the Associated Companies applicable to the American Company's equity investment therein; (b) the unrecorded values due to the Going Value of these companies and of its Long Lines business, and to revaluation on the basis of the reproduction value of the properties of the Associated Companies and of its own Long Lines property. The American Company established its 9% cash dividend in 1921 on the basis that "the stockholders' equity in the business was about $200 a share; $9 per year per share was less than 5% upon the stockholders' equity in the business and would certainly not be considered as an excessive return" (O.R. VII, 2616). Such equity consisted of the American Company's capital, surplus and reserves, plus the American Company's equity investment in the Associated Companies not reflected on the American Company's books.*

The average capital and surplus of the American Company in 1921 was approximately $129 a share (R. VI, 4010) or less than 64½% of its stockholders' equity measured by *recorded property investment* on which the dividend rate was established, but not considering the unrecorded values due to Going Value of the subsidiaries or of the Long Lines business and revaluation on the basis of the reproduction values of their respective properties. The "average cost of funds" for 1921 related to the American Company's outstanding capital and surplus produces a percentage figure of 6.80% (R. VI, 4010), which is at least 1.80%, or 36% higher than the cash return to the American Company's investors related to their property investment (O.R. VII, 2616-7). Similarly in 1921 the return of 7.40% on the capital of the subsidiaries resulted in a return of 7.88% to the American Company related to its capital and surplus (R. VII, 4361; R. IV, 2941).

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*"The Company pays its dividend on a par value of $100, but there is much more than one hundred dollars earning that dividend. Much of the Company's stock has been issued at more than par. The amount paid into the Company's treasury for stock exceeds the capitalization by $36,684,237. The Company has never paid out all of its earnings in dividends, but consistently pursued the policy of employing some part of its earnings in extending and improving its property. So it comes about that through this cash payment of $36,684,237 and the earnings upon that sum and the other earnings left with the Company, surplus and reserves of $154,565,113, or $35 per share, have accumulated which are invested for the stockholders.

Most of this capital and surplus is invested in stocks of associated companies. Many of them have had periods in which they paid no dividends, leaving all of their earnings in the business; and the other periods in which they left a part there. This Company's interest in the amount so accumulated is equivalent to $67 per share of its capital stock, which added to its own surplus and reserves ($35 per share) makes over $200 in assets to earn the dividend upon each $100 par value of its stock." (Annual Report of American Company for 1920, O.R. VII, 2603-4.)

Nor do such percentage figures give consideration to the unrecorded values resulting from Going Value of the subsidiaries and of the Long Lines business or from revaluation on the basis of the reproduction value of their respective properties.

(b) The average cumulative annual cost of the American Company's credit financing in each of the years under investigation would not represent the average annual cost of current credit financing in each such years. (*Southwestern Bell Tel. Co.* v. *Commission,* 262 U. S. 276, at 305-306.)

The American Company's average cost of credit funds, the American Company's,* Appellee's and Bell System's cost on new bond issues compare as follows:

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*On December 31, 1922, the American Company had outstanding $226,604,800 bonds, the carrying charges on which entered in its average cost of funds in the period following thereafter (R. V, 3299).

	American Company's Average Cost of Credit Funds (R. IV, 2941)	Annual Cost of New Bond Issues (R. VII, 4260a)		
		Appellee	American Company	Balance of System
1923	5.69%	5.53%	5.95%	5.33%
1924	5.61			5.70
1925	5.61		5.55	5.19
1926	5.60			5.02
1927	5.58			
1928	5.57			
1929	5.39			5.33
1930	5.30		5.22	5.00
1931	5.60			

Such average cost of funds compares with the average cost of funds on bond issues, aggregating $6,138,000,000, sold during the years 1923-1931 under authorization of the Interstate Commerce Commission and state public service commissions (R. VII, 4285-92).

	COST OF NEW CREDIT MONEY				American Company's Average Cost of Credit Funds (R. IV, 2941)
	AAA	AA	A	BAA	
1923					
Public Utilities Bond Issues (R. VII, 4285)					
Weighted Average Cost (per cent)	5.77	5.68	6.42	6.62	
Railroad Bond Issues (R. VII, 4274)					
Weighted Average Cost (per cent)	5.24	5.47	6.52		
American Company's Average Cost of Funds (R. IV, 2941)					5.69
1924					
Public Utilities (R. VII, 4286)					
Weighted Average Cost (per cent)	5.20	5.67	6.20	7.15	
Railroads (R. VII, 4275)					
Weighted Average Cost (per cent)	5.28	5.77	6.16	8.11	
American Company's Average Cost of Funds (R. IV, 2941)					5.61
1925					
Public Utilities (R. VII, 4287)					
Weighted Average Cost (per cent)	5.24	5.70	5.93	5.86	
Railroads (R. VII, 4276)					
Weighted Average Cost (per cent)	5.17	5.43	6.06		

	COST OF NEW CREDIT MONEY				American Company's Average Cost of Credit Funds (R. IV, 2941)
	AAA	AA	A	BAA	
American Company's Average Cost of Funds (R. IV, 2941-2)					5.61
1926					
Public Utilities (R. VII, 4287-8)					
Weighted Average Cost (per cent)			5.42	6.07	
Railroads (R. VII, 4277)					
Weighted Average Cost (per cent)	4.75	5.08	5.43	5.55	
American Company's Average Cost of Funds (R. IV, 2942)					5.60
1927					
Public Utilities (R. VII, 4288-9)					
Weighted Average Cost (per cent)	4.88	4.96	5.15	5.96	
Railroads (R. VII, 4278-9)					
Weighted Average Cost (per cent)	4.74	4.80	5.12	5.47	
American Company's Average Cost of Funds (R. IV, 2942)					5.58
1928					
Public Utilities (R. VII, 4289-90)					
Weighted Average Cost (per cent)	4.58	4.91	5.25	5.57	
Railroads (R. VII, 4279-80)					
Weighted Average Cost (per cent)	4.41	4.59	4.81	5.25	
American Company's Average Cost of Funds (R. IV, 2943)					5.57
1929					
Public Utilities (R. VII, 4290)					
Weighted Average Cost (per cent)	4.93	5.40	5.73		
Railroads (R. VII, 4280-1)					
Weighted Average Cost (per cent)	4.82	5.00	5.14	5.93	
American Company's Average Cost of Funds (R. IV, 2943)					5.39
1930					
Public Utilities (R. VII, 4291)					
Weighted Average Cost (per cent)	4.88	4.94	5.09	6.40	
Railroads (R. VII, 4281-2)					
Weighted Average Cost (per cent)	4.80	4.85	4.93	5.32	
American Company's Average Cost of Funds (R. IV, 2943-4)					5.30
1931					
Public Utilities (R. VII, 4291-2)					
Weighted Average Cost (per cent)	4.52	4.74	4.93		
Railroads (R. VII, 4283)					
Weighted Average Cost (per cent)	4.70	4.75	5.40	4.94	
American Company's Average Cost of Funds (R. IV, 2944)					5.60

(c) Current stock financing would not involve an annual cost equal to that resulting from the American Company's 9% dividend rate related to its capital and surplus during each of the years under investigation (*Southwestern Bell Tel. Co.* v. *Commission,* 262 U. S. 276, at 305-306):

1923	7.18%	1927	7.20%
1924	7.20	1928	6.77
1925	7.37	1929	6.81
1926	7.20	1930	6.46*

Western justified its payment of $30,000,000 to the American Company for the stock of the Teletype Corporation on the ground that the American Company paid therefor $15,000,000 in stock, but this stock had a market value of at least $200 a share, on which basis the yield would be 4½% (R. I, 458). On the other hand, the annual cost computation gave effect to a return of 6.25% (R. IV, 2944).

As bearing upon the return which stock investors received during this period from stock investments in companies whose bonds are comparable to those of the American Company, Appellants point out that the annual yield (based on cash dividends related to the resale price), to holders of stock in public utilities whose Triple-A bonds sold to the public in the years 1925-1930, and for the first three-quarters of the year 1931, was lower than the yield on resale price of the Triple-A bonds (R. VII, 4218d; R. II, 1747), as follows:**

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*On the basis of the open market this yield to the investor was (R. VII, 4233):

1923	7.27½%
1924	7.05½
1925	6.54½
1926	6.20
1927	5.44
1928	4.74⅓
1929	3.78
1930	4.28
1931	6.24⅓

**The chart (R. VII, 4218d) showing the average yield (based on cash dividend related to the resale price) on common stocks compared with average yield on bonds grouped according to Moody's Rating of the companies' bonds is reproduced herein (Appendix, p. 149).

	Average Yield on Resale Prices	
	AAA Bonds	Stocks Behind AAA Bonds
1925	4.90	4.96
1926	4.84	4.58
1927	4.69	4.38
1928	4.71	3.87
1929	4.85	3.25
1930	4.71	3.62
1931	4.71	4.97

(d) It is not the fact that the difference between the prognosticated rate of return and the percentage figure resulting from its computation on the basis of the American Company's "average cost of funds" would produce the necessary, but only the necessary, margin of safety over and above the cash dividends, and no more (R. II, 1364-5; R. I, 217).

The margin of safety for the interest and amortization requirements on credit obligation lies in the entire amount of earnings available for the stock—no question arises that a margin of safety in addition thereto would be required as a minimum return to sell such securities.

The following table shows that the percentage of combined capital and surplus equal to the difference between the prognosticated return and Appellee's computed "average annual cost of funds percentage" will provide more than the margin of safety on dividends contemplated by such prognosticated return:

Year	Actual Dividend Payments to American Co. Stockholders Related to Capital Stock and Surplus (R. IV, 2941-4)	Per Cent of Return on Total Funds of American Co. Required to Yield 8% on Capital Stock and Surplus for the Years 1923 to 1927, Inclusive, and 7% for the Years 1928 to 1930, Inclusive (R. IV, 2941)	Yield Available to American Co. Stockholders on Capital Stock and Surplus from 8% Return on Total Funds for the Years 1923 to 1927, Inclusive, and 7% for the Years 1928 to 1930, Inclusive (R. IV, 2941)
1923....	7.17%	7.52%	8.62%
1924....	7.23	7.43	8.75
1925....	7.38	7.38	8.84
1926....	7.22	7.41	8.78
1927....	7.21	7.47	8.68
1928....	6.77	6.73	7.34
1929....	6.81	6.68	7.00
1930....	6.45	6.68	7.40

(e) The rate of return which would be required to finance the American Company would not be the rate of return required to finance Appellee. As the entire rate of return to the American Company's investors consists of "net cash income available for return" and no more, they would not receive the advantages of pecuniary profit received by the American Company as Appellee's investor as part of the return on its equity investment in Appellee which are not received by the American Company's investors. For the reasons stated, the difference between the character of the return to the American Company's investor and to the American Company as investor in Appellee makes them incomparable.

CONCLUSION.

The District Court erred in not finding that the attacked telephone rates were constitutionally adequate for each year of the litigation, in not dismissing the bill of complaint, in not dissolving the temporary injunction, and in not ordering a refund of all sums collected by Appellee in excess of the rates prescribed by the Order of August 16, 1923, and interest thereon. Such amounts are (R. VII, 4082):

	Principal a	5% Simple Interest b	Total of a & b
1923	$ 527,926	$213,301	$ 741,227
1924	2,124,632	792,003	2,916,635
1925	2,181,614	704,313	2,885,927
1926	2,203,556	601,073	2,804,629
1927	2,221,798	495,141	2,716,939
1928	2,168,357	375,168	2,543,525
1929	2,060,444	253,693	2,314,137
1930	1,879,411	138,369	2,017,780
1931	1,632,466	38,372	1,670,838
1932 Not available from record.			
1933 Not available from record.			
Total	$17,000,204	$3,611,433	$20,611,637

Respectfully submitted,

Otto Kerner

Attorney General, State of Illinois, and Attorney and Solicitor for the Illinois Commerce Commission,
Appellants.

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Harry H. Ruskin

Of Counsel.

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IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1933.

No. 440

BENJAMIN F. LINDHEIMER, ERNEST J. KRUETGEN, ANDREW OLSON, G. GALE GILBERT, PHIL. W. COLLINS, PAUL SAMUELL and CHARLES E. BYRNE, the persons constituting the Illinois Commerce Commission of the State of Illinois, and OTTO KERNER, Attorney General of the State of Illinois,
Appellants,

and

CITY OF CHICAGO, a municipal corporation,
Appellant,

vs.

ILLINOIS BELL TELEPHONE COMPANY,
Appellee.

APPEAL FROM DISTRICT COURT OF THE UNITED STATES, FOR THE NORTHERN DISTRICT OF ILLINOIS, EASTERN DIVISION (3746).

APPENDIX TO APPELLANTS' BRIEF AND ARGUMENT.

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CHAMPLIN-SHEALY COMPANY, CHICAGO 365

APPENDIX TO APPELLANTS' BRIEF.

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IN THE

Supreme Court of the United States

October Term, A. D. 1933.

No. 440

BENJAMIN F. LINDHEIMER, ERNEST J. KRUETGEN, ANDREW OLSON, G. GALE GILBERT, PHIL. W. COLLINS, PAUL SAMUELL and CHARLES E. BYRNE, the persons constituting the Illinois Commerce Commission of the State of Illinois, and OTTO KERNER, Attorney General of the State of Illinois,
Appellants,

and

CITY OF CHICAGO, a municipal corporation,
Appellant,

vs.

ILLINOIS BELL TELEPHONE COMPANY,
Appellee.

Appeal from District Court of the United States, for the Northern District of Illinois, Eastern Division (3746).

APPENDIX TO APPELLANTS' BRIEF AND ARGUMENT.

APPELLEE'S RATE-MAKING HISTORY.

Western Union Contract of 1879.

Prior to 1879 the National Bell and the Western Union held rival telephone patents, both companies operated directly and through licensed exchanges in over 75 cities in the United States (R. II, 1913-1917); they were also contesting the validity of their patents. In 1879 the controversy was settled by a Contract (O.R. VI, 1887) referred to herein as the Western Union Contract.

The contract, to which the Western Union was the "First Party" and the "National Bell" the "Second Party," contained the following:

> "ARTICLE 12. (1) The right to all uses of the telephone on wires of a district or exchange system is to remain exclusively with the party of the second part excepting such temporary suspension of the application of this contract to certain localities, as has been already herein provided for.
>
> (2) For the purpose of this contract, it is agreed that an "exchange" or a "district or exchange system" applies to a system in which different stations on the same or different circuits, and either within any city or town, or within a radius of fifteen miles of a central office (or within wider limits, where existing contracts have granted wider limits), are connected with such central office or branch offices within said territory for the purpose of placing subscribers or other parties by such circuits in communication with such central or branch offices, or with each other, either directly or through the agents of the system.
>
> ARTICLE 13. (1) The right to connect telephonic district or exchange systems for the purpose of personal conversation between persons at the instruments, and the right to use telephones on all lines not forming a part of a telephonic district or exchange system for such personal conversation (except so far as licenses

for private lines are to be granted to the party of the first part under Article 14) are to remain exclusively with the party of the second part, and those licensed by it for the purpose.

Appellee's Original License Contract of 1881.

In 1881 the American Bell and the Western Union licensee operating in Chicago (*Western Union Tel. Co.* v. *American Bell Tel. Co.*, 187 Fed. 425, 464), joined to transfer their business to Appellee to be organized and operated under an American Bell license contract issued in the same year (O.R. VI, 1926).

By this contract Appellee was granted a perpetual exclusive license to use the telephone to do a telephone business in seven counties in Illinois and in two counties in Indiana (Sec. 2) (O.R. VI, 1925, 1926) for "all purposes for which the Licensor has or shall have the right to use" the same under the Western Union Contract, i. e., for exchange, local toll service and connecting company service. The rent and royalty to the American Bell for the use of the telephone was 50 per cent of the rental charge made by Appellee to its customers for the use of the telephone (Sec. 9) (O.R. VI, 1928). The American Company received no additional compensation from the local toll or connecting company services.

Section 10 provided:

> "In case the Licensor, its successors, or grantees, shall desire to connect points within said territory, with points outside said territory they shall have the right to connect with or avail themselves of the lines and facilities of the party of the second part (Appellee) or its licensees, owners of exchanges or public lines making a reasonable and suitable division of the tolls and profits of such extra-territorial, and through

business; and if or so far as said licensee or its sublicensees shall not have or shall not furnish suitable lines and facilities, then said American Bell Telephone Company may within said territory construct such lines and use such telephones as may be necessary for such purposes'' (Connecting Line Toll Service and Long Distance Service: O.R. VI, 1929).

1891 Contract.

By 1891 the American Company had extended its lines to Chicago (O.R. V, 1739) where Appellee had for ten years operated its local exchange, local toll and connecting company services. Then serving a million people in Chicago alone, with over 6,600 telephones in service (O.R. VI, 2299), Appellee's entire business was done over what was known as a ''grounded magneto line,'' not practically adaptable for long distance service as developed by the American Company (*Chicago Tel. Co.* v. *Ill. Mfg. Assn.*, 106 Ill. App. 54). From the beginning long distance service has been established on metallic circuits (O.R. V, 1739).

In 1891, the American Company and Appellee entered into a contract (O.R. VI, 1934) declared to be a temporary modification of some of the provisions of and ''to provide more explicitly for certain details of operation'' of the license contracts held by both companies, but ''was not to violate any provision thereof.'' It was to continue for a minimum period of one year and until terminated by thirty days' notice by either party.

Appellee agreed:

1. To build, equip and maintain, and to make available for long distance service (a) special terminal loops from its several local exchange offices ''to such points within the districts of the various exchanges as the Ameri-

can Company may from time to time direct"; (b) a sufficient number of public pay stations to meet the reasonable needs of the public for long distance service; and (c) its subscribers' stations.

2. To bill, collect, and settle the account in each case.

The American Company agreed to pay Appellee for all of these services, a specific sum per month for each terminal loop, plus 30% of the cash receipts from business originating at public pay stations, not to exceed 20c. per connection, and 15% of the cash receipts from business originating at subscribers' stations, not to exceed 10c per connection. This basis of compensation was predicated on (a) the American Company's paying the labor cost of the operators at the exchange offices to switch the local lines on to the long distance or toll board, and (b) the American Company's paying to Appellee reimbursement of the actual expense of operation, plus 10% thereof, should Appellee be required to operate property owned by the American Company.

Note: (1) the compensation to Appellee was for the use of all of its necessary facilities in fact used in the long distance service from and including the exchange stations to the toll board or toll trunks (exchange plant facilities), and not merely for billing, collecting and settling the charges; (2) the compensation was subject to modification from time to time by request of either party according to the standard prescribed by Section 10 of the Original License Contract of 1881.

1889 Chicago Telephone Franchise.

The Chicago Telephone Franchise, accepted by Appellee in 1889, and in effect for twenty years thereafter, provided that Appellee "during the term for which this ordinance is granted, shall not increase to its present or future subscribers the rates for telephone service now established, and provided, also, that with the acceptance hereinafter required, there shall be filed by said Company a schedule showing the rates charged by said Company for telephone service at the date of the passage of this Ordinance within the limits of the City of Chicago" (R. V, 3623). In 1889 there was in force for $125 a year a flat rate service known as the "grounded line" service, which entitled the subscribers to unlimited exchange service, plus the right to use the Chicago exchange plant facilities to connect for local toll service (*Chicago Tel. Co.* v. *Ill. Mfg. Assn.*, 106 Ill. App. 54).

To carry out the provisions of the Original License Contract of 1881 and the 1891 Contract relating to long distance service, Appellee at great expense substituted metallic circuits for grounded lines from exchange stations to the central offices (*Chicago Tel. Co.* v. *Ill. Mfg. Assn.*, 106 Ill. App. 54). Appellee then offered its Chicago subscribers a "metallic circuit" service at a flat charge of $175 a year. This service gave to the subscriber the unlimited exchange service plus the right to use the exchange plant facilities to connect for local toll service to the same extent as had been given under the "grounded line" service, plus the right to use the exchange plant facilities in originating or in receiving long distance communications over the wires of the American Company. But the Appellee was enjoined from increasing its flat yearly charges beyond $125, the court holding that the exchange service subscriber was not entitled, as part of the service, for which the flat rate of $125 had been established prior to 1889, to the right to use, without extra charge, the exchange plant facilities for personal *long distance communications* over the wires of the American Company (*Chicago Tel. Co. v. Ill. Mfg. Assn.*, 106 Ill. App. 54); that the 1889 Franchise prohibited any increase in the exchange service rate to cover such long distance use as part of the exchange service.

1907 Telephone Franchise.

A new telephone franchise was put into effect in Chicago in 1907 (R. V, 3624) and another in 1913 (R. V, 3639), establishing schedules of flat and measured rates for exchange service in Chicago. The particular rates are set out in tabular form in City Exhibit 93 (O.R. VI, 2134). These schedules were in effect until June 16, 1919, when the Postmaster General put new rates into effect during the period of government control, all of which were on a measured service basis (*infra*, 12).

The 1907 Franchise divided the exchange service rates into three classifications (R. V, 3625, 3627, 3628): business, residence and nickel prepaid service. It then subdivided the business service (R. V, 3625) into (a) flat rate service at a flat yearly charge for unlimited use of the line and (b) metered message rate service at a monthly charge for a single party line, "including a specified number of outgoing conversations or messages over said line" and a specified graduated per conversation or message charge for all "conversations or messages" in excess of the number specified in said ordinance. The rates for residence telephones (R. V, 3627) were established at maximum flat rates for single and two party lines "including all outgoing messages," and "nickel prepayment service" with outgoing messages, at 5 cents each, as follows:

> "One party line, at a guaranty of 20 cents per day, including four messages.
>
> Two party line, at a guaranty of 12½ cents per day, including three messages," etc.

The Franchise also provided that Appellee should install meters "in connection with every measured service line of its lessees and subscribers which shall prove effective in actual use for accurately and correctly recording the number of outgoing messages or conversations over said line" (R. V, 3631); that Appellee could establish a "neighborhood exchange service" in the suburban districts and subscribers to that service were allowed to communicate with subscribers in the metropolitan area of the city by "a message for which a charge of not more than 5 cents may be made for each period or a fraction thereof" (R. V, 3629). The Franchise also provided for (R. V, 3630):

> "Toll Service."
>
> Said Chicago Telephone Company shall not charge more than 10 cents for each conversation or message up to three minutes in duration (and not more than 5 cents for each additional minute), transmitted from any telephone located within the City of Chicago to any other telephone which is located outside the City of Chicago but within fifteen miles of the present City Hall in said City of Chicago or within 1 mile of the City limits and within the State of Illinois."

The Franchise also provided for extension telephones and for terminals from the subscribers' premises to a switchboard or lines outside his premises but in the City limits at a specified charge. It provided for directory listings and delivery free of charge; that no charges be made for incoming calls except in the case of toll or long distance messages where the subscriber agrees to accept a "reverse" charge; that no charge be made except for transmitted messages or conversations (R. V, 3632-3).

The Franchise also provided for compensation to be paid to the City of Chicago equal to 3% of the gross receipts of the Appellee, including (R. V, 3624):

> "All moneys received by said Chicago Telephone Company for service, communication and messages from the exchanges, offices, stations or telephones of the said Company or of its lessees, subscribers, or patrons, located within the City of Chicago to any exchanges, offices, stations or telephones now or hereafter owned, operated or leased by or to said Company outside the City of Chicago (commonly known and designated as "toll" service, communication or messages), together with all moneys received by said Chicago Telephone Company, as its share of the gross receipts for service, communication and messages between the exchanges, offices, stations or telephones of the said Company, or of its lessees, subscribers or patrons located within the City of Chicago and any exchange, offices, stations or telephones of any other company or person outside said City of Chicago (commonly known and designated as 'long distance' service, communication or messages), shall, for all the purposes of this ordinance, and particularly for the purpose of computing the compensation semi-annually due the City of Chicago hereunder be deemed and treated as a part of the gross receipts from the 'business done by said Chicago Telephone Company within the City of Chicago.'"

The Franchise also provided (R. V, 3634):

> "The said Chicago Telephone Company shall not at any time enter into any agreement or combination with any Company heretofore existing or hereafter created concerning the price to be charged by said Chicago Telephone Company in the City of Chicago for telephone service or equipment."

The Franchise reserved the right in the City to further regulate rates and services (R. V, 3638).

1913 Telephone Franchise.

Pursuant to the reservation of the 1907 Franchise in respect to future regulation, the City of Chicago passed an ordinance on May 26, 1913 (R. V, 3639):

> "for the purpose of fixing the maximum rates for telephone service which may be charged by said Chicago Telephone Company for a period of five years from and after the passage of the Ordinance."

The Franchise modified the 1907 Franchise in that it confined the flat rate business service rate established by the 1907 Franchise to present subscribers only; provided for charges for change in style of instrument, removals where less than a year's service was furnished; provided for additional classes of coin box service and for a push button or other device to be attached to the box to call the operator in case of emergency where the nickel coin box service requires the deposit of a nickel to raise the operator (R. V, 3640-53).

Chicago Exchange Service Rate Schedules Filed With Public Utilities Commission January 27, 1914.

Pursuant to the above provisions, Appellee filed with the Public Utilities Commission on January 27, 1914, its schedules of Chicago exchange service rates in force July 1, 1913, as fixed by the 1907 and 1913 Telephone Franchises (R. VIII, 4922c). Included as part of said Chicago exchange rate schedules it also filed a sheet entitled "Regulations." As a part thereof appears the following paragraph:

> "*Exchange Service (City or Neighborhood)*—Subscribers to Chicago Exchange System service may, on the terms of their contracts, transmit local messages to all exchange telephones located within the limits of the City of Chicago. Subscribers to Neighborhood Exchange service may transmit local messages to all exchange telephones within the limits of the Neighborhood Exchange in which their telephones are located.
>
> A local message is a communication not exceeding five minutes' duration between subscribers' stations within the same exchange limits. By ordinance of the City of Chicago and these regulations the subscriber, the Company and its lessees and patrons, are forbidden to charge any person more than five cents for a single conversation or message transmitted to any point within the City of Chicago from any telephone furnished under the contract of which these regulations are a part. The use of classes of service is restricted by said ordinance and these regulations, as follows:
>
> Flat rate business service is furnished for the use of subscribers and their employees only in their business.
>
> Flat rate residence service is furnished for the use of subscribers and their families only at their residence.
>
> Measured service is furnished for business use of subscribers and their employes only in their business or for residence use of subscribers and their families only at their residence and for the use of any extra name users on the same premises as may be contracted for by the subscribers.
>
> Nickel coin box service business or residence is for the use of subscribers (and others permitted by the subscribers) upon depositing proper coins" (R. VIII, 4922C).

Chicago Exchange Rate Schedule Filed May 2, 1917.

On May 2, 1917, Appellee filed with the Public Utilities Commission a new schedule of Chicago Exchange service rates to replace the schedule filed January 27, 1914, above described. This new filing was stated by Appellee to be for the purpose of having on file a consolidated schedule and not to change the substance thereof. Such schedule contained as part thereof a sheet of "Regulations" on which appeared the identical paragraph as that above quoted, which appeared in the sheet filed on January 27, 1914 (R. VIII, 4922b).

Stein v. The Chicago Telephone Company.

Prior to July 15, 1918, one Meyer J. Stein filed a formal complaint with the Public Utilities Commission that among others

(a) Appellee's Chicago exchange service rates discriminated in favor of the flat rate subscribers against the measured meter rate subscribers; and

(b) the intrastate toll rates were discriminatory as between communities.

After hearings on the bill of complaint and the answer of the Appellee, the Commission issued an order on July 15, 1918, finding that discrimination existed in the exchange service rates and toll rates and directed that Appellee file with the Commission for its approval a schedule of reasonable rates for both classes of service in Appellee's territory within and without the City of Chicago, eliminating therefrom all discriminations of any kind as among, between, or against individuals, communities, or municipalities (R. VIII, 4814b-c). While the case was pending on appeal to the Supreme Court of Illinois (*Utilities Commission* v. *Chicago Tel. Co.,* 287 Ill. 447), the Postmaster General under Congressional authority, took over on July 31, 1918, for the duration of the War, Appellee's property and operations. The Commission's order was sustained by the Supreme Court of Illinois in April, 1919 (*Idem*).

Postmaster General's Administration, August 1, 1918-July 31, 1919.

Upon taking charge the Postmaster General continued in effect the exchange service rates and toll rates of Appellee theretofore filed with the Commission and in force (R. VIII, 4814-D). Thereafter he directed that Appellee put into effect new toll rates which became effective June 6, 1919, and new exchange service rates which became effective June 16, 1919 (R. VIII, 4814c-d).

The Chicago Exchange rate schedules of June 16, 1919 eliminated the flat rate service, and increased the existing meter rates. The schedules as filed did, however, contain the same provision in respect to the scope of Chicago exchange service as was contained in the Schedule filed in 1914 and above quoted (*supra,* 10), excepting only that reference to Neighborhood Exchange Service was eliminated.

The Toll Rate Schedules effective June 6, 1919 (R. VIII, 4814c), provided for various classes of intrastate toll service, including station-to-station service, person-to-person service, appointment calls, and messenger appointment calls, as therein defined (R. VIII, 4938a).*

---

*The said schedules also contained "Rates for special service," including therein

"Long Distance Terminals.

Leased Wire Terminal Loops.

Furnished at Chicago Telephone Company Exchange points in connection with other companies lease wire service. No terminal instrument included."

According to said schedule:

> "The term station-to-station service is defined as a connection between any two telephones (including private branch exchange switchboard operator) and does not contemplate the establishment of conversation between particular individuals. Under station-to-station rates a charge for a message is made where a connection is established with the called person."

The rates for such service were stated under the heading "Message Rates (Station-to-Station Basis)."**

Nowhere in the Toll Rate Schedule, or in any Regulations or Statements Filed as a part thereof does there appear any statement or provision, express or implied, that the service covered by the rate therein contained did not include the furnishing for the use of the patron of the Chicago exchange plant facilities, or that the rates therein contained do not compensate Appellee for the intrastate toll use of the Chicago exchange plant facilities.

The Act of Congress of July 11, 1919, in effect July 31, 1919, provided as of August 1, 1919, that the properties should be returned to their owners and that the toll rate and exchange rate schedules then in effect were to remain in force until December 1, 1919, unless sooner modified or changed by local public authorities having jurisdiction thereover (R. VIII, 4814d).

**This schedule (R. VIII, 4938a) shows the filing mark "July 16, 1919"—and was filed as part of Appellee's petition of that date to maintain in force pending final hearing "rates, charges and classifications which are filed herewith, being the same and identical with the rates, charges and classifications now charged and collected in the territory aforesaid by the applicant herein as agent of the Government of the United States" (R. VIII, 4814h).

Case 9291.

Appellee's Petition July 16, 1919.

On July 16, 1919, Appellee filed an application with the Public Utilities Commission of Illinois for temporary authority to put into force the exchange service rates and toll rates then in effect as established by the Postmaster General in June, 1919, and as appeared in schedules attached to said petitions (R. VIII, 4814a-h).* In said petition Appellee stated:

> "12. That the rates and schedules for local exchange service in the City of Chicago, put in effect by the applicant on June 16, 1919, by direction and as agent of the United States Government, abolished certain kinds of service referred to by this applicant under the provisions of the ordinance of the City of Chicago herein referred to, eliminating all discriminatory rates arising from the continuation of the flat rate contracts to certain subscribers, and placed all subscribers on a measured service basis; that during the month of June and the month of July, 1919, the applicant pursuant to orders from the United States Government, has made and will make numerous changes in equipment and apparatus necessary to furnish service in accordance with the new schedules and that it will be impossible for the applicant to return to a flat rate schedule without return to discriminatory rates and without great expense and serious inconvenience to the public in the City of Chicago" (R. VIII, 4814g).

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*The Toll Rate Schedule is shown on R. VIII, 4938a; the Chicago Exchange Service Schedule on R. VIII, 4922a.

Commission's Temporary Order of July 31, 1919.

On July 31, 1919, the Public Utilities Commission issued an order suspending the schedules for toll and exchange service rates filed as part of Appellee's petition of July 16, 1919, and ordered:

(1) that Appellee "charge and collect for local service rendered by it to its subscribers and patrons within the City of Chicago" the rates established by the Postmaster General June 16, 1919, except that "all patrons and customers using coin box or nickel service in Class 4 C. R.—being four-party line residence service, shall be entitled to thirty messages per month at a guaranty of $1.50 monthly instead of forty messages for two dollars per month" as prescribed by the Postmaster General's schedules and a four cent charge for additional messages.* The new rate was the rate in force prior to the Government control (R. VIII, 4476-83).

(2) that Appellee charge for its intrastate toll service the Postmaster General's rates excepting that the rates for appointment calls and person-to-person calls should be at the same rates as the therein station-to-station service rates.

Appellee accepted the Order and on August 1, 1919, filed new Toll Tariffs and Chicago Exchange Rate Schedules (R. VIII, 4922a).

Note:

(1) Nowhere in the Complete Toll Rate Schedule as filed does there appear any statement or provision, express or implied, that the service covered by the rate schedules therein contained did not include the furnishing for the

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*The order covered also exchange service rates outside Chicago.

use of the patrons of the Chicago exchange plant facilities, or that the rates therein contained did not compensate Appellee for the intrastate toll use of the Chicago exchange plant facilities.

(2) The Chicago Exchange Service Schedules contained the same definition of Exchange Service and defined its scope (above stated, *supra,* 10), as was contained in the schedules filed as part of the petition (R. VIII, 4922a, I. P. U. C. No. 42-A—Sheet 4).

(3) Neither in the petition of Appellee of July 16, 1919, nor in the schedules filed pursuant to the Order of July 31, 1919, did Appellee indicate that it intended to make the 1919 Revision applicable to the Chicago exchange service rates in respect to the uses of the Chicago exchange plant facilities in the American Company's services.

Petition of November 15, 1919.

On November 15, 1919, Appellee filed another petition in Case 9291, which had been consolidated with Case 8672 covering exchange service rates outside Chicago. In this petition it showed its earnings in the entire territory and set forth (R. VIII, 4939):

> (1) "That the rates in effect June 16, 1919, in the City of Chicago, and continued in effect by said order of July 31, 1919, for business and all classes of residence subscribers, except four party, have not been in operation a sufficient length of time to show the full effect, on revenue, of a rate based on the number of calls per month as compared with the rate which had been in effect in the City of Chicago (for a limited number of subscribers originating a large amount of traffic), which rate allowed an unlimited number of calls for a fixed charge per annum, and that said business or residence rates should be continued in effect

temporarily, so that it may be determined whether the revenues therefrom will increase or decrease.

That out of a total of 377,136 subscribers in the City of Chicago, 275,685 have four-party residence service at the minimum rate for any class of service; that under the present schedule, this rate is a guarantee of five cents per day, including one outgoing message, additional messages four cents each, and is the same rate which had been in force since 1913, notwithstanding the greatly increased operating expenses of the applicant since that date; that it would be unjust and unreasonable to continue said rate in effect when the rates for all other classes of service have been increased and that the effect of continuing said rate will be to create an unreasonable difference as to rates between classes of service, contrary to the provisions of the Public Utilities Act of Illinois; that the rate of four-party line residence service of a guarantee of 6½ cents per day, including one and three-tenths outgoing messages, which was in effect from June 16, 1919, to July 31, 1919, was insufficient, and that the rate for four-party residence subscribers should be increased to a guarantee of 7½ cents per day including one and one-half outgoing messages, additional mesages four cents each,—so that this class of subscribers will bear their proportionate part of the greatly increased operating expenses of the applicant since the year 1913, and, particularly, in recent years and since the filing of the petition on July 16, 1919; that said rate for four-party residence service is just and reasonable and should be put into effect temporarily.

That the present rates for long distance service within the State of Illinois are unjust and unreasonable, in that they are not based on the proper relation between the cost to the applicant and the value to the subscriber of the different classes of long distance service given under said order of July 31, 1919, and that the rates for long distance service filed July 16, 1919, for all classes of said service are just and reasonable and should be put into effect.

That the charges under the present schedules for the installation and moving of telephones are unjust and

> unreasonable, in that they do not assess the cost of said moves and changes against the subscribers originating the expense thereof, and contain other discriminatory features; that the charges for the installation and moving of telephones in the schedules filed July 16, 1919, are just and reasonable and should be put into effect."

Appellee requested temporary authority, pending final hearing

(1) to charge and collect from "local service" in Chicago the rates then in effect except that the subscribers and parties using the coin box four-party line residence service (Class 4-C) should guaranty 7½ cents per day, including one and one-half outgoing messages, additional or excess messages to be charged for at four cents each;

(2) to restore the person-to-person and appointment call toll services as shown in the schedule filed originally with its petition of July 16, 1919.

Commission's Temporary Order of November 29, 1919.

The Commission's order of November 29, 1919 (R. VIII, 4476-83)

(1) denied Appellee's petition for increase in the four-party line service, on the ground that not sufficient evidence had been introduced as to the effect of that service;

(2) granted Appellee's request to put into effect the toll rate schedule attached to the petition of July 16, 1919, in respect to person-to-person calls and appointment calls, but suspended the balance of the Toll schedule.

(3) "That in view of the short time in which the rates for the applicant have been in effect in the City of Chicago upon a measured service basis, it is desirable that said measured rates be continued so that their

full effect on the Company's revenues may be determined" (R. VIII, 4480).

Schedules Filed December 1, 1919.

Appellee accepted the temporary order of November 29, 1919, and filed Chicago Exchange Rate Schedules and Toll Rate Schedules on December 1, 1919, to conform thereto (R. VIII, 4922e).

Petition of May 21, 1920.

On May 21, 1920, Appellee filed with the Commission in Case 9291, a petition for a temporary order pending final hearing to increase the measured exchange service rates in Chicago covering two and four-party coin box residence services, one and two-party coin box business service, single measured business service, also to establish new M Trunk Measured Business Auxiliary, Business Extensions and P. B. X. Terminals and Service Connection Charges (R. VIII, 4483-98a).

In this petition Appellee made the following representations:

> "This applicant further states that the following tables show the prior, present and proposed rates for the different classes of services set forth in Exhibit E as shown by the evidence in this proceeding:
>
> *4 C. R. Four Party Coin Box Residence*
>
> "This class of service has been in effect in the City of Chicago since the year 1907; the rate for said service from 1907 to 1913 was a guarantee of five cents per day, including one outgoing message, additional messages at the rate of five cents each; in 1913 the guarantee was continued, but the rate for additional messages decreased to four cents each; this rate has con-

tinued in effect up to and including the present time, with the exception that for a period of about six weeks at the end of Federal control, the rate was temporarily increased to a guarantee of 6½ cents a day, including one and three-tenths outgoing messages.

The proposed rate is a guarantee of eight cents per day, including one and six-tenths outgoing messages, additional messages at the rate of five cents each; the percentage of subscribers in the City of Chicago having four party nickel residence service has been increased from 34 per cent in 1908 to 73 per cent in 1919; the number of stations was 278,506 on August 1, 1919."

2 C. R. Two Party Coin Box Residence

"This class of service has been in effect in the City of Chicago since the year 1907; the rate for said service from 1907 to 1913 was a guarantee of ten cents per day, including two outgoing messages, additional messages at the rate of five cents each; in 1913 the guarantee was continued, but the rate for additional messages decreased to four cents each; this rate was continued in effect up to and including the present time, no change having been made during Federal control.

The proposed rate is a guarantee of 12½ cents per day, including two and five-tenths outgoing messages, additional messages at the rate of five cents each. The number of two party nickel residence subscribers was 5,084 March 1, 1920.

2 C. B. Two Party Coin Box Business.

"This class of service has been in effect in the City of Chicago since the year 1907; the rate for said service from 1907 to 1913 was a guarantee of 12½ cents per day, including two and five-tenths outgoing messages, additional messages at the rate of five cents each; in 1913 the guarantee was continued, but the rate for additional messages decreased to four cents each: this rate has continued in effect up to and including the present time, no change having been made during Federal control.

The proposed rate is a guarantee of fifteen cents per day, including three outgoing messages, additional messages at the rate of five cents each; the number of subscribers in the City of Chicago having two-party nickel business service was 27,245 March 1, 1920.

1 *C. B. One Party Coin Box Business.*

"This class of service has been in effect in the City of Chicago since the year 1907; the rate for said service from 1907 to 1913 was a guarantee of twenty cents per day, including four outgoing messages, additional messages at the rate of five cents each; in 1913 the guarantee was continued, but the rate for additional messages decreased to four cents each; this rate has continued in effect up to and including the present time, no change having been made during Federal control.

The proposed rate is a guarantee of twenty cents per day, including four outgoing messages, additional messages at the rate of five cents each; the number of subscribers in the City of Chicago having one party nickel business service was 5,792 March 1, 1920.

1 *M. B.—Single Measured Business.*

"This class of service has been in effect in the City of Chicago since the year 1907; the rate for said service from 1907 to 1913 was a guarantee of $60 per annum, including 1,200 outgoing messages, additional messages at a scale declining to a minimum charge of two cents per message; in 1913 the guarantee was reduced to $48 per 960 messages, but the minimum charge was continued at two cents per message. This rate continued in effect up to June 16, 1919, when the following scale was put into effect:

$4.00 per month for a guarantee of 80 messages.
5c each for next 20 additional messages.
4c each for next 100 additional messages.
3c each for next 100 additional messages.
2½c each for all other additional messages.

"The proposed rate is the same as the present schedule with the minimum excess message rate increased from two and one-half cents to three cents per message; on March 1, 1920, there were 32,374 direct single measured business lines and 6,276 private branch exchanges in the City of Chicago.

> "That the schedule of rates and charges herein set forth is fair and reasonable; that the effect of having increased the rates of certain classes of service and having continued in effect the rates for other classes of service without increase and at rates which have been in effect since the year 1913 results in discrimination as between classes of service and operates to prevent the proper development of the company's business, which, if continued, will cause injury to this applicant; that is particularly true with reference to the rates for 4 party coin box service, affecting the largest class of the company's subscribers in the City of Chicago, which have remained unchanged since the year 1913, notwithstanding greatly increased operating expenses."

Commission's Temporary Order of June 19, 1920.

That the Commission issued a temporary Order on June 19, 1920, 8 I. P. U. C. 888 (1920), appears from the correspondence of Appellee indicating its action in compliance therewith (R. VIII, 4923). What its terms were does not appear in the record. Nor is reference thereto made in the Commission's final order of December 20, 1920.

Schedule Filed June 25, 1920.

Pursuant to the Order of June 19, 1920, Appellee filed with the Commission on June 26, 1920, effective July 1, 1920, schedules covering the Chicago Exchange Service Rates. Among these were I. P. U. C. 565, Sheet 2, entitled "Regulations" (R. VIII, 4918-21) in which is repeated the paragraph on "Exchange Service" in the identical language of the same paragraph in the Schedule Sheet attached to the petition of June 16, 1919, and identical to the language of the sheet filed on January 27, 1914 (*supra*, 10).

Commission's Final Order of December 20, 1920.

On December 20, 1920, the Commission issued its Final Order in Case 8672 respecting the exchange service charges outside Chicago, and in Case 9291 respecting the exchange service charges in Chicago (O.R. IV, 1281). The Order recited that it did not cover the toll rates because its previous order of November 29, 1919, had disposed of that subject matter. The Order speaks of rates for "long distance service" (O.R. IV, 1283) when referring to the interstate toll rates of Appellee covered by the Order of November 29, 1919, and to "rates for local and long distance telephone service" when referring to the schedules filed by Appellee as part of its original petition of July 16, 1919 (O.R. IV, 1281).

The Order did not grant Appellee the entire increase in Chicago exchange service rates desired by Appellee and as contained in a proposed schedule filed by it on November 8, 1920. It suspended these proposed schedules and ordered Appellee to put in force, effective January 1, 1921, measured service rates in Chicago which were less than Appellee had proposed but more than Appellee had been charging.*

In connection with the four-party coin box service rates, the Commission said:

> "The present schedules of rates herein authorized restores the service to a five cent basis, per call."

The Order also covered charges for "extension line, private line, and long distance terminals," directory listing, and issue of directories.

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*The revenues of Appellee, from its Chicago exchange service, which Appellee allocated to the intrastate and interstate services, were collected from the rates established by this Order.

The Commission reserved jurisdiction for further proceedings.

Schedules Filed December 27, 1920.

On December 27, 1920, Appellee filed its schedule of Chicago Exchange Rates in conformity with the Order of December 20, 1920. As part of said schedule it filed I. P. U. C. I. sheet 2 (R. VIII, 4911-3), identical to the sheet I. P. U. C. 565 Sheet 2 of June 25, 1920, already described, excepting that the name of Appellee was changed from Chicago Telephone Company to Illinois Bell Telephone Company.

Commission's Order of August 16, 1923, Case 11184.

The Order of August 16, 1923, attacked herein states:

> "the 17 cents originating commission which is paid to the Illinois Bell Telephone Company is the only compensation which this company receives for the use and operation of its exchange property in connection with the calls sent or received over the lines of the American Telephone and Telegraph Company. The record shows that the 17 cents commission was determined in 1910 from a study made at that time of the cost of performing this service. Since that date the cost of operation and cost of plant used has increased, and the record also shows that both the American Company and the Chicago Company have increased their telephone rates to a considerable extent within this period of time.
>
> The Commission believes that this matter should be fully investigated and an equitable adjustment made to the end that a greater part of the toll charges be paid to the Illinois Bell Telephone Company. There are not sufficient facts in this record to permit of making a proper adjustment and in this order the Commission will estimate revenues from such source on the basis now in effect" (O.R. I, 38-9).

1925 Revision of Toll Schedule Filed September 5, 1925.

On September 5, 1925, while the proceeding was pending before the District Court on the Bill of Appellee to enjoin the Order of August 16, 1923, Appellee transmitted to the "Section Rates and Tariffs" of the Commission a letter in which it said:

> "Desiring to give you a more complete Toll Rate Schedule, we have prepared and are forwarding you herewith Ill. C. C. No. 2, Sheets 1 to 32, inclusive, Schedule of Toll Rates, which cancels and replaces I. P. U. C. No. 1, Schedule of Toll Rates. Schedule Ill. C. C. No. 2 makes no change in our toll rate schedule or practices. * * *.
>
> "As stated above, this new schedule makes no change in our toll rate schedule or practices and we would respectfully request your Honorable Commission to accept it, to be effective as of September 10, 1925" (R. VIII, 4923-4).

As part of said Schedule Ill. C. C. No. 2, appellee filed Ill. C. C. No. 2, Original Sheet No. 2, canceling I. P. U. C. 1. Illinois C. C. No. 2 was entitled "Illinois Bell Telephone Company—Schedule of Toll Rates," and contained the following statements (referred to herein as 1925 Revision):

> GENERAL.
>
> The service covered by these tariffs consists in furnishing for the use of patrons facilities, other than exchange facilities, intended for use in telephonic communication between the points listed. The exchange facilities used in connection with this service are the facilities required to establish connection between an exchange station and the toll board, or between an exchange station and the toll trunks, when such trunks are employed to effect connection with the Toll board, and the use of such facilities is covered by the charges for exchange service.

CLASSIFICATION OF TOLL SERVICE.

The following classes of toll service are furnished:

> *Station to Station Service.*
>
> "A Station-to-Station Call is one on which the person originating the call does not specify a particular person be reached at the called station but gives only the number of the telephone station desired or the name or address under which the telephone is listed.
>
> Note: A call which would otherwise be a Station-to-Station Call is classed a Person-to-Person Call, if request is made to reverse the charges.
>
> *Person-to-Person Service.*
>
> A Person-to-Person Call is one on which the person originating the call specifies a particular person (or an extension station to be reached at the called place). Under certain conditions a partial charge (known as a "Report Charge") is made where it is impossible to establish communication on a Person-to-Person Call."

It does not appear that the Intrastate Toll Rates were modified.

1926 Revision of Toll Schedule Filed October 1, 1926.

The 1925 Revision was replaced by another on October 1, 1926, but the above statements were not changed (R. VIII, 4898-4900).

Chicago Exchange Schedule Filed October 31, 1927.

On October 31, 1927, Appellee filed I. P. U. C. 1 Revised Sheet No. 2, cancelling the original I. P. U. C. Sheet No. 2, filed December 27, 1920, above described (R. VIII, 4913-6). The new sheet did not change the wording of the paragraph "Exchange Service" stated in the previous sheet.

CONTRACTS COVERING TOLL SERVICES.

ORIGINAL LICENSE CONTRACT OF 1881

(Supra, p. 2).

LICENSE CONTRACTS PRIOR TO 1918.

Form 109D—Exchange Contract.

The Standard forms of license contracts are reproduced in R. V, 3536-48.* Separate license contracts were given for exchange service and for extra-territorial connecting service. Exchange contract form 109D** granted perpetual license to do a telephone business in exchange systems only, and then only in those located within specified areas (Exchange Service). As royalty for this limited use the licensee paid a portion of the gross instrumental rental charged its exchange subscribers. For extra-territorial connecting services of any kind the exchange licensee was obligated:

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*In State ex rel. Southwestern Bell Tel. Co. v. Public Service Commission of Missouri, 262 U. S. 276 (hereinafter referred to as Missouri Case), reference is made to the standard forms in connection with the Original Contract between the American and Licensee Companies attached to the Contract with the Postmaster General (Rec. Missouri Case, 130), and also in connection with the contract between the American Company and the plaintiff (hereinafter referred to as the Missouri Company). (Rec. Missouri Case, 322). In the Western Union Litigation (supra, 174) the Standard forms are used as the basis on which the accounting is sought and enforced (Western Un. Tel. Co. v. American Bell Tel. Co., 187 Fed. 425, 449). Under Standard Form 113D (R. V, 3548-57) the toll licensee becomes obligated to assume the exchange license contracts then outstanding and those to be issued in Contract form 109D (R. V, 3539-48). In the license contract to the American Company covering long distance service, that company becomes obligated to assume the exchange contracts then outstanding and those to be issued thereafter in Contract Form 109D (O. R. VI, 1990). The standard forms of the license contracts were part of the record in the Houston Case 259, U. S. 318 (Rec. Houston Case, Vol. II, 878, 895).

**Form 109C was also used (R. V, 3536-48) but does not differ in substance from Form 109D.

(a) to turn over all such messages originating from customers at exchange stations to the American Bell (or its grantees), exclusively. This latter company was to have the right to prescribe the rates to be charged and to make use of the exchange facilities to route the messages from the station through the exchange offices onto the wires of the American Bell (or of its grantee);

(b) to bill, collect, and settle the toll account;

(c) to permit the use of the exchange plant facilities for the purpose of completing messages coming over the wires of the American Company (or of its grantee) to its customers at exchange stations;

(d) to accept as full payment for all of the above exchange services rendered to the extra-territorial connecting service 15% of the tolls of messages originating within the exchange system, such compensation not to exceed 5 cents per message of less than five minutes' duration.

Form 113D* Contract for Extra-Territorial Connecting Lines.

Standard Form 113D, Contract for Extra-Territorial Connecting Lines, was issued by the American Bell to licensees and in 1894 issued a license to the American Company for long distance service (O.R. VI, 1990) substantially as provided in Form 113D. This Form 113D contract required the licensees:

(a) to assume the obligations to pay the exchange licensee the portion of the toll charges required by the Exchange contracts already issued and by those (which were to be in the form of Exchange Contract Form 109D) to be paid for the use of necessary exchange facilities in connection with extra-territorial connecting service;

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*Form 113C was also used (R. V, 3548-57) but it does not differ from Form 113D in any respect.

(b) to pay the American Bell a percentage of the gross toll charges, ranging from 15% to 25%; and

(c) to establish toll rates on a prescribed basis which should be not less than certain specified minimum rates. For these payments the licensee was granted the right to:

> "construct lines between exchanges in said territory and to use such lines for telephonic personal communication between a customer in one such exchange district and a customer in another such exchange district * * * but the lessee shall connect with each local exchange and do its business, so far as the same can, in the opinion of the lessor, conveniently be so done, with the customers thereof through said exchange, unless the American Bell Telephone Company, or its successors, shall decide that the exchange fails to furnish proper facilities" (R. V, 3539-48).

Where contract Form 113D was issued to a company holding contract Form 109D for exchanges, it could render an exchange service, a local toll service and connecting company service, and/or a connecting company toll service between its exchanges and those of its sublicensees.

CONTRACT OF 1891 (Supra, 3).

1894—100 Mile Contract.

In 1894 The Central Union Company, a licensee which operated, among others, the properties in Illinois outside the territory of Appellee, granted to the American Company the right to do the intrastate connecting company business between certain cities within its territory and cities outside of its territory, including Chicago (R. VIII, 4894-5). The American Company from 1894 to 1924 carried on this intrastate toll business in Illinois.

1896 Modification.

In 1896 the basis of compensation to Appellee prescribed in the 1891 Contract was changed to an "arbitrary terminal commission of 12c per paid long distance message" originating at all stations of Appellee. The change was made to avoid the complication and expense of figuring the commission on each message and was to be modified "from time to time as an investigation of the account disclosed that this payment should be increased or diminished" (O.R. VI, 1938).

1899 Modification.

In 1899 a study was made of six months' commissions to Appellee for long distance messages from all stations on the basis of compensation prescribed in the 1891 Contract. The average payment being $.1198 per connection, the parties adopted 12c per message (paid or free) originating at all stations of Appellee as the basis of settlement, "subject to revision upon request of either party" (O.R. VI, 1940, 1941).

1917 Modification.

In December, 1917, "in view of the extraordinary conditions due to the state of war," the basis of compensation to Appellee and to four other licensees operating in surrounding territory for subscriber station business was changed from 15%, not to exceed 10c, to 25%, not to exceed

12c, per originating message, and for public pay station business from 30%, not to exceed 20c, to 50%, not to exceed 24c per originating message (O.R. VI, 1972). The 1917 Modification was not applicable to Chicago, "as to which special conditions obtain" (O.R. VI, 1973).

TOLL TRUNK ARRANGEMENT.

As the Chicago exchange grew, Appellee developed branch exchange offices from which special trunks were built direct to the toll switchboard for long distance service, and other special trunks for local toll and extra-territorial connecting service. For the use of these trunks in the long distance service, the American Company, prior to 1911, paid a flat annual rental (O.R. V, 1740). In that year, the two companies agreed to use the same trunks. As the annual rental paid by the American Company prior thereto averaged 5c per paid originating long distance message, the parties adopted 5c per paid originating message as the compensation to Appellee for the use in the long distance service of the toll trunks (O.R. VI, 1942). No further study or change in arrangement was made to February 1, 1919, or thereafter.

LONG LINES PLANT ARRANGEMENT.

Prior to 1911 the American Company had built up, owned, and operated its own long lines plant in Chicago for its long distance service. Between 1911 and 1913 Appellee purchased that plant and took over its operating employees (O.R. VI, 1944). Appellee then agreed (a) to lease to the American Company that plant, plus the necessary additions thereto, which it agreed to provide from time to time (all referred to herein as the long lines plant); and (b) to operate the long lines plant under rules prescribed by the American Company. As compensation therefor, the American Company agreed to pay the actual monthly expenses, plus 10%; and, as rental, to pay the maintenance, taxes and depreciation calculated on a fixed percentage basis of book cost of plant, plus 10% of the average monthly book cost of plant. No period of duration for the arrangement was specified; the arrangement was declared to be in lieu of the "reasonable and suitable division of the tolls and profits" of the long distance business in Chicago, insofar as the division was to compensate for the use and operations of the long lines plant (O.R. VI, 1946). No change in this arrangement was made to 1919 or thereafter.

AMERICAN COMPANY'S TOLL TARIFFS, 1914-1917.

Neither the Tariff and Route Book of the American Company filed on January 1, 1914, with the Illinois Commerce Commission (R. VIII, 4924d-f, S. P. U. C. 1, No. 1) covering intrastate toll service in Illinois, nor the Tariff and Route Book of the American Company issued May 1, 1917, and covering its interstate long distance service (R. VIII, 4924g-h), stated

(1) that the service covered by the rates included in such tariffs excluded the furnishing for the use of the patron, the exchange plant facilities necessary for personal communication at telephones in the different territories of such licensees, or

(2) that the rates included in the tariffs were not intended to compensate for the use by the customer of the

American Company in the American Company's service of the exchange plant facilities of the licensees required as part of the facilities for communication in such services.

On July 2, 1917, the American Company filed with the Public Utilities Commission of Illinois, effective August 1, 1917, a new Tariff book to replace the one filed January 1, 1914 (R. IV, 2786a-c). As part of such new book, on the sheet entitled "Explanatory Statement" appeared the following statement:

> "The service covered by this tariff consists in furnishing for the use of patrons facilities, other than exchange facilities, intended for use in telephonic communication between the points listed. The exchange facilities used in connection with this service are the facilities required to establish connection between an exchange station and the toll board, or between an exchange station and the toll trunks, when such trunks are employed to effect connection with the toll board, and the use of such facilities is covered by the charges for exchange service."

The American Company issued, effective June 1, 1917, a supplement sheet No. 2 to the May 1, 1917 issue of the Tariff and Route Book covering its long distance service in which it recited the same provision as appeared in the revised Book filed in Illinois (R. I, 275).

Nothing appears in the record to indicate that the American Company's long distance rates or the American Company's intrastate toll rates were decreased in 1917 to conform to the narrowing of the scope of the service intended to be covered by the rate charged in the tariff schedules.

Beginning with 1917 the American Company started to revise its License Contracts with its licensees including Appellee (O.R. IV, 1585). In the case of Appellee the revised contract was executed in November, 1918 (O.R. VI, 2163). Revised License Contracts with other licensees were also executed during the same year (O.R. VII, 2570) and still others were in the process of revision at the end of 1918 and were not executed until the end of 1919.

1919 Revision.

The Revised License Contract with Appellee (referred to herein as 1919 Memorandum or 1919 License Contract) executed in 1918 and effective February 1, 1919, was in the standard form executed also by the other licensees (O.R. IV, 1205).*

By the 1919 License Contract in perpetuity:

(a) Appellee was not to make any charge to the American Company's customers for their use of Appellee's exchange plant facilities in transmitting or in receiving communications from or to Appellee's exchanges over the American Company's wires, whether such customers were subscribers to Appellee's own services or were non-subscribers thereof;

(b) for all the uses by the American Company or by its subscribers, who may or may not be subscribers of Appellee's services, of Appellee's exchange facilities in transmitting or in receiving communications from or to Appellee's exchange, Appellee was to receive a specified compensation from the American Company;

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*The Standard Revised License Contract, corresponding to and embodying the identical provisions as the 1919 Memorandum, is found in the Record of the Missouri Case, 262 U. S. 276. It appears as part of the contract between the American Company and the Postmaster General of August 4, 1918 (Rec. Missouri Case, 130) and as the contract between the American Company and the Missouri Company of November, 1919 (Rec. Missouri Case, 322).

(c) but such compensation was to be considered as compensation for the uses of only part of the exchange facilities in fact used in transmitting or receiving long distance communications from and to Appellee's exchange, *i. e.*, billing, collecting and settling the charges—the part excepted being Appellee's exchange plant facilities "necessary to make connection between the telephone station and the toll switchboard" * * * "for the use of which excepted facilities, the Licensee is compensated by its rates for its exchange service" (O.R. IV, 1205).

This contract was executed and was made effective without procuring the consent and approval of the Public Utilities Commission of Illinois and was not filed with it before or after its effective date (O.R. V, 1785).

Appellee's Connecting Company Arrangement 1910-1926.

For over ten years prior to March 1, 1920, traffic agreements between Appellee and independent connecting companies provided for an originating commission to each company, and a distribution of the balance upon a basis agreed upon (O.R. IV, 1328). There is nothing in the record to indicate that the use of the exchange plant facilities was not intended to be covered either by the connecting company rates or by the settlement between the parties. In 1920, new traffic agreements were made effective between Appellee and 293 independent telephone companies in Illinois. The agreements provided for an originating commission to each company, and a distribution of the balance of the charge on a basis therein specified. These agreements on their face show clearly that the use of all necessary exchange facilities, including exchange plant facilities, was intended to be covered by the originating commission (O.R. V, 1351).

1926 Revision of Appellee's Connecting Company Contracts.

Appellee's connecting company contracts with companies other than the American Company were revised on January 1, 1926, to provide that the compensation to each party from the revenues of the services using the facilities of both parties covered the following:

> "Note: The above compensation shall not be construed as compensation for connection of exchange *subscribers* with toll boards; such service is performed for the patron and compensated for in the exchange rate" (R. VIII, 4903).

But it does not appear that the new agreements were filed with or were approved by the Illinois Commerce Commission to replace the previous agreements which had been approved and filed, nor that any change was made in the connecting company rates of either party to exclude therefrom compensation for the use in the connecting service of their respective exchange plant facilities.

1929 Revision of Appellee's Connecting Company Contracts.

Appellee's connecting company contracts with companies other than the American Company in use beginning with December 1, 1929, contained the following recital:

> "The commission determined as above is the total amount to be received by each company for facilities furnished and services rendered in originating and terminating connections interchanged under said Traffic Agreement but does not include compensation for the use of exchange service and facilities required to establish connection between an exchange station and

the toll terminal plant, for the use of which facilities each company is compensated by its rates for exchange service" (R. VIII, 4908).

But it does not appear that the new agreements were filed with or were approved by the Illinois Commerce Commission to replace the previous agreements which had been approved and filed, nor that any change was made in the connecting company rates of either party to exclude therefrom compensation for the use in the connecting service of their respective exchange plant facilities.

APPELLEE'S CHICAGO EXCHANGE COMPANY STATIONS.*

(Referred to in Brief, p. 76.)

	Number of Stations at End of Year		Per Cent Pay Stations	Exchange Revenue During Year R. IV, 2734-42		Per Cent Pay Stations
Year	Public Pay Stations (a)	Total Stations (b)	Of Total (c)	Pay Stations (d)	Total (e)	Of Total (f)
1923	11,082	691,545	1.60	$3,143,498	$36,342,226	8.65
1924	12,015	741,936	1.62	3,485,734	38,673,758	9.01
1925	13,037	790,764	1.65	3,612,666	41,216,290	8.77
1926	14,214	848,070	1.68	3,906,453	44,305,629	8.82
1927	15,705	903,460	1.74	4,166,910	47,391,951	8.79
1928	16,857	942,015	1.79	4,403,152	50,244,523	8.76
1929	18,409	987,891	1.86	4,688,996	53,798,200	8.72
1930	20,440	981,325	2.08	4,726,682	54,252,120	8.71
1931	22,057	939,481	2.35	4,694,178	52,458,155	8.95

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*Computed from R. VIII, 4812-13.

STATE PUBLIC UTILITIES COMMISSION ACT.

(Laws of Illinois, 1913, P. 460.)

ARTICLE IV.

Rates and Service.

("Sec. 33. Filing Schedule of Rates.) Every public utility shall file with the commission and shall print and keep open to public inspection schedules showing all rates and other charges, and classifications, which are in force at the time for any product or commodity furnished or to be furnished by it, or for any service performed by it, or for any service in connection therewith, or performed by any public utility controlled in connection therewith, or performed by any public utility controlled or operated by it. Every public utility shall file with and as a part of such schedule and shall state separately all rules, regulations, terminal, icing, storage or other charges, privileges and contracts that in any manner affect the rates charged or to be charged for any service. Such schedule shall be filed for all services performed wholly or partly within this State, and the rates and other charges and classifications shall not, without the consent of the commission, exceed those in effect on July 1, 1913. But nothing in this section shall prevent the commission from approving or fixing rates or other charges or classifications from time to time, in excess of or less than those shown by said schedule.

Where a schedule of point rates or other charges, or classifications is or may be in force between two or more public utilities such schedules shall in like manner be printed and filed with the commission, and so much thereof as the commission shall deem necessary for the use of the public shall be filed in every station or office of such public utility in accordance with the terms of section 34 of this Act Unless otherwise ordered by the commission a schedule showing such joint rates or other charges, or classification need not be filed with the commission by more than one of the parties to it: *Provided,* that there is also filed with the commission a concurrence in such schedule by each of the other parties thereto.

Every public utility shall file with the commission copies of all contracts, agreements or arrangements with other public utilities, in relation to any service, product or commodity affected by the provisions of this Act, to which it may be a party, and copies of all other contracts, agreements or arrangements with any other person or corporation affecting in the judgment of the commission the cost to such public utility of any service, product or commodity.

Sec. 34. Publication and Posting of Schedules.) Subject to such rules and regulations as the commission may prescribe, the schedules referred to in section 33 shall be plainly printed, mimeographed or typewritten in large type, and a copy thereof shall be posted or kept on file in every station or office of a public utility where the public transacts business with such public utility. Any or all of such schedules kept as aforesaid shall be immediately produced by such public utility for inspection upon the demand of any person. A notice printed in bold type, in size prescribed by the commission, stating that such schedules are on file with the agent and open to inspection by any person, and that the agent will assist any person to determine from such schedules any rates or other charges, classification, rules or regulations in force, shall be kept posted by the public utility in two public and conspicuous places in every such station or office. The form of every such schedule shall be prescribed by the commission and shall conform in the case of common carriers subject to the Act of Congress entitled, "An Act to regulate commerce," approved February fourth, eighteen hundred and eighty-seven, and the Acts amendatory thereof and supplementary thereto, as nearly as may be, to the form of schedules and manner of posting presecribed by the Interstate Commerce Commission under said Act: *Provided,* that in lieu of filing its entire schedule in each station or office, any public utility may, subject to the regulations of the commission, file or keep posted at such station or office, schedules of such rates or other charges, classifications, rules and regulations relating thereto, as are applicable at, to and from the place where such office is located.

The commission may determine and prescribe the form in which the schedules required by this Act to be filed with the commission and to be kept open to public inspection shall be prepared and arranged, and may change the form from time to time if it shall be found expedient: *Provided,* however, that the commission shall endeavor to have such form or forms prescribed by it conform so far as practicable to any similar form or forms prescribed by the Interstate Commerce Commission.

Sec. 35. No Service to be rendered until schedules filed.) No public utility shall undertake to perform any service or to furnish any product or commodity unless or until the rates and other charges and classifications, rules and regulations relating thereto, applicable to such service, product or commodity, have been filed and published in accordance with the provisions of this Act: *Provided,* that in cases of emergency, a service, product or commodity not specifically covered by the schedules filed, may be performed or furnished at a reasonable rate, which rate shall forthwith be filed and shall be subject to review in accordance with the provisions of this Act.

Sec. 36. Changes of Rates.) Unless the commission otherwise orders, no change shall be made by any public utility, in any rate or other charge or classification, or in any rule, regulation, practice or contract relating to or affecting any rate or other charge, classification or service, or in any privilege or facility, except after thiry days' notice to the commission and to the public as herein provided. Such notice shall be given by filing with the commission and keeping open for public inspection new schedules or supplements stating plainly the change or changes to be made in the schedule or schedules then in force, and the time when the change or changes will go into effect. The commission, for good cause shown, may allow changes without requiring the thirty days' notice herein provided for, by an order specifying the changes so to be made and the time when they shall take effect, and the manner in which they shall be filed and published. When any change is proposed in any rate or other charge, or classification, or in any rule, regulation, practice, or contract relating to or affecting any rate or other charge, classification or service, or in any privilege or facility, such proposed changes shall be plainly indicated on the new schedule filed with the commission, by some character to be designated by the commission, immediately preceding or following the item.

No public utility shall increase any rate or other charge, or so alter any classification, contract, practice, rule or regulation as to result in any increase in any rate or other charge, under any circumstances whatsoever, except upon a showing before the commission and a finding by the commission that such increase is justified.

Whenever there shall be filed with the commission any schedule stating an individual or joint rate or other charge, classification, contract practice, rule or regulation, the commission shall have power, and it is hereby given authority, either upon complaint or upon its own initiative without complaint, at once, and if it so orders, without answer or other formal pleadings by the interested public utility or utilities, but upon reasonable notice, to enter upon a hearing concerning the propriety of such rate or other charge, classification, contract, practice, rule or regulation, and pending the hearing and the decision thereon, such rate or other charge, classification, contract, practice, rule or regulation shall not go into effect: *Provided,* that the period of suspension of such rate or other charge, classification, contract, practice, rule or regulation shall not extend more than one hundred and twenty days beyond the time when such rate or other charge, classification, contract, practice, rule or regulation would otherwise go into effect unless the commission, in its discretion, extends the period of suspension for a further period not exceeding six months. On such hearing the commission shall establish the rates or other charges, classifications, contracts, practices, rules or regulations proposed, in whole or in part, or others in lieu thereof, which it shall find to be just and reasonable. All such rates or other charges, classifications, contracts, practices, rules or regulations not so suspended, shall, on the expiration of thirty days from the time of filing the same with the commission, or of such lesser time as the commission may grant, go into effect and be the established or effective rates or other charges, classifications, contracts, practices, rules and regulations, subject to the power of the commission, after a hearing had on its own motion or upon complaint, as herein provided, to alter or modify the same. Within thirty days after such changes have been authorized by the commission, copies of the new or revised schedules shall be posted or filed in accordance with the terms of section 34 of this Act, in such a manner that all changes shall be plainly indicated.

Sec. 37. Charging More or Less Than Published Rate.) Except as in this article otherwise provided, no public utility shall charge, demand, collect or receive a greater or less or different compensation for any product, or commodity furnished or to be furnished, or for any service rendered or to be rendered, than the rates or other charges applicable to such product or commodity or service as specified in its schedules on file and in effect at the time, except as provided in section 35, nor shall any such public utility refund or remit directly or indirectly, in any manner or by any device, any portion of the rates or other charges so specified; nor extend to any corporation or person any form of contract or agreement or any rule or regulation or any facility or privilege except such as are regularly and uniformly extended to all corporations and persons.

Sec. 38. Discrimination Forbidden.) No public utility shall, as to rates or other charges, services, facilities or in any other respect, make or grant any preference or advantage to any corporation or person or subject any corporation or person to any prejudice or disadvantage. No public utility shall establish or maintain any unreasonable difference as to rates or other charges, services, facilities, or in any other respect, either as between localities or as between classes of service.

Every public utility shall, upon reasonable notice furnish to all persons who may apply therefor and be reasonably entitled thereto, suitable facilities and service, without discrimination and without delay.

Sec. 39. Discrimination—Rebates, Etc.) No public utility, or any officer or agent thereof, or any person acting for or employed by it, shall directly or indirectly, by any device or means whatsoever, suffer or permit any corporation or person to obtain any service, commodity, or product at less than the rate or other charge then established and in force as shown by the schedules filed and in effect at the time. No person or corporation shall, directly or indirectly, by any device or means whatsoever, whether with or without the consent or connivance of a public utility or any of its officers, agents, or employes, seek to obtain or obtain any service, commodity, or product at less than the rate or other charge then established and in force therefor." * * *

ARTICLE V.

* * * * * *

Sec. 67. Modification of Order or Decision—Rehearing.) The commission may at any time, upon notice to the public utility affected, and after opportunity to be heard as provided in the case of complaints rescind, alter or amend any rule, regulation, order or decision made by it. Any order rescinding, altering or amending a prior rule, regulation, order or decision shall, when served upon the public utility affected have the same effect as is herein provided for original rules, regulations, order or decisions.

After any rule, regulation, order or decision has been made by the commission, any party to the action or proceeding, or any stockholder or bondholder or other party pecuniarily interested in the public utility affected, may apply for a rehearing in respect to any matters determined in said action or proceeding and specified in the application for rehearing, and the commission may grant and hold such rehearing on said matters, if in its judgment sufficient reason therefor be made to appear. An application for rehearing shall not excuse any corporation or person from complying with and obeying any rule, regulation, order or decision or any requirement of any rule, regulation, order or decision of the commission theretofore made, or operate in any manner to stay or postpone the enforcement thereof, except in such cases and upon such terms as the commission may by order direct. If, after such rehearing and consideration of all the facts, including those arising since the making of the rule, regulation, order or decision, the commission shall be of the opinion that the original rule, regulation, order or decision or any part thereof is in any respect unjust or unwarranted, or should be changed, the commission may rescind, alter or amend the same. A rule, regulation, order or decision shall have the same force and effect as an original rule, regulation, order or decision, but shall not affect any right or the enforcement of any right arising from or by virtue of the original rule, regulation, order or decision unless so ordered by the commission. Only one rehearing shall be granted by the commission; but this shall not be construed to prevent any party from filing a petition setting up a new and different state of facts after two years, and invoking the action of the commission thereon."

AMERICAN COMPANY.

(Referred to in Brief, p. 184.)

Departmental Costs.

	1923	1924	1925	1926	1927	1928	1929	1930	1931
Total Departmental (12) Costs (R. IV, 2953-61)	$10,678,072	$11,428,025	$12,254,366	$14,167,860	$15,667,287	$17,111,950	$19,139,695	$23,611,735	$21,448,341
Less:—Development and Research (R. IV, 2953-61)	2,883,039	3,120,276	3,601,273	4,314,518	5,389,515	5,551,381	7,048,714	9,618,267	8,873,209
Operation and Engineering (R. IV, 2953-61)	2,550,709	2,688,340	2,963,159	3,301,306	3,562,940	3,813,983	4,102,105	4,340,568	4,234,967
Treasury—Direct Distribution of Securities (R. I, 861)	74,255	389,093	55,773	444,595	80,575	588,071	404,130	979,305	138,122
Treasury—Cost of Servicing Securities (R. I, 864)	781,115	724,886	754,962	790,411	798,655	835,660	965,444	1,125,600	1,102,333
Total Deductions	$ 6,289,118	$ 6,922,595	$ 7,375,167	$ 8,850,830	$ 9,831,685	$10,789,095	$12,520,393	$16,063,740	$14,348,631
Net Cost of 10 Departments	$ 4,388,954	$ 4,505,430	$ 4,879,199	$ 5,317,030	$ 5,835,602	$ 6,322,855	$ 6,619,302	$ 7,547,995	$ 7,099,710

Effect of Charging Patent Infringement Liability Charges to Capital Account and to Current Operating Expenses.

(Referred to in Brief, p. 216.)

Based on District Court's Finding of Rate of Return Under Existing Rates.

	Total Chicago Intrastate Patent Infringement Cost Allowed by Court	Maintenance Depreciation and Return	Savings	
			Amount	Per Cent
1923	$ 152,942	$ 35,015	$117,927	77.11
1924	147,171	36,483	110,688	75.21
1925	281,740	67,307	214,433	76.11
1926	191,060	87,060	104,000	54.43
1927	140,018	90,764	49,254	35.18
1928	137,695	109,987	27,708	20.12
1929	130,786	129,420	1,366	1.04
1930	125,532	129,663	4,131*	3.29*
1931	98,382	143,752	45,370*	46.12*
	1,405,326	829,451	575,875	40.98%

Based on District Court's Finding of Rate of Return Under Rates in Suit.

1923	152,942	34,207	118,735	77.63
1924	147,171	34,399	112,772	76.63
1925	281,740	63,119	218,621	77.60
1926	191,060	80,586	110,474	57.82
1927	140,018	83,459	56,559	40.39
1928	137,695	101,521	36,174	26.27
1929	130,786	120,839	9,947	7.61
1930	125,532	121,230	4,302	3.43
1931	98,382	134,645	36,263*	36.86*
	1,405,326	774,005	631,321	44.92%

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*Red figures

History of American Company's Depreciation Reserve Account.

(Referred to in Brief, p. 232).

Mr. Heiss, Comptroller of the American Company, testified that he knew that the $5,829,447 had been transferred from surplus to the Reserve for Accrued Depreciation Account in July, 1912, and that prior thereto reservations had been made from income for capital consumption; but he did not know the accounting procedure used during such prior period (R. I, 944). The same witness on behalf of the American Company and the operating telephone subsidiaries of the Bell System, in a communication in 1921 to the Interstate Commerce Commission, stated, "The depreciation reserve now carried by the Bell System is therefore the result of the depreciation policy followed since 1884" (R. VI, 3759).

The history of the $5,829,447 is as follows:

In the early years of development after 1880, research and development work brought a continuous flow of inventions to make the Bell patents serviceable for a telephone system (R. VI, 3776); due to the rapid growth the Bell Licensees were required to reorganize and rebuild their exchanges more than once, as the necessities of the service revealed themselves (O.R. VII, 2358 (6-9)).

In the circular sent out by the American Bell to its local licensees in 1884 recommending a system of telephone accounts, it said:

> "It is certain that the present expense for Repairs and Reconstruction is not proportionate to the actual deterioration of property and that in future years the revenue of most companies will be subjected to much heavier charges on this account. It is suggested that

> a reserve fund be set apart, to which shall be carried such part of the annual profits as represents the estimated amount of yearly depreciation not covered by the expenditure on account of Repairs and Reconstruction" (R. VI, 3777).

Prior to 1899 the American Bell, as the owner of the telephone instruments leased to the Associated Companies, including Appellee (but not then owning the Long Lines plant, which was then owned by its subsidiary, the American Company), made two separate appropriations from surplus entitled "Reserve for General Depreciation" and "Reserve for Depreciation on Instructions" (O.R. VII, 2377), which appropriations were listed in its balance sheet as "Reserve," and appropriated surplus being listed as "Surplus" (O.R. VII, 2376). Apparently the appropriation was not treated as a current operating expense and was not made in every year (O.R. VII, 2377). As of December 31, 1892, the Reserve was 150% of the fixed capital account (O.R. VII, 2376).

In 1899 the American Bell transferred the instruments and licenses to the American Company (O.R. VII, 2389). Beginning with 1901 we find as a yearly appropriation from the balance of net income after dividends, an item designated as "Carried To Reserves" (O.R. VII, 2398, 2403, 2409, 2422, 2431), which the Bell Telephone Securities Company, the financing subsidiary of the American Company, has labeled in its literature as "Appropriated for Contingencies" (R. V, 3445). On the balance sheet of the American Company there was still but one account "Reserve" as in previous years. The American Company's Annual Report for 1903 states:

> "This matter of maintenance and depreciation is constantly before the eyes of our companies. The system of accounts, which is practically uniform for all

> of the Bell organization, forces them fairly to face this expense from month to month and from year to year. Before there is any question of profits, each company recognizes the necessity of reserving from its earnings such amounts as experience has shown to be adequate to keep its property in repair and replace it when worn out or destroyed" (O.R. VII, 2400).
>
> "About the years 1908 to 1910 the Bell Companies generally were making provision for depreciation by charging operating expenses with the difference between (a) the amount of depreciation expense computed by the application to the property in use during the year of the current depreciation rates and (b) the amount of depreciation overcome by that year's reconstruction. Since that time the general practice has been to charge operating expense and credit depreciation reserve with the full amount of the accruing depreciation for the year and to charge against the accumulated reserve the losses on property retired" (R. VI, 3777-8).

The balance sheet of the American Company, as of December 31, 1911, showed an investment in telephone instruments of $12,334,255.95 and in the long distance telephone plant of $48,155,893.26 (O.R. VII, 2483). It showed as liability "Depreciation Reserve" $40,383,161.80 or 67% of the original cost of such investments. But the item "Depreciation Reserve" covered not only the Reserve for Accrued Depreciation in fixed plant as defined herein (O.R. VII, 2471) and as prescribed by the Interstate Commerce Commission Rules of the following year, but also "Reserve for contingencies" to provide "for fluctuations in gross and net revenue caused by varied business conditions" (O.R. VII, 2454, 2471). The "Depreciation Reserve" of December 31, 1911, was treated as "Appropriated Surplus" (O.R. VII, 2472, 2473). The transfer of $5,829,447 from surplus to the Reserve for Accrued Depreciation of Telephone Instruments in July, 1912 (R. I, 943), was therefore merely the transfer into the separate account, as prescribed by the Interstate Commerce Commission uniform system of accounts promulgated in 1[illegible]2 mandatory for use after December 31, 1912, by all the larger telephone companies throughout the United States (R. VI, 3778), of that portion of the appropriated surplus account which represents the balance of the accumulations of capital reimbursements theretofore reserved by the American Company and its predecessor, the American Bell, from the license rental payments. The $5,829,447 transferred in July, 1912, represented 47.26% of the original cost of the instruments as of December 31, 1911, which corresponds to the average per cent maintained in the depreciation reserve thereafter to 1927 (R. VI, 4024).

American Company's Appropriations to Reserve for Contingencies.*

1900-1918.

(Referred to in Brief, p. 204.)

	a Net Earnings after Dividends	b Appropriated for Contingencies	c Balance Added to Surplus	d Per cent b of a
1900..........	$ 1,407,457	$ 937,258	$ 470,199	66.6
1901..........	2,348,262	1,377,651	970,611	58.7
1902..........	1,250,868	522,247	728,621	41.8
1903..........	1,945,514	728,140	1,217,374	37.4
1904..........	1,476,584	586,149	890,435	39.7
1905..........	3,167,683	1,743,295	1,424,388	55.0
1906..........	2,775,704	1,773,737	1,001,967	63.9
1907..........	5,325,744	3,500,000	1,825,744	65.7
1908..........	5,662,551	3,000,000	2,662,551	53.0
1909..........	6,059,113	3,000,000	3,059,113	49.5
1910..........	6,079,071	3,000,000	3,079,071	49.3
1911..........	5,563,815	2,800,000	2,763,815	50.3
1912..........	6,047,357	2,800,000	3,247,357	46.3
1913..........	5,466,053	2,500,000	2,966,053	45.7
1914..........	4,762,139	2,500,000	2,262,139	52.5
1915..........	5,518,047	2,500,000	3,018,047	45.3
1916..........	6,891,090	2,500,000	4,391,090	36.3
1917..........	5,989,492	2,500,000	3,489,492	41.7
1918..........	8,671,623	5,000,000	3,671,623	57.7
Total.......	$86,408,167	$43,268,477	$43,139,690	50.1

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*R. V, 3445.

American Company's Appropriations to Reserve for Contingencies.*

1919-1926.

(Referred to in Brief, p. 204.)

	a	b	c	d
	Net Earnings after Dividends	Appropriated for Contingencies	Balance Added to Surplus	Per cent b of a
1919........	$ 9,039,457	$ 5,000,000	$ 4,039,457	55.3
1920........	16,444,423	8,000,000	8,444,423	48.6
1921........	11,328,301	3,000,000	8,328,301	26.5
1922........	13,199,176	5,000,000	8,199,176	37.9
1923........	18,417,793	3,000,000	15,417,793	16.3
1924........	20,128,095	3,000,000	17,128,095	14.9
1925........	26,360,320	6,000,000	20,360,320	22.8
1926........	30,495,055	4,000,000	26,495,055	13.1
Total.....	$145,412,620	$37,000,000	$108,412,620	25.4

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*R. V, 3291, 3299, 3307, 3312, 3355.

ILLINOIS BELL TELEPHONE COMPANY
LICENSE CONTRACT COSTS—INTRASTATE TOTAL

(Referred to in Brief, p. 86.)

	1923	1924	1925	1926	1927	1928	1929	1930	1931
Percentage of Chgo. Area expense, allocated to intrastate (R. IV, 2734-42) based on relation between interstate and intrastate expenses	96.19%	96.19%	95.83%	95.53%	95.25%	93.67%	88.97%	89.03%	89.27%
Cost of Rendering License Contract Service (R. IV, 2953-61):									
Development and Research	$ 139,476	$ 145,247	$ 160,036	$ 197,747	$ 241,935	$ 242,605	$ 293,601	$ 387,281	$ 355,295
Operation and Engineering	151,346	154,929	170,307	188,751	202,258	214,925	214,063	217,814	213,318
Operation General	12,048	11,497	11,173	12,475	11,804	12,777	12,952	12,857	11,482
Personnel	36,187	30,756	36,385	43,653	55,128	54,686	56,138	57,782	54,922
Information	36,057	38,537	44,145	49,131	44,311	57,301	74,475	72,547	69,007
Public Relations	0	1,273	1,585	1,556	1,552	1,536	1,862	2,524	1,942
Legal	41,273	40,232	38,623	36,886	39,475	49,972	31,231	44,153	41,428
Comptroller	55,255	59,176	63,846	70,596	75,757	77,728	77,257	82,328	80,794
Treasurer	53,677	68,799	50,729	73,870	58,553	85,395	77,626	119,453	78,064
Secretary	3,273	3,462	3,355	3,515	3,356	3,528	3,361	3,244	2,642
General Service Bureau	16,083	18,308	19,722	23,108	23,652	24,400	25,050	26,811	24,724
Sundry Items (Including Administration)	36,839	36,370	40,327	40,425	46,679	40,033	39,641	36,931	33,508
Total Departmental Cost	$ 581,514	$ 608,586	$ 640,233	$ 741,713	$ 804,460	$ 864,886	$ 907,257	$1,063,725	$ 967,126
Cost of maintaining the receivers, transmitters and induction coils (telephones) furnished to the licensee companies under the licensee agreement (R. IV, 2938-9, 2734-42; R. III, 2408-9)	68,931	83,036*	100,469	126,225	$ 129,852				
Depreciation on cost of instruments (6%) (R. III, 2409)	115,000	128,000	141,000	155,000	169,000				
Return on reasonable value of instruments (6%) (R. III, 2408-10)	158,069	183,964	197,531	196,775	177,148				
To protect against infringements (R. III, 2412-13, 2511)	152,942	147,171	281,740	191,060	140,018	137,695	130,786	125,532	98,382
Expense of office space and office furniture and fixtures furnished (R. III, 2414; R. IV, 2734-42, 2947-50)	11,739	5,289	8,863	2,094	2,391	2,502	2,482	2,605	2,795
Additional amount required to equal Court's finding						20*	4	20	
Total Court's finding No. 22 (R. III, 2519)	$1,088,195	$1,156,046	$1,369,836	$1,412,867	$1,422,869	$1,005,063	$1,040,529	$1,191,882	$1,068,303
Total of items contested by Appellants	575,467	590,846	740,899	727,738	710,090	754,339	792,134	940,673	825,186
Appellants' Contentions (a)	$ 512,728	$ 565,200	$ 628,937	$ 685,129	$ 712,[illegible]79	$ 250,724	$ 248,395	$ 251,209	$ 243,117

(a) Composed of a portion of Development and Research expense (supra, 46), Operation and Engineering, Treasury Dept. excluding cost of Distributing and Servicing securities, Telephone Instrument Costs and Expense of Office Space.

* Red figure.

DEVELOPMENT AND RESEARCH ALLOCABLE TO CHICAGO INTRASTATE BUSINESS.

(Referred to in Brief, pp. 89, 126.)

	Interference, Prevention and Protection (R. IV, 2844a-w)	Allocation to Chicago (R. IV, 2845)	Intrastate Ratio (R. IV, 2734-42)	Intrastate Portion
1923	$146,734	$ 7,381	96.19	$ 7,100
1924	200,690	9,709	96.19	9,339
1925	220,883	10,237	95.83	9,810
1926	331,368	15,898	95.53	15,187
1927	672,165	31,674	95.25	30,169
1928	727,195	33,929	93.67	31.800
1929	725,158	33,957	88.97	30,212
1930	736,887	32,451	89.03	28,891
1931	627,248	28,139	89.27	25,120

Protection Expenses.

(Referred to in Brief, p. 90.)

Development and Research expenses concerned with work of protection of telephone and telegraph plant from inductive interference from trolley wires, circuits, electrolysis and lightning (R. IV, 2844a-w):

1923	$146,734
1924	200,690
1925	200,883
1926	331,368
1927	672,165
1928	727,195
1929	725,158
1930	736,887
1931	627,248

Class I—Expenses.

(Referred to in Brief, p. 131.)

Development and Research expenses claimed to have present application solely to plant and operations of the Associated Companies (R. IV, 2844a-w):

AMERICAN COMPANY—DEVELOPMENT AND RESEARCH EXPENSES—CLASS I.

CLASS I.	1923	1924	1925	1926	1927	1928	1929	1930	1931
1. Central Office.									
1.01 Local Manual Equipment and Circuits	66,474	84,050	106,839	43,042	49,015	21,128	42,557	44,194	48,330
1.03 Panel Equipment and Circuits	163,429	165,235	165,178	79,354	85,743	96,505	109,551	99,949	88,390
1.04 Panel Apparatus				40,937	41,712	46,312	33,190	31,911	28,862
1.05 Step-By-Step Equipment and Circuits	285,778	69,640	68,513	55,076	44,059	38.740	62,404	69,294	74,816
1.06 Step-By-Step Apparatus				16,013	18,635	15,884	12,514	14,189	14,650
1.07 Other Dial Systems, Equipment and Circuits				4,426	9,155	3,444	.....	62	150
1.09 P. B. X. Equipment and Circuits	69,110	37,682	32,112	29,744	26,102	39,043	37,466	45,901	51,662
Total	584,791	356,607	372,642	268,592	274,421	261,056	297,682	305,500	306,859
2. Substation Equipment:	56,739	66,311	82,395	51,337	83,169	124,021	137,920	138,914	108,646
4 Transmitters, Receivers and Induction Coils	6,701	18,434	31,924	106,193	122,058	129,552	76,277	168,082	277,754
15 Rate Case Testimony	19,768	29,930	42,251	29,580	16,757	13,935	10,242	2,965	......
Total	667,999	471,282	529,212	455,702	496,405	528,564	522,121	615,461	693,259

On the assumption that the Long Lines received no benefit from these expenses, it follows that to the extent that any portion of these expenses were allocated to the Long Lines, the Associated Companies were enriched and the Long Lines were burdened as follows:

1923	$40,080
1924	28,748
1925	31,224
1926	25,975
1927	30,777
1928	35,942
1929	39,681
1930	55,391
1931	65,860

(Referred to in Brief, p. 131)

Class II—Expenses.

(Referred to in Brief, p. 132.)

Development and Research expenses claimed to have present application in varying degree to plant and operations of both the Long Lines and Associated Companies (**R.** IV, 2844a-w):

AMERICAN COMPANY—DEVELOPMENT AND RESEARCH EXPENSES—CLASS II.

1. Central Office Systems and Apparatus:

	1923	1924	1925	1926	1927	1928	1929	1930	1931
1.02 Manual Apparatus	34,134	37,896	37,965	3,990	5,421	2,229	93	14,723	14,074
1.08 Toll Equipment and Circuits	18,115	29,269	44,786	134,393	174,515	218,901	190,630	206,243	162,798
1.10 Power Equipment	1,133	1,605	2,666	28,075	32,601	34,704	43,808	84,369	76,439
1.11 Testing Mte. Equipment and Apparatus	7,871	18,174	23,244	74,967	98,205	84,044	108,534	105,451	102,564
1.12 Engineering on Equipment Orders	......	......	......	......	......	......	......	309	56
1.13 Fundamental Studies	28,099	49,462	75,258	70,732	62,684	54,291	49,686	36,373	30,168
1.20 Miscellaneous	17,863	14,747	31,138	95,699	120,331	111,852	68,445	76,993	67,143
Total	107,215	151,153	215,057	407,856	493,757	506,121	461,196	524,461	453,242
3. Outside Plant	187,943	229,206	277,176	310,798	437,158	588,773	735,368	823,587	766,106
8. Other Communication Systems	73,777	82,743	48,873	15,088	9,491	8,077	12,516	358,735	237,957
9. Submarine Cable	......	......	......	......	96,635	88,843	518,871	666,609	406,117
10. Materials and Processes	......	......	......	18,714	21,864	24,141	35,180	57,688	197,361
11. Fundamental Studies	114,245	124,502	155,566	218,874	210,966	205,140	218,140	306,025	354,048
12. Interference Prevention and Protection	146,734	200,690	220,883	331,368	672,165	727,195	725,158	736,887	627,248
13. Miscellaneous	153,242	194,158	164,489	203,884	249,487	211,264	232,343	232,909	225,953
Total	783,156	982,752	1,081,994	1,506,582	2,191,523	2,359,554	2,938,772	3,706,901	3,268,032

The burden on the Long Lines from the expenditures of Class I (**supra**, 56) incurred exclusively for the benefit of the Associated Companies represents the following per cent each year of the total expenses in Class II:

1923	5.1%
1924	2.9
1925	2.9
1926	1.7
1927	1.4
1928	1.5
1929	1.4
1930	1.5
1931	2.0

(Referred to in Brief, p. 132.)

Minimum per cent of benefit of total Class II Development and Research expense which would have to be received by Long Lines to offset any enrichment to the Associated Companies because of alleged burden on Long Lines from Class I expenses:

1923	11.1%
1924	9.0
1925	8.8
1926	7.4
1927	7.6
1928	8.3
1929	9.0
1930	10.5
1931	11.5

(Referred to in Brief, p. 132.)

Class III—Expenses.

(Referred to in Brief, pp. 133, 162)

Development and Research expenditures covering Wire Transmission Systems, Radio Transmission Systems, and General Transmission Systems (R. IV, 2844a-w):

	Radio	Wire & General Transmission	Class III Total A & B	% A of C	% B of C	% A of Total D & R	% B of Total D & R
	A	B	C	D	E	F	G
1923	$ 404,502	$ 1,028,099	$ 1,432,601	28.2	71.8	14.	35.7
1924	573,876	1,093,450	1,667,326	34.4	65.6	18.4	35.
1925	751,218	1,239,745	1,990,963	37.7	62.3	20.9	34.4
1926	890,077	1,383,299	2,273,376	39.2	60.8	20.6	32.1
1927	1,080,260	1,547,568	2,627,828	41.1	58.9	20.	28.7
1928	1,085,875	1,505,112	2,590,987	41.9	58.1	19.6	27.1
1929	1,638,414	1,869,543	3,507,957	46.7	53.3	23.2	26.5
1930	2,031,811	3,397,400	5,429,211	37.4	62.6	21.1	35.3
1931	1,192,971	3,598,809	4,791,780	24.9	75.1	13.4	40.6
Total	$9,649,004	$16,663,025	$26,312,029				

Development and Research Radio Expense.

(Referred to in Brief, p. 133)

The portion of the total Development and Research Radio Expense allocable to non-Bell sales to the Associated Companies considered as a unit and to the Long Lines for each year is (R. IV, 2848):

	Non-Bell	Associated Companies (Balance after deducting A & C)	Long Lines Proportion	Chicago Proportion
	A	B	C	D
1923......	$ 21,518	$ 360,005	$ 22,979	$ 20,298
1924......	28,520	512,090	33,266	27,813
1925......	41,528	667,818	41,872	34,775
1926......	37,925	803,579	48,573	42,608
1927......	41,340	974,507	64,413	50,907
1928......	51,411	964,120	70,344	50,689
1929......	72,059	1,447,312	119,043	76,751
1930......	75,411	1,780,324	176,076	91,951
1931......	29,199	1,053,309	110,463	53,488
Total...	$398,911	$8,563,064	$687,029	$449,280

Long Lines Broadcasting Revenues.

(Referred to in Brief, p. 138)

Revenues to Long Lines from the use of its wires for broadcasting of programs (after deducting portion thereof paid to participating companies) (R. V, 3450a-b):

1924	$ 205,318*	1928	$ 2,032,126
1925	248,164	1929	2,837,973
1926	443,425	1930	3,442,701
1927	1,209,711		
		Total	$10,419,418
		1931	Not available

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*The figures are given under the classification "Program Transmission Service and Public Address Systems Service" but the latter service, except for local uses, was replaced or rendered negligible by radio (R. V, 3170).

Western's Sales of Radio Receiving and Transmitting Apparatus.*

(Referred to in Brief, p. 138)

1923	$ 2,176,915
1924	2,889,344
1925	2,764,000
1926	2,736,000
1927	1,578,972
1928	1,533,143
1929	2,265,153
1930	1,471,500
1931	1,353,650
Total	$18,768,677

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*R. IV, 2840a.

Telegraph Transmission, Telegraph and Teletypewriter Services Expenses.

(Referred to in Brief, p. 148)

Development and Research expense included in the classification of Wire Transmission System specifically identified to cover telegraph transmission equipment and methods relating to telegraph and teletypewriter services (R. IV, 2844a-w):

1923	$ 292,358
1924	211,867
1925	232,293
1926	206,011
1927	189,458
1928	187,003
1929	242,042
1930	302,289
1931	266,922
Total	$2,130,243

Revenues Received by Long Lines from Telegraph and Teletypewriter Services.*

(Referred to in Brief, p. 149)

1920	$ 7,060,986
1921	7,649,523
1922	8,190,986
1923	8,792,130
1924	8,633,131
1925	10,212,194
1926	12,231,953
1927	13,260,358
1928	15,528,572
1929	18,003,371
1930	18,311,954
1931	Not Available
Total	$127,875,158

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*R. V, 3450a-b.

Picture Transmission Expenses.

(Referred to in Brief, p. 150.)

Development and Research expense specifically identified to cover work of picture transmission and photo-telegraphy relating to electrical transmission of pictures (R. IV, 2844a-w):

1924	$ 182,681
1925	231,288
1926	151,220
1927	146,546
1928	102,124
1929	85,062
1930	105,518
1931	190,352
Total	$1,194,791

Carrier Telephone Equipment and Circuits Expenses.

(Referred to in Brief, p. 151).

Development and Research expense specifically identified to cover work of carrier telephone equipment and circuits (R. IV, 2844a-w):

1923	$ 100,645
1924	132,933
1925	126,421
1926	200,077
1927	174,723
1928	194,641
1929	281,359
1930	174,608
1931	172,847
Total	$1,558,254

Carrier on Cable Expenses

(Referred to in Brief, p. 153)

Development and Research expense specifically identified to cover application of carrier on cable (R, IV, 2844t-w):

1930	$745,812
1931	806,593

Television Expenses.

(Referred to in Brief, p. 154)

Development and Research expense specifically identified to cover work in television (R. IV, 2844k-w):

1926	$ 33,420
1927	249,604
1928	81,418
1929	135,759
1930	90,771
1931	84,018
Total	$674,990

Vacuum Tubes Expenses.

(Referred to in Brief, p. 156)

Development and Research expense specifically identified as covering work in relation to vacuum tubes (R. IV, 2844a-w):

1923	$ 185,624
1924	207,493
1925	227,764
1926	312,793
1927	284,359
1928	312,417
1929	275,615
1930	350,004
1931	382,955
Total	$2,539,024

Voice Frequency, Cross Induction and Miscellaneous Expenses.

(Referred to in Brief, p. 158)

Development and Research expense specifically identified as covering the work in voice frequency, cross induction, and general and miscellaneous (R. IV, 2844a-w):

	Voice Frequency	Cross Induction	General and Miscellaneous*
1923......		$ 58,312	$ 305,635
1924......		66,589	212,081
1925......		74,453	267,632
1926......	$ 149,796	106,821	181,998
1927......	194,696	107,563	192,026
1928......	260,339	102,292	261,179
1929......	209,996	117,392	456,185
1930......	405,926	163,002	1,059,470
1931......	508,202	173,889	1,013,031
	$1,728,955	$970,313	$3,949,237

Total $6,648,505

History of Western Bonus Stock, 1882-1930.

(Referred to in Brief, p. 168.)

As part of the consideration for the execution of the Western Contract of 1882 and of the licenses therein contained, the American Bell received 2,000 shares of the stock of Western, an Illinois Corporation, predecessor to Western Electric, a New York Corporation (O.R. VI, 2067). From 1881 to 1915 this bonus stock had increased through stock dividends to 14,694 shares of a par value of $1,469,000 and in addition thereto, the American Bell had received a yearly average cash dividend for such entire period of $70,610 (R. VIII, 4376a).

Upon the organization of Western, the American Company exchanged its 14,694 shares for the $1,469,400 par value preferred stock, redeemable at $120 per share, and 14,694 shares of common stock of no par value. In 1920 Western retired its preferred stock at $120 per share. At the same time its stockholders were given the right to subscribe for common stock at $180 per share. The Comptroller of Western treated these two transactions on the basis that they constituted in effect an exchange of 2/3 shares of common stock for each share of preferred stock.

Western history to 1930 of the 14,694 shares of bonus stock held by the American Company is as follows (R. VIII, 4388a, 4392a):

Year	Shares Outstanding December 31st	Cash Dividend Rate	Cash Dividend	Book Value*****
1916	14,694 C**	$8.00 C	$117,552 C	$3,940,836
	14,694 P	6.00 P	88,164 P	
			205,716	
1917	14,694 C	8.00 C	117,552 C	
	14,694 P	6.00 P	88,164 P	
			205,716	
1918	14,694 C	10.00 C	146,940 C	
	14,694 P	6.00 P	88,164 P	
			235,104	
1919	14,694 C	10.00 C	146,940 C	
	14,694 P	6.00 P	88,164 P	
			235,104	
1920	14,694 C	10.00 C	146,940 C	
	..... P	1.15 P	16,898 P	
	9,796 C	7.50 C	73,470 C	
			237,308	
1921	24,490 C	10.00 C	244,900 C	
1922	24,490 C	10.00 C	244,900 C	
1923	24,490 C	10.00 C	244,900 C	$3,670,071
1924	24,490 C	10.00 C	244,900 C	
1925	24,490 C	10.00 C	244,900 C	
	12,245 C***	2.50 C	30,612 C	
			275,512	
1926	36,735 C	10.00 C	367,350 C	
1927	183,675 C****	15.00 C	2,755,125 C	
1928	183,675 C	3.00 C	551,025 C	
1929	183,675 C	5.00 C	918,375 C	
1930	183,675 C	4.00 C	734,700 C	$5,723,313
		Total	$7,700,635	

Dividends 1923-1930, inclusive, $6,091,887

**C—Common Stock; P—Preferred Stock.

***50% stock dividend.

****Stock split up on the basis of five shares of new stock for one share of old.

*****Exclusive of value of Western investment in subsidiaries in excess of the amount carried on its books and after deducting depreciation reserve.

Effect of Charging Development and Research Expense to Capital Account and to Current Operating Expense.

(Referred to in Brief, p. 172.)

Based on District Court's Finding of Rate of Return Under Existing Rates.

	Total Chicago Intrastate Development and Research As Allowed by Court* a	Maintenance Depreciation and Return b	Savings a-b c	
			Amount	Per Cent
1923	$ 139,476	$ 31,933	$ 107,543	77.11
1924	145,247	35,054	110,193	75.87
1925	160,036	47,976	112,060	70.02
1926	197,747	76,102	121,645	61.52
1927	241,935	97,599	144,336	59.66
1928	242,605	131,536	111,069	45.78
1929	293,601	177,698	115,903	39.48
1930	387,281	212,795	174,486	45.05
1931	355,295	267,769	87,526	24.63
	$2,163,223	$1,078,462	$1,084,761	50.15

Effect of Charging Development and Research Expense to Capital Account and to Current Operating Expense.

(Referred to in Brief, p. 172.)

Based on District Court's Finding of Rate of Return Under Rates in Suit.

	Total Chicago Intrastate Development and Research As Allowed by Court a	Maintenance Depreciation and Return b	Savings a-b c	
			Amount	Per Cent
1923	$ 139,476	$ 31,195	$ 108,281	77.63
1924	145,247	33,100	112,147	77.21
1925	160,036	44,528	115,508	72.18
1926	197,747	70,936	126,811	64.13
1927	241,935	91,014	150,921	62.38
1928	242,605	122,926	119,679	49.33
1929	293,601	168,034	125,567	42.77
1930	387,281	202,063	185,218	47.83
1931	355,295	254,809	100,486	28.28
	$2,163,223	$1,018,605	$1,144,618	52.91

The above gives effect to the District Court's findings on (a) the percentage of Western's purchases carried into capital account and maintenance; (b) the rate of return from the existing and attacked rates; (c) the proper depreciation expense charges; (d) the Development and Research expense of $2,163,223 allocated by Appellee to its Chicago Intrastate business for the years 1923 to 1931, inclusive.

WESTERN ELECTRIC COMPANY, INC.

EARNINGS ON NON-BELL BUSINESS AS ADJUSTED ON THE BASIS OF THE DISTRICT COURT'S FINDINGS FOR BELL BUSINESS.

(Dollars in Thousands)

(Referred to in Brief, pp. 245, 293.)

		Adjustments				
Year	Earnings (R. IV, 2819)	Extraordinary reserve for depreciation	Patents charged to surplus	Federal taxes (R. VI, 3918)	Employees' pension fund	Earnings as adjusted
1916	$ 1,730	$...	$263*	$ 2	$...	$ 1,469
1917	3,275	...	23*	88	...	3,340
1918	3,613	...	87*	63*	...	3,463
1919	2,689	...	10*	57	...	2,736
1920	2,435	...	1*	14	...	2,448
1921	2,664*	...	...	14*	...	2,678*
1922	1,672	...	...	1*	...	1,671
1923	2,923	...	...	76	...	2,999
1924	2,370	...	...	9*	120*	2,241
1925	672*	...	...	6*	...	678*
1926	1,696	11	...	3	...	1,710
1927	1,297	21	...	39*	...	1,279
1928	2,592	34	...	48	...	2,674
1929	6,389	34	...	76	...	6,499
1930	1,249	34	...	31*	...	1,252
1931	151*	35	...	...	...	116*
1932 (3 months x 4)	500**	35	...	...	...	465*
Total 1916-1932	$29,943	$204	$384*	$201	$120*	$29,844
Total 1923-1932	$17,193	$204	$...	$118	$120*	$17,395

*Red.

**R. II, 1078.

WESTERN ELECTRIC COMPANY, INC.

PERCENTAGES OF EARNINGS TO SALES AND AVERAGE INVESTMENT—NON-BELL BUSINESS

(As adjusted on the basis of the District Court's findings for Bell Business).

(Dollars in thousands)

(Referred to in Brief, pp. 245, 293, 306, 310.)

				Average investment (before depreciation)				Average investment, less reserve for depreciation			
r	Earnings as adjusted	Sales	Percentage of earnings to sales	Per Exhibit (R. IV, 2819)	Adjustment	Adjusted	Percentage of earnings to average investment	Per Exhibit (R. IV, 2819)	Adjustment	Adjusted	Percentage of earnings to average investment less reserve for depreciation
16	$ 1,469	$ 33,072	4.4	$ 12,983	$....	$ 12,983	11.3	$ 10,274	$...	$ 10,274	14.3
7	3,340	45,658	7.3	16,774	....	16,774	19.9	14,270	...	14,270	23.4
8	3,463	66,009	5.2	23,105	....	23,105	15.0	20,388	...	20,388	17.0
9	2,736	55,361	4.9	22,919	....	22,919	11.9	18,930	...	18,930	14.5
0	2,448	75,400	3.2	26,557	....	26,557	9.2	23,372	...	23,372	10.5
1	2,678*	46,880	5.7*	27,181	....	27,181	9.9*	24,176	...	24,176	11.1*
2	1,671	50,984	3.3	17,254	....	17,254	9.7	14,674	...	14,674	11.4
3	2,999	67,018	4.5	19,267	....	19,267	15.6	15,898	...	15,898	18.9
4	2,241	64,981	3.4	20,432	....	20,432	11.0	16,860	...	16,860	13.3
5	678*	71,029	1.0*	21,384	101*	21,283	3.2*	18,132	...	18,132	3.7*
6	1,710	15,902	10.8	12,367	296*	12,071	14.2	6,742	5	6,747	25.3
7	1,279	12,662	10.1	11,186	458*	10,728	11.9	6,696	21	6,717	19.0
8	2,674	20,123	13.3	15,202	527*	14,675	18.2	9,192	49	9,241	28.9
9	6,499	38,566	16.9	26,419	527*	25,892	25.1	16,983	83	17,066	38.1
0	1,252	22,648	5.5	18,798	527*	18,271	6.9	12,118	117	12,235	10.2
1	116*	9,421	1.2*	11,947	527*	11,420	1.0*	8,165	152	8,317	1.4*
tal 1916-1931....	$30,309	$695,714	4.4	$303,775	$2,963*	$300,812	10.1	$236,870	$427	$237,297	12.8
tal 1923-1931....	$17,860	$322,350	5.5	$157,002	$2,963*	$154,039	11.6	$110,786	$427	$111,213	16.1

*Red.

WESTERN ELECTRIC COMPANY, INC.

Rate of Return From Bell and Non-Bell Business After Giving Effect to Adjustments Made by the District Court in its Findings of Fact, Items 18 and 19, Under Date of April 29, 1933.

(Dollars In Thousands.)

(Referred to in Brief, pp. 169, 304, 305, 306.)

Year	Average Investment less Reserve for Depreciation as determined by the Court			Capital Stock and Surplus distributed in the same ratio as the average investment			Net Profit as Determined by the Court			% Return on Capital Stock and Surplus		
	Total	Non-Bell	Bell	Total (R. VI, 3959)*	Non-Bell *	Bell *	Total	Non-Bell	Bell	Total	Non-Bell	Bell
1926	$128,720	$6,747	$121,973	$ 84,042	$4,166	$ 79,876	$14,594	$1,710	$12,884	17.37	41.05	16.13
1927	129,405	6,717	122,688	80,474	3,930	76,544	18,023	1,279	16,744	22.40	32.54	21.87
1928	123,714	9,241	114,473	73,714	5,310	68,404	20,778	2,674	18,104	28.19	50.36	26.47
1929	171,355	17,066	154,289	100,655	9,885	90,770	24,498	6,499	17,999	24.34	65.75	19.83
1930	220,637	12,235	208,402	152,913	8,328	144,585	13,247	1,252	11,995	8.66	15.03	8.30

*After giving effect to the Court's adjustments of the net profits for each year including 1916.

R. V, 3654A.
(D-19)

WESTERN ELECTRIC COMPANY, INCORPORATED
ANALYSIS OF THE COST OF SALES BY BELL AND NON-BELL CUSTOMERS

(Dollars in Thousands)

(Referred to in Brief, pp. 171, 212, 251, 271, 276.)

	BELL CUSTOMERS											NON-BELL CUSTOMERS											
						EXPENSES											EXPENSES						
Year	Sales	Gross Profits	Current Cost of Sales Before Interest and Expenses	Additions to Employees' Benefit Fund	Additional Depreciation of Plant	Development	Merchandising	General	Federal Taxes	Interest Received	Total Cost	Sales	Gross Profits	Current Cost of Sales Before Interest and Expenses	Additions to Employees' Benefit Fund	Additional Depreciation of Plant	Development	Merchandising	General	Federal Taxes	Interest Received	Total Cost	Year
1916	$ 73,915	$ 6,314	$ 67,601	$ 0	$ 0	$1,227	$1,257	$1,933	$ 38	$(281)	$ 71,775	$33,072	$ 5,925	$27,147	$ 0	$ 0	$ 244	$2,975	$1,096	$ 30	$ (140)	$31,342	1916
1917	104,682	7,792	96,890	0	0	1,662	1,503	2,274	192	(364)	102,157	45,658	8,738	36,920	0	0	307	3,483	1,499	250	(76)	42,383	1917
1918	79,217	7,935	71,282	0	0	1,673	1,844	2,215	285	(503)	76,796	66,009	11,164	54,845	0	0	845	4,178	2,228	345	(45)	62,396	1918
1919	80,361	9,881	70,480	0	0	2,220	2,241	3,040	239	(546)	77,674	55,361	9,914	45,147	0	0	724	4,614	1,691	228	(32)	52,672	1919
1920	130,712	13,506	117,206	0	0	3,310	2,928	2,698	302	(587)	126,857	75,400	12,208	68,192	0	0	425	7,194	2,178	149	(175)	72,965	1920
1921	142,885	20,150	122,735	0	0	4,854	1,804	3,026	315	(987)	131,747	46,880	5,576	41,304	0	0	445	6,244	1,739	25	(213)	49,544	1921
1922	159,957	16,666	143,291	0	0	4,840	2,009	3,907	497	(949)	153,595	50,984	9,537	41,447	0	0	652	5,563	1,624	176	(140)	49,312	1922
1923	188,150	22,483	165,676	0	0	5,497	3,690	6,565	769	(230)	181,967	67,018	12,624	54,394	0	0	1,006	6,179	2,226	398	(108)	64,095	1923
1924	233,300	37,608	195,697	2,000	1,563	9,221	4,418	7,210	2,561	(245)	222,425	64,981	12,192	52,789	0	0	1,309	6,176	2,042	371	(76)	62,611	1924
1925	226,700	41,591	185,109	3,283	1,966	6,967	4,449	7,342	2,588	(1,256)	210,448	71,029	13,103	57,926	1,617	U202	2,777	6,636	2,330	508	(205)	71,701	1925
1926	247,203	47,295	199,908	3,443	1,914	9,407	12,985	4,436	3,311	(752)	234,652	15,902	4,561	11,341	233	188	1,030	954	380	94	(14)	14,206	1926
1927	241,062	52,456	188,606	3,172	1,666	11,382	13,353	4,544	2,264	(793)	224,194	12,662	3,975	8,687	192	137	1,024	720	413	197	(5)	11,365	1927
1928	267,808	47,896	219,912	236	1,831	8,872	15,252	3,589	1,556	(724)	250,524	20,123	6,293	13,830	12	169	1,439	905	953	230	(8)	17,531	1928
1929	372,384	49,303	323,081	0	0	8,910	18,642	3,919	1,329	(869)	355,012	38,566	11,966	36,600	0	0	2,114	1,493	1,221	763	(14)	32,177	1929
1930	338,830	48,068	290,772	0	0	12,244	19,494	4,430	1,097	(882)	329,145	22,648	5,557	17,091	0	0	1,772	1,242	1,120	180	(6)	21,399	1930
Total	2,237,175	428,422	2,458,246	12,134	8,940	92,286	105,889	61,118	17,343	(9,968)	2,743,968	686,293	133,333	552,960	2,055	696	16,113	58,546	22,730	3,944	(1,345)	655,699	Total

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U Includes $1,400,000 Reserve for Graybar Electric Company, Inc., Pension Fund.

Allocation of Western's Development and Research Expenses.

(Referred to in Brief, p. 271.)

Western's Development and Research expenses were allocated between Bell and non-Bell on the basis of standard costs of sales, as follows (R. V, 3654a):

	Bell.	Non-Bell.
1916	$ 1,227,000	$ 244,000
1917	1,662,000	307,000
1918	1,673,000	845,000
1919	2,220,000	724,000
1920	3,310,000	425,000
1921	4,854,000	445,000
1922	4,840,000	652,000
1923	5,497,000	1,006,000
1924	9,221,000	1,309,000
1925	6,967,000	2,777,000
1926	9,407,000	1,030,000
1927	11,382,000	1,024,000
1928	8,872,000	1,439,000
1929	8,910,000	2,114,000
1930	12,244,000	1,772,000
1931	....	....
Total	$92,286,000	$16,113,000

ANALYSIS OF STUDY SHOWING RELATIVE PURCHASES BY APPELLEE OF 17 IMPORTANT ITEMS OF WESTERN MANUFACTURE.

(Referred to in Brief, p. 279.)

(1) Appellee's purchases of Large Multiple Sections represented the following percentages of total Western sales of Bell System of this item (R. VIII, 4432a):

1924	6.5%
1925	13.3
1926	4.2
1927	12.5
1928	45.3
1929	3.5
1930	5.8
Average for Period	10.6%

Of the total purchases of Panel Lines by the Bell System, Appellee purchased the following per cents:

1924	6.6%
1925	5.1
1926	.0
1927	18.3
1928	1.3
1929	6.8
1930	10.5
Average for Period	10.6%

In contrast to Appellee's experience in respect to Panel Lines, the Southern New England Telephone and Telegraph Company apparently has purchased none of such equipment from Western during the entire period 1922-1932, inclusive, as indicated by its requirement sheets (R. VIII, 4444a). From the same requirement sheets it appears that the New

York Telephone Company, during this period, required 39% of the total Bell System Panel Line requirements.*

(2) X-313 (R. VIII, 4431, 4432a) is an exhibit which purports to show the quantity of 17 important plant items of Western manufactures, sold to the Bell System as a unit and to Appellee during the period 1924-1930, inclusive, considered as a unit. On the basis of this sheet Mr. Gregory, Comptroller of Western, claimed he reached the conclusions that Appellee's purchases during that period represented a fair cross-section of the Bell System purchases.

This study (R. VIII, 4431, 4432a) shows:

(a) in respect to 2 of the 17 items Mr. Gregory had no information for the year 1924;

(b) in respect to one of the items he had no information for the years 1924-1926.

(c) Appellee purchased

- (a) 10.6% of Large Multiple Section Switch Boards;
- (b) 5.5% of Dials;
- (c) 9.7% of Sub-sets;
- (d) 6.2% of one class of P. B. X. Switch Boards;
- (e) 2.4% of Step-by-Step Lines (substantially all for use outside Chicago); and
- (f) 7.6% of Panel Lines (substantially all for use in Chicago).

(d) The 17 items included in the study (R. VIII, 4431, 4432a) ranged from Large Multiple Section Switch Boards, which represents a combination of thousands of individual items, each consisting of many piece parts, to loading coils, (single item) which have relatively few piece parts as compared to the Large Multiple Section Switch Boards (R. II, 1923).

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*The close relationship between actual purchases and requirements is indicated by the fact that the total requirements of plaintiff for the entire period 1922-1932, inclusive, represented 7.9% of total Bell System requirements, whereas the total purchases for the period 1924-1930 were 7.6% of Bell System purchases.

(3) This study (R. VIII, 4432a) shows:

(a) The quantity sold to Appellee and to the Bell System as a unit for each of the years of the period shown in Sheet 1 of the study (R. VIII, 4431) and making up the sales figures in said Sheet 1.

(b) The single figure for an item in Sheet 1 of said study (R. VIII, 4431), in several instances, represented the combination of subsidiary groups of items each of which had its own experience.

Cable terminals sold to Appellee, representing 7.7% of the entire Bell System purchases are shown (R. VIII, 4432a). Such sales represent sales of two subsidiary groups of cable terminals. In respect to one group—Appellee purchased none in 1927 although a large quantity was sold to the balance of the System. In the following years it purchased the following percentages of total Bell System purchases:

1928	8.2%
1929	7.7
1930	10.9

Of the second subsidiary group, "14 Type," Appellee purchased the following percentages of total Bell System purchases:

1927	10.3%
1928	4.5
1929	.2
1930	.0

But viewed as a single group of "cable terminals" Appellee's purchases were:

1924	8.9%
1925	7.4
1926	9.2
1927	8.3
1928	6.5
1929	5.9
1930	9.1
Average for Period	7.7%

This group average of 7.7% is the result of the subsidiary group average of 8.3% for 8 and "C" Type terminals and of 5.90% of "14 Type" terminal.

This study shows (R. VIII, 4431) that Appellee purchased 5.6% of Loading Coils. Sales of Loading Coils were of three separate sub-groups (R. VIII, 4432a):

	Per Cent Appellee's Purchases of Bell Purchases.			
	Side and Phantom	Non-Phantom	Carrier	Total
1924	3.6%	7.6%	0%	5.5%
1925	7.0	42.2	0	19.9
1926	4.5	19.7	0	9.1
1927	2.1	22.4	0	9.0
1928	1.7	23.2	.7	7.4
1929	.6	10.9	.3	2.8
1930	.6	11.3	.1	3.0
Total	1.5	17.2	.2	5.6

This study shows (R. VIII, 4432a) Appellee purchased 8.3% of Bell System Lead Covered Cable purchases. It further shows that the figure 8.3% is the result of the averages of two subsidiary groups of Lead Covered Cable:

	Quadded	Loop	Total
1924	4.4%	5.8%	5.7%
1925	11.6	7.8	8.1
1926	5.8	10.0	9.6
1927	5.2	14.3	12.9
1928	3.8	11.4	10.0
1929	2.0	7.3	6.0
1930	2.0	9.6	6.9
Totals	3.5	9.3	8.3

(c) The total period purchases by Appellee of each of the 17 items shown in this study is disclosed on R. VIII, 4432a, to cover the following yearly per cents of total Bell System purchases of the same items:

	Switchboards									Station Apparatus				
Items	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1924	6.5	7.1	*	*	6.6	.2	12.7	..	..	10.7	..	1.6	2.6	9.9
1925	13.3	8.8	11.7	12.9	5.1	3.1	21.5	..	..	8.6	..	3.9	3.3	7.1
1926	4.2	4.3	11.0	11.9	0	0	12.9	..	..	10.5	..	5.5	2.6	9.0
1927	12.5	4.9	16.3	11.9	18.3	4.2	7.0	..	..	10.0	10.2	7.9	4.4	9.3
1928	45.3	6.6	11.5	10.0	1.3	3.2	9.4	0	..	8.5	8.5	12.8	6.1	8.2
1929	3.5	3.7	8.8	8.9	6.8	2.9	11.1	1.2	3.3	9.8	8.1	10.7	7.7	3.5
1930	5.8	3.3	10.3	9.5	10.5	2.2	8.7	14.2	6.2	10.4	6.3	10.5	7.4	8.3
			**	**										***
Total	10.6	5.1	11.6	10.7	7.6	2.4	10.3	6.8	6.2	9.7	7.5	9.1	5.5	8.3

	Cable Terminals			Loading Coils				Lead Covered Cable		
Items	15a	15b	15	16a	16b	16c	16	17a	17b	17
1924	..	..	8.9	3.6	7.6	..	5.5	4.4	5.8	5.7
1925	..	..	7.4	7.0	42.2	..	19.9	11.6	7.8	8.1
1926	..	..	9.2	4.5	19.7	..	9.1	5.8	10.0	9.6
1927	0	10.3	8.3	2.1	22.4	0	9.0	5.2	14.3	12.9
1928	8.2	4.5	6.5	1.7	23.2	.7	7.4	3.8	11.4	10.0
1929	7.7	6.2	5.9	.6	10.9	.3	2.8	2.0	7.3	6.0
1930	10.9	0	9.1	.6	11.3	.1	3.0	2.0	9.6	3.9
	***									
Total	8.3	5.9	7.7	1.5	17.2	.2	5.6	3.5	9.3	8.3

*—Figures not available.
**—Total 1925 to 1930, inclusive.
***—Total 1927 to 1930, inclusive.

Switchboards
1. Large Multiple Sections
2. Small Multiple Sections
3. 550 and 551 Types
4. 505 and 506 Types
5. Panel Lines
6. Step-by-Step Lines
7. 700 and 701 P. B. X. Lines
8. 740 P. B. X.'s
9. 750 P. B. X.'s

Station Apparatus
10. Subsets, 534A, 584A, 534C, 534AC 584C, 554AR, 554C, 534AR
11. Hand Telephone Sets
12. Coin Collectors, 5-Type
13. Dials, 2AA, 2AB, 2AE. 2HA, 2HB, 2HE, 4HA, 4HB, 4HE
14. Desk Stands, 20AL, 20CF, 40AL, 40CF, 50AL, 51AL

Cable Terminals
15-a. 8 & "C" Types
15-b. 14 Type
15. Total

Loading Coils
16-a. Side and phantom
16-b. Non-phantom
16-c. Carrier
16. Total

Lead Covered Cables
17-a. Quadded
17-b. Loop
17. Total

(d) The varying per cents of total Bell purchases for each item during a given year, or years, continue irrespective of the number of years included in the study. This appears from the following showing of per cents of total Bell System purchases of each of the items included in this study, purchased by Appellee on the basis of its experience during the years (R. VIII, 4433).

	1924 to 1925	1924 to 1928	1929 and 1930
Switchboards			
1. Large Multiple Sections	9.2	13.1	4.7
2. Small Multiple Sections	7.9	6.1	3.5
3. 550 and 551 Types	11.7	12.6	9.2
4. 505 and 506 Types	12.9	11.5	9.1
5. Panel Lines	6.0	6.5	8.7
6. Step-by-Step Lines	1.8	2.3	2.5
7. 700 and 701 P. B. X. Lines	17.6	11.1	9.6
8. 740 P. B. X.'s	..	..	7.6
9. 750 P. B. X.'s	..	..	6.2
Station Apparatus			
10. Sub-sets, 534A, 584A, 534C, 584C, 554AR, 554C, 534AR	9.6	9.6	10.0
11. Hand Telephone Sets	..	8.8	7.0
12. Coin Collectors, 50 Type	3.0	7.0	10.6
13. Dials, 2AA, 2AB, 2AE, 2HA, 2HB, 2HE, 4HA, 4HB, 4HE	3.0	4.2	7.5
14. Desk Stands, 20AL, 20CF, 40AL, 40CF, 50AL, 51AL	8.3	8.6	4.2
Cable Terminals			
15a. 8 and "C" Types	..	6.4	9.1
15b. 14 Type	..	7.8	.1
15. Total	7.9	7.9	7.3
Loading Coils			
16a. Side and phantom	5.8	3.0	.6
16b. Non-phantom	25.7	23.0	11.1
16c. Carrier	..	.3	.2
16. Total	14.0	9.3	2.9
Lead Covered Cable			
17a. Quadded	8.6	5.6	2.0
17b. Loop	6.9	9.7	8.3
17. Total	7.0	9.2	6.4

WESTERN ELECTRIC COMPANY, INC.

EARNINGS ON BELL AND NON-BELL BUSINESS COMBINED AS ADJUSTED ON THE BASIS OF THE DISTRICT COURT'S FINDINGS FOR BELL BUSINESS.

(Dollars in thousands)

(Referred to in Brief, pp. 245, 293.)

Year	Earnings (Exhibits (R. IV, 2978, 2819)	Adjustments				Earnings as adjusted
		Extraordinary reserve for depreciation	Patents charged to surplus	Federal taxes (R. VI, 3916)	Employees' pension fund	
1916	$ 3,870	$	$2,023*	$ 5	$...	$ 1,852
1917	5,800	....	230*	155	...	5,725
1918	6,034	....	280*	115*	...	5,639
1919	5,376	....	42*	116	...	5,450
1920	7,290	....	12*	41	...	7,319
1921	8,474	....	6*	183*	...	8,285
1922	8,034	....	3	5*	...	8,032
1923	9,115	....	....	224	...	9,339
1924	13,245	....	....	74*	...	13,171
1925	15,580	112	2*	35*	...	15,655
1926	14,247	243	....	104	...	14,594
1927	18,165	342	....	484*	...	18,023
1928	19,876	530	....	372	...	20,778
1929	23,761	530	....	207	...	24,498
1930	12,934	530	....	217*	...	13,247
1931	10,349	532	....	...	...	10,881
1932 (3 months x 4)	6,900*	532	....	...	...	6,368*
Total 1916-1932	$175,250	$3,351	$2,592*	$111	$...	$176,120
Total 1923-1932	$130,372	$3,351	$ 2*	$ 97	$...	$133,818

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*Red.

WESTERN ELECTRIC COMPANY, INC.

PERCENTAGE OF EARNINGS TO SALES AND AVERAGE INVESTMENT—BELL AND NON-BELL BUSINESS COMBINED

(As adjusted on the basis of the District Court's findings for Bell business).

(Referred to in Brief, pp. 245, 293.)

(Dollars in thousands)

Year	Earnings as adjusted	Sales	Percentage of earnings to sales	Average investment (before depreciation)			Percentage of earnings to average Investment	Average investment, less reserve for depreciation			Percentage of earnings to average investment less reserve for depreciation
				Per Exhibit (R. IV, 2978, 2819)	Adjustment	Adjusted		Per Exhibits (R. IV, 2978, 2819)	Adjustment	Adjusted	
1916	$ 1,852	$ 106,987	1.7	$ 59,095	$	$ 59,095	3.1	$ 46,441	$	$ 46,441	4.0
1917	5,725	150,340	3.8	82,958	.....	82,958	6.9	68,155	....	68,155	8.4
1918	5,639	145,226	3.9	93,790	.....	93,790	6.0	76,435	....	76,435	7.4
1919	5,450	135,722	4.0	92,858	.....	92,858	5.9	73,514	....	73,514	7.4
1920	7,319	206,112	3.6	125,471	.....	125,471	5.8	103,328	....	103,328	7.1
1921	8,285	189,765	4.4	152,511	.....	152,511	5.4	126,537	....	126,537	6.5
1922	8,032	210,941	3.8	140,343	.....	140,343	5.7	111,164	....	111,164	7.2
1923	9,339	255,177	3.7	150,771	.....	150,771	6.2	118,353	....	118,353	7.9
1924	13,171	298,281	4.4	178,920	1,080*	177,840	7.4	141,473	....	141,473	9.3
1925	15,655	297,729	5.3	184,469	3,244*	181,225	8.6	145,127	56	145,183	10.8
1926	14,594	263,105	5.5	172,622	5,379*	167,243	8.7	128,487	233	128,720	11.3
1927	18,023	253,724	7.1	178,557	7,331*	171,226	10.5	128,879	526	129,405	13.9
1928	20,778	287,931	7.2	176,580	8,233*	168,347	12.3	122,752	962	123,714	16.8
1929	24,498	410,950	6.0	230,926	8,233*	222,693	11.0	169,863	1,492	171,355	14.3
1930	13,247	361,478	3.7	289,354	8,233*	281,121	4.7	218,615	2,022	220,637	6.0
1931	10,881	228,956	4.8	282,370	8,233*	274,137	4.0	202,789	2,554	205,343	5.3
Total 1916-1931	$182,488	$3,802,424	4.8	$2,591,595	$49,966*	$2,541,629	7.2	$1,981,912	$7,845	$1,989,757	9.2
Total 1923-1931	$140,186	$2,657,331	5.3	$1,844,569	$49,966*	$1,794,603	7.8	$1,376,338	$7,845	$1,384,183	10.1

*Red.

WESTERN ELECTRIC COMPANY, INC.

PERCENTAGES OF EARNINGS TO SALES AND AVERAGE INVESTMENT—BELL BUSINESS

(As determined by the District Court in its findings of facts, Numbers 18 and 19, R. III, 2518).

(Dollars in thousands)

(Referred to in Brief, pp. 245, 298, 306, 310.)

Year	Earnings as adjusted	Sales	Percentage of earnings to sales	Average investment (before depreciation) Per Exhibit (R. IV, 2978)	Average investment (before depreciation) Adjustment by Court	Average investment (before depreciation) As adjusted by Court	Percentage of earnings to average investment	Average investment, less reserve for depreciation Per Exhibit (R. IV, 2978)	Average investment, less reserve for depreciation Adjustment by Court	Average investment, less reserve for depreciation As adjusted by Court	Percentage of earnings to average investment less reserve for depreciation
1916	$ 383	$ 73,915	.5	$ 46,112	$	$ 46,112	.8	$ 36,167	$	$ 36,167	1.1
1917	2,385	104,682	2.3	66,184	.....	66,184	3.6	53,885	.....	53,885	4.4
1918	2,176	79,217	2.7	70,685	.....	70,685	3.1	56,047	.....	56,047	3.9
1919	2,714	80,361	3.4	69,939	.....	69,939	3.9	54,584	.....	54,584	5.0
1920	4,871	130,712	3.7	98,914	.....	98,914	4.9	79,956	.....	79,956	6.1
1921	10,963	142,885	7.7	125,330	.....	125,330	8.7	102,361	.....	102,361	10.7
1922	6,361	159,957	4.0	123,089	.....	123,089	5.2	96,490	.....	96,490	6.6
1923	6,340	188,159	3.4	131,504	.....	131,504	4.8	102,455	.....	102,455	6.2
1924	10,930	233,300	4.7	158,488	1,080*	157,408	6.9	124,613	.....	124,613	8.8
1925	16,333	226,700	7.2	163,085	3,143*	159,942	10.2	126,995	56	127,051	12.9
1926	12,884	247,203	5.2	160,255	5,083*	155,172	8.3	121,745	228	121,973	10.6
1927	16,744	241,062	6.9	167,371	6,873*	160,498	10.4	122,183	505	122,688	13.6
1928	18,104	267,808	6.8	161,378	7,706*	153,672	11.8	113,560	913	114,473	15.8
1929	17,999	372,384	4.8	204,507	7,706*	196,801	9.1	152,880	1,409	154,289	11.7
1930	11,995	338,830	3.5	270,556	7,706*	262,850	4.6	206,497	1,905	208,402	5.8
1931	10,997	219,535	5.0	270,423	7,706*	262,717	4.2	194,624	2,402	197,026	5.6
1932 (3 months x 4)	5,903*	151,472	3.9*	265,253	7,706*	257,547	2.3*	173,599	2,899	176,498	3.3*
Total 1916-1932	$146,276	$3,258,182	4.5	$2,553,073	$54,709*	$2,498,364	5.9	$1,918,641	$10,317	$1,928,958	7.6
Total 1923-1932	$116,423	$2,486,453	4.7	$1,952,820	$54,709*	$1,898,111	6.1	$1,439,151	$10,317	$1,449,468	8.0

*Red.

WESTERN ELECTRIC COMPANY, INC.

EARNINGS ON BELL BUSINESS AS ADJUSTED BY THE COURT IN DETERMINING ITS FINDINGS OF FACTS (Numbers 18 and 19, R. III, 2518) UNDER DATE OF APRIL 29, 1933.

(Referred to in Brief, pp. 245, 298.)

Year	Earnings (R. IV, 2978)	Adjustments Extraordinary reserve for depreciation	Patents charged to surplus	Federal taxes (R. VI, 3917)	Employees' pension fund	Earnings as adjusted
1916................	$ 2,140	$....	$1,760*	$ 3	$...	$ 383
1917................	2,525	....	207*	67	...	2,385
1918................	2,421	....	193*	52*	...	2,176
1919................	2,687	....	32*	59	...	2,714
1920................	4,855	....	11*	27	...	4,871
1921................	11,138	....	6*	169*	...	10,963
1922................	6,362	....	3	.4*	...	6,361
1923................	6,192	....	...	148	...	6,340
1924................	10,875	....	...	65*	120	10,930
1925................	16,252	112	2*	29*	...	16,333
1926................	12,551	232	...	101	...	12,884
1927................	16,868	321	...	445*	...	16,744
1928................	17,284	496	...	324	...	18,104
1929................	17,372	496	...	131	...	17,999
1980................	11,685	496	...	186*	...	11,995
1931................	10,500	497	...	...	...	10,997
1932 (3 months x 4)	6,400*	497	...	...	...	5,903*
Total 1916-1932...	$145,307	$3,147	$2,208*	$ 90*	$120	$146,276
Total 1923-1932...	$113,179	$3,147	$ 2*	$ 21*	$120	$116,423

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*Red

Breakdown of District Cou Finding of Fair Value.

(Referred to in Brief p. 318, 348, 358.)

	1923	1924	1925	[illegible]	1927	1928	1929	1930	1931	1932
1. Fair Value Found by Court (R. III, 2515)....	$130,000,000	$143,000,000	$157,000,000	$16 0,000	$178,000,000	$186,000,000	$200,000,000	$205,000,000	$197,500,000	$185,000,000
2. Reproduction Cost New Jan. 1 (R. III, 2504)	$..........	$148,581,042	$156,452,212	$17 7,055	$178,413,771	$191,820,622	$202,604,906	$219,327,112	$205,570,197(c)	....
3. Reproduction Cost New Dec. 31 (R. III, 2504)	148,581,042	156,452,212	172,257,055	17 3,771	191,820,622	202,604,906	219,327,112	205,570,197(c)	204,221,442(c)	....
4. Total..............................	$..........	$305,033,254	$328,709,267	$35 0,826	$370,234,393	$394,425,528	$421,932,018	$424,897,309	$409,791,639	....
5. Average Reproduction Cost New for the year..................................	[illegible],761,172(a)	152,516,627	164,354,633	17 5,413	185,117,196	197,212,764	210,966,009	212,448,655	204,895,820	....
6. Reproduction Cost, Less Depreciation (R. III, 2515-6) (b)......................	$119,079,384	$128,113,967	$138,057,892	$14 1,747	$155,498,445	$165,658,722	$179,321,108	$180,387,207	$174,161,446	....
7. Going Value (8% of Item 5) (R. III, 2516)..	11,340,894	12,201,330	13,148,371	1 6,833	14,809,376	15,777,021	16,877,281	16,977,619	16,391,666	....
8. Working Cash Capital (R. III, 2505)......	3,000,000	3,150,000	3,325,000	0,000	3,825,000	4,050,000	4,500,000	4,550,000	4,250,000	....
9. Materials and Supplies (R. III, 2505)......	233,022	299,310	358,227	6,693	326,599	344,336	276,091	209,784	224,433	....
10. Average Property in Process of Const. for year (d) (R. III, 2505)................	775,247(a)	1,456,394	1,745,270	2,787	3,106,169	4,356,407	2,625,222	3,195,226	2,428,860	....
11. Total Reprod. Cost Less Deprec. (plus Items 7 to 10)..........................	$134,428,547	$145,221,001	$156,634,760	$16 8,060	$177,565,589	$190,186,486	$203,599,702	$205,319,836	$197,456,405	....

Notes:.

(a) R. IV, 2757—Average for year 1923 was 95.41% of amount as of Dec. 31, 1923.
(b) R. III, 2515-6—Depreciation deducted was 16% for the years 1923 to 1928, inclus and 15% for the succeeding years.
(c) R. III, 2519—There should be a 10% reduction after Nov. 1 1930, from the price harged. This has been applied on total reproduction cost new.
(d) This is the average of the amount in this account at the beginning and end of ea year, except for 1923.

a.

DISTRICT COURT'S FINDING OF CHICAGO INTRASTATE RATE BASE COMPARED WITH CHICAGO INTRASTATE AND ENTIRE COMPANY CAPITALIZATION.

(Referred to in Brief, pp. 316, 317, 525.)

Date	Chicago Intrastate Rate Base Value (R. III, 2515) (1)	Capitalization (R. V, 3083; R. VIII, 4457) Entire Company Chgo. Intrastate (2)	(3)	Ratios (1÷2) (4)	(1÷3) (5)	(2÷3) (6)
1923	$124,200,000	$ 68,879,379	$109,534,949	180.32	113.39	62.88
1924	136,500,000	77,112,884	121,991,786	177.01	111.89	63.21
1925	148,500,000	81,283,422	128,945,216	182.69	115.17	63.04
1926	151,500,000	90,012,379	143,540,937	168.31	105.54	62.71
1927	167,000,000	98,958,006	159,584,479	168.76	104.65	62.01
1928	173,000,000	110,243,288	178,976,140	156.93	96.66	61.60
1929	184,000,000	121,141,156	200,668,245	151.89	91.69	60.37
1930	187,120,000	132,353,939	223,881,995	141.38	83.58	59.12
1931	179,100,000	134,943,494	232,546,446	132.72	77.02	58.03

DEPRECIATION RESERVE BASED ON DISTRICT COURT'S DEPRECIATION EXPENSE FINDING, COMPARED WITH DISTRICT COURT'S DEPRECIATION DEDUCTION IN VALUATION

(Referred to in Brief, pp. 362, 364.)

Year	Ave. Book Cost of Plant (Chgo. Intrastate) (R. VIII, 4456a; R. VIII, 4462c) (1)	Book Depr. Res. based on Cts. Find. of Depr. Exp. (Chgo. Intrastate) (2)	Reserve Ratio (3)	Average Reproduction Cost (Supra, 86) (4)	Court's Depr. Reserve raised to Reprod. Cost (3 x 4) (5)	Court's Deduction for Depr. (R III, 2515-16) (6)	Difference between Columns 5 and 6 (7)
1923	$ 88,663,316	$26,443,943	29.83%	$141,761,172	$42,287,358	$22,681,788	$19,605,570
1924	100,540,215	29,022,592	28.87%	152,516,627	44,031,550	24,402,660	19,628,890
1925	112,486,829	31,636,847	28.12%	164,354,633	46,216,523	26,296,741	19,919,782
1926	126,061,831	34,725,816	27.55%	175,335,413	48,304,906	28,053,666	20,251,240
1927	139,205,005	38,323,830	27.53%	185,117,196	50,962,764	29,618,751	21,344,013
1928	151,459,710	41,459,891	27.37%	197,212,764	53,977,134	31,554,042	22,423,092
1929	162,493,935	42,698,444	26.28%	210,966,009	55,441,867	31,644,901	23,796,966
1930	170,958,739	43,473,376	25.43%	212,448,655	54,025,693	32,061,448	21,964,245
1931	175,710,631	45,232,272	25.74%	204,895,820	52,740,184	30,734,374	22,005,810

Source:

Column (2)—R. III, 2520; R. IV, 2734-42 and 2748; R. V, 3145; R. VII, 4075; R. VIII, 4462.

APPELLEE'S CHICAGO INTRASTATE RATE BASE VALUE ON APPELLANTS' CONTENTIONS.

(Referred to in Brief, pp. 316, 319, 357.)

		1923	1924	1925	1926	1927	1928	1929	1930	1931
(1)	Average book cost of Plant in Service and Gen'l Equip. (R. VIII, 4462c)	$88,663,316	$100,540,215	$112,486,829	$126,061,831	$139,205,005	$151,459,710	$162,493,935	$170,958,739	$175,710,631
(2)	Average Construction Work in Progress (R. IV, 2748-56)	741,457	1,396,651	1,669,110	1,027,205	2,947,393	3,964,356	2,218,755	2,903,485	2,149,762
(3)	Average book cost, plus Const. Work in Progress (Lines 1 and 2)	$89,404,773	$101,936,866	$114,155,939	$127,089,036	$142,152,398	$155,424,066	$164,712,690	$173,862,224	$177,860,393
(4)	Going Value (O.R. I, 44; Ratio R. V; 3083)	4,009,692	4,009,692	4,009,692	4,009,692	4,009,692	4,009,692	4,009,692	4,009,692	4,009,692
(5)	Average Materials and Supplies (R. VIII, 4462)	222,618	284,533	338,324	316,963	306,108	319,489	253,664	190,933	203,648
(6)	Average Working Cash Capital (R. VIII, 4462)	2,915,000	3,060,000	3,225,000	3,440,000	3,695,000	3,840,000	3,975,000	4,050,000	3,800,000
(7)	Total	$96,552,083	$109,291,091	$121,728,955	$134,855,691	$150,163,198	$163,593,247	$172,951,046	$182,112,849	$185,873,733
(8)	Average accrued Dep'n and Amort. of Intangible Capital on basis of Ill. C. C. order of Aug. 16, 1933 (R. VIII, 4462)	26,248,803	28,007,019	29,351,908	30,914,716	32,204,666	32,468,077	30,583,958	28,082,291	27,060,466
(9)	Total Rate Base	$70,303,280	$ 81,284,072	$ 92,377,047	$103,940,975	$117,958,532	$131,125,170	$142,367,088	$154,030,558	$158,813,267
(10)	Total Capitalization (Stock, Debt and Surplus) (R. VIII, 4457-61; R. V, 3083-90)	$68,879,379	$ 77,112,884	$ 81,283,422	$ 90,012,379	$ 98,958,006	$110,243,288	$121,141,156	$132,353,939	$134,943,494

Effect of Variables on Index Numbers.

(Referred to in Brief, pp. 336, 337, 340.)

Material Index.

The effect on the material index of two variables—

(I) Quantities of the various items,

(II) Relations between the price changes of the various items,

is illustrated in the four following cases:

In Case (1) neither variable is assumed to change;

In Case (2) Variable (II) changes while (I) remains constant;

In Case (3) Variable (I) changes while (II) remains constant; and

In Case (4) both variables change.

Case (1).

In this case the quantities are assumed to be the same in both years, and the price changes uniform for all items.

	1923			1912			
Item	Quantity	Price Each	Cost	Quantity	Price Index	Price Each	Cost
a	2	$5	$10	2	81.1	$4.06	$ 8.12
b	5	4	20	5	81.1	3.24	16.20
c	3	2	6	3	81.1	1.62	4.86
Total	10		$36	10			$29.18

Case (2).

In this case, as in Case (1), the quantities are assumed to be the same in both years. While the weighted average change in price levels is assumed to be the same as before, the price changes differ for the different items.

	1923			1912			
Item	Quantity	Price Each	Cost	Quantity	Price Index	Price Each	Cost
a	2	$5	$10	2	90	$4.50	$ 9.00
b	5	4	20	5	80	3.20	16.00
c	3	2	6	3	70	1.40	4.20
Total	10		$36	10			$29.20

Case (3).

In this case the quantities are varied while the price changes are uniform.

	1923			1912			
Item	Quantity	Price Each	Cost	Quantity	Price Index	Price Each	Cost
a	2	$5	$10	4	81.1	$4.06	$16.24
b	5	4	20	4	81.1	3.24	12.96
c	3	2	6	2	81.1	1.62	3.24
Total	10		$36	10			$32.44

Case (4).

In this case the quantities are assumed to change as in Case (3) and the price relationships as in Case (2).

	1923			1912			
Item	Quantity	Price Each	Cost	Quantity	Price Index	Price Each	Cost
a	2	$5	$10	4	90	$4.50	$18.00
b	5	4	20	4	80	3.20	12.80
c	3	2	6	2	70	1.40	2.80
Total	10		$36	10			$33.60

Dividing the total cost in 1912 by the total cost in 1923 and multiplying by 100 in each case gives the following index numbers:

Case (1): 29.18 ÷ 36 x 100 = 81.1
Case (2): 29.20 ÷ 36 x 100 = 81.1
Case (3): 32.44 ÷ 36 x 100 = 90.1
Case (4): 33.60 ÷ 36 x 100 = 93.3

Assuming that the items and quantities placed in 1912 cost at that time $100, which figure entered into the 1912 book cost, applying these indices to convert that book cost to the 1923 level gives the following results:

Cases (1) and (2): $100 ÷ 81.1 x 100 = $123.30
Case (3): $100 ÷ 90.1 x 100 = $110.99
Case (4): $100 ÷ 93.3 x 100 = $107.18

The first result is what Appellee would get by its method, while the differences between that result and the others illustrate the effect of ignoring these variables.

The two following cases increase the change in the two variables used in the above examples:

Case (3-A) is identical with Case (3) except that the variation in quantities is greater; and

Case (4-A) is identical with Case (4) except that the variations in quantities are increased to the same extent as in Case (3-A) and the changes in price relationships are also increased, the *average* 1912 price level (weighted on the basis of the 1923 plant) being kept constant in all cases.

Case (3-A).

1923				1912			
Item	Quantity	Price Each	Cost	Quantity	Price Index	Price Each	Cost
a	2	$5	$10	6	81.1	$4.06	$24.36
b	5	4	20	3	81.1	3.24	9.72
c	3	2	6	1	81.1	1.62	1.62
Total	10		$36	10			$35.70

Case (4-A).

1923				1912			
Item	Quantity	Price Each	Cost	Quantity	Price Index	Price Each	Cost
a	2	$5	$10	6	94.3	$4.71	$28.26
b	5	4	20	3	79.4	3.18	9.54
c	3	2	6	1	64.5	1.29	1.29
Total	10		$36	10			$39.09

Making the same computations as before, the result is:

Index Numbers.

Case (3-A): 35.70 ÷ 36 x 100 = 99.2
Case (4-A): 39.09 ÷ 36 x 100 = 108.6

Reproduction Cost as of June 30, 1923.

Case (3-A): $100 ÷ 99.2 x 100 = $100.81
Case (4-A): $100 ÷ 108.6 x 100 = $ 92.08

ILLINOIS BELL TELEPHONE CO.

ANALYSIS OF EXCESS OF DISTRICT COURT'S FAIR VALUE (AS AN AVERAGE AMOUNT) OVER AVERAGE BOOK COST

ENTIRE CHICAGO AREA

(Referred to in Brief, pp. 8, 318, 324, 329, 353, 356.)

		1923	1924	1925	1926	1927	1928	1929	1930	1931
(1)	Fair Value found by Dist. Ct. (R. III, 2515)	$130,000,000	$143,000,000	$157,000,000	$161,000,000	$178,000,000	$186,000,000	$200,000,000	$205,000,000	$197[illegible]0,000
(2)	Depreciation deducted by Dist. Ct. (Supra, 87)	22,681,788	24,402,660	26,296,741	28,053,666	29,618,751	31,554,042	31,644,901	32,061,448	30,734,374
(3)	Value new	$152,681,788	$167,402,660	$183,296,741	$189,053,666	$207,618,751	$217,554,042	$231,644,901	$237,061,448	$228,234,374
(4)	Book cost of Plant including Mat'l. and Supplies, work in Progress and Working Cash Capital (R. IV, 2756-65)	99,456,482	110,419,543	124,169,044	138,674,134	155,469,907	171,200,374	183,425,506	194,926,874	200,257,433
(5)	Increase in Value over book cost	$ 53,225,306	$ 56,983,117	$ 59,127,697	$ 50,379,532	$ 52,148,844	$ 46,353,668	$ 48,219,395	$ 41,134,574	$ 27,976,941
	Analysis of Increase in Value over Book Cost:									
(6)	Land	$ 356,438	$ 471,248	$ 681,465	$ 662,508	$ 800,440	$ 1,204,471	$ 1,364,901	$ 1,383,541	$ 1,126,111
(7)	Buildings	4,519,044	4,740,553	4,713,500	4,829,182	4,798,933	4,503,008	4,899,421	4,550,567	1,443,173
(8)	General Equipment	0	0	0	0	0	0	0	0	0
(9)	Total Land, Buildings and Gen'l Equipment	$ 4,875,482	$ 5,211,801	$ 5,394,965	$ 5,491,690	$ 5,599,373	$ 5,707,479	$ 6,264,322	$ 5,934,108	$ 2,569,284
(10)	Telephone Plant before Dist. Ct. adjustment	25,371,758	24,660,509	22,033,530	17,088,331	11,544,755	8,314,329	6,790,958	7,952,479	8,946,191
(11)	Telephone Plant after Dist. Ct. adjustment	25,371,758	24,660,509	22,033,530	17,088,331	11,544,755	8,314,329	6,790,958	1,743,582*	10,359,548*
(12)	Total Physical Plant before Dist. Ct. adjustment	30,247,240	29,872,310	27,428,495	22,580,021	17,144,128	14,021,808	13,055,280	13,886,587	11,515,475
(13)	Total Physical Plant after Dist. Ct. adjustment	30,247,240	29,872,310	27,428,495	22,580,021	17,144,128	14,021,808	13,055,280	4,190,526	7,790,264*
(14)	Theoretical Overheads before Dist. Court's adjustment (Excess over book overheads)	16,084,801	17,159,795	18,232,454	19,116,952	19,847,020	20,840,017	21,962,866	23,073,281	22,861,466
(15)	Theoretical Overheads after Dist. Court's adjustment (Excess over book overheads)	16,084,801	17,159,795	18,232,454	19,116,952	19,847,020	20,840,017	21,962,866	21,348,775	19,401,003
(16)	Going Value	11,340,894	12,201,330	13,148,371	14,026,833	14,809,376	15,777,021	16,877,281	16,977,619	16,391,666
(17)	Amount required to equal Dist. Court's finding	4,428,547*	2,221,001*	365,240	5,278,060*	434,411	4,186,486*	3,599,702*	319,836*	43,595
(18)	Total increase in Value	$ 53,244,388	$ 57,012,434	$ 59,174,560	$ 50,445,746	$ 52,234,935	$ 46,452,360	$ 48,295,725	$ 42,197,084	$ 28,046,000

		1923	1924	1925	1926	1927	1928	1929	1930	1931
	Analysis of Book Costs:									
(19)	Land	$ 1,668,765	$ 1,642,896	$ 1,674,639	$ 1,878,896	$ 2,118,268	$ 2,044,442	$ 2,004,550	$ 2,113,886	$ 2,184,867
(20)	Buildings	8,764,790	9,698,991	10,427,473	10,799,456	11,142,489	11,892,017	12,683,868	13,529,242	14,127,203
(21)	General Equipment	1,440,449	1,597,789	1,768,214	1,948,871	2,194,411	2,482,884	2,708,353	2,846,592	2,869,055
(22)	Total	$ 11,774,004	$ 12,939,676	$ 13,870,326	$ 14,627,223	$ 15,455,168	$ 16,419,343	$ 17,396,771	$ 18,489,720	$ 19,181,125
(23)	Telephone Plant	79,815,373	88,186,135	99,694,527	113,015,502	125,847,806	138,172,502	149,640,730	158,385,464	163,048,259
(24)	Total Physical Plant	$ 91,589,377	$101,125,811	$113,564,853	$127,642,725	$141,302,97[illegible]	$154,591,845	$167,037,501	$176,875,184	$182,229,384
(25)	Overheads	3,839,754	4,358,711	5,128,832	5,995,715	6,823,076	7,759,095	8,910,362	10,034,174	11,055,697
(26)	Total Book Cost	$ 95,429,131	$105,484,522	$118,693,685	$133,638,440	$148,126,050	$162,350,940	$175,947,863	$186,909,358	$193,285,081

			1923	1924	1925	1926	1927	1928	1929	1930	1931
	Percentage of Increase in Value over Book Cost:										
(27)	Buildings	(7÷20)	51.56%	48.88%	45.20%	44.72%	43.07%	37.87%	38.63%	33.64%	10.22%
(28)	Land Buildings and General Equipment	(9÷21)	41.41%	40.28%	38.90%	37.54%	36.23%	34.76%	36.01%	32.09%	13.39%
(29)	Telephone Plant, before Dist. Ct. adjustment	(10÷23)	30.15%	27.96%	22.10%	15.12%	9.17%	6.02%	4.54%	5.02%	5.49%
(30)	Telephone Plant, after Dist. Ct. adjustment	(11÷23)	30.15%	27.96%	22.10%	15.12%	9.17%	6.02%	4.54%	1.10*%	6.35*%
(31)	All Physical Plant, before Dist. Ct. adjustment	(12÷24)	33.02%	29.54%	24.15%	17.55%	12.13%	9.07%	7.82%	7.85%	6.32%
(32)	All Physical Plant, after Dist. Ct. adjustment	(13÷24)	33.02%	29.54%	24.15%	17.55%	12.13%	9.07%	7.82%	2.36%	4.27*%
(33)	Overhead Costs, before Dist. Ct. adjustment	(14÷25)	419.00%	394.00%	355.00%	319.00%	291.00%	269.00%	246.00%	230.00%	207.00%

		1923	1924	1925	1926	1927	1928	1929	1930	1931
(16)	Going value	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
(17)	Amount required to equal Dist. Court's finding	4,428,547*	2,221,001*	365,240	5,278,060*	434,411	4,186,486*	3,599,702*	319.836*	43,595
(18)	Total increase in Value	$ 53,244,388	$ 57,012,434	$ 59,174,560	$ 50,445,746	$ 52,234,935	$ 46,452,360	$ 48,295,725	$ 42,197,084	$ 28,046,000

Analysis of Book Costs:

		1923	1924	1925	1926	1927	1928	1929	1930	1931
(19)	Land	$ 1,568,765	$ 1,642,896	$ 1,674,639	$ 1,878,896	$ 2,118,268	$ 2,044,442	$ 2,004,550	$ 2,113,886	$ 2,184.867
(20)	Buildings	8,764,790	9,698,991	10,427,473	10,799,456	11,142.489	11,892,017	12,683,868	13,529,242	14,127.203
(21)	General Equipment	1,440,449	1,597,789	1,768,214	1,948,871	2,194,411	2,482,884	2,708,353	2,846,592	2,869,055
(22)	Total	$ 11,774,004	$ 12,939,676	$ 13,870,326	$ 14,627,223	$ 15,455,168	$ 16,419,343	$ 17,396,771	$ 18,489,720	$ 19,181.125
(23)	Telephone Plant	79,815,373	88,186,135	99,694,527	113,015,502	125.847,806	138,172,502	149,640,730	158,385,464	163,048.259
(24)	Total Physical Plant	$ 91,589,377	$101,125,811	$113,564,853	$127,642,725	$141,302,974	$154,591,845	$167,037,501	$176,875,184	$182,229,384
(25)	Overheads	3,839,754	4,358,711	5,128,832	5,995,715	6,823,076	7,759,095	8,910,362	10,034,174	11,055,697
(26)	Total Book Cost	$ 95,429,131	$105,484,522	$118,693,685	$133,638,440	$148,126,050	$162,350,940	$175,947,863	$186,909,358	$193,285.081

Percentage of Increase in Value over Book Cost:

			1923	1924	1925	1926	1927	1928	1929	1930	1931
(27)	Buildings	(7÷20)	51.56%	48.88%	45.20%	44.72%	43.07%	37.87%	38.63%	33.64%	10.22%
(28)	Land Buildings and General Equipment	(9÷21)	41.41%	40.28%	38.90%	37.54%	36.23%	34.76%	36.01%	32.09%	13.39%
(29)	Telephone Plant, before Dist. Ct. adjustment	(10÷23)	30.15%	27.96%	22.10%	15.12%	9.17%	6.02%	4.54%	5.02%	5.49%
(30)	Telephone Plant, after Dist. Ct. adjustment	(11÷23)	30.15%	27.96%	22.10%	15.12%	9.17%	6.02%	4.54%	1.10*%	6.35*%
(31)	All Physical Plant, before Dist. Ct. adjustment	(12÷24)	33.02%	29.54%	24.15%	17.55%	12.13%	9.07%	7.82%	7.85%	6.32%
(32)	All Physical Plant, after Dist. Ct. adjustment	(13÷24)	33.02%	29.54%	24.15%	17.55%	12.13%	9.07%	7.82%	2.36%	4.27*%
(33)	Overhead Costs, before Dist. Ct. adjustment	(14÷25)	419.00%	394.00%	355.00%	319.00%	291.00%	269.00%	246.00%	230.00%	207.00%
(34)	Overhead Costs, after Dist. Ct. adjustment	(15÷25)	419.00%	394.00%	355.00%	319.00%	291.00%	269.00%	246.00%	213.00%	176.00%

Sources—(1) R. III, 2515.
(2) Supra, 87.
(4) R. IV, 2756-65.
(6-15) R IV, 2674a-2675.

District Court adjustment is 10% on Reproduction cost new as of Dec. 31, 1930, and 1931 as shown in District Court's opinion R. III, 2504. The effect of this adjustment on the average value for the year was $11,420,567 in 1930 and $22,766,202 in 1931. These amounts were prorated between "Telephone Plant" and "Overheads." Overheads on land excluded per R. IV, 2670a-2671.

(16-17) Supra, 86.
(19-26) R. IV, 2674a-2675

Averages for 1923 computed on basis of ratio of average Book Value to Dec. 31st Book Value per R. IV, 2757.
*Red figures.

APPELLEE'S REPRODUCTION COST NEW ESTIMATE OF TELEPHONE PLANT

CHICAGO AREA

(Referred to in Brief, p. 328.)

Source R IV—	1923 (R. IV, 2599)	1924 (R. IV, 2639)	1925 (R. IV, 2642-43)	1926 (2649-50)	1927 (2652)	1928 (2654)	1929 (2656)	1930 (2658-59)	1931 (2660-61)
Total Cost of Reproduction of Physical Property Exclusive of General Equipment	$126,188,207	$132,612,456	$145,837,811	$150,709,939	$161,795,442	$170,466,095	$184,302,761	$191,527,597	$190,224,011
Deduct:—									
Land	$ 2,017,821	$ 2,210,466	$ 2,501,741	$ 2,581,066	$ 3,256,350	$ 3,241,475	$ 3,497,427	$ 3,497,427	$ 3,124,530
Buildings	13,922,895	14,956,193	15,325,753	15,931,523	15,951.321	16,838,729	18,327.848	17,831,770	13,308,981
Omissions and Contingencies	539,236	497,238	443,535	372,705	327,154	314,823	311,333	304,168	295,072
Total Deductions	$ 16,479,952	$ 17,663,897	$ 18,271,029	$ 18,885,294	$ 19,534,825	$ 20,395,027	$ 22,136,608	$ 21,633,365	$ 16,728,583
Total Telephone Plant	109,708,255	114,948,559	127,566,782	131,824,645	142,260,617	150,071,068	162,166,153	169,894,232	173,495,428

Ratio of Appellee's Depreciation Reserve to Appellee's Average Book Cost of Plant.

(Referred to in Brief, p. 362.)

Year	Actual Depreciation Reserve per Plaintiff's Books (R. III, 2454)	Book Depreciation Reserve based on Court's Finding Appendix, p. 87; R. VIII, 4456a-62c
1923	29.37%	29.83%
1924	28.94	28.87
1925	28.25	28.12
1926	28.19	27.55
1927	28.32	27.53
1928	27.98	27.37
1929	26.70	26.28
1930	26.91	25.43
1931	28.11	25.74

Ratio of Appellee's Going Value to Appellee's Capitalization.

	District Court's Allowance for Going Value (Appendix, p. 86) (1)	Capitalization (R. V, 3082a-90) (2)	Ratio (3)
1923	$11,340,844	$ 68,594,168	16.5%
1924	12,201,330	76,495,497	16.0
1925	13,148,371	80,114,637	16.4
1926	14,026,833	88,718,276	15.8
1927	14,809,376	97,067,716	15.3
1928	15,777,021	108,258,203	14.6
1929	16,877,281	118,963,989	14.2
1930	16,977,619	130,439,612	13.0
1931	16,391,666	148,534,391 (a)	11.0

(a) Sources: R. VII, 4075, 4077; R. VIII, 4794; R. IV, 2756 and 2779.

CHICAGO INTRASTATE TOTAL DEPRECIATION EXPENSE.

DISTRICT COURT'S INTRASTATE DEPRECIATION EXPENSE ALLOWANCE COMPARED WITH ALLOWANCE FIXED IN COMMISSION'S ORDERS AND WITH APPELLEE'S RECORDED AND CLAIMED DEPRECIATION EXPENSE CHARGES.

(Referred to in Brief, pp. 7, 11, 379, 389, 488, 493, 495.)

Year	Court's Finding No. 26 (R. III, 2520) (1)	Recorded Charges (R. V, 3145; R. IV, 2734-42) (2)	Excess Recorded Charges over Court's Finding (3)	Ratio Col. 3 of Col. 2 (4)	(R. VII, 4072a-73; R. IV, 2734-42 (Ratios)) 1920 Order (5)	Excess 1920 Order over Court's Finding (6)	Ratio Col. 6 of Col. 5 (7)	1923 Order (8)	Excess 1923 Order over Court's Finding (9)	Ratio Col. 9 of Col. 8 (10)	Appellee's Claimed Amount (R. III, 2401-2) (11)	Excess over Court's Allowance (12)	Ratio Col. 12 of Col. 11 (13)
1923....	$4,000,000	$4,221,515	$ 221,515	5%	$2,668,612	$ 1,331,388*	50%	$2,477,582	$ 1,522,418*	61%	$5,662,154	$ 1,662,154	29%
1924....	4,250,000	4,469,890	219,890	5	3,133,458	1,116,542*	36	3,050,327	1,199,673*	39	6,382,159	2,132,159	33
1925....	4,750,000	5,048,013	298,013	6	3,557,954	1,192,046*	34	3,489,478	1,260,522*	36	6,768,618	2,018,618	30
1926....	5,400,000	5,767,372	367,372	6	4,108,871	1,291,129*	31	3,582,203	1,817,797*	51	7,217,128	1,817,128	25
1927....	6,000,000	6,334,580	334,580	5	4,576,498	1,423,502*	31	3,513,803	2,486,197*	71	7,608,468	1,608,468	21
1928....	6,650,000	7,009,065	359,065	5	5,077,556	1,572,444*	31	3,506,518	3,143,482*	90	7,981,108	1,331,108	17
1929....	7,000,000	7,436,480	436,480	6	5,580,737	1,419,263*	25	3,549,928	3,450,072*	97	8,148,888	1,148,888	14
1930....	7,200,000	7,864,772	664,772	8	5,906,180	1,293,820*	22	3,886,422	3,313,578*	85	8,581,118	1,381,118	16
1931....	7,400,000	8,133,289	733,289	9	6,114,329	1,285,671*	21	4,914,865	2,485,135*	51	8,934,628	1,534,628	17
			$3,634,976			$11,925,805*			$20,678,874*			$14,634,269	

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* Red.

APPELLEE'S UNDEPRECIATED BOOK INVESTMENT IN SERVICE IN BUILDINGS AND CENTRAL OFFICE EQUIPMENT.

(Referred to in Brief, pp. 11, 403.)

		Central Office Equipment		
	Buildings (R. VII, 4076a)	Dial (R. VII, 4089)	Manual (R. VII, 4089)	Total Building and Central Office Equipment
Dec. 31st, 1923	$ 9,423,101	$ 5,064,290	$22,401,087	$36,888,478
Dec. 31st, 1924	10,492,907	5,081,564	24,768,279	40,342,750
Dec. 31st, 1925	10,951,361	7,233,994	28,596,174	46,781,529
Dec. 31st, 1926	11,286,589	8,143,909	32,985,481	52,415,979
Dec. 31st, 1927	11,684,164	8,534,298	35,962,474	56,180,936
Dec. 31st, 1928	12,863,730	13,271,384	37,623,638	63,758,752
Dec. 31st, 1929	13,344,977	16,968,323	37,981,906	68,295,206
Dec. 31st, 1930	14,721,615	17,253,455	40,104,402	72,079,472
Dec. 31st, 1931	14,699,599	20,888,253	39,187,914	74,775,766

COMPARISON OF APPELLEE'S RECORDED DEPRECIATION EXPENSE CHARGES WITH THOSE FIXED UNDER 1920 AND 1923 ORDERS.

(Referred to in Brief, pp. 11, 404.)

	Recorded Expense Charges			Decrease in allowance of 1923 Order Under 1920 Order		Excess of Recorded Charges over allowance of 1920 Order		Excess of Recorded Charges over allowance of 1923 Order
Year	Total (Acct. 608 (R. IV, 2859) (1)	Buildings & C. O. Equip. (R. VII, 4080a) (2)	Ratio of col. (2) to col. (1) (3)	Amount (R. VII, 4071, 4072a) (4)	Ratio of col. (2) to col. (4) (5)	Amount (R. VII, 4072a) (6)	Ratio of col. (2) to col. (6) (7)	Amount (R. VII, 4071; R. V, 3145)
1923....	$4,480,954	$2,234,177	50%	$ 203,375	986%	$1,639,889	136%	$1,843,264
1924....	4,709,950	2,223,132	47	87,858	2530	1,398,326	159	1,486,184
1925....	5,385,712	2,475,699	46	73,268	3379	1,578,785	157	1,652,053
1926....	6,203,022	2,913,526	47	567,959	513	1,772,017	164	2,339,976
1927....	6,839,392	3,208,885	47	1,150,352	279	1,885,400	170	3,035,752
1928....	7,641,461	3,491,328	46	1,715,669	204	2,096,461	167	3,812,130
1929....	8,120,382	3,840,800	47	2,221,163	173	2,016,546	190	4,237,709
1930....	8,769,886	4,203,213	48	2,255,453	186	2,174,487	193	4,429,940
1931....	9,146,268	4,445,298	49	1,350,900	329	2,259,987	197	3,610,887

EXCESS OF APPELLEE'S CLAIMED DEPRECIATION EXPENSE CHARGES ON BASES OF REPRODUCTION COST OVER ITS RECORDED DEPRECIATION EXPENSE CHARGES (SUPRA, 95).

(Referred to in Brief, p. 433.)

1923	$1,440,639
1924	1,912,269
1925	1,720,605
1926	1,449,756
1927	1,273,888
1928	972,043
1929	712,408
1930	716,346
1931	801,339

Statutory Provisions Relating to Depreciation Expense Charges.

(Referred to in Brief, pp. 386, 387.)

Alabama—Code of 1928, Annotated

§ 9769, p. 1758 (1920 Stat. § 23, p. 38).

"§ 9769. Facilities, equipment, improvements and maintenance required.

Every utility shall maintain its plant, facilities and equipment in good operating condition and shall set up and maintain proper reserves for renewals, replacements and reasonable contingencies. Every utility shall render adequate service to the public and shall make such reasonable improvements, extensions and enlargements of its plants, facilities and equipment as may be necessary to meet the growth and demand of the territory which it is under the duty to serve. (Ib. § 23.)"

Arizona—Revised Statutes 1913 (Civil Code)

Title 9, § 2325, p. 807 (Laws 1912, C. 90, Sec. 49, p. 530-531).

"§ 2325. The commission shall have power, after hearing, to require any or all public service corporations to carry a proper and adequate depreciation account in accordance with such rules, regulations and forms of account as the commission may prescribe. The commission may, from time to time, ascertain and determine and by order fix the proper and adequate rates of depreciation of the several classes of property for each public service corporation. Each public service corporation shall conform its depreciation accounts to the rates so ascertained, determined and fixed, and shall set aside the moneys so provided for out of earnings and carry the same in a depreciation fund and expend such fund only for such purposes and under such rules and regulations, both as to original expenditure and subsequent replacement, as the commission may prescribe. The income upon investments of moneys in such fund shall likewise be carried in such fund."

California—Deering Gen. Laws 1923

Vol. 2, Act. 6386, § 49, p. 2721 (Stat. 1915, p. 115).

§ 49. Depreciation Account. SAME AS ARIZONA.

Colorado—Compiled Laws 1921

§ 2945, p. 928 (Laws, 1913, § 33, p. 480).

§ 2945. Depreciation Account—Rules—Fund. Sec. 35 SAME AS ARIZONA AND CALIFORNIA.

Idaho—Compiled Statutes 1919

Vol. 1, § 2473, p. 703 (Laws, 1913, C. 61, § 47, p. 276).

§ 2473. Depreciation Account. SAME AS ARIZONA, CALIFORNIA AND COLORADO.

Illinois—Cahill's Rev. Stat. 1929

C. 111a, § 29, p. 2045. (Acts 1913, Public Utilities, Art. II, § 14, p. 468.)

"Art. II. Reports and Accounts. § 14. The Commission shall have power, after hearing, to require any or all public utilities to keep such accounts as will adequately reflect depreciation, obsolescence and the progress of the arts. The Commission may, from time to time, ascertain and determine and by order fix the proper and adequate rate of depreciation of the several classes of property for each public utility; and each public utility shall conform its depreciation accounts to the rates so ascertained, determined and fixed."

Indiana—Burns Annotated Statutes, 1926

Vol. 3, §§ 12693-12696, p. 1245 (Laws 1913, §§ 22-25, p. 176, §§ 22, 25, as Amended, Acts 1925, p. 210).

"12693 (10052v.) Depreciation Account and Rates. 22. Every public utility shall carry a separate, proper and adequate depreciation account whenever the commission after investigation, shall determine that such depreciation account reasonably can be required. The commission, from time to time, shall ascertain and determine the proper and adequate rates of depreciation of the several classes of property of each public utility. The rates, tolls, and charges shall be such as will provide the amounts required over and above the reasonable and necessary operating expenses, to maintain such property in an operating state of efficiency corresponding to the progress of the industry. Each public utility shall conform its depreciation accounts to such rates, so ascertained and determined by the commission. The commission shall make changes in such rates of depreciation, from time to time, as it may find necessary."

12694. (10052w.) Rules of Depreciation. 23. The commission shall also prescribe rules, regulations and forms of accounts regarding such depreciation, which the public utility is required to carry into effect.

12695. (10052x.) Rates, Depreciation. 24. The commission shall provide for such depreciation in fixing the rates, tolls and charges to be paid by the public.

12696. (10052y.) Depreciation Fund.—Use and Investment. 25. All money thus provided shall be set aside out of the earnings and carried in a separate depreciation fund. The money in this fund shall be applied first to depreciation expenses. Any balance in the fund, not applied to depreciation expenses, may be invested by the public utility or extended temporarily by it for new construction, extensions or additions to its utility property. This fund shall be used for no other purpose. If invested, the income from the investment shall be carried into and become a part of the depreciation fund. Any balance, not applied to depreciation expenses, shall always remain a part of the depreciation fund. In no event shall moneys, temporarily expended from this fund for new construction, extensions or additions to the property, be carried into or considered a part of the capital account of such public utility. Upon the sale of any public utility property, to continue in operation as such, the balance in the depreciation fund, unexpended for depreciation expenses, shall be transferred to the purchaser and by the purchaser shall be held, administered and used as herein authorized and required."

Massachusetts—Mass. Gen. Laws, 1921

P. 1624 (Acts and Resolves 1921, Chap. 268, p. 308, inserting new § 5A after § 5).

"Section 1. Chapter one hundred and fifty-five of the General Laws is hereby amended by inserting after Section 5 the following new section—Section 5A. If, when the department of public utilities, as required by law, approves an issue of stock, bonds, coupon notes or other evidences of indebtedness of a company under its supervision, or passes upon the price, rates, charges or service of such company, it determines that the provision made by such company for the depreciation of its property has been inadequate, the department shall order such company to set aside out of earnings such allowances for depreciation and for such period or periods as the department may from time to time prescribe. All moneys required by such order to be so set aside shall be kept as a separate fund and shall not, without the further order of the department, be used for any other purpose than for renewals other than ordinary repairs, or for extensions, reconstruction and enlargements of and additions to plant, and the department shall prescribe in its order such requirements relative to the creation and maintenance of such fund and its devotion to such aforesaid authorized uses as it may deem advisable. All orders and decisions of the department under the provisions of this section shall be enforced as provided in section sixteen of chapter one hundred and sixty-four.

Section 2. Nothing in this act shall be construed to limit or affect the power or authority of any public board of trustees of a street railway company, nor to authorize any order inconsistent with the laws of the United States or rules and orders adopted under authority thereof."

Massachusetts—General Laws, 1921

Vol. 2, Chap. 164, § 57, p. 1818 (Acts and Resolves 1905, C. 410, § 4, as amended Acts 1906, C. 411, Acts 1908, C. 486).

"Section 57. At the beginning of each fiscal year, the manager of municipal lighting shall furnish to the mayor, selectmen or municipal light board, if any, an estimate of the income from sales of gas and electricity to private consumers during the ensuing fiscal year, and of the expense of the plant during said year, meaning the gross expenses of operation, maintenance and repair, the interest on the bonds, notes or certificates of indebtedness issued to pay for the plant, an amount for depreciation equal to three per cent of the cost of the plant exclusive of land and any water power appurtenant thereto, or such smaller or larger amounts as the department may approve, the requirements of the sinking fund or debt incurred for the plant, and the loss, if any, in the operation of the plant during the preceding year, and of the cost, as defined in the following section, of the gas and electricity to be used by the town. The town shall include in its annual appropriations and in the tax levy not less than the estimated cost of the gas and electricity to be used by the town as above defined and estimated. By cost of the plant is intended the total amount expended on the plant to the beginning of the fiscal year for the purpose of establishing, purchasing, extending or enlarging the same. By loss in operation is intended the difference between the actual income from private consumers plus the appropriations for maintenance for the preceding fiscal year and the actual expense of the plant, reckoned as above, for that year in case such expenses exceeded the amount of such income and appropriation. The income from sales and the money appropriated as aforesaid shall be used to pay the annual expense of the plant, defined as above, for the fiscal year, except that no part of the sum therein included for depreciation shall be used for any other purpose than renewals in excess of ordinary repairs, extensions, reconstruction, enlargements and additions. The surplus, if any, of said annual allowances for depreciation after making the above payments shall be kept as a separate fund and used for renewals other than ordinary repairs, extensions, reconstruction, enlargements and additions in succeeding years; and no debt shall be incurred under section forty for any extension, reconstruction or enlargements of the plant in excess of the amount needed therefor in addition to the amount then on hand in said depreciation fund. Said depreciation fund shall be kept and managed by the town treasurer as a separate fund, subject to appropriation by the city council or selectmen or municipal light board, if any, for the foregoing purpose. So much of said fund as the department may from time to time approve may also be used to pay notes, bonds or certificates of indebtedness issued to pay for the cost of reconstruction or renewals in excess of ordinary repairs, when such notes, bonds or certificates of indebtedness become due. All appropriations for the plant shall be either for the annual expense defined as above, or for extensions, reconstruction, enlargements or additions; and no appropriation shall be used for any purpose other than that stated in the vote making the same. No bonds, notes or certificates of indebtedness shall be issued by a town for the annual expenses as defined in this section."

Minnesota—Gen. Stat. 1923

§ 5305, p. 733 (Laws, 1915, C. 152, § 1a, p. 213).

§ 5305. Commission Given Right to Change Annual Depreciation Charge. The commission may fix and from time to time change the annual depreciation charge which shall be made by each telephone company which charge shall be sufficient to provide the amounts required over and above the expense of current maintenance, to keep its property in a state of efficiency corresponding to the needs and progress of the industry. Such depreciation fund shall be carried in a separate account and moneys in this fund may be invested and the income thereof returned to such depreciation fund or said moneys may be expended in renewals or in new construction."

Missouri—Rev. Stat. 1919

§ § 10,470, 10,488 and 10,512, pp. 3250, 3266, 3283 (Laws, 1913, pp. 599, 617, 636).

"Sec. 10470. Power of Commission to Require Depreciation Account of Common Carriers. The commission shall have power after hearing, to require any or all railroad corporations, street railroad corporations or common carriers to carry a proper and adequate depreciation account in accordance with such rules, regulations and forms of account as the commission may prescribe. The commission may, from time to time, ascertain and determine and by order fix the proper and adequate rates of depreciation of the several classes of property of such corporation, person or public utility. Each railroad corporation, street railroad corporation and common carrier shall conform its depreciation accounts to the rates so ascertained, determined and fixed, and shall set aside the moneys so provided for out of earnings and carry the same in a depreciation fund and expend such fund only for such purposes and under such rules and regulations, both as to original expenditure and subsequent replacement as the commission may prescribe. The income from investments of moneys in such fund shall likewise be carried in such fund."

"Sec. 10488. Power of commission to require depreciation account of gas, electrical and water corporations." Same as above.

"Sec. 10512. Power of commission to require depreciation account of telegraph corporations and telephone corporations." Same as above.

Nebraska—Const. Art. 10

§ 5 Const. as amended, 1920 (Comp. Stat. 1922, p. 96).

"Sec. 5. The capital stock of public utility corporations or common carriers shall not be increased for any purpose, except after public notice for sixty days, and in such manner as may be provided by law. No dividend shall be declared or distributed except out of net earnings after paying all operating expenses, including a depreciation reserve sufficient to keep the investment intact."

New Hampshire—P. L. 1926

Vol. 2, Chap. 240, § § 9, 10, 11, p. 936 (N. H. Laws, 1913, C. 98:1).

"9. Depreciation, Account. Every public utility shall carry a proper and adequate depreciation account whenever the commission shall determine that such depreciation account can reasonably be required and shall so order.

Every public utility shall conform its depreciation account to such rules, regulations and forms as may be prescribed by the commission.

"10. ...., Use of Fund. The depreciation fund may be expended in new construction, extensions or additions to the property of the public utility, or invested, and, if invested, the income from the investment shall be added to the depreciation fund. Such fund may be used only for new construction, extensions or additions to physical property or for renewing, restoring, replacing or substituting depreciated property in order to keep its plant and system in a state of repair and efficiency.

"11. Declaring Dividends. No public utility shall declare or pay any dividend except out of net corporate income, and except after setting aside such depreciation reserve, if any, as it may carry in compliance with the provisions of Section 9; provided, that this section shall not prevent the payment of dividends in any year out of any undistributed balance of such net corporate income previously accumulated."

New Jersey—1911-1924, Cum. Supp. to Comp. Stat.

Vol. 2, *167-17 (f), p. 2883 (Laws, 1911, C. 195, § 16 (f), p. 378).

"Depreciation Account. (f) to Carry, whenever in the judgment of the board it may reasonably be required, for the protection of stockholders, bondholders or creditors, a proper and adequate depreciation account in accordance with such rules, regulations and forms of account as the board may prescribe. The board shall from time to time ascertain and determine, and by order in writing after hearing fix proper and adequate rates of depreciation of the property of each public utility, in accordance with such regulations or classifications, which rates shall be sufficient to provide the amounts required over and above the expense of maintenance to keep such property in a state of efficiency corresponding to the progress of the industry. Each public utility shall conform its depreciation accounts to the rates so ascertained, determined and fixed, and shall set aside the moneys so provided for out of earnings and carry the same in a depreciation fund. The income from investments of moneys in such fund shall likewise be carried in such fund. This fund shall not be expended otherwise than for depreciation, improvements, new construction, extensions or additions to the property of such public utility."

Ohio—Page's New Annotated Ohio General Code, 1926

§§ 614-49, 614-50. (Ohio Laws, Vol. 102, pp. 563-564).

"Sec. 614-49). Depreciation Account. § 51. Every public utility shall carry a proper and adequate depreciation or deferred maintenance account, whenever the commission after investigation shall determine that a depreciation account can be reasonably required. The commission shall ascertain, determine and prescribe what are proper and adequate charges for depreciation of the several classes of property for each public utility. The charge for depreciation shall be such as will provide the amount required over and above the cost and expense of maintenance to keep the property of the public utility in a state of efficiency corresponding to the progress of the art or industry. The commission may prescribe such changes in such charges for depreciation from time to time as it may find necessary.

"Sec. 614-50. Depreciation Fund. § 52. The moneys for depreciation charges thus provided for shall be set aside out of the earnings and carried as a depreciation fund. The moneys in such fund may be expended in new construction, extensions or additions to the property of the public utility, or invested, and if invested, the income from the investment shall also be carried in the depreciation fund. Such fund and the proceeds thereof, may be used for the purpose of renewing, restoring, replacing or substituting depreciated property in order to keep the plant in a state of efficiency. Such fund and the proceeds or income therefrom shall be used for no purpose other than as provided in this section, except upon the approval of the commission."

Oregon—Olson's Laws 1920

Vol. 2, § 6046, p. 2422 (Laws, 1911, C. 276, § 18).

"§ 6046. Depreciation Accounts, Application of Funds. Every public utility shall carry a proper and adequate depreciation account whenever the commission after investigation shall determine that such depreciation account can be reasonably required. The commission shall ascertain and determine what are the proper and adequate rates of depreciation of the several classes of property of each public utility. The rates shall be such as will provide the amounts required over and above the expenses of maintenance, to keep such property in a state of efficiency corresponding to the progress of the industry. Each public utility shall conform its depreciation accounts to such rates so ascertained and determined by the commission. The commission may make changes in such rates of depreciation from time to time as it may find to be necessary.

The commission shall also prescribe rules, regulations and forms of accounts regarding such depreciation which the public utility is required to carry into effect.

The commission shall provide for such depreciation in fixing the rates, tolls and charges to be paid by the public.

All moneys thus provided for shall be set aside out of the earnings and carried in a depreciation fund. The moneys in this fund may be expended in replacements, new construction, extensions or additions to the property of such public utility, or invested, and if invested the income from the investments shall also be carried in the depreciation fund. This fund and the proceeds thereof shall be used for no other purpose than as provided in this section and for depreciation."

Pennsylvania—Stat. 1920 (West Pub. Co.)
§ 18,066, p. 1742 (Laws, 1913, p. 1380).

"§ 18066. Duty as to Keeping Accounts, Records, Etc.; Application to Municipal Corporations. To adopt, use and keep, in conducting its business, such form, method, system, or systems of accounts, records, and memoranda as shall be prescribed by the commission; to carry no charges in any operating account which should properly be charged to the capital account, or vice versa; to carry a proper and reasonable depreciation account, if required so to do by order of the commission; and to obey and abide by all the regulations and orders of the commission concerning such accounts, records, and memoranda, and the keeping of the same: Provided, That this subsection shall also apply to all municipal corporations, with respect to the accounts, records, and memoranda relating to the rendering or furnishing by them to the public of any service of the kind or character rendered or furnished by public service companies, and to the making of reports in relation thereto: And provided further, That all corporations and persons, operating under lease or other contract any such plant or other facilities, owned by such municipal corporation, shall adopt, use, and keep, in respect to such operation of such plant, or other facilities under such lease or contract, such form or system of accounts as shall be adapted to and reasonable under the circumstances, and consistent with the obligations of such lease or contract, or of any contract made in pursuance thereof, and shall conform to such orders as the commission, on hearing, may make in respect to such form or system of accounts, and shall make such reports in relation thereto as may be required by the commission."

Tennessee—Shannon's Anno. Code, 1926 Supp.

§ 3059a88 (c), p. 733 (Public Acts, 1919, C. 49, § 5 (c) p. 147).

"3059a88. Power to Require What Public Utilities. The railroad and public utilities commission of Tennessee shall have power, after hearing, upon notice, by order in writing, to require every public utility as herein defined:

(c) Depreciation Account for Protection of Stockholders, Bondholders, Etc. To carry for the protection of stockholder (stockholders), bondholders or securities a proper and adequate depreciation account in accordance with such rules, regulations, and forms of account as the commission may prescribe. The commission shall have power to ascertain and determine, and by order in writing, after hearing, fix proper and adequate rates of depreciation of the property of each public utility, and each public utility shall conform its depreciation accounts to the rates so ascertained, determined, and fixed, and shall set aside the moneys so provided for out of earnings and carry the same in a depreciation fund. The income from investments of moneys in such fund shall likewise be carried in such fund. This depreciation fund shall not be expended otherwise than for depreciation, improvements, new constructions, extensions, or additions to the property of such public utility, unless the commission shall by order in writing give permission to the public utility to divert the fund to purposes other than those herein named."

Utah—Compiled Laws of Utah, 1917

Title 91, C. 4, (4818) p. 980 (Laws, 1917, C. 47, Art. IV, § 20, p. 157).

"4817. Depreciation Fund. The commission shall have power to require any or all public utilities to carry a proper and adequate depreciation account in accordance with such rules, regulations, and forms of account as the commission may prescribe. The commission may, from time to time, ascertain and determine and by order fix the proper and adequate rates of depreciation of the several classes of property of each public utility. Each public utility shall conform its depreciation accounts to the rates so ascertained, determined and fixed, and shall set aside the money so provided for out of earnings and carry the same in a depreciation fund and expend such fund only for such purposes and under such rules and regulations, both as to original expenditure and subsequent replacement, as the commission may prescribe. The income upon investments of money in such fund shall likewise be carried in such fund."

Wisconsin—Statutes, 1931

Sec. 190.09, p. 1610-11; Laws 1931, C. 183, s. 3.

"Depreciation rates and practices; findings by commission; dividends from reserves; retirements.

(1) Every public utility shall file with the commission, within such time as may be required by the commission, its estimate of the average annual rate of depreciation required for each of its classes of fixed capital used for public utility purposes, and of the composite annual rate of depreciation required for such fixed capital as an aggregate, which shall constitute the public utility's estimates of the amount which should be returned to it out of its rates for service, to meet the depreciation of its property.

(2) After the submission of such estimates, the commission shall review the same. If it shall determine that the estimates submitted are reasonable and proper, it shall certify that determination to the public utility. If it shall determine that the estimates submitted are not reasonable and proper, it shall certify to the public utility the percentages which it considers reasonable and proper. In case the fixed capital accounts of the public utility are not so subdivided as to permit the rates for the various classes of fixed capital used for public utility purposes to be applied, the estimates submitted by the public utility and the percentages determined by the commission may be based upon the aggregate of such fixed capital.

(3) After the commission shall have certified to the public utility its findings as to the percentages required for depreciation, such public utility shall have thirty days within which to make application to the commission for a hearing and order. If the public utility does not make

application to the commission for a hearing and order within the time set, the commission's certification of findings shall have the effect of an order and the public utility shall have the right to appeal therefrom as provided in this chapter.

(4) The commission may provide, in order to meet changing conditions, that public utilities shall submit the estimates herein referred to from time to time, and in case it requires such resubmission of estimates, it shall follow the procedure with reference to certifying its findings as provided above. In revising the reasonable and proper percentages of depreciation the commission shall give consideration to the experience of the public utility in accumulating a depreciation reserve under previous rates, the retirements actually made, and such other factors as may be relevant.

(5) When the commission shall have established, by certification or order, the reasonable and proper percentages of depreciation, such percentages shall constitute the percentages to be used in any proceeding involving the rates or practices of such public utility, provided that if at the time of such proceeding it is found that the percentages of depreciation previously established are no longer reasonable and proper the commission shall establish reasonable and proper percentages for the purpose of such proceeding and certify such new percentages in the manner provided by this section.

(6) When the commission shall have established for any public utility, by certification or order, the percentages necessary for depreciation on fixed capital used for public utility purposes, such public utility shall credit to its depreciation reserve in each accounting period such amount as may be required to provide for depreciation at the per-

centage or percentages established. If the public utility is a corporation it shall be unlawful for such corporation to pay any dividend out of earnings for any fiscal period subsequent to the commission's certification or order, or carry any portion of its earnings to its surplus account, except out of earnings remaining after crediting its depreciation reserve in accordance with the rates established by the commission; provided; that after application and hearing the commission may, upon a finding that it is necessary in the public interest, exempt a public utility from the duty of crediting to the depreciation reserve in any accounting period a greater amount than is possible without impairing its ability to pay dividends for the current calendar year. Nothing in this section shall be construed to modify the requirements of section 182.19.

(7) If a public utility desires to account for depreciation on a sinking fund basis and the commission determines that such basis of accounting for depreciation may reasonably be employed, the commission shall establish, in the manner hereinbefore referred to, the composite rate to be applied to the aggregate fixed capital used for public utility purposes to determine the amount which shall be charged to operating expenses, and the interest rate applicable to the reserve balance at which additional credits to the reserve shall be computed. In such cases the total amount to be credited to the reserve shall be the amount charged to operating expenses, plus the amount obtained by applying the interest rate to the reserve balance. Public utilities which account for depreciation on a sinking fund basis shall be subject to the same restrictions and regulations in their accounting for the entire amounts to be credited to the depreciation reserve as are applicable to

those public utilities which make the entire provision for depreciation by other methods permitted herein.

(8) No public utility shall charge to its depreciation reserve anything except losses on property actually retired from service."

Interstate Commerce Act.

Amended by Transportation Act (Act Feb. 28, 1920, C. 91; 41 Stat. 493):

Section 20.

"(1) That the Commission is hereby authorized to require annual reports from all common carriers subject to the provisions of this Act, and from the owners of all railroads engaged in interstate commerce as defined in this Act, to prescribe the manner in which such reports shall be made, and to require from such carriers specific answers to all questions upon which the Commission may need information. Such annual reports shall show in detail the amount of capital stock issued, the amounts paid therefor, and the manner of payment for the same; the dividends paid, the surplus fund, if any, and the number of stockholders; the funded and floating debts and the interest paid thereon; the cost and value of the carrier's property, franchises, and equipments; the number of employees and the salaries paid each class; the amounts expended for improvements each year, how expended, and the character of such improvements; the earnings and receipts from each branch of business and from all sources; the operating and other expenses; the balances of profit and loss; and a complete exhibit of the financial operations of the carrier each year, including an annual balance sheet. Such reports shall also contain such information in relation to rates or regulations concerning fares or freights, or agreements, arrangements, or contracts affecting the same as the Commission may require; and the Commission may, in its discretion, for the purpose of enabling it the better to carry out the purposes of this Act, prescribe a period of time within which all common carriers subject to the provisions of this Act shall have, as near as may be, a uniform system of accounts, and the manner in which such accounts shall be kept."

"(5) The Commission may, in its discretion, prescribe the forms of any and all accounts, records, and memoranda to be kept by carriers subject to the provisions of this Act, including the accounts, records and memoranda of the movement of traffic, as well as of the receipts and expenditures of moneys. The Commission shall, as soon as practicable, prescribe, for carriers subject to this Act, the classes of property for which depreciation charges may properly be included under operating expenses, and the percentages of depreciation which shall be charged with respect to each of such classes of property; classifying the carriers as it may deem proper for this purpose. The Commission may, when it deems necessary, modify the classes and percentages so prescribed. The carriers subject to this Act shall not charge to operating expenses any depreciation charges on classes of property other than those prescribed by the Commission, or charge with respect to any class of property a percentage of depreciation other than that prescribed therefor by the Commission. No such carrier shall in any case include in any form under its operating or other expenses any depreciation or other charge or expenditure included elsewhere as a depreciation charge or otherwise under its operating or other expenses. The Commission shall at all times have access to all accounts, records, and memoranda, including all documents, papers, and correspondence now or hereafter existing, and kept or required to be kept by carriers subject to this Act, and the provisions of this section respecting the preservation and destruction of books, papers, and documents shall apply thereto, and it shall be unlawful for such carriers to keep any other accounts, records, or memoranda than those prescribed or approved by the Commission, and it may employ special agents or examiners, who shall have authority under the order of the Commission to inspect and examine any and all accounts, records and memoranda, including all documents, papers, and correspondence now or hereafter existing, and kept or required to be kept by such carriers. This provision shall apply to receivers of carriers and operating trustees. The provisions of this section shall also apply to all accounts, records, and memoranda, including all documents, papers, and correspondence now or hereafter existing, kept during the period of Federal control, and placed by the President in the custody of carriers subject to this Act."

Comparison of Appellee's Recorded Net Cash Return With District Court's Required Minimum Cash Return.

(Referred to in Brief, pp. 456, 479, 482, 485, 496.)

Year	Recorded Net Cash Return		Court's Required Minimum Cash Return		Difference	Ratio
	(a) Amount	(b) Percentage (1)	(c) Amount	(d) Percentage (1)	c-a	b-d
1923	$5,659,998	4.56%	$ 9,315,000	7.5%	$3,655,002	60.80
1924	6,387,565	4.68	10,237,500	7.5	3,849,935	62.40
1925	6,817,297	4.59	11,137,500	7.5	4,320,203	61.20
1926	7,053,741	4.66	11,362,500	7.5	4,308,759	62.13
1927	7,300,918	4.37	12,525,000	7.5	5,224,082	58.27
1928	8,124,206	4.70	12,110,000	7.0	3,985,794	67.14
1929	10,233,791	5.56	12,880,000	7.0	2,646,209	79.43
1930	9,385,221	5.02	13,098,400	7.0	3,713,179	71.71
1931	8,621,323	4.81	11,641,500	6.5	3,020,177	74.00
1932*	6,821,323	4.09	9,157,500	5.5	2,336,177	74.36
Ttl.	$76,405,383		$113,464,900		$37,059,517	

Sources: Col. (a) (R. IV, 2734; 2973; R. II, 1395-1403).
Col. (c) District Court's Findings 2 and 32 (R. III, 2515, 2521).

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(1) Percentage of Court's Finding of Fair Value.
*Estimated. (See District Court's Finding 31, R. III, 2521.)

Comparison of District Court's Finding of Net Cash Return from Existing Rates With Appellee's Recorded Net Cash Return.

(Referred to in Brief, pp. 14, 456, 496.)

Year	Court's Finding of Net Cash Income From Existing Rates District Court Finding 27 R. III, 2520 a	Recorded Net Cash Return (Supra, 118) b	Difference a-b
1923	$ 6,646,183	$ 5,659,998	$ 986,185
1924	7,483,954	6,387,565	1,096,389
1925	7,880,451	6,817,297	1,063,154
1926	8,052,698	7,053,741	998,957
1927	8,363,580	7,300,918	1,062,662
1928	8,627,760	8,124,206	503,554
1929	10,679,602	10,233,791	445,811
1930	10,138,263	9,385,221	753,042
1931	9,826,299	8,621,323	1,204,976
1932	8,000,000	6,821,323	1,178,677
	$85,698,790	$76,405,383	$9,293,407

District Court's Finding* of Reduction in Net Income from Appellee's Intrastate Business Under Rates Fixed by Illinois Commerce Commission Order of August 16, 1923.

(Referred to in Brief, pp. 456, 487, 494, 496.)

Year.	
1923	$1,541,668
1924	1,550,995
1925	1,582,561
1926	1,650,570
1927	1,677,077
1928	1,713,301
1929	1,740,000
1930	1,645,878
1931	1,433,744
1932	1,270,000
	$15,805,794

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*Court's Findings 28 and 31 (R. III, 2520-1).

Comparison of Appellee's Recorded Net Cash Return With District Court's Finding of Net Cash Income From Rates in Suit.

(Referred to in Brief, pp. 14, 457, 487, 492, 493, 494, 495.)

	Recorded Net Cash Return	Court's Finding of Net Cash Income From Rates in Suit (Ct's. Find. 30)	Difference
1923	$ 5,659,998	$ 5,104,515	$ 555,483
1924	6,387,565	5,932,959	454,606
1925	6,817,297	6,297,890	519,407
1926	7,053,741	6,402,128	651,613
1927	7,300,918	6,686,503	614,415
1928	8,124,206	6,914,459	1,209,747
1929	10,233,791	8,939,602	1,294,189
1930	9,385,221	8,492,385	892,836
1931	8,621,323	8,392,555	228,768
1932	6,821,323	6,750,000	71,323
	$76,405,383	$69,912,996	$6,492,387

Sources: R. IV, 2734, 2968, 2973; R. II, 1395-1403; District Court's Finding 30 (R. III, 2521); (R. IV, 2968).

Rate of Return Found by the Public Utilities Commission in Its Order of December 20, 1920, Revised as Nearly as Possible to Basis of Valuation Used by the District Court.

(Referred to in Brief, pp. 182, 459.)

If Appellee's claimed value as of July 31, 1919, as prepared for the Commission in 1920 were adjusted as nearly as possible to conform with the methods used by the District Court in its Opinion of April 29, 1933, and there were added thereto the net additions to December 31, 1920, the estimated rate of return of 7.9% as found by the commission would be reduced to 4.84%.

The adjustments would be as follows:

(a) Depreciation in valuation increased to 15%.

(b) Overhead percentages not changed but applied to lower values resulting from depreciation adjustment.

(c) Going value reduced to 8% of adjusted value.

(d) Net additions to December 31, 1920, added.

The detailed statement follows.

(O.R. IV, 1287)

	Account.	Reproduction Cost July 31, 1919	Percentage of Depreciation (District Court Finding 6; R. III, 2515-6)	Reproduction Cost Less Depreciation July 31, 1919
1.	Land	$ 1,417,020	0	$ 1,417,020
2.	Buildings	12,469,486	15%	10,599,063
3.	Plant	80,656,990	15%	68,558,442
4.	General equipment and supplies	1,200,923	15%	1,020,784
5.	Construction work in progress*	433,714	0	433,714
6.	Working capital*	2,000,000	0	2,000,000
	Total	$98,178,133		$84,029,023
7.	Preliminary cost .825%			673,161
8.	Engineering cost 3.5%			2,855,836
9.	Administration and legal costs 1.00%			815,953
10.	Interest during construction 13.067%			10,662,059
	Total			$99,036,032
11.	Going value 8% (District Court Finding 7, R. III, 2516)			7,922,883
	Total			$106,958,915

12. Net additions July 31, 1919, to December 31, 1920 (R. VII, 4072A; OR. IV, 1287)...	7,273,820
Grand Total	$114,232,735
13. Net income (O.R. IV, 1305)	$ 5,529,966
14. Average return ...	4.84%

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*Items 5 and 6 are not used in computation of overhead items 7-10.

If the net income as found by the Commission were related to Appellee's claimed reproduction cost less its estimated depreciation as of July 31, 1919, with net additions to December 31, 1920, the indicated rate of return would be 3.91%.

Reproduction cost less depreciation July 31, 1919 (O.R. IV, 1287)..........................	$134,244,007
Net addition July 31, 1919, to December 31, 1920 (R. VII, 4072A; O.R. IV, 1287)........	7,273,820
Reproduction cost less depreciation December 31, 1920	$141,517,827
Amount found available for return under the 1920 P. U. C. order (O.R. IV, 1305).........	$ 5,529,966
Average return	3.91%

RATE RETURN—INTRASTATE TOLL—EXISTING RATES ON APPELLANTS' ADJUSTMENT ON INTRASTATE TOLL SEPARATION.

(Referred to in Brief, pp. 56, 145, 459.)

	1923	1924	1925	1926	1927	1928	1929	1930	1931
(1) District Court's Fair Value (R. III, 2515)......	5,515,000	6,250,000	7,200,000	7,800,000	9,300,000	10,500,000	12,600,000	13,850,000	13,600,000
(2) Net Income under existing rates found by District Court (Findings 9 and 11—R. III, 2516)..	674,172	885,927	1,125,260	1,297,162	1,558,822	1,533,414	1,563,287	1,619,810	1,166,875
(3) Appellants' Intrastate Toll Separation adjustment* (R. VII, 4354a)	482,231	547,619	627,685	739,755	833,826	970,292	1,098,525	1,125,953	991,800
(4) Adjusted Net Income	191,941	338,308	497,575	557,407	724,996	563,122	464,762	493,857	175,075
(5) Rate of return on District Court's Fair Value..	3.5%	5.4%	6.9%	7.1%	7.8%	5.4%	3.7%	3.6%	1.3%

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*The same reasons which render fatally defective the District Court's allocation of Exchange Service revenues render fatally defective also its allocation of Exchange Service revenues to intrastate toll services (R. III, 2528; see Brief, p. 56).

RATE OF RETURN—INTRASTATE TOLL—EXISTING RATES ON DISTRICT COURT'S INTRASTATE TOLL SEPARATION.

(Referred to in Brief, pp. 56, 145.)

	1923	1924	1925	1926	1927	1928	1929	1930	1931
(1) District Court's Fair Value (R. III, 2515)	$5,515,000	$6,250,000	$7,200,000	$7,800,000	$9,300,000	$10,500,000	$12,600,000	$13,850,000	$13,600,000
(2) Net Income Under Existing Rates found by District Court (Findings 9 and 11—R. III, 2516)......	674,172	885,927	1,125,260	1,297,162	1,558,822	1,533,414	1,563,287	1,619,810	1,166,875
(3) Rate of Return on District Court's Fair Value	12.2	14.2	15.6	16.6	16.8	14.6	12.4	11.7	8.6

Appellee's Sales of Capital Stock.

(Referred to in Brief, pp. 182, 462, 480.)

	Total Purchased	Amount Allocable to Chicago Intrastate Business
1923	$ 87,500	$ 55,023
1924	9,912,500	6,265,890
1925	10,000,000	6,303,700
1926	....	....
1927	30,000,000	18,603,000
1928	....	....
1929	20,000,000*	12,073,800
Total	$70,000,000	$43,301,413

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*Installment subscriptions paid for in 1929.

Excluding 1929 Installments.

	Total Purchased	Amount Allocable to Chicago Intrastate Business
Total 1923-1928	$50,000,000	$31,227,613
1929	....	....
1930	40,000,000	23,647,200
Total 1923-1930	$90,000,000	$54,874,813

American Company's Purchases of Appellee's Stock, 1923-1929.

Par value of holdings 12/31/29 (R. VI, 4025)	$109,018,000
Par value of holdings 12/31/22 (R. VI, 4025)	59,308,600
Increase	$ 49,709,400
Installments paid in 1929 (99.11% (R. VI, 4025) of $20,000,000)	19,822,000
Total American Company's purchases	$ 69,531,400
Total American Company's purchases allocable to Chicago Intrastate business (61.86%)	43,012,124

Sources: R. V, 3083; O.R. 2180A-B; R. VIII, 4792 (Ratios).

Amount Available for Surplus Resulting from Appellee's Recorded Intrastate Net Income, After Paying an 8% Cash Dividend.

(Referred to in Brief, p. 462.)

1923	$1,112,267
1924	1,219,213
1925	1,434,654
1926	1,128,269
1927	683,888
1928	824,289
1929	2,327,209
	$8,729,789

Sources: R. II, 1395-1403; R. IV, 2734, 2968, 2973; R. V, 3083.

Appellee's Capitalization as of December 31st.

(Referred to in Brief, p. 477.)

1881	$ 500,000
1883	2,000,000
1892	5,000,000
1901	9,000,000
1902	11,993,400
1903	14,000,000
1907	16,908,500
1908	27,000,000
1916	30,000,000
1917	36,000,000
1918	40,000,000
1921	50,000,000
1922	60,000,000

Source. O.R. VI, 2180A-B.

ESTIMATED RETURN ON APPELLEE'S CAPITAL STOCK ALLOCABLE TO CHICAGO INTRASTATE BUSINESS

1932

(Referred to in Brief, p. 485)

Recorded Net Income, for the year 1931 (supra, 118)		$ 8,621,323
Deduct:		
Loss in Revenues in 1932, found by District Court (Finding 32, R. III, 2521)	$1,800,000	
1931 Interest payments	1,933,783	3,733,783
Net Income available for return for 1932		$ 4,887,540
Average Capital Stock during 1931		$ 87,045,349
Return on Average Capital Stock produced by above net income		5.6%

Recorded Net Income for the year 1931, as shown above	$ 8,621,323
Deduct Loss in Revenues in 1932, shown above	1,800,000
Net Income available for return for 1932	$ 6,821,323
District Court's finding of Fair Value (Finding 2, R. III, 2515)	$166,500,000
Rate of return on District Court's Fair Value	4.1%

RECONCILIATION OF DISTRICT COURT'S FINDINGS ON INTRASTATE REVENUES, EXPENSES, AND RATE OF RETURN

CHICAGO—INTRASTATE BUSINESS

(Referred to in Brief, pp. 7, 354, 456, 488, 493, 495)

	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932
Revenues (R. III, 2395, 2516)	$ 37,146,181	$ 39,653,954	$ 42,560,451	$ 45,932,698	$ 49,163,580	$ 53,677,760	$ 57,279,602	$ 58,698,263	$ 56,426,299	
EXPENSES										
Total claimed by Appellee (R. IV, 2766-72, 2971, 2976)	$ 32,745,403	$ 34,936,713	$ 37,237,731	$ 40,131,389	$ 42,963,951	$ 46,408,412	$ 48,678,611	$ 49,942,995	$ 48,579,524	
Less Plaintiff's claims paid										
Lic. Payment (R. IV, 2725-33)	1,662,014*	1,787,095*	1,901,069*	1,845,571*	1,980,880*	1,036,616*	834,276*	864,131*	834,199*	
Depreciation (R. V, 3145 and R. IV, 2766-74)	5,662,154*	6,382,159*	6,768,618*	7,217,128*	7,608,468*	7,981,108*	8,148,888*	8,581,118*	8,934,628*	
	$ 25,421,235	$ 26,767,459	$ 28,568,044	$ 31,068,690	$ 33,374,603	$ 37,390,688	$ 39,695,447	$ 40,497,746	$ 38,810,697	
Add Court's allowances for										
Depreciation (R. III, 2520)	4,000,000	4,250,000	4,750,000	5,400,000	6,000,000	6,650,000	7,000,000	7,200,000	7,400,000	
License Contract (R. III, 2519-20)	1,088,195	1,156,046	1,369,836	1,412,867	1,422,869	1,005,063	834,276	864,131	834,199	
Less 10% reduction in W. E. Charges to O. Exp. (R. III, 2516, 19)									366,157*	
Adjustment necessary to round off to Court finding	9,430*	3,505*	7,880*	1,557*	2,528	4,249	70,277	1,877*	8,739*	
Total Expense (R. III, 2516)	$ 30,500,000	$ 32,170,000	$ 34,680,000	$ 37,880,000	$ 40,800,000	$ 45,050,000	$ 47,600,000	$ 48,560,000	$ 46,670,000	
Net Income (R. III, 2520)	6,646,183	7,483,954	7,880,451	8,052,698	8,363,580	8,627,760	10,679,602	10,138,263	9,826,299	8,000,000
Reduction in Revenues under Rates in Suit (R. III, 2521)	1,541,668	1,550,995	1,582,561	1,650,570	1,677,077	1,713,301	1,740,000	1,645,878	1,433,744	
Net Income under Rates in Suit (R. III, 2521)	5,104,515	5,932,959	6,297,890	6,402,128	6,686,503	6,914,459	8,939,602	8,492,385	8,392,555	6,750,000
Fair Value (R. III, 2515)	$124,200,000	$136,500,000	$148,500,000	$151,500,000	$167,000,000	$173,000,000	$184,000,000	$187,120,000	$179,100,000	$166,500,000
Rate Earned (R. III, 2521)	5.4%	5.5%	5.3%	5.3%	5.0%	5.0%	5.8%	5.3%	5.5%	4.8%
Rate Earned based on Rates in Suit (R. III, 3522)	4.1%	4.4%	4.2%	4.2%	4.0%	4.0%	4.9%	4.5%	4.7%	4.1%

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*Red figure.

Amounts Available for Surplus on Basis of District Court's Finding of Net Cash Return Under Attacked Rates.

Amounts Appellee Would Carry to Surplus After Paying Interest and Amortization Charges and 8% Dividend on Capital Stock Allocable to Chicago Intrastate Business on Basis of Court's Finding of Net Cash Return Under Rates in Suit.

(Referred to in Brief, p. 488.)

	Surplus Over 8% Dividend	Deficit After 8% Dividend
1923	$ 556,784	
1924	764,607	
1925	915,247	
1926	476,656	
1927	69,473	
1928		$385,458
1929	1,033,020	
1930		253,727
1931		504,662
Totals	$3,815,787	$1,143,847
Net	2,671,940	

Sources: District Court's Finding 30 (R. III, 2521); R. IV, 2748, 2778; R. V, 3083; R. VII, 4077-9, 4075; R. VIII, 4792.

Amounts Available for Surplus on Basis of District Court's Finding of Minimum Cash Return to Avoid Confiscation.

Amounts Appellee Would Carry to Surplus After Paying Interest and Amortization Charges and 8% Dividend on Capital Stock Allocable to Chicago Intrastate Business on Basis of Court's Minimum Cash Return to Avoid Confiscation. (Referred to in Brief, p. 504.)

1923	$ 4,767,269
1924	5,069,148
1925	5,754,857
1926	5,437,028
1927	5,907,970
1928	4,810,083
1929	4,973,418
1930	4,352,288
1931	2,744,283
Total	$43,816,344

Sources: District Court Findings 2 and 32 (R. III, 2515, 2521); R. IV, 2748, 2778; R. V, 3083; R. VII, 4075, 4077-9; R. VIII, 4457-61, 4792.

Appellee's Provisional Estimates.

Appellee's Actual and Estimated Future Net Telephone Earnings Related to Average Book Cost of Plant in Service as States in Provisional Estimate Sent to the American Company.

(Referred to in Brief, p. 505.)

(1) Provisional Estimate of November 14, 1923 (R. VIII, 4590a):

	Net Telephone Earnings to Average Plant in Service	
1922	6.69%	A*
1923	6.37%	A**
1924	6.20%	E
1925	6.49%	E
1926	6.01%	E
1927	5.56%	E
1928	6.82%	E

(2) Provisional Estimate of November 12, 1924 (R. VIII, 4590b):

1923	6.04%	A
1924	6.03%	A**
1925	5.71%	E
1926	6.05%	E
1927	6.13%	E
1928	5.73%	E
1929	5.75%	E

(3) Provincial Estimate of November 12, 1925 (R. VIII, 4590d):

1924	6.18%	A
1925	6.20%	A**
1926	5.69%	E
1927	5.92%	E
1928	5.81%	E
1929	5.91%	E
1930	5.87%	E

(4) Provincial Estimate of November 10, 1926 (R. VIII, 4590f):

			Including Effect of Rate Changes
1925	6.41%	A	
1926	5.93%	A*	5.93%
1927	5.82%	E	5.83%
1928	5.82%	E	6.30%
1929	5.78%	E	6.60%
1930	5.80%	E	6.55%
1931	5.74%	E	6.51%

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*A—Actual.
E—Estimated.
**Estimated for last few months.

(5) Provincial Estimate of November 1, 1927 (R. VIII, 4590h):

			Including Effect of Rate Changes
1926	6.13%	A	
1927	6.12%	A*	6.13%
1928	5.64%	E	5.69%
1929	5.75%	E	5.81%
1930	6.18%	E	6.26%
1931	6.30%	E	6.38%
1932	6.39%	E	6.47%

(6) Provincial Estimate of November 1, 1928 (R. VIII, 4590k):

1927	5.92%	A
1928	6.16%	A*
1929	5.93%	E
1930	6.14%	E
1931	6.31%	E
1932	6.52%	E
1933	6.73%	E

(7) Provisional Estimate of November 8, 1929 (R. VIII, 4590p):

1928	6.20%	A
1929	6.49%	A*
1930	6.34%	E
1931	6.00%	E
1932	6.07%	E
1933	6.41%	E
1934	6.03%	E

(8) Provisional Estimate of November 10, 1930 (R. VIII, 4590t):

1929	6.73%	A
1930	5.98%	A*
1931	5.38%	E
1932	5.57%	E
1933	6.04%	E

***A—Actual.**
E—Estimated.
****Estimated for last few months.**

Difference Between Appellee's Net Income Based on District Court's Required Minimum Return and Based on Average Return Earned by the other Associated Companies.

(Referred to in Brief, p. 506.)

	District Court's Required Minimum Return Less Interest Requirements (A)	Appellee's Income on Basis of Return Earned by the other Associated Companies on Capital and Surplus (B)	Difference (C)
1923..........	$ 7,787,819	$ 2,955,321	$ 4,832,498
1924..........	8,483,678	3,188,938	5,294,740
1925..........	9,284,939	3,757,253	5,527,686
1926..........	9,450,373	4,748,426	4,701,947
1927..........	10,248,655	5,235,621	5,013,034
1928..........	10,230,587	6,725,489	3,505,098
1929..........	10,285,879	6,782,010	3,503,869
1930..........	10,500,531	6,755,133	3,745,398
	$76,272,461	$40,148,191	$36,124,270

Sources: Col. A—Dist. Ct. Findings No. 2 and No. 32 (R. III, 2515, 2521; R. VIII, 4457-61).

Col. B—R. VII, 4362-4a; R. VI, 4027; R. V, 3083-90; R. VIII, 4457-61.

Increase in American Company's Average Capital Stock Holding in the Associated Companies Other Than Appellee.

(Referred to in Brief, p. 472.)

	Par Value	Book Value
1923	$ 74,620,317	$ 75,241,767
1924	90,486,332	93,021,677
1925	137,659,054	151,595,909
1926	148,383,469	146,660,178
1927	86,856,147	94,871,809
1928	161,802,426	170,008,246
1929	102,613,225	108,424,319
1930	153,375,939	154,463,220
	$955,796,909	$994,287,125

Sources: R. VI, 4027; R. VII, 4365-6.

APPELLEE'S INTRASTATE RATE OF RETURN ON APPELLANTS' CONTENTIONS.

(Referred to in Brief, p. 498.)

	1923	1924	1925	1926	1927	1928	1929	1930	1931
1) Total Rate Base (supra, 88).......	$70,303,280	$81,284,072	$92,377,047	$103,940,975	$117,958,532	$131,125,170	$142,367,088	$154,030,558	$158,813,267
2) Net Income under rates in suit (R. III, 2521)	5,104,515	5,932,959	6,297,890	6,402,128	6,686,503	6,914,459	8,939,602	8,492,385	8,392,555
3) Appellants' Contention on Separation of Revenues (Brief, p. 49)...	$ 245,042	$ 262,398	$ 309,505	$ 317,915	$ 354,372	$ 427,655	$ 486,875	$ 472,469	$ 431,580
4) Appellants' Contention on License Contract Payments (Brief, p. 81)..	575,195	591,046	740,836	744,867	709,869	754,063	586,276	613,131	591,199
5) Excess Depreciation expense allowed by Court order over amount allowed by 1923 Comm. order (R. III, 2520; R. VII, 4070a-4071; R. IV, 2734-42) (Brief, p. 378)......	1,522,418	1,199,673	1,260,522	1,817,797	2,486,197	3,143,482	3,450,072	3,313,578	2,485,135
6) Total Adjustments	$ 2,342,655	$ 2,053,117	$ 2,310,863	$ 2,880,579	$ 3,550,438	$ 4,325,200	$ 4,523,223	$ 4,349,178	$ 3,507,914
7) Net income under rates in suit after adjustments	$ 7,447,170	$ 7,986,076	$ 8,608,753	$ 9,282,707	$ 10,236,941	$ 11,239,659	$ 13,462,825	$ 12,841,563	$ 11,900,469
8) Rate of return on above rate base (Line 7÷1)	10.6%	9.8%	9.3%	8.9%	8.7%	8.6%	9.5%	8.3%	7.5%

DIVIDEND RATES OF ASSOCIATED COMPANIES

(Arranged from R. VI, 4026)
(Referred to in Brief, pp. 478, 498, 499)

DIVIDEND RATES.

	22½	9	8	7¾	7½	7¼	7	6½	6¼	6	5	4½	4	3	2½	1	0	Tot.
1914			4				2			5			1				4	16
1915			4				3			2	2						5	16
~~1916~~			~~4~~				~~4~~			~~1~~	~~3~~	~~1~~	~~1~~				~~4~~	~~18~~
1917	1		3				5			1	3				1		3	17
1918			4				5			2	3						4	18
1919			4				5			2	3						4	18
1920			4	1	2		1			3							5	16
1921			7			1	1			2			1				3	15
1922			8				1			2	1						5	17
1923			9	1	1		2	1		2						1	3	20
1924			12		1		2			1				2			2	20
1925			12				2			5							1	20
1926			13			1	1			3			1					19
1927		1	13				1	1		3								19
1928		1	15				3			1								20
1929		1	16				2			1							1	21
1930		1	16				1		1		1		1					21

EXCESS OF APPELLEE'S UNDERSTATEMENT OF NET RETURN (RESULTING FROM FAILURE TO COMPLY WITH 1920 ORDER ON DEPRECIATION) OVER REDUCTION IN RECORDED RETURN RESULTING FROM DISTRICT COURT'S FINDINGS.

(Referred to in Brief, pp. 498-9.)

Year	Recorded Deprecia-tion Charges (Appendix, p. 95) (1)	Depreciation Expense based on 1920 Order (Appendix, p. 95) (2)	Appellee's Under-statement of Recorded Net Cash Return (Col. 1-2) (3)	Appellee's Recorded Net Cash Return (Appendix, p. 121) (4)	Court's Finding of Net Cash Return from Rates in Suit with Dep'n. Exp. adjusted to basis of 1920 Order (Appendix, p. 95, Col. 31, and Appendix, 121) (5)	Reduction in Net Cash Return exclusive of Dep'n. Exp. Adjustment (Col. 4-5) (6)	Excess of Under-statement over Reduction of Net Cash Return (Col. 3-6) (7)
1923	$4,221,515	$2,668,612	$1,552,903	$ 5,659,998	$4,883,000	$ 778,998	$ 775,905
1924	4,469,890	3,133,458	1,336,432	6,387,565	5,713,069	674,496	661,936
1925	5,048,013	3,557,954	1,490,059	6,817,297	5,999,877	817,420	672,639
1926	5,767,372	4,108,871	1,658,501	7,053,741	6,034,756	1,018,985	639,516
1927	6,334,580	4,576,498	1,758,082	7,300,918	6,351,923	948,995	809,087
1928	7,009,065	5,077,556	1,931,509	8,124,206	6,555,394	1,568,812	362,697
1929	7,436,480	5,580,737	1,855,743	10,233,791	8,503,122	1,730,669	125,074
1930	7,864,772	5,906,180	1,958,592	9,385,221	7,827,613	1,557,608	400,984
1931	8,133,289	6,114,329	2,018,960	8,621,323	7,659,266	962,057	1,056,903

PUBLIC UTILITY (OTHER THAN BELL SYSTEM) BOND ISSUES OFFERED IN YEARS 1923-1929 RESOLD IN OPEN MARKET IN YEARS 1923-1929

Showing Per Cent of Number and Amount Selling on Higher Yield on Resale Price Than Yield on Resale Price on Appellee's Bonds.

(Dollars in Thousands)

(Referred to in Brief, p. 475.)

Year	Number of Bond Issues Resold in Open Market	Par Amount of Bond Issues Resold in Open Market	Number of Bond Issues Selling on Higher Yield than Yield on Appellee's Bonds	Par Amount of Bond Issues Selling on Higher Yield than Yield on Appellee's Bonds	Per Cent Par Amount Bond Issues Selling on Higher Yield than Yield on Appellee's Bonds	Per Cent Number Bond Issues Selling on Higher Yield than Yield on Appellee's Bonds
1923[1]	13	$ 131,500	13	$ 131,500	100%	100%
1924[2]	49	503,592	45	449,000	89	92
1925[3]	113	1,420,029	103	1,246,529	88	91
1926[4]	169	1,835,414	163	1,741,414	94	96
1927[5]	218	2,884,406	205	2,622,406	91	94
1928[6]	262	3,709,058	235	3,522,732	94	89
1929[7]	268	3,756,009	250	3,314,098	88	93
Years 1923-1929	1092	$14,240,008	1,014	$13,027,679	91%	92%

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1. R. VII, 4336f.
2. R. VII, 4336g; R. VII, 4336f (1923 bond issues).
3. R. VII, 4336h; R. VII, 4336g (1924 bond issues); R. VII, 4336f (1923 bond issues).
4. R. VII, 4336i; R. VII, 4336h (1925 bond issues); R. VII, 4336g (1924 bond issues); R. VII, 4336f (1923 bond issues).
5. R. VII, 4336j-k; R. VII, 4336i (1926 bond issues); R VII, 4336h (1925 bond issues); R. VII, 4336g (1924 bond issues); R. VII, 4336f (1923 bond issues).
6. R. VII, 4336l; R. VII, 4336j-k (1927 bond issues); R. VII, 4336i (1926 bond issues); R. VII, 4336h (1925 bond issues); R. VII, 4336g (1924 bond issues); R. VII, 4336f (1923 bond issues).
7. R. VII, 4336m; R. VII, 4336l (1928 bond issues); R. VII, 4336j-k (1927 bond issues); R. VII, 4336i (1926 bond issues); R. VII, 4336h (1925 bond issues); R. VII, 4336g (1924 bond issues); R. VII, 4336f (1923 bond issues).

PUBLIC UTILITY (OTHER THAN BELL SYSTEM) BOND ISSUES SOLD DURING PERIOD 1923-1929 UNDER AUTHORIZATION OF PUBLIC SERVICE COMMISSION

Showing Per Cent of Number and Amount on Which Cost Was Higher Than Cost on Other Associated Company's Bond Issues:
(Referred to in Brief, p. 475.)

Year	No. of Issues	Par Amount of Bonds Sold	Number of Bond Issues on Which Cost Was Higher Than Cost on Other Assoc. Co. Bond Issues	Par Amount of Bond Issues on Which Cost Was Higher Than Cost on Other Assoc. Co. Bond Issues	Per Cent Par Amt. on Which Cost Was Higher Than Cost on Other Assoc. Co. Bond Issues	Per Cent Number Bond Issues on Which Cost Was Higher Than Cost on Other Assoc. Co. Bond Issues
1923[2]	11	$115,900,000	10	83,900,000	72%	90%
1924[3]	16	170,000,000	14	133,500,000	78%	87%
1925[4]	8	131,300,000	7	122,300,000	93%	87%
1926[5]	16	184,000,000	16	184,000,000	100%	100%
*						
1929[6]	3	30,500,000	2	20,000,000	66%	66%
	54	$631,700,000	49	543,700,000	86%	90%

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1. R. VII, 4235.
2. R. VII, 4285.
3. R. VII, 4286.
4. R. VII, 4287.
5. R. VII, 4287.

* There were no Associated Company bond issues in 1927 and 1928.

6. R. VII, 4290.

PUBLIC UTILITY (OTHER THAN BELL SYSTEM) BOND ISSUES OFFERED TO PUBLIC DURING PERIOD 1923-1929.

Showing Per Cent of Number and Amount on Which Yield on Offering Price Was Higher Than Yield on Offering Price on Other Associated Company Bond Issues.[1]

(Referred to in Brief, p. 476)

Year	Number of Bond Issues Offered	Par Amount of Bonds Offered	Number of Bond Issues on Which Yield on Offering Price Was Higher Than Yield on Offering Price On Other Assoc. Co. Bond Issues	Par Amt. of Bonds on Which Yield on Offering Price Was Higher Than Yield on Offering Price on Other Assoc. Co. Bond Issues	Per Cent Par Amt. on Which Yield Was Higher Than Yield on Other Assoc. Co. Bond Issues	Per Cent Number of Bond Issues on Which Yield Was Higher Than Yield on Other Assoc. Co. Bond Issues
1923[2]	35	$ 335,688,000	35	$ 335,688,000	100%	100%
1924[3]	55	503,574,000	48	417,074,000	82	87
1925[4]	43	467,937,000	41	428,937,000	91	95
1926[5]	72	882,575,000	72	882,575,000	100	100
*						
1929[6]	36	476,266,000	30	394,250,000	82	83
Period 1923-1929	241	$2,666,040,000	226	$2,458,524,000	92%	93%

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1. R. VII, 4235.
2. R. VII, 4293-5.
3. R. VII, 4295-8.
4. R. VII, 4298-4300.
5. R. VII, 4300-3.
6. R. VII, 4311-13.

* There were no Associated Company bond issues offered to the public in 1927 and 1928.

PUBLIC UTILITY (OTHER THAN BELL SYSTEM) BOND ISSUES OFFERED IN YEARS 1923-1929 RESOLD IN OPEN MARKET IN YEARS 1923-1929.

Showing Per Cent of Number and Amount Selling on Higher Yield on Resale Price Than Average Yield on Resale Price on Other Associated Company Bond Issues.

(Referred to in Brief, p. 476)

(Dollars in Thousands)

Year	Number of Bond Issues Resold in Open Market	Par Amount of Bonds Resold in Open Market	Number of Bond Issues Selling on Higher Yield Than Yield on Other Associated Company Bonds	Par Amount of Bonds Sold on Higher Yield Than Yield on Other Associated Company Bonds	Per Cent Par Amt. Bonds Sold on Higher Yield Than Yield on Other Associated Company Bonds	Per Cent Number Bond Issues Sold on Higher Yield Than Yield on Other Associated Company Bonds
1923[1]	13	$ 131,500	13	$ 131,500	100%	100%
1924[2]	49	503,592	47	466,092	92	96
1925[3]	113	1,420,029	109	1,348,529	95	96
1926[4]	169	1,835,414	164	1,753,914	95	97
1927[5]	218	2,884,406	211	2,721,406	94	96
1928[6]	262	3,709,058	256	3,483,147	94	97
1929[7]	268	3,756,009	240	3,207,582	85	89
Period 1923-1929	1092	$14,240,008	1040	$13,112,170	92%	95%

[1] R. VII, 4336f.

[2] R. VII, 4336g; R. VII, 4336f (1923 bond issues).

[3] R. VII, 4336h; R. VII, 4336g (1924 bond issues); R. VII, 4336f (1923 bond issues).

[4] R. VII, 4336i; R. VII, 4336h (1925 bond issues); R. VII, 4336g (1924 bond issues); R. VII, 4336f (1923 bond issues).

[5] R. VII, 4336j-k; R. VII, 4336i (1926 bond issues); R. VII, 4336h (1925 bond issues); R. VII, 4336g (1924 bond issues); R. VII, 4336f (1923 bond issues).

[6] R. VII, 4336l; R. VII, 4336j-k (1927 bond issues); R. VII, 4336i (1926 bond issues); R. VII, 4336h (1925 bond issues); R. VII, 4336g (1924 bond issues); R. VII, 4336-f (1923 bond issues).

[7] R. VII, 4336m; R. VII, 4336l (1928 bond issues); R. VII, 4336j-k (1927 bond issues); R. VII, 4336i (1926 bond issues); R. VII, 4336h (1925 bond issues); R. VII, 4336g (1924 bond issues); R. VII, 4336f (1923 bond issues).

PUBLIC UTILITY (OTHER THAN BELL SYSTEM) BOND ISSUES OFFERED IN YEARS 1923-1930 RESOLD IN OPEN MARKET IN 1930.

Showing Per Cent of Number and Amount Selling on Higher Yield on Resale Price Than Yield on Resale Price on Appellee's Bonds.

(Referred to in Brief, p. 480)

(Dollars in Thousands)

Year of Public Offering	Number of Bond Issues Resold in 1930	Par Amt. of Bond Issues Resold in 1930	Number of Bond Issues Selling on Higher Yield Than Yield on Appellee's Bonds	Par Amt. of Bond Issues Selling on Higher Yield Than Yield on Appellee's Bonds	Per Cent Par Amt. Bond Issues Selling on Higher Yield Than Yield on Appellee's Bonds	Per Cent Number Bond Issues Selling on Higher Yield Than Yield on Appellee's Bonds
1923[1]	15	$ 147,000	15	$ 147,000	100%	100%
1924[2]	30	299,374	31	259,374	87	93
1925[3]	31	346,637	30	316,637	91	96
1926[4]	56	691,185	54	668,185	96	96
1927[5]	82	1,482,960	71	1,251,460	84	86
1928[6]	49	725,641	46	661,641	91	93
1929[7]	30	379,766	29	369,266	97	96
1930[8]	54	886,379	51	846,879	95	94
Total in 1930	350	$4,958,942	327	$4,520,442	91%	93%

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[1] R. VII, 4336f.
[2] R. VII, 4336g.
[3] R. VII, 4336h.
[4] R. VII, 4336i.
[5] R. VII, 4336j-k.
[6] R. VII, 4336l.
[7] R. VII, 4336m.
[8] R. VII, 4336n.

PUBLIC UTILITY (OTHER THAN BELL SYSTEM) BOND ISSUES OFFERED IN YEARS 1923-1930 RESOLD IN OPEN MARKET IN 1930.

Showing Per Cent of Number and Amount Selling on Higher Yield on Resale Price Than Average Yield on Resale Price of Other Associated Company Bonds.

(Referred to in Brief, p. 481)

(Dollars in Thousands)

Year of Public Offering	Number of Bond Issues Resold in 1930	Par Amount of Bond Issues Resold in 1930	Number of Bond Issues Selling on Higher Yield Than Yield on Other Assoc. Company Bonds	Par Amt. of Bond Issues Selling on Higher Yield Than Yield on Other Assoc. Company Bonds	Per Cent Par Amount Bond Issues Selling on Higher Yield Than Yield on on Other Assoc. Company Bonds	Per Cent Number Bond Issues Selling on Higher Yield Than Yield on on Other Assoc. Company Bonds
1923[1]	15	$ 147,000	15	$ 147,000	100%	100%
1924[2]	33	299,374	33	299,374	100%	100%
1925[3]	31	346,637	31	346,637	100%	100%
1926[4]	56	691,185	55	683,185	98%	98%
1927[5]	82	1,482,960	73	1,266,460	85%	89%
1928[6]	49	725,641	47	696,641	96%	96%
1929[7]	30	379,766	30	379,766	100%	100%
1930[8]	54	886,379	51	846,879	95%	94%
Total in 1930	350	$4,958,942	335	$4,665,942	94%	95%

---

1. R. VII, 4336f.
2. R. VII, 4336g.
3. R. VII, 4336h.
4. R. VII, 4336i.
5. R. VII, 4336j-k.
6. R. VII, 4336l.
7. R. VII, 4336m.
8. R. VII, 4336n.

PUBLIC UTILITY (OTHER THAN BELL SYSTEM) BOND ISSUES OFFERED IN YEARS 1923-1931, INCLUSIVE, RESOLD IN OPEN MARKET IN 1931.

Showing Per Cent of Number and Amount Selling on Higher Yield on Resale Price in 1931 Than Yield on Original Offering Price.
(Referred to in Brief, p. 484)

Year of Issue	Number of Issues Resold in 1931	Par Amount of Bonds Resold in 1931	Number of Issues Selling on Higher Yield in 1931 Than Yield on Offering Price	Par Amount of Bonds Selling on Higher Yield in 1931 Than Yield on Offering Price	Per Cent Par Amount of Issues Selling on Higher Yield in 1931 Than on Offering Price	Per Cent Number Bond Issues Selling on Higher Yield in 1931 Than Yield on Offering Price
1923[1]	10	$ 176,000,000	5	$62,500,000	35%	50%
1924[2]	28	265,874,000	13	101,000,000	37	46
1925[3]	30	350,570,000	19	180,175,000	51	63
1926[4]	54	700,435,000	40	474,935,000	67	74
1927[5]	83	1,566,500,000	66	1,121,360,000	71	79
1928[6]	60	840,252,000	58	816,837,000	97	96
1929[7]	32	428,766,000	28	374,250,000	87	87
1930[8]	56	956,379,000	52	863,879,000	90	92
1931[9]	39	847,484,000	38	747,484,000	88	97
Total 1923-1931	392	$6,132,260,000	319	$4,742,420,000	77%	81%

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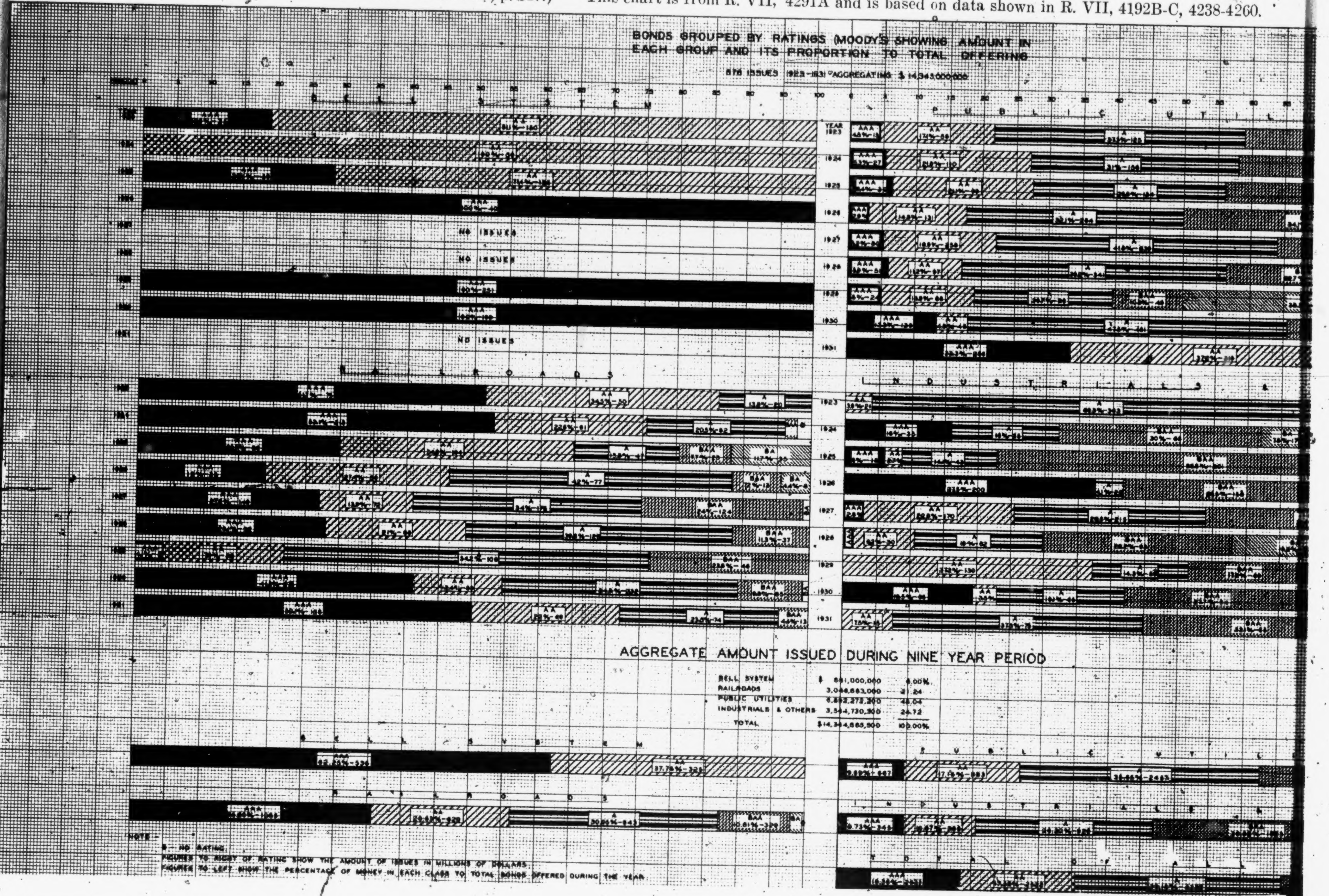
1. R. VII, 4336f.
2. R. VII, 4336g.
3. R. VII, 4336h.
4. R. VII, 4336i.
5. R. VII, 4336j-k.
6. R. VII, 4336l.
7. R. VII, 4336m.
8. R. VII, 4336n.

(Referred to in Brief, p. 517.) This chart is from R. VII, 4291A and is based on data shown in R. VII, 4192B-C, 4238-4260.

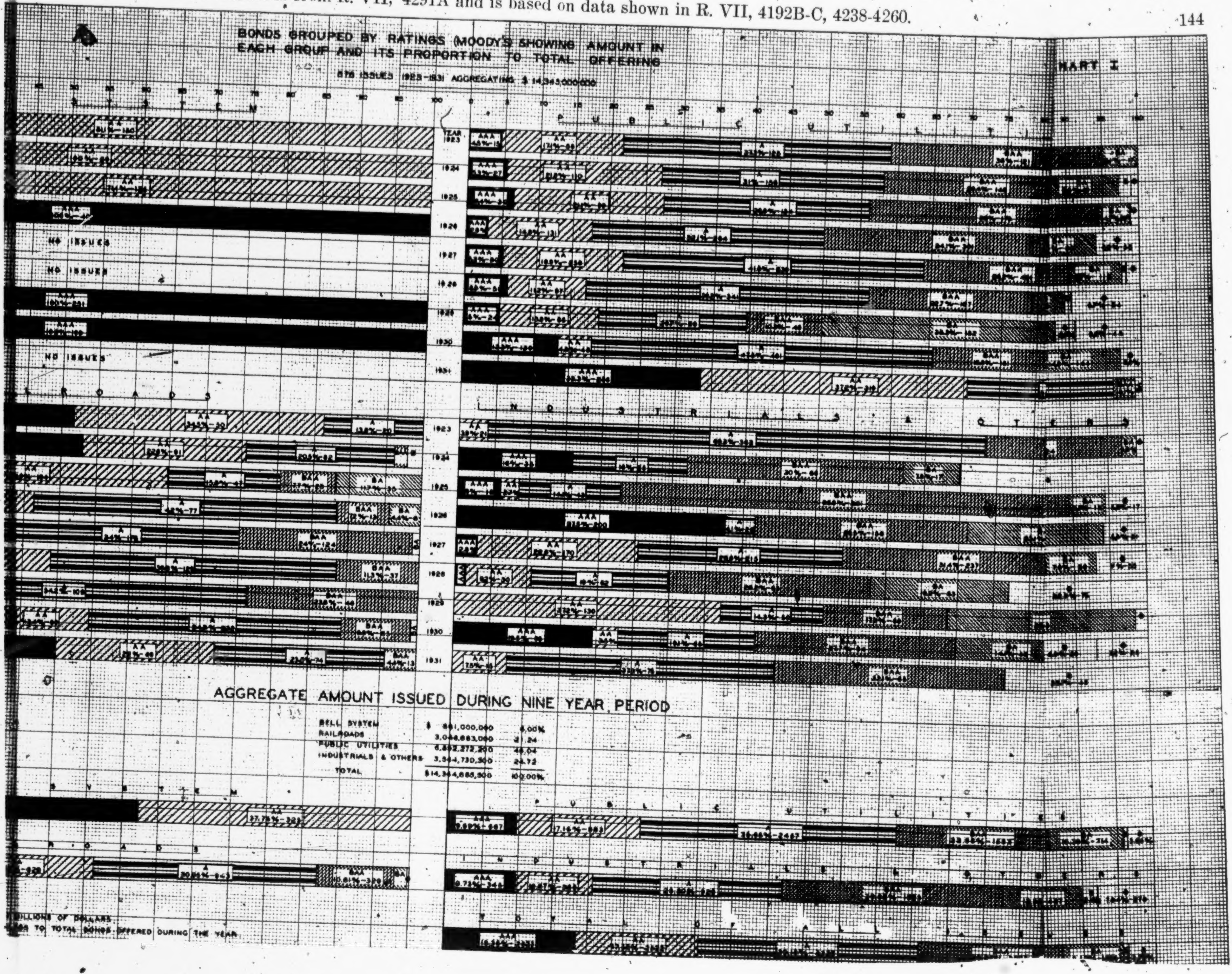


AGGREGATE AMOUNT ISSUED DURING NINE YEAR PERIOD

BELL SYSTEM	$ 861,000,000	6.00%
RAILROADS	3,046,883,000	21.24
PUBLIC UTILITIES	6,892,272,200	48.04
INDUSTRIALS & OTHERS	3,544,730,300	24.72
TOTAL	$14,344,885,500	100.00%

NOTE—
B—NO RATING.
FIGURES TO RIGHT OF RATING SHOW THE AMOUNT OF ISSUES IN MILLIONS OF DOLLARS.
FIGURES TO LEFT SHOW THE PERCENTAGE OF MONEY IN EACH CLASS TO TOTAL BONDS OFFERED DURING THE YEAR.

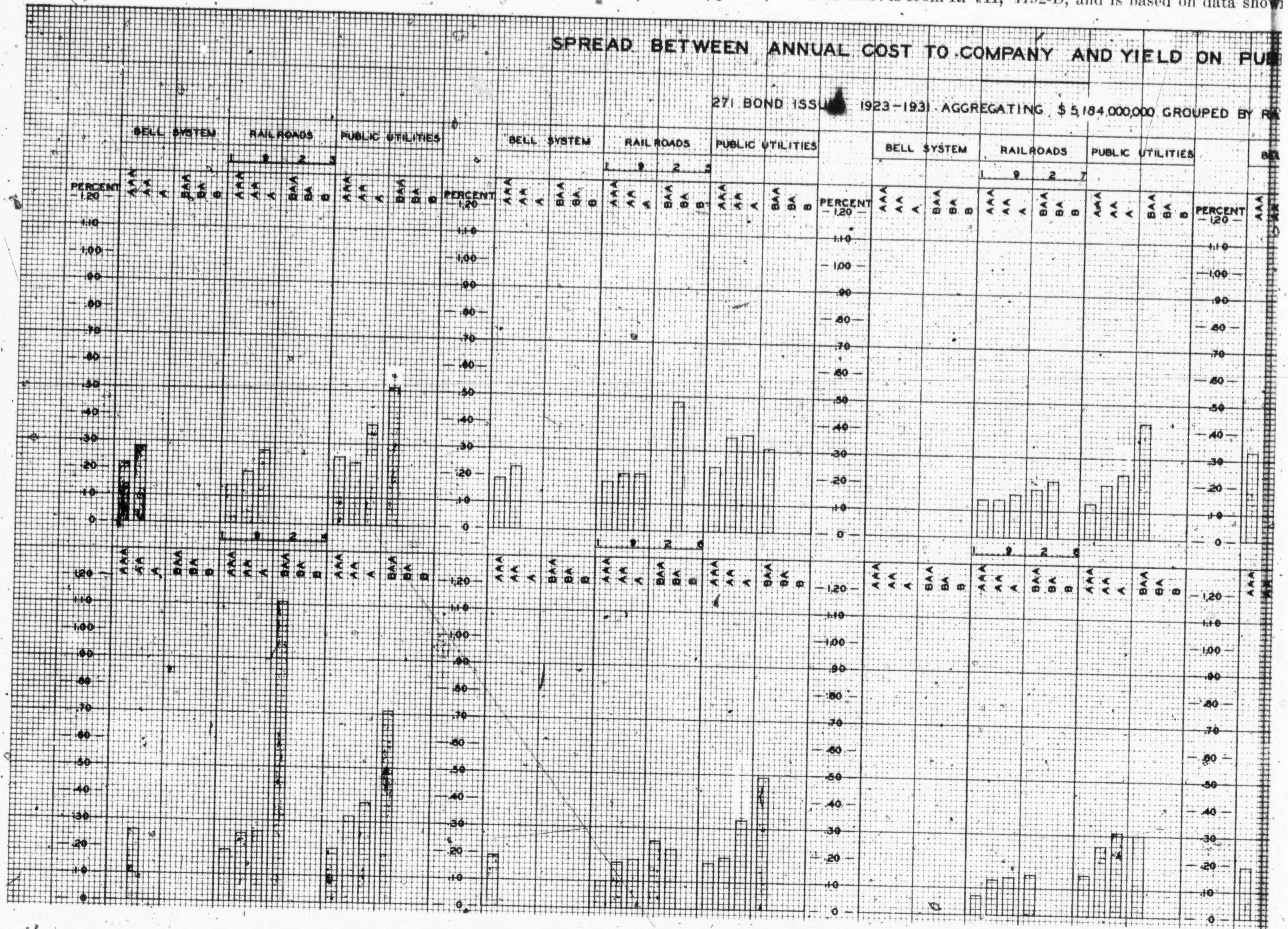
to in Brief, p. 517.) This chart is from R. VII, 4291A and is based on data shown in R. VII, 4192B-C, 4238-4260.



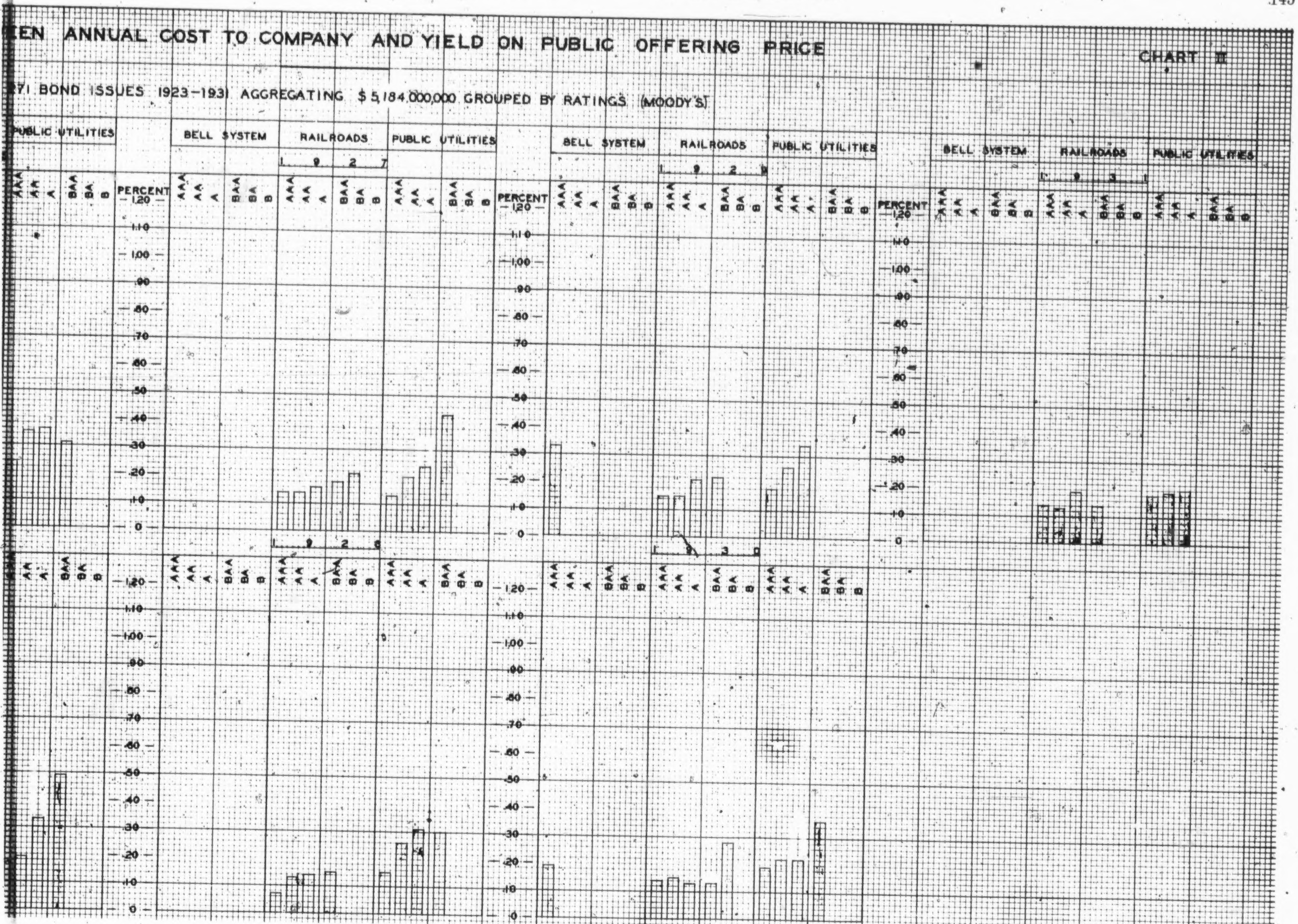
AGGREGATE AMOUNT ISSUED DURING NINE YEAR PERIOD

BELL SYSTEM	$ 861,000,000	6.00%
RAILROADS	3,046,883,000	21.24
PUBLIC UTILITIES	6,892,272,200	48.04
INDUSTRIALS & OTHERS	3,544,730,300	24.72
TOTAL	$14,344,885,500	100.00%

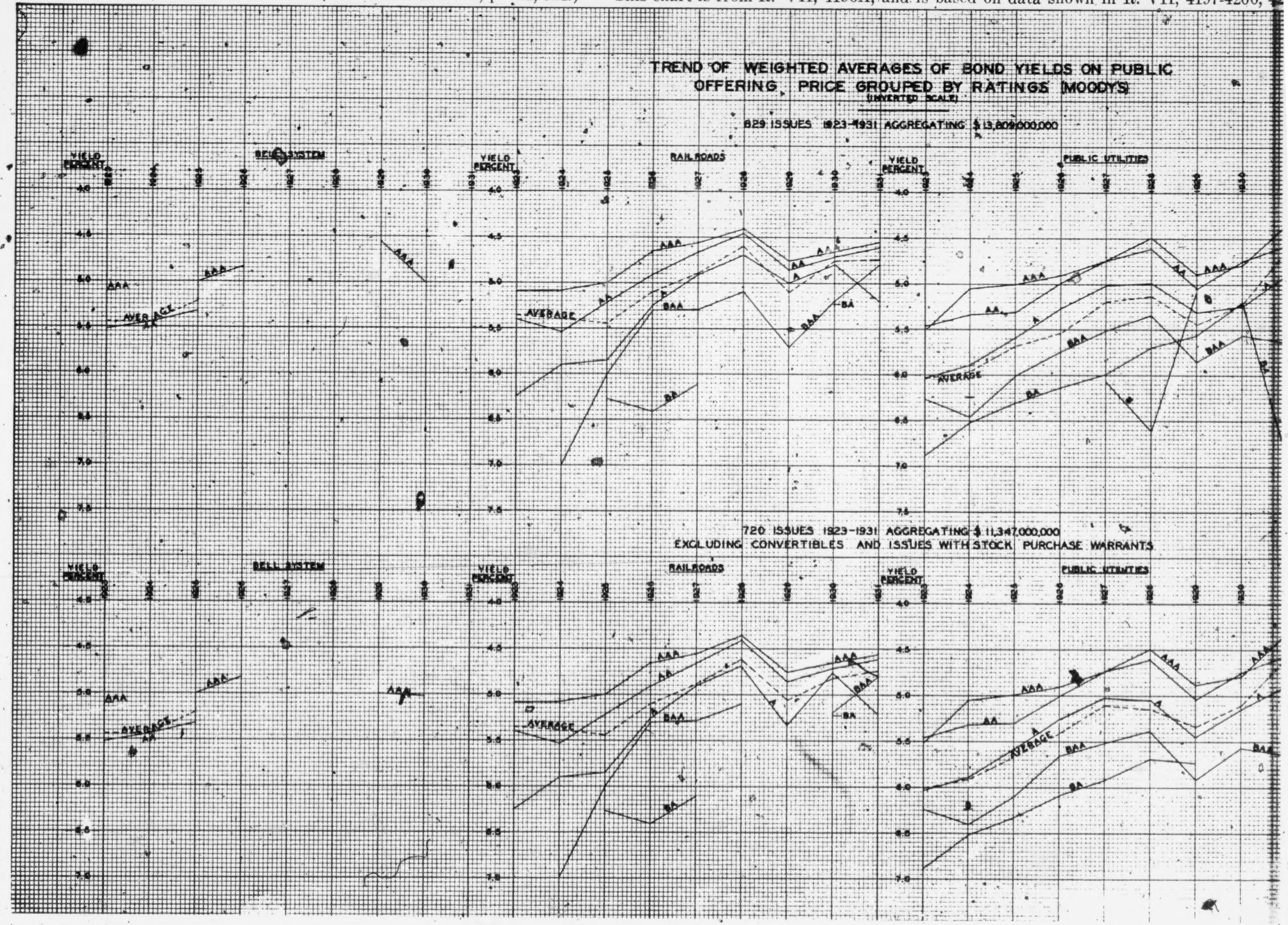
(Referred to in Brief, p. 513.) This chart is from R. VII, 4192-D, and is based on data show



p. 513.) This chart is from R. VII, 4192-D, and is based on data shown in R. VII, 4193-4195, 4235-4243.



(Referred to in Brief, p. 512, 514.)   This chart is from R. VII, 4196A, and is based on data shown in R. VII, 4197-4200, 42



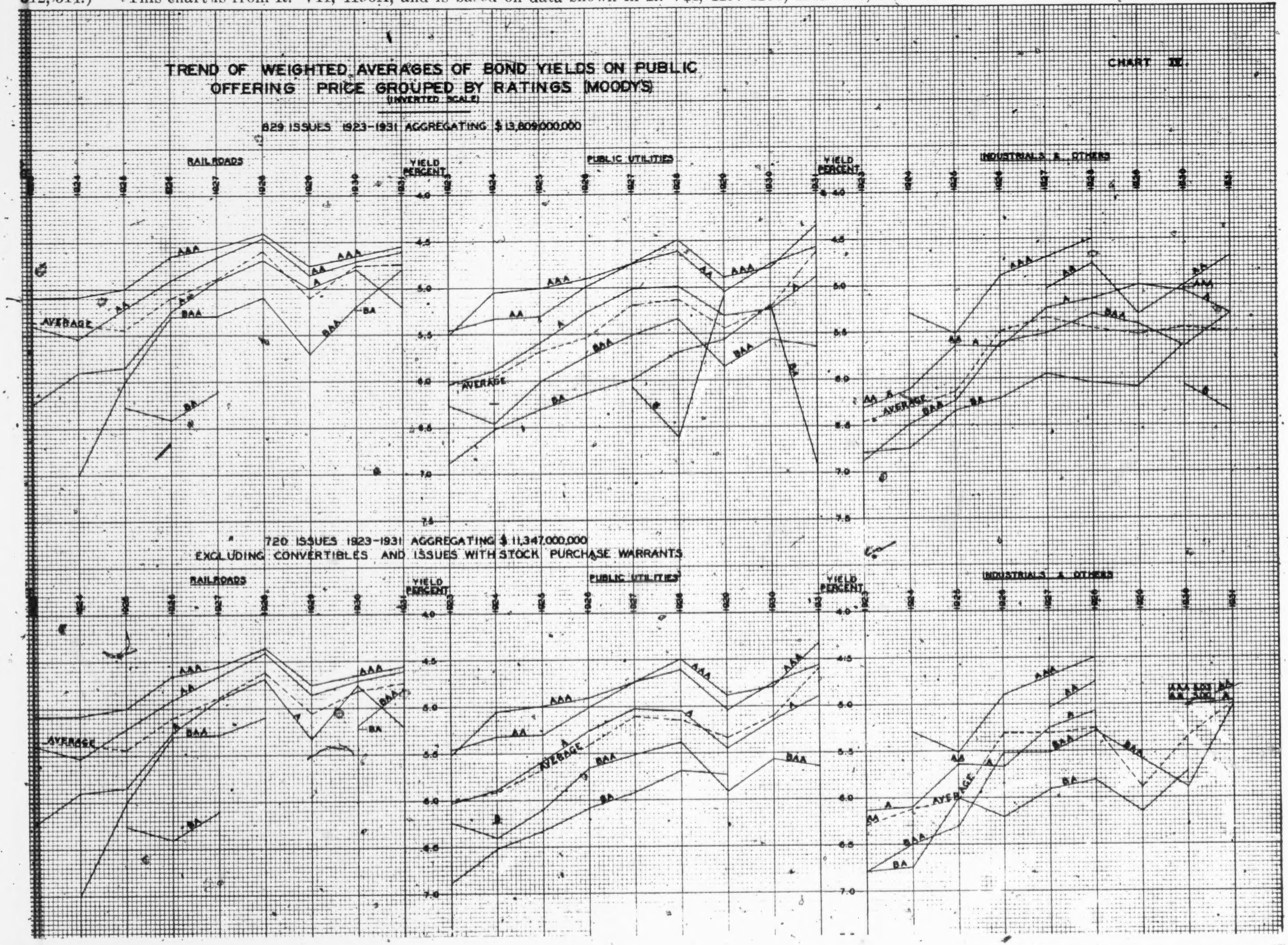
TREND OF WEIGHTED AVERAGES OF BOND YIELDS ON PUBLIC OFFERING PRICE GROUPED BY RATINGS (MOODY'S)

(INVERTED SCALE)

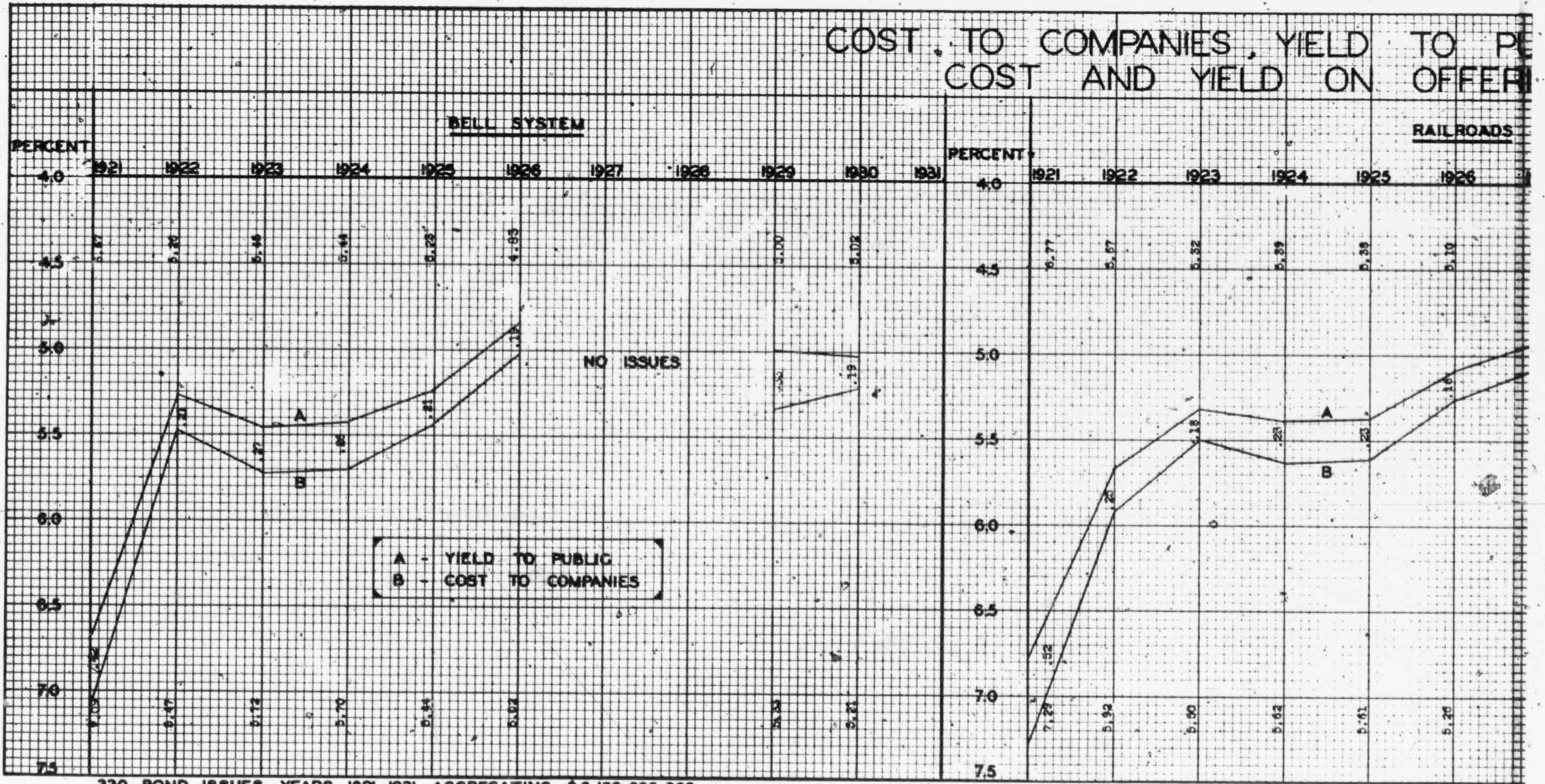
829 ISSUES 1923-1931 AGGREGATING $13,809,000,000

720 ISSUES 1923-1931 AGGREGATING $11,347,000,000
EXCLUDING CONVERTIBLES AND ISSUES WITH STOCK PURCHASE WARRANTS

512, 514.) This chart is from R. VII, 4196A, and is based on data shown in R. VII, 4197-4200, 4245-4260, 4274-4336.

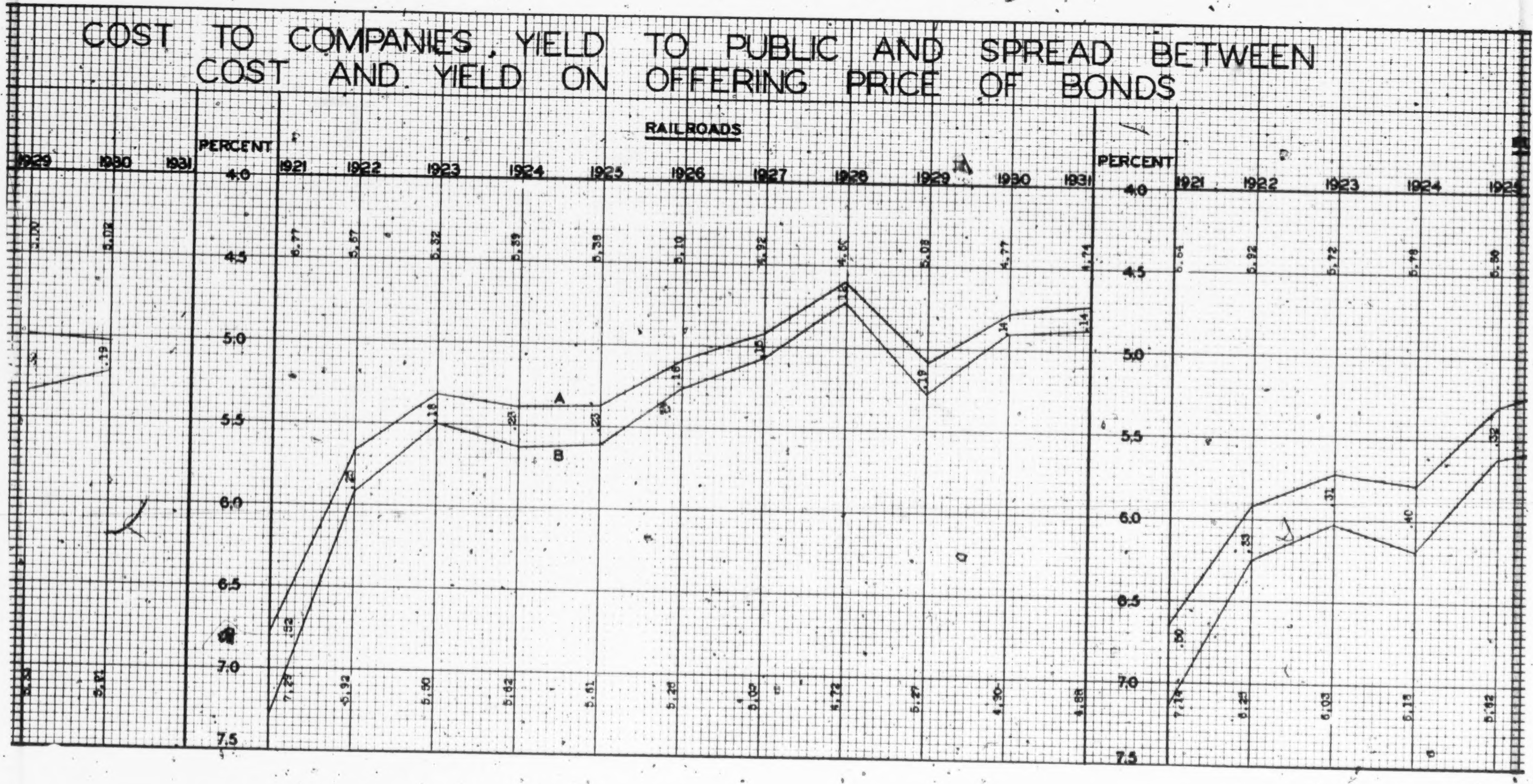


(Referred to in Brief, pp. 476, 511-2.) This chart is from R. VII, 4190A, and



330 BOND ISSUES YEARS 1921-1931 AGGREGATING $6,138,000,000.

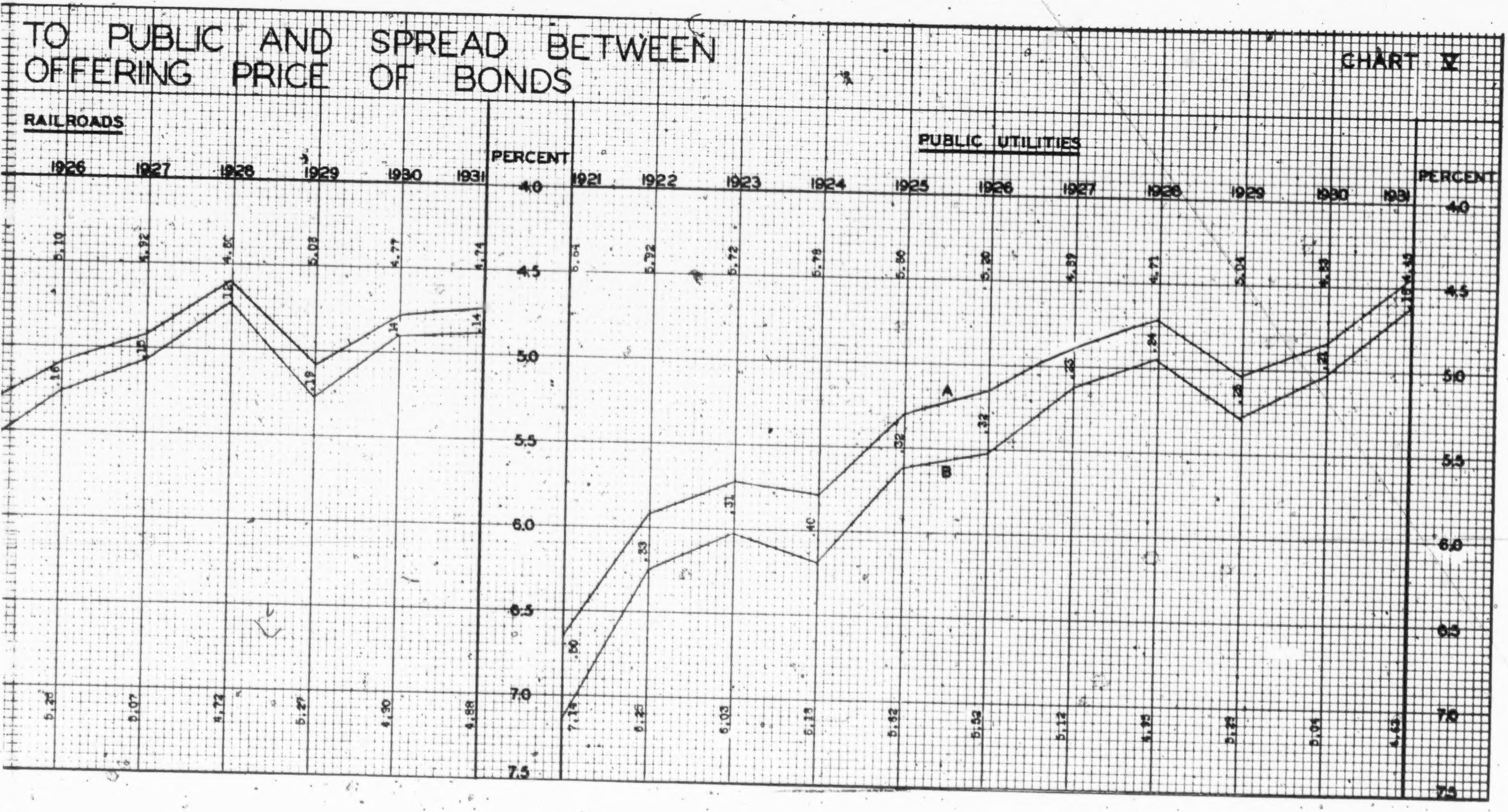
(Referred to in Brief, pp. 476, 511-2.) This chart is from R. VII, 4190A, and is based on data shown in R. VII, 4191, 4197-4200, 4235-4243.



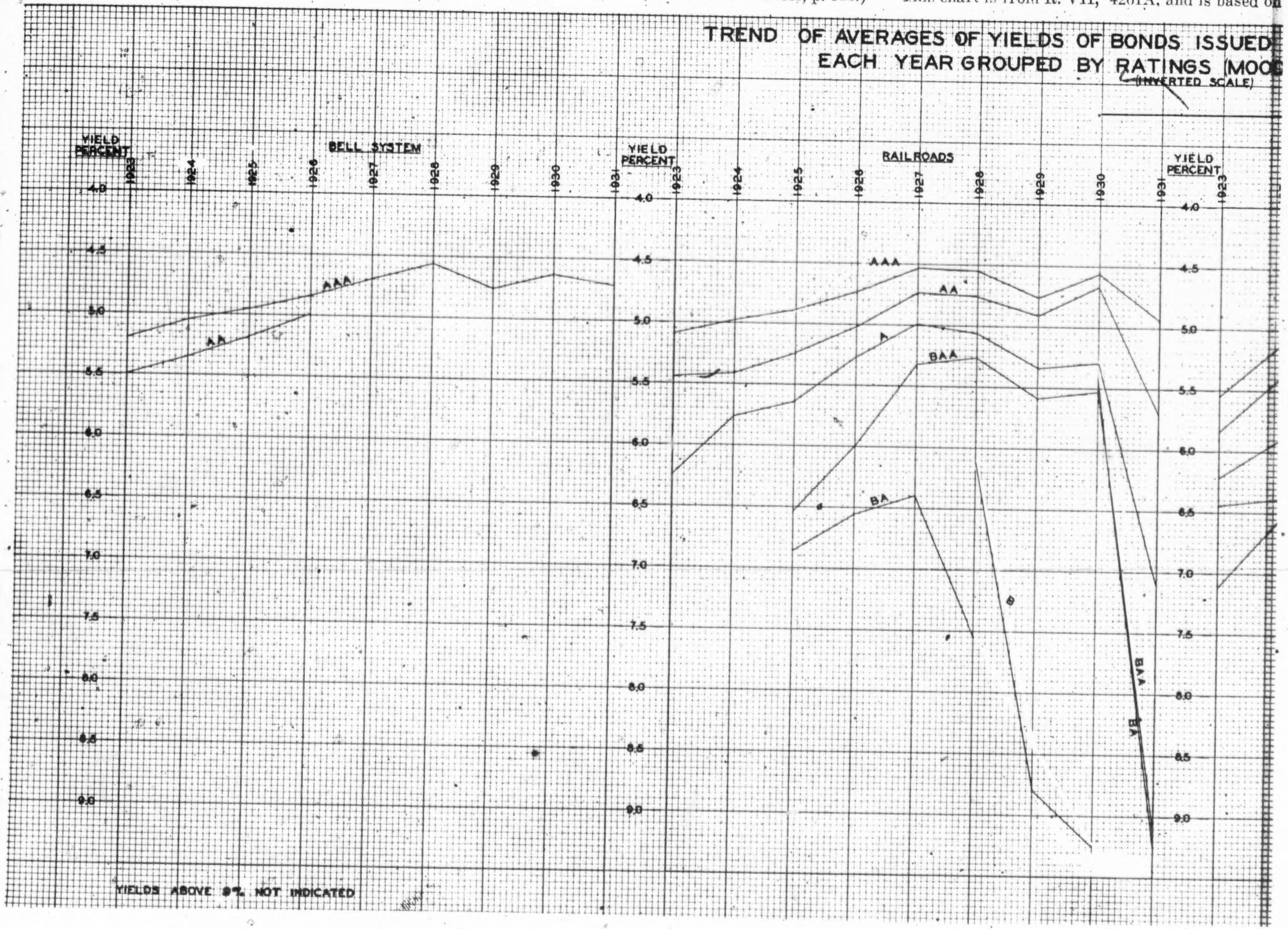
COST TO COMPANIES, YIELD TO PUBLIC AND SPREAD BETWEEN COST AND YIELD ON OFFERING PRICE OF BONDS

RAILROADS

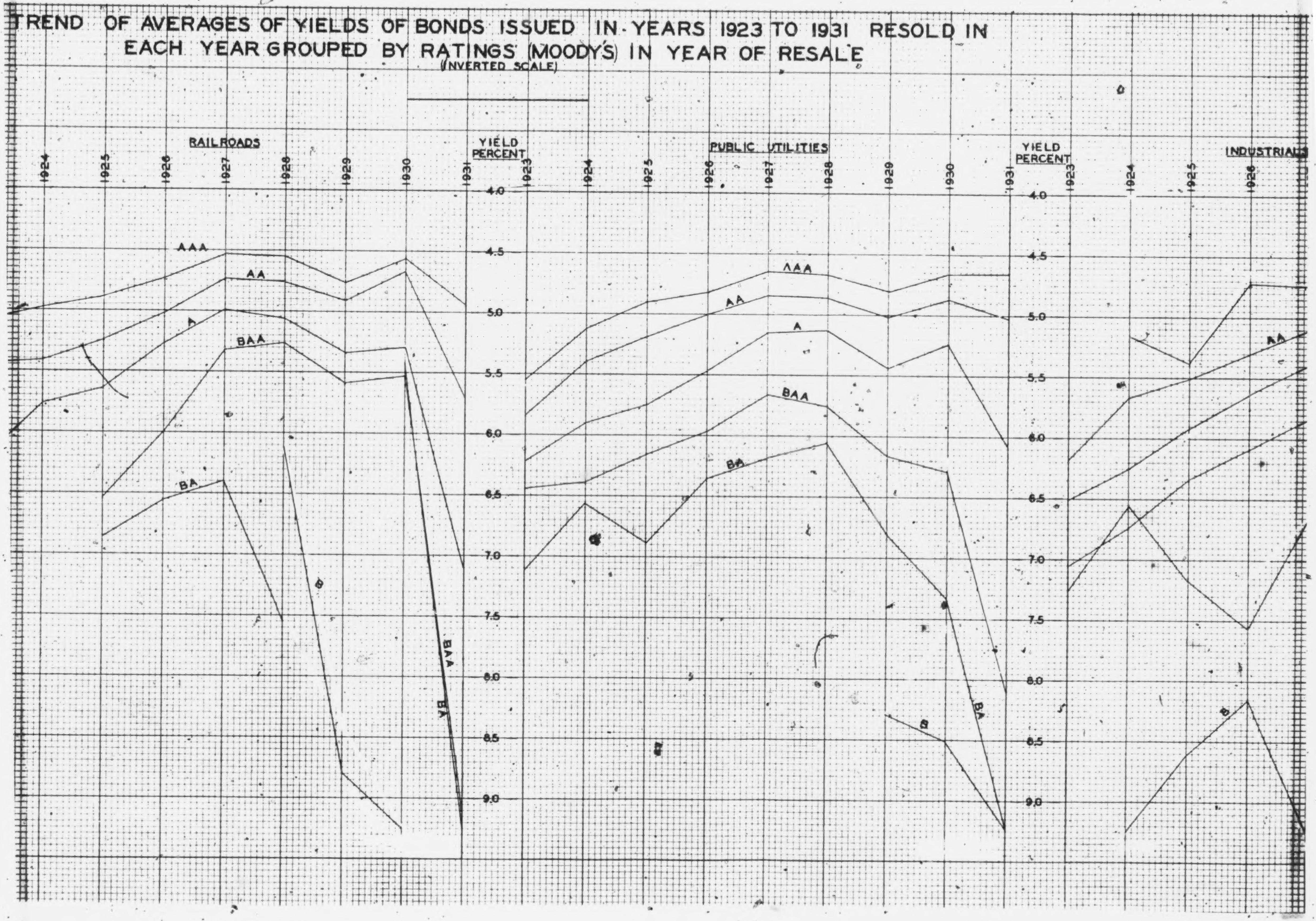
VII, 4190A, and is based on data shown in R. VII, 4191, 4197-4200, 4235-4243.



(Referred to in Brief, p. 516.)   This chart is from R. VII, 4261A, and is based on



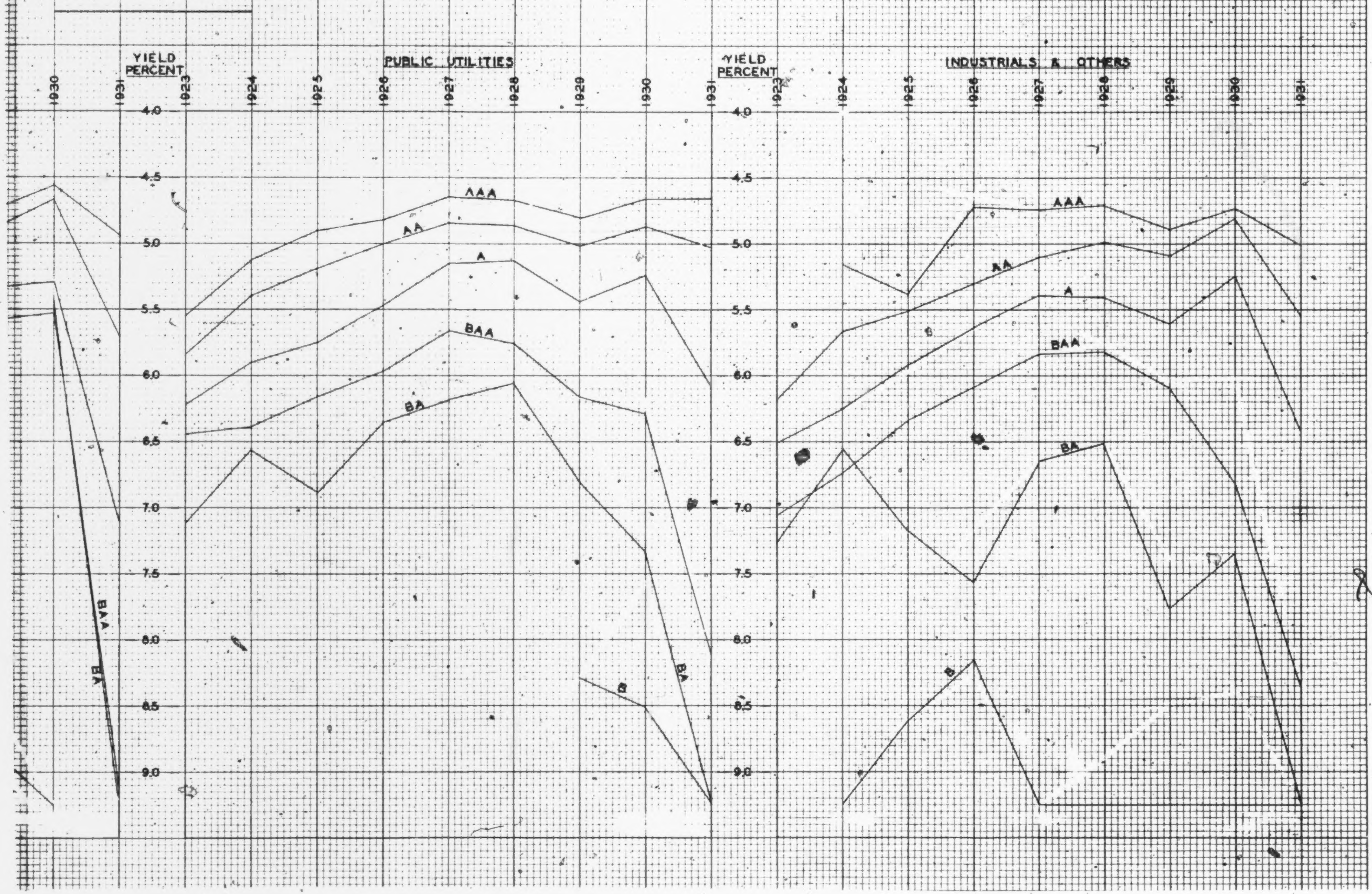
ed to in Brief, p. 516.) This chart is from R. VII, 4261A, and is based on data shown in R. VII, 4216B, 4336a-4340g.



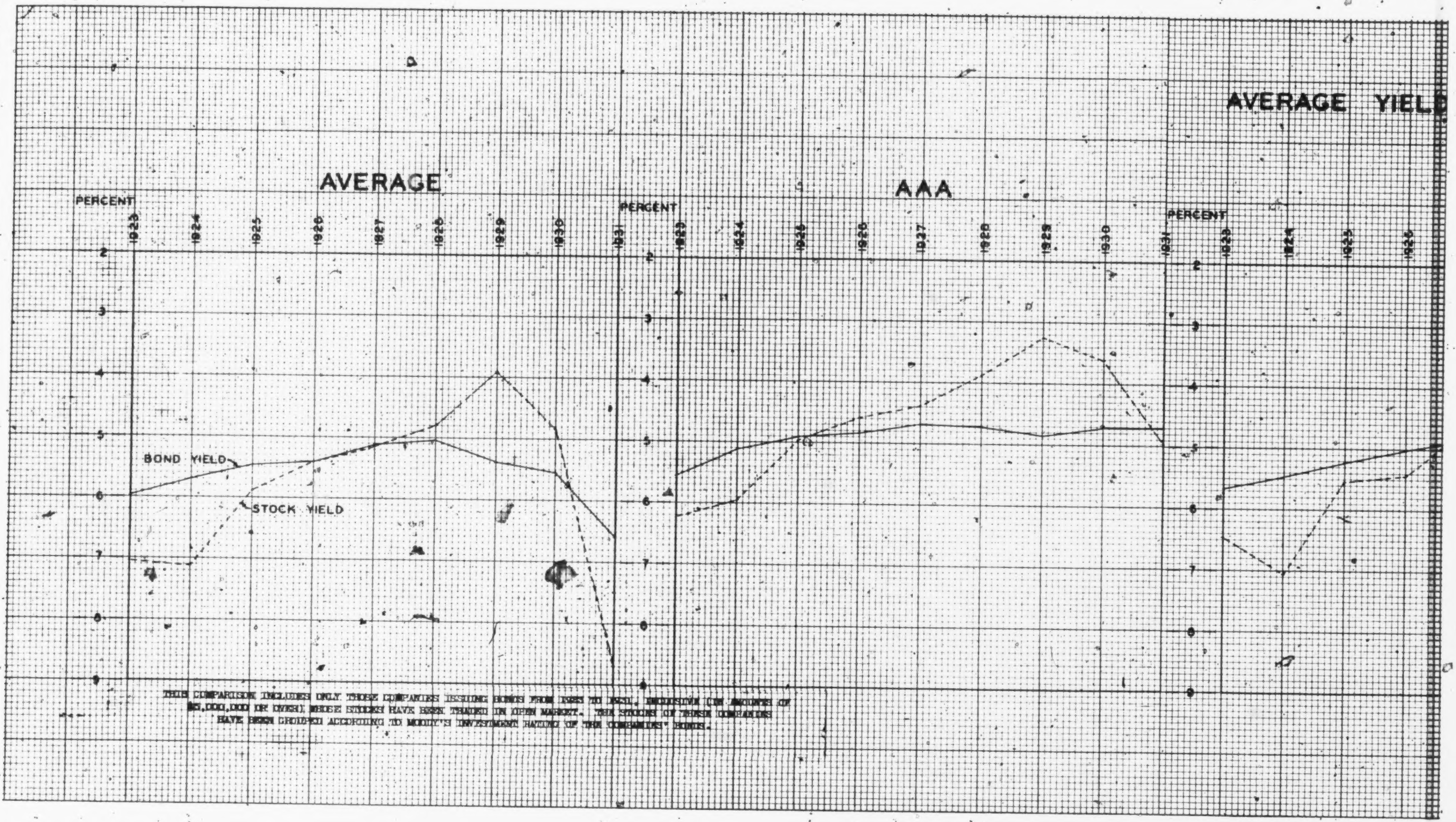
VII, 4261A, and is based on data shown in R. VII, 4216B, 4336a-4340g.

OF BONDS ISSUED IN YEARS 1923 TO 1931 RESOLD IN
BY RATINGS (MOODY'S) IN YEAR OF RESALE
(INVERTED SCALE)

CHART VIII

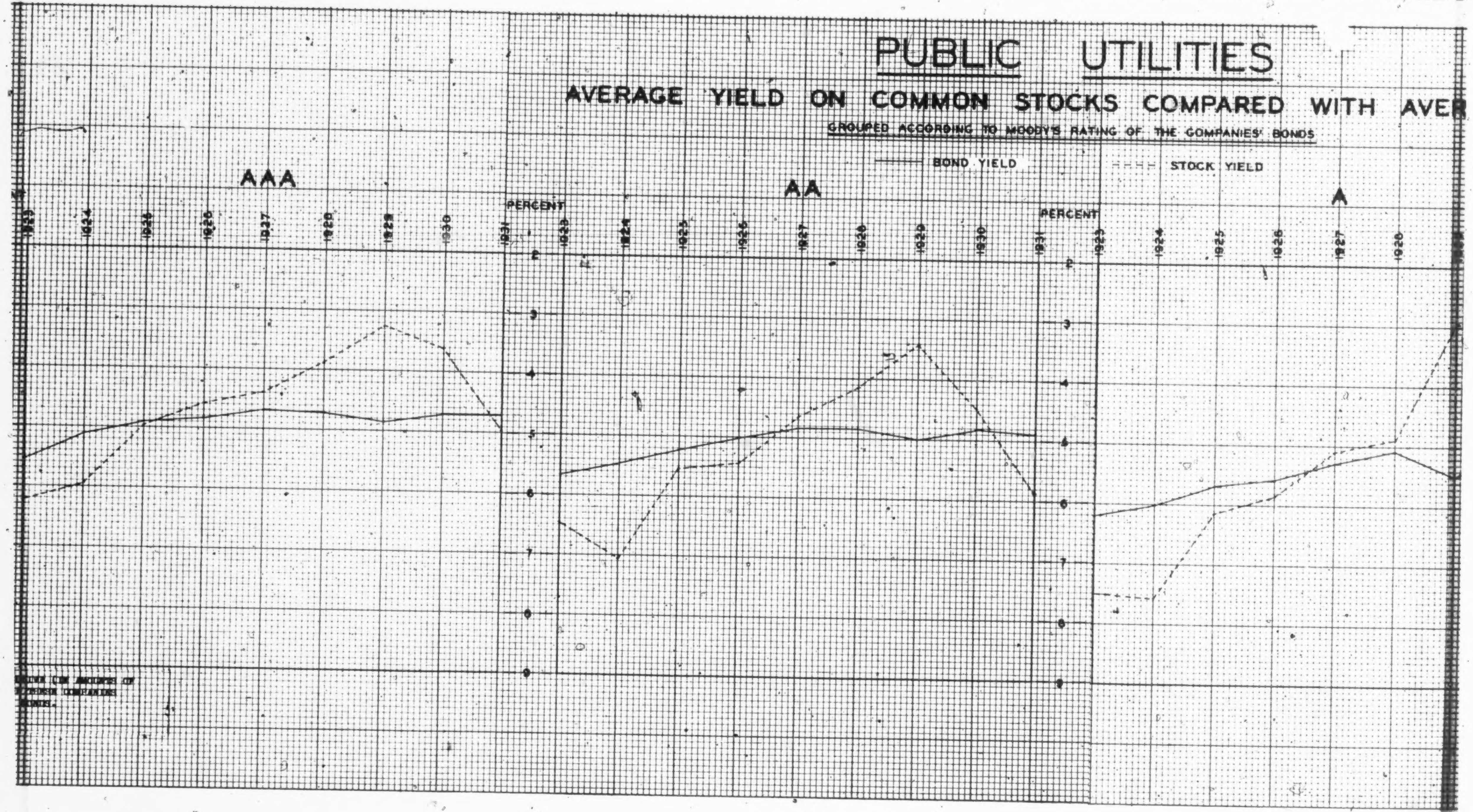


(Referred to in Brief, pp. 519,



THIS COMPARISON INCLUDES ONLY THOSE COMPANIES ISSUING BONDS FROM 1923 TO 1931, INCLUSIVE (IN AMOUNTS OF $5,000,000 OR OVER) WHOSE STOCKS HAVE BEEN TRADED IN OPEN MARKET. THE STOCKS OF THESE COMPANIES HAVE BEEN GROUPED ACCORDING TO MOODY'S INVESTMENT RATING OF THE COMPANIES' BONDS.

(Referred to in Brief, pp. 519, 542.) This chart is from 4218D, and is based on data shown in R. VII, 4219-2



m 4218D, and is based on data shown in R. VII, 4219-21.

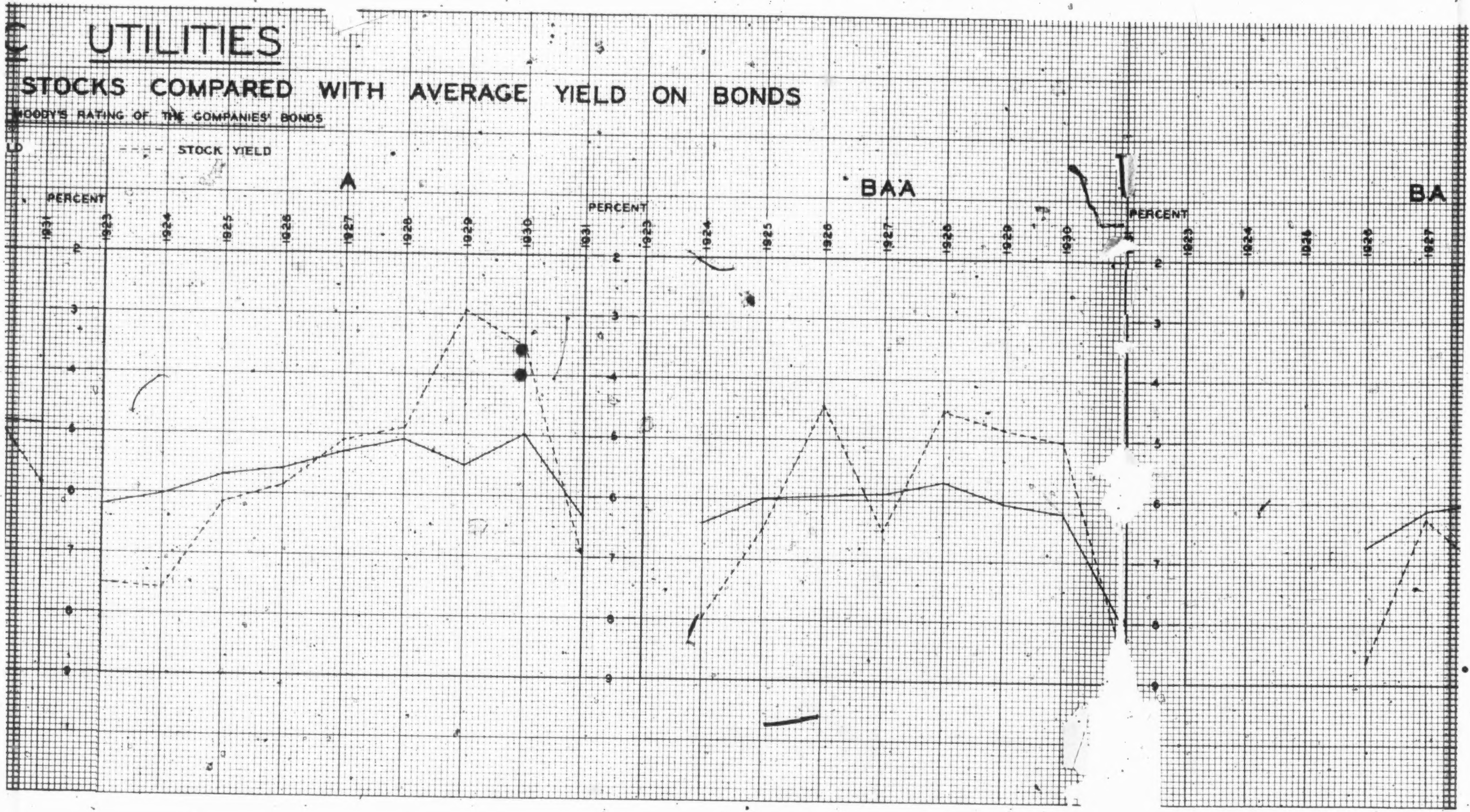
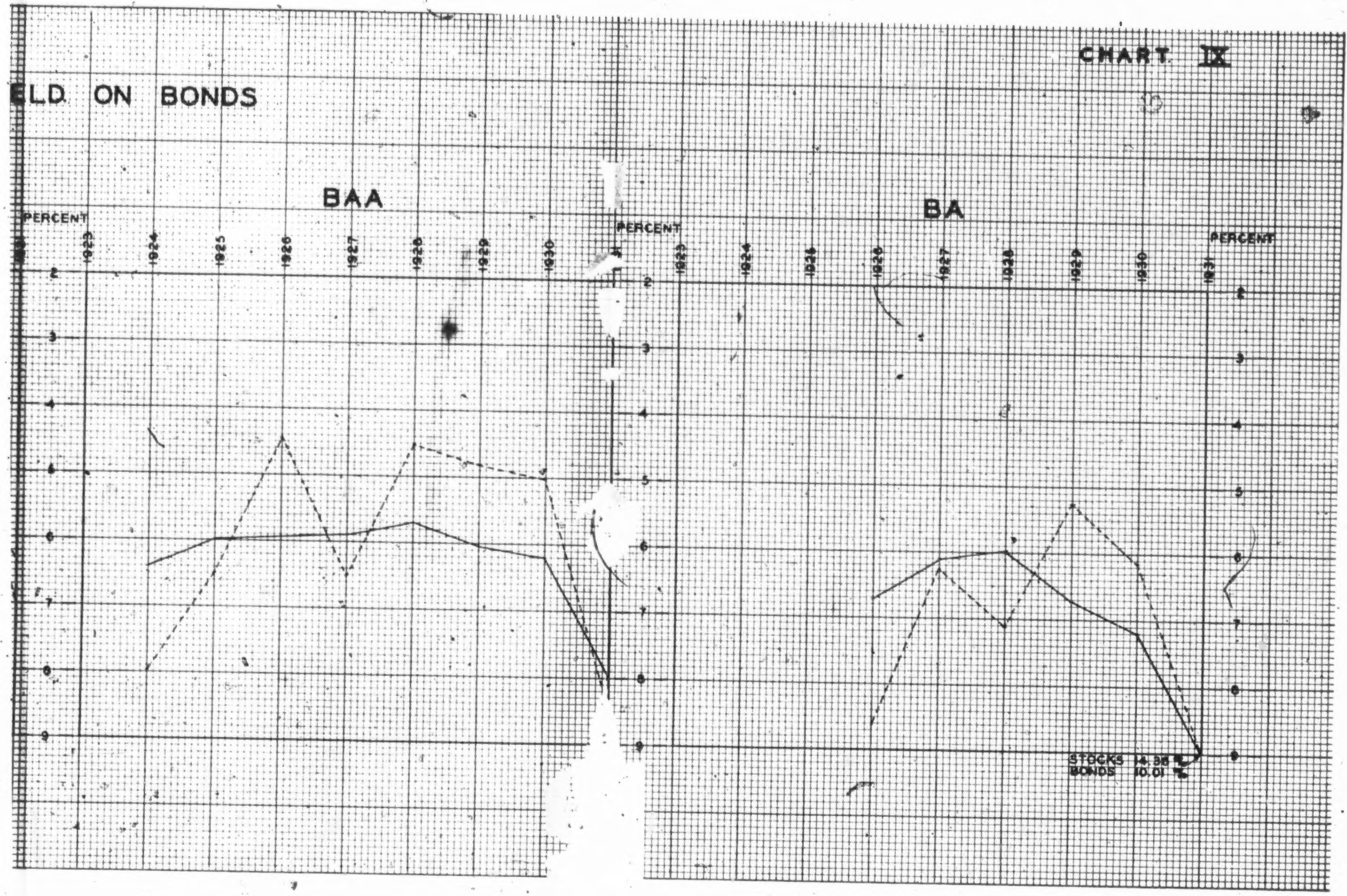


CHART IX


ELD ON BONDS
BAA
BA
PERCENT
1923
1924
1925
1926
1927
1928
1929
1930
1931
2
3
4
5
6
7
8
9
STOCKS 14.98 %
BONDS 10.01 %

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Supreme Court of the United States

OCTOBER TERM, A. D. 1933.

No. 440.

BENJAMIN F. LINDHEIMER, and others, constituting the Illinois Commerce Commission of the State of Illinois, and OTTO KERNER, Attorney General of the State of Illinois, and CITY OF CHICAGO, a municipal corporation,
Appellants,

vs.

ILLINOIS BELL TELEPHONE COMPANY,
Appellee.

BRIEF FOR APPELLEE.

Correction of Appellants' Statement of Case.

The order of the Illinois Commerce Commission of August 16, 1923, here under attack, was not confined to the four classes of coin box telephone service referred to by appellant. The company was cited as to all of its rates in Chicago (O.R. I, 10-11). As a result of this investigation, the Commission fixed the entire rate schedule of plaintiff. It directed that a schedule be filed which should contain the same rates and charges then on file with it except for the four classes of coin box service (O.R. I, 45). The rates for these four classes of coin box service affect a substantial part of the service of plaintiff in Chicago (R. IV, 2786).

These coin boxes are in private residences and places of business and are not public pay stations.

On page 7 of their brief, defendants state that the operating expenses were reduced in the year 1931 by $366,000. Defendants are apparently referring to the reduction in expenses resulting from the refusal of the court to give full effect to the Western Electric Company's prices in 19[illegible]. The effect of the court's reduction in this respect was $67,167 for the last two months of 1930, $332,470 for the year 1931, and an equal amount for the year 1932 (Ex. X-400, R. VIII, 4779, 4780; Ex. A-61, R. IV, 278).

The statutory court refused to give effect to Western Electric Company prices for telephone apparatus which were in effect subsequent to November, 1930, and thus reduced the valuation of plaintiff's property for each of the years 1930, 1931 and 1932 (R. VIII, 4943). The amount of this reduction was 10.2 per cent. and defendants have applied such reduction to the entire reproduction cost estimate instead of to the telephone apparatus included in such estimate.

50 per cent. of the cost to reproduce plaintiff's property in any year consists of materials purchased from Western (R. II, 1314). 59 per cent. of plaintiff's purchases from Western during the period 1923 to 1931 consists of telephone apparatus (R. I, 335). Therefore, only 29.5 per cent. of the total cost of reproduction is affected by this action of the court.

The defendants show the effect of these reductions on the infrastate portion of the plaintiff's property to have been about $20,000,000 as of December 31st for each of the years 1930 and 1931. These figures can be calculated from the tables appearing at page 86 of the appendix to the defendants' brief as appellants. The correct figures are set forth at page 25 of this brief, *infra,* and are approximately $5,600,000 annually before depreciating the same in accordance with the court's findings.

The District Court did not find the fair value of the property upon the basis of plaintiff's presentation subject to the four adjustments mentioned by defendants in their statement of the case. The tables at pages 24 and 25 of this brief show this.

On page 9 of appellants' statement of the case they say that the amounts of exchange service revenue apportioned to interstate service range from $260,000 to $650,000 per year. Their own exhibit, to which they refer in this connection (Exhibit X-271, R. VII, 4354A), shows that the net effect of this separation under the rates in suit ranges from $245,000 to $486,000 in each of the years 1923 to 1931. That is, this separation has decreased the net income available for return on the intrastate business by these amounts.

The defendants state on page 14 of their brief that the earnings as found by the statutory court under the rates in suit were lower than the earnings under the existing rates as recorded on the books of the company by amounts ranging from $71,000 to $1,294,000. These figures were obtained by defendants by comparing the court's findings of net income under the rates in suit as adjusted by the court with the net income actually recorded by plaintiff on its books under the existing rates without adjustment. These figures do not measure the effect of the reduction in plaintiff's revenues which would have resulted if the rates fixed by the Commission had become effective. Such reductions are correctly stated in defendants' brief at page 7, as ranging from a low of $1,270,000 in the year 1932 to a high of $1,740,000 in 1929.

Summary of Argument.

Reduction in Plaintiff's Net Earnings which would have Resulted if Rates in Suit had been in Effect.

There is no dispute between the parties as to the reduction in plaintiff's net earnings which would have resulted from the imposition of the telephone rates complained of. The amount of that reduction is found by the District Court in its Finding of Fact 28, and varies in the several years 1923 to 1931 from a minimum of $1,433,000 to a maximum of $1,740,000. There is no assignment of error to this finding by plaintiff or by the defendants.

This reduction stated as a percentage of plaintiff's net earnings under the existing rates as found by the District Court is for each of the years of the case:

1923	23.2%	1926	20.5%	1929	16.3%
1924	20.7%	1927	20.1%	1930	16.2%
1925	20.1%	1928	19.9%	1931	14.6%

Interstate and Intrastate Separation.

Plaintiff made a complete and careful separation of its property, revenues and expenses as between its interstate and intrastate business on the basis of use, in accordance with this court's opinion. That separation was accepted by the District Court and the findings are based upon it.

It is stipulated that the separation of the property is correct and the separation of expenses is not questioned.

The separation of revenues as between the interstate and intrastate business, as found by the District Court in accordance with the plaintiff's proof, is disputed by the defendants. The undisputed evidence shows that plaintiff's exchange rates cover and compensate for all use of the local property, including the use for toll calls, both interstate and intrastate, and that the charge made for toll calls covers only the use of the toll plant as distinguished from the exchange plant. Consequently a portion of the exchange revenue on the basis of use must be allocated to the interstate business, along with the similar allocation of exchange property and expenses.

The net amount of revenue allocated to the interstate business on this account varies in the several years from a minimum of $245,000 to a maximum of $486,000, increasing gradually over the period to 1929 and falling off somewhat in 1930 and 1931 on account of the depression.

We understand the defendants to concede that if any separation of revenues is proper the amounts as stated are correct.

Valuation.

The District Court's findings of the average fair value of the property for each year of the case are contested by both plaintiff and the defendants.

There is no claim that any of the property was not used and useful in the public service.

The District Court made separate findings of the cost of the property, the amount of construction work in progress, cash working capital, and materials and supplies. None of these amounts are in dispute.

Reproduction Cost New Appraisal of Structural Elements. Plaintiff introduced in evidence an appraisal of the reproduction cost new of its property as of December 31st of each of the years 1923 to 1931. (The trial began in February, 1932, hence no similar appraisal for that year could be made.) Defendants did not present any reproduction cost estimate of the property nor any appraisal thereof. They criticize the method of plaintiff's appraisal.

The method by which plaintiff's reproduction cost new appraisals were made was the same in all essential respects as that which had been used by the company in the commission case, which was accepted by the commission and was the basis of the commission's finding of the reproduction cost new of the property as of December 31, 1922. The method used was to convert the cost of the property, as accurately recorded in the plant accounts, to the costs current for such property on the date of the appraisal. This method was shown to be as accurate as if the appraisal had been based upon a complete field inventory. It was approved by the District Court upon the first trial and the defendants' criticisms were held to be without merit. Defendants assigned error upon the former appeal to this court. In its opinion upon the former appeal this court did not discuss or pass upon the questions thus raised with respect to plaintiff's appraisal, for the reason that the defendants' assignment of error in this respect was abandoned in their brief in this court. The method is again approved by the District Court in its present opinion and the defendants have again assigned error, which they now urge upon the present appeal.

The wage rates used by plaintiff in making the appraisal in each year were the actual wage rates being paid at the time.

Substantially all of the materials (apparatus, equipment and lead covered cable manufactured by the Western Electric Company, and other materials) were purchased from the Western Electric Company, the manufacturing and supply "department" of the Bell System. These materials represent roughly one-half of the total cost and total value of the property. The prices currently charged by the Western Electric Company in each year were used in the appraisal. These prices are shown to have been reasonable at all times and less than market prices for comparable materials. Several very substantial reductions in prices were made by the Western Electric Company during the years of the case, whereas the general level of commodity prices was practically constant until the depression began at the end of 1929.

As bearing upon the reasonableness of Western Electric Company's prices to plaintiff this court directed the District Court to inquire into and find the profits earned by the Western Electric Company upon its sales to the Bell System Companies and to plaintiff. That branch of the case is the subject of a separate section of this brief and will be referred to again later herein, where it is shown that these profits were never more than reasonable and on the average were very low.

The District Court undervalued the property for each of the years 1930, 1931 and 1932 to the extent of more than $4,750,000 by reducing the prices of Western Electric Company applied to the appraisal in those years. This action of the court was unwarranted. The court found that Western's prices in those years were lower than the market prices for comparable things and lower than Western's prices to independent telephone companies and others for the same things. It also found that Western's earnings were very low in 1930 and 1931 and that it would sustain a loss of more than $6,000,000 in 1932. Hence the court could not reduce the prices either upon the basis of a comparison with market prices or upon the basis of undue profits. There was no justification for the reduction.

For the years 1931 and 1932 the court made an additional reduction amounting to more than $14,000,000 for 1931 and more than $23,000,000 for 1932. These reductions were made by the court upon the basis of the general decline in property values due to the general business stagnation, of which the court took judicial notice. The record shows that these reductions were without justification in the circumstances of this case, in view of the fact that Western's prices had been repeatedly reduced by large amounts during the period from 1923 to 1929, while general prices maintained an even level, and shows that Western's prices used in the reproduction appraisal in each of those years were reasonable.

Going value. The District Court appraised the element of going value at 8 per cent. of the reproduction cost new of the property in each year. This finding is accepted by plaintiff but contested by the defendants. The only evidence of the amount of going value is that introduced by plaintiff, which shows an amount in each year equal to 15 per cent. of the reproduction cost new of the physical property. Defendants did not introduce any evidence to dispute this estimate, and such testimony as defendants' witnesses gave upon the subject does not contradict but tends to support the testimony of plaintiff's witness. The evidence would sustain a much larger amount than was found by the District Court.

Existing depreciation in the property. With respect to the actual existing depreciation in the property to be deducted from the reproduction cost new, the District Court found that 16 per cent. of the reproduction cost new should be deducted for the years 1923 to 1928, and 15 per cent. for the succeeding years. This finding is assigned as error in this court by both plaintiff and defendants.

Plaintiff's testimony shows that the property was in 91 per cent. condition, or 9 per cent. depreciated from condition new, for the years 1923 to 1928, and 92 per cent. condition for the succeeding years. Plaintiff's estimate was based upon careful and accurate inspections of the property. The defendants made no inspection and gave no estimate.

Plaintiff's witnesses took into account all existing depreciation, both physical and functional. This evidence is wholly uncontradicted. There is nothing in the record to sustain the District Court's finding or to support any amount in excess of that shown by plaintiff. As a result of this error on the part of the court below, plaintiff's property was undervalued in each year by amounts ranging from $9,000,000 to $13,000,000.

The position of the defendants upon the trial and upon this appeal is that the depreciation reserve, being first raised to the level of the reproduction cost new of the property in each year, should be deducted in order to arrive at a "fair rate base value." Their contention does not go to the fair value of the property, but is predicated upon alleged principles of equity. They propose to deduct the reserve for depreciation in lieu of the actual depreciation existing in the property. They characterize the District Court's finding as "a compromise fiat" and as being purely arbitrary.

The "equitable adjustment" proposed by the defendants is fully discussed in the argument herein, *infra*, page 51, *et seq.*

Profits and Prices of the Western Electric Company.

Western Electric Company, in which the American Company has owned more than 97 per cent. of the common stock since its organization in 1915, is engaged chiefly in the manufacture of telephone apparatus and lead covered cable and in the purchase of supplies manufactured by others and in their sale to the Bell Associate Companies.

Western is, in effect, the manufacturing department of the Bell System and the companies comprising that system have bought substantially all of their telephone apparatus, cable and supplies from Western.

90 per cent. of Western's manufactures and 82 per cent. of its total sales, including supplies, were sold during the period 1916 to 1931 to Western's Bell customers.

The statutory court found that Western's prices to plaintiff and its other Bell customers have been lower during the entire period 1916 to 1932 than prices charged by other manufacturers for comparable materials, and lower than prices charged by Western to independent telephone companies and others for the same materials. Commencing in 1921, Western made substantial reductions in prices charged to its Bell customers for telephone apparatus and the court found that as a result of these reductions the level of Western's prices for telephone apparatus at the end of 1929 was only 58.3 per cent. of what it had been on December 31, 1920. These reductions were made in pursuance of Western's policy, which was to make reductions whenever reasonable profits in its Bell business could be made at lower prices. During this period general price levels remained substantially unchanged.

It also found that Western's profits on sales for the period 1916 to 1932 were 4.5 per cent. and for the period 1923 to 1932, 4.7 per cent.; that its earnings on average investment were 5.9 per cent. and 6.1 per cent. for the same periods, and on average investment less the amount of the depreciation reserve were 7.6 per cent. and 8 per cent. for such respective periods; that Western had made no unreasonable or unfair profit in any of its dealings with the plaintiff; and that all of its telephone apparatus, lead covered cable and supplies were sold to plaintiff at reasonable prices; except for the price increase made in 1930, which the court eliminated from its calculations.

Western's profits are related to its "average investment." The court found that such average investment included its plant and manufacturing facilities, merchandise, receivables and cash less current accounts payable, all at cost to Western, except merchandise, which is cost or market, whichever is lower; that there was not included in Western's average investment any amount for patents, good will, development expense or going concern value; that a large part of Western's manufacturing plant and facilities have been constructed by it for less than they could have been purchased by others and these savings reflected in its average investment; that Western's factories are advantageously located, and well designed and equipped for efficient and economical operation; that the operating costs of Western are low and its products of a high standard.

The court also found that Western's earnings on its average investment in its Bell business, and on its investment less the amount of its depreciation reserve, have been substantially one-third lower than those of other large manufacturing companies whose risks and hazards make them fairly comparable with Western; that its rate of profit on sales in its Bell business, as distinguished from earnings on investment, has been less than one-half the rate of profit made on sales by other large comparable manufacturers.

The statutory court further found that Western develops apparatus and equipment for the present and future needs of all the Bell Associate Companies which are engaged in rendering a uniform and nation-wide telephone service through plants engineered and constructed along similar lines. Because of these facts, Western's total earnings on its investment and its profit on sales in its total Bell business are a fair basis for determining the reasonableness of Western's earnings in its dealings with the plaintiff. It further found that the sales of Western to plaintiff for its entire business and for use in its Chicago area had been a reasonably fair and representative cross-section of the total sales of Western to its Bell customers.

It found that Western has no sales expense and no credit risk involved in its Bell business; that by receiving advance estimates from the Bell Associate Companies of their requirements it is able to plan its manufacturing more efficiently and economically; but that these factors, which result in reducing Western's costs, are not advantages retained by Western, since the reductions in costs are passed on by it in prices charged to its Bell customers.

All the foregoing findings of the District Court are sustained by clear and convincing testimony and were made after a most thorough and searching investigation of the entire business affairs of Western and its subsidiaries. It is clearly shown that the entire Western Electric relationship has been of substantial advantage to the plaintiff and the other Bell Associate Companies and that no unreasonable profit has been made by Western in any of its dealings with the plaintiff.

It is claimed by the defendants that Western has unduly burdened its Bell business by failing to allocate to six companies with which it had dealings, some of them being subsidiaries and others independent, their proper proportion of Western's development and research expenses, and by failing to credit to Western's Bell business the proper portion of the royalties or value received by Western from them. These criticisms are fully refuted by the evidence. Defendants likewise challenge the apportionments made by

Western in arriving at its investment in and costs incident to its Bell business. These apportionments are shown to have been properly made.

Revenues and Expenses.

A. Revenues.

There is no dispute with respect to the revenues of plaintiff except upon the one point involved in the separation of revenues as between the interstate and intrastate business, referred to in connection with the separation, *supra,* page 4.

B. Expenses.

Three items of expenses as found by the district court are in dispute, namely, in all years, the annual allowance for depreciation expense and the payment to the American Telephone and Telegraph Company for services rendered pursuant to the license contract, and in the years 1930, 1931 and 1932, the disallowance of a part of the cost of materials for current maintenance purchased from Western Electric Company.

1. The Annual Allowance for Depreciation Expense.

The evidence shows that plaintiff in the regular course of business charges depreciation expense monthly at rates separately determined for the several classes of depreciable property, upon the straight line basis of depreciation expense accounting prescribed by the commission's system of accounts. These rates have been carefully and correctly determined and the charges are shown to be correct upon the straight line method. In the accounting upon the books the charges are based upon the cost of the property, and the rates and the amounts charged are shown. Plaintiff also recomputed the charges upon the basis of the replacement value of the property by applying the book depreciation rates to the replacement value. The amounts so computed represent the allowance to which plaintiff is entitled under the law.

The evidence shows that plaintiff's depreciation rates throughout the period have been lower than the average for all operating companies of the Bell System.

The district court's finding for this item is less than the amount charged on the books, by sums ranging from $200,000 to $700,000 in the several years, and is less than the amount shown by plaintiff as computed upon the replacement value of the property by amounts ranging from $1,100,000 to $2,100,000 in the several years.

Both plaintiff and defendants complain of the finding of the district court.

Plaintiff's evidence is entitled to full credit and should be accepted. Defendants' witnesses made some criticism of this evidence, but their criticisms are shown to be without substantial merit. Defendants did not present any depreciation rates or any estimate of proper charges. They contend chiefly that the amount allowed by the commission in the 1920 rate order, which fixed the existing telephone rates, and the amount similarly allowed in the 1923 order, which fixed the telephone rates in suit, are controlling as a matter of law, and that it was error for the district court to allow any greater or other amounts. Their position in this respect is shown to be without foundation in law or in fact.

2. License Contract Payments.

During the period covered by this suit the American Telephone & Telegraph Company furnished to the plaintiff and to 23 other operating telephone companies, known as the Associate or Licensee Companies, licenses to use the patents and patent rights of the American Company and also engineering, financial and other advisory services. During a part of the period in question, from 1923 to January 1, 1928, in addition to the foregoing, the American Company furnished to the Associate Companies all the telephone transmitters, receivers and induction coils required in their business and maintained them in first-class operating condition.

These services, commonly referred to in the industry and in this case as License Contract services, were furnished under two contracts, one made in 1919 and the other in 1930, both being continuations and renewals of a License Contract agreement originally entered into in 1881.

Plaintiff and each of the other Associate Companies paid for these services a percentage of their gross revenues. The percentage was 4½ per cent. in the years 1923, 1924 and 1925; 4 per cent. for 1926 and 1927; at the end of 1927 the American Company ceased to furnish the receivers, transmitters and induction coils and the rate was reduced 2 per cent. There was a further reduction to 1½ per cent. on January 1, 1929 and that rate was continued throughout the years 1929, 1930, 1931 and 1932.

It was found by the court below upon the first trial, and was not questioned then or since, that the services which the plaintiff received under the License Contract were necessary to it and could not have been obtained on as favorable terms elsewhere. For this reason, and without inquiring into the cost to the American Company of furnishing the services, the court below sustained the License Contract upon the first trial.

Upon appeal to this court, the case was sent back for findings of the cost to the American Company of rendering the License Contract services, among other things.

Upon the second trial those costs were shown in great detail. It was also shown that the American Company continued to render to the plaintiff the same valuable License Contract services which were shown upon the first trial.

The court below found the costs to the American Company and the amounts thereof which should be allocated to the operating expenses of the intrastate business of the Illinois Company for each of the years 1923 to 1931, inclusive.

The starting point of this proof was the mass of detailed records of the American Company, which showed every dollar spent and the purpose for which it was spent. There was no attack or criticism upon any of these figures. The figures required allocations in some cases, however, to determine the License Contract costs. These were made by the persons most familiar with the subjects and most capable of making them.

All, or practically all, of the primary facts shown by plaintiff's witnesses were accepted by the court; but the amounts allowed for License Contract costs aggregated $3,357,997 less than those claimed by plaintiff. This was due principally to the fact that certain items of expense or loss actually incurred by the American Company and found by the court, such as taxes, etc., were disallowed as part of the License Contract costs.

The court below, moreover, did not allow as operating expenses either the actual payments made by plaintiff to the American Company or the amount which it found to be the fair share of the costs of the American Company allocable to plaintiff. Instead, the court allowed in each particular year the cost or payment, whichever was lower.

Plaintiff has accepted the primary facts found by the court below, but has assigned error to its exclusion of taxes, etc., from the License Contract costs of the American Company, and to its restriction of the allowance to such cost or the payment, whichever was lower.

Defendants have made more than 27 assignments of error to the primary determinations of the court. These assignments consist principally of allegations that credits claimed by defendants were not offset against the admitted expenditures of the American Company.

The claimed credits aggregate a very large sum. The proof shows that the claims are unfounded, and shows that except to a small fraction thereof they are impossible. These claims are refuted in the argument herein, but they are of such a nature that it is not feasible to make a helpful summary of the argument within a reasonable compass.

3. Maintenance Expense Adjustment for 1930, 1931 and 1932.

A part of plaintiff's purchases of materials from the Western Electric Company is for current maintenance chargeable as an expense of operation. We have already referred to the District Court's action in reducing Western's prices, and thus reducing the appraisal of the property, in the years 1930, 1931 and 1932. The same price reduction was applied by the court to the materials chargeable to maintenance expenses. This reduction, so far as this item of expenses is concerned, was applicable only to the last two months of the year 1930, and therefore amounted to only $67,000 in that year. In the succeeding two years the reduction was applicable to all purchases from Western Electric Company and amounted to $332,000 for 1931 and a like amount for 1932.

For the reasons stated in our discussion of the valuation the disallowance of these expenses in the amounts stated was error.

Fair Rate of Return.

The District Court found that the fair rate of return upon the fair value of the property, which plaintiff was entitled to earn to avoid confiscation, was 7½ per cent. for each of the years 1923 to 1927, inclusive, 7 per cent. for the years 1928, 1929 and 1930, 6½ per cent. for 1931, and 5½ per cent. for 1932.

The court justifies the percentages found for 1931 and 1932 upon the ground of the general decline in corporate earnings in those years, of which the court took judicial notice.

Plaintiff assigns error to the court's findings of 6½ per cent. for 1931 and 5½ per cent. for 1932. Defendants assign error to the finding in all years.

The only witnesses who testified directly on the fair rate of return were two witnesses on the part of plaintiff. They testified that a fair rate of return to plaintiff was, for 1923 to 1927, inclusive, 8 per cent.; for 1928, 1929 and 1930, 7 per cent.; for 1931, 7 per cent. until the latter part of the year and thereafter 8 per cent. Their testimony convincingly sustains the District Court's findings for the years 1923 to 1930, inclusive, and equally sustains plaintiff's assignment of error with respect to the last two years. Their testimony is undisputed.

The record shows the history of the new financing done by the Bell System and by plaintiff, and the cost of new capital to them, during the period in suit, and the comparable cost to railroads, other utilities, and other non-utility enterprises. This evidence likewise fully sustains plaintiff's position with respect to the fair rate of return.

Defendants take the position that considerations of the fair rate of return (and the fair value of the property) have no application to the facts and circumstances of this case. Their position and their several contentions are stated and answered in the section of this brief devoted to this subject.

ARGUMENT.

I.

Reduction in Revenue if Rates in Suit Had Been Made Effective.

If the rates established in the Commission's order of August 16, 1923, had been put into effect, they would have resulted in reducing plaintiff's net earnings on its intrastate business by the following amounts for the following years:

1923	$1,541,668
1924	1,550,995
1925	1,582,561
1926	1,650,570
1927	1,677,077
1928	1,713,301
1929	1,740,000
1930	1,645,878
1931	1,433,744

The statutory court so found upon undisputed evidence (Finding No. 28, R. III, 2520-1). The correctness of this finding is not disputed by the defendants.

This reduction stated as a percentage of plaintiff's net earnings under the existing rates as found by the District Court (Finding 27, R. III, 2520) is for each of the years of the case:

1923	23.2%	1926	20.5%	1929	16.3%
1924	20.7%	1927	20.1%	1930	16.2%
1925	20.1%	1928	19.9%	1931	14.6%

II.

Fair Value of Plaintiff's Property.

(Appellant's brief, "Rate Base Value," pages 316-377.)

Summary of Attacked Order of Illinois Commerce Commission Dated August 16, 1923.

Decisions of Statutory Court on First Trial and of this Court on Appeal (p. 21, *infra*).

Statutory Court's Findings of Fair Value on Second Trial (p. 23, *infra*).

Points in Connection with Valuation Which Are Not Contested (p. 26, *infra*).

General Description of Plaintiff's Plant (p. 27, *infra*).

The Evidence as to Fair Value (p. 27, *infra*).

Existing Depreciation and Defendants' Claims for an Equitable Adjustment on Account of the Depreciation Book Reserve (p. 50, *infra*).

Fair Value as Found by the Court Was Conservative (p. 65, *infra*).

Extent to Which Western's Profits Could Affect Valuation of Plaintiff's Property (p. 68, *infra*).

Defendants' Criticisms Are Without Merit (p. 69, *infra*).

◆

Summary of Attacked Order of Illinois Commerce Commission Dated August 16, 1923.

The findings of the Commission in the order here attacked, so far as they relate to the subject matter under discussion, are:

> That the original cost of plaintiff's property used and useful in rendering telephone service in Chicago as of December 31, 1922, exclusive of working

capital, materials and supplies, work in progress and going value, but including overheads, was $90,687,816 (O.R. I, 43).

That the reproduction cost new of the property used and useful in rendering telephone service in Chicago, exclusive of working capital, materials and supplies, work in progress and going value, but including overheads, as of December 31, 1922, was $128,769,000 (O.R. I, 43).

That the property was in at least 90 per cent. condition (O.R. I, 43).

That the amount of construction work in progress eventually to be included in plaintiff's capital account did not exceed $4,250,000 (O.R. I, 43).

That the required amount of cash working capital and materials and supplies was $3,000,000 (O.R. I, 43-4).

That the going value of the Chicago property was $4,196,872 (O.R. I, 44), which was the same amount found by the predecessor Commission for plaintiff's property as of July 31, 1919 (O.R. IV, 1293).

That the depreciation reserve of the Chicago area of the plaintiff was $26,000,000 (O.R. I, 44).

The Commission did not find fair value but arrived at a "fair rate making base" for the Chicago property of the company, including physical property, overheads, working capital, going value and work in progress of $96,000,000, which was "exclusive of the $26,000,000 of money taken by the company for depreciation reserve and put in plant and equipment" (O.R. I, 44).

Decisions of Statutory Court on First Trial and of This Court on Appeal.

On the first trial of this case the statutory court found that the original cost of the property as fixed by the Commission as of December 31, 1922, with net additions to

June 30, 1923, was $101,626,014 (O.R. I, 194); that the reproduction cost new as of the latter date was at least $145,000,000 (O.R. I, 196); that the property was in 90 per cent. condition and that the reproduction cost new less depreciation was $130,500,000 (O.R. I, 197); that the amount allowed by the Commission for going value of $4,196,067 was the minimum allowance which should be made for that purpose (O.R. I, 196); that the Commission's rate base value was clearly insufficient (O.R. I, 197).

It held that the Commission's exclusion from the rate base of the $26,000,000 in the depreciation reserve was erroneous (O.R. I, 193-4).

The statutory court did not find the fair value of the plaintiff's property, but said that it *could not be less than* $125,000,000. In that connection it said:

> "We are not to be understood as * * * holding that the evidence does not warrant a higher valuation than $125,000,000. We have not undertaken to decide disputed questions where it is apparent that in the view most favorable to the defendants the return to the Company would still be inadequate" (O.R. I, 198).

It made no finding with respect to value in the succeeding years, except that having determined the issue of confiscation as of 1923 in favor of the plaintiff, it said that this finding applied "with increasing force to the succeeding years" (O.R. I, 198).

This court held that in view of the fact that a rate order which is confiscatory when made may cease to be confiscatory or that one which is valid may become confiscatory at a later period, and as the disposition of the amounts withheld by the company under the conditions of the interlocutory injunction must depend upon the final decree of the court, there was a necessity for an appropriate finding "as to the results of the intrastate business in Chicago and the effect of the rates in question for each of the years since the date of the commission's order."

The defendants' main attack on the plaintiff's valuation was directed against the method used by the plaintiff's witness Sloan in arriving at reproduction cost of the property as of June 30, 1923. The statutory court after a thorough consideration of the method employed and the criticisms made of that method by the defendants approved the same and held that the appraisal of June 30, 1923 was "a reasonably adequate basis for determining a minimum reproduction cost" (O.R. I, 195).

This court passed upon the questions raised by the defendants' appeal and remanded the cause to the statutory court with specific instructions to make findings on the disputed issues involved, but it said nothing about Sloan's method. In this connection we point out that the defendants having assigned error specifically challenging the use of Sloan's method made no presentation of such claimed error to this court.*

The Statutory Court's Findings of Fair Value on Second Trial.

The findings of the statutory court on the second trial of the case with respect to the value of plaintiff's intrastate property are shown in the following table:

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*Defendants' assignments of error on the former appeal challenging the use of Sloan's method were Nos. 25, 34, 41 and 42 of which No. 34 is the most specific (O.R. I, 206-8). The entire discussion of appellants in the former case, with respect to reproduction cost and fair value, is found at pages 300 to 316 of their brief (Case of *Smith v. Illinois Bell Telephone Company*, No. 845, October Term, 1929). The defendants did not there challenge the accuracy of such method in any way.

Facts Relating to Valuation of the Intrastate Property as Determined by Statutory Court.

		CHICAGO INTRASTATE PROPERTY				
		1923	*1924*	*1925*	*1926*	*1927*
1.	Book Cost—Dec. 31	$ 95,582,266	$105,519,266	$119,476,874	$132,669,445	$145,779,829
2.	Sloan's Reproduction Cost New—Dec. 31	141,959,703	148,743,498	162,702,634	167,973,156	179,821,278
3.	Existing Depreciation—16% of line 2	22,713,552	23,798,960	26,032,421	26,875,705	28,771,404
4.	Reproduction Cost New Less Depreciation (2-3)	119,246,151	124,944,538	136,670,213	141,097,451	151,049,874
5.	Going Value—8% of line 2	11,356,776	11,899,480	13,016,211	13,437,852	14,385,702
6.	Construction Work in Progress	777,127	2,016,174	1,322,045	732,365	5,162,420
7.	Total—Dec. 31 (4 + 5 + 6)	131,380,054	138,860,192	151,008,469	155,267,668	170,597,996
8.	Average for year (Computed from line 7)	125,349,710	135,120,123	144,934,331	153,138,069	162,932,832
9.	Average Working Cash Capital	2,915,000	3,060,000	3,225,000	3,440,000	3,695,000
10.	Average Materials and Supplies	222,638	284,563	338,356	316,990	306,167
11.	Total (8 + 9 + 10)	128,487,348	138,464,686	148,497,687	156,895,059	166,933,999
12.	Court's Finding of Fair Value	$124,200,000	$136,500,000	$148,500,000	$151,500,000	$167,000,000

		Chicago Intrastate Property				
		1928	1929	1930	1931	1932
1.	Book Cost—Dec. 31	$157,216,705	$167,865,952	$174,160,314	$177,384,652	
2.	Sloan's Reproduction Cost New—Dec. 31	188,042,959	201,567,159	207,960,544	205,968,163	
2-A.	Less: W. E. Co. price adjustment	....	....	5,674,723	5,620,356	
2-B.	Adjusted Reproduction Cost New (2-2A)	188,042,959	201,567,159	202,285,821	200,347,807	
3.	Existing Depreciation—16% (1928) and 15% (1929-1932) of line (2B)	30,086,873	30,235,074	30,342,873	30,052,171	
4.	Reproduction Cost New less Depreciation (2B-3)	157,956,086	171,332,085	171,942,948	170,295,636	
5.	Going Value—8% of line (2B)	15,043,437	16,125,373	16,182,866	16,027,825	
6.	Construction Work in Progress	2,766,292	1,671,217	4,135,752	163,771	
7.	Total—Dec. 31 (4 + 5 + 6)	175,765,815	189,128,675	192,261,566	186,487,232	
8.	Average for year (Computed from line 7)	173,181,906	182,447,245	190,695,121	189,374,399	$186,487,232*
9.	Average Working Cash Capital	3,840,000	3,975,000	4,050,000	3,800,000	3,800,000#
10.	Average Material and Supplies	319,589	253,733	191,002	203,718	203,718#
11.	Total Average (8 + 9 + 10)	177,341,495	186,675,978	194,936,123	193,378,117	190,490,950
12.	Court's Finding of Fair Value	$173,000,000	$184,000,000	$187,120,000	$179,100,000	$166,500,000

SOURCE OF FIGURES.

1. Finding 4, R. III, 2515; Exhibit A-54, R. IV, 2757-65.
2. Finding 5, R. III, 2515; Exhibit A-43, R. IV, 2698.
2. (a) See page 37 of our brief on cross appeal.
3. Opinion, R. III, 2505; Finding 6, R. III, 2515.
5. Opinion, R. III, 2506; Finding 6, R. III, 2515.
6. Finding 5, R. III, 2515; Exhibit A-54, R. IV, 2757-65.
9 & 10. Finding 6, R. III, 2515; Exhibit A-54, R. IV, 2757-65.
12. Finding 2; R. III, 2516.

* December 31, 1931.
# 1931.

The court found that the plaintiff's reproduction cost new estimates were substantially accurate (Opinion, R. III, 2504) but its findings of fair value above set out were substantially below such reproduction cost estimates, after deducting therefrom existing depreciation in accordance with the court's findings.

Points in Connection with Valuation Which Are Not Contested.

The following points in connection with the valuation of the plaintiff's property are not contested by the defendants:

1. That all the property of the plaintiff in its Chicago area is used and useful in rendering service to the public.

2. That the plaintiff has properly separated its Chicago area property as between its interstate and intrastate business on the basis of actual use in full recognition of the decision of this court. The defendants have stipulated that they will not raise in this court the issue of the correctness of such separation (R. III, 2594).

3. That the amounts of cash working capital, materials and supplies and construction work in progress were correctly found by the statutory court.

4. That the plaintiff's books for its Chicago area show separately the cost of gross additions, betterments and replacements; that all retirements have been properly accounted for and that such adjustments as were proper to be made thereto have been made.

General Description of Plaintiff's Plant.

The Illinois Bell Telephone Company for forty years has owned and operated a telephone property in Chicago which is known as its Chicago area. The property in this area, with minor exceptions, is located within the city limits of Chicago (R. I, 251). The physical property consists of the necessary buildings, the land upon which they are situated and a complete telephone plant and system with necessary materials and supplies, all of which is used and useful in the public service.

The Chicago property of the plaintiff is a modern Bell System plant, well planned, efficiently engineered and properly constructed. It has a capable staff of operating employees. The plant is well adapted to the needs of the community in which it is located and through years of operation has become highly efficient and serviceable to that community (R. I, 24; Opinion, R. III, 2506).

Plaintiff was furnishing telephone service on December 31, 1923, to subscribers having over 690,000 telephones. That number had increased to over 987,000 on December 31, 1929, and at the end of 1931 was approximately 940,000 (R. IV, 2775).

The Evidence as to Fair Value.

1. General Method of Valuation.

The plaintiff's testimony with respect to the fair value of its property used in the Chicago area for rendering intrastate service was as follows:

The market value of its real estate and the cost to reproduce new its buildings was proved for each of the years as of December 31st by the testimony of Mr. Ward T. Huston and Mr. Edward H. Renwick, respectively (*infra*, p. 29).

The cost to reproduce new plaintiff's other physical property, consisting of its telephone plant, including undistributed construction costs, was established by the evidence of Mr. William F. Sloan by classes of plant for each of the years as of December 31st (*infra*, p. 30), Mr. Sloan also testified as to the going value for each year (*infra*, p. 46).

The actual existing depreciation in the plant as compared with a new one was established by careful inspection and the amount of this existing depreciation shown and deducted likewise by classes of plant (*infra*, p. 50).

The average reproduction cost new of the physical property in each year, less existing depreciation, was ascertained by taking the arithmetical average of the sum of the reproduction costs at the beginning and end of the year and to this sum there was added the average amount of construction work in progress, materials and supplies, working cash capital and going value (Exhibit A-54, R. IV, 2757-65).

The book costs of the total property and of the intrastate portion thereof were shown for each year (Exhibit A-54, R. IV, 2757-65).

The property was separated for each of the years on the basis of use to determine the amount of the property employed in plaintiff's intrastate business.

Since the valuation made as of December 31, 1922 in the order of the Illinois Commerce Commission of August 16, 1923, neither the Commission nor the City of Chicago has *made any valuation of the plaintiff's property. The defendants introduced in evidence no appraisal for any year of the period involved either of the entire property or of any element of that property. They offered no evidence upon which any finding of fair value could have been predicated.*

2. Real Estate and Buildings.

The value of plaintiff's real estate was established by the evidence of an experienced real estate appraiser, thoroughly familiar with the property, who for thirty-six years had purchased, sold and appraised parcels of real estate in Chicago. He personally inspected each parcel of the company's real estate and testified as to its market value in each year (R. I, 63-4; IV, 2680-2681).

The cost to reproduce new the buildings used by the plaintiff in its Chicago area was established by the testimony of a competent architect who was familiar with all the buildings and who had supervised the construction of practically all of them since 1921. He testified as to the cost to reproduce them during each year of the period (R. I, 62-3; IV, 2676-2680).

Plaintiff's testimony showed a substantial reduction in the value of its buildings and real estate on December 31, 1931, as compared with 1930. This reduction was approximately $5,000,000 (R. IV, 2679, 2680, 2681). Such reduction was reflected in the court's finding of fair value for the years 1931 and 1932, before it made the reductions on account of general declines in values hereafter referred to.

The defendants offered no evidence as to the value of plaintiff's buildings or its real estate. They do not challenge the correctness of plaintiff's testimony but content themselves with pointing out that the values so arrived at are in excess of the book cost of the property.

3. Telephone Plant.

William F. Sloan of the firm of Sloan and Cook, a consulting engineer with wide experience in the appraisal of public utility properties, whose qualifications are fully set out in the record (O.R. II, 637), testified as to the cost to reproduce new the plaintiff's property in its Chicago area.

Sloan, in arriving at the reproduction cost new of plaintiff's property as of June 30, 1923, applied to the expenditures for construction in each year prior thereto cost conversion factors which converted the expenditures in such years to the level of reproduction costs new as of June 30, 1923. It was unnecessary for Sloan to go back of 1911 in converting gross additions and retirements because in that year a very elaborate field inventory of the property of the plaintiff had been made by the engineering firms of Byllesby and Arnold (O.R. II, 638, 644).* That appraisal showed a reproduction cost new slightly less than the book cost of the property (O.R. IV, 1425). Sloan therefore used this admittedly accurate appraisal as a starting point and converted the property in place as shown by that appraisal and all subsequent additions thereto and retirements therefrom year by year to the cost level of June 30, 1923, thus arriving at a reproduction cost new of plaintiff's property, as accurately recorded in its books, as of June 30, 1923, at the price level then prevailing.

Sloan excluded from the appraisal referred to capitalized overheads, land and buildings and applied to the total plant in place in 1911 so arrived at, cost conversion factors in order to convert such property in existence in 1911 by separate plant accounts (R. I, 17) to the level of prices of June 30, 1923 (R. I, 48). He also applied cost conversion factors to the gross additions and gross retirements for each year subsequent to 1911 to convert the same by separate plant accounts to the price level of June 30, 1923 (R. I, 48). The gross additions so converted were added to the appraisal and the gross retirements so converted deducted therefrom in order to obtain the final result for June 30, 1923 (R. I, 48). The dollar amounts of the gross additions and retirements were obtained from the plaintiff's records (R. I, 18) which, it is admitted, accurately recorded the same.

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* That appraisal, after exclusion of capitalized overheads, land and buildings, showed a reproduction cost new of approximately $22,000,000 (Plaintiff's Exhibit I, O.R. IV, 1158).

Cost conversion factors for materials were obtained for the June 30, 1923 appraisal by using a typical cross-section of each plant account based upon the property in such account on June 30, 1923. Such typical cross-section of plant was arrived at by taking as of June 30, 1923, the actual quantities in each plant account and dividing these quantities by a common divisor such as 1000. The purpose of this was to obtain conversion factors based upon a smaller number of articles in each plant account in the proper proportions (R. I, 25).

Cost conversion factors for labor were obtained by the use of typical gangs. Such typical gangs were representative of the gang set-up which would be used under a proper reconstruction program and the formation of such gangs was based upon the average experience of the company over a period of years (R. I, 37, 38).

The application of the method may be best illustrated by taking, for example, the year 1914, and showing how gross additions for that year were converted to the June

30, 1923 level. Sloan applied to the typical cross section of the material in a given plant account the average 1914 prices actually paid by the plaintiff to Western. He also applied to the same cross section Western prices as of June 30, 1923 and determined the ratio of material costs between the two dates (R. I, 30).

He applied to the typical gang the average wage rates actually paid by plaintiff in 1914 and likewise the wage rates as of June 30, 1923, and determined the ratio of labor costs between the two dates (R. I, 36).

These material and labor ratios were then combined in the proportions actually experienced by the Company during the year 1914 for this given plant account (R. I, 38).

The composite ratio as thus determined was then applied to the gross additions for the year 1914 to convert them to the June 30, 1923 level (Plaintiff's Exhibit I, O.R. IV, 1155-1182).

The method employed in the appraisals for December 31st for each of the years 1923 to 1931 was substantially the same as that used in making the June 30, 1923 appraisal (R. I, 15). In the latter appraisals it was necessary to arrive at nine different cost levels instead of one and Sloan, therefore, used in the later appraisals varying cross-sections of plant representative of the plant in place for each of such years (R. I, 15, 16).

The use of a typical cross-section of plant and of a typical labor gang was for the sole purpose of obtaining cost ratios (R. I, 38, 48).

Sloan starts from a detailed inventory of the plaintiff's property, the correctness of which is not challenged and applies his cost conversion factors to such property and the gross additions thereto and retirements therefrom as accurately recorded in the plaintiff's books. There is thus no doubt that the property to which the cost conversion factors are applied has been correctly ascertained. The cost conversion factors were based upon proper ratios, both as to labor and materials, and the resulting appraisal is an accurate reproduction cost estimate.

The method used by Sloan was approved by the statutory court on both trials of this case after a careful investigation of the criticisms made by the defendants (O.R. I, 195-6; R. III, 2504).

That the action of the trial court in this respect was correct, and that Sloan's method has resulted in an accurate reproduction cost estimate is fully shown by the following general considerations:

1. William J. Hagenah, one of the most widely known public utility and appraisal engineers in the country, made a careful examination of Sloan's June 30, 1923 appraisal and of the method used by Sloan in arriving at that appraisal. Hagenah, in several cases referred to in his testimony, had used the same method as a check against reproduction cost estimates based upon a complete field inventory and found that the two methods resulted in approximately the same answer. He correctly concluded that Sloan's appraisal was as good evidence of reproduction cost new as any appraisal that could be made and he testified directly that the method used by Sloan resulted in a substantially accurate determination of reproduction cost new (O.R. III, 941-952).

2. The only critics of Sloan's methods were the city's witnesses, Wray and Cummings, of the firm of J. G. Wray and Company. Their evidence was directed particularly to the

claim that the method used by Sloan would not convert the plant in existence in 1911 and the gross additions thereto and retirements therefrom to the June 30, 1923 price level with substantially accurate results, and that inasmuch as a portion of the property in existence in 1911 still remains in the plant, the appraisals for each subsequent year are likewise inaccurate. That these criticisms cannot be relied upon is shown by comparing the cost trends obtained by Mr. Sloan as the result of applying this method in his appraisal, with cost trends obtained for the same period of time by his critics, J. G. Wray and Company, for properties of the Indiana Bell and New York Telephone Companies. Both of these properties are Bell System plants constructed along lines similar to those of the plaintiff. The New York plant is more nearly comparable with plaintiff's Chicago area than any other telephone property in this country. Sloan's trends for representative outside plant accounts, for central office equipment and for the entire property of the plaintiff are shown in practically every instance to be as low as or lower than those obtained for these other Bell properties for the same period of time by these same city witnesses. In the New York case, J. G. Wray and Company were employed by the Public Service Commission of New York (O.R. V, 1711) and represented the public interest. If Sloan had used the cost trends developed by J. G. Wray and Company instead of his own, his appraisal would obviously have been much higher in each year than it was (see Appendix, pp. b, c and d).

Aside from their general statements as to the inaccuracy of Sloan's method, the criticisms of these witnesses were minor in character and related to details. Certainly their testimony is not entitled to any weight where, as here, it is shown that their own costs trends developed for comparable properties for the same period of time would have resulted in a substantially higher appraisal than that of Sloan. The statutory court on the first trial of this cause refused to credit the testimony of these witnesses. In that connection it said:

> "The testimony of the plaintiff's engineers and accountants satisfies us that the computations are based upon data which are substantially correct. It has not been met, in our opinion, by the criticisms of the expert witnesses produced by the defendants. Those criticisms are weakened by the conflicting statements of the witnesses and the contradictions found in correspondence and testimony in other cases" (O.R. I, 196).

3. Sloan's estimate of reproduction cost new as of June 30, 1923, is lower than the finding of such reproduction cost new by the Illinois Commerce Commission as of December 31, 1922, plus net additions.

The statutory court in its opinion on the former hearing thus correctly* compares the findings of the Commission as to such reproduction costs new and Sloan's estimate of such cost, both as of June 30, 1923:

> "As to reproduction cost, the Commission found the reproduction cost new, exclusive of working capital, materials and supplies, work in progress and going value, but including overheads, as of December 31, 1922, was $128,769,000. There is no rational basis in the record for that finding, unless there is added $8,292,869, the amount of the net additions

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* The evidence at the former hearing entirely sustained this finding of the court. See the testimony of Turner (O. R. II, 682) where the facts are collected and summarized.

for the year 1922, which was obviously overlooked by the Commission in making its finding. There should also be added the net additions from January 1, 1923, to June 30, 1923, amounting to $9,938,198. This makes the reproduction cost new as of June 30, 1923, approximately $147,000,000. The evidence of the Company is that the reproduction cost new of the property as of June 30, 1923, was $145,248,344 * * *''

Illinois Bell Telephone Company v. *Moynihan*, 38 F. (2d) 77, 87 (O.R. I, 195).

4. The principal defendant in this case, the Illinois Commerce Commission, in its order of August 16, 1923, determined the reproduction cost new of the plaintiff's property by adopting an appraisal in which the same method of arriving at reproduction cost new was used. The Commission thus approved Sloan's method as a basis for its own action (O.R. I, 19; O.R. II, 681-683).

In view of the general considerations above pointed out, which show conclusively the accuracy of Sloan's method, it is necessary to consider only briefly the specific criticisms which the defendants make to the Sloan appraisals.

The defendants claim that Sloan's method reflects, so far as labor costs are concerned, piecemeal rather than wholesale construction. They point out that Sloan's conversion factors are applied to book costs, which include all work done by the company in its annual additions under both ''routine'' and ''specific estimates.'' ''Specific estimates'' are used by the plaintiff where the work involves $2,500 or more; and ''routine estimates'' where the amount is less than that.

This criticism is directed to only a small portion of Sloan's reproduction cost estimates, that is the labor portion of the routine estimates, which amount represents only 14 per cent. of the company's total property (R. II, 1314). The criticism, however, is without merit. Most of the work which is done by the company under its routine estimates would have to be performed in a reconstruction of the property in the same manner as that work is regularly done by the company, not because of the amount involved in the particular work but because of the nature and character of this work (R. I, 1312-1313).

The annual construction work of the plaintiff has been so large in amount that it has necessarily involved all of the problems which are met under large continuous construction undertakings. Such is the testimony of Hagenah (O.R. III, 943), and of Sloan (R. II, 1313). Each year during the period 1923 to 1931, the company has installed in its Chicago area on the average about $20,000,000 of gross additions. This is substantially the average amount of work which would have been done under an economical and proper reconstruction program (R. IV, 2662a; R. I, 43). These facts alone constitute a complete answer to the claim that Sloan's method results in giving effect to piecemeal construction.

Defendants also criticize Sloan's use of a constant cross-section of plant in arriving at the cost conversion factors for the June 30, 1923 appraisal. It is insisted that use should have been made of a varying cross-section of plant representative of the actual plant measurements in 1911 and of the gross additions for each subsequent year. It is also claimed that the typical labor gang used by Sloan was not representative of the company's experience in any particular year.

To illustrate their contention, defendants have set out in their brief (Appendix to appellants' brief, pages 89 to 92, inclusive) certain calculations which they call Cases 1 to 4a. They have attempted to develop a cost conversion factor, for example, in Case 3, by pricing one group of quantities with the 1912 prices and an entirely different group of quantities with the 1923 prices. It is obvious that a correct cost conversion factor can only be obtained by pricing out the same list of quantities with prices current as of two different dates, and this is what Sloan did.

That the criticisms, both as to labor and material cost trends, are without merit is shown by a comparison of Sloan's cost trends with those of J. G. Wray and Company referred to above (see Appendix, pp. b, c and d). In addition, it appeared that the effect of the use of a constant cross-section of plant instead of a varying cross-section would have a wholly negligible result upon Sloan's appraisals.*

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* In order to test the validity of this criticism, Sloan prepared cost conversion factors for each year from 1914 to 1923, using for a material cross-section the quantities actually reported in the ten largest specific estimates in each year for pole lines, aerial cable and underground cable. For a labor cross-section he used the actual gangs peculiar to each year. Applying these new cost conversion factors to the gross additions for each year, he found a difference of only three tenths of one per cent., the test method giving a higher result than the method used in the appraisal.

He made a similar test for the same three accounts using all the quantities placed under both specific and routine estimates in the years 1920 to 1923 and found a difference there of less than four-tenths of one per cent. The result in the case of this test was lower than the appraisal by the percentage indicated (See Plaintiff's Exhibit 50, O.R. IV, 1548; also O.R. 924-5, 930-3).

Defendants contend that Sloan's appraisal does not reflect increased efficiency in labor which has taken place during the period involved in this controversy. They state that his reproduction cost new estimates "preserve in their results the higher labor costs which entered into the book cost of gross additions made prior to the introduction of new and more economical construction methods, beginning with 1911 to the date of each such new estimate."

In the first place, it is necessary to bear in mind that the defendants do not claim any increased efficiency in labor in the sense of better performance of work resulting from the honest application of the employee to his labor. It is established by undisputed testimony that there has been less inefficiency in labor performance in the public utility business than in any other industry, and that the changes in the honesty of application of employees during this period has been negligible (O.R. III, 949).

Defendants' claim in this connection is limited, as it must be, to increase in labor efficiency due to improvements in the tools used for the construction of telephone plant and in the methods of such construction. That there have been such improvements is not denied.

Defendants attempted to show that if Sloan had taken into consideration the increase in labor efficiency his appraisals would have been lower. A number of their studies were filled with errors to such an extent that they were of no value (R. II, 1319-1321). In one of their exhibits, when corrections were made for obvious omissions and errors, there was a showing of an increase in labor efficiency in a particular plant account for the year 1929 over the year 1923 of about 1 per cent. (R. II, 1321). The testimony shows that the effect of such increased efficiency as measured by defendants is substantially negligible.

Sloan's method results in a conservative estimate for labor costs. His use of a typical gang for obtaining labor cost trends gave him a substantially lower result than would have been obtained if he had used the productive hourly labor rates for his entire appraisal, which was the method advocated by the defendants' witnesses (Exhibit A-247, R. V, 3117; R. II, 1305, 1306, 1307).

Sloan's cost conversion factors for labor did not include any allowance on account of the increased difficulties due to underground obstructions and traffic conditions which would be met in a reproduction of the plaintiff's plant and which would materially increase the cost of such construction. The extent of these difficulties is graphically stated in the testimony of Messrs. Sloan and Hagenah (R. II, 1322; O.R. III, 943-5).

Complaint is also made that Sloan's method results in a reproduction of the property installed in prior years instead of the new types of equipment which perform the same functions as the earlier types. The defendants' position is that in arriving at reproduction cost new the court should value not the property actually in use which satisfactorily fulfills every requirement, but some other property. The law is clear that the property to be valued in a confiscation case is the property actually in the plant and not something else.

> *McCardle v. Indianapolis Water Company*, 272 U. S. 400, 417.

In discussing a substantially similar situation which arose in that case this Court said:

> "There is to be ascertained the value of the plant used to give the service and not the estimated cost of a different plant. Save under exceptional circumstances, the court is not required to enter upon a comparison of the merits of different systems. Such an inquiry would lead to collateral issues and investigations having only remote bearing on the fact to be found, viz. the value of the property devoted to the service of the public."

Averaging of Property.

The defendants complain of the method used by the plaintiff in obtaining the reproduction cost of the average property for each year. What plaintiff did was to add together the reproduction cost new at the beginning of the year and at the end of the year, and obtain an arithmetical average of the two figures. During the period 1923 to 1930, Western's prices for telephone apparatus were declining and labor prices were increasing. The result of the method used was to obtain the average property in service and the average prices of labor and materials for the year. The method used was a proper one and is not subject to just criticism.

4. Undistributed Construction Costs.

The undistributed construction costs included in the plaintiff's appraisal consisted of engineering, administrative and legal expense, insurance, taxes and interest during construction (R. I, 20-22). The plaintiff, if it were to reproduce the Chicago area plant, would inevitably incur these expenses (R. I, 50). It actually did incur similar expenses in every ordinary process of building its plant (R. I, 52). It would be impossible to attempt to build such a property without adequate engineering preparation and design (R. I, 52). It is obvious that the interest charges on money invested in labor and materials during the progress of construction are just as truly an element of the cost of reproducing the plant as is the cost of the labor and materials themselves. Taxes must be paid on the property during the period of construction. It is necessary to have legal advice and administrative organization and to pay insurance premiums, both on property constructed and on account of liability for damages to the public and for personal injuries to employees engaged in the construction program. The amounts of undistributed construction cost which would have been incurred in a reproduction of the property were testified to by Mr. Sloan and were based upon his judgment as an engineer and upon the actual experience of the company (R. I, 20-22, 50-53). There was no evidence to the contrary.

The Commission in its 1920 order allowed 15 per cent. for undistributed construction costs and applied this percentage to land, buildings, telephone plant, general equipment and supplies, and construction work in progress (O.R. IV, 1294). In the order under attack the Commission allowed for these undistributed construction costs 12 per cent. in addition to such overheads as were reflected in the company's books. It is clear that the Company's books included 2.36 per cent. for engineering*, so that the Commission's total allowance was at least 14.36 per cent. The 12 per cent. was applied to the reproduction cost new of the total property, including right of way, land, buildings, plant and general equipment (O.R. I, 21-23; O.R. II, 87).

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* It is shown, *infra*, at page 45 that the company had not capitalized all of its engineering expense.

In the present case Sloan excluded from the company's property to which he applied his conversion factors, such undistributed construction costs as were recorded in the books (R. I, 21, 56). He then estimated the amount of undistributed construction costs that would be reasonably incurred in a reproduction of the plant. These were applied to the plaintiff's plant, exclusive of land, general equipment, materials and supplies, and construction work in progress. The percentages arrived at vary for the years involved from 16.9 per cent. to 18.2 per cent.

If Sloan's figures had been applied to the same base as the Commission used, his percentages would be slightly lower.

The amounts used by Mr. Sloan were reasonable and proper. He allowed 5 per cent. for engineering and 2 per cent. for administrative and legal expenses. These figures were arrived at after a careful study of the plaintiff's expenditures for such purposes (R. I, 21). Insurance and taxes during construction were based upon the actual experience of the company, taking into consideration the length of the construction program which varied from 9 to 10 years (R. II, 1329; R. I, 21; O.R. II, 670; A-11, R. IV, 2668-9). Interest during construction was figured at the rate of 6 per cent. per annum and amounted *in total* to slightly less than 8 per cent. (R. I, 45, 52). All the undistributed construction costs were calculated on the basis of including only that portion of such costs as would be incurred by the company before the property with respect to which they were applied was actually in use in the service of the public (Exhibit A-11, R. IV, 2662A-2670; R. I, 21-2). The evidence of the company with respect to these undistributed construction costs is detailed and satisfies every legal requirement. The proof is clear that they would have been incurred in the amounts claimed and there is no opposing testimony.

The defendants criticize these undistributed construction costs on two grounds: they claim, first, that they are theoretical and not based on the company's actual experience, and second, that the plaintiff is now attempting to capitalize overheads which it has charged as operating expenses during the period involved.

With respect to the first contention, that these overheads are theoretical, this court has expressly decided that such items are proper elements of value and that they are not matters of outlay but of estimate, and that while proof of actual expenditures originally made is helpful, it is not indispensable.

In *Ohio Utilities Company* v. *Commission*, 267 U. S. 359, at page 362, the court says:

> "Reproduction value, however, is not a matter of outlay, but of estimate, and should include a reasonable allowance for organization and other overhead charges that necessarily would be incurred in reproducing the utility. In estimating what reasonably would be required for such purposes, proof of actual expenditures originally made, while it would be helpful, is not indispensable."

There was, however, definite proof in this case that the overheads which were used conformed to the company's experience in its ordinary construction work. Defendants point out that the plaintiff's capitalized overheads for the period 1920 to 1930, inclusive, were from 5.1 per cent. to 8.9 per cent. of the book cost of gross additions of that period, and in 1931 were 9.7 per cent. (Defendants' brief,

p. 353). The undisputed testimony in this case, which is admitted by city's witness Wray to be correct, shows that only since 1920 has the plaintiff included in its capitalized overheads any interest during construction, traffic engineering, commercial engineering or general expenses, that taxes and insurance during construction were not included down to the end of 1930 (Defendants' Exhibit X-270c, R. VII, 4353), and that interest during construction is not included in the company's capitalized overheads to the extent that it would be met under a reproduction program (R. II, 1992). That this fact is true further appears from the Commission's order in this case, in which it added $5,000,000 to the book cost of plaintiff's plant as of December 31, 1922 because of the fact that such book costs did not properly reflect overheads which should have been capitalized (O.R. I, 18, 23, 43).

There can be no question that the testimony in this case shows that the amounts of undistributed construction costs used by Sloan are based upon the experience of the company.

The claim of the defendants that plaintiff has included in its undistributed construction costs items which have been charged to current operating expenses is based upon a misapprehension of the facts. This may be illustrated by considering the item of taxes. Plaintiff currently pays taxes on its operating property and charges the same to expenses. The taxes included in the undistributed construction costs are those which would be incurred under a reproduction program before the property has been used in the plaintiff's operations.

5. Going Value.

The amount of going value was separately arrived at by the statutory court. There was not included in the court's finding of reproduction costs new of the physical property any amount on account of going value. In this respect the court followed the same procedure as did the Illinois Commerce Commission in the order under attack (O.R. I, 44).

The plaintiff claimed that the various elements which should be considered in arriving at the going value of its property required an allowance of 15 per cent. of reproduction cost new for such value. The court found 8 per cent. The defendants admit that the property had a substantial going value which has not been included in the reproduction costs of the physical property but contend that such allowance should be $4,009,692 for each of the years. That amount is the intrastate portion of an allowance for going value made by the Public Utilities Commission of Illinois as of July 31, 1919, and at a time when it found the fair value of plaintiff's property, exclusive of going value, to be approximately $66,000,000 (O.R. IV, 1293).

The statutory court in its opinion, in speaking of the element of going value in plaintiff's plant, said:

> "In determining the element of going value, consideration has been given to the evidence relating to the construction and management of plaintiff's Chicago property. It is well planned, effectively engineered, and properly constructed. It has a capable staff of operating employees. It is well adapted to the needs of Chicago, and through years of operation has become fully efficient and serviceable to that community. Continuously from 1923 to the present time,

> it has had established routines, attached customers, and trained employees. The plaintiff has been efficiently and economically operated, and has had a high standard of maintenance. The company's credit has been excellent and, if given reasonable rates, it has good earning power. The number of its telephone stations increased from 690,000 at the end of 1923 to over 980,000 at the end of 1930. Plaintiff has engineered and planned its property so that, as additions are required to meet the future needs of the community, they may be made efficiently and economically.
>
> From a consideration of the pertinent facts, we have reached the conclusion that 8 per cent. is a reasonable allowance for going value" (R. III, 2506).

The defendants do not claim that plaintiff's evidence is insufficient to justify the allowance of going value actually made by the court, or that the court in arriving at such allowance took into consideration improper factors.

Wray was the city's witness on going value at the first trial. No witness testified for the defendants at the second trial. We find ourselves somewhat at a loss to know how to characterize Wray's testimony. He found considerable fault with both the method and the result of Sloan's detailed study, it is true, but apparently little or no fault with his final figure. At all events, the following statement fairly represents Wray's contribution to the subject. He testified:

> "I am not quarreling with his judgment that going value of the Chicago property on June 30, 1923, was at least 15 per cent. I have not made an estimate and I will say that 15 per cent. may be all right. I do not believe I am justified in making an estimate of going value without making a study of it. * * *

> I haven't any judgment about going value of this property" (O.R. V, 1773).

It may be that comment upon this is superfluous. The matter is for the court, of course. It seems to us we might fairly claim that this testimony by Wray lends affirmative support to Sloan's appraisal of going value. He does not quarrel with 15 per cent.; he thinks that 15 per cent. may be all right. On the other hand, he disclaims having any judgment about the going value of this property. Certainly we are justified in saying that Sloan's testimony stands uncontradicted.

Possibly we should refer to Crumb as being another witness for the city on the subject of going value. He talked briefly about the subject, but really gave no evidence upon it, except that he did say that the Chicago property of plaintiff had "a very substantial going value" (O.R. V, 1625). Of course, that was obvious. Beyond this statement, Mr. Crumb's testimony consisted of an attempt to argue legal theories in reference to the matter.

Defendants' claims in connection with going value are limited to two narrow propositions: first, that the method followed by the statutory court is not the method followed in the case of *New York Telephone Company* v. *Prendergast*,* 36 F. (2d) 54, and results in a higher allowance than was made by the court in that case, and, second, that the ascertainment of going value as a percentage of reproduction cost new results throughout the period of years involved, in doubling the allowance therefor although in the meantime plaintiff's investors have purchased plaintiff's stock at par and its bonds below par.

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* This case is now pending on appeal to this court.

As to the first point:

In many cases this court and other federal tribunals have sustained and approved findings of going value of from 9.5 per cent. to 15 per cent. of the cost of reproducing the physical property.* Because of the controlling principles announced by this court in the cases referred to in the margin, further discussion of the ruling in the *Prendergast* case is unnecessary.

In the recent decision of this court in *Los Angeles Gas and Electric Corporation* v. *Railroad Commission of California,* 289 U. S. 287, where the cases are reviewed, it appeared that there was included in the valuation found by the Commission an amount of over $5,500,000 which the court regarded "as applicable to whatever intangible value the property had as a going concern." This amount was slightly in excess of 9 per cent. of the rate base fixed by the Commission, exclusive of going value.

The second contention of the defendants needs little detailed consideration. It is clear that going value ordinarily will bear a close relation to the size of the plant. The defendants do not even claim that the plaintiff's evidence in this respect was insufficient.

It is of no importance in determining the difference in value between a dead plant and a living, successfully operating property whether the investment of the plaintiff's stockholders has been paid for at par, below par; or above par. The going value which inheres in the business is to be added to the structural or "bare bones" value entirely irrespective of the considerations urged by the defendants.

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* *McCardle* v. *Indianapolis Water Co.,* 272 U. S. 400 (held that evidence sustained a finding in excess of 10 per cent.), 9.5%; *Consolidated Gas Co.* v. *Prendergast*, 6 F. (2d) 243, modified and affirmed 272 U. S. 576, 10%; *New York and Richmond Gas Co.* v. *Prendergast,* 10 F. (2d) 167, 14%; *City of Fort Smith* v. *Southwestern Bell Telephone Co.,* 294 Fed. 102, affirmed 270 U. S. 627, 15%; *Bluefield Waterworks, etc., Co.* v. *Public Service Commission of West Virginia,* 262 U. S. 679, 10%; *Georgia Railway and Power Co.* v. *The Railroad Commission of Georgia*, 262 U. S. 625, 10%.

Existing Depreciation and Defendants' Claims for an Equitable Adjustment on Account of the Depreciation Book Reserve.

(Appellants' brief, "Contention VIII," pages 361-77.)

On this subject the District Court says in its opinion:

> "In considering the reproduction cost new as an element in arriving at value, it is necessary to deduct the actual existing depreciation in the property as compared with the new one in order to find the value of the physical elements commonly referred to as the structural value of the property.
>
> "A consideration of the evidence on this subject, including that of the witnesses who inspected the property, has led to the conclusion that the fair rate of depreciation is sixteen per cent. for the years 1923 to 1928, inclusive, and fifteen per cent. for the succeeding years" (R. III, 2505).

The court made a definite finding of the amount to be deducted on account of such depreciation, as a step in the valuation process, which is its sixth Finding of Fact, as follows:

> "6. The fair rate of depreciation to be applied to the reproduction cost new in determining the valuations for rate-making purposes, is sixteen per cent. for the years 1923 to 1928, inclusive, and fifteen per cent. for the succeeding years" (R. III, 2515-6).

Plaintiff assigned error to this finding, as did also the defendants. Plaintiff relies upon its assignments of error in this respect upon its cross-appeal. (Plaintiff's brief as appellant on cross-appeal, No. 548, pp. 23-36.)

Plaintiff's evidence shows a maximum depreciation of 9 per cent. as compared with the court's finding of 16 per cent. for the years 1923 to 1928, inclusive, and a maximum of 8 per cent. for the succeeding years as compared with the court's finding of 15 per cent. Plaintiff urges that its evidence is clear and convincing, and that being undisputed it is entitled to full credit; and that no finding of actual depreciation in excess of 9 per cent. of the reproduction cost new of the property for the years 1923 to 1928, and of 8 per cent. for the subsequent years, can be sustained upon this record.

In support of this position we respectfully refer to the discussion in our brief on cross-appeal above cited, and we incorporate that argument herein by reference.

Defendants' Position.

Defendants, in their brief as appellants, state their position upon this issue as "Contention VIII," as follows:

> "The District Court's findings on fair rate base value should have deducted from the reproduction cost new of the depreciable property of each year a percentage thereof equal to the percentage which the amount of appellee's depreciation reserve was of the undepreciated book cost of such property as of the same date." (Appellants' brief, page 361.)

In support of this thesis they advance five subpoints, A to E, inclusive, pages 363 to 377.

Defendants' argument does not pertain to the fair value of the property at all. It is thus perhaps not without significance that their entire discussion is under the head of "*fair rate base value.*" We do not suggest that this term might not be used as having reference to the fair value of the property; one might properly say that the "fair rate base value" is the fair value of the property, and thus use the terms interchangeably. But this is not what the defendants have done and is not what they mean.

They propose to deduct the depreciation reserve balance, as such, either from book cost or reproduction cost new (Appellants' brief, page 362). In the latter case, since the credits and debits to the reserve account have been based on book cost they would recompute the reserve to make it conform to the ratio which the reproduction cost new of the property bears to the book cost. For example, if the reproduction cost new is 10 per cent. above the book cost they would increase the reserve account balance by 10 per cent. and deduct that amount from reproduction cost new.[1]

Referring to this proposal and in justification of it, they say:

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[1] The accounting process is this:

When property goes into the plant the cost of it is entered in the capital accounts. While the property remains in the plant the current depreciation rate for the particular class of property is applied to the book cost and the amount so determined is charged currently, month by month, as an expense of operation. At the same time the same amount is credited to the reserve account, "Reserve For Accrued Depreciation." When the property is taken out of the plant (1) its cost is taken out of the capital accounts, and (2) its cost less salvage recovered is also taken out of the reserve account. Of course no further expense is charged at the time of retirement. See *Board of Commissioners* v. *New York Telephone Company*, 271 U. S. 23, 27.

> "The proposed principle is based upon the familiar equitable principle of not permitting the repudiation of a course of conduct which leads to the unjust enrichment of the repudiating party at the expense of the complaining party." (Appellants' brief, page 369.)

This of course has no relation to the fair value of the property.

Their reference to the case of *New York Telephone Co. v. Prendergast*, 36 F. (2d) 54, where the statutory court deducted the balance in the depreciation reserve from reproduction cost new, is to the same effect. In that connection they also quote from the report of Commissioner Eastman of the Interstate Commerce Commission in the telephone depreciation case a passage of the same import. They contrast these holdings with the principle which they are proposing, in the following statement:

> "The principle which Appellants urge in the instant case as the basis for the deduction of the depreciation reserve in respect to property in service has the advantage over the principle of a presumption sought to be invoked in the *New York Telephone* case and by the Interstate Commerce Commission that depreciation, in fact, has occurred to the extent of the balance in the depreciation reserve; the presumption may be contrary to fact." (Appellants' brief, page 368.)

Defendants also take a quotation from the dissenting opinion of Mr. Justice Brandeis in the *United Railways* case, in which the suggestion is made that it may be that the depreciation reserve balance "should be subtracted from the present value of the utility's property in determining the rate base, on the theory that the payments thus contributed by the public represent a part payment for the property consumed or to be consumed in service."[1]

Defendants characterize the finding of the District Court as being "a compromise fiat" and without support either in law or in fact (see headnote to Point D, page 371). The significance of this statement is made clear in the closing paragraph of the discussion of Point D, on page 377, where they say:

> "Appellee's presentation is fatally defective. The only other evidence in the record upon which the District Court could make a valid finding on depreciation in valuation was the depreciation reserve account on Appellee's books and the adjustments thereto which would have resulted had the depreciation charges been recorded as found by the District Court. But such facts the District Court did not use."

That is to say, upon the record there were two bases for determining the amount to be deducted in arriving at a rate base, namely (1) plaintiff's evidence which showed the actual existing depreciation in the property, and (2) the balance in the depreciation reserve account. The court took neither one nor the other; its finding was "a compromise fiat." It is implicit in their argument that these two bases are different concepts; that they are not evidence of the same thing. If actual existing depreciation is to be deducted, the reserve balance is immaterial. If the reserve balance is to be deducted, as they contend, the depreciation in the property is immaterial.

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[1] With reference to this suggestion, Mr. Justice Brandeis says:

> "These matters are not involved in the case at bar and as to them no opinion is expressed." *United Railways* v. *West*, 280 U. S. 234, 286.

Defendants quote this without comment. We surmise that this is due to the fact that the suggestion there made of deducting the reserve balance from the *present value* of the property is not in accord with what the defendants are advocating, though in other respects apparently they would endorse the suggestion of Mr. Justice Brandeis.

Defendants propose to deduct the latter amount, not upon principles of valuation of property, but upon principles of equity.

It is settled that the depreciation to be deducted in arriving at the fair value of the property is the actual existing depreciation in the property, that this can ordinarily be determined only by an examination of the property itself, and that an accounting reserve balance for depreciation such as that of plaintiff cannot be deducted either from the value of the property or as a step in the process of determining the value.

> *McCardle* v. *Indianapolis Water Co.,* 272 U. S. 400, 416;
> *Minnesota Rate Cases,* 230 U. S. 352, 457;
> *Newton* v. *Consolidated Gas Co.,* 258 U. S. 165, 175;
> *Galveston Electric Co.* v. *Galveston,* 258 U. S. 388, 396;
> *Bd. Public Util. Comm.* v. *New York Telephone Co.,* 271 U. S. 23, 32;
> *Pacific Gas and Electric Co.* v. *San Francisco,* 265 U. S. 403, 406;
> *Monroe Gaslight and Fuel Co.* v. *Public Utilities Commission,* 292 Fed. 139, 146-7;
> *Michigan Public Utilities Commission* v. *Michigan State Telephone Co.,* 200 N. W. 749, 752;

City of Charleston v. *Public Service Commission,* 95 W. Va. 91;
Southern Bell Telephone & Telegraph Co. v. *Railroad Commission,* 5 F. (2d) 77, 95, 96;
City of Cincinnati v. *Public Utilities Commission,* 113 O. S. 259, 286.

The law as laid down in these cases is soundly based. Existing depreciation is not a matter of formula. There is no possibility of keeping a running record in the accounts of the depreciation taking place in the property. The only way such a thing could be even attempted would be by making periodic inspections and recording the results in regular course of business. That is quite out of the question as a practical matter if for no other reason than that the cost of doing it would be prohibitive.

Depreciation expense accounting does not purport to do that; if it did its pretensions would be obviously contrary to reality. The total expense of depreciation for any unit of property is the replacement value of the unit less recoverable salvage. That represents the company's loss due to the consumption of the property in service, for which it must be reimbursed. The annual depreciation expense charge is the mechanism for making such reimbursement in even annual increments over the service life, so that all who receive equal service from the property share equally this part of the cost of giving the service.* This ultimate loss of the property is the result of many different causes: wear and tear, rust, rot and decay, public requirements, progress in the art, growth of the community, etc. These causes in the main do not make themselves felt progressively.

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* It is to be understood, however, that the accounting on the books is on the basis of book cost of the property, in accordance with the defendant commission's prescribed system of accounts.

It results that a depreciation reserve is built up which bears no relation to actual depreciation in the property. The reserve balance and the actual depreciation at any time can be compared only after examining the property to ascertain its condition; the depreciation, physical and functional, thus found can be measured in dollars and the amount compared with the reserve.

Monies which plaintiff has thus retained in the undertaking as a result of accruing the proper depreciation reserve have been expended for property. These monies are a part of the company's revenues of past years which it has earned by rendering service. There is no doubt about the ownership of these monies; they are just like any other monies which the company has owned and invested in its property. *Board of Commissioners* v. *New York Telephone Company,* 271 U. S. 23, 31.

Ordinarily the accounting reserve will be in excess of the actual depreciation. *The depreciation is taken away from the company in the valuation process.* The amount by which the reserve account balance exceeds the depreciation remains with the company, and the company may be said to have had the use of this difference, providing, however, it has earned a fair return throughout the period during which the reserve on the books has been built up. To the extent that it has not earned a fair return, the Company's stockholders have contributed the difference.

The annual charge for depreciation is an expense charge and comes ahead of any return. Before it is possible to know whether, in any view of the matter, any adjustment on account of the difference between the reserve account balance and the existing depreciation would be equitable or not, it is necessary to know whether the company has earned a fair return on the value of the property throughout the period during which the reserve balance has accumulated. That cannot possibly be known; there is no possible way of ascertaining that fact. Moreover, the reserve balance in existence when the question of an adjustment arises, that is at the inception of the suit, whatever the amount of it, cannot be brought into the adjustment. It was accrued on the books by charges against earnings under lawful rates for service. *Knoxville* v. *Knoxville Water Company*, 212 U. S. 1; *Board of Commissioners* v. *New York Telephone Company*, 271 U. S. 23.

In plaintiff's brief as appellant on cross-appeal we have shown:

First; that plaintiff has accrued its depreciation reserve on its books during this period by a careful and correct application of the straight line method of depreciation expense accounting, and that the District Court erroneously disallowed substantial amounts of such accrual in each year (brief, pages 50-76). See also page 61, *infra*.

Second; that the existing depreciation in the property, physical and functional, does not exceed 9 per cent. in the years 1923 to 1928 and 8 per cent. thereafter, and that the court erroneously deducted 16 per cent. and 15 per cent. respectively in the corresponding years (brief, pages 23-36).

Assuming that some adjustment is to be made in recognition of the equitable considerations which defendants invoke, the first step in the process should be to correct these errors of the District Court. First, with respect to the earnings, the company's expense charges for this item should be approved, and the amount disallowed by the District Court should be restored to the expenses and its finding of net earnings reduced accordingly. Second, with respect to the valuation, the amount deducted by the District Court in excess of the actual depreciation should be added to the value of the property found by the District Court. Both these things will be in accord with the settled law.

Before taking the next step in this adjustment, there are two fundamental errors in what the defendants propose that remain to be pointed out.

Their first fundamental error is that they propose to increase the reserve to make it correspond to the reproduction cost new of the property in each year.

The answer here seems to be clear. The subscribers pay money for service. They do not pay for property or buy property, and they are not financially interested in what property the company has. Whenever the company invests money in operating plant to serve the public, it does so at its own risk. It is entitled to the benefit of any increase in property value and must sustain the loss from any decrease. If there is any "enrichment" of plaintiff as the result of straight line depreciation expense accounting, it must be by reason of the advance collection of certain money. The money, therefore, is the item to be ascertained and dealt with in any adjustment.

Defendants' second fundamental error is that they propose to deny the company any earnings whatever upon this portion of its property.

This would be inequitable and is wholly unwarranted. This is true for the same reason as just pointed out with respect to the valuation. When the company invests this part of its money in operating property, the property is at its own risk and not at the risk of the users of the service. This is elementary: the money belongs to the company; the users accept none of the risks of the undertaking. If the company takes all the risks, it is entitled to commensurate compensation. Whatever adjustment, if any, is equitable, it cannot be such as to deny to the company recompense suitable to offset the risks which it assumes when it devotes this money to the public service in the form of operating plant. Investments free of risk do not command a rate of return equal to the fair rate of return in the telephone business. Such investments are properly compensated by a rate of return of 3 per cent. or at the outside 3½ per cent. The return in excess of this is in recognition of what has come to be summed up in the convenient phrase "risks and hazards."

The adjustment, therefore, however made, should not go further than to give credit in favor of the telephone users in an amount equal to 3½ per cent. upon the difference between the depreciation reserve and the amount deducted from the valuation for existing depreciation. The following tables assemble all the facts and, by the successive steps indicated above, proceed to the final adjustment, which is shown in Table 4, column 4, page 63, *infra.*

First Step.

The difference between the amounts allowed by the Court for annual expense of depreciation and the amounts charged on the Company's books based on the original cost of the property are shown in column 3 below:

TABLE 1.

Year	Amount Found by Court (1)	Amount Charged on Original Cost Basis per Books (2)	Court's Depreciation Allowance Less Than Charge per Books (2) — (1) (3)
1923	$4,000,000	$4,222,000	$222,000
1924	4,250,000	4,470,000	220,000
1925	4,750,000	5,048,000	298,000
1926	5,400,000	5,767,000	367,000
1927	6,000,000	6,335,000	335,000
1928	6,650,000	7,009,000	359,000
1929	7,000,000	7,436,000	436,000
1930	7,200,000	7,865,000	665,000
1931	7,400,000	8,133,000	733,000

Second Step.

The amounts which should be restored to the value of the property and the amounts of return thereon at the fair rates of return found by the court are as follows:

TABLE [illegible]

	Reproduction Cost Intrastate Property Excluding Land and Right of Way		Deduction for Existing Depreciation As Percentage of Reproduction Cost	
Year	Amount at December 31 from Exhibit A-41 "Intrastate Total" (1)	Average Amount for Calendar Year (Computed from Col. 1) (2)	Court's Finding (3)	Company's Evidence (4)
1923........	$139,664,758	$133,244,605	16%	9%
1924........	146,223,565	142,939,162	16%	9%
1925........	159,884,262	153,053,914	16%	9%
1926........	165,032,055	162,458,159	16%	9%
1927........	176,290,322	170,661,189	16%	9%
1928........	184,618,758	180,454,540	16%	9%
1929........	197,887,923	191,253,341	15%	8%
1930........	198,679,303*	198,283,613	15%	8%
1931........	197,032,239*	197,855,771	15%	8%

Year	Amount Which Should Be Restored to Value of Property (in Round Figures) Col. 2 Multiplied by Col. 3 Minus Col. 4 (5)	Fair Rate of Return Found by Court (Finding 32) (6)	Return at Court's Rates on Amounts Which Should Be Restored to Value (Col. 5 x Col. 6) (7)
1923............	$ 9,300,000	7½%	$697,000
1924............	10,000,000	7½%	750,000
1925............	10,700,000	7½%	802,000
1926............	11,300,000	7½%	847,000
1927............	11,900,000	7½%	892,000
1928............	12,600,000	7 %	882,000
1929............	13,300,000	7 %	931,000
1930............	13,800,000	7 %	966,000
1931............	13,800,000	6½%	897,000

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* These amounts for 1930 and 1931 have been reduced by $5,674,723 and $5,620,356, respectively, below those stated in Exhibit A-41 (R. 2687-2697) on account of the Court's adjustment of Western Electric Company prices in those years (pp. 36 to 44, plaintiff's brief as appellant on cross-appeal, No. 548).

Third Step.

The amounts by which the Company's depreciation reserve exceeded the currently existing depreciation in the property, and interest thereon at 3½ per cent. are shown in columns 3 and 4, respectively, below:

TABLE 3.

Year	Deduction for Existing Depreciation at Percentages Shown by Company's Evidence (in Round Figures)* (1)	Depreciation Reserve Per Books** (2)	Excess of Reserve Over Existing Depreciation (Col. 2 Minus Col. 1) (3)	Interest at 3½% on Amounts in Col. 3 (4)
1923	$11,992,000	$26,797,000	$14,805,000	$ 518,000
1924	12,865,000	29,316,000	16,451,000	576,000
1925	13,775,000	32,155,000	18,380,000	643,000
1926	14,621,000	35,572,000	20,951,000	733,000
1927	15,360,000	39,352,000	23,992,000	840,000
1928	16,241,000	42,769,000	26,528,000	928,000
1929	15,300,000	44,515,000	29,215,000	1,023,000
1930	15,863,000	45,829,000	29,966,000	1,049,000
1931	15,828,000	48,362,000	32,534,000	1,139,000

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* Average amounts per year, obtained from Table 2 above by multiplying the figures in Col. 2 by the percentages in Col. 4.

** Average amounts per year, obtained from total Chicago depreciation reserve at end of each year (Exhibit A-60, R. IV, 2782-A), multiplied by "intrastate total" percentage shown in last column of Exhibit A-43 (R. IV, 2698), minus one-half of the increase during the year in order to obtain the average for the year.

The net effect of the foregoing adjustments is shown in column 4 of the following table:

TABLE 4.

Year	Court's Depreciation Allowance Less Than Charge Per Books (From Table 1) (1)	Return at Court's Rates on Amounts Which Should be Restored to Value (From Table 2) (2)	Interest at 3½% on Excess of Reserve Over Existing Depreciation (From Table 3) (3)	Net Effect of Adjustments (Col. 1 Plus Col. 2, Minus Col. 3) in Favor of Company (4)
1923	$222,000	$697,000	$518,000	$401,000
1924	220,000	750,000	576,000	394,000
1925	298,000	802,000	643,000	457,000
1926	367,000	847,000	733,000	481,000
1927	335,000	892,000	840,000	387,000
1928	359,000	882,000	928,000	313,000
1929	436,000	931,000	1,023,000	344,000
1930	665,000	966,000	1,049,000	582,000
1931	733,000	897,000	1,139,000	491,000

The amounts shown for each year in column 4 of Table 4 above should be added to the deficiencies (cols. 8 and 9, page 251, *infra*) of amounts found by the District Court to have been earned by plaintiff, below the amounts which in accordance with the Court's decision it would have been entitled to earn in the respective years. To illustrate, the Court found that the fair value of plaintiff's property in 1923 was $124,200,000; that plaintiff was entitled to a return of 7.5 per cent. on this value, or $9,315,000. The Court also found that the return actually earned by plaintiff in 1923 under the existing rates (after all adjustments made by the Court) was $6,646,000. The deficiency in return for that year was the difference between these last two amounts, or $2,669,000. Adding to this deficiency the net effect of the adjustment here being considered, the total deficiency in return for the year 1923 was $3,070,000 under existing rates. Similarly, the deficiency in return for 1923 under the rates in suit would be increased from $4,210,000 to $4,611,000.

The foregoing facts and computations, which can be readily checked and easily followed, make it entirely clear that the District Court in its findings has already made an excessive adjustment against the company, an adjustment that is excessive by the amounts shown in column 4 of table 4. It has accomplished this result, first, by deducting from the value of the property amounts for existing depreciation which have absolutely no support in the evidence; and second, by disallowing substantial amounts of plaintiff's proper depreciation expense charges, likewise contrary to all the evidence.

We have dealt with the matter thus far on the basis of the book accruals to the reserve account. This has been done for the sake of simplicity and clarity of treatment.

We now present Table 5, in which the annual accruals are put on the basis of replacement value (reproduction cost new) of the property, in accordance with *United Railways v. West, supra.* That is the proper basis. The calculation of deficiencies in return would be made as before, but substituting in place of the amounts taken from column 4 of Table 4 the amounts appearing in column 5 of Table 5 below. To illustrate, the deficiency in return for 1923 under existing rates now becomes $4,486,000 and under the rates in suit $6,027,000.

TABLE 5.

Year	Net Effect With Depreciation Expense on Basis of Original Cost (Table 4) (1)	Excess of Depreciation Expense on Replacement Value Basis Over Original Cost Basis (Plaintiff's Brief on Cross-appeal, p. 60) (2)	Increase in Reserve With Accruals Made on Basis of Replacement Value (Col. 2 Cumulative From 1923) (3)	Interest at 3½% on Increases in Reserve (Col. 3, Averaged for Each Year, Multiplied by 3½%) (4)	Net Effect of Adjustments in Favor of Company With Depreciation Expense on Basis of Replacement Value (Col. 1 Plus Col. 2 Minus Col. 4) (5)
1923	$401,000	$1,441,000	$1,441,000	$ 25,000	$1,817,000
1924	394,000	1,912,000	3,353,000	84,000	2,222,000
1925	457,000	1,721,000	5,074,000	147,000	2,031,000
1926	481,000	1,450,000	6,524,000	203,000	1,728,000
1927	387,000	1,274,000	7,798,000	251,000	1,410,000
1928	313,000	972,000	8,770,000	290,000	995,000
1929	344,000	712,000	9,482,000	319,000	737,000
1930	582,000	716,000	10,198,000	344,000	954,000
1931	491,000	801,000	10,999,000	371,000	921,000

Fair Value as Found by the Court Was Conservative.

The reproduction cost estimates of the plaintiff for each year were based upon labor costs actually experienced by the company and upon prices paid by plaintiff to Western for telephone apparatus and materials (R. I, 34; R. II, 1301).

The company's labor costs were not criticized in the court below and are not here attacked.

The prices paid for materials to Western were at all times below open market prices for the same or comparable materials. The extent to which Western's prices are lower is strikingly shown in one of the defendants' exhibits, where Western's prices to its Bell customers for the years 1926, 1927 and 1928 were shown to be from 22 to 26 per cent. below prices paid for the same materials by independent telephone companies of the country (see *infra*, p. 95).

For 1931 the market value of plaintiff's real estate and the estimate of the reproduction cost new of its buildings were reduced approximately $5,000,000 below its December 31, 1930 estimate by the company's witnesses, and this reduction was reflected in the court's finding of fair value for both 1931 and 1932 (see *supra*, p. 29).

The reproduction cost estimates of the plaintiff were conservative for all of the years and were based upon prices lower than those at which the property could have been reproduced, except for the advantages resulting from the Western relationship.

It is settled by repeated decisions of this court, "that, in order to determine present value, the cost of reproducing the property is a relevant fact which should have appropriate consideration." *Los Angeles Gas and Electric Corporation* v. *Railroad Commission of California*, 289 U. S. 287, and cases there cited.

The statutory court, in arriving at the fair value of plaintiff's property did not give undue consideration to the cost of reproducing such property. While it found that the plaintiff's reproduction cost estimates were substantially accurate, it did not adopt such costs* nor did it arrive at fair value by means of any formula. Its findings of the fair value of plaintiff's intrastate property were lower than the plaintiff's reproduction cost estimates, after deducting existing depreciation in accordance with the court's findings, by the following amounts in the following years:

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* This is admitted in the defendants' brief. See page 318.

1923	$ 4,287,348
1924	1,964,686
1926	5,395,059
1928	4,341,495
1929	2,675,978
1930	10,454,869
1931	19,530,329
1932	29,217,880

That the action of the statutory court was conservative further appears when its findings of fair value of the intrastate portion of the plaintiff's property, excluding going value, are compared with book costs, including cash working capital, materials and supplies, and construction work in progress for each of the years of the period involved

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[*] The figures above given are arrived at by deducting from the court's finding of fair value of the plaintiff's intrastate property for each of the years, the sum of the elements of value found separately by the court in definite sums, viz., going value, materials and supplies, cash working capital and construction work in progress. The resulting figure represents the sum at which the court ultimately found the fair value of the structural elements of the property, and this sum is then deducted from the plaintiff's proof of reproduction costs new depreciated in accordance with the court's findings. In only two years, 1925 and 1927, did the court's findings of fair value exceed the aggregate of the elements of value separately found and the reproduction costs less depreciation. Such excess is less than $3,000 for 1925 and less than $70,000 for 1927. The figures given above for the years 1930, 1931 and 1932, include the reductions made by the court on account of Western Electric prices and for the years 1931 and 1932, the reductions made by the court on account of general price declines. There was no finding by the statutory court of reproduction cost new for 1932 but in making the calculations we have taken the figure for December 31, 1931.

thus making the comparison between the same items of property.

This comparison is as follows:

COMPARISON OF COURT'S FINDING OF FAIR VALUE OF THE INTRASTATE PROPERTY WITH THE BOOK COST OF THE INTRASTATE PROPERTY

(1) Year	(2) *Court Finding of Fair Value Intrastate Property (R. III, 2515)*	(3) *Average Going Value Allowed by Court (8% of Average Reproduction Cost New as obtained from Exhibit A-43, R. IV, 2698)*	(4) *Fair Value Less Going Value ((2)-(3))*	(5) *Average Book Cost, plus Construction Work in Progress, Material and Supplies and Working Cash Capital Intrastate Property (A-5[illegible], R. IV, 2757-65)*	(6) *Per-centa (4) to*
1923	$124,200,000	$10,835,500	$113,364,500	$ 95,074,135	119.2
1924	136,500,000	11,628,128	124,871,872	105,291,980	118.6
1925	148,500,000	12,457,846	136,042,154	117,730,536	115.5
1926	151,500,000	13,227,032	138,272,968	130,857,355	105.6
1927	167,000,000	13,911,777	153,088,223	146,173,197	104.7
1928	173,000,000	14,714,570	158,285,430	159,622,212	99.1
1929	184,000,000	15,584,405	168,415,595	168,988,816	99.6
1930	187,120,000	16,154,120*	170,965,880	178,157,620	95.9
1931	179,100,000	16,105,346*	162,994,654	181,925,963	89.5
1932	166,500,000	16,027,825**	150,472,175	181,552,141***	82.8

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* Based on Reproduction Cost after eliminating Western Price Increase of 1930.

** Based on December 31, 1931, figure after eliminating Western Electric Price Increase of 1930.

*** December 31, 1931, figure.

Extent to Which Western's Profits Could Affect Valuation of Plaintiff's Property.

The following calculation shows the maximum effect which Western's profits could have upon the court's finding of fair value in this case in the several years. If we take the total Western materials included in the plaintiff's appraisal year by year, depreciate the same in accordance with the court's findings applicable to the entire property, and then apply to Western's materials so depreciated the percentage of profit made on Bell sales by Western in that year, the amount of Western's profit would be as follows: 1923, $2,027,001; 1924, $2,935,894; 1925, $4,919,638; 1926, $3,668,218; 1927, $5,210,192; 1928, $5,368,850; 1929,

$4,110,828.* For the years 1930, 1931 and 1932, the court by refusing to give effect to Western's price increase made in November, 1930, has eliminated all of Western's profits from the valuation of plaintiff's intrastate property.

We have already shown that Western's prices and earnings were at all times reasonable. Certainly no one would contend on any conceivable theory that all of Western's profits should be eliminated. But we have set out the above figures for the purpose of showing the court the maximum effect which Western's profits could have on the valuation in any year.

Defendants' Criticisms Are Without Merit.

Defendants contend that the statutory court, in valuing plaintiff's property, did not properly reflect an "honest and intelligent forecast" of future price levels. They claim that the error of the court, in this connection, is twofold: (1) with respect to 1932 and the future,** and (2) with respect to the years preceding 1932.

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* The above figures are arrived at in the following manner. The reproduction cost new of the labor and materials in the plaintiff's plant was obtained for each year from Sloan's appraisal. Approximately one-half of this amount consists of Western's materials (R. II, 1314). To the figures for Western's materials so obtained are applied the percentages of profit made by Western on its sales to its Bell customers for each of such years (R. III, 2518), which are then separated, as between intrastate and interstate property, and existing depreciation deducted in accordance with the court's findings. The above profits, of course, are not cumulative since they represent annual estimates of the total of Western's profits upon all plant items which would be purchased from Western for the construction of the total intrastate property, computed upon Western's prices current in each year.

** Defendants state that there was no proof in the record on which the issue of confiscation could be determined for 1932. This is not correct. The trial of this case commenced February 16, and was concluded July 1, 1932. The plaintiff introduced a reproduction cost estimate as of December 31, 1931. Proof of reproduction cost as of a later date was obviously impossible.

(1) With Respect to 1932 and the Future.

That the court in its opinion and findings did consider what it supposed to be future price levels and, indeed, gave undue weight to them is clear. In consideration of the general price trends prevailing at the time of the trial, it reduced the fair value of plaintiff's property by the following large amounts:

1. It disallowed the Western price increase of 1930 notwithstanding the fact that Western's earnings were less than reasonable. It thus reduced the value of plaintiff's intrastate property by over $4,750,000 in each of the years 1930, 1931 and 1932.* This refusal to accept reasonable Western prices resulted in trending the cost of Western apparatus included in plaintiff's appraisal to the lowest point reached by finished manufactured articles for the entire period 1923 to 1933 and only slightly above the low point of general commodity prices (see Appendix, p. e).**

2. It further reduced the fair value of plaintiff's intrastate property by sums in excess of $14,000,000 in 1931, and $23,000,000 in 1932.*** (See our brief on cross-appeal, No. 548, pp. 45 to 50.)

These large reductions were on account of a decline in general prices and the court so expressly states in its opinion (R. [illegible], 2505). Plaintiff's reproduction cost estimates (except for items of land and buildings where the full effect of price declines were separately reflected in plaintiff's appraisals) were not based on general price levels. During this entire period plaintiff's appraisal reflected the downward trend of Western's prices rather than the higher and the comparatively stable prices of other manufacturers.

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* See pages 36 to 44 of our brief in cross-appeal, No. 548, where the facts in this connection are set forth and the reasons why the Court committed error in this respect are discussed.

** In setting up these curves plaintiff has used 1923 as a base in order to show the trend during the period involved. Western's prices were lower than those of other manufacturers (See *infra*, page 95), and the trend at the starting point does not give consideration to this fact.

*** In this connection it must not be overlooked that the Court reduced the fair rates of return in 1931 and 1932 for the same reason.

Price trends should not have been taken into consideration by the statutory court in arriving at the fair value of the plaintiff's property for reasons which we have already explained. If, however, when the statutory court decided this case in April, 1933, it could reasonably have foreseen a continued decline in prices for a period of three or four months, it was also predictable that there would be a sharp up-turn in prices thereafter, and the court should have given consideration to this foreseeable condition, which it did not. The low price levels prevailing in 1932 and the first part of 1933 have been superseded. The major activities of the government for months have been devoted to an effort to increase the prices of labor and materials. This has been done pursuant to a policy publicly announced prior to the court's decision. In arriving at the fair value of the plaintiff's property for 1932 and the future, full weight should be given to these considerations if price levels are to be considered at all.

(2) With Respect to Years Prior to 1932.

The defendants claim that an "honest and intelligent forecast" of future price levels requires that in arriving at the valuation of plaintiff's property consideration should be given to the fact, which is now definitely known, that there were declines in the prices of Western's materials. What the plaintiff actually did was to give effect to the reduced prices in its reproduction cost estimates as they occurred. This the defendants say is not enough. For example, they object to the use in 1924 of Western's prices current in that year and say that lower prices should be used because it is now definitely known that in 1925, 1926 and 1927 further reductions in Western's prices were made. They claim that such price reductions were foreseeable.

One of the important factors in making possible the price reductions of Western has been the increase in the volume of its business and the resulting efficiency therefrom (R. I, 329, 450). In 1923 Western sold $132,000,000 of its manufactures to its Bell customers, and in 1929 it sold $242,000,000 (R. IV, 2830). As the volume increased price reductions were made possible and were put into effect, in recognition of this relationship.

The issue of confiscation is to be tried in view of Western's relationship to the Bell System. The defendants have so contended and this court has so held. In their present position they try to escape from the consequences of that relationship and now say that it is not enough that Western's prices and earnings always be reasonable but that in addition, in arriving at the value for each year, consideration must be given to possible future price reductions.

The defendants' position cannot be fairly maintained. Such price changes were not only dependent upon volume and other considerations, but could not be accurately forecast. This is clearly shown by the fact that Western reduced its prices in 1929 relying upon a large anticipated increase in business which was not realized (R. I, 450).

Defendants would accept the prices at which Western's materials are included in its appraisal only, if such prices were as low as or lower than market prices, and if Western made no unreasonable earnings. They then would decrease the value of plaintiff's property because of reductions in prices anticipated for the future. The result would be to impose a limitation on prices and profits, and then to use that limitation as a means of still further reductions. Surely such a proposal is not consonant with equity.

This case involves the issue of confiscation in the past, for each of the years 1923 to 1932. This is true because of the necessity of determining the disposition of amounts withheld by the company under the provisions of the interlocutory injunction. It is, therefore, essential to arrive at the fair value of plaintiff's property in each of these past years and to ascertain the revenues which it would have earned had the rates in suit become effective. This court has decided that the purpose of ascertaining probable future values is to afford a prediction as to the future "in order that the validity of rates for the future may be determined." *Los Angeles Gas and Electric Corporation* v. *Railroad Commission of California*, 289 U. S. 287. The forecast of future prices is not, as defendants claim, for the purpose of determining present prices and conditions. Those are known. Such prediction is necessary only for the purpose of determining future confiscation.

Even if there were no unusual features involved in this case, there are substantial reasons why the defendants' contentions cannot be sustained. One of them is that while the decline of Western's prices is substantial over the entire period 1923 to 1929, it is not so great as to constitute a new price level in the immediate future within the meaning of the cases. In the second place, defendants have entirely overlooked the fact that during the period 1923 to 1929 there was an increase in labor costs (R. V, 3117). These were treated by the plaintiff in the same way as Western's prices and effect was not given to them in plaintiff's appraisals until they occurred.

III.

Separation of Revenues.

(Appellant's brief, "Allocation of Chicago Intrastate Exchange Service Revenues to Interstate Toll Services," pages 49-80.)

Separation Made at First Trial and Decision of This Court.

Findings of Statutory Court and Amounts Involved (p. 75, *infra*).

Apportionment of Part of Exchange Revenue to Interstate Business Conclusively Sustained by Uncontradicted Evidence (p. 76, *infra*).

Defendants' Criticisms Are Without Merit (p. 81, *infra*).

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Separation Made at First Trial and Decision of This Court.

On the first trial of this case, plaintiff in separating its property, attributed to its intrastate service all of the property included in the local or exchange plant up to the connection of that plant with its toll facilities. It apportioned between its intrastate and interstate toll service all of its toll plant, beginning with the connection of that plant with the exchange facilities. It apportioned revenues and expenses on the same basis.

This has been termed the "board-to-board" method of separation (R. I, 170).

The separation was made in this manner because the exchange rates of the plaintiff and all other Bell and independent telephone companies have always been fixed to provide compensation for every use of the exchange plant, including the use of such facilities made in connection with toll calls. Similarly, toll rates have always been fixed to include compensation only for the use of the toll plant up to the connection of that plant with exchange facilities.*

This court held that inasmuch as the subscriber's station apparatus and the other facilities of the plaintiff which were used in connecting plaintiff's telephone users with the long distance toll board were employed in the receipt and transmission of interstate messages, the actual use to which the property was put could not be ignored and that it was necessary to make an apportionment. It further said that unless the apportionment was made, the intrastate service to which the exchange property is allocated would bear an undue burden, the extent of which was a matter of controversy.

Findings of Statutory Court and Amounts Involved.

Upon the second trial of the case, plaintiff made a new separation and apportionment of its property, revenues and expenses as between its intrastate and interstate business.

The defendants have stipulated that they will not raise in this court the issue of the correctness of the separation made by the plaintiff of its property in its Chicago exchange area as between its intrastate and interstate uses (R. III, 2594). Such apportionment was made on the basis of use and in full conformity with the decision of this court.* In addition, they do not challenge the correctness of plaintiff's apportionment of its expenses. (See Defendants' Brief, page 49.)

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* The single exception is in the case of the New York Telephone Company, where special and unusual conditions with respect to the local toll business prevail (R. I, 275).

The court adopted plaintiff's apportionment of its exchange revenues to its interstate service. The amounts of net revenue involved under the rates in suit are as follows (Defendants' Exhibits X-271, R. VII, 4354a): 1923, $245,042; 1924, $262,398; 1925, $309,505; 1926, $317,915; 1927, $354,372; 1928, $427,655; 1929, $486,875; 1930, $472,469; 1931, $431,580.

The defendants do not dispute that the amounts above set forth are the correct amounts of plaintiff's exchange revenue to be apportioned to its interstate revenue, if any apportionment of such revenue should be made. Their position is that exchange rates were not fixed to include compensation for services rendered by such facilities in providing access to the toll board, and that, therefore, all exchange revenues are purely intrastate in character and must be so treated.

Apportionment of Part of Exchange Revenue to Interstate Business Conclusively Sustained by Uncontradicted Evidence.

The question involved is purely factual: Were plaintiff's exchange rates fixed to compensate it for all uses of its exchange facilities including the toll use of such facilities? If it has been shown that the exchange rates were fixed to include compensation for every use of the exchange facilities, including the interstate use made of them in the toll business, then the rates paid for such services cannot be considered as producing merely intrastate revenue.

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* In separating and apportioning the subscribers' stations, subscribers' lines and local central office equipment as between their intrastate and interstate uses, the company's witnesses collected compiled, analyzed and classified for each year of the period from two billion to two billion eight hundred million originating and incoming exchange and toll calls in the central offices in Chicago (R. IV, 2701). The separation was not based merely upon the number of calls but upon the holding time and all elements affecting the use of the property (R. I, 182).

It is clear from the evidence that throughout the history of the telephone business, exchange rates have been fixed to include compensation for all uses of exchange facilities including connection with the long distance plant, and that toll rates have been fixed to provide compensation only for the use of the toll facilities up to the connection with the exchange plant. The witnesses who testified on this question were men of wide experience in the telephone business.* They spoke with authority on this subject matter and the defendants did not call a single witness to dispute their evidence.

C. O. Bickelhaupt, now Assistant Vice-President of the American Company who had more than 20 years' experience in rate making, makes the following clear statement in connection with this subject matter:

> "It has been the general practice of telephone companies throughout the United States to separate or classify the telephone service into exchange service and toll service, and to charge separate rates for each class of service. When a subscriber pays his exchange rates, he is entitled to exchange service, which has always included the right or privilege of connection with the other telephones connected with

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* See the testimony of Carroll O. Bickelhaupt (R. I, 270-294); Lambert N. Whitney (R. I, 295-299); Allen B. Crunden (R. I, 300-308); W. K. Kruse (R. I, 263); and Andrew Sangster (R. I, 254-261).

> the same exchange, including the right to call or be connected with the toll or long distance board, in order to send or receive toll and long distance messages which come over the toll facilities. When toll lines are connected with exchange lines, the subscriber who pays the toll rate for a given toll call is entitled to the use of toll facilities.
>
> * * * * * *
>
> "The exchange rate covers every use made of the exchange telephone, just as it did at the beginning of the telephone industry. That has always been so in all of the telephone industries with the possible exception of New York where special conditions prevail with respect to the local toll service."

The above quoted testimony is fully supported and confirmed by that of four other witnesses (see note, page 77, *supra*)—it is not denied or disputed in any particular by any witness.

After the completion of plaintiff's entire case the city called three witnesses, Wray, Cummings and Hill, all of them with telephone experience covering many years, and they testified at length on several subject matters involved in this controversy. They were not called upon to, and did not contradict in any particular the plaintiff's evidence that exchange rates were fixed to provide compensation for all services rendered by means of exchange facilities. The defendant Commission has an engineering department (O.R. V, 1854). It called no witnesses whatever in connection with this subject matter. The evidence of the plaintiff stands absolutely unchallenged and uncontradicted although the record clearly discloses that both defendants, the City of Chicago and the Commission, had available for their use witnesses who were familiar with the particular matter under investigation.

It is obvious that every term which is used in a rate schedule does not need to be and cannot be defined in such schedule. For example, in the plaintiff's exchange schedules applicable to Chicago, a single-party business service is defined simply as "Class 1 M. B.—Single Line" (R. VIII, 4924A). Everyone knows that there is furnished as a part of that service a telephone instrument and all other equipment necessary for rendering the service, and all this is done without the facilities being listed and described.

It does, however, appear that in many places in both exchange and toll service schedules filed by Bell and independent companies with various regulatory bodies, the terms which we are now discussing, viz., "exchange services" and "exchange rates" were from time to time defined when there was a reason for doing so. *There is not a single instance in which such a definition was made where it does not fully conform with plaintiff's position.*

As far back as 1917, the toll rate schedule of the American Telephone and Telegraph Company *filed with the Illinois Commerce Commission* contained the following provision (Exhibit A-66, R. IV, 2786B):

> "The service covered by this tariff consists in furnishing for the use of patrons facilities, other than exchange facilities, intended for use in telephonic communication between the points listed. The exchange facilities used in connection with this service are the facilities required to establish connection between an exchange station and the toll board, or between an exchange station and the toll trunks, when such trunks are employed to effect connection with the toll board, and the use of such facilities is covered by the charges for exchange service."

An entirely similar provision is found in the toll rate schedule of the Illinois Bell Telephone Company filed with the same commission, effective October 1, 1925 (Exhibit A-221, R. V, 3092), and in the schedules, toll and exchange, filed by many independent and Bell companies with the public service commissions of the several states for the period 1920 to date. Exhibits A-67 (R. IV, 2787-92) and A-68 (R. IV, 2792A-2813) contain a list of numerous schedules filed by Bell and independent companies with the public service commissions of seventeen states. The rules of the Public Service Commission of Louisiana, effective January 1, 1913, contain a substantially similar provision (Exhibit A-67, R. IV, 2792), as does likewise an order passed by that Commission as long ago as November 20, 1902.

A substantially identical definition appears in the license contract between the American Telephone and Telegraph Company and the Illinois Bell Telephone Company, executed in 1919 (Plaintiff's Exhibit 7, at O.R. IV, 1205), and reaffirmed on September 25, 1930 (Exhibit A-206, p. 9, R. V, 3007).

At the first hearing of this case, the defendant Commission introduced as Exhibit 27 (O.R. I, 259), the order of the Interstate Commerce Commission of November 2, 1926, relating to depreciation charges of telephone companies. At page 292, the Interstate Commerce Commission quotes from the brief of a committee of the National Association of Railway and Utility Commissioners, the following statement:

> "Under the interstate toll schedules in force in this country, the telephone lines between the toll operator's position and the local switchboard, and be-

tween the local switchboard and the subscriber's premises are considered as purely local property, and any cost in connection with the maintenance, operation and depreciation of those lines, or of a return upon the investment in them, if covered at all, is covered by the charges for local telephone service. *In other words, in the make-up of the rates for local telephone service, the service which the subscriber gets in connection with interstate toll business, up to the point where he talks to the toll operator, is paid for as a local service''* (Emphasis ours).

This evidence is conclusive. It not only comes from a wholly outside and independent source but from a body of public officials charged with the duty of regulating the various operating telephone companies which comprise the Bell System and all independent telephone companies in the United States. It shows that all services which were rendered by means of exchange facilities, including the use of such facilities in connecting subscribers with the toll plant, were paid for as local service and by means of the local rates. There is no doubt as to the understanding which the various public service commissions of the United States had in connection with this matter. They knew of the existence of this universal custom in the making of exchange rates. They had recognized it at a time before the first trial of this case. In the defendants' brief they make no reference to this testimony. They simply ignore it.

Defendants' Criticisms Are Without Merit.

Defendants criticize the finding of the lower court in making the apportionment of plaintiff's exchange revenues upon the following grounds:

First: That the question involved has already been decided by this court adversely to the plaintiff's contention.

Second: That the plaintiff made no proof that there was a universal understanding of the terms "exchange services" and "exchange facilities" in the telephone business, or that such general understanding had any applicability to the plaintiff's Chicago area property.

Third: That plaintiff's treatment of its pay-stations is inconsistent with its position in this case.

Fourth: That the inclusion in plaintiff's exchange rates of compensation for all services rendered by means of exchange facilities is in violation of the Illinois Public Utilities Act.

We will now discuss these contentions separately:

1. The defendants' claim that this specific question has been decided by this court is based upon the statement appearing in the opinion in this cause that "exchange facilities" of plaintiff were used to render three different kinds of service, one of which was called "exchange service, all of which is intrastate," and upon the further statement in the same opinion that unless an apportionment of plaintiff's property was made as between its intrastate and interstate uses it was obvious that the exchange service would bear an undue burden, the extent of which was a matter of controversy.

The question here presented was not and could not have been before this court on the former appeal and was not in fact determined by it. As shown above, plaintiff's separation in the former case was made by the board-to-board method, and all that this court decided in that connection was that such method did not give recognition to the use of plaintiff's exchange facilities in its interstate business, and that an apportionment would have to be made which did give such recognition.

Defendants' position comes to just this: that this court having directed an apportionment of plaintiff's property in accordance with its use respectively for intrastate and interstate purposes determined that no part of plaintiff's exchange revenues could properly be apportioned to its interstate business even though the evidence should conclusively establish and all parties to the case should admit that a definite portion of plaintiff's exchange service revenues were received by it in payment for the use of such facilities in its interstate business!

This court in discussing the apportionment which should be made, said:

> "At the threshold of the discussion, we are met with the fact that, in these findings, the Commission and the court made no distinction between the intrastate and the interstate property and business of the Company. It appears that the property of the Company in Chicago is used to render (1) what is called exchange service, all of which is intrastate, (2) intrastate toll service over its own lines and under arrangements with companies other than the American Company, and (3) interstate toll service, which includes all the toll service rendered under arrangements with the American Company. The Company introduced evidence separating the intrastate and interstate business and also the intrastate exchange business. While the court regarded these computations as correct, and approved the method in which they had been made, still the court made

> no specific findings based *on a separation of the intrastate and interstate property, revenues and expenses*, but determined the issue on the basis of the total Chicago property of the Company" (Our emphasis).

It seems clear that what this court desired was a separation of the intrastate property, revenues and expenses to the end that no undue or unfair burden should be imposed on either the intrastate or the interstate business of the plaintiff. This is exactly what has been done in this case.

2. The defendants urge that the plaintiff has not established that exchange rates are fixed to include all compensation for use of exchange facilities, either in the telephone business generally or for the Chicago exchange area. Most of the defendants' argument on this question is based upon their assumption that in order to prove the existence of such a universal understanding the plaintiff must produce Chicago exchange schedules specifically defining exchange rates and exchange services. We have fully discussed this question at page 79, *supra.*

The defendants find themselves in an embarrassing position with respect to the toll rate schedule filed by the plaintiff with the Illinois Commerce Commission in 1925. That schedule contained a specific statement that the exchange rates of the plaintiff included compensation for the toll use of the exchange facilities (Ex. A-221, R. V, 3092). The defendants would have it appear, however, that this filing showed a change in the plaintiff's practice and that before that date exchange rates were not so fixed. The evidence shows the contrary. When the 1925 filing was sent to the

Illinois Commission there was a covering letter in which the plaintiff stated:

> "As stated above, this new schedule makes no change in our toll rate schedules or practices * * *" (Exhibit A-220, R. V, 3091).

The case of *Chicago Telephone Co.* v. *Illinois Manufacturing Co.*, 106 Ill. App. 54, upon which the defendants rely, does not decide or attempt to decide the question here discussed.

Defendants claim that the general description of exchange service appearing in plaintiff's filings disproves its contentions. A casual reading of this description discloses that the full services furnished in return for the exchange rates are not set forth. It is also clear that the wording is especially designed to differentiate between general exchange subscribers and neighborhood exchange subscribers.

3. Defendants claim that plaintiff's methods of dealing with local and long distance messages at its public pay stations is inconsistent with its claim that a portion of its exchange revenues representing the interstate use of its exchange facilities should be apportioned to its interstate business.

For the convenience of the public, plaintiff maintains pay stations where all persons, whether they have telephones in their residences or places of business or not, may make either local, intrastate toll, or interstate toll calls. These stations represented during the period 1923 to 1931 from 1.6 per cent. to 2.35 per cent. of the plaintiff's total stations. The exchange revenue derived from such stations during the same period varied from $3,000,000 to almost $4,700,000 annually and amounted to approximately

9 per cent. of plaintiff's total exchange revenues (Defendants' Brief (Appellants), Appendix, p. 37). The exchange revenues derived from these stations were approximately four times as much per pay station as the revenues derived by plaintiff from its average station.

The exchange rates received by the plaintiff from its individual subscribers compensate it for their use of exchange facilities in transmitting toll calls. The situation is identically the same at a pay station. At a pay station the public may be considered to be the subscriber; it uses the exchange facilities as a means for reaching the toll plant for the transmission of both intrastate and interstate messages, and the exchange service revenues paid by the public at the pay station include compensation for the entire use of such exchange facilities by the public.

The plaintiff deals with the public at the pay stations on the same basis as it deals with the remaining 98 per cent. of its stations. But if the defendants' contention that there is a difference in this situation were correct, this would fall far short of establishing their claim. The most that it would prove would be that the company for the convenience of the public has made an exception to its general rule. That exception would be based upon the practical necessity of recognizing in a rate structure differences in the situation arising out of conditions under which service must be given to the public.

4. Defendants urge that plaintiff's position that the exchange rates are fixed to include compensation for all services rendered by exchange facilities, including the interstate use of such facilities, results in a showing that plaintiff's rate schedules have been filed in violation of the

Illinois Public Utilities Act. Their argument in this respect is predicated upon two propositions: (a) that a specific definition was not filed with the commission, and (b) that rates so fixed will result in a discrimination between toll users and non-toll users.

We have already shown that every word in a tariff cannot be defined in that tariff, but that the words used must be read in the light of the universal custom of the business. With this point in mind, it is clear that every filing of the plaintiff's exchange rate schedules fully informed the commission and the public of the services which were paid for through exchange rates.

The defendants claim that the practice results in a discrimination between subscribers who use the toll service and those who do not. The point has no practical substance because during the course of a year from 85 to 90 per cent. of telephone subscribers do use the toll service (R. I, 278). But whether they do or not, each subscriber has the right to such use and the resultant advantage therefrom.

The question here is whether exchange rates were fixed to provide the compensation for the total use of exchange facilities. The question is not as to the desirability of the practice or whether it results in an unfair discrimination. All such matters are for the determination of the State commission having jurisdiction.

The showing made by the plaintiff is conclusive. Exchange rates cannot be treated as producing merely intrastate revenue when a portion of the service for which they provide compensation is interstate in character.

IV.

Western Electric Company's Prices and Earnings in Its Bell Business Have Always Been Reasonable.

(Appellant's Brief, "Western's Profits and Prices," pages 233-315.)

Decision of This Court with Respect to Western Electric Relationship.

Relationship of Western to Bell System and Character and Extent of Its Business (p. 89, *infra*).

Findings of Statutory Court as to Reasonableness of Western's Prices and Earnings (p. 91, *infra*).

The Decision of the Statutory Court that Western's Prices and Earnings Were Reasonable Is Fully Sustained by the Evidence (p. 94, *infra*).

Decision of This Court with Respect to Western Electric Relationship.

This court, in dealing with the finding of the lower court on the first trial, in connection with the Western Electric relationship, said:

> "The Court said that it appeared that for the past fourteen years the average profit of the Western Electric Company on its total business had not been 'in excess of seven per cent. and never above ten per cent.' That fact has evidentiary value, but the finding does not go far enough. The Western Electric Company not only manufactured apparatus for the licensees of the Bell system but engaged in other large operations and it cannot be merely assumed or conjectured that the net earnings on the entire business represent the net earnings from the sales to the Bell licensees generally or from those to the Illinois Company. Nor is the argument of the appellants answered by a mere comparison

of the prices charged by the Western Electric Company to the Illinois Company with the higher prices charged by other manufacturers for comparable material, or by the Western Electric Company to independent telephone companies. The point of the appellants' contention is that the Western Electric Company, through the organization and control of the American Company, occupied a special position with particular advantages in relation to the manufacture and sale of equipment to the licensees of the Bell system, including the Illinois Company, that is, that it was virtually the manufacturing department for that system, and the question is as to the net earnings of the Western Electric Company realized in that department and the extent to which, if at all, such profit figures in the estimates upon which the charge of confiscation is predicated. We think that there should be findings upon this point."

Relationship of Western to Bell System and Character and Extent of Its Business.

Western Electric Company of New York was organized in 1915 and acquired the assets of a predecessor corporation of the same name, organized under the laws of Illinois in 1881, at which time the American Telephone and Telegraph Company acquired a substantial interest in the Western Electric of Illinois. The American Company has owned more than 97 per cent. of the common stock of the New York corporation continuously since its organization (R. I, 318).

Under the contract of 1882, between the American Company and Western, which is still in force, the latter was constituted exclusive manufacturer of telephones as long as it should meet the demands of the Bell Associate Companies on reasonable terms. Since the date of that contract, the American Company has done the fundamental research work on voice transmission and Western has developed apparatus to be manufactured by it (O.R. VI, 2068-2077; R. I, 319, 489).

The "Standard Supply Contract" which is in force between Western and each of the Bell Associate Companies including plaintiff, requires Western to manufacture or purchase materials which such companies may require in their business and which they may order from Western (R. V, 2988; O.R. VI, 2040). These contracts provide that Western's prices and terms to the Bell Associate Companies shall be as low as to its most favored customers under comparable conditions (O.R. VI, 2042; R. V, 2991).

Western has been engaged chiefly in the manufacture of telephone apparatus and lead covered cable, and in the purchase of supplies manufactured by others, and in their sale to the Bell Associate Companies (R. IV, 2830). Western is, in effect, the manufacturing department of the Bell System and the companies comprising that system have bought substantially all of their telephone apparatus, cable and supplies from Western, at prices which have always been lower than open market prices (R. I, 421).

From 1916 to 1931 Western sold to its Bell customers $2,135,000,000 of goods of its own manufacture, and $950,000,000 of supplies manufactured by others. Its sales to its non-Bell customers during the same period were $230,000,000 of goods of its own manufacture and $460,000,000 of supplies. Western's Bell business thus has constituted 90 per cent. of its manufactures and 82 per cent. of its total sales, including supplies (Ex. A-90 and A-109, R. IV, 2830, 2840a). Western's non-Bell business, while substantial in amount, is clearly subordinate to its main business which is with its Bell customers.

In addition to telephone apparatus and lead covered cable, Western manufactures and sells to both its Bell and non-Bell customers special commercial products, consisting principally of aviation communication, sound picture, phonograph, radio receiving and transmitting, public address, railway and scientific equipment. During the period 1916 to 1931 this business has amounted to $81,000,000, which is less than 3½ per cent. of Western's total manufactures. Approximately 92 per cent. of all special commercial products manufactured by Western were sold to its non-Bell customers (R. IV, 2840a).

Western owns and operates three large manufacturing establishments. It also has 32 distributing houses and an extensive organization for the installation of central office equipment for its Bell customers throughout the United States (R. I, 309, 310).

The factories of Western are advantageously located, well designed and efficiently equipped. Its employees are capable and well trained, and its operating costs low. Its products are of high quality (R. 1, 499-510).

During the period involved, Western owned certain subsidiaries and had contracts with other companies doing business in the non-Bell field. The nature and extent of these relationships, in so far as they are involved in this cause, are discussed *infra*, at pages 111, *et seq.* of this brief.

All of the facts above stated were established by uncontradicted testimony.

Findings of Statutory Court as to the Reasonableness of Western's Prices and Earnings.

As a result of the decision of this court there was a most thorough and exhaustive investigation of the entire business affairs of Western and its subsidiaries.

The findings of the statutory court, so far as they are material to the questions now to be determined, may be summarized thus:

First: Western's prices to plaintiff and its other Bell customers have been lower during the entire period 1916 to 1932, inclusive, than prices charged by other manufacturers for comparable materials and lower than prices charged by Western to independent telephone companies and others for the same materials (R. III, 2517).

Second: The earnings of Western on its investment in its Bell business, on such investment less its depreciation reserve account, and its profit on sales were as follows (R. III, 2518):

	Per cent. profit on sales	Per cent. earnings on average investment	Per cent. earnings on average investment less amount of depreciation reserve account
1916	.5	.8	1.1
1917	2.3	3.6	4.4
1918	2.7	3.1	3.9
1919	3.4	3.9	5.0
1920	3.7	4.9	6.1
1921	7.7	8.7	10.7
1922	4.0	5.2	6.6
1923	3.4	4.8	6.2
1924	4.7	6.9	8.8
1925	7.2	10.2	12.9
1926	5.2	8.3	10.6
1927	6.9	10.4	13.6
1928	6.8	11.8	15.8
1929	4.8	9.1	11.7
1930	3.5	4.6	5.8
1931	5.0	4.2	5.6
1932	(3.9)*	(2.3)*	(3.3)*
For period 1916 to 1932	4.5	5.9	7.6
For period 1923 to 1932	4.7	6.1	8.0

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* Red. The testimony was that the loss for 1932 would exceed $6,400,000 (R. II, 1074).

THIRD: Western made no unreasonable or unfair profit in any of its dealings with the plaintiff, except as a result of the price increase made in November, 1930. All of the telephone apparatus, lead covered cable and supplies sold by Western to plaintiff have been sold at reasonable prices, except for such price increase* (R. III, 2519).

FOURTH: Western's earnings on investment and profit on sales vary from year to year due to the relative weighting of several important factors, among which are reductions in the prices of its products, rate of turnover, changes in cost of materials and wage schedules. Western's relationship to the Bell System is permanent, not casual. It supplies substantially all of the requirements of all of the Bell Associate Companies for telephone apparatus and lead covered cable at all times. It is, therefore, necessary in arriving at what are reasonable earnings and profits on sales in Western's Bell business to take into consideration the results over a period of years and not merely a single year (R. III, 2507-8).

FIFTH: Western has no sales expense and no credit risk in its Bell business; it receives advance information of the requirements of the Bell Associate Companies for telephone apparatus and materials and as a result is able to plan its manufacturing work more efficiently and economically and thereby to sell its manufactured articles to its Bell customers at lower prices than would otherwise have been possible. These advantages are not retained by Western but are passed on by it in the prices charged to its Bell customers (R. III, 2507).

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* For a full discussion of the propriety of this price increase, see plaintiff's brief on cross appeal, No. 548, pages 36, *et seq.*

Sixth: Commencing in 1921, Western made substantial reductions in the prices charged by it for telephone apparatus so that at the end of 1929 the level of its prices for telephone apparatus was only 58.3 per cent. of what it had been on December 31, 1920 (R. III, 2508).

Seventh: The earnings made by Western on its investment in its Bell business and on such investment less the depreciation reserve account, were substantially one-third lower than the earnings of other large comparable manufacturers. Its profits on sales were less than one-half of those of other large comparable manufacturers (R. III, 2508).

The Decision of the Statutory Court that Western's Prices and Earnings Were Reasonable Is Fully Sustained by the Evidence.

Under the decision of this court there are only two questions to be considered in connection with Western's prices and earnings. They are:

1. Whether Western sold telephone apparatus, lead covered cable and supplies to plaintiff at prices as low as, or lower than, such materials could have been purchased elsewhere; and

2. Whether Western's earnings in its Bell business have been reasonable.

With respect to the first question involved, the statutory court found upon uncontradicted testimony that during each year of the period in controversy Western's prices to plaintiff were lower than the prices at which comparable materials could have been purchased elsewhere, and lower than the prices charged by Western for the same materials to independent telephone companies and others (R. III, 2517). The extent to which such prices were lower is shown by the fact that Graybar Electric Company, which acted as a distributor of Western's telephone apparatus and lead covered cable in the non-Bell field, was able, in competition with other manufacturers, to sell telephone apparatus and lead covered cable manufactured by Western, during the years 1926, 1927 and 1928, at prices at least 22 to 26 per cent. higher than those paid for the same materials by Western's Bell customers (See Defendants' Brief, p. 122). This proof was offered by the defendants. They do not and cannot question that Western's manufactures have been sold to its Bell customers at prices substantially below the prevailing market.

It remains only to consider the reasonableness of Western's earnings in its Bell business.

Western's Earnings in Its Bell Business Have Always Been Reasonable.

The statutory court found that Western's earnings on its average investment in its Bell business were 6.1 per cent. for the period 1923 to 1932 and 5.9 per cent. for the period 1916 to 1932, and that for the same periods its earnings on its average investment less the amount of its depreciation reserve account were 8 per cent. and 7.6 per cent., respectively. It also found such earnings year by year, and that Western made no unreasonable or unfair profits at any time in any of its dealings with the plaintiff, except for the price increase made in November 1930, which the statutory court eliminated from the calculations upon which it determined the issue of confiscation for the years 1930, 1931 and 1932 (R. III, 2518-9).

The defendants contend that the statutory court erred in giving any consideration whatever to Western's earnings over a period of years and that the issue should have been decided on the basis of Western's earnings for each year separately. They assume, contrary to the evidence and the finding of the court, that Western's earnings were excessive if considered year by year.

The evidence showed and the court found that in the period 1923 to 1932 Western sustained a loss in its Bell business in one year; that in three of such years it earned less than 5 per cent. on its investment; in three other years from 6.9 per cent. to 9.1 per cent.; in two of the years, less than 10.5 per cent., and in one year 11.8 per cent. (R. III, 2518).

Considering the nature of Western's manufacturing business, these earnings from year to year appear on their face to be fair, and the court so found. In addition, it was shown by uncontradicted testimony that earnings on the average of 10 per cent. on the book cost of Western's assets devoted to its Bell business would have been reasonable (R. I, 414, 430, 520).

The reasons which impelled the statutory court to take into consideration the result of Western's operations over a period of years, as well as the results in each year, are thus stated in the court's opinion:

> "The Western Electric Company, because of its relationship with the Bell system, has no sales expense and no credit risk involved in its Bell business. By receiving advance estimates from the Bell associate companies of their requirements, it is able to

> plan its manufacturing work more efficiently and economically. These factors result in reducing Western's costs, but they are not advantages retained by Western, since such reductions in costs are passed on by it in prices charged to its Bell customers. As a result of this relationship, Western has been enabled to sell and has sold its manufactured articles to its Bell customers at lower prices than otherwise would have been possible. Western's earnings on investment and profit on sales vary from year to year, due to the relative weighting of several important factors, among which are reductions in prices of its products, rate of turn over, changes in costs of materials and wage schedules. Western's relationship to the Bell system is permanent, not casual. It supplies substantially all of the requirements of all the Bell associated companies for telephone apparatus and lead covered cable at all times. It is, therefore, necessary in arriving at what are reasonable earnings on investment and profit on sales in the Bell business of Western to take into consideration the results for a period of years and not merely a single year * * *" (R. III, 2507-2508).

The entire record fully sustains these findings.

Western is engaged in the manufacturing business on a large scale. It sold more than two billion dollars of its own manufactures to its Bell customers in the period 1916 to 1931 (R. IV, 2840a). Experience teaches that the earnings of such a manufacturing company are subject to substantial fluctuations. Western's earnings on investment have varied from year to year on account of the factors stated by the court (R. I, 329, 430). In view of these facts, any determination of the reasonableness of Western's earnings in its Bell business which failed to take into consideration a period of years, would have been incomplete and would have missed the purpose for which the investigation was made, viz., whether Western in its dealings with its Bell customers has made any unfair or unreasonable profit.

It needs no argument to show that Western's earnings cannot have the same stability as those of public utility companies engaged in furnishing gas, water, electric light or telephone service to a community.

The evidence shows conclusively that Western's earnings in its Bell business have been fair and reasonable over the entire period of years and have not been excessive in any year.

Earnings of Western in Its Bell Business Compared With Earnings of Other Large Companies.

Western's earnings in its Bell business were compared with those of eighty-eight large manufacturing companies which were, in fact, comparable with Western (R. IV, 2823-4; I, 333; V, 3150.) This comparison was made for the six year period 1925 to 1930 and showed that Western's earnings were approximately one-third less than the average earnings of these comparable manufacturers. During the same period Western's profits on sales were less than one-half the average profit on sales of thirty-eight of these manufacturing companies which were the only ones reporting the necessary information for such a comparison (R. IV, 2824-6; I, 334; V, 3150).

Appreciating the importance of this testimony, defendants seek to avoid its consequences by asserting that the comparison made is not a valid one for reasons which we will now consider.

That the manufacturing companies included in the list were engaged in businesses comparable with Western is not contested except in one particular. Attention is called to the fact that there were included in the list fifteen companies owning mineral deposits whose operations involved the question of depletion of assets, and it is claimed that they should have been excluded on the ground that their businesses were not comparable with Western's. If the companies referred to are excluded, Western's earnings in its Bell business are shown to be on the average 39 per cent. less than those of the remaining companies instead of only 33 per cent. when such companies are included.

The other objections urged by the defendants relate to the question of whether the investment and earnings of the companies compared are stated on the same basis as those of Western. Defendants point out that five of the eighty-eight companies used depreciation rates in conformity with those approved for income tax purposes, whereas Western's earnings on its Bell business give effect to depreciation expense charges which are higher than those approved for income tax purposes by the Internal Revenue Department. The proof is that Western's depreciation rates were based upon its own experience as determined by competent engineers (R. V., 3139), and it is reasonable to assume that all of the eighty-eight companies charged proper depreciation rates based upon their individual experience. Certainly there is no reason for rejecting the comparison on this ground.

Defendants complain that the comparison made is affected because of certain adjustments to surplus which had been made by part of the eighty-eight companies. Some of these adjustments resulted in credits and others in debits to surplus. When consideration was given to all of them, the return on investment for the eighty-eight companies for the six-year period was reduced from 12.2 per cent. to 11.9 per cent. (R. II, 1339). These adjustments to surplus, whether proper or not, could not substantially affect the result of the comparison.

Defendants also point out that Western's operating earnings on its Bell business were compared with the earnings of the eighty-eight companies, many of whom make their returns either on a total company basis, including operating and non-operating earnings, or on a consolidated basis, including the combined subsidiary and parent company earnings. These eighty-eight companies earned 11.9 per cent. on the book cost of their investment for the period 1925 to 1930 after correcting for the adjustments to surplus above referred to (R. II, 1339). During the same period Western earned 8.2 per cent. on its Bell business and 8.5 per cent. on its Bell and non-Bell operating business (A-77, R. IV, 2816; A-79, R. IV, 2818; V, 3150). The record does not disclose the earnings of Western and all its subsidiaries for this period, but for the years 1916 to 1931 such earnings were 7.6 per cent. (Exhibit A-84, R. IV, 2822; R. I, 317, 332). It is obvious that any comparison of Western's earnings, whether on the basis of its Bell business, its total operating business, Bell and non-Bell, or the business of Western and all of its subsidiaries shows that Western's earnings are low.

The defendants' criticisms are limited to minor details and do not touch in any substantial particular the essential bases upon which this comparison rests. The narrow grounds upon which defendants' attack is predicated emphasize the importance of the comparison. No one can doubt that Western's earnings are substantially below those of these eighty-eight companies, the comparability of whose businesses with Western's is practically conceded by the defendants.

Western's Earnings in Its Dealings With Plaintiff Were Reasonable.

The statutory court found that the sales of Western to plaintiff for use in its entire business and in its Chicago area have been a reasonably fair and representative cross-section of the total sales of Western to all of its Bell customers, and that Western had not made any unreasonable or unfair profit in its dealings with the plaintiff, except for the price increase of November, 1930, to which it refused to give effect (R. III, 2519).

The defendants contend that Western's earnings in its total Bell business do not fairly measure its earnings in its dealings with the plaintiff. The evidence is clearly to the contrary. Western's profit on sales and earnings on investment in its dealings with the plaintiff for its entire business and in its Chicago area over a period of years were substantially the same as the earnings and profits made by it in its dealings with all of its Bell customers. (See Exhibits A-93 to A-98, inclusive, where the comparative figures are set forth in detail, R. IV, 2832-3).

It has never been claimed by the plaintiff that exact identity could be found in the ratio of purchases by each of the Bell Associate Companies from Western in any given year. Western develops telephone apparatus and equipment for the present and future needs of all these companies, and its plants are maintained for the purpose of supplying their demands at all times (R. I, 407, 8). If articles of a certain type are not used during one year by one associate company, they are used in another year (R. I, 441, 447, 448). In every year Western sells large quantities of every type of apparatus which it manufactures (R. IV, 2830; R. IX, 5055-6). Western's prices are the same to each Bell Associate Company (R. I, 342).

The Chicago area of the plaintiff is engaged in rendering telephone service by means of a plant equipped with standardized Western articles and engineered and constructed in accordance with Bell System standards.

When these facts are taken into consideration, the variations which occur from time to time in the relative purchases by the different associate companies of the various items of Western's manufacture do not have any significance. The fact is, as established by the evidence and found by the statutory court, that the earnings of Western in its Bell business are a fair measure of Western's earnings in its dealings with plaintiff.

The use which was made by the statutory court of Western prices in arriving at the valuation of plaintiff's property is dealt with at page 32 of this brief, *supra.*

Western's Earnings on Its Capital Stock and Surplus Are of No Importance in Determining Whether Its Earnings on Investment in Its Bell Business Have Been Reasonable.

At a number of places in the defendants' brief tables are inserted in which Western's earnings in its Bell business are related to the capital stock and surplus which defendants attribute to such business.*

To illustrate the effect of this procedure reference need be made to one year only, 1930. In that year the average investment of Western in its Bell business was approximately $270,000,000 (Ex. A-77, R. IV, 2816) and its capital stock and surplus apportioned to its Bell business by the defendants in their calculations was approximately $145,000,000. Defendants' method results in excluding from the base to which Western's earnings are applied $125,000,000 of its investment in such business. Further comment is unnecessary.

Western Used Proper Methods in Making Such Apportionments as Were Necessary in Order to Determine the Net Earnings in Its Bell Business.

Western has never maintained records which showed separately the cost of each article manufactured or the aggregate cost of doing business with particular customers or classes of customers, or the time at which a particular article was manufactured. The maintenance of such a system would have served no useful purpose, would have been impracticable in view of the size and complexity of Western's manufacturing operations, and the expenses incident to it would have been prohibitive (R. I, 375, 569).

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* In these tables (See pp. 246, 296, 304, 305, 307) they show rates of return which they say are calculated after excluding interest, but the fact is that interest was not excluded. The result is that even on defendants' wholly erroneous theory, the rates shown are substantially in excess of what they would have been if interest had been excluded.

The receipts from sales, made by Western to its Bell customers and the amount of such sales is not in controversy (R. I, 323; R. II, 1382). Western's earnings in its total business are known. A part of the investment in and expenses of the Bell business are shown directly in the records but there was a substantial portion with respect to which allocations were necessary. Such apportionments as were necessary to be made in order to ascertain the profits in the Bell business were made on the basis of use (R. I., 323, 324, 331, 568-72). *These apportionments were made currently by Western in the conduct of its business during each of the years in controversy and were not made for the purpose of this litigation* (R. I, 469).

More than 90 per cent. of the telephone apparatus and lead covered cable manufactured by Western have been sold to its Bell customers, and more than 92 per cent. of the third type of its manufactures, special commercial products, have been sold to its non-Bell customers (R. IV, 2830, 2840a).

Western manufactures three types of articles, viz., telephone apparatus, lead covered cable and special commercial products. It makes more than 100,000 separate articles. When these are manufactured it is not known whether they will ultimately be sold to a Bell or a non-Bell customer, as both classes of customers purchase articles of the same kind (R. I, 375). The same types of apparatus, for example, relays, are made by the use of the same kind of machines, using the same materials and processes and with the same grades of productive labor (R. I, 570; R. II, 1383).

The necessary apportionments were made by using "standard shop costs" (R. I, 386, 568-72). "Standard shop costs" is an accounting method used by more than a hundred large manufacturers in the conduct of their business (Ex. A, 254; R. V, 3127).

A "standard shop cost" is determined by the company's engineers for each of the 100,000 items of Western's manufacture. Each step in the manufacturing process is carefully analyzed. The kind and quantity of material required, the grade and amount of labor to be used, the tools and machines required for manufacture and the extent of the use of each, and the shop overheads are carefully computed. The "standard shop cost" includes both labor and materials at rates and prices estimated when the "standard shop cost" is computed (R. I, 382).

The whole problem of the apportionment in this case is to divide on a substantially accurate basis between Western's Bell and non-Bell business the property which is used in the manufacture of Western's products, such as plant and machinery, and to apportion correctly between the two businesses the cost of manufacture, including labor and materials, all on the basis of relative use. The "standard shop costs" furnish an accurate basis for such an apportionment. They include for each article manufactured, whether it ultimately reaches a Bell or non-Bell customer, a measurement of the materials used, the grade and extent of labor employed, the use of machines upon which such articles are produced, and the shop overheads incident to production (R. I, 568, 572; II, 1382, 1402).

All the "standard shop costs" in effect at a given time include the same level of material costs and the same labor rates. The aggregate of all the "standard shop costs" in effect at a given time, taken with the kinds and quantities of goods being produced at that time, provides an accurate and detailed cross-section of plant activity showing the relative use of raw materials, labor, tools and machinery in the manufactures being made at that time.

For each of the years involved Western had these "standard shop costs" and also a complete record of the items and quantities of its manufactures sold to its Bell and non-Bell customers, respectively (R. I, 381). From these two sources it was possible to obtain the total "standard shop costs" for Bell sales and the total "standard shop costs" for non-Bell sales for that year for telephone apparatus, lead covered cable and special commercial products separately (R. I, 382 to 399). The ratio between these two totals accurately reflects for each of the three classes of products the relative use of plant, materials and labor and other elements entering into the cost of actual manufacture. Having determined these percentages of relative use in this way, the same percentages can be applied to the figures not covered by shop costs, such as, for example, general administration and development expenses, where those items are not directly allocable to one or the other classes of business.

The company's records show separately for telephone apparatus, lead covered cable and special commercial products the cost of manufacture for each year. Such totals are compared with the aggregate of the "standard shop costs" for each of the three classes of products (R. I, 382 to 399). The respective differences thus obtained (referred to in the record as the "current variations") are then apportioned between Bell and non-Bell business in the ratio that the total "standard shop costs" for Bell sales bear to the total "standard shop costs" for similar non-Bell sales (R. I, 384).

The process of arriving at the earnings on Western's manufactures sold to its Bell customers may be thus stated:

(a) Start with total Bell sales taken from the books;

(b) Deduct aggregate "standard shop cost" of items sold to Bell customers;

(c) Result is basic gross profits in Bell business;

(d) Apportion current variations between actual and "standard shop costs" and also inventory revaluations on basis above stated, and adjust basic gross profits accordingly;

(e) Result is the actual gross profit in the Bell business;

(f) Deduct from such actual gross profits, development, distribution and general expenses apportioned in the same manner;

(g) Result is earnings on Western's manufactures sold to its Bell customers.

(R. I, 381 to 399, 434).

The same basis is used in allocating between Bell and non-Bell business that part of Western's investment in the combined business which is not directly related to one or the other (R. I, 381).

Defendants call attention to the fact that "standard shop costs" have not been revised as often as there have been substantial variations between the prices of copper and lead as used in the "standard shop costs" and the actual prices prevailing therefor at various times; and to similar variations in the prices of other materials, labor and overheads. They argue that such variations destroy the validity of the apportionments. The objections urged have no merit.

The totals of the "standard shop costs" can be compared with the totals actually expended within any year and thus permit accurate check of the efficiency of manufacturing operations after making an overall adjustment for the differences in material costs and labor rates actually paid during the year and those estimated at the time the "standard shop costs" were determined, and likewise furnish a proper yardstick for making the apportionments here required (R. I, 384).

"Standard shop costs" are revised from time to time in the regular course of business (R. I, 382). Changes in material prices alone would not justify revision because obviously it is much simpler to make the overall adjustments for such changes at the end of the year than to attempt to change all the "standard shop costs" as material prices vary. Changes in manufacturing processes, in design of product, in kinds and quantities of materials used, are typical of the things which make for the revision of "standard shop costs" (R. I, 382 to 399).

At any given time there is only one "standard shop cost" for a particular article, whether such article is sold to a Bell or non-Bell customer (R. I, 383). When "standard shop costs" of all articles sold to Bell customers are aggregated for any given year and the "standard shop costs" for non-Bell sales are likewise aggregated, there is absolute identity in the material, labor and overheads entering into the "standard shop costs" of Bell and non-Bell sales, respectively, for each item manufactured. Each pound of copper and each pound of lead is carried into such aggregate shop costs at the same price for the Bell and the non-Bell products. Each hour of productive labor is similarly treated. *Since we are seeking a ratio reflecting* *the use of property and the degree of activity devoted to Bell as compared with non-Bell business of Western, the variations between actual and "standard shop costs" in prices of materials and the other elements of shop costs have no significance.* This appears from the facts above stated but it is also supported by the direct testimony of Western's Comptroller (R. I, 570-2) and of two independent accountants who examined the methods used and checked the apportionments made by Western (R. II, 1379-1384, 1402).

The net variations between the aggregate of the "standard shop costs" and the aggregate of the actual shop costs are negligible for the period* (R. I, 569). One of the defendants' witnesses, Hagberg, testified that it was erroneous to consider the net variations (R. II, 1594). His testimony is directly contradicted by Western's Comptroller and the two independent accountants referred to, but even the testimony of Hagberg is limited to the narrow theoretical proposition that error might or would result from an apportionment of the net variations. Neither he nor any other witness contradicts the specific testimony of Western's Comptroller based upon an analysis of the gross variations that the use of the gross variations could not have affected the validity of the apportionments in any way (R. I, 570-572). This testimony is unchallenged.

The apportionments were made separately in each year for telephone apparatus, for lead covered cable and for special commercial products (R. I, 382 to 399). There is, therefore, no question involved of what the effect might have been if the apportionments had been made by combining the result of Western's operations.

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* Such variations for the period of 1921 to 1930 were only two-tenths of one per cent., and for the period 1923 to 1930, seven-tenths of one per cent. (R. I, 569).

The apportionments made correctly reflect the use of Western's investment and the amount of its expenses in connection with its manufacturing activities on the basis of actual use. They are in full conformity with the decision of this court which has held that in making apportionments only reasonable measures are essential. *Smith v. Illinois Bell Telephone Co.*, 282 U. S. 133, 150. In the *Minnesota Rate Cases*, 230 U. S. 352, the apportionment of the plaintiff's property, which was made on the basis of gross revenue was condemned. The difference between such a method and the one here employed is too obvious to require argument.

The apportionments made conform to the realities of the situation. Western's prices to its Bell customers for telephone apparatus and lead covered cable have always been as low as, or lower than, its prices for the same articles to its non-Bell customers. The method used shows greater profits for the non-Bell business than for the Bell, which is in conformity with the relative prices charged such customers (Exhibits A-77 and A-79; R. IV, 2816, 2818).*

Plaintiff has shown the entire practicability of the method and has demonstrated that when applied it gives a substantially accurate result.

This method was used by Western year by year in the regular course of its business for ascertaining its profit in its Bell and non-Bell business, respectively. It relied upon the information so obtained in making substantial price

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* The earnings as stated on these exhibits do not reflect the adjustments which were made by the statutory court.

reductions to its Bell customers and in administering its general business affairs (R. I, 329, 379, 518).

The statutory court, after a thorough examination of all the evidence, adopted the apportionments. Its action in so doing was clearly correct. The apportionments as made properly related to Western's Bell business its correct part of the manufacturing facilities used, and the costs incident to, such Bell manufactures.

Western, in arriving at its investment in and earnings on its Bell business determined the same by the use of "standard shop costs" applicable to the sales made in a given year and not to the production of that year. This is criticized by the defendants. The impracticability of making an apportionment on defendants' suggested basis is apparent. There is no substantial lag in Western's business between the time of manufacture and sale and an apportionment based upon cost of production in a given year would not be substantially different from one based on cost of sales. The rate of turn over is the same for Bell and non-Bell business (R. II, 1341).

Apportionment of Western's Development and Research Expenses Has Not Imposed Any Burden Upon Its Bell Business but Has Resulted in Substantial Benefit to That Business.

Defendants claim that Western unduly burdened its Bell business by failing to allocate to six companies with which Western had dealings, their proper proportion of Western's development and research expenses, and by failing to credit to Western's Bell business the proper portion of the revenue or value received by Western from them.

In order to understand the claims urged by the defendants it is necessary to state briefly what these companies are and their relationship to Western.

International Western Electric Company, its predecessors and its various subsidiaries, which in the main were owned 100 per cent. by Western, operated in Europe and elsewhere abroad. The first of these foreign subsidiaries was organized in 1882. These companies were sold as of September 30, 1925 to the International Telephone and Telegraph Corporation. The name of International Western Electric Company was thereupon changed to International Standard. Since such sale Western has had no interest in these companies, which were engaged in the manufacture and sale of telephone apparatus and lead covered cable outside the United States and Canada. International Western and its subsidiaries purchased for resale during the period 1916 to September 30, 1925, more than $35,000,000 of telephone apparatus and lead covered cable manufactured by Western. Western and International Western interchanged patent rights and complete design and technical information for the manufacture of telephone apparatus (R. I, 320, 493, 494; R. IV, 2820A).

International Standard Electric Corporation has been engaged since September 30, 1925, in the manufacture of telephone apparatus in the foreign field. It purchased from Western for resale during the years 1926 to 1931, inclusive, $9,650,000 of Western's manufactures. There is a contract between the companies by which patent rights are interchanged and under which International Standard pays Western a royalty of one-half of 1 per cent. on sales in the foreign field of telephone apparatus and cable not purchased from Western or Northern, whether embodying Western's patents or not. Western has never owned any interest in this company (R. I, 494; R. IV, 2820A).

Northern Electric Company, Limited, manufactures and sells telephone apparatus and lead covered cable in the Dominion of Canada and Newfoundland, and has purchased from Western for resale from 1926 to 1931, inclusive, $10,750,000 of Western's manufactures. Western and Northern have a contract for the interchange of patent rights, design and technical information, sales distribution and accounting methods, and engineering and managerial service and advice. Under this contract Northern pays Western a 1 per cent. royalty on Northern Electric sales of telephone apparatus, without respect to whether such apparatus embodies Western's patents. Western has never owned more than 43.6 per cent. of the common stock of Northern (R. I, 491-3; R. IV, 2820A).

Automatic Electric Company is a manufacturer of a particular type of automatic central office equipment known as "step-by-step" of which Western has purchased a substantial amount for its Bell customers. Before Western made any contract for the purchase of telephone equipment from Automatic and at all times since, there had been a cross-licensing patent agreement between the two companies with respect to this type of equipment. In 1919, when the first purchase contract between the parties was made, the American Company procured an option to purchase a controlling interest in the stock of Automatic, and when Western renewed its purchase contract in 1924, an option to purchase the control of Automatic, which theretofore ran to the American Company, was granted to Western. No money consideration passed for this option. After Electrical Research Products, Inc., was organized, this option was transferred to it with other non-Bell assets of Western. In 1927 negotiations were entered into with the owners of Automatic who felt that the option might pass to other hands and were anxious to procure the surrender of this option and thus assure their control of the manufacturing company which was supplying equipment to the operating telephone companies, both domestic and foreign, which they had acquired. As a result of these negotiations, the option was surrendered for $4,000,000. At the same time a new contract for a ten year period expiring December 31, 1936, was executed, by the terms of which Western procured a reduction of 2½ per cent. on the price of "step-by-step" apparatus thereafter purchased by it from Automatic. Western has never had any interest in this company (R. I, 346, 462-5, 565, 580, 584).

Electrical Research Products, Inc., which is a wholly owned subsidiary of Western, commenced business January 1, 1927. This company was organized to take over Western's business in certain special commercial products, the chief of which was the sound motion picture business, and certain non-Bell assets of Western. It has never been engaged in the manufacture or sale of telephone apparatus. It is licensed to use Western's inventions in its particular field, and Western is licensed to use any inventions arising out of the development work of Products. During the period 1927 to 1931, Products has purchased over $46,000,000 of Western's manufactures (R. I, 321-2, 343, 454, 497, 567; R. IV, 2820A).

Graybar Electric Company was organized for the purpose of segregating in another corporation the distribution of telephone apparatus, lead covered cable and supplies to non-Bell customers in the United States. Graybar, on January 1, 1926, took over the non-Bell business formerly done in the United States by the Supply Department of Western. Graybar is not licensed to use Western's inventions, but does distribute outside the Bell System telephone apparatus and lead covered cable manufactured by Western. Western has sold more than $42,000,000 worth of such products to Graybar during the period 1926 to 1931. The resale of these products constitutes only 15 per cent. of Graybar's total sales. The remainder of its business consists in buying supplies from various manufacturers other than Western and selling them to non-Bell customers. From the date of Graybar's organization until December 31, 1928, Western owned Graybar 100 per cent. but on the latter date Western sold its stock in Graybar to Graybar Management Corporation, an organization of Graybar employees. Since that date Western has had no interest in Graybar except the ownership of a non-voting participating preferred stock which was taken in part payment of the purchase price, and which is required to be retired gradually. Western's stock was sold to the Graybar Management Corporation without profit and because of the desire of Western no longer to engage in the business of selling telephone apparatus, lead covered cable and supplies to telephone companies in the United States outside the Bell System (R. I, 321, 332, 491, 562; R. II, 1343; R. IV, 2820A).

The claim that Western has made large profits through its various subsidiaries, in the exploitation in the non-Bell field of inventions and ideas developed in Western's Bell business, the cost of which has been charged in substantial part to its Bell customers, is completely refuted by the evidence. Western's earnings on its combined operating Bell and non-Bell business for the period of 1916 to 1931 were on the average 7 per cent. per annum on its investment (R. IV, 2817, 2819). During the same period of time, the earnings of Western and all of its subsidiaries were on the average 7.6 per cent. per annum on their total investment (R. IV, 2822). Included in these earnings are the proper proportion of the undistributed profits of Northern Electric, in which Western owns only 43.6 per cent. of the common stock, and also the proper proportion of a non-recurring profit made by Western on the sale of the International Western to the International Telephone (R. I, 331-2, 338).

We come now to the specific claims made by the defendants in their brief with respect to Western's dealings with the six companies referred to above. In discussing the International Western, International Standard, Northern and Automatic Electric, it is stated at page 272 of appellants' brief:

> "Appellee did not allocate any portion of Western's Development and Research expense to them and did not credit as an offset the revenue and value received by Western from them for such licenses."

Western's total sales of its own manufactures to its Bell customers during the period 1916 to 1930 were $1,972,000,000 (R. IV, 2830), against which it charged $92,000,000 of development expense (R. V, 3654A). During the same period, it sold $224,000,000 of its own manufacture to its non-Bell customers (R. IV, 2830) against which it charged $16,000,000 of development expense (R. V, 3654A).

Western would have incurred in the development of its telephone apparatus and lead covered cable for the Bell System the same development expense if none of such products had been sold to non-Bell customers (R. I, 490-1). It sold $154,000,000 of such products to its non-Bell customers. The expense of the development of these products was spread in the same ratio over its entire business, Bell and non-Bell. In addition, Western sold a total of more than $70,000,000 of its special commercial products to its non-Bell customers. Such sales, which amounted to 92 per cent. of Western's total sales of such products, bore their proportionate part of the development expense required for such products. *During the period 1916 to 1930, inclusive, there was thus included in the sales price to Western's Bell customers a loading of 4.7 per cent. for development expense, and in its sales to non-Bell customers a loading of 7.1 per cent. for such expense.*

But this is not all. Western has not incurred any development expense for the special commercial products manufactured by it for Products since that company commenced business (R. I, 516). During the period 1927 to 1931, development expenses for special commercial products to the extent of $8,900,000 were charged to and paid for by Products (R. IV, 2821), and in addition, $3,500,000 of development expense incurred in the Bell business in connection with manufactures was included in the prices of the special commercial products sold by Western to Products (R. I, 343, 454, 497, 567). To the extent of this latter sum, Western's Bell customers have been relieved of charges for development which they otherwise would necessarily have borne and which were made for their benefit.

The defendants in their presentation wholly ignore this testimony.

Western received during the period October 1, 1925 through 1931, from Northern, $695,000, and from International Standard, $918,000 as royalties which were paid by these companies under the contracts above referred to, on account of telephone apparatus sold in the foreign field. These two amounts, aggregating $1,613,000, were credited to the cost of sales, with the result that the expense of Western's Bell business was reduced over this period by approximately 90 per cent. of this total amount or $1,500,000 (R. I, 343).

The defendants claim, in addition, that Western's Bell business has been burdened because Western granted the right to use its inventions in the manufacture of telephone communication equipment to the four companies above referred to, and that the telephone apparatus and cable which these companies manufactured did not bear any part of Western's development expense and that no credit was given to Western's Bell business on account of the use of inventions by these companies.

In this connection it is important to consider the fact that the principal advantage to Western and its Bell customers arising out of the ownership of patents and the interchange of patent rights consists in having available the right to use every sort of telephone apparatus and lead covered cable which may be desirable (R. I, 491, 650).

The interchange of patent rights and information with these companies has resulted in great advantage to Western's Bell customers.

One illustration of this is the acquisition by Western from Northern Electric of a process for tinning wire. This process resulted in a saving of over $6,000,000 in a period of thirteen years prior to 1932 in Western's Bell business and no charge was made on account thereof to Western's Bell customers (R. I, 492-3). Western received from International Western the right to use the inventions of Siemens and Halske, a large telephone manufacturing company in Germany, which did fundamental research work in the telephone art (R. I, 495-6).

There were only four companies to whom Western granted the right to use its inventions or processes in the manufacture of telephone communication equipment. Two of these companies, Northern and International Standard, paid royalties to Western which, as we have already shown, operated to reduce the expense of Western's sales to its Bell customers (*supra*, p. 118). Western had no interest in International Standard and owned less than a control of Northern (R. I, 320-1, 494).

Western granted Automatic the right to use certain of its inventions in connection with the manufacture of "step-by-step" equipment in exchange for the right given to Western to use Automatic's inventions. This contract was made by parties dealing at arms' length and there is no suggestion in the record that Western gave any greater benefit than it received or that its Bell customers were harmed in any way by this cross-licensing arrangement (R. I, 462, 565, 584).

This leaves but one company, International Western, which was a wholly owned subsidiary prior to September 30, 1925. We have heretofore pointed out the advantages under which Western and International Western exchanged patents and information (*supra*, p. 112). There is no reason why International Western, under the circumstances, should have paid any royalty to Western.

If, however, International Western had paid a royalty to Western on the same basis as International Standard, a wholly independent company which later occupied the same field, that is, one-half of 1 per cent., and the payment so made had been credited to Western's Bell business, the effect would have been negligible. In the year 1924 International Western's sales in the foreign field were the largest of any year. They amounted to $43,000,000 (R. VIII, 4557). If the royalty is applied to all of these sales, including telephone apparatus purchased from Western which had already borne its share of Western's development expense, the maximum credit to Western's Bell business would be approximately $200,000 and would increase the return on Western's Bell business in the year 1924 by less than 13/100 of 1 per cent.

The defendants state that "Western made up for the reduced sales prices to Graybar on its manufactures * * * by the unreasonably large return which it received on its investment in that company during the period 1926 to 1928, inclusive" (Defendants' Brief, p. 122). Western's telephone apparatus and lead covered cable were sold to Graybar at prices always as high and usually higher than Western's prices to its Bell customers (R. I, 456). There is no basis for claiming that Graybar received reduced prices.

Graybar has no license to use any of Western's patents. It merely acted as distributor of Western's telephone apparatus, lead covered cable and certain other products in the non-Bell field, pursuant to a contract between the parties (R. I, 491; R. IV, 3943-3956). As shown above, development expenses which would otherwise have been necessarily charged to Western's Bell business have been spread over the more than $42,000,000 of sales of Western's manufacture to Graybar. Western made no profit out of the sale of its common stock in Graybar to Graybar Management Corporation and the transaction by which Western acquired a participating preferred stock was an ordinary and usual business arrangement for the purpose of safeguarding Western's investment until it should have been paid in full for the stock (R. I, 321, 366; R. II, 1343-4). A third of this stock had been retired before the trial of this cause and the contract requires that the remainder be retired over a period of years (R. I, 333; R. VI, 3934).

The claim that Electrical Research Products has made large profits out of the exploitation of inventions developed by Western and used by Products in the non-Bell field, is without substantial merit. When Products was organized, money was risked in an uncertain and hazardous business in order to carry on its operations. In the beginning it was difficult to interest motion picture producers in sound recording and reproduction. In the first year of its operation, as well as in 1931, this company lost money in its sound picture business, while in the intervening years it made substantial profits (R. I, 497-8). The total profits made out of the recording and reproduction of sound in connection with the motion picture business from the year 1926 to the year 1931, inclusive, by the Western, Electrical Research Products and its subsidiaries, were $18,000,000 and amounted to 14½ per cent. on the investment in such business (R. I, 567). During the past five years practically all of the principal motion picture theatres in the United States have been equipped for sound reproduction. The profits made in the past by Products are substantially larger than can be hoped for in the future (R. 1, 498).

The $4,000,000 profit which Electrical Research Products made on account of the surrender of the option to the Automatic was treated, as it should have been, as a profit on the non-Bell business. Such profit was made because the owners of the Automatic Electric, on account of its rapidly expanding domestic and foreign business, were willing to pay $4,000,000 in order to regain control of the manufacturing company which supplied their foreign and domestic trade (R. I, 462-5). A transaction of this character ought not to be considered in determining Western's profits with Bell customers.

The defendants assert that the plaintiff's claims in connection with this $4,000,000 cannot be sustained because the profits of Automatic are not shown in the record and it is, therefore, impossible to say that its prices to Western were reasonable. The record shows that the prices under the contract between the parties were on a cost-plus basis (R. VIII, 4614-5, 4617, 4619, 4624-5).

Western has never owned any interest in Automatic or its sales subsidiary. The contracts between the parties were made at arms' length and their fairness has not been challenged.

There is nothing in any of these relationships which has resulted in any disadvantage to Western's Bell business. On the contrary, the entire relationship has been shown to be fair in every respect and of great advantage to Western's Bell customers.

There Should Be No Deductions from Western's Average Investment.

Western's average investment consists of plant, merchandise, receivables and cash less current payables, all at cost to Western except merchandise, which is cost or market, whichever is lower. Such investment does not include any amount for patents, good will, development expenses or going concern value. Substantial portions of Western's buildings and other property, planned and built under the supervision of its own engineers, are included at a lower cost than if they had been built by others. These facts are not disputed (R. 1, 330, 342, 500; Court's finding, R. III, 2507).

Western's investment includes only the assets used by it in its business and at the risk of that business.

The defendants claim that Western's investment is overstated and that the statutory court should have deducted therefrom the amounts of the following classes of items:

(1) Notes Payable.

The defendants claim that there should be deducted from Western's average investment amounts borrowed from the American Company ranging from $17,000,000 to $22,000,000 per year for the years 1923, 1929 and 1930, and smaller amounts in other years, and amounts borrowed from the trustees of Western's pension fund, banks and others, ranging from $6,000,000 to $26,000,000 per year for the period 1922 to 1930.

While these loans were either payable on demand or in a period of less than one year the moneys represented by these borrowings were invested in and were at the risk of Western's business and were properly included in Western's average investment.

From 1916 to 1930 Western's investment in merchandise necessary in the transaction of its Bell business increased more than $70,000,000 and its plant devoted to such business more than $120,000,000 (Ex. D-56, R. V, 3696). Due to this tremendous expansion, primarily required because of the growth of Western's Bell business, large sums of money were borrowed on temporary loans until appropriate permanent financing could be made either through bond or stock issues. These temporary borrowings, as made by Western, were at appropriate times converted into permanent capital (R. VIII, 4549, 4558).

Concerning these facts there is no dispute. The problem is not, as erroneously assumed by the defendants, whether as between Western and its creditors these obligations must be paid on demand or in a short time. As these short term obligations represented assets devoted to Western's business and at the risk of such business, it was entirely proper to include them in Western's average investment (R. I, 564; R. II, 1330).

Defendants claim that in the balance sheets contained in Western's annual reports these notes payable were included as current liabilities and that in this case Western has taken a different position by failing to deduct the same notes from average investment. In order to show the actual financial condition of Western its balance sheets necessarily classify obligations as between long and short term maturities. That classification has no bearing upon the problem here under consideration and involves no inconsistency with plaintiff's present position. It is interesting, in this connection, to note that the defendants, in their treatment of "Rate Base Value" of the plaintiff at page 316 of their brief, include, in its average outstanding capitalization upon which they calculate its return, notes to trustees of its pension fund and advances from System Corporations of the same identical kind which they now claim should be deducted from Western's average investment.

(2) Reserve for Pension Fund and Working Reserves.

Defendants' claim that there should be deducted from "average investment" of Western amounts varying from $2,000,000 to $15,300,000 a year during the period 1923 through 1927, representing the reserve for pension fund purposes; and also working reserves for the years 1926 to 1930 varying in amount from $6,900,000 to $11,100,000.

As early as 1906, Western had a pension fund, but it was not until 1927 that provision was made for segregating this fund in the hands of a trustee. During the period 1916 to 1927 certain reserves for pension fund purposes were set up on Western's books, but the money represented by these reserves remained continuously invested in its business (R. I, 461, 564).

An example of the working reserves referred to is an accrual for federal income tax purposes. If we take for illustration a single year, say 1927, Western accrued for each month as a bookkeeping reserve the amount of the estimated income tax which would be payable in respect to such month's earnings. Of the amount accrued for January, 1927, there would be one-fourth due respectively in March, June, September and December, 1928. These particular amounts would therefore be in the business for a period of from thirteen to twenty-two months. Each subsequent month's accrual would be at the risk of the business for one month less (R. I, 461-2).

The arguments advanced by defendants for deducting from "average investment" of Western the reserve for pension fund purposes and the working reserves rest upon the same basis as those made by them in connection with notes payable, which we have already discussed (page 123, *supra*). Western is entitled to earn on the total amount invested in its business which is represented by property at the risk of that business. There is no merit in defendants' claim that these reserves should be deducted from the "average investment" representing such property.

(3) Claimed Excess Cash.

Defendants claim that there should be deducted from Western's "average investment" during the various years involved amounts of cash varying from $900,000 to $20,500,000, the latter sum being for the year 1925, which they assert were not needed by Western in its business. The principal reason assigned for this contention is that the American Company assists in financing Western at a relatively low cost for the benefit of the Bell Associate Companies and apparently defendants would have the court conclude that in view of this relationship the amounts of cash and cash items included in Western's average investment are too large.

The cash and cash items claimed by Western as a part of its investment in its Bell business were the amounts which it currently held. They averaged about $8,000,000 annually for the period 1916 to 1930 and were only 4 per cent. of Western's Bell sales and 6 per cent. of its average investment for the same period (Ex. D-56, R. V, 3696).

Western's cash and cash items are not only low when related to its sales and "average investment," but they are relatively small when compared with the needs of other large manufacturing companies. Western's cash requirements during the period 1925 to 1930 were proportionately one-third of the average cash requirements of the eighty-eight companies with which its earnings were compared. Western's Comptroller testified that he knew of no manufacturing company which was able to get along with relatively as small a cash balance as Western's (R. II, 1341).

Western's Operating Expenses Do Not Include Any Improper Items.

Defendants contend that the profits of Western have been understated and should be readjusted by adding to earnings certain sums on account of the following items (or that a redistribution of such sums should be made among the years under consideration):

(1) Pension Fund Accruals.

Defendants claim that Western improperly deducted $7,275,000 from current income for the years 1925, 1926 and 1927 on account of excess pension fund accruals in those years to make up under-accruals for the years prior to 1923.* The testimony shows that the only over-accruals of Western for pension fund purposes were in the years 1925, 1926 and 1927, and that they amounted to approximately $5,500,000 and not to $7,275,000. There were under-accruals in 1923 and 1924 aggregating nearly $4,000,000, and in the years 1928 to 1931 amounting to approximately $2,500,000. In the period 1923 to 1931, Western under-accrued for pension fund purposes by the sum of $742,000. In the years prior to 1923 the under-accruals were very large. As of December 31, 1931, Western's reserve for pension fund purposes was $34,990,000, whereas the actuarial requirement under its plan was over $59,000,000 (Exhibit A-193, R. IV, 2977; R. II, 1069; R. I, 800-818).

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* An "over-accrual" is where there is charged to operating expenses for a given year an amount in excess of the required contribution for that year figured by actuarial computations on the basis of building up on a regular schedule over a period of years the amounts required to meet the company's ultimate obligations under its pension plan. An "under-accrual" is where an insufficient amount is charged to operating expenses in a given year on the same basis (R. II, 1069).

Western, in making proof of its pension fund requirements, introduced exhibits based upon actuarial computations made by Western employees which showed that Western had over-accrued for pension fund purposes in certain years and had under-accrued in other years. Evidence on this subject offered by Western's Comptroller was excluded on defendants' objection that the witness was not an actuary. Thereupon Western for the first time employed an actuary to make detailed and specific computations of the amounts required to be set up under Western's pension fund plan for the period 1916 to 1931. The actuary employed was Dr. Arthur A. Hunter, Vice President and Chief Actuary of the New York Life Insurance Company, who had been president of the leading American actuarial societies and the author of tables which are actuarial standards in many states. He is undoubtedly one of the most eminent actuaries in the world. At the time he testified, he did not know what amounts had been accrued by Western for pension fund purposes, but he was familiar with Western's plan and the scope and nature of its obligations thereunder. Western's pension accrual during the period 1923 to 1931 have been less than the requirements for those years, as shown by Dr. Hunter's testimony (Exhibit A-193, R. IV, 2977; R. II, 1069; R. I, 800-818).

There is no reason for spreading these accruals differently over the years involved in the period. But if defendants' point were conceded and a redistribution were made in accordance with Dr. Hunter's testimony, the result on Western's earnings would be wholly negligible.

(2) Depreciation on Machinery, 1928.

In 1928, Western increased its depreciation rate on machinery from 7½ to 10 per cent. and charged $2,000,000 to expenses in that year for the purpose of making the 10 per cent. rate retroactive to 1924. Defendants do not challenge the 10 per cent. rate for 1928 and subsequent years but do claim that $1,831,000, being the portion of the $2,000,000 attributable to the Bell business, should be disallowed as an operating expense. The only reason assigned for this claim is that "the 7½ per cent. rate was in conformity with the general practice of manufacturing companies as shown in the case of the eighty-eight companies which the District Court used as a basis of comparison in respect to the reasonableness of Western's earnings" (Defendants' Brief, p. 313).

The change in Western's depreciation rate for machinery was based on a study made by its engineers and was in accordance with its experience and in line with the practices laid down in "Standard Accounting and Cost System for the Electrical Manufacturing Industry" (adopted by that industry) which recommends depreciation rates of from 7½ to 12½ per cent. for machinery (R. I, 358-9, Exhibit A-261; R. V, 3139-40). The defendants do not even claim that this rate on depreciation for machinery was not justified by Western's experience.

However, the claim that the rate so established was not in conformity with the experience of the eighty-eight companies above referred to is not sustained by the record. There are a number of these companies which make no statement in their published reports with respect to their depreciation policy. The rates charged by the other companies on machinery naturally vary with the needs of their respective businesses. Twenty-one of these companies have rates on machinery less than Western, fourteen have the same rate and three have higher rates (R. I, 563). It is certainly not true, as claimed by the defendants, that the 7½ per cent. rate is in conformity with the general depreciation practice of these eighty-eight companies.

(3) Depreciation on Tools, Furniture and Fixtures.

Defendants claim that Western improperly charged as an operating expense in the years 1924 to 1929 $4,100,000 for depreciation on small tools, furniture and fixtures. This operating expense is attacked because Western's depreciation rates in this respect are in excess of those allowed by the Federal Government for income tax purposes. Western has maintained a reserve of approximately 100 per cent. on its small tools, furniture and fixtures. This is sound and conservative accounting and is a well recognized practice in manufacturing industry. The individual items in these accounts are small, are scattered throughout all the plants and shops, and have relatively short life. During the years 1924-1929 small tools, furniture and fixtures were added at the rate of about 17 per cent. a year. 100 per cent. depreciation was charged each year for the additions made in that year. The dollar effect of this practice, therefore, is approximately the same, considered over a period of years as though in each year Western had charged depreciation expense at 17 per cent. of the property represented by the account in that year (R. V, 3137).

Western's depreciation rates are based upon Western's experience and the judgment of its engineers.

The amount which is allowed for depreciation for income tax purposes depends upon the interpretation of the provisions of the income tax law and the regulations of the Treasury Department adopted from time to time, and has no necessary relation to the proper annual amount of depreciation which should be charged as a portion of Western's expenses. There is no evidence which tends to disprove the correctness of Western's annual charges for depreciation.

(4) Extraordinary Reserve on Plant and Machinery for the Years 1924 to 1927, inclusive.*

In the years 1924 to 1927, Western set up special reserves aggregating $8,233,000 to cover the decline in cost of plant and machinery which it was estimated would come in the future. These amounts were charged to operating expenses and the defendants claim that $7,109,000 thereof, which is the part allocable to the Bell business of Western, cannot be correctly treated as an operating expense. Western's Comptroller and two independent accountants testified that if such amounts were eliminated from operating expenses, corresponding adjustments should be made to Western's investment. Accordingly, plaintiff introduced Ex. A-257 (R. V, 3133-36) on which it made the necessary adjustments in accordance with this testimony. One effect of this adjustment was a reduction in average investment for the period 1916 to 1932, thereby decreasing the base to which Western's earnings were related and correspondingly increasing the rate of such earnings. The other effect of the adjustment was to increase Western's rate of earnings by adding to its profits during the years 1924 to 1932 the sum of $3,147,000 on account of depreciation applicable to the excluded investment. The court, in finding 17, made this adjustment in accordance with plaintiff's testimony.

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* Defendants' claims with respect to depreciation of machinery, tools, furniture and fixtures and extraordinary depreciation of plant, discussed under 2, 3 and 4, *supra*, must be limited in their application to Western's earnings on its average investment undepreciated, because there was credited to Western's depreciation reserve all charges to expense made on account of these items. Defendants cannot be heard to claim that an adjustment should be made on account of charges for these items and at the same time claim that the full amount of the depreciation reserve reflecting these charges should be deducted from Western's average investment.

There will be no appreciable difference in the making of this adjustment whether plaintiff's or defendants' method be followed.

V.

Understatement of Operating Expenses Resulting from the Court's Reduction of Western Electric Company Prices in 1930, 1931 and 1932.

This is one of three items of operating expenses that are in controversy, the other two being the annual allowance for depreciation expense and the License Contract payment, which are taken up in the two succeeding sections.

The court reduced the operating expenses of the plaintiff $67,167 for the last two months of 1930, $332,470 for 1931 and an equal amount for 1932, by deducting 10 per cent. from the prices paid by plaintiff to the Western Electric Company during the times referred to, on purchases attributable to maintenance and other expense accounts. These reductions from plaintiff's necessary operating expenses were improperly made and resulted in overstating to the extent indicated the dollars available to plaintiff for a return on account of its intrastate operations in Chicago. The reasons why these reductions were improper are discussed at pages 36 to 44 of plaintiff's brief as appellant on cross appeal, in Cause No. 548.

VI.

Annual Depreciation Expense.

(Appellant's brief, "Depreciation Expense Charges" pages 378-448.)

This court in remanding the case instructed the District Court to determine "the amount which in fairness both to public and private interest should be allowed as an annual charge for depreciation," to receive such additional evidence as might be necessary for that purpose, and to make appropriate findings in that respect. The District Court in Finding 26 determined "the reasonable and proper amount to be allowed as the annual charge for depreciation applicable to the intrastate portion of plaintiff's said Chicago area property for each of the years 1923 to 1931, inclusive."

Both plaintiff and defendants complain of the amount found by the District Court in each year and seek a review of the finding and correction of the error in this court, defendants by this appeal and plaintiff by its cross-appeal, case No. 548.

Plaintiff in its brief as appellant on cross-appeal presents its argument upon this issue at pages 50 to 76, under the following heading:

> "The statutory court's allowance for the annual charge for depreciation is less in each year than the reasonable and proper amount shown by the evidence. Such deficiency in the allowance in the several years ranges from approximately $1,100,000 to $2,100,000."

The figures stated in that brief are reassembled in the following table, which shows for each year the amount found by the court, the amount charged on the books, the amount by which the court's allowance is less than the charge on the books, the amount recomputed by the company based on replacement value, and the amount by which the court's allowance is less than the amount thus recomputed and claimed by the company.

Year (1)	Amount Found by Court (2)	Amount Charged on Original Cost Basis per Books (3)	Court's Allowance Less Than Charge per Books (3) — (2) (4)	Amount Computed on Current Replacement Value New (5)	Court's Allowance Less Than on Replacement Value New (5) — (2) (6)
1923	$4,000,000	$4,221,515	$221,515	$5,662,154	$1,662,154
1924	4,250,000	4,469,890	219,890	6,382,159	2,132,159
1925	4,750,000	5,048.013	298,013	6,768,618	2,018,618
1926	5,400,000	5,767,372	367,372	7,217,128	1,817,128
1927	6,000,000	6.334,580	334,580	7,608,468	1,608,468
1928	6,650,000	7,009,065	359,065	7,981,108	1,331,108
1929	7,000,000	7,436.480	436.480	8,148,888	1,148,888
1930	7,200,000	7,864,772	664,772	8,581,118	1,381,118
1931	7,400,000	8,133,289	733,289	8,934,628	1,534,628

Plaintiff now desires to submit the argument there made as a part of its argument as appellee herein, and to incorporate the same herein by reference as if written here.

This enables us to proceed at once to a consideration of the points of defendants' argument as appellants herein.

Defendants state their position as follows, at the outset in the section of their brief above referred to:

> "Appellants' position is that: the 1920 Order on depreciation expense charges determined the amounts thereof to be deducted as proper operating expense in determining the net income under the existing rates and the 1923 Order on depreciation expense charges determined the amounts thereof in respect to the attacked rates. * * *" (Appellants' brief, page 379).

Following this statement there appears a "Summary Statement of Appellants' Contentions," which they offer in support of their position as above stated.

Their position upon this appeal, as thus stated, is the same as that taken by them upon the former appeal to this court, although the form of words used is not quite the same. In their brief as appellants in this court upon that appeal, their argument under the heading "Depreciation Expense" appears at pages 337-40 (Brief for Appellants, *Smith v. Illinois Bell Telephone Company,* October Term, 1929, No. 845). We refer the court to that entire discussion. Their statement of their position, heading the argument, and of the two contentions made in support of it are copied from their brief, as follows:

> "The operating charge set up by the Chicago Company to cover the expense of depreciation for 1923 was $1,835,974 in excess of the allowance prescribed by the Order of August 16, 1923 (R. I, 194, 244), which Order it has attacked as confiscatory. This operating charge was also $1,636,556 in excess of the allowance prescribed by the Order of December 20, 1920 (R. I, 251; R. IV, 1300), which Order prescribed the rates in force in 1923 under the temporary injunction issued in the instant case and still in force (R. I, 189). The Chicago Company has never appealed from the Order of December 20, 1920" (Appellants' brief on former appeal, page 337).
>
> "The City contends:
>
> "I. Not having appealed or assigned error to the failure by the Statutory Court to pass on the propriety or impropriety of the Commission's finding of fact covering the allowance for depreciation, the Chicago Company is foreclosed from attacking such finding before this Court.

> "II. If the finding of the Order of August 16, 1923, covering the allowance for depreciation is void, then only the allowance prescribed by the Order of December 20, 1920, can be legally included as an operating charge" (Appellants' brief on former appeal, page 338).

This court held against this position and rejected these contentions by its decision in that case, by remanding the case to the District Court with the instructions first above referred to.

The law of the case was thereby settled, and the same position is not now open to the defendants upon the present appeal.

While this disposes of their present position adversely to them, it is not entirely clear that it also disposes of all of the points of the argument they now make. We are mindful of the fact that the *issue* with respect to this item of annual expense must be settled by this court, and that it is not settled merely by rejecting the defendants' position with respect to it. We think this makes it incumbent upon us to give further consideration to certain of the points of their present argument.

Specific Answers to Defendants' Contentions.

1. Defendants first contend that the District Court erred in disregarding the "Commission's 1920 Order on depreciation expense charges as a valid legislative act" (Appellants' brief, page 379). In support of this they urge in substance that the state statute authorized the commission to regulate the depreciation charges, that on the present pleadings and record there is no ground "to hold void the 1920 Order on depreciation expense charges," and that the District Court has substituted itself for the Illinois Commission as the administrative tribunal (Appellants' brief, Summary Statement of Appellants' Contentions, I, A to D, and II, pages 379-80).

The foregoing points of their argument are foreclosed against the defendants by the law of the case as settled upon the former appeal. While that is decisive of the matter, we nevertheless call the court's attention to our discussion of the commission's orders in our brief as appellant on cross-appeal herein, at pages 65 to 73, where our argument is directed to the District Court's statement in its opinion that it had given consideration to those orders, among other matters, in reaching its finding of fact upon this issue. It is entirely clear that this contention of the defendants is without merit.

2. The defendants' next contention, as stated by them, is that "the District Court could not make a valid finding on depreciation expense charges on the basis of the recorded depreciation expense charges." In support of this (point III) they advance sub-points A to E, inclusive (Appellants' brief, pages 380-81; 395-432). Their several arguments under this head are all directed to one point, and we will deal with them together.

The burden of their complaint here is that the use of plaintiff's method results in "annual advance contributions by its telephone users, computed on the straight line method, for anticipated depreciation on contemplated future additions to buildings and central office equipment" (Appellants' brief, pp. 395-6).

Defendants *assume* this result. The evidence is clear, definite and uncontradicted that no such result has been produced, when all the classes of depreciable property are considered, page 144, *infra.*

The defendants here challenge the method by which plaintiff determines the annual depreciation expense rate applicable to two large classes of the plant, namely (1) buildings and (2) central office equipment.

In technical parlance this controversy between the parties is entitled "*group method* vs. *unit method.*" The company uses the group method for determining the service lives of all classes of depreciable plant (R. II, 1106-7; 1114-15) and the defendants here oppose to it and advocate the unit method, but only for the two classes above referred to. As to all other classes of plant they insist upon adherence to the method the company uses. Both of these methods were considered by the Interstate Commerce Commission in the telephone depreciation case, and the commission upheld the group method (Depreciation Charges, 177 I. C. C. 351, at page 441, under the heading "Unit Basis *v.* Group Basis of Depreciation Accounting"; see also I. C. C. official stenographer's minutes of testimony of Mr. Woodford, on direct examination, pp. 678-684, 701; on cross-examination, 1043-1048).*

The characteristic of telephone buildings and central office equipment which differentiates them from all the rest of the telephone plant is that, in general, each building and each central office involves an initial investment which is added to from time to time, and that the entire building or the entire office is finally retired from service as a whole (Plaintiff's Exhibit A-128, R. IV, 2874-5).

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* Mr. Woodford, of the engineering staff of the American Company, was the witness on this subject, representing all Bell System companies, in the hearings before the Interstate Commerce Commission in the telephone depreciation case (R. II, 1203).

The result is that when the original structure and all subsequent additions are taken as a "group," the "average life" is much less than the over-all life of the structure from the initial installation to retirement. This average life is taken as the basis for the depreciation rate under the group method employed by the company and the same depreciation rate is used uniformly throughout the life of the building or central office.[1] Thus the depreciation charge per dollar of investment currently employed is the same for each of the years (R. II, 1183).

On the other hand, if the original building or switchboard and each subsequent addition are considered as separate "units," as defendants propose, then there is no averaging. The life of the initial structure (neglecting certain minor interim retirements) is the number of years from the date of establishing the office until its final retirement and the individual lives of the several successive additions are each progressively shorter. The result is that the depreciation rate is low at the beginning of the life of the structure and rises progressively to the date of retirement.

In the case of plant classes *other than* buildings and central office equipment, the unit method results in a composite rate as to all units involved which is relatively high at first but grows less and less as fewer units remain in service. Some units among any considerable number originally installed together at a given time will last longer than others. Units of shortest life take individually the highest depreciation rate; those lasting longer take a lesser rate.

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[1] We are discussing the principle. Of course, the matter is being continuously studied and the rates are continuously revised if and as indicated by the results of those studies (R. II, 1388, and much other testimony).

The composite effect is to decrease the depreciation rate progressively as the shorter lived units are increasingly eliminated from the calculations (R. II, 1183-4).

Now the company can apply either the group method or the unit method to every class of plant in both categories. It has the data available to enable it to do that. Mathematically either method is sound. Practically the group method is unquestionably to be preferred, as the Interstate Commerce Commission concluded it should be. But a combination of the two methods is indefensible, and this is what the defendants are proposing in their brief.

The mathematics of the group method as applied to buildings and central office equipment may be illustrated by the example of the Kedzie office, one of plaintiff's manual central offices in service during this period. The actual life history of this office is shown on page 5 of plaintiff's Exhibit A-128 (R. IV, 2864-65). This office was installed in 1906 at an initial cost of $69,573. The additions to the office in amount of cost in every year since 1906 to the end of 1929 and the estimated annual additions to 1936 are shown in the exhibit, as are likewise the dollars of interim retirements in every year, incident to making the additions. At the end of 1929 the investment at book figures had grown to $1,200,000 and will be $1,500,000 at the time of retirement in 1936 (R. IV, 2865). It is unnecessary to state the contents of the exhibit further.[1]

The exhibit shows how the group method of determining the average service life of an office in order to derive the correct annual depreciation rate works in practice. Mr. Turner compares the application to the Kedzie office of the group method used by the company with the results which would be obtained by the use of the unit method. His testimony shows that the company's depreciation rate for the office would be a uniform rate of 7.9 per cent. to be applied to the actual investment standing on the books each year throughout the life of the office. The use of the unit method on the other hand would result in starting off with a rate of 3.3 per cent. applicable to approximately $70,000, and the rate would increase year by year until at the end the composite rate applicable to the investment then amounting to $1,500,000 would be 16.7 per cent. (R. II, 1131-6).

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[1] In the official print of the Record the exhibit takes two pages, 2864 and 2865, which have been separated by two pages intervening. The historical data, that is to the end of 1929, appear on page 2864, and the detailed forecast to date of retirement in 1936 appears on page 2865.

It will be observed that both plaintiff and defendants would rely from the beginning upon the company's plans and the engineering forecast for that office. Defendants insist upon having the benefit, in the resulting low depreciation rate during the early years, of the extended life based on the planned additions to the office. The element of prophecy is the same under both defendants' and plaintiff's methods. That is inherent in any system of depreciation accounting.

While each method will accrue the correct amount, as stated, there is this difference between them: the company's method will accrue a larger percentage of the total investment during the early years, in the example, and an equivalent lesser amount during the later years, so that on the whole, *with respect to a single office*, the company's method gives it that advantage over the defendants' method. This is the defendants' point.

There were more than thirty-five central offices in service in Chicago, both dial and manual, in 1931. The earliest date of the initial installation of any of these offices was 1899 (Plaintiff's Exhibit A-128, R. IV, 2864a). During the period 1923 to 1931 fifteen new central offices were installed at a cost of approximately $22,000,000 and eight offices were retired. The *additions to existing offices* during the period aggregated a cost of approximately $30,000,000 (see Appellants' brief, page 431).

These statistics show the offices initially established from time to time from the year 1899; the existing offices during this period were of all ages. They also show new offices installed throughout the period of the case, and very large additions to offices of all ages and thus give point to the fact, established by the testimony, that the relative amount of depreciation expense chargeable under the two methods during any period of the history of a large exchange area like Chicago *depends upon the age distribution of the initial offices and the subsequent additions at the time of the inquiry.*

Plaintiff has been using the group method above described for a long time; at least, the record shows, since a date earlier than 1923 (R. II, 1106-7; 1114-15). The Interstate Commerce Commission in the telephone depreciation case has only recently thoroughly canvassed the problem and affirmed the practice (Depreciation Charges of Telephone Companies, 177 I. C. C. 351, at page 441). The defendant commission has been fully conversant with the company's depreciation practices and has never objected to this method or criticized it. *The commission does not now criticize it;* no witness from the Commission's staff gave any testimony on the subject; the only objection comes from the City's witness Hill (of the firm of J. G. Wray and Company), and he would not commit himself (R. II, 1761).

Comparative Results Under the Two Methods.

In these circumstances this attack upon the method at the trial was unexpected.[1]

Plaintiff thereupon caused an investigation to be made which would show what the depreciation rates and charges would have been in each year of the case if the unit method had been used as compared with those under the group method used by the plaintiff. The results of that work are in evidence here as Defendants' Exhibit X-436 (R. VIII, pages 4949-54). Page 1 of the exhibit is a summary. It shows that in the years 1923, 1924 and 1925 the defendants' method would have resulted in somewhat lesser charges for depreciation expense and in the succeeding years somewhat greater charges. *For the total period 1923 to 1931, inclusive, the charges under the defendants' method for all of plaintiff's depreciable property would have exceeded those of the plaintiff under its method by the sum of $823,000.* The amounts by years are as follows (R. II, 1388):

1923	—$146,000	1926	+$ 26,000	1929	+$353,000
1924	— 125,000	1927	+ 195,000	1930	+ 107,000
1925	— 61,000	1928	+ 383,000	1931	+ 91,000

This testimony is uncontradicted and is entitled to full credit. We think it disposes of the matter. The issue is not a question of methods, as such, but of the amount of the annual charge for this item in each year of the case.* *The controversy over methods is rendered moot by this evidence.*

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[1] All of plaintiff's exhibits, together with all work papers upon this subject, were delivered to the defendants in August, 1931, 8 months before the trial (R. I. 798). They showed clearly and completely exactly what the plaintiff had been doing in this respect, as well as in all other matters pertaining to its depreciation practices, procedures and rates, and what plaintiff's evidence would be, so that the defendants could not be taken by surprise.

Defendants' counsel criticize this unit study in three respects, which we answer below.

Salvage of Buildings and Dial Central Office Equipment.

Defendants claim that the results of the study must be incorrect because Mr. Turner reduced his salvage allowances for buildings and for dial central office equipment (Appellants' Brief, pp. 426-429). The reason for these reductions was clearly explained by Mr. Turner on cross-examination (R. II, pp. 1431-2). In estimating the salvage on the group basis he had found higher salvage by weighting the effect of future additions, as that method does. Now in applying the unit basis, which disregards future additions, Mr. Turner inevitably will get lower salvage. The method compels it. Since he was thus eliminating the future additions, he was forced to leave out of consideration the parts which, upon retirement of the complete structures, will be the newest parts having the highest salvage values. Consequently, the remainder, relating only to existing parts, must necessarily have lower average salvage values due to (a) the greater age of the portions which survive to final retirement and (b) the removal loss of portions dismantled prior thereto in connection with the making of additions.

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* Referring to other questions of like character, this court has said:

> " * * * The enquiry is essentially one of fact and of discretion in technical matters; and uniformity can be secured only if its determination is left to the Commission. Moreover, that determination is reached ordinarily upon voluminous and conflicting evidence, for the adequate appreciation of which acquaintance with many intricate facts of transportation is indispensable; and such acquaintance is commonly to be found only in a body of experts. * * * "
>
> *Great Northern Railway Company* v. *Merchants Elevator Company*, 259 U. S. 285, 291.
>
> " * * * The inquiry would necessarily relate to technical and intricate matters of fact, and the solution of the question would demand the exercise of sound administrative discretion. The accomplishment of the purpose of Congress could not be had without the comprehensive study of an expert body continuously employed in administrative supervision. Only through the action of such a body could there be secured the uniformity of ruling upon which appropriate protection from unreasonable exactions and unjust discriminations must depend. * * * "
>
> *Board of Railroad Commissioners of North Dakota* v. *Great Northern Railway Company*, 281 U. S. 412, 421.

The quotation from Mr. Turner's testimony referred to by defendants at the top of page 427 of their brief:

> "We did not attempt to visualize any conditions that might exist in 1974 with reference to a particular neighborhood,"

has nothing to do with the point which defendants are here seeking to make. They are criticizing Mr. Turner's unit study as against the group study, but an estimate of future salvage is required in any event. It is no more necessary to particularize as to prospective conditions in various neighborhoods under one type of study than it is under the other.

Respecting salvage on dial equipment they attempt to show that on the group basis the percentage should be higher than on manual equipment, since manual equipment is now to some extent in process of supersession by dial equipment (Appellants' Brief, p. 429). Mr. Turner's testimony shows that salvage for dial equipment will be lower because the life of such equipment is much longer than the life of manual equipment (R. I, 763).

When Mr. Turner came to the unit study of dial equipment, his reason for further reducing the salvage was, as stated above, that he was dealing only with the then existing parts of equipment which would be the oldest when retired and hence would produce less salvage than the average salvage which he used in conjunction with his life on the group basis.

Life of Dial Buildings.

Defendants imply that Mr. Turner changed his view of the life of dial buildings in his "restudy" (Appellants' Brief, p. 427). This is incorrect—there was no "restudy." Mr. Turner found an average life of 35 years on the group basis (including additions) and a life of 40 years for the existing portions on the unit basis (Defendants' Exhibit X-436, R. VIII, 4950).

Other Classes of Plant.

Defendants refer to the fact that Mr. Turner had no working papers to support his comparison of depreciation expense on the group and unit bases for four classes of plant. (Appellants' Brief, p. 429). The record shows that his determination of the greater expense under the unit method as compared with the group method for classes of property other than buildings and central office equipment was developed through an analysis of the two methods applied to underground cable (R. II, p. 1427). This was a correct procedure.

Defendants then imply (Appellants' Brief, p. 430), that there is some question concerning the increase for underground cable, alleging that the charges on the group basis for this class of property "were predicated on studies based in part on incomplete data of the older records and resulted in an overaccrual of from 9 per cent. to 15 per cent. (R. II, 1717)." Defendants here are relying on the testimony of their witness Hill. We quote Mr. Hill's conclusion as he stated it (R. II, 1717):

> "The effect of using my method, as compared with Mr. Turner's, on the figures shown in Table 21, A-128, for exchange aerial cable, and in Table 24, A-128, for Main Subscribers' Underground Cable *might be on the order of* 9 to 15 per cent. in the direction of a longer average life *as nearly as I can tell* from the *approximate figures* which I have made in the form of Table X-154." (Emphasis ours.)

Table X-154 was described by Mr. Hill as follows:

> "This Table X-154 *does not pretend to give an accurate result* as regards average life. It merely illustrates the principle.
>
> In order to get an accurate result, one should take in column B, instead of a uniform rate of growth, *the actual gross additions* made each year, and of course this would not run back for 68 years." (Emphasis ours.)

Plaintiff submits that Mr. Hill has said absolutely nothing in the above upon which defendants can base their contention of error in plaintiff's methods. Testimony of that kind does not prove anything.

In conclusion on this point:

Either method, applied to all classes of plant, would produce the right result in the end. The group method spreads charges more evenly, on averages. The unit method, applied to buildings and central offices involves lower charges in the earlier years and higher charges later. As applied to other classes of depreciable property, it involves higher charges in the earlier years and lower charges later. Clearly, it would distort the accounts and be unfair to do what defendants propose in their brief, namely, to substitute the unit method for buildings and central offices while retaining the group method for all other classes of plant. While we are confident that we are right in this position, we nevertheless call attention to the fact that the first six lines on page 1 of defendants' exhibit X-436 show that during the period 1923 to 1931 the application of the unit method to buildings and central office equipment alone would have reduced depreciation expense as charged on the company's books by $1,473,000. For the same period the statutory court reduced the company's charges for expense of depreciation as made on its books on the original cost basis by $3,635,000.

3. Defendants' next contention is stated by them in their brief, as follows:

> "IV. The District Court could not make a valid finding on depreciation expense charges on the basis of Appellee's showing of its recorded depreciation expense charges adjusted 'to make the amounts of such allowances correspond with the present value of the property at the time such amounts were set up on the books of the company.'" (Appellants' brief, pages 381, 433.)

In support of the above contention they advance five subpoints A, B, C, D and E (Appellants' brief, pages 381-382, 434-41). The most satisfactory way to answer this part of defendants' argument is, we think, to discuss each of the subpoints separately, since they are largely unrelated.

Subpoint A.

This point is stated in their brief, at page 381, and again at page 434, where it is discussed, as follows:

> "A. Appellee's financial program to provide annual advance contributions for anticipated depreciation on contemplated future additions to buildings and central office equipment precludes the possibility of using the reproduction value of property in service as a base for the computation of the amounts thereof."

It will be borne in mind that plaintiff's depreciation accounting is done on a book cost basis, as required by the defendant commission's accounting system, which is identical with that of the Interstate Commerce Commission, and that accordingly plaintiff from time to time determined the correct depreciation rate for each separate class of depreciable property (as classified by the commission) and applied this rate to the amounts standing on the books from month to month. Then in this case in compliance with the decision of this court in *United Railways* v. *West* plaintiff recomputed the amount of the depreciation expense for each year by applying the same depreciation rates to the replacement value new (reproduction cost new) of the several classes of depreciable property (see brief of plaintiff as appellant on cross-appeal, pages 52, 58, 59-60).

Defendants' contention here is that, with respect to buildings and central office equipment, this cannot be done; that depreciation rates developed by the group method to apply to the book cost of buildings and central office equipment cannot be applied to their replacement value.

They contend that there is a mathematical error in what plaintiff has done. The importance of this contention depends upon the degree to which depreciation percentage rates refigured to satisfy the contention would differ from those which were developed by the company in the ordinary way and have been used in this case. This makes necessary a discussion of the mathematics involved, but it need not be intricate or abstruse.

The essential considerations can best be made clear by a few calculations from the figures of defendants' own example, put forward by them at pages 434-5 of their brief. It is obvious, we take it, that the particular assumption made does not conform to actual conditions, for no telephone company would take a building 40 years old and double the investment in it with the aim of prolonging its life for a further span of but ten years; such heavy expenditure would be uneconomical under the circumstances. However, this sort of extreme case magnifies the point at issue.

The assumed building (in the illustration used by defendants) at the time it must be retired from service will have cost $1,000,000 of which $500,000 will have been outstanding for 50 years and $500,000 for the ten years then last past. The average life is 30 years; the resulting annual rate 3.33 per cent. This is upon defendants' assumption of no salvage.

On the books, the accounting, being upon the basis of original cost, would proceed as follows:

	Depreciable Property	*Depreciation Rate*	*No. of Years*	*Amount*
1926-1966	$ 500,000	3.33%	40	$ 666,666
1966-1976	1,000,000	3.33	10	333,333
				$1,000,000

The amount provided equals the original cost, which is the aim of the accountant.

To develop defendants' contention, it is now necessary to assume that at some time after the first $500,000 was expended and before the second $500,000 was expended, there is a rate case in which it is determined that the replacement value of the portion of the building already constructed and in use is greater or less than $500,000. Defendants say, "Appellee would be unjustly enriched if the effect of the change were to increase the amount of the rate base and would be prejudiced if the effect were to reduce the amount of the rate base." This statement has practical significance only if the "enrichment" or the "prejudice" would be substantial and not negligible.

We proceed with the illustration upon the assumption that the replacement value is going to be higher than the original cost. Ten years after the expenditure of the $500,000, there is a rate proceeding in which it is found that the then replacement value of the building would be 20 per cent. higher or $600,000.*

This finding affects the required computations as follows:

	Depreciable Property	*Depreciation Rate*	*No. of Years*	*Amount.*
1926-1936	$ 500,000	3.33%	10	$ 166,666
1936-1966	600,000	3.33	30	600,000
1966-1976	1,100,000	3.33	10	366,666
				$1,133,333

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* During the period of the present suit, the excess of the replacement value of the buildings and central office equipment of plaintiff in the Chicago area over the original cost thereof averaged 18.5%.

We assume that the accounting upon the books is not changed as a result of the enhanced value of the property, but the depreciation allowance must be greater and our illustration deals with this allowance.

It thus appears that whereas the "cost of worn out property at time of replacement" would be $1,100,000, the allowances to the company would amount to $1,133,333. There would be in the end an excess of $33,333 gradually accumulated over a period of 40 years, amounting to about 3 per cent. of the total correct allowance over the life of the building. However, although the loss to the Company is $1,100,000, we assume that it may be entitled to recover at the higher value only after the date when the replacement value rose to $600,000; or in other words, that of the $100,000 increase in replacement value, the company may not be entitled to recover 10/50ths, or $20,000, applicable to the prior years. The excess then becomes $53,333, instead of $33,333, and represents an overallowance of approximately 5 per cent. But this is not a practical case.

First, defendants "assume no salvage." The salvage on central office buildings in Chicago is 20 per cent. of their cost (Ex. A-125, R. IV, 2853).

Second, as already pointed out, defendants assume a very large building addition abnormally late in the life.

Had defendants assumed the second $500,000 outlay to be made midway in the life of the building—a reasonable assumption—and had they also assumed $200,000 salvage, the depreciation rate would be 2.13 per cent. and the total allowance to the company would be $885,333, towards a replacement loss of $880,000 ($1,100,000 minus $200,000 salvage, and minus also the $20,000 referred to above). This illustration also assumes a rate case at the ten-year point and the same 20 per cent. advance in replacement value over original cost at that time. While on this basis there is a theoretical excess accrual of about six-tenths of one per cent., the fact is that the company would actually fail by \$14,667 to cover its replacement loss of \$900,000.

If we assume a rise of replacement value over original cost substantially higher than the 20 per cent. used in the foregoing calculations, this has little effect upon the result; for example, we calculate below in detail the results upon the basis of a 60 per cent. rise occurring ten years after the date the first portion of the building was constructed:

Calculation of Rate—*Original Cost Basis:*

\$ 500,000 for 25 Yrs. = 12,500,000 dollar–years
1,000,000 for 25 Yrs. = 25,000,000 " "
37,500,000 " "

$$\frac{37{,}500{,}000}{1{,}000{,}000} = 37.5 \text{ Yrs. average life}$$

$$\frac{100\% \text{ minus } 20\% \text{ salvage}}{37.5 \text{ Yrs.}} = 2.1333\% \text{ rate}$$

Accruals—*Replacement Value Basis:*

	Depreciable Property	*Depreciation Rate*	*No. of Years*	*Amount*
1926 to 1936	\$ 500,000	2.13%	10	\$ 106,666
1936 to 1951	800,000	2.13	15	256,000
1951 to 1976	1,300,000	2.13	25	693,333
				\$1,056,000

The loss to the company is \$1,300,000, less \$200,000 salvage, or \$1,100,000. Of the \$300,000 difference between the replacement value and the cost of the building, 10/50ths, or \$60,000, is, we assume, to be borne by the Company. The allowable depreciation accrual thus is \$1,040,000. This compares with an accrual which would be produced by the depreciation rates used of $1,056,000.

While on this basis there is a theoretical excess of $16,000, the fact is that the company would actually fail to recover its replacement loss by $44,000.

The matter is of no practical importance. We are dealing with a theoretical error which cannot exceed a minute amount—an error which as defendants admit may from time to time run either way and so may either "enrich" or "prejudice" the company.

The maxim, "*De minimis non curat lex,*" applies.

Subpoint B.

Defendants say, at page 381 of their brief:

> "B. The investors in Bell Telephone securities 'are not primarily interested in property, as such, but are interested in safeguarding the money invested in the property which so far as it will some day be lost in operations, is, therefore, what should be covered by the depreciation provision.'"

The point is argued in their brief at pages 436-38.

It is not necessary for us to discuss this. The argument is obviously contrary to law.

Subpoint C.

They say at page 381:

> "C. The present record precludes the possibility of reaching the same conclusion of fact as that to which this Court attached legal consequences in the *United Railways* Case (280 U. S. 234), to wit: the conclusion of fact that the cost of retired prop-

> erty at the time of replacement 'is for all practical purposes present value.' "

This is discussed by them at pages 439-40.

The answer is that this court announced a principle in the case of *United Railways* v. *West*, and that this principle is plainly applicable to the facts of the instant case. In so far as defendants here rely upon the use of the "group method" of determining depreciation rates for buildings and central offices, we have already answered the argument.

Subpoint D.

Defendants state this point as follows, at pages 381-382 of their brief:

> "D. The base which Appellee used in its depreciation expense computations was not the 'present value' of the property which this Court in the *United Railways* case held was the proper base for depreciation expense computations in respect to the property covered thereby."

This point they argue on page 440.

This argument has already been answered in preceding sections of this brief.

Subpoint E.

Subpoint E is stated by defendants at page 382 and argued on page 441 of their brief. They say:

> "E. Appellee's position before the District Court in 1932 repudiates the position which it took in the 1929 hearings in this case, in the regular course of its business in relation to its investors, and

> before the Interstate Commerce Commission since the decision in the *United Railways* case."

Their argument is, in substance, that plaintiff will not be heard to claim annual depreciation expense charges on the basis of replacement value for the reason that it has kept its books with respect to this item upon the basis of the cost of the property as shown by the books.

The answer is perhaps twofold: First, the books are kept in the way they are because the prescribed accounting system so provides; and second, the issue here is not a question of bookkeeping but of constitutional rights.

4. The next main contention of the defendants reads as follows:

> "V. The District Court could not make a valid finding on depreciation expense charges on the basis of the experience of other Associated Companies in respect to depreciation expense charges as disclosed in the record."

This is stated on page 382 of appellants' brief in the summary statement of the argument, and is restated and argued at pages 442-47.

Their point here is that the District Court, as stated in its opinion, took into consideration in making its finding on this issue the experience of other Bell System operating companies, and that it was error for the District Court to do this.

For answer we refer to plaintiff's brief as appellant on cross-appeal, "Comparison with all other Bell System Companies," pages 62-65. The point is without merit.

5. Defendants' further contentions which are numbered VI and VII, stated in their brief at page 382 and argued at pages 447 and 448, do not call for any comment.

VII.

License Contract Services and Payments.

(Appellants' Brief, "License Contract Services and Payments," pages 81-232).

Introduction (pp. 158-166, *infra*).

Allocation of American Company's Development Expense (p. 166, *infra*).

Allocation of License Contract Costs Between Plaintiff and Others (p. 188, *infra*).

Miscellaneous Criticisms by Defendants (pp. 193-246, *infra*).

◆

The License Contract is an agreement which was made between the American Company and each of the operating companies in the Bell System. The contracts here in question were executed in 1919 and 1930, respectively, but the contract relationship in the same general form goes back to 1881. The License Contract grants to the Licensee Companies licenses under the patents of the American and Western Companies, guarantees the companies against losses for patent infringement, and requires the American Company to furnish certain other services. Such services are referred to in the opinion of this court upon the previous appeal as follows:

> "the rental for the use of instruments and for engineering, financial and advisory services * * *" (Smith *v.* Illinois Bell Telephone Co., 282 U. S. 133, 153).

The License Contract payments were sustained upon the first trial of this action on the ground that the services were necessary and important to plaintiff and that plaintiff could not obtain them on as favorable terms elsewhere (O.R. I, 189-191). There was no inquiry into the cost of such services to the American Company.

This court in the decision above referred to sent the case back for additional findings, including findings of the cost to the American Company of furnishing the License Contract services in each of the years 1923 to 1931, inclusive. Proof of these was furnished on the second trial, and the facts with respect thereto are as follows:

> The American Company was divided into 12 general departments. Each of those departments kept accurate records which showed every dollar spent and the purpose for which it was spent. Each of them rendered services to the Associate Companies of the kind and character required by the License Contract.
>
> Plaintiff took up and dealt with each of said 12 departments separately. It showed the total costs incurred by each department in each of the years in question and showed the various classes of work for which those costs were incurred. It eliminated therefrom any work, and the expense thereof, which was not within the terms of the License Contract. Then it pro rated the remaining expense to the beneficiaries thereof in proportion to the benefits received, thus allocating to plaintiff the fair share of the expenses of each department separately.

This work of allocation was done by the head of the particular department in question, who later testified thereto and was cross-examined thereon. These witnesses were men of the highest standing, many of them with world-wide reputations as engineers or scientists, and they had complete knowledge of the subjects concerning which they testified. The work was done with great care and in great detail. It was introduced in evidence in the form of 70 exhibits and the testimony concerning the reasons for the treatment of each class of expense was given at length, the direct and cross examination covering more than 700 pages of the condensed record.

The court below accepted practically without exception the primary facts testified to by these witnesses, but differed radically with plaintiff's counsel as to which of the items should qualify as License Contract expense and should be included in developing the cost thereof. Thus, the court threw out completely all taxes and all losses incurred by the American Company in connection with temporary financing of, and holding funds available for, the Licensee Companies. The court below found these items of expense practically as claimed, but rejected them as License Contract expenses. Plaintiff assigned error and appealed from such action of the court, and these matters are discussed at pages 11-17 and 77-102 of plaintiff's brief as appellant, Case 548.

While plaintiff accepted practically all of the primary facts found, defendants have filed and argued thirty-seven assignments of error directed to the findings of the court with respect to License Contract costs. It would be hopeless to attempt to outline a discussion of all of the separate issues raised by them.

Defendants charge with respect to the above described allocations that they were vague and indefinite, and in support of that charge they quote from what they allege to be a statement of the Comptroller of the American Company on that subject, as follows:

> "This matter of separating expenses here, license contract expenses from other expenses, was quite a mystery and the department heads could not tell me very much" (R. II, 1175.)

The statement quoted did not refer to the allocations made by the witnesses in the case at bar, but to an attempted allocation of all 12 departments which the Comptroller himself had undertaken to make previous to this trial on his own general knowledge of the situation.*

There may be differences of opinion concerning allocations—there usually are; but there can be no criticism of any allocation made in this case on the ground that it was indefinite or mysterious in any way. This is perhaps best shown by the fact that the defendants have pointed out in more than a dozen places particular allocations to which they object, stating the class of work objected to and the exact amount of money involved and precisely how it was dealt with by plaintiff.

In the case at bar, the possibility of error in the allocations was greatly limited due to the fact that most of the expenses of the American Company were of License Contract character and most of the benefits thereof were restricted to the operating companies, which shared in those benefits approximately in proportion to their respective sizes.

In explanation of the foregoing it will be necessary to give a brief description of the American Company and its assets and activities.

Its assets are shown both graphically and in figures on plaintiff's Exhibit A-99 (R. IV, 2834-A), as of December 31st, 1929. The situation was similar throughout the period

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* See page 225, *infra*.

(1923-1932). Those assets consisted principally of holdings of common stock in twenty-one operating telephone companies in the United States and in the Bell Telephone Company of Canada, as follows:

Company	*Assets*	*Percentage Ownership of American Company*
New York	$755,773,547	100.00
Southwestern	325,862,842	99.99
Illinois	291,562,853	99.11
Pennsylvania	295,582,619	100.00
Southern	237,013,378	99.99
New Jersey	179,110,576	100.00
New England	290,964,099	61.94
Pacific System (4 Cos.)	423,344,169	85% of Common Stock. 78.10% of Preferred Stock.
Ohio	170,043,384	99.99
Michigan	170,475,303	99.99
Northwestern	121,973,596	100.00
Mountain States	89,493,621	72.82
Wisconsin	66,901,301	100.00
Indiana	45,864,680	99.99
District of Columbia	31,729,223	100.00
Baltimore City	47,804,416	100.00
Virginia	28,501,987	100.00
West Virginia	24,081,504	100.00
Diamond State	7,887,684	100.00
Southern New England	67,988,021	33.34
Cincinnati & Suburban	37,728,091	29.71
Canada	179,680,187	30.56

The above assets total $3,889,367,081.

In addition to the stock ownership in the above operating companies, the American Company owned the following:

Company	*Assets*	*Percentage Ownership of American Company*
Western Electric Co. (including its two wholly owned subsidiaries)	$312,959,519	98.34
Long Lines Dept.	364,278,115	100.00
195 & 205 Broadway Co.	26,931,481	83.6
Bell Tel. Securities Co.	19,286,328	100.00
Bell Laboratories	14,822,568	50% A. T. & T. Co. 50% W. E. Co.
Cash and Temporary Investments)	40,165,351	
Furniture and Other Property	1,402,052	
Receivables and Miscellaneous	775,775	

The twenty-one Associate Companies in the United States, together with the American Telephone & Telegraph Company, and the Western Electric Company, the Bell Laboratories, and Bell Securities Company, were generally known as the Bell System.

Each of the operating companies above listed was carrying on a general telephone business in the locality indicated by its name. The Long Lines Department of the American Company carried on a telephone business which was limited to interstate business and to calls between points not less than forty miles apart. That property was owned directly by the American Company and not through stock ownership. However, it was organized and treated precisely as each of the operating companies, having its own separate officers, bank accounts, financial department, law department, etc. It constituted in size, on any reasonable basis, about 7 per cent. of the entire operating system. (O.R. III, 973; Ex. A-100, R. IV, 2835-37.) In the discussions hereafter, references are made to the entire operating group including the Bell of Canada as the 23 operating companies, except at points where it is necessary to distinguish between the Long Lines Department and the other operating telephone companies.

Such 23 operating companies represented total investments of over $4,200,000,000., and represented more than 90 per cent. of all of the assets of the Bell System.

The only other considerable asset (comparatively) was the Western Electric Company. This company was engaged almost exclusively in the manufacture of telephone apparatus and lead-covered cable and sold most of this product to the 23 operating companies. It made these sales at very low prices, and at prices which returned it a profit of less than five cents on each dollar of goods sold (See discussion Western Electric's prices, p. 92, *supra*).

The Bell Laboratories did laboratory work *at cost* for the American and Western Companies and for Electrical Research Products, a subsidiary of Western. It did nothing else (R. III, 2155).

The Bell Securities Company was engaged in selling securities, exclusively of the Bell System, and raising money for the extension of the various units thereof.

The American Company did not speculate or deal in securities or properties of any kind. It dealt with each of the companies constituting the Bell System (Plaintiff's Ex. A-99, R. V, 2834-A). *It had no other dealings,* except that it sold its securities to the public and to bankers and raised money which it used to finance other members of the system.

With the possible exception of the cost of the financing of the twenty-one Associate Companies in this country and the Western, all of the expenses incurred by the American Company were clearly included within the terms and obligations of the License Contract. (The License Contract is Plaintiff's Ex. 7, O.R. IV, 1196).

Moreover, if it should be possible to disregard the separate corporate entities of the parties with regard to the License Contract (as claimed by defendants) and hold that the American Company can make no profit from plaintiff, then it would make no difference whether the services rendered by the American Company were enumerated in the License Contract or not, so long as they were rendered to benefit and did benefit the operating companies.

Its activities were restricted almost entirely to obtaining money for and improving the efficiencies of the operating companies and Western Electric. Insofar as these activities assisted Western to produce its goods at a low cost, the benefit, or most of it, was passed on to the Associate Companies through the low prices charged to them.

The American Company did, of course, devote some time and attention to taking care of the securities held by it in the Associate Companies, but as these were not dealt in and none was ever sold, this work amounted to little more than providing safety deposit boxes. It also received large sums in dividends from the Associate Companies, which it banked and took care of, but these payments were made in a few very large sums and the expense connected therewith was small. All of the other assets of the American Company except those above named were comparatively negligible.

Thus, it was not possible that any substantial part of the reasonable expenses of the twelve departments of the

American Company (excluding taxes and other financing expenses disallowed by the court below) could possibly have had as their object and effect anything except the benefit of the operating companies through improving their efficiencies in some way or another.

There has been no criticism of the reasonableness of such expenditures nor of the efficiency of the American Company.

Allocation of American Company's Development Expense.

Points I, II, and III, pages 97 to 125 of defendants' brief, are so closely related that they can be considered together. They all involve the problem of determining the part of the development expense incurred by the American Company which should be allocated to the license contract service. Defendants contend that the allocations made by plaintiff and adopted by the statutory court operate to enrich the American Company unjustly because they do not either assign a part of such expenses to certain special commercial products manufactured by Western or give credit for certain royalties from such products (Point I), because they do not assign another part of such expenses to certain manufacturers licensed by Western (Point II), and because they do not either assign another part of such expenses to certain distributors who purchase Western's manufactures for resale or give credit for certain profits made by such distributors (Point III).[1] The contentions have no merit on the facts.

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[1] The facts as to each of the companies under discussion, including ownership, contracts with other companies, nature and extent of business done are set forth in pp. 112-122, *supra*. This reference is made to avoid repetition.

The invention of the telephone and its application to public communication created a new art which has required extensive research and development. That work has been divided between the American Company and Western along the lines of the division of patent ownerships agreed upon between them in the contract of 1882 (R. III, 2166). Since the date of that contract the development work of the American Company and the patents owned by it have related to the fundamentals of voice transmission, and the development work done and the ownership of patents by Western have related to apparatus to be manufactured by it (R. I, 489; R. III, 2144-2147). Western has periodically assigned to the American Company United States patents it acquired on telephones, and the American Company has similarly assigned to Western patents it acquired on telephonic appliances (R. II, 1212, 1223-1224). In view of the confusing references in defendants' brief to Western and its customers and licensees it is important to keep in mind throughout this discussion that the development expenses under discussion are solely those of the American Company. The development expenses associated with Western's work have been dealt with earlier in this brief (p. 111). They were not included in the costs here dealt with and are not here involved. We are here concerned only with defendants' claim that plaintiff allocated too large a share of the American Company's development expenses to the Associate Companies.

The license contract (R. V, 3001) provides that "The licensor (American Company) will prosecute continuously fundamental work of research, investigation and experimentation in the development of the art and science of telephony." * * *

The uncontradicted testimony shows the development and research which the American Company has carried on under this contractual provision. Its activities have been in fundamental research on voice transmission and have related almost entirely to matters connected with telephone apparatus and cable, as distinguished from special commercial products (p. 91, *supra*). Its development work was done by its Department of Development and Research (R. I, 614-615, 621-622).

In making proof, therefore, of the cost to the American Company of furnishing the license contract services, it was necessary to apportion the development expenses of the American Company between those related to furnishing the license contract services and those which were not so related.

The Department of Development and Research kept a complete and detailed record of each dollar spent. That record was made in the regular course of business and no question has been raised as to its accuracy (R. I, 619-620). The total expense of the Department is not in dispute.

The allocation of the share of these expenses attributable to the Chicago area of the plaintiff was made by Dr. Frank B. Jewett. For many years he had been chief engineer and later was Vice President in Charge of Manufacture and Engineering of Western Electric. For some years he has been Vice President of the American Company, in charge of its development activities and since 1925 he has also been President of Bell Telephone Laboratories. He has wide and intimate knowledge of the facts, based on experience in positions of responsibility with these companies during the period when the transactions here under discussion took place. He is a man of international reputation. His testimony showed that his computations had been made very carefully and conservatively (R. I, 611-690).

Dr. Jewett allocated the expenses of his department as follows:

He first eliminated certain minor expenses not properly charged to his department and thus arrived at the expenses which were exclusively related to the development of that art (Plaintiff's Ex. A-115, R. IV, 2845; I, 623-4). This is the amount to be allocated and it is not in dispute.

With full knowledge of the facts and in the light of broad experience Dr. Jewett reached the conclusion that the fair way to apportion the expenses of his department between license contract users and others was to apply the ratio between the sales of telephone apparatus and cable made by Western to Bell customers on the one hand, and to its non-Bell customers on the other. Plaintiff's Ex. A-117, R. IV, 2848, shows this allocation for each of the years in this case. He testified:

> "In my opinion, that method gives a fair share and no more than a fair share of the expenses of my department which are allocable to the Chicago area of the Illinois Bell Telephone Company in each of the years 1923 to 1931, inclusive." (R. I, 632).

Defendants' contentions now under discussion do not require elaborate discussion of the testimony or any substantial argument. We will first summarize the facts shown by the evidence which establish the broad fairness of Dr. Jewett's method insofar as defendants' three contentions are concerned and then deal with certain statements made by defendants which might, if not discussed, be confusing to the court. The summary follows:

> (1) All of the development work of the department was fundamental research on voice transmission. It concerned telephone apparatus and cable, but not special commercial products. (The American Company does not do development work on special commercial products.) (R. I, 630; III, 2147.)

(2) Some of the developments reach the Associated Companies directly—notably those arising from work done on protection of telephone lines and systems from lightning, from inductive interference due to operation of trolley lines and electric light and power lines, etc. (R. I, 628-632).

(3) The major part of the developments, however, find their application through products manufactured by Western (R. I, 629-632).

Western is licensed by the American Company to make and sell products embodying these developments (O.R. VI, 2069-2070; R. II, 1211-1223). Western's sales of telephone apparatus and cable to Bell customers are more than 90 per cent. of the total sales of its products (Plaintiff's Ex. A-116; R. IV, 2846-2847).

(4) The American Company has granted certain licenses under its patents in this country to companies outside the Bell system as follows:

(a) Cross licenses under existing and future patents exchanged with the General Electric Co., Westinghouse Co., and Radio Corporation of America, the licenses granted by the American Company being related to fields outside the telephone business, and the licenses received including that business (R. I, 651, 2.)

(b) Cross licenses exchanged with Automatic Electric Co. in 1916 and extended at various later times covering certain automatic telephone apparatus (R. II, 1217).

(c) Cross licenses with other manufacturers which are not in controversy (R. II, 1222, 1224).

Each of these cross licenses was advantageous to the operating companies. In addition to the licenses granted by the Bell companies under their patents, each of the cross licenses referred to, except (a) above, involved a cash payment from the American Company or Western (R. II, 1217, 1224).

(5) Western has been licensed by the American Company to make and has sold special commercial products, all of which lie outside the field of apparatus and cable in which the American Company's development was done, but some of which embody inventions made in the course of that work. These sales are only 3½ per cent. of Western's total sales. The Bell system companies receive substantial benefits from development work on special commercial products. This development work is not done by or charged to the American Company or the Associated Companies in any way (R. I, 497-498).

(6) The American Company granted patent licenses in the telephone field in Canada to the Bell Telephone Company of Canada under the agreement of 1923 (prior to 1923 the contract of November 2, 1880, applied). The license covers the right to use, and also the right to have manufactured in Canada for use, by the Bell of Canada. Supplementing this and under the same date as said contract the American Company, Bell of Canada and Western made a contract with Northern Electric Company whereby manufacturing licenses were granted to the Northern by the Bell of Canada and whereby the parties agreed that the two Canadian companies should receive their several rights under inventions belonging to either the American Company or Western through Western (prior to 1925 International Western). Consideration for rights under the patents coming from the American Company was paid by the Bell of Canada in its license contract payment. Consideration for the rights received by Northern through Western, came through their agreement to continue an earlier contract dated in 1919 between the Bell of Canada, Western and Northern (Defendants' Exs. X-379, X-380, X-381, R. VIII, 4675-4689).

(7) On its patent side the 1882 contract above referred to between the American Company and Western dealt primarily with United States patents. In this country telephone patents acquired by either company were to go to the American Company. Patents on telephonic appliances were to go to Western. In addition, the contract contemplated, and the practice of the parties has always been (subject to certain limitations for Canada resulting from the 1923 contract referred to in (6) above), that Western should acquire rights in foreign countries to inventions resulting from the American Company's work (O.R. VI, 2068-2075).

Western therefore, while transferring its U. S. patents on telephones to the American Company, has not transferred to the American Company any foreign rights to the inventions covered by those patents. It retained those rights. It also acquired directly from the inventors the foreign rights on the inventions covered by the U. S. patents on telephones and telephonic appliances which the American Company acquired in its development work here. The American Company, therefore, has not owned foreign patents. Foreign patents on both telephones and telephonic appliances have been taken out by Western and any licenses under such patents have been granted by Western (R. II, 1213-1214).

We come now to the specific contentions made by defendants in Points I, II and III under discussion.

One-third of the Royalties Received by the American Company for Special Commercial Products Was Sufficient Credit to Allow as an Offset to the Expenses of the Department of Development and Research of the American Company and this was deducted by plaintiff.

(Answering defendants' Contention I, their brief as appellants, pages 97 to 106.)

Defendants show in the last column of the table on page 103 of their brief the royalties which they claim. These aggregate $5,226,141, or an average of approximately $600,000 a year for the nine years covered by the proof. Approximately 4 per cent. of the expenses of the Department of Development and Research were allocated to the intrastate business of Chicago area of plaintiff.* Therefore if defendants' claim were sustained the result would be to reduce the amount of the License Contract costs allocated to the Chicago area of plaintiff by 4 per cent. of the credit, or by an average of $24,000 a year.

Plaintiff, in order to avoid raising a doubtful issue, conceded the principle and had the amount of allowance evaluated by persons familiar with the matter and set up such amounts as deductions from the cost to the American Company of the License Contract services (Plaintiff's Ex. A-171, R. IV, 2962). This evaluation showed one-third of the total receipts as the proper credit (R. II, 1172).

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* The 4 per cent. is derived by comparing the total D. & R. expenses in column 1 with column 5 of plaintiff's Ex. A-117, R. IV, 2848, which gives about 4.7 per cent. for the Chicago area, interstate and intrastate combined. Making the adjustment for intrastate business will bring the percentage down to a little over 4 per cent. For intrastate adjustment percentages see the property separation in plaintiff's Exs. A-50, A-184, A-189, R. IV, 2734, 2968, 2973.

The court did not refer specifically to this item in its opinion or its findings, and defendants claim that no allowance was made therefor. This may be true, though the costs found by the court as allocable to the Chicago area of plaintiff in many years were more than $100,000 less than those claimed by plaintiff.

The above statement of a $24,000 annual credit claimed and an $8,000 annual credit admitted by plaintiff gives the court an idea of the magnitude of the controversy, but greatly overstates the practical effect thereof. More than three and a half millions of the five and a quarter millions of royalties were received in the years 1929, 1930 and 1931. (Plaintiff's Ex. A-171, R. IV, 2962.) In those years the court below found that the share of the License Contract expenditures allocable to the intrastate business of plaintiff's Chicago area exceeded by nearly $200,000 a year the License Contract payments made by plaintiff with respect to that area and business, but the court restricted the allowance for plaintiff's operating expenses to the amount paid.*

Thus, practically, all allowance claimed by plaintiff would operate in reduction of amounts which were not allowed by the court and would have no effect in reducing the amounts allowed by it with respect to License Contract services.

Defendants claim also that there will be large continuing royalties from these matters in the future and that some great allowance should be made *in the years 1923 to 1931* for such prospective future royalties in addition to the amounts actually collected in those years. Any such computation would be purely speculative. Clearly, future royalties should be disregarded. If any royalties are to be credited, the only practical course is to relate them to the years in which they are received. Any other course would require not only estimates for the future which cannot be definite, but also a spreading of royalties over all the years subsequent to that in which the particular invention or inventions producing the royalties were made. This would of course require allocation of parts of royalties received in any year, 1929, for example, over many prior years. It might exclude some royalties received during the years in issue and relate them back to prior years.

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* See discussion, Plaintiff's brief as appellant, pages 80 and 81.

Plaintiff submits that the foregoing should dispose of this entire matter.

The allocation of the expenses of the Department of Development & Research was fair, *took account of all factors,* and allocated to the Chicago area of plaintiff no more than its fair share of such expenses on the basis of the share of the benefit thereof received.

(Answering Defendants' Contention II, p. 106.)

Defendants' contention that too large a share of the expense of the Department of Development & Research was allocated to the Associate Companies and too small a share to the sales of telephonic appliances and lead covered cables to others than the Associate Companies is without support.

Defendants' Claim.

Defendants claim that Dr. Jewett did not allocate any portion of the expenses of his department to the International Western Electric Company, International Standard Electric Company, Northern Electric Company, and Automatic Electric Company, all of which were licensees of the Western Electric Company and all of which they say enjoyed to some extent the benefits of the work done by Dr. Jewett's department.

Defendants further claim that "a substantial portion of more than $20,000,000" should be credited over the period 1923 to 1931, because of the foregoing (Defendants' brief as appellants, pages 106 and 107).

Dr. Jewett's Allocation Included an Ample Allowance for All of the Matters Contended for by Defendants.

While, as above stated, Dr. Jewett did not state in detail all of the factors which had caused him to make an allowance of $2,046,400 as the share of the cost of his department which should be allocated to the non-licensee activities of the American Company, it is clear that he could not well have deducted so much had he not made allowance for the activities of the four companies in question (Col. 2 of Plaintiff's Ex. A-117, R. IV, 2848).

Dr. Jewett with respect to the work of his department stated as follows: "Viewing the work from the standpoint of the purposes for which it is done I think I can break it down into a few general classifications." He then stated six classifications (R. I, 621, 623). These six classes included as one class of work connected with the protection of the telephone wires against inductive interference from trolley wires, high tension circuits, lightning, electrolysis, etc. Work of this kind did not assist the Western Electric Company in any way and did not lead to any sales of Western Electric Company apparatus outside of the Bell System. Defendants themselves concede that the expenses of this work should be allocated 100 per cent. to the operating telephone companies (Defendants' brief as appellants, pp. 88-90, Appendix 55). There were other of the six classes of work which did not lead to new manufactures by the American Company and, in fact, only one or at most two of said six classes did naturally so lead (R. I, 621-23).

Dr. Jewett was fully familiar with all of these matters claimed by defendants as offsets and credits, as he had been Vice President in Charge of Manufacturing, Engineering, etc. of the Western Electric Company at the time when the relations with the International Western Electric, the International Standard, the Northern Electric, and the Automatic Electric had been in effect (R. I, 611-614).

If Dr. Jewett had made his apportionment in the most meticulous way he would have pro rated the expenses of his department in the fourth and fifth general classes enumerated by him at pages 622-623 of Vol. I of the record, and above referred to, on the basis of the Western Electric Company's sales to the operating companies as compared to its sales to all others. Then he would have made a separate allowance for the benefits from the work of his department received by the International Western Electric and any others. Instead of doing this, Dr. Jewett applied his percentage deduction not to the expenditures of said fourth and fifth classes alone (which classes were the only ones that contributed to the new or changed manufactures by the Western Electric Company, R. I, 629), but applied his percentage to all six classes of the work done by his department (Plaintiff's Ex. A-117, R. IV, 2848). He testified that he did this because it was difficult to divide his expense accurately among the six classes and to pro rate those classes separately (R. I, 631). The method followed by him obviously resulted in a deduction for non-Bell business much larger than would have been justified if he had considered the business of the Western Electric Company *alone* and had taken no account of that of the International Western Electric, Northern Electric Company and others.

Thus, on the state of the record it cannot be said that Dr. Jewett did not *intend* to make a fair allowance for any of the items in question which should have been allowed for.

Neither can it be said that Dr. Jewett *did not* make a full allowance for all of the items in question, unless it should appear affirmatively from the evidence that there *should be* allowance for these items and that they *should aggregate more than a million dollars.**

The evidence not only *fails to show* or even indicate the above, but, on the contrary, *shows affirmatively* that there should have been *no allowances* in two or three of the four cases, and only small allowances, if any, in the others.

Considering separately the four claims made by defendants "to a substantial portion of more than twenty million dollars."

Northern Electric Company.

The Northern Electric Company is a manufacturing company operating in the Dominion of Canada. The Western Electric Company owned a *minority* interest of 43 per cent. in its stock (R. I, 491). The Western Company sold substantial quantities of its manufactures to the Northern Company (R. I, 491-493). These sales were included in the non-Bell sales shown on Dr. Jewett's Exhibit A-117 and were directly allowed for. This is specifically admitted by defendants in their brief as appellants, page 112.

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* One million dollars is the approximate difference between $2,046,400 which Dr. Jewett actually allocated to non-Bell business and the amount which he would have allocated had he confined his allowance to the non-Bell business transacted by the Western Company itself.

Northern occupies a position in Canada somewhat similar to that occupied by the Western Company in the United States. It supplies the requirements of the Bell of Canada as the Western Company supplies the requirements of the Bell Companies in the United States. In doing so, it has the right to use such inventions of the American Company as it considers advisable. It gets this right, however, not from the Western Company as alleged by defendants, but from the Bell Telephone Company of Canada, which company holds a License Contract agreement from the American Company made in 1923. This agreement gives to the Bell of Canada the right to authorize others to manufacture and the Bell of Canada has authorized Northern to manufacture under the inventions of the American Company, for which the Bell of Canada makes payments under its License Contract (R. VIII, 4684-4689).

The fact is, therefore, that Northern derives rights to Western's inventions under the 1 per cent. royalty contract referred to in defendants' brief, but derives its rights to American Company inventions through the Bell of Canada, which pays full consideration therefor under the 1923 license contract (R. VIII, 4675-4689). The Bell of Canada is not controlled by stock ownership by the American Company and neither is the Northern (Plaintiff's Ex. A-99, R. IV, 2834; R. I, 491).

Dr. Jewett in making his allocations *allocated to the Bell of Canada* its full share of the costs of his department on the same basis as he used for the Associate Companies in the United States (Plaintiff's Ex. A-117, Col. 3, R. IV, 2848).

The foregoing facts make clear that there is no basis for defendants' contention that something should be deducted from the development expenses on account of the use of American Company inventions in the manufacturing business done by Northern.

The same facts make it clear that no part of the profits of Northern should be credited against development expense attributable to the License Contract.

To show the extent to which defendants have gone to make criticisms of the findings of the court and the testimony of Dr. Jewett, it may be proper to point out that the royalties claimed were at the rate of approximately $50,000 a year. Now, as the share of the expenses of the Department of Development & Research allocated to the Chicago area of the plaintiff was 4 per cent.; if defendants' claim had been well founded, the effect of the credit claimed would have been 4 per cent. of $50,000, or $2,000 annually.

Automatic Electric Company.

As to Automatic, the $4,000,000 payment for which credit is claimed by defendants at this point is the same $4,000,000 for which defendants claim credit with respect to its Bell business (Defendants' Brief as Appellants, p. 115 and p. 273). Obviously, the same item cannot be allowed for twice.

The conclusive answer to the claim both as a credit to Western and as a credit against License Contract expenditures is given at page 122, *supra*.

Further with respect to the interchange of licenses between the Automatic Company on the one hand and the American Company and Western on the other hand, the fact that $2,000,000 was paid to Automatic, an entirely independent concern, for its license as far back as 1916 (R. II, 1217), is proof of the value of the licenses obtained from it for the benefit of the Associate Companies.

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International Western Electric Company.

Defendants claim three substantial offsets or credits against the expenses of the Department of Development & Research based on profits or dealings of the International Company. Defendants state their premises as follows:

> "The American Company received no compensation for the foreign rights to its inventions or reimbursement for any portion of the cost of developing its own inventions * * *. *Obviously* telephone communication equipment received the *same* benefit of the *same* inventions of the American Company, whether manufactured by Western for export, to which Dr. Jewett gave effect, or manufactured by the foreign factory of International Western * * *." (Italics ours.) (Brief, p. 108.)

To the plaintiff the *contrary* seems *obvious*. However, defendants' statement above is exactly contrary to the only evidence in the record on the subject (R. I, 494-7).

Here, again, the claim is a duplicate of that made by defendants for the same allowance in computing the development expenses of Western in determining its profits from its Bell business (Defendants' Brief as appellants, p. 109 *et seq.*)

The International Company was sold to an outsider in September, 1925, so that the relationship upon which defendants base their claims existed only two and one-half years of the nine years covered by this suit (R. I, 493).

As above shown in the section relating to Northern Electric Company, the share of any credit against the expenses of the Department of Development & Research which would apply to the Chicago area of plaintiff was 4 per cent. If the smallness of this percentage, together with the comparative smallness of the business of the International Company compared to that of Western is borne in mind, it will be seen that the maximum credits to the Chicago area of plaintiff would not exceed $10,000 for the years 1923, 1924 and 1925, and nothing thereafter.

Defendants seem to claim the above offset or allowance based on the amount of business done, and also the entire profits of the International Company. This would, of course, be a double allowance for the same thing. Defendants worked out their claim to profit by appearing to show a substantial return averaging 13 per cent. upon *capital* and *surplus* (defendants' brief as appellants, p. 109). They entirely omit reference to the fact that International was financed largely by advances from Western Company, and that the capital, surplus *and advances* together averaged approximately $20,000,000. International made no more than a fair manufacturing profit on the amount which Western had embarked in the enterprise, and the figures make it plain that there is no amount which could be regarded as profit from the use of American company inventions.

However, the complete answer to the claim for any allowance is given, *supra* at pages 119-120, where the same claim is discussed in connection with the Western Electric prices. It is there shown that the entire relationship was more than fair and advantageous to the Associated Companies.

International Standard.

On September 30, 1925, International Telephone and Telegraph Corporation paid to Western $29,306,534 in cash for the entire capital stock of International Western (R. VIII, 4563, 4890).

The company so purchased changed its name to International Standard, and made a patent and sales contract with Western. It undertook to pay to Western one-half of one per cent. upon its future sales other than resales of purchases from Western, such percentage payments to continue for a period of years (R. VIII, 4884). International Standard granted to the Bell System the right to use in the United States and Canada patents then owned and thereafter acquired by it.

Defendants argue that by reason of the above transaction there should be a large credit or offset against the actual expenses incurred by the Department of Development & Research. They suggest that the $6,255,095 by which the purchase price exceeded the book cost of the physical assets sold was all in effect payment for licenses under the patents of the American and Western Companies and should be offset against the expenses of the Department of Development & Research of that company *in the particular years covered by this suit.* There is nothing to sustain this argument and many things contradict it, as follows:

There is no proof that any part of cash payment of the International Standard was paid for the licenses of the American Company. On the contrary, the proof indicates that no substantial part of said $6,225,095 was paid for those patent rights. While the sales price to the Standard exceeded the cost of the physical assets of the International Western by $6,255,095, there is nothing to show that the Standard Company paid one dollar more than the value of these assets at the time when it acquired them. The Western Company embarked upon its European and Asiatic business in 1882. It attached business and built up a good will for more than forty years before it sold out to the International Standard. It was doing an annual business of approximately $40,000,000 (see defendants' brief as appellants, page 108). It would be difficult to believe that the good will of such a business would not be worth at least $6,255,095.

Moreover, the assets sold in 1925 had been turned over to the International Company in 1918, a corporation wholly owned by the Western (R. VIII, 4523). Some of these assets had been owned by the Western for many years prior thereto, and as far back as 1884. It is not shown on what basis the property was turned over to the International Company, but if this basis were the value at the time there would undoubtedly have been a substantial increase in value between that time and 1925. The above facts, taken together with the fact that the wholly independent International Company made a specific agreement to pay a patent royalty on all its sales of telephone apparatus, whether patented or not negatives the idea that any part of the six million dollars in question was *an additional* payment over and above the royalty.

If the $6,255,095 in question is considered as having any relation whatever to patents or inventions, it would have to be spread over some period of time corresponding to the patents or rights so related to it. If all the $6,255,095 were to be credited, there is no basis in the record for saying whether it should be spread over the 15 years during which International Western's future contracts ran or over that period plus some time in the past.

In no event can 4 per cent. of the amount which could be attributed to any one year on any reasonable basis be more than nominal.

As above shown, there was no evidence that any part of this payment was for patent rights. Defendants' entire argument on this point is based on pure speculation.

The Basis Adopted by Dr. Jewett for Allocating a Portion of the Expenses of the Department of Development & Research to the Non-Bell Sales of Western Company Was More Than Fair.

(Replying to Defendants' Brief as Appellants, pp. 116-125.)

Defendants take their discussion of this subject back to 1879. Many of the statements made are most unfair, to say the least. They are entirely irrelevant, however, and plaintiff will start with those facts which have some relation to the matter in controversy.

From 1919 to 1931, inclusive, the Western Electric Company sold its product to the Bell Companies in this country, and referred to generally as "Bell customers," and to others referred to as "non-Bell customers." Defendants say:

> "Dr. Jewett allocated the entire Development and Research expense between the Bell System and non-Bell customers of the Western on the basis of their respective purchases of Western's telephonic appliances (including lead-covered cable). His declared purpose was to allocate to the non-Bell field its proper portion of such expense." (Defendants' Brief as Appellants, p. 120).

This statement is entirely correct. Defendants then say:

> "Dr. Jewett failed to give effect to the fact that the Bell sales figures used by him in all cases repre-

sented retail sales." (*Defendants' brief as appellants, p. 120.*)

If Dr. Jewett had given proper effect to the differences in price levels he would have allocated a smaller share, and not a greater share, of the expenditures of his Department to the non-Bell business. This follows from the fact that the so-called "*retail*" prices to the Associate Companies were at lower prices than the *wholesale* prices to others. The Western Company's "*retail sales*" to the Associate Companies averaged $264,431,000 (R. IV, 2816) a year for the period 1923 to 1931. Its "*retail sales*" to plaintiff averaged $16,875,000 (R. VIII, 4779) a year. In making its sales to the Associate Companies, Western had no selling expense, no credit risk, and was informed in advance concerning the expected requirements of the company. The profits of Western on its sales to the Associate Companies was limited to approximately five cents on the dollar. Because of all the foregoing, the prices at which Western sold to the Associate Companies was very low. Throughout the whole period Western has never sold at wholesale or otherwise at lower prices than it sells to the Associate Companies.

Of course, in allocating the expenses of his department the ideal basis would have been the basis of units sold, but this information was not available; so Dr. Jewett took the dollars received for the units sold, which was available. This was more than fair, because the units sold to non-Bell customers were sold at higher prices than to the Associate Companies.

The resale price to the public includes, of course, a large sales cost, credit risk, and additional handling, plus a return upon the money invested in the retail business.

None of these factors were present in the sales to the Associate Companies, and obviously, in determining the proportion of the total benefit of the work applicable to the non-Bell sales, it would be highly improper to use as the basis, resales to the public.

The foregoing, plaintiff believes, effectually disposes of defendants' whole argument on this point.

Here again, however, all of the factors hereinbefore discussed in connection with the Northern and International Companies are present and operate to reduce to an insignificant figure any allowance from retail sales, if such allowance were possible.

The sales through International. Western and Northern Electric, referred to on page 125 of defendants' brief, have already been claimed by defendants and here they are making a second claim for the same thing.

The discussion *supra* at pages 112 to 122 is a complete answer to *both* claims.

Defendants show in a table at page 122 of their brief a comparison between the profits that Graybar made on the resale of Western's apparatus and the profits that it made on the resale of its purchases from others. This difference is striking and a conclusive support to the contentions of plaintiff and the findings of the court below that the Western sold to the Associate Companies far below the market, *because the sales to Graybar were never made at lower prices than the sales to the Associate Companies.*

The Allocation to Plaintiff of Its Share of the License Contract Expense Incurred for the Benefit of All Operating Companies Was Carefully and Fairly Made.

(Answering Defendants' Brief as Appellant, pages 126-167.)

In the preceding section of this brief we have dealt with the determination of the total License Contract expenses of the American Company. When these had been determined it was then necessary to pro rate such expenses among the 23 companies who received the benefit thereof.

Plaintiff and 21 others of the 23 companies were all doing substantially the same kind of business. Obviously, a pro-rate among these 22 companies on the basis of relative size was proper, and we do not understand that defendants take any exception to this.

However, one of the operating companies, namely, the Long Lines, carried on a business which was somewhat different from that of the other 22 (R. I, 552, 634; III, 2203). Defendants complain that plaintiff's witnesses allocated to the other operating companies including plaintiff and the Bell of Canada $20,000,000 of the expense of the Department of Development & Research which should have been allocated to the Long Lines, and that thereby too large a share of the License Contract expenses was allocated to plaintiff. The allocation in question was made by Dr. Jewett, was explained in great detail, and his evidence fully supports the finding of the court below (R. I, 624-687). There was no testimony or evidence to the contrary.

The Long Lines constitutes about 7 per cent. of the Bell operating companies on any reasonable basis (Plaintiff's Ex. A-100, R. IV, 2835). *The number of messages handled by Long Lines was only a fraction of 1 per cent. of those* *handled by all of the Bell operating companies.** Dr. Jewett allocated to Long Lines about 7½ per cent. of the expenses of his Department, and allocated about 93 per cent. to the 22 other Associate Companies including plaintiff and about 4 per cent. to plaintiff alone.

Dr. Jewett's Method of Allocating between 22 Associate Companies, on the one hand, and the Long Lines, on the other, was fair and logical.

Dr. Jewett pro rated the total expenses of his department among the 23 operating companies including the Long Lines on the basis of the respective plant investment of each company, stating that he considered that the fairest way to apportion such expenses (R. I, 633 to 635; Plaintiff's Ex. A-117, Cols. 3 and 4; R. IV, 2848).

He did not stop there, however, but checked the correctness of this allocation by considering separately the proper allocations of the different classes of work done by his department. In so doing, he divided the hundred or more classifications in which the work and the expenses of his department were divided in the regular course of business into 13 groups, based upon the particular object for which the work in each group was prosecuted, then he allocated the expenses of each such group separately, based on the relative benefits received from the work of that particular group by the Long Lines and the other operating companies (Plaintiff's Ex. A-118; R. IV, 2848A to 2848Q; R. I, 635 to 687).

The results obtained by the above method of allocation agreed closely with the results obtained by the over-all method (compare Cols. 5 in Plaintiff's Exs. A-117 and A-119, R. IV, 2848, 2849).

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* Compare testimony of Gherardi, R. I, 530, with Long Lines messages shown in Plaintiff's Ex. A-100, R. IV, 2836.

In support of his over-all method Dr. Jewett testified that the work of his department was not done for particular companies or for particular classes of plant, but was done for all of the operating companies as a whole and that practically all of its developments benefited the whole system (R. III, 2146-2147; I, 624, 632 to 634). Work begun on one line of effort often failed to accomplish the result sought, but did accomplish something of value in another field (R. I, 647-687). Devices used in one kind of plant are "tools of research" for developments affecting other plant.

The work had to do with providing new and improved things and methods employed in connection with the plants of the various operating telephone companies, including Long Lines, and to instruct the companies in the best use thereof, and the fairest way to apportion this expense on the basis of use by or value to the recipient was to pro rate the whole expense upon the basis of the respective plant investment of the several companies (R. I, 624, 632; III, 2146).

Defendants' attack upon the above allocation is developed by selecting certain classes of work in which *they* assert, *based on no competent evidence,* that the Long Lines *alone* profited to a much greater extent than the other 22 companies *combined.*

To meet defendants' argument fully would require a careful examination of each of the more than 100 separate classes of work performed by Dr. Jewett's Department. That would be impossible in a brief of a size and scope which would be of any real assistance to the court.

Moreover, Dr. Jewett has done that, and has sworn to his results. His standing is of the highest (R. I, 614); his testimony was clear and convincing (R. I, 611-690); his knowledge of the subject greater, probably, than that of any other living man, and the court below accepted it (R. III, 2509). It was right in that action.

In the circumstances, we shall not enter into a detailed discussion of the questions raised by defendants, but will restrict ourselves to general matters showing the unreasonableness of defendants' contentions and the relative smallness of the maximum possible error in this allocation.

Negligible Effect of Maximum Possible Error.

The amount which defendants claim was improperly allocated was $20,000,000 over a period of nine years, or an average of approximately $2,200,000 a year (Defendants' Brief as Appellants, p. 162). Approximately 4 per cent. of this was allocated to the intrastate business of the Chicago area of plaintiff. Thus, if defendants were 100 per cent. right in their contention, the effect would be to reduce the costs of the License Contract expenses allocable to plaintiff by $88,000 a year.

The *practical* effect, however, would be negligible, because the greater part of the $20,000,000 in question was spent in the latter part of the period covered by the suit and during those years the court below found that the License Contract costs exceeded the payments therefor by upwards of $200,000 per year, *but disallowed the excess as a credit to plaintiff* (Findings 22, 23 and 25, R. III, 2519 and 2520).

Again, any error in the apportionment here under consideration would necessarily be comparatively small.

Plaintiff and each of the other 21 operating companies (exclusive of Long Lines) owns and operates all the classes of plant which the Long Lines owns or operates, but operates many other kinds in addition which the Long Lines does not own or operate (R. I, 634). This is due to the fact that plaintiff is conducting a business which enables its Chicago subscribers to talk to other subscribers in the City of Chicago, to subscribers in the suburbs, and to subscribers in Rockland, Cairo, and other points in Illinois 150 or 200 miles away. This business is all transacted over the lines of plaintiff and is all intrastate business conducted by it and by it alone. The Long Lines, on the other hand, handles only interstate business and only that where the haul is more than 40 miles (R. I, 672).

A message from Chicago to Springfield, Rockland or Cairo, requires the use of precisely the same kind of instrumentalities as a call from Chicago to Indianapolis, Cleveland or Buffalo, over the Long Lines (R. I, 634).

On the other hand, the Long Lines does not own or operate any plant which is the equivalent of that used by plaintiff in rendering its local service in the City of Chicago or its suburban service (R. I, 634).

While the use of the local plant of the Chicago Company is required in every long distance message coming in to or going from the City of Chicago, this plant is used more than one hundred times for the business of the Illinois Company to once for the business of the Long Lines (compare Plaintiff's Ex. A-100, R. IV, 2836, with testimony of B. Gherardi, R. I, 530).

Considering even the toll plant for the handling of messages between distant points, the plant of this kind owned and operated by the 24 Associate Companies is more than twice that owned and operated by Long Lines (Plaintiff's Ex. A-100, R. IV, 2837).

Thus, no matter what class or classes of plant received the benefit of any class of work done by Dr. Jewett's Department, the Associate Companies combined received, and must have received, a far greater share thereof than the Long Lines alone.

The foregoing seems a rather complete answer to defendants' contention at page 162 of their brief that the entire amount of $26,312,029, the aggregate of the expenses of many classes of work of the Department of Development & Research, should all be allocated to Long Lines and none to the twenty-two remaining operating companies, when Long Lines constituted 7 per cent. of the total and the other 22 companies constituted 93 per cent.

A very brief reference to some of the matters which defendants have singled out to criticise is as follows:

Teletypewriter.

In 1930 the Western Company paid $30,000,000 for the Teletype Company, which manufactured and sold telegraph typewriting machines, called teletypewriters. Many of such machines are used by their owners, such as Press Associations, Telegraph Companies, etc., upon circuits leased from the operating telephone companies (R. I, 459).

The Department of Development & Research during the nine years covered by the suit spent approximately $800,000 in working on and perfecting the teletypewriter exchange apparatus. (Aggregate of amounts in Ex. A-118, R. IV, 2848 A to Q, estimated as the portion relating to teletypewriter.) 4 per cent. of the $800,000, or approximately $32,000, which comes to only $3,555 a year, was allocated to the Chicago area of plaintiff. No part of the $30,000,000 was allocated thereto. The evidence showed that the teletypewriter or switching or interconnecting service is a new thing. It is just being introduced in a large way and should have a substantial *local* intrastate use in the large cities, such as Chicago. In addition, the local plant would be required in connection with all interstate use between points in Illinois and points outside (R. I, 684-5).

The effect of plaintiff's procedure has been to allocate to the City of Chicago over the entire nine years in question approximately one-tenth of one per cent. of the total costs of developing facilities and systems for the teletypewriter exchange. The defendants claim that this allowance is ten times too much.

Communication with Harbor Craft.

The Department of Development & Research has spent a comparatively trifling amount in developing a system of communication from shore to tug-boats and other harbor craft. The amount of this expenditure which was allocated to the City of Chicago was only $1,400 for the whole 9-year period.

Plaintiff could understand a possible objection to the allocation to it of a part of such expenditures by an inland city, but not by the City of Chicago.

Radio.

The Department of Development and Research throughout the period covered by this suit made extensive and costly investigations in the field of radio (R. I, 647-657). This is by far the most important of all the items criticised by defendants.

The amounts which were allocated by Dr. Jewett to plaintiff's intrastate business in the City of Chicago for these expenses of his department aggregated $449,326 in the nine years in question. (Amounts shown in Ex. A-118,

R. IV, 2848 A to Q, for Radio, allocated in same manner as total D. & R. expenses shown in Ex. A-117, R. IV, 2848.)

Defendants assert that no part of this expenditure should be allocated to the Illinois Company and that it all should be transferred to the Long Lines because plaintiff received none of the benefits of this work and Long Lines all of it. (Defendants' Brief as appellants, p. 133.)

Plaintiff has already obtained the following direct and positive benefits from the work above referred to and from the inventions and discoveries which have developed therefrom or have been obtained thereby.

1. Higher quality transmitters and receivers in general use in the *exchange plants* of all the Associate Companies in their local business as well as in their toll business—none owned by the Long Lines (R. I, 678).

2. The present successful type of hand set, in substantial use in the *exchange plants* of all the Associate Companies; none owned by Long Lines (R. I, 679-680).

3. Dial interference eliminator—in general use in dial subscribers' sets in the properties of the *local* companies; none owned by the Long Lines (R. I, 679).

4. Larger use of fine wire cables in the *exchange plant* due to the improved receivers, transmitters and transmission devices. Long Lines has no exchange or local plant (R. I, 681).

5. Improved and much less expensive loading coils in large use in *the exchange* and toll plants of the local companies (R. I, 678).

6. Changes in design making the *local* plant less susceptible to outside interference (R. I, 678).

7. Anti-side tone sets improving the quality of speech received, in use in *exchange plants* of the local companies (R. I, 681).

8. Vacuum tubes used in repeaters, amplifiers and in many other forms in *the exchange* and toll plants of the local companies, as well as in plant of Long Lines (R. I, 663).

9. Carrier Systems. At the end of 1930 there were approximately 596 D type installations in the plants of the *local* companies and four in the plant of the Long Lines R. I, 667). At that same time there were about 300 C type installations in the plants of the *Associate Companies* and about 150 in the plant of the Long Lines. The A and B types have gone out of use (R. I, 667).

10. Carrier on cable. A development akin to carrier systems, which have on open wire already had a great effect and which together with the newer type is expected to have still greater economies in the plants of the *local companies* as well as in that of Long Lines (R. I, 668).

11. Concentric Conductor. Very broad band circuit capable of being broken up into many individual channels. Promises large economies and will probably be applied to *shorter* circuits first (R. I, 660-661).

Dr. Jewett testified that each of the foregoing was an important development (R. I, 647-681).

However, the foregoing is only a part of the benefits which the plaintiff together with the other Associate Companies have obtained from the work of the Department of Development and Research in the field of radio. Dr. Jewett states the three main considerations for such work as follows: (1) To enable the American Company to maintain itself in such a position as not to be threatened by any strong patent situation which may be developed by a group working in the closely allied radio art (R. I, 652). (2) To explore the radio art which is so closely allied technically and scientifically with the wire telephone and telegraph art in order to apply developments in the radio art to the wire telephone and telegraph art (R. I, 652-653). (3) To enable the American Company and its Associate Companies to perform any services by radio methods which are ultimately found to be best rendered by that means rather than by wire methods (R. I, 648).

He stressed the great importance to the American Company of its early investigations in the field of radio and which enabled it to take a commanding position with respect to patents in that field, and he also stressed the importance of continuing that strategic position in the communication art by continued researches (R. I, 650 to 652).

The court must understand that the hope of enlarging the field of sending wireless communications in the Bell System is a very small part of the object of the radio researches and a part which does not offer attractive financial possibilities. The Long Lines has conducted its trans-oceanic service at a loss throughout. There is no present prospect of large profits in communicating with airplanes, harbor craft, etc. (R. I, 648), but all of these things extend the usefulness of the service and furnish the means of learning more and more of the mysterious laws which govern the communication of sound without wire and which apply so generally to the art of communicating sound with wires (R. I, 648, 649).

A further matter to be considered in connection with the expenditures for radio development is the fact that by the commanding position which the American Company took in the radio field, it was enabled to exchange licenses with the General Electric, Westinghouse, Radio Corporation of America and others, which were of enormous benefit to the Associate Companies (R. I, 651).

Radio Broadcasting.

While it is quite true that the Long Lines has profited and will profit from the developments of radio broadcasting, the Associate Companies also have profited and will profit greatly therefrom. It was due in part to its investigations in radio broadcasting that the American Company was able to make the exchange with the General Electric, Westinghouse and Radio Corporation above referred to; but, in addition, any *"hook-up"* of a broadcasting system which includes Chicago brings revenue to the Chicago area of plaintiff for the use of its wires. On the other hand, all the local broadcasting done in Chicago, of which there is a great deal, makes use solely of the plant of the Chicago company to connect the broadcasting station with ~~the~~ various studios and hotels and is a local intrastate business.

In the face of the foregoing, defendants assert:

> "The development and research expense included in the classifications—wire transmission systems, general transmission systems, and radio transmission systems—should be considered *exclusively Long Lines expense* in the aggregate amount of $26,312,029" (Defendants' Brief, p. 162).

Plants of Associate Companies Were Not Designed or Engineered With Respect to Long Distance Service But With Respect to Their Own Local Requirements.

Defendants, in attacking the expenses of the Department of Development and Research allocated to the Long Lines, assert that the plant in the City of Chicago was specially engineered and more expensive material used in order to make it usable for long distance as well as local service (Defendants' Brief as Appellants, pp. 163-164). If this were so, it would not seem to be highly relevant. It was of advantage to every local subscriber to be able to use the long distance service from his home or office. However, the record clearly and flatly contradicts defendants' claim. Thus, Mr. Gherardi, a vice-president and Chief Engineer of the American Company in charge of the Department of Operation and Engineering, testified in answer to defendants as follows:

> "I would say, broadly speaking, that if the local plant is built so that it will take care of the local conditions, the requirements of the local plant have been satisfied, from an engineering standpoint" (R. III, 2246).
>
> * * * * * * *
>
> "If at each local plant you succeed in giving satisfactory local service, then as far as the local plant is concerned the conditions are satisfied to enable a nation-wide service to be given so that a person in any part of the country can talk to any other person in the country without limitations of distance or property ownership. No coordination is necessary, except in the sense that coordination may mean having adequate standards of local service. In that latter sense coordination is necessary" (R. III, 2247).

There was no testimony offered by defendants in opposition to the above, but now they suggest, based on incomplete and inconclusive quotations from more or less informal statements made in periodicals, that the facts are to the exact contrary of what Mr. Gherardi testified to.

It is true, as argued by defendants, that the local plant must be used in connection with every long distance message and to that extent the Long Lines service gets the benefit of improvements in the local plant. However, as heretofore shown, the local plant is used a hundred times for intrastate messages to once for messages over the Long Lines.

The court must not be misled by defendants' statements with respect to the circuits necessary to transmit radio programs. Defendants say correctly that these circuits must be three times as good as the ordinary telephone circuits. But these are a few special circuits for a special purpose. There has been no re-engineering of plaintiff's plant to permit of circuits to carry radio programs. The evidence is exactly to the contrary, and such a claim seems to be absurd.

In conclusion of the discussion of the pro-rate between Long Lines and the other 22 operating companies.

The evidence shows that up to the time of the trial, the 22 Associate Companies other than the Long Lines (comprising 93 per cent. of the total operating system), were obtaining many times the advantage that Long Lines alone (comprising 7 per cent. of the system), was obtaining from the expenditures discussed by defendants at pages 126 to 170 of their brief as appellants. Moreover, the record showed that the comparative benefit to the 22 companies would increase in future.

The cost of the work should be pro-rated not on the basis of the relative benefits which have been obtained at the moment, but upon those which may reasonably flow therefrom. The evidence shows that it is often five and sometimes ten years before there has been a full practical use made of the developments of the Department of Development and Research (R. III, 2159-2160).

Defendants must be consistent. They have demanded and have received credits during the period covered by this suit for money spent and inventions made long prior to 1923.

In view of the foregoing, it seems to be demonstrated that defendants' contention that 100 per cent. of the cost of radio and other studies should be allocated to the Long Lines and no part thereof to the other 22 operating companies is wholly unfounded and that plaintiff's allocation was fair.

No Part of the Expenses of the Department of Development and Research Should Be Allocated to the American Company as "Holding Company Investor."

(Answering Defendants' brief as appellant, pp. 167-170.)

The character of the work of this department has been thoroughly discussed in the preceding sections. It has there been shown that the 23 operating companies receive more than 90 per cent. of the benefit of that work. The share which the Western received and which was not passed on to the 23 operating companies was sufficiently allowed for in the pro-rate to non-Bell sales and the allowance for patent royalties above referred to.

This accounted for all that the Associate Companies did not get. Nothing was left.

For general discussion of "Holding Company" relationship and costs, see *infra,* p. 207.

A Capitalization of a Substantial Part of the Expenses of the Department of Development & Research Would Have Been Erroneous and Would Result in a Substantial Increase of the Burden Upon the Associate Companies.

(Answering Defendants' Brief as Appellants, pp. 171-173.)

Defendants contend that where new apparatus is produced as a result of the work of the Department of Development and Research, the cost of that work should be added to the price of the article when sold by the Western Electric Company to the Associate Companies, including plaintiff (p. 171).

As shown *infra* (p. 229) the Interstate Commerce Commission has directed that the License Contract payments be charged annually and that no part thereof should be capitalized (R. VIII, 4473). Such direction, while not binding on this court, should be followed unless shown to be clearly wrong.

There was no proof introduced attacking that direction, and the only proof in the record is that expenditures of the kind in question should be charged in the year when made and not capitalized. However, the effect of defendants' contention would be to increase the allowance that should be made for such expenditures.

Defendants state the contrary at page 172 of their brief, and assumed to prove their statement mathematically at pages 68 and 69 of the Appendix thereto. The figures in the Appendix substantially understate the amount which would be charged annually during the years 1923 to 1931, upon defendants' own theory. It is unnecessary to go into that, however, because the theory is obviously wrong, mathematically.

If the expenditures of the Department of Development & Research are to be capitalized, the expenditures which must be considered are not limited to those of the period 1923 to 1931, taken by defendants but must go back and include all expenditures which had been incurred prior to 1923 which were incorporated in plaintiff's property and still in service.

Defendants are quite correct in saying that the method adopted by the statutory court allocated 100 per cent. of the expenditure to the expenses of the year in which the money was spent. To do otherwise would require that the expense should be added to the cost of the telephone apparatus purchased by plaintiff and that plaintiff would be entitled to a fair return, plus depreciation, upon the entire cost of the property. Including the allowance for depreciation, these would aggregate not less than 15 per cent. annually, and if they lasted for so short a period as ten years the charge for the development would be 150 per cent. thereof and not 100 per cent.

The Expenses of the Treasurer's Department Were Properly Dealt With by the Court Below.

(Answering Defendants' Brief as Appellants, pages 174-184.)

The expenses of the Treasury Department were divided by Mr. Blair-Smith, the Treasurer, into six separate groups:

Group 1 included the direct expenses connected with selling the American Company's stock and bonds to the public. These securities were sold to obtain money to supply to the Associate Companies for financing their requirements, principally extensions in plant to meet demands for service.

Group 2 consisted of expenses in servicing the securities, that is, making the stock transfers and paying the dividend checks and interest to the hundreds of thousands of stockholders and bondholders.

Group 3 was a small amount connected with making loans almost entirely to the Associate Companies and the plaintiff.

Group 4 were expenses incurred in connection with the work of financing the General Departments of the American Company which were engaged principally upon work for the Associate Companies.

Group 5 includes the work of the Treasury Department in connection with the Employees' Stock Plan.

Group 6 were expenses of advising the Treasurers' Departments of the Associate Companies with respect to their work so that their expenses might be reduced to a minimum (R. I, 861-864, 866).

The expenses included in Groups 1 and 2 amounted to $11,032,985 over the nine-year period in question or a little more than a million dollars a year, and approximately 6 per cent. of these annual amounts were allocated to plaintiff's Chicago area (R. I, 867; Plaintiff's Ex. A-154, R. IV, 2917).

During the period in question, the American Company, through its Treasurer's Department, financed the Associate Companies (R. I, 857). The License Contracts of the Associate Companies in this country (but not the Bell of Canada contract) require that financial services be rendered to them.

The costs of this financing were, for temporary financing, an aggregate of $16,688,713, and for holding funds available for immediate use by Associate Companies, $25,635,789 (Plaintiff's Ex. A-169, Sheet 2, R. IV, 2952b, Ex. A-170, R. IV, 2953-2961). This latter represented the difference between the actual cost to the American Company of obtaining funds and the low interest rate which it obtained thereon through investment in high-grade, non-fluctuating securities which could be turned into money instantly to supply the needs of the Associate Companies (R. I, 859, 931-935). These were actual expenses of the American Company, and were in addition to the costs of the Treasurer's Department above referred to, such costs being about two-thirds for salaries and wages (R. VIII, 4504a to 4504i).

The court below found the annual costs of holding funds available and the amount thereof which should be allocated to the Chicago area if the amount were one which should be included in the License Contract expenses allocable to plaintiff (R. III, 2511).

However, the court included nothing for either of these items of financing and restricted its allowances to what it found was a fair share of the actual clerk hire and salaries of the Treasurer's Department (R. III, 2511). The court proceeded on the theory that it would allow no expenditure of the American Company as a License Contract expense allocable to plaintiff's Chicago area which did not *pro tanto* reduce the operating expenses of plaintiff.

The action of the court below in allowing the financial expenses of the American Company seems to be extreme in its conservatism.

The two classes of expenses above referred to as objected to by defendants were for selling securities to obtain money to supply to the Associate Companies for financing their requirements and the expenses in servicing the securities of the American Company, that is, making the stock transfers and paying the dividend checks and interest to the 644,000 stockholders of the American Company. (See Note, page 177 of Defendants' brief as Appellants).

With regard to $7,356,221 of this expense (R. I, 881; R. IV, 2917), Mr. Blair-Smith said:

> "The $7,000,000 expense which I spoke of was that character of expense that any large company that had its stock well scattered would be bound to incur."

With respect to that item and the remainder of the $11,032,985 in question, it was shown that by reason of the fact that the American Company held all the stock, or practically all the stock, of plaintiff, and that plaintiff had no transfers of stock to make on its books and paid its dividends by one check, it was saved a substantial annual expense which every company whose securities are held by the public must incur. It was further shown that such expenses are recognized as proper annual operating expenses and are charged as such, and that if they had been *incurred by plaintiff, they would have exceeded the share* of the expense of the American Company for such work which was allocated to plaintiff by the court (R. II, 1064, Plaintiff's Exs. A-154 and 180; R. I, 866, 876, 878; II, 1061, 1066).

Plaintiff submits that in any view of the License Contract this share of the expense of the Treasurer's office should properly be considered as a part of the cost to the American Company of furnishing the License Contract services. However, if the separate legal entities between the plaintiff and the American Company may be ignored, with respect to the License Contract, then there seems to be no possible objection to including the fair share of an expense which was absolutely necessary and which would have been borne by the plaintiff itself if it had not been met by the American Company.

The License Contract Costs as Determined by the Court Below Included no Expenses Which Should Have Been Allocated to the American Company in Its Capacity as Investor in or Proprietor of the Associate Companies.

(Replying to Defendants' Brief as Appellants, pages 184-192.)

Throughout the period in question, the American Company has owned upwards of 97 per cent. of the stock of plaintiff. It has also owned the great majority of the stock of most of the other Associate Companies (Plaintiff's Ex. A-99, R. IV, 2834-A). At no time has the American Company owned a majority of stock of two of the Associate Companies in this country or of the Bell of Canada. It has never *dealt* in the stock of those companies or the securities thereof and has never sold a share thereof. It has furnished them money for expansion and has taken stock in payment (R. I, 857, 986).

The American Company incurred expenses in connection with making payments to the Associate Companies and receiving and banking their dividend checks and kindred matters. This work, however, was restricted to comparatively few very large transactions and resulted in comparatively little expense. It was fully allowed for in the allocations made by plaintiff's witnesses, who deducted for this non-License Contract work an average of about $450,000 per year (Plaintiff's Ex. A-170, R. IV, 2953-2961, and exhibits there cited as supporting, A-170). (R. I, 857-870).

It incurred heavy expenses in temporary financing of the Associate Companies in this country and in holding funds available for their use (Plaintiff's Ex. A-170, lines (e) and (f), R. IV, 2954-2960). The court below disallowed all of these expenses and included no dollar therefor in its findings of costs (R. III, 2509-2512).

In addition to the foregoing activities, the American Company examines into, criticises and advises with respect to every detail of the operation of each of the Associate Companies (O.R. III, 970-978, 1045); but this is in exact conformity with the obligation put upon it by the License Contract, and all of this work has, as its direct object, the improvement of the service or the reduction of the expenses of the Associate Companies.

It is idle to say that a large part of this expense is incurred as proprietor and not in performance of its License Contract. The only work of this kind which the American Company now does for the operating companies which it would not do if it fully performed the License Contract but owned not a share of their securities, is the work having to do with receiving, banking and caring for the dividends which it receives from the Associate Companies and the work connected with making advances to the Associate Companies.

It is no answer to the above that the American Company might have done some of the things which it did do if it had had no License Contract. The work all had to do with reducing the cost of construction, the cost of operation, of maintenance and other expenses, of looking after the health of the 300,000 employees to minimize losses occasioned by sickness, and otherwise to make the operating efficiency of each of the companies as high as possible. This was all a direct service to plaintiff and to its patrons. While the American Company was doubtless anxious to secure as large dividends as possible, it could secure those dividends as a result of the expenditures here in question only by increasing the efficiencies of the Associate Companies, and the subscribers got the benefit.

As "horrible examples" of the manner in which the court below has allocated these expenses, defendants call attention to five particular items: $8,000 for an audit by outside auditors, $31,889 for the printing and distribution of Annual Reports to stockholders, directors' fees, expenses of President and his office and staff and the Secretaries' expenses (p. 188).

Defendants state that plaintiff's witness, Heiss, allocated only $400 of this audit expense to the "Holding Company" activities of the American Company. Now, what happened was that the $8,000 in question is one item forming part of $777,082 expended by one of the Departments of the American Company during the year in question (1928), and Mr. Heiss allocated that whole amount between License Contract expenditures and other expenditures on the basis of approximately 93½ per cent. for License Contract and 6½ per cent. for other expenses (R. VIII, 4504-f, next to last column; Plaintiff's Ex. A-157, relation between columns 2 and 3 for year 1928, R. IV, 2927; R. I, 890-896). The way in which defendants' statement is made is far from fair.

However, there is nothing to show what the audit is for and it is not at all impossible that the percentages used might apply to that item alone (though, of course, this was never intended). If the auditors had made a general check of the balance sheets of the Associate Companies and of the American Company, apparently 4 per cent. of their work, and not 6½ per cent., was devoted to the American Company.

If this audit were one confined to the American Company itself, the allocation is still in no wise ridiculous, as the American Company through its 12 departments had thousands of transactions in connection with services rendered to the Associate Companies and only a comparatively few transactions, each very large, in connection with the receipt of dividends and other purely financial matters.

Of course, the work of an audit is dependent more upon the number of transactions dealt with than upon the magnitude of the sums.

The printing and distribution of the Annual Reports is another item of the $777,082 to which Mr. Heiss applied the general percentage (R. VIII, 4504-f, next to last column).

The directors' fees were comparatively trivial and the amount thereof allocated to the Chicago area of plaintiff amounted to only a few thousand dollars over the whole nine years in question. However, there was good ground for allocating the directors' fees in the same manner as was allocated the money spent under their direction, and this was what was done (R. VIII, 4504-f, next to last column; R. I, 896).

Defendants claim that of the expenses of the General Administration Department, including the President's salary, $18,493 was all that was allocated to the so-called "Holding Company" activities in 1928 (p. 190). This figure, which is a computation, is an understatement, but is sufficiently close for the argument. Similar amounts were allocated in all other years. This seems ample, when it is recollected that the acts of the President and his staff, where judgment and executive ability are required, were almost exclusively confined to matters which directly or indirectly benefited the Associate Companies and constitute License Contract services. It obviously required little of the time of the President and his staff to look after the receipt and disbursement of funds and the investment in high-grade low interest bearing securities of the comparatively small amounts of cash on hand.

The Secretary's Department is one which is specially singled out for criticism by defendants (p. 190). The amounts which were allocated to the Chicago area of plaintiff with respect to this department never exceeded $3,550 and were in most years less than that amount. For 1931, $2,642 (Plaintiff's Ex. A-156; R. I, 888-889). While the greater part of the expense of the Secretary's office is incurred for work which directly affects the American Company rather than the Associate Companies, yet as the work and expenditures of the American Company related principally to the furnishing of services to the operating companies, it is fair to pro rate the expense of the Secretary in accordance with the other expenditures of the American Company (R. I, 888-890).

The Allowance Made by the Court Below for the Contingent Liability of the American Company to Pay Judgments or Costs Incurred by Plaintiff for Patent Infringements Was Fully Sustained by the Evidence.

(Replying to Defendants' Brief as Appellants, pp. 194-216.)

The License Contract gave licenses under thousands of patents, and provided protection in their enjoyment and in the use of the 100,000 or more parts and combinations of apparatus purchased by the Associate Companies from the Western Electric (see discussion, p. 213, *infra*).

The American Company made provision to meet this contingent Patent liability. The evidence shows the amounts it set aside (see discussion, p. 216, *infra*).

The court found these amounts as averaged to be fair costs to the American Company of rendering the license contract services (R. III, 2511).

Defendants, however, contend that no allowance should be made for this item (Defts.' Brief, pp. 194-195).

To state the above in more detail:

American Company Obligated to Insure Associate Companies Against Damages for Patent Infringement.

The License Contract of 1919 (Plaintiff's Exhibit 7, O.R. IV, 1196) which was in force during seven of the nine years covered by the case at bar provided as follows:

> "(9) The licensee is entitled to receive from the licensor, in addition to all other services and benefits accruing hereunder to the licensee, the following described services and privileges:
>
> (a) The right to use, subject to the privileges herein set forth, all telephonic devices, apparatus, methods and systems covered by patents now or hereafter owned or controlled by the licensor * * *. All new and improved apparatus and developments in the art of telephony * * *; and, without expense to the licensee, protection and defense against, and to be saved harmless from all actions or suits charging infringement of patents arising out of the use of telephones furnished hereunder to the licensee, as well as ample provision for *protecting* and *defending* against, and *insuring* the licensee against judgments for damages and profits in all actions or suits charging infringement of patents arising out of the use of any apparatus, methods or systems which the licensor may recommend." (Italics ours.) (O.R. IV, p. 1206.)

The License Contract of 1930 contains in Sec. 2 thereof a similar provision (Plaintiff's Exhibit A-206, R. V, 3001).

The above obligation, like the other obligations of the American Company under the License Contract, was compensated for by the Associate Companies in this country[1] through their payments of a percentage of their gross revenues as provided for in the contract and its various amendments (4½%, reduced to 4%, further reduced to 2%, further reduced to 1½%) (R. II, 1165; O.R. II, 791, 792).

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[1] This patent indemnity is not a part of the license contract of the Bell of Canada, for obvious reasons.

Obligation of American Company a Serious One.

The period 1919 to 1931 was one of very rapid development in the field of electrical communications, and the activity and rivalry in procuring patents as each new field or branch of the art was opened up was great (R. I, 650, 651). At the end of that period the American Company and its subsidiary, the Western Electric, owned or controlled outright, or owned licenses under, over nine thousand United States patents and had over two thousand patent applications pending (R. II, 1211), and throughout the period, the American and Western Companies have had at all times upwards of a thousand patent applications pending (O.R. III, 983).

The Western Company was manufacturing during the period 1923 to 1931, and selling to the twenty-five Associate Companies, over one hundred thousand different piece parts and over twenty thousand kinds of telephone apparatus (R. I, 375), and this highly diversified product, in conjunction with the rapid growth of the art and patent rivalry gave almost unlimited opportunity for patent controversies.

Despite the great activity of the American and Western Companies in trying to keep the field clear for the Associate Companies by taking out patents themselves and by purchasing patent rights from others (R. I, 650-651; II, 1216-1217), there was continuous controversy with other manufacturing companies and inventors and frequent charges of infringement were made against the Associate Companies.

Speaking about this matter, Mr. Folk, the General Patent Counsel for the company, testified as follows:

> "Almost invariably when we standardize a new type of apparatus some claim of infringement is made by somebody" (R. II, p. 1218).

By "standardize" the witness meant when the sale of the apparatus to and the use thereof by the Associate Companies was approved by the American Company (R. I, 703; III, 2244). Mr. Folk further testified that in addition to the open claims of infringement there was the added risk with respect to each new piece of apparatus developed by the American Company "of some application for patents being pending in the patent office of which we would know nothing until the patent was issued" (R. II, 1218).

During the trial of the case at bar before the court below there were pending two very active patent infringement suits brought by the Kellogg Switchboard & Supply Company, of Chicago, a large manufacturer of telephone equipment and appliances, against the New York Telephone Company and the Michigan Telephone Company, two of the twenty-five licensee companies. These suits were test suits. They alleged infringement of patents owned by the Kellogg Company by apparatus in common use throughout the Bell System; and in case of success, similar suits would have been brought against all of the other Associate Companies, including plaintiff (R. II, 1216-1222). The amounts which the plaintiff in those suits has repeatedly stated it expected to recover from the twenty-five Associate Companies aggregate several hundreds of millions of dollars (R. II, 1088, 1089). While this is of course, not controlling as to the amount actually involved, the magnitude of the claims, taken in connection with the following facts, did indicate that the litigation was a serious one and fraught with danger of a substantial loss to the Bell System. Testimony was being taken on such a scale that it seemed the suits would be monumental ones (R. II, 1219). There had been long and serious attempts to reach a settlement before the suits had been brought and the best offer of settlement made to the American Company by the Kellogg Company was the acceptance of five million dollars in cash plus the equivalent of substantially more than twenty million dollars in addition (R. II, 1219).

The American Company made reasonable provision to meet possible losses resulting from its obligation to insure associate companies.

In view of the seriousness of its said obligation under the License Contract to *protect, defend* and *insure* the licensees the American Company made transfers to a contingent reserve which it carried on its books in order to make proper provision against such liability (R. II, p. 1166).

This provision took the form of appropriations from the company's surplus earnings to a "reserve for contingencies." The appropriations during the period covered by this suit were $3,000,000 from the earnings of 1923, $3,000,000 from those of 1924, $6,000,000 in January 1925, $4,000,000 in January 1926. In January 1928, the balance of $14,395,799 in the reserve for depreciation of the instruments was no longer required, as the instruments had been sold, and this whole amount was transferred to the reserve for contingencies. There were no further transfers during the period covered by this suit (R. II, 1089).

Plaintiff claimed that the provisions made were reasonable, were an exercise of the right of management, and should be regarded as well within any reasonable measure of the obligation of the American Company. Defendants offered no proof showing or tending to show that the amounts were unreasonable, and the court below upheld plaintiff's claim (Op. R. III, 2510-2511).

These amounts, though quite substantial considered alone, are very small relatively. It must be remembered that they related to a huge base, several billions of dollars, and that the share thereof allocated annually by the court to plaintiff's Chicago business was less than *one-tenth of one per cent*: of the value of plaintiff's property devoted thereto.* This *percentage* does not seem in any wise excessive for so serious and unlimited a liability.

Contingent liabilities must be considered in determining costs.

The courts have recognized that contingencies and contingent liabilities are matters that must be considered in determining costs. Thus, in *Mobile Gas Co. v. Patterson*, 293 Fed. 208, modified and affirmed 271 U. S. 131, the opinion states as follows:

> "Plaintiff also contends that it is entitled to an allowance for contingencies, and the evidence tends to show that six thousand dollars per annum is a proper allowance for this item. No manufacturing business can be prudently conducted without a provision for contingent expenses which cannot be foreseen and which may cost either more or less than the estimate provided. This item is ordinarily allowed * * *."

While the decision above cited was modified by this court the modification had no relation to the point for which plaintiff cites the case and the allowance of the six thousand dollars for contingencies may be considered as having had the approval of this court.

The plaintiff uses this mass of complex apparatus and enjoys rights under thousands of patents. Someone must pay for plaintiff's protection in this use.

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* (Compare figures in R. III, 2511, 4th and 5th lines with the figures in Finding 1, R. III, 2515.)

In the case at bar the *plaintiff* makes no direct claim for *its* very real and substantial contingent liability for possible infringement of some of the net work of patents surrounding the telephone industry as an item of expense in carrying on its business. Plaintiff ignores the real hazard of the patent situation and does not ask rates which will contribute any provision therefor because it is held harmless against such loss or liability by the American Company under the License Contract and *pays* for that protection by its annual license contract payments.

Plaintiff claimed below that the contingent liability of the American Company under the above provision could not be ignored and that the amounts which the American Company had itself set aside to provide therefor in the regular course of business were no more than reasonable and should be accepted as fair provision therefor and measurement thereof. The court below accepted this contention and included in the costs of the American Company found by it, an allowance for the above contingent liability equal to the said provision of the American Company (O.R. III, 2510-2511).

Defendants attack the above allowance and apparently claim that no consideration whatever should be given to the item in question.

Plaintiff has made the foregoing rather long statement of a fairly simple situation because of the character of defendants' arguments against this item of License Contract expense. They are difficult to follow and seem to be a mass of sophistries.

Considering now defendants' four objections:

I. Section 9a of Plaintiff's Exhibit 7 was a plain and simple guaranty to protect, defend and insure against damages for patent infringement, and defendants' argument thereon is wholly lacking in any logical basis.

(Answering Defendants' Contention "1" at pp. 196 to 200 of Their Brief as Appellants.)

In their argument at this point defendants complain that the court below, "following appellee, treated Section 9a of the 1919 License Contract and Section 2 of the 1930 License Contract as creating identical obligations * * *" (Defts.' brief as appellants, p. 198).

This seems to be the focal point of defendants' criticism of the allowance of the contingent liability item. As far as plaintiff can follow the argument of defendants it is that if the 1930 agreement had been in effect throughout the period, the decision of the court below would have been correct, but that there was no justification for that decision in view of the fact that the 1919 agreement was the one which had been in effect during three-quarters of the period covered by the suit and that under that 1919 License Contract agreement there was no basis for the allowance of anything for contingent liability.

The 1930 agreement provides in Sec. 2 thereof that "The licensee shall be protected and saved harmless by the licensor from all actions * * *" (Plaintiff's Ex. A-206, R. V, 3001).

The 1919 agreement provides in Sec. 9 (a) thereof that the American Company shall make "ample provision for protecting and defending against and insuring the licensee against judgments for damages * * *" (O.R. IV, 1206).

Defendants seize upon the language of the 1919 agreement which requires the American Company to "make *ample provision* * * *" and argue that this is a substantially different provision from that in the 1930 agreement.

Defendants' argument is wholly unfounded. The general obligation of protecting, indemnifying and insuring is of course the same under both contracts. In each case if plaintiff or any other one of the licensee companies in this country were mulcted in damages for patent infringement the American Company would have to pay the judgment.

The 1919 contract has the special phrase requiring the American Company to make provision therefor which the 1930 does not contain. Thus, if there is any distinction to be made between the two contracts, the 1919 contract the more clearly requires the building up of a contingent reserve such as the American Company did, in fact, build up.

Defendants, however, appear to argue that under the 1919 contract the American Company should have "paid premiums to an insurance company" to protect the licensee companies against patent infringement or "should have set aside a fraction only of its several billions of assets as a trust fund," and that the American Company having failed to set up a fund "free from the creditors of the American Company and free from the possibility of re-transfer to surplus or to other reserves", the contingent reserve actually set up by it was "of no practical benefit pending the time when judgments are, in fact, entered * * *" (Defs.' brief as appellants, p. 199).

Defendants state further:

> "The value to appellee of the American Company's obligation under Sec. 2 of the 1930 contract is measured by the value of the entire unpledged assets of the American Company available for unsecured creditors, including appellee; * * * the value to appellee of the American Company's obligation under Sec. 9a of the 1919 contract is measured by

the value of the trusteed reserve and no more" (Brief, 200).

Defendants argue on the above premise that the American Company having failed to create an actual trust fund "free from the creditors of the American Company and free from the possibility of re-transfer to surplus", had conferred nothing of value on the Associate Companies by its agreement and was entitled to no allowance therefor.

Both the premise and the conclusion seem to be simply nonsense and a mere statement thereof the best answer thereto. Of course *all the assets* of the American Company were liable for the faithful carrying out of its agreement, under each of the forms of contract. The failure of the American Company to set up a trust fund, if one were required under the 1919 agreement (which was not the case) would in no wise relieve the American Company of its obligation to indemnify. It could not possibly escape liability by failing to observe one of the terms of its contract.

II. The American Company's appropriations to its reserve for contingencies were intended primarily as a reserve against patent liability, were reasonable in amount and the Court below properly sustained such appropriations as measuring the cost to the American Company of its agreement to indemnify against patent infringement liability.

(Answering Defendants' Brief as Appellants,
pp. 201 to 207.)

Defendants state the testimony of Mr. Heiss, plaintiff's principal witness upon this subject, as follows:

> "This reserve for contingencies was determined upon by myself and the President and was set up

by the Executive Committee (R. II, 1166). That regularly each year, beginning with 1919, the American Company had made substantial transfers to this contingency reserve. He stated that the controlling factors in the establishment of this large contingency reserve was the apprehension of the directors of the company that there might be large losses incurred in connection with patent suits; that this apprehension was aroused largely because of the great activity in the development of electrical communications following and resulting from the war and the great number of patents which had been taken out in the field of electrical communication (R. II, 1088-1089)." (Defts.' brief as Appellants, p. 203.)

Defendants state that the above testimony of Mr. Heiss is the only evidence in the record to support the District Court's finding (Defs. Brief, p. 203). This is not correct. Many things besides Mr. Heiss's statement prove the ultimate facts. To refer to only a part of that evidence, the License Contract imposed the obligation of meeting all losses from patent infringement (Plaintiff's Ex. 7, sec. 9(a), O.R. IV, 1206). The testimony shows that this was a serious obligation and almost unlimited in amount. The same contract requires that a provision be made to meet such damages and losses, and provision was made through the establishment of a reserve for contingencies.

The American Company was directly engaged in business to a comparatively small extent.* The only reasonable basis for any expectation of sudden demands upon it was the patent liability.

Dr. Jewett's testimony, supplemented by that of Mr. Folk, Patent Attorney of the American Company, goes at length and in detail into the vital importance of the vacuum tube to the telephone business, and the very dangerous and complicated patent situation existing in relation to such tubes in 1919 (R. I, 649-687; II, 1215-1229). These dangers were more than justification for all the reserves set up.

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* The allocation gives to the Long Lines its share of these amounts (See Plaintiff's Ex. A-201, the first line of the note, R. V, 2980-b).

In the circumstances, the testimony that the reserves were set up to meet the patent obligations seems to be almost unanswerable and there was no testimony introduced in answer thereto.

Defendants next attack the seemingly reasonable and almost obvious statement of Mr. Heiss with respect to what he and the President of the American Company agreed upon in 1919 and carried out between that time and 1931, by referring to transactions which had taken place *prior to 1919* and to statements made in 1910 by persons who were no longer active in the company during the period covered by this suit. Moreover, the facts referred to are in no way in conflict with the testimony of Mr. Heiss or the claim of the plaintiff thereon. These objections of defendants are as follows:

(a) That during the period 1900 to 1918 the American Company appropriated $43,268,477 of its surplus earnings to a reserve for contingencies. Defendants further state that during that period there was no obligation on the part of the American Company to defend the Associate Companies against patent infringements (Brief, p. 204).

From the foregoing defendants apparently seek to make the point that it was the policy of the American Company prior to 1919 to maintain a contingent reserve without regard to patent responsibility, and that this policy continued after 1919. Neither of the above conclusions follows necessarily or even reasonably from the premises stated by defendants and the premises are contrary to the proof.

The American Company had a large contingent liability with regard to patent infringements *at all times.* The preamble to the 1919 License Contract agreement sets forth that it is merely putting into definite concrete form the actual agreement which had existed between the American Company and the Associate Companies for many years (Plaintiff's Ex. 7, O.R. IV, 1196).

The American Company would hardly have created so serious a right against itself extending back for 17 years by writing such a preamble into the 1919 agreement if it had not correctly stated the facts.

Thus, the American Company had a direct legal obligation to answer for patent infringements to the Associate Companies prior to 1919.

However, regardless of the question of legal liability to the Associate Companies, the American Company as the owner of the great majority of the stock in twenty of the operating companies in this country was actually the party who would suffer the loss if the companies owned by it were mulcted in damages for patent infringements.

Thus, we see that for two reasons the defendants' premise that there was no patent liability to be considered prior to 1919 is unfounded.

Further, if we accept defendants' premise their argument has even less force. They say that prior to 1919 the American Company had set aside $43,268,477 for contingencies which did not include patent liability, and at which time there was no such liability (Defendants' Brief as Appellants, p. 204). They say that in 1919 the American Company assumed the liability with respect to the patent infringement losses. The uncontradicted evidence further shows that at that time there was a great increase in the hazard of patent infringement suits due to the great activity in the development of electrical communication following the war and great activity in the patent field in connection therewith (R. I, 650-651).

Thus accepting defendants' contentions we have a complete change in the situation taking place in 1919. But defendants argue in the face of this complete change, and in the face of the direct testimony of Mr. Heiss to the contrary, that the American Company continued to accumulate the reserve *subsequent to 1919* for the *same purposes* for which it had accumulated that reserve *prior thereto*.

The claim principally relied upon by the defendants (that the $43,268,477 which had been accumulated in the reserve prior to 1919 contained no provision for patent liability), seems to support rather than refute Mr. Heiss. For the fact that the American Company had created so large a reserve prior to 1919 for remote contingencies, when it had no patent obligations, strongly supports the claim that when the American Company, in 1919 subjected itself to a very direct hazard in connection with patent infringement losses, it at once proceeded to do exactly what Mr. Heiss said it did do; namely, make provision therefor.

In view of the foregoing, it is hardly necessary to point out the lack of support given to defendants' contention by the much relied on statement quoted from the company's annual report on page 204 of defendants' brief as appellants. That statement was made in 1911 by men who were not officers at the times here in question (1911 Annual Report of American Company, O.R. VIII, 2471). How it can contradict the statement of a transaction ten years later between two other officers, Mr. Heiss and the president, is difficult to see.

Moreover, in reading that statement it must be borne in mind that at that time and to the end of 1912 the financial statements of the American Company showed the surplus, the reserve for contingencies and the reserve for depreciation on telephone instruments and upon long lines plant all as one item (O.R. VII, 2483, 2485, 2675, R. V, 3292, 3299, 3307, 3318, 3323, 3331, 3339).

Thus, the quotation on page 204 had reference to all of those matters and obviously referred principally to the depreciation and to the surplus from which "fluctuations in gross and net revenue" could be stabilized. A *contingency* reserve would have little application to any of the matters referred to in the quotation, yet, defendants introduce the quotation with the following statement: "In 1910 the American Company stated the purposes of *the appropriations for contingencies** to be:" This, we submit, is more than a little misleading.

Defendants very unfairly criticize Mr. Heiss, at page 206 of their brief, and this court must not gain the impression that Mr. Heiss testified any differently concerning the contingent liability of the American Company to answer for patent infringement losses on other occasions. In none of the exhibits referred to on page 206 is the item here under consideration dealt with at all, and Mr. Heiss was not questioned at all as to why it did not appear.

From an examination of the exhibits the answer appears to be, however, that on those exhibits he was dealing with actual expenditures and not contingent liabilities.

The testimony in the note at the bottom of page 206 has no relation whatever to the question of the contingent patent liability nor does it throw the slightest discredit upon Mr. Heiss's accuracy and reliability as a witness. In the Ohio and Michigan cases referred to, Mr. Heiss undertook to handle himself, alone, the entire question of the License Contract expenses of the American Company, and made certain arbitrary deductions to cover work and expenditures of the American Company which was not strictly License Contract (R. II, 1145-46).

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* **(Italics ours.)**

Upon the trial of this action, and in view of the direct inquiry of this court concerning the costs of the American Company, it was deemed necessary to prove those costs much more thoroughly, and instead of the one witness, Mr. Heiss, covering the whole subject, the head of each of the twelve departments who made the expenditures and who had direct knowledge thereof, was called and testified thereto. Naturally, the aggregate of the deductions of the twelve witnesses differed somewhat from the amount estimated by Mr. Heiss but when doing the job himself, the deductions taken by him were *greater* than the deductions testified to by the various heads of departments. There can be no possible reflection on Mr. Heiss from this fact.

Now, when these deductions were developed by the other witnesses, they were handed to Mr. Heiss, who used them in preparing his final summary sheets, which were largely a matter of clerical combination of figures testified to by others, and he testified correctly that in the Chicago case he "had to make the deductions as they (the attorneys) outlined the specifications" (R. II, 1144-50).

Plaintiff submits that the evidence fully supports the finding of the court below, that the appropriations to the contingency reserve of the American Company, admittedly made, fairly measure the extent of the contingent liability to answer for patent infringement liabilities imposed upon the American Company by the License Contract.

However, the right of the American Company to an allowance with respect to its contingent liability for patent infringement losses is not dependent upon the amount which it set aside in its contingency reserve and it would have the right to have that hazard fairly evaluated if it had not appropriated a dollar to the reserve for contingencies, and plaintiff submits that in view of the very large hazard assumed, and upon all the evidence in the case, the court below could well have found that one-half of one per cent. per annum of the value of the properties protected would be a reasonable charge and compensation for such contingent liability, regardless of the provision which the American Company made with respect thereto. An allowance of one-half of one per cent. would substantially exceed the amount which the court below actually did make.

III. The amounts of the American Company's appropriations to the reserve for contingencies were properly taken by the Court as measuring the cost to the American Company of its agreement to indemnify against patent infringement liability.

(Answering Defendants' Brief, pp. 208-213, incl.)

Defendants, in their discussion of the provision for patent infringement liability in subdivision 3, set up five reasons which they state show that no substantial allowance should be made to the American Company because of its said contingent liability. The first three of these contentions are dealt with in the preceding sections of this brief and the claims thereon are shown to be utterly unfounded. In any event, they have no bearing whatever upon the subject here under discussion. For example, what possible bearing can it have upon the evaluation of the contingent patent infringement liability of the American Company that the sum of $14,395,799, which was concededly transferred to the contingent liability reserve of the American Company, had been obtained through a transaction which "unjustly enriched the American Company" as claimed by defendants? At pages 231 to 232 of their brief as appellants, defendants ask that this full amount be a general offset against the costs of the license contract. If it is offset there and here, too, there will be a $28,000,000 offset for an alleged $14,000,000 "unjust enrichment." That there was no unjust enrichment at all is clearly shown earlier in this section.

The fact that the American Company sought to obtain a free field for the Associate Companies to use all of the most approved devices in the telephonic art by purchasing patents, purchasing licenses and exchanging licenses (O.R. III, 983), as asserted by appellants, is no proof that there was not a serious contingent liability none the less, and is no answer to the testimony of Mr. Folk, referred to *supra*, pages 213-214.

This Court must not gain the impression from defendants' argument that the American Company minimized its patent liability by spending huge sums to buy patents from others and that the cost of these patents was borne by the Associate Companies including plaintiff. The total amount included in the share of the American Company's License Contract expenses which was charged to plaintiff for patents purchased between 1923 and 1931 was less than $10,000 a year, and less than one-twenty thousandth part of the value of plaintiff's property. (For total costs of purchasing patents see R. I, 911; for percentages of these amounts to be allocated to the Chicago area see Plaintiff's Ex. A-160, R. IV, 2932.)

Defendants reach the pinnacle of absurdity in their argument under (5), page 213. There they argue that the American Company should be allowed nothing for the patent infringement liability, because it had the right to terminate its obligation.. This argument is based upon the fact that the American Company, in the 1919 agreement, provided that if it should transfer to another company its telephone instruments, and its patents (worth tens of millions of dollars) and that if this other company should assume the obligation of the American Company as Licensor, the American Company should be relieved "in respect of all things done or to be done *after such assignment*" (Plaintiff's Ex. 7, Sec. 13, O.R. IV, 1214).

IV. The allowances to the American Company for its contingent liability for patent infringement properly took the form of annual allowances.

(Answering Defendants' Brief as Appellants, pp. 214 to 216.)

The Uniform System of Accounts of the Interstate Commerce Commission directs the plaintiff to treat its payments to the American Company under the License Contract as annual expenses and not capitalize any part thereof (R. VIII, 4473). The General Expense Account 668, referred to by defendants, has nothing to do with the License Contract payment and is another and separate account (R. VIII, 4475). Therefore whatever payment plaintiff makes for protection against patent infringement liability, it makes as part of the license contract payments and therefore makes in annual payments and treats as an annual expense, under the direction of the Interstate Commerce Commission. Moreover, there seems to be no possible basis for any argument that any part of an agreed annual payment for continued protection or insurance against any loss or hazard should be capitalized. The important point is not the accounting practices of the American Company, but the payments for patent protection made by the plaintiff.

What the court below really found was, that of the annual License Contract payments made by the plaintiff to the American Company each year certain parts thereof were merely fair compensation to the American Company for the hazard of insuring against patent liability.

However, looking at the matter from the standpoint of the American Company, it was reasonable for it to make annual or periodical contributions to its reserve for contingencies and to consider its liability as an annual expense.

In no event are defendants correct in their argument that there would be a saving in this item of 40 per cent. if it were capitalized and not treated as an annual expense. It seems to be defendants' idea that the American Company, instead of including the patent infringement protection in the License Contract agreement, should have provided therefor by including something therefor in the selling price of the apparatus sold by the Western Electric Company to plaintiff and the other Associate Companies. The answer to this is two-fold:

First. It wasn't done that way, and the way it was done was a perfectly proper and reasonable one.

Second. If it had been done that way it would have resulted in increasing, rather than decreasing, the annual expenses of plaintiff. If defendants' suggestion were followed, there would have been added each year to the amounts which the Western Electric Company charged the plaintiff for apparatus sold to it an amount equal to the allowance found proper by the court below for protection against patent liability. This, of course, would have increased by that amount the rate base upon which the plaintiff was entitled to earn a fair return and the base to which the annual expense of depreciation is applied. There might have been a saving of 40 per cent. of this item if the amounts capitalized had been restricted to the allowances for the years 1923 to 1931, inclusive. But such would not have been the case. Capitalization of the item would have required that additions should have been made by the court to all of the purchases which plaintiff made from the Western Electric Company during the years prior to 1923 as well as those subsequent thereto. If this had been done there would obviously have been an increase rather than a decrease in the expenses of the plaintiff over the period in question *and a continuing increase in the future.*

The practices of the Stromberg-Carlson, Automatic Electric, and other electric companies, and that of the Western Electric Company in selling to its non-Bell customers have no bearing on this subject and this Court must not be induced to believe that the claim which is being made for an allowance for patent infringement liability protection is something in addition to what the Western Company chargos its non-Bell customers. Such is by no means the case. The Court below found that the price at which the Western Company sold its apparatus to the Associate Companies was substantially below the prices charged by the Stromberg and other companies and also substantially below the prices at which the Western Company itself sold to non-Bell customers (Findings 14, 15, and 16, R. III, 2517). One reason for this much lower price was the fact that the American Company stood the hazard of patent infringement suits in connection with the sales to the Associate Companies and that in all the other cases referred to by defendants the vendor took that risk. The spread between the prices at which the Western Company sold to the plaintiff and the other Associate Companies and the price at which all other sales were made was many times the amount which was claimed and allowed to the American Company by the Court below for the patent infringement hazard (Compare data and charts in Plaintiff's Exhs. 64 to 68, incl., O.R. IV, 1554 to 1559 with the figures shown in the Court's Opinion, R. III, 2511, top of page).

The American Company Received no Considerations From the Plaintiff Which Should Be Allowed as Offsets Against the Costs of Furnishing License Contract Services.

(Replying to Defendants' Brief, pp. 217 to 231.)

Defendants contend that there were four such compensating considerations which they charge that the court overlooked. (Brief, pp. 217 to 218.) Taking these four objections up in their order:

I. Such Small Services as Plaintiff's Employees Performed for the American Company Were Outweighed Many Times by the Benefits Which the American Company Conferred upon the Plaintiff *Dehors* the License Contract.

(Answering Defendants' Brief as Appellants, pp. 217-224.)

During the period covered by this suit the employees of the plaintiff, like the employees of each of the other Associate Companies, did clerical work for the American Company in selling stock to the public and in managing the stock sales plan of the American Company (R. V, 3215 to 3216), under which employees of the Bell System had a right to subscribe to and purchase *limited amounts* of the stock of the American Company at prices below the market (R. I, 864 to 865).

The work required to handle these sales was clerical and comparatively trivial. The proof showed that from $29,701 to $45,263 per year was the total cost to the Chicago Division of appellant of the work connected with the stock sales to the employees of plaintiff (Defendants' Ex. D-126, R. VI, 3809).

Defendants complain that plaintiff was entitled to compensation for this work and that the amount thereof should be offset against the credits to the American Company for license contract services. Defendants entirely ignore the fact that these stock sales to employees were made without strings attached; the employee became the absolute owner of the stock and was free to dispose of it at will; and that if the stock purchased by plaintiff's employees between 1923 and 1930 had been sold by each purchaser at market prices on the day of purchase, the aggregate profit to said employees of the plaintiff would have been over $5,000,000 (R. I, 864 to 866). This profit, or ability to make profit, was a matter of great advantage to plaintiff's employees and was recognized as such by them. It was in the nature of additional compensation and additional compensation paid by the American Company and not included in any way in plaintiff's operating expenses. This great advantage outweighed more than ten times the small expense of handling the records of the sales and collecting the money.

In addition to handling the records of the sales to its own employees, plaintiff handled the collecting and accounting services in connection with sales of the stock of the American Company to the public in the Chicago area.

Where the plaintiff mailed circulars or annual reports of the American Company or incurred incidental expenses of that kind, the expense actually incurred was billed to the American Company and paid by it (R. II, 1260 to 1261). Plaintiff, however, did furnish services of a general accounting and clerical character in connection with this work. Plaintiff received from the American Company $9000 a year from 1923 to 1928, inclusive, for this service, and $3600 a year beginning 1929 (Defendants' Ex. D-128, R. VI, 3811). Plaintiff developed the cost of this work to it and showed that a maximum amount to allow therefor was from $15,100 to $19,600 per year (R. VI, 3810).

Thus, considering the whole expense to plaintiff for handling the stock sales of the American Company, both to employees and to the public, and the advantage to plaintiff from that arrangement, it is seen that the advantage still outweighed the expense in the ratio of 10 to 1.

II. The Central Union Transaction Is Wholly Irrelevant.

Defendants devote pages 224 to 228 of their brief in an attempt to show that the American Company unloaded on the plaintiff unprofitable properties burdened with debt, and at page 229 argue that the advantage to the American Company from this transaction should be offset against the License Contract services rendered by it to the plaintiff.

The transaction in question was the sale to the plaintiff by the American Company of its interest in the Central Union Telephone Company. This transaction seems to be advantageous to plaintiff or disadvantageous, depending upon the particular argument which the defendants are making at the time.

In this connection we call the Court's attention to page 478 of Defendants' brief, wherein they make an argument based upon the fact alleged by them that soon after the Central Union properties were acquired by the plaintiff they were a fine paying property.

The Central Union transaction, however, is one wholly irrelevant to this case. This case deals with plaintiff's property and rates in the City of Chicago alone, and for the period 1923 to 1931. The Central Union transaction took place in 1920, with respect to properties wholly without the City of Chicago.

III. Under No Possible Circumstances Could There Be Any Credit Due the Plaintiff Against License Contract Services or Payments for the Alleged Surrender of Its Right to Participate in Profits from Long Distance Business.

(Answering Defendants' Brief as Appellants, pp. 229 to 231.)

Under the original License Contract of 1881, plaintiff had the right to certain compensation from the American Company for the use by the latter of plaintiff's exchange plant in its Long Distance service into and out of Chicago (Q.R. VI, 1929 to 1930). In 1919, there was a new contract entered into which changed this provision. Defendants claim that by this change plaintiff surrendered rights which would have brought it in from $350,000 to $650,000 a year (Defendants' brief, page 230), and that credit should be given to appellee for such surrender against its License Contract payments.

The 1881 contract did not by its terms run forever, but was terminable. The American Company had the right to terminate it and did terminate it. Plaintiff had no prescriptive right to the profits in question.

Moreover, the 1919 contract was a much more favorable one to plaintiff than that of 1881. Under the 1881 agreement, plaintiff paid $5 per station as its License Contract payments (O.R. VI, 1929). Under the 1919 agreement, plaintiff paid for 1920 approximately $2.10 per station (Opinion of this court in *Smith* v. *Illinois Bell Tel. Co.*, 282 U. S. 133, at pp. 153 to 154). Moreover, under the 1919 agreement, plaintiff received, according to the explicit claims of defendants, substantial advantages with regard to the use of patents and to insurance against liability for patent infringement which it had never had theretofore (Defendants' Brief as Appellants, pp. 196-197).

In the circumstances, defendants' complaint that plaintiff was deprived of something of advantage by this change in the form of the License Contract is wholly without merit.

Furthermore, the whole matter is irrelevant. The transaction in question took place in 1919. It related wholly to *interstate* long distance business. The suit at bar deals with the *intrastate* business during the years 1923 to 1931.

No Offset or Credit Arose From the Sale of the Telephone Instruments to Plaintiff and the Other Operating Companies.

(Answering Defendants' Brief as Appellants; pp. 231, 232.)

Under the License Contract the American Company was obligated to and did furnish to each of the Licensee Companies in this country, the telephone instruments required by them in their business and was required to and did maintain those instruments in first-class condition (Plaintiff's Ex. 7, O.R. IV, 1198-1199, 1205).

Plaintiff included a fair allowance for the furnishing of such instruments as one item of the total costs of or allowance to the American Company in connection with furnishing its License Contract services.

The respective amounts claimed by plaintiff, allowed by the court below and admitted by defendants for furnishing such instruments (referred to hereafter as instrument rentals) were as follows:

	(a) Claimed by plaintiff	*(b) Found by court*	*(c) Admitted by defendant*
1923	$415,482	$342,000	$187,260
1924	478,354	395,000	223,320
1925	529,282	439,000	261,149
1926	570,327	478,000	236,165
1927	563,855	476,000	237,777*

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* Instruments in use by it sold to plaintiff at end of 1927.

(Plaintiff's proposed finding No. 42, R. III, 2411; Op. Court Below, R. III, 2510; Defendants' request 15, R. III, 2433).

Plaintiff developed the amount of the instrument rental by proving three elements: (1) the actual out-of-pocket costs to the American Company of keeping the instruments in repair (R. I. 921-922, Ex. A-162, R. IV, 2939); (2) a reasonable percentage of the value of the instruments set aside annually for depreciation (R. I, 921-922, Ex. A-162, R. IV, 2939); (3) a fair return upon the fair value of the instruments (R. I, 922-923, Ex. A-163, R. IV, 2940).

The court allowed (1) above as claimed (R. III, 2509). It reduced (2) from 7 per cent. upon value to 6 per cent. upon cost (R. III, 2509-2510). It reduced (3) from a fair return upon the fair value of the instruments to a 6 per cent. or interest rate thereon (R. III, 2510).

Defendants in arriving at the amounts admitted by them and shown in column (c) above, concede the actual maintenance of the instruments as claimed by plaintiff and found by the court, concede a proper annual depreciation charge of more than that allowed by the court (7% instead of 6%), and include an item of taxes which the court omitted (Subdivision (e) of Request to Find 15, R. 2434).

Defendants include, in addition, annual allowances which they term "return upon cost of carrying investment in instruments." While these amounts are less than those claimed by plaintiff and found by the court, the difference is not great. The wide difference between the items shown in columns "a" and "b" and those in column "c", *supra,* is due to the fact that defendants, having admitted the above enumerated items of costs of furnishing the instruments, proceed to wipe out the entire allowance for the largest item (depreciation), by claiming credit for an equal amount.

Defendants' claim is based upon the following facts:

At the end of 1927, the telephone instruments were sold by the American Company to the associated companies in this country including the plaintiff (R. I, 939-940). Plaintiff paid $2,520,126 for the instruments in use in the Chicago area (R. I, 939; Defendants' Brief as appellants, 231). The sales price was arrived at by a valuation of the instruments, and amounted to 80 per cent. of the special low price at which the American Company was able to buy in enormous quantities at that time (R. I, 941). The instruments sold were comparatively new* and there is no charge in defendants' brief that the price paid was excessive, but this would be immaterial in any event, as is shown hereafter.

The same terms were made to each of the associate companies and the selling price of all the instruments to all of the associate companies was $38,183,727 (Defendants' Brief as appellants, 231-232). At the time of the sale, the American Company had a book reserve for depreciation with respect to the instruments of $22,795,386 built up over the period 1884 to 1927 (Defendants' Brief as appellants, 231-232). The amount actually received by the American Company for the instruments was $8,399,587 less than the amount standing upon its books as the cost thereof (Defendants' Brief as appellants, 231-232; R. VI, 4024).

Defendants assert *correctly* that the sales price of the instruments exceeded by $14,395,799 the book cost, less the reserve for depreciation. They assert *incorrectly* that this whole amount was profit to the American Company and should be offset against and should wipe out entirely all allowance for depreciation of the instruments during the years 1923 to 1927, inclusive.

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* This is evidenced by the following: (1) Rapid growth in this type of plant, amounting to 35% from 1923 to 1927, Plaintiff's Ex. A-162, R. IV, 2938; (2) The 91% condition of station apparatus testified to by plaintiff's witness Hyatt, R. I, 88-89; (3) The fact that these instruments have a life of about 18 years "from the cradle to the grave" testified to by plaintiff's witness Turner, R. II, 1129; (4) Many new transmitters and receivers put in by American Company in last two or three years, R. I, 944.

The answer to defendants' contention is three-fold:

> (a) There was no profit of $14,395,799.
>
> (b) There is no possible reason for any offset against the costs of furnishing the instruments by reason of the transfer thereof to plaintiff whether profit resulted therefrom or not.
>
> (c) If the American Company's book reserve for depreciation can be offset against the fair rental of the telephone instruments, then it is an offset over the years during which the reserve was accumulated, and should not be concentrated into a portion of that period when the reserve was shrinking. So likewise any offsettable profits should be offset against the charges during the years when the profits accrued.

Considering (a), *supra:*

There was no $14,395,000 profit. The American Company sold the instruments for $8,399,587 less than the amount standing in the instrument account upon its books (Defts.' Ex. X-121, R. VI, 4024, R. I, 941). The $22,795,386 in the depreciation reserve account was built up by annual amounts added to that reserve by the American Company *from its own funds* (R. I, 944-945). No one *paid* the American Company those amounts; they were merely bookkeeping entries whereby the American Company charged itself. The fact that the American Company, when it sold the instruments and no longer needed the depreciation reserve, transferred that reserve to surplus, did not indicate an actual gain of that amount in any sense (R. I. 944-945).

Considering (b), *supra:*

If for the sake of argument it be conceded that there was a $14,395,000 profit, it was a profit which was irrelevant in determining the costs of the American Company or the *quantum meruit* for furnishing the instruments in the years 1923 to 1927, inclusive.

The above matter, and the whole License Contract situation can be considered on the basis of one or the other of two suppositions: (a) that the American Company and the operating companies are to be considered as separate and distinct entities (as plaintiff claims they should be) and that fair and reasonable transactions between them should be sustained as valid and binding for all purposes; (b) that the American Company and the Associate Companies are so closely related that they must be considered as branches of one great business with respect to dealings between or among themselves.

Considering the matter of the instrument rentals and the sale thereof on the basis of (a) above then the only question concerning the allowances which should be made to the American Company for furnishing the telephone instruments to plaintiff in the years 1923 to 1927, inclusive, is what are fair amounts *based upon the conditions* that existed *in those years.*

If we concede a profit of $14,395,000 made from the sale of the instruments in 1927, that profit would be irrelevant in determining the fair rentals for each of the years prior to 1927.

Considering, for example, the fair allowance for the year 1923, based upon a determination thereof made in that year, we would have to develop the following factors: cost of maintaining the instruments, depreciation, and fair return, the very factors set forth in (1), (2) and (3) on page 238, *supra,* as those used by plaintiff and the court below to determine this allowance.

There is nothing in the record to indicate that the amounts allowed by the court for these three factors were excessive or more than any fair and impartial person would have fixed *at that time.* The fact that five years later the instruments had been sold at a price sufficient to repay the investment therein, without any depreciation reserve, would not so indicate even if the instruments had been bought in 1923 and sold in 1927, and much less would this be the case where the instrument account goes back to 1884.

The same rule would apply in all years subsequent to 1923.

Assuming that plaintiff and the American Company must be considered as separate entities able to make reasonable contracts with each other, then plaintiff would have no more claim to any share of the American Company's depreciation reserve or profit than a tenant of a dwelling would have to a share of the profit or of the reserve which his landlord had set up for depreciation during his tenancy if such landlord had later sold at a price in excess of cost.

On the other hand, if the American Company and the operating companies are considered as branches of one great business with respect to dealings among themselves, still there is no possible basis for any claim to the depreciation reserve of the American Company as a profit and an offset against the License Contract payments.

In that case there was no actual sale of the instruments at all and the whole matter may be regarded as bookkeeping entries by one branch of the business with corresponding entries by another. The instruments are still owned by the Bell System, which still uses them in rendering its telephone service and the Bell System still owns and needs the reserve which in the end may prove inadequate rather than excessive.

Considering (c) above:

If the objections raised in (a) and (b), *supra*, be waived, and if it be assumed that the transaction of the sale of the instruments indicated an excessive provision for depreciation or an increase in the market price of the instruments which should operate in reduction of the amounts built up for depreciation, still the offset would have to be made against the period in which the increase in price took place or the excessive provision for reserve was made.

Nothing in the evidence shows that any part of either of these amounts should be allocated to the particular five-year period here in question rather than to any other part of the forty-year period during which the account was on the books of the American Company. On the contrary, the evidence shows quite conclusively that there was no excessive provision for reserve made during the period 1923 to 1927 and that no increase in the value of the instruments took place during that time, but that the market price of the instruments in 1927 was lower than in 1923.

Considering, first, the period during which the reserve of $22,795,386 was built up. This represents, of course, the contributions to the reserve less the cost of the instruments retired from service. The proof concerning the building up of this reserve was that for many years an annual rate of 10 per cent. had been used and that in 1912, $5,600,000 was taken bodily out of the company's general surplus and set up as a reserve against the instruments; that for several years prior to 1923 an 8 per cent. annual rate was used, and that subsequent to 1923 the rate was 7 per cent. (R. I, 943-944, 946-947). Now the evidence shows that the percentage relationship between the reserve and the book cost of the instruments rose under the 10 per cent. rate and then came down a bit with the 8 per cent. rate and fell still lower under the 7 per cent. rate (R. I, 943-944). In this connection, it must be recollected that the amount in the reserve is a *balance* and is what remains after the charges for depreciation have been added to the reserve and the costs of the instruments actually withdrawn from service have been deducted. A slightly excessive annual depreciation rate of 10 per cent. applied for many years to the large quantities of instruments on hand might well have built up a reserve of more than $22,795,386, while the 7 per cent. rate in effect from 1923 to 1927 might well have failed to provide enough allowance for depreciation. So that the evidence shows exactly what would have been expected.

The same kinds of instruments were not in use throughout the period 1884-1927. Several types were used and superseded. There is no indication even that there was one dollar of excessive depreciation with respect to the instruments which were actually sold to the Associate Companies in 1927 (R. I. 697-701, 950).

Considering, now, the period during which there was any increase in value of the instruments: the record shows that a great increase in the price of the instruments took place in or before 1920. In that year the prices were more than fifty per cent. in excess of what they had been in 1916. In 1923, the first year of the period covered by this suit, they were slightly lower than in 1920, and in 1927, when the instruments were sold, they were lower still (R. VI, 3762a-3762d).

Thus, the American Company made a loss and not a profit on all of its instruments purchased subsequent to the making of the license contract of 1919, if effect be given to the transfer to plaintiff. In these circumstances, there is no basis for offsetting over the years 1923 to 1927 merely because they happen to be the years covered by the suit, a profit which had accrued in 1920 and prior years.

There seems to be no basis whatever for any credit or offset arising out of the sale of the instruments. But any possible credit should be given to 1920 and prior years, when the instrument prices were rising, in which case no part of it would apply to the period here in question. If such credit be spread over the forty years that the instrument account was on the books of the American Company and its predecessor, it would be too small to find.

Now, if the changing prices of the instruments in any year or years should be considered as affecting the annual rate of depreciation (which plaintiff denies), then of course the offsets against depreciation for rising prices claimed by defendants would apply to the years 1916 to 1923, and the 7 per cent. provision from 1923 to 1927 should be increased because the market price was falling during that time.

Plaintiff makes the above argument to show the utter impossibility of working out any credit such as that claimed by defendants on any possible basis. Plaintiff does not in any way concede the necessity for the foregoing discussion and contends that the whole matter is completely answered in its discussion in (b) at page 241, *supra.*

The court below understated the proper allowance to the American Company for furnishing the instruments, by failing to allow the same fair return upon the instruments as it allowed as the fair return upon all the rest of the property required to furnish telephone service to plaintiff's subscribers (see plaintiff's brief as appellant, p. 99).

The court below further understated the proper allowance to the American Company for furnishing the instruments, as shown in said brief, pages 98 and 99.

These matters account for the difference between the figures shown in column "a" and column "b" on page 237, and the allowances for the furnishing of said instruments, instead of being reduced as claimed by defendants, should be increased by the following amounts in the following years:

1923	$73,842	1926	$92,327
1924	83,354	1927	87,855
1925	90,282		

VIII.

Fair Rate of Return.

(Appellants' Brief, "Fair Return," pages 449-544.)

District Court's Findings (p. 250, *infra*).

The Evidence (p. 252, *infra*).

Risks and Hazards (p. 253, *infra*).

Plaintiff as a Constituent Company of the Bell System (p. 256, *infra*).

Refutation of Defendants' Contentions (p. 265, *infra*).

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This court in its opinion, after stating that while the statutory court found the return to be inadequate it failed to find "what would be a proper rate of return," said that it is necessary to consider the actual effect of the rates imposed "in the light of the utility's situation, its requirements and opportuntities." After citing and quoting excerpts from the opinions in *United Railways* v. *West* and *Bluefield* v. *Public Service Commission*, the court said in substance that in the present case we are not dealing with an ordinary public utility "but with one that is part of a large system organized for the purpose of maintaining the credit of the constituent companies and securing their efficient and economical management." The court called attention to the fact that for many years the Illinois Company had been able to expand its business, to meet its operating expenses, to pay dividends of 8 per cent. upon its capital stock, and to accumulate a surplus. It referred to the fact that the District Court found that the reduction in revenue which would have resulted from the rates established by the commission if they had been put into effect, as applied to the entire business of the company for the year 1923, would have amounted to about $1,700,000 and it said: "The question is whether the loss when ascertained with respect to the intrastate business would cause confiscation under the applicable standard as above set forth in the *Bluefield* case, *supra*." The opinion concludes its discussion of the subject with the following statement:

> "In order to determine this question, the court should find the rate of return which was realized from the intrastate business and the rate of return which it is fair to conclude would have been realized from that business under the prescribed rates."

The statutory court in its opinion said upon this subject:

> "With reference to the rate of return, the Supreme Court (p. 161) said:
>
> > 'It was found by the court that the reduction in revenue caused by the rates in question, as applied to the entire business for the year 1923, would amount to about $1,700,000, and the question is whether the loss when ascertained with respect to the intrastate business would cause confiscation under the applicable standard as above set forth in the *Bluefield* case, *supra*. In order to determine this question, the court should find the rate of return which was realized from the intrastate business and the rate of return which it is fair to conclude would have been realized from that business under the prescribed rates.'
>
> Accordingly, we have made findings as to the rate of return which was realized from plaintiff's intrastate business under the rates in force for each of the years during the period in question, and also the rate of return which it is fair to conclude would have been realized in each of those years from that business under the rates prescribed by the commission in its order of 1923.

> Applying the standard prescribed by the Supreme Court, we have made findings as to the proper rate of return for each year which is necessary to avoid the charge of confiscation. One of the factors to be considered is that of the rates 'generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties.'
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> We have given weight to the facts of which the court takes judicial notice relative to the general decline in corporate earnings during the years 1931 and 1932. It is for this reason that we have fixed 6½% as the proper rate of return for 1931 and 5½% as the proper rate of return for 1932. A public utility enjoying the advantages of plaintiff is not entitled to the large earnings made by many undertakings during periods of great prosperity. On the other hand, its return in times of business adversity should not be reduced to the extent that the earnings of many private corporations have been impaired. The range of from 7½% to 5½% as found in this case gives weight, in our opinion, to all of the elements which under the ruling of the Supreme Court we are required to consider" (Opinion of the District Court, R. III, 2513-2514).

The District Court found that the fair rate of return on the fair value of the intrastate portion of the property to which plaintiff was entitled as the constitutional minimum to avoid confiscation was 7½ per cent. for each of the years 1923 to 1927, 7 per cent. for each of the years 1928, 1929 and 1930, 6½ per cent. for 1931, and 5½ per cent. for 1932* (R. III, 2521).

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*Plaintiff upon its cross-appeal assigned error to the finding of 6½ per cent. for 1931 and 5½ per cent. for 1932. (See plaintiff's brief as cross-appellant in case No. 548, pages 104-110.)

The court further found the amount of plaintiff's net earnings in each year under the existing rates (Finding 27, R. III, 2520), and computed and stated these earnings in percentages of return upon the fair value of the property as found by the court in Finding 2 (Finding 33, R. III, 2521). It found the amount by which these earnings under the rates charged would have been reduced in each year if the contested rates had been in effect (Finding 28, R. III, 2520-1), and by subtracting this amount from the actual earnings, as found, obtained the amount of the net earnings in each year under the contested rates (Finding 30, R. III, 2521). These amounts were in like manner computed as percentages of return upon the fair value of the property (Finding 34, R. III, 2522).

The following table shows in parallel the rate of return from the intrastate business upon the fair value of the Chicago intrastate property earned by the company under the existing rates, what the rate of return would have been if the rates in suit had been charged, and the fair rate of return to avoid confiscation, all as found by the District Court (R. III, 2521):

District Court's Findings.

Year	*Existing Rates*	*Under Rates in Suit*	*Required Fair Rate of Return*
1923	5.4%	4.1%	7½%
1924	5.5	4.4	7½
1925	5.3	4.2	7½
1926	5.3	4.2	7½
1927	5.0	4.0	7½
1928	5.0	4.0	7
1929	5.8	4.9	7
1930	5.3	4.5	7
1931	5.5	4.7	6½
1932	4.8	4.1	5½

In the table on the adjoining page we assemble for the convenience of the Court all the findings of the District Court above referred to.

Findings of the District Court.

ILLINOIS BELL TELEPHONE COMPANY

Chicago—Intrastate Property and Business

Comparison of Fair Return Upon Fair Value and Return Under Existing Rates and Under Rates in Suit, From Findings of the District Court.

				Return Under Existing Rates		Return Under Rates in Suit		Deficiency in Return	
Year	Court's Fair Value Finding 2 (1)	Court's Rate of Fair Return Finding 32 (2)	Amount of Fair Return (1) x (2) (3)	Amount Finding 27 (4)	Percent. Finding 33 (5)	Amount Finding 30 (6)	Percent. Finding 34 (7)	Under Existing Rates (3) minus (4) (8)	Under Rates in Suit (3) minus (6) (9)
1923........	$124,200,000	7.5%	$ 9,315,000	$ 6,646,183	5.4%	$5,104,515	4.1%	$2,668,817	$4,210,485
1924........	136,500,000	7.5	10,237,500	7,483,954	5.5	5,932,959	4.4	2,753,546	4,304,541
1925........	148,500,000	7.5	11,137,500	7,880,451	5.3	6,297,890	4.2	3,257,049	4,839,610
1926........	151,500,000	7.5	11,362,500	8,052,698	5.3	6,402,128	4.2	3,309,802	4,960,372
1927........	167,000,000	7.5	12,525,000	8,363,580	5.0	6,686,503	4.0	4,161,420	5,838,497
1928........	173,000,000	7.0	12,110,000	8,627,760	5.0	6,914,459	4.0	3,482,240	5,195,541
1929........	184,000,000	7.0	12,880,000	10,679,602	5.8	8,939,602	4.9	2,200,398	3,940,398
1930........	187,120,000	7.0	13,098,400	10,138,263	5.3	8,492,385	4.5	2,960,137	4,606,015
1931........	179,100,000	6.5	11,641,500	9,826,299	5.5	8,392,555	4.7	1,815,201	3,248,945
1932........	166,500,000	5.5	9,157,500	8,000,000	4.8	6,750,000	4.1	1,157,500	2,407,500

The Evidence.

The evidence convincingly sustains the District Court's findings of the requisite fair rate of return for the years 1923 to 1930, and equally shows that the findings for 1931 and 1932 are too low and confiscatory in effect.

The only witnesses who testified on the subject of fair rate of return were plaintiff's witnesses Allen G. Hoyt, of New York, and Edward E. Brown, of Chicago (Hoyt, R. I, 151-160; 187-217; II, 1355-66. Brown, R. II, 1153-55). Their qualifications as shown in the record and their testimony warrants us in saying that two better qualified men could scarcely have been found in the country. They were both bankers of very wide experience in the investment field in general and also in the field of public utility financing. Moreover, they were both acquainted with the Bell System, the history of its financing, and its financial structure. They had like knowledge of the facts with respect to the Illinois Bell Telephone Company.

They testified that a fair rate of return to plaintiff over the period of this case was as follows: 1923-1927, inclusive, 8 per cent.; 1928, 1929 and 1930, 7 per cent.; 1931, 7 per cent. until the latter part of the year and thereafter, 8 per cent. (R. I, 159, 160, 213).

There was no serious effort to break down or challenge their testimony in any respect, and none was introduced to contradict it.

The defendants in their brief characterize this testimony as being "the unsupported general statements of appellee's two banker witnesses" (p. 508). But the witnesses were *qualified*. Their qualifications support their statements. Their conclusions are not binding upon the court, of course, and the weight of their testimony is for the court, which will take into consideration the fact that the defendants called no witness to dispute them. Moreover, they did not merely give their opinions, they supported them with relevant facts drawn from their knowledge and wide experience. Such testimony cannot be dismissed with a gesture, as defendants dismiss it.

Risks and Hazards.

With reference to the risks and hazards attending investments in the telephone business of the Bell System as compared with investments in other enterprises and particularly other utilities, Mr. Hoyt's testimony is impressive and uncontradicted. He testified:

> "In the course of my business, I have become familiar with the way in which the investing public regarded and regards the various classes of securities in which my Company has dealt during my connection with it. I have become familiar with the risks and uncertainties which such investing public considered and considers attend the various enterprises which have issued such securities * * *" (R. I, 154).
>
> "In the course of my business, I have become familiar with the risks and uncertainties which attend an investment in a telephone business in the eyes of those investing therein" (R. I, 156).

Mr. Hoyt's testimony concerning the risks and hazards of the business is summarized as follows:

1. The telephone company is subject to all the familiar hazards of commission regulation (R. I, 156).

2. A telephone company makes an unfavorable comparison with other public utilities, particularly an electric or a gas company utility, in that the principles of mass production are not applicable to a telephone company. As a matter of fact, as the telephone company's business develops, the investment *per station* tends to increase, and the return upon that additional investment is constant.* On the other hand, the electric and to some extent gas companies, as their business develops, are enabled to install larger and more efficient generators, and the tendency is for the cost per unit of output for those companies to decline (R. I, 157).

3. The telephone company is at a disadvantage by reason of the fact that in the event of declining business, the electric and gas companies may reduce their purchases of fuel, and fuel is an important item in production cost, whereas the telephone company, providing only service, is not in a position to show the same flexibility of operation and reduce production cost to the same extent that the other public utilities are (R. I, 157).

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* This inherent tendency toward constantly rising cost of operation per unit of service as the number of subscribers and the size of the exchange grow is well recognized in the business. Speaking of this, the Illinois Bell Telephone Company in its annual report for the year 1920 (defendants' Exhibit X-352, R. VIII, 4512), referring to the rapid expansion of its business, said "* * * but because of the inherent characteristics of the telephone business this expansion has not been and cannot be attended by the economies of mass production customary in most industries." The company further there points out in this connection that the benefits and economies resulting from continuous improvements in methods and equipment in which it is aided by the American Telephone and Telegraph Company and its laboratories, and by the Western Electric Company, are of great value in tending to neutralize and offset the effects of this inherent characteristic of the business. (See also testimony Dr. Jewett, R. I. 624-8).

4. The business has expanded very rapidly; and in that expansion the company has reached a clientele of more moderate means than the average subscriber of a few years ago. That means, of course, that the company is in a more vulnerable position than heretofore. The telephone company compares unfavorably with the electric companies in that respect, because the electric companies supply many houses with their only means of illumination. Likewise in the case of the gas company there is often no other means available to the customer for cooking except by using a certain amount of gas. On the other hand, the telephone subscriber can have his telephone taken out; and telephones are being taken out (R. I, 157-8).

5. In the minds of some investors also there is the fear, as far as a telephone investment is concerned, that the telephone company may be adversely affected by the further development of wireless communication (R. I, 158).

6. The telephone companies and other public utilities have made very large investments during the past four or five years, and during a considerable part of that time construction costs were high. They are showing a declining tendency. As duplication value is to be given great weight in determining a rate base, it may be that the rate base, as far as the property is concerned which was installed during the past four or five years, will be adversely affected. The investor in public utilities speculates on the price of labor, material and other things, just as an investor in any other business (R. I, 158).

7. The telephone business has shown great stability up to a certain point, the reason being that until recently the telephone industry never approached the point of satura-

tion. The gas and electric companies have enjoyed a similar experience. In fact, by reason of discoveries of new uses for electric companies particularly, and to some extent gas companies, they have perhaps enjoyed benefits which the telephone company does not enjoy, as, after all, a telephone plant can only be used for transmitting the spoken word (R. I, 158-9).

"In answering questions as to what risks and uncertainties were in the mind of the investing public, I was considering the risks inherent in the business, irrespective of the present market conditions. The risks that I referred to are recognized, I think, by bankers and others, who invest in securities of this kind" (R. I, 159-60).

This testimony is not contradicted in any respect and it justifies Mr. Hoyt's statement that the Bell System has no advantage over other well and conservatively managed utilities when it goes into the market to compete with them for available new capital.

Plaintiff as a Constituent Company of the Bell System.

Referring to the fact that the Illinois Bell Telephone Company is one of the constituent companies of the Bell Telephone System, this court said in its opinion:

> "It is evident that in the present case we are not dealing with an ordinary public utility company, but with one that is part of a large system organized for the purpose of maintaining the credit of the constituent companies and securing their efficient and economical management" (Opinion, page 161).

We now consider the case in this aspect.

Plaintiff's witnesses took this fact fully into account, and their testimony is convincing that their knowledge and experience were such as enabled them to appreciate and correctly appraise its significance. We will have occasion to refer to their testimony later herein.

Bond Financing of the Bell System.

The defendants placed in evidence a comprehensive tabulation of the bond financing that was done during the period of this case by the Bell System, railroads, other public utilities and other industries, as bearing upon the question of what constitutes a fair rate of return to the plaintiff in this case (Exhibits X-261, X-262, R. VII, 4235-4341).

But their argument completely misapprehends the legal significance of their own evidence in this respect.

The main reliance of the defendants is upon a comparison between the cost of bond money to the Bell System, the railroads, and other public utilities. In this connection they argue in their brief (appellants' brief, pages 510-511) that such a comparison, to be significant, must be one between groups of bonds in these several industries "grouped according to some investment rating classification", and they adopt Moody's ratings AAA bonds, AA bonds, etc. (appellants' brief, pages 513-16). In this they are entirely correct. Plaintiff's counsel were insistent upon it at the trial, and upon cross-examination the commission's witness, Mr. Hammond, was requested to make up an exhibit of that character. In response to this request Mr. Hammond prepared defendants' Exhibit X-343, taking the data directly from his other exhibits, as appears upon the face of Exhibit X-343 (R. VIII, 4476).

This evidence of the defendants shows the following facts:

On December 31, 1922, the combined Bell System balance sheet (inter-company duplications excluded) shows total capital stock of $837,000,000 and total funded debt of $646,000,000, of which debt approximately $420,000,000 (mostly mortgage bonds) was indebtedness of the Associate Companies, and approximately $226,000,000 was bonds and debentures of the American Company (Defendants' deposition, Ex. 42, R. V, 3298).

On December 31, 1931, the capital stock had increased to $2,172,000,000 and the funded debt (long-term debt) to $1,054,000,000.[1] This debt is divided approximately, Associate Companies $584,000,000, American Company, $470,000,000 (Defendants' Ex. 307, R. VIII, 4427-29).

The above bond issues were put out in the years 1923, 1925, 1926, 1929 and 1930. The cost to the issuing companies varied only slightly in the different years, and the average (weighted) cost was 5.21 per cent. (Defendants' Ex. X-343, R. VIII, 4476).

As compared with this cost of 5.21 per cent. to the Bell System for money obtained upon long-term bonds, the cost to the railroads of the country upon their comparable bonds during the same period was a weighted average of 4.94 per cent. The comparable cost to the public utilities of the country was 5.12 per cent. (Defendants' Ex. X-343, R. VIII, 4476).

Defendants' evidence thus shows that it has cost the Bell System somewhat more to borrow money on long-term bonds than the similar cost to railroads and other public utilities.

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[1] In the exhibit, which is Defendants' Ex. X-307 (R. VIII, 4428), this figure appears as $1,654,824,529. The figure 6, the ninth figure, is a misprint and should be 0.

The question arises, What is the significance of these facts as bearing upon the fair rate of return in the Bell System?

If bonds issued in the ratio of 1 to 5 of the assets, and in the ratio of 1 to 2 of the capital stock (the assets being in the ratio of 5 to 3 of the total stock and bonds) cost the issuing company 5¼ per cent., what rate of return is fair, in the constitutional sense, to those who carry all the risks and hazards upon the entire property investment in the business, save only such risk as the bond holders carry?

While this is not the sole test of what is a fair rate of return, surely it indicates an average minimum of 7½ per cent. That would allow a spread of only 1½ per cent. between the highly secured and the unsecured portions of the investment, if only ¾ of 1 per cent. is allowed for surplus.

The matter may be stated in another way. Assume a capital structure of which 40 per cent. of the total amount of securities outstanding is represented by bonds.[1]

1. This requires $2.10 per $100 of property value for bond interest. (40% of 5.25%.) An 8 per cent. return upon the unsecured remainder of $60 would equal $4.80. $2.10 plus $4.80 equals a return of $6.90 per $100 with nothing for surplus. If only .6 of 1 per cent. be added for surplus the rate of return is 7½ per cent.

2. If instead of 8 per cent. upon the equity 7½ per cent. be taken, the return is 6.60 per cent. with nothing for surplus.

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[1] Mr. Hoyt testified:

"The bonded indebtedness of a large, conservative gas or electric company runs from 30 to 40 per cent of the property value: It is rather questionable whether a public utility could maintain its credit if it permitted its borrowings to exceed materially 30 to 40 per cent of the property value." (R. I, 212.)

3. If only 7 per cent. upon the equity be taken the rate of return is 6.30 per cent. with nothing for surplus.

We submit that if all other relevant considerations are taken into account and given due weight the fair rate of return as an average for the period is not less than 7½ per cent.

Mr. Hoyt's testimony was in substantial agreement with the foregoing evidence of the defendants (R. II, 1364-65).

During the period 1923 to 1931 the Bell System drew into the business from the investment market $1,743,000,000 of which $408,000,000 was bonds (R. V, 3298; VIII, 4427-9). During that period the Bell System securities by and large were well regarded and, to a degree, the system got what is known as cheap money (R. I, 195). Mortgage obligations of a subsidiary of the Bell System, like the Illinois Bell Telephone Company, would compare favorably with mortgage obligations of the gas and electric light utilities; the yield would be very similar to the better obligations of such companies (R. I, 197).

Referring to the Illinois Bell Telephone Company, as of the end of 1931, its outstanding stock and bonds were $200,000,000, of which $50,000,000 was bonds and $150,000,000 stock. The total assets as of the same date were $320,000,000 (R. I, 198).

The $50,000,000 of bonds of plaintiff were a single issue floated in 1923, thirty-three year 5 per cent. first mortgage bonds upon its entire property in the State of Illinois (R. I, 1032). It has no other bonds outstanding. The cost to the company of these bonds over their entire life is 5.53 per cent. per annum (R. VII, 5259a). Obviously they are bonds of a very high grade. The average cost of credit funds to the American Company in that year was 5.69 per cent.;

but the American Company has no mortgage bonds outstanding. In the succeeding years the cost to the American Company of its financing was within one-tenth of one per cent. of the 5.53 per cent. cost to plaintiff of its bond issue, except in 1929 when the American Company's cost fell to 5.39 per cent. and in 1930 when it fell to 5.29 per cent. (R. IV, 2941-4; see also appellant's brief, p. 540).

The conclusions to be drawn from the foregoing figures for the Bell System and for plaintiff are that, first, a fair rate of return whether considered from the standpoint of the American Company or plaintiff is the same rate, and second, over the period is 7.5 per cent.

We think, moreover, that these are the conclusions one would naturally reach *a priori,* and which one would expect the actual transactions in the market to bear out, because it is clear that the Bell System and its constituent companies are counterparts and that by and large each sustains the credit of the other. Whether it is the American Company or a constituent company that enters the market for capital, it is there viewed as one large, well and conservatively managed enterprise, jealous of its good credit, competing against all others for funds (R. I, 155-6; II, 216-7). It can obtain no better terms than other comparable enterprises, whether they are parts of a large system or not. The financial history of the period proves this.

Stock Financing of the Bell System.

We turn now to the stock financing which, as we have seen, was 75 per cent. of the total for the period. It was a huge sum required to finance the expansion of the telephone facilities of the Bell System in order to meet the great public demand for telephone service which it was the legal obligation of the Bell System to furnish.

Nearly all of this portion of the new capital was obtained by the American Company by offering additional stock (which is all common stock of $100 par value) to its own stockholders (R. V, 3298; VIII, 4428). Such new issues were offered from time to time as the money was needed. The stockholders, or those to whom they sold their "rights" (which comes to the same thing), subscribed for all stock so offered, hence no underwriting was necessary and no underwriter's or other commissions were paid (R. IV, 2941-4). This stock was offered at par, with the exception of one issue of somewhat more than $200,000,000 which was issued upon conversion of bonds at a premium above par of $80 a share.*

We have, therefore, a situation in which a comparison similar to that above with respect to the bond financing is not available. The price of issue, *upon an offer to existing stockholders,* is without significance in this connection. They were merely putting additional capital into the business and increasing the number of units outstanding as tokens of ownership. As this court says in *Miles v. Safe Deposit Co.*, 259 U. S. 247, at page 252:

> "The right to subscribe to the new stock was but a right to participate, in preference to strangers and on equal terms with other existing stockholders, in the privilege of contributing new capital called for by the corporation—an equity that inheres in stock ownership under such circumstances

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* In addition, in the period 1921 to 1931 stock of the American Company was issued to system employees under the Employees Stock Plan to the par amount of $185,000,000 at a premium above par of $30,000,000 (Exhibit A-172, R. IV, 2963)

> as a quality inseparable from the capital interest represented by the old stock, recognized so universally as to have become axiomatic in American corporation law." (Citing cases.)
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> "The stockholder's right to take his part of the new shares therefore—assuming their intrinsic value to have exceeded the issuing price—was essentially analogous to a stock dividend. So far as the issuing price was concerned, payment of this was a condition precedent to participation, coupled with an opportunity to increase his capital investment. * * *"

The defendants make a point of the fact that the American Company in 1921 increased its dividend from $8 a share to $9, which it has continued to pay (Appellants' brief, page 534). At that time the Bell System was confronted with the necessity of obtaining new capital to finance a huge expansion, and at the $8 dividend its stock was selling below par (R. VII, 4233). The American Company then had a substantial surplus available, if necessary, for dividends, which had been accumulated over a period of 40 years as a result of the wise and conservative policy of retaining each year a part of its earnings in the business (R. V, 3295, 3299). To raise the dividend at that time was imperative if the new capital required was to be obtained on reasonable terms (O.R. VII, 2616). The stock was then worth upon a book basis (the stockholders' equity) $200 a share (Appellants' brief, page 538).

The plaintiff introduced in evidence an exhibit showing the cost to the American Company in each year of all its funds invested in the business of the Bell System, as represented by its annual disbursements in dividends and interest (Exhibit A-164, R. IV, 2941-44). It also introduced

Exhibit A-172 (R. IV, 2963) which shows the consideration received by the American Company for all of its capital stock issued and outstanding to the end of the year 1931. These exhibits show the following facts:

1. For stock outstanding at the end of 1931 in the par amount of $1,865,000,000 the American Company had received upon issue $2,134,000,000, or the sum of $268,000,000 as capital stock premiums in excess of the par value of the stock.

2. The dividend of $9 a share, stated as a percentage of the par value of the capital stock, plus the capital stock premiums, plus earned surplus, for each year has been the following percentages:

1923	7.17	1926	7.22	1929	6.81
1924	7.23	1927	7.21	1930	6.45
1925	7.38	1928	6.77	1931	6.58

3. The cost to the American Company of all its funds (book figures) used in the business in each year has been the following percentages:

1923	6.87	1926	6.83	1929	6.53
1924	6.85	1927	6.86	1930	6.25
1925	6.93	1928	6.55	1931	6.42

The court will observe that the cost of capital to the American Company here shown is without any allowance whatever for surplus, since the entire surplus is included in the base upon which the percentages are computed. These percentages would have to be increased by a reasonable addition for surplus.

It is not the position of the plaintiff that these percentages, as such, are the measure of a fair rate of return. But that they are very important evidence upon this issue cannot be doubted. They represent the best judgment of the management as to what was required to maintain the credit of the American Company, and so of the Bell System, in order that the system might attract into the business upon advantageous terms, and in open competition with all others seeking capital, almost two billions of dollars of new capital in this period of 10 years.

The evidence clearly and convincingly sustains the findings of the District Court with respect to the fair rate of return for the years 1923 to 1930, inclusive, and equally sustains plaintiff's appeal from the findings for the years 1931 and 1932.

Refutation of Defendants' Contentions.

We now answer the contentions of defendants.

Their presentation is such that it is not feasible to follow the text of their argument and take up their points consecutively as presented in their brief. We will therefore endeavor to analyze their argument in order to discover and state the fundamental assumptions or propositions upon which it rests, and then to show that they are unsound and untenable, both in fact and in law.

Defendants reject the settled law: In their view the fair value of the property and the fair rate of return have no place in this case. When they do speak of rate of return at all it is a computed rate.

They advance and stand upon three main propositions.

1. The defendants contend that the existing rates are valid and that the Company's "recorded return" under those rates is constitutionally adequate. Starting from that premise they proceed to the conclusion that the contested rates are compensatory and valid.

They say at page 458 of their brief:

> "Appellee's position taken in its pleadings before the Commission and District Court and its course of conduct during the period of the litigation prove conclusively that the recorded return from its Chicago intrastate business under the existing rates was constitutionally adequate during each year thereof.'"

At page 461 they say:

> "The Bill of Complaint has never been amended. The Appellee has not by any other or additional pleadings in the instant case or otherwise attacked the rates prescribed by the 1920 Order as unreasonable or as constitutionally inadequate."

The pleadings referred to are plaintiff's return to the commission's order of September, 1921, citing the company to show cause why the 1920 rates should not be reduced, and the bill of complaint in this suit (O.R. 1, 2, 10, 11). The return to the citation was in the nature of a plea or motion to quash. The company took the position that since the 1920 rates had been prescribed by the commission they were presumed to be lawful and that hence the company could not be compelled to assume the burden of sustaining them. The company was overruled.

With respect to the bill of complaint, not only is there no allegation or admission that the 1920 rates are compensatory, but the bill plainly shows affirmatively that they are confiscatory. This appears from the averments of the sixth, seventh and eighth sections of the bill (O.R. I, 5, 6), where the allegations with respect to the fair value of the intrastate property, the fair rate of return, and the actual and prospective earnings of the company under those rates are set forth. These averments show that the earnings under the 1920 rates are far short of the alleged fair return and plainly confiscatory.

So much for the pleadings.

If, however, for the purposes of the argument, we should grant defendants the presumption that the 1920 rates are valid, either because they represent the unchallenged action of the state, or because plaintiff has by its pleadings admitted or alleged their validity, we have then to consider what the legal consequences of that presumption are in this case.

Manifestly the presumption is that the 1920 rates are *compensatory* in the constitutional sense; that is, that they produce a fair return upon the fair value of the property. It can go no further than that. But that presumption *proves* that the rates in suit are confiscatory, for it is found by the statutory court and conceded by the defendants that these rates would reduce plaintiff's net earnings on its intrastate business in Chicago in every year by amounts ranging from $1,433,000 to $1,740,000 (R. III, 2520-1). If it is the "recorded return" under the 1920 rates that is presumed to be compensatory, then the "recorded return" under the rates in suit will be less by the amounts stated and hence confiscatory.

It is the *telephone rates* that are compensatory or confiscatory. Defendants invoke against the plaintiff a legal presumption or admission to establish a premise, viz., that the existing rates are compensatory in the constitutional sense. From that premise it follows inevitably that the contested rates are confiscatory and the decree would necessarily be affirmed.

Of course the court cannot decide the case on that basis.

2. Defendants take the further position that the issue of confiscation is determined by the relation between earnings and the capitalization and capital structure of the utility, instead of by the relation between earnings, fair rate of return and fair value of the property, as held in every decision of this court.[1]

Defendants call this theory "the attraction of capital and maintenance of credit test" (Appellants' brief, page 452. See also 524-6).

The first place at which this idea crops out in their brief is on page 454, where they say:

> "Unsupported general statements or judicial notice covering returns on investments of corporations outside the Bell System *whose entire property values are represented by outstanding securities* should not be accepted in support of a finding of confiscation." (Emphasis ours.)

They are well aware of the fact that the "entire property values" of Bell System Companies are generally, and specifically in the case of the Illinois Bell Telephone Company, greatly in excess of their "outstanding securities" (Defendants' Exhibit X-307, R. VIII, 4430-B; City's Exhibit

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[1] In stating this position of defendants, we are not unmindful of the fact that at page 497 of their brief, defendants also contend that "the rate base value should be measured by the book cost of plant less the amount of the depreciation reserve."

We shall take no space to discuss book or original cost as a rate base in view of the settled law.

80, O.R. VI, following p. 2120; R. VIII, 4792-5).* Hence, they say, a fair return upon such property values is not comparable with that of other companies not so conservatively capitalized. It is a mistake, if this is true, for a Bell System company or any utility to be conservatively capitalized, because by whatever amount their properties, at a fair valuation, are in excess of their outstanding stocks and bonds they are to be denied any return upon it.

They apply this line of reasoning to an assumed case at pages 524-5 of their brief where they discuss the opinion of this court in the *United Railways* case.

The law, of course, is to the contrary. The "investment" of a public utility consists of its property. The amount of the investment is the fair value of the property and the company owning the property is entitled to a return upon that amount at a fair rate of return. While there is no formula for determining what is a fair rate of return, it is no more dependent upon the kind, or the amount, or the relative proportions of different kinds of securities than is the fair value.

There is no basis in law or reason why, for example, two utilities with like properties of the same value, and in all other respects similarly situated, are to be accorded different rates of return as the measure of their constitutional rights, because Company A has capital stock outstanding in an amount at par equal to 75 per cent. of the value of its property and no bonds or other debts, while Company B has outstanding stock at par equal to 50 per cent. and bonds equal to 50 per cent. of the value of the property. They are entitled to the same return. The entire investment is at all times at the risk of the business. The risk may be shifted as between different classes of security holders; bondholders carry less risk, which is shifted to stockholders; but the shifting of the risk does not get rid of any part of it.

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* These are book figures. Many of defendants' own exhibits show that the book figures are far less than the actual value of the property. (O.R. VII, 2618, 2633, 2646, 2666; R. V, 3284, 3298, 3311.)

Defendants advance what they call "the attraction of capital and maintenance of credit test" (page 452). Under the caption "Amount to be Carried to Surplus" (page 524), referring to the opinion of this court in the *United Railways* case, they say:

> "In the *United Railways* Case this Court held that a utility is constitutionally entitled to have earnings sufficient so that, after paying all expenses of operation, interest and reasonable dividends 'there should still remain something to be passed to the surplus account' (280 U. S. 234 at 251-2).
>
> "Whether a given rate of return related to a given rate base value will produce the 'something to be passed to the surplus account,' depends upon the following factors, among others: (1) Amount of outstanding securities; (2) Interest rate on credit obligations; (3) Dividend Rate on stock; (4) Rate base value to which Rate of Return is to be related."

At page 526, they conclude:

> "What rate of return related to a given rate base will produce sufficient net income so that 'there should still remain something to pass to the surplus account,' requires detailed knowledge of the corporate structure of the company to which such rate of return has application."

It is a truism to say that the amount carried to surplus is dependent upon the amount of the earnings and the amount distributed in dividends. It is the difference between the two.

The complete sentence of the *United Railways* case from which the defendants quote the excerpt above is as follows;

> "* * * Sound business management requires that after paying all expenses of operation, setting aside the necessary sums for depreciation, payment of interest and reasonable dividends, there should still remain something to be passed to the surplus account; and a rate of return which does not admit of that being done is not sufficient to assure confidence in the financial soundness of the utility to maintain its credit and enable it to raise money necessary for the proper discharge of its public duties" (*United Railways* v. *West*, 280 U. S. 234; 251-2).

There can be no possible objection, of course, to defining "fair return" in these terms, that is, in terms of reasonable amounts for dividends (whether declared or not is immaterial) and reasonable amounts for surplus, over and above the disbursements referred to. But the *reasonableness* of the dividend (or the amount available for the dividend) cannot be dissociated from the fair value of the property and the fair rate of return.

If Company A has property worth $1,000,000 with $500,000 par of stock outstanding, and no debt, and Company B has property worth $1,000,000 with $1,000,000 par of stock outstanding, and no debt, all other things being equal, a reasonable dividend to A's stockholders will be *at a rate* twice that to B's stockholders, both as a matter of law and of common fairness.

The foregoing example illustrates the fundamental error of the defendants, which runs all through their argument. Applying their test, "the attraction of capital and maintenance of credit test," and stoutly maintaining that the settled law became inapplicable in 1923, they would say that if both Company A and Company B can attract capital with a dividend, say, of $8 a share, then A is entitled to earn for dividend $40,000 or 4 per cent. on the property, and B $80,000 or 8 per cent. But this entirely overlooks *the amount of capital* that is to be attracted. On the basis stated, Company A would be able to attract only $500,000, or half the value of the property. This is a complete *reductio ad absurdum.*

On the other hand if we conclude as to both A and B that 8 per cent. is a reasonable rate of return and apply that rate to the property of $1,000,000 in both cases, the results will be consistent and "a detailed knowledge of the corporate structure of the company" is obviously not required and is immaterial.

3. Defendants contend further that the issue of confiscation during this period in the case of plaintiff (or any other Bell telephone company) is to be determined by a comparison of its net earnings in any year with the average net earnings of all telephone companies of the Bell System in that year. Such average net earnings constitute the measure of a compensatory return.

This test would also make the fair value of the property and the fair rate of return irrelevant to the issue of confiscation. Indeed much the greater part of the record in this case would become meaningless.

At pages 535-6 of their brief defendants say:

> "In the absence of a showing that the average net earnings from the operations of all Associate Companies are inadequate no issue of confiscation can arise as to the net earnings from the operations of any single Associate Company so long as such

> Associate Company's showing is as good as or is better than such average" (see also Appellants' brief, page 472).

It is not surprising, therefore, in view of the foregoing statements, to find the defendants taking the position in their brief that the law as declared by this court in the reports from 242 U. S. to 272 U. S. has no application to the period of this case, because "the apparent simplicity of pre-war and immediate post-war corporate finance" (page 508), which justified this court in declaring those principles of law, "disappeared in the decade covered by the present litigation" (Appellants' brief, p. 508).[1]

Whether their position is that the settled law has merely been suspended during the decade covering this suit or is permanently outmoded is not made entirely clear, and perhaps does not matter here.

The comparison put forward by the defendants, of course, cannot be a legal test of confiscation.*

There are 21 operating telephone companies of the Bell System, commonly referred to as the "Bell Associate Companies," which together cover the entire United States. They own and operate the telephone properties of the Bell

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[1] Among the cases they cite in this connection as having become obsolete ten years ago are *Denver* v. *Denver Water Co.*, 246 U. S. 178, 194; *Lincoln Gas & Electric Co.* v. *Lincoln*, 250 U. S. 256, 259; *Galveston Electric Co.* v. *City of Galveston*, 258 U. S. 398; *Southwestern Bell Telephone Company* v. *Public Service Commission of Missouri*, 262 U. S. 276; *Bluefield Water Works and Improvement Co.* v. *Public Service Commission*, 262 U. S. 679; *McCardle* v. *Indianapolis Water Co.*, 272 U. S. 400.

In view of the fact that some of the cases they cite were decided by this court during this decade, that is, since 1923, we should call attention to the fact that counsel for defendants are careful to point out in their brief (see footnote, page 508) that those cases *on their facts* all antedate the year 1923.

* If this were the law, ultimately it would lead inevitably to zero earnings as constituting a fair rate of return.

System in their respective territories. They vary greatly in size and in extent of the territory covered, some being confined to a single state, others extending over many states (R. IV, 2834A; I, 523). Some are located in sparsely settled and relatively undeveloped sections of the country, others in densely populated and relatively rich areas. The record shows for all of the companies the financial results of their operations in each year of this case, as shown by their books, but there is no segregation between the interstate and intrastate property and business (such segregation is made only in rate cases). The property is carried on the books at actual cost and the record shows these amounts, but there are no valuation figures. Whether the rates being charged at any time by any company were compensatory or confiscatory cannot be known. Whether some of the companies were justly seeking increases in rates at the hands of the state commissions does not appear. Whether any of the companies were complaining in the federal or state courts of confiscatory rates from time to time, and if so, whether their claims were well-founded or not, does not appear. Nothing is shown as to the fair value of the property or the fair rate of return with respect to any company.

It may be that we should drop the matter without further discussion. However, we do not think the court should be left under the misapprehension that plaintiff's net earnings under the rates in suit would have been equal to or in excess of the average net earnings of all the Associate Companies (operating telephone companies) of the system. The fact is to the contrary; *plaintiff's net earnings would have been far below such average in every year and by this test plainly confiscatory.*

If any such comparison is to be made it must be a fair and valid comparison.

In the court below, defendants offered in evidence and relied upon a comparison to which they make no reference in their brief. We refer to defendants' Exhibit X-299 (R. VIII, pp. 4399-4400),[1] which covers the years 1920 to 1930, inclusive, and a similar exhibit for the year 1931 on page 4401. These two exhibits are entitled "Percentages of Return of Licensee Companies on Average Fixed Capital and Material and Supplies." The term "average fixed capital" means the cost of the plant as shown by the books (OR. I, 223). The term "materials and supplies" is self-explanatory, and the amount is also the book figure.

This comparison, then, is a comparison between the net earnings of plaintiff and the average net earnings of all the operating telephone companies of the system, as shown by the books, as a percentage of the actual cost of the property devoted to the public service. The net earnings are shown in the exhibit as a percentage of such cost separately for each constituent operating company of the Bell System including plaintiff, for each year from 1920 to 1931, inclusive. (We are not concerned with the years 1920, 1921, 1922.) At the foot of each yearly column the average for all companies is given. The earnings are the actual net earnings, so that it is to be kept in mind that for plaintiff they are the earnings, not under the rates here in suit, but under the higher existing rates.*

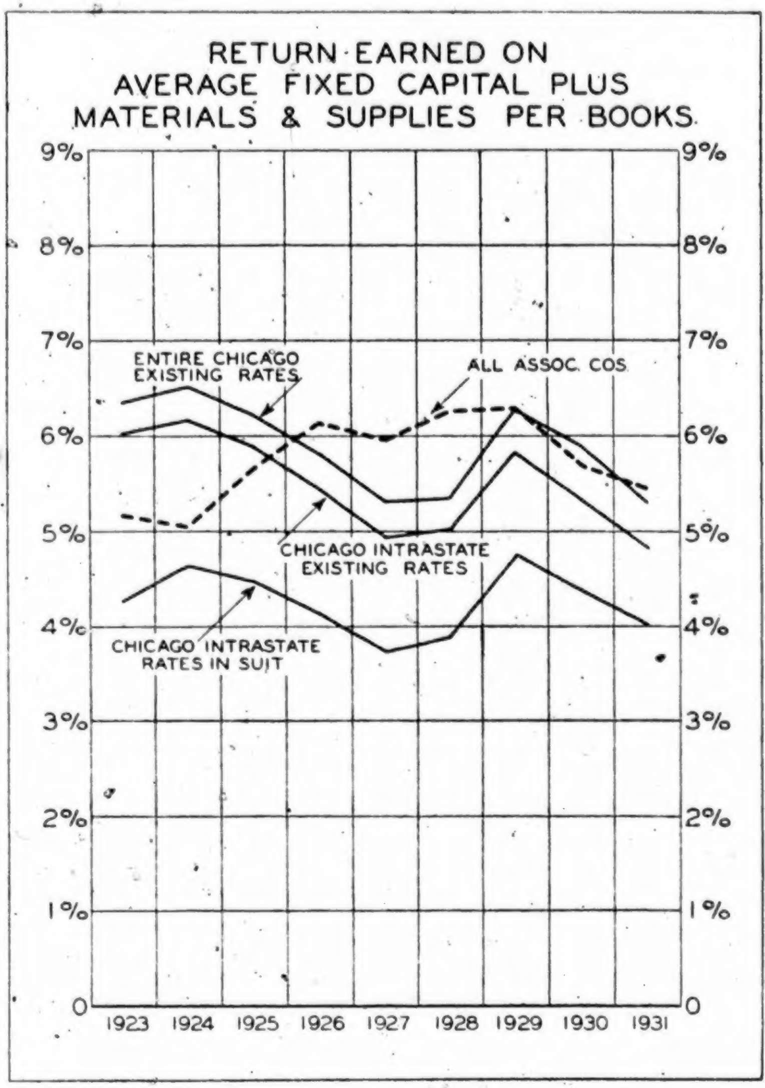
---

[1] The column headings indicating the years 1920-1930, inclusive, are inadvertently omitted from page 4399, but appear on page 4400.

* The record shows that the business, methods of doing business, property, books, accounting system and methods, and Bell System relationship are similar for all the companies.

Defendants do not show a like comparison with plaintiff's earnings under the rates in suit, but that is readily supplied from the record, and we supply it.

These comparisons are shown graphically upon the following chart.



The dotted line in the chart represents the system average. The lowest unbroken line represents plaintiff's earnings under the rates in suit upon its Chicago intrastate business; that is, the business and telephone rates in issue in this case.[1]

The above chart is an accurate, graphic representation of the data shown in the table printed in the Appendix, *infra,* page a. None of the figures are in dispute in any respect. They are all taken, as the table shows on its face, from defendants' exhibits, with the single exception of the "estimated reduction under rates in suit," which are shown in column 3 at the bottom of the table. While these amounts are taken from Plaintiff's Exhibit A-55, they are the exact amounts found by the district court in Finding 28 (R. III, 2520-1) and are not disputed by defendants.

We call attention to the fact that *in the first three years the combined earnings of all the companies were obviously much too low* (O.R. VII, 2633, 2658-2661). It is clear that the Bell System had not yet made much headway in the necessary post-war readjustment of the telephone rates. Considerable progress in that direction was made in 1925, when the combined average earnings increased approximately ½ of 1 per cent. over the two preceding years, and by 1926 the average exceeded plaintiff's earnings (R. V, 3311). An examination of the defendants' exhibit in detail, where the earnings of each company are shown, will make this clear. Many of the companies were obviously earning far less than a compensatory return in the first three years. (Exhibit X-299, R. VIII, 4399-4401). It is entirely clear, from a glance at the chart, that if it be assumed the system earnings were compensatory from 1926 until the depression in 1930, as the defendants contend, they were plainly much less than compensatory in 1923, 1924 and 1925.

---

[1] The other two unbroken lines, as related to the dotted line, represent plaintiff's actual earnings under the existing rates. The difference between the two upper unbroken lines is that the one at the top includes plaintiff's Chicago earnings from its interstate business whereas the unbroken line immediately below it includes only the intrastate earnings and is comparable with the bottom line.

In their brief in this court defendants present other comparisons but not this one which, as we have said, they introduced in evidence and relied upon in the District Court. For the comparisons they do present here see their brief, pages 487-99. In those pages they first make various large adjustments in plaintiff's earnings, to conform to the findings of the District Court, etc., and assume that no offsetting like adjustments or other adjustments would be made with respect to the other companies of the system. Then, having made such adjustments in plaintiff's earnings to raise them very substantially, they use plaintiff's return on "average capital stock," and on "average capital stock and surplus." Comparisons of this kind are obviously meaningless. Defendants first destroy comparability of earnings and, having done that, compare earnings in relation to the capital structure instead of making a comparison in relation to the actual cost of the properties as shown by the books.

The rate of return fixed by the court or by the special master and passed by the court in the more recent cases, all within the period here involved, has been as follows:

8 per cent. in *Southwestern Bell Telephone Co.* v. *Ft. Smith,* 294 Fed., 102—affirmed 270 U. S. 627.

8 per cent. in *Brush Electric Co.* v. *Galveston,* 262 U. S., 443.

8 per cent. in *Brooklyn Union Gas Co.* v. *Prendergast,* 7 F. (2d) 628.

8 per cent. in *New York & Queens Gas Co.* v. *Prendergast,* 1 F. (2d), 351.

7½ per cent. in *Duluth St. Ry. Co.* v. *Commission,* 4 F. (2d) 543.

8 per cent. in *Indiana Bell Telephone Co.* v. *Commission,* 300 Fed., 190.

7½ per cent. in *Pac. Tel. & Tel. Co.* v. *Whitcomb,* 12 F. (2d) 279.

8 per cent. in *Reno Power, etc., Co.* v. *Commission,* 298 Fed., 790.

8 per cent. in *Louisiana Water Co.* v. *Commission,* 294 Fed., 954.

8 per cent. in *Alton Water Co.* v. *Commission,* 279 Fed., 869.

7½ per cent. in *Adirondack Power & Light Co.* v. *Commission,* 211 App. Div. (New York), 272.

7½ per cent. in *Northwestern Bell Telephone Co.* v. *Commission,* 6 F. (2d), 663.

8 per cent. in *New York & Richmond Gas Co.* v. *Prendergast,* 10 F. (2d), 167.

8 per cent. in *Springfield Gas & Electric Co.* v. *Commission,* 10 F. (2d), 252, holding 7 per cent. fixed by the Commission confiscatory.

7.44 per cent. approved and higher indicated in *United Ry. & Electric Co.* v. *West,* 280 U. S. 234.

7 per cent. in *N. Y. Telephone Co.* v. *Prendergast,* 36 F. (2d), 54.

In the present case, the Illinois Commerce Commission fixed 7½ per cent. as the fair rate of return.

Conclusion.

Plaintiff has fully sustained the burden of proof, the decision in its favor is plainly right, and the decree should be affirmed.

Respectfully submitted,

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William H. Thompson,
Edward L. Blackman,
Kenneth F. Burgess,
Leslie N. Jones,
John H. Ray,
Counsel for Appellee.

John W. Davis,
Of Counsel.

APPENDIX.

Comparison of Rate of Return Earned on Average Fixed Capital and Materials and Supplies of Illinois Bell Telephone Company with the Average Rate of Return of All Associated Operating Companies Per Books.

	1923	1924	1925	1926	1927	1928	1929	1930	1931
1. Average Rate of Return of all Associated Companies (Exhibit X299, R. VIII, 4399-4401)	5.18%	5.05%	5.67%	6.14%	5.96%	6.27%	6.31%	5.69%	5.44%
2. Plaintiff. (Entire Company) (Exhibit X299, R. VIII, 4399-4401)	6.05	6.12	6.31	6.08	5.83	6.09	6.56	5.93	5.32
3. Difference (lines 1 and 2)	+ .87	+1.07	+ .64	— .06	— .13	— .18	+ .25	+ .24	— .12
4. Plaintiff. Total Chicago (including Interstate) Under Existing Rates (Exhibit X-328, R. VIII, 4455-4456A)	6.36	6.52	6.24	5.82	5.32	5.36	6.29	5.90	5.30
5. Difference (lines 1 and 4)	+1.18	+1.47	+ .57	— .32	— .64	— .91	— .02	+ .21	— .14
6. Plaintiff. Chicago—Intrastate Under Existing Rates (Exhibit X328, R. VIII, 4455-4456A)	6.02	6.18	5.89	5.45	4.93	5.01	5.83	5.35	4.83
7. Difference (lines 1 and 6)	+ .84	+1.13	+ .22	— .69	—1.03	—1.26	— .48	— .34	— .61
8. Plaintiff. Chicago—Intrastate Under Rates in Suit (Exhibit X328, R. VIII, 4455-4456A and A55, R. IV, 2767-2774—see table below)	4.28	4.64	4.49	4.14	3.73	3.88	4.76	4.39	4.01
Difference (lines 1 and 8)	— .90	— .41	—1.18	—2.00	—2.23	—2.39	—1.55	—1.30	—1.43

Table Showing Derivation of Percentages on Line 8 Above.

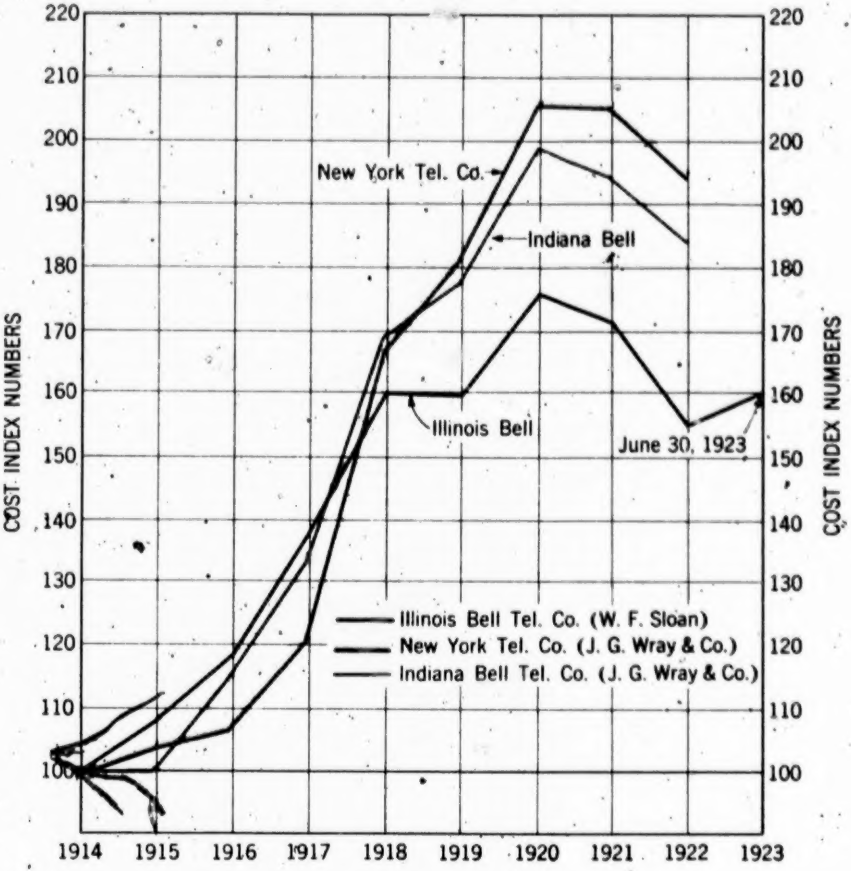
Year	Average Fixed Capital and Materials and Supplies Exhibit X328 (R. VIII, 4455-4456A)	Amount Available for Return Under Existing Rates Exhibit X328	Estimated Reduction Under Rates in Suit Exhibit A55 (R. IV, 2767-2774)	Balance Available for Return Under Rates in Suit Amount (2) minus (3)	Balance Available for Return Under Rates in Suit Per Cent.
	(1)	(2)	(3)	(4)	(5)
1923	$ 88,885,934	$5,347,533	$1,541,668	$3,805,865	4.28%
1924	100,824,748	6,230,178	1,550,995	4,679,183	4.64%
1925	112,825,153	6,650,718	1,582,561	5,068,157	4.49%
1926	126,378,794	6,887,012	1,650,570	5,236,442	4.14%
1927	139,511,113	6,877,089	1,677,077	5,200,012	3.73%
1928	151,779,199	7,601,567	1,713,301	5,888,266	3.88%
1929	162,747,599	9,490,091	1,740,582	7,749,509	4.76%
1930	171,149,672	9,152,490	1,645,878	7,506,612	4.39%
1931	175,914,279	8,494,616	1,433,744	7,060,872	4.01%

3

COMPARISON OF CONSTRUCTION COST LEVELS

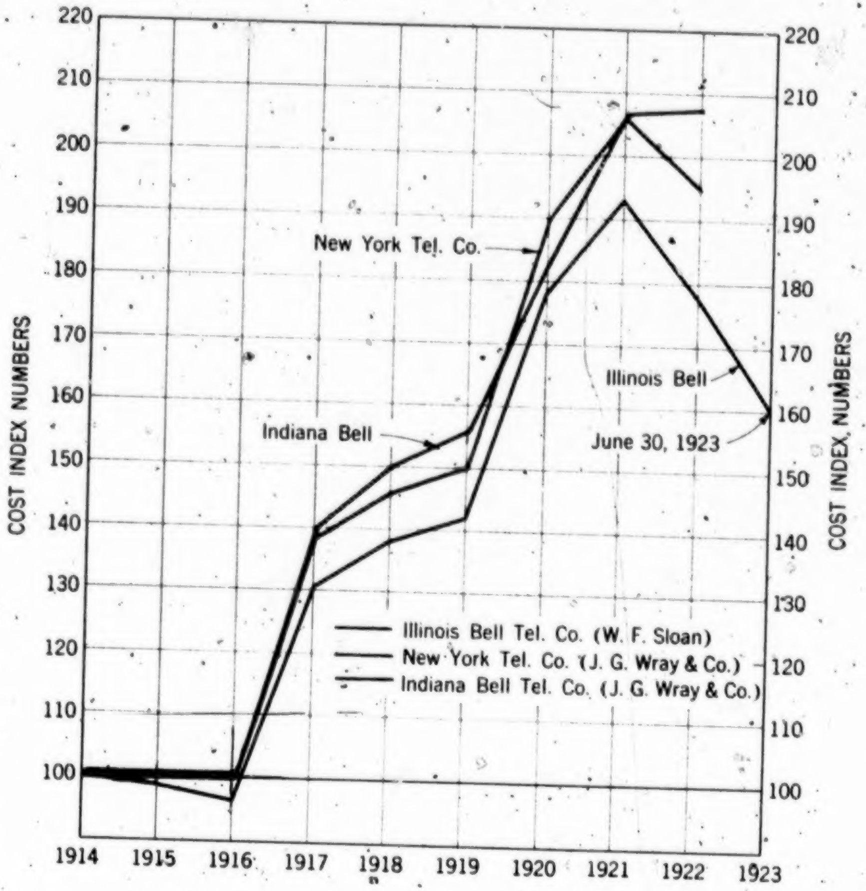
1914 = 100

Composite of
- Exchange Pole Lines
- Exchange Aerial Cable
- Exchange Aerial Wire
- Exchange Underground Cable



Data for above taken from: Plaintiff's Exhibit 1 - OR IV, 1172-3
Plaintiff's Exhibit 35 - OR IV, 1385
Plaintiff's Exhibit 44-C, following page 1426 (OR IV)
Testimony of J. R. Turner - OR III, 958-9

COMPARISON OF COST LEVELS
CENTRAL OFFICE TELEPHONE EQUIPMENT
1914 = 100



Data for above taken from: Plaintiff's Exhibit 1 · OR IV, 1169
Plaintiff's Exhibit 32 · OR IV, 1379

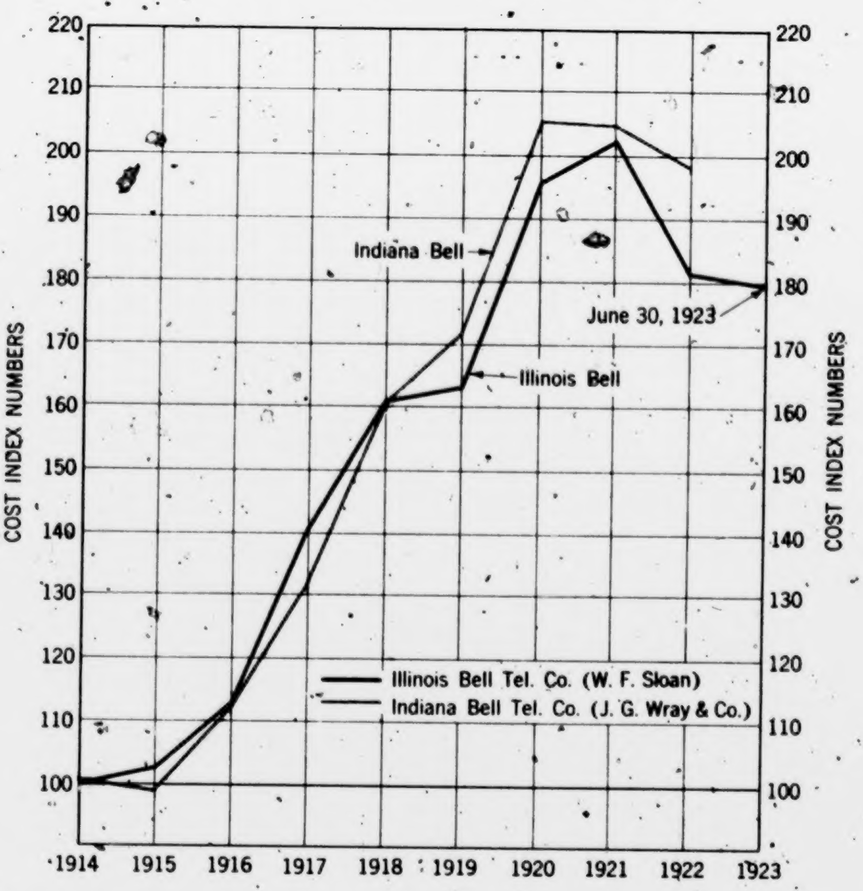
d

COMPARISON OF COST INDEX NUMBERS

FOR TELEPHONE PROPERTY

1914 = 100

Illinois Bell Tel. Co. - Sloan Appraisal
Indiana Bell Tel. Co. - Cost of Complete Telephone Plant in Indiana Based on Analysis of Completed Construction Work (Pl.Exh.86)



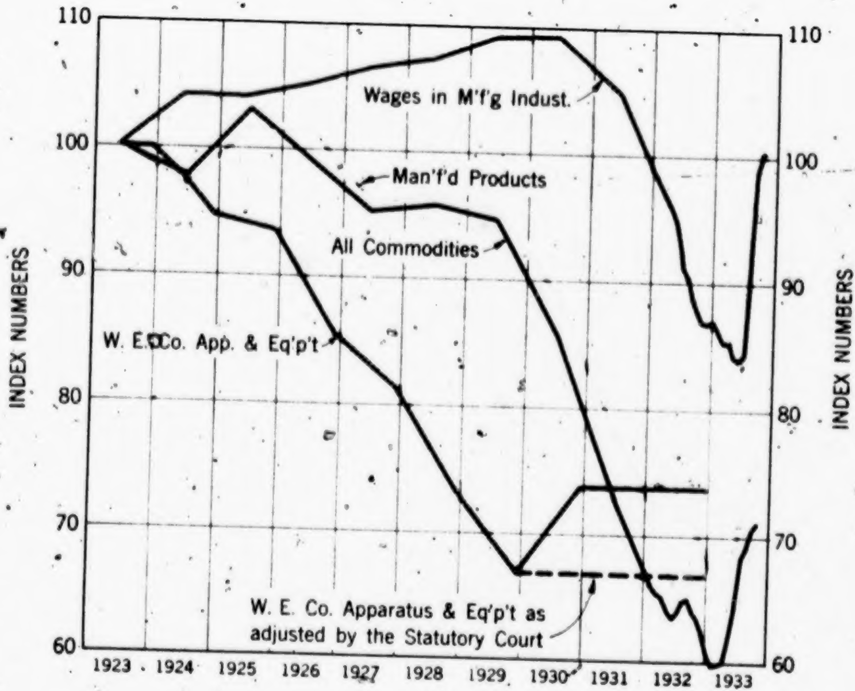
Data for above taken from: Plaintiff's Exhibit 44-B, following page 1426 (OR IV)
Testimony of J. R. Turner - OR III, 958

e

COMPARISON OF COST INDICES

~~1914~~ 1923 = 100

All Commodities (784) - U. S. Bureau of Labor Statistics
Finished Man'f'd Products - U. S. Bureau of Labor Statistics
Tel. Apparatus and Eq'p't - W. E. Co. - from City Exh. X - 13a, NR VI, 3892
Average Hourly Earnings in M'f'g Industries - Nat'l Indust. Conf. Board



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Supreme Court of the United States

October Term, 1933.

No. 440

Benjamin F. Lindheimer, and Others, constituting the Illinois Commerce Commission of the State of Illinois; Otto Kerner, Attorney General of the State of Illinois, and the City of Chicago,

Appellants,

vs.

Illinois Bell Telephone Company,

Appellee.

BRIEF FOR THE STATE OF MICHIGAN, AS AMICUS CURIAE.

Patrick H. O'Brien,
Attorney General, State of Michigan.

Harold Goodman,
Special Assistant Attorney General,
State of Michigan.

CONWAY-SCOTT COMPANY LAW PRINTERS, DETROIT, MICH.

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PATRICK H. O'BRIEN,
Attorney General, State of Michigan.

HAROLD GOODMAN,
Special Assistant Attorney General,
State of Michigan.

INDEX-SUMMARY.

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Interest of the State of Michigan in the Controversy 1

Validity of contentions similar to plaintiff's is involved in rate cases pending before the United States District Court in Michigan, and the Michigan Public Utilities Commission; and a decision in favor of the company here would establish precedents adverse to the interest of the State of Michigan.

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The determination of net income does not extend to include all gains, e.g., capital gains; and the bookkeeping entries, insofar as they pass beyond the recording of receipts and disbursements, consist in opinions, which are subject to question and revision.

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Bookkeeping debits to Expense of Depreciation determined by straight-line method substantially overstate the expense of depreciation, as will be subsequently shown.

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5. Employees' Pensions and Benefits 15

The burden of actual payment is upon the business. The employee has no interest in the so-called fund; its creation is merely a bookkeeping transaction.

The actual cost to the company consists in the disbursements made to the employees. The burden of prospective costs upon each accounting period must be determined. The factor of interest is conceded to be material. For purposes of ascertaining the present (or annual) burden of future payments, their present worth (or equivalent annual worth)

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must be ascertained upon the basis of the actual rate of profit. Full explanation of equitable distribution of irregular costs to be treated in connection with the subject of depreciation.

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Non-Bell operations are joint activities of the enterprise and should be accounted for as such.

Profits from selling or liquidating subsidiaries, from licenses, from special transactions (like the $4,000,000 received from the Automatic Electric Co.), should be accounted for as the result of joint activity.

In a computation of profits the value of existing agreements for future income should be capitalized and considered in the reckoning.

Essential to a determination of Bell business profits is a purview of the entire enterprise, and a division of costs and values among the various activities. We shall submit an exposition of the general principles governing such divisions, applicable to all apportionments of common expenses and values among different activities.

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3. Scope and Usefulness of Correct Principle of Cost Distribution 26

It will apply to all expense, cost, and value apportionment involved in this case.

4. Criticism of Prevalent Ideas of Cost 26

It is ordinarily assumed that a separate cost of every item is known or discoverable. But sacrifices are incurred in gross for numerous items of different value. An apportionment of such general costs is a matter of accountancy art.

5. Example of Common Cost Distribution to Joint Products 28

Solution indicated is distribution of common expense in accordance with the relative appreciation in the products caused thereby.

6. Relation Between Cost and Price 32

Under conditions of joint production, the average cost per unit of service cannot be used to determine the price, since to do so is to beg the question by the assumption that the unit of service is of equal value. Common costs have the total output which they appreciate as an object, and only the price requirement for such total output can be deduced from cost.

7. Importance of Relative Value of Different Services Obtained at a Common Cost 34

Contribution of each class of output or class of service unit toward providing total requirement of compensation, which is set by cost, is determined by relative value of classes of output or service units, after due regard for the appreciation caused by direct expense has been had.

8. Property Value Division Proceeds on Same Basis Common Cost Apportianment 35

The special complication of capital value apportionment arises from the fact that the services

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of capital goods are distributed over time, and the proportionate distribution of the services among the different activities will vary from time to time.

9. Comment on Judicial Decisions Concerning Property Separation and Division of Powers 36

It appears to have been accepted as axiomatic that the value of jointly used property could be divided upon some basis independent of the relative values of the several uses. Smyth v. Ames, 169 U. S. 466; Northern Pacific Railway Co. v. North Dakota, 236 U. S. 585; Norfolk and Western Railway Co. v. Conley, 236 U. S. 605; Minnesota Rate Cases, 230 U. S. 352; and Northern Pacific Railway Co. v. Department of Public Works, 268 U. S. 39. But the determination of the method of division has been held to be a question of fact. Groesbeck v. Duluth South Shore Railway Co., 250 U. S. 607.

As respects railroads, interstate and intrastate transactions are so related that the government of one, in effect, involves the control of the other. Houston, East and West Texas Railway Co. v. United States, 234 U. S. 342 (1914); Act to Regulate Commerce, Secs. 13 (3), (4), and Sec. 15a (U. S. C., Title 49, Secs. 13 (3), (4), 15a; Railroad Commission of Wisconsin v. Chicago, Burlington & Quincy Railroad Co., 257 U. S. 563 (1922); New York v. United States, 257 U. S. 591 (1922); Illinois Central Railroad Co. v. Public Utilities Commission, 245 U. S. 493 (1918); Board of Railroad Commissioners of North Dakota v. Great Northern Railway Co., 281 U. S. 412 (1930); Florida v. United States, 282 U. S. 194 (1931); Louisiana Public Service Commission v. Texas & New Orleans Railroad Company, 284 U. S. 125 (1931).

10. Views of Economists 38

Economists agree that cost allocations are unsound in principle as a means of determining rates.

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The authorities are collected in D. Phillip Locklin, "The Literature of Railroad Rate Theory," 47 Quarterly Journal of Economics. See also Vanderblue & Burgess, "Railroads," Ch. VII; Olmstead, "Do 'Cost of Transportation' Exhibits In Railroad Rate Cases Show Cost" 23 Annals of Amer. Acad. 274; R. T. Bye, "Composite Demand and Joint Supply In Relation to Public Utility Rates." 44 Quarterly Journal of Economics, 40.

11. Summary of Value Apportionment Between Interstate and Intrastate Uses 39

Value apportionment must be made upon the basis of the relative values of the parts. The fair value of the whole must be ascertained by means independent of the present income; next, the compensatory income as a whole must be ascertained; and finally the contribution properly to be made from the activity under regard must be determined. The last element is resolved upon considerations of public interest in obtaining the best use of the facility and at the same time rendering an income remunerative as a whole.

12. Divided Powers to Regulate Rates are Complementary; Confiscation is Result of Insufficient Contribution to Total Requirements 42

Each rate making authority, national or state, determines in the first instance, in effect, the contribution of the commerce under its jurisdiction to a total requirement. In the case of railroad rates the Interstate Commerce Commission has power to revise the determinations of the state authorities, and thereby to establish a total requirement, and to apportion the burden thereof.

In the present case, confiscation cannot be said to have been shown if substantial remuneration over direct costs is had from intrastate rates, and the revenues as a whole are sufficient.

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13. Criticism of Division According to Time of Use 46

It begs the question of the relative value of the unit (a minute's use) for different purposes, by assuming that it is equal and should burden equally the minimum price requirement.

Time of use is not a general basis of price for exchange telephone service. If it were made so, a new distribution of relative use would result, destroying the company's allocations,—a proof of their unsoundness.

14. Practical Application of Joint Cost Principle in This Case 48

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1. Meaning of Value 50
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V. The Legal Concept of Fair Value 58

Fair Value is the capital value of a business subject to regulation, upon the hypothesis that the regulative power to cut down rates is being exerted to the maximum degree which the Constitution will permit.

VI. Fundamental Relations of Income and Fair Value Under Simple Hypotheses 62

VII. Valuation Depreciation 66

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6. Valuation Depreciation in View of Increasing Returns 73

7. Allocation of Profits Between Accounting Periods 77

VIII. The Price of Service in View of Fluctuating Use of Property and Varying Output 81

Value of used and useful property merely a limited aspect of this question.

The reasonableness of rates cannot be tested unless the conditions of varying use and fluctuating output are considered. The proper rate is the correct price per unit of service to yield a given profit.

Telephone plant is designed with margins of capacity in excess of immediate needs in the expectation of growth in numbers of customers and the extent of use.

The company makes a claim for revenue as if the property were subjected to a constant use like that of a test year or period. Such a claim is not sustainable.

IX. The Economic Significance of Service Life 94

1. Period of Service Life is a Result of Economic Selection 94
2. Physical Life 95
3. Obsolescence 96
4. Inadequacy 98
5. Relation of Service Life to Expense 99
6. Rates in View of Service Life Theory 101

The service life theory is not and cannot be an actual theory of rate regulation. When used as a basis of determining the expense of depreciation when the reasonableness of rates is to be tested, the theory is vicious.

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The retirement of property is merely an incident in the economic operation and development of plant. The transaction actually involves a net gain, and not a loss. To burden the present user with a share of the prospective gross detriment, without considering the prospective benefit, is to overstate very substantially the revenue requirement and to conceal in great degree the profit making power of the rates under regard.

This error exists even if service lives may be forecast. It is merely increased by forecasts of service lives which may turn out to be too short.

7. Hypothetical Physical Service Life as a Standard for Depreciation 115

The basic calculations for proper rates are such as during hypothetical physical service lives will amortize the cost of existing property and the unamortized cost of property previously retired. Explanation of why such rates are reasonably calculated to yield proper remuneration at the very least, and will yield an excess over minimum requirements if justifiable retirements can be made.

8. Approximation of Requirement for Depreciation and Return 118

In the case of durable public utility property the burden of depreciation and return, stated in terms of an annual percentage of cost does not greatly exceed the standard rate of profit, e. g., requirement to yield 6% profit and amortization over 35 year period is 6.9% of cost, and it diminishes as the period lengthens.

9. Depreciation on Account of Obsolescence is a Result of Price Reduction Forced by Competition 122

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11. Other Utilities Admit that Service Life Theory Results in Excessive Rates 123

It is not used by gas, electric, water and railroad companies. Their executives admit that it is a means of obtaining excessive rates.

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X. Criticism of Straight Line Depreciation Accounting.

1. Reservation of Income Cannot Create Expense: Writing Off Capital Value by the Amounts Reserved Produces No Correction 125
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Depreciation Charges of Telephone and Steam Railroad Co's., 177 I. C. C. 351, regulates accounting and at most affects the amount of income to be reserved. The requirements have no effect in determining the confiscatory character of rates.

XI. Going Value 134

This court has consistently rejected claims for going value which did not involve compensation for actual sacrifices. Cedar Rapids Gas Light Co. v. Cedar Rapids, 223 U. S. 655, Des Moines Gas Co. v. Des Moines, 238 U. S. 153, Galveston Electric Co. v. Galveston, 258 U. S. 388, and Georgia Railway and Power Co. v. Railroad Commission of Georgia, 262 U. S. 625.

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Under proper accounting, expenditures for attaching customers and training employees would be equitably distributed over numerous accounting periods. Such costs do not procure permanent assets. Even if the disbursements of any year are capital costs, still they may measure approximately the expense of the year.

It is improper to seek rates based upon the allowance of such items as expenses, and then to seek to add them to capital value.

Going Value and Varying Use of Capacity 139

Claim for going value based upon deficiency of revenue during development years is not sustainable. Such apparent deficiencies are only the result of defective accounting. Revenues must of necessity fluctuate with use. A proper rate per unit of service in view of fluctuating use, and proper distribution of depreciation will reveal no deficiencies in revenues during development period.

XII. The Rate Base 143

The deficiencies in plaintiff's showing will dispense with the necessity of determining a rate base.

Application of cost standard open to question under present conditions. Consistently applied it will result in securing constant compounding of undistributed profits at high rates—a process which cannot go on indefinitely.

Present values based on reproduction costs was put forth as a remedy for this condition. It cannot be applied under present conditions, since the value of stocks of goods on the market is not involved.

A proper reproduction cost of specially manufactured goods today cannot be ascertained without designation of the quantities to be produced.

The business world regards surpluses and reserves as only contingently profits.

The requirement of compensation for actual investment outlays, and the relative burden upon public utility service upon the cost of living should be considered.

XIII. Rate of Profit 147

Present market conditions too erratic to form basis of estimate for proper rate of return.

Revenues which are sufficient to pay fixed interest charges and leave substantial profits to stockholders should not be held confiscatory.

This business contains probably the lowest risk of any commercial enterprise. There is (1) no competition; (2) no probable substitute services in sight; (3) a very reliable demand; (4) heavy expenditures, allowed as expense, to insure efficient conduct of business; (5) elimination of labor troubles by pension, benefit and stock ownership plans; (6) elimination of structural and operating defects through research and standardization at costs allowed in expense; (7) more than adequate protection against depreciation; (8) a slight risk of casualties and storm damage; (9) a risk of adverse regulation which is not to be considered here.

The existing revenues under proper accountancy will show a rate of profit upon any claimed rate base clearly substantially above constitutional requirements.

XIV. Conclusion 152

Scope for application of principles here expounded should be allowed.

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IN THE

Supreme Court of the United States

October Term, 1933.

No. 440

Benjamin E. Lindheimer, Et Al., constituting the Illinois Commerce Commission of the State of Illinois; Otto Kerner, Attorney General of the State of Illinois, and the City of Chicago,

Appellants,

vs.

Illinois Bell Telephone Company,

Appellees.

BRIEF FOR THE STATE OF MICHIGAN, AS AMICUS CURIAE.

The Interest of the State of Michigan in the Controversy.

The Michigan Bell Telephone Company, whose service facilities extend substantially throughout the State of Michigan, is at present maintaining a suit in the United States District Court for the Eastern District of Michigan, the object of which is to have existing rates, statewide in scope, declared invalid as confiscatory of its property. The issues are substantially the same as those involved in the present case, except for the obvious difference in the properties involved, and the fact that no injunction has been had restraining the operation of existing rate orders. There are, however, marked differences in the manner in which the plaintiffs' contentions are resisted.

At the present time, proceedings on the part of the plaintiff in the Michigan case have been stayed until the plaintiff shall have complied with all orders of the Michigan Public Utilities Commission requiring the production before it of proofs of the cost to the American Telephone and Telegraph Company and to the Western Electric Company, Incorporated, of furnishing goods and services to the plaintiff, and until the plaintiff has otherwise exhausted its remedies before the Commission in conformity with all legal requirements.

On October 30, 1933, the Michigan Bell Telephone Company presented to the Commission as its showing upon the above mentioned matters the identical evidence relative to the American Telephone and Telegraph Company, Western Electric Company, Incorporated, and their subsidiaries as is contained in this record. The plaintiffs' claim of confiscation, in other respects, is supported by theories of valuation, of depreciation, of annual depreciation expense, of going value, and of the proper rate of return identical with those urged in the present case. In respect to the countervailing theories upon these subjects urged by the defendants in the respective cases, there is a marked difference.

As a practical matter the decision of this Court not only upon matters of law, but also of fact, will be followed and applied in the telephone cases in Michigan. It is therefore a matter of importance to the State of Michigan to prevent precedents adverse to our contentions on both matters of law and fact from being established by the decision and opinion in the present case. To sustain the contentions of the plaintiff will, regardless of legal theory, have the practical effect of repudiating all claims inconsistent therewith, whether or not they have been actually litigated here. On the other hand, a similar result might likewise be accomplished if, in sustaining some of the defendant's contentions, a limitation upon what the public could justly claim should appear to be imposed. A greater degree of confiscation is claimed in respect to the Michigan case; and the application of accountancy principles which, in the Chicago case, would avoid the charge of confiscation, might not be broad enough to have a like effect in the Michigan controversy. This is especially true in respect to the subjects of the separation of properties as between interstate and intrastate uses, fair value, depreciation expense, going value, and the rate of return.

The approach which we make to the problems involved is distinctive. We therefore submit to the Court a statement of the general principles for which we contend, to the end that, should any of them seem to possess merit in any degree, they may find such application and be subject to such further investigation as they may merit.

I.

THE MEASURE OF PROFIT

1. Bookkeeping Liquidations of Net Income Not to be Identified with Profit.

Two main reasons exist why the bookkeeping records depended upon by the company to show profits fail of this purpose. First, the records themselves are not calculated to show all of the increase in wealth proper to the enterprise, and, secondly, the subsidiary entries composing the record, except for the statement of cash receipts and disbursements, consist of liquidations and valuations which are matters of opinion rather than of fact.

The net income shown by books is to be distinguished from profit. Gain in wealth is not solely accomplished by the realization of profits on sales; and to deduct the expense from the annual gross revenues is only to arrive at the net income, which is to be distinguished from profit. Apart from sales at a profit, increase may be secured in the form of capital gains. The stock of capital goods may, during the accounting period, have become enlarged. Inventories may have been greatly increased. Investments may have appreciated. Such elements of gain, the consideration of which is necessary in the ascertainments of profits, are excluded by a regard solely for gains realized through current revenues.

Moreover, the very statement of net income itself as shown by the books is always subject to revision. While the receipts are known, the expenses are not. The latter element represents value consumption at cost during the accounting period, and it includes many items not of fact but of opinion. Disbursements made for services or goods completely used up during the accounting period are unquestionably expenses thereof, but many disbursements charged to current expense have a more general effect. The value consumption of previously acquired capital goods is always difficult to estimate. Whether certain expenditures are to be charged wholly to expense, and how much of past expenditures shall be considered as expense, present problems which are not at all settled by the bookkeeping entries.

2. The Test of Profit.

The complete outcome of an investment is not indicated by the amount of revenues received during an accounting period, less the more or less arbitrary liquidations of expense. Until the enterprise is completely liquidated, it is impossible to determine, in an absolutely definite sense, the amount of profit. At that time, all of the wealth at any time contained within the enterprise has rendered up its benefits in terms of money income. The total gross income then is all-inclusive; and it is only necessary, in order to ascertain profits, to deduct therefrom the outlays of money or moneys' worth which have, in fact, been committed to the enterprise. The difference between income and outlay, when the former exceeds the latter, is profit. In the sense here used, "income" has a somewhat different meaning from that usually given to it in accountancy parlance. It comprises what has been rendered up by the enterprise to its owners. "Outlay", as here used, means the amount of wealth contributed to the enterprise by its proprietors. It is what they have invested as a matter of fact as distinguished from subsequent revaluations of what the proprietary interest may be worth.

When it is desired to measure profit earned in an enterprise at any time before liquidation, difficulties are at once encountered. The enterprise has rendered money to its proprietors, but still retains, locked within it, wealth in the form of property, the value of which is necessarily indefinite. Nevertheless, in order to calculate profit this value must be arrived at and applied like a liquidating figure. A calculation of profit to date in a going business is necessarily tentative, for while past outlay and income are definite enough, the remaining wealth is measured by an appraisement relative to the conditions of the time.

Any bookkeeping liquidation of profits implicitly makes an assumption concerning the value of the remaining assets. If I engage in the drayage business with a truck costing me $1,000 and I find myself at the end of the year with my truck and $500 in hand, I cannot compute my profit unless I make an estimate of what the truck may be worth to me. Now the bookkeeper may allocate $200 of income to a reserve for depreciation. If, however, his figures are used as a measure of the depreciation expense, in effect he is revaluing the truck at $800. But, as everybody knows, the charges to the expense of depreciation and the credits to a depreciation reserve do not closely measure the actual expense of depreciation or consumption of wealth during the accounting period. They indicate a profit of $300. However, this particular truck may have received such maintenance out of revenues that its value decline may be estimated fairly at $100. The owner justly considers that he has gained a profit of $400 from the enterprise.

Profit must be measured in relation to a standard of reference. We are concerned here with measuring the increase of wealth which results to the proprietary interest in the enterprise. If it is desired to know the profit earned by an individual in his business operation, the basic starting point is his outlay—the amount of money or money's worth which he has consigned to the enterprise. Under the corporate form of ownership, the actual payment made by stockholders for their stock is not comparable to the outlays of the individual in his enterprise, since an expenditure to purchase shares of stock already issued and in the hands of a third party does not constitute investment in the enterprise. The outlay comparable to the individual's investment is that made to the corporation upon the original issuance of its stock. The gains flowing to stockholders over and above the amount of the sums committed to the enterprise are profits.

Bondholders and other creditors are not ordinarily to be considered as holders of a proprietary interest. In the absence of special circumstances, their contributions of wealth made to the enterprise have an ascertainable cost in the form of interest payments which come out of the enterprise. The gains over this cost, earned through the conduct of business, inure to the stockholders. The liabilities of the enterprise to such creditors simply diminishes the equity of stockholders in the existing assets. However, the reality as a cost of interest payments between related corporations is open to scrutiny. What may seem to be a cost of the payer may contain profit to the receiver.

It may be desirable to determine profits earned within a time more limited than from the inception of the business; and to do so, it will be necessary to take as a basis the proprietary value of the enterprise at the desired starting point. If gains realized in the remote past were to be considered as immaterial in a determination of reasonable profits for present purposes, it is only necessary to move up the time point of reference. Suppose, for example, that the profit earned since 1910 should alone be considered as material. In the first place, it will become necessary to measure the value of the proprietary interest at that date; and this would be the value of the assets in the enterprise less its liabilities,—in short, the value of the stockholders' equity. Next, the amount of profit subsequently earned may be ascertained by adding together the dividends received and the present value of the stockholders' equity, and deducting therefrom the initial value.

In a study of profit earned by the proprietorship over a period of time, it is necessary to express the increase in terms of a uniform annual rate.

For purposes of calculation, a rate of profit is identical with a rate of interest; and since it is necessary to consider gain upon gain, it is the compound rate which is material. Increase which is not withdrawn obviously stays in the business and presumably makes its contribution to the production of future increase and income. The most familiar period for compounding is annual; but we may reckon interest as compounded for smaller periods, or even continuously; and it is therefore a necessary part of the rate to state the period of compounding. Thus a rate of profit of 6 per cent will have different meanings depending upon whether compounding is annual, quarterly, a still smaller period, or continuously. The following tabulation will indicate rates at continuous compounding for one year equivalent to the nominal rate:

CONTINUOUS COMPOUNDING RATE	EQUIVALENT ANNUAL RATE
5.827%	6%
6.766%	7%
7.696%	8%

It is worthy of note that an annual rate of profit in relation to the average assets throughout the year is approximately equivalent to a rate of profit reckoned continuously. If, for example, an 8 per cent rate of profit is desired, it is obtained by a rate of 7.7% in relation to the average assets.

A distinction should be taken between a rate of productivity and the rate of profit with which we are concerned. The rate of profit upon one's outlay or upon the value of one's interest as proprietor is something different from the rate of productivity or increase of wealth under one's control. A high rate of profit may be made by means of a relatively low rate of productivity. The investor or the enterprise may have command over considerable wealth by borrowing at low rates, and may thus be in a position to reap a high rate of profit relative to the actual investment outlay, or the value of the proprietary interest. The ability of a business to obtain the use of money and property at low cost is an important factor in its profit-making power.

We are now in a position to make a general comment upon the evidence offered by the company concerning Western Electric Company profits as contained in Exhibits A-77 to A-84 inclusive, submitted by Mr. Gregory. Putting aside for the moment the validity of the profit figures, we may note that in A-77 profit is related to average investment; and average investment is the cost of plant, merchandise, receivables, and cash, less accounts payable, which, on the average, existed during the accounting period. All of these items, including that of profit, are the result of allocations between Bell and non-Bell business, and the validity of these allocations will be passed for the moment. The defect which we now point out goes to the base to which profit is referred. This base purports to be, subject to the deduction of accounts payable, a kind of value of all existing assets over which the enterprise has control. It is not entirely clear why accounts payable should be deducted. The result is, in a general way, to afford an index of the average productive power of the assets in the business; and that is all. This index is only useful as a kind of control figure, which the management may watch. Taken by itself it is not at all significant as a rate of profit, and it is extremely unfortunate that it should be confused therewith. For purposes of management control it is of no great significance whether or not the accounts payable are excluded or included, or whether depreciation is or is not deducted, or whether accounts receivable are or are not lumped with the productive assets. It is only necessary that a certain system be followed consistently over a number of years so that comparisons may be made.

There is little point to argument concerning what items should properly comprise the base of "average investment" as the term is used by the company's witnesses. It is impossible to test the reasonableness of any rate of profit made in relation to such a base, except by ascertaining its remunerative character. The percentage relationship of profit to the average investment base so computed is not the index of remuneration. A low rate of profit so computed might result in very handsome remuneration, depending upon what needs to be paid in the way of interest charges for the use of assets which may be made to cluster about an actual outlay or investment in a business. In short, a low earning power of all assets generally, less payables, is not inconsistent with a rate of profit upon proprietorship which a court may deem unreasonably high. It should also be observed that to average all assets, including the profit itself, and to derive a rate of profit in relation thereto, is to approximate a rate at continuous compounding.

Obviously, the important consideration is to determine what must be charged for output in order that the enterprise may meet its costs and afford a sufficient remuneration to proprietorship. The company should have directed its showing of profits to this object. The reasonableness of profits involves a consideration of their compensatory character, and this cannot be determined except by indicating concretely what the gains are to the proprietary interest. The court may then exercise judgment as to whether the interest represented thereby is being fairly treated. But to draw the inference of yearly reasonable profits to the proprietary interest from a rate of profit for average assets, less accounts payable, is to assume to know in advance a standard of reasonableness, for the increase of wealth. Such a standard has not yet been discovered.

II.

MAJOR ELEMENTS OF ERROR IN COMPANY'S CALCULATIONS OF WESTERN ELECTRIC PROFITS.

We have pointed out that the company's profit calculations have too narrow a scope for the purpose. We shall now indicate certain arbitrary assumptions contained in the figures themselves which vitiate the conclusions.

1. Allocations Between Bell and Non-Bell Business.

The division of assets, expense, and profits, as between Bell and non-Bell business as carried out on the company's books is entirely arbitrary. In order to demonstrate the inaccuracy thereof, we consider it advisable to expound what we regard as a sound theory of cost and profit distribution as between the several activities of an essentially unit enterprise. This subject requires a separate and extensive treatment, which will be presently set forth.

2. Overstatement of Expense and Understatement of Capital Gains by Excessive Depreciation Expense Charges.

The charges to the expense of depreciation are based upon a special application of the straight line formula. As is well known, this formula does not result in even a substantially accurate determination of value loss, and consequently when used as a term in the calculation of profits it produces results wide of the mark. The subject of depreciation will likewise be made a matter of extensive consideration in this brief. No particular accounting formula can possibly be an accurate measure of depreciation. However, if the validity of certain facts commonly taken for granted be conceded, then the bias in the straight line formula can be measured. Furthermore, the actual test of depreciation is an appraisement which will ascertain the difference in capital value as between prior and subsequent dates. In view of this consideration there is especial efficacy in determining profits by comparing what was put in with what was taken out and what remains. In these figures will be found all values remaining in the business which were accounted for as expense items but which have contributed to the enhancement, in some degree, of capital value.

The cost of small tools and fixtures is charged entirely to the expense of the year in which it is incurred. Accordingly, the actual expense for any particular year is overstated by the remaining value of such tools and fixtures at the end of the year. Taking the matter from a cumulative point of view for the purpose of computing profit over an extensive past period, the remaining value of all such tools and fixtures is an essential item bearing upon the determination of past profit.

Many tools, considerable machinery, and other items are of the company's own production. These are put upon the books at standard cost and thus include loadings for depreciation of plant. This depreciation expense loading, being transferred to the product, becomes an element to appreciate its book cost. Against it, in turn, depreciation is charged. If in general the depreciation expense charges are excessive, the result is a strongly accumulative error which can never be figured out by the use of general expense loadings. It becomes necessary to revalue all remaining goods of company manufacture in order to determine what wealth they represent.

3. Inventory Revaluations.

The book profit of any one year may be made to vary markedly by the method of inventory revaluations at the end of each year. In Western Electric Company, Incorporated, the inventory figures at any time are quite large; for example, for 1929 they averaged $95,940,000 and for 1930 $86,678,000. Obviously, the method of valuing the inventories will greatly affect the measure of profit as shown by the books. It is practically impossible to check past inventory revaluations since the goods are not available to be appraised. However, under the methods which we propose here it is only necessary to get at the wealth represented by the remaining inventory at the end of the study period. If in the past a consistent method of inventory revaluations has been followed, errors would tend to become compensating for a like amount of property. But the amount of the inventory has not been stable. The average inventory has increased upon the company's basis from $33,000,000 in 1916 to $96,000,000 in 1929. The essential question in this regard is how much wealth is represented by the merchandise inventories at the conclusion of our study period.

4. Development Expense.

Development expense always regards economics and profits of the future. Only a trifling amount of development expense goes to enhance the value of output in the year in which such expense is incurred. Development is progressive. Research consistently carried on at considerable expense eventually culminates in discovery. The discovery applied in the arts produces profit actually realized in income as products embodying the development are marketed. To charge development expense as a current expense is, in effect, to conceal profit. The history of the business conclusively shows that plowing and sowing by way of development eventually raises abundant crops. In any computation of profits it becomes necessary to evaluate the wealth represented by unexpired developments and development work in progress. In Western Electric Company, Incorporated, the so-called development expense for the year 1930 was $14,000,000; for the year 1921 it was $11,000,000. Unquestionably the cumulative expenditure of many millions for development over a period of years will produce at the conclusion of our study period existing patents, processes, and projects of very substantial value. This value will eventually be realized by and through products which will be marketed in the future. Developments in the field of sound and visual transmission may permit, if past experience is any indication, the accumulation of tremendous profits which may be classified as non-Bell. The cost of the basic developments upon which the commercial application is superimposed is borne as a part of the Bell business. The point here made is applicable not only to Western Electric Company but to the Department of Development and Research in the American Company and to Bell Telephone Laboratories.

5. Employees' Pensions and Benefits.

The expense of employee's pensions, disability and death benefits, presents a problem of some difficulty. Our discussion at this point will refer to Western Electric Company as typical. The complicating feature in the determination of this expense arises out of the fact that a so-called fund in the hands of a trustee is created and maintained. The creation and maintenance of this fund is, in reality, a fiction amounting only to a bookkeeping transaction. The trustee is required to accept the direction of the company concerning the investment of the fund, and the company directs him to lend it to Western Electric Company upon the latter's notes at 5½ per cent interest per annum.

The company seeks to justify charges to expense measured by the amount of principal contributions to the pension fund upon the theory that a fund accumulating at 4 per cent compounded semi-annually will at any time have a magnitude equal to the present worth of all benefits prospectively payable, if the amount of such benefits, when paid, be discounted at the same rate. Briefly stated, the rate of 4 per cent compounded semi-annually is arbitrarily taken as a valuation factor to measure what the contributions to the fund should be and what its amount should be at any time.

Why select a 4 percent rate at semi-annual compounding (equivalent to 4.04% annually)? Nothing other than habit, convention and analogy dictates this selection. (See testimony of Arthur Hunter.) There is no explanation whatever of the true function performed by a rate of interest and hence no proof in support of it, other than the analogy of customary actuarial calculations, which are totally without significance with respect to the case in hand.

Disregarding the fiction of the fund and the trustee, the Western Electric Company is seen merely to undertake to pay the pensions and benefits which are described. The actual cost to the company consists in the disbursements made to beneficiaries and to pensioners. The question to be here considered is, what is the equitable distribution of this cost to the several accounting periods.

The determination of such an equitable distribution is necessary because the actual disbursements are not equal annual amounts and ought not to be chargeable exclusively as expenses of the accounting period in which they occur. The distribution of unequal expenses will be later treated in some detail in connection with our exposition of depreciation.

At this point, however, we may state the result without the elaborate probative detail. The assets to cover such anticipated disbursements are kept invested in the business. We may call the amount thereof the employees' equity for purposes of calculation. The wealth represented by the interest of the owners and the provision for employees earns at a certain rate, and when the earnings are left in the business the increase proceeds by compounding. What is the rate of profit as to the combined equity of the owners and employees? This rate, applied instead of 4.04 per cent, as done by the company, will measure the amount of assets at any time which should on the books be allocated to the reserve for pensions. This reserve balance remains in the business and earns profit. To credit the pension fund merely with interest at some arbitrary figure, as, for example, 5½ per cent, the rate which Western pays upon its borrowings from the pension fund, is simply to fix arbitrarily upon a rate of earning power for a certain proportion of assets devoted to the business.

The proper factor to use to distribute the pension fund expense and to ascertain the reserve requirement, is the rate of profit being earned upon the equity of the owners, plus that of the beneficiaries and pensioners. The reserve requirement is the present worth of the pension and benefit liabilities, at the rate of profit.

We have already indicated that the company's exhibits are calculated to show not the actual profits and the actual rate of profit on investments or on the value of the proprietary interest, but rather the rate of merely book profit related to average assets less current payables. Entering into the operating expenses are the principal contributions to the pension fund, too high because of the use of a rate of interest lower than the rate of profit. Entering into the average assets is the cost of such goods paid for out of borrowings from the pension fund. Diminishing the profit and swelling the asset base, make a high rate of profit look like a small one. Interest payments to the pension fund are excluded from consideration in the exhibits. Even if the fiction of borrowing and paying interest is followed, the rate of profit on the owner's equity is increased whenever the use of assets may be had at rates below the rate of earning. But the principal and interest payments are form and not substance. The benefits are paid out of the business, and any money's worth of assets nominally allocated in the books as provision to meet them gains compound accretion in value according to the actual rate of earning.

If an insurance company calculates its reserve requirement upon a 3 or 3½ per cent basis, it does so out of conservatism with regard to the character of its investments. It allocates an amount to the reserve which is clearly sufficient for the purpose, and what it has left over and above this amount may clearly be considered its surplus or profit. Its investments are supposedly conservative and their average earning power might not tremendously exceed the factor used in calculating the requirement for reserves. As applied to an actual business having higher earning power where the liability is assumed by the enterprise and not through insurance separately carried, the factor for distributing the benefit and pension disbursements as expense over the various accounting periods must be the actual rate of earning and not some assumed and imaginary safe rate of compounding.

A serious question may be raised as to whether the experience up to 1931 relative to continuance in employment is a safe basis upon which to ascertain prospective liability for benefit and pension funds. Such figures cannot include consideration of the major recession of business which reached its low point in the early part of 1933. It is safe to say that the number of employees prospectively eligible for benefits and pensions has greatly declined, in comparison with the figures used by Mr. Hunter.

6. Exclusion of Investments, Profits in Subsidiaries, and Profits Derived by Special Contracts.

The formation of separate corporations for the purpose of exploiting commercial opportunities in fields apart from the Bell System makes it possible to present the appearance of profit realized in such businesses wholly exclusive of dependence upon the Bell System. But if, in fact, the commercial possibilities exploited through subsidiaries and through activities apparently non-Bell, exist only through the inextricably intermingled activities of an essentially unit business, then the gains allocated to investments merely through the forms of separate organization and of accounting are subject to revision and re-allocation. Every activity dominated by the American Telephone and Telegraph Company is financed out of a common pot. The American Company has made not merely telephony but the entire field of wire and wireless, sound, and visual transmission a subject of research and commercial exploitation, not only through offering communication services directly, but also through the manufacturing and selling of various appliances, the acquisition of patents and the licensing of their use. Developments of use in non-Bell fields arise out of researches in the general field. Before application of a scientific principle can be made, the principle itself must be discovered; and when such research, conducted ostensibly to foster the telephone business, forms the basis of non-telephonic developments, it cannot be said that the latter have an economic standing wholly independent of that business whose financial power and unity of purpose brought them forth. To credit the profits made from these developments to non-Bell activities is to fail to account for the value of services produced by and through the telephone business. To charge to the development merely certain costs accrued after the project became recognized as commercial as distinct from telephonic is, in effect, to shunt the cream into a separate reservoir without considering the fact that the ultimate revenue derived is in reality a joint product of the business as a whole, primarily existing for, and supported by, subscribers for telephone service.

In the brief presented below by the appellants, elaborate studies were made showing, in definite arithmetic, the fact that the major expenditures for development seemed to have first and primary application with the Long Lines department of the American Telephone and Telegraph Company and with Western Electric as the manufacturing department. It was pointed out in illuminating detail that though the costs were ultimately charged against the local telephone subscriber in large degree, the benefits were realized in the form of disproportionate profits through Western Electric and through the Long Lines. Since we anticipate that this subject will be fully detailed in the appellant's brief, we refrain from repeating it here. Moreover, our object is primarily to urge principles for interpreting the facts, rather than the detail of the facts themselves. We shall therefore principally expound the manner in which we contend by-product or joint product revenues should be accounted for. Such revenues, taken together with the Bell receipts, are all-inclusive. They include not merely the dividends paid by subsidiaries to the parent corporation, but the actual gains realized in income or through capital value appreciation in the subsidiaries. There are other methods of drawing out profits and classifying them as non-Bell or non-operating, besides the device of realizing gains in subsidiaries. Among those are sales of companies and of assets, and the making of contracts and licensing agreements which, since they provide for future revenues, have a value which should properly be capitalized. Indeed, such items must be carefully scrutinized and valued before any determination of profits may be had.

We shall cite as typical two examples out of many. The first is the $4,000,000 payment known as the Automatic transaction (X-360, X-361); the second is the leasing agreements for Western Electric sound equipment between Electrical Research Products, Incorporated, and theaters.

The Automatic transaction, consisting of payments to aggregate $4,000,000 by 1936, is in effect a rebate to this extent of the prices which Automatic charges Western for goods which Western purchases of it. The company explains this transaction as compensation for Western's releasing an option to buy out Automatic. But the basis of any transaction between the two companies, including the option itself, consists in the fact that the companies have maintained commercial relationships founded upon the supplying of equipment to the Bell System. Indeed, it appears that Automatic has patents and manufacturing facilities of use to the Bell System. The transaction, reduced to simplest terms, is that Western gives Automatic business, paying therefor certain prices, and Automatic rebates $4,000,000, not directly but to a wholly owned subsidiary. But regardless of this fact, the $4,000,000 of revenue arises as a product or by-product of the telephone business. It is not sensible to say that this receipt or any other single item of revenue is achieved by means of a speculative stroke wholly apart from the business in general. Any successful enterprise tends to develop advantages apart from the mere sale of its products. Any special investment opportunity which may arise is necessarily reached from the foundation of the enterprise itself and is just as much a part of the gains flowing to the enterprise as is the revenue realized from marketing the primary product. Now, instead of attempting to distinguish by meticulous argument how much of each particular transaction is Bell or non-Bell in nature; it is necessary to lump together the total value of all of the assets in the enterprise including all investments in subsidiaries, or in stocks, bonds and real estate, and all deferred revenue items incorporated or represented by contracts and licenses, and also the value of all completed development projects in the form of patents and all projects in work. It will be found that without carrying these valuations to completion, or changing minimum valuations upon the items of somewhat indefinite value, the profits realized in the Bell System and the gains properly to be allocated to any single company are of such magnitude that regulations like those of Illinois or of Michigan are fully absolved of the charge of being confiscatory.

In a like manner it should be noticed that Western Electric sound equipment for use in the motion picture theater business is leased under ten-year installment contracts to the theaters. The gains to be realized, produced fundamentally from developments appertaining to the Bell System business, are not shown in any computation of profits produced by the company. The showing of Electrical Research Products', Incorporated, profits is limited to that derived from income actually realized. But a capital gain of immense significance is acquired upon the making of each contract. The expected income from such contracts may even be heavily discounted in the process of capitalizing it, on account of possible risks of non-realization, and still the capital gains thus revealed will have a substantial effect in a calculation of profits.

The foregoing six points indicate generally the insufficiency of the company's showing concerning profits, specifically Western Electric Company's profits. Profits must of necessity be measured through a purview which shall be inclusive of all gains, regardless of the activity in which they are apparently accrued, and of the form in which they exist, be they income or capital gains. It will be unnecessary for our purposes to enter into any detailed analysis of the claims made by the company concerning the costs of rendering the license contract services. The principles to be applied in ascertaining profits will dispose of such claims. The major problem in determining the cost of conducting the Bell business lies in ascertaining the method under which costs or property values are to be divided between, say, the Associated Companies on the one hand and the American Company on the other, or between Bell and non-Bell activities. This problem is created because services of persons and of property have a common or intermingled reference to both activities. We are profoundly persuaded that the attempts to allocate the cost or value of such services between different uses made in this case are entirely erroneous. We believe further that there is a common principle for the distribution of costs or values between uses which will have application to all aspects of the problem, including that of dividing the value of property between interstate and intrastate uses. We desire, therefore, to show the nature of the problem itself, the fallacies which are encountered when an attempt is made to split joint costs or the value of jointly used property upon the basis of a physical standard of measurement like, for example, time of use; and finally, that the true principle of cost or value distribution must ultimately depend upon the value of the benefits derived out of each of the joint activities, and that this value of service basis for such allocations may be discovered and applied consistently with legal principles of fair value and rate determination, a proposition which in the past has engendered some doubt.

III.

THE APPORTIONMENT OF COSTS AND VALUES BETWEEN JOINT USES.

1. The Business Here Under Consideration an Example of Joint Production at Common Costs.

The business of the American Telephone & Telegraph Company is concerned with exploiting the commercial opportunities for sound and visual transmission. Primarily engaged in communication by telephone, the enterprise includes besides telephone operating companies, a manufacturing department, selling organizations to market various commercial products, and a research department. The business is so integrated that its subdivisions are only the necessary functioning parts of a whole. The financial resources of the entire business are available to any department at the discretion of a central management. The same management likewise determines the scope and extent of development study and whether commercial opportunities shall be exploited.

A large part of the total cost of doing business in this enterprise is incurred for the services of persons and goods which will have distributive effect upon the business in general through its various activities. Indeed, all of the various classes of output of the business regarded as a unit, whether telephone service, manufactured goods, the rental of talking picture apparatus to theaters, and so on to every product, have a substantial element of common cost. The community thus existing may be likened to a tree and its branches, in which the trunk sustains the branches, twigs, and leaves, and through them is in turn reciprocally nurtured.

In a word, the business here under consideration in all of its phases is subject to the condition and circumstance of joint production. We use this term in a broad sense without narrow limitation upon its meaning. It has been restricted to apply to cases in which the production of a certain commodity is necessarily or practically accompanied by output of companion products, like cotton and cotton seed, meat and hides, gas and coke, etc. Such a fine distinction and definition is not of importance for our purposes, and we may apply the term to the case here emphasized in which costs have a distributed effect over several products.

2. Joint Production Determined by Value Difference in the Unit of Output.

The problem of distributing a common cost will arise whenever there is economic distinction in the units of output. Such distinction is not excluded by physical identity. For example, kilowatts of electrical energy, though physically identical, may have different uses and therefore sell at different prices. They are thus subject to classification as if different in nature. Of course, the difference is economic, and it is evidenced by a difference in selling price, that is, value difference to the customer. Upon reflection it will be seen that value differences in output having a common source represents the general rule. It is indeed a rare case in which all of the output consistently sells at the same price per unit. The railroad business will present striking differences in the value of transportation, depending upon what is being transported and the economic value of the transportation service. And the same is true of the telephone business.

In the same way, a facility common to the production of intrastate and interstate services may be regarded as a source of joint products. The types of services so classified may be of different economic value, unless, indeed, a consistently administered policy of regulation fixes an identical price per unit of service. The telephone business, which is not, and cannot be made, subject to regulation providing a uniform price per unit of service, represents an excellent example in which intrastate and interstate services are jointly produced by the same facilities and constitute distinctive output because use, application, and value are different.

3. Scope and Usefulness of Correct Principle of Cost Distribution.

A valid general principle for distributing common costs to joint products will have far-reaching application to the numerous problems involved in this case. It will serve to divide and to apportion the general development costs, common manufacturing costs, and the common cost of management supervision, as well as to make apportionments in the value of property as between interstate and intrastate uses. It will likewise serve to apportion the value of property used in common for exchange and toll purposes. However, it may be said at the outset that a demand for the kind of division conventionally sought cannot be satisfied, and it is a part of the solution which we here propound to demonstrate that this demand is totally incapable of fulfillment.

4. Criticism of Prevalent Ideas of Cost.

The conventional approach to this subject, which, we may add, has achieved absolutely nothing by way of solution[1], is grounded upon a verbal formula. It imagines that what may be expressed in words has an objective existence. We may talk glibly and with assurance concerning the cost of rendering a particular service, but if the verbal expression or mental concept does not correspond to anything in reality, the talk is futile and its syllogistic results are empty. Let us examine the nature and meaning of cost for a moment.

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[1] "Every attempt to figure out the total expenses of a given item of traffic, or a given group of items has failed."—F. W. Taussig, "The Theory of Railroad Rates Once More," 47 Quart. Jour. Ec. 337 (1933).

Cost is a word of loose definition having extensive reference depending upon the context. The common knowledge and understanding of its meaning are founded upon the simple transactions of barter and sale which comprise everyday experience. Ordinarily, items are separately bought for a definite price; and what one pays or sacrifices for an article is termed its cost. An article for retail sale will usually have a price tag upon it, which represents the cost to the purchaser. The purchaser naively assumes that somewhat similar price tags extend back through the course of production, and that the article has a separable cost to the retailer, and in turn has a separable cost to the wholesaler or producer. He assumes that the article, as made available to him, or each element comprising it, has a distinct, separate cost.

The condition of simplicity in which a sacrifice finds a defined and liquidated relationship to the object is relatively infrequent. The retailer's costs are not limited to what he has to pay directly for his goods; and to ask him for a complete statement of what a particular item of merchandise costs him is, if he interprets the question as not limited merely to what the purchase price of the article was to him, to pose a conundrum. In order to place a particular item on his shelves for sale, the retailer has made numerous sacrifices, most of which were incurred for all goods in common. For example, he has rented and equipped a shop, he has developed and nurtured a trade, expended money for advertising, maintained a proper staff throughout periods of good and bad business, incurred general expenses for the purpose of keeping his buyers and managers informed of market and trade conditions, and he has stocked his shop with a variety of merchandise so as to facilitate the sale of any one item. To ask the question, therefore, as to what the item costs, meaning to include all of the sacrifices of money or money's worth made to render the article deliverable to the customer, is to demand the production of something which does not exist in the form sought. There is no objectively occuring or existing cost having complete and exclusive reference to the object. We cannot ascertain what was paid to render it in salable condition for the very obvious reason that substantial payments were made for services in gross which have a general effect upon this and presumably all other items.

It then becomes a matter of accountancy art to make an apportionment of such general costs and to propound a figure which may, for accounting purposes, be taken as the cost of any single item. The figure thus propounded is not a real cost. It is not, as a matter of fact and event, the actual measure of the sacrifice made for the object. It embodies a distribution of composite costs, the validity of which must be justified by some principle of distribution as will stamp it as fair for the purpose used.

5. Example of Common Cost Distribution to Joint Products.

We shall now turn to a simple example of joint production, selected to involve the joint production of numerous items identically the same but subject to some economic differences. The example provides illustration of complicated facts under most simple conditions.

A concern engaged in the business of court reporting has the opportunity to sell transcripts of certain proceedings. We shall assume that the labor cost will be $100, whether one or ten transcripts are made; and that the material cost will be $1 per copy. Each of the two parties will purchase a transcript at $50. Eight others, having a minor interest in the case will spend $5 each for a copy. Upon this basis the reporters are willing to undertake the work, because there is visible a profit of $30, since the total revenue will be $140, at a total cost of $110. A proportion of this cost and profit is allocated to each of the customers.

It is simple enough to compute the average cost of each transcript at $11. However, it is erroneous to allocate the sum of $11 as the expense of each. To do so is to assume that each customer has received an equal worth of service. As we have indicated, it does not follow that because each transcript is physically identical, its value as a service is also identical. If each transcript were to bear a cost burden of $11, the reporters will appear to lose $6 each on the customers who purchase the $5 copies. If they depended upon such figures, they would be misled. The process of averaging in this case simply eliminates the distinctive elements which themselves are the bases for the solution of the allocation problem.

Another view, equally erroneous, is that since the major purpose of the work was to furnish each of the parties with a transcript, the other eight are really by-products. Since the extra cost of making the other eight is only $1 each, under this view, it would be said that the expense chargeable to the by-products is only this amount. But it would then appear that a loss of $1 each is incurred on the $50 customers, while a profit of $4 each is made on those who buy the other eight. The idea that by-product revenues are gratuitous windfalls and should bear no expense burden is wholly untenable.

In accounting for the cost of the transcripts, and in tracing the same into the expense chargeable to each, it is obvious that in each case the expenditure for material is a direct service to the product. Only the joint service, that is to say, the labor expense, which has gone over into the product needs to be apportioned. Traceable to the labor, there is a total income of $130, of which 49 parts are allocable to each of the $50 customers, and 4 parts to each of the $5 customers. Therefore 49/130 of the total labor cost must be allocated to each of the transcripts sold to the parties, and 4/130 to each of the others. As a result, $37.69 represents the portion of common expense allocable in respect to each of the two major transcripts, whereas but $3.08 are assignable as such expense to the others.

It will be obvious that in the foregoing example the joint expense is allocated in accordance with the appreciation which it causes in the product. This is indeed the value of the services procured by such joint expense. Suppose that a certain commodity when delivered to a distant point is enhanced in value by, say, $100 because the buyer is willing to pay the nominal transportation charge amounting to $100. Now suppose that upon the truck carrying the primary article another box of equal weight and dimensions can be loaded, the value of which will be enhanced at the point of delivery by only $10. The same truck hire of $100 will serve to carry both. The $100 of expense is a joint service to both commodities and it appreciates their value by $110. The appreciation of the primary article is 10/11 of the total; that of the second article is 1/11 of the total. Therefore, the joint expense of $100 is to be allocated in the same proportion. As a result, the transportation expense applicable to the primary item is $91.91 and that applicable to the secondary item is $9.09.

Allocations of joint expense in accordance with the value of the service must be distinguished from the gross revenue method. The value of the service does not refer to the selling price of the commodity worked upon, but rather to the appreciation in value caused by the joint expense. A still greater appreciation in each commodity may be caused by the services of separate or direct expenses. In the absence of any direct expense, the joint expense will obviously be apportioned in accordance with the value of the product.

Let us examine the example of the transcripts from the profit aspect.

In the first place, we may note the special advantage which constituted the source of the profit. It consisted in having the labor opportunity; and this advantage was worth $30. No special profit opportunity lay in having the paper; it inhered in having the job. Now the profit opportunity relates to the entire project, and it gets its force and value from the demands of the ten customers as a whole. The demand of any one customer without that of the other nine has no significance. In essential aspect, the opportunity may be described as that of getting $130 at a labor cost of $100. The labor services permeate all the products compositely. It is not the case that so many units are expended upon one transcript and so many upon another, for each unit of labor, or dollar's worth of service, extends to all. It is therefore fair to say that each dollar sacrificed for labor was equally effective in procuring the benefit. In short, each dollar of cost may be correlated with $1.30 of income. The profit is therefore 30 per cent upon the cost, and this is equivalent to 23.08 per cent upon the income. An appropriate disposition of each income-dollar is 23.08 per cent to profit, and 76.92 per cent to cost recoupment. Accordingly, we may conclude that, where it appears that the income is a composite result of a certain cost, it follows that to each dollar of cost an equal profit making potency must be accorded.

6. Relation Between Cost and Price.

A necessary interdependence exists between the price actually or properly to be charged for the product and the distribution of costs, so that as a result each dollar's worth of property jointly used or each dollar of joint expense will have the same profit-making power. As we have seen, the cost apportionment is not in accordance with the gross revenues or the selling price of the products, since compensation for the direct costs which may exist in any magnitude will be included in the price, and will cause individual variation. The remaining income after compensation for direct services has been deducted is alone attributable to the joint production. In order to apportion common costs, it is necessary to know in advance at least the relative contribution of each product to the total requirement for joint cost compensation. How, then, is the division herein suggested and the principle upon which it is based of any help in the regulation of public utility rates?

The assumption is frequently made that a fair price for a particular service must necessarily be determined by first finding the cost thereof. The proposition that cost ascertainment is a logically necessary premise to price determination in public utility rates is utterly fallacious. It must be conceded that no independent cost exists and that a general cost must be divided according to some standard. It is thought that a common physical unit may be found—a unit of use—which will serve as a basis for dividing the common costs, so that from the division thus made there may be inferred the minimum income requirement per unit of service. Unfortunately this procedure does not logically advance the course of thought. *It contains the underlying assumption that each such identical physical unit of service must, as a minimum proposition, command the same income.* Thus the very reasoning leads into the pit which it was designed to avoid. The rule of cost distribution advocated is simultaneously a doctrine of price regulation. It says plainly and necessarily that unless there is at least compensation per unit of service in all activities equal to the minimum standard, then the rate below this standard is confiscatory. As applied to the example of the transcripts such a rule necessarily makes each cost $11.

The proper relationship between cost and price in a regulated business may now be stated. In respect to jointly used facilities there exists no separate cost of each use, and there likewise exists no separate cost for each unit of use no matter to what extent the refinement of units may be carried. The general cost, however, is a positive fact, and the object of that cost is the total output. Remuneration for the cost must be found in the total output; and this statement exhausts the usefulness of determining price from cost in this instance. We are enabled, therefore, to use such general cost only for the purpose of imposing a limit upon the total price which may be demanded, that is, as a basis for limiting total revenues. In the same way it may also be said that each service must afford compensation for its direct costs and make at least a substantial contribution toward providing compensation for common costs.

7. Importance of Relative Value of Different Services Obtained at a Common Cost.

Having thus exhausted the efficacy of cost in rate determination, it becomes necessary to seek for another and different factor upon the basis of which the precise contribution of each service toward making up the total income requirement may be established. This factor, referred to as the relative value of the service, is the result of interaction between the facts of demand and the conditions of supply, and is not ordinarly susceptible to exact calculation. Experience and practice will offer better precepts in the composition of a differential rate structure than theory and mathematical formula. General principles, however, may be indicated. The interest of the utility is adequately protected if revenues as a whole are compensatory. The distribution of services should be such as will bring in the total revenue requirement and will subject the facilities to the most advantageous exploitation in the interest of the public. This is, indeed, the fundamental object of rate regulation. When due regard is had for the value of service to the customer and prices are adjusted so as to facilitate a more complete use of the facilities, compensatory revenues are secured more easily and with greater certainty and the services are distributed in the most desirable fashion from the public point of view.

8. Property Value Division Proceeds on Same Basis as Common Cost Apportionment.

The principles of allocation which we have described in connection with the distribution of expense are equally applicable to the apportionment of property values as between different classes of service. However, the division of expense in accordance with the value of its services to the products, discerned in its relative appreciating facts, is more simple because we are immediately confronted with the output, whereas the output of capital goods is extended over a considerable time period. In this time factor lies the special problems of capital value accountancy. Its complications may be perceived if there is visualized several streams of output extended in time in which the volume is subject to continuous and disproportionate fluctuations. These elements, when they exist—and their existence is the general rule rather than the exception—are to be considered in the practical applications of valuation science and in the accountancy of values by reason of different uses. But for the sake of keeping the subject in elementary terms, let us by means of an assumption concerning the facts, eliminate these special complications. Let us assume that the relative value of any time portion of the several output streams is always constant; that is to say, that the value of any one service for every accounting period bears the same relation to the value of all the services. It will then follow that the proportions indicated in the operations of a single accounting period are a perfect sample of all and the division of values made upon this basis will apportion the values of commonly used property as well as the value quantities which have passed out as expense.

It must always be remembered that the subject matter of acountancy is value quantities; and the principle of apportionment herein expounded is applicable to any value quantity no matter how it may be measured or classified. Thus an expense is simply a value quantity used up immediately, or within the current accounting period. A capital value is a value quantity applied to a stock of services, which when not perpetual, may be consumed as expense over protracted accounting periods. Nor will there be any distinction in principle between apportioning costs and dividing values. Distinctions in meaning between cost and value are irrelevant to the present subject. The division of a cost simply means the apportionment of a quantity of value measured at the cost standard. It makes no difference to the principle of apportionment what the value quantity to be divided may be. It may be measured at cost; it may be revalued on some other basis; it may be measured in terms of some arbitrary unit, like "standard cost;" or it may be expressed by an algebraic symbol. The divisions will be a certain proportion of the value quantity regardless of the latter's magnitude.

9. Comment on Judicial Decisions Concerning Property Separation and Division of Powers.

It has apparently been accepted as axiomatic in previous decisions of this court that the cost of particular services rendered by facilities engaged in common activities, for example, intrastate and interstate commerce, could be ascertained independently of the relative value of the different services. We refer to such cases as *Smyth v. Ames,* 169 U. S. 466; *Northern Pacific Railway Co. v. North Dakota,* 236 U. S. 585; *Norfolk and Western Rail-*

way Co. v Conley, 236 U. S. 605; *Minnesota Rate Cases,* 230 U. S. 352; and *Northern Pacific Railway Co. v. Department of Public Works,* 268 U. S. 39. But this court has never asserted a rule of law to govern the division of common costs between the classes of commerce or of traffic, but on the contrary has indicated that such matters are considered to be questions of fact in the particular case. *Groesbeck v. Duluth South Shore Railway Co.,* 250 U. S. 607. Because the fair value of the property may be determined independently of rates and revenues, it does not follow that subsidiary fair values can be ascertained by like methods. The summation of costs, or of present prices, can only be resolved back into the very units—separate costs or prices—which compose it. There is no escape from the proposition that the total fair value of jointly used property must be divided according to judgment as to the proper relative values of the several inherent uses. The attempt to deduce this division from a premise of refined cost analysis, as has been indicated, begs the question itself by imputing equivalence to each unit into which the property or its value is resolved. 9

In spite of the predilection to infer independent property elements correlative with apparently independent regulative authorities, in legislation and judicial decision it has become recognized that as respects railroads, interstate and intrastate transactions are so related that the government of one, in effect, involved the control of the other. *Houston, East and West Texas Railway Co. v. United States,* 234 U. S. 342 (1914). It is well established that the authority conferred upon the Interstate Commerce Commission to prescribe intrastate rates in place of those found to be unduly discriminatory against persons or localities in interstate commerce, contained in Paragraphs 3 and 4 of Section 13 of the Act to Regulate Commerce, is to be read in connection with the provisions of Section 15a authorizing the Commission to fix rates which, as a whole, will yield a fair return in view of the value of the property and the transportation needs of the country. *Railroad Commission of Wisconsin v. Chicago, Burlington & Quincy Railroad Co.*, 257 U. S. 563 (1922); *New York v. United States*, 257 U. S. 591 (1922); *Illinois Central Railroad Co. v. Public Utilities Commission*, 245 U. S. 493 (1918); *Board of Railroad Commissioners of North Dakota v. Great Northern Railway Co.*, 281 U. S. 412 (1930); *Florida v. United States*, 282 U. S. 194 (1931); *Louisiana Public Service Commission v. Texas & New Orleans Railroad Company*, 284 U. S. 125 (1931).

10. Views of Economists.

A recent article[1] points out that in the opinion of most economists, cost allocations are unsound in principle when applied as a means of determining rates. To quote therefrom:

> "Most economists are inclined to consider cost allocations as unsound in principle. Hadley stated that an apportionment of costs results in a false and arbitrary return which is worse than none at all.' Taussig said that cost allocations as a basis for fixing or criticizing railway rates were 'useless and indifferent alike for the railway manager and for the student of economics.' G. P. Watkins says: 'All costs certainly can be apportioned. But that fact of itself is no more significant than is the possibility of obtaining an arithmetical average of any fortuitous collection of numbers.' And Philip

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[1] D. Philip Locklin, "The Literature on Railway Rate Theory," 47 Quarterly Journal of Enonomics 167.

In this article will be found an exhaustive bibliography of the subject. See also Vanderblue & Burgess "Railroads," Ch. VII; Olmstead, "Do 'Cost of Transportation' Exhibits in Railroad Rate Cases Show Costs," 23 Annals of Amer. Acad. 274; R. T. Bye, "Composite Demand and Joint Supply in Relation to Public Utility Rates," 44 Quart. Jour. Ec. 40.

> Cabot, in speaking of cost allocations, says: 'They suffer from an incurable disease, namely, the attempt to divide the indivisible . . . To allocate the costs of a utility is as futile and dangerous as it would be for a butcher to allocate the cost of the different pieces into which he cuts the carcass of a cow.' "

11. Summary of Value Apportionment Between Interstate and Intrastate Uses.

Professor Cabot's comparison between allocating the costs of a utility and a butcher's apportioning the cost of the different pieces into which he cuts the carcass of a cow, is not inappropriate to illustrate the possibilities and functions of such cost acountancy. The butcher could not arrive at a price which he should charge for meat, first by apportioning the total cost of the carcass in accordance with the proportionate weight which the several parts may bear to the whole. He could not rationally assume that any pound of the meat cost him an identical sum. However, he would be entirely rational if he divided the total cost in acordance with the relative values of the parts. In the butcher's trade, it would not be at all difficult to do this. Now a proper principle of accountancy should apply as well to things so incongruous as a cow and a public utility, because the subject matter of accountancy is a quality which they possess in common—a value. The relative value of public utility service is obviously more difficult of ascertainment than that of the various cuts of meat, but these relationships in neither case are derived from cost—except for the general limiting influence of the total cost—but actually emerge as commercial facts dependent upon conditions of demand and supply such as have been explained. In the same way, to divide the value of a business jointly rendering interstate and intrastate services, is properly to regard the value gravity in respect to each activity as it is related to the whole. The apportionment is not to be made by first inquiring what each part cost, for the reason that the parts as such are not items of separate purchase. The function of cost in measuring contemporaneous values is appropriate only to ascertaining what the object of the cost was worth. Since the facility which furnishes interstate and intrastate service as joint products is entire, the total cost or value must be divided upon the basis of the relative values of the different activities. They cannot be compared in respect to their worth to any tangible objects in existence. Therefore it becomes necessary to have regard for the factors which account for the very existence of the value quantity itself. This is found in the total income which the business as a whole must have if it is going to be worth the particular sum designated as its fair value. Since we are concerned only with dividing the value of composite goods serving a common purpose, our search must be directed toward the income correlative with the value of such goods and must accordingly exclude all such income as is purely correlative with directly applied values or expenses. By charging the gross income of each separate activity with the appropriate amount of direct expense, the balance remaining will constitute the income realized in each activity from the jointly used property. This property has value only by reason of its capacity to produce income. What that income should be is measured by the requirements of compensation if direct expenses are deducted. The several uses are merely contributors to this requirement; and the income to be furnished from each use must depend upon the contribution to the whole which each use ought to make.

For the sake of definiteness, let us set up an example in figures. Suppose that the fair value is $1,000,000; the gross revenues are $100,000, equally divided between interstate and intrastate business; the direct expense, interstate, is $10,000; the direct expense, intrastate, is $15,000; the joint expense is $15,000; the following tabulation will indicate the manner of division:

	The Intrastate Business	The Interstate Business
Gross Revenues	$50,000	$50,000
Direct Expense	15,000	10,000
Income from jointly used property	35,000	40,000
Proportion of total income from jointly used property	7/15	8/15
Allocation of joint expense	7,000 (7/15 of $15,000)	8,000 (8/15 of $15,000)
Profit	28,000	32,000
Allocation of fair value	466,666.67 (7/15 of $1,000,000)	533,333.33 (8/15 of $1,000,000)
Rate of profit to fair value	6%	6%

Value apportionment between the different activities depends upon whether it is proper that, say, 7/15 of the joint income requirement should be made up out of intrastate business. To resolve this question is to determine whether it is better policy to distribute the requirement in these proportions as compared with any other tentatively selected apportionment. Some other apportionment might not be practical for the reason that the demand on the part of the public might not fall in line with the preconceived burden. Another division of the burden might not be in the best interest of the public as restricting access to the facility and allowing a portion of its capacity to go to waste. The division of the total income requirement, it is submitted, ought to be made upon such a basis, rather than upon the merely arbitrary assumption that a minute's use of the facility or a like physical quantity of energy expended is equally valuable in either activity. Unless it is clearly apparent, that, say, the intrastate business is making a contribution of a wholly disproportionate nature to the total revenue requirement, it cannot be said that the rates are confiscatory. It is difficult to conceive that conditions would ever exist in which the inadequacy of intrastate revenues were so clearly apparent. The use would have to be considerable and the margin of revenue over direct expense slight.

For purposes of expounding the general principle, we have assumed that the rate of profit to be earned upon any capital value proper to the enterprise should be the same. Some qualification to this assumption may be conceded, with the note, however, that it is probably not applicable to this case. Items of property assembled together in a business are not to be regarded as having separable earning power. They are partners in common productivity, and the community in earning power, as each supports the other, is such that to any invested dollar, the same earning power is attributed. Yet the question is one of degree. We may suggest, not without diffidence however, that special circumstances having primary reference to one branch of the business might not render all others sharers therein. Such differences of risk or advantage for or against a particular commodity or class of customers may be accounted for by and through different rates of profit. Of course such different rates, each the product of refined analysis, will equate to a single one, and this will ordinarily be most satisfactory for practical use.

12. Divided Powers to Regulate Rates Are Complementary; Confiscation Is Result of Insufficient Contribution to Total Requirement.

The allocation of governmental control over rates between state and nation cannot therefore be determined upon the basis of a mathematical formula, which without regard to the entire business and the relative values created by the several activities, cleaves the value in two. It is a pretty intellectual concept that the federal and state power should each be supreme in its domain, but it is futile to assume that property in its nature indivisible and uses related and contributory can divide in subservience to this concept. We have seen that, in respect to railroads, the power of the state to control intrastate rates has scope only if the rates are in harmonious relation with those in interstate commerce, and make an adequate contribution to the total revenues as prescribed by the national regulations. In effect, therefore, the state authority determines in the first instance the contribution which the intrastate output of service should make to total revenues, subject to the paramount power of revision by the Interstate Commerce Commission. In the communications business, a similar national power of revision has not yet been created by legislation. Restraints upon the exercise of state power must be found in the Constitution and administered by the courts.

Upon what basis can it be said that intrastate rates as a whole are confiscatory. Repudiating utterly the idea that apart from the relationship of proper rates themselves, a strictly intrastate fair value of jointly used property can be propounded, the writer submits that intrastate rates which yield a substantial sum above direct expense, sufficient to avoid condemnation as arbitrary, can be decreed to be confiscatory only on the basis of two subsidiary propositions. The first is that the income from the commonly used property as a whole is constitutionally inadequate; the second, that the confiscation be caused by the disproportionate contribution of intrastate revenues.

As has been indicated, the foregoing points could not well arise before the courts in a railroad rate case on account of the adequacy of the administrative remedy before the Interstate Commerce Commission. In telephone rate cases, owing to the hiatus in governmental control, they are invariably presented. In this latter class of case due to the special facts of the business, confiscation, if it exists, can with reason be attributed to the insufficiency of intrastate rates. It could scarcely be cured by increasing the rate on long distance communication. Indeed, such an increase would in all probability diminish rather than increase revenues. Accordingly, it is not unreasonable to assume that the revenues provided by the interstate long distance rates represent a proper contribution to total revenue requirements from this class of business. With these revenues as a fixed standard, a unit of service, as for example, a minute's use of the identical property, will have a different value in each use.[1]

Apportionment on the basis contended for here, will give recognition to this inevitable difference in the relative values of the different uses. Its practical application to actual cases will be very simple. Since the ultimate result of such apportionment is to equalize the rate of profit made in each activity—a logical sequence of joint production—the adequacy of existing rates may be tested without apportionment simply by ascertaining whether the total revenues are compensatory. By taking the enterprise as a whole and calculating the rate of profit upon its capital value earned therein, the result will indicate the rate of profit earned in any of the joint activities, provided that a substantial return over direct expense is earned in each activity. Referring to the example appearing upon page 41, it may be ascertained without apportionment that the rate of profit in the intrastate business is 6 per cent. The total revenues in both activities are $100,000 and the total expense direct and joint are $40,000 leaving a resultant profit of $60,000 or 6 per cent of the fair value of $1,000,000. If the return thus ascertained is found to be compensatory, the case based upon constitutional grounds is at an end. If, however, the total return is found to be confiscatory, it must clearly appear that the interstate rates are not responsible for that condition. If the revenues therefrom can be taken as the measure of the return from this activity, the deficiency must of necessity be made up by the intrastate rates.

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[1] The Public Service Commission of Wisconsin, in the opinion supporting an order for a state-wide investigation of telephone rates, Re Wisconsin Telephone Company, P.U.R. 1931 C 101, 108, suggested consideration of the relative value of the two services as a factor in rate-making. The Commission, however, did not follow up this suggestion in its opinion and order fixing temporary rates, dated June 30, 1932, Re Wisconsin Telephone Company, P.U.R. 1932 D, 173, 229-231.

It is not necessary to cast the divisions of governmental authority into rigid molds, each excluded from the other as by a Chinese wall. We think it better to regard the power to regulate a single business as an entirety, which has been subjected to distribution. Each phase thereof must have a proper correlation with the whole; and the result of the exercise of one power must harmonize with that of the other. Until the duty of creating this necessary harmony is lodged somewhere, the power necessarily remains distributed. What has been done for railroads in coordinating regulation by enlarging the control of the Interstate Commerce Commission over intrastate rates, has not yet been accomplished for telephone companies. Accordingly, any prescription by state authorities of compensatory requirements for intrastate traffic, impliedly involves a determination of what this traffic should contribute to a total requirement itself considered reasonable.

13. Criticism of Division According to Time of Use.

We shall briefly consider and dispose of the company's method of dividing the value of jointly used property between interstate and intrastate uses.

A division made according to time of use must rest logically upon the thought that for purposes of dividing fair value, a minute's use represents or corresponds with an equal value quantity. Stated in another way, the idea is that when constitutional requirements are in question, a minute's use is equally valuable. Any earning power attributed to a minute's use beyond this constitutional standard obtained by dividing the fair value by the figure representative of the total minutes' use is presumably due to the fact that the particular rate making authority has the power to enlarge returns to something in excess of what is merely constitutionally adequate. Upon dividing the value of the jointly used property in proportion to the division of total use between the two activities, we have, according to the claim of the company, a division corresponding to the division of regulatory power between state and nation.

There is no commercial warrant for the idea that a minute's use is equally valuable; and if it is not equally valuable, how can it be used as a divisor of *total cost or total value?* The revenue resulting from the minute's use of so-called exchange facilities for long distance purposes, after deducting the direct expense applicable to the toll lines, including a reasonable profit allowance for their use, is disproportionately large in comparison with the revenue resulting from a minute's use of the same exchange plant for an exchange message.

In exchange service the minute's use is in no sense a basis for determining the price of service to the customer or the cost of service to the company. If it were made such, the effects would be most remarkable. Lengthy conversation, which at present costs no more than brief, will be drastically curtailed, but not however without having the strange result of completely destroying the laboriously compiled allocations made by the company. As we have previously pointed out, any division of a value quantity by or into units presupposes equivalence in each unit. Equivalence of what? Obviously of worth. Equivalence of worth must of necessity manifest itself through imposing an equal burden upon the selling price of that into which the service is incorporated. The selling price of exchange telephone service has only a fortuitous relationship to time of use. A dollar each paid by different customers upon a flat rate basis, or even upon a message basis, will result in a widely different duration of use per customer. One might exhaust his dollar's worth of use in, say, a half hour. Another might indulge in many hours of conversation per day. The company claims that the time of exchange use, added together, should be compared with the brief, costly and valuable time of interstate use. This subject could be pursued into further ramifications, among which might be mentioned the distribution of use in interstate facilities between customers and between localities. To what extent are exchange customers to be regarded as sharers in each other's use of facilities for long distance communication? We believe that we have exhibited the fundamental elements of community of interest as between customers and parts of the business, so that further refinements of detail may be excused. The principle for which we contend is simple, and when fully realized the logic upon which it rests completely rebuts all inconsistent contentions.

That principle of value distribution, or accountancy in accordance with the value of services, correlative with the distributive parts is fundamental and inherent in all distributions of value quantities. Its application and validity will, we trust, be made even more apparent in our discussion of valuation and depreciation which is to follow.

14. Practical Application of Joint Cost Principle to This Case

The practical application of the principles of cost and value apportionment between different uses or activities which we expound is simple. The procedure of allocating out the direct expenses would be an onerous task, but as has been explained, this mode of approach may be circumvented by a short route which arrives at the same objective. This short route is progressed through the medium of equalizing the rate of profit. It is only necessary first to define the total and undivided receipts from the interstate business. Proper portions of this total must be allocated back to the local companies with due regard to the just distribution between them. This will proceed until the rate of profit shown for the Long Lines is at the standard for the purpose—that is, at the lowest point to avoid the charge of confiscation. The revenue apportionment thus resulting to the particular local company, added to the intrastate revenues which it receives, will represent the compensation for the use of all of its facilities. It may then be determined whether or not such revenues are confiscatory, conceding of course that confiscation, if it exists, is a result of a deficiency in intrastate revenues. This method is equivalent to allocating out a portion of the total value of jointly used property. It is, of course, taken for granted that no service is rendered at less than direct cost, an assumption quite proper in view of the evidence.

Western Electric Company, Incorporated, and its subsidiaries may, for the purposes of a tentative calculation, be regarded as a unit and the rate of profit on the stockholders' interest may be determined. This record, however, scarcely permits of such a determination because it lacks evidence of ending or liquidating capital values necessary to a proper calculation. After this profit has been discovered a standard of reasonable profit to such interest must be determined and a redistribution upon equitable terms of the selling price represented by Bell sales must be made so as to reduce the profit rate to a reasonable one. The very theory of joint production makes it possible to redistribute the relief of excess profits realized in Western Electric Company, Incorporated, in the form of a uniform percentage deduction from the purchases. We fully realize that under the method of accountancy used by the company different profit rates appear to be made on different items, and that no such thing as a representative cross-section of purchases could possibly have been made by any one company. We cannot, in this record, produce a reliable estimate of the difference which a redistribution of Western Electric Company's profits will make to the fair value of the property in any one company. The writer believes that the element, though substantial, is not that of greatest magnitude in the case. However, it must be measured upon the basis of an adequate presentation on the part of the company, and this the latter has signally failed to accomplish.

Profits realized in the American Telephone and Telegraph Company would likewise need to be determined, and the excess redistributed to the local companies. Such profits would include gains, if any, liquidated through interest payments by Western Electric to the American Company. We shall spend no space in criticizing the showing of cost of the license contract services made by Mr. Heiss, the comptroller of the American Company. We have already indicated its general deficiencies. One comment may be made. The claim as to cost of money is founded upon an erroneous definition of cost. In seeking to ascertain the cost of money, so-called dividend requirements for stockholders is included as a cost. It cannot rationally be said that the use of stockholders' capital is an item of purchase and has a cost; and to assume that the reward of profit is a cost is to beg the question. It was therefore incumbent upon the company to show the outlay on the part of stockholders, and the gains which have resulted to them in undertaking the license contract services, including financing. It would be apparent that the so-called services are merely ministrations to the investment, fostering a dividend rate of $9 per share, accumulating huge surpluses, and appreciating the value of the stock held in subsidiaries. The services and the investment are inseparable; and we therefore contend that cost determination is governed by the joint cost principles here propounded.

IV.

GENERAL DEFINITION OF VALUE

1. Meaning of Value

Value is the result of a relationship between the human subject and an object. The subject has a desire for, or an interest in the object and therefore invests it with value. The power which things possess to satisfy human interests gives them character as being worth something. We may call the satisfaction or good which objects render to mankind their services. The ultimate services are enjoyed and render up their good in terms of satisfaction. But in advance of such enjoyment the source of such residual services is also valued as provision for the future. As a stock of services, it has a value derivative from the services themselves.

The degree of value is measured by the intensity of desire and is hence relative. Despite variations in desires between individuals and even in the same individual, the possibility of value measurement exists. The desires of many people in relation to many different objects tend to establish general standards of comparison. Objects may be exchanged, thus measuring off the strength of the desire for one as against that for the other.

By economic value is meant the value of a commodity in exchange.[1] The primary reference here is to the measurement of value, and the standard thereof is one of market experience. The value of each commodity is constantly being measured in terms of some other commodity for which it may exchange at certain quantity ratios.

The economic value of a thing is measured by its power of commanding other commodities in exchange. Every exchange is a mutual sacrifice and a mutual gain to the individuals who are parties to it. It testifies to the fact that the desire for the acquest is greater than that for the sacrifice. The unconcerned onlooker, however, is impressed by the element of exchange in the transaction, and seeing that each commodity possessed the mutual power of commanding the other in exchange, he concludes that they are of equal value. This conclusion is often given a far too enlarged construction. We are prone to measure the value of all goods, including those held under conditions of special advantage to the owners, at what goods of similar description may exchange for on the market. The matter is not so simple. Market price is only an index to the value of the total stock of such goods and its intelligent use in appraisals depends upon judgment relative to quantities bought and sold, and the private advantages which may be enjoyed by those who retain possession of like goods.

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[1] Taussig, Principles of Economics, 3rd Ed. 112.

The measurement of economic value by the processes of exchange, and the consequent equating of sacrifice and benefit, causes comparison to be made between goods of widely different character. Obviously, they must possess a common element which makes comparison possible. This element is found—to advance a step beyond psychic satisfaction—in their command over money income. A most interesting value comparison comes about when the commodity exchange is a right to future income. This right is purchased and paid for in terms of present money. It is found however, that, rare and special cases excepted, a given quantity of present money will command in exchange a larger quantity of future money. Nevertheless the fact that these different quantities are exchanged one for the other proves that at the time of the exchange each was equivalent in value. Consideration of a loan may serve to illustrate that equivalence. If $100 is loaned for one year at 6 per cent interest, the lender has purchased the expectation of $106 realizable a year from the present. But the acquest and the sacrifice are equivalent, and that is to say, $106 of money to be paid a year hence is today worth $100. This example is typical of the fact that the time dimension is an essential consideration in the valuation of all commodities except those for immediate consumption.

2. Dependence of Capital Value Upon Income

The time aspect is really inherent in the meaning of capital. One's capital is his provision for the future; and capitalistic production is that which requires a provision of instruments in advance. Capital goods thus embody a stock of future services which are drawn off like oil from a well, wool from sheep, or apples from trees. The result of any productive process is income—that which is withdrawn therefrom. Capital and income designate aspects of the productive process from different points of view. "Capital is a stock of wealth existing at an instant time; and income is a flow of services through a period of time."[1]

Income as here used must be distinguished from earnings. It means the total money realization as a matter of fact and event. If one makes a loan of $100 and at the end of the year he receives payment thereof plus interest, say $106, we would call the entire amount, and not merely the profit, the income. The realization of income is a matter of fact, not of estimate. Whether or not the value of the capital is impaired or has depreciated or is completely exhausted, is of no importance in determining what the income is in fact. The actual income is the money realized, less only the attendant cash disbursements which are paid, or rationally regarded as paid, out of receipts, no new outlay being required.

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[1] Per Irving Fisher, whose books, "The Nature of Capital and Income," and "The Theory of Interest," represent full and definitive treatments of their subjects.

Income is distinct from capital because it is the service itself, whereas the capital goods are the source of the income. Their value is capital value. That value, however, is based upon and measured by the income expectation which is in prospect from the conversion of the stock of services into money.[1]

Capital gain is to be distinguished from income. For example, if the debtor at the end of the year does not pay his note amounting to $106, but instead makes out a new note in which the principal sum is $106, there has been no income realized by the creditor. A profit in the form of a capital gain has been earned.

The analysis of capital value into its component elements is necessarily accomplished first by a delineation of the income expectation, and then by an appraisal of its several items in terms of present money. For the purpose of defining these elements let us consider a simple case of bond valuation.

One who invests money in a bond merely purchases, at some degree of risk of course, a defined future income. It takes the form of periodical interest payments and a final payment of the face of the bond at maturity. The risk involved extends to non-payment of the income and to changes in its value between the present and the time of realization. When the amount and distribution of income is postulated as a definite fact, the element of risk will be completely expressed in the valuation factor, that is, the amount at which a unit of income—one dollar—is valued. Table I illustrates the value of a nominal 5 per

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12 Taussig "Principles of Economics," 3rd Ed. 125; Fetter, "Economic Principles" 267.

cent bond for $100, payable in 10 years under different assumptions of risk, one in which the valuation is at 5 per cent and the other at 4 per cent. The third and fourth columns show respectively the discount factors, that is to say, the present worth per dollar of future income when it is valued, as in column 3, at 5 per cent, or as in column 4, at 4 per cent. Columns 5 and 6 show the present worths of the incomes at the several valuations.

TABLE I.

Comparative Value of a Nominal 5% Bond, Payable in Ten Years. Market Rate of Interest 5% and 4%

1.	2.	3.	4.	5.	6.
Year	Income	Discount Factor		Present Worth	
		5%	4%	5%	4%
1	$ 5	.952	.962	$ 4.76	$ 4.81
2	5	.907	.925	4.53	4.63
3	5	.864	.889	4.32	4.44
4	5	.823	.855	4.12	4.28
5	5	.784	.822	3.92	.411
6	5	.746	.790	3.73	3.95
7	5	.711	.760	3.55	3.80
8	5	.677	.731	3.38	3.66
9	5	.645	.703	3.22	3.51
10	105	.614	.676	64.47	70.98
		Market Value of Bond		$100.00	$108.17

The significance of interest rates, or rather their counterpart, discount rates, as valuation factors must be emphasized. It is a frequent assumption that interest arises purely out of the productivity of wealth. Now of course production is usually accelerated by provision in the way of tools and equipment previously lacking. Such provision requires financial investment which is rewarded by the gain in productive facility. The skillful application of wealth to productive processes is a means of producing increase of wealth. The control of present goods is thus frequently the means of commanding advantageous opportunities to increase wealth. This element, of course, enters into the market premium which will be offered for capital. But, important at it is, it is not the only factor in that premium. Generally speaking, present wants or necessities are more keenly felt than those which are merely anticipated. Likewise there is a clear preference, generally speaking, for present gratification in comparison with future. This natural psychological condition interacts with the technical conditions of value productivity and causes an under-valuation of a merely future good as it is compared with the same thing at present available. This value comparison is expressed in a rate of interest, or discount. The former is applied to a capital value base and represents a premium thereon per unit of time; the latter, discount, is applied to the future value quantity and represents the present worth per unit thereof.

The valuation of defined money incomes by the process of discounting the income expectation is simple and commands universal assent. Nevertheless, the capital value of other goods is, from an analytical point of view, composed of the same elements. The definition of the income prospect, and the rate at which it is discounted, are not without interdependence. Prospective income may be defined with varying degrees of certainty. It may be forecast in terms of the maximum probable, the minimum probable, or at any other degree of assurance. The discount factor will then be burdened with any remaining elements of risk.

In describing the nature and basis of value and its dependence upon income, we are not advocating a specific method of appraisal. We are rather describing the analytical breadown of the capital value quantity upon the assumption that the means of determining it produced a valid result. There are, of course, shortcut indexes of value which, while they do not seem to represent the capitalization of expected income, nevertheless in a circuitous way amount to the same thing.

The basing of value upon cost is such a method. The willingness to incur the cost is ultimately derived from the prospective income value of that which is purchased or produced. The incurring of cost carries with it no assurance of correlative appreciation, else in the oil fields dry holes would be worth as much as gushers. However it is sufficient here to note that regardless of whether cost in the particular case is reliable evidence of value, that value is what it is, not because cost was incurred to create it, but rather because an income prospect exists to support it. The analytical breakdown of capital value which we describe here is not advanced for the purpose of composing initially the values involved in a rate case, though these principles applied in appraisement are of obvious significance. Initial values change in the course of time and without an analysis of component elements the degree of change cannot satisfactorily be measured. For example, cost may serve to measure the value of goods when they are acquired; and it is indeed the piecemeal purchase price of any existing plant. But that cost, upon any theory, can only serve as a measure of value at a subsequent time only if it be assumed that all exhaustion in value has been replenished. Such an assumption cannot be taken for granted. It should be emphasized that any valuation has a focal time point of view, depending upon the nature or time shape of the prospective income stream and the rate at which it is discounted. The ensuing value quantity is subject to appreciation or depreciation depending upon the manner in which prospective income is apparently distributed. It is impossible to value property at a figure having a durable validity.

V.

THE LEGAL CONCEPT OF FAIR VALUE

Fair Value is a legal concept. It is designed to express the worth of the business in view of the fact that the full force of legal restraint upon its income has been exerted. The nature of Fair Value is easily perceived from the manner in which the occasion to determine it arises. An exercise of legislative power has occurred, by force of which the power of the owner to obtain revenues otherwise open to him is restricted. If not for the legislative act the utility would be free to sell its services at prices which would yield the most favorable possible income from its point of view. The power to obtain such a charge the existence of a consumer's surplus must be granted, else to assume to ask it is merely an empty gesture. In the absence of such restrictive legislation the value of the business is one amount; in view of the maximum possible restriction, the value of the business is another amount.

It is quite clear that the Constitution protects only a modicum of value. If the protection extended to all value, then the power to regulate is empty. If the power to regulate is without limitation, then there might be no value in owning the property. This was cogently pointed out by Justice Holmes in the opinion of the Court in

Cedar Rapids Gas Light Co. v Cedar Rapids, 223 U. S. 655:

> "An adjustment of this sort under a power to regulate rates has to steer between Scylla and Charybdis. On the one side if the franchise is taken to mean that the most profitable return that could be got, free from competition, is protected by the 14th Amendment, then the power to regulate is null. On the other hand, if the power to regulate withdraws the protection of the Amendment altogether, then the property is nought. This is not a matter of economic theory, but of fair interpretation of a bargain. Neither extreme can have been meant. A midway between them must be hit."

Through the course of judicial decisions it has come about that the Constitution is interpreted as according immunity to a certain and limited amount of property value. Another and extremely cogent interpretation of the Constitutional purposes, which would emphasize the element of conduct more than that of value measurement, might consist in an assertion of immunity against conduct clearly unreasonable. This doctrine, while not without vitality, has given way to the thought that it is the function of the court not merely to test conduct according to general standards of reasonableness but to measure a certain value quantity to which immunity must be accorded.

The early cases of *Covington and Lexington Turnpike Road Company v. Sanford*, 164 U. S. 578 and *Smyth v. Ames*, 169 U. S. 466, while interpreted as defining fair value in purely economic terms, emphasized nevertheless a significant aspect of the fair value concept. "The utmost that any corporation, operating a public highway, can rightfully demand at the hands of the Legislature when asserting its general powers is that it receive what, under the circumstance, is such compensation for the use of its property as will be just both to it and to the public."

The dominating idea therein emphasized is that of compensation. Now what shall be deemed compensatory is not a purely objective matter. One is compensated when satisfied, and reasonable compensation is simply what in general opinion ought to be satisfactory. A sacrifice has been incurred for which a measure of compensation up to a certain level should be provided. This level is not necessarily attained by an arithmetical addition of all costs. For example, if one were put to a cost of $100 ten years ago, $100 today might not constitute complete compensation. There has been involved in the sacrifice the foregoing of all the opportunities which the power to invest over ten years could command. The presence or absence of past income would be a material factor in determining proper compensation. Again the monetary unit of measurement may have undergone substantial changes since the costs were incurred.

These cases likewise strongly emphasize the element of value of service to the customer and his right to a reasonable access to the facility. This question is not of grave importance in measuring the constitutional requirement of just compensation in this particular case. However it has strong application to the element of price distinction in various classes of service to which reference has previously been made.

In the search for formulas out of which a rate base could be constructed, there has been overlooked to a large extent the true purposes of the endeavor and the function which a rate base should perform. This oversight consists in the failure to coordinate the idea of compensation with capital value. After all, sacrifices have been made in creating the facility of service to the public. The fair value, as that concept is qualified by considerations of justice, is only an amount measured in terms of capital value as will contain the required compensation. It will not be the capital value of the enterprise on the assumption that regulation did not exist. In view of the monopolistic character of the regulated business, and the special advantages which it enjoys in rendering a service constantly in demand, a capital value merely compensatory in amount will be much less than what would be the commercial value of the property if regulation were non-existent.

This fair value, determined under the influence of a due regard for compensation is, nevertheless, like any other capital value, the capitalization of all expected income. If it were not such, it would be a merely arbitrary figure, a rate base derived from a formula and applied in darkness. Fair value is therefore Janus-faced. On the one hand it regards the sacrifices of the past and is an amount, from a present point of view, equivalent in worth thereto. On the other hand this fair value is likewise the present worth of the future income, which should be secured under proper rates.

The derivation of a rate base has been regarded as the major problem in the regulation of rates. Jurists and writers have very largely concentrated all attention upon whether the rate base should be primarily influenced by the cost of the property, or what it should have cost, or its present reproduction cost. Decisions upon such abstract questions have apparently determined whether rates are to be increased or decreased. We characterize these questions as abstract because they do not actually emanate from, and find their application and meaning in, the facts of the particular business; whereas, in our judgment, they should, in order to have concrete meaning. For example, of what avail is a rate base if it is not going to be applied with reference to the technological facts of the business and the inevitable concomitant economic facts? Any rate base is totally without significance unless, the time-shape of the prospective income stream which it should summarize is recognized. In short, concentration upon the derivation of the rate base has resulted in submerging a subject of even greater importance; namely, the proper technique of determinating the price of service by reason of which the property is worth the sum expressed in the rate base.

At this point we are concerned only with a qualitative definition of fair value, rather than of its precise quantitative determination. However, *Smith v. Illinois Bell Telephone Co.,* 282 U. S. 133, by necessary implication has placed strong emphasis upon a preliminary measurement of actual profits, and this requirement places the cost standard distinctly in the foreground. If the principles herein advocated should be given application, it will be seen that the factor of rate base difference, while one of substance, is not of necessity controlling. In many cases there are other considerations which, taken in connection with the particular claim for fair value, demonstrate that the rates attacked are not confiscatory.

VI.

FUNDAMENTAL RELATIONS OF INCOME AND FAIR VALUE UNDER SIMPLE HYPOTHESES

It has frequently been taken for granted that, given a rate base, by means of simple and obvious methods, fair rates could be computed. Could not the annual expenses of production be ascertained and could not the company be allowed rates which would provide the amount thereof plus a reasonable profit on the rate base? Now the fallacy in this attitude, stated in a word, consists in the fact that an arbitrary and *a priori* definition of the annual expense of production is applied. This is derived largely from the bookkeeping results of a single year's business, modified, perhaps, by a host of arbitrary accountancy concepts.

We shall not stop at this point to expound the grounds of this fallacy in abstract terms. We propose to proceed concretely, with specific examples in view, so that each relevant fact involved in the income and capital value relationship will be made to appear. From such results, general conclusions may be drawn.

Beginning with a minimum in the way of assumption, we shall gradually work into the exposition further conditions typical of those actually present in the conduct of business.

We shall first define a few terms.

Revenues are the receipts from customers for service.

Disbursements are all expenditures of money to obtain revenues.

Income is the amounts realized in the process and withdrawn therefrom for the benefit of the owner.

Outlay is that part of the disbursements which are direct expenditures by the owner and are not provided for by the revenues of the current accounting period.

Suppose that a market analysis indicates that annual sales of service at least to the amount of $200 per year may be made, and that after due eliminations there is available plant of a certain design which will supply this demand for a period of ten years. Its initial cost is $1000, and at the end of its assumed production period there will be no salvage value remaining. In order to obtain the service an annual expenditure of $64.13 is required. The figures here stated concerning future revenues and disbursements represent a fair approximation of what is expected. If they were certainly foreknown, then the appropriate valuation factor to relate them to the present would be the riskless rate of discount. The 6% rate is chosen upon the assumption that the risk contained in the approximations are assumed to be comparable with that in other investments yielding 6% returns. Table II indicates the elements involved in the appropriate equation of value under the conditions here stated.

TABLE II.

Income and Capital Value Derivation

1. Year	2. Revenues	3. Disbursements	4. Income	5. 6% Valuation Factor	6. Present Worth o Income
0		$1000			
1	$200	64.13	$135.87	.943396	$ 128.1
2	200	64.13	135.87	.889996	120.9
3	200	64.13	135.87	.839619	114.0
4	200	64.13	135.87	.792094	107.6
5	200	64.13	135.87	.747258	101.5
6	200	64.13	135.87	.704961	95.7
7	200	64.13	135.87	.665057	90.3
8	200	64.13	135.87	.627412	85.2
9	200	64.13	135.87	.591898	80.4
10	200	64.13	135.87	.558395	75.8
					$1000.0

The table illustrates that annual revenues of $200 are required in view of the assumed facts. That sum is the minimum price which the owner can afford to charge. On account of the annual disbursements of $64.13 contemplated, the income expectation is approximated, in view of probable deviations in both directions, at $135.87 annually. Now if the scope of the purview is limited to the current year, and the owner sees only in prospect a single year's income of $135.87, and nothing beyond, he is not going to incur a present outlay of $1000 for it. In fact if the income prospect is limited to a year, then the owner cannot afford to spend $1000 unless the income expectation is $1060 at the end of the year. And if he can regard a ten year prospect but is forewarned that in the last year he will only get revenues of $100, he cannot afford to sell the output of the first nine years at $200 annually. He must revise the rate. It is obvious that when there is in question the minimum price which must be charged for service, the total income prospect must be regarded. The minimum price at which one can afford to sell any one unit of output is dependent upon the quantity of total output and the price or prices contemplated for all units.

This example assumes an equal amount output, which has always the same relative value to the customer, since he pays the same price at all times for like service. It also assumes equal annual disbursements, excluding the initial outlay. These expenditures are recouped practically as made, and their complete effect is fully accounted for simply by deducting them from simultaneous revenues. Then the question of determining a minimum rate is this: What equal annual income for ten years is worth $1000 of present money? The answer is $135.87. Each income item, discounted by the 6% factor shown in

Column 5, makes a value contribution to the capital worth as shown in Column 6, which totals $1000.

It will be convenient to elucidate, in connection with this and further examples, the effect of the movement of time upon capital value. This introduces the element of change—depreciation, and appreciation—in capital value due to the simplest possible dynamic condition, the passing of time.

VII.

VALUATION DEPRECIATION

1. Definition of Terms in Revaluation

When a *revaluation* is made, and a comparison is had between value at such time and value formerly, the result usually indicates *depreciation.* Sometimes *appreciation* is found. We define depreciation simply as a lessening of *value;* appreciation as an increase of value. These terms, thus broadly defined, include all changes in relative value during the course of time, regardless of the causes which bring them about.

2. The Nature of Depreciation

The essential nature of depreciation—a lessening of value,—is not to be confused with the causes which bring it about or the facts which evidence it. Deterioration may indeed indicate that depreciation has taken place; depletion signifies diminution in the stock; but the resultant effect upon value brought about by the physical fact of deterioration or depletion consists in the lowered estimate in which the goods are held. Whatever causes a relative decline in esteem is a cause of depreciation; the amount of which is measured, not in terms of physical quantities, but in terms of value.

It will therefore be seen that depreciation is not the kind of a fact that is capable of measurement by rule or caliper. It is a term of value comparison; the value of a stock of services at one time point of reference is compared with its value at another time point. It follows that every fact which has any material effect upon value is likewise relevant to the study of the downward movement of values, or depreciation.

It is often highly useful, however, to distinguish between certain causes of depreciation which characterize the nature of the decline in value. The effect of price changes upon value may be considered as a case apart from that value decline which usually attends property by reason of its use in operations. The former case has a primary reference to the value of money; the latter case consists in depletion in the stock of services. And we also defer consideration of another important dynamic element—changes brought about by the ability to substitute a more efficient or economical technical means of production. The inward and outward movement of plant items under the influence of this consideration is of great import. It profoundly qualifies the assumption of a definite service life which we have made in this chapter. We have deemed it necessary to make that assumption, first, because the facts and principles may be more easily apprehended when expounded under hypothetical simple conditions; and secondly, because, since this assumption is not infrequently given general application, it is desirable to show its limitations in view of a continuous business. The assumptions at this time will, therefore, include only the minimum of dynamic conditions. Cost and reproduction cost new will be, in assumption, constant, and the ability to substitute different instruments or methods of production will be excluded. These assumptions in reality have the effect of excluding all causes of depreciation such as price change, obsolescence, and inadequacy, which do not result in depleting the stock of physical services. We open up shop with a plant having a certain foreseeable output which will be distributed over a certain "service life." Under such conditions, depreciation results from the fact that the stock of services runs out in time.

3. Property Subject to Depreciation

No property is essentially undepreciable. Obviously, any property may have a value at present less than that ascribed to it at a prior time. Even if an assumption of constant prices be made, there is no property which must of necessity endure perpetually as an undepleted stock of services. The services of land are depleted by agriculture, lumbering, mining, quarrying, and, what is important here, by the loss of its advantages of location. Land renders services of varying quality and magnitude, its capacities being always affected by its proximity to people, and its economic adaptability to render services which are in demand. The depreciation of land is a capital loss, its appreciation a capital gain. Like other capital goods, land renders a constant service in the production of income, and when its usefulness in plant is over, it renders up a final income as salvage.

4. Valuation and Depreciation

At the commencement of business, as the plant is about to initiate the stream of services on account of which it is valued, we tend to think that it has then its maximum value—value new—and that it will gradually depreciate as the stock of services therein contained becomes depleted in the course of time. Such a situation is typical and will be the basis of the initial examples.

We have seen from Table II that property capable of rendering an income of $135.87 annually for ten years, when interest is at 6%, has an initial value of $1000. In this case the capital goods represent a stock of services to the owner, or incomes the realization of which, it is expected, will be distributed equally over a period of ten years. We have had occasion to note the reference of time to the subject of valuation, and to observe that the capital goods which are the source of future income are ordinarily worth less than the amount of such income. Here we have ten items of income, for the sake of which the capital goods are valued at $1000. These items are of equal value only when each is realized; and since each is realized in different years, each makes a different contribution to the initial capital value. The contribution of each item to such initial capital value is indicated in the last column of Table II. The expectation of the first item, to be realized a year hence, has a weight in the capital value of $128.18; the expectation of the last item, to be realized ten years hence, has only a weight in the present value of $75.85. If, however, the time point of view is shifted to the realization of each item, at each of said times the income then realized is then worth its amount, or $135.87. However, the valuation of capital goods depends upon the simultaneous worth of the incomes in prospect. This, at year 0 is $1000.

When, however, a year passes, the valuation time point of view is shifted. The present has advanced a year and each residual item of income is a year closer to realization. The worth of each will have appreciated. The first item has already been realized and is hence removed from consideration. The other items are to be discounted by the factors pertaining to years one to nine. So discounted the weight of each in the then capital value is: (1) $128.18; (2) $120.93; (3) $114.08; (4) $107.62; (5) $101.53; (6) $95.79; (7) $90.36; (8) $85.35; (9) $80.42. Their sum—$924.13—represents the capital value at the end of the first year.

The depreciation is the difference between the initial value (V_o) and the value at the end of the first year (V_1), or $75.81.

The capital value, the annual depreciation, the annual profit, and the total accrued depreciation throughout the service life, are set forth in Table III. These elements are all mutually interdependent. All of them depend upon the nature of the income prospect and its running out in time, and a change therein will have a general effect upon each element.

TABLE III.
VALUATION DEPRECIATION TABLE
V=Capital Value; V_a =Capital Value any Designated Year

Year	Income	Capital Value	Annual Depreciation	Annual Profit	Accrued Depreciation
0		$1000.00	$(V_{a-r}—V_a)$		$(V_o—V_a)$
1	$135.87	924.13	$ 75.87	$ 60.00	$ 75.87
2	135.87	843.71	80.42	55.45	156.29
3	135.87	758.47	85.25	50.62	241.53
4	135.87	668.11	90.36	45.51	331.89
5	135.87	572.33	95.78	40.09	427.67
6	135.87	470.80	101.53	34.34	529.20
7	135.87	363.18	107.62	28.25	636.82
8	135.87	249.10	114.08	21.79	761.90
9	135.87	128.18	120.92	14.95	871.82
10	135.87	000.00	128.18	6.69	1000.00

The hypothetical example of an equal annual income prospect is the simplest to set up, but it is rarely, if ever, encountered in an actual enterprise. It is, however, frequently serviceable as a rough approximation. Actually, however, annual disbursements are subject to considerable variation, and so are the annual revenues. As a result, a condition of a varying annual income prospect is the rule. It is unsound to ignore it.

5. Income Varying by Reason of Rehabilitation Expense Requirement

We take as a second example the case in which the rendition of the service cannot proceed unless money is spent to rehabilitate the property item. As in the prior example, it will be assumed that the service output is an equal annual quantity throughout the service life of the property, but that money must be spent in each year to keep up the output, and certain special expenditures need to be made in addition. We shall assume that the service actually rendered produces an annual revenue of $200, and that during each of the first five years disbursements of $60 annually are required; in the sixth year this requirement increases to $70; in the seventh year $125 must be spent, evidently to rehabilitate the property; in each of the eighth and ninth years $60 must be spent, and in the tenth year $70 are spent. At the end of the tenth year the property is junked, producing a salvage realization of $45.56, which are of course part of the revenues. Subsequent to the initial capital outlay all of the required disbursements may be made out of revenues. For this reason, if the annual disbursements be deducted from the annual revenues, the remainder will constitute the income, or what the owner receives from the use of his property. This income may be accounted for as annual depreciation representing the return of capital value as the same is consumed, and profit representing the gain allocated to the accounting period.

TABLE IV.

VALUATION DEPRECIATION—VARYING ANNUAL INCOME CAUSED BY REHABILITATION EXPENSE

Year	1. Revenues (*Salvage)	2. Disbursem'ts	3. Income	4. Capital Value	5. Annual Depreciation	6. Annual Profit	7. Accrued Depreciation
0		$1000		$1000			
1	$200	60	$140	920.00	$80.00	$60.00	$ 80.00
2	200	60	140	835.20	84.80	55.20	164.80
3	200	60	140	745.31	89.89	50.11	254.69
4	200	60	140	650.03	95.28	44.72	349.97
5	200	60	140	549.03	101.00	39.00	450.97
6	200	70	130	451.97	97.06	32.94	548.03
7	200	125	75	404.09	47.88	27.12	595.91
8	200	60	140	288.33	115.76	24.24	711.67
9	200	60	140	165.63	122.70	17.30	834.37
10	200	70	175.56	0.00	165.63	9.93	1000.00
	*45.56						

The conditions of this example in a word are those of equal annual output of constant value, but with varying annual disbursements, as a result of which the income expectation has an irregular time shape. Since in rate regulation the revenues themselves are in question, let us assume that this element (column 1) is unknown. The question then becomes this: What is the least that can be charged per unit of service to compensate an owner who makes an initial capital outlay of $1,000 and contemplates expending annually the amount shown in column 2, and expects an ultimate salvage realization of $45.56?

We shall detail precisely the method of price determination in view of these assumptions.

Since by assumption the revenues from service of each year are the same and are unknown, the annual price requirement may be represented by "X". Those of the last year will be augmented by the salvage realization and may be expressed as X plus $45.56. In view, however, of simultaneous disbursement requirements, the expected income is the result of deducting these disbursements from the revenues. Since by assumption this income is merely compensatory, its present worth and the initial capital value of the property will be equal. The value of "X" upon solving this equation is $200.

Thus, it is apparent that the effect of the varying disbursement requirement is not to be limited to the year in which it occurs. It is not to be a special burden upon the customers of that particular year. It was not caused exclusively by the demands of these customers, but rather by the endeavor to supply these, the prior, and the future customers. The customer pays for service; and since each unit of output is of equal value when delivered, it should command the same price. The burden, therefore, of all the disbursements must properly be distributed equitably into the price to be charged per unit of output. An equitable distribution, it will be observed, is not an equal one. It is an equivalent one.

6. Valuation Depreciation in View of Increasing Returns

The third case to be illustrated is that of "increasing returns." This condition is quite common, but strangely enough the legal mind has exhibited but slight appreciation of its existence. There has been a peculiar proneness to think in terms which take for granted a constant output similar to that of a single year taken as a sample. In fact, however, plant is usually built to accommodate a growing demand for service.

Much confusion is unquestionably caused by the use of the economic terms "increasing returns" and "diminishing returns." There is implied in these terms that costs per unit of service decrease in the former case and increase in the latter case. This idea is subject to considerable qualification, as we shall later show. At the present time we shall merely set forth an illustrative table indicating the effect of an increasing output upon capital value. No new principle is involved; and the main purpose of the example is to show how this variation in the basic facts is treated under the same principles of valuation which have been expounded. They likewise apply to the less frequent case of "diminishing returns."

The previous examples represented cases of equal annual service output, so that a year's service could be regarded as a convenient unit. When the output varies annually such a unit is obviously not helpful. We shall therefore make use of a service unit based upon the service capacity of the property. Let us assume that when operating at capacity the property delivers one hundred units of service annually, but that the expected demand is such that only 50% of the capacity will be called forth the capacity will take place. Therefore the use of the property will reach 100% in year 6. We shall assume equal disbursement requirements per unit of service, with the result that the elements of revenues and disbursements may be omitted from the example. The minimum compensatory income requirement is $1.6536 per service unit. This unit price of service is derived by the same methods used in connection with the previous example. Table V is the Valuation Depreciation Table for this case.

TABLE V.

VALUATION DEPRECIATION TABLE ILLUSTRATING INCREASING RETURNS AS RESIDUAL CAPACITY IS BROUGHT INTO USE

Year	1. Output Units	2. Income	3. Capital Value	4. Annual Depreciation	5. Annual Profit	6. Accrued Depreciation
0			$1000.00			
1	50	$ 82.68	977.31	$ 22.69	$59.99	$ 22.69
2	60	99.21	936.74	40.57	58.64	63.26
3	70	115.75	877.19	59.55	56.20	122.81
4	80	132.28	797.54	79.65	52.63	202.46
5	90	148.82	696.56	100.98	47.84	303.44
6	100	165.36	572.99	123.57	41.79	427.01
7	100	165.36	422.01	130.98	34.38	557.99
8	100	165.36	303.17	138.84	26.52	696.83
9	100	165.36	156.00	147.15	18.19	844.00
10	100	165.36	0.00	156.00	9.36	1000.00

The main condition of this Table, that of increasing output, is highly typical. A plant is seldom if ever established to serve merely the constant needs of a present population. It counts upon increasing demand and has the reserve capacity to supply the future needs of a growing community. A railroad is typically a pioneering business. As it makes possible the growth of communities which it serves, it accommodates more and more traffic until its capacity becomes completely taxed, and then further construction starts the cycle over again. There are as a rule obvious economies in constructing initially a plant of large capacity capable of caring for the future growth of business rather than to build only for immediate wants.

Under conditions of increasing output, as will be seen by a reference to the Table, the depreciation in the early years is relatively slight. It is of great importance clearly to understand this fact. We have had occasion previously to point out how with reference to a limited stock of services, the passing of time appreciates the worth of those which still remain residual, since it brings them closer to realization. When increasing output is expected, the income stream is funnel shaped. The passing of time brings closer the larger volume, and in the early years, exhausts only the narrower end. The effect is, of course, that of relatively slight depreciation in the early years. There may even be a positive appreciation. The most extreme example of the latter occurs when property is bought purely for future use, it rendering no immediate income. Land is an obvious example of this. Due economic selection assumed, it appreciates as time brings it closer to the moment of use. It frequently continues to appreciate thereafter as time brings it closer to a fuller or capacity use. For such reasons, Table V is, on the whole, the most important which we have yet shown. The example set forth in the Table has an intimate connection with the subject to Going Value which will be later treated.

The three examples which we have set forth in detail: (1) that of constant output and equal annual revenues and disbursements; (2) that of constant output, varying disbursements and equal annual revenues; and (3) that of increasing annual revenues,—are sufficient to indicate that fair minimum rates cannot be deduced merely from a Fair Value figure. While the Fair Value is indeed but the capitalization of the minimum compensatory income, precisely what the latter needs to be, in order to satisfy the equation, cannot be deduced from the former. There is nothing in the nature of capital value which determines or describes the time shape of the income stream which is its basis. The income, composed of the interplay of receipts and disbursements, depends for its time shape upon technological and market facts, which must be reckoned with

The Tables indicate how erroneous it is to assume, as is frequently done in the uncritical presentation of a rate case, that the elements of revenue and of expense may be approximated as constants, or that a single year is of any value as a test period.

The Tables particularly emphasize the fact that the mutations in capital value, and hence the depreciation due to the passing of time, depend upon the time shape of the income stream. They may even make clear that the correctness of all accountancy with respect to any item of disbursement or receipt is also dependent upon the time shape of the income stream.

7. Allocation of Profit Between Accounting Periods

In our previous discussion concerning the division of joint expenses and of values, it was indicated that treatment of the time element was for the moment passed. It has now already been made. In principle there is no distinction between apportioning the initial capital value between accounting periods, and a division thereof between simultaneous activities. Indeed, the initial capital value may be regarded as devoted to the common purpose of providing income for future accounting periods under whatever conditions may be encountered.

At any point in time, the accrued depreciation, cost basis, is only a division of the entire cost between past and future use. It is as accurate—no more, no less—as the foresight of future income. Unforeseen income events, positive or negative, seem like windfall gains or unfortunate losses, yet they are the chances and risks of the business. The full story is not told until the particular venture is liquidated. Then only can the relative contribution of capital cost to each separate annual income be accurately defined. Regarding capital cost as having been incurred for all income, we should distribute it so that a uniform rate of increase will be attributed to each dollar remaining invested. It is not argued that this over-all aspect is essential; but rather that it is a desirable point of view for the regulation of public utilities. It is a long run view as distinguished from a year to year regard.

Such a long-run view asserts that the apparently different rates of profit year by year are only the delusions of imperfect accounting. If the accounting were accurate, the rate of profit would be equal over a past period.

We have seen that under the assumption of equal annual income, which presumably is had when output is constant annually, the depreciation expense is not an equal annual amount. This proposition is incontrovertible. We have also seen from the Tables the manner in which depreciation expense varies, subject to the distribution of income. The apparent inequality of annual profit is brought about by a rigid and arbitrary system of depreciation expense charges. Whatever may be the merits of such systems for bookkeeping purposes, revision is essential when the correctness of the profit rate comes into question in rate cases. A redistribution of the annual depreciation expense so as to equalize the rate of profit is necessary.

We have already proved, from two major aspects, the fundamental correctness of the result thereby attained. The first aspect had to do with the principles to be applied in distributing a joint expense or general value. In the second, emphasis has been laid upon valuation and depreciation. The distribution of depreciation expense so that a uniform rate of profit results is not at all a matter of artificial juggling. It is in accord with the value of the service rendered by the capital goods and with the actual devolution of the capital value. Let us refer once more to Table V for the purpose of re-emphasizing the point.

The income shown in column 2 of this Table was derived from a calculation in which two requirements were met. The primary requirement was that as a whole it should afford a profit of 6 per cent over cost. The further requirement was that the income should be related to the output. In view of the output and its distribution in time, each unit when sold must afford an income of $1.6536 in order that as a whole the yield as received will afford a profit of 6 per cent compounded annually on $1,000. Let us consider that this 6 per cent rate of profit is also the appropriate rate by which to value such incomes. The depreciation in capital value taking place in the first year will be the difference between the initial value, or cost, and the value of the remaining 9 years' income expectation. It is the relatively small sum of $22.69, which is to be compared with the first year's depreciation indicated in Table III of $75.87. In both cases the amount of profit depends not merely upon the year's income, influenced as it is by the current output, but also upon the decline in capital value which has taken place during the year, that is to say the expense of depreciation. Now the valuation basic to the determination of this expense, like all other valuations, contains implicitly a series of capital values referable to future times. A present capitalization depending upon the income prospect implies a future capitalization depending upon the then remaining income prospect. These values are so related to the correlative current income and depreciation that the rate of profit in any year is approximately equal. Thus with respect to the tables, a 6 per cent rate of profit over cost is likewise a 6 per cent rate of profit over value at any time.

The principle of an equal and constant rate of profit is not a law of productivity or even one of value increase. It does not define physical facts. It has application only to the accountancy of values under conditions which must be assumed or taken for granted. It is the most convenient way of expressing the results of past operations over a considerable period. It is perhaps the only way of setting up the expectation relative to the future.

We particularly emphasize the fact that the constant rate of profit above referred to is in no sense dependent upon constant revenues. We consider as erroneous the assumption that expense is constant and profits variable in accordance with variations of revenues over such assumed constant expense. We have been at some pains to point out that such a result is produced by erroneous accounting. Yet there is a prevalent, deeply rooted idea that revenues in order to be reasonable ought to be constant, or, what amounts to the same thing, directly proportionate to plant investment. To take for granted this idea is to give to rate regulation an objective itself economically undesirable, and practically impossible to attain. It is not economically desirable to level off public utility revenues by advance adjustments in rates. Reflection will at once disclose that the volume of revenues received in a particular accounting period is not in itself an index of the reasonableness of rates. There is no reason why the price of service should vary in accordance with fluctuations in demand — that it should decrease with strong demand, and increase with falling demand. Moreover, an annual adjustment of rates which attempts to accomplish such a thing will shackle the business and its usefulness to the public with uneconomic fetters. The proper objective should be to propound stable rates in view of the factors of variable demand and varying output relative to the capacity to care for such demand. As said by Mr. Justice Brandeis in his dissenting opinion in *Missouri ex rel. Southwestern Bell Telephone Co. v. Public Service Commission*, 262 U. S. 276, 308, "The prime needs of the community are that facilities be ample and that rates be as low and as stable as possible."

We shall next treat of the subject of plant capacity and of varying use thereof in relation to rates. We have no desire to argue the specific question involved in the findings of the court below concerning the fair value of the company's property during each year that the attacked rates were sustained, and the profit determinations for each of such years made by that court. The theory of capital cost distribution over extended accounting periods which we here advocate is, of course, not consistent with the basis of calculation used below. Our argument is directed to the subject of whether particular rates prospective in operation will result in confiscation. If the theory which we propound is worthy of approval, it should of course find application likewise to the determination of whether rate orders tested in their application over a reasonable period in the past would have been remunerative. We cannot subscribe to the thought that such a test is to be applied year by year upon the basis of a regard limited only to the revenues of the particular year.

VIII.

THE PRICE OF SERVICE IN VIEW OF FLUCTUATING OUTPUT AND VARYING USE OF PROPERTY

In testing the reasonableness of rates it is ordinarily assumed, in the absence of recognized abnormal conditions, that the past year's operations are representative of future conditions. The effect of this is to project into the future a forecast of a uniform annual expense and a uniform annual income. We have indicated how unsound such ideas are. We have also shown that nothing in either physical or economic laws requires that output shall be uniform. The unwarranted assumption that it is so is an example of figures set down with "delusive exactness." But the fact of variable output, far from being accepted as the common case, has received attention only when capacity returns were claimed at a time when the output represented a quite limited use of the property. In legal development, therefore, the output question has been associated with the subject of "used and useful property."

The element of probable future earning capacity has been frequently mentioned in the cases. A consideration of this element ought, of course, to include regard for physical capacity of the property to furnish increased output when demanded; but the references to earning power have not very definitely recognized these features, and the cases have not resulted in the elucidation of correct principles. The recognition of a present output less than capacity has simply influenced particular decisions and suggested remedial palliatives for particular cases.[1]

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[1] In Smyth v. Ames, 169 U. S. 466, 546, the relevancy of the "probable earning capacity of the property under particular rates" was indicated. In Southern Railway Co. v. Kentucky, 274 U. S. 76, 81 (involving valuation for taxing purposes), it was said: "Much weight is to be given to present and prospective earning capacity at rates that are reasonable, having regard to traffic available and competitive and other conditions prevailing in the territory to be served." In Darnell v. Edwards, 244 U. S. 564, 576, it was said: "If the earning capacity of the railroad, present and prospective, really is as small as the appellant claims, it may be doubted whether the road is worth what it cost."

In Knoxville v. Knoxville Water Co., 212 U. S. 1, 15, attention was directed to the validity of a year's results as a sample. "The operations of the preceding fiscal year, or of any other past fiscal year, were valueless if the year was abnormal, and were only of significance as they foretold the future." In Willcox v. Consolidated Gas Co., 212 U. S. 19, 49-51, probable increase in the demand for gas, especially under the reduced rates, We have had occasion to touch upon this subject in connection with the example of valuation under conditions of "increasing returns" (Table V, page 75). The railroad business was mentioned as one characteristically exemplifying this condition. Construction in advance of immediate requirements was also referred to. The most general aspect of the subject is indicated by the relationship between present and prospective output to present and prospective capacities.

We have already explained how utterly impossible it is to determine the cost of a single year's output without first determining the composite cost of the total output of which that of the current year is merely a part. The existing capital goods in a public utility enterprise substantially contribute to the production of an extremely extensive output. It is a matter of great difficulty, therefore, to identify precisely the total product of a presently existing plant. During the course of production, the plant itself does not stand in a stationary condition. There is an inward and outward movement of plant items. The more durable or backbone elements of the plant become

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was especially stressed as an element of high relevance. See also Des Moines Gas Co. v. Des Moines, 238 U. S. 153, 173. In Darnell v. Edwards, supra, the abnormality of the test period was strongly emphasized. See also Galveston Electric Co. v. Galveston, 258 U. S. 388; and Brush Electric v. Galveston, 262 U. S. 443.

Denver Union Stock Yard Co. v. United States, 57 Fed. 2nd, 735, represents excellent appreciation of the fact that a particular year's income is not a significant measure of profit. "Ordinarily a test period of five years or more, if available, is selected. * * * It is generally true that the longer the test period the more accurate the judgment for the future; the broader the base and the safer the estimate. When there has been a reasonably steady growth in the business and reason to anticipate that it will continue, the factor of growth should be considered in estimating the future. There is ample evidence in the record that a fair estimate of earnings for the future cannot be predicated upon an examination of a single year of the period; that in estimating earnings for the future the business world generally studies the earnings for at least a five-year period in the past."

interwoven with new additions, with the result that the total output to which the existing plant contributes is a joint product in part of the present, and to a considerable degree, of the future plant.

Generally speaking, property is acquired and plant items are installed with a view to the future expansion of output. Sometimes the installed facilities will, without substantial modification, care for the contemplated increased output, but usually expenditure for additions and adaptations is necessary. Proper engineering requires that existing plant shall be designed with reference to economical additions for future requirements. It is the object to develop a plant which, in view of the present and prospective demand for service, and the present and prospective costs, will represent the most economical means of delivering the required service. The importance of such considerations is of increasing weight in view of the longer lived and more costly items of equipment.

Such items constitute indeed the skeletal design of the plant. Its important requisite is that it shall be adequate not only for the present service but shall also be adaptable to the needs of the future. Its design, however, is not controlled merely by the arbitrary prescription that it shall be made of durable construction. It is given a durable and adaptable design because that particular plan is the most economical. The engineer must compare all the available means of rendering the service in respect to their first and ultimate costs; and as a result, he selects that kind and design of plant which, in view of all conditions, will result in the maximum of profit. It is, of course, not necessary to be able to visualize the exact constitution of plant at a remote period in the future, although it is perfectly feasible to make fundamental approximations having reference to plant composition twenty-five or more years in advance. In many instances, when land is acquired or large buildings are constructed, the conditions for a practically unlimited period may be considered.

In the same way, when costs in relation to an output extensively distributed in time are in question, perfec accuracy in the forecast both of future output and of the future expenditures, which may have a bearing upon the costs of present service, is unattainable. But we may have fairly accurate knowledge concerning the maximum probable cost of a certain minimum output practically certain to be required. In this way working cost figures may be computed which are unlikely to be exceeded by the actual results. It must be remembered, however, that the demand for certainty in advance can never be met; the present and the probable future cost of service is always a matter of estimate; and the claim of confiscation must necessarily be resolved according as one estimate seems more or less probable in comparison with another.

The leading case which involved consideration of the existing installed capacity and the probable earning power of the future is that of *San Diego Land and Town Company v. Jasper*, 189 U. S. 439. The gist of the opinion is contained in the following quotation:

> "The supervisors, in determining the rates, assumed that the amount of water available for outside irrigation, apart from the amount used and paid for by National City, was enough for a little over 6,000 acres, and on that point there is no serious dispute. Then they fixed the rate as if the company supplied this 6,000 acres, although such was not the fact. Of course, the amount actually received for the water actually furnished was correspondingly less than the receipts as estimated by the supervisors upon their assumption. If there

> were no force in any of the arguments for the appellees which we have passed by, the result of this mode of estimate might be that the appellant did not get 6 per cent on the total value of its plant. But here, again, we have to distinguish between Constitution and statute: If a plant is built, as probably this was, for a larger area than it finds itself able to supply, or, apart from that, if it does not, as yet, have the customers contemplated, neither justice nor the Constitution requires that, say, two-thirds of the contemplated number should pay a full return. * * *
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> "It hardly can have meant that a system constructed for 6,000 acres should have a full return upon its value from 500, if those were all that it supplied. At all events, we will not be the first to say so. If necessary to avoid that result, we should assume that only a proportionate part of the system was actually used and useful within the meaning of the statute."[1]

This decision is both correct and effective in repudiating an improperly planted claim. That claim, in logical essence, is to the effect that a remunerative profit must be realized in the income of each and every year; and regardless of how many customers are being served, their payments must make up this total requirement. Such a view is erroneous and impractical, for it disregards both the technological facts of production and of output, and also the economic conditions of the demand for service and its value. The system was either in fact designed to have an increase in output, or the venture was misconceived. In all probability there was reasonable expectation of such growth in customers' demands as would justify the advance provision for a system capable of serving, say, 6,000 users. It was evidently contemplated that the demand should start at its lowest with the presently existing customers, and that it should increase. Now if the presently existing customers were required to pay rates which would afford a realized income equal to, say, 6 per cent upon the investment plus depreciation expense charges, then the effect of any additional output at a relatively small increment expense would enhance the profit rate. Rates would not automatically decline as demand increased; and regulation seeking thus to manipulate them is totally impractical. A rate, as a practical matter, stands for a period of years. If the rate, initiated at the low point of use, and hence a high one, were reduced when a full demand became manifested, the customers would receive highly unequal treatment. The rate would be high at a time when the burden on the customer would be most onerous; it would be disproportionately low for precisely the same service at a time when the customer had no need of the reduction. Owing to the necessary lag in attempting the rate adjustment, the utility will already have received more than the merely reasonable returns which it was intended to grant. In brief, the merely investment formula of an equal annual profit realized in the income does not fit the facts of a business.

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[1] In Southern Pacific Co. v. Bartine, 170 Fed. 725, 767, a similar claim met with the following response:

"It does not necessarily follow that a schedule of maximum rates fixed by law is confiscatory because it fails to yield a reasonable return on the investment, above taxes, operating expenses and interest on the indebtedness. The rates must be reasonable to the company, but they must, in any event, be reasonable to the public. If a railroad is built into a new, sparsely settled territory with a view of serving a large future population and developing business, the Constitution does not require the few people and the small business of the present time to pay rates which will yield an income equal to the full return to be gathered when the country is populated and business developed to the full capacity of the road."

See also to the same effect, Boise City Irr. Land Co. v. Clark, 131 Fed. 415.

To divide the property into a "used and useful part" as distinguished from a superfluous or not yet useful part is to resort to a fiction good only for remedial purposes. It may well have been the case that substantially all of the property was in actual use. The lopping off of a part as not in use renders it possible to apply the equal annual income notion to the imaginary part which is deemed to be presently used and useful. The actual effect of such a procedure in fixing rates is to make them somewhat too low. It ignores the fact that, presumably, economies were effected by the advance construction, and that the cash expenditures incurred for this reason in advance must be compensated for.

In the case of *Long Branch Commissioners v. Tintern Manor Water Works*, 70 N. J. Eq. 71, this subject was approached from a somewhat different aspect, but one which still fails to cut loose from the fallacious notion that the annual profit requirement must be met by a corresponding income. The remedy there propounded was that the investor ought to be content with a somewhat lower rate of profit in the years of low output. It was said:

> "These considerations lead to the conclusion that the water company, when it starts with new works, or a large addition to the original supply, is entitled to an income therefrom somewhat greater than what is due to the cost of work sufficient merely to meet the present demands. I say 'somewhat greater' for I do not mean to be understood as holding that capitalists ought to expect an immediate compensatory income from an enterprise of this character. But, on the other hand, it would be manifestly unjust to expect them to invest their money in a plant necessarily larger than present demands require and take as an income therefor

> such a sum as would satisfy an investment sufficient to meet present demands. * * *
>
> "I have intimated that the defendant ought not to expect, at the start, a compensatory income such as that stated by Judge Williams in the Supreme Court of Pennsylvania, and by the Supreme Court of Maine above cited, but I do think they ought to get at the start a moderate rate of interest, say five per cent, on their investment."

The foregoing view is again a remedial palliative founded upon a fiction. The idea of a fluctuating income seems to be an anomalous exception, and is reconciled with the normal by the theory that under special conditions the rate of profit should fluctuate. But as we have shown, a variable income does not at all signify a fluctuating rate of profit.

The price of service is not independent of its value as delivered to the customer. The same service, generally speaking, should command an identical price regardless of whether the plant is operating at full or only partial capacity. If, therefore, an equal price per unit of service is fixed, which, considering the output as a whole, will yield a total income sufficient to afford a compensatory rate of profit upon value, at cost or other proper standard, each customer will be equitably treated and the utility will be fully compensated. The derivation of such unit price requirements is shown in Table V, Page 75. The income will, of course, fluctuate with the output and will properly stand in a direct proportion to the quantity of goods which is sold. It may be observed from the table, as has been fully expounded, that the rate of profit is nevertheless constant. The reasonable rate of profit afforded by charging a proper price per unit of service, if based upon cost or initial value, will result in the same earning rate upon the value at any time, provided that no shift is made in the standard of value itself.

A rate structure is merely a set of unit prices for services. It is impossible to test its reasonableness unless regard is had for the total units of output which the property was designed to supply, and in all probability will supply. It must particularly be emphasized that a due regard for prospective output and the correlative factor of prospective income is not to be excused, and therefore neglected, merely because perfect foreseeability can never be attained. One who invests money, say in the construction of a large office building, is persuaded that he will be able to receive remunerative rents in view of the prospective demand for space. He may have a reliable estimate of the present demand, and he may feel warranted in spending extra money to enlarge the capacity of the building above that which will be filled by the immediately available tenants. Unless the expansion in use materializes within a reasonable time, and this depends upon the surplus cost of providing the additional capacity, such additional investment will be ill-advised. The plant development in the telephone business is most carefully planned in order that the most economical capacities will be installed in view of present costs and the future demand for service.

When the growth in demand for service proceeds at a rapid rate, naturally the margins of excess capacity existing at a certain date are relatively soon brought into use. In the meantime new margins will have been created to take care of the growing demand. However, the factors of cost and the technical conditions of plant construction prevent a nicely ordered plant development merely a step or so in advance of present demands. The conditions just referred to will dictate that for some classes of plant the demands of a very considerable period in the future be anticipated, while for others only those immediately in prospect need be cared for. In selecting a site for a building it will pay to spend more money for the land than would be required for merely the next few years' use. The site must be located at the most advantageous point, price considered, in view of the service requirements many years hence. Like principles will dominate the construction of buildings to house general offices and central office equipment. Furthermore, the building itself is generally designed so as to be adaptable to enlargement. The actual central office equipment will contain considerable capacity over present requirements, together with provision for additions at relatively low cost. The economies of advance provision in respect to outside plant tend to shade down, although conduit will usually contain more runs than are filled, cable more circuits than are in use, while poles are set, when the occasion demands, of sufficient size and strength to accommodate prospective requirements in the way of additional cross arms and wires.

The elements of capacity and use become all the more important when there has been a slowing up of the demand for telephone service. A plant adapted for the permanent conduct of business is naturally subject to cyclical fluctuations in use. Construction is not of necessity a continuous affair creating large plant margins not in use. As the demand stabilizes the use tends to approach a standardized capacity. These factors are of great importance in this case and have received no attention at the hands of the plaintiff.

Yet the elements herein mentioned are matters of daily attention in connection with the telephone companies' plant development. The anticipated demand of a particular community for telephone service is most carefully studied and reduced to plots and curves. The prospective revenues from each class of service and over periods many years in the future are carefully considered. The probable character of plant ten, twenty, and even thirty years in the future is held in view, and all of these studies are given a focal concentration upon whether it pays to make certain commitments in view of the future. The most important single document illustrating the basic elements involved in plant design and indicating the degree of refinement to which planning has been carried in the telephone business is the "Handbook of Outside Plant Engineering Practices, General," which is furnished by the American Company to the operating companies. This book was in evidence below but the writer does not know whether it is a part of the record upon appeal. He is warranted, however, in saying that its contents ought to be thoroughly studied by this court. A copy is available at the Library of Congress. This book reveals many subjects for which we contend, including the inaccuracy of straight line depreciation charges and the consideration of the subject of capacity and fill. Much of its contents is technical, and to explain its significance in words would require a considerable amount of space. Its formulas are, of course, set up with a view to practical use, and consist, in many instances, of calculation conveniences which do not reveal the fundamental economic principles which justify them. However, the book, carefully perused and properly interpreted, contains full admissions, as we have said, validating the practical nature of most of our contentions, and indicating that the presentation of a rate case in behalf of the company does not have the objective of revealing the actual economic conditions and requirements which attend this business. It is rather designed to take full advantage of the unfamiliarity of the judge and of the representatives of the public with the facts, which are ordinarily exclusively within the knowledge of the plaintiff.

In attempting to present the claim that existing customers, whose use of plant facilities is not up to capacity, should pay rates so that the revenues will have a total as if the plant were subjected to capacity use, the company raises a question both of morals and of law. It knows of the existence of facts highly relevant to the controversy. Having a private knowledge of highly technical and esoteric facts, it ignores their existence. The proper response, legally, should be that no rate order can be declared unconstitutional unless, as tested by the actual plans and projects used in the business, the price per unit of service, considered with due approximation of total output, capacity, and variation in use, is clearly unremunerative. There is complete failure to make any presentation of this sort.

It must be remembered that perfect accuracy is no necessary part of such a presentation. It would not be practically difficult to show the degree of use by classes of plant relative to the total capacity of each class. Comparisons could be made of such indexes with the number of stations by class and with revenues per station. Even the investment per station from year to year will constitute a crude index of use relative to capacity. It will be seen that the investment per station has, during the depression, greatly risen, due to the station loss. A fairly accurate index of the use of toll plant relative to capacity could be constructed from statistical data.

It is an unfortunate element involved in the paradox of private industry and governmental regulation that the regulating authorities are, with a few exceptions, we hope, outsiders looking in. This disadvantageous position imposed upon the public relative to access to the facts, appreciation of their significance, and means of marshalling them, should prompt this court to hold a complaining public utility to the requirement of clear and convincing proof that its constitutional rights are being violated.

The subjects of use relative to capacity, and of capital value and depreciation in view thereof, has an intimate connection, as we have before mentioned, with that of Going Value; but we defer discussion of that subject until the exposition of depreciation has been completed.

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IX.

THE ECONOMIC SIGNIFICANCE OF SERVICE LIFE

1. Period of Service Life is a Result of Economic Selection

From casual appearances, property items may seem to have as attributes a certain endowed duration in service. To describe that duration as a "life" is to suggest an analogy between the service period for property, and the term of life for living beings. The analogy is, however, extremely misleading.

The distinction between a period in service and a biological life is aptly illustrated by property having both of these characteristics. A cow might go out of service by being sold to the butcher whenever her productive functions have so fallen off that the advantage of selling outweighs the benefits to be had by keeping her. A horse may have a period of useful service at one kind of work, and may be sold for future service at something else. Domestic fowl may be kept "in service" for eggs and stock; others may render no service whatsoever except when sold for the table. These examples are sufficient to indicate that the "service life" of plant items is not at all analagous to a biological period of vitality. The actual service period of such an object is a matter of art—a result of human action. It depends upon the materials and the methods of its composition, and the relative advantage of disposing of it, over keeping it.

Service life as commonly understood means the period of use at the same location. The item may still be capable of further use elsewhere. The point of view is that of a particular productive process which begins with the installation of the item, and terminates with its removal. At removal, an extra cost may be occasioned, or an extra revenue may be had from the sale of the item. The latter income is salvage. If a net cost is sustained, it may be termed negative salvage.

As ordinarily considered, the termination of service life looks like an untoward event. The analogy sought to be shown between plant and human mortality is a source of grave error. It causes one to regard the termination of usefulness as a commercial detriment, and the chance thereof as a risk.

2. Physical Life.

Physical service life is not analogous to the biological, for it is possible in many instances to give great extension to the former by the expedient of repairing. The limit of physical life is reached when further service without repairs is impossible, and it no longer pays to make them.

The potential physical service life is always an important factor to be reckoned with when retirement is contemplated. It represents an existing reliable stock of services, bought and paid for and not to be thrown away unless the retirement is an incident to an economically superior project. The value of an item on the hypothesis of its remaining in service for its physical life, ascertained by its value new, less an allowance solely for physical deterioration, is commonly termed "structural value."

3. Obsolescence.

Retirement purely on account of obsolescence is a somewhat rare occurrence. Let us consider a simple hypothetical example illustrative of the conditions which at least raise the question of obsolescence. The example which we shall apply is purely hypothetical, for conditions so neat will never occur in actual practice.

A manufacturer has a certain machine on hand in a condition as good as new. He is advised, however, that it is obsolete because there is now available at half its cost a new machine of different construction which is a perfect substitute for the one he has: it operates at the same cost, produces an identical output with equal efficiency, will last precisely as long, and will have the same junk value. Should the present machine be retired for obsolescence? Obviously, the effect of retirement and replacement with the new machine will be simply to have duplicated the identical services and the identical income which the old machine would afford; but the burden of a further outlay will have been incurred. It is clear that the mere relative cheapness of a new machine can never be a cause of retirement; for the old machine will be worth, subject to deterioration, as much as the new. To carry the example a step further, let us suppose that the new machine can be operated with such economies as will first recoup with interest the new outlay required to make the substitution (this outlay is the cost of the new machine less the net salvage realization of the old), and then leave remaining the same income as could be had with the old.

This circumstance, if risk can be disregarded, will only serve to make the choice even, and will still offer no positive advantage in making the change. A qualification may be indicated. The rate of profit reasonably to be expected in the particular business may be sufficiently attractive to justify new outlay in order merely to obtain it in preference to some other and lower rate which the capital could earn elsewhere. If funds are available pressing for employment, to obtain the normal rate of profit on such new outlays may be preferable to seeking another investment. If the outlay must be financed from new funds, the comparison is between the market rate of interest and the rate of profit expected in the business. Ordinarily, in an expanding business the demand for new capital is such that plant items are not displaced merely to afford employment for more capital, but because appreciable savings will also result.

We may now summarize the conditions of retirement purely for obsolescence: The new article must at least substitute for the services, (and hence the income) of the old; it must also within its period in service, afford recoupment plus interest for the further outlay; and it must have operating advantages in addition, so as to provide a further income to induce making the change.

We have mentioned as one of the requisites that the superseding machine shall at least render the same services as the old. What service life is contemplated? Obviously, subject to a qualification which we shall mention, the physical service life. This is only to say that the superseding machine must, after rendering amortization of, and profit upon, the new outlay, be capable of rendering recoupment and profit upon the value of the machine to be retired, for its value will include the probability of its remaining in service for the maximum period. Now it may happen that, pursuant to a major plan, the present machine is slated to be retired before the probable expiration of its physical life. In this event, its hypothetical physical life would seem to be irrelevant to the present comparison. But in formulating the major plan, which thus foreshortens the machine's service life, this maximum must have been considered in order to determine that the plan actually adopted had an advantage. At bottom there is presented a fundamental choice between maintaining existing units and substituting them with new ones; and if in a particular case, the hypothetical physical life of the existing unit is ignored, it is because it has previously been considered.

4. Inadequacy.

Similar economic considerations for the most part determine retirements on account of inadequacy. As a general rule, the means adopted to increase the output result in a reduction in the cost per unit of service; but there are doubtless exceptional cases in which plant expansion is made under public requirements which have the result of increasing such unit costs. Even when expansion is compelled by reason of demands for service, and retirement is made as an incident thereof, it does not follow that the measure of the loss incurred is the structural value of the unit retired. The apparent detriment forced by the removal of the unit may be in part offset by taking advantage of the occasion to effect unit cost reductions through larger or improved units. The result of the sacrifice caused by the expansion will depend upon the facts in each case. In short, the measure of both the gains and the losses through the process of plant development is always a question of fact. Public service companies have a motive in failing to disclose the fact that such gains are constantly made and the magnitude thereof. The subject is one of an intricate nature and is likely to become a matter of sharp controversy in litigation. In the past the tendency has been to emphasize the loss side of the picture and to suppress or fail to perceive the gain side.

The fact that the rate of profit may decline as a result of plant expansion by no means indicates that the process of development and retirement results in losses. Capital will seek investment in the business so long as the expected rate of profit upon the new money will represent a better premium than the readily available market rate of interest. A larger volume of profit at a lower rate per dollar of invested capital may be preferable to a small volume at a high rate of profit. The existence of demand is obviously a condition of plant expansion but it is by no means a loss producing factor. We emphasize the fact that retirement for inadequacy takes place as an incident to making a profit from supplying the increased demand.

5. The Relation of Service Life to Expense

If the particular property item is the unit of value, obviously its entire worth is necessarily consumed in service within its life period. It would therefore seem to follow, subject to such qualification as would arise from an unequal distribution of use over time, that the exhaustion of service life would serve to measure the accrued consumption of value, and hence the expense of depreciation. We have already considered the subject of depreciation from the point of view of regarding a single item as an enterprise, which is initiated and comes to an end in complete liquidation when service life expires. But it was pointed out that the service life concept was subject to considerable qualification. What is true of the enterprise itself is not necessarily to be applied to the several plant items taken singly which contribute to it. Now the plausibility of the service life concept itself comes about by implicitly assuming that, for purposes of valuation, plant items may be likened to miniature complete enterprises. The specific plant item is not, as part of a going business, a satisfactory unit of value.

The separate and isolated existence of the unit actually ceased to be a fact when it became incorporated into the plant. Thereafter, its value becomes manifested not in terms of an output proper to it alone, but rather in the contribution of its services to producing the income of the business. The customer purchasing, say, electric power, is not in any actual sense paying for the services of a particular generator. Nor can he be conceived as making any contribution toward its maintenance and the recoupment of its cost or value. In purchasing the services of a public utility he buys the end product created by means of many subsidiary services. Each plant item makes a contribution in furtherance of the ultimate product. Each plant item is in reality a joint contributor to a practically continuous stream of services, the value of which is manifested in terms of what customers pay for service. What has been said concerning joint production is applicable to a proper consideration of how the specific plant item is related to the enterprise. It is not entirely logical to take the position that, when a unit has been retired for obsolescence or inadequacy at the end of five years, a burden of compensation during this period was actually thrown upon the past revenues. In fact, it is largely a gratuitous assumption that a fully compensatory income needs to be allocated to the retired item by the time its life expires. There is certainly nothing in business practice which imposes such a requirement or makes it even practical.

In considering the expense of depreciation in the true and actual sense as distinguished from merely arbitrary liquidations which may be shown upon the books, the primary factor to be first regarded is the income, since both value and value loss must depend upon the prospective income stream and the difference in its character as between two time points of view. Depreciation therefore, will depend upon what the proper price of service should be. But it is very commonly supposed that the reverse is the case, and that the proper price of service should depend upon what the annual depreciation is. Our discussion of the principles of valuation thus far should have sufficiently clarified the point and satisfactorily demonstrated that value loss is not a primarily given and independently discoverable quantity, but is relative to the prospective income stream and its diminishing worth. Therefore in considering whether or not a particular property item is a proper unit of value the question to be answered really is whether it is desirable in the first place, and practical in the second place, to set prices for service which during the actual service life of plant items will be neatly responsive to the demands of compensation item by item.

6. Rates is View of the Service Life Theory.

Should the price which customers pay for service be so adjusted that a sum sufficient to cover cost or value plus profit equitably distributed over the service life of the several units may be recovered during service lives? This interrogation itself challenges attention to the question as to whether the income of a business may be correlated with its mechanical and structural parts. By what means or process can rates be made sensitive to plant changes so that when a unit is retired it is certain that customers have just completed the final touch toward molding their payments to fit the life and mortality of the structural unit? Reflection upon this question will be persuasive that such a neat relationship cannot exist in fact whether or not it be desirable.

Before pointing out the specific tendency of the service life theory to operate detrimentally, it is advisable to set forth an example in figures so that the discussion may be centered around definite points of reference.

Concerning this example, some preliminary explanation is necessary. The example must represent as defined that which is in fact indefinite. Even though, in actual rate regulation, the implications of the service life theory are not carried into effect, the propriety of the theory must, nevertheless, be tested in view of its perfect application. By perceiving the theoretical requisites of the proposition, we may then determine whether it may actually find application. In our opinion, the theory itself is simply a rate-fixing formula which only affords a rule of thumb to set rates which are in fact arbitrary. The rate so determined does not in fact perform the functions which constitute the implicit basis for the theory. The example, therefore, is of conditions which would exist if a price for service were charged, which during actual service lives, would meet the requirement of amortization and profit item by item. At the date of retirement, the item is supposed to be analogous to a completely liquidated enterprise, which has, with fairness to all customers, produced enough to cover its cost and to yield a reasonable profit to its owner.

The example must be complete as to relevant detail. It must include every element necessary to an economic analysis of the problem. In short, it must show the dollars and cents involved in the retirement transaction. It will therefore serve to recapitulate in figures what has been said concerning the nature of obsolescene and inadequacy, and will demonstrate the fact that retirements based thereon are merely incidental to plant development in view of due economic selection.

Let us suppose that there is brought into question whether, in view of the existence of an advantageous substitute, a particular plant item should be retired. This presents a choice in respect to two optional modes of conduct: to retain the existing item, or to retire it and to substitute the new one. The choice will be resolved upon the basis of which alternative is most economical. It is necessary to consider, therefore, the financial difference, in detail as complete as may be convenient, between one and the other alternative. What has already been spent for the existing item is completely irrelevant to the determination in view. The comparison must be made purely upon the basis of future advantage as between retaining the existing item and replacing it with the new.

The present item, let us suppose, has a hypothetical physical service life for ten more years. At the end of that period it will render salvage of $50. But if substitution is made, an immediate salvage realization from the present item of $300 can be had. In addition the new item has an operating expense advantage over the old of $150 per year. Furthermore, the new item has a hypothetical physical service life of 15 years. Nor is there any great probability that an even more efficient article will soon be developed. The new item has an expected salvage realization of $50 at the end of its physical life. These benefits must, however, be offset by the detriment consisting of the first cost of the new item, say $1000, and the loss of the ultimate salvage upon the old.

The benefit and detriment involved by the plant change may be set up from the present point of view, regarding the future. The items of benefit or detriment expressed in monetary terms must however be reduced to a comparabl basis in view of the fact of time differences in their realization. Conditions which are common in either event do not need to be considered, since the exercise of the option does not alter them. The benefits and detriments involved in the retirement and substitution may be tabulated as follows:

		Present Worth
Benefits		
Salvage immediately realized	$ 300.00	
Saving of $150 in expense for 10 years	1,104.00	
Value of surplus services of new:		
Income of years 11-15 at minimum of $100.81* annually	237.12	
Salvage at $50 at year 15	20.86	
		$1,661.98
Detriments		
Outlay	$1,000.00	
Salvage of $50 to be realized in year 10, foregone	27.92	
		$1,027.92
Balance in favor of retirement and substitution		$ 634.06

*This figure results from an estimate that the substitution will not involve a compulsory rate reduction during the extended service life period below a level based upon a first cost of $1000, a physical service life of 15 years, ultimate salvage of $50, and approximately constant use throughout. Under these conditions the requirement to yield 6% is the above figure.

It is thus seen that by retiring the existing item and substituting the new, a gain, worth in present money $634.06, may be had. In addition, the substitution offers the advantage of employment for more capital, to the extent that this may be an advantage. The foregoing figure, however, must be taken as merely a probable approximation. There can be no guarantee that this advantage will in fact be realized. It may in turn be discounted in relationship to various possibilities; for example, the general state of the arts may be indicative of the fact that improvements in equipment of the character in question are in the offing. Under certain conditions, it might be better business to await future developments. There are frequently many factors of chance and risk which cannot be conveniently expressed mathematically, but which, in close cases, may influence the choice. Subject to such qualifications, plant development actually proceeds largely upon the basis of the above mentioned considerations and comparisons. Though the exact eventualities are unlikely to be precisely foreseen, still, action is taken in view of minimum, maximum, and most probable expectations.

The example illustrates in detail the economic considerations behind most retirements for obsolescence and inadequacy. A particular property item is incidental to the conduct of the business as a whole; it is maintained or sacrificed in accordance with what is best for the business. In view of advantages ultimately to be realized, the item itself is made to depreciate down to salvage value. Herein lies a paradox which, however, can be fully reconciled if regard is had for the change in the point of view from the item itself to the enterprise. From the latter point of view, which is indeed the effective one, the value of the item as such is irrelevant. It may pay to annihilate it. If so, the completed transaction in which the retirement figures merely as an element, has an appreciative rather than a depreciative result.

A strong force prompting the plant change is the ability to appreciate the worth of the business by means of the advantageous substitution of plant items. For the case covered by the example, it is clear that a saving of $634.06 will be available on account of the change. To the extent that the existing rates are maintained, this saving will fall to the enterprise. If rates are not to be readjusted on account of the cost reduction effected, it is clear that immediately upon making the change the enterprise has sustained a gain in value of $634.06. Likewise, it must be indicated that the change might not be made if all of the advantages thereof had to be passed on to the public through the medium of reduced rates.

The proponents of the service life theory argue, in support of it, that the economies of the substitute plant item are all passed on to customers—an absolutely false proposition.

In order to set up the revenue requirement in view of the complete application of the service life theory, additional data are necessary. We need to know the cost of the existing item, its age at retirement and the relative annual volume of output throughout the total period. We shall assume that the original cost is $1000; and to avoid conflict with reproduction cost theories of value, we shall also assume that the reproduction cost does not change. The assumption in respect to output will be that it is constant annually. The age of the property at retirement—its actual service life—will be assumed to be five years. The problem then becomes the following: What is the equal annual income requirement to afford a profit of 6% in view of a cost of $1000, a service life of five years, and a salvage income of $300? By the methods fully explained in connection with the Valuation Tables, this requirement is found to be $184.18. The price of service will therefore need to be this amount increased by the annual operating expense. Let us assume that the operating expense (not including depreciation) is $400 annually. The revenue requirement, therefore, during the service life of the present item is $584.18.

Upon the retirement of the existing item, when it has been in service a period of five years, the rate will need to be changed, if equity is to be done as between the utility on the one hand and the customers collectively on the other. Under the conditions of the example, the compensatory revenue requirement to yield a profit of 6% and to amortize the cost of the new item during its service life, will be $350.81 annually, composed as follows: The income requirement from service to yield a 6% profit on the first cost in view of the 15 year service life and the salvage is $100.81 annually. Since the annual expense is now $150.00 less, its amount is $250.00; which, added to the requirement for amortization and profit gives the total revenue requirement of $350.81.

It is seen that the service-life theory, if logically applied in fixing rates to yield a merely compensatory income, will cause the price of service to take on special characteristics. The picture is not complete or representative unless the purview is extended over a considerable time period. If perfect forseeability is assumed, the rate must be made to change with the inward and outward movement of plant items. In anticipation of early retirements due to progress in the arts and growth in the demand for service, the charge while the initial item is in use must be high, since its cost must be amortized, and profit thereon must be earned during its actual service life. But the greater this progress and growth, the more onerous the burden upon the present user. In attempted justification of the high rates thus resulting, it is said that the books on the old item must be closed, so that the new may start out with no drawback from the past. At the moment of the plant change, a new rate must be instituted low enough to pass on to the public the savings effected. To conform with theory, the price of service will start high, and drop to lower levels with major plant changes.

This requirement of frequent rate adjustment is practically impossible to meet. It is impossible for a commission to be sufficiently well informed to be in a position to enforce the reduction with the necessary promptness. An industry in private hands does not rush to disclose, and thus to throw away, its profit making opportunities. They are, in fact, kept secret as much as possible. Obscured by systems of accounting and claims for depreciation, they are elusive even to the intelligent and the vigilant. A knowledge of the business, particularly of its most important aspect, namely its probably future, is for the most part, private to its management, and is kept so. The routine accounting statements usually required do not comprise an analysis of the business sufficient for the purpose. Accounting science and economic analysis have not progressed sufficiently so that a general body of approved principles is at hand. At the present stage the usual analysis is based upon a series of underlying conventional assumptions which we believe to be replete with error. At best the possibilities of plant development and cost reduction can be fully appreciated only by those on the inside. Ready disclosure cannot be expected, and discovery is difficult and uncertain. A level of rates, once established, tends to perpetuate itself.

As a practical matter, the refined adjustments required by the service life theory are not made. The rate order actually outlasts a considerable part of the property in existence when it was made. It will run over into new cost conditions without adjustment. In actual practice, rate revisions are infrequent. For the same utility they may be spaced five to ten or more years apart. As a result, the economies effected through the process of substituting more efficient productive goods are not passed on to the public.

In consequence, it is highly profitable for a utility to establish as a basis for computing rates, short service lives. Their use tends to establish and to maintain a high rate level. It has been thought, however, that the merits of the service life theory depended upon whether it was possible to forecast accurately the duration of the goods in service. Though inaccurate forecasts contribute to error, they are not always the principal cause of it. Mere accuracy in service lives at the time the rate is instituted will not serve to keep rates constantly adjusted in accordance with the new economies to which the actual service life is incidental. An accurate service life represents only the detrimental side of the picture to the exclusion of the more than offsetting benefit side. Charging the public with the detriment and failing to credit it with the benefit naturally results in excess profits.

The measure of the excess profit depends upon the differential between the rate requirement before and after the plant change, and the length of the overrun of the existing rates. In the example, the differential is $233.37. An overrun of, say, two years will produce excess profits of 23-1/3% based on plant cost. Spread over the period of fifteen years, this excess will raise the rate of profit to approximately 10%.

The service life theory gets its plausibility from the delusive idea that each item should, in a sense, be self-sufficient, and should pay its own way, presumably out of the direct services which it renders to the customer. Such a simple analysis of the business into immediately tangible objects makes a strong appeal to common sense; but dominant realities cannot be thus brushed aside. In applying the service life theory, the impossibility of segregating the item becomes immediately apparent. No attempt is made to correlate the item with services to the particular customer and to fix rates on the basis thereof. Instead, the service life actually used pertains to a group of items of like kind, without regard for the fact that the services of many may be devoted to only limited groups of customers. In thus classifying items of property, the substance of the service life theory is thrown to the winds.

A large sized power or telephone company, for example, will have far flung pole lines. A particular user may be served by a line of poles having conceivably a service life of thirty years; but the impossibility of classifying users according to the life of the property which serves them is at once apparent. Upon an adjacent street the poles may have a life of only ten years. Accordingly, even the proponents of the service life theory must admit that the specific item cannot be given individual treatment. They must perforce fall back upon the class. As a result, the price of service, theoretically of course, is set to provide amortization of all the poles. The user of the thirty year poles is charged on account of the short lives of other poles; while those served by short lived poles are relieved.

A community of interest as between all the users of the class of property is thus recognized even though no customer makes a direct use of all items in the class. The inward and outward movement of these items will not take place in any regular order; as, for example, according to age. The movement is constant, in both directions—inward and outward. Perhaps many of the existing poles will last upwards of forty years; on the other hand, some not yet placed, may reduce the composite life, because they will last, say, for only five years.

If community of interest between present and future users is recognized as a basis of spreading capital costs, it must also apply to distributing economies in operating expenses. Calculations of depreciation expense based upon the probability of short service lives on account of prospective obsolescence and inadequacy result in great unfairness to the public. Such forecasts do not genuinely signify that a so-called expense of retirement is immediately to be encountered. On the contrary, then denote that operating economies are immediately in prospect so that the cost of service will be less by retiring the item and substituting something else for it, than would be the case if it were left in plant to last out its physical life. If, however, the prospective operating economies are to be ignored, then when rate calculations are made, the shorter the service life, the higher the apparent expense, and the less adequate the existing rate seems to be.

The predictability of service lives argues absolutely nothing in favor of the validity of the service life theory. In *Depreciation Charges of Telephone and Railroad Companies,* 177 I. C. C. 351, considerable attention was devoted toward justifying the use of the service life theory on the ground that services lives were predictable. But if service lives are predictable, then the fact of substantial operating economies through plant changes is likewise predictable and should enter into the determination of proper rates. It must, however, always be remembered that the investigation referred to dealt not with rate making but with bookkeeping.

The tendency of past experience, whether subject to statistical analysis or to the interpretation of judgment, is in favor of short service lives. We venture the opinion that a forecast based upon the experience of retirements prior to 1930 will propound service lives considerably shorter than will actually be realized in the future. The principal causes of retirement—growth in demand and technological improvements in the arts—were operative with especially great force throughout the decade of 1920. Indeed, the half century preceding 1930 probably comprised the development stage of the industry. A projection of the trend of retirements represented by the experience immediately prior to 1930 produced forecasts for the ensuing ten years indicative of equally short service lives. The management itself was persuaded that the decade of 1930 would be characterized by a similar rate of growth involving large and rapid retirements for which new plants would be substituted. Plans for this movement were already formulated and some projects were under way.

We have indicated that an accurate forecast of service lives in itself does not protect against the vice of the service-life theory, and we have no desire to give the subject the appearance of importance by concentrating discussion upon it. However, in our opinion, the actual evidence brought forth to sustain the predictability of service lives is of too limited a character to be wholly persuasive.

Statistical methods as usually applied overemphasize present trends and minimize the probable limitations upon them. When the demand for service grows at a constantly increasing pace, nothing in the statistics warns that the rate of growth cannot continue. Furthermore, increasing business itself creates an optimism which will not heed caution concerning a limit. Growth and progress seem to be unlimited. Plans in anticipation of continued expansion are made, and they have the approval of judgment. But both growth and progress are self-limiting factors. The tendency toward growth of population must come to an end. Likewise the concentration of people within limited areas must reach a limit. The standard of living cannot rise indefinitely. Furthermore the field of research is intensively cultivated, and it is natural to assume that each technological improvement narrows the scope of future possibilities.

The tendencies of statistical tabulations and of judgment based upon the actual experience of the past, coupled with a natural psychological predilection in favor of optimism, greatly favor the prediction of short service lives. To these weighty influences there should be added that of self-interest. Since a rate more favorable to the utility may be secured on the basis of short service lives, the prospect of early retirements is naturally entertained with favor. The tendency to underestimate service lives is one inherent in the usual forecast propounded by the utility; and, though it may be questioned, the public does not usually have the means at hand to correct it. The very use of service lives as a basis for rates produces a standard too greatly within the control of the utility. Service lives in practice may be suspected of bias in the direction of shortness.

The financial effect of errors in this direction is very considerable. When the expected age at retirement is relatively short an error of even one year makes a large difference. For purposes of comparison, the income requirement may be regarded as an annuity to be realized during the expected service life. With interest at 6%, the requirement upon a six-year service life is 20.3% of the initial value, while the use of a five-year service life increases the burden of revenues to 23.7%, an increase of 3.4%. As the life lengthens, the effect of an error of one year progressively diminishes. The requirement for an eleven-year expectation is 12.7%, while that for ten years is 13.6%, a difference of .9%. For sixteen and fifteen years the requirements respectively are 9.9% and 10.3%, a difference of .4%. The difference between the requirements of twenty-one and twenty years is reduced to .2% whereas that between years thirty-one and thirty is less than .1%.

The above mentioned defects in the results brought about by the use of the service life theory indicate the nature of the corrective substitute. The primary defect, which imposes the theoretical requirement of prompt rate readjustment, is obviated by a standard of regulation which makes the level of rates more nearly constant, both in theory and practice, over extended time periods. Indeed, the ideal conditions are those of perfect forseeability, in which not only the retirement, but the concomitant economies could be foreknown. The ideal charge for service would be an equal amount to all the customers over the period; but since such perfection in foresight is impossible, rates must be fixed upon the basis of the reasonably probable conditions to be anticipated.

7. Hypothetical Physical Service Life as a Standard for Depreciation.

For this purpose a standard is readily at hand, derived from the very facts and principles of economic selection. We have seen that the theory of amortizing through rates the cost of property retired during its service life ignores the benefit side, while stressing the detriment involved in the retirement. The retirement itslf will ordinarily be influenced by the comparative advantage of removal and substitution, over letting the item remain in service over its hypothetical physical service life. Thus, we may perceive that a price for service designed to realize profit and amortization of cost over the hypothetical physical service life will be a maximum which the prospective economies (to the extent that they can be computed) will be available to reduce.

In formulating rates in which the factor of physical service life is regarded, the physical unit in and by itself cannot be taken as the unit of value. Since we brand as fallacious the theory that amortization and profit needs to be complete and perfect for each item at retirement, we must show the due procedure and rationale of burdening the enterprise itself, rather than the item for the return of cost and profit. The view of the business merely as a collection of independent items is so persistent that the question is asked—"Why burden other items for such unamortized cost and unrealized profit as remains at retirement?" But this again is to make too much of the item view. Equities do not run in favor of the several plant items for they themselves are only incidental to the rendition of continuous services to customers, at an equitable price. In securing such an equitable price, the group of customers as a whole—and not merely an instantaneous cross-section of it—has a community of interest. The burden of cost and profit must be equitably distributed to this group through the price of the continuous service which it uses. It will be seen that this view makes necessary a revision of the idea that the essence of property value is residual in the physical items.

Let us assume for the moment that a new plant is installed and rates are fixed to afford profit and recoup cost over the hypothetical physical life. The possibility of retirement in advance is recognized, but only as a possibility. For the present it is not possible to calculate an economic advantage by advance retirement and substitution. Turning to the example we have used, the income requirement (amortization and profit) is $100.81. The annual operating expense is $400, making the revenue requirement $500.81 annually. This is to be compared with the figure of $583.87—an amount 16.7% higher—which is the requirement under the service life theory.

At the end of five years the advantage of retirement and substitution become definitely manifest. The existing item is retired; and the new is substituted. To start a clean slate with the new item and to base rates purely upon its hypothetical physical service life (which, in this case corresponds with the actual) *will not do.* A full compensation for the initial investment would not be rendered. We have seen that to have charged the initial customers a higher price would not have been proper. The rate to them was on a reasonable basis, and the benefits of the plant change run wholly to the future user. Indeed, it may with justice be said that the existing structural value of the item, less the salvage, is dispensed with for the benefit of the future user. The price of service to him should therefore include compensation for this otherwise uncompensated for sacrifice.

The example which we have set forth is reduced to the simple terms of two items and therefore is not entirely typical of a continuous business. Since the example is limited to a single replacement, the possibility of further cost reduction by continuing the process of substitution is excluded. In an actual business either the prospect is that the substituted item will last out its physical life, like our example, or there is reason to suppose that it will be subject to a shorter service life on account of prospective economies. In every instance the utility can afford to reduce the rates in the face of heavy retirements. We have also seen that as a practical matter the economy is likely to be in force long before a compulsory reduction in rates can be effected. The utility is therefore likely to receive a more than sufficient opportunity to amortize any uncompensated for costs through the operating economies which it is enabled to institute before rate reductions. However, it would be manifestly unfair to fix rates after operating cost reductions had been effected, on the basis of the assumption that a clean slate is to be started with the new item and the utility was bound to protect itself against this kind of rate regulation by making the previous rates provide compensation during previous service lives. This doctrine is simply the service life theory over again.

The right to amortize the structural value of the retired item seems to us to be clear. *Pacific Gas & Electric Co.*

v. San Francisco, 265 U. S. 403. The operating advantages of the substitution will still permit a reduction in rates even though they bear a burden for such amortization. That burden is to be distributed over the hypothetical physical life of the new item. So distributed it will be so small an amount annually as to be almost imperceptible. Furthermore, the influence of prospective economies should be regarded. The remaining burden of amortization will not be, in the form of an annual amount, enough to influence a decision in a rate case.

To return to the example: The present structural integrity of the item retired may be measured by the figure of 66-2/3 per cent, on the assumption that the condition at which retirement is forced equals zero.

As we have seen, physical condition is not synonymous with value. It is necessary to evaluate the remaining two-thirds of the hypothetical physical life, considering likewise the salvage. The income requirement for the physical life, salvage considered, is $100.81 annually; and since the remaining life is ten years, the present worth of this income is $741.97. This figure, which measures the structural value of the item at retirement, also measures the amount of cost which has not been amortized in rates.

The burden of further amortization to be met out of rates is simply computed. The actual market value of the item when dissevered is indicated by the salvage realization—in this case, $300.00. There remains, then, $441.97 as of the five-year point to be compensated for out of the services of the substitute item.

The replacing item, having the same cost and hypothetical physical service life as the initial one, sets an income requirement of $100.81. In addition a present worth of

$441.97 is to be compensated for out of the stock of services. This burden in terms of an annuity of equivalent worth, over 15 years at 6%, is $45.52. The total income requirement is therefore $146.33. Since the operating expenses are $250.00 per year, the annual revenue requirement from service is now $396.33. This sum is to be compared with the prior annual requirement of $500.81.

8. Approximation of the Requirement for Depreciation and Return.

The valuation tables, particularly Table III, will have demonstrated that in the case of progressively depreciating property annual depreciation and annual profits are each of them variable rather than constant; but that the addition of these variables results in a constant annual sum when output is constant. For broad general purposes, particularly in making estimates to be taken merely as approximations, the assumption of constant output may be made, since the probability of variations in both directions is thereby equated. In measuring the annual requirement for depreciation and profit over a long period, this point of view may be adopted. We have shown that amortization burdens should properly be distributed over periods as long as the hypothetical physical service life of the property. It will be found that a composite physical service life for telephone property will be quite long, probably considerably in excess of 35 years.

Annual amounts providing depreciation and profit over lengthy periods do not greatly exceed the standard rate of profit or interest. Profit and amortization in equal annual payments over 35 years to render 6 per cent of a principal sum will only need to be 6.9 per cent of such sum annually. Thus it may be perceived that the factor of depreciation in the public utility business may be reduced to a minor figure. Indeed, as the period increases over which the income burden is to be spread, the rate for the income tends to approach the nominal rate of interest, a fact which is illustrated in the following table:

Life	Annual Income Requirement, %
30 years	7.26
35 "	6.90
40 "	~~6.90~~ 6.65
50 "	6.34
60 "	6.19
70 "	6.10
100 "	6.02

A public utility engaged in a type of business which for practical purposes can be considered as permanent, (60 years in the future is enough) receiving an income (depreciation and return) of, say, 7 per cent, is actually earning a profit somewhat in excess of 6 per cent. This is sufficient to show the extent to which claims for depreciation expense have been exaggerated in this case. The actual charges to depreciation expense in a Bell company exceed 5 per cent of the book cost of plant. This claim, added to that for profit, results in an annual claim of income amounting to from 12 to 14 per cent of book cost. It is still further increased by the use of a reproduction cost rate base. The justification thus to swell the price requirement for service depends upon the hocus pocus of the straight line method, taken in conjunction with the theory of amortization during service life. It is of the utmost importance for the just regulation of rates that the fallacies in these theories be exposed.

Depreciation expense applied in testing the propriety of rates is to be carefully distinguished from the debits or charges to depreciation expense in keeping a set of books. For the former purpose an assumption will need to be made concerning future operating expenses. To assume that they will continue at present levels comports with the assumption that the existing property will last out its hypothetical physical service life. These correlative assumptions will result in the propounding of a rate which is clearly sufficient. The future holds within it a high degree of probability that under rates thus fixed the rate of profit will be much larger than that assumed in the calculations. This result is likely to ensue because future operating economies will be available through the process of retiring plant items and substituting others in their stead. By virtue of the reductions in operating economies thus resulting, there will be income sufficient to amortize the cost of property retired, and, unless rates are reduced, to swell profits. Therefore it must be remembered that while it will be reasonable for purposes of rate determination to use a total income requirement of, say, 7 per cent to cover depreciation and return, the actual charges to depreciation expense in the future may still be large enough to amortize the cost of property retired, (allowing, of course, an extensive period in the future) because operating expense diminishes as retirements increase. It is extremely important fully to comprehend the fact that, except for quite unusual cases, a rate based upon present operating expense and an income requirement to be spread over the hypothetical physical life of property is a maximum figure. Prospective retirements, accompanied by operating economies, diminish rather than increase the requirement.

9. Depreciation on Acount of Obsolescence is a Result of Price Reduction Forced by Competition.

It is also very important to avoid confusing the marketing conditions pertaining to public utilities with those of competitive businesses. In the former, depreciation on account of obsolescence, is, generally speaking, entirely absent. In the latter, it is an ever present risk. Subject to value of service considerations, the public actually guarantees to a public utility a fair remuneration, a condition which does not exist in competitive businesses. If a competitor develops a more efficient mode of production by means of new appliances, the price of output is depressed, with consequent depreciation in the value of all capital goods engaged in such production. Generally speaking; public utilities are protected against such risks. Nevertheless, the service life theory is really based upon the existence of such a risk in the public utility business. The result, of course, is that the public is loaded with an assumed cost of this risk, while the object of the risk itself never happens to the utility.

10. Retirements for Inadequacy Involve Operating Cost Reductions.

The claim is frequently made by the telephone companies that retirements are brought about through the desire to render a more extensive service regardless of cost. Such a claim should, however, be supported by evidence. A perusal of the "Handbook of Outside Engineering Practices" will amply demonstrate that such a claim is utterly unfounded. Plant development does not proceed from that which is economically good to the company to something worse. The primary warrant for spending money in plant development is that more money can be made by instituting the project that by leaving things as they are.

11. Other Utilities Admit that Service Life Theory Results in Excessive Rates.

The service life theory does not have the approval of public utilities apart from the Bell telephone companies. The railroads have no use for it. Gas, electric, and water companies do not use it. At bottom its chief function is to justify high rates. See particularly "Concerning Depreciation," by Robert A. Carter, Vice-president of the Consolidated Gas Company of New York, a digest of testimony given before the Interstate Commerce Commission on November 22, 1923; also, "Depreciation Charges of Railroads and Public Utilities" by Robert A. Carter and William L. Ransom, a memorandum filed with the Depreciation Section of the Bureau of Accounts of the Interstate Commerce Commission.

We have before explained the distinction between the use of service life depreciation rates for purposes of accounting and their use as a measure of annual depreciation expense when rates are in question. We are concerned only with the latter element, and with this the recent findings of the Interstate Commerce Commission have nothing whatever to do. We are not disposed, therefore, to argue upon the limited subject of bookkeeping. In passing, however, we may mention that to claim as an annual expense an amount which does not even approximate correctness is not commercially healthy except for very strong businesses. The public takes the statement at face value, and a railroad which is compelled to represent its annual expense of depreciation at a high figure will seem to reveal great financial weakness. Of course, that weakness does not exist, but a great detriment to its bondholders and stockholders is very likely to result. A considerable part of railroad company difficulties today is due to defective notions of accounting applied to the peculiar condition of fluctuating revenues pertaining to the business. Weaker telephone companies make a very poor financial showing when they are compelled to report high depreciation expense charges which do not exist.

12. This Court Should Not Permit the Service Life Theory to Become a Doctrine of Constitutional Law.

It is a matter of grave importance that the decision of this court be not interpreted as petrifying the service life depreciation expense theory as a doctrine of constitutional law. Generally speaking, commissions and lower courts do not make independent investigations of the enterprise with a view to ascertaining what the facts are, but instead attempt to apply to the regulation of rates decisions of this court upon facts as well as law. As a practical matter, this court has the responsibility of leadership. We submit that no rate order should be declared unconstitutional without most thorough consideration of the claims in respect to depreciation expense, even though the parties themselves do not dispute the service life theory. The public importance of the subject is so great that the Constitution should not be used as a means of sustaining rate claims unless the order attacked is shown to the satisfaction of the court to be clearly confiscatory. The technique of rate regulation and of testing the constitutional validity of rates is still in a formative condition. Each decision of this court is, however, accepted as formulating an essential principle of rate regulation inflexibly required by the Constitution.

X.

CRITICISM OF STRAIGHT LINE DEPRECIATION ACCOUNTING

1. Reservation of Income Cannot Create Expense: Writing Off Capital Value by the Amounts Reserved Produces No Correction.

Depreciation accounting has two aspects. The first is the charge or debit to Depreciation Expense; the second is the credit to Reserve for Depreciation. It is not essential that the first element be coupled with the second, for there is no necessary reason why the creation of a reserve should depend upon the simultaneous existence of an expense. A reserve may be designed to represent a portion of income held back from passing out as dividends in order that there may be secured protection against contingencies more or less likely to happen.

When, however, the measure of profit is in question, it becomes necessary to determine the actual value loss, relative to the standard of initial value, which has been sustained. Charging the amount reserved to expense raises, rather than settles this question.

The difficulty of measuring, period by period, the expense of depreciation is obvious. Such measurements, of necessity, involve contemporaneaus valuations which, as everybody knows, are highly unstable. But we have shown that in public utilities the element of depreciation is much smaller than is commonly represented. With very durable property, the annual value loss by reason of deterioration is of minor significance, and though we cannot measure it precisely, we may reduce to a fair approximation the combined burden for depreciation and return which should be laid upon the customer for service. This we have already shown.

The assumption is sometimes made that the magnitude of the debit or charge to depreciation expense is of no importance provided that the capital value be correspondingly written down. Protagonists of the public interest have concentrated great attention upon pointing out the injustice of failing to write out from capital value the depreciation expense charges. They do their cause much harm. They merely advocate a formal perfection in the performance of an operation itself erroneous and thus help to sustain the fundamental error of the method itself.

2. Use of Straight Line Depreciation in Rate Determination has Practical Result of Imposing a Greatly Excessive Rate Upon the Customer.

The following table, comparable to Table III, will demonstrate the error of the straight line method when applied to rate making.

TABLE VI.

STRAIGHT LINE DEPRECIATION TABLE

1. Year	2. Accrued Depreciation or amortization at end of year	3. Book Value remaining investment or Rate base at beginning of year	4. Profit on Rate Base	5. Annual amortization and Profit (Income Requirement)
1	$100	$1000	$60.00	$160.00
2	200	900	54.00	154.00
3	300	800	48.00	148.00
4	400	700	42.00	142.00
5	500	600	36.00	136.00
6	600	500	30.00	130.00
7	700	400	24.00	124.00
8	800	300	18.00	118.00
9	900	200	12.00	112.00
10	1000	100	6.00	106.00

It is evident that this table practically can work out only upon one condition. That condition is indicated in column 5. Unless the price for service (less current expense) corresponds with the figures in column 5, the table will have absolutely no application. Now it is obvious that the price of service cannot practically be made to conform to the decline indicated in column 5. And it would be extremely undesirable from the point of view of the rate payer to subject him to such charges. A new property would place a burden upon him for depreciation and return of 16 per cent; in a property of average age, the burden would decrease to 13.6 per cent; a property in the last year of its life would only require the customers to pay 10.6 per cent. But at all times the customer has received the same service. It did not differ in value to him on account of the age of the capital goods used to produce it.

In fact, the price adjustments necessary to the working out of the straight line declension are never made. If its theory is applied in the determination of rates, the fairly persistent rate will be made to depend upon the age of the property at the time rates are fixed. If the utility is fortunate enough to have a rate case in the infancy of its property, the burden upon the customer, fairly permanently fixed, will be, with reference to the example, 16 per cent. Rates will only be fair if they are fixed with reference to middle-aged property. We believe that this is sufficient to reduce the theory of the straight line method to absurdity. It gains support because it is very simple. Anybody can understand it. It embodies the hypnotic power of simple mathematical ratios. Certainly, it is thought, if the service life is ten years, the value loss must be 10 per cent annually; and if this is the value loss, the rate base must decline in step; and since the price of service is based upon the rate base it, too, should decline in step. Thus goes the logical pursuit of an erroneous premise. Most public utility property is young. The accrued depreciation for most utilities under the conditions of growth during the past decade, measured by the straight line method combined with the service life theory, will seldom exceed 20 per cent. For this reason those who have tried to benefit the public by insisting upon the method which makes the maximum deduction from the value new on account of accrued depreciation do not succeed in getting a tremendous reduction, and their argument supports the heavy annual depreciation expense charge which is the joker contained in the method.

The Bell System, however, is prepared to accept all of the advantages of the straight line method, rejecting at the same time every element of detriment which the method in strict theoretical application would impose.

It insists that the method is excellent to measure depreciation expense but that it is worthless to measure accrued depreciation.

A well maintained property will rarely have even as much as 10 per cent accrued depreciation. It is therefore extremely profitable for the company to advocate the right to burden the customer with the straight line, service life, depreciation expense charge, and likewise to burden the customer with a profit requirement based upon the value new less depreciation calculated on the basis of physical life or condition.

In order to produce this highly advantageous result the company admits somewhat more accrued depreciation than actually exists. The per cent condition as derived by the company is only the result of the straight line formula applied in connection with the hypthetical physical life. As may be observed from Table III, the actual value decline does not stand in a direct relationship to the expiration of time. To condition property at, say, 90 per cent is only to say that the physical durability is impaired by 10 per cent. The value decline or depreciation does not correspond. By accepting a somewhat excessive measure of accrued depreciation the company is enabled to avoid telling courts and commissions more than it is good for them to know. It manages to keep within the straight line method, demanding that so-called service lives be used in the determination of depreciation expense, but that hypothetical physical lives be used when a deduction from value new is in order.

The validity of the straight line service life method is not to be tested by whether the reserves are sufficient to meet prospective retirements as they may occur. As to the service life theory, this test begs the question. And it may be conceded that the straight line method would not accrue more money than is required by the service life theory. The error consists in mal-distribution of the total depreciation (equal to cost, less salvage) among accounting periods. So far as the reserve is concerned, the error consists not of too much accretion, but of too early accruement. The vice of the method consists in its use to fix a price requirement for service,—16 per cent as in year 1, Table VI, whereas 13.59 per cent is alone proper under such conditions.

3. Demonstration of Error in Straight Line Method from Example of Merrimac Exchange.

In the appellants' brief a cogent criticism was made of average life figures for buildings and central office equipment. Although the initial structure and the equipment installed within it will last for the life of the building, yet the depreciation expense of the present is based upon a much shorter average life. From time to time additions are made to the building and to the equipment, but the entire structure and its contents are retired at the same time. As a result, the average life is shorter than that of the initial construction and of the early additions. The use of the straight line method for determining the annual depreciation expense will impose an undue burden upon the revenue requirement whether it is calculated upon the basis of the actual service life of the existing property or upon a hypothetical average. However, the error which exists in the former case will be greatly magnified in the latter. The straight line method takes no account of the factors of time and interest. The prospect of spending a dollar fifty years hence is immediately converted into a burden as if the dollar were being spent now. This, too, the appellants' brief points out.

The burden of remote future costs in terms of present money is so slight that the matter of average service lives of the initial structure and its additions becomes of little importance. In other words, if the vicious straight line method is not used, and instead a correct burden is placed upon customers in view of present and future costs, that burden is not large enough to be the subject of argument.

This fact can be speedily shown without resort to intricate calculation. The average life claimed by the company for the Merrimac Building is, in round figures, 38 years. The equal annual income requirement to yield 6 per cent on cost over this period is 6.74 per cent of such initial cost. It is apparent that the enlargement of this burden is due primarily to the straight line method applied in conjunction with the average service life.

A more elaborate computation of the requirement per unit of service to yield a profit of 6 per cent will confirm the rough approximation above indicated of 6.74 per cent. The writer has gone through such a calculation. For purposes of simplicity he has approximated the expenditures made up to 1929 at $238,000 and considered them as made at the beginning of 1926. He has assumed that the output will be directly proportional to the cost of the building remaining in service, and has considered each thousand dollar's worth as representing a unit of output. By deducting the retirements at cost from the expenditures, the units of output produced will be indicated. The output will consist of 238 units to and including year 5; 380 units to and including year 18; 950 units to and including year 28; 1,035 units to and including year 38; 1,124 units to and including year 48; 1,177 units to and including year 58. In view of this output and the outlays required to produce it, with due allowance for salvage, what will be the price requirement per unit of service? This was computed by methods like that shown in connection with Table IV. The unit price requirement thus found was $67.90, which is the income requirement per thousand dollars of plant in service at cost. In other words, the burden upon customers to yield 6 per cent in respect to outlays effective from 1926 to 1984 is 6.79 per cent of the cost of plant in existence at any time.

This example forcibly points out the fact that long term calculations are concededly essential in the determination of depreciation expense. The ultimate object of figuring is to ascertain what the customer should properly be required to pay for service.

Let us now compute the effect of the company's claims upon the price requirement. We have a total investment of $1,291,880, and a salvage rendition of $184,770—approximately 14.5 per cent of the cost. If this salvage is distributed pro rata, the amount allocable to the initial property is 14.5 per cent of $238,000, or $34,510. The total completed depreciation at retirement in the initial property, therefore, is cost less salvage, or $203,490. A life of 37.9 years represents an annual charge of 2.67 per cent, which amounts to $5,392. The profit requirement will be 6 per cent of first cost, and amounts to $14,280. The total requirement for depreciation and return on this basis is therefore $19,572, or approximately 8.2 per cent of cost. As we have seen, however, the actual requirement is 6.79 per cent, a difference of 1.41 ~~1.3~~ per cent.

A requirement of 6.79 per cent for depreciation and return to yield an annual profit of 6 per cent would not be felt as a heavy burden upon customers. Even so, the requirement is overstated. It excludes from consideration any operating advantages of financial significance which will be obtained by enlarging the building. Such savings are indeed part and parcel of the plans for expansion, and are hence as well known to the company as is the cost of the contemplated additions. The charge to depreciation expense is based upon the probable events of the future. The showing is necessarily incomplete which limits the gross detriments which are foreseeable, unrelieved by countervailing benefits which are equally foreseeable.

If the complete picture is shown, the effect in all probability will be that future expenditures will occasion such operating economies that the contemplated additions will not even in the slightest degree, constitute a burden upon present users of service.

4. The Accounting Regulations of the Interstate Commerce Commission are Irrelevant upon the Issue of Confiscation

The Interstate Commerce Commission has given its approval to the straight line method of depreciation accounting. *Depreciation Charges of Telephone and Steam Railroad Companies,* 177 I. C. C. 351. This approval was conditioned upon the fact that all of the theoretical implications of the method, including corresponding write-downs in capital value, were to be pursued. But there is an obvious distinction between accounting requirements and rate prescriptions. The former deal with the allocations of wealth on paper; the latter deal with the price of service. Bookkeeping allocations of wealth can neither enrich nor impoverish, since they have only to do with figures on paper. The Interstate Commerce Commission was not authorized to determine, nor did it undertake in that investigation to ascertain, what price the customer should pay for service. The sole effect of any determination therein made by the Commission is to regulate the amount of income to be reserved. This income is the property of the company, whether it is held in reserve or distributed in the form of dividends; and when there is drawn into question the confiscatory character of rates, wealth is not to be turned into dross merely because it is to be kept in the business continuously earning money, rather than distributed to stockholders. It may, of course, be true that the Interstate Commerce Commission intended that the debits to expense on account of depreciation should be taken as a measure of the actual expense on this score. But is it to be assumed that the Interstate Commerce Commission has the power to lay such a requirement upon this court when this court is engaged in determining the Constitutional measure of property immunity? Obviously, the orders of the Commission do not even bind the Commission itself in a rate proceeding. They affect only the way in which records should be kept. In a rate case even before the Commission, that tribunal would certainly have the power to interpret and revise the significance of the bookkeeping entries for the purpose of fixing rates.

The distinction here indicated receives recognition in the report of the Commission (See p. 380 thereof).

Valuation depreciation is not reducible to a convenient formula for bookkeeping purposes. (See comments on annuity method, p. 409 ff. of I.C.C. report.)

XI.

GOING VALUE

The occasion to emphasize going concern value as an element arises when it is sought to increase or inflate a particular liquidation of fair value, and it depends upon the claim of insufficiency in respect to the figures already propounded for fair value. The determination of this claim involves consideration of what, in the particular case, has been included in arriving at the fair value quantity.

We have been at some pains to indicate the distinction between the value of an enterprise considered in relation to the existence of a regulatory power to cut down its revenues, and what would be its value in the absence of regulation. The numerous statements in the cases, adduced in support of going value, that a business in actual operation is worth more than one inactive, that a business with customers attached is worth more than one without customers, that a business earning money is worth more than one not earning money, etc., seem for the most part to beg the question at issue. In any case the value of the enterprise will depend upon earning power; and this is true whether it be a going concern or a quantity of assembled junk. We cannot logically derive value by assuming it. In an unregulated business we can, of course, capitalize the prospective income. But when the income itself may be cut down by regulation we must resolve the basis of the permitted income not by reasoning as to what things may be worth in some abstract sense, but by a consideration of what income may constitute a just compensation for sacrifice.

The thought that "value is value," meaning that it may be discovered as a definite substance held in proprietorship, for which compensation must be allowed, is not at all a fruitful approach to the subject of fair value relative to Constitutional law. It tends to obliterate the distinction between value under the condition of income restricted by law, and value when such restriction does not exist. Such confusion runs through such cases as *National Water Works v. Kansas City*, 62 Fed. 853, and *Omaha v. Omaha Water Co.*, 218 U. S. 180.

Both of these cases involve the valuation of a public utility in view of contemplated purchase by the city. In assuming to value these businesses at what they were worth as going concerns, no distinction was observed in respect to what the value would be if the power to regulate were exerted to the utmost, and what value would attend the business in the absence of regulation. Merely because the services rendered by the enterprise are highly valuable to the customer, in the sense that they are greatly in demand, is not a reason for enlarging the requirement of fair compensation.

Except for the dictum in *McCardle v. Indianapolis Water Co.*, 272 U. S. 400, this court has tested the claim for going value by reference to the requirements of due compensation. So tested, claims for special going value allowances were rejected in *Cedar Rapids Gas Light Co. v. Cedar Rapids*, 223 U. S. 655, *Des Moines Gas Co. v. Des Moines*, 238 U. S. 153, *Galveston Electric Co. v. Galveston*, 258 U. S. 388, and *Georgia Railway and Power Co. v. Railroad Commission of Georgia*, 262 U. S. 625.

In *Des Moines Gas Co. v. Des Moines*, particular attention was accorded to the element of cost in respect to the organization and establishment of the business; and it was pointed out that while the incurring of such costs ordinarily generates a requirement of compensation, it did not appear that full compensation for these costs had not already been received.[1] That going value allowances should be limited to the requirements of due compensation for sacrifice was especially stressed in *Galveston Electric Co. v. Galveston*, in which the claim for going value measured by the capitalization of past deficits was repudiated.

The measure of compensation when going value is in question is not independent of the rate base standard. Likewise the rate of profit calculated upon the rate base may be such as to have a bearing upon whether or not something more is needed to secure just compensation. A consideration of these relationships is at present excluded. Our desire is to indicate merely the qualitative character of going value.

The conclusion that expenditures properly made in the enterprise are to be compensated for in the determination of compensatory capital value, presents the question as to whether the object of these expenditures—the services which they procure—have in the past become spent, or exist in whole or in part at present as a stock of services. For the sake of definiteness let us have in mind specifically the cost of training help and attaching customers, that is to say, money spent for advertising, soliciting, making and keeping customer records. Such expenditures are universally charged to current expense. The utility, having demanded that such expenditures be regarded as current for purposes of computing profits during any accounting period, is in very poor position to urge that they result in capital value appreciation. Now the writer would not deny that under refined and proper methods of accounting such expeditures are really in part chargeable to capital rather than to revenue. When a customer is acquired and a record of transactions with him is initiated, no doubt the expenditure incurred should properly be distributed over the total income to be received from the particular customer. Now the value of that expenditure is by no means a permanent and durable capital gain. It is continuously being expended as the customer uses service; and if the customer comes and goes entirely within the accounting period, then the cost of soliciting him and keeping records for him is completely an expense of the current accounting period. It becomes a matter of great difficulty, therefore, to distribute between accounting periods, with a high degree of refinement, the amount of value consumption in respect to the cost of attaching customers, which occurs in each accounting period. For this reason it has been deemed most convenient to charge such expenditures to the expense of the current period.

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[1] In Michigan Public Utilities Commission v. Michigan State Telephone Co., 228 Mich. 658, 677, it was held that the payment of such costs as expense out of current income did not warrant the denial of any allowance at all for going value, since the income was lawfully the money of the company.

Now it is possible, by a special study, to distribute irregular expenditures as general burdens upon all of the users of service. The valuation tables dealing with varying annual income aptly demonstrate how this may be done. But it will be seen that under proper distribution of such irregular expenditure, the burden will be equitably distributed to the total output. The question properly to be considered is, therefore, what is the effect of the expenditures incurred for advertising, for training help, and for keeping customer records on the price requirement per unit of service? To assume that every cent spent up to date for such purposes shall be a burden upon the future demands of the present and future customers, is to assume something of manifest absurdity. This, in effect, however, is what the company claims.

Worse still, the claim is that expenditures charged as expenses in the current accounting periods of the past, was not really so, but they become cumulatively the capital value of the present.

It has been a customary procedure of the company to make a showing in behalf of going value at a remote date, say 1923, apparently based upon claimed expenses, to convert this into a percentage relationship to the reproduction costs of the physical elements, and then to argue that the result, namely going value, keeps on growing as the plant itself and its reproduction cost increases, so that it is always a constant per cent of the fair value, reproduction cost basis, of the physical elements. Such slap-dash accountancy should defeat its own ends. Nevertheless, it appears that the statutory court sanctioned the general theory of the company, modifying the claim of 15 per cent to an allowance of 8.

Correct accountancy will distribute the burden of all such costs in the form of an equal burden upon the price per unit of service. We have indicated the general mode of making such distributions, and the theory basic thereto. However, such expenditures are more or less continuous, and in all probability a careful distribution thereof will not substantially alter the result obtained by charging such expense against the revenues of the current year. The degree of irregularity itself is too small, and the amounts involved are too small, for the particular refinement which should be the basis of the plaintiff's proofs to have a substantial effect upon the proper price per unit of service.

Moreover, as presented, the company's claim is duplicitous. Regarding the calculations of the test year, we see that current expenditures for training help and attaching customers are taken as a measure of annual expense burdens upon customers. If these expenditures are capital charges, composing an increased going value of the future, they cannot be allowed as current expense. This vice extends, we think, to all test calculations from 1923 to date.

We therefore conclude that the plaintiff's proofs do not establish a fair and proper basis for allocating to the present fair value a proper portion of the cost of training employees, acquiring customers and keeping customer records.

Going Value and Varying Use of Capacity

Utilities persistently advance a claim for going value arising out of alleged deficiency of income in the so-called development period of the business. A claim of this sort was repudiated in the *Galveston* case, *supra,* on the ground that deficits could not constitute evidence of capital value. By the exercise of more than a little imagination the same claim appears in new garments as part of the telephone company's paraphenalia of securing rate increases. Since the attempt to capitalize actual deficits in a real business had failed of its object, it was evidently thought that a more persuasive appeal could be made by attempting to capitalize the hypothetical deficits of a purely imaginary business. Accordingly, an expert was called upon to give testimony that if the business were to be reproduced the construction would march somewhat ahead of the customers, so that during the construction period there would be considerable idle plant and considerable employed but non-productive numbers of operatives. All this, it is claimed, signifies a deficit in income which ought to be capitalized under the guise of going value. This claim is made in this record by Sloan (O. R. II, 709-747).

A presented by this record the claim itself consists of general and indefinite conclusions unsupported by specific facts. It may be regarded as too vague to merit consideration. The claim, however, is known to the writer in its best possible form, and in such form is involved in the Michigan case.

It is true that plant development in an actual public utility enterprise proceeds in advance of the acquisition of the customer. A growing plant will have, as we have previously pointed out, a margin of unused capacity. This condition actually existed in the development of every enterprise. But the claim for rates made by the utility was, in fact, based upon the theory that the existing customers, making only a partial use of the plant, should pay rates as if the plant were fully used. The company's plant in this case has during each year in question a considerable margin of excess capacity, yet we find that for each year the existing customers are supposed to furnish an income equal to capacity returns, and this figured under the company's method of computing it. At bottom there is involved an erroneous distribution of the burden of capital costs, coupled with a similarly erroneous distribution of the profit requirement burden.

Everything which we have said concerning the proper distribution of an irregular expense is applicable to the distribution of capital costs to the output to which such costs contribute. The assumption of a standard revenue per dollar of investment each and every year is a serious fallacy. Once it is made it draws a train of subsidiary, entangling errors which completely prevent straight thought. In the valuation tables which we have presented, the questions here involved are implicitely considered, accounted for and determined. We must, however, specially direct attention to these elements from the present point of view. If we regard Table II, we note that the income requirement under considerations of constant output, in view of the basic assumptions made, is undeniably $135.87 per annum. This amount covers depreciation and return, the correct analysis of which appears in Table III. Now the assumption of equal annual revenue is only justifiable when output is constant. The particular mutations of value there shown depend upon the factors of constant output and of constant annual expenditure. If even the latter element is varied by the condition in which irregular expenditure is foreseeable, then specific modifications in the capital values are necessarily caused. This is illustrated in Table IV. But if output alone, and consequently revenues, are constantly increasing as shown in Table V, another special effect upon depreciation and capital value results. Table V is to be compared with Table III. The only difference between them is that in one the income is constant and in the other it increases in pace with output. There is nothing standard about the income requirement. If plant having the same cost when the output is 50 per cent of capacity yields an income of $82,68, there is no deficiency whatsoever. To be sure, some modification in the price requirement per unit of service is necessary as between the two examples. A higher price per unit must be demanded under the conditions of varying output than would be proper when output is constant. The difference is due to the element of time.

A proper price per unit of service in view of all costs, including unequal annual expenditures, and likewise according consideration to the element of varying output, is fully compensatory and includes everything meritorious in the claim for going value based upon the failure to reach capacity revenues immediately.

When a business which requires a large capital investment is initiated, its customer development is relatively small. Yet the usual forms of financial accounting create the impression that, of necessity, a loss must be taken in the early years. This apparent loss must be countered by a restorative gain when capacity demands swing into play. It is this condition which naturally prompts the thought of going value. It is purely the result of delusive accountancy.

The major delusion is the belief in a constant rate of depreciation. Since this constant amount is subtracted from the meager income of the early years, only a little of so-called profit is left. But it should be recognized that there are, so to speak, appreciative factors at work. The prospective large incomes from capacity use are constantly drawing closer to realization, and in considering the actual depreciation, the effect of time relative to the distribution of income must be reckoned with. Indeed, in properties under development it soon becomes recognized that the assumption concerning depreciation in the early years as usually made was erroneous, and an honest attempt is made to counteract it by stressing the so-called element of going value. The simple truth of the matter, however, is that the property did not depreciate at the assumed rate and no "going value" was needed to restore the merely imaginary loss.

Sometimes the balance between appreciative and depreciative factors runs in favor of the former. The degree of deferred use may be such that positive appreciation results. A building under construction must appreciate at least to the extent of interest or the venture is misconceived. In a like manner unused land tends to appreciate as the time of income rendition draws nearer.

In conclusion it may be said that any presentation of evidence to support the claim of confiscation is fatally defective unless there is shown that the price per unit of service in view of output, present and prospective, is too low. A determination of the proper price per unit of service will include all necessary consideration of "going value,"—or, put in other words, will dispense with considering it.

XII.

THE RATE BASE

We have concentrated attention upon the development of principles which are applicable to any rate base figure, no matter how derived. We contend that these principles are so essentially involved in testing the claim of confiscation that a plaintiff's presentation which ignores them must necessarily fail of its object. Before a rate base for the purpose of this case can be determined, profits realized in related corporations must be ascertained, and values must be apportioned between interstate and intrastate uses. This record does not progress far enough to warrant a decision upon the proper measure of the rate base.

So much has been written upon the subject of the rate base that it is difficult to add a constructive word. We shall therefore limit ourselves to a mere observation designed only to round out somewhat the general picture which we present.

If the basic starting point for ascertaining fair value is the cost prudently incurred of existing assets, (a figure which may be modified for depreciation) it will be found that the Constitution will have become an instrument to permit and protect a process of value increase by continuous compounding at rates deemed to be reasonable.

If it is right to assume that when rates are tested a reasonable profit on cost prudently incurred should be accorded, then this right should properly be considered to have a continuous existence and a constant application. Does the Constitution afford a guarantee, subject only to the value of service qualification, that wealth at cost left to function in a business will continuously increase by compounding? Practical business experience will advise that the continuous compounding of wealth at rates heretofore considered to be constitutionally required is, for business in general, impossible. The process itself is exemplified in large scale businesses during so-called periods of expansion, and is self-limiting. Doubtless the apparent prosperity itself creates a wide range of socially uneconomical demands which are undependable in themselves and are likewise exhaustive of purchasing power. In competitive businesses the increase of wealth by geometrical progression comes to a halt, and values decline sharply to a point which permits the process to start over again. It follows that the right to continuous earnings upon cost ought not to be conceded by the Constitution.

The concept of present value was developed to offer a corrective for this condition. It wholly fails of attaining this objective under present conditions of production and commercial organization. The main reason for this failure is to be found in the special conditions pertaining to goods used in the production of public utility services.

Such goods are not at any time produced so as to form market stocks. There is never an impelling pressure upon manufacturers to produce. In a period of depression such goods are substantially off the market.

It would be impossible sensibly to appraise the great bulk of public utility properties today upon the basis of reproduction costs. The inquiry would be thrown back to the hypothetical question of what it would cost to produce the goods themselves. The question may be asked: In what quantities? This is indeed the stumbling block. If we may imagine a particular utility in process of reproduction, why not imagine all other utilities in the same condition? Clearly, the hypothesis will have changed the economic conditions of the country. On the other hand, to produce only a limited quantity of goods at a profit will be to burden them with the total constant overhead cost involved in operating the factory and servicing a dormant business. It might even be found that wage rates have not officially dropped. As a result plausible estimates could be made to show that reproduction cost of most of the plant items would today be much higher than at any time in history.

A business which has been able to pay liberal dividends and also to keep invested a substantial balance of income (reserves and surpluses) will show a considerable amount of what is commonly called reinvested profit. Commonly the business world does not value this so-called reinvested profit at face. Earnings plowed back do not appear to be worth as much as earnings paid out in dividends. It is realized that the continuous nurturing of the business is a condition of the dividends themselves, and that a profit determination at a particular point of time is highly contingent. Up to a certain point surpluses and reserves are regarded not as profit but as provision for value recession which is commonly considered almost certain to happen.

We would apply this principle in some degree to the regulation of public utility rates. A community of interest between rate payers of different years, and even of different economic periods, should be recognized. The question of what is a reasonable rate should be resolved upon consideration of a proper balance between the price at which the utility can afford to sell service and that which will accord to the public a reasonable access to the service at a price which is not felt to be too onerous. The fact that the invested capital at the cost standard has been greatly increased through past earnings ought to be of some weight in determining the price at which a utility can afford to sell service in a period of depression. And what the public can afford to pay should likewise be material.

In our view a rate base formula does not, under present conditions, serve a useful purpose. In any view of the matter the rate base should provide a measure of the stockholders' equity in the business. This sum will consist of the total fair value of the property, less the indebtedness against it. But a present appraisement of property values upon any standard could not command general assent. Its final result will appear, tested by common sense judgment, to be too high. We suggest that the dominating consideration in rate making today is the ability of the public to stand the burden. The opinion of the Public Service Commission of Wisconsin, rendered June 30, 1932, in *Re Wisconsin Telephone Company,* P.U.R. 1932 D, 173, recites cogent economic considerations bearing upon the comparative burden of public utility rates upon the cost of living. To us, such considerations seem more important today than mathematical calculations. At the same time there should be considered the financial position of the utility itself and the effect of such hypothetical rates upon the conduct of the business. Clearly, if they are sufficient to meet current obligations and to pay, if not the customary dividend, at least a substantial amount, the claim of confiscation should be denied.

XIII.

RATE OF PROFIT

There exists no standard rate of value productivity. It is impossible to know that a dollars' worth of goods at cost devoted to productive purposes in the arts will produce increase of wealth. Such increases which actually take place are extremely irregular from time to time; and commercial losses are enormous.[1] Nevertheless there are people prepared to estimate profit possibilities and to expend money upon the hope that their estimates will not prove disappointing. They value the income prospect, definite or indefinite in their minds, in terms of precise present figures. The prospective profit realization on dollars already invested cannot, of course, be affected by such estimates; but they do, however, have the effect of revaluing capital goods and thus modifying the rate of profit by changing its base. Such valuations are, however, indexes of expected profit returns in relation to sacrifices of present money.

---

[1] See Foster and Catching's "Profits," pp. 108 and ff.

Common stock prices can afford only a meager index to the profit expectation, since usually no means are at hand to define the estimate of income. Such expectations may be well defined in the mind of the prudent, but its form, or time shape, will vary greatly among individuals. Many others will be prepared to gamble on merely vague intimations. Only where the income expectation is defined, as in loans, is it possible to ascertain the expectation of a rate of profit upon present value. The market rate of interest on loans is therefore the only basic standard of reference from which an idea of a compensatory rate of profit may be derived. But it is maintained that we should select 38 of the most fortunate corporate enterprises and be advised concerning compensatory rates from their experience. But except as such experience has, in fact, modified market rates of interest, it is irrelevant. The advent of fortunate chance is no indication of a minimum profit to provide compensation for sacrifices.

It is likewise a vain pursuit to assume the non-existence of an enterprise and then to imagine what returns must be offered to call forth investment. Facts are not usually proved by fictions. Any new business, real or imaginary, is ordinarily considered a speculative venture. It is erroneous to impute a continuous speculative character to an established business by the process of imagining it being continually established anew.

A particular business is attended with unique factors of safety and of risk. It is almost impossible to subject it to ready comparison with some other business. It is therefore most convenient to apply general judgment to the business under regard, and to attempt to arrive directly at an opinion concerning the compensatory rate of profit. A good starting point in this endeavor is to first ascertain the market riskless rate of interest. This rate will fluctuate in accordance with economic conditions. At the present time it would be somewhat difficult to discover it. Likewise, the peculiar conditions of the present will cause a great difference between the short time rate and the long term rate.

It may be conceded that this or any business is subject to some degree of risk, but the present conditions of panic ought not to be available to measure it. Likewise the special conditions of prosperity and expansion will properly indicate a rate of return greater than is presently necessary to avoid the charge of confiscation. Again we say that the most convenient, practical test to apply today in a close case is the sufficiency of present and prospective revenues to meet interest obligations and to provide substantial dividends. As was said with reference to the rate base, it would be difficult to obtain general ~~consent~~ assent to any figure for a rate of profit produced as a result of calculation, and almost any such figure would to ordinary common sense be considered too high.

Let us consider the extent of risk in this business:

1. *The risk of competition.* This may be briefly dismissed. The size of the business, its monopolistic character, and the interrelation of its divisions makes it unthinkable that substantial competition can be offered in either the manufacturing or research field, in which alone

competition may be regarded as hypothetically possible. Telegraphic communication is diminishing. It makes considerable use of telephone lines.

2. *The risk of substitute services.* The measure of possible wireless competition has already been taken. It is auxiliary rather than competitive. The probabilities of its further development favor increased use of the telephone.

3. *The risk of fluctuations in demand.* A certain level of demand is highly dependable, but as the use of telephone service expands, the demand becomes more elastic. This risk is to a great extent measurable and protection against it may be directly accorded in rates based upon the relation of present use to average. The company allows—indeed induces—courts to assume that present use is at capacity, and thus fails to reveal the favorable chance of expanding use.

This risk is reduced by advertising, customer good will, and low charges. It is enhanced by burdensome bills and rate contests.

4. *Inefficient conduct of business.* This risk is reduced to lowest terms by means of scientific systematization obtained at considerable cost which is charged to operating, development, and supervising expense.

5. *Risk of labor troubles.* This risk is reduced to a minimum through the benefit and pension plan, and the employees' stock ownership plan. Very few businesses are so free of labor troubles.

6. *Risk of structural and operating defects.* This risk is largely eliminated by research and standardization at considerable expense.

7. *Risk of depreciation.* This, we have shown, does not exist.

8. *Risk of casualties and storm damage.* This risk exists and rates must afford protection against it. Its burden is very slight.

9. *Risk of adverse regulation.* This is an investor's gamble. The law cannot admit its failure to afford adequate protection.

A general word may be said concerning risk: it is the effect of uncertainty. Whatever diminishes uncertainty minimizes risk. To a large extent uncertainties can be reduced through incurring expense, and this expedient is greatly favored in the Bell System. As a result of this policy, and of the especially favorable investment opportunity subject to exploitation, the American Telephone and Telegraph Company is as near being a riskless business as is imaginable for a commercial enterprise.

Borrowing large parts of the capital needed to conduct business is, of course, a mode of distributing risk. The expense entailed by interest payments is one proper to constitute a burden upon rates. By this means the borrowed capital can be exactly compensated for, through rates. In a public utility such as the Bell System, the risk upon stockholders is not appreciably increased by borrowing. The general risk is too small for stockholders to be substantially affected by bearing all of it.

The favorable chances for the enhancement of stockholders' profits must not be overlooked. Any tentative rate of profit expectation which may be incorporated in rates is almost certain to be bettered by the eventualities. Opportunities exist in this direction—that of cost reduction, and that of revenue expansion.

It is confidently asserted that the application of the accounting principles heretofore expounded for the determination of profit, depreciation expense, revenue requirements in view of limited use, and the distribution of expense and values between the various activities, will result in both a rate base and a rate of profit impressively high. The case will not be close enough to require a determination of fair value and the rate of profit necessary to avoid the charge of confiscation.

XIV.

CONCLUSION

This brief has been filed for the purpose of demonstrating the fallacies contained in the usual calculations brought forward to support the claim of confiscation. We are concerned not with attempting to lay down principles of general application, but rather in setting forth those applicable to the telephone business as it is conducted by the American Telephone and Telegraph Company. We brand as fallacious the proposition that an income requirement can be computed directly from the premise of invested capital value. Regard must be had for the facts of output determined by the technological conditions of production, and the expansion and recession of demand. These conditions will likewise constitute factors determinative of annual expenses, particularly the expense of depreciation. We show that, as Justice Holmes so well emphasized, a business is a course of conduct. We indicate the bearing of this conduct and the results which it accomplishes upon the troublesome subject of depreciation expense. We ask the court to allow scope for the application of the principles which we expound to the decision of this case and to the decision of the pending cases in Michigan.

Respectfully submitted,

Harold Goodman,
Special Assistant Attorney
General, State of Michigan.

Dated at Detroit this 4th day
of January, 1934.

9

Patrick H. O'Brien,
Attorney General,
State of Michigan.

Harold Goodman,
Special Assistant Attorney General,
State of Michigan.

3

FILE COPY

IN THE

Supreme Court of the United States

October Term, 1933.

No. 440.

Benjamin F. Lindheimer and Others, Constituting the Illinois Commerce Commission of the State of Illinois; Otto Kerner, Attorney General of the State of Illinois, and the City of Chicago, *Appellants*,

vs.

Illinois Bell Telephone Company.

No. 548.

Illinois Bell Telephone Company, *Appellant*,

vs.

Benjamin F. Lindheimer and Others, Constituting the Illinois Commerce Commission of the State of Illinois; Otto Kerner, Attorney General of the State of Illinois, and the City of Chicago.

STATEMENT FILED PURSUANT TO DIRECTION OF CHIEF JUSTICE.

Return on Book Cost of Property of Plaintiff.

In Finding of Fact No. 4 (R. III, 2515) the District Court found that the original or book cost of plaintiff's property is correctly stated in plaintiff's Exhibit A-54. Exhibit A-54 (R. IV, 2757-2765) contains a sheet for each of the years 1923 to 1931, inclusive. The following statement of average book cost is the figure shown in line 18 of this exhibit for each of the years for the total intrastate property in the Chicago area. This figure represents the average book cost of the plant in service and general equipment, construction work in progress, materials and supplies, and working cash capital for each such year. It contains no element for overheads omitted from plaintiff's books (Order of Commission, O. R. I, 23) nor for going value. The 1931 figure is used for 1932 in the following computation.

The amount available for return is taken from the District Court's Finding of Fact No. 30 (R. III, 2521). This finding sets out the amounts available for return for each of the years 1923 to 1932, which plaintiff would have earned on its intrastate business under the rates imposed by the order of the Commission here under attack.

TOTAL INTRASTATE BUSINESS.

	Average Book Cost for Year	Amount Found by Court Available for Return Under Rates in Suit	Per Cent Return
1923	$95,074,135	$5,104,515	5.4%
1924	105,291,980	5,932,959	5.6
1925	117,730,536	6,297,890	5.3
1926	130,857,355	6,402,128	4.9
1927	146,173,197	6,686,503	4.6
1928	159,622,212	6,914,459	4.3
1929	168,988,816	8,939,602	5.3
1930	178,157,620	8,492,385	4.8
1931	181,925,963	8,392,555	4.6
1932	181,925,963	6,750,000	3.7

Respectfully submitted,

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WILLIAM H. THOMPSON,
Counsel for Illinois Bell Telephone Company.

FILE COPY

IN THE

Supreme Court of the United States

OCTOBER TERM, 1933.

No. 440.

BENJAMIN F. LINDHEIMER AND OTHERS, CONSTITUTING THE ILLINOIS COMMERCE COMMISSION OF THE STATE OF ILLINOIS; OTTO KERNER, ATTORNEY GENERAL OF THE STATE OF ILLINOIS, AND THE CITY OF CHICAGO, *Appellants*,

vs.

ILLINOIS BELL TELEPHONE COMPANY.

No. 548.

ILLINOIS BELL TELEPHONE COMPANY, *Appellant*,

vs.

BENJAMIN F. LINDHEIMER AND OTHERS, CONSTITUTING THE ILLINOIS COMMERCE COMMISSION OF THE STATE OF ILLINOIS; OTTO KERNER, ATTORNEY GENERAL OF THE STATE OF ILLINOIS, AND THE CITY OF CHICAGO.

APPELLANTS' MODIFICATION OF APPELLEE'S STATEMENT FILED PURSUANT TO DIRECTION OF CHIEF JUSTICE.

Return on Book Cost of Property of Appellee Giving Effect to the Deduction of Depreciation Reserve Resulting From the District Court's Findings on Expense of Depreciation.

TOTAL INTRASTATE BUSINESS.

Year (a)	Average Book Cost for Year (Taken from Appellee's Statement) (b)	Average Book Depreciation Reserve Based on District Court's Finding of Depreciation Expense (Taken from Column (2) second table page 87, Appendix to Appellants' Brief and Argument) (c)	Average Book Cost Less Depreciation Reserve (Column b Minus Column c) (d)	Amount Found by District Court Available for Return Under Rates in Suit (Taken from Appellee's Statement) (e)	Per Cent Return (Col. (e) Divided by Col. (d)) (f)
1923....	$ 95,074,135	$26,443,943	$ 68,630,192	$5,104,515	7.44%
1924....	105,291,980	29,022,592	76,269,388	5,932,959	7.78
1925....	117,730,536	31,636,847	86,093,689	6,297,890	7.32
1926....	130,857,355	34,725,816	96,131,539	6,402,128	6.66
1927....	146,173,197	38,323,830	107,849,367	6,686,503	6.20
1928....	159,622,212	41,459,891	118,162,321	6,914,459	5.85
1929....	168,988,816	42,698,444	126,290,372	8,939,602	7.08
1930....	178,157,620	43,473,376	134,684,244	8,492,385	6.31
1931....	181,925,963	45,232,272	136,693,691	8,392,555	6.14
1932....	181,925,963	45,232,272	136,693,691	6,750,000	4.94

Respectfully submitted,

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SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1933

No. 548

ILLINOIS BELL TELEPHONE COMPANY, Appellant,

vs.

BENJAMIN F. LINDHEIMER and Others, Constituting the Illinois Commerce Commission of the State of Illinois; OTTO KERNER, Attorney General of the State of Illinois, and THE CITY OF CHICAGO.

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE NORTHERN DISTRICT OF ILLINOIS.

STATEMENT AS TO JURISDICTION.

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support of the jurisdiction of that Court on plaintiff's cross-appeal in the cause herein, respectfully states:

I.

The statutory provision believed to sustain the jurisdiction of the United States Supreme Court on plaintiff's cross-appeal herein is Section 266 of the Judicial Code as amended (28 U. S. C., Sec. 380), which authorizes direct appeals from this Court to the Supreme Court of the United States in causes having the character of this cause.

II.

The case involves the validity of the order of the Commerce Commission of the State of Illinois dated August 16, 1923, prescribing certain rates and charges for telephone service in the City of Chicago, Illinois, a copy of which order is attached to the bill of complaint herein as Exhibit A.

III.

The date of the decree in this cause sought to be reviewed is June 28, 1933, and the date upon which the application for plaintiff's cross-appeal is presented is September 26, 1933.

IV.

The following is the nature of the case out of which plaintiff's cross-appeal arose: Plaintiff's bill of complaint in this Court sought to restrain the Illinois Commerce Commission and the Attorney General of Illinois from enforcing against plaintiff certain rates for telephone service in the City of Chicago, which rates were prescribed by the order of said Commission referred to in paragraph II hereof. The Bill alleged that the rates so fixed did not afford a fair return upon plaintiff's property used and useful in furnishing the service covered by said order, and that said rates were confiscatory, in violation of the Fourteenth Amendment to the Constitution of the United States. The final decree and judgment entered herein granted plaintiff the injunction prayed for, and from said decree and judgment defendants have appealed to the United States Supreme Court.

While this Court has granted plaintiff the injunction prayed for, certain issues necessary to the decision of the case, particularly with respect to the fair value of the property, the reasonable and proper operating expenses, and the fair rate of return, as specifically set forth in plaintiff's assignment of errors presented and filed herewith, were decided adversely to the contentions of plaintiff. Plaintiff seeks the correction of these errors.

This cross-appeal by plaintiff to the United States Supreme Court is taken:

(1) In order that in any subsequent actions between the parties hereto the plea that plaintiff is estopped by the decree and judgment with respect to said matters may not be maintained.

(2) In order that plaintiff, as a matter of right, may urge said errors of this Court in opposition to the appeal of the defendants and in support of this Court's decree, wherein the relief sought by plaintiff was granted.

V.

The cases thought to sustain the jurisdiction of the United States Supreme Court on plaintiff's cross-appeal are:

As to the first ground set forth in paragraph IV hereof:

New York & Richmond Gas Co. v. *Prendergast* (1925), 10 Fed. (2d) 167, 208 (D. C. N. Y.); *Van Wert Gaslight Co.*

v. *Public Utilities Commission of Ohio* (1924), 299 Fed. 670, 675 (D. C. Ohio). See, also, *City of Houston* v. *Southwestern Bell Telephone Company* (1922), 259 U. S. 318. But cf. *Harding* v. *Federal National Bank* (1929), 31 Fed. (2d) 914, 918, 919 (C. C. A., 1st Circuit).

As to the second ground set forth in paragraph IV hereof:

Bolles v. *Outing Co.* (1899), 175 U. S. 262, 268; *Warner Co.* v. *Pier Co.* (1928), 278 U. S. 85, 91; *United States* v. *Ten Cases, more or less, Bred Spred* (1931), 49 Fed. (2d) 87, 89 (C. C. A., 8th Circuit). See, also, *United Railways* v. *West* (1930), 280 U. S. 234, 253. But cf. *United States* v. *American Railway Express Co.* (1924), 265 U. S. 425, 435, 436; *Langnes* v. *Green* (1931), 282 U. S. 531, 538; *Story Parchment Paper Co.* v. *Paterson Co.* (1931), 282 U. S. 555, 560.

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Supreme Court of the United States

OCTOBER TERM, 1933.

No. 548.

ILLINOIS BELL TELEPHONE COMPANY,
Appellant,
vs.
BENJAMIN F. LINDHEIMER and Others, Constituting
The Illinois Commerce Commission of the State of Illinois,
et al.,
Appellees.

BRIEF FOR APPELLANT ON CROSS-APPEAL.

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Supreme Court of the United States

OCTOBER TERM, 1933.

No. 548.

ILLINOIS BELL TELEPHONE COMPANY,
Appellant,
vs.
BENJAMIN F. LINDHEIMER and Others, Constituting the Illinois Commerce Commission of the State of Illinois; OTTO KERNER, Attorney General of the State of Illinois, and THE CITY OF CHICAGO,
Appellees.

BRIEF FOR CROSS-APPELLANT.

The plaintiff prosecutes this cross-appeal from a decree rendered June 28, 1933, by the United States District Court for the Northern District of Illinois, composed of three judges (Evan A. Evans and Will M. Sparks, Circuit Judges, and James H. Wilkerson, District Judge) as required by Section 266 of the Judicial Code (R. III, 2524), which enjoined the enforcement of an order of the Commerce Commission of the State of Illinois entered August 16, 1923, effective October 1, 1923, prescribing certain rates and charges for plaintiff's telephone service in the City of Chicago, Illinois.

Plaintiff does not seek to reverse the decree entered below, but does seek the correction of certain errors made by the statutory court in determining issues necessary to the decision of the case, in order that:

(1) In any subsequent action between the parties hereto the plea that plaintiff is estopped by the decree and judgment with respect to said matters may not be maintained, and

(2) That plaintiff, as a matter of right, may urge said errors of the lower court in opposition to the appeal of the defendants from said decree (No. 440, to be argued with this appeal) and in support of the lower court's decree, wherein the relief sought by plaintiff was granted.

Prior Opinions in this Cause.

The opinion of the statutory court on the first trial of this cause was filed January 31, 1930, and is reported in *Illinois Bell Telephone Company* v. *Moynihan*, 38 F. (2d) 77 (O.R. I, 178).*

On appeal to this court the cause was remanded with directions to the statutory court to make findings of fact, and to receive such additional evidence as was necessary for that purpose. The opinion of this court was rendered December 1, 1930, and is reported in *Smith* v. *Illinois Bell Telephone Company*, 282 U. S. 133.

The last opinion of the statutory court, pursuant to which the final decree herein appealed from was entered, was filed April 29, 1933, and is reported in *Illinois Bell Telephone Company* v. *Gilbert, et al.*, 3 F. Supp. 595 (R. III, 2502).

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* The letters O.R. are used to designate the record in this court upon the former appeal, *Smith* v. *Illinois Bell Telephone Company*, No. 845, October Term, A. D. 1929, which record has been made a part of the record upon the present appeal but has not been reprinted.

Jurisdiction.

Appellant, pursuant to Rule 12, paragraph 1, of the rules of this court, has filed a concise statement of the grounds on which it invokes the jurisdiction of this court, and this court has postponed further consideration of the question of jurisdiction until the hearing of this case on its merits.

Statement of the Case.

The Illinois Commerce Commission entered an order on August 16, 1923, effective October 1, 1923, which would have resulted in reducing plaintiff's revenues in the City of Chicago by approximately $1,700,000 annually (O.R. I, 14-45; Findings 28 and 29, R. III, 2520-2521). Before the effective date of this order, the plaintiff commenced an action in the lower court to enjoin its enforcement on the ground that the order was confiscatory (O.R. I, 2 *et seq.*). The statutory court granted a temporary restraining order (O.R. I, 49) and, on December 21, 1923, an interlocutory injunction. The case was tried on its merits in 1929 and a decree was entered by the statutory court on February 28, 1930, permanently enjoining the enforcement of the order as confiscatory (Opinion, O.R. I, 178-198; Final Decree, O.R. I, 199).

The defendants prosecuted an appeal to this court, which remanded the cause with directions to the statutory court to make specific findings for 1923 and subsequent years with respect to the following issues, and to receive such additional evidence as might be required for that purpose (*Smith v. Illinois Bell Telephone Company*, 282 U. S. 133):

(1) The fair value of the plaintiff's property employed in the service of the public in its intrastate business in Chicago, and in that connection to make a separation between the interstate and intrastate property on the basis of actual use.

(2) The fair rate of return which the plaintiff is entitled to earn on such property.

(3) The reduction in revenue which would have resulted if the Commission's rates had been put into effect and the amount of plaintiff's return after giving effect to the reduction.

(4) The cost to the American Telephone and Telegraph Company of rendering services under its license contract to the plaintiff and other Bell Associate Companies, and the reasonable amount which should be allocated in that respect to the operating expenses of the intrastate business of plaintiff.

(5) The proper amount of the annual charges of the plaintiff for depreciation in connection with its intrastate business.

(6) The net earnings of the Western Electric Company in the business done by it with its Bell customers, the reasonableness of such earnings, and the extent to which, if at all, such earnings figure in the estimates upon which the charge of confiscation in this case is based.

Pursuant to the mandate of this court, the statutory court set the case for hearing to receive additional evidence necessary for the determination of the several issues above referred to, and hearings were held commencing on February 23rd (R. I, 1) and ending on July 1st, 1932 (R. II, 2052). By direction of the court, briefs were subsequently filed by the parties, and thereafter the case was argued orally and finally submitted on December 15, 1932 (R. II, 2102-3). It was decided and the court's opinion and findings of fact and conclusions of law were filed April 29, 1933 (R. III, 2502-2522). The findings of fact are thirty-five in number and fully cover all of the matters at issue. As conclusions of law the court held that the telephone rates in suit have at all times been and are now confiscatory of plaintiff's property, and that the interlocutory injunction should be made permanent, and plaintiff be discharged from its bond, and that plaintiff should be released from all obligation to refund to its subscribers the sums of money collected by it pursuant to the terms of the preliminary and interlocutory decrees (R. III, 2525). The final decree granting a permanent injunction was entered on June 28, 1933 (R. III, 2524-6). The defendants have taken an appeal and plaintiff a cross-appeal to this court.

Plaintiff charges error in certain findings of the statutory court, with respect to the valuation of the property, certain items of expenses, and, as to the years 1931 and 1932, the fair rate of return.

The facts, briefly stated, which are material to a consideration of the questions presented by plaintiff's cross-appeal, are as follows:

I.

Valuation.

The statutory court undervalued plaintiff's intrastate property due chiefly to its errors in three important particulars.

1. Actual Existing Depreciation in the Property.

(1) The court found and deducted, as the existing depreciation in the property, 16 per cent. of the reproduction cost new, as determined by the court, for the years 1923 to 1928, inclusive, and 15% for the succeeding years.[1] The evidence established a maximum depreciation of the property of 9% for the years 1923 to 1928, and of 8% thereafter.[2] The resulting undervaluation on this account varied from approximately $9,300,000 in 1923 to $13,800,000 in 1932.

The plaintiff determined the amount of the existing depreciation, first, by careful inspections of the property made by qualified telephone engineers and plant men, who observed and measured the physical condition of the property as compared with like property new, and second, by a survey made by qualified operating officials of the company to find any existing functional depreciation. Thus all elements of actual existing depreciation in the property were taken into account, and the result was expressed in terms of the "per cent. condition" for each class of property.[1]

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[1] Finding 6, R. III, 2515.

[2] Exhibit A-22, R. V, 2682; Stipulation, R. III, 2545.

Defendants did not make any inspection of the property at any time and introduced no evidence going to show the condition of the property. One witness for the defendants, Mr. J. G. Wray, testified on the subject, but only with respect to the approved method of determining the existing depreciation, and his testimony in that respect was in entire accord with that of plaintiff's witnesses.[2]

Upon this record the finding of the court was error of law.

2. Refusal to Accept Western Electric Company Prices in the Years 1930, 1931, and 1932.

The statutory court undervalued the plaintiff's intrastate property for each of the years 1930, 1931 and 1932 by a sum in excess of $4,750,000 by refusing to give effect to reasonable Western Electric Company prices prevailing during such years.

Plaintiff introduced in evidence appraisals of its property for each of the years 1923 to 1931, which were made by William F. Sloan, a competent engineer with broad experience in the construction, operation and appraisal of telephone properties. He testified as to the cost of reproduction new of the plaintiff's property for each of its plant accounts except land and buildings,[3] with respect to which evidence was presented by witnesses with particular qualifications on those matters.[4] The defendants made no appraisal of the plaintiff's property for any year. Sloan's estimate of reproduction cost new as of June 30, 1923 is less than the Illinois Commission's finding of such reproduction cost new as of that date.[1] Sloan's appraisals for the subsequent years were on bases comparable with his appraisal of June 30, 1923. The court found that Sloan's reproduction costs were substantially accurate for all of the years.

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[1] R. I, 65-168.

[2] O.R. V, 1729, 1771, 1772.

[3] Testimony of Sloan, R. I, 13-61; R. II, 1297-1330, 1421-4.

[4] Testimony of Renwick, R. I, 62, and Huston, R. I, 63.

Telephone apparatus and other materials were included in plaintiff's appraisals at the prices paid therefor to the Western Electric Company, which is the manufacturing department of the Bell System, and from which plaintiff purchases all such materials. Such prices to the plaintiff were lower during the entire period involved than the prices at which they could have been purchased from others.[2]

Commencing in 1921 Western's prices to its Bell customers for telephone apparatus were constantly reduced until July 1, 1929.[3] The last reduction was made in anticipation of a large increase in the volume of Western's Bell business in 1930 and subsequent years, which was not realized.[4] Accordingly, in November, 1930 Western restored the prices charged by it prior to such reduction.[5] Western's profits on sales and earnings on investment have been low whether considered for the entire period of years involved or for the particular years in which this price increase was in effect. The statutory court refused to give effect to this price increase and as a result undervalued plaintiff's intrastate property by a sum in excess of $4,750,000 for each of the years 1930, 1931 and 1932.*

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[1] See Opinion on first trial of this cause, *Illinois Bell Telephone Company* v. *Moynihan*, 38 F. (2d) 77-78; also testimony of Turner, O.R. II, 682.

[2] Finding 16, R. III, 2517; O.R. III, 1076 *et seq.*; R. I, 412.

[3] Opinion, R. III, 2508; Defendants' Exhibit X-13-A; R. VI, 3892; R. I, 329-330.

[4] R. I, 450-451.

[5] Defendants' Exhibit X-13-A; R. IV, 3892.

3. Reductions on Account of General Decline in Property Values.

The statutory court undervalued plaintiff's intrastate property by the sum of more than $14,000,000 in 1931 and more than $23,000,000 in 1932, because it felt "obliged to take notice of the general decline in property values which has accompanied the present period of business stagnation."[1] Plaintiff's appraisals for all the years in controversy were based upon actual prices paid by it to Western Electric Company for materials[2] and upon wages actually paid for its labor,[3] and not upon general commodity prices or enhanced property values. Western's prices to plaintiff were at all times, including the years 1931 and 1932 to which this reduction made by the court applies, below the prices at which plaintiff could have purchased its telephone materials from others.[4] Western's prices to plaintiff were constantly reduced during the years 1923 to 1929,[5] during which time general commodity prices remained substantially unchanged and other manufacturers were either maintaining or increasing their prices.[6] Full consideration was given in the company's appraisal to all conditions which had resulted in the lessening of the value of the company's property in 1931.* These conditions were reflected in the court's valuation for both the years 1931 and 1932 before the reductions here complained of were made.

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* Finding 19, R. III, 2518; R. II, 1070.

[1] Opinion, R. III, 2505.

[2] R. I, 34.

[3] R. IV, 1301.

[4] Finding 16, R. III, 2517; R. I. 421, 474-5; O.R. III, 1076 *et seq.*

[5] Defendants' Exhibit X-13-A, R. VI, 3892.

[6] Bulletin of United States Bureau of Labor Statistics No. 543, "Wholesale Prices 1930"; R. I, 450.

II.

Expenses.

The statutory court disallowed substantial amounts of three important items of plaintiff's operating expenses as follows:

1. Annual Allowance for Depreciation Expense.

The statutory court, in accordance with the opinion and mandate of this court, determined the amount of the allowance for depreciation expense applicable to the intrastate portion of the property for each year, in its twenty-sixth Finding of Facts.[1] The amount so found by the court for the year 1923 is $4,000,000, and increases with the rapid growth of the property during the period to $7,400,000 in 1931. Plaintiff assigned error to this finding, upon the ground that under the evidence it is entitled to a substantially larger amount in each year, the additional amount ranging from approximately $1,100,000 to $2,100,000 in the several years.[2]

Plaintiff in the regular course of its business carefully computed the amount of this charge and entered it upon its books each month. This was required to be done under the system of accounts prescribed by the Interstate Commerce Commission and the Illinois Commission, the two systems being *identical.*[1] The method prescribed is the straight line method of depreciation accounting[2]. Under this method a separate depreciation rate is determined for each class of the plant, as classified by the commission, which is computed from the expected service life and salvage as determined for each class, and this rate is applied to the cost of the property of each class standing upon the books from month to month. The evidence shows that the service life and salvage, and hence the rate, can be and were determined from adequate data, and by reliable and approved methods.[3]

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* Exhibit A-17, R. IV, 2676-2680; R. I, 63; Exhibit A-18, R. IV, 2680-2681; R. I, 64.

[1] R. III, 2520.

[2] Exhibit A-267, R. V, 3145; Exhibit A-48, R. IV, 2705, 2716, 2723.

The charges were recomputed in this case, in conformity with the decision of this court in *United Railways* v. *West*, 280 U. S. 234, upon the basis of the replacement value new of the property in each year, as shown by the evidence and found by the court, by applying the rate for each class to that value. This is the amount that is claimed by the plaintiff and established by the evidence.[4]

2. License Contract Payments.

One of plaintiff's operating expenses was its compensation to the American Telephone & Telegraph Company for services furnished to it. These services were furnished under a formal written contract known as the "License

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[1] O.R. II, 152; O.R. I, 222; O.R. II, 748; R. I, 222, 255.

[2] O.R. IV, 1183-92.

[3] Testimony of Turner, R. I, 750-798, R. II, 1097-1144, 1278-97, 1384-1391, 1426-1433; Testimony of Woodford, R. II, 1177-1204, 1392-1394, 1424; Testimony of Hale, O.R. II, ; Exhibits A-125, A-126, A-127, A-128 and A-129 (R. IV, 2853-2885); A-203 (R. V, 2982), A-263 (R. V, 3141), A-265 (R. V, 3144).

[4] Exhibit A-267, R. V, 3145; R. II, 1397.

Contract". The forms of license contract in effect during the time covered by the trial were those made in 1919 and 1926,[1] but these were amendments and modifications of an agreement entered into between the predecessors of the American Company and the plaintiff as far back as 1881.[2] The original contract and the various amendments have been uniform agreements between the American Company or its predecessor and a great number of operating companies.[3] Under the 1919 amendment the American Company was obligated as follows:

(*a*) To lease licensees all the telephone instruments required.

(*b*) To license the licensee companies under all patents embodied in the said instruments.

(*c*) To give the licensees the right to use all telephonic devices, apparatus, methods and systems presently owned or controlled by the licensor, or thereafter owned or controlled, resulting from the research and experimental work of the licensor, together with licenses under all patents relating thereto.

(*d*) To continuously prosecute experimental and research work in the development of the telephone art.

(*e*) To advise and assist the licensees in all matters pertaining to the efficient, economic and successful conduct of their telephone business.

(*f*) To advise and assist the licensee companies in financing extensions, developments and improvements in their telephone systems, and to aid them in securing funds for new construction and other expenditures.

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[1] Plaintiff's Exhibit 7, O.R. IV, pp. 1196-1217.
[2] O.R. IV, 1196, City's Exhibit 23, O.R. VI, p. 55.
[3] O.R. III, 977-978.

(*g*) To render active assistance to the licensees in the matter of pensions, disability and death benefits for the purpose of maintaining a stable, contented and efficient personnel.

(*h*) To render available for use by the licensee company all the products of the licensor's work of research, investigation and experimentation.

(*i*) To acquire any patent rights held by others necessary to render inventions and discoveries made by the licensor available for the licensee companies.

(*j*) To maintain continuously a sufficient organization of specialists trained for the work of rendering the foregoing services and relieve the licensee companies of attempting to perform the work for themselves.

Plaintiff and the other operating companies, called "Licensee Companies," were obligated to pay to the American Company 4½ per cent. of gross revenues as compensation for the services above described.[1] Prior to 1919 substantially the same general arrangement existed between the parties.[2]

The services rendered by the American Company under the License Contract were not of a kind which constituted a part of the ordinary business of an operating telephone company, nor were they of a kind which the operating companies could perform for themselves. Neither were they services which could have been obtained elsewhere, as the American Company had built up an organization of over 7,000 persons, more than 3,000 of whom were engineers and scientists, and many of whom were specialists who stood at the very top of their various specialties.[1] There was no other organization in the telephone field and no other in any branch of industry in the world, similar to that of the American Company.[2] The services rendered were necessary to the operating companies and to the public as well.

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[1] Plaintiff's Exhibit 7, O.R. IV, p. 1210.

[2] O.R. III, 978, O.R. IV, 1196.

Plaintiff could not possibly have performed for itself the complete service received from the American Company, and such part as it could have performed would have cost it substantially more than the entire payment to the American Company.[3] This was 4½% on gross revenue in 1919 and prior thereto,[4] but was reduced to 4% in 1926.[5]

In 1928 the American Company sold the instruments to the operating companies at a substantial discount and discontinued furnishing and maintaining the instruments. The contract was revised at that time and the payment reduced from 4% to 2%. The next year there was a voluntary reduction to 1½%.[6] All of the reductions from the 4½% rate have been voluntary and without consideration to the American Company except for the discontinuance of the furnishing of the instruments, and all of the said deductions were made after this and other courts had repeatedly sustained the 4½% rate.[7] The costs to the American Company or the offsets against the payments received by it from plaintiff and the other associate companies were: (a) the expenses of the 12 general departments of the American Company, each of which was engaged principally in advising and assisting the operating companies and rendering the services specified in the License Contract; (b) taxes and other expenses incurred in connection with the performance of its obligations thereunder; (c) the furnishing and keeping in repair of the telephone instruments consisting of receiver, transmitter and induction coil.[1] The cost or allowance for this instrument service consisted of the actual out-of-pocket cost of repairs, a fair annual rate for the depreciation of the instruments (7%), and a fair return for the use of the instruments (the same return allowed plaintiff upon the other property used by it in furnishing its service).[2]

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[1] O.R. III, p. 976.

[2] R. III, pp. 2192-2194, O.R. III, 54-55.

[3] O.R. III, pp. 1045-1046, 1056.

[4] Plaintiff's Exhibit 7, O.R. IV, p. 1210.

[5] R. II, p. 1165, O.R. IV, 1215.

[6] R. II, 1165.

[7] 259 U. S. 318; 262 U. S. 276. 288; 12 F. (2d) 279, 285 (affd. 276 U. S. 97); 6 F. (2d) 663; 5 F. (2d) 77, 96; 300 Fed. 190, 204; 36 F. (2d) 54, 67.

The court found the cost of furnishing the License Contract services to plaintiff at the following amounts:[3]

1923	$1,088,195	1928	$1,005,063
1924	1,156,046	1929	1,040,529
1925	1,369,836	1930	1,191,882
1926	1,412,867	1931	1,068,303
1927	1,422,869		

These amounts as found by the court are considerably less in each year than the costs contended for by the plaintiff. This difference for the nine years totals about $2,500,000.[4]

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[1] Plaintiff's Exhibit A-170, R. IV, 2963-2970. Testimony of Dr. F. B. Jewett, R. I. 611-742; Mr. B. Gherardi, R. I. 526-553; Mr. Arthur W. Page, R. I. 745-749; Mr. Charles A. Heiss, R. I. 819-820, 841-848, 881-898, 909-1048; R. II, 1086-1097, 1144-1175; Mr. Edwin F. Carter, R. I. 821-833; Mr. Hugh Blair-Smith, R. I. 849-880; Mr. Charles P. Cooper, R. I. 899-908.

[2] Plaintiff's Exhibit A-162, A-163, R. IV, 2938-2940.

[3] Finding 22, R. III, 2519.

[4] Plaintiff's figures for these amounts are built-up figures based on the computation of some eighteen subdivisions of license contract costs. See Plaintiff's Exhibits A-108, A-117, A-123, A-150, A-170 inclusive, A-200, R. IV, 2840, 2848, 2850, 2914-2953, R. V. 2980; Plaintiff's Assignment or Error 14, R. IX, 4966.

The court below allowed the actual out-of-pocket expenses of maintaining and repairing the instruments, but cut down the annual depreciation expenses from 7% to 6% and the fair return to the American Company claimed on the instruments from 7½% to 6%.[1] Moreover, the court below disallowed all taxes and other expenses incident to the performance of the contract claimed by plaintiff.[2]

The foregoing is a brief explanation of the difference between the amounts claimed by plaintiff as the fair share of the American Company's License Contract costs allocable to plaintiff's intrastate business in the Chicago area and the amounts found therefor by the court below. There was no evidence to support the court's action in trimming the costs or allowances for furnishing the instruments, nor in disallowing taxes and other items.

The fair share of the License Contract costs attributable to the intrastate business of plaintiff found by the court is set forth in its Finding 22.[3] The amounts which the plaintiff actually paid to the American Company for the License Contract services are set forth in Finding 23.[4] The costs of the services rendered to plaintiff *as found* were substantially less than the payments which plaintiff made therefor in the years 1923 to 1927, inclusive, slightly less in 1928, and substantially more in 1929, 1930 and 1931.[5] There was no finding for 1932. According to plaintiff's claim and proof the costs exceeded the payments in four of the nine years[6] and closely approached in two. However, although the statutory court found that the License Contract was made in good faith and was fair to plaintiff, it has disregarded the amounts of payment made thereunder and has allowed for operating expenses in connection with the License Contract, only the costs found in Finding 22 for the years 1923-28, both inclusive, and the payments found in Finding 23 for the years 1929, 1930 and 1931.[1] Thus the court has taken cost or payment, whichever was lower, in determining the amount to be allowed to plaintiff in its operating expenses with respect to the License Contract.

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[1] Op. R. III, 2509, 2510.

[2] Op. R. III, p. 2511, 2512.

[3] R. III, 2519.

[4] R. III, 2519.

[5] Compare Findings 22 and 23, R. III, 2519.

[6] Plaintiff's Proposed Finding 51, R. III, 2417, Plaintiff's Exhs. A-170, A-201, R. IV, 2953; R. V. 2980; Court's Finding 23, R. III, 2519.

Plaintiff contends that, on the evidence, and on the findings the License Contract should have been sustained, and the full amounts paid thereunder should have been allowed as operating expenses. Plaintiff contends further that the costs found in Finding No. 22 were less than the true costs, and further, that in any event the allowance for operating expenses must be determined upon a consistent basis and must be costs in all years or payments in all years, and not whichever of the two is lower in each particular years.[2]

3. Maintenance Expense.

The court deducted from the operating expenses of the plaintiff $67,167 for the last two months of 1930, $332,470 for 1931, and an equal amount for 1932. These deductions were made because of the court's refusal to give effect to the 10 per cent increase in Western's prices in November, 1930, which we have discussed *supra* at p. 7, and result from a reduction of such 10 per cent from the prices charged by Western on purchases attributable to maintenance and other expense accounts.

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[1] Finding 25, R. III, 2520.

[2] Plaintiff's Assignments of Error 9 (b); 14, 15, R. IX, 4965-4966.

III.

Fair Rate of Return.

Plaintiff's business was neither free from hazard nor so considered by the investing public. It was more hazardous than a gas or electric business and required a higher rate of return to attract capital.[1]

The fair rate of return to plaintiff considered separately and alone or as a member of the Bell System was in each case at least the following percentages in the following years:

1923, 8 per cent.; 1924, 8 per cent.; 1925, 8 per cent.; 1926, 8 per cent.; 1927, 8 per cent.; 1928, 7 per cent.; 1929, 7 per cent.; 1930, 7 per cent.; 1931, 7 per cent. until the latter part of the year and then 8 per cent.[2]

The above facts were shown by highly qualified experts called by plaintiff who testified both to the ultimate fact of the percentage rate and also to the subsidiary facts supporting that ultimate fact.[3]

Defendants called no witnesses who testified to any fair rate of return but introduced tabulations showing prices at which plaintiff and the Bell System had obtained moneys in the past.[4] The prices paid properly interpreted support plaintiff's contention.[1] In this connection the fact that plaintiff and the American Company were greatly undercapitalized is an important consideration.[2]

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[1] R. I, 157, 158.

[2] R. I, 159, 160, 213.

[3] Testimony of Hoyt, R. I, 151-160, 187-217; Testimony of Brown, R. II, 1153.

[4] Defendants' Exhs. X-227 to X-262, inc.; R. VII, 4190-4341.

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The court found the fair rate of return at the following amounts for the following years: 1923 to 1927, inclusive, 7½%; 1928, 1929, 1930, 7%; 1931, 6½%; 1932, 5½%.[3]

Plaintiff has assigned error to the findings above with respect to the years 1931 and 1932 only,[4] although the findings for the preceding years are less than those shown by the evidence.

The court below found a lower rate of return in 1931 and 1932 than in the preceding years by taking judicial notice of the falling off in corporate earnings.[5] It failed, however, to take judicial notice of the greater falling off in the price of corporate securities which kept the rate of return to investors as high or higher in 1931 and 1932 than in the years previous thereto.

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[1] Exhibit X-343, R. VIII, 4476.

[2] Defendants' Dep. Exhibits 44 to 50, inclusive, R. V. 3306, 3312-3314, 3319-3320, 3324-3325, 3332-3333, 3339-3340, 3347-3350.

[3] Finding 32, R. III, 2521.

[4] Plaintiff's Assignment of Error 21, R. IX, 4968.

[5] Opinion, R. III, 2514.

SPECIFICATION OF THE ASSIGNED ERRORS HEREIN URGED.

I.

Valuation.

The court undervalued the property of the plaintiff by substantial amounts in each of the years involved in the case. Such undervaluation is in large part the result of the court's errors in the following respects:

A. The court undervalued the property by deducting excessive amounts for actual existing depreciation, such excess ranging from $9,300,000, to $13,800,000 in the several years.

> Assignment of Errors 1 (a), 2, 4, 5, 7 (R. IX, 4962).

B. The court undervalued the property in each of the years 1930, 1931 and 1932 to the extent of more than $4,750,000 by refusing to give effect to reasonable Western Electric Company prices prevailing in those years.

> Assignment of Errors 1 to 6 inclusive (R. IX, 4962).

C. The court undervalued the property by more than $14,000,000 in 1931 and more than $23,000,000 in 1932 by erroneously giving effect to a general decline in property values in those years.

> Assignment of Errors 1 to 6 inclusive (R. IX, 4962).

II.

Expenses.

The court disallowed substantial amounts of the plaintiff's reasonable and proper operating expenses in each of the years involved in the case, specifications whereof are as follows:

A. The allowance for the annual charge for depreciation expense, as found by the court, is less in each year than the reasonable and proper amount shown by the evidence, such deficiency in the allowance in the several years ranging from approximately $1,100,000 to $2,100,000.

Assignments of Error 9 (a), 11, 16, 17, 18, 19 and 20 (R. IX, 4962).

B. The court erred in its findings by disallowing portions of the annual payment made by plaintiff to the American Telephone and Telegraph Company for services rendered pursuant to a contract between the two companies, known as the license contract, the amounts erroneously disallowed ranging from approximately $200,000 to $630,000 in the several years respectively.

Assignments of Error 9 (b), 14, 15, 17, 18, 19 and 20 (R. IX, 4962).

C. The court erred in deducting from the plaintiff's reasonable operating expenses subsequent to November 1, 1930, 10% of the prices charged by the Western Electric Company on purchases made by plaintiff attributable to maintenance and other expense accounts, such deductions amounting to more than $65,000 for the last two months of 1930 and more than $330,000 for each of the years 1931 and 1932.

Assignments of Error 9 (c), 13, 17, 18, 19 and 20 (R. IX, 4962).

III.

Fair Rate of Return.

The court erred in finding that the fair rate of return was 6½% for the year 1931 and 5½% for the year 1932.

Assignment of Error 21 (R. IX, 4962).

ARGUMENT.

Plaintiff charges error in certain findings of the statutory court, with respect to (1) the valuation of the property, (2) certain items of expense, and (3) as to the years 1931 and 1932, the fair rate of return.

I.

Valuation.

The court undervalued plaintiff's intrastate property by substantial amounts in each of the years involved in the case, due chiefly to its errors in three important particulars now to be discussed.

1. Actual existing depreciation in the property.

The statutory court undervalued the property by deducting excessive amounts for actual existing depreciation.

(Assignments of Error, 1 (a), 2, 4, 5, 7, R. IX, 4962.)

The court made a definite finding of the amount to be deducted, which is its sixth finding of fact, as follows:

> "6. The fair rate of depreciation to be applied to the reproduction cost new in determining the valuations for rate-making purposes, is sixteen per cent. for the years 1923 to 1928, inclusive, and fifteen per cent. for the succeeding years" (R. III, 2515-6).

In its opinion, the court says:

> "In considering the reproduction cost new as an element in arriving at value, it is necessary to deduct the actual existing depreciation in the property as compared with the new one in order to find the value of the physical elements commonly referred to as the structural value of the property.
>
> "A consideration of the evidence on this subject, including that of the witnesses who inspected the property, has led to the conclusion that the fair rate of depreciation is sixteen per cent. for the years 1923 to 1928, inclusive, and fifteen per cent. for the succeeding years" (R. III, 2505).

The evidence shows a maximum depreciation of 9% for the years 1923 to 1928 and of 8% thereafter.

The excessive deduction by the court resulted in the undervaluation of the property in the several years by the approximate amounts shown in column 5 of the subjoined table:

	Reproduction Cost Intrastate Property Excluding Land and Right of Way		*Deduction for Existing Depreciation*		
			As Percentage of Reproduction Cost		
	Amount at December 31 from Exhibit A-41 "Intrastate Total" (1)	*Average Amount for Calendar Year (Computed from Col. 1)* (2)	*Court's Finding* (3)	*Company's Evidence* (4)	*Court's Finding in Excess of Company's Evidence (in Round Figures) Col. 2 Multiplied by Col. 3 Minus Col. 4* (5)
1923	$139,654,758	$133,244,605	16%	9%	$ 9,300,000
1924	146,223,565	142,939,162	16%	9%	10,000,000
1925	159,884.262	153,053,914	16%	9%	10,700,000
1926	165,032,055	162,458,159	16%	9%	11,300,000
1927	176,290,322	170,661,189	16%	9%	11,900,000
1928	184,618.758	180,454.540	16%	9%	12,600,000
1929	197,887,923	191,253,341	15%	8%	13,300,000
1930	198,679,303*	198,283,613	15%	8%	13,800,000
1931	197,032,239*	197,855,771	15%	8%	13,800,000
1932	....	197,032,239	15%	8%	13,800,000

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* These amounts for 1930 and 1931 have been reduced by $5,674,723 and $5,620,356, respectively, below those stated in Exhibit A-41, on account of the Court's adjustment of Western Electric Company prices in those years (Pages 36 to 44, *infra*).

The statutory court's statement of the applicable rule of law, in the first paragraph above quoted from its opinion, is substantially a paraphrase of what this court said in its opinion in the Minnesota Rate Cases, as follows:

> "It is also to be noted that the depreciation in question is * * * *the actual existing depreciation in the plant as compared with the new one.* * * * And when an estimate of value is made on the basis of reproduction new, the extent of the existing depreciation should be shown and deducted." Minnesota Rate Cases, 230 U. S. 352, 457. (Emphasis ours.)

The company determined the amount of the depreciation by making an inspection of the property, which took into account all elements of actual existing depreciation. Such depreciation is not a matter of formula or theory. The books of account or other records of the company do not record such depreciation, or purport to do so, and in the nature of the case they could not. *McCardle* v. *Indianapolis Water Company,* 272 U. S. 400, 416, and cases there cited.

The only witness for the defendants who testified on the subject was J. G. Wray, one of the valuation engineers who has represented the city throughout the case. His testimony was given at the first trial; the defendants offered no evidence on the subject at the second trial. Mr. Wray did not make an inspection of the property, and he gave no testimony as to its condition or the amount of the existing depreciation. Such testimony as he did give was confined to the method of determining the amount of such depreciation and in that he was in substantial accord with the witnesses for the plaintiff.

On direct examination at the first trial, Mr. Wray testified, in part, as follows:

> "In addition to the general examination of the property as a whole, we examine portions of it very closely and examine enough of the different classes of property to establish averages which are representative of the property as a whole."

* * * * * *

> "When we have determined the per cent. condition of each item of property, then in determining the value of the property we apply the per cent. condition to the reproduction cost, and arrive at a figure which is known as the 'reproduction cost in present condition.' That I think is the most accurate characterization of what we do. I think it is the

> most exact method that can be used at all * * *" (O.R. V, 1729).

On cross-examination he further testified:

> "In other words, per cent. condition is determined by inspection" (O.R. V, 1771).
>
> "I believe in inspecting a property and ascertaining its condition without any relation to the depreciation rate, the age of the property or the amount in the depreciation reserve" (O.R. V, 1772).

There are certain broad considerations, shown by the record, which have an important bearing upon the condition of the property and which we think should be brought to the attention of the court in advance of a discussion of the evidence directly pertaining to the inspection of the property.

1. The Commission found that the property was "in at least 90 per cent. condition." Commission Finding No. 4 (O.R. I, 43). The only testimony that was before the Commission on this subject so far as its order discloses was that of the company's witnesses, who testified to a condition of 92 per cent. at that time. Referring to this testimony, the Commission says:

> "In other words, the property has depreciated some 8% as testified to by the company's witnesses, which when expressed in terms of the original cost of the depreciable property, would mean that there has been a lessening of worth to the extent of $6,425,000" (O.R. I, 27).

2. The property in Chicago is a modern Bell System plant (R. I, 73). There is an abundance of uncontra-

dicted evidence scattered throughout the record to prove this:

In its opinion, the trial court says:

> "It (the Chicago property) is well planned, efficiently engineered and properly constructed * * *. It is well adapted to the needs of Chicago and through years of operations has become fully efficient and serviceable to that community * * *. The plaintiff has been efficiently and economically operated and has had a high standard of maintenance * * *. Plaintiff has engineered and planned its property so that as additions are required to meet the future needs of the community they may be made efficiently and economically" (R. III, 2506).

3. The Chicago property was maintained at a high and even standard of maintenance throughout the years involved, and was kept in excellent condition at all times (R. I, 73, 139-40, 132, 115-16, 145-6). Through this process of current maintenance, worn, damaged or otherwise defective parts were being constantly removed before their impairment affected the telephone service. Other current repairs, not involving the substitution of new piece parts for old, had a similar effect (R. I, 98, 139-40, 132, 116).

4. The factors of "inadequacy" and "obsolescence" were continuously anticipated by the company, so that the telephone service might not be impaired, and no depreciation of that character was ever present in the plant, except to the slight extent that obsolete items of plant were found, as hereinafter stated on page 32. Such items were depreciated practically 100 per cent. (R. I, 72-3, 162-3, 140). The property was at all times capable of giving adequate

telephone service abreast of the art, and there was no functional depreciation at any time, other than that due to the slight amount of obsolescence just noted (R. I, 73).

5. New plant was being installed continuously in very large amounts during this period. Such plant, undepreciated, tended to raise the average per cent. condition and to keep it at a high level.

The business expanded with great rapidity. The number of telephones in Chicago increased from 690,000 at the end of 1923 to 940,000 at the end of 1931, and was 987,000 at the peak in 1929. (The exact figures are shown in Plaintiff's Ex. A-56, R. IV, 2775.) In the period 1923 to 1931 the cost of the plant as shown by the books rose from $85,000,000 to $195,000,000, so that during a term of nine years a greater amount of plant was added new to the property than was in service at the beginning of the term. In addition, replacements of plant were very heavy; Exhibit A-57 (R. IV, 2776-7) shows that from 1923 to 1931 used plant taken out of service amounted in the aggregate to $79,000,000.[1] Even excluding retirements of short-lived plant at subscribers' stations replaced more than once during the nine years, the retirements amounted to approximately $30,000,000.[1] The new construction was spread over the years in a fairly even ratio to the plant then in service (Exhibit A-57, R. IV, 2776-7). While the amount of the retirements varied more widely from year to year than did the additions, as the exhibit referred to shows, their distribution over the period was still such that they also tended to maintain the per cent. condition at a constant level.

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[1] Exhibit A-57 (R. IV, 2776-7) gives the exact figures by years. These figures, it is to be noted, relate only to the capital accounts and do not include new parts installed to replace old parts, in the course of current maintenance, in units of property not retired. Such substitutions or "repairs" are in addition to these amounts.

The Inspection of the Property.

The defendants did not make any inspection of the property at any time, and the testimony of plaintiff's witnesses now discussed, both that at the first trial and the second trial, is uncontradicted.

First Trial. S. A. Rhodes was the company's witness on this subject at the first trial (O.R. II, 699-709). He had made an inspection of the property during the months of December and January in 1921-22 in connection with the Commission's investigation. He had been Chief Engineer and had become thoroughly familiar with the plant in the regular course of his employment over a period of 35 years. He made a second inspection of the plant in the summer of 1923 (O.R. II, 699-700). He testified that the plant was in at least 90 per cent. condition. His findings as to the amount of existing depreciation are stated for each class of plant separately, being stated in terms of per cent. condition as compared with new, as of June 30, 1923, in Plaintiff's Exhibit 2 of the previous record (O.R. IV, 1182). He understood that anything that was obsolete or inadequate was to be depreciated accordingly, and that otherwise the depreciation was to be measured by comparing the plant as he found it with the same things new. The only item of plant that he found obsolete was certain paper conduit, of which there are about 190 duct miles out of a total of some 4,500 duct miles. This paper conduit had been placed in the years 1901-2 and was still in use and in the main giving satisfactory service, but there was some trouble with it and it was of a type no longer considered proper for new installation or replacement. He depreciated this conduit 80 per cent., that is, he gave it a per cent. condition of 20 per cent. He found that no part of the plant was inadequate (O.R. II, 699-709).

Second Trial. In preparation for the second trial a most thorough and careful inspection of the property was made in the early part of 1931, and is fully set forth in the record.

Frank Redmund, R. I, 65-74, 160-166.
Frank P. Hyatt, R. I, 75-111, 133-142, 166-168.
E. T. Young, R. I, 111-116, 142-148.
Maynard H. Riley, R. I, 116-132, 148-151, 168.

The completeness and accuracy of this inspection of the property are conceded by the defendants. A stipulation to that effect has been entered of record, at pages 2595-6, Vol. III, of the present record, as follows:

> "7. It is agreed that, for all issues arising on appeal, Exhibits A-19 to A-21, inclusive, A-23 to A-38, inclusive, and A-210, omitted from the record in the Supreme Court, showed a very thorough inspection of Appellee's property in its Chicago Area in minute detail as of December 31, 1930, the summary sheet of which, Exhibit A-2,* is included, and accurately recorded what the inspection purported to show, that is, the per cent. condition of the property as that term was used and understood by Appellee's witnesses. No question will be raised by Appellants in the Supreme Court because of the omission of said exhibits from the record."

Exhibit A-22, bearing the heading "Per Cent. Condition of Plant on December 31st of each Year from 1923 to

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* This is a misprint and should be A-22.

1930—Chicago'' is in the record (R. IV, 2682), where the facts are summarized. This exhibit shows the per cent. condition separately for each class of plant for each of the years 1923-30. These percentages run all the way from a low of 77 per cent. for pole lines to a high of 99 per cent. for underground conduit and underground cable. The weighted total or overall condition is 91 per cent. (or 9 per cent. depreciation) for each of the years 1923-1928, and 92 per cent. for the subsequent years. The witnesses testified that the condition for the year 1931 and at the time of the trial in 1932 was, to their knowledge and in their judgment, not less than that found at the time of the inspection, or 92 per cent. (R. I, 73, 110, 116, 132).

In view of the above stipulation it is unnecessary for us to review the testimony except to the extent necessary to show what is meant by the term ''per cent. condition of the property,'' as used and understood by the witnesses. This same term, it will be recalled, has been used throughout the entire history of the case. The Commission found that the property was ''in at least 90% condition'' (*supra*, p. 26). Defendants' valuation engineer, J. G. Wray, employed the same term (*supra*, pp. 25-26).

The term does not connote or have any relation to what is known as ''deferred maintenance.'' The evidence is uncontradicted that the property was at all times fully maintained, and the Court found that it was ''fully efficient'' and that it has had ''a high standard of maintenance'' (*supra*, p. 27).

All existing depreciation, both physical and functional, was found, was reduced to a percentage, and subtracted from 100 per cent. The remainder is ''per cent condition.''

The manner in which the depreciation was determined is as follows:

First, an examination of the physical things was made by the field forces for the purpose of finding every kind of physical impairment. Condition new was assumed to be free from defects or impairment of any kind, that is, perfect or 100% condition, and the thing as it stood in actual use in the plant was compared with the same thing new (R. I, 162, 135, 147, 150-1).

Second, the plant was surveyed to determine whether or not any of the parts were inadequate or obsolete and any such depreciation was also deducted. It is necessary in reading the testimony of the witnesses to distinguish this from the physical examination made by the field forces and referred to in the preceding paragraph. This survey was the primary responsibility of the men who headed the organization which was set up by the company to make this depreciation study. They were high operating officials of the company in the Chicago area, possessing exceptional qualifications for this work. Throughout the period involved in this case it had been their duty to know the plant intimately, and they had, moreover, actively participated in the field inspection.[1]

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[1] Each of these witnesses testified that no part of the plant was inadequate at any time. A few obsolete items were found which in the aggregate, while more than negligible, are of slight importance in relation to the whole. Such items were depreciated practically 100% (R. I, 72-73, 162-3, 140). The specific items of obsolete plant found are the following:

1. Certain call circuit keys in switchboards, depreciated 100%.
2. Certain carrier equipment and apparatus at Morrell Park Station, depreciated 100%.
3. A certain type of teletypewriter, depreciated 100%.
4. One million feet of paper conduit, depreciated 95% (R. I, 72-73).

The witnesses did not concern themselves with future inadequacy or obsolescence. The fact that a cable, for example, now fully adequate to the demands of the service (which includes a reasonable margin of spare capacity, R. I, 140), might become too small and hence inadequate at some time in the future, was not for that reason marked down in per cent. condition.

The following testimony of Mr. Redmund on cross-examination (R. I, 163) fairly summarizes the testimony upon this point:

> "I considered physical condition, inadequacy and obsolescence, as I have explained those terms. I did not take into consideration any retirements that may occur in the future due to new inventions or discoveries. That was not part of my work. Nor did I take into consideration wear and tear in the future, or something that might occur subsequent to the date of the inspection, but which has not yet happened. I took the condition as I found it at that time. I did not speculate on what might happen in the future, nor did I consider at all the retirements of property that might occur subsequent to the date of the inspection because of physical changes, or because of future public requirements, or future changes in the public demand, or because of future losses that might occur through storms, and so forth."

The record shows without dispute that the company during all the period of this suit furnished fully adequate telephone service to the people of Chicago in the second largest telephone exchange in the world, second only to the New York City exchange. The service measured up to the standards of the telephone art at all times. There is no evidence of inefficiency. The plant capable of giving such service was not functionally deficient, in any practical sense. This is not to say that parts of the plant do not from time to time become inadequate or obsolete, but that the company continuously anticipates and forestalls inadequacy and obsolescence. Before a thing becomes inadequate or obsolete it is removed from the plant, written out of the accounts, and thereafter does not appear in the appraised value of the property upon which the company claims the right to earn a fair return.

There remains for consideration the condition of the property in the intervening years between the 1923 and the 1931 inspections. In this connection the general facts set forth herein, *supra*, pages 26 to 28, are important. Also in this connection it is to be borne in mind that Mr. Redmund, who was in general charge of the inspection in 1931, and Messrs. Hyatt, Young and Riley, who were, respectively, in immediate charge of the inspection of inside plant, buildings, and outside plant, were in intimate daily contact with the property throughout all these years (R. I, 73-74, 109-111, 115-116, 132, 145). They had been in charge of its construction, maintenance and operation, and were thoroughly conversant with it.

As appears from Exhibit A-22 (R. IV, 2682) the percentage of depreciation in the various classes of plant did not vary materially during the period, with the exception of three classes, namely, central office equipment, private branch exchanges and booths and special fittings. In the case of central office equipment, there were large installations of new equipment in 1929 which had the effect of raising the per cent. condition for the entire class from 92 per cent. for prior years to 93 per cent. for 1929 and subsequent years. In the case of private branch exchanges, the per cent. condition improved gradually from 88 per cent. in 1923 to 94 per cent. in 1930 due to the unusually large proportion of new installations and correspondingly large retirements of the old. In the case of booths and special fittings, the per cent. condition gradually improved from 78 per cent. in 1923 to 85 per cent. at the end of the period, in this case also because of abnormally large changes of booths at pay stations. These are the changes which in the main account for the fact that the overall condition of the plant rose from 91 per cent. for the years 1923-1928 to 92 per cent. thereafter (R. I, 74, 109-11, 115-16, 132, 141, 145-147).

Each one of these witnesses testified that by reason of his day-by-day familiarity with the plant during all of these years, of having had charge of the changes in it, having been responsible for its proper condition and functioning at all times, each one in his own department of the service, and having made the complete inspection herein shown, he was able to arrive at a fair judgment as to its condition in those years. The testimony of the witnesses with respect to the intervening years appears at the following places in the Record upon this appeal: Vol. I: Redmund, direct, page 74, cross, 160-62, 164; Hyatt, direct, 109-10, cross, 138-9; Young, direct, 115, cross, 145-47; Riley, direct, 132.

The matter is one that lies peculiarly within the province of technically trained men. There is nothing inherently unreasonable or improbable in what they have said. The trial staff of the defendants was manned with telephone engineers, some of whom testified upon various phases of the case, but no one of them challenged the testimony of these witnesses with respect to this matter.

Plaintiff's evidence is clear, definite, and convincing. It shows every element of actual existing depreciation in the property. There is no evidence to the contrary. The court can form no judgment as to a matter of this character except as it is based upon the evidence. The court is not at liberty to refuse to accept such evidence upon such an issue. It is clear from the court's opinion and findings that the error was carried into the valuation. Upon this record, the court's action was error of law.

We respectfully submit that the trial court has undervalued the property of the plaintiff by the amount of the excessive deduction for existing depreciation shown in the table, *supra*, p. 24, and that the error should be corrected.

2. The statutory court undervalued the intrastate property of plaintiff for each of the years 1930, 1931 and 1932 to the extent of more than $4,750,000 by refusing to give effect to reasonable Western Electric prices prevailing in those years (Assignments of Error 1-6 inclusive).

In remanding this cause to the statutory court for the purpose of making findings and receiving the necessary additional evidence for that purpose, this court said, in discussing the Western Electric Company relationship:

> "The point of the appellants' contention is that the Western Electric Company, through the organization and control of the American Company, occupied a special position with particular advantages in relation to the manufacture and sale of equipment to the licensees of the Bell system, including the Illinois Company, that is, that it was virtually the manufacturing department for that system, and

> the question is as to the net earnings of the Western Electric Company realized in that department and the extent to which, if at all, such profit figures in the estimates upon which the charge of confiscation is predicated. We think there should be findings upon this point" (283 U. S. 133, 153).

Plaintiff's estimates of reproduction costs were based upon prices paid by it to Western, from which it purchased substantially all of its telephone apparatus and other plant materials. Western increased its prices for telephone apparatus 10 per cent in November, 1930 (Finding 20, R. III, 2519). This advance substantially restored the price level prevailing before Western's price reduction in 1929.*

The court eliminated this price increase in arriving at the fair value of plaintiff's property for the years 1930, 1931 and 1932, and as a result undervalued plaintiff's intrastate property for each of said years by a sum in excess of $4,750,000. The basis on which this figure is arrived at is shown in the margin.†

The court's action in eliminating this price increase cannot be justified, as we shall show.

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* The price level of telephone apparatus at the end of 1928 was 64 per cent. of the price level of December 31, 1920. After the price increase of 1930 it was 64.4 per cent. (Exhibit X-13A, R. VI, 3892).

† Substantially 50% of the cost to reproduce new plaintiff's property in any given year consists of telephone apparatus and materials purchased from Western (R. II, 1314). 59% of plaintiff's purchases from Western during the period 1923-1931 consisted of telephone apparatus (R. I, 335). Therefore 29½% of plaintiff's reproduction cost new of the structural property consists of telephone apparatus.

The figures above are arrived at by relating the 10% reduction in Western's prices made in November 1930 and rejected by the court to that portion of plaintiff's reproduction cost new represented by telephone apparatus and depreciating the same in accordance with the court's findings.

Whenever a reasonable profit could be made by Western at lower prices than then prevailing, its uniform policy was to make reductions accordingly. This policy was consistently pursued, even in years when other manufacturers were maintaining or increasing their prices (R. I, 450; R. VIII, 4557). In conformity with this policy substantial reductions were made from time to time in Western's prices to its Bell customers beginning in 1921 and ending on July 1, 1929. The price level of telephone apparatus at the end of 1929 was only 58.3 per cent. of what it had been on December 31, 1920.*

The last reduction referred to was made because Western anticipated a large increase in the volume of its Bell business. Such anticipated increase was not realized but, on the contrary, a substantial decline began in the last half of 1930 and continued during the subsequent years. Before the end of 1930, it became clear that the price reduction made in 1929 was not justified (R. I, 450-451).

The action of the statutory court in refusing to give effect to the price increase made by Western in November, 1930, could only have been proper:

First, if the result of such price increase was to require plaintiff to pay more to Western for its telephone materials than it could have purchased them for from others; or

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* The annual changes in the price level of Western's telephone apparatus to plaintiff were as follows: 1921. — 1.7 per cent.; 1922. — 10.7 per cent.; 1923, + 0.2 per cent.; 1924, — 5.6 per cent.; 1925, — 1.1 per cent.; 1926, — 8.7 per cent.; 1927, — 4.9 per cent.; 1928, — 10.3 per cent.; 1929, — 8.6 per cent. (Opinion, R. III, 2508; Defendants' Exhibit X-13A, R. VI, 3892; R. I, 329-330).

Second, if such price increase resulted in Western earning unreasonable profits.

The evidence in the record and, indeed, the court's own findings conclusively negative the existence of either of these justifiable bases for rejecting such price increase.

As to the first test, the court found upon uncontradicted testimony that Western's prices to plaintiff and its other Bell customers had been lower, during the entire period 1916 to 1932, inclusive, than prices charged by other manufacturers for comparable materials and lower than the prices charged by Western to independent telephone companies and others for the same materials (Finding 16, R. III, 2517; R. I, 421, 574-5; O. R. III, 1076, *et seq.*). It was, therefore, impossible for the court to refuse to give effect to this price increase on the ground that Western's prices were thereby increased above prices of other manufacturers for the same or comparable materials.

As to the second test, the court found that Western's earnings were reasonable at all times prior to the price increase made in November, 1930. It specifically found Western's earnings, including the amount of the price increase, to be only 4.6 per cent and 4.2 per cent on Western's investment in its Bell business for the years 1930 and 1931, respectively, and that it would sustain a loss in 1932 (Finding 19, R. III, 2518). It was shown that this loss would be more than $6,400,000 (R. II, 1070-1). Western's earnings were thus shown to have been reasonable whether considered over a period of years or for the particular years in which the increase was effective. The court's action in rejecting this price increase cannot, therefore, be sustained on the basis that Western's earnings in its Bell business were at any time unreasonable.

Apparently recognizing that such price increase could not be rejected on the basis of the two controlling tests just discussed, the court in its opinion, in seeking to justify its action, says that "In view of the general price trend during the years 1981 and 1932, this advance in price should be eliminated from the computations upon which the charge of confiscation is determined * * *" (R. III, 2508). When consideration is given to Western's consistent policy of price reductions during a period of business expansion, when other manufacturers were maintaining or increasing their prices, and to the fact that Western's prices during the entire period involved were lower than prices at which plaintiff could have purchased comparable materials from others, it is obvious that general price trends cannot be made the basis for a rejection of reasonable Western prices in 1930, 1931 and 1932.*

The action of the statutory court in refusing to give effect to such price increase in arriving at the fair value of plaintiff's property for the years 1930, 1931 and 1932 cannot be sustained on any proper basis. The following facts found by the statutory court and fully sustained by the evidence further emphasize the reasonableness of Western's prices and earnings:

FIRST: Commencing in 1921, Western made substantial reductions in the prices charged by it for telephone apparatus. These reductions from 1923 to 1929 amounted to about 35 per cent. (Opinion, R. III, 2508; Defendants' Exhibit 13A, R. VI, 3892). During the period last referred to, general commodity prices which this court will notice judicially remained substantially unchanged (Bulletin of the United States Bureau of Labor Statistics No. 543: "Wholesale Prices 1930").

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* In connection with further reductions in the valuation of plaintiff's intrastate property made by the statutory court on account of general decline in property values it is shown under Expenses, *infra*, at p. 45, that such a decline cannot fairly be applied to the reproduction cost estimates of the plaintiff which have never been based upon general commodity prices or enhanced property values. The reasons there stated apply with equal force here.

Second: Western's profits on sales to its Bell customers for the period 1916 to 1932 were 4.5 per cent. and for the period 1923 to 1932 4.7 per cent. (Finding 18, R. III, 2518). Not only were these profits on sales low, but they were less than one-half the profit on sales made by other large comparable manufacturing industries (Opinion, R. III, 2508; Exhibits A-86, R. IV, 2824 and A-87, R. IV, 2825; R. I. 334).

Third: Western's relationship to the Bell system has enabled the Bell Associate Companies to purchase their materials at low prices and the advantages arising out of this relationship have not been retained by Western, but have been passed on in prices charged to its Bell customers. In this connection, the statutory court, in its opinion, said:

> "The Western Electric Company, because of its relationship with the Bell System, has no sales expense and no credit risk involved in its Bell business. By receiving advance estimates from the Bell Associate Companies of their requirements, it is able to plan its manufacturing work more efficiently and economically. These factors result in reducing Western's costs, but they are not advantages retained by Western since such reductions in costs are passed on by it in prices charged to its Bell cus-

tomers. As a result of this relationship, Western has been enabled to sell and has sold its manufactured articles to its Bell customers at lower prices than otherwise would have been possible" (R. III, 2507; R. I, 412, 418).

Fourth: Western's earnings on its investment in its dealings with its Bell customers have always been low. (Finding 18, R. III, 2518). Its earnings on average investment in its Bell business, after making the adjustments referred to in Finding 17 (R. III, 2517), were 5.9 per cent. for the period 1916 to 1932, and 6.1 per cent. for the period 1923 to 1932. For the same periods its earnings in its Bell business on average investment less the amount of its depreciation reserve account were 7.6 per cent. and 8 per cent. respectively (Finding 18, R. I, 2518).

Fifth: In determining the reasonableness of Western's earnings consideration must be given to a period of years for the reasons thus stated in the statutory court's opinion:

> "Western's relationship to the Bell system is permanent, not casual. It supplies substantially all of the requirements of all the Bell associated companies for telephone apparatus and lead covered cable at all times. It is, therefore, necessary in arriving at what are reasonable earnings on investment and profit on sales in the Bell business of Western to take into consideration the results for a period of years and not merely a single year" (R. III, 2507; R. I, 329, 440).

While not a subject of any finding, the undisputed testimony showed that earnings on the average of 10 per cent. of the book cost of Western's assets devoted to its Bell business would have been fair (R. I, 414, 430, 449, 520).

Sixth: Western's earnings on its investment in its Bell business and on its investment less the amount of its depreciation reserve account have been substantially one-third lower than those of other manufacturing companies whose risks and hazards make them fairly comparable with Western (Opinion, R. III, 2508; Exhibit A-271, R. V, 3150; Exhibit A-85, R. IV, 2823; R. I, 333).

Seventh: In figuring the percentage earnings of Western, the base used was an extremely conservative one. The statutory court, in speaking of Western's investment, said:

> "The term 'average investment' of Western Electric Company, as used in the findings, includes its plant and manufacturing facilities, merchandise, receivables and cash, less current accounts payable, all at cost to Western except merchandise, which is cost or market, whichever is lower. There is not included in Western's 'average investment' any amount for patents, good will, development expense, or going concern value. A large part of Western's manufacturing plant and facilities have been constructed by it at less than they could have purchased from others, and these savings are reflected in its 'average investment.' Western's factories are advantageously located, well designed and equipped for efficient and economical operation. It maintains a group of engineers who plan its manufacturing operations and constantly study the problem of cheapening its products" (Opinion, R. III, 2507; R. I, 330, 342; Testimony of Stoll, R. I, 486 *et seq.*).

The evidence clearly establishes that Western's relation to the Bell operating companies contemplates, and, as a matter of consistent policy, has involved the lowest prices consistent with reasonable earnings, and that Western's margins for profit have been narrow. Instead of accumulating large profits, Western consistently and as a matter of policy reduced its prices during the years of expanding business so that at the end of the year 1929, as stated, its price levels for telephone apparatus were only 58.3% of its price levels at the end of the year 1920. What it did in November, 1930, was merely to restore prices to the levels ~~on~~ which they had been prior to the 1929 reduction, and thereby, enable itself to earn 4.2% on its investment in 1931, and to keep its loss for the year 1932 to $6,400,000.

The conclusion and finding of the statutory court that amounts represented by the 10% price restoration in 1930 must be eliminated from the valuation of plaintiff's property is in effect a decision that the test of reasonableness of earnings may operate only one way, that is, when prices can be reduced, and may not operate when its effect is to increase prices.

The ultimate question to be determined in connection with the Western Electric relationship is whether the prices for its materials included in the valuation of plaintiff's intrastate property and its operating expenses have been reasonable. Under the decision of this court there was nothing to justify the statutory court in the rejection of this price increase, it having been clearly established that after the increase became effective, Western's prices to the plaintiff were lower than prices of other manufacturers for comparable materials and its earnings reasonable.

3. The court erred in its finding of fair value of plaintiff's intrastate property by making an undervaluation, in addition to that complained of under Point 2 of more than $14,000,000 for 1931 and more than $23,000,000 for 1932 (Assignment of Errors 1 to 6, inclusive).

The reasons which impelled the statutory court to make the deduction complained of are thus stated in its opinion:

> "The valuation of plaintiff's property for 1931 and 1932 presents some difficulties which are not present in the other years. We are obliged to take notice of the general decline in the property values which has accompanied the present period of business stagnation. For this reason we cannot take the reproduction estimates, based on the cost of labor and materials stated in the record at their face. We have fixed values, therefore, for 1931 and 1932, which in our opinion give due consideration to the elements of the present general declining values."

The statutory court does not state either in its opinion or its findings the amounts by which it reduced plaintiff's reproduction cost estimates in the years 1931 and 1932 on account of the general decline in property values, but such amounts can be readily calculated as shown below,* and are in excess of $14,000,000 for 1931 and $23,000,000 for 1932.

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* The difference between plaintiff's reproduction cost estimate depreciated and all other elements of value as found by the court and the court's finding of fair value for the year 1931 (after allowance is made for the Western Electric price adjustment discussed under Point 2) is $15,351,509, which related to plaintiff's intrastate property gives a reduction in excess of $14,000,000 on account of such general decline in property values. For the year 1932 the court's finding of fair value is more than $12,000,000 below its 1931 finding. By the same process $9,000,000 of this is attributable to the reduction in the intrastate value of plaintiff's property due to such decline or a total of $23,000,000 for 1932.

It must not be assumed from the abovequoted statement from the opinion of the statutory court that for the years prior to 1931 it adopted plaintiff's reproduction cost estimates. This is not the fact. If there be deducted from the Court's finding of fair value for each of the years from 1923 to 1930 the sum of the elements of value found separately by the court, viz., going value, materials and supplies, cash working capital and construction work in progress, the resulting figure will represent the sum at which the court ultimately found the fair value* of the structural elements of the property. Such figures are below plaintiff's estimate of reproduction cost of such structural value less the existing depreciation as found by the court, by the following amounts:

	Intrastate Property
1923	$4,287,348
1924	1,964,686
1926	5,395,059
1928	4,341,495
1929	2,675,978
1930	7,816,125

The court's error in making the deductions complained of arises out of the fact that plaintiff's reproduction cost estimates for the years involved in this case were not based upon general commodity prices prevailing during that period, but were based upon actual prices paid by plaintiff to Western Electric Company for materials and upon labor costs actually experienced by the company (R. I, 34; R. II, 1301). Western's prices were constantly reduced from 1923 to 1929, although general commodity prices remained substantially unchanged and other manufacturers were maintaining or increasing their prices. Full consideration was given in the company's appraisal for 1931 to all conditions which had resulted in lessening the value of this property.*

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* In only two years, 1925 and 1927, do the court's findings of fair value exceed the aggregate of the elements of value separately found and the structural values as ascertained by the company and such excess is less than $3,000 for 1925 and less than $70,000 for 1927.

The reproduction cost estimates of plaintiff for all of the years in controversy were not only conservative (R. II, 1312, 1322, 1307), but were based upon prices below those at which the property could have been reproduced except for the advantages resulting from the Western Electric relationship (see *supra,* pp. 39 to 43).

In dealing with reproduction cost based upon such standards of value, it was improper to make further reductions in the years 1931 and 1932 on account of a general decline in property values due to business stagnation, as will appear from an examination of the four major items of plaintiff's physical property: (1) buildings, (2) real estate, (3) materials purchased from Western, and (4) telephone construction labor.

1. Plaintiff's estimate of the reproduction cost of its buildings as of December 31, 1931, was reduced by the sum

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*The introduction of evidence in this case was commenced February 23rd and concluded July 1st, 1932, hence no reproduction cost estimate was made by plaintiff for 1932 nor did the court find reproduction cost new for 1932, but it did find fair value for that year. The plaintiff made net additions to its plant in 1931 of $4,135,948 (Exhibit A-57, R. IV, 2777) so that the value as found by the court for the plaintiff's average property in 1931 related to a plant whose book cost was substantially $2,000,000 higher than in 1930 and for the year 1932 to a plant whose book cost was substantially $4,000,000 higher than in 1930.

of $4,500,000 or approximately 25 per cent below its 1930 estimate. These figures, based upon the undisputed testimony and fairly measuring the reduction in building costs, were reflected in the court's finding of fair value for 1931 and 1932. (Exhibit A-17, R. IV, 2679-2680; R. I, 62.)

2. Plaintiff's appraisal of the value of its real estate as of December 31, 1931, was reduced by the sum of approximately $350,000 or 10 per cent below its 1930 estimate. This appraisal, likewise based upon undisputed testimony and reflecting the actual market value of real estate in Chicago during the years 1931 and 1932, was reflected in the court's findings of value. (Exhibit A-18, R. IV, 2681; R. I, 63.)

3. The portion of plaintiff's property consisting of Western materials is included in the valuation at prices lower than they could have been purchased from others and at prices which yielded Western low profits on sales and earnings on investments. (See *supra*, pp. 41, 42.) The effect of Western's policy of reducing prices so that it would make no more than a reasonable profit is strikingly evidenced by the fact, established by the undisputed evidence and found by the court, that its prices for telephone apparatus at the end of 1929 were only 58.3 per cent of what they had been on December 31, 1920 (Opinion, R. III, 2508; also see *supra*, p. 44).

The reductions made by the statutory court on account of the general decline in property values, amounting to more than $14,000,000 in 1931 and $23,000,000 in 1932, were clearly not intended by the court to be made on account of Western's prices. The court found that Western's prices and profits had never been unfair or unreasonable except for the price increase of 10 per cent. made in November, 1930 (Findings 20 and 21, R. III, 2519; see also *supra,* pp. 36-44). The court, having made this finding, refused to give effect to the price increase and thus reduced plaintiff's valuation for the years 1930, 1931 and 1932 by the entire amount by which it deemed Western's prices excessive. It is thus clear that the reductions now under discussion were not intended to be applied because of Western's prices.

Such reductions cannot be related to appellant's buildings, its real estate, or the cost of its materials for the reasons above indicated. It remains only to examine the labor costs in the company's appraisal in order to ascertain whether any rational basis exists for such reductions.

4. The labor costs in the company's appraisal were based upon the wages actually paid by the company (R. II, 1301). Such wages were not criticized by any witness and are not challenged here.*

It is clear that no justification can be found for a reduction in the labor costs used by plaintiff in its reproduction estimates.

The period from 1923 to 1929, inclusive, was one of a fairly stable price level for wholesale commodities and of a slightly increasing price level for labor costs. (See *supra,* p. 41.)

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* By agreement of the parties, Sloan's detailed exhibits showing labor costs for all of the years subsequent to 1923 have been omitted from the record, and the defendants have agreed that they will not in this court "urge that the plaintiff has failed to sustain its burden of proof by reason of the fact that said Exhibits A-3 to A-10 are not in the record in the Supreme Court" (R. III, 2594).

Notwithstanding these facts, the reproduction cost estimates of plaintiff, because of reductions in Western Electric prices and only moderate increases in the wages actually paid by the company, were steadily downward. It is thus apparent that plaintiff's valuation of its property was not based upon general commodity prices prevailing during this period, nor upon labor costs experienced by others nor upon increased property values prevailing during such period. If such a valuation had been claimed by the plaintiff and allowed by the court, then a reduction on account of the decline in general commodity prices and labor would have been appropriate for the years 1931 and 1932. The reductions made by the court unjustly and unfairly penalize the plaintiff, because its reproduction costs have never been measured by such standards.

II.

Expenses.

The court disallowed in each year substantial portions of certain of plaintiff's reasonable and proper operating expenses, namely (1) annual depreciation expense (2) license contract payment, and (3) maintenance expenses, which we now discuss in the order stated.

1. The statutory court's allowance for the annual charge for depreciation is less in each year than the reasonable and proper amount shown by the evidence: Such deficiency in the allowance in the several years ranges from approximately $1,100,000 to $2,100,000.

(Assignments of Error, 9 (a), 11, 16, 17, 18, 19, 20, R. IX, 4962.)

In remanding the case this court instructed the statutory court to determine, among other matters, "the amount which in fairness both to public and private interest should be allowed as an annual charge for depreciation," and to "make appropriate findings with respect to the amount to be allowed in this case as an annual charge for depreciation in connection with the intrastate business."

The statutory court in its opinion, after quoting from the opinion of the Supreme Court herein, said:

> "In determining the amounts which should be allowed as annual charges for depreciation, we have given consideration to the estimates in the orders of the Illinois Public Utilities Commission and Illinois Commerce Commission, to the adjustment of such estimates which is necessary to place them on the basis of the present value of the property for the respective years for which such estimates were made by the commission, to the amounts set up by plaintiff on its books for that expense, to the adjustments of the amounts set up by plaintiff on the basis of original or book cost to make the amounts of such allowances correspond with the present value of the property at the time such amounts were set up on the books of the company, to the experience of the Illinois Company and to the results shown in comparable conditions by other companies which are a part of the Bell system. From a consideration of the evidence on the subjects above stated, we have determined the amounts which in our opinion are reasonable and proper amounts, fair alike to public and private interest, to be allowed as the annual charges for depreciation applicable to the intrastate portion of plaintiff's Chicago area property."

The finding of the court is as follows:

> "26. The reasonable and proper amount to be allowed as the annual charge for depreciation applicable to the intrastate portion of plaintiff's said Chicago area property for each of the years 1923 to 1931, inclusive, is as follows: 1923, $4,000,000; 1924, $4,250,000; 1925, $4,750,000; 1926, $5,400,000; 1927, $6,000,000; 1928, $6,650,000; 1929, $7,000,000; 1930, $7,200,000; 1931, $7,400,000" (R. III, 2520).

The following table shows for each year the amount found by the trial court, the amount shown by the evidence as claimed by the company, and the difference.

	Amount Found by Court	*Amount Claimed by Company*	*Difference*
1923	$4,000,000	$5,662,154	$1,662,154
1924	4,250,000	6,382,159	2,132,159
1925	4,750,000	6,768,618	2,018,618
1926	5,400,000	7,217,128	1,817,128
1927	6,000,000	7,608,468	1,608,468
1928	6,650,000	7,981,108	1,331,108
1929	7,000,000	8,148,888	1,148,888
1930	7,200,000	8,581,118	1,381,118
1931	7,400,000	8,934,628	1,534,628

(Exhibit A-267, R. V, 3145; Exhibit A-48, R. IV, 2705, 2716, 2723.)

The amount of this item of expense is large, and its substantially correct determination, year by year, is important. The expense is actual and cannot be controlled or affected by findings. If the company underestimates what this expense will be, it will, in the long run, lose the difference, because it can never make up any past deficiency. *Knoxville* v. *Knoxville Water Co.*, 212 U. S. 1, 13-14.

The Company Has Conformed to the Commission's Accounting Requirements.

The company determines the amount of this annual charge to expense, which is charged on the books in monthly installments, by the *straight line method* of depreciation expense accounting. This has been the practice of the company for more than twenty years, and during all that time it has been required by law, as we shall show.

The straight line method is prescribed by both the Interstate Commerce Commission and the Illinois Commission and hence, being also inherently sound, it is required by law.

The Interstate Commerce Commission in 1912, by an order effective January 1, 1913, promulgated the Uniform System of Accounts for Telephone Companies. We think the court will take judicial notice of the provisions of this system of accounts, but in any event, plaintiff's Exhibit 3 (O.R. IV, 1183-92) sets forth the provisions immediately pertinent for our present purposes. (See especially Section 23, pp. 1190-91.). The text has been carried out and applied by the Interstate Commerce Commission in all that it does to administer this system and see that it is followed by the companies. The testimony upon both trials shows fully and in detail what this system of depreciation accounting is and how the annual amount of the charge is to be determined. The record leaves no room for doubt or difference of opinion with respect to the basis and method prescribed by the Interstate Commerce Commission.

The Illinois statute provides that the system of accounts established by the Commission and the forms of accounts prescribed by it "shall not be inconsistent" with those established from time to time by the Interstate Commerce Commission (O.R. I, 75).

The Illinois Commission has adopted the accounting system and methods of the Interstate Commerce Commission. It is stipulated of record that the two systems are identical (O.R. II, 152. See also O.R. I, 222; O.R. II, 748; R. I, 222; R. I, 255).

The company has complied with these requirements at all times. Its witnesses repeatedly testified that the company's accounts have been kept in accordance with the rules prescribed by both commissions. This testimony was given by the Vice President in charge of accounting, by the operating Vice President, by the General Accountant (R. I, 221-2) and by Andrew Sangster, a Certified Public Accountant in general practice (R. I, 255). It is not contradicted.

U. F. Cleveland, Vice President in charge of the Accounting Department of plaintiff, testified upon the former trial:

> "I believe the books of account of the company have been kept in accordance with the Uniform System of Accounts since January 1, 1913. The company has kept a complete and separate set of books of account since 1908 showing the revenues and expenses of its Chicago business. That separate set of books of accounts has also been kept in accordance with the Uniform System of Accounts" (O.R. II, 165).

The Illinois Commission had full knowledge of the way in which the accounts were kept and of the facts as recorded by the company. The books and records were subjected to continuous examination and supervision by the Commission's staff, *who had an office assigned to them at the company's headquarters for that purpose.* In only one instance was anything criticized and that was a minor matter not related to depreciation accounting (O.R. II, 807).

F. O. Hale, then Operating Vice President, now President of plaintiff, testified upon the former trial that the amounts of money charged by the company in each of the years 1923 to 1928 for the expense of depreciation in the operation of its Chicago property were determined in accordance with the accounting rules of the Interstate Commerce Commission and the Illinois Commission and represented the best judgment of the company (O.R. II, 890). He testified further, referring to this same subject:

> "I think the company complied fully with the intent and purpose of Section 23 of the Uniform System of Accounts. We never, to my knowledge, received any complaints from the Interstate Commerce Commission or the Illinois Commerce Commission as to our non-compliance with those rules" (O.R. II, 919).

K. E. Tholin, *an accounting officer of the Illinois Commission and a witness for the Commission at both trials,* testified concerning the close scrutiny the Commission has exercised continuously since 1921 over the books and records of the plaintiff and in particular over the depreciation accounts. On cross-examination by Mr. Bangs at the first trial, he testified as follows:

> "* * * We have had jobs in connection with your books since 1921. Some of our men are investigating there now. We have been continuously examining books of the plaintiff since 1921 in some case or other. I think there are about five or six men

> there right now and at times we might have had a few more than that and at other times we probably had only one or two there. It might be that the number would average around three" (O.R. V, 1854).

Referring specifically to what the company's books show with respect to the amount actually charged for expense of depreciation and the entire matter of the accounting in that respect, he further testified:

> "Our accountants in all cases make a report of what the depreciation reserve and the depreciation accounting on the company's books have resulted in, showing what the debits are and the credits are to the reserve and how much is charged in expense; that is a part of our regular accounting report and that has been done in all cases. * * * " (O.R. V, 1854-55).

Presumably this witness was put forward by the Commission as its spokesman in this case. Although the Commission had full knowledge throughout these years both of the accounting principles and procedure and of the actual entries upon the company's books, according to his testimony, he is silent as to any word of objection or criticism made by the Commission during all these years, thereby confirming the testimony of plaintiff's witnesses referred to above. The Commission's supervision and continuous check of the company's books, requiring the full time of several men and an office specially set aside for their use at the company's headquarters, presumably was for the purpose of assuring that the accounts were being properly kept at all times.

The company is required to file an annual report with the Interstate Commerce Commission showing, among other matters, the rate and amount of depreciation expense charged during each year (Hale, O.R. II, 886).

The Straight-Line Method.

This method of charging for depreciation expense, the straight line method, is designed to spread evenly over the service life of the property the loss which is realized when the property is ultimately retired from service. Under the prescribed accounting system the loss is computed upon the actual cost of the property as entered upon the books, less the expected salvage. The amount to be charged each year is one year's pro rata share of this total amount. It is necessary, therefore, to determine the expected service life and the expected salvage. (For example, if service life is 20 years and salvage is 10% the annual charge on the books is 4½% of the cost.) Because of the character of the business, the size and complexity of the property, the many different classes of plant of widely different characteristics, some having very long and others very short lives, some yielding large salvage and others little or no salvage (or even negative salvage, on account of the cost of removal), and because of the very large number of units of a class, averages must be used—the average service life and average salvage of poles, of telephones, etc. Also because of the facts just referred to it is necessary to determine the amount of the annual charge for each class of property separately. That is, a separate annual rate is computed from the service life and salvage of the particular class of property, and the rate thus obtained is applied to the cost as shown by the books to obtain the amount to be charged. One-twelfth of the rate is applied to the property standing on the books each month. The methods and all the processes by which it is determined are set forth fully in the evidence hereinafter discussed.

But the amount charged on the books under this method of accounting is not the measure of the company's constitutional rights. The property was provided new and it is that property which is used up in giving the service. The company is entitled to have returned to it during the period of its use the money equivalent of the same property new (less salvage) at the time it is retired from service. In the evidence in this case, therefore, the charges made on the books have been recomputed upon the basis of the replacement value of the property new, by applying the depreciation rates for each class of property to the reproduction cost new as shown by the company's appraisal and found by the court. This is in accordance with the decision of this court in *United Railways* v. *West*, 280 U. S. 234.

The Evidence Sustains the Amount Claimed by the Company.

The company developed in regular course of its business definite percentage rates to be applied to each separate class of its property in order to arrive at the annual depreciation charge. The percentages so developed by the company, when combined and expressed as a composite rate applicable to the entire depreciable property, are as follows:

COMPOSITE DEPRECIATION RATES

(Based on average plant in service and office furniture and fixtures but excluding land and right of way)

Year	*Per Cent.*
1923	4.926
1924	4.595
1925	4.694
1926	4.766
1927	4.793
1928	4.850
1929	4.733
1930	4.775
1931	4.790

The arithmetical average for the nine years is 4.72 per cent. (Ex. A-127, R. IV, 2859).

With reference to the variations in the percentages for the different years, it will be noted that these reflect both changes in class rates during the period and changes in the relative amounts of the property of the different classes. This is so because the charges to expense are determined by applying the separate class rates to the respective classes of property. The class rates are continuously reexamined in connection with the current studies of service life and salvage, constantly being made, and the rates are changed if and as indicated by the result of those studies. Exhibits A-125 (R. IV, 2853-7) and A-126 (R. IV, 2858-9).

The following table shows the amounts of depreciation expense, corresponding to the above depreciation rates, actually charged on the books of the company (column 2) in each of the years, and the amounts adjusted to the current value new (column 3), in accordance with the decision of this court in *United Railways* v. *West, supra,* page 58:

PLAINTIFF'S DEPRECIATION CHARGES AS MADE AND AS ADJUSTED.

INTRASTATE PORTION OF PROPERTY—CHICAGO AREA.

Calendar Year (1)	*On Original Cost Basis, Per Books* (2)	*On Current Replacement Value New of Same Property* (3)
1923	$4,221,515	$5,662,154
1924	4,469,890	6,382,159
1925	5,048,013	6,768,618
1926	5,767,372	7,217,128
1927	6,334,580	7,608,468
1928	7,009,065	7,981,108
1929	7,436,480	8,148,888
1930	7,864,772	8,581,118
1931	8,133,289	8,934,628

(Exhibit A-267, R. V, 3145; Exhibit A-48, R. IV, 2705, 2716, 2723).

The amount for each year shown in column 3 of this table is the amount claimed by the company in this case.

In support of the reasonableness of these figures the plaintiff called Mr. John R. Turner as its chief witness. He has charge of all studies and investigations for determining service life and salvage of the company's property and the resultant depreciation rates. His oral testimony covers 125 pages of the printed abstract, and complete references to it and his exhibits are given at the foot of this section, page 75. Mr. Turner succeeded on this work Mr. F. O. Hale, now president of the company and formerly its chief engineer, who was the company's principal witness on this subject at the first trial (see references to Mr. Hale's testimony at the foot of this section, *infra,* p. 75).

Exhibit A-125 (R. IV, 2853-7) shows the depreciation rates for each class of plant used by the company for the years 1923-30, and shows also the life and salvage expectancies from which the rates are derived. Exhibit A-126 (R.

IV, 2858) gives the same data for the year 1931. Exhibit A-127 (R. IV, 2859) shows the dollar amounts resulting from the application of the foregoing depreciation rates to the cost of the property of each class standing on the books month by month. These are the amounts charged in each year, by monthly charges, and entered on the books in the expense account entitled "Account 608—Depreciation of Plant and Equipment," as provided in the Illinois Commission's system of accounts.

Exhibit A-128 (R. IV, 2860-83) sets forth fully and in detail the character of data available in the company's recorded experience, the methods by which these data were analyzed and interpreted by Mr. Turner, and the processes by which he reached his conclusions, with respect to the service lives and percentages of salvage. In his oral testimony, he amplified and elucidated the descriptive matter of the exhibit (R. I, 754-98). It is not feasible to condense this further in a brief.

Defendants themselves showed that the method followed by Turner was an exact application of the straight line depreciation practice as defined by the Interstate Commerce Commission and the Illinois Commission. Exhibit D-123 (R. VI, 3776-3807) was offered and received in evidence on the part of the defendants (R. II, 1210), being a paper entitled "The Straight Line Depreciation Practice of Telephone Companies in the United States," presented before the International Congress on Accounting in September, 1929, by Allan B. Crunden and Donald R. Belcher. The authors, together with Mr. Woodford, were the witnesses who appeared and testified for plaintiff and all other operating units of the Bell System before the Interstate Commerce Commission in the depreciation case, "Telephone and Railroad Depreciation Charges," representing the "central organization of a few carefully selected engineers and accountants" (referred to by the Interstate Commerce Commission and by this court in its opinion), maintained by the American Telephone and Telegraph Company as a part of its staff for carrying out its obligations under the License Contract.

This paper is comprehensive in scope, though of course not exhaustive, and non-technical so far as the nature of the subject permits. It is an exposition particularly of the way depreciation accounting is handled throughout the Bell System. The evidence shows that plaintiff has employed and correctly applied the accounting principles, methods and procedures set forth in this paper. In view of this, we do not discuss here at any length the phases of the subject covered there.

Comparison With All Other Bell System Companies.

Referring to this subject, this court said:

> "* * * The experience of the Illinois Company, together with a careful analysis of the results shown, under comparable conditions, by other companies which are part of the Bell system, and thus enjoy the advantage of the continuous and expert supervision of a central technical organization, should afford a sound basis for judgment as to the amount which in fairness both to public and private interest should be allowed as an annual charge for depreciation."

Mr. L. G. Woodford was plaintiff's witness to make such an analysis and comparison. He is a telephone engineer employed in the Operation and Engineering Department of the American Telephone and Telegraph Company, who, since the Interstate Commerce Commission has been actively investigating telephone depreciation rates and practices with a view to fixing the rates, has devoted his time almost exclusively to this subject. He represented all Bell System Companies as the engineering witness in the depreciation hearings before the Interstate Commerce Commission (R. II, 1203). His duties during the period covered by this suit have pertained almost exclusively to methods for studying service life and salvage of the various classes of telephone property and advising and assisting the operating companies of the Bell System in the application of those methods. He heard Mr. Turner's testimony, examined his exhibits and testified to his familiarity with the methods that were used in Chicago in 1923 and succeeding years and with the methods of all the operating companies of the system. He testified that the methods used throughout the system during the entire period have been substantially the same in all respects (R. II, 1178-79).

Mr. Woodford placed in the record detailed exhibits showing comparisons of what the depreciation expense of each of the other companies actually was and what it would have been if each company had used the rates used by the Illinois Bell Telephone Company in the Chicago Area (Exhibit A-203, R. V, 2982; R. II, 1185, 1201, 1392). The comparisons were made in this way for the reason that the various companies have different amounts of the various classes of plant, and to obtain a fair comparison it is necessary properly to weight the classes of plant. There was also a comparison made between the rates for the City of Chicago and the rates for the City of New York (Exhibit A-265; R. V, 3144; R. II, 1393).

These comparisons showed that for the entire period 1923 to 1931 the depreciation rates of all the other Bell Companies, taken as a whole, were slightly higher than the Chicago rates; that of the individual companies, 12 companies had in effect rates as high as or higher than, and 8 companies had in effect rates lower than, those in effect in Chicago; that the rates of three companies operating solely or in large part in single large cities were in each case as high as or higher than the Chicago rates; and that the rates for New York City for the three years 1929, 1930 and 1931 (the only years during which separate rates were applied in New York City) were substantially higher than the Chicago rates. (Exhibits A-203, R. V, 2982; A-265, R. V, 3144; R. II, 1185-7 and 1392-3.)

Mr. Woodford's testimony, of course, is not questioned or disputed in any respect whatever, so far as his statement of the facts is concerned. A very brief cross-examination, however, suggested a doubt as to the comparability of the rates of the different companies (N.R. IV, 1201). Of course, all that it was possible to do was to make the comparison. It is not possible to draw more out of this than there is in it. The rates of the various companies depend upon multitudinous differences in local conditions impossible of definite evaluation. That is true in the nature of the case. The record shows what the various disparate factors are in general, and that is all it can show in this respect.

It does not follow that the comparison does not mean anything. On the contrary, it is of undoubted significance and tends strongly to sustain the Chicago rates as being reasonable and proper rates. The accounting systems of all the companies are identical. The same methods of ascertaining service life and salvage expectancies for the same classes of plant are employed by all the companies. The line of demarcation between maintenance expenses and retirements charged to the depreciation reserve is drawn the same in all cases. The properties of the several companies are chiefly of Western Electric manufacture and are largely standardized throughout the System. The maintenance practices are similar. The art progresses with substantial uniformity for all because it is the telephone art of the Bell System (R. II, 1179, 1201).

Certainly there is nothing in the analysis and comparison prepared and introduced by Mr. Woodford which would give the slightest indication that the Chicago rates may be out of line with telephone depreciation rates generally throughout the country, and it is fair to say, as we have said, that *the comparison has substantial probative weight in support of the Chicago rates.*

The Statutory Court Erred in Giving Any Weight to the Commission's Orders.

The statutory court stated in its opinion that it had "given consideration to the estimates in the orders of the Public Utilities Commission and Illinois Commerce Commission." Two orders are referred to, namely the 1920 Order of the former commission (Public Utilities Commission) which prescribed the telephone rates effective January 1, 1921 (O.R. IV, 1281, 1297), and the 1923 Order of the defendant commission which fixed the telephone rates involved in this suit. This order is attached to the bill of complaint (O.R. I, 1446).

The court erred in giving any weight to these orders for two reasons: First, they were not competent evidence. It is surely not proper to consider as evidence the determination by the Commission of one of the disputed matters of fact upon which the order alleged to be confiscatory is based. Second, the orders show upon their face that they had no solid basis and that they are contrary to established accounting rules and principles of law.

The 1920 Order.

This order shows upon its face that it was not soundly based and was a temporary expedient of the postwar readjustment. After rejecting the contention of the City in that case, the Commission refers to the "reserve against depreciation" of $16,000,000 for the Chicago property, and says that any further additions to the reserve "*are unnecessary and should not be allowed during the present period which is one of general financial readjustment*" (p. 1299). But the expense is a fact, goes on in years of depression as well as in those of prosperity, and under the accounting rules of the Interstate Commerce Commission and of this Commission must be spread *evenly* over the life of the property. Under the established rule of law inadequate charges in any year can never be made up. *Knoxville* v. *Knoxville Water Co., supra.*

Moreover, the 1920 order, even if it had been correct then, could have no bearing upon the proper amount in 1923 and subsequent years, both because of the lapse of time and because it is superseded by the 1923 order of the defendant Commission.

This Commission also commits the same fundamental error that underlies the action of its successor in dealing with this matter in the 1923 order, which we discuss, *infra*, p. 72.

This order is clearly without any value as an indication of proper depreciation charges in accordance with sound accounting and settled legal rules.

The 1923 Order.

The Commission made the following finding with respect to maintenance and "*retirement charges*" combined:

> "(11) That a fair allowance to take care of maintenance and retirement charges for said property in use as of December 31, 1922, is $7,869,400, and that this sum, plus 8¾ per cent. of all additions and betterments, will be sufficient and adequate to permit the Illinois-Bell Telephone Company to properly maintain its Chicago property" (O.R. I, 44).

In this finding the Commission abandoned "depreciation accounting" altogether and in plain violation of its own accounting system substituted "retirement accounting" in its place.

The distinction between depreciation accounting and retirement accounting is fundamental. The Interstate Commerce Commission recognizes the distinction in its "Report on Further Hearing," *Telephone and Railroad Depreciation Charges,* 177 I. C. C. 358-9:

> "Question has arisen as to the meaning of this statutory provision. At the outset it will be well to define certain terms which will be employed frequently hereinafter. Most property units used by a railroad or telephone company are retired from time to time for various reasons. Units so retired may be replaced in kind or by an improved substitute

> or not at all. It is conceded that the loss involved in such retirements is an expense of operation. Broadly speaking, there are three methods of accounting for such loss. It may be charged in bulk at the time of the retirement of the unit; or it may be anticipated and spread, as nearly as may be, over the service life of the unit by periodical charges, usually annual or monthly; or it may be spread by periodical charges over a period subsequent to the retirement. We shall term these methods, respectively, retirement accounting, depreciation accounting, and future accounting."

Under the method of "retirement accounting" thus adopted by the defendant Commission in its 1923 order, instead of charging annually a year's proportion of the cost of the property (less salvage) and thus accruing an amount equal to such cost in even annual increments throughout the period of use, which is depreciation accounting, the company is in effect denied the right to recoup any part of the cost of the property until the property is gone. That is the principle upon which the Commission acted and that would have been the approximate result.

Before analyzing this finding to show the gross inadequacy of the amount of the "retirement charges" which it produces, we wish to point out that it is void upon two other grounds.

First, "maintenance" is a separate category of expense in the Commission's accounting system, as it is in all accounting systems, so far as we know. There has not been any dispute whatever at any time during the period of this case with respect to the amount of the company's maintenance expenses as shown by its books. Of course, they necessarily vary in amount from year to year, as wages and the price of materials, the operating conditions in the plant, the policies of the company, etc., change. Under the Commission's formula contained in this finding, as the maintenance expenses vary on account of these and other causes, the "retirement" allowance will automatically change inversely in the identical amount. Such a formula is arbitrary and void on its face.

Second, this finding is in plain violation of the provision of the Illinois statute by which the Commission was governed and which defines its authority to regulate the annual depreciation charges of public utilities subject to its jurisdiction. Section 14 of the Public Utilities Commission Act of Illinois is as follows:

> "Section 14. The Commission shall have power, after hearing, to require any or all public utilities to keep such accounts as will adequately reflect depreciation, obsolescence and the progress of the arts. The Commission may, from time to time, ascertain and determine and by order fix the proper and adequate rate of depreciation of the several classes of property for each public utility; and each public utility shall conform its depreciation accounts to the rates so ascertained, determined and fixed" (O.R. I, 76).*

The Commission did not fix any depreciation rates for the several classes of property, either "proper and adequate" or otherwise. It did not attempt to "ascertain and determine'' such rates, or even an over-all composite rate to be applied to the entire depreciable property, although the latter would not have conformed to the statute. If it could be supposed that the Commission was attempting to find the amount in dollars which would represent a proper and adequate annual depreciation allowance the formula of this finding would be arbitrary and a nullity. But the fact must be that the Commission was not concerning itself at all with depreciation expense charges in this finding. Obviously it was not making a depreciation order, which it would expect the company to comply with. The Commission, we repeat, abandoned depreciation accounting altogether in this finding. Its action is void.

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* This provision, it will be observed, is entirely consistent with the Interstate Commerce Commission's system of accounts, and is therefore also entirely consistent with the other provision of the Illinois statute, referred to herein, *supra*, pp. 53-54, which requires any system and all forms of accounts prescribed by the state commission to be in conformity with those of the Interstate Commerce Commission.

The Amount Allowed by the 1923 Order is Grossly Inadequate.

We have already referred in a previous section, *supra*, p. 28, to the great rapidity with which the property grew during the period of this suit. In the nine years 1923-31, new plant was added (gross additions) to the amount of $189,000,000. Retirements were $79,000,000. Net additions were $110,000,000. These are book figures. The company's investment in property at actual cost was more than doubled. On January 1st, 1923, this investment was $85,000,000, and on December 31, 1931, it was $195,000,000 (O.R. I, 18; Ex. A-58, R. IV, 2778-9). The gross additions were spread fairly evenly over the period.*

The increase in the depreciation reserve under the Commission's order would have been only $2,200,000. (Table,

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* For the various figures here stated see Table, *infra*, Appendix. The figures are not in controversy, so far as we are aware, and the column headings show where they appear in the record.

infra, Appendix, Column F). That is, upon the basis of the Commission's order the company would have been allowed over the period of nine years a net increase of $2,200,000 in the financial provision with which to meet the ultimate loss of its entire investment, which stood on the books at $85,000,000 at the beginning of 1923 and grew to $195,000,000 at the end of 1931. Or if we consider only the nine years' added investment (*i. e.*, net additions) in relation to the net amount accrued over the period in which that investment was made, the figures are, added investment $110,000,000 and net depreciation reserve accrual $2,200,000. The amount actually and correctly charged by the company over the period is $26,000,000 more than allowed by the Commission (Table, *infra*, Appendix, Column E).

To an investment of $85,000,000 at the beginning of 1923 has been added the further investment of $110,000,000 in a period of nine years, not in railroads or waterworks or gas plants, in which the property is long-lived, but in the telephone business, in which the average life of the property, exclusive of underground conduit (Defendants' Ex. D-123, R. VI, 3779), is less than fifteen years. And we are told by the Commission that the measure of the Company's legal right, as declared by this Court in the *Knoxville* case and the *West* case, to make provision against the time when that property will be dismantled and gone because no longer useful is the sum of $2,200,000 in the period of nine years!

No investor in his right mind would put his money into this business on any such basis as that.

Fundamental Fallacy of the Commission.

That there is a fundamental fallacy in attempting to measure depreciation expense by the annual retirement losses, in the case of a rapidly growing property, is clear and well understood. Exhibit D-123 (R. VI, 3776-3807), which is an exposition of the subject of depreciation accounting in a paper published by two experts of the staff of the American Telephone and Telegraph Company and was offered in evidence by defendants as a part of their case, under the caption "Retirement Expense Less Than Depreciation Expense in Growing Properties" (R. VI, 3803), points this out:

> "In a growing plant, the annual retirement losses will be less than the current true annual expense of depreciation and the greater the rate of growth, the smaller the retirement losses will appear in comparison with the current depreciation rate, the reason being, of course, that in a growing plant there are new plant groups in operation on which depreciation is accruing but which are not yet represented, or are but slightly represented, in the retirement losses."

After illustrating the matter by charting an assumed case, the paper continues:

> "For this reason any attempt to ascertain percentages of current depreciation expense to investment in a growing property by dividing the average retirement losses by the average plant in service during the period within which such losses culminated, involves a mathematical fallacy."

Mr. Hale, testifying for plaintiff on this subject at the first trial, pointed out the same fundamental fallacy in what the Commission did. He testified:

> "* * * You have got a rapidly growing plant here, and you have got a life I think that they will admit of at least twelve years, consequently your retirements in any given year must refer on an average to the amount of plant you had in service twelve years before. You have a condition where your plant at least tripled in size in twelve years, and your retirements, by a simple mathematical calculation on that basis, must be approximately one-third of what the depreciation was on your plant for the year in which the retirement takes place * * *" (O. R. II, 315).

This testimony, of course, is undisputed.

We do not suggest that the Commission was not aware of this, although whether it was or not would make no difference. The point is it was allowing only retirement charges in lieu of depreciation expense charges. *That the Commission did not have the legal right to do.*

Neglect of depreciation was one of the historical causes of financial disaster of many of the smaller telephone companies in the United States and the ability of the companies in the Bell System and various of the independent telephone companies to maintain themselves is undoubtedly traceable in part to a better perception of the nature and function of depreciation expense accounting (Defendants' Ex. D-123, R. VI, 3777).

The court *could obtain no help whatever* from the Commission's action in this matter. The Commission simply did not deal at all with the problem that confronted the court. Its action was unsound from every point of view.

In conclusion upon this subject:

The matter here is not one that lies in the field of opinion, in the ordinary sense of the word. The "opinions" of expert witnesses are not ordinarily binding upon the triers of fact. But plaintiff's witnesses in this case did not determine, merely as a matter of their opinion, that a rate of about so much—5 per cent., or 4 or 6 per cent.—would be about right. They would not be willing to rely upon a mere general judgment. They would know that the problem is one that lends itself to statistical and mathematical treatment, although at the same time it cannot be fed into a machine that will turn out the answer, and they would insist upon attacking it in that way. The Bell System has done that. It would be inexcusable if that were not so. The matter is too large and too important both to the telephone companies and their patrons to admit of haphazard treatment. The court would not be satisfied with broad generalizations from plaintiff's witnesses with respect to a matter of this kind.

The company takes up each class of property and studies it separately. There is no basis whatever in the evidence upon which the court could find a rate for any single class of the company's property, or a composite rate for the entire property, different from that used by the company. And to attempt to determine the amount of the charge except upon the basis of service life and salvage, and the appropriate rate resulting therefrom, is indefensible.

That this item of annual expense should be the year's equal share of the value of the property, less salvage, can scarcely be denied or questioned. Plaintiff's evidence shows what this is, and there is no other evidence that does show it. The court should accept this evidence. If, when that is done, further problems remain for consideration, these should not be allowed to stand in the way of a proper determination of this question, which should be taken within its own four corners.

Index to Plaintiff's Depreciation Testimony.

1. Testimony of John R. Turner:
    - Direct examination in chief, R. I, 750-798.
    - Cross-examination, R. II, 1097-1129.
    - Re-direct examination, R. II, 1130-1138.
    - Re-cross-examination, R. II, 1138-1143.
    - Further re-direct examination, R. II, 1143-1144.
    - Further re-cross-examination, R. II, 1278-1297.
    - Rebuttal, direct examination, R. II, 1384-1391.
    - Cross-examination, R. II, 1426-1433.
2. Testimony of L. G. Woodford:
    - Direct examination, R. II, 1177-1188.
    - Cross-examination, R. II, 1188-1203.
    - Re-direct examination, R. II, 1203-1204.
    - Rebuttal, direct examination, R. II, 1392-1394, 1424-1425.
    - Cross-examination, R. II, 1425.
3. Testimony of W. K. Kruse:
    - Direct examination, R. I, 230.
    - Rebuttal, direct examination, R. II, 1397-1398.
4. Testimony of F. O. Hale:
    - Direct examination, O.R. II, 884-893.
    - Cross-examination, O.R. II, 893-910.
    - Re-direct examination, O.R. II, 910-914.
    - Re-cross examination, O.R. II, 914-915.
    - Re-direct examination, O.R. II, 915-919.
    - Re-cross-examination, O.R. II, 919-921.

PLAINTIFF'S PRINCIPAL DEPRECIATION EXHIBITS.

A-55	Rate of return, with depreciation expense based on reproduction cost (R. IV, 2766-2774).
A-59	Amounts charged compared with amounts allowed by the Commission order (R. IV, 2780-1).
A-60	Reserve balances in amount and per cent. to plant (R. IV, 2782-3).
A-125	Depreciation rates, years 1923 to 1930 (R. IV, 2853-7).
A-126	Depreciation rates, year 1931 (R. IV, 2858).
A-127	Depreciation expense and composite rates, years 1923 to 1931 (R. IV, 2859).
A-128	Study of life and salvage, principal classes of property (R. IV, 2860-2883).
A-129	Study of life and salvage, other classes of property (R. IV, 2884-5).
A-203	Comparison of Chicago depreciation rates with those of other Bell companies (R. V, 2982-7).
A-263	Method of computing annual rate of depreciation for station apparatus (R. V, 3141).
A-265	Comparison of depreciation rates, Chicago and New York City (R. V, 3144).
A-267	Comparison of depreciation expense based on book cost and reproduction cost (R. V, 3145).

2. The statutory court made errors of both fact and law in determining the allowable deductions from plaintiff's revenues on account of the services of the American Company (known as the License Contract Services), which errors resulted in a substantial understatement of such deductions and overstatement of plaintiff's net earnings.

The court below found the allowable deductions above referred to, in its Findings of Fact 22, 23 and 25 (R. III, 2519-2520). Plaintiff took exception thereto in its Assignments of Error Nos. 9 (b), 14 and 15 (R. IX, 4964, 4966).

The "License Contract" between plaintiff and the American Company, which owned most of plaintiff's stock, was one of the matters discussed in the opinion of this court upon the previous appeal (*Smith* v. *Illinois Bell Tel. Co.*, 282 U. S. 133, pp. 153 to 157).

In that discussion this court said:

> "At the time to which the evidence was primarily directed (1923), there was in force a 'license contract' between the Illinois Company and the American Company, granting a license under the patents owned or controlled by the American Company and providing for the payment to the latter of 4½ per cent. of the gross revenues of the Illinois Company covering the rental for the use of instruments and for engineering, financial and advisory services * * *" (p. 153).

Plaintiff set up on its books as expenses the License Contract payments made by it to the American Company and deducted them in determining its net income. Referring to this practice and to the actions taken with regard thereto by the two Illinois Commissions this court said:

> "The order of the Public Utilities Commission of Illinois, made in December, 1920, which fixed the rates charged in 1923 (the rates still in force under the interlocutory injunction in this suit) had provided that an allowance of $1.13 was reasonable solely for the use of each telephone instrument, that the services of the American Company were of great value to the Illinois Company, that the annual payment under the license contract then averaged $2.10 per station for the City of Chicago, and that this payment was not excessive. The Illinois Commerce Commission, in the order now under attack, continued this allowance of $2.10 per station as sufficient to cover the rental and the services in question" (pp. 153-154).

Referring to the treatment accorded the License Contract by the statutory court upon the first trial of this action, this court said:

> "The Court found that the case for the allowance of the entire amount (paid by plaintiff) for services was a strong one; that on the basis of a total charge of $2.10 per station, as allowed by the state commission, there would be a reduction of $360,000* in the amount chargeable to operating expenses by virtue of the payments under the license contract, and that there was no warrant for any further reduction. Without approving the reduction, the court accepted the ruling of the Commission for the purpose of determining the issue of confiscation" (p. 155).

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* The gross revenue per station was greater in 1923 than in 1920, and hence 4½% of gross amounted to more than $2.10 per station in 1923.

During the period from 1923 to 1929 the percentage of gross revenue charged plaintiff by the American Company for its License Contract service was reduced in several steps from 4½% to 1½%. The benefits rendered were also reduced, but not commensurately* (R. II, 1165; O.R. II, 791, 792).

After commenting upon such reductions, this court closed its discussion of the License Contract as follows:

> "In view of the findings, both of the state commissions and of the court, we see no reason to doubt that valuable services were rendered by the American Company, but there should be specific findings by the statutory court with regard to the cost of these services to the American Company and the reasonable amount which should be allocated in this respect to the operating expenses of the intrastate business of the Illinois Company in years covered by the decree" (p. 157).

Upon this second trial the Statutory Court found the cost to the American Company of furnishing its license contract services and found the reasonable amount thereof which should be allocated to the intrastate business of the plaintiff in the Chicago area (Finding 22, R. III, 2519).

The statutory court also found the amount of the actual payment made by plaintiff to the American Company in each year under the License Contract on account of its Chicago intrastate business (Finding 23, R. III, 2519).

After having made the above findings, the statutory court found the allowable deductions for License Contract services in each year from 1923 to 1931 (Finding 25, R. III, 2520) and plaintiff's net revenues (Finding 27, R. III, 2520).

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* The American Company, in 1928, sold the instruments in question to plaintiff and discontinued that part of the License Contract service represented by the furnishing of said instruments. Otherwise, the services continued the same. In recognition of the reduced service, the License Contract payment was reduced from 4% to 2%. Later further reduced to 1½% (O.R. II, 791-792).

In making its determination of said allowable deductions the statutory court committed three major errors.

(1) It was plain error on the part of the statutory court to restrict the allowable License Contract deduction of plaintiff in each year to the cost to the American Company or payment by the plaintiff, *whichever was lower.*

In three years of the nine covered by the trial the Statutory Court sustained as proper deductions from revenue, the full amounts paid by the plaintiff to the American Company under the "License Contract" (Findings 25 and 23, R. III, 2519, 2520). In each of those years the court found that the cost to the American Company of rendering the services far exceeded the amount paid therefor by plaintiff, but the court restricted plaintiff's deductions to the amounts actually paid (Findings 22, 23 and 25, R. III, 2519-2520). On the other hand, in six of the nine years the statutory court found that the costs to the American Company of rendering the services were substantially less than the payments therefor and in those years restricted plaintiff's deductions from revenue to the amounts which it found to be the costs to the American Company (Findings 25, 22 and 23, R. III, 2519, 2520).

There was no support in the evidence for the above procedure, and there seems to be no possible support therefor in law or logic under the findings. The American Company rendered necessary and valuable services to plaintiff and twenty-three other operating companies. The American Company was efficient, its operations were conducted upon a gigantic scale, and its costs of performing the license contract services were low (O.R. III, 1045-1046, 1057). This was so in 1929, 1930 and 1931 as well as prior years.

If this contract is one that must be regarded by the Court as binding between the parties and fair and valid for all purposes (which is what the plaintiff claims), then the actual payments made pursuant to its terms must measure the deductions of plaintiff in all years.

The plaintiff protests that there is nothing in the evidence or in the decisions of this court to sustain such a rule, but if the two companies are to be considered as one with respect to the License Contract services, then the expenditures by the American Company would be the equivalent of expenditures by plaintiff itself and plaintiff would be entitled to the cost of such services to the American Company in all years and not only in those when the cost to the American Company was less than the payments therefor.

Based on the foregoing, the deductions allowed plaintiff under Finding 25 for the years 1929, 1930 and 1931 (R. III, 2520) must be increased to the amounts found by the court in Finding 22 for those years (R. III, 2519), or the deductions allowed plaintiff under Finding 25 for the years 1923 to 1928 must be increased to the amounts found for those years in Finding 23 (R. III, 2519). That is to say, the deductions must be on a consistent basis of cost throughout the nine years or of payments throughout the period. The statutory court understated plaintiff's deductions from revenue and overstated its net profit by at least $768,108 by reason of this one error (Findings 22 and 23; R. III, 2519).*

Again accepting the facts stated in the findings and opinion of the statutory court, we find further error in its conclusions as follows:

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* Figures 1929, 1930, 1931.

(2) The statutory court in making its Finding 22 of the fair share of the costs of the American Company which should be allocated to the intrastate business of plaintiff omitted important elements of cost which were found by it.

The opinion of the statutory court (R. III, 2509 to 2512) enumerates what items it included in building up the costs to the American Company of performing the License Contract services in connection with plaintiff's intrastate business.

Such enumeration does not include taxes and other items claimed by plaintiff. Moreover, the statutory court in order to make its procedure certain beyond possibility of doubt states that the American Company incurred expenses for taxes, states the proper share thereof which should be considered as applying to the Chicago area of the plaintiff, but says

> "We have reached the conclusion, however, that these amounts are not covered by the contract and should not be included under the allowance made herein for operating expenses" (Opinion, R. III, 2511-2512).

What the statutory court did is perfectly obvious. This court having sent the case back for further determinations, including the costs of the License Contract service to the American Company, the statutory court naturally wished to make sure that the case would not be sent back again. To that end, it included in the License Contract costs found by it only those items of expense concerning which there could be no question. However, in order to be fair, it found all the facts concerning other expenditures and costs of the American Company so that this court might include them if it thought proper.

Taking up the item of taxes, one of those dealt with, as immediately above described:

The exclusion from the License Contract costs of all taxes paid by the American Company was clearly erroneous. The court does not find that the taxes had nothing to do with the rendering of the License Contract services. On the contrary, it states that if the taxes paid "were distributed in accordance with the percentages on which the actual costs to the American Company of its twelve departments were distributed" that the amounts which would be charged to the intrastate business of the Chicago area of the Illinois Company are as follows:

1923	$203,459	1928	$57,446
1924	211,228	1929	22,390
1925	238,046	1930	19,844
1926	160,482	1931	45,895
1927	154,036		

(R. III, 2511, 2512.)

Now, the total costs to the American Company of the twelve departments were prorated on the basis of use and benefit (see Opinion of statutory court, R. III, 2509, and also testimony of Dr. Jewett, R. I, 629-632, 689-690, 729-730, 732; and Mr. Gherardi, R. I, 532, 533, 541, 544, 547).

Thus the table above shows the share of the total tax costs of the American Company which should be allocated to plaintiff if taxes are held to be "covered by the contract." Of course taxes are not *mentioned* in the license contract any more than office rent or stenographer's salaries.

However, plaintiff submits that any taxes which were incurred by the American Company in connection with the License Contract services should be a part of the License Contract costs and that the findings and statements of the court above referred to show that the taxes thrown out were of that kind and should have been included.

A. brief reference to the record will make that plain beyond question.

The taxes paid by the American Company in each year covered by the suit which were claimed to be a part of the license contract costs were set forth in detail in Plaintiff's Exhibit A-161 (R. IV, 2993-2997). These taxes consisted of the following: *Instrument Tax (Illinois); New York Excise and New York Franchise Tax; Federal Capital Stock Tax; Federal Income Taxes.*

Considering the more important of these taxes very briefly:

(a) The Illinois Instrument Tax.

This was a property tax imposed by the State of Illinois upon all property within the state which of course included every telephone instrument in use in that state. The American Company owned the instruments (Record, I, p. 952). The License Contract agreement between plaintiff and the American Company required the American Company to pay this tax down to the year 1926,* and it did pay it (Record, I, p. 952).

All of this payment was for the benefit of the plaintiff alone and was a necessary cost of furnishing the instruments to plaintiff. Furnishing the instruments was an important part of the License Contract in all years prior to 1928 when they were sold (Plaintiff's Exhibit 7, O.R. IV, 1198-1199, R. I, 949). The inclusion of the whole payment for Illinois instrument taxes does not seem to admit of any argument.

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* Contract changed with respect to payment of this tax at time of reduction of rate from 4½% to 4% (R. I, 952-953).

The amount of this tax was not in dispute and was set up and shown separately upon Plaintiff's Exhibit A-161, as follows (R. IV, 2933-2935):

1923	$41,651	1926	$1,540
1924	52,802	1927	60
1925	64,666		

(Chicago area.)

(b) *Federal Income Taxes.*

It is well settled that income taxes are a cost and should be deducted in determining profit, even in the case of a utility.

> *Galveston Electric Co.* v. *Galveston*, 258 U. S. 388, 399;
>
> *Georgia Ry.* v. *R. R. Comm.*, 262 U. S. 625, pp. 632-633.

Plaintiff showed income taxes paid under the License Contract allocable to the intrastate Chicago business of plaintiff, as follows (R. IV, 2933-2935):

1923	$110,303	1928	$28,669
1924	102,127	1929	8,732*
1925	111,559	1930	12,755*
1926	111,384	1931	7,102
1927	121,674		

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* Red figures.

These amounts were obtained by a long and involved computation. It would require too much space to detail that here. Suffice it to say for the present that the *minimum* amount which was chargeable to the License Contract in each year was the corporation income tax upon the profit obtained under the contract in that year, as follows:

1923	12½%
1924	12½%
1925	13%
1926	13½%
1927	13½%
1928	12%

(c) New York State Excise and Franchise Taxes.

The American Company could not have carried on its business as a corporation and rendered the License Contract services to plaintiff and the twenty-three other operating companies which it served if it had had no corporate existence. It had to pay for the right to exist as a corporation. From the standpoint of the American Company a fair proportion of this tax was obviously a cost of furnishing services to the plaintiff under the License Contract. Likewise such fair share was a cost from the standpoint of the rate payers in Illinois. They cannot have it both ways. While it is true that if the plaintiff had performed the License Contract services for itself there would have been no New York franchise tax to deal with, on the other hand, the American Company, furnishing services to twenty-four operating companies, such as the plaintiff, at one time, does so at a much less cost than the Illinois Company could perform the work itself (O.R. III, 1045-1046, 1056). As the Illinois Company gets the benefit of the low cost incident to mass production, it must stand its share of the small additional amount of taxes incident to the carrying on of the mass production business.

The plaintiff submits that under the strictest tests of what constitute License Contract expenses allocable to plaintiff's intrastate business, the above enumerated taxes qualify, accepting all of the determinations of primary facts made by the statutory court.

However, there is a broader basis upon which such taxes must most certainly be added to the costs found for all of the years 1923 to 1928 inclusive.

In all of those years, the court in finding the allowable deductions from income of the Illinois Company disregarded the actual payments made by the Illinois Company to the American Company and restricted such deduction to the fair share of certain costs which were incurred by the American Company in rendering the License Contract services to the twenty-four Licensee Companies, as shown in (1), *supra*, page 80.

If the License Contract is not to determine the deduction, then the fact that the service was not one specifically mentioned therein is a matter of no consequence. It is exactly as if there had never been any contract. In such case a service rendered or an expense incurred *dehors* the contract would stand on exactly the same footing as one specifically enumerated therein, provided that it was for the benefit of plaintiff or was incurred in connection with a service to plaintiff.

Plaintiff has already shown that the statutory court stated in its opinion that the American Company had incurred expenses for taxes and that "if such taxes were distributed in accordance with the percentages on which the actual costs to the American Company of its twelve departments were distributed'' (that is, on the basis of benefit and use), that certain definite amounts found by the court should be allocated to the operating expenses of the intrastate business of the Chicago area of plaintiff (*supra*, p. 79) (R. III, 2511-2513).

Those amounts as found should be added to the costs of the American Company found in Finding 22, in determining the allowable deductions of plaintiff for the services of the American Company. This should apply to all years, but most certainly to the years 1923 to 1928 inclusive, when the License Contract was ignored and the deductions allowed were less than the amounts paid by plaintiff.

The addition of these taxes for the years 1923 to 1928 only would add to plaintiff's deductions from income found by the statutory court and deduct from its net revenues so found upwards of a million dollars (O. R. III, 2511-2512).

Plaintiff has not gone into the details of the increases in its deductions in each year which would result from the correction of the errors of the court shown in the above argument, nor of those shown in (1) above, because plaintiff considers that the argument in (3) immediately following is decisive of the whole question of plaintiff's deductions in all years, and that the above matters have their principal importance in supporting that argument.

(3) Upon the uncontradicted evidence and even upon the facts formally found by it, the statutory court should have sustained the license contract as fair and reasonable and all payments thereunder as proper deductions from revenue.

Upon the first trial, the statutory court made no formal findings of fact but stated the facts found by it carefully and fully in its opinion. With respect to the allowance of the payments made by the plaintiff to the American Company under the License Contract as proper deductions from revenue, the statutory court said:

> "The case for the allowance of the entire amount for services is a strong one. We have already found that the record does not show the abuse of the power of stock ownership which operates to destroy the corporate identity of plaintiff. * * * The test is the nature of the benefits received by plaintiff and whether or not it probably could have secured better terms elsewhere. Houston *v.* Southwestern Bell Telephone Co., *supra;* Missouri *ex rel.* S. W. Bell Telephone Co., *supra;* United Fuel Gas Co. *v.* Railroad Commission, *supra;* Indiana Bell Telephone Co. *v.* Public Service Commission, *supra;* Northwestern Bell Telephone Co. *v.* Spillman, 6 Fed. (2nd) 663" (Old Record, I, pp. 190-191).

The uncontradicted evidence upon the first trial fully supported the determinations of fact by the statutory court above referred to, and that record is a part of the record now before this court upon this appeal.

There was no complete new trial, nor any redetermination of the issues of fact raised upon the previous trial. Upon the second trial the only evidence introduced with respect to the License Contract services was such as showed: (a) that the same kind and amount of License Contract services were continued in the years 1929, 1930, 1931 and 1932, (b) the cost to the American Company of furnishing such services in all years 1923 to 1931 inclusive, and (c) the fair proportionate share thereof which should be allocated to the operating expenses of the intrastate business of the plaintiff. The only new determinations by the statutory court with respect to the License Contract were set forth in its opinion on the second trial (R. III, 2509 to 2512), and the only formal findings made by it with respect to the License Contract were Findings 22, 23 and 25 (R. III, 2519, 2520). Nothing in the opinion of the statutory court upon the second trial shows any change of mind concerning the License Contract so far as any of the matters above quoted from its opinion upon the first trial are concerned.

Thus, it may fairly be said that all of the ultimate facts found with regard to the License Contract are as follows:

> That there was no abuse of power by the American Company of its stock ownership in plaintiff in order to obtain an unfair contract, and that the parties in making *and in continuing* the License Contract intended an agreement which would be fair to both parties, and further that the benefits received by plaintiff under the License Contract could not have been secured upon better terms elsewhere. (The evidence shows that they could not have been obtained elsewhere except upon much less advantageous terms) (O.R. II, 1045-1046, 1056; R. III, 2194).
>
> On the other hand, the Statutory Court found that in its actual operation the License Contract yielded a substantial profit to the American Company in six of the nine years in question, and a substantial loss in the

remaining three years (Findings 22 and 23, R. III, 2519-2520).

Further, that over the whole period of nine years the License Contract costs incurred by the American Company in connection with plaintiff's intrastate business in Chicago amounted to 84.4% of the amount which it received for those services. (All of the above facts stated are obtainable from Findings 22 and 23 alone, by comparing and adding figures therein R. III, 2519-2520.)

Thus, there was presented to the statutory court the question of how it should deal with the above facts, and whether the payments made under a contract of great value to plaintiff, intended to be fair and *sought to be kept fair** should be disregarded in computing the deductions from revenue of the plaintiff, merely because the American Company owned the control of the plaintiff and had expended in rendering services to the plaintiff 84.4% of the payments therefor and not 100%.

The statutory court answered the question in the affirmative and paid no attention to the License Contract whatever *except to restrict the deductions on account of the services of the American Company to the Illinois Company below the actual cost thereof* as shown in subdivisions (1) and (2) of this point (*supra*).

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* Rate of payments reduced constantly in face of continuous line of decisions of this and other courts sustaining the higher rates. 4½ per cent. sustained in 1922 (259 U. S. 318; 262 U. S. 276, 288; 1924, 300 Fed. 190, 204; 1925, 5 F. (2d) 77, 96). Reduced from 4½ per cent. to 4 per cent. in 1926 (Plaintiff's Exhibit 7, Old Record, IV, p. 1215). 4½% sustained in 1926 (12 Fed. 279, 285; affirmed 276 U. S. 97; 133 S. E. 144). Rate voluntarily reduced from 4 per cent. to 2 per cent. in 1927 (R. II, 1165). Again reduced from 2 per cent. to 1½ per cent. in 1928 (R. II, 1165).

The statutory court reached the above conclusion, which was the opposite of its conclusion upon the first trial because it construed the direction of this court quoted at p. 79, *supra,* as instructing it to (a) find the costs to the American Company of furnishing the license contract services, and (b) *measure* the allowable deductions from revenue of plaintiff in each year on account of the license contract services by the fair share allocable to plaintiff of such cost of the American Company in that year.

Plaintiff finds no such instruction as (b) above, either in the portion of the opinion of this court quoted at p. 79 (*supra*) or in the whole opinion and finds that any such direction would have been contrary to a long line of decisions of this and other courts.

In *United Fuel Gas Co.* v. *R. R. Commission,* 278 U. S. 300, 320, 321, this court stated the rule with respect to contracts between closely affiliated corporations as follows:

> "Common ownership is not of itself sufficient ground for disregarding such intracorporate agreements when it appears that although an affiliated corporation may be receiving the larger share of the profits, a regulated company is still receiving substantial benefits from the contract and probably could not have secured better terms elsewhere. (*Missouri ex rel. Bell Tel. Co.* v. *Public Service Commission,* 262 U. S. 276, 288; *Houston* v. *Southwestern Telephone Co.,* 259 U. S. 318.)"

The above decision, like those cited therein, related to public utilities, and the two telephone cases cited were cases where the very License Contract here in question was sustained under the rule above quoted. To the same general effect see the following:

Pacific Tel. & Tel. Co. v. *Whitcomb*, 12 F. (2d) 279, 285 (affd. 276 U. S. 97);

Northwestern Bell Telephone Company v. *Spillman*, 6 F. (2d) 663, 664;

Southern Bell Tel. & Tel. Company v. *Railroad Commission*, 5 F. (2d) 77, 96;

Indiana Bell Telephone Company v. *Public Service Commission*, 300 Fed. 190, 204;

New York Telephone Company v. *Prendergast*, 36 F. (2d) 54, 67;

State v. *Southwestern Bell Telephone Company*, 115 Kan. 236, 223 Pac. 771;

City of Detroit v. *Michigan, etc.*, 209 Mich. 395, 177 N. W. 306;

Cincinnati v. *Public Utilities Commissioners* (Ohio), 148 N. E. 817.

In the face of the above decisions that affiliated corporations may make *fair* contracts with each other, it does not seem possible that this court in deciding the former appeal in this case intended to lay down a rule that a dominant corporation can make no contract with one controlled by it unless the contract be *unfair*—unfair to the dominant corporation and without profit or advantage to it.

Rather, it would seem that all that was intended by this court was to adhere strictly to the rule laid down by it in *United Fuel Gas Co.* v. *R. R. Commission* (*supra*), where the court said, in addition to the matter quoted immediately above:

> "We need not labor the point that a public service corporation may not make a rate confiscatory by reducing its net earnings through the device of a

> contract unduly favoring a subsidiary or a corporation owned by its own stockholders."

Thus in that case this court prescribed two tests with respect to contracts between affiliated utility companies, *first,* the company receiving the service from its affiliate must get it as cheaply as it could secure the same service from an outsider, but *further,* the affiliate furnishing the service must not obtain *undue* profit.

Now in the case at bar, the statutory court, upon the first trial, applied only one of those tests and upheld the License Contract because it found that the services were important and even necessary to plaintiff and the price at which they were obtained from the American Company was less than that for which they could have been obtained elsewhere (O.R. I, 190-191).

This court was not satisfied with the application of that one test and directed the statutory court to find what profit the American Company was making and apply the other test. Thus this court, at page 157 of its opinion, directed the statutory court to find the cost to the American Company of the License Contract services,

> "And the reasonable amount which should be allocated in this respect to the operating expenses of the intrastate business of the Illinois Company in the years covered by the decree."

This is not a direction to restrict the allowable deductions of the Illinois Company for License Contract services received by it from the American Company to the precise amount represented by the cost to the American Company of furnishing those services.

This court's obvious intention was to direct the statutory court to use the costs incurred by the American Company as a *test,* and not as a *measure*—a test of the reasonableness of the payments to the American Company, not as a *measure* of the operating costs [illegible] plaintiff.

The above seems clear from the opinion of this court in *Smith* v. *Illinois Bell* alone, but it seems conclusive when that opinion is read in connection with its other decisions cited at page 93, *supra.*

However, the statutory court misinterpreted the directions of this court. It found the cost of the License Contract services to the American Company, but instead of using that as a test of the reasonableness of the payments, it made no finding as to reasonableness and, using the costs to the American Company as a measure, meted out to plaintiff as its full allowable deduction from revenue the exact share of the total costs to the American Company which it found was properly chargeable to the operating expenses of plaintiff's intrastate business in its Chicago area.

Plaintiff submits that upon the authorities and upon the findings of the Statutory Court in its Findings No. 22, No. 23 and No. 25 (R. III, 2519-2520), and without reference to anything else, the License Contract should have been sustained as fair, and all the actual payments made thereunder by plaintiff should have been held proper deductions from revenue.

(a) The difference between the payments for license contract services by plaintiff as found, and the cost of those services as found, does not indicate an unreasonable profit to the American Company, especially in view of the great advantage which the plaintiff received therefrom.

(b) The difference between payment for the services found in Finding No. 23 and the cost thereof found in Finding No. 22 is substantially greater than the true difference.

(c) No sufficient consideration was given to the patent rights of great value which were conferred by the license contract.

Considering (a) above:

As was shown by the evidence, it would have cost the plaintiff much more than it paid the American Company to have performed for itself only a part of the services which it was obtaining from the American Company (O.R. II, 1045-1046, 1056). The services of the American Company were unique. There is no organization in the world comparable to the scientific and research departments of the American Company. There was no source other than the American Company from which plaintiff could have obtained such services (R. III, 2193-2194). In the Bell Laboratories and on the general staff of the American Company there were employed in 1929 seven thousand people, over three thousand of whom were trained scientists and engineers (O.R. III, 996). Those organizations conducted research and development work in all branches of the telephone business and furnished advisory and consulting services to the Associate Companies of the Bell System (O.R. III, 970).

While the Illinois Bell is one of the large and important telephone companies of the country, it constituted only approximately 8% of the entire Bell System of operating companies. Obviously, neither it nor any of the operating companies could afford to employ the number and class of scientists and engineers who were employed by the American Company and whose work benefited alike all twenty-four companies of the System (O.R. III, 976).

The American Company was under no duty or obligation to the people of Illinois or to the people of any other State to carry on this work for them. The License Contract work of the American Company is entirely beyond and outside of that of the ordinary operating telephone company. The License Contract was in no sense a case where the work of furnishing one service has been split up between two companies so that there might be a duplication of profit.

Some idea of the extent of the business of the operating companies may be gained from the fact that during the time covered by the trial, there were over 300,000 employees (Defendants' Dep., Exh. 195, R. V, 3570, stamped by error 3670) and the number of calls handled was between twenty and twenty-five billion per annum (R. I, 530). This army of employees and enormous volume of business made efficiency a matter of prime importance and permitted the expenditure of vast sums to make small savings. Thus, for illustration, the saving of one-half second in the handling by one class of telephone operators ("A" Operators) of each simple local call would result in a saving annually of approximately five million dollars to the Bell System (R. I, 530). Therefore, it was reasonable to spend, and the American Company did spend, large sums to effect seemingly small economies which could be utilized throughout the system (R. I, 528-[illegible]1).

These expenditures saved the plaintiff vast sums (O.R. III, 1044-1045).

In the circumstances, plaintiff submits that the American Company is entitled to a fair and substantial profit upon the actual cost of performing the License Contract services, and that the difference between the cost of the service, and the payment therefor over the entire period 1923-1931, as found by the statutory court in its findings Nos. 22 and 23, R. III, 2519, was not unreasonable.

Considering (b) above:

The true difference between cost and payment was much less than that found by the court. As shown in (2), *supra*, pages 82 to 88, the court below erroneously omitted from the cost found by it all taxes and other elements of cost claimed by the plaintiff and *found by the court* but held not to be expressly covered by the License Contract.

Correcting for these errors alone would bring the costs up to more than 90% of the payment.

In addition to those errors shown right on the face of the court's opinion, it trimmed down at several points items of cost which it did include. This trimming was contrary to the evidence. For example, the American Company set up on its books depreciation on the telephone instruments which it furnished to plaintiff (R. I, 943-944). The statutory court properly held that depreciation on the instruments was an element of cost. The evidence introduced by plaintiff showed that 7% was reasonable and a minimum (Plaintiffs' Exh. A-163, R. IV, 2940; R. I, 922-923). There was no other evidence introduced. Yet, the statutory court without discussing the matter, takes 6% for depreciation (Opinion, R. III, 2510). The effect of this seemingly small difference was substantial as the 1% is applied annually to between two and three million dollars (Plaintiff's Exh. A-163, R. IV, 2940).

Again, the statutory court in finding the return on the telephone instruments finds it at 6% for all the years such instruments were furnished by the American Company (Opinion, R. III, 2510). During all of these years the statutory court found that a fair return upon all of the other, telephone property of the plaintiff used in furnishing its service to its subscribers in Chicago was 7½% (Finding of Fact No. 32, R. III, 2521). The court states no reason, and there seems to be none, why the return on this part of the property required for plaintiff's telephone service should be at a substantially lower rate. Again, there is a difference of 1½% applied to between two and three million dollars annually (Plaintiff's Exh. A-163, R. IV, 2940).

There were other minor instances where the statutory court erroneously trimmed items of License Contract costs proven by plaintiff. The above are the most important, however, and those items, together with taxes, go far toward closing the gap between cost and payment, between 84.4% and 100%.

Considering (c) above:

No proper consideration and allowance was given to or for the patent rights of enormous value which plaintiff received under the License Contract. The American Company and its subsidiary, the Bell Laboratories, filed hundreds of patent applications and took out great numbers of patents each year. The American Company also purchased patents continually. In so far as the actual cost to the American Company in the years 1923-1931 of obtaining patents is concerned, the statutory court took that into account and made an allowance therefor in the figures of cost found by it in its Finding No. 22.

The patent cost to the American Company in those years was very small, comparatively, and the share thereof allocated to plaintiff was almost trifling. However patents acquired both subsequent to 1923 and prior thereto had great values and much in excess of the cost thereof to the American Company. Most of the patents in question were taken out by employees who were obligated to give any inventions made by them to the American Company without cost. Sometimes these inventors were presented with a nominal honorarium of $50 or $100 when the patent was one of great importance.

In the field of radio, which has many features kindred to that of telephony, the American Company exchanged rights under patents which had cost it little for rights to use in the telephone field, patents of the General Electric Co., Westinghouse Co. and other corporations, which rights were worth upwards of $10,000,000 (R. I, 651-652; R. II, 1169-1170; Plaintiff's Ex. A-198, E (b), R. V, 3240). These were passed on to the Associate Companies, including the plaintiff, without charge other than its regular license contract payments.

Any owner, including even a utility, has a right to a fair return upon the *fair value* of its patents or patent rights and is not limited to a return upon the actual cost. *Pacific Gas Co.* v. *San Francisco*, 265 U. S. 403, 406-416. Now the American Company did not under its license contract agreement agree to furnish its Associate Companies with rights under all of its patents at cost. What it did was to agree to furnish for 4½% of gross revenue a great number of miscellaneous services, the use of telephone instruments, and the use of patents.

The procuring of a body of over 9,000 patents was no part of the business of an operating telephone company, and in any event, and regardless of the close relations of the two companies, it would be proper for the American

Company to get some profit from its patents and some recognition of the difference between the cost and value thereof. This argument seems the stronger because of the fact that if the plaintiff had acquired these patents or rights thereunder for the nominal sums which the American Company expended it would still be entitled to a return on *value thereof,* and not the cost. *Pacific Gas Co.* v. *San Francisco, supra.*

Thus an allowance to the American Company on the value of its patents imposes no additional burden upon the Illinois telephone subscribers. On the other hand, if no recognition is taken of the value of these patents and no allowance made the American Company therefor, the telephone subscribers of Illinois will receive their service more cheaply because these patents were obtained by the American Company and rights thereunder conferred on the plaintiff than if the plaintiff had obtained the patents itself at a nominal price.

To summarize: It is shown that the contract is a most valuable one to plaintiff and that it is receiving a necessary service for much less than it could obtain the same elsewhere. The service of the American Company is unique; there is nothing like it performed for any industry in the world and it is of great advantage to plaintiff's subscribers as well as to plaintiff.

The costs found by the court at 84.4% of the payments received therefor are shown to be substantially more than 90%—approximating 95%—of such payments when corrections are made for the obvious understatements of the statutory court. In addition to incurring those costs in the years in question, the American Company conferred valuable patent rights on plaintiff. The American Company was entitled to an allowance based on the *value* thereof and *not on bare cost.*

In view of the above facts, the license contract must be upheld and the payments thereunder allowed as fair unless this court is prepared to hold that the American Company can obtain no profit whatever from the plaintiff.

Such a holding would be directly contrary to the long line of decisions cited at p. 93, *supra,* and would require the American Company to furnish its license contract service in Chicago without profit when it is entitled to a reasonable profit for furnishing the same services in Cincinnati, solely because the American Company owns a great majority of the stock of plaintiff and owns only a minority interest in the Cincinnati Company.

3. The court erred in deducting from the plaintiff's reasonable operating expenses subsequent to November 1st, 1930, ten per cent of the prices charged by Western on purchases made by plaintiff attributable to maintenance and other expense accounts (assignments of error 9 and 13).

Finding 21 of the court reads as follows:

> "In determining reasonable operating expenses to be allowed to plaintiff after November 1, 1930, there should be a reduction of ten per cent from the prices charged by Western Electric Company on purchases made by plaintiff attributable to maintenance and other expense accounts and this deduction has been made in determining the amount allowed in these findings on account of plaintiff's operating expenses" (R. III, 2519).

The deductions made from operating expenses of plaintiff on this account were $67,167 for the last two months of 1930, $332,470 for 1931 and an equal amount for the year 1932.*

These reductions from plaintiff's necessary operating expenses were improperly made and resulted in overstating to the extent indicated the dollars available to appellant for a return on account of its intrastate operations in Chicago. The reasons why this reduction is improper were fully discussed at pages 36 to 44, *supra,* and need not be restated here.

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* The net purchases of plaintiff from Western for each year down to 1931 for its Chicago area property are shown by Exhibit X-400 (R. VIII, 4779, 4780). The per cent of such purchases attributable to maintenance and other expense accounts is shown on Exhibit A-61 (R. IV, 2783; R. II, 1265; R. I, 232). The court did not restrict this deduction of ten per cent. to telephone apparatus included in such purchases attributable to maintenance and other expense accounts, but applied the reduction to all such purchases.

III.

Fair Rate of Return.

The Court Below Erred in Finding that the Fair Rate of Return on the Fair Value of Plaintiff's Property Was Only 6½% for the Year 1931 and 5½% for 1932.

The court below found the fair rate of return as follows:

> "32. The fair rate of return on the average fair value of plaintiff's intrastate property was 7½% for each of the years 1923 to 1927, inclusive, 7% for each of the years 1928, 1929 and 1930, 6½% for 1931 and 5½% for 1932" (R. III, 2521).

Plaintiff took exception thereto in its Assignment of Error No. 21 (R. IV, 4968). In the above finding the fair rate of return allowed in a number of years is below what was shown proper by the evidence. However, except in 1931 and 1932 the error did not seriously harm plaintiff because of the smallness of the difference and because of the remoteness of the time. Plaintiff, therefore, has assigned error to the findings of the fair rate of return for the years 1931 and 1932 only.

The above finding No. 32 is the only reference made by the statutory court to the fair rate of return in its formal findings and the only finding which has any relation thereto.

In its opinion the statutory court quoted from the opinion of this court in the *Bluefield* case, and then stated:

> "We have given weight to the facts of which the court takes judicial notice relative to the general decline in corporate earnings during the years 1931 and 1932. It is for this reason that we have fixed 6½% as the proper rate of return for 1931 and 5½% as the proper rate of return for 1932" (Opinion, R. III, 2514).

The statutory court has fallen into error through a plain misinterpretation of the rules laid down by this court in the *Bluefield* case and reaffirmed repeatedly thereafter. In the *Bluefield* case this court said:

> "A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties; but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures. The return should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties." Bluefield *v.* Public Service Commission, 262 U. S. 679, 692, 693.

Plaintiff believes that no sound exception can be taken to the fairness, clearness and logic of the above statement. The statutory court, however, quoted the first few lines of the above, and *misinterpreting them*, assumed that the "general decline in corporate earnings during the years

1931 and 1932" (which the court took notice of) indicated that rates on investments in other business undertakings had decreased. The Court's error was that, while taking judicial notice of the general decline in corporate *earnings*, it failed to take judicial notice of the more notorious and greater decline in the *market prices of corporate securities*, and failed to take that fact into consideration and accord due and proper weight to it.

The undisputed testimony in the case is that it was harder to get money in 1931 and 1932 than in the years previous thereto, and that in those years capital could not be attracted into this business for a return under 8% (R. I, 160).

Of course, as business conditions grow worse, capital becomes more timid, the cost of money increases, and investors require a *greater rate* of return upon their funds before they will put them out at the hazard of business. This fact was recognized and well stated in the decision of the statutory court in the recent case of *Wichita Gas Co. v. Public Service Commission* 2 F. Supp. 792, 810. There a witness for the Commission had testified that 8% would not be an unreasonable return in normal times but that the present times were abnormal and that the rate should be less.

The court commenting upon this testimony said:

> "* * * *but if abnormality is considered, the return must be increased, not decreased.* In these times when the stock of the best utilities can be purchased on a 9% basis or better, certainly an 8% return on this hazardous enterprise is not unreasonable."

We do not conceive that "fair rate of return" is a matter of formula, any more than fair value is a matter of formula. But the settled law is not suspended because of a depression. To refuse at any time *to give consideration and accord due weight* to the *current* rate of return which investors demand as the price of their capital, as the statutory court did here, is error of law. In every utterance of this court upon the subject, the rule has been plainly laid down that the fair rate of return is a rate sufficient to attract capital to the enterprise on reasonable terms *at the time of the inquiry.* It needs no argument to show that plaintiff could not have obtained permanent new capital, *which would carry the risks of the business,* at 6½% in 1931, or at 6½%, to say nothing of 5½%, in 1932. Moreover, the uncontradicted testimony shows this.

It is to be borne in mind that the question is not what return plaintiff shall earn. The court could not guarantee to plaintiff any earnings or rate of earnings. The question is whether or not the company may be deprived of an opportunity to earn, if it can, a given rate of return; whether or not telephone rates may be imposed upon it by law which will deprive it of that opportunity.

Every utility must provide the means of obtaining *the whole* of the required investment; it must pay returns to cover the whole of the risks.

Returns to stockholders who carry the risks of the enterprise must obviously be higher than those to bondholders who occupy a preferred status and are protected by the stockholders' investment.

How to provide such a return to the stockholders, and in addition to set aside a margin for surplus, out of a return which has been forced down to 6½% is impossible for us to see.

An indication of the minimum return which the plaintiff must earn at all times is shown by the following:

Plaintiff floated a bond issue of $50,000,000 in 1923, thirty-year 5% first mortgage bonds upon its entire property in the State of Illinois (R. I. 1032). It has no other bonds outstanding. The cost to the company of these bonds over their entire life is 5.53% (R. VII, 4259a per annum). Obviously they are bonds of a very high grade. These bonds could not have been refloated at any better rate in 1931 and 1932; on the contrary, it would have been difficult to float them at all. Yet the statutory court has held that in 1931 plaintiff's right to earn upon the fair value of its property, an investment upon which the stockholders carry the entire risk and hazard (save only the almost negligible risk of the bondholders), is limited by law to a rate less than 1% in excess of the base cost to the plaintiff of a bond issue representing some 20% of the value of only the Chicago property.

In the *McCardle* case this court said:

> "Obviously the cost of money to finance the whole enterprise is not measured by interest rates plus brokerage on bonds floated for only a part of the investment." *McCardle v. Indianapolis Water Company*, 272 U. S. 400.

In the *United Railways* case the court said:

> "Sound business management requires that after paying all expenses of operating, setting aside the necessary sum for depreciation, payment of interest and reasonable dividends, there should still remain something to be passed to the surplus account; and a rate of return which does not admit of that being

> done is not sufficient to assure confidence in the financial soundness of the utility to maintain its credit and enable it to get the money necessary for the proper discharge of its public duties." *United Railways* v. *West*, 280 U. S. 234.

Clearly, when tested by this statement of the law, unless the depression has suspended the law, 6½% is substantially less than a fair rate of return in the years in question.

The rates allowed plaintiff by the statutory court in the years 1923 to 1930 inclusive are less than those which were shown proper by the evidence and less than many which have been sustained by this court in the case of important corporations,* some of them larger than plaintiff and conducting a less hazardous business (R. I. 157).

The only testimony in the record directly relating to the subject of fair rate of return was the testimony of plaintiff's witnesses Hoyt and Brown. These were both bankers, and probably two of the best qualified men in the country to speak on the subject. Hoyt had had 25 years of experience and had dealt in hundreds of millions of dollars of utility securities, sometimes representing the bankers purchasing, and sometimes the corporation itself (R. I. 151-2). He was a resident of New York and was familiar with all large financing throughout the United States.

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* 8% in *Consolidated Gas Co.* v. *Prendergast*, 6 F. (2d) 243, 280 (Affd. with modification, 272 U. S. 576).

8% in *Kings County Lighting Co.* v. *Prendergast*, 7 F. (2d) 192, 218 (Affd. with modification, 272 U. S. 579).

8% in *Brush Electric Co.* v. *Galveston*, 262 U. S. 443, 446.

8% in *Southwestern Bell Tel. Co.* v. *F. L. Smith*, 294 Fed. 102 (Affd. 270 U. S. 627).

8% in *Mobile Gas Co.* v. *Paterson*, 293 Fed. 208 (Affd. with modification, 271 U. S. 131).

7.44% in *United Ry. & Electric Co.* v. *West*, 280 U. S. 234.

Brown was a resident of Chicago and generally familiar with security prices and especially familiar with those dealt in in Chicago (R. II, 1153-4). The testimony of these two witnesses had high probative force, especially as there was no serious effort to break down or challenge their statements and no evidence was introduced to contradict it. Their testimony convincingly sustains a rate of 8% in the years 1931 and 1932 (R. I. 159-160, 213; R. II, 1153-4).

The City of Chicago called no bankers, dealers in securities, officers of corporations or other person to testify to any fair rate of return.

We submit that there is no possible justification for restricting plaintiff to a lower fair rate of return for the years 1931 and 1932 than for the years 1928, 1929 and 1930, which the court conservatively found to be 7 per cent.

Conclusion.

While plaintiff does not seek a reversal of the decree, which was in its favor and grants all the relief sought, it prays the correction of the errors herein urged, which have resulted in the substantial undervaluation of its property, the substantial understatement of its operating expenses and corresponding overstatement of its earnings, and the determination by the court of a fair rate of return for the years 1931 and 1932 substantially lower than that to which plaintiff is entitled.

Respectfully submitted,

Charles M. Bracelen,
William H. Thompson,
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Counsel for Cross-Appellant.

Appendix.

(A)	Commission's Allowance for Maintenance and Retirements (Exh. A-59) (B)	Actual Charges for Maintenance and Depreciation (Exh. A-59) (C)	Actual Charges for Maintenance and Retirements (Exh. A-59) (D)	Difference between Actual Charges for Maintenance and Depreciation over Commission's Allowance for Maintenance and Retirements (C)-(B) (Exh. A-59) (E)	Excess of Commission's Allowance for Maintenance and Retirements over Actual Charges for Maintenance and Retirements (B)-(D) (Exh. A-59) (F)	Gross Additions (Exh. A-57) (G)	Retirements (Exh. A-57) (H)	Net Additions (Exh. A-57) (I)
1923	$ 8,501,920	$ 10,491,767	$ 7,411,610	$ 1,989,847	$1,090,310	$ 18,435,639	$ 3,978,036	$ 14,457,603
1924	9,608,787	11,166,791	8,477,943	1,558,004	1,130,844	15,743,357	4,901,150	10,842,207
1925	10,761,514	12,406,222	8,809,061	1,644,708	1,952,453	21,442,182	5,936,341	15,505,841
1926	12,070,873	14,458,366	10,508,731	2,387,493	1,562,142	20,924,698	6,502,325	14,422,373
1927	13,350,988	16,261,731	11,904,371	2,910,743	1,446,617	22,467,008	7,629,612	14,837,396
1928	14,634,313	18,319,863	14,801,817	3,685,550	167,504*	25,177,797	10,682,043	14,495,754
1929	15,811,377	19,900,402	18,823,877	4,089,025	3,012,500*	27,124,452	14,715,881	12,408,571
1930	16,731,753	21,104,391	18,430,669	4,372,638	1,698,916*	20,884,218	12,255,613	8,628,605
1931	17,290,203	20,854,733	17,392,892	3,564,530	102,689*	17,108,257	12,972,309	4,135,948
Total 9 years	$118,761,728	$144,964,266	$116,560,971	$26,202,538	$2,200,757	$189,307,608	$79,573,310	$109,734,298
Round Figures	$119,000,000	$145,000,000	$117,000,000	$26,000,000	$2,200,000	$189,000,000	$79,000,000	$110,000,000

* Decrease.

FILE COPY

IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1933.

No. 543.

ILLINOIS BELL TELEPHONE COMPANY,
Appellant,

vs.

BENJAMIN F. LINDHEIMER, ERNEST J. KRUETGEN, ANDREW OLSON, G. GALE GILBERT, PHIL W. COLLINS, PAUL SAMUELL and CHARLES E. BYRNE, the persons constituting the Illinois Commerce Commission of the State of Illinois, and OTTO KERNER, Attorney General of the State of Illinois,
Appellees,

and

CITY OF CHICAGO, a municipal corporation,
Appellee.

CROSS-APPEAL FROM DISTRICT COURT OF THE UNITED STATES,
FOR THE NORTHERN DISTRICT OF ILLINOIS,
EASTERN DIVISION (3746).

**Brief and Argument for Illinois Commerce Commission,
Attorney General of State of Illinois, and
City of Chicago—Cross-Appellees.**

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CHAMPLIN-SHEALY COMPANY, CHICAGO [illegible] 262

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IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1933.

No. 548.

ILLINOIS BELL TELEPHONE COMPANY,
Appellant,

vs.

BENJAMIN F. LINDHEIMER, ERNEST J. KRUETGEN, ANDREW OLSON, G. GALE GILBERT, PHIL. W. COLLINS, PAUL SAMUELL and CHARLES E. BYRNE, the persons constituting the Illinois Commerce Commission of the State of Illinois, and OTTO KERNER, Attorney General of the State of Illinois,
Appellees,

and

CITY OF CHICAGO, a municipal corporation,
Appellee.

CROSS-APPEAL FROM DISTRICT COURT OF THE UNITED STATES,
FOR THE NORTHERN DISTRICT OF ILLINOIS,
EASTERN DIVISION (3746).

**Brief and Argument for Illinois Commerce Commission,
Attorney General of State of Illinois, and
City of Chicago—Cross-Appellees.**

EXPLANATION OF TERMS.

American Company .	American Telephone & Telegraph Company.
Answer on Cross-Appeal	Brief and Argument herein following.
Appellants	Illinois Commerce Commission, Attorney General of State of Illinois, and City of Chicago, Appellants in Case Number 440 and Appellees in Case Number 548.
Appellants' Brief . .	Brief and Argument for Appellants on Appeal, Case Number 440.
Appellee	Illinois Bell Telephone Company, Appellee in Case Number 440 and Appellant in Case Number 548.
Appellee's Brief . . .	Brief for Illinois Bell Telephone Company, Appellant on Cross Appeal, Case Number 548.
Appendix	Note: The Appendix is printed in the back of this Volume, *infra,* pages 99 to 112.
Appendix to Appellants' Brief	Appendix to Appellants' Brief and Argument on Appeal, Case Number 440.
Associated Companies .	Licensee companies of the American Company in the United States.
Bluefield Case	*Bluefield Waterworks & Improvement Co.* v. *Public Service Commission of West Virginia,* 262 U. S. 679.

Minnesota Rate Cases	*Minnesota Rate Cases*, 280 U. S. 352.
O. R.	Old Record, being Volumes I to VII of the record in the case of *Smith, et al.* v. *Illinois Bell Telephone Company* before this Court in the October Term 1930 (282 U. S. 133), containing the evidence introduced upon the 1929 hearing.
R. ... Record	Note: Roman numeral following "R." (for example, R. I) indicates Record Vol. I. Similarly R. I, 40—for example—indicates Record Vol. I, page 40.
United Railways Case	*United Railways & Electric Co. of Baltimore* v. *West*, 280 U. S. 234.
Western	Western Electric Company, an Illinois corporation to 1915, and a New York corporation since 1915.

Brief On Behalf of Illinois Commerce Commission, Attorney General of State of Illinois and City of Chicago.*

PRELIMINARY STATEMENT.

The Brief of the Illinois Bell Telephone Company** on its Cross Appeal seeks to show that the findings of the District Court which failed to follow its presentation, erred to Appellee's prejudice and that such prejudicial errors supply a cushion to absorb any prejudice in its favor which may have resulted from the District Court's findings claimed by Appellants to be erroneous.

Appellee's Brief on Cross Appeal preserves the same lack of realism which permeated its presentation before the District Court, as shown in Appellants' Brief on Appeal before this Court (referred to herein as "Appellants' Brief").

Appellee's Brief on Cross-Appeal catalogues findings and decisions of the Commission and District Court in other hearings and of Commissions and Courts in other cases in support of its claims on License Contract. But Appellee does not point out the facts of the American Company's experience in respect thereto, made available to Courts and Commissions for the first time as a result of this Court's direction of December 1, 1930. These facts reveal that the Commissions and Courts in such other hearings and cases were imposed upon by Appellee and by the other Associated Companies who made the presentations on License Contract, and that the findings and decisions based thereon jar one's sense of fair play.

---

*Referred to herein as Appellants.

**The Illinois Bell Telephone Company, appellant in Case Number 548 and appellee in Case Number 440, is herein referred to as Appellee.

Appellee's Brief on Cross-Appeal invokes an alleged "more notorious and greater decline in the market price of corporate securities" than the "general decline in corporate earnings" as found by the District Court for 1931 and 1932 in support of its claims on Fair Return for those years. But Appellee does not point out that the investor in its own securities could have sold in 1931 at a substantial profit its securities purchased at their offering in 1923 or in the years 1923 to 1926, inclusive, and even in the year 1929. Nor does Appellee point out the similar actual experience of other high grade securities as disclosed in the record, to which securities the alleged "notorious" decline had no application. Nor does Appellee point out that the cost of issuing such high grade securities was less in 1931 than in the years prior thereto; nor that a larger percentage of total financing in 1931 embraced high grade securities of the investment rating of those of Appellee than in the period prior to the depression. Nor does Appellee point out that the securities to which its alleged "notorious" decline had application were all of investment rating inferior to that of Appellee's securities as admitted by Appellee's experts on Fair Return.

Appellee's Brief on Cross-Appeal invokes its interpretation of the language of the Minnesota Rate Cases in support of its claims on Depreciation in Valuation. But Appellee points out neither the accounting practices to which such language had application, nor the accounting practices of Appellee which determine the proper basis for the deduction from rate base value new in arriving at the rate base. Such practices make its interpretation incongruous.

Appellee's Brief on Cross-Appeal invokes its interpretation of language of the Commission's Orders in support of its claims on Depreciation Expense allowances. But Appellee does not point out its own experience which is inconsistent with such interpretation.

Appellants' Answer herein to Appellee's Brief on Cross-Appeal points out these facts which Appellee disregarded.

Appellee's Brief on Cross-Appeal, as well as its presentation before the District Court, reveals that its contentions cannot be accepted without being checked against those facts of experience to which it has consistently failed and refused to give consideration, and for the recounting of which the voluminous record on Appeal is essential.

Summary of Argument.

APPELLEE'S CLAIMS COVERING LICENSE CONTRACT SERVICES AND PAYMENTS (Infra, 26).

Appellee's Position.

Appellee seeks through its cross-appeal to show that the District Court went out of its way to favor Appellants on all disputed items and otherwise erred to its prejudice. In support of its position, Appellee pointed out that:

I. The District Court allowed, as proper operating expense for the years 1929 to 1931, inclusive, the license payments which were less by $768,000 than the American Company's costs found by the District Court applicable thereto.

II. The District Court should have allowed as proper operating expense for the years 1923 to 1928, inclusive, the entire license payments, and not merely the American Company's costs applicable thereto as found by it. Such costs were less by $2,758,369 than such payments. The District Court should have followed its own findings on the 1929 hearing, and the many other cases which allowed the license payments in full.

III. The District Court should have allowed as proper the entire license payments for the years 1923 to 1928, inclusive, on the basis of the American Company's actual experience in respect to the License Contract during the entire period 1923 to 1931, inclusive.

IV. The District Court, in any event, should have allowed as additional costs the instrument, franchise, excise, capital stock and income taxes of the American Company, as claimed by Appellee.

Appellants' Position.

Appellee has distorted the facts and misinterpreted the law, in that:

I. The American Company's costs found applicable to License Contract operations for the years 1929 to 1931, inclusive, were inflated by $2,558,000 through the inclusion therein of costs applicable to Holding Company and to Licensing of Inventions operations. The restriction by the District Court of the allowance to the license payments merely reduced the amount of inflation contained therein by $768,000.

II. There was no legal basis to sustain the license payments in full for the years 1923 to 1927, inclusive, because:

A. Such payments exceeded by from $432,000 to $631,000 the amount required to pay (1) the American Company's expenses plus a reasonable return on its investment applicable to the License Contract operations, as found by the District Court; (2) the expenses and return applicable to its Holding Company and Licensing of Inventions operations; and (3) a portion of its appropriations to the Reserve for Contingencies.

B. The Commission's allowances and the District Court's determinations prior to the 1932 hearing covering telephone instrument rental, were revealed by the American Company's actual experience made available at the 1932 hearing, to have been grossly excessive—the Commission's allowances for rental yielding the American Company at least 45.7% and the District Court's determinations, based on Appellee's showing, 42.2% on the American Company's investment in the instruments.

C. The findings of Commissions and Courts in other cases sustaining License Contract payments were rendered inapplicable to support any corresponding finding on the 1932 hearing, because:

(1) Findings of fair telephone instrument rental in other cases, when tested by the American Company's actual experience as revealed on the 1932 hearing, were grossly excessive. The yield therefrom ranged from 33% to 76% on the American Company's investment in the instruments involved.

(2) Appellee, on the 1932 hearing, disclaimed the service of Temporary Financing through loans by the American Company and the American Company's costs applicable thereto, as properly under the License Contract. But in twenty-three cases, Courts and Commissions relied on that service as the sole or principal reason to sustain the license payment. The District Court found on the 1932 hearing that holding funds by the American Company to effect the Temporary Financing and its costs incident thereto, were not properly under the License Contract and Appellee has not assigned error thereon. For other Associated Companies, including those involved in cases cited by Appellee as sustaining the license payment, the American Company's costs of Temporary Financing, including the holding of funds therefor, absorbed from 26% to 86% of the entire license payment made by them.

(3) On the 1932 hearing, evidence became available for the first time which showed that the American Company covered by the license payments its expenses to operate as a Holding Company investor in the securities of the Asso-

ciated Companies, and, as a Licensor for valuable considerations of inventions to manufacturers and others outside the telephone communication field and within the telephone communication field outside the Bell System.

III. The consideration that the American Company reduced the license payments from 4½% to 4% in 1926, to 2% in 1927, and to 1½% in 1929, does not prove that the license payments before or after each cut were fair, because:

A. From 1923 to 1925, inclusive, the license payment exceeded the amount necessary to pay expenses and reasonable return on investment applicable to License Contract, Holding Company, and Licensing of Inventions operations as found by the District Court, by $1,736,091. The reduction from 4½% to 4% in 1926 and 1927 involved an aggregate reduction in license payments of $478,306. As part of the consideration therefor, Appellee was required to pay the instrument taxes of $131,297 which theretofore the American Company paid, and Appellee paid in license payments for these two years $990,815 more than the District Court found properly applicable to License Contract operations.

B. The 1926 reduction merely eliminated from the license payment the portion thereof which the American Company had used prior thereto to provide the deficiency between the interest and dividends which it received on its investments in the Associated Companies and the interest and dividend requirements which it had on its own securities applicable to such investments. Such deficiency ranged from $1,500,000 to $4,500,000 per year. But the reduced license payment was admittedly contemplated to cover the expenses applicable to its Holding Company and

Licensing of Inventions operations in addition to its expenses properly applicable to License Contract operations.

C. The 1928 and 1929 reductions were not intended to refund to the Associated Companies any excess in the license payments over the amount necessary to cover the costs properly applicable to License Contract operations only. On the contrary, such reductions were less than those which should have been made as consideration for the additional values outside the License Contract received from the Associated Companies in connection therewith.

On December 31, 1927, the Associated Companies, including Appellee, were required to purchase from the American Company second-hand telephone instruments at a price which covered the American Company's cost, less 18.03% thereof, whereas, the American Company had already been reimbursed through the depreciation expense charges covered by rentals 48.9% of its cost. The American Company's profit on the sale aggregated $14,395,799, of which $726,540 was applicable to Appellee's Chicago intrastate business. By this sale, the American Company was relieved of the annual costs of owning and maintaining these instruments; was relieved of the obligation to supply, without additional charge, cradle telephone sets which had been developed and made commercially practicable by 1927, but which were much more expensive to own and to maintain than the desk stands; and was relieved of the greater charges against its depreciation reserve for retirement of desk stands resulting from the expected popularity of the cradle sets. By this sale, the American Company made it possible for Appellee to burden its telephone subscribers with a surcharge for the use of the cradle set to cover increased annual costs in their use, instead of the American Company bearing that expense.

During the same period the superior investment position of the Bell System resulted in a lowering cost of funds to attract capital, but the American Company did not give the Associated Companies the benefit thereof in financing them under the License Contract. As a result, the American Company's return from the Associated Companies was sufficient to cover its own annual charges applicable to its investments in them, and to carry to surplus $40,165,520 for the period 1928 to 1930, inclusive.

Under these conditions the reduced license payments beginning with 1928 were even more unfair to the Associated Companies than those made prior thereto.

IV. Appellee's claim that the District Court erred in failing to include instrument, franchise, excise, capital-stock and income taxes as costs under the License Contract is more than offset by other errors committed by the District Court in computing License Contract costs, and cannot be supported when viewed in the light of the facts in the record.

A. Appellee claimed that the District Court failed to allow as proper the instrument taxes for the years 1923 to 1925, inclusive, ranging from $42,000 to $65,000 per year. But Appellee failed to advise this Court that the District Court committed two other errors in its computations of fair rentals for the instruments, which errors inflated the rentals by amounts ranging from $95,000 to $116,000 per year. By reducing this inflation by the amount of instrument taxes which the District Court omitted, the inflation still ranges from $55,000 to $105,000 per year. On the basis of the District Court's findings, but after giving effect to the instrument taxes, omitted by it, the return to the American Company on its investment in telephone instruments ranged from 10.58% to 11.40% in the years 1923 to 1925, inclusive.

B. Appellee claimed that the District Court failed to allow as proper License Contract costs, the franchise, excise, and capital stock taxes of the American Company ranging from $30,000 to $72,000 per year. But Appellee failed to advise this Court that such amounts were computed on the basis of allocating to License Contract operations the taxes allocable to Holding Company operations. If the amount of such taxes were distributed between these two classes of operations, the amount chargeable to the License Contract operations would be negligible. As Appellee's portion would be less than 6% of such negligible amount, the District Court's error in not allocating to it any part of these costs was infinitesimal in effect.

C. Appellee claimed that the District Court failed to allow as proper License Contract costs, the Federal income taxes of the American Company ranging from $28,000 to $121,000 per year for the period 1923 to 1928, inclusive. But Appellee failed to advise this Court that it allocated the entire amount of Federal income tax to the License Contract operations. On the basis of such allocation, the American Company, as a Holding Company and as Licensor of Inventions, would have had taxable income only in 1927. The amounts properly chargeable to Appellee as part of the License Contract costs for the years 1923 to 1928, inclusive, which the District Court failed to allow, range from $4,000 to $79,000 per year.

APPELLEE'S CLAIMS COVERING FAIR RETURN (Infra, 55).

Appellee's Position.

Appellee seeks through its cross appeal to show that the District Court erred in its determination of the required minimum return for 1931 and 1932 to the substantial prejudice of Appellee, and that such prejudicial error was not offset by its corresponding determination for the previous years. In support of Appellee's position it urged:

I. The District Court should have applied the "attraction of capital and maintenance of credit" test of compensatory rates set forth in the *Bluefield* case in its determination of the required minimum return to avoid confiscation for the years 1931 and 1932.

II. Tested by the "attraction of capital and maintenance of credit" test, the District Court's findings of 6½% return for 1931 and 5½% return for 1932 are so arbitrary as to be void in that:

A. Returns which were less than 1% in excess of the annual charges on Appellee's bonds could not possibly provide also Appellee's dividend requirements on an 8% basis and the margin for surplus to which its stockholders are entitled.

B. On the basis of such returns Appellee could not possibly have attracted capital in 1931 and 1932. The District Court took judicial notice of the general decline of corporate earnings but failed to take judicial notice of the "greater and more notorious decline in the price of corporate securities."

III. The required minimum return found by the District Court for the years 1923 to 1930, inclusive, was in each case less than that shown by Appellee's witnesses to be proper, and less than that allowed in other cases sustained by this Court. Such findings therefore provide no cushion to offset the District Court's error for 1931 and 1932.

Appellants' Position.

I. Appellee's claim that the "attraction of capital and maintenance of credit" test of compensatory rates should have been applied for the years 1931 and 1932, is fatally defective in that:

A. The claim disregards the fact that Appellee had excess capital in 1931 and 1932. In July, 1930, Appellee sold to the American Company $8,000,000 stock in excess of its current needs, of which $4,729,440 is allocable to Chicago intrastate business; the proceeds of this sale remained on deposit with the American Company to 1932 and thereafter without being required by Appellee's business. Nor did Appellee include the interest accrued on such deposit in its showing of earnings available for return on such capitalization.

B: The claim involves the principle that Appellee is entitled to have applied the "comparative return" or "attraction of capital and maintenance of credit" test of compensatory rates, whichever is more favorable to it.

II. Appellee's claim that the required minimum return, as found by the District Court, is so arbitrary as to be void disregards its own experience and the undisputed facts in the record, in that:

A. Appellee's claim that a 6½% return in 1931 could not possibly provide the 8% dividend plus the required margin for surplus disregards the fact that the rate base value as found by the District Court, to which such return is applicable, exceeded the outstanding capitalization by $44,000,000. Related to such rate base a 6½% return would yield 11.15% return on outstanding stock and would provide the 8% dividend thereon plus $2,740,000 for surplus. On the basis of the 1931 capitalization, the 5½% return on the rate base value for 1932, as found by the District Court, would provide the 8% dividend requirements plus $260,000 for surplus. Such rate of return for 1931 and for 1932 would be increased in each case if the excess capitalization issued in 1930 not used or useful in the public service thereafter were eliminated or if the interest on the proceeds thereof were included as part of Appellee's earnings available for return. Appellee made no showing that during these depression years any other utility earned any such returns. Such returns are excessive if considered as the total return and more so when considered with the advantages of additional pecuniary profit and additional security which the American Company received from Appellee but which are not received by the ordinary investor outside the Bell System.

B. Appellee's claim that there was a notorious decline in the market price of corporate securities, in the years 1931 and 1932, disregards the following undisputed facts in the record:

(1) Appellee's claim has no application to Appellee's bonds. The yield on the resale price of Appellee's bonds in 1931 was 4.76%. The investor who purchased such bonds on the original public offering in 1923, or

in the open market in the years 1923 to 1926, inclusive, or even in the year 1929, could have resold his investment in 1931 at a substantial profit. Appellee's bonds in 1931 were rated AAA. The notorious decline in market prices had no application to AAA bonds. Similarly the market price of stocks behind AAA bonds was higher in 1931 than the corresponding market price of such stocks in the years 1923 to 1925, inclusive.

(2) The annual cost on AAA bonds of public utilities issued in 1931 was lower than the annual cost of AAA bonds of the same issuer offered in any of the years 1923 to 1930, inclusive.

(3) Appellee's claim that credit money was more difficult to obtain in 1931 than in prior years had no application to securities which, like Appellee's, enjoyed the highest investment rating. The percentage of total financing represented by the highest grade investment bonds in 1931 was 33%. Such percentage was greater than the corresponding percentage in any other year in the case of public utilities; and the amount in dollars of the highest grade investment bonds offered in 1931 represented more than 74% of the entire amount in dollars of all issues of the same rating offered in the period 1923 to 1930, inclusive.

Appellee's claim of the notorious decline in market price of corporate securities had application, if at all, to bonds of inferior investment rating than that enjoyed by its bonds and by Bell System bonds in 1931 and 1932; and had application, if at all, to stocks behind such inferior graded bonds.

III. Appellee's claim that the required minimum return for each of the years 1923 to 1930, inclusive, as found by the District Court, was less than that which was shown proper by Appellee's witnesses and less than that allowed in other cases by this Court disregards the facts that:

A. The testimony of Appellee's witnesses consist of prognostications which are fatally defective because they are contrary to Appellee's actual experience and to the comparable experience of the other Associated Companies, and are based on five assumptions which are contrary to the facts of such actual experience.

B. The returns of other cases cited by Appellee as having been sustained by Courts have no application to the instant case. In some of those cases the discussion on return was academic; in others, there was not even a statement by the Court of any specified rate of return necessary to avoid confiscation; and in the balance of the cases the facts involved were opposite to those which the record shows for Appellee.

APPELLEE'S CLAIMS COVERING DEPRECIATION EXPENSE ALLOWANCES (Infra, 70).

Appellee's Position.

Appellee's claim is that the District Court's depreciation expense allowances, which represented a compromise between Appellee's and Appellants' claims, erred to its prejudice in that:

I. Appellee's judgment of the proper depreciation expense charges should have been followed by the District Court as a managerial act which had not been shown to be arbitrary or otherwise improper.

II. The District Court should not have given any consideration to the 1920 Order on depreciation expense allowances because it was temporary, was superseded by the 1923 Order; and covered "retirement" but not "depreciation" expense charges.

III. The District Court should not have given any consideration to the 1923 Order on depreciation expense allowances because:

A. In a confiscation case, the Commission's finding of fact is not competent evidence.

B. The language of the 1923 Order covered "retirement" and not "depreciation" expense charges.

C. The allowances by the 1923 Order were so grossly inadequate as to be void in that the aggregate of such allowances for the period 1923 to 1931, inclusive, barely covered the retirements of the same period.

Appellants' Position.

I. Appellee's right as a managerial act to originate the amount of depreciation expense charges and to make changes therein was taken away from it by Section 14 of the Illinois Public Utilities Act, and was placed in the Illinois Commerce Commission. Even if Appellee had such right, its showing thereon was fatally defective.

II. Appellee's objections to the 1920 Order are raised for the first time and represent a collateral attack on state action. For the reasons stated in Appellants' Brief, pages 388 to 392, they should be disregarded.

III. Appellee's objections to the 1923 Order on depreciation expense allowances are fatally defective because:

A. They disregard the evidentiary value attaching to a legislative act pursuant to Section 14 of the Illinois Commerce Commission law.

B. The Commission's Order made adequate findings for depreciation expense charges and was not limited to retirement expense, as shown by the facts that: (1) the excess of allowances over retirement charges in the period 1923 to 1927, aggregated $7,180,000; (2) despite the same attack on the form of the 1923 Order by Appellee before this Court in *Smith* v. *Illinois Bell Tel. Co.* (282 U. S. 133), this Court treated the 1923 Order in respect to the allowances as covering depreciation expense charges; (3) the entire discussion in the Commission's Order clearly shows its intent to make adequate depreciation expense allowances, and Appellee reads into the order of the Commission language which is not there and which is not warranted.

C. Appellee's claim that the allowances by the 1923 Order were so grossly inadequate as to be void, based upon the relation of the aggregate thereof for the period 1923 to 1931, inclusive, to the aggregate retirements for the same period of time, if considered as a single unit of time, disregards the facts that: (1) for the years 1923 to 1927, inclusive, the allowances exceeded the retirements by wide margin; (2) where depreciation expense charges are computed on the straight line method, the adequacy of the amount thereof in any one year cannot be measured by the retirements for the same year. Such retirements cover property installed in prior years—for the loss in service value of which property depreciation expense charges of prior years have been accumulated; (3) Appellee's comparison of the allowances with the retirements presents a distorted picture, because (a) it includes under retirements the loss on general equipment, for which reimbursement has already been provided in accounts other than in the depreciation expense account, ranging from $109,000 to $225,000 per year; (b) Appellee changed its depreciation accounting methods on exchange aerial wire beginning with 1929, the effect of which was to increase operating expenses thereafter by charges applicable to the depreciation reserve of $600,000. Such charges are a cushion to be added to the depreciation allowances beginning with 1929; (c) Appellee's retirements beginning with 1928 are excessive because of second-hand telephone instruments acquired at the end of 1927 on which the American Company had accrued a 48% depreciation reserve, but in respect to which only a 18.03 [redacted]% depreciation reserve was transferred on their sale to Appellee; (4) Appellee failed to give consideration to the fact that on account of the depression the factor of inadequacy covered by the depreciation expense charges and allowances prior to 1929-1930 was eliminated in respect to all property then in service to which such charges and allowances have application; (5) the relation of the net increase in depreciation reserve to the net increase in plant during the period of the allowances is without significance in the absence of a showing of the relation of the net increase plus the depreciation reserve already accumulated at the date of the allowances to the investment in service to which they have application. Appellee made no showing that such total reserve would be inadequate. On the contrary the facts of Appellee's experience by comparison with that of other Associated Companies shows such reserve to be adequate. Moreover the depression has released a large portion of the reserve accumulated (a) to provide against retirements of property in service because of inadequacy, and (b) to provide for anticipated depreciation on contemplated future additions to central offices and buildings.

APPELLEE'S CLAIMS COVERING DEPRECIATION IN VALUATION (Infra, 80).

Appellee's Position.

The District Court's finding on Depreciation in Valuation failed to follow the Minnesota Rate Cases which require that the deduction from rate base value new in arriving at the rate base should be only for depreciation revealed by inspection. The District Court deducted from $9,300,000 to $13,800,000 more than the amounts so revealed by Appellee's presentation.

Appellants' Position.

Appellee's position interprets the language of the Minnesota Rate Cases, "actual existing depreciation," to exclude foreseeable facts and contingencies causing property retirement which Appellee claimed are certain of realization in the service life of the property inspected but which are not manifest at the date of such inspection. Such narrow interpretation is contrary to the express language of the Minnesota Rate Cases, disregards the depreciation accounting practices to which the language quoted by Appellee from the Minnesota Rate Cases had application, and disregards its own accounting practices which determine what the proper deduction should be.

APPELLEE'S CLAIMS COVERING THE DISTRICT COURT'S CUT IN VALUATION IN 1930 AND THEREAFTER TO ELIMINATE THE EFFECT OF THE PRICE INCREASE BY WESTERN (Infra, 89).

Appellee's Position.

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The District Court reduced the rate base value by more than $4,750,000 in each of the years 1930, 1931 and 1932 to eliminate the effect of Western's 10% Price Increase in 1930. Such reduction was improper because:

I. The price increase was justified as it merely corrected the price decrease of 1929 which was based on anticipated large volume of business in future years not realized.

II. Western's prices, even after the increase, were lower than those of other manufacturers.

III. Western's profits from Bell business done at the increased prices were not more than reasonable as found by the District Court.

IV. Western did not overreach the Bell System even after the increase in prices, as found by the District Court.

Appellants' Position.

Appellee's position is based on the same fundamental errors on which it based its presentation before the District Court on Western's Profits and Prices as the basis for the District Court's findings thereon. Appellee's position disregards the facts that:

I. The reproduction program assumed in Appellee's revaluation for each year would involve annual purchases from Western in volume greater than that upon which Western based its decrease in prices in 1929.

II. Western's price policy during the depression based on standard costs established prior to and during 1929 precludes comparison between its prices during the depression with those of other manufacturers.

III. Appellee's claim that Western's profits from Bell business during the depression were no more than reasonable assumes, contrary to fact, the proper separation of manufacturing facilities and expenses between Bell and non-Bell business, and the proper relation of Bell profits to profits from business with Appellee in the same years.

IV. Appellee's claim that Western did not overreach the Bell System through their relationship has no application to the issues involved in the use of Western's current prices to revalue Appellee's property.

THE DISTRICT COURT'S UNDERVALUATION IN 1931 AND 1932 (Infra, 95).

Appellee's Position.

The District Court should not have reduced the rate base value by $18,500,000 in 1931 and $23,000,000 in 1932 to give effect to reduced prices of labor and material. Appellee's reproduction cost new estimates for these years gave effect to its own expense and not to inflated value.

Appellants' Position.

I. Appellants construe the entire amount of the cut in valuation in 1931 and 1932 as intended by the District Court to eliminate the effect of the 1930 increase in Western's prices.

II. Assuming Appellee's construction is correct, its claim is fatally defective as it assumes, contrary to law, that its reproduction cost new estimates measure value.

DISCUSSION.

APPELLEE'S CLAIMS COVERING LICENSE CONTRACT SERVICES AND PAYMENTS.

I.

Appellee's Claim.

(Appellee's Brief, p. 80.)

The District Court found that the American Company's costs of rendering Appellee's License Contract services in 1929 to 1931, inclusive, were $768,000 in excess of Appellee's license payments of such years. The District Court allowed as proper operating expense for such years only the license payments; it should have allowed the full amount of the American Company's costs.

Appellants' Answer.

The District Court inflated the American Company's costs of rendering Appellee's License Contract services in 1929 to 1931, inclusive, by $2,558,000, by including therein costs applicable to its Holding Company and Licensing of Inventions operations (Appellants' Brief, p. 86). By allowing as proper operating expenses only a portion of such costs, the District Court merely reduced the amount of inflation in Appellee's operating expenses. Appellants gave effect to such reductions in their showing of the proper amounts which should have been allowed by the District Court as proper operating expense to cover License Contract services (Appellants' Brief, p. 86, Appendix to Appellants' Brief, p. 54).

Appellants direct attention, however, to the fact that the District Court's allowances for the years 1929 to 1931, inclusive, now complained of by Appellee, are the identical amounts which Appellee's requested findings asked the District Court to allow as proper operating expense (R. III, 2417). Similarly, the amounts of the American Company's costs as found by the District Court correspond to those requested by Appellee to be found (R. III, 2416). Appellee is complaining in this Court about its own requested findings.

II.

Appellee's Claim.

(Appellee's Brief, p. 89.)

Upon the first hearing in 1929, the District Court found that "the case for the allowance of the entire amount for services is a strong one." No facts appeared at the second trial in 1932, to warrant any change in that conclusion. The District Court, therefore, should have allowed the entire license payment as proper operating expense for each of the years 1923 to 1928, inclusive, upon the authority of other cases which allowed as proper the entire license payments.

Appellants' Answer.

This Court's direction of December 1, 1930, made available five separate classes of facts which precluded the District Court, on the 1932 hearing, from reaching the same conclusion which it reached at the former hearing in 1929, and from relying on other cases wherein the entire license payment was allowed as proper. These were:

1.

On the basis of the District Court's findings, Appellee's license payments of $9,176,000 for the years 1923 to 1927, inclusive, exceeded the American Company's costs applicable thereto, by amounts ranging from $433,000 to $631,000 per year, and aggregating for the period $2,727,000 (Appellants' Brief, p. 84) But the American Company's costs, so found, covered (a) the American Company's expenses found applicable to License Contract operations (Appendix to Appellants' Brief, p. 54); (b) more than a reasonable return on the American Company's investment found applicable to such operations (*infra,* 51); (c) expenses and return on investment applicable to the American Company's Holding Company and Licensing of Inventions operations (Appellants' Brief, pp. 174, 184); and (d) a portion of the appropriations to the Reserve for Contingencies (Appellants' Brief, p. 194).* The excess over such costs would increase the unjust enrichment of the American Company.

2.

On the 1929 hearing, the record showed that (a) the 1920 Order which fixed the telephone rates charged in 1923, had provided an allowance of $1.13 per station as reasonable rental for the use of telephone instruments in Chicago; (b) the 1923 Order, now under attack, made no change therein; and (c) Appellee estimated that its annual charges to provide and maintain the instruments in 1923, had it owned them, would have been $1.07 per station, or $681,994* (O.R. III, 1038). The District Court, without approving, accepted the Commission's ruling on the license payment of 1923 to be allowed as proper operating expense, for the purpose of determining the issue of confiscation for that year (*Smith* v. *Illinois Bell Tel. Co.*, 282 U. S. 133, at 155-6).

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*Although Appellee claimed that the appropriations to the Reserve for Contingencies were intended by the American Company to form a Patent Infringement Liability Reserve (Appellants' Brief, pp. 203, 207), the American Company's representations to Bankers who purchased its bonds showed the earnings covered by such appropriations as available for interest requirements (R. V, 3415, 3497; cf. R. V, 3307, 3312, 3318, 3323, 3331).

On the 1932 hearing, the actual experience of the American Company in 1923, in respect to these instruments, was made available to Appellants for the first time, pursuant to this Court's direction of December 1, 1930. Appellants showed that a rental of $1.13 per station in 1923 would be sufficient to cover maintenance, depreciation expense charges, and instrument taxes incurred, charged or paid by the American Company, and to yield to the American Company 45.79% on its investment in the instruments (book cost less the amount in depreciation reserve account) (O.R. III, 1038; R. IX, 4987). Appellants showed, also, that, on the same basis, a rental of $1.13 per station in 1920, when the 1920 Order was issued, would yield 51.28% on such investment (R. IX, 4991); that a rental of $1.07 per station in 1923 would yield 42.27% on such investment (R. IX, 4989).

Appellee's presentation on the 1932 hearing claimed that for 1923 a fair rental should be $415,482 (R. III, 2411), or 65c per station. Appellants showed that 65c per station would be sufficient to yield to the American

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*$709,000 estimated in 1929, covered the Chicago Division. This figure is reduced in the text to the intrastate portion thereof to make it comparable to the 1932 showing.

Company 16.53% on investment after covering all maintenance, depreciation expense charges, instrument taxes actually incurred, charged or paid by it as shown on its books (R. IX, 4987).

On the 1932 hearing, the District Court allowed, as fair rental for 1923, $342,000, or 54c per station (R. III, 2510).* Such allowance was sufficient to cover maintenance, depreciation expense charges and instrument taxes actually incurred, charged or paid by the American Company as shown on its books, and to yield 9.43% return on investment (book cost less the amount in depreciation reserve account) (Appendix, *infra,* 99). On the basis of the District Court's allowance of depreciation expense charges, the yield was 11.40% on such investment (Appendix, *infra,* 99).

Comparison of the 1929 and 1932 evidence and findings shows for fair rental:

Commission's Allowance	Appellee's Claim 1929 Hearing	Appellee's Claim 1932 Hearing	District Court's Finding on 1932 Hearing
$718,393	$681,994	$415,482	$342,000

On the 1929 hearing, the District Court determined the issue of confiscation on the basis of the Commission's allowance covering License Contract services. Such allowance reduced, as proper operating expense for 1923, the amount of the license payment by $360,000 (O.R. I, 191). Such allowance applicable to intrastate business was $1,312,032.** On the 1932 hearing, the District Court found as the proper operating expense covering License Contract services, $1,088,195 (R. III, 2519), or $223,837 less than the amount used by it on the previous trial. As Appellee's 1932 claim covering telephone instrument rental for 1923 was less by $266,512 than its 1929 claim, the District Court's allowance on the 1932 hearing covering license payments as operating expense was more favorable to Appellee than the District Court's findings on the previous hearing!

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*The District Court's errors in computing the rental are shown infra, 47.

**96.19% of $1,364,000 (Appendix, infra, 101; O.R. I, 191).

3.

The direction of this Court of December 1, 1930, has made possible for the first time the comparison of findings by Courts and Commissions in other cases covering the fair rental of telephone instruments with the American Company's actual experience in respect thereto. Considering cases where the facts are available, such comparison shows that the findings therein were far out of line with the real facts (Appendix, *infra,* 103-4):

(a) For the year 1920, the allowance in the *Chesapeake & Potomac* cases yielded a return to the American Company ranging from 51% to 61% on its investment in telephone instruments (book cost less the amount of depreciation reserve account); the allowance in the *Southwestern Bell* case yielded a 69% return; and in the *Chicago Telephone* cases a 51% return. In the *Michigan Bell* case, relied on by Appellee, the presentation of fair rental covered by the allowance yielded the American Company a 76% return (Appendix, *infra,* 103).

(b) For the year 1921, the allowance in the *Indiana Bell* case, relied on by Appellee, yielded a 50% return (Appendix, *infra,* 103).

(c) For the year 1922, the allowance in the *Cumberland* case and *Indiana Bell* case yielded a 40% return (Appendix, *infra,* p. 7).

(d) For the year 1923, the allowance in the *New York Telephone* case, relied on by Appellee, yielded a 41% return (Appendix, *infra,* 104).

(e) For the year 1925 the allowance in the *New England* case yielded 33% (Appendix, *infra,* 104).

4.

On the 1932 hearing, Appellee claimed that no part of the $16,688,000 "net loss" to the American Company on Temporary Financing of the Associated Companies through loans to them for the period 1923 to 1931, inclusive, should be allocated to Appellee's operating expenses or covered by Appellee's License Contract payments (R. I, 1003; R. III, 2416-17). Such "net loss" was computed to be the difference between the interest received by the American Company from such loans and the annual interest and dividends paid to its investors on its own funds applicable to such loans (R. I, 972).

Mr. Heiss, Comptroller of the American Company, as Appellee's witness, testified further that although such "net loss" was charged as proper License Contract costs in other cases, if he were to now make the presentation in such cases over again he would not include therein any portion of such costs under the License Contract (R. I, 1003). And the reason for the change of position, he testified, was "as one grows older, one gives further consideration to things, and has the right to change his mind" (R. I, 975).* But in twenty-three cases Courts and Commissions relied on this service and its cost as the sole or principal reason for sustaining the entire license payment to the American Company.*

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*Mr. Heiss included the cost of Temporary Financing in his presentation in 1928 in the Michigan Telephone Case and in his presentation in 1931 in the Ohio Telephone Case (R. I, 975). The Associated Companies involved in those cases were heavy borrowers (R. VI, 4030, H and I); but Appellee's borrowings from the American Company were negligible (Idem.). Mr. Heiss changed his mind after his presentation in 1931 in the Ohio Telephone Case (R. I, 975). His excuse given in the text should

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be weighed with the consideration that Appellants' Brief on the Appeal in 1930, before this Court, laid stress on the fact that the other Associated Companies absorbed through the Temporary Financing service the whole or a large portion of their respective license payments (Appellants' Brief, Smith v. Illinois Bell Tel. Co., 282 U. S. 133, pp. 162-3, 185-6; 188-193; 243-4; 247-51).

In the Michigan Telephone Case, where the Associated Compan~~ies~~y owed the American Company from $19,000,000 to $38,000,000 in 1927-8-9 (R. VI, 4030 H), Mr. Heiss showed for 1928 "a net loss" to the American Company in its Temporary Financing of the Associated Companies, of $4,100,000 (R. VI, 3770); in the instant case, where such service was negligible, the net loss for 1928 was presented by him as only $1,050,000 (R. IV, 2958). His excuse for the $3,000,000 discrepancy was that "At the time, in 1928, when I hadn't much experience in this matter, I was told in conjunction with our people to set up the money cost in the way that I described. Now that will make a difference of two or three million dollars. We had a method which I used in 1928, and I saw fit to change that method, after mature consideration, for these present cases" (R. I, 1002). Other instances of his opportunistic proclivities are given in Appellants' Brief, pp. 203, 206.

*Birmingham v. Southern Bell Tel. & Tel. Co. (Ala. P. S. C. 1918), P. U. R. 1919B, 791.
In re Rates, etc., of Telephone Companies (Arizona Corp. Comm. 1919), P. U. R. 1920B, 411, 462, 463, 464.
In re Southwest Bell Tel. Co. (Ark. Corp. Comm. 1920), P. U. R. 1921B, 516, 522.
In re Southern Cal. Tel. Co., No. 14420 (1924), 25 Cal. R. C. R. 721, 747.
In re Chesapeake & Potomac Tel. Co. (D. of C. P. U. C. 1920), P. U. R. 1920D, 614.
In re Mountain States Tel. & Tel. Co. (Idaho P. U. C.) P. U. R. 1921B, 739, 755-757.
Indiana Bell Tel. Co. v. Public Service Commission (1924), 300 Fed. 190 (D. Ind.) P. U. R. 1925A, 363.
Indiana Bell Tel. Co. (Ind. P. S. C. 1922), P. U. R. 1922E, 46, 63.
In re New England Tel. & Tel. Co. (Me. P. U. C. 1925), P. U. R. 1926B, 247, 258.
State ex rel. Hopkins v. Southwestern Bell Tel. Co. (1924), 115 Kans. 236, 223 Pac. 771, P. U. R. 1924D, 388, 413.
In re New England Tel. & Tel. Co. (N. H. P. S. C. 1926), P. U. R. 1926E, 186.
In re Chesapeake & Potomac Tel. Co. (Md. P. S. C. 1920), P. U. R. 1920F, 417, 437.
In re Chesapeake & Potomac Tel. Co. (Md. P. S. C. 1916), P. U. R. 1916C, 925.
In re Michigan State Tel. Co. (Mich. R. Comm. 1918), P. U. R. 1918C, 81.
Detroit v. Michigan Railroad Commission (1920), 177 N. W. 306, P. U. R. 1920D, 867, 878.

On the 1932 hearing, the District Court disallowed, as part of the License Contract costs or payments allocable to Appellee's operating expenses any part of the $23,000,000 "net loss" to the American Company of holding funds to meet the Temporary Financing of the Associated Companies. Such "net loss" was computed to be the difference between the earnings received by the American Company

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In re Mountain States Tel. & Tel. Co. (N. Mex. Corp. Comm. 1923), P. U. R. 1923B, 352.

In re New York Tel. Co. (N. Y. P. S. C. 1923), P. U. R. 1923B, 545, 559.

Public Utilities Commission v. New England Tel. & Tel. Co. (R. I. P. U. C. 1925), P. U. R. 1926C, 207, 253.

Houston v. Southwestern Bell Tel. Co. (1922), 259 U. S. 318.

In re New England Tel. & Tel. Co. (Vt. P. S. C. 1926), P. U. R. 1927C, 348.

In re Chesapeake & Potomac Tel. Co. (Va. Corp. Comm. 1920), P. U. R. 1920F, 49, 94.

In re Chesapeake & Potomac Tel. Co. (W. Va. P. S. C. 1920), P. U. R. 1921B, 97, 121.

In re Mountain States Tel. & Tel. Co. (Idaho P. U. C. 1921), P. U. R. 1921B, 739, 757.

In re Rates, etc., of Telephone Companies (Arizona Corp. Comm. 1919), P. U. R. 1920 B, 411, 462, 463, 464. The Commission stated:

> "We have found that $2,600,000 have been advanced by the Bell Company, a discount of 10 per cent, amounting to $260,000, whereas the total rentals paid by the Mountain States Company from 1914 to 1918, inclusive, amounted to $102,843.35."

In re Chesapeake & Potomac Tel. Co. (D. of C. P. U. C. 1920), P. U. R. 1920D, 614. Here the special financing in aid of the subsidiary cost the American Company $1,200,000, in three years, which as the Commission points out, represents the license payment for a period of almost eight years.

In re New England Tel. & Tel. Co. (N. H. P. S. C. 1926), P. U. R. 1926E, 186. The opinion shows that although "the credit of the New England Company has been impaired during the last two years (1925-1926) yet it has been able to borrow all the money it needed," from the American Company, at the time of this case the figure being $40,869,000, on demand notes. "On January 1, 1925, the subsidiary (operating in all of New England states except Connecticut) owed the American Company $31,220,000 on demand notes and by July 1st of that year the figure had increased to $40,869,000."

In re Chesapeake & Potomac Tel. Co. (W. Va. P. S. C. 1920), P. U. R. 1921B, 97, 121:

> "It is further shown that the applicant * * * has been financed by the American Company, either directly or through its subsidiaries to the extent of over $5,000,000, at an annual interest rate of 6 per cent, payable in arrears; and but for the financial assistance thus received, applicant's interest rate upon this money would exceed by at least 2 per cent the rate it has been required to pay."

on such funds pending their use for loans to the Associated Companies, and its own annual interest and dividends paid to its investors on such funds. Appellee claimed at the hearing that such "net loss" was properly allocable to License Contract (R. III, 2411). Such "net loss" was part of the American Company's License Contract costs as presented in other jurisdictions (R. I, 1002). Apparently, however, Appellee does not assign error to the District Court's finding against its claim and does not complain in this Court in respect thereto, although it does complain of its other findings on License Contract.

But the record shows that the cost to the American Company of Temporary Financing and of holding funds available therefor in the case of other Associated Companies absorbed a large portion of the license payments received from such other Associated Companies, including those involved in the cases cited by Appellee in support of its position that Appellee's entire license payment should have been allowed each year of the litigation. To illustrate:

These costs absorbed from 27% to 34% of the license payments of the years 1922 to 1926, inclusive, made by Pacific Telephone & Telegraph Company (R. VII, 4047, 4050e; *Pacific Tel. & Tel. Co.* v. *Whitcomb*, 12 Fed. (2d) 279 (1926)); from 20% to 26% of the license payments of Southern Bell Telephone Company for the years 1921 to 1923, inclusive (R. VII, 4047, 4050e; *Southern Bell Tel. & Tel. Co.* v. *Railroad Commission*, 5 Fed. (2d) 77 (1925)); from 26% to 32% of the license payments of Southwestern Bell Telephone Company for the years 1921 to 1923, inclusive (R. VII, 4048, 4050f; *Houston* v. *Southwestern Bell Tel. Co.*, 259 U. S. 318 (1922)); from 55% to 86% of the license payments of Indiana Bell Telephone Company for the years 1921 to 1924, inclusive (R. VII, 4042, 4050b; *Indiana Bell Tel. Company* v. *Public Service Comm.*, 300 Fed. 190 (1924)); from 41% to 52% of the license payments of Michigan Bell Telephone Company for the years 1922 to 1924, inclusive; and from 51% to 78% of the license payments of the same company for the years 1926 to 1930, inclusive (R. VII, 4043, 4050b; *City of Detroit* v. *Michigan R. R. Commision*, 209 Mich. 395 (1920); *Michigan Public Utilities Comm.* v. *Michigan State Tel. Co.*, 228 Mich. 658 (1925)).

5.

On the 1932 hearing, the records of the American Company, made available for the first time by direction of this Court of December 1, 1930, disclosed that the License Contract operations as claimed in other cases and in the instant case covered (a) the American Company's financing and management operations as Holding Company investor in the securities of the Associated Companies (Appellants' Brief, pp. 184, 174); (b) the Development and Research work covering the development of patents and inventions to be used, for valuable consideration to the American Company, in the non-telephone field and in the telephone communication field outside the Bell System (Appellants' Brief, pp. 95-6); (c) appropriations to Reserve for Contingencies (Appellants' Brief, p. 194).

III.

Appellee's Claim.

(Brief, pp. 90-1; 14.)

In its actual operation, the License Contract yielded a substantial profit to the American Company in the years 1923 to 1928, inclusive, and a substantial loss in 1929 to 1931, inclusive. The American Company has sought to have the license payments kept fair, and for that purpose voluntarily reduced the rate of license payments from 4½% to 4% in 1926, to 2% in 1928, to 1½% in 1929. All of the reductions have been voluntary and without consideration to the American Company, except for the discontinuance of the furnishing of the instruments. All of the reductions were made after the 4½% rate had been sustained in cases in this Court and in other courts. Considering the results for the entire nine-year period, 1923 to 1931, inclusive, as a single unit of time, the license payments have been fair and should have been allowed for each year of that period.

Appellants' Answer.

Appellee misstates the facts and the law.

The consideration that the American Company reduced the license payments does not prove that such payments, before or after each cut, were fair, because:

1:

1926 REDUCTION.

The 1926 reduction was neither a charitable act on the part of the American Company, nor was it made without consideration, as claimed by Appellee.

For the three years 1923 to 1925, inclusive, Appellee's license payments exceeded by $1,736,101 the amounts found by the District Court as necessary to cover the American Company's expenses and return on investment applicable to License Contract, Holding Company and Licensing of Inventions operations (Appellants' Brief, p. 84). The reduction from the 4½% to the 4% rate resulted in a gross saving to Appellee of $230,696 in 1926, and of $247,610 in 1927 (Appellants' Brief, p. 84). But as part of the consideration therefor, Appellee was required to pay the instrument taxes which theretofore the American Company had paid (O.R. IV, 1216). Such taxes were $63,404 for 1926 and $67,803 for 1927 (R. IV, 2934, 2736-8 ratios; R. IX, 5018A). By such amounts, therefore, must the saving be reduced. But in 1926 and in 1927 the license payments still exceeded by $990,715 the allowances by the District Court, which allowances in turn were excessive (Appellants' Brief, p. 84). It is clear, therefore, that the 1926 reduction did not refund to Appellee any portion of the excess license payments of the previous years, nor did it serve to make fair the 1926 and 1927 license payments.

Appellants submit the following facts from the American Company's actual experience, as the explanation and significance of the 1926 reduction; and as conclusive proof that Appellee's claim in respect thereto is a figment of its imagination.

In 1921 the American Company increased the dividend rate on its own stock from 8% to 9% (O.R. VII, 2617). From 1921 to the end of 1925, the American Company did not receive in dividends and interest from the Associated Companies, other than Appellee, sufficient to cover its own annual cost of funds (interest, amortization, and dividend requirements) applicable to its investment in them, even on the basis that all of its expenses applicable to its Holding Company operations as such investor were absorbed by their license contract payments. The deficit ranged from $1,526,829 to $4,583,881 per year.* During that period, therefore, their license payments, in addition to covering such Holding Company expenses, provided a substantial portion of the funds required to meet the American Company's annual interest and dividend requirements, and to carry to surplus the necessary margins in conformity with the American Company's policy towards its own investors (*Smith* v. *Illinois Bell Tel. Co.*, 282 U. S. 133, at 161, 151; R. VII, 4059-60A; R. VI, 4008A-G). Beginning with 1926, the interest and dividend receipts from the Associated Companies were sufficient not only to cover the American Company's annual costs applicable thereto, but to carry to surplus substantial margins. The amount carried to surplus in 1926 was $3,360,687 (R. VI, 4030R).

This change in the investment position of the American Company from 1921 to 1926 was due to three factors whose continued effect to maintain and improve such position was clearly established and assured by 1926. These were: (1) the complete elimination of non-dividend paying Associated Companies and the continued increase in the number of Associated Companies earning and paying high dividend rates** (*Public Utilities Comm.* v. *New England Tel. & Tel.*

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*The yearly deficits were 1921, $3,859,489; 1922, $4,583,881; 1923, $3,316,226; 1924, $1,526,829; 1925, $1,840,664 (R. VI, 4030 M. R.).

**In 1921 no dividends were paid by three Associated Companies; 4% was paid by one, 6% by two, 7% by one, 7¼% by one, and 8% by seven companies. By 1926 every Associated Company was on a dividend paying basis: 4% was paid by one, 6% by three, 7% by one, 7¼% by one and 8% by thirteen companies (Appendix to Appellants' Brief, p. 136). The result of these changes was that in 1921 the American Company's dividends from Associated Companies represented 6.37% on its book investment in their stocks; in 1926 the return was 7.35% (R. VI, 4027).

Co., P. U. R. 1926C, 207 at 257-60; Re New England Tel. & Tel. Co., P. U. R. 1926B, 247 at 255); (2) the substantial decrease in the ratio of the American Company's credit security investments in the Associated Companies on which it was receiving a uniform 5.88% return to its higher yielding stock investments in them*; and (3) the definite decline in the American Company's own rate of annual charges (interest and dividend requirements).**

Under the circumstances the American Company in 1926 reduced the license payment to eliminate therefrom the portion thereof which theretofore it had used to supply a portion of the dividend and interest requirements applicable to its investment in the Associated Companies. Similarly, the American Company, in 1926, made its first reduction in long distance rates (R. V, 3317). The reduced license payments, however, continued to cover, as before, all of the American Company's expenses of operating its General Department business (excluding Long Lines) covering License Contract operations, Holding Company operations and Licensing of Inventions operations (R. VI, 4090C-E). It was on such basis that the American Company's annual report to its stockholders in 1926, quoted by this Court in its Opinion of December 1,

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*The American Company's stock investment in the Associated Companies increased from 73.8% in 1921 to 85.4% in 1926 of its combined stock and loan investment (R. VI, 4033). In 1921 its stock investment was $539,000,000 (R. VI, 4027) and loans $191,000,000 (R. VI, 4030F); in 1926 its stock investment had increased to $1,126,000,000 (R. VI, 4027), but its loans averaged only $192,000,000 (R. VI, 4030H). The American Company itself controlled this factor. The return to the American Company on its combined investment in 1921 was 6.16% and in 1926 7.11% (R. VI, 4030S, T).

**The American Company's rate of annual charges were. (R. VI, 4010-5):

1921	6.68%	1924	6.85%
1922	6.90	1925	6.93
1923	6.87	1926	6.83

1930, stated that "the purpose of these contracts is not to make money for the American Company . . . . The revenue of $29,850,303 received under the contracts during 1926 only slightly more than offsets the estimated cost of over $29,250,000" (*Smith* v. *Illinois Bell Tel. Co.*, 282 U. S. 133 at 156). Such costs correspond to those presented for that year by the American Company at the 1932 hearing (R. IV, 2955). Such costs cover, in addition to the items found by the District Court to be within the License Contract, also the items admitted by Appellee, or found by the District Court, or claimed by Appellants as not properly within its scope—*i. e.*, net loss of Temporary Financing (*supra*, 32); of Holding Funds therefor (*supra*, 35); corporation, franchise, excise and income taxes (*infra*, 52, 54); expenses of direct distribution of the American Company's new issues of securities and of servicing outstanding securities (Appellants' Brief, p. 174); the expenses of operation of ten departments and of Development and Research applicable to its Holding Company and Licensing of Inventions operations (Appellants' Brief, pp. 184, 95); Appropriations to Reserve for Contingencies (Appellants' Brief, p. 194).

Appellee's claim covering the 1926 reduction bears no relation to the realities of the situation.

2.

1928 AND 1929 REDUCTIONS.

Appellee's claim that the reduction from 4% to 2% in 1928 was in consideration of the discontinuance of furnishing the telephone instruments, states a half-truth and presents a distorted picture of that transaction. It fails to give effect to the profit and advantages which the American Company derived from the sale of the telephone instruments and from the failure to give to the Associated Companies the benefit of the low cost of new money resulting from the superior investment position of the Bell System. The facts are:

The rental arrangement for telephone instruments as part of the License Contract was maintained from 1879 to 1927 because of three considerations (a) the obligations of the Western Union Contract to 1896 (Appellants' Brief, p. 98); (b) the necessity for the control by the American Company of the development of the instruments to insure satisfactory transmission, both local and toll, as an effective means of meeting competition during the period 1896 to 1908, when the telephone field was competitive (O.R. VII, 2395 (8), 2417 (5, 6), 2418 (9, 10); and (c) with the extension of public utility regulation beginning with 1908, the license payment came under close scrutiny (*San Jose v. Pacific Tel. & Tel. Co.*, Calif. R. R. Comm. Dec. No. 1008, Oct. 9, 1914; General Investigation of Telephone Rates in Vermont, Vt. P. S. Comm. No. 340, March 14, 1914; Re Southwestern Tel. & Tel. Co., Mo. P. S. C. P. U. R. 1915E, 1087); therein the American Company derived a distinct advantage through the rental arrangement in sustaining the license payment to cover rental plus other services. Such advantage came from the fact that beginning with 1908 Western sold telephone instruments in the open market at a higher price than the special price paid by the American Company (R. V, 3562). By using the higher prices as a basis to compute the annual charges which the Associated Companies would have to assume if they owned the instruments, it was possible to make a more favorable showing for the license payment, particularly after the War, which helped to sustain the entire payment (*Birming-*

ham v. *Southern Bell Tel. & Tel.*, P. U. R. 1919B, 791; Re Pacific Tel. & Tel. Co., P. U. R. 1919D, 345; *Buck* v. *New York Tel. Co.*, P. U. R. 1921F, *supra*, 31).

By 1928 two considerations required that the rental arrangement be discontinued:

(a) By the end of 1927 the American Company had definitely lost the advantage of using the higher open market prices of telephone instruments to inflate the fair rental charges because:

(1) Western had transferred its non-Bell retail sales to Graybar in 1926 and had itself withdrawn from the field of retail sales (Appellants' Brief, p. 121).

(2) Courts and Commissions were insisting that proof of the reasonableness of the license payments be predicated upon the facts of the American Company's actual experience and not upon the assumed experience which the Associated Companies had theretofore used and which had been sustained (*Re Chesapeake & Potomac Tel. Co.*, P. U. R. 1926E, 481 at 601-2 (1926); *Re New England Tel. & Tel. Co.*, P. U. R. 1926E, 186, at 196-9 (1926); *Re Rates Wisconsin Tel. Co.*, P. U. R. 1927A, 581 at 591 (1926); *Chesapeake & Potomac Telephone Co.* v. *Whitman*, 3 Fed. (2d) 938, at 957-8 (1925); *Chesapeake & Potomac Tel. Co.* v. *Commonwealth*, 147 Va. 43 at 78-9 (1927)).

(3) Western's price-reducing policy foreshadowed the risk that the current prices of the telephone instruments would be less than the book cost thereof, representing the American Company's investment therein (R. VI, 3762A-D); R. VIII, 4941-2.

(b) Between 1924 and 1927 the cradle set had been developed to a point where its use was commercially practicable. At least nine independent telephone companies were using telephone instruments of the cradle set type and were receiving from various Commissions authorizations to make a special surcharge for their use.* In the case of the Bell System, however, it was difficult for the Associated Companies to justify such a surcharge—such companies not being the owner of the instruments and not being able to show that they could not obtain from the American Company the new types of instruments under the License Contract without additional charge.

For the American Company to continue the rental arrangement of telephone instruments involved probable substantial losses in two respects:

(1) The original cost of cradle sets was higher (R. VI, 3762D) and the estimated depreciation and maintenance charges were higher than were those of the desk sets. (Re Proposed Rates for Handsets, 7 Ill. C. C. Rep. 607 at 609 (1928); *Re Wisconsin Telephone Company,* Wis. R. R. Comm. Order, February 23, 1928.)

(2) The expected popularity of the cradle sets presaged substantial retirements of the older type of telephone instruments, with resultant charges against the 48.9% depreciation reserve which the American Company had accumulated for this account. Indeed Appellee's position before the Illinois Commerce Commission on its petition for

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*Re Kewanee Home Tel. Co.—Ill. Co. Comm. Order, Oct. 11, 1922; Re Reedley Tel. Co.—Calif. R. R. Comm., Order Sept. 19, 1923; Re Mitchell Tel. Co.—Ind. P. S. C., Order April 30, 1924; Re Twin City Tel. Co.—Wis. R. R. Comm., Order June 20, 1924; Re Union City Tel. Co.—Ind. P. S. Comm., Order Aug. 21, 1925; Pet. of Roselawn Tel. Exch.—Ind. P. S. Comm., Order Aug. 21, 1925; Pet. of United Tel. Co.—Kan. P. S. Comm., Order June 8, 1926; Re So. Ind. Tel. Co.—Ind. P. S. Comm., Order Sept. 17, 1926; Re Manteca Tel. Co.—Cal. R. R. Comm., Order Nov. 29 1926.

authorization to establish a surcharge was based, in part, on the contention that:—

> "if no additional charge be made for this particular class of instrument the result would be that a large number of subscribers would immediately request the installation of the telephone handsets and as a result the present apparatus of the company which is still serviceable would be rendered useless" (Re Proposed Charge for Handsets, 7 Ill. C. C. R. 607, at 608 (1928)).

Under these circumstances the advantage was clearly in favor of transferring the ownership of the instruments to the Associated Companies, thereby placing upon them the burden of protecting themselves by justifying the surcharge before the commissions, and enabling them to make a showing on the basis of ownership. In such showing they were successful (Re Proposed Rates for Handsets, 7 Ill. C. C. Rep. 607 (1928); Re Wisconsin Tel. Co., Wis. R. R. Comm. Order, February 23, 1928.)

On December 31, 1927, the Associated Companies were required to purchase from the American Company the second-hand telephone instruments theretofore leased to them at a price which covered the American Company's cost thereof less 18.03% of cost (R. VI, 4024), whereas the American Company had already been reimbursed through the depreciation expense charges covered by rentals, 48.9% thereof (R. VI, 4024). The profit to the American Company from such sale was $14,395,799, of which over $726,540 was applicable to the telephone instruments used in the Chicago intrastate telephone business (Appellants' Brief, pp. 231-2). Such profit offsets the total difference between the District Court allowance and the license payments actually made for the years 1928 to 1931, inclusive (Appellants' Brief, p. 85).

Without consideration of the profit to the American Company on the sale of the instruments and the burden on the telephone subscribers resulting therefrom, the picture of the 1928 reduction is distorted.

Such distortion is produced also by Appellee's failure to point out the following facts:

The three factors already mentioned (*supra,* 39) which had eliminated by 1926 the deficiency in the returns from the Associated Companies to meet the American Company's annual charges on its investment in them, operated with accelerated force during the period beginning with 1928 to the advantage of the American Company. As a result of the vigorous operation of these factors* during this period, the American Company received from the Associated Companies beginning with 1928 in interest and dividends sufficient to cover its own annual charges applicable thereto, and to carry to surplus $12,129,360, $12,037,809 and $15,998,351, respectively, for the years 1928 to 1930, inclusive** (R. VI, 4030R).

The considerations involved in the sale of the telephone instruments, together with the failure of the American Company to give to the Associated Companies the benefits arising from the superior investment position of the Bell System, for which they were as much responsible as the American Company itself, more than justified the reductions in the license payments in 1928 and 1929. It made three reductions in the long distance rates during the same period (R. V, 3317; O.R. VII, 2680; R. V, 3328).

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*In 1928 every Associated Company was on a dividend paying basis; 6% was paid by one; 7% by three; 8% by fifteen, and 9% by one. In 1929 no dividends were paid by one Associated Company; 6% was paid by one; 7% by two; 8% by sixteen, and 9% by one. In 1930 every Associated Company was again on a dividend paying basis; 4% was paid by one; 5% by one; 6¼% by one; 7% by one; 8% by sixteen, and 9% by one (Appendix to Appellants' Brief, p. 136). The American Company's dividends from Associated Companies represented 7.39%, 7.48%, 7.48% and 7.26%, respectively, on its book investment in their stocks during the years 1927 to 1930, inclusive (R. VI 4027). The American Company's stock investment in the Associated Companies increased from 73.8% in 1921 and ~~85.4% in 1926 to 89.3% in~~ 1928 and to 86.4% in 1930 of its total investments in such years (R. VI, 4033). The American Company's annual charges (dividend and interest requirements) were in 1928, 6.55%, in 1929, 6.53%, and in 1930; 6.25% (R. VI, 4017-9).

**Figures for 1931 unavailable.

IV.

Appellee's Claims on Taxes.

(Appellee's Brief, p. 82.)

The District Court's findings of the fair share of the American Company's costs allocable to Appellee's Chicago intrastate business, should have included therein the instrument, franchise, excise, capital stock and federal income taxes of the American Company, which it failed to include.

A.

Appellee's Claim Covering Instrument Taxes.

(Appellee's Brief, p. 84)

The District Court's allowance for fair rental of telephone instruments for each of the years 1923 to 1925 failed to cover taxes on instruments paid by Appellee and reimbursed by the American Company in amounts ranging from $42,000 to $65,000 per year.

Appellants' Answer.

Appellee failed to advise this Court that the District Court not only erred in this respect, but committed other errors in its computations of fair rental, which errors were all in favor of inflating the rentals by amounts far in excess of the taxes omitted by the District Court and complained of by Appellee. The District Court allowed as a fair return 6% on the current cost of new telephone instruments less 8% deduction for depreciation in valuation. The District Court's allowances erred in three respects, and were inflated thereby from $95,000 to $116,000 per year.

(1) DEPRECIATION IN VALUATION.

The depreciation in valuation deduction was erroneous.

The American Company used the straight line method of computing depreciation expense charges on telephone instruments (R. I, 936). The depreciation reserve accumulated therefrom represented more than 47% of the book cost of instruments in service during the period 1923 to 1927, inclusive (Appendix, *infra,* 101). By adjusting the reserve to give effect to the District Court's allowance of 6% as a proper depreciation expense charge, instead of 7% as charged by the American Company, the reserve would still represent more than 43% of such book cost (Appendix, *infra,* 101). On the basis that the fair value new is measured by the *current cost* of telephone instruments, the percentage thereof which should have been deducted in arriving at the base on which a return should be computed was 43% and not 8% (Appellants' Brief, p. 361). The inflation of the allowance (based on a six per cent return) by this error alone ranged from $57,000 to $67,000 per year (Appendix, *infra,* 101).

(2) CURRENT COST AS RATE BASE NEW.

The District Court should have valued the instruments new at book cost. The current cost of telephone instruments used by the District Court to measure fair value new exceeded the corresponding book cost thereof by at least $383,692, or over 14% (Appendix, *infra*, 102). Such instruments were purchased from Western under a special arrangement (Appellants' Brief, p. 100). The per cent return to Western from its instrument business done on the current prices of 1923 to 1927, inclusive, compares as follows with that derived from Bell business as found by the District Court both related to the applicable undepreciated rate base as determined by the District Court:

	Instrument Business (R. VI, 3817; R. VIII, 4632A)	Bell Business (Appendix to Appellants' Brief, p. 84)
1923	11.3%	4.8%
1924	14.2	6.9
1925	8.5	10.2
1926	13.6	8.3
1927	10.6	10.4

As the per cent return to Western from Bell business was exorbitant for the years 1923 to 1927, inclusive (Appellants' Brief, p. 304), the per cent return from current sales of telephone instruments was clearly excessive—and to that extent are the District Court's findings on depreciation expense applicable to instruments and on fair return on investment thereon excessive.

That Western's current prices in any one year cannot be used to convert book costs of purchases into fair value new thereof, is clear from the discussion of Rate Base Value in Appellants' Brief (Appellants' Brief, pp. 343-7). The inflation of the rental through the use of fair value based on current cost instead of on book cost ranged from $23,000 to $32,000 per year (Appendix, *infra*, 102).

(3) Return.

The District Court found that the American Company "is entitled to . . . . an annual return of 6% of the reasonable value of" the instruments. The dollar return allowed by the Court ranged from $158,000 to $197,000 in the years 1923 to 1927 (Appendix to Appellants' Brief, p. 54). However, this dollar return was much more than 6% when related to the fair value of the instruments as claimed by Appellee, as follows (Appendix, *infra*, 101):

	Return Allowed by District Court	Six per cent return	Excess of Court's allowance over 6%
1923	$158,069	$133,215	$24,854
1924	183,964	151,960	32,004
1925	197,531	164,836	32,695
1926	196,775	170,714	26,061
1927	177,148	169,782	7,366

The District Court's error arose from its use of Appellee's requested finding Number 42 (R. III, 2411). Such finding combined maintenance costs; 7% reproduction cost new of the instruments; and an 8% return related to the same reproduction cost new less 8% existing depreciation. From this combined request the Court attempted to eliminate maintenance and depreciation expense charges in order to determine the amount claimed as return. The Court deducted the actual maintenance (R. III, 2408) and the depreciation expense charges related to book cost (R. III, 2409) and assumed that the remainder represented Appellee's claim of an 8% return. Since the Court intended to allow a 6% return, it determined its dollar figure of return by taking 75% of this remainder. In fact, such remainder represented not only Appellee's claim for return but also included the difference between Appellee's claim for depreciation expense charges related to reproduction cost new and the depreciation expense charges as charged on the American Company's books. The actual rate of return thus allowed by the District Court ranged from 6.26% to 7.26% (Appendix, *infra*, 105).

The total inflation of rentals through the District Court's errors ranged from $86,000 to $116,000 per year (Appendix, *infra*, 102). By reducing the inflation by the amount of taxes which the District Court omitted, the inflation still ranges from $55,000 to $105,000 per year (Appendix, *infra*, 102).

On the basis of the District Court's findings, the return to the American Company on its investment (book cost less the amount of depreciation reserve account) in instruments leased to Appellee was (Appendix, *infra*, 99):

1923	15.27%
1924	15.56
1925	15.12
1926	13.73
1927	12.58

Giving effect to the instrument taxes omitted by the District Court, the adjusted return to the American Company would still be excessive, as follows (Appendix, *infra*, 99):

1923	11.40%
1924	11.26
1925	10.58
1926	13.62
1927	12.58

B.

Appellee's Claim Covering Franchise, Excise and Capital Stock Taxes.

(Appellee's Brief, p. 86)

The American Company paid each year New York Excise and Franchise taxes, federal capital stock tax (to June 30, 1926) and stamp and miscellaneous taxes. The District Court found that such taxes were not covered by the License Contract and disallowed them as part of the costs thereof. The District Court stated the amounts allocable to Appellee if the taxes paid "were distributed in accordance with the percentages on which the actual costs to the American Company of its twelve departments were distributed" (R. III, 2511). Such amounts were those requested by Appellee to be found (R. III, 2413), and ranged from $30,100 to $71,800 per year (Appendix, *infra*, 105).

Appellee claimed that the taxes should have been allowed as the American Company could not have carried on its business as a corporation and performed the License Contract services if it had no corporate existence. A fair proportion of this tax was obviously a cost of furnishing services to Appellee under the License Contract.

Appellants' Answer.

Appellee failed to advise this Court that it allocated to the American Company's License Contract operations more than 86% each year of the aggregate of these taxes applicable to the American Company's total operations, excluding Long Lines, and less than 7% to the American Company's operations as a Holding Company investor in the Associated and other companies, and as a Licensor of Inventions (R. IV, 2933-7). Although the American Company owned stocks ranging from $756,463,932 (R. V, 3307) to $1,939,270,421 (R. VIII, 4424) per year, and other securities from $178,147,274 (R. V, 3307) to $316,577,487 (R. VIII, 4424) per year; received dividends and interest payments and royalties ranging from $67,000,000 to $178,000,000 per year (R. VI, 4008D-M); distributed interest and dividends ranging from $77,000,000 to $195,000,000 per year (R. VI, 4008D-M), the total of taxes allocated to it as a Holding Company ranged from $29,000 to $130,000 per year (R. IV, 2933-7). But the License Contract operations were charged with taxes ranging from $518,000 to $1,190,000 per year (R. IV, 2933-7), although the investment in telephone instruments ranged from $16,300,000 to $22,400,000 and the other assets applicable to License Contract operations at no time exceeded $15,500,000 (Appellants' Brief, pp. 174-5); the revenues ranged from $14,455,000 (R. VIII, 4799) to $32,454,000 (O.R. VI, 2292) per year, and the expenses from $23,000,000 to $35,200,000 per year (R. III, 2415). Of these expenses, from $1,300,000 to $6,300,000 per year in the period 1925 to 1931, inclusive, were incurred by Bell Telephone Laboratories, Inc., a separate corporation (R. IV, 2844S-W).

Obviously Appellee charged the License Contract operations with the expense allocable to Holding Company operations. The expenses of ten of the twelve departments were so allocated (Appellants' Brief, p. 184). Distributing the taxes between the Holding Company and License Contract operations would leave the portion allocable to the American Company's License Contract operations negligible. As Appellee's portion would be less than 6% of such negligible amount, the District Court's error in not allocating any part of these costs was so small in effect as not to be worthy of consideration herein.

C.

Appellee's Claim Covering Federal Income Tax.

(Appellee's Brief, p. 85)

The District Court did not allow as part of the License Contract costs any federal income tax on the profits claimed by the American Company on the License Contract. Such tax is clearly chargeable. The amounts thereof ranged from $102,000 to $121,000 for the years 1923 to 1927, inclusive, $28,000 in 1928 and $7,000 in 1931.

Appellants' Answer.

Appellants concede that Appellee is chargeable with the federal income tax on the difference between the license payment and the costs allocable thereto as found by the District Court. Appellee would be required to make such payment if the difference were refunded to Appellee. The tax so computed would be (Appellants' Brief, p. 84; Appellee's [illegible], p. 86):

	Excess of Payments over District Court Allowance.	Income Tax	
		Rate.	Amount.
[illegible]	$573,819	12.5%	$71,727
1924	631,049	12.5	78,881
1925	531,233	13	69,060
1926	432,704	13.5	58,415
1927	558,011	13.5	75,331
1928	31,553	12	3,786

Such amounts are, however, offset by the inflation in the telephone instrument rental above stated (*supra,* 48, 51).

Such amounts, however, are but a portion of the amounts claimed proper by Appellee and the District Court. On the basis of their allocation, the American Company as a Holding Company and Licensor of Inventions, had taxable income for only one year—1927—of the entire period 1923 to 1931, inclusive (R. IV, 2933-7).

APPELLEE'S CLAIMS COVERING FAIR RETURN.

I.

Appellee's Claim.

(Appellee's Brief, p. 106)

The District Court applied the "comparative return" test of compensatory rates. By so doing it gave no consideration to the factors which should be considered, as contemplated by the "attraction of capital and maintenance of credit" test set forth in the *Bluefield* case.

Appellants' Answers.

A.

Appellee's claim disregards the fact that it financed itself in 1930 admittedly in excess of its current capital requirements; such over-financing carried through the years 1931 and 1932 and made any further financing unnecessary.

In 1928 Appellee adopted a program of financing its estimated requirements for 1929 and 1930. It offered to its stockholders the right to subscribe for $40,000,000 par value of stock, half to be paid in 1929, 25% in January 1930, and 25% in July, 1930.

In January, 1930, the American Company paid its 25% subscription by cancelling $2,200,000 owing from Appellee to it and by crediting as a loan from Appellee $7,725,825 (R. I, 963; R. VIII, 4786). On the loan Appellee received 5.88%; on its stock Appellee paid 8% (R. VIII, 4461). No part of this loan was drawn down till May, 1930, and on July 1, 1930, the American Company still owed Appellee on account thereof $2,300,000 (R. VIII, 4786).

By July, 1930, it was apparent that the depression rendered the balance of the financing unnecessary (R. I, 104[illegible]). Nevertheless such financing was not deferred because, as Mr. Heiss, Comptroller of the American Company, testified, it would have been bad business for Appellee to have asked the American Company to defer the issue of stock; a corporation is presumed to go through with an offer of stock which it made to its stockholders (R. I, 1041). And this even though the License Contract provided that Appellee shall have the right to demand from the American Company "financial support and assistance in the premises as will tend to serve the best interests of both companies" (R. I, 963).

On July 1, 1930, the American Company again paid for its stock subscription by crediting $7,946,360 as a loan, no part of which was drawn down by December 31, 1930 (R. VIII, 4787). On the contrary, the American Company owed Appellee on that day $9,172,000 (Idem.). During 1931 Appellee deposited with the American Company additional surplus funds so that by March, 1931, the American Company owed Appellee over $15,000,000. On December 30, 1931, there was still owing to Appellee $9,272,000, or more than the amount of the July 1, 1930 subscription credited as a loan on the books of the American Company. On December 31, 1931, the loan was reduced to $6,272,000, which amount was carried over to 1932 (R. VIII, 4789). How much of such loan was drawn down in 1932 or whether it was increased as in 1931, the record does not show*. But the record does show that the interest on such loan was not considered as part of Appellee's earnings in determining its return (R. II, 1260; R. IV, 2742).

From these facts it is clear that Appellee's claim based on any necessity to attract capital is absurd. That it should require the application of a test of compensatory rates which has no relation to the realities of its situation (*Kankakee Water Company* v. *Gilbert* (decided January 6, 1933, District Court, Northern District of Illinois, not yet reported, quoted *in extenso*, Appendix, *infra*, 110)), is consistent with its claims on License Contract (*supra*, 26) and on Depreciation in Valuation (*infra*, 80).

B.

For the period 1923 to 1930, inclusive, Appellee's claim for a compensatory rate is not predicated on the "attraction of capital" test, but on the "comparative return" test (Appellants' Brief, p. 451). On the attraction of capital test, the District Court's findings of required minimum return are fantastic (Appellants' Brief, p. 499); the recorded return and the return from the attacked rates are clearly compensatory. Appellee's claim on Fair Return depends on the principle that it is entitled to have applied the comparative return, or the attraction of capital test of compensatory rates, whichever is more favorable to it!

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*According to Moody's, no new stock or bonds were issued in 1932. That the loans would be increased is to be expected from the consideration that on account of the depression the current depreciation expense moneys which are intended to provide for future retirement losses will not be used for additions in conformity with Appellee's policy (O.R. I, 27; R. II, 1191).

II.

A.

Appellee's Claim.

(Brief, p. 107)

"It is impossible for us to see" how the 6½% and 5½% returns will provide the return to stockholders and the margin for surplus to which they are entitled for 1931 and 1932 as such return in each case is less than 1% in excess of Appellee's interest and amortization charges on outstanding bonds.

Appellants' Answer.

The vacuity of Appellee's claim arises from its disregard of its own experience and of the relation of the rate base value as found by the District Court to its outstanding capitalization. Such experience shows that for 1931 a 6½% return on the rate base value found by the District Court would enable Appellee to pay interest and amortization on money borrowed, and to pay cash dividends of 8% upon its capital stock allocable to its Chicago intrastate business, and to carry to surplus $2,740,000 (Appellants' Brief, 503). Such margin is 39% in excess of its dividend requirements. Such a return would yield to Appellee's stockholders 11.15% on its outstanding capital stock, and 9.65% on its outstanding capital and surplus for 1931 (*Idem*, 502).

True it is, as Appellee pointed out, that the 6½% return is less than 1% in excess of Appellee's annual charges on its bonds (5.53%). But it is equally true, as Appellee *did not* point out, that the rate base to which the 6½% return is applied, as found by the District Court, exceeds by $44,000,000 Appellee's outstanding stock and surplus, and by $58,000,000 Appellee's outstanding stock* after deducting in each case the portion of the rate base value applicable to Appellee's outstanding funded debt (Appendix, *infra*, 106). 6½% on capital and surplus provides 7.51% on outstanding stock; 6½% on the excess of Appellants' rate base value over capitalization (Appendix, *infra*, 108) provides 1.78% on outstanding stock; 6½% on the additional rate base value arising from reproduction and going values allowed by the District Court above Appellants' contentions, and from its failure to make the proper deduction for depreciation in valuation, adds 1.52% to such return; 6½% on the rate base value applicable to funded debt provides the 5.53% return on the funded debt plus a margin available for the stock equal to .34% thereon (Appendix, *infra*, 107). Because of these facts does a 6½% return provide the 8% cash dividend on stock and 3.15% margin for surplus.

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*The issue of Appellee's securities for additions and betterments has been subject to state commission regulation since January 1, 1914 (Laws of Illinois, 1913, pp. 459, 470-1). From that date to December 31, 1931, the total funds obtained from the issue of securities were covered in each year by recorded investment in fixed capital, after allowing for plant acquired from surplus and reserve funds (R. VII, 4228A-B).

The vacuity of Appellee's claim is significant in view of the fact that its recorded rate of return under the existing rates was 4.81% for 1931 before giving effect to the District Court's disallowance of $1,204,000 maintenance and depreciation expense charges, and was 5.5% after giving effect thereto, as found by the District Court (Appendix to Appellants' Brief, pp. 118, 128). From the 4.81% Appellee earned all but $275,894 of its $6,963,000 dividend requirements to pay an 8% dividend; from the 5.50% Appellee would have earned such full dividend requirements and would have carried to surplus $929,000 in addition thereto. But such return in each case would have been increased by at least $300,000, had Appellee included as part of its net income the interest received from the American Company on the proceeds of the excess amount of capital stock sold in 1930 (*supra,* 57). Had Appellants excluded such excess capitalization as not being used or useful in the public service, as it did not include the interest earnings therefrom, the dividends would have been earned in each case and substantial surplus accumulations would have been provided.

Appellants direct the attention of this Court to the fact that in their Brief on Appeal they showed the returns to Appellee from the recorded income, from the attacked rates, and the required minimum return as found by the District Court in each case on the basis of the outstanding capitalization in 1930, 1931 and 1932, without giving effect to the earnings on the excess capitalization. (Appellants' Brief, pp. 456, 479, 482, 485, 492, 494, 495, 502). To that extent is such return in each case understated in the discussions therein.

On the assumption that Appellee had the same capitalization in 1932 as in 1931 the 5½% return related to the rate base value found by the District Court would have enabled Appellee to pay an 8% dividend from current earnings and to add to surplus $260,000 (Appendix, *infra,* 107). Such return would have been increased by the amount of the interest on the funds derived from the excess capitalization which Appellee received but which are not included in its showings on return. Such a return would have exceeded the estimated recorded return by $2,354,000; but Appellee's credit securities in 1932 retained their comparative superior stability in relation to credit securities of other companies (Appellants' Brief, p. 486). Appellee made no showing that any other utility earned more than 8% in 1931 and 1932, or that such earnings were guaranteed under the Constitution.

B.

Appellee's Claim.

(Appellee's Brief, p. 106)

Corresponding to the general decline in corporate earnings in 1931 and 1932, of which the District Court took judicial notice was the "more notorious and greater decline in the market price of corporate securities," of which the District Court failed to take judicial notice. It would have been difficult if not impossible to have floated Appellee's bonds at all in 1931; certainly on a 6½% return, equity capital could not have been attracted in 1931 and on a 5½% return could not have been attracted in 1932.

Appellants' Answers.

I.

For the year 1931, the "notorious decline in market prices of corporate securities" had no application to Appellee's securities, or to securities of the same investment rating as those of Appellee. The yield on resale price in 1931 on Appellee's bonds was 4.76%; such yield was .54% lower than the yield on their original offering price in 1923. (R. VII, 4336a). The investor who had purchased Appellee's bonds on their original public offering, or in the years 1923 to 1926, inclusive, and even in the year 1929, could have resold his investment in 1931 at a substantial profit ranging from $91.87 to $10.63 on every $1,000 of Appellee's bonds (Appellants' Brief, p. 484; R. VII, 4336a). The average yield on resale price on bonds of the same investment rating in 1931 as Appellee's (AAA), was lower in 1931 than was their average yield in six of the eight years 1923 to 1930, inclusive (Appellants' Brief, p. 516; Appendix to Appellants' Brief, p. 148). The average yield on resale price of stock in 1931 behind AAA bonds of utilities was 4.97%; such yield was 1.72% higher than the lowest yield, and 1.26% lower than the highest yield on resale price of such stocks during the entire period 1923 to 1930 (R. VII, 4219-21).

Appellee's claim covering the notorious decline in market prices of corporate securities has application, if at all, to lower grade classes of securities in none of which are to be found Bell System securities (Appellants' Brief, pp. 475-6, 480-1, 483, 517). Thus ~~the~~ average yield on resale price in 1931 of A bonds was 6.08%, of BAA bonds was

8.12%, and of BA bonds 11.48% (R. VII, 4213-4). Similarly the average yield on resale price in 1931 of stock behind low grade bonds was: 6.95%, for stock behind A bonds; 8.46%, for stock behind BAA bonds; and 14.36% for stock behind BA bonds (R. VII, 4221, 4218D, Appendix to Appellants' Brief, p. 149).

2.

Appellee's claim that the cost of credit money to Appellee and to other utilities was higher in 1931 than it was in previous years disregards the undisputed facts in the record. No Bell System bond issues were offered in 1931. Appellants direct attention to the financing record in 1931 of AAA bonds of other utilities, such bonds corresponding in investment rating to those of Appellee (Appellants' Brief, pp. 517-8).

Such record shows that for all public utilities which issued AAA bonds in years prior to 1931 and in 1931 the cost of money on the 1931 issue was lower than that of the previous issues:*

Year of Issue	1923	1924	1925	1926	1927	1928	1929	1930	1931
Comm. Edison Co.	5.77%	....	....	5.12%	4.88%	....	....	4.82%	4.42%
Consol. Gas, Elec., Lt. & Power	....	....	5.15%	5.15%	....	....	4.93%	4.75%	4.37%
Public Serv. Elec. & Gas Co.	....	....	....	....	4.78% 5.38%	....	....	4.97%	4.51%
Buffalo Gen. Elec. Co.	....	....	....	5.27%	....	....	....	....	4.62%
Consol. Gas of N. Y.	....	....	5.93%	....	....	....	....	....	4.65%

Similarly the yield on public offering price in 1931 of AAA bonds of public utilities was lower than the yield on public offering price of AAA bonds of the same issuer, issued in prior years:*

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*Sources: R. VII, 4285-4291.

Year of Issue	1923	1924	1925	1926	1927	1928	1929	1930	1931
Comm. Edison Co.	5.52%	5.10%	....	4.95%	4.75%	....	....	4.65%	4.27%
West Penn Power	5.63% 5.83%	....	5.15%	4.97%	....	....	....	....	4.24%
Buffalo Gen'l Elec.	....	....	....	5.06%	....	....	....	....	4.45%
Philadelphia Elec.	5.60%	5.03%	....	....	4.58%	....	....	....	4.34%
Public Service El. & Gas	....	5.72%	....	....	4.61% 5.06%	....	....	4.75%	4.33%
Consol. Gas Co. of N. Y.	....	....	5.50%	....	....	....	....	....	4.42%
Consol. Gas, Lt. & Pr. of Baltimore	....	....	4.97%	4.91%	....	....	4.75%	4.58%	4.22%

The average cost of money in 1931 on AAA public utility bond issues was 4.52 per cent (R. VII, 4195). Such cost was lower than the average cost of money on AAA public utility bond issues offered in every one of the years 1923 to 1930, inclusive (R. VII, 4193-95; Appellants' Brief, p. 518). The average yield on public offering price of AAA public utility bond issues sold to the public in 1931 was 4.33 per cent (R. VII, 4255). Such yield was lower than the average yield on public offering price on AAA public utility bond issues sold to the public in each of the years 1923 to 1930, inclusive (R. VII, 4255; Appendix to Appellants' Brief, p. 146).

3.

Appellee's claim that credit money was more difficult to obtain in 1931 than in prior years has application, if at all, to the lower grade classes of securities, in none of which are to be found Bell System securities (*supra,* 62).

In 1931, $286,000,000 AAA bonds were offered to the public, which amount represented more than 74% of the entire amount of AAA bonds offered to the public in the period 1923 to 1930, inclusive. On the other hand, the amounts of the A, BAA and BA public utility bonds offered to the public in 1931 represented 9.7%, 1.7% and 1.1% respectively of the entire amount of correspondingly rated bonds offered to the public from 1923 to 1930, inclusive (R. VII, 4255).

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*Sources: R. VII, 4293-4318.

Of the total amount in dollars of bond issues offered by public utilities in 1931, 33% and 37% were represented by AAA and AA bond issues, respectively. In the years 1923 to 1930, inclusive, the proportion of AAA and AA bonds of the total amount of bonds offered in each such years ranged from 2% to 13% in the case of AAA bonds, and from 4% to 21% in the case of AA bonds. On the other hand, of the total amount of bonds offered in 1931, the amount of A, BAA and BA bonds represented 25%, 3% and 1% respectively, and the proportion of such low grade bonds of the total amount of bond issues offered in each of the years 1923 to 1930 ranged from 20% to 47% in the case of A bonds, from 10% to 38% in the case of the BAA bonds, and from 5% to 38% in the case of BA bonds (R. VII, 4192B).

The record closed on July 1, 1932, and contains no facts from which comparisons may be made for 1932 as were made for the years prior thereto. However, Moody's Manual of Public Utilities shows that in 1932 the relative stability of Bell System bonds, including Appellee's bonds, was the same as that for prior years; that whereas the yield on resale price on other utility bonds was increasing and reached a high of 17.73% in December of 1932, the Bell System bonds, including those of Appellee, were steadily decreasing and reached a low of 4.50% in December of 1932 (Appellants' Brief, p. 486).

Appellee's claim therefore depends on the principle that the required rate of return to Appellee should be determined on the basis of securities of a substantially inferior investment rating.

III.

Appellee's Claim.

(Appellee's Brief, p. 109.)

The required minimum return for each of the years 1923 to 1930, inclusive, as found by the District Court, was less than that which was shown proper by Appellee's witnesses and less than that allowed in other cases by this Court.

Appellants' Answers.

A.

The testimony of Appellee's witnesses consists of prognostications which are fatally defective, because:

1. The prognostications of Appellee's witnesses are contrary to Appellee's actual experience and to the comparable experience of the other Associated Companies (Appellants' Brief, pp. 450-1, 449, 463, 479, 482, 485).

2. The prognostications are based on five assumptions which have no application to Appellee's actual experience and to the comparable experience of the other Associated Companies (Appellants' Brief, pp. 450-1).

3. The prognostications are based on general unsupported statements in an important and intricate field and should not be accepted as adequate proof to sustain confiscation (Appellants' Brief, p. 507; R. I, 199-200).

B.

The returns of other cases cited by Appellee as having been sustained by Courts have no application to the instant case because:

(1) The total return to the investor in such other cases embraced only "cash income available for return" but in the instant case such return embraced such cash return plus advantages of additional profit created at Appellee's expense for the benefit of the American Company as its investor (Appellants' Brief, pp. 463-70, 480, 482-3, 486).

(2) The discussion in respect to 8 per cent return in three of the cases relied on by Appellee was academic.

In *Consolidated Gas Co.* v. *Prendergast* (6 Fed. (2d) 243 (1925)), the rates complained of were not sufficient, on any theory, to yield a return of more than 4.13 per cent for the years 1922-1924 (*Ibid*, at 273). The public conceded that a return lower than 6 per cent was confiscatory, and obviously there was no necessity for going into any 8 per cent rate (Record on appeal: *Ottinger* v. *Consolidated Gas Company*, 272 U. S. 576; Brief for Attorney General, pp. 109-117).

In *Kings County Lighting Co.* v. *Prendergast* (7 Fed. (2d) 192 (1925)), the revenues from the rates complained of, after absorbing high interest charges ranging from 5 per cent to 6½ per cent on bonds, and from 7 per cent to 8 per cent on preferred stock, would have left practically nothing for the common stock (*Ibid*, at 211, 209). The rate of return on the rate base found by the Master was 2.94 per cent, and on the rate base contended for by the public was less than 5 per cent (*Ibid*, at 205, 213). In this case as well, the public had conceded that a return lower than 6 per cent was confiscatory (Record on appeal: 272 U. S. 579; Brief for Attorney General, p. 59).

(3) There was no statement by the Court of any specified rate of return necessary to avoid confiscation in two of the cases relied on by Appellee.

In *Southwestern Bell Telephone Co.* v. *Fort Smith* (294 Fed. 102 (1923); 270 U. S. 627 (1926)), the main point determined was whether or not going value is a proper element to be considered in making rates for telephone service. The District Court held that it was. All that is said with regard to the rate of return is as follows:

> "By allowing a valuation of $685,605, which includes a going value of 10 per cent, and by reducing the annual depreciation to 4 per cent, the city shows a return of 6.29 per cent. Its engineer admits that a fair return would be 8 per cent" (*Ibid,* at 108).

There was no discussion as to whether the 8 per cent was to be an over-all rate, and it is quite clear that there was no evidence taken upon this point, since the City's own engineer admitted that a fair return would be 8 per cent.

In *Brush Electric Co.* v. *Galveston* (262 U. S. 443 (1923)), there was no question as to the confiscatory nature of a return of less than 8 per cent. This Court held that in the light of the conflicting evidence, an actual test of the rates should be made.

(4) The other cases relied on by Appellee are totally inapplicable to the facts in the record concerning Appellee.

In *Mobile Gas Co.* v. *Patterson* (293 Fed. 208 (1923); 271 U. S. 131 (1926)), it appeared that the company paid no dividends during the first eight years of its operations; during the next four years the rates of dividend paid by it ranged from 2.66% to 5%; and since December 31, 1917, it paid no dividends (*Ibid,* at 222-3). From the order of the Commission it appeared that, with the low rate then fixed, the company was not able even to meet its actual operating expenses, and that the rates in question would have yielded less than 2.5 per cent on the rate base value contended for by the public (*Ibid,* at 224). But such facts are opposite to those which the record shows for Appellee.

The 7.44 per cent return in *United Rys. & Electric Co.* v. *West* (280 U. S. 234 (1930)), was applied for 1927 to a rate base value which was $1,000,000 less than its capitalization (*Ibid,* at 248). As the annual charges on outstanding credit obligations and preferred stock exceeded 7 per cent, the 7.44 per cent return for 1927 was not sufficient to pay more than 7.34 per cent return on the outstanding stock. In the light of its financial history* and unbalanced corporate structure (Record, *United Rys.* v. *West, supra,* pp. 533-4), such a return was clearly a minimum on any theory. But such facts are opposite to those which the record shows for Appellee (Appellants' Brief, pp. 463, 470, 472, 477, 479, 482, 486, 524-6).

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*The United Railways Company paid no dividends prior to 1912, 4% through 1919, none in 1920-21, 2% in 1922, 4% in 1923 to 1926, and none thereafter (Record, United Railways Case, Vol. V, p. 1476).

APPELLEE'S CLAIMS COVERING DEPRECIATION EXPENSE ALLOWANCES.

I.

Appellee's Claim.

(Appellee's Brief, pp. 53, 58)

Appellee's judgment of the proper depreciation expense charges should have been followed by the District Court as a managerial act which had not been shown to be arbitrary or otherwise improper.

Appellants' Answer.

The right to originate the amount of depreciation expense charges and to make changes therein as part of the managerial acts of utilities was taken away from them by Section 14 of the Illinois Public Utilities Act and was placed in the Commission (Appellants' Brief, p. 383). Even if Appellee had such right, its exercise thereof by including under the label of depreciation expense charges, advance contributions for anticipated depreciation on contemplated future additions to buildings and central office equipment, and by giving effect in connection therewith to the reproduction cost new estimates of its property, rendered its showing thereon fatally defective (Appellants' Brief, pp. 395, 433).

II.

Appellee's Claim.

(Appellee's Brief, p. 66)

The District Court should not have given any consideration to the 1920 Order on depreciation expense allowances because: (a) the Order was a temporary one and as such could not determine depreciation expense charges, (b) the Order was superseded by the 1923 Order, and (c) the Order covered "retirement" and not "depreciation" expense charges.

Appellants' Answer.

Appellee's objections to the 1920 Order on depreciation expense allowances insofar as the allowances therein provided should have been used by the District Court in determining the net income under the existing telephone rates established by the same Order, are raised for the first time in this Court in a collateral proceeding in which Appellee seeks the advantage of the Order in respect to the telephone service charges specified therein (*United Fuel Gas Co.* v. *R. Commission of Ky.*, 278 U. S. 300 (1929)); for the reasons stated in Appellants' Brief, pages 389-392, Appellee's objections should be disregarded.

III.

Appellee's Claim.

(Appellee's Brief, p. 67)

The District Court should not have given any consideration to the 1923 Order on depreciation expense allowances, because:

A. In a confiscation case, the Commission's findings of fact are not competent evidence;

B. The language of the 1923 Order covered "retirement" and not "depreciation" expense charges.

C. The allowances by the 1923 Order were so grossly inadequate as to be void in that the aggregate of such allowances for the period 1923 to 1931, inclusive, barely covered the retirements of the same period.

Appellants' Answers.

Appellee's objections to the 1923 Order on depreciation expense allowances should be disregarded because:

A.

Appellee's claim that in a confiscation case involving the 1923 Order on telephone rates the Commission's Order on depreciation expense allowances is not competent evidence disregards the evidentiary value attaching to a legislative act pursuant to Section 14 of the Illinois Commerce Commission Law (Appellants' Brief, p. 392) and the holding of this Court in *Los Angeles Gas & Electric Corp.* v. *Railroad Commission,* 289 U. S. 287, at 304-5 (1933).

B.

Appellee's claim that the language of the 1923 Order on depreciation expense allowances covered retirement and not depreciation expense charges disregards the facts that:

(1) Appellee concedes that for five years following the date of the Order, to-wit: 1923 to 1927, inclusive, the Commission's allowances covered actual retirement charges and provided in addition from $1,090,000 to $1,950,000 per year for *future retirements,* aggregating for the period $7,180,000 (Appellee's Brief, p. 111). The special reasons why the depreciation allowances beginning with 1928 did not exceed actual retirements are discussed later (*infra,* 75).

(2) Appellee made the same attack on the form of the Order before this Court leading up to this Court's Opinion of December 1, 1930 (282 U. S. 133, Brief for Appellee, pp. 53-7). But the Opinion of this Court did not mention that point and shows clearly that the 1923 Order in respect to depreciation expense allowances was treated as covering depreciation expense charges.

(3) The discussion in the 1923 Order used interchangeably the terms "future requirements for . . . . replacements" (O.R. I, 34, 35); "annual requirement to cover depreciation" (*Idem,* at 35); "retirement requirements" (*Idem,* at 35); "replacement allowance . . . . to accrue a reserve in the anticipation of property retirements" (*Idem,* at 36). In commenting on the findings to be made for plant in service (*Idem,* at 36) the Commission says: "In the findings hereinafter the Commission will base its maintenance and depreciation allowance." In the next sentence referring to the allowance covering work in progress and future additions, the Commission uses the term "maintenance and

replacement allowance." In the final finding, the Commission refers to both of these items in the same sentence and uses the term "fair allowance to take care of maintenance and retirement charges" (Appellee's Brief, p. 67). Appellee's claim reads into the term "retirement charges" the additional words "of property in service actually retired in the year of the allowance." The Commission stated, however, that its findings would provide an allowance "to accrue a reserve in anticipation of property retirements" (*supra*, 73). Such an allowance is the "depreciation charge" which was defined by Mr. Justice Brandeis as "an allowance made pursuant to a plan of distribution of the total net expense of plant retirement" (*United Railways* case, 280 U. S. 234 at 264). The reserve intended by the Commission to be accrued "in anticipation of property retirements" is the reserve to which Mr. Crunden and Mr. Belcher, the American Company's experts on Depreciation, referred in their article "The Straight Line Depreciation Accounting Practice of Telephone Companies in the United States" (R. VI, 3776 at 3781-2):

> "It is, of course, evident from what has just been said that the Bell System depreciation reserve is a **retirement reserve**, not a replacement reserve." (Bold face ours.)

C.

Appellee's claim that the allowances by the 1923 Order were so grossly inadequate as to be void based upon the relation of the aggregate thereof for the period 1923 to 1931, inclusive, considered as a single unit of time to the aggregate retirements for the same period of time considered as a single unit of time, disregards the facts that:

(1) For each of the years 1923 to 1927, inclusive, such allowance exceeded retirements (*supra,* 73) by a wide margin. As to these years no issue arises even under Appellee's claim.

(2) For the years 1928 to 1931, inclusive, the fact that the allowances did not exceed the actual retirements of the same years* has no significance to void the allowances because:

(a) There is no relation between the allowance in a given year and the retirements of that year where the depreciation expense charges are computed on the straight line method. Obviously the allowance in 1923 or 1928 or in any other year applicable to any unit retired in such year covers only a fraction of the loss realized by the retirement in that year of that unit, for which loss, depreciation expense charges of prior years have been accumulated. Appellee's depreciation rate for manual central offices was 6.9% and for buildings 3.2% of the book cost, including the last year of service life of each building and of each unit of central office equipment respectively (Appellants' Brief, pp. 372-3).

The lack of uniformity and the lack of relation of current retirements to current depreciation expense charges (R. VI, 3779) are illustrated by Appellee's own experience in respect to central office equipment and for all of its plant.

Beginning with 1923, the first year in which the Commission's Order would have been effective, Appellee began to place in service panel machine switching central office equipment (R. II, 1282). This marked the beginning of its program to retire all of its manual equipment by the end of 1944 (R. II, 1110). Much of this equipment was installed prior to 1910 (R. IV, 2864A). Appellee retired less than $2,000,000 of central office equipment during the nine year period 1914-1922, inclusive (R. VII, 4076 a-b), but retired the following amounts during the period under investigation (R. IV, 2776a-2777):

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*The deficiency in 1931 was $102,000; in 1928, $167,000; in 1930, $1,700,000; and 1929, $3,012,000 (Appellee's Brief, p. 111).

1923	$483,441	1928	$ 818,367
1924	546,616	1929	4,552,317
1925	410,316	1930	1,385,708
1926	212,682	1931	2,235,574
1927	548,847		
		Total	$11,193,868

Obviously the heavy losses realized through the retirements of the last three years bear no relation to the current depreciation expense charges of the same three years.

For the four year period 1928 to 1931, inclusive, the retirement loss for all plant ranged from 55% to 86% of Appellee's current recorded depreciation expense charges; for the five year period 1923 to 1927, inclusive, the range was from 32% to 44%; for the five year period 1918 to 1922, inclusive, the range was from 15% to 23% (R. VII, 4070).

(b) Appellee's comparison of the allowances with the retirements presents a distorted picture in that: (1) the retirements include general equipment for which Appellee made a separate provision by charges to certain clearing accounts from which the cost is distributed. The failure of Appellee (R. IV, 2780; R. II, 1718-20) to include the provisions therefor, together with certain miscellaneous credits, made the showing (Appellee's Brief, p. 111) unduly favorable to Appellee by annual amounts ranging from $109,000 to $225,000 in the period 1923 to 1931. The proper inclusion of these amounts would convert the deficits of 1928 and 1931 to excesses of allowance over retirements.

(2) Appellee changed its depreciation accounting methods on exchange aerial wire beginning with 1929, the effect of which was to increase the operating expense thereafter by charges applicable to the depreciation reserve of $600,000.* Such charges are a cushion to be added to the depreciation allowances beginning with 1929. (3) Appellee's retirements of telephone instruments beginning with 1928 are unduly increased because they were *second hand instruments* (*supra,* 45), against which a 48% reserve had been accumulated by the American Company but in respect to which only an 18% deduction was made from the American Company's cost when sold to Appellee (*supra,* 45). The current depreciation expense allowed by the Commission's Order contemplates provision for a portion of the amount necessary to cover the losses realized from retirement actually taking place plus a reserve for the future retirements of plant in service on the basis that property added is new property with full service life. But it is one thing to have the schedule of retirements begin with 1928 on the basis that the additions to the property account are new property with the full service life to be included in the computations of depreciation expense and it is quite another thing to throw into the retirement schedule second hand property whose service life was over or largely used up at the date of purchase. The picture must inevitably become distorted. A look at the picture of Gross Additions, Retirements and Net Loss realized from Retirements of station apparatus for the years prior to and subsequent to the purchase of the telephone instruments is instructive, as set forth in the Appendix (Appendix, *infra,* 112).

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*Prior to 1929 Appellee applied its depreciation accounting to aerial wire, accumulating a reserve of over $600,000 (R. VII, 4083) from charges ranging from $106,000 to $194,000 for the period 1923 to 1928. Subsequent to 1928 Appellee has charged replacements direct to expense instead of to the reserve provided therefor (R. II, 1725).

(c) Inadequacy due to growth of the service was the greatest factor in the retirement of property during the period prior to 1930 (R. VI, 3779; R. I, 755; R. II, 1099; O.R. II, 898-9, 909; 177 I. C. C. 351, at 383 and 401). The depression eliminated that factor for many years to come.

From 1923 to 1929, inclusive, the increase in stations ranged from 39,000 to 58,000 per year, the total increase aggregating 296,000 (Appendix to Appellants' Brief, p. 37).

During this period the increase in book cost of fixed plant ranged from $10,000,000 to $15,000,000 per year, the total increase aggregating $82,000,000 or 82% of the amount of plant in service at the beginning of the period (R. VII, 4078).

Appellee lost 6,000 stations in 1930, and 42,000 stations in 1931 (Appendix to Appellants' Brief, p. 37); it estimated the loss in stations in 1932 to be 75,000 (R. II, 1081). On December 31, 1931, the number of stations in service was less than on December 31, 1928, although the fixed plant on later date exceeded by $25,000,000 the fixed plant of December 31, 1928 (R. VII, 4078-9).

The depreciation expense charges and allowances from 1923 to 1929, inclusive, gave effect to inadequacy as a principal cause of retirement. In testing the adequacy of such charges and allowances in the light of Appellee's actual experience, consideration must be given to the fact that on account of the depression the factor of inadequacy covered by them was eliminated in respect to the property remaining in service in 1930 to which they had application. Appellee's claim that the Commission's allowances were inadequate give no such consideration.

(d) The relation of the net increase in the depreciation reserve to the net increase in plant during the period of the allowances is without significance in the absence of a showing of the relation of the net increase *plus the depreciation reserve* already accumulated at the date of the allowance to the investment in service to which they have application (*Smith* v. *Illinois Bell Tel. Co.*, 282 U. S. 133 at 158). Appellee made no such showing. In this connection, consideration must be given to the facts that: (1) Giving effect to the Commission's 1923 Order on Depreciation Expense allowances, the percentage of Appellee's Depreciation Reserve to the Chicago Intrastate property would still be from 2 to 10 times the corresponding percentage applicable to the Illinois Division property, would be the highest percentage in 1923 in the Bell System, and would exceed in percentage that of 24 companies in the Bell System in 1924, that of 20 in 1925, that of 18 in 1926, that of 17 in 1927, that of 15 in 1928, that of 14 in 1929, and that of 12 in 1930. No corresponding data is available for 1931 (R. VII, 4088A). (2) The depreciation expense accumulations prior to 1923 gave effect to inadequacy as a principal factor in the retirement of property, which factor was eliminated since 1929 by the depression in respect to all property then in service and installed prior to 1923. (3) The depreciation expense accumulations prior to 1923 included advance contributions for anticipated depreciation on contemplated future additions to buildings and central office equipment (R. II, 1107). The deferment, because of the depression, of the date for the placing in service of such additions (Appellants' Brief, pp. 414-5) makes the amount of such advance contributions included in the depreciation reserve available for reimbursement for retirement loss on "property in service" and not otherwise reimbursed.

APPELLEE'S CLAIMS COVERING DEPRECIATION IN VALUATION.

Appellee's Claim.

(Appellee's Brief, 23-36.)

The District Court stated that in arriving at the rate base it was necessary to give effect to the "actual existing depreciation in valuation in the property as compared with the new one." Such statement follows the principle of law enunciated by this Court in the *Minnesota Rate Cases.* *Actual existing depreciation* is determined by inspection and not by the company's records and means the depreciation which is apparent upon inspection. Appellee's presentation was based upon an inspection the thoroughness of which was admitted. The District Court's findings of depreciation in valuation exceeded the amounts shown by Appellee. Such excess ranged from $9,300,000 to $13,800,000 per year.

Appellants' Answer.

Appellee's claim is fatally defective in that:

A. Appellee concedes that its inspection was not concerned with "future inadequacy or obsolescence"; nor with anything "that might occur subsequent to the date of the inspection, but has not yet happened—because of physical changes, because of future public requirements, of future changes in the public demand" (Appellee's Brief, p. 33).

Appellee's position on "actual existing depreciation" in its property in service, for valuation purposes, is a repudiation of the basis on which its depreciation reserves were built up through current charges against income from the moment such property was placed in service.* Such basis was that

> "in addition to providing for deterioration actually in evidence the reserve provides for facts and contingencies *which may not yet be manifest, but which from past experience, are certain of realization*, *e. g.*, obsolescence, inadequacy, public requirements, casualties etc. *within the period of service life* on the basis of which the reserve is set up." (R. VI, 3758. Italics ours.)

B. Although this Court in the *Minnesota Rate Cases* did not define the scope of "actual existing depreciation" for valuation purposes, it is apparent that such depreciation was viewed as covering more than the factors leading to loss in value, whose effects are manifest upon inspection at any given moment during the service life of such property:

> "The Master allowed the cost of reproduction new without deduction for depreciation. It was not denied that there was depreciation in fact. As the Master said, 'everything on and above the road-bed depreciates from wear and weather stress. The life of a tie is from eight to ten years only. Structures become antiquated, inadequate and more or less dilapidated. Ballast requires renewal, tools and machinery wear out, cars, locomotives and equipment, as time goes on, are worn out or discarded for newer types'" (230 U. S. 352 at 456).

To provide for reimbursement of the property cost of the property used up in the service through these forseeable causes, the carriers invested in additional plant during the service life and pending the retirement of the original property a portion of the current income and charged such amount to operating expense. (*Minnesota Rate Cases,* 230 U. S. 352 at 457; *Illinois Central Ry. Co.* v. *I. C. C.,* 206 U. S. 441 at 461-2).

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*The record shows, as to manual, central office equipment and buildings, the difference in result between the deduction from valuation new made by Appellee on the basis of inspection, and what the deduction would have been had Appellee considered for depreciation in valuation purposes the same causes of property retirement as it did for depreciation expense purposes (R. VII, 4084-7).

The failure by the carriers and by the Master to give specific consideration to such reimbursement was held by this Court in the *Minnesota Rate Cases* to be error (230 U. S. 352 at 457).

C. Appellee gave no effect to this consideration: The applicable principles covering the deductions from rate base value new to arrive at the rate base for rate-making purposes, as set forth by this Court in the *Minnesota Rate Cases,* and as required for the instant case, arise from the basis on which the depreciation expense charges were established in each case and the method of accounting for the proceeds thereof and for the propery on account of which such depreciation charges were collected. Thus:

Property in Service.

Example I.

Assume rail trackage placed in service on January 1, 1901, costs $10,000,000, as recorded in the carrier's plant account. To December 31, 1905, the carrier purchased new trackage aggregating $1,000,000 taken from income for the purpose of offsetting the gradual depreciation in the original trackage pending its retirement, which depreciation it recognized was taking place through wear and tear, weather stress, inadequacy and obsolescence.

Under the accounting practice in effect prior to July 1, 1907*, the cost of such additional trackage would have been

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*The *Minnesota Rate Cases* cover the period 1907-8 but the major portion of the investments had been made and recorded under accounting practices in use prior to 1907 (230 U. S. 352, 456-7).

charged to operating expense but would not have been recorded in the carrier's fixed capital account (*United States* v. *Kansas Pacific Railway Co.*, 99 U. S. 455, at 459; *Union Pacific R. R. Co.* v. *U. S.*, 99 U. S. 402, at 420-422; *Illinois Central Ry. Co.* v. *I. C. C*, 206 U. S. 441, at 461-462). By this process the carrier's original dollar investment, as recorded on its books, was maintained unimpaired (*Knoxville* v. *Knoxville Water Co.*, 212 U. S. 1, at 13-14 (1909)), although the units in service were not always the same as those covered by such recorded dollar investment.

On such basis it is clear that:

If the rate base value new on December 31, 1905, is measured by the recorded dollar investment, such rate base value will *not* give effect to the $1,000,000 additional trackage charged to operating expense, but which had never been recorded in the fixed capital account. The carrier will not receive a return on such $1,000,000. To make any deduction from the $10,000,000 recorded dollar investment to arrive at the rate base on which to allow a return, will, therefore, unduly burden the carrier.

Similarly, unfairness to the carrier would be effected if any deduction were made from the rate base value new to arrive at the rate base on which to allow a return when such rate base value new is determined by the conversion of the recorded dollar investment to current values through the use of index numbers.*

On the other hand, if the rate base value new on December 31, 1905, is determined by an appraisal of the *units* found by an *inventory*, such determination *will* give effect to the *units originally* placed in the service and covered by the $10,000,000 recorded cost and to the *additional units* costing $1,000,000 *subsequently* placed in the service for the express purpose of offsetting the gradual depreciation of the original investment. Under such circumstances, the carrier would be unjustly enriched if no deduction were made from such appraised valuation to give effect to the $1,000,000 reimbursement.

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*Appellee used index number conversions and not inventory and appraisal valuations (Appellants' Brief, p. 333).

In the *Minnesota Rate Cases* the *rate base value new* was determined by *inventory and appraisal.* This Court there required that proper deduction be made to arrive at the rate base to avoid such unjust enrichment. Obviously, the proper deduction would be equivalent to the value of the units acquired with the depreciation expense moneys (Appellants' Brief, pp. 370-1). This Court found error in the failure of the Master to make such deduction on the ground, as he claimed, that intangible values not otherwise included in the rate base had equivalent values.

Example II.

Vary the carrier's accounting practice in Example I to the extent that (a) straight line depreciation expense charges of $1,000,000 are deducted from current income; (b) this $1,000,000 is used to acquire additional trackage; (c) $1,000,000 is added to the recorded fixed capital account as the $1,000,000 additional trackage is placed in service; and (d) no deduction is made from the recorded dollar investment in the fixed capital account covering the original investment pending its retirement from service. Such variation would then conform the carrier's accounting practice to that used by Appellee for depreciation expense purposes. Under such circumstances, Appellee's practices like those of the carriers are intended to provide other investments "so that as items of plant are used up they are replaced by other investments in like amounts. In this way the capital is maintained unimpaired." (Quotation by Interstate Commerce Commission from Bell System Brief filed in proceedings on *Depreciation Charges of Telephone Companies,* 177 I. C. C. 351, at 399).

In such case, if the rate base value new is determined as of December 31, 1905, either on the basis of the recorded dollar investment ($11,000,000), or on the basis thereof as converted to current values by index numbers, or on the basis of an appraisal of the *units* found by *an inventory,* proper deduction must be made therefrom to avoid the unjust enrichment of the carrier. Under such circumstances, the proper deduction would be equivalent to—(a) the dollars added to the fixed capital account, if the recorded dollar investment is used to measure the rate base value new; (b) such added dollars converted by the index number ratios used to convert the recorded dollar investment, if the rate base value new is determined by the use of index numbers applied to the recorded dollar investment; ~~and~~ (c) the appraised value of the units acquired with the depreciation expense moneys, if the rate base value new is determined by inventory and appraisal (Appellants' Brief, p. 371).

Contemplated Future Property.

Example III.

Vary Example II to the extent that (a) the carrier in 1901 foresees that the $10,000,000 trackage installed in 1901 will remain in service to 1951, but will then be retired. It contemplates, however, that a spur track will be required in 1941 at a cost of $2,000,000 and that this spur track will be abandoned and retired from service in 1951 when the main trackage is retired. The carrier begins in 1901 to charge against current gross income advance contributions of equal monthly amounts to accumulate by 1941, $1,230,800 for anticipated depreciation after 1941 in the contemplated $2,000,000 investment to be placed in service in that year.* These contributions the carrier labels "depreciation expense charges." By December 31, 1905, such advance contributions are $153,850; (b) the carrier invests in plant the $153,850; and (c) adds the amount thereof to its recorded fixed capital account. Such variation would conform the carrier's accounting practice to that of Appellee covering depreciation expense charges on buildings and central office equipment (Appellants' Brief, pp. 395-6, 399-400).

The carrier's recorded fixed plant account would show on December 31, 1905:

1901	Original Investment	$10,000,000
1901-05	Plant acquired by use of Depreciation Expense Monies	
	(a) Depreciation on Original Plant 5 yrs. @ 2%	1,000,000
	(b) Advance Contributions	153,850
12/31/05	Total	$11,153,850

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*"The amount of the advance contributions are computed as follows:

Investment	Life	Dollar Years
$10,000,000	50	$500,000,000
2,000,000	10	20,000,000
$12,000,000		$520,000,000

$520,000,000 ÷ $12,000,000 = 43.3333 years, which is the average life after giving effect to the shorter life of the later investment."

100% (original cost) minus salvage (none) divided by average life (43.3333 years) = depreciation rate of 2.3077%. Since the original unit is to live 50 years its depreciation rate would be 2%; therefore the excess of .3077% which is annually applied to the original investment of $10,000,000 produces the following advance contributions:

First five years	$ 153,850
First forty years	$1,230,800

In such case, if the rate base value new is determined as of December 31, 1905, either on the basis of the recorded dollar investment ($11,153,850) or on the basis thereof converted to current values by index numbers, or on the basis of an appraisal of the units found by inventory, proper deduction must be made therefrom to arrive at the rate base to avoid the unjust enrichment of the carrier. In addition to the deduction of $1,000,000 required in conformity with the principles underlying Example II, *supra*, deduction would be required to avoid the unjust enrichment from the $153,850 collection in advance of the date when the carrier is entitled to receive the return thereon (Appellants' Brief, p. 363). But such deduction ($153,850) could not be made on Appellee's literal interpretation of "existing depreciation in the property" covered by the *Minnesota Rate Cases;* the property to which the accumulations have application was not in service in 1905.

Depreciation Reserve.

Example IV.

Add to the accounting practices in Example III the following accounting practices: (a) the depreciation expense accumulations covering property in service and advance contributions applicable to contemplated future additions are recorded as one separate account called the "depreciation reserve" and (b) the depreciation reserve is reduced by property retired. Such additional provisions will complete Appellee's accounting practice covering depreciation expense charges and the disposition of the funds derived therefrom and of the property to which such funds have application.

In such case, the balance in the depreciation reserve will at all times measure (a) the recorded dollars added to the recorded fixed capital account to cover property placed in service which additions had been acquired with depreciation expense moneys, pending the retirement from service of property originally placed in service of corresponding dollar amount and not yet written off the books; and (b) advance accumulations pending the placing in service of contemplated future additions.

The deductions required in Example III to prevent unjust enrichment would therefore be equivalent to the amount of such balance where the rate base value new was based on the recorded dollar investment and equivalent to the amount of such balance adjusted to current values where the rate base value new was based on current values (*supra*, 85). But after giving effect to such deductions, the total funds obtained by Appellee from the issue of securities plus surplus earnings would still be covered by rate base value (R. VII, 4228A-B, *supra*, 59).

APPELLEE'S CLAIMS COVERING THE DISTRICT COURT'S CUT IN VALUATION IN 1930 AND THEREAFTER TO ELIMINATE THE EFFECT OF THE 1930 PRICE INCREASE BY WESTERN.

The District Court eliminated the effect of the 1930 increase of 10% in Western's prices in arriving at the fair value of Appellee's property for the years 1930, 1931 and 1932. The effect of this elimination was to reduce the valuation of Appellee's property by more than $4,750,000 in each of such years. Appellee assigned error thereon and in support urged four claims.

I.

Appellee's Claim.

(Appellee's Brief, p. 38)

The price increase was justified in view of the fact that the 1929 reduction of 8.29% was made because Western anticipated a large increase in the volume of the Bell business which was not realized.

Appellants' Answer.

Appellee's claim is based on the same fundamental errors which Appellants pointed out existed in its presentation on Western's Profits and Prices and on Rate Base Value on which the District Court's findings on such subject matters were based (Appellants' Brief, pp. 294-6, 306, 345-6, 351).

If it be assumed that Western's increase in price in 1930 and thereafter was justified because of the abrupt drop in sales in such years, it would not justify the use of such increased price to *revalue* Appellee's property as the volume of purchases in the reproduction program would exceed by far the current purchases actually made (Appellants' Brief, pp. 343-6).

II.

Appellee's Claim.

(Appellee's Brief, p. 39).

Even after the increase, Appellee would have purchased from Western its materials at prices below those of other manufacturers.

Appellants' Answer.

The consideration that Western's prices to the Bell System are lower than those of other manufacturers does not prove that Western's prices are reasonable in the absence of a showing that the comparison gives effect to the reduction and elimination of expense of production and of distribution made possible by Western's relationship to the Bell System. No such showing was made (Appellants' Brief, pp. 284-6). On the contrary it appears that Western's prices in 1931 and 1932 were based on standard costs which gave effect to 15-cent copper, although the actual prices paid therefor were 10.4 cents and 6.25 cents, respectively; to 8-cent lead, although the actual prices paid therefor in these years were 5.6 cents and 4.22 cents, respectively, and to the labor wage scale established in 1929 (Appellants' Brief, 252-3; 269; R. V, 3717; R. I, 379; R. II, 1600). It is inconceivable that other manufacturers not enjoying a monopoly control over their customers would predicate prices in the depression on any such basis.

III.

Appellee's Claim.

(Appellee's Brief, pp. 39, 41)

Even after the increase, Western's profits from Bell business, as found by the District Court, were reasonable.

Appellants' Answer.

Appellee's claim that Western's profits from Bell business in 1931 and 1932 are reasonable is based on the District Court's findings thereon and as such is fatally defective in that it assumes contrary to fact:

(1) the proper separation of Western's total operating expenses between Bell and non-Bell business (Appellants' Brief, p. 247);

(2) the proper separation of Western's manufacturing facilities between Bell and non-Bell business (Appellants' Brief, p. 261);

(3) the proper allocation of Western's Development and Research expense between Bell and non-Bell business (Appellants' Brief, p. 271);

(4) the relation of Western's profits on Bell sales, to its sales to Appellee in each of these years (Appellants' Brief, p. 277);

(5) the significance, as a yardstick by which to determine the reasonableness of Western's earnings on Bell business, of the percentage figures related to Western's depreciated and undepreciated "average investment" in Bell business as found by the District Court (Appellants' Brief, p. 296).

Appellants direct attention that Western's showing of net earnings of $10,500,000 for 1931 from $219,000,000 sales to the Bell System was the same as Western's showing from its estimated $256,000,000 sales to the Bell System for the same year (Appellants' Brief, p. 270). These showings and Appellee's contentions that the 1930 increase was necessary to offset falling volume (*supra,* 89) can not be reconciled.

IV.

Appellee's Claim.

(Appellee's Brief, pp. 41-43)

The District Court's findings on the reasonableness of the relationship between Western and the Bell System for the period of the litigation and to 1916 justified the price increase in 1930.

Appellants' Answer.

Appellee's claim that the relationship between Western and the Bell System for the period 1923 to 1932, inclusive, and for the period 1916 to 1932, inclusive, was advantageous to Appellee and justified Western's price increase in 1930 is based on the District Court's findings thereon, and as such is defective because:

(1) The issue on Western's Profits and Prices does not relate to an abuse of inter-corporate relationship to be viewed in the light of the relationship over a period of years. The issue on Western's Profits and Prices is one of confiscation for each year of the litigation based upon the use of Western's prices to arrive at the estimates upon which the charge of confiscation for each of the years of the litigation was predicated and sustained (Appellants' Brief, p. 233).

(2) The District Court's finding of reasonableness based upon the results of a period of years and not merely of a single year precludes the determination of the reasonableness of Western's prices used in the estimates upon which Appellee's charge of confiscation for each year of the litigation was predicated and sustained (Appellants' Brief, p. 281).

(3) The standards applied by the District Court to determine the reasonableness of Western's Bell Profits and Prices did not and could not determine their reasonableness for any one year or over a period of years (Appellants' Brief, p. 284).

MAINTENANCE EXPENSE.

(Appellee's Brief, p. 103.)

Appellee's Claim.

The District Court's finding which reduced maintenance expenses in 1930 and thereafter to undo the effect of the 1930 increase in Western's prices is erroneous for the reasons stated for its error in reducing the valuation of Appellee's property on account thereof.

Appellants' Answer.

Appellants' answer to Appellee's claim covering the reduction in Valuation (*supra,* 89) is a conclusive answer to its claim on Maintenance Expenses.

THE DISTRICT COURT'S UNDERVALUATION IN 1931 AND 1932.

Appellee's Claim.

(Appellee's Brief, pp. 45-50.)

The District Court's finding of fair value for 1931 was $18,500,000 less than the total of its separate findings of the reproduction cost new of the property plus the other items of value. $4,500,000 is attributable to its findings on Western's prices and $14,000,000 to its findings that it was giving effect to "the general decline in property values" in these years. Such $14,000,000 reduction was erroneous because Appellee's reproduction cost new estimates for 1931 were based on its experience which gave effect to all conditions which resulted in lessening of the value of its property.

Similar error was committed by the District Court's findings for fair value for 1932, which cut the valuation by $23,000,000, even though no reproduction cost new estimate was in the record.

Appellants' Answer.

Appellants construe the District Court's reduction in values for 1930 and thereafter as intending to undo the 10.2% increase in Western's prices in 1930 so as to maintain the 1929 level of prices as stated by the District Court (Appellants' Brief, pp. 345, 349, 351). On such construction, Appellee's claim fails.

If Appellee's construction is correct, its claim is nevertheless fatally defective in that:

A. It assumes, contrary to fact, that it is possible to determine the extent to which Western's prices have entered into its reproduction cost estimate (Appellants' Brief, p. 315).

B. It preserves all the errors which render the reproduction cost new estimates fatally defective as the basis for fair value determination (Appellants' Brief, pp. 328-346).

C. It disregards the specifications of the *McCardle* Case in respect to a forecast of probable future price levels (Appellants' Brief, p. 347).

D. It assumes, without proof, that the price level of 1931 was maintained in 1932 and 1933.

E. It assumes that a purchaser would have paid the full price for the plant which was built to take care of the predepression demand.

F. Appellee's claim, if allowed, will increase the incongruity of the District Court's finding of Required Minimum Return (Appellants' Brief, pp. 502-3).

On the tests of compensatory rates applicable in the instant case, the increase in valuation will not affect the result (Appellants' Brief, pp. 482-5; 494-7).

CONCLUSION.

Appellee's Cross-Appeal is based on the arbitrariness of the District Court's fiats on the several issues on which its determination of confiscation was predicated. But Appellee's claims of what the proper determinations on such issues should have been are themselves arbitrary; they do not give effect to the facts of its own experience.

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APPENDIX.

STATION TO STATION SEPARATION AND APPORTIONMENT OF EXPENSES BY YEARS.

(Excluding All Overheads on Lands.)

(R. IV, 2734-42.)

Year	Total Chicago Area Amount	Total Chicago Area Percentage	Interstate Toll Amount	Interstate Toll Percentage	Total Chicago Intrastate Amount	Total Chicago Intrastate Percentage
1923	$32,732,054	100%	$1,245,856	3.81%	$31,486,198	96.19%
1924	34,585,244	100	1,318,848	3.81	33,266,396	96.19
1925	37,298,344	100	1,555,174	4.17	35,743,170	95.83
1926	40,698,361	100	1,819,396	4.47	38,878,965	95.53
1927	43,951,533	100	2,088,850	4.75	41,862,683	95.25
1928	48,633,875	100	3,080,218	6.33	45,553,657	93.67
1929	54,004,988	100	5,959,109	11.03	48,045,879	88.97
1930	55,537,767	100	6,088,439	10.97	49,449,328	89.03
1931	54,145,007	100	5,807,220	10.73	48,337,787	89.27

TELEPHONE INSTRUMENT RENTAL.

Chicago Intrastate.

	1923	1924	1925	1926	1927
Return allowed by Dist. Ct. (Appendix to Appellants' Brief, p. 54) ..	$ 158,069	$ 183,964	$ 197,531	$ 196,775	$ 177,148
Instrument Taxes (R. IV, 2933-5, Apportionment on Intrastate % shown above)	40,064	50.790	59,246	1,471	57
Return after deducting Taxes	$ 118,005	$ 133,174	$ 138,285	$ 195,304	$ 177,091
Investment less Depreciation Reserve (R. IV, 2945, Apportionment on Intrastate % shown above)	1,035,373	1.182,262	1,306,554	1,433,562	1,407,773
Rate of Return					
Before deducting taxes	15.27%	15.56%	15.12%	13.73%	12.58%
After deducting taxes	11.40%	11.26%	10.58%	13.62%	12.58%
Return after deducting taxes	$ 118,005				
Deduct difference between Appellee's Book Depreciation and District Court's allowance (*Infra*, 101)	20,344				
Return on basis of Dist. Court's allowance of Dep'n. Exp. Charges ..	$ 97,661				
Return on Investment...	9.43%				

TELEPHONE INSTRUMENT INVESTMENT.

Investment in Instruments less Depreciation Reserve	1923	1924	1925	1926	1927
American Company Total (R. IV, 2945)					
Investment	$31,329,013	$35,531,013	$35,373,616	$43,403,336	$42,848,662
Depreciation Reserve	15,010,382	16,611,453	18,387,618	20,304,999	20,441,625
Net	$16,318,631	$18,920,431	$20,985,998	$23,098,337	$22,407,037
Chicago Area Ratios (R. IV, 2945)	6.59604%	6.4961%	6.49675%	6.49675%	6.59604%
Chicago Area					
Investment	$ 2,066,474	$ 2,308,187	$ 2,558,005	$ 2,819,806	$ 2,826,315
Depreciation Reserve	990,091	1,079,097	1,194,597	1,319,165	1,348,338
Net	$ 1,076,383	$ 1,229,090	$ 1,363,408	$ 1,500,641	$ 1,477,977
Intrastate Ratios (*Supra,* 99)	96.19%	96.19%	95.83%	95.53%	95.25%
Intrastate					
Investment	$ 1,987,741	$ 2,220,245	$ 2,451,336	$ 2,693,760	$ 2,692,065
Depreciation Reserve	952,368	1,037,983	1,144,782	1,260,198	1,284,292
Net	$ 1,035,373	$ 1,182,262	$ 1,306,554	$ 1,433,562	$ 1,407,773
Rate Base (Chicago Area) (R. IV, 2940)					
Average Current Cost	$ 2,366,891	$ 2,699,950	$ 2,939,714	$ 3,054,103	$ 3,046,359
6% Reserve Stock	142,013	161,997	176,383	183,246	182,782
Total	$ 2,508,904	$ 2,861,947	$ 3,116,097	$ 3,237,349	$ 3,229,141
Depreciation 8%	200,712	228,956	249,288	258,988	258,331
Rate Base	$ 2,308,192	$ 2,632,991	$ 2,866,809	$ 2,978,3[illegible]	$ 2,970,810
Intrastate Ratios (*Supra,* 99)	96.19%	96.19%	95.83%	95.53%	95.25%
Rate Base (Intrastate)					
Average Current Cost	$ 2,276,712	$ 2,597,082	$ 2,817,128	$ 2,917,585	$ 2,901,657
6% Reserve Stock	136,603	155,825	169,028	175,054	174,100
Total	$ 2,413,315	$ 2,752,907	$ 2,986,156	$ 3,092,639	$ 3,075,757
Depreciation 8%	193,064	220,233	238,893	247,410	246,061
Rate Base	$ 2,220,251	$ 2,532,674	$ 2,747,263	$ 2,845,229	$ 2,829,696

TELEPHONE INSTRUMENT DEPRECIATION.

Chicago Intrastate.

	1923	1924	1925	1926	1927
Depreciation Charge per Books (R. III, 2409)	$ 135,344	$ 149,389	$ 164,862	$ 181,235	$ 197,969
Depreciation Charge per Dist. Ct. (R. III, 2510)	115,000	128,000	141,000	155,000	169,000
Reduction from Book Charge	$ 20,344	$ 21,389	$ 23,862	$ 26,235	$ 28,969
Cumulative effect of above reduction on Average Depreciation Reserve (½ of current year plus sum of all prior years)	10,172	31,039	53,664	78,712	106,315
Dep. Reserve per Books (*Supra*, 100)	952,368	1,037,983	1,144,782	1,260,198	1,284,292
Dep. Res. adjusted to basis of Court's deprec. allowance	942,196	1,006,944	1,091,118	1,181,486	1,177,977
Investment (*Supra*, 100)	1,987,741	2,220,245	2,451,336	2,693,760	2,692,065
Ratio of Adjusted Dep. Res. to Investment*	47.40%	45.35%	44.51%	43.86%	43.76%
Current Cost (incl. 6% Reserve Stock (*Supra*, 100)	2,413,315	2,752,907	2,986,156	3,092,639	3,075,757
Depreciation which should have been deducted based on above ratios	1,143,911	1,248,443	1,329,138	1,356,431	1,345,951
Depreciation deducted by Appellee (*Supra*, 100)	193,064	220,233	238,893	247,410	246,061
Additional Amount of Depreciation that should have been deducted	$ 950,847	$1,028,210	$1,090,245	$1,109,021	$1,099,890
6% Return on Additional Depreciation Deduction	57,051	61,693	65,415	66,541	65,993

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*The average for the period was 44.83%.

FAIR RETURN ON INSTRUMENTS AS ALLOWED BY DISTRICT COURT COMPARED WITH SIX PER CENT ON VALUE CLAIMED BY APPELLEE.

Year (a)	Value Claimed by Appellee (*Supra*, 100) (b)	Return Allowed by District Court (Appendix to Appellant's Brief, p. 54) (c)	Six Per Cent Return (on Col. (b)) (d)	Excess of Court's Allowance Over 6% (e)
1923	$2,220,251	$158,069	$133,215	$24,854
1924	2,532,674	183,964	151,960	32,004
1925	2,747,263	197,531	164,836	32,695
1926	2,845,229	196,775	170,714	26,061
1927	2,829,696	177,148	169,782	7,366

INFLATION OF INSTRUMENT RENTAL
CHICAGO INTRASTATE

Item	1923	1924	1925	1926	1927
1. Excess on account of using 8% Depreciation instead of amount indicated by percentage of reserve (a) (*Supra*, 101)	$ 57,051	$ 61,693	$ 65,415	$ 66,541	$ 65,993
2. Excess on account of using current cost instead of book cost (6% of Item 16)	25,534	31,960	32,089	23,933	23,022
3. Adjustment of Item 1, to basis of Book Depreciation Reserve (a) (6% of Item 19)	12,103*	14,490*	14,281*	10,495*	10,078*
4. Excess return allowed by District Court over 6% on Value claimed by Appellee (*Supra*, 101)	24,854	32,004	32,695	26,061	7,366
5. Sub Total	$ 95,336	$ 111,167	$ 115,918	$ 106,040	$ 86,303
6. Taxes (*Supra*, 99)	40,064	50,790	59,246	1,471	57
7. Total	$ 55,272	$ 60,377	$ 56,672	$ 104,569	$ 86,246
8. Return allowed by Dist. Court (Appendix to Appellants' Brief, p. 54)	$ 158,069	$ 183,964	$ 197,531	$ 196,775	$ 177,148
9. Book Cost (*Supra*, 100)	1,987.741	2,220,245	2,451,336	2,693,760	2,692,065
10. Depreciation reserve adjusted to Dist. Court's allowance (*Supra*, 101)	942,196	1,006,944	1,091,118	1,181,486	1,177,977
11. Difference	$1,045,545	$1,213,301	$1,360,218	$1,512,274	$1,514,088
12. 6% return on Item 11	62,733	72,797	81,613	90,735	90,845
13. Total Excess (Item 5) (8-12)	$ 95,336	$ 111,167	$ 115,918	$ 106,040	$ 86,303
14. Average Current Cost, Plus 6% Reserve Stock (*Supra*, 100)	$2,413,315	$2,752,907	$2,986,156	$3,092,639	$3,075,757
15. Investment (*Supra*, 100)	1,987,741	2,220,245	2,451,336	2,693,760	2,692,065
16. Difference	$ 425,574	$ 532,662	$ 534,820	$ 398,879	$ 383,692
17. Depreciation that should have been deducted (*Supra*, 101)	$1,143,911	$1,248,443	$1,329,138	$1,356,431	$1,345,951
18. Depreciation adjusted to Dist. Court's allowance (*Supra*, 101)	942.196	1,006,944	1,091,118	1,181,486	1,177,977
19. Difference	$ 201,715	$ 241,499	$ 238,020	$ 174,945	$ 167,974

(a) After giving effect to District Court's adjustment of Depreciation Expense from 7% to 6%.

* Red.

COMPARISON BETWEEN ASSOCIATED COMPANIES' SHOWING, COMMISSION'S ALLOWANCES, FOR RENTAL, AND RETURN TO AMERICAN COMPANY RESULTING THEREFROM.

Company and Commission	Associated Companies' Showing of Annual Cost on Telephone Instruments Per Station	Commission's Allowance for Rental	American Company's Actual Annual Cost on Telephone Instruments (Including Cost of Funds) Per Station*	American Company's Return on Property Investment Resulting from Showing or Allowance*
YEAR 1920				
Central Union Tel. Co. (Ind. P. S. C.; P. U. R. 1920B, 813)	$ .96	.....	$ .3883	48.19%
Chesapeake & Pot. Tel. Co. (N. Y.) (D. C. P. U. C.; P. U. R. 1920D, 614)		$1.13	.3883	60.71%
Michigan State Tel. Co. (Mich. P. U. C. Order Jan. 17, 1920)	1.34	....	.3883	76.17%
Chesapeake & Pot. Tel. Co. (Va.) (Pa. P. S. C.; P. U. R. 1920F, 49)	1.13	1.13	.3883	60.71%
Southwestern Bell Tel. Co. (Ark. C. C.; P. U. R. 1921B, 516)		1.24	.3883	68.81%
Chicago Tel. Co. (Ind. P. S. C. Order Jan. 17, 1920)		1.13	.5164**	51.28%
Appellee (Ill. P. U. C. Order Dec. 20, 1920)		1.13	.5164**	51.28%
Chesapeake & Pot. Tel. Co. (W. Va.) (W. Va. P. S. C.; P. U. R. 1921B, 97)		1.00	.3883	51.14%
YEAR 1921				
Indiana Bell Tel. Co. (Ind. P. S. C.; P. U. R. 1922E, 46)	1.12	....	.4336	52.85%
		1.08	.4336	50.16%
YEAR 1922				
Cumberland Tel. & Tel. Co. (La. P. S. C. Order May 13, 1922)	1.36	....	.4809	63.17%
		1.00	.4809	40.13%
Indiana Bell Tel. Co. (Ind. P. S. C.; P. U. R. 1922E, 46)	.99	....	.4809	39.49%
		1.00	.4809	40.13%

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*Computed from R. IV, 2933-9, 2945; R. V, 3754A; R. VI, 4009-19; R. VII, 4060b; R. IX, 4974-85, 5018A.

**Includes reimbursements by the American Company of taxes on instruments paid by the Appellee, which arrangement was not in effect in respect to the other Associated Companies.

Company and Commission	Associated Companies' Showing of Annual Cost on Telephone Instruments Per Station	Commission's Allowance for Rental	American Company's Actual Annual Cost on Telephone Instruments (Including Cost of Funds) Per Station*	American Company's Return on Property Investment Resulting from Showing or Allowance*
YEAR 1922.				
Michigan State Tel. Co. (Mich. P. U. C.; P. U. R. 1923A, 30, approved in City of Detroit v. Michigan, etc., 209 Mich. 395)		.41¼	.4809	2.52%
YEAR 1923.				
New York Tel. Co. (N. Y. P. U. C.; P. U. R. 1923B, 545, approved in N. Y. Tel. Co. v. Prendergast, 36 Fed. (2nd) 54)	1.08	....	.4485	45.71%
	1.19	.....	.4485	52.48%
		1.00	.4485	40.79%
Indiana Bell Tel. Co. (Ind. P. S. C.; P. U. R. 1924A, 1, approved in Indiana Bell Tel. Co. v. Public Service Commission, 300 Fed. 190)		.50	.4485	10.04%
YEAR 1925				
New England Tel. & Tel. Co. (Me. P. U. C.; P. U. R. 1926B, 247)	.97	.97	.5068	32.73%
YEAR 1926				
Wisconsin Tel. Co. (Wis. R. R. C.; P. U. R. 1927A, 581)	.97	....	.5242	30.94%
		.70	.5242	16.34%

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*Computed from R. IV, 2933-9, 2945; R. V, 3754A; R. VI, 4009-19; R. VII, 4060b; R. IX, 4974-85, 5018A.

**Includes reimbursements by the American Company of taxes on instruments paid by the Appellee, which arrangement was not in effect in respect to the other Associated Companies.

Appellee's Claim in Respect to Franchise, Excise and Capital Stock Taxes.

	Chicago Area	Chicago Intra-State	
	R. IV, 2933-7.	(*Supra*, 99) Ratio	Amount
1923	$59,564	96.19%	$57,295
1924	64,666	96.19	62,202
1925	75,021	95.83	71,893
1926	55,067	95.53	52,606
1927	39,984	95.25	38,086
1928	32,659	93.67	30,592
1929	33,898	88.97	30,159
1930	35,044	89.03	31,164
1931	44,310	89.27	39,556

RECONCILIATION OF DISTRICT COURT'S FINDINGS OF FAIR RETURN AND DEPRECIATION EXPENSE ALLOWANCE COVERING TELEPHONE INSTRUMENTS.

(Chicago Intrastate)

	1923	1924	1925	1926	1927
Appellee's Claim. FAIR RETURN					
1. Maintenance (R. III, 2408)	$ 68,931	$ 83,036	$100,469	$126,225	$129,852
2. Depreciation (7% on current value new, *supra*, 100)	168,931	192,704	209,032	216,484	197,969
3. Return (8% on current value less 8% Depreciation, *supra*, 100)	177,620	202,614	219.781	227,618	236,034
4. Total (R. III, 2411)	415,482	478,354	529,282	570,327	563,855
From above Total the District Court apparently deducted the following:					
5. Maintenance (R. III, 2408)	68,931	83,036	100,469	126,225	129,852
6. Depreciation on Book Cost (R. III, 2409) (7%)	135,344	149,389	164,862	181,235	197,969
7. Total Deductions	204,275	232,425	265,331	307,460	327,821
8. Remainder	211,207	245,929	263,951	262,867	236,034
9. The District Court apparently assumed this Remainder to be the 8% return claimed by Appellee and therefore reduced it by 25% thereof to equal a return of 6% which produced the following amounts	158,405	184,447	197,963	197,150	177,026
10. Amounts allowed for Return by the District Court in its rounded out total of Maintenance, Depreciation and Return (Appendix to Appellants' Brief, p. 54) (R. III, 2510)	158,069	183,964	197,531	196,775	177,148
11. Rate of Return allowed	7.12%	7.26%	7.19%	6.92%	6.26%

Excess of District Court's Finding of Fair Value Over Capitalization.

A. Chicago Intrastate.

1931.

Fair Value (R. III, 2515)	$179,100,000
Funded and Misc. Debt (*Infra*, 109)	34,355,705
	$144,744,295
Capital Stock (*Infra*, 109)	87,045,349
Excess over Capital Stock	$ 57,698,946
Surplus (*Infra*, 109)	13,542,440
Excess over Capital Stock and Surplus	$44,156,506

ANALYSIS OF RETURN ON CAPITAL STOCK RESULTING FROM DISTRICT COURT'S FINDING OF MINIMUM RETURN.

CHICAGO INTRASTATE.

1931.

	Value (1)	6½% Return on Value (2)	Resulting Return on Capital Stock After Paying Interest, (3)
(1) Capital Stock ,Infra, 109)..	$ 87,045,349	$ 5,657,948	6.50
(2) Surplus (Infra, 109)........	13,542,440	880,259	1.01
(3) Total Capital and Surplus...	$100,587,789	$ 6,538,207	7.51
(4) Funded Debt (Infra, 109)..	26,589,626	1,728,326	.27 (a)
(5) Misc. Indebtedness (Infra, 109)	7,766,079	504,795	.07 (b)
(6) Total Capitalization (Infra, 109)	$134,943,494	$ 8,771,328	7.85
(7) Excess of Appellants' Rate Base over Capitalization..	23,869,773	1,551,535	1.78
(8) Total Appellants' Rate Base (Appendix to Appellants' Brief, p. 88)..............	$158,813,267	$10,322,863	9.53
(9) Additional Value allowed by District Court over Appellants' Rate Base	20,286,733	1,318,637	1.52
(10) District Court's Fair Value (R. III, 2515).............	$179,100,000	$11,641,500	11.15

(a) After deducting Interest and Amortization of $1,492,670 (Infra, 109).

(b) After deducting Interest of $441,113 (Infra, 109).

Net Amount Remaining for Surplus Resulting from District Court's Finding of Minimum Return.

CHICAGO INTRASTATE.

1932.

1. Fair Value found by Dist. Ct. (R. III, 2515).	$166,500,000
2. Fair Rate of Return as found by Dist. Ct. (R. III, 2521)...........................	5.5%
3. Amount of Return (2 x 1)................	$ 9,157,500
4. Interest, amortization of discount and 8% Dividend Requirements (based on 1931—*infra*, 109)	8,897,217
5. Amount Remaining for Surplus...........	$260,283

ILLINOIS BELL TELEPHONE CO.

Funds Used in Business.

1931.

	Entire Company			Chicago Area			Chicago Intrastate	
		Average Invest. or Funds	Interest and Dividends		Average Invest. or Funds	Interest and Dividends	Average Invest. or Funds	Interest and Dividends
Fixed Capital (R. VII, 4078-9)								
Jan. 1	$282,948,223			$191,286,165				
Dec. 31	290,594,688			195,422,114				
	$573,542,911	$286,771,456		$386,708,279	$193,354,140			
Fixed Capital Reserves (R. VII, 4075)								
Jan. 1	$ 63,966,749			$ 51,469,803				
Dec. 31	69,242,666			54,942,489				
	$133,209,415	66,604.708		$106,412,292	53,206,146			
Fixed Capital, after deducting Reserve		$220,166,748			$140,147,994			
Work in Progress (R. IV, 2782b, 2779)								
Jan. 1	$ 5,436,845			$ 4,415,765				
Dec. 31	664,892			441,956				
	$ 6,101,737	3,050,869		$ 4,857,721	2,428,861			
Total Fixed Capital and Work in Progress, after deducting Reserve		$223,217,617			$142,576,855			
Ratios		100.00%			63.873%		90.85% (a) (Of Chicago Area)	

Capital Stock, including Premiums (R. VIII, 4793-4)								
Jan. 1	$150,004,168							
Dec. 31	150,004,168							
	$300,008,336	$150,004,168	$12,000,000		95,812,162	7,664,760	$ 87,045,349	$6,963,434
Capital Stock Installments (R. VIII, 4793-4)		....			....		....	
Funded Debt, less discount (R. VIII, 4793-4)								
Jan. 1	$ 45,833,026							
Dec. 31	45,810,129							
	$ 91,643,155	45,821,578	2,572,300		29,267,613	1,643,005	26,589,626	1,492,670
Other Interest Bearing Obligations...		13,383,187(b)	760,165		8,548,243	485,540	7,766,079	441,113
		$209,208,933	$15,332,465		$133,628,018	$8,793,305	$121,401,054	$8,897,217
Surplus (R. VIII, 4793-4)								
Jan. 1	$ 22,907,655							
Dec. 31	23,767,381							
	$ 46,675,036	23,337,518			14,906,373		13,542,440	
		$232,546,451			$148,534,391		$134,943,494	

(a) Ratio based on R. IV, 2756, line 15.

(b) Computed by dividing interest, by 1930 interest rate (5.68%), assumed to be the same for 1931 (R. VIII, 4461).

IN THE DISTRICT COURT OF THE UNITED STATES FOR THE EASTERN DISTRICT OF ILLINOIS.

KANKAKEE WATER COMPANY,
a corporation,
vs.
G. GALE GILBERT, et al.

In Equity
No. 514-D.

FINDINGS OF FACT AND CONCLUSIONS OF LAW UPON HEARING UPON APPLICATION FOR TEMPORARY INJUNCTION.

The motion for temporary injunction came on to be heard on December 21st, and after hearing the evidence and statements of counsel was taken under advisement.

After due consideration, the court enters the following findings:

(1) The jurisdictional and historical facts are not in dispute; hence there is no necessity of repetition thereof.

(2) The ultimate question submitted is whether plaintiff's property is being unconstitutionally confiscated, and depends upon two material sub-questions, viz: is the valuation of plaintiff's property by the Illinois Commerce Commission a fair and reasonable one, and, if so, is the probable return of approximately 5.17% upon said valuation, furnished by the rates fixed by said commission, such as to constitute confiscation of property.

(3) The commission apparently considered the testimony of three engineers, one employed by the City of Kankakee, one by the plaintiff, and one by the commission. The respective valuations placed upon plaintiff's property by these three gentlemen, exclusive of allowance for a going concern, were $1,018,926; $1,074,390 and $1,236,271. The commission fixed the fair value, including an allowance for a going concern, at $1,200,000. Plaintiff now claims in its bill and ex parte affidavits, that its property is of a value in excess of $1,500,000.

(4) The only evidence of value submitted to the court, in accordance with the usual practice, is that of affidavits and counter affidavits. Without an opportunity to hear tes-

timony and pass upon the credibility of witnesses, we do not find in the record sufficient evidence to warrant an affirmative finding that the valuation fixed by the commission is unfair or unreasonable.

(5) Under the existing generally depressed industrial and financial conditions, indicating a greatly abnormal condition both generally and locally, all of which appears in the record, we are not warranted in finding that the probable return of 5.17% upon the valuation, as aforesaid, furnished by the commission's prescribed rates, is confiscatory. In this connection, we have considered the evidence of present return in industrial enterprises of other character, and that of similar utility companies, as well as the fact that plaintiff makes no claim and furnishes no evidence that new capital is at present needed in its business.

(6) There are various subsidiary questions involved, such as the propriety of certain charges included by plaintiff in its accounting upon disbursements; original cost, present cost of reproduction, prematureness of this application and other important elements involved upon which, as in the matter of valuation and return, we are not satisfied with the sufficiency of the evidence to warrant affirmative findings of fact upon this interlocutory hearing. We prefer to dispose of them at final hearing, for which the court will furnish prompt opportunity upon settlement of issues herein.

CONCLUSIONS OF LAW.

We conclude, therefore, that there being insufficient evidence upon which to base affirmative findings of unreasonable valuation or confiscation, the motion for a temporary injunction should be denied. It is so ordered.

Entered January 6, A. D. 1933.

Evan A. Evans,
Circuit Judge.

James H. Wilkerson,
District Judge.

Walter C. Lindley,
District Judge.

STATION APPARATUS—CHICAGO DIVISION.

Gross Additions, Retirements, Net Loss and Depreciation Accruals 1921 to 1931, Inclusive.*

Year	Gross Additions	Retirements	Net Loss	Depreciation Accruals
1921	$1,142,531	$ 564,280	$ 103,217**	$ 463,462
1922	1,551,180	916,194	3,084	514,455
1923	2,262,763	1,184,968	59,727	585,154
1924	2,573,514	1.415,776	173,446	570,752
1925	2,945,003	1,905,584	122,188	634,399
1926	3,113,065	2,148,598	376,765	693,802
1927	5,893,658	2,396,145	19,865**	762,879
1928	5,260,510	4,126,570	664,420	1,089,166
1929	5,182,765	4,431,767	1,140,004	1,148,120
1930	4,445,243	4,855,098	1,588,036	1,182,551
1931	4,694,615	5,143,412	1,340,357	1,154,230

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*Sources: R. IV, 2776a, 2776b, 2777.

**Red figure.

SUPREME COURT OF THE UNITED STATES.

Nos. 440 and 548.—October Term, 1933.

Benjamin F. Lindheimer and others, constituting the Illinois Commerce Commission of the State of Illinois; Otto Kerner, Attorney General of the State of Illinois, and the City of Chicago, Appellants,
440 *vs.*
Illinois Bell Telephone Company.

Illinois Bell Telephone Company, Appellant,
548 *vs.*
Benjamin F. Lindheimer and others, constituting the Illinois Commerce Commission of the State of Illinois; Otto Kerner, Attorney General of the State of Illinois, and the City of Chicago.

Appeals from the District Court of the United States for the Northern District of Illinois.

[April 30, 1934.]

Mr. Chief Justice Hughes delivered the opinion of the Court.

This case comes here for the second time. It presents the question of the validity under the Fourteenth Amendment of rates prescribed by the Illinois Commerce Commission for telephone service in the City of Chicago. The Commission's order, made on August 16, 1923, to be effective October 1, 1923, reduced rates applicable to a large part of the intrastate service of the appellee, Illinois Bell Telephone Company.[1] In this suit, brought by that Company in September, 1923, an interlocutory injunction was granted upon the condition that if the injunction were dissolved the Company should refund the amounts charged in excess of the challenged rates. We affirmed that order. 269 U. S. 531. The final hearing was not had until April, 1929,—a delay found to be attributable to the City of Chicago. On that hearing, the District Court, composed of three judges, entered a final decree making the injunction permanent. 38 F. (2d) 77. We reversed that decree and remanded the case for further proceedings. *Smith* v. *Illinois Bell Telephone Company*, 282 U. S. 133. Further evidence was then taken and the District Court made new findings and entered a final decree which permanently restrained the enforcement of the Commission's order and released the Company from obligation to refund the moneys which had been collected pending the suit. 3 F. Supp. 595. The state authorities and the city bring this direct appeal. Jud. Code, sec. 266. The Company brings a cross-appeal to review the findings below, insisting that its property has been undervalued and that substantial amounts of its operating expenses have been disallowed.

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[1] The order reduced rates for four classes of coin box service. Otherwise it kept in force the rates which were fixed by an order of December 20, 1920. The coin boxes are in private residences and places of business and are not public pay stations.

No. 440.—The appeal of the State officers and the City of Chicago. On the former appeal, it appeared that no distinction had been made by the Commission or by the District Court between the intrastate and the interstate property and business of the Company. We found that separation was essential to the appropriate recognition of the competent governmental authority in each field of regulation. Accordingly, we directed that as to the value of the property employed in the intrastate business in Chicago and as to the amounts of revenue and expenses incident to that business, separately considered, there should be specific findings. And as a rate order which is confiscatory when made may cease to be confiscatory, and one which is valid when made may become confiscatory at a later period, we held that there should be appropriate findings for each of the years since the date of the Commission's order. 282 U. S. pp. 149, 162. On the further hearing, that difficult task was so well performed that no question is now raised as to the allocation of property to the intrastate and interstate services, respectively, in the Chicago area, the allocation being made on the basis of use.[2] Nor is there dispute with respect to the separation of expenses. Appellants object to the separation of revenues, insisting that certain revenues were improperly assigned to the interstate, instead of the intrastate, business.[3]

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[2] It appears that in 1923 there was used in the intrastate service approximately 95 per cent. of appellee's total property in the Chicago area. This percentage progressively decreased in the succeeding years, and in 1931 was somewhat less than 91 per cent.

Considering the fact that ninety-nine per cent of the stock of appellee is owned by the American Telephone & Telegraph Company which also owns substantially the same proportion of the stock of the Western Electric Company, we directed that there should be further examination of the purchases made by appellee from the Western Electric Company and of the payments made by appellee to the American Company. As it appeared that the Western Electric Company, through the organization and control of the American Company, was virtually the manufacturing department for the Bell system, we directed specific findings to be made as to the net earnings of the Western Electric Company in that department and as to the extent to which, if at all, such profit figured in the estimates upon which the charge of confiscation was predicated. We also held that there should be specific findings with regard to the cost to the American Company of the services which it rendered to appellee and the reasonable amount which should be allocated in that respect to the operating expenses of appellee's intrastate business. *Id.*, pp. 153, 157. The District Court entered into an exhaustive examination of these questions and made detailed findings. The court found that the equipment and supplies furnished by the Western Electric Company had been sold to appellee at fair and reasonable prices, and that the earnings of the Western Electric Company on its investment allocated to the business done with appellee, and its profits on sales, had been fair and reasonable, with the exception of an advance in prices of 10.2 per cent. effective on November 1, 1930. That advance the court disapproved, and, in determining the reasonable outlays to be allowed to appellee after that date, the court made a reduction of 10 per cent. from the prices charged by the Western Electric Company.[4] Appellee contests this reduction, and appellants object to the amounts allowed.

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[3] The amounts of net revenue thus involved, which appellants contend should not have been allocated (under the rates in suit) to the interstate service for the respective years, are as follows: 1923, $245,042; 1924, $262,398; 1925, $309,505; 1926, $347,915; 1927, $354,372; 1928, $427,655; 1929, $486,875; 1930, $472,469; 1931, $431,580.

[4] Appellee states that this effected a reduction in the operating expenses of appellee of $67,167 for the last two months of 1930, $332,470 for 1931, and an equal amount for 1932.

The District Court made specific findings as to the character of the services rendered by the American Company under its license contracts with appellee and the amounts of the cost of these services which should be allocated to the operating expenses of the latter's intrastate business. In the years 1923 to 1928, inclusive, when the court found that the payments under the license contracts charged on appellee's books exceeded the cost as thus determined and allocated, only the cost was held to be chargeable to operating expenses, but in the years 1929 to 1931, inclusive, when the license payments as so charged were less than the cost, only the amount of the license payments was allowed as an operating expense.[5] Appellants raise many questions in opposition to these determinations of costs and allocations, while appellee contends that the costs as found were less than the true costs and that the full amounts paid under the license contracts should have been allowed.

The evidence with respect to the value of appellee's property employed in its intrastate business at Chicago is voluminous. The evidence shows the original or book cost of this property, the market value of land, and estimates of the cost of reproduction new of the other physical property constituting appellee's telephone plant. There was also evidence of the condition of the property, together with estimates of accrued depreciation. Appellants submitted no valuations since one made by the Commission in 1923,[6] but presented detailed criticisms of appellee's estimates. The District Court found that the method adopted by appellee's witness in ascertaining the cost of reproduction new was reliable and that appellee's estimates were substantially correct. The court encountered difficulties in making its valuations for the years 1931 and 1932. It took notice of the general fall in values which had accompanied the depression in business. And for that reason, the court fixed values for 1931 and 1932 which in its opinion "gave due consideration to the element of the present decline". The court found that the fair rate of depreciation to be applied to reproduction cost new was 16 per cent. for the years 1923 to 1928, inclusive, and 15 per cent for the succeeding years; and that the amount to be added to reproduction cost new on account of going value was 8 per cent. of that cost. The court also made findings as to the appellee's working cash capital, the amounts invested in materials and supplies and in property in course of construction, and as to these three items there is no controversy.

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[5] The amounts of the license payments thus disallowed by the Court, as being in excess of the cost of the service, for the years 1923 to 1928, inclusive, are as follows: 1923, $573,819; 1924, $631,549; 1925, $531,233; 1926, $432,704; 1927, $558,011; 1928, $31,553. The amounts by which the cost to the American Company exceeded the license payments, for the years 1929 to 1931, are as follows: 1929, $206,253; 1930, $327,751; 1931, $234,104.

[6] See 38 F. (2d) p. 86; 282 U. S. pp. 144, 145.

The court's findings, for each year, of the fair value of appellee's property, used and useful in its intrastate business in the Chicago area, including working cash capital, materials and supplies, construction work in progess and going value, taking the average amount for the year, and the court's findings as to the original or average book cost of the same property, but without going value, are as follows:

	Fair Value	*Book Cost.*
1923	$124,200,000	$95,074,135
1924	136,500,000	105,291,980
1925	148,500,000	117,730,536
1926	151,500,000	130,857,355
1927	167,000,000	146,173,197
1928	173,000,000	159,622,212
1929	184,000,000	168,988,816
1930	187,120,000	178,157,620
1931	179,100,000	181,925,963
1932	166,500,000	181,925,963

Appellants contend that the findings as to fair value are excessive. Appellee insists that they are too low. In particular, appellee says that the property was undervalued through excessive deductions for existing depreciation. Appellee maintains that the evidence shows a maximum depreciation of 9 per cent. for the years 1923 to 1928, and of 8 per cent. thereafter, instead of the 16 per cent. and 15 per cent. deducted by the court.

In computing the net revenue from the intrastate business in Chicago, the court made adjustments in operating expenses with respect to the payments to the Western Electric Company and the American Company, as above stated, and also reduced to some extent the annual charges for depreciation. By these adjustments, the amount of the net revenue as found by the court largely exceeded that shown by appellee's books. For example, the amount available for return in the year 1923 under the existing rates appears to have been $5,347,533 according to appellee's books, while the amount found by the court to have been available for return in that year is $6,646,183. We shall presently refer to the comparison for the other years.

The court found that, if the rates in suit had been effective, appellee's net earnings on its intrastate business would have thereby been reduced to the extent of $1,541,668 for 1923, and by somewhat greater amounts in later years except in 1931 and 1932. As thus estimated, the net revenue available for return from the intrastate business in Chicago under the rates in suit would have been as follows: 1923, $5,104,515; 1924, $5,932,959; 1925, $6,297,890; 1926, $6,402,128; 1927, $6,686,503; 1928, $6,914,459; 1929, $8,939,602; 1930, $8,492,385; 1931, $8,392,555; 1932, $6,750,000.

The court found that the fair rate of return on the average fair value of the intrastate property was 7½ per cent. for each of the years 1923 to 1927, inclusive, 7 per cent. for each of the years 1928, 1929 and 1930, 6½ per cent. for 1931, and 5½ per cent. for 1932. On the basis of these findings of fact, the court concluded that the rates in suit were confiscatory at all times from the date of the Commission's order.

1. *The experience of the Company under the existing rates.* The effect of the decision below, and of the findings upon which it is based, strikingly appears if we put aside for the moment the rates in suit and consider that effect in relation to the existing rates under which the Illinois Company has conducted its business since 1920. That is, if we compare the amounts available for return—the net intrastate income in Chicago under existing rates—as shown (1) by appellee's statement from its books and (2) by the court's adjustments, with (3) the amount of the net income which, under the findings of fair value, income, expenses, and rate of return, would be necessary to avoid confiscation. The following table—with columns correspondingly designated—gives the comparison:[7]

	(1)	(2)	(3)
1923	$5,347,533	$6,646,183	$9,315,000
1924	6,230,178	7,483,954	10,237,500
1925	6,650,718	7,880,451	11,137,500
1926	6,887,012	8,052,698	11,362,500
1927	6,877,089	8,363,580	12,525,000
1928	7,601,567	8,627,760	12,110,000
1929	9,490,091	10,679,602	12,880,000
1930	9,152,490	10,138,263	13,098,400
1931	8,494,616	9,826,299	11,641,500
1932	....	8,000,000	9,157,500

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[7] Column (1) gives the net intrastate income in Chicago as shown by the Company from its books; column (2) the amount as adjusted by the District Court; and column (3) the amount required by the court's findings.

On this showing, the findings if accepted would compel the conclusion that when the Commssion's order was made in 1923, not only the new rates, but the existing rates as well were grossly confiscatory: that appellee was receiving under the existing rates, according to its books, a net return of $5,347,533 when it was entitled to nearly $4,000,000 more, or $9,315,000, to prevent its property from being confiscated. The table shows a similar situation in the succeeding years. Again, the inference would be irresistible that the existing rates were confiscatory when they were prescribed by the Public Utilities Commission of Illinois (the predecessor of the present Commission) in December, 1920, to be effective January 1, 1921. In the comprehensive disclosure of appellee's financial condition there is nothing to permit an inference of any radical change which would have made rates, compensatory in 1921, confiscatory in 1923.

But, instead of challenging the existing rates as constituting an invasion of constitutional right, appellee when summoned by the Commission, in September, 1921, in the proceeding which led to the order now under review, asserted that the existing rates were just and reasonable. In its answer to the Commission, appellee alleged "that its rates and charges heretofore approved and authorized by the aforesaid order of the Public Utilities Commission of Illinois, entered on the 20th day of December, 1920, and now in full force and effect, are just and reasonable, and that the burden of proof is upon whomsoever avers, or seeks to show, that said rates and charges are unjust or unreasonable". And when this suit was brought in September, 1923, to prevent the enforcement of the new rates, appellee did not seek to enjoin the existing rates.

The financial history of the Illinois Company repels the suggestion that during all these years it was suffering from confiscatory rates. Its capital stock rose from $9,000,000 in 1901, to $70,000,000 in 1923, $80,000,000 in 1925, $110,000,000 in 1927, $130,000,000 in 1929, and $150,000,000 in 1930. Its funded debt, which was somewhat less than $50,000,000 in 1923, continued at about the same amount until 1930. During this period appellee paid the interest on its debt and 8 per cent. dividends on its stock. Its "fixed capital reserves",[8] which embraced the depreciation reserve presently to be mentioned, rose from $37,575,004 in 1923, to $63,966,748 in

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[8] The "fixed capital reserves" are the depreciation reserve and the reserve for amortization of intangible capital. The latter reserve ranged from

1930, and to $69,242,667 in 1931. The Company's surplus and undivided profits over and above these capital reserves increased from $5,600,326 in 1923, to $22,907,654 in 1930, and to $23,767,381 in 1931. Its "fixed capital", that is, the book cost of "total plant and general equipment", which was $145,984,084 at the end of 1923, increased to $288,381,090 at the end of 1930, and to $291,259,580 at the end of 1931.[9] We do not lose sight of the fact that this showing embraces the entire business of the Illinois Company, both interstate and intrastate. But it appears that the intrastate investment in the Chicago area approximated 60 per cent. of the entire investment of appellee in the State. The book cost of the plant in service and general equipment in intrastate business in Chicago increased from $95,582,266 at the end of 1923 to $174,160,314 at the end of 1930, and to $177,384,652 at the end of 1931.[10] "The gross additions" to the Company's property in the Chicago area, the Company states, "were spread fairly evenly over the period".—"The business expanded with great rapidity. The number of telephones in Chicago increased from 690,000 at the end of 1923 to 940,000 at the end of 1931, and was 987,000 at the peak in 1929". During the nine years "a greater amount of plant was added new to the property than was in service at the beginning of the term". The Company informs us that the property was kept "at a high and even standard of maintenance throughout the years involved" and "was at all times capable of giving adequate telephone service abreast of the art". The property has been efficiently and economically operated and the Company has enjoyed excellent credit.

This actual experience of the Company is more convincing than tabulations of estimates. In the face of that experience, we are unable to conclude that the Company has been operating under confiscatory intrastate rates. Yet, as we have said, the conclusion that the existing rates have been confiscatory—and grossly confiscatory—would be inescapable if the findings below were accepted. In that

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$182,041.50, in the year 1923, to $274,086.36 in 1930, and to $289,018.77 in 1931.

[9] [illegible] according to the Company's "Plant and General Equipment Accou[illegible] for the Chicago and State Areas."

[10] [illegible] book cost of the "Plant in Service and General Equipment" for the Chicago area, including both interstate and intrastate business, rose from $100,040,051 at the end of 1923 to $191,286,165 at the end of 1930 and to $195,422,113 at the end of 1931.

event, the Company would not only be entitled to resist reduction through the rates in suit, but to demand, as a constitutional right, a large increase over the rates which have enabled it to operate with outstanding success. Elaborate calculations which are at war with realities are of no avail. The glaring incongruity between the effect of the findings below as to the amounts of return that must be available in order to avoid confiscation and the actual results of the Company's business makes it impossible to accept those findings as a basis of decision.

2. *The effect of the reduction through the rates in suit.* The foregoing considerations limit our inquiry. It is not necessary to traverse the wide field of controversy to which we are invited and to review the host of contested points presented by counsel. In the view that the existing rates cannot be regarded as inadequate, the question is simply as to the effect of the reduction in net income by the rates in suit. The question is whether the Company has established, with the clarity and definiteness befitting the cause, that this reduction would bring about confiscation. *Los Angeles Gas Co.* v. *Railroad Commission,* 289 U. S. 287, 304, 305. The amounts of the reduction for the respective years are not in dispute.[11] It would have been $1,541,668 for 1923, would have been greatest, at $1,740,000, for 1929, and least, at $1,270,000, for 1932.

Operating expenses. In determining the effect of these reductions, and what amounts would still be available to the Company for net return, we come to the questions raised by the Company's charges to operating expenses. Charges to operating expenses may be as important as valuations of property. Thus, excessive charges of $1,500,000 to operating expenses would be the equivalent of 6 per cent. on $25,000,000 in a rate base. In this instance, against the reductions which the rates in suit would have effected, are the considerable sums which would be added to the amounts available for return by the adjustments in operating expenses made by the District Court.[12] These adjustments embraced overpayments found to have been made by the Illinois Company in its transactions with the American Telegraph and Telephone Company and the Western Electric Company. In 1923, the overpayment to the former Company, treating its outlay, or the cost of its service to its subsidiary, as the measure of the operating expense, was found to be $573,819; the average of the annual overpayments, as found for the years 1923 to 1927, inclusive, amounted to $545,443.[13] It should be noted that on the same basis of adjustment there would have been an increase (averaging $256,036) in operating expenses for the years 1929 to 1931, when the cost of the service exceeded the license payments.[14] The court below found overpayments to the Western Electric Company of $332,470 in 1931 and 1932, respectively.[15] There are numerous contentions presented by each of the parties in relation to these adjustments—by appellants, to decrease, and by appellee, to increase, the amounts of expense allowed—but we shall not undertake to pass upon them in view of the determinative nature, for the present purpose, of the remaining question as to the sums which the Company has annually charged to operating expenses for depreciation.

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[11] The amounts of the reduction in intrastate income in Chicago, if the rates in suit had been effective, as shown by the Company and found by the District Court, are as follows: 1923, $1,541,668; 1924, $1,550,995; 1925, $1,582,561; 1926, $1,650,570; 1927, $1,677,077; 1928, $1,713,301; 1929, $1,740,000; 1930, $1,645,878; 1931, $1,433,744; 1932, $1,270,000.

[12] See comparison of the amounts of net return as shown by the Company with the amounts as adjusted by the District Court, in table, *supra*, p. 6.

Annual allowances for depreciation. The Commission, in the order under review, concluded that the depreciation reserve (amounting, at the end of 1922, for the Chicago property, interstate and intrastate, to about $26,000,000) had been built up by annual additions that were in excess of the amounts required. The Commission provided for "a combined maintenance and replacement allowance" which it considered sufficient to protect the investment in the property and to permit the Company "to accrue a reserve in the anticipation of property retirements". On the first hearing, the District Court considered that the effect of that ruling was to reduce the amount charged for depreciation to the operating expenses in 1923 to the extent of about $1,800,000.[16] The Company did not comply with the Commission's requirement but continued its own method of computing the annual allowances. We adverted to this question on the former appeal. We said that the recognition of the ownership of the property represented by the depreciation reserve did not justify the continuance of excessive charges to operating expenses. We thought that the experience of the Illinois Company, together with a careful analysis of the results shown under comparable conditions, by other companies which are part of the Bell system, should afford a sound basis for judgment as to the amount which in fairness both to public and private interest should be allowed as an annual charge. 282 U. S. pp. 157-159. The District Court in making its findings stated that it had considered the data to which we referred, but we are not advised as to the precise method of its calculations.[17] The annual amounts allowed by the court for depreciation, as compared with those which appellee charged on its books to operating expenses,[18] are as follows:

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[13] *Supra*, p. 4, Note 5.

[14] *Id.*

[15] *Supra*, p. 3, Note 4.

[16] 38 F. (2d) pp. 86, 87.

	Court's Allowances	*Book Charges*
1923	$4,000,000	$4,222,000
1924	4,250,000	4,470,000
1925	4,750,000	5,048,000
1926	5,400,000	5,767,000
1927	6,000,000	6,335,000
1928	6,650,000	7,009,000
1929	7,000,000	7,436,000
1930	7,200,000	7,865,000
1931	7,400,000	8,133,000

Broadly speaking, depreciation is the loss, not restored by current maintenance, which is due to all the factors causing the ultimate retirement of the property. These factors embrace wear and tear, decay, inadequacy, and obsolescence.[19] Annual depreciation is the loss which takes place in a year. In determining reasonable rates for supplying public service, it is proper to include in the operating expenses, that is, in the cost of producing the service, an allowance for consumption of capital in order to maintain the integrity of the investment in the service rendered.[20] The amount necessary to be provided annually for this purpose is the subject of estimate and computation. In this instance, the Company has used the "straight line" method of computation, a method approved by the Interstate Commerce Commission. 177 I. C. C. pp. 408, 413. By this method the annual depreciation charge is obtained by dividing the estimated service value by the number of years of estimated service life. The method is designed to spread evenly over the service life of the property the loss which is realized when the property is ultimately retired from service. According to the principle of this accounting practice, the loss is computed upon the actual cost of the property as entered upon the books, less the expected salvage, and the amount charged each year is one year's pro rata share of the total amount.[21] Because of the many different classes of plant, some with long and some with short lives, some having large salvage and others little salvage or no salvage, and because of the large number of units of a class, the Company employs averages that is, average service life, average salvage of poles, of telephones, etc.

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[17] 3 F. Supp. p. 605.

[18] The Company's charges on its books were based on original cast. The Company claims considerably larger amounts as the result of recomputations for each class of property according to its replacement value new.

[19] Depreciation, as defined by the Interstate Commerce Commission, "is the loss in service value not restored by current maintenance and incurred in connection with the consumption or prospective retirement of property in the course of service from causes against which the carrier is not protected by insurance, which are known to be in current operation, and whose effect can be forecast with a reasonable approach to accuracy." 177 I. C. C. p. 422.

[20] See Knoxville *v.* Water Company, 212 U. S. 1, 13, 14; Kansas City Southern Railway *v.* United States, 231 U. S. 423, 448; Denver *v.* Denver Union Water Co., 246 U. S. 178, 191; Southwestern Bell Telephone Co. *v.*

While property remains in the plant, the estimated depreciation rate is applied to the book cost and the resulting amounts are charged currently as expenses of operation. The same amounts are credited to the account for depreciation reserve, the "Reserve for Accrued Depreciation". When property is retired, its cost is taken out of the capital accounts, and its cost, less salvage, is taken out of the depreciation reserve account. According to the practice of the Company, the depreciation reserve is not held as a separate fund but is invested in plant and equipment. As the allowances for depreciation, credited to the depreciation reserve account, are charged to operating expenses, the depreciation reserve invested in the property thus represents, at a given time, the amount of the investment which has been made out of the proceeds of telephone rates for the ostensible purpose of replacing capital consumed. If the predictions of service life were entirely accurate and retirements were made when and as these predictions were precisely fulfilled, the depreciation reserve would represent

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Public Service Commission, 262 U. S. 276, 278; Georgia Railway & Power Co. *v.* Railroad Commission, 262 U. S. 625, 633; United Railways *v.* West, 280 U. S. 234, 253, 260; Smith *v.* Illinois Bell Telephone Co., 282 U. S. 133, 158; Clark's Ferry Bridge Co. *v.* Public Service Commission (February 5, 1934), 291 U. S. —.

[21] **See 177 I. C. C. pp. 431, *et seq.***

the consumption of capital, on a cost basis, according to the method which spreads that loss over the respective service periods. But if the amounts charged to operating expenses and credited to the account for depreciation reserve are excessive, to that extent subscribers for the telephone service are required to provide, in effect, capital contributions, not to make good losses incurred by the utility in the service rendered and thus to keep its investment unimpaired, but to secure additional plant and equipment upon which the utility expects a return.

Confiscation being the issue, the Company has the burden of making a convincing showing that the amounts it has charged to operating expenses for depreciation have not been excessive. That burden is not sustained by proof that its general accounting system has been correct. The calculations are mathematical but the predictions underlying them are essentially matters of opinion.[22] They proceed from studies of the "behavior of large groups" of items. These studies are beset with a host of perplexing problems. Their determination involves the examination of many variable elements and opportunities for excessive allowances, even under a correct system of accounting, are always present. The necessity of checking the results is not questioned. The predictions must meet the controlling test of experience.

In this instance, the evidence of expert computations of the amounts required for annual allowances does not stand alone. In striking contrast is the proof of the actual condition of the plant as maintained—proof which the Company strongly emphasizes as complete and indisputable in its sharp criticism of the amount of accrued depreciation found by the District Court in valuing the property. The Company insists that "the existing depreciation in the property, physical and functional, does not exceed 9 per cent. in the years 1923 to 1928 and 8 per cent. thereafter." The existing depreciation as thus asserted by the Company, and the amounts it shows as the depreciation reserve allocated to the intrastate business in Chicago (taking in each case the average amounts per year) are as follows:

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[22] In the exposition in evidence, to which the Company's counsel refers in their argument, of the "Straight Line Depreciation Practice" of the companies in the Bell system, it is said: "The proper interpretation of the data regarding plant life and salvage obtainable from accounts, records and statistics is of equal importance with the integrity of the data themselves. It would seem that we should have first: investigations of past service life and salvage through sound accounting and statistical methods; second: investigations of the conditions surrounding the employment of such plant in the past and of the extent to which such conditions still prevail; third: the best possible forecast of conditions looming in the future which should exert a modifying influence upon either life or salvage. And then, the active judgment which fuses the experience of the past, so far as it is still pertinent, and the expectation for the future, so far as it is presently pertinent, into a just and reasonable determination of the current rate of depreciation for the time being".

Years.	*Existing depreciation.*	*Depreciation reserve.*[23]
1923	$11,992,000	$26,797,000
1924	12,865,000	29,316,000
1925	13,775,000	32,155,000
1926	14,621,000	35,572,000
1927	15,360,000	39,352,000
1928	16,241,000	42,769,000
1929	15,300,000	44,515,000
1930	15,863,000	45,829,000
1931	15,828,000	48,362,000

In explanation of this large difference, the Company urges that the depreciation reserve in a given year does not purport to measure the actual depreciation at that time; that there is no regularity in the development of depreciation; that it does not proceed in accordance with any fixed rule; that as to a very large part of the property there is no way of predicting the extent to which there will be impairment in a particular year. Many different causes operating differently at different times with respect to different sorts of property produce the ultimate loss against which protection is sought. As the accruals to the depreciation reserve are the result of calculations which are designed evenly to distribute the loss over estimated service life, the accounting reserve will ordinarily be in excess of the actual depreciation. Further, there are the special conditions of a growing plant,—"there are new plant groups in operation on which depreciation is accruing but which are not yet represented, or are but slightly represented, in the retirement losses". Where, as in this instance, there has been a rapid growth, retirements at one point of time will relate for the most part to the smaller preceding plant, while the depreciation reserve account is currently building up to meet the "increased eventual retirement liability" of the enlarged plant.

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[23] The Company obtains these average amounts from the total Chicago depreciation reserve at the end of each year, multiplied by the percentage found to be applicable to the intrastate business, with a deduction of one-half of the increase during the year in order to obtain the average. The balance in the depreciation reserve for the entire Chicago property, interstate and intrastate, increased from $4,384,828 at the end of 1911 to $29,306,122 at the end of 1923.

Giving full weight to these considerations, we are not persuaded that they are adequate to explain the great disparity which the evidence reveals. As the Company's counsel say: "The reserve balance and the actual depreciation at any time can be compared only after examining the property to ascertain its condition; the depreciation, physical and functional, thus found can be measured in dollars and the amount compared with the reserve". Here, we are dealing not simply with a particular year but with a period of many years—a fairly long range of experience—and with careful and detailed examinations made both at the beginning and near the end of that period. The showing of the condition of the property, and of the way in which it has been maintained, puts the matter in a strong light. In substance, the Company tells us: The property in Chicago is a modern Bell system plant. Through the process of current maintenance, worn, damaged or otherwise defective parts were being constantly removed before their impairment affected the telephone service. The factors of "inadequacy" and "obsolescence" were continuously anticipated by the Company, so that the telephone service might not be impaired, "and no depreciation of that character was ever present in the plant, except to the slight extent that obsolete items of plant were found" as stated by the Company's witnesses. One of these witnesses testified that, in his examination of the plant to determine existing depreciation, he understood "that anything that was obsolete or inadequate was to be depreciated accordingly." We are told by the Company that in that investigation—"Condition new was assumed to be free from defects or impairment of any kind, that is, perfect or 100% condition, and the thing as it stood in actual use in the plant was compared with the same thing new". "All existing depreciation, both physical and functional, was reduced to a percentage, and subtracted from 100 per cent". The service measured up to the standards of the telephone art at all times. The plant capable of giving such service "was not functionally deficient, in any practical sense. This is not to say that parts of the plant did not from time to time become inadequate or obsolete, but that the Company continuously anticipates and forestalls inadequacy and obsolescence. Before a thing becomes inadequate or obsolete it is removed from the plant." But little variation was found in the percentage of existing depreciation during the years 1923 to 1931.[24] The Company points out that the Commission found, in its order of 1923, that the property was then "in at least 90 per cent condition". "The weighted total or overall condition", the Company shows, "is 91 per cent. for the years 1923-1928 and 92 per cent. for subsequent years."

This condition, kept at a nearly constant level, directs attention to the amounts expended for current maintenance. In the process of current maintenance, "new parts" are "installed to replace old parts" in units of property not retired. Such "substitutions or 'repairs' " are separate from the amounts which figure in the depreciation reserve. The distinction between expenses for current maintenance and depreciation is theoretically clear. Depreciation is defined as the expense occasioned by the using up of physical property employed as fixed capital; current maintenance, as the expense occasioned in keeping the physical property in the condition required for continued use during its service life. But it is evident that the distinction is a difficult one to observe in practice with scientific precision, and that outlays for maintenance charged to current expenses may involve many substitutions of new for old parts which tend to keep down the accrued depreciation. The amounts charged by the Company to current maintenance year by year, the amounts credited to the depreciation reserve, and the total of the two sets of charges to operating expenses for the intrastate property in Chicago are as follows:

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[24] Referring to the period 1923 to 1931, and to the Company's exhibit, the Company's counsel state—that "the percentage of depreciation in the various classes of plant did not vary materially during the period, with the exception of three classes, namely, central office equipment, private branch exchanges and booths and special fittings. In the case of central office equipment, there were large installations of new equipment in 1929 which had the effect of raising the per cent. condition for the entire class from 92 per cent. for prior years to 93 per cent. for 1929 and subsequent years. In the case of private branch exchanges, the percentage condition improved gradually from 88 per cent. in 1923 to 94 per cent. in 1930 due to the large proportion of new installations and correspondingly large retirements of the old. In the case of booths and special fittings, the percentage condition gradually improved from 78 per cent. in 1923 to 85 per cent. at the end of the period, in this case also because of abnormally large changes of booths at pay stations. These are the changes which in the main account for the fact that the overall condition of the plant rose from 91 per cent. for the years 1923-1928 to 92 per cent. thereafter."

	Current maintenance.	*Depreciation.*	*Total.*
1923	$5,643,[illegible]3	$4,222,000	$9,865,623
1924	6,043,737	4,470,000	10,513,737
1925	6,563,193	5,048,000	11,611,193
1926	7,714,364	5,767,000	13,481,364
1927	8,849,550	6,335,000	15,184,550
1928	9,941,143	7,009,000	16,950,143
1929	10,671,576	7,436,000	18,107,576
1930	11,372,858	7,865,000	19,237,858
1931	10,842,053	8,133,000	18,975,053

These aggregate amounts range from over 30 per cent. to nearly 40 per cent. of the total amounts charged by the Company to operating expenses.[25]

In the light of the evidence as to the expenditures for current maintenance and the proved condition of the property—in the face of the disparity between the actual extent of depreciation, as ascertained according to the comprehensive standards used by the Company's witnesses, and the amount of the depreciation reserve—it cannot be said that the Company has established that the reserve merely represents the consumption of capital in the service rendered. Rather it appears that the depreciation reserve to a large extent represents provision for capital additions, over and above the amount required to cover capital consumption. This excess in the balance of the reserve account has been built up by excessive annual allowances for depreciation charged to operating expenses.

In answer to appellants' criticism, the Company suggests that an adjustment might be made by giving credit in favor of the telephone users "in an amount equal to 3½ per cent. upon the difference between the depreciation reserve and the amount deducted from the valuation for existing depreciation". The suggestion is beside the point. The point is as to the necessity for the annual charges for depreciation, as made or claimed by the Company, in order to avoid confiscation through the rates in suit. On that point the Company has the burden of proof. We find that this burden has not been sustained. Nor is the result changed by figuring the allowances at the somewhat reduced amounts fixed by the court below.[26]

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[25] The total amounts charged by the Company for operating expenses in the intrastate business at Chicago appear to be as follows: 1923, $31,550,286; 1924, $33,275,574; 1925, $35,649,160; 1926, $38,893,042; 1927, $42,142,649; 1928, $45,704,899; 1929, $48,489,647; 1930, $49,319,993; 1931, $47,904,196.

We find this point to be a critical one. The questionable amounts annually charged to operating expenses for depreciation are large enough to destroy any basis for holding that it has been convincingly shown that the reduction in income through the rates in suit would produce confiscation.

The case has long been pending and should be brought to an end. The Company has had abundant opportunity to establish its contentions. In seeking to do so, the Company has submitted elaborate estimates and computations, but these have overshot the mark. Proving too much, they fail of the intended effect. It is not the function of the court to attempt to construct out of this voluminous record independent calculations to invalidate the challenged rates. It is enough that the rates have been established by competent authority and that their invalidity has not been satisfactorily proved.

The decree below is reversed and the cause is remanded with direction to dissolve the interlocutory injunction, to provide for the refunding, in accordance with the terms of that injunction and of the bonds given pursuant thereto, of the amounts charged by the Company in excess of the rates in suit, and to dismiss the bill of complaint.

No. 548.—The appeal of the Company. The Company was successful in the District Court and has no right of appeal from the decree in its favor. The Company is not entitled to prosecute such an appeal for the purpose of procuring a review of the findings of the court below with respect to the value of the Company's property or the other findings of which it complains. Its contentions in these respects have been considered in connection with the appeal of the state authorities and the city. The appeal of the Company is dismissed. *New York Telephone Co.* v. *Maltbie,* 291 U. S. — (February 19, 1934).

Decree in No. 440 reversed.
Appeal in No. 548 dismissed.

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[26] See, *supra,* p. 11.

SUPREME COURT OF THE UNITED STATES.

Nos. 440 and 548.—October Term, 1933.

Benjamin F. Lindheimer and others, constituting the Illinois Commerce Commission of the State of Illinois; Otto Kerner, Attorney General of the State of Illinois, and the City of Chicago, Appellants,
440 *vs.*
Illinois Bell Telephone Company.

Illinois Bell Telephone Company, Appellant,
548 *vs.*
Benjamin F. Lindheimer and others, constituting the Illinois Commerce Commission of the State of Illinois; Otto Kerner, Attorney General of the State of Illinois, and the City of Chicago.

Appeals from the District Court of the United States for the Northern District of Illinois.

[April 30, 1934.]

Mr. Justice Butler.

The evidence does not show that the amounts taken by the company from revenue and charged to the depreciation reserve were required for the maintenance of the property or that the amounts allowed by the lower court for that purpose were needed. The ruling in condemnation of the charges to the depreciation reserve is so important that, even at the risk of duplication, emphasis should be laid upon some facts and reasons that may be cited in its support.

The court's opinion discloses the principle followed for the ascertainment of the amounts annually so charged. It is the straight line method calculated on cost less salvage.[1] That method was prescribed by the Interstate Commerce Commission by an order effective January 1, 1913, establishing the uniform system of accounts for telephone companies.[2] The evidence requires a finding that the company faithfully followed the prescribed system. The state commission continuously watched over the company's handling of the depreciation reserve account.

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[1] This is not in harmony with the principle of our decision in United Railways *v.* West, 280 U. S. 234, 253-254, which requires replacement cost to be taken as the basis of calculation.

The table next below shows by years in column (1) the intrastate reserve balances, in (2) the intrastate book cost of the property and in (3) percentages that the balances are of the cost.

TABLE I

	(1)	(2)	(3)
1923	$26,797,000	$95,074,135	28.1%
1924	29,316,000	105,291,980	27.8
1925	32,155,000	117,730,536	27.3
1926	35,572,000	130,857,355	27.1
1927	39,352,000	146,173,197	26.9
1928	42,769,000	159,622,212	26.7
1929	44,515,000	168,988,816	26.2
1930	45,829,000	178,157,620	25.9
1931	48,362,000	181,925,963	26.

The cost of the property includes from $2,000,000 to $3,000,000 paid for land which is not depreciable, and $13,000,000 to $18,000,000 paid for buildings having a long service life. There are other important and relatively permanent plant elements. These facts suggest that the percentages shown in the table are considerably lower than the actual relation of reserve balances to cost of depreciable parts of the property. While much of the plant is new, the reserve was piled up at about the rate that the cost of plant increased. The balances held in respect of all property, interstate and intrastate, increased from about $4,000,000 in 1911 to about $26,000,000 in 1922. The amounts attributable to the intrastate property alone show an average annual increase of more than $2,300,000. That amount is greatly in excess of the reduction of revenue that would have resulted if the rate order had been enforced.

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[2] The following is § 23, Uniform System of Accounts for Telephone Companies, promulgated by the Interstate Commerce Commission, effective January 1, 1913. It will serve to disclose the underlying principle on which the reserve charges are made.

"Depreciation of Plant and Equipment.—Telephone companies should include in operating expenses depreciation charges for the purpose of creating proper and adequate reserves to cover the expenses of depreciation currently accruing in the tangible fixed capital. By *expense of depreciation* is meant—

(a) The losses suffered through the current lessening in value of tangible property from wear and tear (not covered by current repairs).

(b) Obsolescence, or inadequacy resulting from age, physical change, or supersession by reason of new inventions and discoveries, changes in popular demand, or public requirements, and.

(c) Losses suffered through destruction of property by extraordinary casulaties.

The amount charged as expense of depreciation should be based upon rules determined by the accounting company. Such rules may be derived from a consideration of the company's history and experience. Companies should be prepared to furnish the Commission, upon demand, the rules and a sworn statement of the facts, expert opinions, and estimates upon which they are based.

The estimate for depreciation of physical property should take into account—

(a) The gradual deterioration and ultimate retirement of units of property which may be satisfactorily individualized, such as buildings, machines, valu-

The table below shows by years in column (1) the amounts actually expended for current maintenance, in column (2) the amounts charged to depreciation reserve, in column (3) the total of both.

TABLE II

	(1)	(2)	(3)
1923	$5,643,623	$4,222,000	$9,865,623
1924	6,043,737	4,470,000	10,513,737
1925	6,563,193	5,048,000	11,611,193
1926	7,714,364	5,767,000	13,481,364
1927	8,849,550	6,335,000	15,184,550
1928	9,941,143	7,009,000	16,950,143
1929	10,671,526	7,436,000	18,107,526
1930	11,372,858	7,865,000	19,237,858
1931	10,842,053	8,133,000	18,975,053

The importance of the amounts involved is illustrated by the following table which shows by years (1) expenditures for current maintenance plus charges to depreciation reserve, in (2) revenues, in (3) the percentages that the former are of the latter.

TABLE III

	(1)	(2)	(3)
1923	$9,865,623	$37,146,181	26.5%
1924	10,513,737	39,653,954	26.5
1925	11,611,193	42,560,451	27.2
1926	13,481,364	45,932,698	29.3
1927	15,184,550	49,163,580	30.8
1928	16,950,143	53,677,760	31.5
1929	18,107,526	58,279,602	31
1930	19,237,858	58,698,263	32.7
1931	18,975,053	56,496,299	33.5

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able instruments, etc., to the end that by the time such units of property go out of service there shall have been accumulated a reserve equal to the original money cost of such property plus expenses incident to retirement less the value of any salvage.

(b) The depreciation accruing in property which cannot be readily individualized, such as pole lines, wires, cables, or other continuous structures, where expenditures for repairs or replacements of individual parts ordinarily are not actually made until the later years of the life in service of such property, and when made may, therefore, be classed as extraordinary repairs.

The rate of depreciation should be fixed so as to distribute, as nearly as may be, evenly throughout the life of the depreciating property the burden of repairs and the cost of capital consumed in operations during a given month or year, and should be based upon the average life of the units comprised in the respective classes of property. . . .''

The next table gives similar information. It shows by years in column (1) actual expenditures for maintenance plus charges to the reserve, in (2) the total of all operating expenses and in (3) the percentages that the former are of the latter.

TABLE IV

	(1)	(2)	(3)
1923	$9,865,623	$31,550,286	31.2%
1924	10,513,737	33,275,574	31.5
1925	11,611,193	35,649,160	32.5
1926	13,481,364	38,893,042	34.6
1927	15,184,550	42,142,649	36
1928	16,950,143	45,704,899	37
1929	18,107,526	48,489,647	39.4
1930	19,237,858	49,319,993	39
1931	18,975,053	47,904,196	39.5

The actual annual expenditures to keep the plant in proper condition for service are made up of the amounts included in current maintenance and those taken from the depreciation reserve. The table next below is illustrative and is intended to show by years in column (1) that total, in column (2) the revenue, in (3) the percentage that the former is of the latter.

TABLE V

	(1)	(2)	(3)
1924	$7,994,737	$39,653,954	20.1%
192[illegible]	8,772,193	42,560,451	20.6
1926	10,064,364	45,163,580	21.8
1927	11,404,550	49,163,580	23.1
1928	13,533,143	53,677,760	25.2
1929	16,361,526	58,279,602	28
1930	17,923,858	58,698,263	30.5
1931	16,442,053	56,496,299	29.1

The purpose of this table is to compare the percentage in each year with the percentage in each of the other years. It is to be observed that the lowest is 20.1% (1924) and the highest 30.5% (1930). This comparison serves to test the claim that the depreciation reserve is needed in order to equalize annual cost of upkeep in relation to revenue. If the period covered is typical, the last statement strongly suggests that no reserve account is necessary for that purpose. And that impression is confirmed by a similar comparison of the percentages in Table IV. It shows the relation of current maintenance plus depreciation reserve charges to revenue. Comparing the percentage in each year (during the period covered by Table V) with the percentage in each of the other years, the lowest is 31.5% (1924), the highest is 39.5 (1931).

From the foregoing it justly may be inferred that charges made according to the principle followed by the company create reserves much in excess of what is needed for maintenance. The balances carried by the company include large amounts that never can be used for the purposes for which the reserve was created. In the long run the amounts thus unnecessarily taken from revenue will reach about one-half the total cost of all depreciable parts of the plant. The only legitimate purpose of the reserve is to equalize expenditures for maintenance so as to take from the revenue earned in each year its fair share of the burden. To the extent that the annual charges include amounts that will not be required for that purpose, the account misrepresents the cost of the service.

The company's properties constitute a complex and highly developed instrumentality containing many classes of items that require renewal from time to time. But, taken as a whole, the plant must be deemed to be permanent. It never was intended to be new in all its parts. It would be impossible to make it so. Expenditures in an attempt to accomplish that would be wasteful. Amounts sufficient to create a reserve balance that is the same percentage of total cost of depreciable items as their age is of their total service life cannot be accepted as legitimate additions to operating expenses. In the absence of proof definitely establishing what annual deductions from revenues were necessary for adequate maintenance of the property, the company is not entitled to have the rate order set aside as confiscatory.